APPENDIX B

THE SEC AND HEDGE FUNDS

GENERAL FRAMEWORK

1. Exemptions from Securities Laws

The term "hedge fund" is not defined or used in the federal securities laws, including those administered by the Securities and Exchange Commission ("SEC," or "Commission"). Over time, the term has come to be used to refer to a variety of pooled investment vehicles that are not registered under the federal securities laws as investment companies, broker-dealers, or public corporations.

Hedge funds are typically structured as limited partnerships, limited liability companies, or other vehicles that provide pass-through tax treatment of investor earnings. Hedge fund sponsors, some of which are registered as investment advisers under the federal securities laws, are responsible for managing the investments of the fund. As compensation, they typically receive a management or administrative fee based on the amount of the fund's assets, together with a share of the profits or some other allocation based on the fund's investment performance.

To maximize flexibility, hedge funds operating in the United States are structured so as to be exempt from regulation under the Investment Company Act of 1940 ("Investment Company Act"). Most hedge funds rely on the "private" investment company exclusions in Sections 3(c)(1) and 3(c)(7) of the Investment Company Act.[1] These exclusions exempt certain pooled investment vehicles from the definition of "investment company" and from substantive regulation under the Investment Company Act.

A fund relying on the Section 3(c)(1) exclusion ("Section 3(c)(1) Fund") must comply with two basic conditions. The Section 3(c)(1) Fund's securities (other than short-term paper) may not be beneficially owned by more than 100 persons.[2] In addition, the fund must not be making or proposing to make a public offering of its securities.[3] Certain Section 3(c)(1) Funds

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[1] 15 USC 80a-3(c)(1), -3(c)(7).

[2] 15 USC 80a-3(c)(1). To prevent circumvention of the 100-investor limit, section 3(c)(1) requires, in some instances, that a fund seeking to rely on section 3(c)(1) look through certain companies that hold its voting securities and count the company's security holders as beneficial owners of the fund's securities. The look-through provision applies if the company owns 10% or more of the fund's voting securities and is either an investment company or a private fund. Securities of the Section 3(c)(1) Fund owned by "knowledgeable employees" of the Fund or its investment adviser do not count toward the 100 security holder limit. See rule 3c-5 under the Investment Company Act [17 CFR 270.3c-5].

[3] 15 USC 80a-3(c)(1). The limitation on public offerings has been interpreted to permit "transactions by an issuer not involving any public offering" under section 4(2) of the Securities Act of 1933 [15 USC 77d(2)]. See, *e.g.*, Engelberger Partnerships (Dec. 7, 1981). A fund formed under the laws of a jurisdiction other than the United States may make a private offering in the United States only if after the private offering the foreign fund's securities are held by no more than 100 beneficial owners resident in the United States, or if all of the beneficial

may be structured as a "master-feeder" arrangement, in which several feeder funds invest all of their assets in a master Section 3(c)(1) Fund.[4] These arrangements may not be used to circumvent the requirements of the Investment Company Act.[5]

A fund relying on the Section 3(c)(7) exclusion ("Section 3(c)(7) Fund") may sell its securities only to those persons who are "qualified purchasers."[6] A "qualified purchaser" is (i) any natural person who owns not less than $5 million in investments (as defined by the Commission),[7] (ii) a family-owned company that owns not less than $5 million in investments,[8] (iii) certain trusts,[9] and (iv) any other person (*e.g.*, an institutional investor) that owns and invests

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owners resident in the United States are "qualified purchasers" as discussed below. See Touche Remnant & Co. (Aug. 27, 1984) and note 6 *infra*. The foreign fund's private U.S. offering generally would be viewed as separate from the fund's simultaneous offshore public offering. See *id.* U.S. residents need not be counted toward these limits if they became owners as a result of activities beyond the control of the fund. See Investment Funds Institute of Canada (Mar. 4, 1996); Goodwin, Proctor & Hoar (Oct. 5, 1998).

[4] Fund sponsors may find it desirable, for tax or other reasons, to establish separate investment vehicles for U.S. investors and foreign investors, respectively. Rather than establishing two separate investment vehicles, the sponsor may establish an offshore master fund with domestic feeders (for U.S. investors) and offshore feeders (for foreign investors). Since all investment activities will be effected through the master fund rather than two separate funds, this structure may allow the sponsor to reduce the costs of operating side-by-side entities involving separate domestic and offshore investment vehicles .

[5] See *e.g.*, Cornish & Carey Commercial, Inc. (June 21, 1996).

[6] 15 USC 80a-3(c)(7). The securities of a Section 3(c)(7) Fund may also be owned by "knowledgeable employees" of the fund or its investment adviser, even if the employees do not fall within the definition of qualified purchaser. Rule 3c-5 under the Investment Company Act [17 CFR 370.3c-5]. In the case of a foreign fund relying on section 3(c)(7) to privately offer its securities in the United States, only beneficial owners resident in the United States must be qualified purchasers; the non-U.S. resident beneficial owners need not be qualified purchasers. See Goodwin, Proctor & Hoar (Feb. 28, 1997).

[7] Section 2(a)(51)(A)(i) of the Investment Company Act [15 USC 80a-2(a)(51)(A)(i)]. The term "investments" is defined in rule 2a51-1 under the Investment Company Act [17 CFR 270.2a51-1].

[8] A family company is a company "that is owned directly or indirectly by or for 2 or more natural persons who are related as siblings or spouse (including former spouses), or direct lineal descendants by birth or adoption, spouses of such persons, the estates of such persons, or foundations, charitable organizations, or trusts established by or for the benefit of such persons...." Section 2(a)(51)(A)(ii) of the Investment Company Act [15 USC 80a-2(a)(51)(A)(ii)].

[9] A trust may be a qualified purchaser if (i) it was not formed for the specific purpose of acquiring the securities offered, and (ii) the trustee or other person authorized to make decisions with respect to the trust, and each settlor or other person who has contributed assets to the trust, are qualified purchasers. Section 2(a)(51)(A)(iii) of the Investment Company Act [15 USC 80a-2(a)(51)(A)(iii)].

on a discretionary basis not less than $25 million in investments.[10] As is the case of a Section 3(c)(1) Fund, a Section 3(c)(7) Fund cannot make, or propose to make, a public offering of its securities.[11] Section 3(c)(7) was added to the Investment Company Act in 1996 as part of the National Securities Markets Improvement Act of 1996 ("NSMIA").[12]

Press reports suggest that Section 3(c)(7) Funds may have no more than 499 investors. While Section 3(c)(7) does not contain such a limitation, as a practical matter, Section 3(c)(7) Funds limit the number of record holders of their securities to less than 500 persons in order to avoid being subject to the public reporting requirements of the Securities Exchange Act of 1934 ("Securities Exchange Act").[13]

Private fund managers may be exempt from investment adviser registration under Section 203(b)(3) of the Investment Advisers Act of 1940 ("Investment Advisers Act"),[14] which exempts from registration any adviser who, during the preceding twelve months, had fewer than fifteen clients and who neither holds itself out generally to the public as an investment adviser, nor acts as an investment adviser to a registered investment company or business development company.[15] In computing the number of clients, a limited partnership counts as only one client of the general partner or any other person acting as investment adviser to the partnership.[16]

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[10] A qualified purchaser that meets the $25 million threshold may act for its own account or for the accounts of other qualified purchasers. Section 2(a)(51)(A)(iv) of the Investment Company Act [15 USC 80a-2(a)(51)(A)(iv)].

[11] The public offering limitation appears to reflect Congress's concern that unsophisticated individuals not be inadvertently drawn into a Section 3(c)(7) Fund. *Privately Offered Investment Companies*, Investment Company Act Rel. No. 22597 (Apr. 3, 1997) [62 FR 17512 (Apr. 9, 1997)] at n.5.

[12] P.L. No. 104-290 (1996) (codified in various sections of the United States Code).

[13] See section 12(g) of the Securities Exchange Act of 1934 [15 USC 78l(g)].

[14] 15 USC 80b-203(b)(3)).

[15] 15 USC 80b-3(b).

[16] 17 CFR 275.203(b)(3)-1. The limited partnership must receive investment advice based on its investment objectives rather than the individual investment objectives of its limited partners. Rule 203(b)(3)-1 also contains a specific provision to address foreign investment advisers. The rule provides that an adviser with its principal office and place of business outside the United States must count only clients that are United States residents. An adviser with its principal office and place of business in the United States must count all clients, regardless of their place of residence. Thus, an off-shore investment adviser that manages more than fifteen hedge funds may rely on section 203(b)(3), provided that no more than fifteen of the funds are based in the United States and the other conditions of the exemption are met.

Typically, hedge funds also claim an exclusion from registration as broker-dealers under Section 15(a) of the Securities Exchange Act[17] based on the "trader" exception to the definition of "dealer." In general, a trader is an entity that trades securities solely for its own investment account and does not carry on a public securities business.[18] As defined by the Securities Exchange Act, a "dealer" buys and sells securities as part of a regular business.[19]

In addition, interests in hedge funds are sold privately to sophisticated, high net worth individuals to avoid registration of interests in the fund under the Securities Act of 1933 ("Securities Act"). Sales of interests in hedge funds typically are structured to take advantage of the "private offering" exemption under Section 4(2) of the Securities Act[20] or the related safe harbors under Regulation D thereunder.

2. Oversight of Broker-Dealer Exposure

Although the SEC generally does not regulate hedge funds, it does oversee broker-dealers that may act as creditors of, or counterparties to, these funds. Many hedge funds use prime brokers, which are also overseen by the SEC.[21]

The SEC relies on a number of regulatory tools, including capital, margin, and reporting requirements, in carrying out its oversight responsibilities. In addition, the SEC has examination authority and the ability to impose fines on those broker-dealers that violate the securities laws. SEC rules require broker-dealers to maintain a capital cushion to help them withstand the failure of a counterparty or periods of system-wide stress. For example, under the SEC's net capital rule, a broker-dealer must deduct from its net worth 100 percent of the value of all loans not fully

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[17] 15 USC 78o(a).

[18] See, *e.g.*, Letter from Charles M. Horn, Division of Market Regulation, SEC, to David R. Burton, President, Burton Securities, dated December 5, 1977.

[19] 15 USC 78c(a)(5).

[20] 15 USC 77d(2). Section (4)(d) of the Securities Act provides that transactions by an issuer not involving any public offering are exempted from registration.

[21] Prime brokers are broker-dealers that clear and finance customer trades executed by one or more other broker-dealers, known as executing brokers. Prime brokers and executing brokers are required to register as broker-dealers under Section 15(a) of the Securities Exchange Act. A prime broker acts as a custodian for the customer's securities transactions and funds. Prime brokers also act as clearing facilities and accountants for all of a customer's securities transactions wherever executed. A prime broker for a hedge fund would, therefore, be expected to have greater knowledge as to the credit exposure posed by that hedge fund than would any executing broker.

collateralized by liquid securities.[22] In this way, the net capital rule helps to insulate broker-dealers from credit risk posed by counterparties, such as hedge funds.

Federal and self-regulatory organization ("SRO") margin rules also help protect against losses resulting from customer defaults by requiring customers (such as hedge funds) to provide collateral in amounts that depend on the market risk of the particular position.[23] Margin requirements imposed on broker-dealers help to maintain the safety and soundness of the individual firms. Such prudential measures also may have indirect benefits for the financial system as a whole.

As discussed further below, major U.S. securities firms also have controls in place to manage the credit risk posed by hedge funds and their customers. These controls generally include credit functions, such as the capability to perform credit analysis, approve and set counterparty credit limits, approve specific transactions, establish credit reserves, and manage overall credit exposure. A typical control would be a requirement that a firm's senior management approve transactions involving extensions of credit above authorized levels. In addition, information systems at some major firms enable risk managers to compute each firm's aggregate credit exposure by counterparty or product type and to monitor concentrations of counterparty risk.

The SEC staff also monitors the financial activities of material affiliates of certain large broker-dealers on a regular and continuous basis. Specifically, the risk assessment rules under the Securities Exchange Act[24] establish recordkeeping and reporting requirements for subject broker-dealers and their affiliates whose business activities are reasonably likely to have a material impact on the financial and operational conditions of the broker-dealer. These affiliates are known as "Material Associated Persons."[25]

The risk assessment rules require broker-dealers to maintain and file, on a quarterly basis, information concerning the financial activities of their Material Associated Persons. This information includes a description of a broker-dealer's policies for monitoring and controlling

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[22] 17 CFR 240.15c3-1.

[23] Federal margin rules are administered by the Federal Reserve Board under Section 7 of the Securities Exchange Act. These rules are enforced by the SEC. SROs, including the securities exchanges and the National Association of Securities Dealers, which are overseen by the SEC, also impose margin requirements on their members.

[24] Rules 17h-1T and 17h-2T.

[25] The SEC adopted the rules pursuant to the authority granted by the Market Reform Act of 1990 ("Market Reform Act"). The Market Reform Act authorized the SEC to monitor and obtain information concerning the activities of significant affiliates of registered broker-dealers. The rules apply to broker-dealers that clear or carry customer accounts or have capital in excess of $20 million.

financial and operational risks to itself based on the activities of its Material Associated Persons. It also includes consolidated and consolidating financial statements for the ultimate holding company, and, as to each Material Associated Person, aggregate securities and commodities positions. Broker-dealers also must provide information concerning financial instruments with off-balance-sheet risk and the aggregate amount of bridge loans or other similar extensions of credit by each Material Associated Person.

With respect to instruments with off-balance-sheet risk, broker-dealers must furnish a counterparty breakdown where credit risk exceeds $100 million or 10% of tentative net capital (*i.e.*, capital before securities positions are adjusted to account for potential market movements), whichever is greater. For large securities firms, this threshold generally would not be met until counterparty concentration reaches between $200 million and $400 million. The SEC's risk assessment program has been in effect since December 1992. Currently, about 225 broker-dealers file information with the SEC pursuant to the risk assessment rules. To date, no hedge fund has triggered the reporting requirements under the credit risk concentration provisions.

Finally, under the Derivatives Policy Group ("DPG") framework, discussed in detail in Appendix F, the SEC collects additional risk assessment data on credit and market risk related to the OTC derivatives activities of five of the largest U.S. securities firms. The DPG framework, which is a voluntary framework, was developed by the six largest U.S. derivatives dealers, in coordination with the SEC and the Commodity Futures Trading Commission. The framework is designed to assist the SEC in evaluating risks presented by the OTC derivatives activities of unregulated affiliates of registered broker-dealers.

Specifically, the framework defines the responsibilities of the firm's governing body, or board of directors, as well as the management's responsibilities for implementing an effective risk management program. Under the framework, the board of directors is responsible for establishing written guidelines addressing items such as: (1) the scope of authorized activities; (2) quantitative guidelines for managing the firm's overall risk exposure; (3) the scope and frequency of reporting by management on risk exposures, and (4) the significant structural elements of the firm's risk management systems.

Under the DPG framework, the SEC also receives quarterly information on credit and market risks from the largest U.S. securities firms conducting a business in derivatives activities. This information includes the firms' top twenty counterparty exposures; credit reporting information by credit rating, industry segment, and country; and the reporting of financial information about derivatives activities, including net revenues, notional principal, and current exposures. The DPG counterparty disclosures did not identify any hedge funds because the reporting securities firms had no material uncollateralized exposures to hedge funds as measured by current exposures.

Practices followed by investment banks in their dealings with hedge funds

Several large broker-dealers had exposures to LTCM. Although the sudden liquidation of these exposures could have affected their earnings, it would not have threatened the solvency of those institutions. None of the six largest securities firms experienced realized or unrealized losses from LTCM during the third quarter of 1998; and their current exposures to LTCM during August and September of 1998 were fully collateralized with highly liquid securities. Despite its losses, LTCM was able to meet every margin and collateral call on a timely basis.

Nevertheless, the LTCM situation demonstrated that improvements could be made to the firms' risk management procedures. The largest securities firms have a centralized management structure with written policies and procedures for conducting due diligence into the financial condition and reputation of all prospective credit clients, including hedge funds. As discussed below, most firms appear to have appropriately allocated the technology and staffing resources needed to effectively manage risk on a global basis, including senior management involvement and oversight. Nevertheless, firms could strengthen and improve their systems of internal controls and risk management. In isolated instances, the SEC found deficiencies in the content or implementation of written policies and procedures, centralization of control, extent of active management involvement, or methods used to aggregate potential exposures globally by counterparty.

Credit management structure and oversight. At most large broker-dealers, the firm's board of directors will authorize a credit management committee to determine credit risk management policies in accordance with the board's authorizing guidelines. Some firms have one or more committees between the firm's board of directors and the credit department. In these instances, there is typically a hierarchy among the committees, with the most senior committee directly responsible to the board of directors. Senior management is usually represented on each committee.

Credit risk management policies are implemented on a global basis and executed by the credit department, usually under the guidance of the credit committee. The department has the responsibility for day-to-day credit operations, including due diligence, assignment of credit ratings, credit approvals, credit extensions, and monitoring of credit overages. Counterparties and clients are generally assigned to credit analysts according to industry sector or product group. To assure independence of credit evaluations and decisions, the credit department is independent of the firm's business units that assume the credit risk.

Credit approval process. Before executing transactions through a firm, every counterparty is subjected to a lengthy credit approval process. Most firms make exceptions to allow affiliates of existing counterparties to begin trading on a trade-by-trade basis (*i.e.*, each individual transaction is approved by the credit department before execution) or under temporary credit lines until a formal credit review and approval is completed Generally, the process begins with a due diligence review by the credit analyst and ends with final approval by designated

committees. In isolated firms, the credit department is vested with the sole authority for credit decisions. Each counterparty receives a credit rating and a corresponding credit line based on an in-depth analysis of the unique attributes of the counterparty, as well as its relationship with the firm.

Role of the credit analyst. The credit analyst evaluates whether a given counterparty will be able to meet its obligations to the firm. The analyst formally reviews all new accounts and approves or rejects prospective accounts under the guidance of the credit committee or a management committee with similar oversight. The evaluation of a new client, including a hedge fund, typically will includes on-site visits to assess the fund's overall strategy and operation. Initial credit approvals and the assignment of ratings are largely dependent on a number of factors, such as: character of management, credit history, financial performance, permanence of capital and access to additional capital, liquidity, asset quality, business integrity, experience of fund management, sensitivity to risk, use of leverage, back office operations, and mark-to-market procedures. The analyst will try to evaluate the fund's risk exposure by determining the liquidity of positions held and the potential amount of leverage employed. The analyst will conduct a review of financial reports, and prepare a trend analysis, ratio analysis, and industry comparison to make an overall determination as to how the counterparty's exposures may affect the firm's current risk structure. Based upon the analyst's overall assessment of the hedge fund, the firm will negotiate its collateral requirements.

