

Global Derivatives Study Group

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Introduction

Derivatives have fundamentally changed financial management by providing new tools to manage risk. As the use of derivatives has grown rapidly in the past 15 years, they have moved into the mainstream of finance.

Yet many, both inside and outside of the financial industry, remain uncomfortable with derivatives activity. They see it as complex and obscure, potentially subject to abuse that might lead to the failure of individual firms or even to a crisis in the financial system. This Study recognizes and addresses these concerns by explaining derivatives and their uses and by formulating and disseminating recommendations about their management.

The distinguishing feature of this Study is the practical character of its contents. Other studies of derivatives have been conducted by academics or supervisors; this Study was conducted largely by market participants.

Why Derivatives Matter

In general terms, a derivatives transaction is a contract whose value depends on (or "derives" from) the value of an underlying asset, reference rate, or index. This Study focuses on global "over-the-counter" (OTC) derivatives--those privately negotiated contracts provided directly by dealers to end-users, as opposed to the standardized contracts (such as futures) sold on exchanges. The main over-the-counter derivatives include swaps, forwards, and options, based upon interest rates, currencies, equities, and commodities.

By any measure, derivatives are a major financial activity. Some have even portrayed it as a multi-trillion dollar business dwarfing activity in other financial markets. But a more careful comparison reveals that, while derivatives activity is growing rapidly, its size remains modest in relation to foreign exchange, bonds, or equities.

What makes derivatives important is not so much the size of the activity, as the role it plays in fostering new ways to understand, measure, and manage financial risk. Through derivatives, the complex risks that are bound together in traditional instruments can be teased apart and managed independently, and often more efficiently.

The results can benefit a wide variety of institutions. For many that issue securities, and for many that invest, derivatives can save costs and increase returns while broadening the range of funding and investment alternatives. For them and others, derivatives can reduce the risk of loss. And for financial institutions, derivatives can be a source of strength because they reinforce existing activities with clients, and help to build diversified credit portfolios.

Derivatives and Risk

Derivatives help to manage risk in new ways--an important economic function. Yet the risks involved in derivatives activities are neither new nor unique. They are the same kinds of risks found in traditional financial products: market, credit, legal, and operational risks.

Because over-the-counter derivatives are customized transactions, they often assemble risks in complex ways. This can make the measurement and control of these risks more difficult and create the possibility of unexpected loss. Banking supervisors have conducted several studies into the implications of derivatives for the financial system. None of these studies concluded that derivatives significantly increase systemic risk, but neither did they find cause for complacency.

For derivatives activity to grow and prosper, those who take part in it--whether as dealers, end-users, or both--should continue laying a strong foundation of good management practice. They also should provide the public with information that will allay unjustified fears by demystifying this activity. And participants should discuss openly with legislators, supervisors, and regulators, ways to further strengthen the current institutional framework.

These steps are both appropriate and sufficient to address the systemic and other concerns about derivatives activity. Without minimizing the significance of these concerns, this Study does not conclude that any fundamental changes in the current regulatory framework, such as separate regulation of this activity, are needed.

Separate regulation of global derivatives would be at cross-purposes with the existing framework of supervision, with its focus on the common risks contained in derivatives and traditional instruments. There is also a danger in imposing regulatory formulas that inhibit new product innovation or discourage firms from developing the individualized, robust risk management systems on which they should rely.

The Global Derivatives Study

This Study consists of the Recommendations, an Overview of Derivatives Activity, and three Appendices:

The Recommendations

The Study offers 20 recommendations to help dealers and end-users manage derivatives activity and continue to benefit from its use. The Study also recommends four ways that supervisors and regulators, for their part, can help the financial infrastructure keep up with derivatives activity.

The Overview of Derivatives Activity

The Overview section of this Study explains in relatively plain language what derivatives are, the needs they serve, their risks, and their relationship to traditional financial instruments. The Overview is intended to promote understanding and discussion among the growing number of people--in financial institutions, other corporations, and official bodies--that have an interest in the subject.

The Appendices

Three separately bound volumes of appendices contain the Study's detailed background material, which should be of special interest to professionals involved in various aspects of derivatives.

Appendix I contains the six working papers that form the basis of the Study and whose analysis supports the Recommendations. Each covers one of the main areas studied by the Working Group: valuation and market risk; credit risk; enforceability; systems, operations, and controls; accounting and reporting; and systemic issues.

Appendix II is a compilation of legal memoranda discussing issues of enforceability in nine jurisdictions: Australia, Brazil, Canada, England, France, Germany, Japan, Singapore, and the United States.

Appendix III summarizes the findings of the Survey of Industry Practice conducted for this Study. A representative group of 80 dealers and 72 end-users responded to a detailed questionnaire.

