BANKING ISSUANCE

Comptroller of the Currency
Administrator of National Banks

Type:	Banking Circular	Subject:	Risk Management of Financial Derivatives

TO: Chief Executive Officers of National Banks, General Managers of Federal Branches and Agencies, Deputy Comptrollers, Department and Division Heads, and Examining Personnel

PURPOSE

This banking circular provides guidance on risk management practices to national banks and federal branches and agencies engaging in financial derivatives activities. The guidelines in this circular represent prudent practices that will enable a bank to conduct financial derivatives activities in a safe and sound manner. National banks engaged in financial derivatives transactions are expected to follow these guidelines. (Financial derivatives transactions are sometimes referred to herein as "financial derivatives," "derivatives transactions," or "derivatives.")

REFERENCE

This banking circular replaces and supersedes Banking Circular 79 (3rd Rev.), "National Bank Participation in the Financial Futures and Forward Placement Markets," dated April 19, 1983.

SCOPE

Financial derivatives transactions currently represent a relatively small portion of the total credit, market, liquidity, and operational risk to which most banks are routinely exposed. However, because of their complexity, many banks involved in financial derivatives transactions have developed sophisticated approaches in managing those traditional types of risk. These guidelines reflect such approaches and, therefore, represent sound procedures for risk management generally. Therefore, to the extent possible, they should be applied to all of a bank's risk-taking activities.

PRESENTATION

An outline of the guidance in this banking circular follows. Within the topical discussions, a summary statement of the guidance appears in bold type. Each summary is followed by supplemental discussion. References to "national banks" or "banks" throughout the circular also include, to the degree appropriate, federal branches and agencies of foreign banks.

OUTLINE

Page

Definition 4

Background 4

Guidance 5

A. Senior Management and Board Oversight 5
1. Written Policies and Procedures 6
2. General Risk Monitoring and Control 7
3. Risk Management Systems 8
4. Audit Coverage 9

B. Market Risk Management 9
1. Dealers and Active Position-Takers 9
2. Limited End-Users 10

C. Credit Risk Management 11
1. Credit Approval Function 12
2. Pre-Settlement Risk 13
3. Settlement Risk 14
4. Credit Risk Monitoring 14

D. Liquidity Risk Management 15
1. Market/Product Liquidity Risk 15
2. Cash Flow/Funding Liquidity Risk 16
3. Early Termination Arrangements and Credit Enhancements 16
4. Monitoring 17

Page

E. Operations and Systems Risk Management 18
1. Quality of Personnel 18
2. Systems 19
3. Segregation of Duties 19
4. Valuation Issues 20
5. Documentation 21

F. Legal Issues 21
1. Bilateral Netting 22
2. Multilateral Netting 23
3. Physical Commodity Transactions 24

G. Capital Adequacy 24

H. Accounting 25

BANKING ISSUANCE

Comptroller of the Currency
Administrator of National Banks

Type:	Banking Circular	Subject:	Risk Management of Financial Derivatives

DEFINITION

Financial derivatives may be broadly defined as financial instruments which derive their value from the performance of assets, interest or currency exchange rates, or indexes. Derivative transactions include a wide assortment of financial contracts, including structured debt obligations and deposits, swaps, futures, options, caps, floors, collars, forwards, and various combinations thereof.

BACKGROUND

Financial derivatives, properly used, provide national banks with substantial benefits. They provide banks greater flexibility in managing risk by separating out the different types of risks that are found in financial instruments and services, and by transferring those risks to parties who are more willing, or better suited, to take or manage them. Financial derivatives transactions also often provide users with the lowest cost funding alternatives by reducing transaction costs and, in some cases, by exploiting arbitrage opportunities across financial markets. Further, banks can use financial derivatives to efficiently reduce undesirable exposures to factors such as interest rate changes or currency fluctuations. Finally, banks can offer financial derivatives to customers seeking risk management tools to assist in meeting business objectives. The Office of the Comptroller of the Currency (OCC) encourages national banks to use derivatives for such purposes.

The complexities of financial derivatives, however, raise concerns about some institutions' use of derivatives under certain circumstances. National banks engaging in derivatives transactions must do so in accordance with safe and sound banking practices. The OCC is concerned about how the use of financial derivatives can influence the risk of failure of any institution, and particularly those institutions whose failure might threaten the solvency of other institutions or negatively affect liquidity in the nation's financial system.