For existing accounts, the analyst will approve or reject requests for changes to assigned credit limits. The analyst will conduct a periodic review, usually no less than annually, of hedge fund counterparties, to identify any changes in creditworthiness warranted by current market conditions. The analyst will also monitor overlines (*i.e.*, temporarily authorized credit exposures in excess of credit limits) and overages (*i.e.*, credit exposures in excess of credit limits due to market movements), and evaluate credit limits for counterparties experiencing material changes. At most firms, the analyst must note all credit actions in the credit monitoring system, including a record of all derivative transaction approvals. The analyst is also responsible for updating internal monitoring systems, counterparty credit files, approved product limits, and aggregate credit exposure limits. Credit analysts typically are not permitted to approve various complex and high risk transactions without documenting or evidencing senior management approval

Assignment of credit ratings for hedge funds. Each counterparty is reviewed in order to evaluate individual credit strengths and weaknesses. Credit quality ratings are generally assigned on a numerical scale ranging from one through ten, reflecting minimal credit risks to the highest level of credit risk. The counterparty's credit risk rating will establish the level of trading that may be conducted at the firm and the required level of collateral. Internal credit ratings are continually reviewed and adjusted throughout the year.

Although hedge funds are not rated by credit rating agencies, credit analysts use similar criteria to assess creditworthiness. Criteria include market size, capital structure and leverage, financial stability, profitability, management, operating efficiency, legal documentation, and access

to financial resources. Because hedge funds typically do not provide as much disclosure as public reporting companies or registered entities, their ratings are inherently more subjective. Subjective factors such as the experience and track record of the hedge fund and the firm's past dealings and relationships with the hedge fund are significant factors in the rating. In contrast, the ratings for large, corporate counterparties are closely linked to publicly available financial statements and credit reports by credit rating agencies.

How credit limits are set and allocated for hedge funds. The assignment of credit limits is generally related to the assigned internal credit rating. Once an internal credit rating has been established, firms will determine the maximum amount of credit that may be extended across all products areas, along with limits on the term-to-maturity of transactions. At several firms, limits are set according to total counterparty risk across all products, as well as individual product lines. Limits are also set for all approved counterparties on a legal entity basis. In conjunction with the periodic review of the credit rating, firms issue a formal renewal of each counterparty's credit line.

Monitoring and surveillance. All major firms use a computerized credit system that is updated at the end of each day to determine current and potential exposures for credit transactions. These systems receive data feeds from various trading systems and information databases relating to counterparties, such as trade detail, daily mark-to-market detail, and collateral supporting potential credit exposure calculations. Various reports are generated to assist the credit analyst with daily maintenance of accounts, such as overage and excessive unsecured exposures.

Ability to assess current and potential exposure. In order to manage credit risk, most firms measure potential exposure ("PE") and current exposure ("CE") on a daily basis to evaluate the impact of potential changes in market conditions on the value of counterparty positions and collateral. As a practical matter, firms require collateral on current exposures based upon the creditworthiness of the counterparty and have systems to test for potential credit exposure which may trigger requests for additional collateral. Value-at-risk ("VaR") calculations are used to determine potential exposures by subjecting positions to market movements involving normal and abnormal movements in interest rates, foreign exchange rates, equity prices, and other market factors. Market models try to quantify the dollar amount a firm might lose (PE) if a counterparty were to default. These models estimate that credit losses will not exceed some set limit within a specified level of confidence, usually between 95% and 99%. Market models value trades under future economic conditions incorporating historic data to create scenarios. The models will reprice a portfolio and simulate possible future outcomes.

Most models do not incorporate all products traded by the firm. Firms initially included products they believed presented the highest risks to them, with the intent of including other credit sensitive products at some future date. Some firms do not have the ability to calculate and monitor aggregate exposure limits across all product lines in a VaR-based environment. For instance, some firms only include derivative and foreign exchange transactions, and not repurchase agreements, mortgage backed securities and forwards. A firm's inability to evaluate

exposures across all product lines could considerably underestimate credit exposures during periods of extreme market volatility. These firms are currently considering implementing future enhancements to their credit-based systems to include calculations of potential exposures for every product.

Overages. Overages occur when counterparties exceed their assigned credit limit for potential unsecured exposures. Overages may occur due to new transactions that exceed the approved credit limits or, more commonly, due to market movements that affect existing positions. Firms will monitor and resolve overages in several different ways, including: raising the overall credit limit within certain guidelines, checking for system problems or input errors, reviewing for additional collateral not considered, restricting further trades, or requiring the counterparty to unwind or offset certain risks associated with the exposure. The credit analyst is responsible for finding and alerting the appropriate parties responsible for dealing with credit overages. Frequently, overages are resolved by evaluating current credit risk and increasing the credit limit.

To discourage internal violations of credit limits, firms may require an account executive to forfeit sales commissions on trades that prove to circumvent the firm's credit policies. For large or repeated violations, additional disciplinary consequences often include fines, censures, or other sanctions designed to enhance compliance with credit policies. Moreover, a written record of each credit policy violation may be produced and sent to the appropriate supervisor.

Risk mitigants. Firms use a number of tools to reduce counterparty risk, including netting and close out provisions, initial and maintenance margin requirements, and daily mark-to-market of positions with collateral posted by the counterparty.

Periodic reviews of hedge fund creditworthiness. The credit analyst is responsible for the daily monitoring of accounts as well as all periodic reviews. At most firms, credit committees also perform an oversight role. The committees are generally responsible for reviewing credit limits established for a fund at least once annually. These committees are guided by the analyst that oversees the fund on a daily basis.

Conclusion. The trading and credit losses incurred during the third quarter of 1998 highlighted certain weaknesses in firms' risk management control systems, senior management oversight, documentation, and compliance with internal policies.

For example, credit decisions to lend to hedge fund counterparties were not always consistent with the firm's overall credit standards. Prior to the market events of August 1998, many hedge fund counterparties provided limited or no information with respect to aggregate security portfolios, leverage, risk concentrations, performance, and trading strategies. Firms often did not impose collateral and financial disclosure requirements on hedge funds that reflected the greater risks of the hedge funds' activities. Credit decisions were often based upon qualitative assessments involving the reputation and prior performance history of hedge fund management.

Certain oversights may have compromised the credit process, including the setting of limits and margin requirements. Recognizing these deficiencies, many firms have begun to require enhanced disclosures from hedge fund counterparties in order to continue doing business.

In addition, while key qualitative components of effective risk management included risk-based measurements during periods of extreme market volatility, these measurements of potential exposure became virtually meaningless during the third quarter of 1998, as the volatility of the underlying securities increased beyond the historical levels incorporated into the risk models. Consequently, as statistical measurements of potential risk became less reliable, some firms shifted their emphasis to monitoring equity levels and increasing margin and collateral requirements for clients trading illiquid securities or experiencing financial difficulties.

Concentration and liquidity risks also may not have been appropriately factored into assumptions. Products that were not considered as risky, such as repurchase agreements and mortgage-backed securities, were not always factored into potential exposures. Permissible limits also may have been too large, given the concentration of such exposures.

Stress testing, an essential component of risk management, was not thoroughly performed at all firms. While most firms were stress testing their proprietary positions with parallel volatility curve shifts and correlations, aggregate counterparty credit exposures were not always routinely stress tested. Furthermore, believing that credit exposures were protected by collateral, some firms did not formally review or limit their exposure to market movements based on an analysis of aggregate firm and customer positions.

Most large firms have made changes and enhancements to their risk management processes in response to the market turmoil. In August 1998, the firms became very concerned with their exposure to LTCM and other hedge fund counterparties. Consequently, they immediately began evaluating their internal risk management systems and controls. Corrective actions to strengthen the current operating structure and reduce credit exposures were considered or implemented. Firms are now more strictly adhering to stated policies, enhancing their back-testing and stress testing for high risk hedge fund portfolios, tightening their margin and collateral requirements, and updating their risk models to reflect recent market volatility. Moreover, several firms have created additional monitoring reports to document daily hedge fund exposures and weekly limit violations. Finally, as noted above, most firms are requiring more comprehensive financial disclosures from all hedge fund and other highly-leveraged institutional counterparties, and are reviewing their geographic and other concentrations.

The Commission will issue non-public inspection findings to several large broker-dealers addressing the strengths and weaknesses of their particular credit risk management structure, credit control procedures, and firms' implementation of credit policies.

3. Management of Clearing Risks

Section 17A of the Securities Exchange Act gives the Commission the authority to register and regulate clearing agencies. Clearing agencies registered with the Commission include the National Securities Clearing Corporation ("NSCC"), the Government Securities Clearing Corporation ("GSCC"), and the MBS Clearing Corporation ("MBSCC"), as well as the Depository Trust Company ("DTC"). These clearing agencies establish the rules governing the clearance and settlement of securities transactions, subject to the Commission's review and approval.

Generally, the rules of the clearing agencies do not provide for unregulated hedge funds to become direct clearing members.[26] Therefore, hedge funds must use clearing agency members (*i.e.*, banks and broker-dealers) for clearance and settlement of their transactions. As a result, the clearance and settlement system's exposure to hedge funds is no greater than its exposure to any other customer of a clearing broker-dealer or bank.

Clearance risk

After a trade is executed, clearing agencies are responsible for the transfer of securities and funds, and generally guarantee settlement. To guarantee settlement, clearing agencies interpose themselves between the counterparties and become the buyer to every seller and the seller to every buyer. As a result, clearing agencies incur certain risks, including counterparty/credit risk (*i.e.*, the possibility that a clearing member buyer or seller might default on its obligations) and market risk (*i.e.*, the possibility of financial loss caused by adverse movements in market price).

Clearing agencies mitigate these risks by employing risk management procedures, such as:

- **Establishing admission criteria.** Membership standards require every member to be creditworthy upon admission, and exclude entities that may increase risk.

- **Marking positions to market.** All unsettled securities or fail positions are marked to market and the clearing member failing to deliver the securities may be required to pay a mark-to-market adjustment depending on whether the price of the security rises or falls.

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[26] There is no statutory prohibition against the admission of hedge funds as members of registered clearing agencies, but a clearing agency's rules would have to provide for the admission of hedge funds as members or participants. The Commission must approve clearing agency rules before they are implemented, but not the admission of individual participants. At least one clearing agency, MBSCC, has a hedge fund member (Long-Term Capital Portfolio, L.P., an affiliate of Long-Term Capital Partners). It is important to note that MBSCC does not guarantee trades like NSCC, or hold securities like DTC; therefore, MBSCC is not exposed to similar counterparty or market risks.

- **Monitoring current and potential exposures.** Clearing agencies routinely monitor members' creditworthiness through financial reporting requirements. The clearing agencies also coordinate their surveillance activities among each other, the exchanges, and the NASD.

- **Maintaining liquidity facilities** (clearing fund and lines of credit). Clearing members are required to contribute to a clearing fund, which is designed to mutualize the risk of a member's default. Clearing agencies also use lines of credit as a source of liquidity in the event of a member's default.

4. Other Issues Raised by LTCM

Issues concerning the size and organization of hedge funds

General issues. A wide variety of investment vehicles, other than hedge funds, rely on the exemptions from the Investment Company Act under Sections 3(c)(1) and 3(c)(7). These private funds include venture capital pools, asset securitization vehicles, family estate planning vehicles, and small groups of individual investors, such as investment clubs.

As noted above, Section 3(c)(1) Funds and Section 3(c)(7) Funds are not subject to the substantive protections of the Investment Company Act. These protections include limits on the extent to which an investment company can engage in leveraging. A closed-end investment company, for example, cannot issue a senior security unless, after giving effect to its issuance, the senior security will have asset coverage of at least 300% if the senior security is a debt security, or 200% if the senior security is preferred stock.[27] An open-end fund may not issue any senior securities, although it may borrow from a bank, subject to a 300% asset coverage test.[28]

Investors in private hedge funds typically are institutions and wealthy individuals that are in a position to appreciate and assume, or protect themselves from, the risks associated with hedge funds and other types of private investment pools. Although hedge funds may present certain risks, these vehicles generally have not been associated with traditional investor protection issues (such as self-dealing by the fund's manager). Investors in private funds typically receive disclosure concerning the risks presented by these funds. The antifraud provisions of the

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[27] Section 18(a) of the Investment Company Act [15 USC 80a-18(a)].

[28] Section 18(f)(1) of the Investment Company Act [15 USC 80a-18(f)(1)]. The Division of Investment Management has taken the position that certain trading techniques, such as reverse repos and short sales, may involve the issuance of a senior security for purposes of the Act's leverage limitations. See, *e.g.*, *Securities Trading Practices of Registered Investment Companies*, Investment Company Act Rel. No. 10666 (April 18, 1979) [45 FR 25128 (April 27, 1979)]; *Guidelines for the Preparation of Form N-8B-1*, Investment Company Act Rel. No. 7221 (June 9, 1972) [37 FR 12790 (June 24, 1972)].

Securities Act and the Securities Exchange Act also apply to the sale of a private fund's securities, whether or not the private fund is registered under the Investment Company Act.

As with other private funds, investors in private hedge funds may sustain losses commensurate with higher investment risks. Abuses by hedge fund sponsors are also possible. Congress has determined that hedge funds that rely on Sections 3(c)(1) and 3(c)(7) do not warrant Investment Company Act regulation, either because of the relatively small number of investors involved (in the case of Section 3(c)(1) Funds), or because the investors have sufficient investment experience to understand and bear the risks involved (in the case of Section 3(c)(7) Funds).[29]

Options for imposing additional restrictions on hedge funds. The imposition of additional limits on hedge funds that seek to rely on Sections 3(c)(1) or 3(c)(7), such as fund size limits, limits on the maximum amount that an investor may invest in a hedge fund, or limits on the number of investors in any one hedge fund, may not be an appropriate or effective means to address the perceived risks of hedge funds. First, a provision that seeks to impose additional limitations on hedge funds may also impose unwarranted burdens on other types of private investment pools, such as venture capital funds and structured financings, that may not raise the same concerns as hedge funds. For example, a limit on fund size or maximum individual investments could force a venture capital pool to reject or limit investment contributions. This could, in turn, limit investor opportunity and capital-raising efforts that benefit small and large businesses. Given the difficulties of formulating a precise definition of the term "hedge fund," drafting limitations that apply solely to hedge funds would be exceedingly difficult.

Similarly, reducing the 100 investor limitation in Section 3(c)(1), or introducing a limit on the number of investors in Section 3(c)(7), may not advance the investor protection concerns underlying the Investment Company Act.[30] Successful hedge fund sponsors, faced with limits on the number of investors, may be in a position to increase investment minimums (if any) and

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[29] Section 3(c)(7) was premised on the notion that qualified purchasers are sufficiently sophisticated to appreciate the risks associated with investment pools that do not have the Investment Company Act's protections. The Securities Investment Promotion Act of 1996, S. Rep. No. 293, 104th Cong., 2d Sess. 10 (1996) (report of S 1815, eventually enacted as the NSMIA). Section 3(c)(1) does not contain any provisions addressing the financial sophistication or wealth of investors in Section 3(c)(1) Funds. In order to take advantage of Section 4(2) of the Securities Act of 1933, however, hedge funds typically sell their securities to sophisticated, high net worth individuals.

[30] Decreasing the investor limit in section 3(c)(1) without introducing a similar limit into section 3(c)(7) could simply result in more hedge fund managers relying on section 3(c)(7). As noted above, private funds typically limit their investors to fewer than 500 in order to avoid the public reporting requirements of the Securities Exchange Act of 1934. It is unclear whether reducing the 500 record holder threshold would substantially reduce the size of hedge funds or result in more hedge funds filing reports with the Commission. Such a change would, however, subject many non-hedge fund issuers, particularly small businesses, to periodic reporting requirements that may not be appropriate under the circumstances.

maintain the amount of assets they have under management. Therefore, reducing the 100 investor limitation in Section 3(c)(1), or introducing a limit on the number of investors into Section 3(c)(7), may have little effect on the size of hedge funds. It could, however, have the unintended consequence of requiring similar adjustments to be made by other types of investment vehicles that are not ordinarily considered to be hedge funds.

Finally, precluding hedge funds from relying on Sections 3(c)(1) and 3(c)(7) would be conceptually at odds with the purpose of the Investment Company Act. The Act generally addresses structural protections, such as prohibitions against overreaching by insiders, and not an investment company's effects on the markets.

Issues concerning hedge fund managers

The manager of a hedge fund generally falls within the definition of investment adviser in Section 202(a)(1) of the Investment Advisers Act. In general, an investment adviser is any person who, for compensation, is in the business of advising others about investing in securities.[31] The Investment Advisers Act contains broad prohibitions against fraud. As a fiduciary, advisers owe their clients undivided loyalty, and may not engage in activity that conflicts with a client's interest without the client's informed consent. This duty requires advisers to make full disclosure to their clients of their business practices, fees, and conflicts of interest.[32]

The Advisers Act requires most advisers to register with the Commission if they have $25 million of assets under management unless an exemption from registration is available.[33] Registered advisers are subject to certain regulatory requirements designed to protect clients. For example, registered investment advisers are subject to books and records requirements,[34] cannot assign their advisory contracts without client consent,[35] cannot engage in principal transactions

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[31] Certain persons, such as banks, are excepted from the definition of investment adviser.

[32] Rule 204-3 under the Investment Advisers Act [17 CFR 275.204-3].

[33] A investment adviser that manages less than $25 million of assets may not register with the Commission if the adviser is regulated in the State in which it maintains its principal office and place of business. Investment advisers registered with the Commission are not subject to state regulation. See generally sections 203 and 203A of the Investment Adviser Act [15 USC 80b-3, 80b-3A].

[34] Section 204 of the Investment Advisers Act [15 USC 80b-4].

[35] Section 205 of the Investment Advisers Act [15 USC 80b-5].

with their clients without prior client consent,[36] must take steps to protect client assets that are in their custody,[37] and are limited in the types of performance fees they can charge.[38]

As noted above, many hedge fund managers rely on the exemption from registration in Section 203(b)(3) and rule 203(b)(3)-1.[39] Advisers that do not register in reliance on Section 203(b)(3) remain subject to the antifraud provisions of Section 206 of the Investment Advisers Act.[40]

Modifying Section 203(b)(3) or rule 203(b)(3)-1 to limit or preclude hedge fund advisers from relying on them presents many of the same problems as discussed above with respect to Sections 3(c)(1) and 3(c)(7). Specifically, it would be difficult to limit any changes solely to hedge fund advisers. Moreover, requiring hedge fund managers to register as investment advisers would not seem to be an appropriate method to monitor hedge fund activity. Like the Investment Company Act's private fund exclusions, Section 203(b)(3) evidences a Congressional determination that clients of an adviser that has relatively few clients do not need the substantive protections of the Investment Advisers Act. These clients (particularly the sophisticated investors that typically invest in hedge funds) may be in a position to protect their own interests, either because of their size or their relationship to the investment adviser.