By contributing to the public understanding of the nature and potential of derivatives, and by providing guidance on principles of good management, the authors of this Study hope to add to the soundness and utility of these instruments.

[The Recommendations](#)

24 Recommendations covering:

General Policies

Credit Risk Measurement and Management

Enforceability

Accounting and Disclosure

The Recommendations

Summary

Global over-the-counter derivatives activity is relatively new, and until now there has been no thorough study of its management. Dealers and end-users, while aware of the broader challenges, have focused their discussions on specific issues--and have addressed these with a variety of practices, some more effective than others.

This Study presents the first comprehensive effort to take stock of what the industry has learned, and to broaden awareness of the more successful management approaches. It provides practical guidance in the form of 20 recommendations addressed to dealers and end-users alike (some firms perform both functions). These recommendations can help them to manage derivatives activity, to respond to its growth and complexity, and to continue to benefit from its use.

The recommendations, which the Steering Committee has endorsed unanimously, were formulated by the Working Group--a diverse cross-section of end-users, dealers, academics, accountants, and lawyers involved in derivatives. Input also came from a detailed Survey of Industry Practice among 80 dealers and 72 end-users worldwide,

involving both questionnaires and in-depth interviews.

Some of the recommendations reflect a strong consensus among participants, and are already in widespread use; others represent the Working Group's choice among alternative practices. Still others point to emerging practices currently followed by a handful of participants.

These 20 recommendations are not necessarily the only means to good management. What they do offer is a benchmark against which participants can measure their own practices.

To summarize, the recommendations suggest that each dealer and end-user of derivatives should:

Determine at the highest level of policy and decision making the scope of its involvement in derivatives activities and policies to be applied.

Value derivatives positions at market, at least for risk management purposes.

Quantify its market risk under adverse market conditions against limits, perform stress simulations, and forecast cash investing and funding needs.

Assess the credit risk arising from derivatives activities based on frequent measures of current and potential exposure against credit limits.

Reduce credit risk by broadening the use of multi-product master agreements with close-out netting provisions, and by working with other participants to ensure legal enforceability of derivatives transactions within and across jurisdictions.

Establish market and credit risk management functions with clear authority independent of the dealing function.

Authorize only professionals with the requisite skills and experience to transact and manage the risks, as well as to process, report, control, and audit derivatives activities.

Establish management information systems sophisticated enough to measure, manage, and report the risks of derivatives activities in a timely and precise manner.

Voluntarily adopt accounting and disclosure practices for international harmonization and greater transparency, pending the arrival of international standards.

In addition, there are four recommendations for legislators, regulators, and supervisors. To help strengthen the financial infrastructure for derivatives activities, officials are called upon to:

Recognize close-out netting arrangements and amend the Basle Accord to reflect their benefits in bank capital regulations.

Work with market participants to remove legal and regulatory uncertainties regarding derivatives.

Amend tax regulations that disadvantage the economic use of derivatives.

Provide comprehensive and consistent guidance on accounting and reporting of derivatives and other financial instruments.

The recommendations are generally grouped below according to specific areas of study. Six subcommittees of the Working Group addressed these areas in detail. Their Working Papers, published separately as Appendix I, form the basis for these recommendations and provide essential background information.

Recommendations for Dealers and End-Users

These recommendations are addressed to participants in derivatives activity, both dealers and end-users. The terms "dealer" and "end-user" do not refer to particular types of institution, but rather to the nature of their derivatives activity. A bank, for instance, may participate both as a dealer and as an end-user. Likewise, some corporate end-users of derivatives may also be involved as dealers. (For information about who uses derivatives and why, see Section II of the Overview of Derivatives Activity)

General Policies - 1

Recommendation 1: The Role of Senior Management

Dealers and end-users should use derivatives in a manner consistent with the overall risk management and capital policies approved by their boards of directors. These policies should be reviewed as business and market circumstances change. Policies governing derivatives use should be clearly defined, including the purposes for which these transactions are to be undertaken. Senior management should approve procedures and controls to implement these policies, and management at all levels should enforce them.

Derivatives activities merit senior management attention because they can generate significant benefits or costs for any firm. A firm's policies for derivatives should be an integral part of its overall policies for risk taking and management, either in its underlying business (if it is an end-user) or in its other lines of business (if it is a dealer). Periodic reviews will help ensure that these policies reflect changing circumstances and innovations.

Recommendation 2: Marking to Market

Dealers should mark their derivatives positions to market, on at least a daily basis, for risk management purposes.

Marking to market is the only valuation technique that correctly reflects the current value of derivatives cash flows to be managed and provides information about market risk and appropriate hedging actions. Lower-of-cost-or-market accounting, and accruals accounting, are not appropriate for risk management.