The OCC believes that the best defense against sizeable individual losses or significant systemic disruptions is the implementation and use by individual banks of sound and efficient risk management systems. Such systems for managing credit, market, liquidity, operational, and legal risks should prevent significant losses due to counterparty failure or adverse changes in market conditions. No systems, however, can substitute for open and timely communications between trading, operating, and risk management units.

GUIDANCE

A. Senior Management and Board Oversight

National banks that engage in derivatives activities should have effective senior management supervision and oversight by the Board of Directors to ensure that such activities are conducted in a safe and sound manner and are consistent with the Board of Directors' overall risk management philosophy and the bank's business strategies.

Before engaging in derivatives activities, bank management should ensure that all appropriate regulatory approvals are obtained and that adequate operational procedures and risk control systems are in place.

Any derivatives activities also should be approved by the Board of Directors; by a committee thereof; or by appropriate senior management, as designated by the Board of Directors. Proposals to undertake derivatives activities should include, as applicable:

- A description of the relevant financial products, markets, and business strategies;
- The costs of establishing sound and effective risk management systems and of attracting and retaining professionals with specific expertise in derivatives transactions;
- An analysis of the reasonableness of the proposed activities in relation to the bank's overall financial condition and capital levels;
- An analysis of the risks that may arise from the activities;
- The procedures the bank will use to measure, monitor and control risks;
- The relevant accounting guidelines; and
- An analysis of any legal restrictions and whether the activities are permissible.

A bank's Board of Directors and senior management should carefully consider the resources required to enter into the derivatives business. At a minimum, senior management and the Board of Directors should ensure that the financial condition of the institution and the professional expertise of designated personnel are adequate to support the bank's proposed activity.

After the bank's initial entry into derivatives activities has been properly approved, any significant changes in such activities or any new derivatives activities should be approved by the Board of Directors or by an appropriate level of senior management, as designated by the Board of Directors. What constitutes a new activity will vary among institutions. Examples include entry into different product lines or markets, the use of derivatives instruments with different risk characteristics, the use of derivative instruments to implement different business strategies and goals, and the use of derivative instruments with cash flow performance dependent upon markets in different geographic regions.

Banks that propose to enter the derivatives markets as end-users should ensure that the Board of Directors and senior management understand and agree that the risk management techniques and reporting procedures that will be used are appropriate. Banks entering into derivatives transactions as dealers should ensure that their Boards of Directors and senior management understand the potential risk exposure, and the appropriateness of the proposed business in light of the strategies and objectives approved by the Board of Directors.

Senior management of national banks that act as dealers of financial derivatives should establish procedures necessary to ensure that individuals involved in the sales and trading units sufficiently understand derivatives instruments to identify instances in which a bank customer may not fully understand the risks associated with a particular transaction.

1. Written Policies and Procedures

A bank should have comprehensive written policies and procedures to govern its use of derivatives. Senior management should review the adequacy of these policies and procedures, in light of the bank's activities and market conditions, at least annually. Appropriate governance by the Board of Directors should include an initial endorsement of significant policies (and changes, as applicable) and periodic approval thereafter, as appropriate, considering the scope, size and complexity of the bank's derivatives activities.

A bank's policies and procedures governing the use of derivatives may be part of a broader set of policies and procedures, such as those addressing financial risk management, customer-related business activities, and/or proprietary trading activities. Written policies and procedures should address risk management (market, credit, liquidity, and operations), legal issues, capital requirements and accounting standards. At a minimum, such policies and procedures should identify:

- Managerial oversight and responsibilities;
- Scope of activities;
- Risk limits;
- Risk measurement and reporting processes; and
- Operational controls.

2. General Risk Monitoring and Control

Senior management of each national bank engaging in derivatives transactions should establish an independent unit or individual responsible for measuring and reporting risk exposures. That responsibility should include monitoring compliance with policies and risk exposure limits.

The individuals or units responsible for risk monitoring and control functions should be independent of the units that create risk exposures. Such individuals or units are responsible for developing and supporting risk measurement systems, establishing market and credit risk approval processes, developing appropriate risk control policies, reporting risk exposures, and monitoring the bank's risk position against approved limits. These individuals or units should have sufficient experience and authority to make and direct critical position and transaction decisions if circumstances require. The individual or unit may be part of a more general operations, compliance, or risk management unit.

Regardless of how the risk monitoring and control operation is structured, personnel should have appropriate experience and ability to understand and communicate the implications of the institution's exposure to senior management and the Board of Directors in a timely manner. This function should also be supported with the technical and financial resources and the corporate visibility and authority necessary to ensure effective oversight.