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[36] Section 206 of the Investment Advisers Act [15 USC 80b-6].

[37] Rule 206(4)-2 under the Investment Advisers Act [17 CFR 275.206(4)-2].

[38] Recent amendments to the Advisers Act and the SEC's rules governing performance fees have increased the ability of registered investment advisers to charge performance fees and may have made registration more palatable to hedge fund advisers. For example, as a result of NSMIA, the performance fee restrictions do not apply to clients that are Section 3(c)(7) Funds. Advisers may also charge clients that are qualified purchasers performance fees without regard to the Advisers Act's performance fee prohibition. Investment Advisers Act rule 205-3.

[39] Some hedge fund managers register under the Investment Advisers Act because an exemption from registration is unavailable. A hedge fund manager may also choose to register if registration is important to its clients.

[40] Many investment advisers are also registered as broker-dealers.

APPENDIX C

THE CFTC AND HEDGE FUNDS

The term hedge fund is not defined under the Commodity Exchange Act ("CEA"). Thus no rule of the Commodity Futures Trading Commission ("CFTC") applies specifically to hedge funds as a separate category of regulated entity. However, to the extent that hedge funds trade commodity futures or option interests and have U.S. investors, their operators or advisors become subject to CFTC registration and/or reporting requirements. In addition, all persons, including hedge funds, who trade on U.S. commodity futures and commodity option exchanges are subject to reporting requirements with respect to large, open positions held on regulated markets as well as limits concerning speculative positions in certain contracts.

While these regulations may require the operators of the hedge funds to report to the CFTC information concerning hedge fund trading of on-exchange commodity futures and option contracts, they generally do not require reporting of information concerning the hedge funds' activities in other markets. Consequently, these requirements would not necessarily provide the CFTC with an "early warning" of any financial difficulty that may arise from trading activity.

1. Description of CPO and CTA Regulation

If hedge funds have U.S. investors and trade commodity futures contracts or commodity options, these funds would be commodity pools under the CEA. The CEA subjects the operators of commodity pools ("CPOs") and their advisors ("CTAs") — but not the pools themselves — to regulation.[1]

The regulatory scheme for CPOs and CTAs is designed to protect investors in commodity pools and customers of CTAs against fraud and overreaching. Thus, the CEA specifically forbids all CPOs and CTAs and their associated persons ("APs") from engaging in fraudulent transactions with pool participants and customers. In addition, the CEA sets forth general registration and other requirements for CPOs and CTAs that are designed to ensure the fitness of CPOs and CTAs; to protect commodity pool participants by ensuring that they are adequately informed about the material facts regarding the pool before they invest and during the course of their investment; and to protect customers of CTAs by ensuring that they receive adequate disclosures of information. To fulfill these statutory mandates, the CFTC has enacted registration, disclosure, reporting and recordkeeping requirements for CPOs and CTAs.[2] However, the CEA does not

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[1] Part 30 of the CFTC's regulations requires CPOs and CTAs who operate and advise pools that trade on foreign exchanges and who have U.S. participants to register with the CFTC, or to obtain an exemption from registration, and to make certain disclosures. In addition, any CPO who is located in the U.S. is required to be registered as a CPO, even if it operates pools that have only non-U.S. investors.

[2] The CFTC has delegated to the National Futures Association ("NFA"), the futures industry self-regulatory organization, direct responsibility for the primary monitoring of compliance with these requirements. Thus, NFA, subject to CFTC oversight and review, receives and reviews applications for registration and grants, denies or conditionally registers CPOs and CTAs. In addition, NFA reviews the disclosure documents required to be provided by CPOs and CTAs to their customers and is responsible for conducting periodic inspections of registered persons.

impose minimum capital or other financial standards on CPOs and CTAs, nor does it impose restrictions on the financial interests that a commodity pool can trade.

CPO and CTA registration

Each person who comes within the statutory definition of the term "commodity pool operator"[3] or "commodity trading advisor"[4] must register with the CFTC, unless the person is excluded or exempt from registration pursuant to the CEA and CFTC regulations.[5] There are no general exceptions from registration that are comparable to those available to investment vehicles such as hedge funds under the federal securities laws. Consequently, a hedge fund that trades on commodity exchanges generally will be considered a commodity pool, its operator will be required to register as a CPO, and its commodity interest advisor will be required to register as a CTA.

Requirements applicable to CPOs and CTAs

Both the CEA and CFTC regulations prohibit CPOs and CTAs (regardless of registration status) from engaging in fraudulent practices with pool participants and customers. In addition, CFTC rules establish disclosure, reporting and recordkeeping requirements for each CPO and CTA "registered or required to be registered" under the CEA.

Each CPO who is registered or required to be registered and solicits prospective participants in a commodity pool must, absent an exemption, deliver to prospective participants, and file with the CFTC and NFA, a Disclosure Document containing specified information before the CPO may accept funds or other property in exchange for participation in the pool.[6] CTAs also must comply with disclosure requirements before they may enter into an agreement to direct or to guide a client's commodity interest trading account.[7]

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[3] 7 USC § 1a(4).

[4] 7 USC § 1a(5)(A).

[5] CFTC Rules 4.5 and 4.6 exclude certain categories of person from the definitions of CPO and CTA. The exemptions from registration available to CPOs are found in CFTC Rule 4.13. The exemptions for CTAs are found in 7 USC §6m(1) and CFTC Rule 4.14. All persons required to be registered with the CFTC (except non-managed account CTAs) also must become members of NFA.

[6] CFTC Rules 4.21 and 4.24 through 4.26 set forth Disclosure Document requirements for CPOs.

[7] CFTC Rules 4.31 and 4.34 through 4.36 set forth Disclosure Document requirements for CTAs.

CPOs who are registered or required to be registered also must provide pool participants with financial statements concerning the pool's performance.[8] Specifically, the CPO must provide participants with an unaudited periodic Account Statement for the pool that contains Statements of Income (Loss) and Changes in Net Asset Value. The CPO also must provide participants with an audited Annual Report for the pool that contains the net asset value of the pool and Statements of Financial Condition, Income (Loss), Changes in Financial Position, and Changes in Ownership Equity.[9] Annual Reports are filed both with the CFTC and NFA, and while they provide an annual snapshot of the financial condition of a pool at a given point in time, they are not required to detail, and generally do not detail, the particular off-exchange activities or holdings of the pool.

CPOs and CTAs of hedge funds may qualify for exemptions from providing certain disclosures and reports to investors either because of the nature of their investors or to avoid duplicative or inconsistent regulation of funds operating primarily as securities trading vehicles In addition, the CFTC has granted certain regulatory exemptions for CPOs of commodity pools that do not accept U.S. investors. Because these exemptions are not predicated on whether the pool at issue is a hedge fund, the CFTC does not have data to show how many hedge fund operators or advisors operate pursuant to one of the available exemptions. However, most, if not all, hedge fund operators or advisors who are registered as CPOs or CTAs likely operate pursuant to one of these reporting and recordkeeping exemptions.

The CFTC's Rule 4.12(b) provides relief from certain of the operational requirements applicable to registered CPOs who operate pools where the primary investment activity is in securities and the pool's commodity interest activity is limited and incidental to its securities trading.[10] To avail themselves of the foregoing relief, CPOs must file a written claim of exemption which identifies the CPO and the pool for which relief is being claimed and contains representations that the pool will be operated in accordance with the applicable criteria.

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[8] Reporting requirements for registered CPOs are found in CFTC Rule 4.22.

[9] Registered CTAs are not subject to any financial reporting requirements to clients because their clients' funds must go directly into an account at a registered futures commission merchant ("FCM"). Therefore, unlike pool participants whose funds go into a pool for which a CPO subsequently opens an account with an FCM in the pool's name, CTA clients are provided with all relevant account information from the statements provided them by their FCMs.

[10] With respect to pools qualifying under Rule 4.12(b), CPOs may: (1) use an offering memorandum prepared in accordance with the Securities Act of 1933 ("'33 Act") or relevant exemption therefrom, supplemented by certain, but not all, Disclosure Document information otherwise required by CFTC rules to be included in the pool's Disclosure Document; (2) provide a quarterly statement that indicates the net asset value of the pool as of the end of the reporting period and the change in net asset value from the end of the previous reporting period in lieu of the prescribed Account Statement; (3) provide in lieu of the prescribed Annual Report a certified annual report which contains, at a minimum, Statements of Financial Condition and of Income (Loss); and (4) claim exemption from certain recordkeeping requirements.

Similar relief also is available to CPOs who operate pools whose only participants are persons who have substantial financial holdings and therefore are presumed to be sophisticated investors. The CFTC's Rule 4.7 provides relief from certain disclosure, reporting and recordkeeping requirements for registered CPOs who operate pools that are offered only to "qualified eligible participants" ("QEPs") and from disclosure and recordkeeping requirements for registered CTAs who advise only "qualified eligible clients" ("QECs"), as those terms are defined in the rule.[11] The relief available under Rule 4.7 is: (1) for CPOs and CTAs, an exemption from the requirement to provide a Disclosure Document, provided, however, that any offering memorandum or brochure distributed by the CPO or CTA must include all disclosures necessary to make the information contained therein not misleading; (2) for CPOs, permission to provide pool participants, in lieu of the prescribed Account Statement, a quarterly statement that indicates solely the net asset value of the pool as of the end of the reporting period, the change in net asset value from the end of the previous reporting period and the net asset value per unit; and (3) for CPOs, permission to provide pool participants and to file with the CFTC, in lieu of the prescribed certified Annual Report, an uncertified annual report containing, at a minimum, Statements of Financial Condition and of Income (Loss).[12]

To obtain relief under Rule 4.7, CPOs and CTAs must file a written claim of exemption. The claim must identify the CPO or CTA and must contain representations to the effect that the registrant qualifies for relief. In all likelihood, most hedge fund operators qualify for and obtain relief pursuant to Rule 4.7, since hedge fund investors usually meet the definition of QEP and because Rule 4.7 requires fewer affirmative disclosures by the CPO.

In addition to the above exemptions, the CFTC staff have granted exemptive relief from the disclosure, financial reporting and certain recordkeeping requirements to registered CPOs of offshore pools where: (1) the pool is organized and operated outside the U.S.; (2) none of the participants in the pool is a U.S. person; (3) no capital is committed, directly or indirectly, to the pool from U.S. sources; and (4) the CPO will not engage in any marketing activity with respect to

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[11] QEPs and QECs fall within three general categories. The first category includes registered commodity and securities professionals, *e.g.*, futures commission merchants ("FCMs"), securities broker-dealers, the CPO and CTA of the pool at issue, and CPOs and CTAs who have been registered and active as such for the two prior years and who have $5,000,000 under management. The second category generally includes persons who are "accredited investors" as defined in Regulation D under the '33 Act and who meet a portfolio requirement of: (1) securities of unaffiliated issuers and other investments with an aggregate market value of $2,000,000; (2) $200,000 on deposit with an FCM in exchange-specified initial margin and option premiums for commodity interest transactions; or (3) a combination of (1) and (2). The third category includes entities in which all unit owners or participants are QEPs. In addition, non-U.S. persons, as defined in the rule, are QEPs. Because of the differences on limitation of loss typically existing between participating in a commodity pool and directly trading through a managed account, non-U.S. persons are not also QECs.

[12] Although Rule 4.7 provides an exemption from certain recordkeeping requirements, exempt CPOs still must maintain certain records in accordance with Rule 1.31; required books and records must be kept for five years from the date of making and must be readily accessible during the first two years.

U.S. persons. To avail themselves of this relief, CPOs must file a written claim of exemption. However, as is the case with Rule 4.7 and 4.12(b) exemptions, the CPO is not required to state whether the pool is a hedge fund.

Antifraud provisions

Regardless of their registration status, CPOs and CTAs are subject to the general antifraud provisions of the CEA and CFTC regulations, as well as specific prohibitions against fraud by CPOs and CTAs.[13] In addition, the CFTC has enacted rules that prohibit CPOs from accepting pool subscriptions in their own name and from commingling pool property with the property of any other person and that prohibit CTAs from accepting client property in the CTA's own name for the purpose of trading commodity interests.[14] CFTC rules also prohibit false and deceptive advertising.[15] These requirements, along with the registration and disclosure requirements, are designed to protect investors against fraud and overreaching by CPOs and CTAs.

2. Reporting of Exchange-Traded Commodity Positions

The CEA provides authority for the CFTC to enact appropriate regulations and to monitor trading activities of all traders on U.S. futures and commodity option exchanges. CFTC surveillance tools include speculative position limits and regulations that require daily position reporting for traders with large open positions in exchange-traded contracts. Since many hedge funds are also large traders who fall within these reporting requirements, the CFTC is able to monitor large on-exchange commodity interest trading on a daily basis. The CFTC's market surveillance mechanisms apply only to U.S. exchange-traded futures and commodity option contracts and not to other types of instruments and contracts. Since the exchange-traded positions held by hedge funds are often small compared to their positions in other markets, the CFTC's market surveillance systems cannot alone identify troubled hedge funds or systemic risks arising from major hedge fund losses.

Speculative position limits and position accountability rules

The CFTC is authorized to set "limits on the amounts of trading which may be done or positions which may be held by any person" for the purpose of protecting the integrity of the

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[13] 7 USC § 4b prescribes antifraud activities for any person acting for or on behalf of any other person in connection with a contract of sale of any commodity in interstate commerce, made or to be made on or subject to the rules of a contract market or in connection with a futures contract. 7 USC § 4(o) specifically prohibits fraudulent transactions by CPOs and CTAs. In addition, CFTC Rules 32.9 and 33.10 prohibit fraud by any person in connection with commodity option transactions.

[14] CFTC Rules 4.20 and 4.30, respectively.

[15] CFTC Rules 4.41(a) and (b).

markets.[16] Thus, the CFTC, as well as the commodity exchanges, imposes speculative position limits to prevent market distortions.[17] To the extent that they trade on U S. futures and commodity option exchanges, hedge funds and their operators and advisors are subject to these limits.

Hedging, and in some cases arbitrage, transactions are exempt from the CFTC's speculative position limits.[18] Hedge funds also may be able to obtain an exemption from the exchanges' speculative position limits for hedging or arbitrage transactions. In addition, in certain contract markets, such as those for U.S. Treasury bonds, foreign currencies and precious metals, speculative position limits have been replaced by position accountability rules.[19] Under these rules, traders can hold open positions in excess of exchange-established limits but must provide information regarding their positions on request.

Large-trader reporting system

It is unlawful for any person to hold a "reportable" futures position, *i.e.*, a position that equals or exceeds the quantities specified in CFTC rules, unless the person has filed reports of those positions in accordance with CFTC rules.[20] Under CFTC rules, each futures commission merchant ("FCM"), clearing member, and foreign broker must submit a report to the CFTC each business day with respect to each account for which there is a "reportable" position, except for accounts carried on the books of another FCM on a fully-disclosed basis.[21] Contract markets also must report to the CFTC each business day, by proprietary and customer account, on the positions that each clearing member is carrying.[22] Further, traders who hold a "reportable" position, are required to file upon call by the CFTC or its designee identifying information including: the name and address of the reporting trader; the principal business and occupation of the reporting trader; the name and address of each person whose commodity interest trading is

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[16] 7 USC § 6a(a).

[17] The CFTC imposes speculative position limits solely on agricultural commodities. See CFTC Rule 150.2. In addition, under CFTC Rule 1.61, each commodity exchange (contract market) is required to establish speculative position limits, subject to CFTC approval (or exemption), for those contracts not specified in CFTC Rule 150.2.

[18] CFTC Rule 150.3.

[19] See 51 Fed Reg. 51867 (October 15, 1991).

[20] 7 USC § 6i.

[21] CFTC Rule 17.00. The exact level of a reportable position differs from contract to contract and is defined in CFTC Rule 15 03.

[22] CFTC Rule 16.00.

controlled by the reporting trader; the name and address of each person who controls the trading of the reporting trader; and the names and locations of persons who guarantee the commodity interest trading accounts or who have a financial interest of ten percent or more in the reporting trader or accounts of the reporting trader.[23] Given their size, many hedge funds and their operators and advisors hold reportable market positions and therefore supply the CFTC with information about their commodity interest trading on U.S. exchanges. The CFTC has the power to inspect an entity's books and records to examine the complete details concerning all such transactions, positions, inventories, and commitments, including the names and addresses of all persons having any interest therein.[24] In addition, CFTC rules provide for special calls for information from traders and FCMs.[25]

3. Oversight of FCM Exposure to Hedge Funds

FCMs solicit and/or accept orders for the purchase or sale of futures and commodity options and accept funds (or extend credit in lieu thereof) to margin, guarantee or secure commodity interest transactions. FCMs can have financial exposures to hedge funds either because the hedge funds are customers of the FCM or because the FCM acts as a counterparty to the hedge fund in an OTC transaction. There are no special rules imposed on FCMs to limit their exposure to hedge funds or otherwise to restrict their dealings with hedge funds. However, the various protections that are designed to ensure the financial integrity of FCMs apply equally to all customer accounts carried by FCMs, whether such accounts are for trading by hedge funds or individual retail customers. In addition, any OTC activity undertaken by an FCM will be limited by the CFTC's minimum capital requirements for FCMs, which in general require FCMs to take a substantial charge to regulatory capital with respect to OTC derivative transactions.

Because of the role of FCMs in handling customer funds, they are subject to the most extensive financial requirements of any registrants under the CEA. The most important of these financial safeguards are as follows.

Margin

Customer margin requirements are designed to assure performance by the customer of its obligations under the futures contracts. The commodity exchanges set a minimum amount of

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[23] CFTC Rule 18.04. The CFTC has recently proposed amending Form 40, the form on which this information is filed, in a manner that would divide the current reporting category of "Investment Groups" into distinct, more descriptive subcategories. The proposed subcategories include one for hedge funds. See *Changes in Reporting Levels for Large Trader Reports*, 64 Fed. Reg. 5200, 5203-04 (February 3, 1999) (Proposed Amendments to 17 CFR Parts 15 and 17).

[24] 7 USC § 6i; Rule 18.05.

[25] Rule 18.05 and Part 21 of the CFTC's rules.

margin that its member FCMs must receive from their customers in order to establish and to carry positions for these customers. The deposit the customer makes to establish its position is called "initial" margin. FCMs have the discretion to require their customers to provide funds in excess of the minimum margin requirements set by the exchange. Whether an FCM will exercise this discretion depends upon its assessment of a customer's creditworthiness. In normal market conditions, most FCMs would only charge sophisticated institutional customers such as hedge funds the exchange-set minimum initial margin.