The Survey of Industry Practice shows that the practice of [marking to market](#) daily is widespread among dealers, reflecting the importance of the information it provides to risk managers. Intraday or even real time valuation can help greatly, especially in managing the market risk of some option portfolios.

Recommendation 3: Market Valuation Methods

Derivatives portfolios of dealers should be valued based on mid-market levels less specific adjustments, or on appropriate bid or offer levels. Mid-market valuation adjustments should allow for expected future costs such as unearned credit spread, close-out costs, investing and funding costs, and administrative costs.

Marking to mid-market less adjustments specifically defines and quantifies adjustments that are implicitly assumed in the bid or offer method. Using the mid-market valuation method without adjustment would overstate the value of a portfolio by not deferring income to meet future costs and to provide a credit spread.

Two adjustments to mid-market are necessary even for a perfectly matched portfolio: the "unearned credit spread adjustment" to reflect the credit risk in the portfolio; and the "administrative costs adjustment" for costs that will be incurred to administer the portfolio. The unearned credit spread adjustment represents amounts set aside to cover expected credit losses and to provide compensation for credit exposure. Expected credit losses should be based upon expected exposure to counterparties (taking into account netting arrangements), expected default experience, and overall portfolio diversification. The unearned credit spread should preferably be adjusted dynamically as these factors change. It can be calculated on a transaction basis, on a portfolio basis, or across all activities with a given client.

Two additional adjustments are necessary for portfolios that are not perfectly matched: the "close-out costs adjustment" which factors in the cost of eliminating their market risk; and the "investing and funding costs adjustment" relating to the cost of funding and investing cash flow mismatches at rates different from the LIBOR rate which models typically assume.

The Survey reveals a wide range of practice concerning the mark-to-market method and the use of adjustments to mid-market value. The most commonly used adjustments are for credit and administrative costs.

Recommendation 4: Identifying Revenue Sources

Dealers should measure the components of revenue regularly and in sufficient detail to understand the sources of risk.

By identifying and isolating individual sources of revenue, dealers develop a more refined understanding of the risks and returns of derivatives activities. Components of revenue generally include origination revenue, credit spread revenue, if applicable, and other trading revenue. It is useful, though complex, to split other trading revenue among components of market risk.

The Survey of Industry Practice indicates that few dealers identify individual sources of revenue. This should become a more common practice.

Recommendation 5: Measuring Market Risk

Dealers should use a consistent measure to calculate daily the market risk of their derivatives positions and compare it to market risk limits.

Market risk is best measured as "value at risk" using probability analysis based upon a common confidence interval (e.g., two standard deviations) and time horizon (e.g., a one-day exposure).

Components of market risk that should be considered across the term structure include: absolute price or rate change (delta); convexity (gamma); volatility (vega); time decay (theta); basis or correlation; and discount rate (rho).

Reducing market risks across derivatives to a single common denominator makes aggregation, comparison, and risk control easier. "Value at risk" is the expected loss from an adverse market movement with a specified probability over a particular period of time. For example, with 97.5% probability (that is, a "confidence interval" of 97.5%), corresponding to calculations using about two standard deviations, it can be determined that any change in portfolio value over one day resulting from an adverse market movement will not exceed a specific amount. Conversely, there is a 2.5% probability of experiencing an adverse change in excess of the calculated amount.

Value at risk should encompass changes in all major market risk components listed in the recommendation. The difficulty in applying the technique of value at risk increases with the complexity of the risks being managed. For comparability, value at risk should be calculated to a common confidence interval and time horizon.

For most portfolios without options, once the expected loss is known for events with a given probability, the loss for a more likely or less likely scenario can easily be deduced. Therefore, for such portfolios, the choice of confidence interval is of no great significance. For option-based portfolios, however, this does not hold true. In their case, it would also be useful to calculate the loss from more and less likely scenarios.

A time horizon of one day is consistent with Recommendation 2 for daily marking to market, which allows management to know and decide daily any change of the risk profile.

Once a method of risk measurement is in place, market risk limits must be decided based on factors such as: management tolerance for low probability extreme losses versus higher probability modest losses; capital resources; market liquidity; expected profitability; trader experience; and business strategy.

The Survey suggests that most dealers know and consider some or all of the components of market risk. However, the use of one consistent measure of market risk, such as value at risk, is more prevalent among large dealers.

Recommendation 6: Stress Simulations

Dealers should regularly perform simulations to determine how their portfolios would perform under stress conditions.

Simulations of improbable market environments are important in risk analysis because many assumptions that are valid for normal markets may no longer hold true in

abnormal markets.