3. Risk Management Systems

National banks engaged in financial derivatives transactions should have comprehensive risk management systems that are commensurate with the scope, size, and complexity of their activities and the risks they assume. Such systems must ensure that market factors affecting risk exposures are adequately measured, monitored, and controlled. These factors include changes in interest and currency exchange rates, commodity and equity prices and their associated volatilities, changes in the credit quality of counterparties, changes in market liquidity, and the potential for major market disruptions. Risk management procedures also should adequately control potential losses arising from system deficiencies.

A comprehensive risk management system will incorporate:

- Effective management supervision and oversight by the Board of Directors;
- Procedures that identify and quantify the level(s) of risk on a timely basis;
- Limits and other controls on the level(s) of risk with respect to counterparty credit, concentrations, and other relevant market factors;
- Limits and other controls on inter-connected risk positions (i.e., two or more risk positions that are correlated and would be expected to change in value due to a change in the same market factors);
- Reports to senior management and the Board of Directors that accurately present the nature and level(s) of risk taken and compliance with approved policies and limits; and
- Auditing procedures to ensure the integrity of measurement, control, and reporting systems, and compliance with approved policies and procedures.

When determining risk exposure limits, senior management should consider the nature of the bank's strategies and past performance, the level of earnings and capital available to absorb potential losses, and the Board's tolerance for risk. This analysis should be available for bank examiners to review. The Board of Directors, or its designees), should review the appropriateness of established limits and controls whenever significant changes occur in the size and scope of the bank's activities or market conditions, or if the bank experiences significant reductions in earnings or capital that were not anticipated at the time the limits and controls were established.

4. Audit Coverage

National banks should have audit coverage of their financial derivatives activities adequate to ensure timely identification of internal control weaknesses and/or system deficiencies. Such audit coverage should be provided by competent professionals who are knowledgeable of the risks inherent in the financial derivatives transactions.

Audit coverage of derivatives activities should be commensurate with a bank's level of risk and volume of activity. For those banks with end-user activities, audit coverage is likely to be included within the scope of audits of the interest rate, foreign currency, and liquidity risk management functions. Banks that function as dealers need audit coverage sufficient to assess other risks associated with these businesses. For all financial derivatives users, the audit scope should include an appraisal of the soundness and adequacy of accounting, operating, legal, and risk controls. The audit scope also should include testing for irregularities and compliance with the bank's policies and procedures.

As with any effective audit program, the audit of financial derivatives activities should be conducted by competent auditors who are both independent of the business unit being audited and yet knowledgeable of the risks unique to that unit. The level of auditor expertise should be consistent with the level of activity and degree of risk assumed by the bank with respect to its derivatives activities.

B. Market Risk Management

1. Dealers and Active Position-Takers

National banks whose financial derivatives activities involve dealing or active position-taking should have risk measurement systems that can quantify risk exposures arising from changes in market factors. Those systems should be structured to enable management to initiate prompt remedial action. The systems also should facilitate stress testing and enable management to assess the potential impact of various changes in market factors on earnings and capital.

The bank should evaluate risk exposures under various scenarios that represent a broad range of potential market movements and corresponding price behaviors and that consider historical and recent market trends. Statistical analyses should be used to characterize market scenarios and price behaviors. Before they are used, and whenever market conditions change significantly, the analyses should be validated by a source independent of the trading desk or risk assumption unit. At a minimum, all risk measurement applications and models should be reviewed and validated annually, and management should maintain adequate documentation to support the reliability of the validation process.

The frequency with which exposures should be evaluated varies by the nature and size of a bank's financial derivatives activities. For dealing and trading units, such evaluations should be available on a daily, and even intra-day, basis. For banks actively using derivatives as part of their overall risk management, less frequent evaluations may be sufficient.

At some national banks, financial derivatives activities span numerous products, markets, currencies, and geographic regions. These activities may be conducted in numerous profit centers or branches and may be managed on a decentralized basis. At a minimum, such banks should be able to measure their derivatives-related risks for each major portfolio, branch, and profit center. In addition, bank management should develop the ability to aggregate such risks across various profit centers and branches to determine the aggregate risk profile of the institution. The OCC recognizes that developing such consolidated risk measurement systems may require significant time and resources. However, given the complexity, potential volatility, and size of risk exposures in derivatives positions, the OCC believes that such capabilities are necessary for banks that are dealers and/or active position-takers in derivatives transactions.

2. Limited End-Users

A bank whose derivatives activities are limited in volume and confined to risk management activities may need less sophisticated risk measurement systems than those required by a dealer or active position-taker. Senior management at such a bank should ensure that all significant risks arising from their derivatives transactions can be quantified, monitored, and controlled. At a minimum, risk management systems should evaluate the possible impact on the bank's earnings and capital which may result from adverse changes in interest rates and other market conditions that are relevant to the bank's risk exposure and the effectiveness of financial derivatives transactions in the bank's overall risk management.