Whenever losses in a customer's account erode the net equity in the account to maintenance margin levels set by the exchange (generally 70-75 percent of the initial margin level), the FCM will issue a "maintenance" margin call to the customer requiring the deposit of sufficient additional funds or collateral to bring the level of margin on deposit with the FCM up to 100 percent of the initial margin deposit. If market conditions change abruptly, an FCM can require additional margin deposits from a customer in as little as one hour's time.

Segregation of customer funds

The CEA and CFTC rules require FCMs to account separately for customer funds deposited to margin, guarantee or secure futures positions, and the accruals (gains or losses) on such positions, on their books and records.[26] All such customer funds must be segregated from the FCM's own funds and must be treated as belonging to the customer. An FCM may, however, pool all customer funds in a single account, as long as the account is clearly identified as belonging to customers. An FCM must always maintain in the segregated account, free from claims, sufficient funds to meet all the obligations it would owe to customers if their accounts were closed out at current market prices. Segregation also facilitates the transfer of accounts from a failing firm to a solvent one, allowing customers to maintain their positions without any disruption to the customer. Thus, segregation serves to protect the customer.

Minimum financial requirements

The CFTC prescribes both minimum financial requirements for FCMs and the standards for calculating how those requirements are met. The basic minimum adjusted net capital requirement for an FCM is the greater of (1) $250,000 or (2) four percent of customer segregated funds (less the market value of long options in customer accounts). The basic calculation that an FCM must make in order to demonstrate compliance with the minimum adjusted net capital requirement is as follows: current assets *minus* liabilities *minus* capital charges *equals* adjusted net capital.

FCM capital is a backup to margin and must be highly liquid so that an FCM can readily satisfy segregation requirements and obligations to all its customers should a particular customer

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[26] See CEA Section 4d(2), 7 USC § 6d(2), and CFTC Rules 1.20-1.30, 1.32 and 1.36.

default.[27] CFTC rules are more restrictive than generally accepted accounting principles with respect to items such as receivables and prepaid expenses. Unsecured receivables, except in very limited circumstances, have essentially no value as regulatory capital. As a consequence, even though it may be permissible for an FCM to engage in certain OTC derivative transactions, the capital rules result in significant charges against regulatory capital with respect to OTC derivative transactions, and it is common practice for such transactions to be conducted through unregistered affiliates of the FCM.

Financial recordkeeping and reporting requirements

FCMs must prepare and keep current ledgers showing each transaction affecting their asset, liability, income, expense and capital accounts. An FCM must make and retain as a record open to inspection a formal computation of its adjusted net capital and minimum financial requirements as of the end of each month. Although these computations are only required monthly, an FCM should be able to demonstrate compliance with minimum financial requirements at all times. FCMs also must file financial reports on a quarterly basis[28] and submit reports certified by an independent public accountant as of the fiscal year end. (An applicant for registration as an FCM must also file a certified financial report.) If any material inadequacies in an FCM's internal controls are found by the independent public accountant, they must be reported.[29]

Risk assessment rules

As noted above, it is not uncommon for an unregistered affiliate of an FCM to engage in OTC derivative transactions. The CFTC, recognizing that these and other transactions conducted through unregulated affiliates of holding company systems that include FCMs can create risk for the regulated FCM, adopted rules that require FCMs that are part of holding company systems to file: (1) an organizational chart depicting the various entities with which the FCM is affiliated and identifying those entities that are "material affiliated persons;" (2) the FCM's policies, procedures and systems to manage the risks to the FCM's financial condition or operations arising from the activities of its affiliates; and (3) annual consolidated and consolidating financial statements.[30] The

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[27] The CEA and CFTC rules prohibit the use of one customer's funds to satisfy obligations of another customer, so if there is a customer default on a margin call, an FCM may be required to put its own funds in the segregated account. See CEA Section 4d(2); CFTC Rule 1.23.

[28] The CFTC's financial reporting form for FCMs is Form 1-FR. Firms dually registered as FCMs and as securities broker-dealers can file a copy of the SEC FOCUS Report in lieu of Form 1-FR.

[29] See CFTC Rule 1.16(c), (d) and (e); CFTC Rule 1.12(d).

[30] CFTC Rule 1.15.

CFTC can also request additional information as conditions warrant, as it did following the recent difficulties experienced by LTCM.

4. Management of Clearance Risks

To the extent that hedge funds engage in commodity futures or options transactions on U.S. exchanges, they receive the benefits of the exchange clearing systems. The clearance and settlement system for each U.S. commodity futures or options exchange plays a key role in managing and containing risk in those markets and is essential to their efficiency and integrity. Although the rules of each exchange's clearinghouse differ, the clearinghouse for each exchange performs essentially the same function — it decreases credit risk by becoming the counterparty to, and guarantor of, every trade. The CFTC oversees the clearing systems for U.S. commodity futures and options exchanges.[31] The key elements of this clearinghouse system are as follows.[32]

Clearinghouse membership

Not all exchange members qualify for membership in the clearinghouse because the financial requirements for membership in a clearinghouse are more stringent than for membership in the exchange. Clearing members are monitored regularly to assure the members' continued compliance with applicable net capital requirements and to detect any financial problems before they affect the members' ability to meet their obligations. In addition, most clearinghouses require their members to contribute to the general clearinghouse guaranty fund. Each member's deposit is available to the clearinghouse to cover a default by that member and, if necessary, to cover a default by another clearing member.

Margin requirements

When a clearing member adds positions to its customer or proprietary accounts, it must deposit money, known as "original margin," to secure its obligations to the clearinghouse. The exchange or the clearinghouse sets the minimum amount of original margin that must be maintained to secure open positions.[33] In addition, open positions are "marked-to-market" daily, and the clearinghouse will debit or credit a member's account based on the changes in value of the

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[31] For example, the Commodity Exchange Act and the CFTC regulations require any board of trade which has been designated as a contract market to submit to the CFTC for review all proposed rules, including those of the exchange's clearinghouse. 7 USC § 5a(8) and 5a(12); CFTC Rule 1.41.

[32] A comprehensive discussion of the clearance and settlement procedures of U.S. commodity exchanges can be found in Timothy Snider, Regulation of the Commodities Futures and Options Markets § 2.01-2.12 (2d ed. 1995)

[33] The amount of original margin that members are required to deposit is usually uniform. Most clearinghouses have authority to require higher levels of margin, sometimes referred to as "supermargin requirements," for particular clearing members in extraordinary circumstances.

member's open positions.[34] All members of a clearing organization are required to maintain accounts for the payment and collection of variation margin with at least one of the exchange's designated settlement banks.

Clearinghouse guarantee

When a trade takes place on the exchange floor, each trader must report it to the clearinghouse, where the trade is registered on the account of the trader's clearing firm. The clearinghouse then verifies the trade by matching the information from the buyer and the seller in order to clear the contract. Once the clearinghouse verifies and clears the contract, the clearinghouse is substituted for the original parties to the contract, becoming the "buyer to every seller" and the "seller to every buyer." Since the clearinghouse, as the "universal counterparty" to every cleared contract, guarantees performance of that contract, the parties to a trade do not need to know the identity of a counterparty prior to executing a trade, and need not be concerned about the creditworthiness of the original counterparty. In guaranteeing the payment of variation margin to clearing members with net gains on positions in their accounts, the clearinghouse substantially protects customers from the risks of a default by another customer or by a clearing member.

In the event of a customer default, the margin deposits made by the customer assist a clearing member in meeting its obligations to the clearinghouse. However, if a customer defaults on its margin payment to the clearing member and the member is unable to close out the customer's position before the equity in the account is exhausted, the clearing member must use its own funds to pay the variation margin owed to the clearinghouse and pay any additional variation margin required to cover losses sustained in closing out the position. This guarantee of payment by the clearing member provides market participants with substantial protection against defaults by other participants.

In the event of a default by a clearing member, the clearinghouse generally will be allowed, under its rules, to close out or transfer to other members all of the positions carried by the defaulting member. If obligations to the clearinghouse remain, the clearinghouse may use original margin deposited by the defaulting member to cover these obligations. The clearinghouse cannot use margin deposited on a defaulting member's customer positions to satisfy obligations other than those related to the defaulting member's customer accounts.[35] The clearinghouse has priority

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[34] To the extent that the value of a member's account has increased above required minimum original margin levels, the member may withdraw any excess margin. By contrast, if the value of a member's account has fallen below required original margin levels, the member will be required to pay additional margin.

[35] Thus, a clearinghouse cannot use original margin funds deposited in connection with positions held by a defaulting member's customers to cover any obligations arising from the defaulting member's proprietary trading. However, the defaulting member's customers could be exposed to losses because of shortfalls in other customers' margin payments. This risk occurs because at the clearinghouse level customer funds are held in a single omnibus

with regard to original margin funds because those deposits constitute security to satisfy demands for variation margin owed on open positions. If a deficit still remains after the margin funds have been exhausted, then the clearinghouse can access the defaulting member's guaranty funds and will have recourse to its other assets, as well. If these funds still do not cover the deficit, most clearinghouses will assess their other clearing members to cover the balance.

5. LTCM and U.S. Futures Markets

The FCMs carrying U.S. exchange-traded futures and option positions for LTCM made timely margin calls related to those positions, and LTCM satisfied them. Even when conditions at LTCM came to a head in late September 1998 and there was a margin call made for tens of millions of dollars, LTCM's account equity was more than three times the size of the call so that even if LTCM had defaulted, futures market positions could have been liquidated without causing an impact on the financial conditions of the carrying FCMs. Even if events had further deteriorated so that LTCM ended up in a debit or deficit condition that it was unable to cover, the FCMs in question had substantial excess adjusted net capital with which to absorb a default. Nor were LTCM's exchange positions of such magnitude that a default by it likely would have caused significant disruption of the U.S. exchange-traded futures markets.

6. CFTC Analysis of Hedge Fund Data

The CFTC receives information from CPOs concerning commodity pools, some of which are hedge funds.[36] In addition, the CFTC has authority to request and receive additional information under CFTC Regulations 1.31 and 4.23 from CPOs about the trading activities of the commodities pools that they operate. After learning of LTCM's financial difficulties in late September 1998, CFTC staff determined to gather additional information concerning the current financial status of certain large commodity pools. Accordingly, in early October CFTC staff issued a request for information to operators of selected pools.

The selection criteria were (a) pools with total assets over $250 million *or* (b) pools with total assets somewhat less than $250 million and leverage greater than 2½-to-1. Ninety-nine CPOs operated at least one pool that met these criteria. Because the CPOs were required to report on all pools that they operated, whether or not all the pools met the criteria, information

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account and all funds in this account could be used to satisfy obligations to the clearinghouse arising from customer positions. Thus, funds of one customer could be used to satisfy the obligations of another customer if the clearing member is unable to meet those obligations.

[36] There are more than 1000 funds operated by CPOs registered with the CFTC. As discussed *supra*, these CPOs file with the CFTC an annual report for each pool. In addition, CPOs must maintain certain records and provide copies to the CFTC upon request.

was received on 370 pools.[37] The information obtained was as of September 30, 1998. CFTC staff auditors analyzed this information and, in a number of cases, asked follow-up questions. Pools were also grouped into families of related pools, based on CFTC staff's understandings of such relationships.[38]

Size

The ten largest families of pools as measured by total assets as of year-end 1997 ranged from $11 billion to $129 billion, with an average size of $34 billion. As of September 30, 1998, the ten largest families ranged in size from $15 billion to $122 billion, with an average size of $36 billion. At the end of each period measured, approximately forty families had total assets greater then $1 billion, and approximately fifty had total assets greater than $500 million.

The total assets of the ten largest individual pools as of year-end 1997 ranged from $9 billion to $129 billion. By comparison, as of September 30, 1998, the total assets of the ten largest pools ranged from $10 billion to $122 billion. As was the case with families, for both dates there was a significant difference in size between the largest pool and the others on the list, as indicated by average size. The average size of the ten largest individual pools both at year-end 1997 and as of September 1998 was approximately $28 billion in total assets.

At both year-end 1997 and September 1998, approximately another 45 pools had total assets exceeding $1 billion. A total of approximately 150 pools at year-end 1997 and 130 pools at September 1998 had total assets exceeding $100 million. Thus, most pools operated by CFTC registrants had total assets under $100 million.

Leverage

CFTC staff also analyzed funds based on balance-sheet leverage, defined (for ease of computation) as total assets divided by total equity. The following leverage analysis focuses on the larger funds (those with total assets greater than $500 million), given the greater likelihood that the failure of such a fund might have systemic effects. It is important to emphasize that these figures are based on accounting data and do not include analysis of open positions, market strategies, or value at risk. An entity might have high balance-sheet leverage but, because of the

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[37] To avoid double-counting, data on feeder pools was excluded, leaving about 270 pools. A feeder pool is a pool that invests most of its money in another pool or pools. The pools that it invests in may be operated by the same CPO or by other CPOs. Feeder pools may be tiered.

[38] Thus, this summary is based on the following information: (1) 1997 year-end annual reports filed by CPOs and (2) responses to the request for information sent by the CFTC to selected pool operators during the first week of October 1998 and steps taken by staff to follow up on that request. All of the 1998 and some of the 1997 information is based on unaudited reports. Because CFTC Rules do not require certain funds to provide financial statements (other than net asset value information) on a basis more frequently than annually, some funds did not provide total asset information for 1998.

low volatility and effective hedging of its positions, represent a lesser risk than another entity with low balance-sheet leverage but highly volatile and/or unhedged positions.

As of year-end 1997, the ratio for the ten families with the highest degree of leverage (among those who reported total assets greater than $500 million) ranged from 12 to 71. As of September 30, 1998, the leverage ratio for the ten most highly leveraged of this class of families ranged from 7 to 32. In each case, approximately another ten families had leverage ratios in excess of 2.5.

As of year-end 1997, the ratio for the most leveraged individual pools with total assets exceeding $500 million ranged from 27 to 67.[39] As of September 30, the ratio for the ten most leveraged pools ranged from 16 to 37. At year-end, there were three pools with leverage ratios in the forties, two pools with ratios in the thirties, and two with ratios in the twenties. The September figures reveal four pools with ratios in the thirties, two with ratios in the twenties, and two with ratios in the teens. Most funds operated by CFTC registrants had leverage of less than 2-to-1.

Creditors and counterparties

In the October request, the CFTC asked responding pools to list their five largest creditors and their five largest counterparties. The pools were not asked to identify the dollar amounts of the obligations. In analyzing the responses, CFTC staff noted that there were inconsistencies among the reporting firms as to who was classified as a creditor and who was classified as a counterparty. Accordingly, the data were analyzed to identify all instances where an entity was listed in either category. Eighty-six entities were listed at least once. The ten most frequently listed firms were all well-known banks, investment banks, or broker-dealers. Only four pools were mentioned at all as creditors or counterparties. None was in the top 35.[40]

Futures positions on U.S. exchanges

CFTC staff review large trader reports on a daily basis. After learning of LTCM's financial difficulties, the CFTC staff contacted FCMs carrying large positions on behalf of pools and confirmed that daily margin obligations continued to be met on a timely basis. CFTC staff also have reviewed recent futures positions of the ten largest pools that responded to the request for information. As of December 15, 1998, there were 33 instances where these pools had

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[39] Two outliers are excluded from this analysis.

[40] It should be emphasized that these figures do not represent the dollar level of exposure for these firms. Rather, they only represent the number of instances a firm was listed as a creditor or as a counterparty. Thus, a firm listed once as a creditor with a $10 million loan outstanding would have more financial exposure than a firm that was listed 9 times but with each exposure being $1.1 million or less.

reportable futures positions. In 31 of these cases, the net positions represented less than 1 percent of the total open interest in the contract.

Withdrawal polices

CFTC staff also analyzed the withdrawal policies of the largest commodity pools to determine whether there were indications of a risk of a "rush to the exits" on December 31. CFTC staff contacted some of the larger funds that do allow significant withdrawals as of the end of the year. The CFTC concluded that funds operated by CFTC-registered pool operators were unlikely to experience significant liquidity problems in coping with redemptions at the end of 1998.

7. Conclusion

The CFTC and the exchanges have detailed information available on a daily basis regarding the on-exchange activities of large traders, including hedge funds, through its large trader reporting system and speculative position rules. However, even where the operator or advisor of a hedge fund may be registered as a CPO or CTA, the CFTC does not have extensive information about the off-exchange activities of the hedge fund. Similarly, CFTC-registered FCMs are not a useful source of information about hedge funds' activities in these other markets because they do not act as counterparty to such transactions, although they may have affiliates that do so.

APPENDIX D

THE SUPERVISION OF BANK EXPOSURE TO HEDGE FUNDS

1. Commercial Bank Relationships with Hedge Funds

Commercial bank relationships with hedge funds can involve direct lending, counterparty trading, direct equity investment in funds, investment advisory, and fund sales through private banking operations. The risks resulting from these activities are no different from the risks from similar activities with other types of financial institutions. However, the unique characteristics of hedge funds, such as dynamic trading strategies and frequent use of leverage, may alter the relative importance of different measurement and control elements that banks use for their risk management processes. This section of the appendix summarizes the scope of major bank exposures to hedge funds, identifies how examiners assess banks' credit risk management, and reviews the basic elements of the risk management systems used to manage these exposures. It also discusses lessons learned from the LTCM event, as well as from subsequent targeted reviews of banks' relationships with hedge funds.

Bank exposures to hedge funds

U.S. commercial bank activity with hedge funds, including exposure to the LTCM Fund, is concentrated in those money center institutions with major strategic business lines devoted to investment banking services and trading and derivatives activities. However, even at these institutions and the handful of other U.S. commercial banks identified to have such relationships, exposures to hedge funds represent a small portion of the aggregate credit exposure from both traditional banking and derivatives business lines. As of September 30, 1998, aggregate bank direct lending exposure to hedge funds is estimated at less than $4.3 billion at the twelve banks identified to have hedge fund relationships. This compares to total assets of more than $2.6 trillion at these institutions. U.S. commercial banks had estimated direct investments in hedge funds of less than $1.7 billion, including the recent workout investments in the LTCM Fund. While some banks do engage in repurchase agreement transactions with hedge funds, which can further increase credit exposure, this activity is limited given the constraints that the leverage ratio places on this business at U.S. commercial banks.

Most bank exposures with hedge funds arise from counterparty trading and derivatives activities. The estimated notional value of derivative contracts with hedge funds at money center banks with significant trading activities represents less than four percent of the total $27 trillion in total notional value of derivatives contracts at these institutions. The estimated current credit exposure of derivative positions with hedge funds amounted to less than four percent of the current credit exposure of all derivative positions at these institutions. Collateral held against current hedge fund exposures resulted in negligible net current credit exposure.