These simulations should reflect both historical events and future possibilities. Stress scenarios should include not only abnormally large market swings but also periods of prolonged inactivity. The tests should consider the effect of price changes on the mid-market value of the portfolio, as well as changes in the assumptions about the adjustments to mid-market (such as the impact that decreased liquidity would have on close-out costs). Dealers should evaluate the results of stress tests and develop contingency plans accordingly.

The Survey indicates that some stress testing is being conducted, mainly by large dealers, and that broader usage is planned.

Recommendation 7: Investing and Funding Forecasts

Dealers should periodically forecast the cash investing and funding requirements arising from their derivatives portfolios.

The frequency and precision of forecasts should be determined by the size and nature of mismatches. A detailed forecast should determine surpluses and funding needs, by currency, over time. It also should examine the potential impact of contractual unwind provisions or other credit provisions that produce cash or collateral receipts or payments.

The Survey indicates that at present, half of responding dealers are conducting forecasts of cash investing and funding requirements. This type of forecast should become a more common practice.

Recommendation 8: Independent Market Risk Management

Dealers should have a market risk management function, with clear independence and authority, to ensure that the following responsibilities are carried out:

The development of risk limit policies and the monitoring of transactions and positions for adherence to these policies. (See Recommendation 5.)

The design of stress scenarios to measure the impact of market conditions, however improbable, that might cause market gaps, volatility swings, or disruptions of major relationships, or might reduce liquidity in the face of unfavorable market linkages, concentrated market making, or credit exhaustion. (See Recommendation 6.)

The design of revenue reports quantifying the contribution of various risk components, and of market risk measures such as value at risk. (See Recommendations 4 and 5.)

The monitoring of variance between the actual volatility of portfolio value and that predicted by the measure of market risk.

The review and approval of pricing models and valuation systems used by front- and back-office personnel, and the development of reconciliation procedures if different systems are used.

The growth of activities in derivatives and other financial instruments has led many firms to establish market (and credit) risk management functions to assist senior management in establishing consistent policies and procedures applicable to various activities. Market risk management is typically headed by a board level or near board level executive.

The market risk management function acts as a catalyst for the development of sound market risk management systems, models, and procedures. Its review of trading performance typically answers the question: Are results consistent with those suggested by analysis of value at risk? The risk management function is rarely involved in actual risk-taking decisions.

According to the Survey, a large majority of dealers already have such a function in place and over 50% of those that do not plan to establish one in the near future.

Recommendation 9: Practices by End-Users

As appropriate to the nature, size, and complexity of their derivatives activities, end-users should adopt the same valuation and market risk management practices that are recommended for dealers. Specifically, they should consider: regularly marking to market their derivatives transactions for risk management purposes; periodically forecasting the cash investing and funding requirements arising from their derivatives transactions; and establishing a clearly independent and authoritative function to design and assure adherence to prudent risk limits.

While many end-users do not expect significant change in the combined value of their derivatives positions and the underlying positions, others do. Derivatives are customer-specific transactions, often designed to offset precisely the market risk of an end-user's business position (e.g., buying a commodity as a raw material). End-users should establish the performance assessment and control procedures that are appropriate for their derivatives activities.

Less than half of those end-users surveyed currently mark their derivatives hedges to market for risk management purposes. About half plan to do so.

Credit Risk Measurement and Management

Recommendation 10: Measuring Credit Exposure

Dealers and end-users should measure [credit exposure](#) on derivatives in two ways:

Current exposure, which is the replacement cost of derivatives transactions, that is, their market value.

Potential exposure, which is an estimate of the future replacement cost of derivatives transactions. It should be calculated using probability analysis based upon broad confidence intervals (e.g., two standard deviations) over the remaining terms of the transactions.

To assess credit risk, a dealer or end-user should ask two questions. If a counterparty

was to default today, what would it cost to replace the derivatives transaction? If a counterparty defaults in the future, what is a reasonable estimate of the future replacement cost?

Current exposure is an accurate measure of credit risk that addresses the first question. It simply evaluates the replacement cost of outstanding derivatives commitments. The result can be positive or negative. It is an important measure of credit risk as it represents the actual risk to a counterparty at any point in time. The regular calculation of current exposure is a broadly accepted practice today.

Potential exposure is more difficult to assess, and the methods used to determine it vary. The most rigorous methods use either simulation analysis or option valuation models. The analysis generally involves a statistical modeling of the effects on the value of the derivatives of movement in the prices of the underlying variables (such as interest rates, exchange rates, equity prices, or commodity prices). These techniques are often used to generate two measures of potential exposure: expected exposure; and maximum or "worst case" exposure.