Each financial derivatives transaction should have a clear objective that is consistent with the bank's overall risk management objectives and strategies. Further, the bank's risk measurement systems should be capable of demonstrating the effectiveness of derivatives transactions in achieving such objectives.

C. Credit Risk Management

Credit risk management should parallel the prudent controls expected in traditional lending activities. Policies and procedures should be formalized to address concerns such as significant counterparty exposures, concentrations, credit exceptions, risk ratings, nonperforming contracts, and allowance allocations. Timely, meaningful reports should be generated and distributed consistent with policy and procedure requirements.

Credit exposures to an individual counterparty, which are significant in size relative to capital, should be addressed in the bank's credit risk policy. Bank management should establish internal limits that are prudent in light of the bank's financial condition and management's expertise. The Board of Directors' risk tolerance for concentrations and credit exceptions should be reflected in policies and procedures. Policies addressing credit management functions, such as risk ratings, nonperforming contracts, and allowance allocations, should be consistent throughout the bank.

Senior management should receive reports that document line usage by significant counterparties and new credit relationships. Such reports should consolidate derivatives credit exposure with all other lending exposure the bank might have to a particular customer.

1. Credit Approval Function

To ensure safe and sound management of derivatives credit risk exposure, bank management should make sure that credit authorizations are provided by personnel independent of the trading unit. Credit officers should be qualified to identify and assess the level of credit risk inherent in a proposed derivatives transaction. Approving officers also should be able to identify if a proposed derivatives transaction is consistent with a counterparty's policies and procedures with respect to derivatives activities, as they are known to the bank.

Derivative credit lines should be approved using the same credit discipline as credit exposures arising from traditional lending products. Credit should be approved by a level of senior management sufficient to ensure consistency with corporate objectives. Banks that function as dealers should ensure that personnel approving credit lines for financial derivatives transactions do not have any trading authority or any reporting responsibility to trading unit management. Credit analysis supporting credit lines and sub-limits should be performed before financial derivatives transactions are executed. This analysis should parallel analysis conducted in connection with traditional extensions of credit.

Credit officers should be able to effectively analyze the impact of proposed derivatives activities on the financial condition of the customer. The availability and impact of credit exposure reduction techniques, such as netting arrangements and collateral agreements, also should be considered. Consistent with good practice in traditional lending, the creditworthiness of the counterparty should be assessed periodically throughout the life of the derivatives transaction.

The credit officers responsible for establishing and changing financial derivatives credit lines should understand the applicability of financial derivatives instruments to the risks the bank customer is attempting to manage. When the bank believes a particular transaction may not be appropriate for a particular customer, but the customer wishes to proceed, bank management should document its own analysis and the information provided to the customer.

2. Pre-Settlement Risk

The system a bank uses to quantify pre-settlement credit risk exposure should take into account current exposure ("mark-to- market") as well as potential credit risk due to possible future changes in applicable market rates or prices ("add- on"). That system should use a reliable source for determining the credit risk factor used to calculate the credit risk add-on.

This methodology should produce a number representing a reasonable approximation of loan equivalency, that is, the amount of credit exposure inherent in a comparable extension of credit. The mark-to-market calculation should incorporate the same controls as the mark-to-market calculation used to identify profits and losses. Prices should be obtained independently from qualified sources on a periodic basis, the frequency of which should be determined by the extent and type of a bank's financial derivatives activities. The bank's traders should not be used as the source of market valuations unless an independent unit (risk management and/or operations) verifies the traders' input against published quotes.

The credit risk add-on should determine the potential for future increases in credit exposure based on the likelihood that market rates or prices will change over the life of a contract. Although the methodology used to calculate this exposure should be consistent with that used for calculating market risk, the credit risk add-on calculation differs in at least one significant aspect. Specifically, the time horizon for market risk is the time it would take to offset or close- out a position, whereas the time horizon for credit risk appropriately is the remaining life of the contract because default could occur at any time during the remaining life.

Correlations among off-setting or matched positions with a single counterparty can reduce the overall potential for future credit exposure to that counterparty, but determining the extent of such reductions generally requires sophisticated simulation analysis. Consequently, if a bank adjusts for such correlations when summing and evaluating counterparty credit exposures, the simulation analysis supporting any such adjustment should be available to bank examiners.