2. Supervision of Bank Credit Exposures to Hedge Funds

The banking agencies generally take a business line-oriented, risk-focused approach in conducting their supervisory activities. This approach is designed to conform with the operational structure and risk profile of the institutions supervised. The agencies focus supervisory resources

on assessing the safety and soundness of the bank's activities. Examiners assess the level and direction of risk, and the quality of risk management for different types of risks (*e.g.*, credit, market, liquidity, operational, legal, reputation) on an aggregate basis. They also review risk profiles for various product offerings, business lines or activities (*e.g.*, lending, trading, investing, and derivatives). Accordingly, bank exposures from hedge funds are primarily supervised within the context of the functional area or product line in which they arise, such as lending or derivatives activities. Unless targeted for special review, exposures arising from any one type of customer or counterparty, such as hedge funds, are generally not singled out from other types of customers.

Supervisors expect banks to analyze hedge fund exposures consistent with the principles of sound credit risk management. Supervisors communicate these credit risk management principles via formal handbook guidance and periodic advisory letters to bankers and examiners. Supervisors have not had specific examination procedures for hedge fund exposures since it is not practical to have separate procedures for individual industries. Nevertheless, the guidance on sound practices as they relate to lending, trading, investing and derivatives activities are just as applicable to banks' hedge fund relationships as they are to any customer relationship.[1] Accordingly, supervisors use existing loan portfolio management, commercial loan, and counterparty trading examination guidance and procedures to assess the quantity of credit risk and quality of credit risk management processes. Bank supervisors, in recognition of some of the unique risks associated with counterparty trading exposures generally, and hedge funds particularly, have recently issued supplemental guidance for examiners to use in reviews of bank trading and dealer operations.[2]

In assessing compliance with sound practices, supervisors rely on continuous supervision of large complex banking organizations — which are the most likely institutions to have meaningful exposures to hedge funds. In general, supervisors assign examiners full time at these institutions to maintain an ongoing program of risk assessment, monitoring, and communications with bank management and directors. Supervisors rotate personnel selected for these assignments periodically to ensure that the staff maintains an objective and diverse supervisory perspective. Examiners assess the quality of banks' credit portfolios, which includes exposures from off-balance-sheet derivatives activities. They also evaluate the adequacy of credit risk management practices, through on-site reviews and from continuous supervision of credit exposures. In

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[1] Such general guidance that is applicable to all types of counterparties includes OCC Banking Circular 277 and Advisory Letter 97-3 (Credit Underwriting Standards and Portfolio Credit Risk Measurement); and the Federal Reserve Board's Trading and Capital Markets Activities Manual and various supporting SR letters, including SR 93-69 and 97-17.

[2] See OCC Bulletin 99-2: Risk Management of Financial Derivatives and Bank Trading Activities, dated January 25, 1999; Federal Reserve SR letter 99-3: Supervisory Guidance Regarding Counterparty Credit Risk Management, dated February 1, 1999; Basle Committee on Banking Supervision: Banks' Interactions with Highly Leveraged Institutions (January 1999) and Sound Practices for Banks' Interactions with Highly Leveraged Institutions (January 1999).

choosing risk areas for targeted reviews, examiners emphasize those bank activities exhibiting higher than average risk or growth, and unique or new characteristics.

Hedge funds historically have not represented significant credit risk to banks, largely due to the collateralized nature of most transactions. The following discussion outlines how bank supervisors assess credit risk generally. It also discusses hedge fund exposures particularly, from the two principal sources of exposure: direct lending and counterparty trading. While the credit risk management of these two types of exposure to a hedge fund differ in important respects, they have many elements in common. Banks generally manage all types of exposures to a customer as a single credit relationship. Thus, the due diligence and monitoring described under direct lending applies also to counterparty trading, and banks are expected by supervisors to have comprehensive credit reporting systems that provide measures of total exposure to each hedge fund.

Supervision of direct lending activities

Examiners assess how bank management identifies, measures and controls risk throughout the credit process, by reviewing the bank's strategic direction, risk appetite, and risk management processes. Bank supervisors have not targeted hedge funds, as a separate industry class, for specific reviews. However, examiners have reviewed large hedge fund relationships as part of regular assessments of large exposures. For example, examiners evaluate hedge fund relationships as part of their targeted reviews of large corporate credits, including those exposures that fall under the scope of the Shared National Credit Program.[3]

When evaluating a targeted loan portfolio (*e.g.*, large corporate) and credit risk management practices, examiners consider the following specific factors, as appropriate, depending on the scope of the review:

Credit culture. Examiners evaluate the bank's credit culture because it exerts a strong influence on credit risk management. Values and behaviors that banks reward influence credit standards and can often take precedence over written policies and procedures. When practices do not correspond with policies, lenders may not clearly understand the culture, credit controls may not be effective, policies and systems may be inappropriate for the credit environment, or banks may reward employees for behaviors inconsistent with policy.

Loan policy. The loan policy is the primary means by which senior management and the board guide lending activities. Examiners assess whether the policy provides a framework for

[3] A shared national credit ("SNC") is any loan and/or formal commitment extended to a borrower by a supervised institution, or any of its subsidiaries or affiliates, which totals $20 million or more and: (1) is shared by three or more institutions under a formal lending agreement, or (2) a portion of which is sold to two or more institutions, where the purchasing institutions assume a pro-rata share of the credit risk.

achieving asset quality and earnings objectives, sets prudent risk tolerance levels and guides the bank's lending activities in a manner consistent with the bank's strategic direction.

Integrity and quality of the risk ratings process. Rating the credit risk of individual loans through regular credit evaluations is fundamental to a sound credit process. Such evaluations allow timely detection of changes in portfolio quality, and enable management to modify portfolio strategies and to intensify the supervision of weaker credits. Examiners review the bank's risk rating definitions and processes for reasonableness. To confirm the integrity of the risk rating process, examiners analyze individual credits to assess the quality of the risk rating analysis and to determine if management correctly assigns ratings. Examiners also assess whether the risk-rating framework provides sufficient guidelines for evaluating loans to entities with unique characteristics, such as leverage.

Loan approval process. The loan approval process is the first step towards ensuring sound portfolio credit quality. While examiners do not promote any particular system for loan approval, they evaluate whether the loan approval process introduces sufficient controls to ensure acceptable credit quality at origination. This process should be compatible with the bank's credit culture, risk profile, and capabilities of its credit personnel. Examiners evaluate whether the system for loan approvals establishes accountability for credit decisions.

Allowable types of loans. Examiners evaluate the types of loan relationships, including hedge funds, that the bank approves and evaluate them relative to the bank's ability to properly underwrite and supervise the credits. Because entities such as hedge funds may engage in sophisticated trading strategies, leveraging, and various off-balance-sheet activities, examiners assess whether the bank has retained personnel with the required expertise to analyze and monitor these specialized credits. The lending policy should control specific types of loans that have resulted in abnormal losses for the bank or that the bank considers to have less favorable risk/reward characteristics.

Underwriting criteria & due diligence reviews. Examiners assess a bank's underwriting standards on an ongoing basis through the review of individual credit files and changes to policy. Examiners assess the extent to which the credit analysis of individual exposures supports the underlying credit decision. These file reviews also help examiners assess compliance with policy and identify any deterioration in underwriting standards.

Examiners evaluate whether banks obtain sufficiently comprehensive financial and other information to provide a clear understanding of the obligor's risk profile. A sound underwriting process should contain the following elements, calibrated to the size of the obligor and the nature of their activities:

- Financial information, covering both on- and off-balance-sheet positions, including:
  - Current and historical balance-sheet and income data,
  - Balance-sheet, income, and cash flow projections, and
  - Comparative industry data.

- Sufficient detail about the major types of business strategies and activities to understand the obligor's overall risk profile, including the nature and size of the obligor's involvement in broad instrument categories and markets (cash, derivatives, leverage). For hedge funds, this should include a comprehensive, quantitative assessment of leverage and risk concentrations. To assess a hedge fund's leverage, for example, banks can compare the obligor's value-at-risk ("VaR") numbers and stress testing results to the amount of available capital. Even more straightforward statistics such as quarterly data on the standard deviation of daily P&L, or quarterly data on maximum daily loss or profit, have value for assessing risk

- Sufficient understanding of the relative size of the obligor's aggregate positions in a given market, and the liquidity associated with these positions.

- Sufficient knowledge about, and risk assessments of, the obligor's performance on obligations with other creditors. A dealer's own transactions with a hedge fund might not reveal the fund's overall risk profile.

Because hedge funds actively trade and dynamically manage their investment positions, many of which can be off-balance-sheet, financial statements tend to have limited value in prospective credit analysis. Hedge funds view banks as competitors as well as creditors. Therefore, most hedge funds are very reluctant to share information on their trading strategies, a practical limitation which impairs the ability of the credit officer to gain comprehensive insight into the fund's risk profile. For these reasons, bank due diligence reviews of hedge fund customers tend to focus on more qualitative assessments of hedge fund credit quality, such as:

- the equity investment, track record and reputation of the principals;
- trading strategies and risk appetite;
- redemption policies;
- leverage, including for off-balance-sheet positions;
- the quality of risk management systems;
- front and back office operations; and
- offering circulars, private placement memorandums and partnership agreements.

Examiners then evaluate the effectiveness of banks' due diligence efforts and qualitative assessments. In particular, examiners review whether banks have established mitigating controls when the transparency of the hedge fund is inadequate. For example, hedge fund financial statements typically provide insufficient information to assess the risks of off-balance-sheet

contracts, the effective degree of leverage, and changes in business strategies. Mitigating controls can include requiring collateral or negotiating more conservative covenants (especially contractual provisions that become more stringent as credit quality deteriorates) into credit agreements.

Because of increasing competitive pressures, banks had come under pressure to waive covenants. Examiners will investigate a high level of covenant waivers and assess the impact on loan quality and credit management practices. Examiners will also assess whether the underwriting policy sufficiently details procedures for approving exceptions to credit policies. Examiners evaluate the frequency of policy exceptions, an excessive level of which may indicate an unwarranted slippage in underwriting standards.

Examiners also determine that banks appropriately translate their risk tolerance levels into effective policies and procedures that deal both with individual as well as important classes of obligors. Policies, which reflect credit culture and risk appetite, need to drive the credit standard setting process, not competitive pressures in the marketplace. When bank management identifies credit concerns with regard to an obligor, it should take appropriate steps to limit and manage the exposure. For example, banks should either refuse to extend credit, or implement tougher credit conditions (*e.g.*, insist on more conservative financial covenants), for those obligors who provide less than complete information about their risk profile.

Ongoing monitoring. Banks typically impose on-going financial reporting requirements on hedge fund customers as part of their credit risk assessment and risk management process. Such reporting usually includes audited annual financial statements, quarterly financial statements, and monthly net asset value statements.

The variability of a hedge fund's financial position and risk profile, however, makes traditional tools of financial statement analysis less effective in assessing the credit exposure to a hedge fund. As noted in a 1994 BIS report on public disclosure of risks arising from trading activity, traditional accounting based information is not well suited to describing the risks associated with trading activity.[4] That report emphasized the importance of information about the volatility of trading portfolio values, both retrospectively and potentially, for assessing a counterparty's creditworthiness. While such information is produced by most risk management information systems, the degree to which that information is drawn upon in reports to trading

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[4] Public Disclosure of Market and Credit Risks by Financial Intermediaries. Bank for International Settlements. September, 1994. The report recommended that "all financial intermediaries—regulated and unregulated—should move in the direction of disclosing periodic quantitative information which expresses, in summary form, the estimates relied upon by the firm's management of:

- the market risks in the relevant portfolio or portfolios, as well as the firm's actual performance in managing the market risks in these portfolios;
- the counterparty credit risks arising from its trading and risk management activities, including current and potential future credit exposure as well as counterparty creditworthiness, in a form which permits evaluation of the firm's performance in managing credit risk."

counterparties and other disclosures still varies widely. In general, hedge funds provide balance-sheet and income statements which are not informative about risk profiles.

Typically, banks receive only general information on the characteristics of a hedge fund's trading strategies (*e.g.*, aggressive growth, distressed securities, emerging markets, market neutral, etc.). Banks generally have not received the sort of risk-focused financial information, such as risk management reports or other summary measures of market and other risks (*e.g.*, liquidity and credit) that would allow for a more comprehensive credit assessment, particularly with respect to leverage. However, banks do look for changes in trading strategies. Banks can sometimes detect changes in strategy by observing trades placed with the banks' dealer operations. Deviations in a hedge fund's trading strategy can result in a fund straying from its area of market expertise, which can increase the bank's credit risk.

Given the limitations of the typical financial statement for timely assessment of a hedge fund's trading risks, banks and securities firms supplement traditional financial analysis with occasional on-site visits and qualitative evaluations of the fund's risk management practices, trading strategies, and performance. Such qualitative evaluations, while important, are not a substitute for better quantitative information.

Examiners evaluate the bank's process for monitoring client credit quality. Because of the dynamic nature of hedge fund trading activities, banks should require more frequent financial information on broad trading strategies, fund redemptions, leverage, and net asset values. Examiners evaluate whether banks obtain sufficient information, and review it with appropriate frequency, to demonstrate effective credit risk management.

Credit risk control function. Besides the loan policy, the primary controls over a bank's lending activities include credit administration, loan review, and audit functions. These units ensure the reliability and effectiveness of the bank's risk management process, management information systems ("MIS"), and internal and accounting controls. Control functions can also provide senior management and the board with a periodic assessment of how well the bank's employees understand the credit culture and whether their actions conform to the bank's standards and values.

During targeted credit examinations, examiners determine the scope and adequacy of banks' control functions, such as the loan review and audit functions. For example, examiners sample internal loan review workpapers and reports to assess their depth and coverage. To evaluate the competence of oversight functions, examiners will determine whether loan review personnel possess the required industry expertise to analyze loans to entities with unique characteristics, such as high leverage. Examiners also sample audit workpapers and reports to ensure that senior management is appropriately responsive to deficiencies and concerns cited by oversight units. Repeated deficiencies resulting from the failure to take appropriate corrective action prompt examiners to initiate discussions with, and seek corrective commitments from, executive management.

Supervision of counterparty trading exposure

For reasons mentioned earlier, supervisors generally have not targeted hedge funds, as a separate industry class, during reviews of counterparty risk from trading activities. Rather, supervisory efforts have focused on the largest counterparty credit exposures, and those exposures that are exceptions to bank policy.

The procedures for evaluating a bank's counterparty trading exposure and risk management systems are similar to the process described for evaluating direct lending activities. However, there are some unique issues that examiners consider when evaluating the credit risk management of counterparty exposures to leveraged entities, including hedge funds. Examiners consider:

Personnel. In order to effectively evaluate risk exposure and set appropriate credit limits, the personnel responsible for approving and monitoring counterparty credit exposure must possess a strong understanding of derivative instruments, the sources of credit exposure, and market factors that affect credit exposure. Credit personnel should receive ongoing training on derivative instruments, risk management techniques, and methods of measuring credit risk.

Counterparty limits. Banks should establish counterparty credit limits in much the same way as traditional credit lines. Counterparty credit limits should be a function of the bank's risk tolerance, the terms and conditions of financial contracts and, most importantly, the capacity of the counterparty to perform on its obligations. Limit approvals should precede the execution of derivative transactions. Credit file documentation should support the purpose, repayment source, and collateral.

For trading transactions, current credit exposure occurs when changes in market prices cause the replacement value (*i.e.*, current mark-to-market) of a transaction to rise above its value at inception.[5] A hedge fund default would cause a loss to a creditor if the current mark-to-market favored the creditor, because that creditor can replace the transaction only at the market prices prevailing after default.[6]

Counterparty credit risk includes both pre-settlement risk ("PSR") and settlement risk. Pre-settlement risk represents the current mark-to-market amount of counterparty positions, plus an estimate of potential future exposure ("PFE"), *i.e.*, how large that current mark-to-market might become over the life of the contract. The PFE reflects the possibility that the current credit exposure may increase as a result of *future* market movements. The PFE provides a measure of

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[5] Almost all derivatives contracts have no current credit exposure at inception; the contract is priced fairly for each party.

[6] It is of course true that if the current mark-to-market is in favor of the hedge fund, then the hedge fund would suffer a loss if its creditor institution defaulted.

possible future changes in market value, at a specified confidence interval, over some defined horizon (typically over the life of the contract). PSR limits should be commensurate with the board's risk tolerance and the sophistication of the bank's risk measurement system. Banks which have less sophisticated credit risk measures should compensate by imposing more conservative limits.

Banks should have separate and distinct limits for settlement risk, which measures the exposures that occur when one party makes a payment prior to assurance that it has received a payment from its counterparty. Settlement risk lasts from the time a bank can no longer unilaterally cancel an outgoing payment until the time the bank receives the incoming payment with finality. Settlement risk arises because it is generally impractical to arrange simultaneous payment and delivery in the ordinary course of business. For example, settlement risk arises in international transactions because of time zone differences. This risk generally exists for a *minimum* of one to two days. It can take another one to two business days to confirm receipt through reconciliation procedures. As a result, settlement risk can accumulate during the reconciliation period, and span three business days (or more), until a bank can be certain that it has received a payment. A failure to perform may result from counterparty default, operational breakdown, or legal impediments. Settlement risk arises in both cash and off-balance-sheet derivatives dealing activities.

The dollar volume of exposure due to settlement risk sometimes is greater than the credit exposure arising from pre-settlement risk because settlement can involve an exchange of the total notional value of the instrument or principal cash flow. Limits should reflect the credit quality of the counterparty and the bank's own capital adequacy, operations efficiency, and credit expertise. Any transaction that will exceed a limit should be pre-approved by an appropriate credit officer. Reports to managers should enable them to easily recognize limit excesses.

Stress testing. Banks need to stress test their credit, as well as market, risk profiles in order to evaluate the potential impact of adverse market conditions on cash flows and asset/collateral values supporting trading transactions. Stress testing helps identify those counterparties likely to create the greatest credit exposures in market environments more severe than standard risk measurement methods assume. Examiners place increasing emphasis with banks on the need to stress test counterparty trading exposures as a supplement to routine (normal case) estimation of pre-settlement risk. If stress testing identifies particularly risky positions, the bank should consider reducing exposure, or requiring additional collateral.

Examiners also assess whether the bank has considered the impact of liquidating collateral in the event the borrower defaults. The potential for disorderly liquidation, financial market disruption, and systemic market stress is a function of the borrower's leverage, the concentration of collateral in any one market, and prevailing market conditions. Disorderly markets increase credit risk because banks may not realize sufficient value upon collateral liquidation to completely offset their current credit exposures. Because hedge funds are active participants in many

financial markets, and frequently rely on leverage, banks face greater risks of having to liquidate collateral in disorderly conditions with hedge funds than with many other trading counterparties.