Dealers and end-users that cannot justify the simulation and statistical systems needed to perform such potential exposure calculations should use tables of factors developed under the same principles. The factors used should differentiate appropriately by type and maturity of transaction and be adjusted periodically for changes in market conditions.

The Survey shows that dealers use several different methods for calculating credit exposures. These include: the BIS original and current exposure methods, used by one-third of all dealers; methods based on worst-case scenarios applied to each transaction, used by about a quarter of dealers and expected to become the most common in the future; and methods that rely upon tables of factors, used by almost 40% of dealers. End-users tend to rely on simpler methods primarily based on notional amounts.

Recommendation 11: Aggregating Credit Exposures

Credit exposures on derivatives, and all other credit exposures to a counterparty, should be aggregated taking into consideration enforceable netting arrangements. Credit exposures should be calculated regularly and compared to credit limits.

In calculating the current credit exposure for a portfolio of transactions with a counterparty, the first question is whether netting applies. If it does, the current exposure is simply the sum of positive and negative exposures on transactions in the portfolio.

The calculation of potential exposure is more complicated. Simply summing the potential exposures of all transactions will in most cases dramatically overstate the actual exposure, even if netting does not apply. This is because a straight summation fails to take into account transactions in the portfolio that offset each other or that have peak potential exposures at different times. The most accurate calculation of potential exposure simulates the entire portfolio. Although portfolio-level simulation is not commonly used by dealers at present, they should pursue it more widely to avoid overstating aggregate exposure.

Credit exposures should be calculated regularly. In particular, dealers should monitor current exposures daily; they can generally measure potential exposures less frequently. End-users with derivative portfolios should also periodically assess credit exposures. For them, the appropriate frequency will depend upon how material their credit exposures are.

Credit exposures should also be regularly compared to credit limits, and systems should be in place to monitor when limits are approached or exceeded, so that management can take appropriate actions.

By aggregating credit exposures on derivatives as described above, participants will have a consistent basis for comparison with other credit exposures including those resulting from on-balance-sheet activity. This would permit a more effective evaluation of the adequacy of credit reserves relative to overall credit exposure.

The Survey suggests that most dealers monitor gross credit use against limits. Aggregating current and potential exposures by counterparty on a net basis is not common among dealers, although some who do not net at present plan to in the future. Frequent monitoring of credit exposure is widespread among dealers, with three-quarters of respondents doing it either intraday or overnight. The majority of end-users monitor credit exposures at least once a month.

Recommendation 12: Independent Credit Risk Management

Dealers and end-users should have a credit risk management function with clear independence and authority, and with analytical capabilities in derivatives, responsible for:

Approving credit exposure measurement standards.

Setting credit limits and monitoring their use.

Reviewing credits and concentrations of credit risk.

Reviewing and monitoring risk reduction arrangements.

For dealers, credit exposures should be monitored by an independent credit risk management group. According to the Survey, most dealers and some end-users have such a group. For end-users, this role may not necessarily be performed by a separate group; however, the credit risk should be managed independently from dealing personnel. This separation of responsibility is intended to prevent conflicts of interest and to ensure that credit exposure is assessed objectively. The credit risk management function should approve exposure management standards, and should establish credit limits for counterparties consistent with these standards. Specifically, it should conduct an internal credit review before engaging in transactions with a counterparty, and should guide the use of documentation and credit support tools. Credit limits and guidelines should ensure that only those potential counterparties that meet the appropriate credit standards, with or without credit support, become actual counterparties.

The credit risk management function should continually review the creditworthiness of counterparties and their credit limits.

Credit Risk Measurement and Management

Recommendation 13: Master Agreements

Dealers and end-users are encouraged to use one master agreement as widely as possible with each counterparty to document existing and future derivatives transactions, including foreign exchange forwards and options. Master agreements should provide for payments netting and close-out netting, using a full two-way payments approach.

Participants should use one master agreement with each counterparty. That agreement should provide for close-out and settlement netting as widely as possible to document derivatives transactions. In particular, there is substantial scope for reducing credit risk by including foreign exchange forwards and options under master agreements along with other derivatives transactions.

A single master agreement that documents transactions between two parties creates the greatest legal certainty that [credit exposure](#) will be netted. The use of multiple master agreements between two parties introduces the risk of "cherry-picking" among master agreements (rather than among individual transactions); and the risk that the right to set off amounts due under different master agreements might be delayed. Dealers and end-users will be well served by using a single master agreement with counterparties to document as many derivatives transactions as law or regulation permit. The practices of using separate agreements for each transaction between two parties, or standard terms that do not constitute a master agreement, are not good practices and should be discontinued. According to the Survey, two-fifths of all dealers now document derivatives transactions under a multi-product master, and more plan to do so in the future.