The sophistication of a bank's credit risk measurement system should be consistent with the level of activity and degree of risk assumed by the bank in its derivatives activities. Banks active in derivatives transactions should have internal systems to determine potential credit risk. Limited end-users may rely on estimates from dealers or other third party sources, provided the sources are independent of the bank's counterparty.

3. Settlement Risk

A bank's system for managing counterparty credit risk should address settlement risk.

Settlement risk can be defined as the risk a bank faces when it has performed its obligations under a contract, but has not yet received value from its counterparty. The time horizon for settlement risk is typically very short (less than 24 hours). Bank management should establish limits and monitoring procedures for settlement risk exposures. Settlement risk limits should be established separately from pre-settlement credit limits and should consider the bank's capital adequacy, operations efficiency, and credit analysis expertise. Because settlement risk becomes credit risk if the counterparty defaults during the settlement cycle, the ability of bank management to limit this exposure should be the key determining factor in establishing settlement limits. Monitoring reports should provide sufficient detail to identify credit risk arising from settlement versus pre-settlement exposure.

4. Credit Risk Monitoring

Credit risk monitoring should be independent of the units that create financial derivatives exposures. This risk monitoring unit should be responsible for producing and distributing timely, accurate information about credit exposures such as line usage, concentrations, credit quality, limit exceptions, and significant counterparty exposures. Credit exposure reports should provide aggregate information about the bank's credit risk to a given counterparty (including products such as loans, securities underwritings and other traded products). The risk monitoring unit should ensure that appropriate levels of senior management and the Board of Directors receive relevant information about credit exposure arising from derivatives activities on a periodic and timely basis.

The methodology the bank adopts to measure and monitor credit risk should be controlled by personnel independent of the trading unit. As with the methodologies used to measure mark-to-market value and potential market risk exposure, it is important that the assumptions and variables used in such models be kept current. Periodic validation should be an integral part of this process.

D. Liquidity Risk Management

Bank management should establish effective controls over the liquidity exposure arising from financial derivatives activities. Key principles in the governance and management of this risk are diversification and communication.

With respect to financial derivatives products, liquidity risk takes two forms: market/product liquidity and cash flow. If there is insufficient market activity or prices are not available, a bank risks loss due to its inability to exit or unwind a position. The inability to meet cash flow obligations at an acceptable price as they become due may also present a risk of loss.

Management of the liquidity exposure resulting from financial derivatives activities should be an integral part of day-to-day operations, as well as contingency and liquidity planning processes. The depth and formality of management systems governing this risk should reflect the volume and complexity of activities undertaken and the overall liquidity of the bank.

1. Market/Product Liquidity Risk

Exposure to market/product liquidity risk should be formally addressed within market risk limits. Diversification policies specifically addressing known or potential liquidity problems also should be implemented. Limits should be designed to trigger management action and control loss. Quality and timely communication also should be an integral part of a bank's risk management culture.

Effective market risk exposure limits should incorporate orderly liquidation periods based on the length of time required to hedge or liquidate a position under normal market conditions. When markets or products are illiquid and there is little variety or depth to hedging alternatives, market and credit exposure measures should be based on longer time frames.

Communication and management/trader action are important during periods of illiquidity. A policy in which traders communicate early warning signs to risk control units is critical. At a minimum, traders should routinely report instances of unusually wide spreads and the absence of regular market participants.

Operating procedures should require traders to alert line and risk control units to early market indicators of resistance to the bank or to significant counterparties, as well as resistance with respect to particular products or maturities, or by particular markets or geographic regions.

2. Cash Flow/Funding Liquidity Risk

A bank should have liquidity policies to formally govern its exposure to cash flow gaps (from intermediate payments or settlements) arising from financial derivatives activities.

Controls over a bank's current and projected liquidity positions should include limits on cash flow gaps, in the aggregate and by currency. Based on the bank's organizational structure, it also may be appropriate to establish such limits according to legal or geographic entities, as well as on a firm-wide basis.

Banks engaged in significant financial derivatives trading activities should consider having an internal transfer pricing system that incorporates an appropriate "charge" for liquidity usage. Such a charge could help provide financial derivatives users with the appropriate economic incentive to manage their cash flow gaps and funding requirements according to overall organizational needs and strategies.

The limits previously discussed for controlling market/product liquidity risk also should assist in diversifying cash flows and avoiding concentrations around specific dates, within specific time periods, and by currency, product, or customer.

3. Early Termination Arrangements and Credit Enhancements

Policies should control the bank's exposure arising from early termination arrangements, as well as collateralization or other credit enhancements.