Collateral management. Given the information problems associated with hedge funds, leverage, and the volatility of hedge fund net asset values, banks and securities firms usually require collateral on their trading exposures to hedge funds. Generally, banks require collateral to cover the current credit exposure or current replacement value. Banks normally require a "haircut" (collateral margin) when financing a counterparty's acquisition of a trading asset, such as in reverse repurchase agreements. Competitive pressures, however generally led to banks' reducing, or eliminating such haircuts, and thus sometimes banks have provided 100% financing. For over-the-counter derivatives, many hedge fund clients negotiated loss thresholds in their trading agreements.[7] Loss thresholds are small, generally less than $5 million. To reduce the need for frequent small transfers of collateral, the trading agreements often set minimum collateral transfers to trigger collateral calls above the thresholds. These minimum transfer amounts are even smaller. The unsecured exposure thus can total the amount of the threshold plus the minimum transfer requirement. While loss thresholds and minimum transfer amounts are also subject to strong competitive pressure, on balance, banks generally have had well collateralized current credit exposures to hedge funds.

Examiners evaluate the potential risks in smaller collateral haircuts, and the size of loss thresholds, in relation to the overall credit quality of the relationship and the grace period for posting collateral. Collateral agreements typically include a close-out provision allowing the bank to terminate a client's positions if it is unable to post the required collateral within a specified grace period. These close-out provisions may or may not allow recourse back to the counterparty. A non-recourse close-out could lead to losses for the bank if the underlying positions are illiquid.

Due to the increasing trend of collateralizing derivative transactions, examiners assess the operational integrity of collateral monitoring systems as part of their review of back office operations. During these reviews, examiners look at collateral perfection, initial account set up, how collateral is held in accordance with documentation (including controls on collateral segregation and rehypothecation/substitution of collateral), and adequacy of collateral haircuts Examiners assess how the bank ensures accurate mark-to-market valuation of trading counterparty positions in order to determine collateral coverage and make collateral calls if necessary. They also review the level of disputes with counterparties as an indicator of whether there is a recurring problem with the price marks. Some warning of problems may occur through the spotting of irregularities in a customer's posting of collateral.

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[7] A loss threshold represents current mark-to-market exposure below which a bank agrees not to require collateral. It represents unsecured credit exposure. For example, a bank might grant a hedge fund a $1 million loss threshold. This means that the fund would post collateral only after the current replacement cost of the contract exceeds $1 million.

Examiners assess whether banks regularly compare trading exposures against collateral pledged by the counterparty. Depending upon the volatility of the underlying positions and liquidity of the collateral, banks may need to do this on an intra day basis. Examiners also evaluate the timeliness of collateral calls when the current credit exposure exceeds the value of collateral. Examiners review the grace period allowed to post margin and the history of fails to assess the bank's potential risk exposure. They may test individual transactions to determine if the bank made collateral calls in accordance with policy.

Examiners affirm that banks have in place clearly articulated policies for the establishment of collateral arrangements with counterparties. Policies should lay out clear guidelines for the type of collateral arrangements required, based on criteria such as the rating assigned to the counterparty, the quality of information available, and the nature, volatility and liquidity of the transactions. In particular, banks need to have clear internal guidelines detailing the types of acceptable collateral and their respective haircuts, as well as the condition under which the bank will require collateral to cover some portion of the PFE of trading transactions. Finally, the granting of two-way collateral arrangements, and any re-hypothecation rights given to the counterparty, should be a function of the obligor's credit quality and the bank's own liquidity position. Examiners evaluate whether audit and other oversight units regularly evaluate the adequacy of the collateral management function as well as test compliance with established policies and procedures.

Documentation exceptions. Trading documentation refers broadly to the documents needed to legally enforce the credit agreement and properly analyze the borrower's financial capacity. When a document is missing, stale, or improperly executed, it becomes an exception. Documentation exceptions can exacerbate problem exposures and seriously hamper work-out efforts For example, failure to ensure timely receipt and analysis of financial information can preclude the early identification of potential problems and the opportunity to initiate efforts to strengthen the credit. Failure to promptly review financial information can delay exercising any powers to strengthen the creditor's position under the credit agreement. Examiners will analyze the level, composition, and trend of documentation exceptions to assess potential risks.

Maintaining current documentation of all outstanding contracts is an important component of credit risk management. Generally, signed master agreements are required prior to initiation of trading transactions. Where master agreements have not been signed, "full" confirmations containing many of the provisions found in a master agreement are used. Master agreements usually include standard ISDA (International Swaps and Derivatives Association) and IFEMA (International Foreign Exchange Master Agreement) default clauses, supplemented with additional termination events covering the dissolution or liquidation of the fund, the resignation of the fund's general partner or principals, or decreases in net asset values beyond a certain threshold.

Interconnection risk. Recent market events have underscored the importance of assessing risk interconnections. For example, market and credit risks are directly related. When a

contract moves deeply into-the-money for the bank, counterparty credit risk increases. Similarly, as credit risk increases across the system, liquidity tends to erode, making it more difficult for the bank to manage the risk of its portfolios. Counterparties having deeply out-of-the money positions may threaten litigation, asserting that the bank has not sufficiently disclosed all contract risks, especially if the contract involves a high degree of complexity. Examiners also focus on the bank's client selection process to determine if management has properly considered reputation and potential litigation risks. Bank management, with the strong encouragement of supervisors, have been working to identify and develop analytical responses to interconnection risk.

Use of risk measurement models. In addition to the core examination staff, supervisors increasingly use economists, who hold PhDs in economics or finance, to assist in trading examinations. Economists help to assess theoretical and quantitative issues in the models banks use for pricing and risk management.

Examiners assess whether bank management places undue reliance on quantitative risk modeling techniques. Although financial modeling has proven to be a valuable risk management tool, such models have limitations. Banks must complement risk models with sound risk management practices, especially a stress testing program, and appropriate risk oversight by experienced personnel.

Control of legal risk. Because the enforceability of many OTC derivative contracts has not been tested in the courts in all jurisdictions, examiners evaluate whether banks employ competent legal counsel to review applicable documents prior to executing transactions, and periodically thereafter. Counsel should be familiar with the economic substance of the transaction, the laws of the jurisdictions in which the parties reside, and laws governing the market in which the instrument was traded. When a bank does not use standardized documents, or makes changes to standardized contracts, examiners assess whether bank counsel has reviewed the documents and/or changes for propriety. When the legal enforceability of netting arrangements is not certain, examiners also ensure that bank management measures credit exposures on a gross basis, to avoid understating credit risk.

3. Credit Risk Management Issues

Lessons learned from LTCM

Although the liquidation of direct exposures to the LTCM Fund could have significantly impacted quarterly earnings at several banking institutions, it would not have threatened the solvency of any U.S. commercial bank. Nevertheless, the favorable credit terms given to the LTCM Fund by some banks despite a lack of information about the full scope of the LTCM Fund's exposures raises important questions regarding the credit risk management processes at these institutions. Such questions pertain to the management of not only hedge fund relationships, but also other types of trading counterparties.

The root of any breakdowns in the credit risk management systems of banking institutions in the LTCM incident result from imbalances in the dynamic interactions of the basic credit risk management elements described above, in particular, an over reliance on collateral to mitigate and control credit risk. In managing the LTCM relationship and relationships with some other hedge funds, banks clearly relied on significantly less information on the financial strength, condition, and liquidity of their counterparty than is available for, and perhaps required of, other types of counterparties. Banks relied on the protection provided by the collateralization of the current replacement cost of trading exposures to offset the compromises made in their credit risk management programs. While collateral can help to reduce credit risk, it does so at the expense of increased liquidity, operational and legal risks. Moreover, in disorderly markets, a deterioration in collateral values can result in the collateral value failing to cover current credit exposures, creating credit losses.

Specific weaknesses in counterparty credit risk management and supervisory responses

Credit exposure measurement standards. In measuring and managing derivative exposures with the LTCM Fund and other hedge funds, banks relied primarily on the timely collateralization of the current market value of their exposures. Although the LTCM incident did not expose major difficulties in the operation of collateral management systems, the specific measures used to assess potential credit exposure to the LTCM Fund, and more generally for other collateralized counterparties, require enhancements

Banks generally calculate derivatives and foreign exchange exposure as the sum of current market exposure and potential future exposure ("PFE"). Most banks calculate PFEs using a holding period reflecting the remaining life of the contract and often estimate the peak exposure over the contract's life. At some banking institutions these methodologies have generated such conservative measures that they failed to be a meaningful representation of exposure. In addition, meaningful comparisons between exposures in the loan portfolio and those in the derivatives book become difficult. As a result, credit officers and traders are less likely to use PFEs as a tool to manage credit exposures, and therefore tend to rely heavily on the current market exposure. For example, when banks established credit limits based upon the results of a highly conservative PFE calculation, such "limits" not only overstate risk but they also do not represent the degree of current market exposure a bank would willingly accept. Instead, limits are set at the levels necessary to accommodate the hedge fund's current business volumes, rather than as a constraint imposed as a result of sound credit analysis and judgment.

In addition, life-of-contract measures of PFE vastly overstate the exposure to collateralized counterparties. The use of lifetime PFEs *overstates* the potential exposure when banks mark-to-market their positions daily and have the ability to close-out the counterparty's position, *e.g.*, if the counterparty fails to post sufficient collateral. Notwithstanding the collateralized nature of the credit agreement, a bank still has measurable unsecured credit exposure to its collateralized counterparties arising from the lag between the issuance of a margin call and the posting of margin. A bank's actual credit exposure in a collateralized relationship, in

which the bank can call for additional collateral as the current mark-to-market increases, is the PFE from the time a counterparty fails to meet a collateral call until the time the bank liquidates its collateral and/or hedges its exposure. This period is typically much shorter than the contract's life.

Recent events have illustrated that banks need to define more effective PFEs, particularly for collateralized counterparty relationships. The PFE measure for collateralized counterparties should consider the liquidity of derivatives instruments, the near-term volatility of their potential values, and more realistic time frames in which banks can take risk reducing actions.

In addition, the approach to aggregating PFEs for a given counterparty can influence the conservatism of the exposure measures. Banks can aggregate PFEs for a given counterparty using a transaction approach or a portfolio approach. Under the transaction approach, banks calculate exposure to the counterparty as the simple sum of the potential exposures for each transaction. Since the transaction approach assumes that all transactions will achieve their estimated exposure at the same time, it typically overstates aggregate "portfolio" risk to the counterparty. For example, consider a hedge fund with both long and short interest rate swap positions with a bank. The transaction approach might sum the peak exposures, whenever they occur. As a result, it would add credit exposures for contracts even though they represent offsetting market positions.

Some banks use a "portfolio" approach to measure potential credit exposure. The portfolio approach addresses the overstatement of credit risk generated by the transaction approach by using simulation modeling to calculate exposures across products and transactions through time for the counterparty. The model incorporates both correlations among transaction factors and contractual close-out netting. It therefore provides a lower, yet more accurate, measure of credit risk.

Some institutions already calculate PFEs by assessing the estimated worst case value of positions over a time horizon of one or two weeks and incorporate cross product netting and correlation portfolio effects to construct a comprehensive measure of exposure to a collateralized counterparty. This allows such banks to more realistically define their credit risk exposures, assuming the bank faces no impediments (legal or otherwise) to liquidating collateral.

Moving forward, supervisors should encourage institutions to implement more realistic PFE calculations, using more appropriate measures of exposure within a generally more consistent exposure measurement framework (including loan exposures) and based upon a portfolio (as opposed to a transaction) approach. A single measure of PFE may not be sufficient for managing credit risk, and several measures, including PFEs calculated for different holding periods, may be helpful. Supervisors' experience suggests that conservatism in statistical measures of exposure is better achieved by greater precision than by overestimation. Such enhanced calculations would clearly facilitate and enable more disciplined limit structures and

counterparty exposure management processes, and provide greater integrity to the entire credit process.

Stress testing. Currently, banks' procedures for stress testing their counterparty credit exposures are not as well developed as for market risk exposures. Many banks do not have adequate credit stress testing procedures, typically due to systems problems. Fragmented systems at large internationally active banks make it difficult to aggregate information. Recent events demonstrate that credit exposures change rapidly as market volatility increases. Although a bank may believe that it has a reasonably well-secured exposure, extreme price movements and disorderly markets can quickly lead to an unanticipated exposure. Banks need to stress test their counterparty credit portfolios to identify individual counterparties, or groups of counterparties, with positions that are particularly vulnerable to extreme or one-way directional market movements. Through stress testing, better-managed banks may identify risk issues, such as concentrations in collateral, that jeopardize the bank's collateral protection across its hedge fund client base and therefore warrant further investigation.

It is important to note that even the ostensibly conservative life-of-contract measures of PFE are not genuine stress tests, in that they are not based on assumptions of volatile markets, reductions of transaction volumes and higher than normal liquidation costs arising from disorderly markets. They do not factor in the follow-on effects of a default by a major collateralized counterparty, such as a hedge fund, which would force a bank to liquidate positions and re-balance its market risk portfolio. Potential losses in such events are a function of market liquidity, which can erode rapidly if multiple counterparties experience problems or choose to de-leverage rapidly. Supervisors should encourage institutions to consider such factors in their stress testing exercises. Finally, historical data may insufficiently gauge the potential for true stress events in any given market. Thus, risk managers should identify and develop appropriately severe "what if" scenarios throughout their portfolio. At present, it appears that few institutions conduct such scenario stress testing.

Banks have looked primarily to their daily collateral management systems as a means to manage and control their credit exposures. Updated supervisory guidance in this area may be especially pertinent.

Due diligence process. Banks' due diligence for hedge funds may have been less than adequate due both to a reluctance of funds to share basic information with the banks and an individual bank's interest in conducting business with the fund. The rigor of the due diligence process has much to do with the institution's corporate credit culture, as described earlier

In the interest of conducting transactions, banks may set counterparty credit limits based on customer demand and line usage, as opposed to rigorous assessments of default probabilities and exposures. Banks clearly have relied on significantly less information on the financial strength, condition, and liquidity of their hedge fund counterparties than is available for, and perhaps required of, other types of counterparties. Insufficient information to conduct meaningful

due diligence and assess counterparty default probabilities should result in lower counterparty credit limits, or downward adjustment of existing limits, and requirements for greater collateral. If the information deficit is great enough, banks should decline to enter trading relationships with the counterparty, and some have indeed done so. Banks should have policies in place governing the terms of credit, such as unsecured threshold amounts, haircuts on repurchase agreements, two-way collateral agreements and collateral requirements to cover some or all of the short horizon estimate of PFE, to be offered counterparties based on the information provided and the underlying credit quality and liquidity of the counterparty. While banks tightened credit terms on derivatives and negotiated stronger financial disclosure covenants in their loan agreements as a result of troubled markets last fall, the soundness of credit terms offered to hedge funds remains an area of supervisory concern.

In general, banks seem to have displayed the following shortcomings with regard to conducting appropriate due diligence of hedge funds:

- When assessing the financial condition of the hedge funds, banks did not fully analyze off-balance-sheet information. When banks did, they often assessed derivatives on a net, not gross, basis, and therefore underestimated the sheer size of LTCM's transactions volume. In addition, banks did not have a complete understanding of the risk profile of hedge funds because they seldom could get information incorporating transactions done with other dealers.

- Rapid market changes required hedge funds to change their risk profile significantly, leaving typical financial analysis outdated in a short time period. Banks needed to obtain more risk-focused financial information, such as risk management reports detailing a fund's value at risk and an assessment of exposures in stressed market environments.

- Banks did not understand or assess the adequacy of the liquidity risk management approaches of hedge funds, especially those funds, such as LTCM, which relied heavily on collateral to obtain financing.

- During the LTCM experience, banks found they wanted to make more frequent collateral calls with a shorter time to post collateral, given a rapidly changing environment. However, trading agreements sometimes stood in the way. For example, the standard ISDA master agreement has a two-day lag following mark-to-market of the position.

- Banks frequently use the personal investment of principals in hedge funds as a gauge of financial support, but this indicator proved to be less useful than expected since some fund managers used borrowed funds to make the investment.

- Banks may have relied on the track record of hedge fund managers too heavily, focusing on past performance rather than consideration of future potential and risk. The highly leveraged nature of hedge funds, and their dynamic trading strategies, made frequent assessments of counterparty credit quality more important than for other borrower classes.

- Banks may have placed too much reliance on the strategies articulated by hedge fund managers, and/or assumed that "market neutral" strategies entailed less risk. The nature of bank monitoring did not allow the banks to detect significant changes in strategy early enough. Banks' assessment of the quality of risk management systems may have relied too heavily on the people associated with risk management and not enough on actual understanding of the tools used to control risk. Some hedge fund trading strategies frequently rely heavily on the use of models, and all hedge funds should be able to provide summary measures of market, credit and liquidity risk, which banks need to understand and analyze.

Supervisors should closely monitor banks' efforts to address the weaknesses in due diligence processes discussed above and in recent supervisory guidance, including bank managements' use of on-site visits to assess funds' risk management capabilities.

The due diligence process for analyzing proposed business with hedge funds should not differ fundamentally from other sound business selection procedures. Two areas in particular require additional care. Specifically:

- Banks should not compromise their business selection process as a result of the unwillingness of potential hedge fund counterparties to provide all necessary information. In the credit process for loans, for example, the borrower's unwillingness to provide essential information is generally sufficient to turn down a loan application.

- Banks should make use as needed of covenants or similar provisions to ensure that they can closely monitor credit exposures to hedge funds. Documentation supporting on-balance-sheet exposures to hedge funds already typically contains covenants that require the hedge fund to notify lenders of material changes in its financial condition and, in extreme circumstances, allow the bank to declare an event of default and seek early repayment. Scope almost certainly exists to incorporate covenant-like provisions in the documentation supporting OTC derivatives that would entitle banks to obtain and monitor key features of hedge funds' financial strength, including factors pertaining to leverage. Such provisions would, however, require careful design in order to ensure that the information provided about the hedge fund and the conditionality over the facility is meaningful.

Closeout provisions. In general, most banks use standard ISDA (International Swaps and Derivatives Association) documentation and have closeout rights that allow the banks to closeout contracts if the financial condition of a counterparty becomes significantly impaired. For hedge funds, a standard closeout provision is one based on declines in net asset value ("NAV"). While the standard NAV closeout trigger for most hedge funds is a 20 percent drop in NAV, several large hedge funds, including the LTCM Fund, brought competitive pressures to bear in order to gain 40-50 percent NAV declines as their closeout provision. This obviously reduces the capital cushion available at closeout events.