Full two-way payments, as opposed to limited two-way payments, is now the preferred payments approach in master agreements. Under full two-way payments, the net amount calculated through the netting provisions in a bilateral master agreement is due regardless of whether it is to, or from, the defaulting party. Under limited two-way payments, the defaulting party is not entitled to receive anything, even if the net amount is in its favor. This discourages default and enhances cross-product and cross-affiliate set-off. However, when master agreements cover a wide range of derivatives transactions, the benefits created by increasing the certainty about the value of a net position under full two-way payments outweigh any possible benefits under limited two-way payments.

Recommendation 14: Credit Enhancement

Dealers and end-users should assess both the benefits and costs of credit enhancement and related risk-reduction arrangements. Where it is proposed that credit downgrades would trigger early termination or collateral requirements, participants should carefully consider their own capacity and that of their counterparties to meet the potentially substantial funding needs that might result.

Credit risk reduction arrangements can be useful in the management of counterparty credit risk. These include collateral and [margin](#) arrangements; third-party credit enhancement such as guarantees or letters of credit; and structural credit enhancement through the establishment of special-purpose vehicles to conduct derivatives business.

The Survey indicates that about two-thirds of dealers are prepared to accept credit enhancement with cash or securities as collateral, and over three-quarters accept a third party guarantee or enhancement. Reflecting strong dealer credit ratings, only one-third are prepared to provide cash or securities collateral and only 10% or so will offer a third party guarantee.

Enforceability

Recommendation 15: Promoting Enforceability

Dealers and end-users should work together on a continuing basis to identify and recommend solutions for issues of legal enforceability, both within and across jurisdictions, as activities evolve and new types of transactions are developed.

Dealers regularly develop new types of transactions, and new technologies are developed to confirm them. These developments may not fit clearly within the current legal framework in the jurisdictions where transactions occur. Therefore, dealers and end-users should continue to work together to evaluate developments in light of existing laws to assess what legal issues may arise. They should take the initiative to ensure that risks arising from these developments can be properly handled through analysis, market practices, documentation and, when necessary, legislation.

Enforceability of netting provisions is considered a serious concern by 43% of dealer senior management responding to the Survey, and another 45% consider it to be of some concern. It also is considered a serious issue by management of many end-users.

Recommendation 16: Professional Expertise

Dealers and end-users must ensure that their derivatives activities are undertaken by professionals in sufficient number and with the appropriate experience, skill levels, and degrees of specialization. These professionals include specialists who transact and manage the risks involved, their supervisors, and those responsible for processing, reporting, controlling, and auditing the activities.

To establish good management, derivatives activities must be staffed by talented, well-trained, and responsible professionals. There is a danger, however, in relying on a few specialists, and it is essential that their managers understand not only derivatives but also the broader business context.

Derivatives support functions are technical and generally require a level of expertise higher than for other financial instruments or activities. Respondents to the Survey expressed concern that, while they are satisfied with the quality of staff in line derivatives activities, the quality of support staff lags. Developing expertise through training programs and appropriate standards of professionalism is encouraged.

The Survey indicates that, for the majority of respondent dealers, senior management is confident about the general quality of its derivatives professionals. To the extent it is concerned about issues of professionalism, it is more worried about its own lack of understanding, about insufficient understanding of derivatives by other functions, and about overreliance on a few specialists.

Recommendation 17: Systems

Dealers and end-users must ensure that adequate systems for data capture, processing, settlement, and management reporting are in place so that derivatives transactions are conducted in an orderly and efficient manner in compliance with management policies. Dealers should have risk management systems that measure the risks incurred in their derivatives activities including market and credit risks. End-users should have risk management systems that measure the risks incurred in their derivatives activities based upon their nature, size, and complexity.

The size and scope of the required systems will depend upon the nature and scale of an organization's derivatives transactions.

For dealers, operating efficiency and reliability are enhanced through the development of systems that minimize manual intervention. Those benefits are particularly significant for dealers with a large volume of activity and a high degree of customization of transactions. At the moment, confirmations of transactions, for example, are automated for about 40% of dealers, some 10% are partially automated, and another 45% rely on manual systems. Eighty percent plan to automate their confirmations completely. In addition, large dealers have made significant investments to integrate back- and front-office systems for derivatives with their firms' other management information systems. Dealers that have done so have found that the integration further enhances operating efficiency and reliability.

While end-users may invest less extensively in their systems than dealers do, these should still be sufficient to group exposures and analyze aggregated risk in a meaningful and useful way.

Recommendation 18: Authority

Management of dealers and end-users should designate who is authorized to commit their institutions to derivatives transactions.