Banks should carefully evaluate the risks of entering into agreements governing their financial derivatives transactions that include provisions allowing a counterparty to terminate the agreement or liquidate outstanding transactions upon a deterioration in the bank's financial condition. Even absent such provisions, counterparties may request a bank that is experiencing real or perceived problems to unwind financial derivatives transactions before they mature. Bank policy should formally address how such requests will be handled, because in either situation, the early termination of trades may result in an undesired cash outflow and an increase in market risk at the least opportune time.

Banks' policies also should limit the amount of assets that may be encumbered by collateral arrangements or other credit enhancements triggered by a deterioration in the bank's financial condition. In developing such limits, a bank should consider potential exposures and alternative financing sources to meet liquidity requirements under a series of successive declines in its credit standing.

4. Monitoring

Banks should have management information systems that permit daily monitoring of liquidity positions relative to limits. These reports should be prepared by an area or employee(s) independent of the trading unit.

Information reflecting current and prospective cash flows from financial derivatives activities should be included in bank-wide liquidity management processes and contingency funding plans. Reports showing actual positions relative to diversification limits also should be readily available for management's review.

The frequency with which reports are prepared should be based on the relative risk exposures of a bank's activities, as well as its liquidity needs. Such information should be provided to trading, risk control, and funding units.

E. Operations and Systems Risk Management

The Board of Directors and senior management should ensure the proper dedication of resources (financial and personnel) to support operations and systems development and maintenance. The operations unit for financial derivatives activities, consistent with other trading and investment activities, should report to an independent unit, and should be managed independently of the business unit. The sophistication of the systems support and operational capacity should be commensurate with the size and complexity of the derivatives business activity.

To ensure effective transaction processing, exposure and profit and loss reporting, valuation of positions and documentation, the operations unit should be independent of the business unit.

Systems support and operational capacity should be able to adequately accommodate the types of financial derivatives activities in which the bank engages. This includes the ability to efficiently process and settle the volume of business transacted through the business unit, to provide support for the complexity of the transactions booked, and to provide accurate and timely input. Support systems and the systems developed to interface with the official databases should generate accurate information sufficient to allow business unit management and senior management to monitor risk exposures in a timely manner.

Systems needs and adequacy for financial derivatives activities should be evaluated during the strategic planning process. Current and projected volume should be considered together with the nature of the derivatives activity and the user's expectations. Consistent with other systems plans, a written contingency plan for financial derivatives products should be in place.

1. Quality of Personnel

Senior management should recognize the need for, and devote appropriate resources to, employing knowledgeable and experienced personnel in the operations area.

Although organizational structures may vary from one bank to another, trading operations should report to high-level management. This assures that senior management is aware of significant operational risks. With the complexity of financial derivatives products and the size and rapidity of transactions, it is essential that operational units be able to capture all relevant details of trades, identify errors, and process payments or move assets quickly and accurately. This requires a staff of sufficient size, knowledge and experience to support the volume and type of transactions generated by the business unit.

Management should develop appropriate hiring practices and compensation plans to recruit and retain high caliber staff,

2. Systems

Systems design and needs may vary according to the size and complexity of a bank's financial derivatives business. However, each system should provide for accurate and timely processing and allow for proper risk exposure monitoring.

Operational systems should be tailored to each bank's needs. Limited end-users of financial derivatives may not require the same degree of automation needed by more active trading and position-taking banks. However, all operational systems and units should adequately provide for basic processing, settlement, and control of derivatives transactions.

The more sophisticated the bank's activity, the more need there is to establish automated systems to accommodate the complexity of the deals transacted, to accommodate the volume of trades conducted, and to reconcile more efficiently and report position information accurately.

It is appropriate for front and back office systems to become more highly integrated as the bank's financial derivatives activities expand.

3. Segregation of Duties

Segregation of operational duties, exposure reporting, and risk monitoring from the business unit is critical to proper internal control.

To provide proper control over the recordation, settlement, and monitoring of the financial derivatives business activities, operational duties should be segregated and managed independently from the business unit. Proper internal control should be provided over the entry of deals into the database, transaction numbering, date and time notation, and the confirmation and settlement processes. Operational controls also should be in place to resolve disputes over contract specifications. In this regard, banks which act as dealers of derivatives transactions should consider employing recorded telephone lines for both dealing and operational units.

The operations department, or another unit or entity independent of the business unit, should be responsible for ensuring proper reconciliation of front and back office databases on a regular basis. This includes the verification of position data, profit and loss figures, and transaction-by-transaction details.