On the surface, the use of NAV closeout provisions seems eminently reasonable. However, on closer review, it appears that many of these closeout provisions are based on annual returns calculated either at year-end or on a 12 month rolling average basis. Given the potential smoothing of near-term poor performance by performance in prior months, triggers having this structure may be late or misleading signals of problems and the actions triggered may be untimely and ineffective mitigators of risk. For a fund in deteriorating financial condition, a bank may not be able to execute closeout provisions for up to 12 months after the deterioration began. In this regard, institutions should ensure that when they negotiate closeout provisions, they employ prudent triggers that allow timely action in the event of a meaningful deterioration in the financial condition of a counterparty.

Beyond NAV thresholds, banks generally did not have flexible contractual provisions that could become more stringent as the credit quality of the counterparty deteriorates. For example, banks might require the posting of collateral, or increases in collateral haircuts, as the counterparty's risk profile changes.

Ongoing monitoring. Banks may also need to enhance ongoing exposure monitoring. With some large hedge fund counterparties, banks received only rudimentary monthly balance sheets and monthly changes in fund net asset values. The net asset values appear to be the primary monitoring tool used by most banks. Supervisors should encourage institutions to use more robust monitoring tools and require more complete, and current, information from their counterparties. When hedge funds will not provide such information, banks should compensate with more conservative credit structures and/or refuse to provide credit.

Given the LTCM Fund and its ability to amass potential market-moving shares of individual instruments and markets, banking institutions are paying more attention to potential market concentration measures in assessing their exposures to hedge funds. However, banks should consider expanding such measures to include other types of financial institutions. Supervisors should encourage the development of exposure measures that take into account possible market concentration and liquidity impacts to all counterparty credit exposures.

Credit exposure management process. Credit assessments of hedge funds are likely to have relatively short shelf lives — a fact that arises out of the nature of their businesses. Banks can reasonably expect credit assessments of most industrial companies to fairly represent a

company's financial condition for up to one year because of the relative stability of most businesses. The same applies to mainstream financial institutions, which tend to be comparatively transparent, benefit from more diverse funding and revenue sources, and are subject to various forms of external supervision. Credit assessments of hedge funds, however, can become outdated very quickly given the dynamic nature of their business and, because of their leverage, their vulnerability to changing market conditions. A more volatile risk profile, combined with the absence of external monitoring (*e.g.*, by credit rating agencies), demands that banks update their internal assessments of hedge fund credit quality more frequently.

Bank supervisors may wish to review existing guidance with regard to the internal ratings of derivative counterparties, the setting of counterparty credit limits, and the overall exposure monitoring and limit exception process. The lack of granularity that supervisors have identified based on a study of internal loan ratings systems for commercial loans may easily carry-over into the rating of derivative counterparties.[8] In general, it appears that many institutions group counterparty ratings into only one or two rating categories, thus allowing for relatively little differentiation with respect to credit quality. The lack of risk rating granularity may make it more difficult for banks to incorporate more conservative covenants into credit agreements that reflect potentially meaningful distinctions in hedge fund credit quality.

Liquidity Risk of Counterparties. All banks place significant emphasis on collateral in managing their derivative exposures with hedge funds. The ability of hedge funds to meet margin calls as necessary is therefore an important consideration for banks in the credit process. For most large hedge funds, two-way collateral arrangements appear standard. Most of these two-way arrangements also provide for rehypothecation of collateral, *i.e.*, they allow the party holding the collateral to re-pledge it. Counterparties find these provisions useful in the day-to-day management of their liquidity risk.

The importance of collateral to hedge funds and other leveraged counterparties in maintaining market access represents a substantial liquidity risk which must be measured, monitored and carefully managed by the counterparty. Careful management includes development of an adequate liquidity contingency plan, all the more so when day-to-day liquidity is managed aggressively, with few liquidity buffers. In addition, the liquidity risk of a hedge fund interacts with and is magnified by leverage, most clearly in distressed market circumstances.

The need to identify and control the risk that a counterparty's liquidity vulnerabilities exacerbate its credit risk points to the importance of assessing liquidity risk management as part of the general due diligence and credit assessment of leveraged counterparties such as hedge funds. Bank managements generally need to strengthen attention to this aspect of their counterparties' risk profiles. In addition, the level of the counterparty's liquidity risk and the

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[8] William F. Treacy and Mark S. Carey, "Credit Risk Rating at Large U.S. Banks." *Federal Reserve Bulletin* (November 1998).

effectiveness of liquidity risk management should be important factors in deciding on the appropriate credit terms for counterparties, including the terms of collateral arrangements.

Conclusion

The LTCM Fund was, to a large extent, an exception with regard to both the amount of leverage employed and the lack of information it provided to creditor banks. At the same time, LTCM seems the extreme case that illustrates the inherent weaknesses of some prevailing credit practices. Importantly, the lessons learned regarding the measurement, monitoring, and management of counterparty credit risks arising from this incident are generally applicable to the management of all derivatives transactions. Overall, the factors underlying the LTCM incident in particular, and the current state of banks' relationships with hedge funds in general, bear some resemblance to past commercial bank excesses such as the real estate phenomenon of the late 1980s and early 1990s. The confluence of competitive pressures, pursuit of earnings, and personal and professional relationships may have led some institutions to suspend or ignore fundamental risk management principles regarding counterparty due diligence, exposure monitoring, and the management of credit risk limits. Some large institutions need to enhance their counterparty credit risk exposure measurement and management regimes. Supervisors must remain alert to the conditions which can lead institutions to suspend prudent risk management practices, and tailor their supervisory efforts to require institutions to correct risk management weaknesses so as to reduce the likelihood that such weaknesses will pose a systemic threat.

APPENDIX E

BANKRUPTCY ISSUES

1. Background

The immediate termination and subsequent liquidation of the OTC derivatives, futures, and repurchase transactions of the foreign hedge fund Long-Term Capital Portfolio, L.P. (the "LTCM Fund" or "Fund"), which was managed by Long-Term Capital Management, L.P. "LTCM") through its Connecticut offices, would have probably generated significant movements in market prices and rates with resulting increased losses for the LTCM Fund's counterparties and, potentially, for other market participants as well. The adoption of the consortium approach by a number of the LTCM Fund's counterparties likely prevented this scenario from occurring.

U.S., U.K., and Cayman Islands law provide extensive statutory protection for close-out netting in insolvency. The U.S. Bankruptcy Code and other relevant insolvency statutes generally permit parties to certain defined financial contracts to enforce contractual provisions permitting the termination of those contracts and the netting of the amounts due upon the insolvency of their counterparty. As a result, the LTCM Fund's counterparties could reduce their individual credit and market risk by immediately closing out their positions with the Fund.[1]

In cases of insolvency, the availability of close-out netting enhances market stability by limiting losses to solvent counterparties, by reducing precipitous terminations of contracts, and by preserving liquidity for the solvent counterparties. This ability to terminate financial contracts upon a counterparty's insolvency thus preserves liquidity and permits the solvent party to replace the terminated contract without incurring additional market risk. Netting reduces the counterparty risk to financial institutions and thus reduces the "systemic" risks that the failure of one financial institution will cause a "domino" effect on other institutions and disrupt the financial markets. Bank supervisors have recognized the importance of close-out netting in reducing systemic risk to the financial system and have incorporated that recognition into advantageous capital treatment in U.S. and international bank capital regulations. The Basle Capital Accord similarly recognizes those benefits.

However, the LTCM Fund's significant positions in certain markets and the condition of those markets created the potential for a much greater impact on the markets in the event of immediate termination and subsequent liquidation of the LTCM Fund's financial contracts. As a consequence of the large, and in some cases extremely large, positions held by the LTCM Fund in certain markets, the simultaneous liquidation of those positions by its counterparties before and after a declaration of bankruptcy potentially could have created disruptions and heightened volatility in the financial markets. The reason is that all of the LTCM Fund's counterparties would have been trying to promptly liquidate their collateral while simultaneously attempting to close out their positions and reestablish their hedges relating to any defaulted contracts.

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[1] As discussed in greater detail below, however, it is possible that the liquidation of U.S. collateral pledged by the LTCM Fund to its counterparties could have been affected by Section 304 of the U.S. Bankruptcy Code.

2. The U.S. Legal Framework's Treatment of Derivative Contracts in Insolvencies

Under U.S. law, different statutes govern the insolvencies of different types of financial market participants. The Bankruptcy Code governs insolvency proceedings for most corporations, partnerships and limited liability companies, while the Securities Investor Protection Act of 1971 (in conjunction with the Bankruptcy Code) governs insolvency proceedings involving stockbrokers who are members of the Securities Investor Protection Corporation. Insolvencies of insured banks and thrifts are governed by the bank receivership provisions of the Federal Deposit Insurance Act ("FDIA"), the National Bank Act, and, for state-chartered institutions, state law. The Federal Credit Union Act includes provisions, similar to those in the FDIA, covering the insolvency treatment of financial contracts by federally-insured credit unions. In 1991, Congress enacted the Federal Deposit Insurance Corporation Improvement Act of 1991 ("FDICIA"), which included provisions governing the treatment of netting contracts between financial institutions.

Congress has taken steps to enhance the availability of netting for derivatives and to minimize the risk of systemic events. For example, both the Bankruptcy Code and the FDIA contain provisions that protect the rights of financial participants to terminate certain types of financial contracts following the bankruptcy or insolvency of a counterparty to such contracts or agreements. Furthermore, other provisions prevent transfers made under such circumstances from being avoided as preferences or fraudulent conveyances (except when made with actual intent to defraud). Protections also are afforded under U.S. law to ensure that the netting, set off and collateral foreclosure provisions of such transactions and master agreements for such transactions are enforceable. Finally, FDICIA protects the enforceability of close-out netting provisions in "netting contracts" between "financial institutions."[2] FDICIA states that the goal of enforcing netting arrangements is to reduce systemic risk within the banking system and financial markets.

However, in the case of the LTCM Fund, U.S. bankruptcy law may not have governed its winding up since any bankruptcy proceeding would have, to a certain extent, occurred in the Cayman Islands.[3] Although LTCM was a Delaware limited partnership, the LTCM Fund itself was a Cayman limited partnership. It is very likely, therefore, that the LTCM Fund would have sought bankruptcy protection in the Cayman Islands. If so, it is quite possible that any U.S.

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[2] These terms are broadly defined. A "financial institution" includes broker-dealers, depository institutions, future commissions merchants, and other entities recognized by Federal Reserve regulation. On March 7, 1994, the Federal Reserve expanded the definition of "financial institution" to include many significant participants in the financial markets. See Regulation EE, 12 CFR Part 231.

[3] As the sole general partner of the Fund, another Cayman Islands limited partnership, Long-Term Capital Portfolio (GP), L.P. ("GP1"), would have been legally obligated to the extent the LTCM Fund's liabilities exceeded its assets. A Cayman limited liability company, Long-Term Capital Portfolio (GP), Ltd. ("GP2"), would also have been indirectly liable for all of the LTCM Fund's obligations because it was liable for the obligations of GP1 as the sole general partner of GP1. As a result, any Cayman Islands insolvency proceeding would have been likely to also involve these two other entities. (We note that GP2 is controlled by Long-Term Capital Management, L.P.)

bankruptcy proceeding could have been merely ancillary in nature.[4] In addition, since the LTCM Fund entered into over-the-counter transactions in financial markets throughout the world, its financial assets were held in a variety of countries and any insolvency proceedings involving the Fund would have been affected by how the law of those countries treated contractual rights to closeout and net financial contracts and liquidate related collateral as well as the extent to which the laws of those countries would defer to foreign insolvency proceedings with respect to assets held in those countries. At a minimum, substantial legal uncertainty remained for counterparties and other creditors of the Fund because bankruptcy proceedings may very well have been initiated both in the U.S. and abroad and involved resolution of complicated and novel international bankruptcy issues.

In short, it is impossible to determine with complete precision how the LTCM Fund's various contracts would have been treated if an insolvency had occurred. Nevertheless, most financial market participants structure their relationships with their counterparties to provide for closeout, netting, and collateral liquidation through contractual provisions, including choice of law provisions. Moreover, in the event of an actual insolvency, because of the economic incentives, many counterparties may simply act and litigate the legitimacy of that action later. Accordingly, for the sake of simplicity, this discussion assumes that the U.S. Bankruptcy Code would be the applicable law while also briefly addressing the implications if the Fund's U.S. bankruptcy proceeding was ancillary in nature.

The treatment of financial contracts under the Bankruptcy Code

The Bankruptcy Code gives creditors a broad right to file a involuntary bankruptcy petition against debtors regardless of where the debtor is incorporated so long as such action is brought where the debtor's assets or principal place of business are located. As a result, with respect to foreign limited partnerships such as the LTCM Fund and its Cayman affiliates, an involuntary petition could have been initially filed under the Bankruptcy Code by creditors of the Fund and its affiliated entities.

When a bankruptcy petition is filed, an automatic stay is imposed which generally prohibits any action to collect debts owed by the bankrupt party, including netting or termination of outstanding contracts.[5] This stay does not eliminate the contractual right to net, but it does bar the immediate exercise of those rights During this stay, netting can be exercised only if the contract qualifies under one of the five defined types of financial contracts protected under the

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[4] While it is also quite possible that the Fund's U.S. creditors would have filed an involuntary bankruptcy petition against the Fund in the U.S. and a U.S. bankruptcy court would have been able to exert jurisdiction over the Fund, whether the U.S. court would have stayed its hand in deference to a Cayman Islands bankruptcy proceeding is unclear.

[5] Section 365(e)(1) prohibits the termination of most contracts by mere virtue of bankruptcy, financial condition or the like. Such termination provisions are commonly referred to as "ipso facto" clauses.

Bankruptcy Code or if the counterparty obtains bankruptcy court approval pursuant to Section 362(d). The Bankruptcy Code also grants to the trustee expansive powers to avoid pre-bankruptcy transfers — for example, payments or other property — and require the return of the transferred property to the bankruptcy estate. Although the Bankruptcy Code generally permits the set-off or netting of pre-petition mutual debts, it bars set-off during the 90 day period preceding bankruptcy if the creditor received more through the set-off than the pro rata share of the bankruptcy estate it would otherwise have received.[6] The bankruptcy trustee also has broad powers to avoid fraudulent transfers, which include those made for less than reasonably equivalent value while the bankrupt entity was insolvent or in otherwise severe financial difficulties as described in the Bankruptcy Code.[7] These provisions are designed to support the bankruptcy principle that all creditors are to be treated equally.

In order to reduce systemic risks, however, Congress has provided statutory exceptions from many of these restrictions for repurchase agreements, securities contracts, commodity contracts, swap agreements, and forward contracts. The Bankruptcy Code's provisions thus protect eligible entities from losses that could result from market fluctuations if the eligible entities were unable to terminate and net these derivatives during the bankruptcy proceeding. The bank insolvency laws, which are primarily found in the FDI Act, also provide similar "safe harbors" to protect the liquidity of these five types of financial contracts despite the insolvency of a bank or thrift counterparty.

Under the Bankruptcy Code, there are four principal benefits available to a party to one of the defined derivatives contracts. First, the party can terminate the contract despite the Bankruptcy Code's automatic stay.[8] Second, the contracting party can net the contract despite the automatic stay. Third, pre-bankruptcy set-offs by the contracting party or payments by the bankrupt entity cannot be avoided by the trustee unless the transfers were made with actual intent to hinder, delay or defraud the creditors of the bankrupt entity.[9] Fourth, the trustee cannot recover transfers that were made by the bankrupt entity even if the transfer was intentionally fraudulent so long as the contracting party received the transfers in good faith.[10] A major caveat

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[6] See 11 USC § 553.

[7] 11 USC § 548(a).

[8] See 11 USC §§ 555, 556, 559, 560. One caveat, however, is that stockbrokers that are members of the Securities Investors Protection Corporation ("SIPC") are liquidated under the Securities Investors Protection Act. In those proceedings, the general provisions of the Bankruptcy Code continue to apply. See In re Government Securities Corp. v. Camp, 972 F.2d 328 (11th Cir. 1992), cert. denied, 113 S.Ct. 1366 (1993). As a consequence, Bankruptcy Code sections 555 and 559 specify that the right to terminate and net a securities contract and repurchase agreement, respectively, does not control over a contrary order by SIPA.

[9] See 11 USC §§ 362(b)(6), 362(b)(7), and 362(b)(17).

[10] See 11 USC §§ 546(c), 546(f), and 546(g).

is that these rights are available for these contracts only if the *party* meets specific criteria, commonly referred to as the "counterparty limitations."

Critical to the availability of these special rights is whether a particular contract fits within the Bankruptcy Code definitions of repurchase agreements, securities contracts, commodity contracts, swap agreements or forward contracts. The Bankruptcy Code carefully identifies the sorts of financial contracts entitled to its special protections in one of two ways. First, the Bankruptcy Code's definitions may include terms to narrow an otherwise broad descriptive definition. For example, the definition of repurchase agreement includes broad language, but limits the term of any protected agreement to one year or less.[11] The definition of swap agreement is somewhat different. It consists simply of a listing of common types of swaps and the legislative history of this definition indicates that the definition is expected to evolve over time as the market evolves. Second, as noted above, the special rights for these contracts are limited to particular counterparties. While the terms "repo participant" and "swap participant" include virtually any counterparty to a repurchase agreement or swap agreement, the counterparties entitled to the benefit of immediate close-out netting for securities contracts, commodity contracts, and forward contracts are far more limited.[12] As a result, the Bankruptcy Code provides important rights to counterparties to repurchase agreements, securities contracts, commodity contracts, swap agreements, and forward contracts. Those rights, however, are limited by the definitions of the covered agreements and by the restrictions on the counterparties who can avail themselves of those rights.

3. Practical Application of the Bankruptcy Code to a Hedge Fund Failure

While the Bankruptcy Code, the FDI Act and FDICIA offer strong statutory support for the netting of derivatives, the insolvency of a large foreign hedge fund involved in international markets would still have required resolution of some unique legal issues. A description of the likely sequence of events should such a failure occur illustrates these concerns.

To begin with, any bankruptcy of a hedge fund or other market participant likely will be preceded by a period of increasing losses and deteriorating financial condition. During this period, the counterparties to financial contracts will, as they did with the LTCM Fund, seek to closely monitor the financial condition of the fund, enforce stricter credit limits, and carefully enforce mark-to-market valuations and collateral pledges. If the financial condition of a hedge fund continued to deteriorate, counterparties might seek to employ contractual rights to terminate the contracts and set-off their obligations. This pre-bankruptcy set-off of obligations by counterparties entitled to set-off rights under the Bankruptcy Code could not be challenged by a U.S. bankruptcy trustee in a subsequent bankruptcy so long as the contracts qualified as

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[11] See 11 USC § 101(47).