Authority may be delegated to certain individuals or to persons holding certain positions within the firm. Management may choose to limit authority to certain types of transactions, for example to certain maturities, amounts, or types of underlying risks. It is essential that this information be understood within the firm.

Participants should communicate information on which individuals have the authority to commit to counterparties. They should recognize, however, that the legal doctrine of "apparent authority" may govern the transactions they enter into, and that there is no substitute for appropriate internal controls.

Two-thirds of dealers responding to the Survey involve senior management in authorizing traders to commit the firm.

Accounting and Disclosure

Recommendation 19: Accounting Practices

International harmonization of accounting standards for derivatives is desirable. Pending the adoption of harmonized standards, the following accounting practices are recommended:

Dealers should account for derivatives transactions by marking them to market, taking changes in value to income each period.

End-users should account for derivatives used to manage risks so as to achieve a consistency of income recognition treatment between those instruments and the risks being managed. Thus, if the risk being managed is accounted for at cost (or, in the case of an anticipatory hedge, not yet recognized), changes in the value of a qualifying risk management instrument should be deferred until a gain or loss is recognized on the risk being managed. Or, if the risk being managed is marked to market with changes in value being taken to income, a qualifying risk management instrument should be treated in a comparable fashion.

End-users should account for derivatives not qualifying for risk management treatment on a [mark-to-market](#) basis.

Amounts due to and from counterparties should only be offset when there is a legal right to set off or when enforceable netting arrangements are in place.

Where local regulations prevent adoption of these practices, disclosure along these lines is nevertheless recommended.

Accounting policies for derivatives vary widely around the world. In some countries there are local accounting standards that address accounting for derivatives; in other countries there are no specific standards and a variety of customs and practices has developed. In view of the global nature of derivatives, it is desirable to achieve some harmonization of accounting treatment to assist in clarifying the financial statements of dealers and end-users.

The recommendation for dealers to account for changes in the value of their derivatives positions in income during each period has become standard in many, although not all, countries. It provides a better representation of the economic effects of such positions than other methods.

The recommended accounting treatment for end-users using derivatives to manage risks, referred to as "risk management accounting," is also a standard treatment. It has evolved in many countries, at least in a modified form, as a response to anomalies in the existing accounting framework. Traditionally in some countries, this accounting treatment has been applied solely to transactions undertaken to reduce risks, usually referred to as "hedges."

Policies must define when financial instruments are eligible for risk management accounting to ensure that the method is not abused. Among a majority of dealers who

responded to the Survey, senior management thought inconsistency of accounting standards with the economics of the business were either of serious or some concern.

Recommendation 20: Disclosures

Financial statements of dealers and end-users should contain sufficient information about their use of derivatives to provide an understanding of the purposes for which transactions are undertaken, the extent of the transactions, the degree of risk involved, and how the transactions have been accounted for. Pending the adoption of harmonized accounting standards, the following disclosures are recommended:

Information about management's attitude to financial risks, how instruments are used, and how risks are monitored and controlled.

Accounting policies.

Analysis of positions at the balance sheet date.

Analysis of the credit risk inherent in those positions.

For dealers only, additional information about the extent of their activities in financial instruments.

The Survey shows that the quality of financial statement disclosure about derivatives transactions varies even more widely than the accounting policies that are applied. Until local standards-setting bodies can adopt harmonized standards, there is a need to improve the quality of financial statement disclosure concerning transactions in both derivatives and cash market instruments.

Its qualitative nature dictates that information about management's attitude to financial risks, how instruments are used, and how risks are monitored and controlled, should appear in the management analysis section of the annual report. The remaining information should appear in the footnotes to the financial statements and be commented on as appropriate in the management analysis.

This recommendation is not apparently precluded by accounting regulations in any country and its early adoption is encouraged.

Inadequate public disclosure of exposures of counterparties is of some concern, or of serious concern, to about three-fifths of senior management among dealers responding to the Survey.

Recommendations for Legislators, Regulators, and Supervisors

Recommendation 21: Recognizing Netting

Regulators and supervisors should recognize the benefits of netting arrangements where and to the full extent that they are enforceable, and encourage their use by reflecting these arrangements in capital adequacy standards. Specifically, they should promptly implement the recognition of the effectiveness of bilateral close-out netting in bank capital regulations.

The bilateral or multilateral netting of contractual payments due on settlement dates, and of unrealized losses against unrealized gains in the event of a counterparty's default, is the most important means of mitigating credit risk. By reducing settlement risk as well as credit exposures, netting contributes to the reduction of systemic risk.

Significant efforts have been made to develop standard master agreements that effect netting across the full range of derivatives products. Nonetheless, the enforceability of such netting provisions remains among the highest concerns of senior management of derivatives dealers, according to the Survey.