4. Valuation Issues

Banks that engage in financial derivatives activities should ensure that the methods they use to value their derivatives positions are appropriate and that the assumptions underlying those methods are reasonable.

Dealers and active position-takers should have systems that accurately measure the value of their financial derivatives portfolios. The pricing procedures and models the bank chooses should be consistently applied and well-documented. Models and supporting statistical analyses should be validated prior to use and as market conditions warrant.

The best approach is to value derivatives portfolios based on mid-market levels less adjustments. Adjustments should reflect expected future costs such as unearned credit spreads, close-out costs, investing and funding costs, and administrative costs. Most limited end-users (and some traders) may find it too costly to establish systems that accurately measure the necessary adjustments for mid-market pricing. In such cases, banks may price derivatives based on bid and offer levels, provided they use the bid side for long positions and the offer side for short positions. This procedure will ensure that financial derivatives positions are not overvalued.

Banks adopting mid-market pricing should recognize that mid-market prices are not observable for many instruments. In those cases, banks should derive unbiased estimates of market prices from prices in similar markets or from sources that are independent of the bank's traders. The bank's operations staff should develop procedures to verify the reasonableness of all pricing variables or, if that is not possible, should limit the bank's exposure through position or concentration limits and develop appropriate reporting mechanisms.

Traders may review and comment on prices. When material discrepancies occur, senior management should review them. If, in an extenuating circumstance, senior management overrides a back office estimate, it should prepare a written explanation of the decision.

5. Documentation

Bank management should ensure a mechanism exists whereby financial derivatives contract documentation is confirmed, maintained, and safeguarded. Documentation exceptions should be properly monitored and resolved.

Controls must be in place to ensure that the appropriate contract documentation is timely and properly executed and maintained. The bank should establish a process through which documentation exceptions are monitored and appropriately reviewed by senior management and legal counsel. Banks with more active derivatives businesses should consider establishing a separate documentation unit to control financial derivatives contracts and supporting documents. Such a unit may be part of a broader documentation unit or the legal department.

F. Legal Issues

Prior to engaging in derivatives transactions, a national bank should reasonably satisfy itself that its counterparties have the legal, and any necessary regulatory, authority to engage in those transactions. In addition to determining the authority of a counterparty to enter into a derivatives transaction, a national bank also should reasonably satisfy itself that the terms of any contract governing its derivatives activities with a counterparty are legally sound.

Participants in the financial derivatives markets have experienced significant losses because they were unable to recover losses from a defaulting counterparty when a court held the counterparty had acted outside of its authority in entering into such transactions. National banks, especially dealers, should ensure that their counterparties have the power and authority to enter into derivatives transactions, and that the counterparties' obligations arising therefrom are enforceable. Similarly, a national bank also should ensure that its rights with respect to any margin or collateral received from a counterparty are enforceable and exercisable. The bank should be able to be use such margin or collateral to offset actual losses upon the default of the counterparty.

A national bank also should reasonably satisfy itself that the terms of any contract governing its derivatives transactions with a counterparty are legally sound. This is especially important with respect to provisions governing (i) the timing of the termination of outstanding transactions and

(ii) the calculation of settlement amounts payable to or between parties upon the termination of a transaction or an agreement.

1. Bilateral Netting

In order to reduce counterparty credit exposure, a national bank should use master close-out netting agreements with its counterparties to the broadest extent legally enforceable, including in any possible insolvency proceedings of such counterparties. However, the reliance upon such agreements where the enforceability of such agreements against a particular counterparty has not been legally established should be considered carefully and will be scrutinized closely by the OCC.

In the United States the enforceability of bilateral close-out netting arrangements for various derivatives transactions in the insolvency proceedings of U.S. counterparties is almost certain. The advantages of such netting arrangements include a reduction in credit and liquidity exposures, the potential to do more business with existing counterparties within existing credit lines, and a reduced need for collateral to support counterparty obligations. National banks, therefore, gain substantial potential benefits by documenting their relationships in master agreements that contain close-out netting provisions.

The enforceability of such provisions against many foreign counterparties or U.S. branches or offices of some foreign counterparties, however, is less certain. National banks that rely on netting arrangements with such counterparties may understate credit and liquidity exposures, As a result, they may improperly monitor and control that exposure, assume unintended credit risk, and increase systemic risk.

Only when the enforceability of close-out netting arrangements with counterparties has a high degree of certainty should national banks monitor their credit and liquidity risks, and account for financial derivatives transactions with such counterparties, on a net basis.

2. Multilateral Netting

A national bank should determine credit and liquidity exposure and account for financial derivatives transactions on a multilaterally-netted basis only if cleared through a clearinghouse, organization, or facility that meets the conditions set forth in the Report of the Committee on Interbank Netting Schemes of the Central Bank of the Group of 10 Countries, Bank for International Settlements, Nov. 1990 ("Lamfalussy Report").

Under a multilateral netting facility, a central counterparty or clearinghouse is designated as the common legal counterparty for each participant in the facility. The reductions in credit risk resulting from a well-designed facility can be substantial and, generally, the OCC encourages the development of such arrangements.

In order to provide the highest level of certainty with respect to (i) the enforceability of the obligations of the participants, (ii) the ability of the system to freely and promptly exercise the right of set-off with respect to any property deposited with the system by a defaulting participant as security for its obligations, (iii) limitations on the obligations of non-defaulting participants to cover the losses arising out of defaulted transactions, and (iv) the financial integrity of the system as a whole, national banks should only participate in multilateral netting facilities that meet the conditions set forth in the Lamfalussy Report.

3. Physical Commodity Transactions

National banks may engage in physical commodity transactions in order to manage the risks arising out of physical commodity financial derivatives transactions if they meet the following conditions:

- **Any physical transactions supplement the bank's existing risk management activities, constitute a nominal percentage of a bank's risk management activities, are used only to manage risk arising from otherwise permissible (customer-driven) banking activities, and are not entered into for speculative purposes; and**

- **Before entering into any such physical transactions, the bank has submitted a detailed plan for the activity to the OCC and the plan has been approved.**

The OCC has concluded that a national bank may engage in physical commodity transactions in order to manage the risks arising out of physical commodity financial derivatives transactions. However, given the potential additional risks associated with physical hedging activities, a national bank must first develop a detailed plan, which should be approved by the bank's Board of Directors and the supervisory staff of the OCC, before the bank begins engaging in such activities. Requests for plan approval must be submitted to: Senior Deputy Comptroller for Bank Supervision-Operations, Office of the Comptroller of the Currency, Washington, D.C. 20219.

Upon OCC approval, a national bank may engage in such activities only under the conditions specified above and in accordance with safe and sound banking practices.

Financial derivatives transactions with respect to bank-eligible precious metals (gold, silver and platinum) are not subject to this guideline.

G. Capital Adequacy

The Board of Directors should ensure that the bank maintains sufficient capital to support the risk exposures (e.g., market risk, credit risk, liquidity risk, operation and systems risk, etc.) that may arise from its derivatives activities. Significant changes in the size or scope of a bank's activities should prompt an analysis of the adequacy of the amount of capital supporting those various activities by senior management and/or the Board of Directors. This analysis should be approved by the Board of Directors and be available for bank

examiner review. In addition to internal reviews of capital adequacy, senior management should ensure that the bank meets all regulatory capital standards for financial derivatives activities.

Under current risk-based capital requirements national banks must hold capital for counterparty credit risk exposures in financial derivatives contracts. These requirements are specified in 12 CFR 3 Appendix A. The OCC is developing additional capital requirements for banks' interest rate exposures which would include requiring capital to cover interest rate risk exposures arising from financial derivatives positions. As these and any other modifications or additions to capital requirements are adopted, bank management must ensure that all financial derivatives activities are properly incorporated into their minimum capital levels.

H. Accounting

Accounting guidance for financial derivatives instruments is not comprehensive. Generally accepted accounting principles (GAAP) include definitive accounting standards only for futures contracts. Regulatory accounting principles (RAP), set forth in the Instructions to Consolidated Reports of Condition and Income, address only futures, forwards, and options. Due to the lack of comprehensive GAAP or RAP guidance for all derivatives, inconsistent accounting practices have developed for some products.

The OCC is currently studying the issue of accounting for financial derivative instruments. A consistent regulatory accounting policy will be developed for all derivative products. That policy will consider the impact of accounting rules on business decisions, with a view to minimizing regulatory burden, and will be a cooperative effort with the other U.S. banking agencies. In the interim, each bank should review its accounting practices and documentation to ensure consistency with the strategies and objectives approved by its Board of Directors.

BANKING ISSUANCE

Comptroller of the Currency
Administrator of National Banks

Type:	Banking Circular	Subject:	Risk Management of Financial Derivatives

RESPONSIBLE OFFICE

Questions or concerns regarding this banking circular or the information it contains should be directed to: Capital Markets Division, Office of the Chief National Bank Examiner, (202) 874-5070,

Douglas E. Harris
Senior Policy Advisor to the Comptroller