Regulators and supervisors should officially recognize netting where and to the full extent it is enforceable, and reflect these arrangements in the capital standards. In this way, regulators and supervisors will stimulate efforts to resolve uncertainties where they exist and will create tangible incentives for using this most important method of reducing counterparty risk.

An important step in implementing this recommendation was taken in April of this year when the Basle Committee released a Consultative Paper that included a proposal for recognizing the effectiveness of close-out netting. This is an amendment to the agreed framework for measuring bank capital adequacy (the "Basle Accord") published by the Basle Committee in July 1988. When the consultation period for this proposal has ended, the national supervisory authorities represented on the Basle Committee should recognize and implement bilateral close-out netting for capital purposes.

Recommendation 22: Legal and Regulatory Uncertainties

Legislators, regulators, and supervisors, including central banks, should work in concert with dealers and end-users to identify and remove any remaining legal and regulatory uncertainties with respect to:

The form of documentation required to create legally enforceable agreements (statute of frauds).

The capacity of parties, such as government entities, insurance companies, pension funds, and building societies, to enter into transactions (ultra vires).

The enforceability of bilateral close-out netting and collateral arrangements in bankruptcy.

The enforceability of multibranch netting arrangements in bankruptcy.

The legality/enforceability of derivatives transactions.

These five main enforceability risks are analyzed for nine major jurisdictions in Appendix II (bound separately). Regulators and legislators in these jurisdictions should remove the remaining uncertainties that have been identified. In other countries, market participants, regulators, and legislators should work to identify and resolve any similar legal risks. These efforts should be conducted on a continuing basis, to account for new types of derivatives transactions and new technologies. It is important to approach these issues aggressively so that the largest risks faced by dealers and end-users are not legal risks from legal systems that have not kept pace with financial developments.

Further work on the enforceability in bankruptcy or insolvency of bilateral netting and collateral arrangements is particularly important if the credit risk reduction techniques for derivatives are to evolve. These techniques are essential building blocks for enforceable multilateral netting arrangements, if that is a direction participants choose to take.

Recommendation 23: Tax Treatment

Legislators and tax authorities are encouraged to review and, where appropriate, amend tax laws and regulations that disadvantage the use of derivatives in risk management strategies. Tax impediments include the inconsistent or uncertain tax treatment of gains and losses on the derivatives, in comparison with the gains and losses that arise from the risks being managed.

In most, if not all jurisdictions, the tax treatment being applied to derivatives transactions dates back to before they came into general use. This can lead to considerable uncertainty in determining how gains and losses associated with these instruments should be taxed depending upon their use.

These uncertainties and inconsistencies present real difficulties to organizations that seek to use derivatives to manage risks in their businesses. Confusion can discourage them from pursuing commercially sensible risk management strategies.

Recommendation 24: Accounting Standards

Accounting standards-setting bodies in each country should, as a matter of priority, provide comprehensive guidance on accounting and reporting of transactions in financial instruments, including derivatives, and should work towards international harmonization of standards on this subject. Also, the International Accounting Standards Committee should finalize its accounting standard on Financial Instruments.

At present no country has accounting and reporting standards that comprehensively address all financial instruments, including derivatives. Even in those countries where development of accounting standards is considered far advanced, there are gaps or inconsistencies between different standards. This is an area where action needs to be taken as a matter of priority.

In a number of countries, accounting standards-setters have recognized the need to improve accounting standards in this area and some have commenced work. Furthermore, the International Accounting Standards Committee (IASC) has issued an exposure draft on Financial Instruments (E40) and presently intends to finalize an accounting standard by the end of 1993.

In addressing the accounting and disclosure requirements for financial instruments, the IASC and national accounting standards-setters are encouraged to address the problems of accounting for risk management activities. Most existing accounting regulations were formulated before recent advances in risk management strategies. This poses considerable practical problems, both to end-users and dealers. Developments in accounting regulations have not kept pace with changes in the way risk is managed.

In some countries, the accounting standards that govern the eligibility for hedge accounting treatment of hedges of anticipated transactions may be too restrictive: some relaxation should be permitted, subject to safeguards to prevent abuse.

Similarly, accounting standards should deal with risk management in a broad sense and not deal just with risk reduction (hedging) which is only one aspect of risk management. Risk management strategies are increasingly being used by both financial and nonfinancial institutions to achieve an acceptable risk profile, but not necessarily a reduced level of risk. Concern over current accounting regulations is deterring some organizations from pursuing commercially sensible risk management strategies. While standards are necessary to ensure that risk management accounting is not abused, it is essential that accounting standards respond to modern risk management techniques.

SOURCE: IFCI Risk Institute, www.ifri.ch