[12] Netting still may be available for these contracts, however, if the *debtor* qualified as one of the defined parties. See 11 USC §§ 555, 556.

repurchase agreements, securities contracts, commodity contracts, swap agreements, and forward contracts.[13]

Normally, in a U.S. bankruptcy proceeding involving a U.S. entity, to the extent that financial contracts can be terminated and netted, the debtor's counterparties will liquidate collateral pledged by the hedge fund in order to recover on the claims against those contracts. If there is inadequate collateral or no collateral to cover the counterparty's claim against the insolvent fund, then the counterparty must file an unsecured claim against the bankruptcy estate and, ultimately, receive a pro rata distribution. This sequence of events normally allows the direct counterparties of the debtor to limit their losses thereby reducing the likelihood that the defaults by a fund will create any "domino" effect upon the financial markets. The "special rights" under the Bankruptcy Code allow financial market participants to avoid the delays inherent in the bankruptcy process and reduce the losses that otherwise could result from any degradation of collateral pledged by their insolvent counterparty. Consequently, the right to terminate and net certain financial contracts despite a bankruptcy helps prevent the destabilization of additional financial market participants by facilitating the liquidity necessary to settle other obligations and by reducing the likelihood of a series of defaults that could undermine the overall operation of the financial markets. In the unusual situation, however, where a hedge fund has substantial positions in a particularly illiquid security or type of security, conditions in such markets could be adversely affected if many of the fund's counterparties simultaneously sought to terminate and net their exposures. These disruptions would result from creditors' attempts to realize upon their illiquid collateral, from the resulting impact on market prices and from market participants' subsequent reevaluation of their remaining exposures.

In the case of the LTCM Fund, the liquidation of foreign securities underlying certain of the Fund's repo and securities lending transactions could have been substantially disruptive. In addition, market disruption could have been caused by LTCM's counterparties' rush to replace derivatives positions they had terminated with LTCM.

The financial imperative to reduce market risk and potential future exposure will compel the insolvent fund's counterparties to terminate immediately their financial contracts and net their resulting exposures. Unfortunately, the Bankruptcy Code has no mechanism for consideration of the potential system-wide impact of an insolvency by the bankruptcy court, the trustee, or a third party. In the absence of any process for determining that the normal Bankruptcy Code obligations should give way in the interest of the broader economy, action to prevent or moderate the impact of a default must take place *before* insolvency. Once a non-bank is placed into bankruptcy, the interests of its creditors, not the markets or the economy, prevail under the Bankruptcy Code.

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[13] See 11 USC §§ 553(b)(1) (referencing the contracts listed in 362(b)(6), 362(b)(7), and 362(b)(17)). Although Section 553(b)(1) continues to cite Section 362(b)(14), the appropriate reference should be to Section 362(b)(17), which was renumbered after enactment of Section 553(b)(1).

Indeed, the opportunity for consideration of other issues in bankruptcy proceedings is limited because the goals of the Bankruptcy Code focus on the reorganization of the insolvent entity and the payment of creditors. The Bankruptcy Code generally does not authorize third parties, such as government agencies that are not creditors of the bankrupt entity, to participate in the bankruptcy proceedings. Sections 1109(a) and 901 do permit the Securities and Exchange Commission to appear and be heard in Chapter 11 reorganization and Chapter 9 municipal bankruptcy cases. Section 762 likewise permits the Commodity Futures Trading Commission to appear and be heard in commodity broker liquidation proceedings. These provisions, however, do not provide these agencies with any decision-making power.

International issues

The resolution of a large market participant's international trading activities would create additional difficult practical and legal issues. Most international financial contracts incorporate netting rights. These contract provisions are frequently based on standard documentation prepared by the International Swaps and Derivatives Association ("ISDA"). While the laws of many nations recognize the enforceability of netting, the insolvency treatment of such contractual provisions is not assured.[14] ISDA documentation offers choice of law provisions focused on New York law and English law. The enforceability of close-out netting in insolvency proceedings is clear in both jurisdictions. Likewise, the close-out and netting provisions of a standard ISDA master netting agreement would most likely have been enforceable against the Fund under Cayman Islands law. Therefore, assuming a U S creditor and the Fund had duly entered into one of these agreements, the U.S. or Cayman Islands court handling the LTCM Fund's bankruptcy petition would most likely have recognized the U.S. creditor's right to exercise its contractual right to terminate any underlying swap transactions and then calculate a net amount owed by the Fund. Consequently, counterparties of a large, internationally active hedge fund could be expected to assert their rights to terminate and net their exposures for transactions documented under standard ISDA documentation.

Issues raised by Section 304 of the Bankruptcy Code

The Code's Treatment of Financial Contracts in a Section 304 Proceeding. In the specific case of the LTCM Fund, additional legal uncertainly existed because the Fund was a foreign limited partnership and was thus likely to have been wound up pursuant to a foreign bankruptcy regime. Unfortunately, in the event of a ancillary U.S. bankruptcy proceeding involving the LTCM Fund, some legal uncertainty existed regarding whether the right

[14] See Bank for International Settlements, "OTC Derivatives: Settlement Procedures and Counterparty Risk Management" at 14 (Sept. 1998).

counterparties to financial contracts have under the Bankruptcy Code to promptly liquidate collateral might have been undermined.[15]

While Section 304 of the Bankruptcy Code gives creditors broad rights to seek recourse in U.S. courts against any debtor with assets located in this country, the Bankruptcy Code authorizes the immediate suspension of a proceeding involving a foreign entity if the court finds that such an action is consistent with six factors, including: (i) that U.S. claimants would not be prejudiced by such a stay and (ii) distribution of the proceeds of the debtor's estate would occur through the foreign proceeding substantially in accordance with that of the Bankruptcy Code [16] Section 304 of the Bankruptcy Code authorizes the duly selected trustee or other representative of an estate in a foreign insolvency proceeding ("Foreign Representative") to commence an ancillary proceeding[17] ("Section 304 Proceeding") protecting the assets of the foreign debtor's estate located in the U.S.[18] Once a Section 304 Proceeding has been initiated, U.S. bankruptcy courts have broad discretion in determining the type of relief to be granted a Foreign Representative. U.S. bankruptcy courts can enjoin any action against the foreign debtor with respect to its U.S. property and compel the turning over of property of the foreign debtor's estate (or the proceeds thereof) to such Foreign Representative.[19]

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[15] However, as explained below, legislation drafted by the President's Working Group and introduced in the 105th Congress would have amended Section 304 of the Bankruptcy Code to clarify that the provisions of the Bankruptcy Code relating to financial contracts and master netting agreements apply in a Section 304 Proceeding. See S. 1914, § 210 (105th Cong., 2nd Sess. April 2, 1998) ("Grassley Bill"); H.R. 4393 (105th Cong., 2nd Sess. Oct. 4, 1998) ("Leach Bill"). This legislation was reintroduced in the 106th Congress. See H.R. 1161 (106th Cong., 1st Sess. Mar. 17, 1999).

[16] See In re Gee, 53 B.R. 891 (Bkrtcy. N.Y. 1985) (holding that a foreign bankruptcy trustee of a Cayman Islands company was entitled to relief under Section 304 of the Bankruptcy Code).

[17] Section 304 is designed to afford bankrupt foreign debtors the opportunity to "prevent the piecemeal distribution of [their] assets [located] in this country..." by local creditors. Victrix Steamship Co. S.A. v. Salen Dry Cargo A.B., F2d 709, 713-14 (2d Cir. 1987). A Section 304 Proceeding is not a full-scale bankruptcy case. It does not offer the foreign representative either the protections of an automatic stay or the right to invoke the Bankruptcy Code's avoidance powers. In re Koreag, 103 B.R. 705, 709 (S.D.N.Y. 1991).

[18] In order to invoke a U.S. bankruptcy court's jurisdiction under Section 304, a Foreign Representative merely has to allege that: (i) a foreign proceeding was commenced against the debtor; (ii) the petitioner is a Foreign Representative and thus entitled to file the action under Section 304; and (iii) "the debtor had certain assets within the judicial district where the petition was filed." In re Koreag, 130 B.R. at 711 (quoting In re Trakman, 33 B.R. at 783).

[19] 11 USC §304(b). In a Section 304 Proceeding, temporary injunctive relief is within the discretion of the bankruptcy court and is available to Foreign Representatives on an ex parte basis for a short period of time (*e.g.*, one to three days). Of course, losses by U.S. creditors of the LTCM Fund would arguably have been substantially exacerbated if these creditors had to wait even two or three days to liquidate their collateral following a bankruptcy filing by the Fund in the Cayman Islands.

Implications of a potential bankruptcy filing by LTCM in the Cayman Islands. With respect to the LTCM Fund, it was quite possible that the Fund would have initially filed for bankruptcy protection in the Cayman Islands. In fact, with respect to the recent failure of the High Risk Opportunities Hub Fund ("HRO"), a $450 million Cayman Islands hedge fund that had substantial U.S. creditors, no U.S. bankruptcy proceeding occurred despite the fact that the debtor's principal place of business was Florida. In that case, HRO filed for liquidation in the Cayman Islands in early September soon after its creditors had sought recourse against the fund in the Cayman Islands court system.[20]

Operation of Section 304 of the Bankruptcy Code. U.S. bankruptcy courts have historically been quite willing to defer to a foreign insolvency proceeding involving a foreign debtor absent a substantial showing by U.S. creditors that they will face discriminatory treatment in the foreign proceeding.[21] In fact, Cayman trustees have previously had success obtaining stays against U.S. creditors through the filing of a Section 304 petition.[22]

It therefore seems possible that any Section 304 petition filed by the Cayman trustee of the LTCM Fund shortly after it filed for bankruptcy may very well have succeeded in forcing certain U.S. secured creditors to seek the permission of a foreign bankruptcy court in order to liquidate their collateral.[23] At a minimum, it may have delayed U.S. creditors from liquidating any U.S.

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[20] Financial Times, p. 34, Sept. 3, 1998. On September 8, 1998, HRO's investment advisor, fII Offshore Advisors of West Palm Beach, Florida also filed for bankruptcy protection in the Cayman Islands Wall. St. J. C22, Column 3, Sept. 8, 1998.

[21] Thus in holding that creditors of a Swedish debtor "may be required to assert their claims against a foreign bankrupt before a duly convened foreign tribunal," the Second Circuit Court of Appeals sought to stress in Cunard Steamship that "American courts have consistently recognized the interest of foreign courts in liquidating . . . the affairs of their own domestic business entities." Cunard Steamship Company Limited v. Salen Reefer Services AB, 773 F.2d 452, 458-59 (2d Cir. September 19, 1985).

[22] See In re Gee, 53 B.R. 891 (Bkrtcy. N.Y. 1985). In 1985, the U.S. Bankruptcy Court for the Southern District of New York granted a request by a Cayman Islands liquidator for a stay pursuant to Section 304. In ruling for the Cayman representative, the court evaluated many of the factors specified in Section 304(c) before finding in favor of the petitioner on the grounds that Cayman bankruptcy law was not repugnant to U.S. laws and policies. In its decision, the U.S. Bankruptcy Court for the Southern District of New York found that the Cayman Islands Companies Law is quite similar to both the British Companies Act and the Bankruptcy Code, and the court was swayed by the fact that Cayman bankruptcy law did not appear to prejudice U.S. claimants or create unjust treatment of the estate's creditors.

[23] Petitions filed under Section 304 are frequently accompanied by a request for an immediate temporary restraining order ("TRO") which remains in force until a hearing on the request for an injunction can be scheduled. At the subsequent hearing, the bankruptcy court will determine whether a more permanent injunction will be granted to the Foreign Representative.

Treasury securities pledged by the Fund under a master netting agreement.[24] The reason is that it is unclear under the Bankruptcy Code whether a stay issued in a Section 304 proceeding can temporarily prohibit the liquidation of collateral pledged to secure obligations under certain financial contracts. Although Section 362 of the Bankruptcy Code includes a broad exception to its automatic stay that expressly allows for the exercise of setoff and liquidation rights by repo and swap participants, Section 362 and its protections are not applicable in an ancillary proceeding. Therefore, it is currently not altogether clear whether a temporary restraining order ("TRO") or other stay issued in a Section 304 proceeding can prevent the exercise of these same creditor rights. Assuming a U.S. bankruptcy court granted a Foreign Representative the requested suspension order pursuant to Section 304, one of the immediate consequences would have been that U.S. creditors might have been barred from liquidating their U.S. collateral. However, the amendments to the Bankruptcy Code proposed by the Working Group on March 16, 1998, would also have helped to clarify that U.S. creditors could indeed immediately liquidate any collateral pledged to them pursuant to a master netting agreement regardless of whether a Section 304 order was issued by a U.S. bankruptcy court.

While the Bankruptcy Code does not currently address the extraterritorial reach of U.S. insolvency proceedings, H.R. 833 would clarify the circumstances under which U.S. Bankruptcy Court should coordinate with foreign proceedings. Currently, there are few international agreements governing how a foreign court or government will respond to a U.S. insolvency proceeding. Some provisions of the U.S. Bankruptcy Code do have potential extraterritorial effect. Section 541, for example, defines the property of the bankruptcy estate subject to the Bankruptcy Code as including property "wherever located and by whomever held." Similarly, 28 USC § 1334(d) grants a U.S. district court in which a case under the Bankruptcy Code is pending "exclusive jurisdiction" over the estate "wherever located." Based on these provisions, federal courts have held that the Bankruptcy Code applies to actions affecting property abroad.[25] This potentially broad international application of the Bankruptcy Code is limited by constitutional and practical considerations. Under U.S. law, jurisdiction over an individual exists only if the individual has some "presence" in the United States sufficient to confer personal jurisdiction. If there is no U.S. jurisdiction, then an entity or individual controlling assets of the insolvent hedge fund, either as collateral or by a claim against the hedge fund, is not subject to the U.S. Bankruptcy Code.[26] Resolution of the potential conflicts in the liquidation of the assets of the

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[24] With respect to HRO, it is our understanding that a U.S. ancillary proceeding under Section 304 of the Bankruptcy Code has not been initiated by HRO's Cayman trustee because creditors voluntarily agreed to the marshaling of the fund's remaining assets in the Cayman Islands.

[25] See e.g., In re Deak & Co., 63 B.R. 422, 425-28 (Bankr. S.D.N.Y. 1986) (finding that the U.S. court could assert jurisdiction over stock held outside the U.S. under 28 USC § 1334(d) and 11 USC § 541); but see Arabian American Oil Co., 499 U.S. 244 (1991) (federal statute will not be applied extraterritorially unless the statutory language reflects the "affirmative intention of the Congress clearly expressed to do so").

[26] See Fotochrome, Inc. v. Copal Co., 517 F.2d 512, 516 (2d Cir. 1975) (noting that the "automatic stay" under the Bankruptcy Code cannot be effective without "in personam jurisdiction over the creditor"); see also

hedge fund between U.S. bankruptcy proceedings and foreign proceedings on those assets would be dependent on cooperation between the U.S. bankruptcy court and foreign authorities. While cross-border insolvencies have been characterized by growing cooperation, reliance on case-by-case judicial approach can create unpredictability – particularly in emergency situations.[27]

Other nations also have begun to adopt laws, like Bankruptcy Code Section 304, designed to facilitate cooperation in international bankruptcy proceedings. The United Kingdom has adopted a law providing for close cooperation by its courts with countries designated by the government as cooperative in insolvency matters. Australia and the European Union also have adopted new laws to facilitate cooperation in international insolvencies. During May 1997, the United Nations Commission on International Trade Law ("UNCITRAL") approved a model act incorporating provisions recognizing a "main" insolvency proceeding to govern the resolution of the international affairs of a debtor and "non-main" proceedings in the courts of other nations to facilitate the marshaling of assets. These provisions, which were incorporated as Title IX of H.R. 833, would have helped clarify the applicability of the Bankruptcy Code especially in a situation — such as one involving the LTCM Fund — where the debtor was organized abroad but whose "center of main interests" was domestic and whose assets and principal creditors were in large part located in the U.S.

Bankr. Rule 7004(e) (service of process in a foreign country is permitted only if jurisdiction over the property or person exists). The cases cited in the prior footnote all involved creditors or defendants with a U.S. presence sufficient to provide personal jurisdiction in the cases.

[27] See Harold S. Burman, "Harmonization of International Bankruptcy Law: A United States Perspective", 64 Fordham L. Rev. 2543 (1996); see also In re McLean Industries, Inc., 74 B.R. 589, 591-601 (Bankr. S.D.N.Y. 1987) (discussing complications arising from efforts to resolve claims to assets held in foreign jurisdictions); Felixtowe Dock & Rv. Co. v. U.S. Lines, Inc., 2 Lloyd's Rep. 76, 95 (1987) (English court's injunction barred removal from the United Kingdom of assets of a U.S. company in bankruptcy proceedings in New York that were claimed by U.K. company).

APPENDIX F

VOLUNTARY INDUSTRY INITIATIVES

1. The Derivatives Policy Group Initiative

The Derivatives Policy Group ("DPG") was formed by six major Wall Street firms in August 1994, to respond to the public policy issues raised by the OTC derivatives activities[1] of unregulated affiliates of SEC-registered broker-dealers and CFTC-registered futures commission merchants ("FCM"). The DPG is a voluntary framework designed to provide the SEC and the CFTC with information and analyses that would permit them to more systematically and rigorously evaluate the risks associated with OTC derivative products.

The voluntary framework applies to affiliates of registered broker-dealers and FCMs that: (1) are not subject to supervisory oversight with regard to capital; (2) primarily serve as OTC derivatives dealers; and (3) conduct OTC derivatives activities that are likely to have a material impact on their registered broker-dealer affiliates or FCMs. The voluntary oversight framework for members consists of four interrelated components: management controls, enhanced reporting, evaluation of risk in relation to capital, and counterparty relationships.

Management controls

The DPG identified two elements critical to effective management controls: (1) the integrity of the process for measuring, monitoring, and managing risk; and (2) guidelines that clearly establish accountability, at the appropriate levels of the firm, for defining the permitted scope of activities and the acceptable level of risk.

To maintain effective management controls, each OTC derivatives affiliate's board or governing body adopted written guidelines addressing:

- the scope of permitted OTC derivatives activity;
- acceptable levels of credit and market risk; and
- the structure and appropriate independence of the risk monitoring and risk management processes and related organizational checks and balances.

Under the DPG, senior management of participating firms permit business units to assume risks within approved guidelines and establish independent measuring and monitoring processes to manage risk within those guidelines. The firms must also have an independent external means of verification to confirm that adopted policies and procedures have been implemented.

Enhanced reporting

As part of their enhanced reporting obligations under the DPG framework, affiliates are required to submit periodic reports to the SEC and the CFTC covering credit risk exposures

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[1] For purposes of the DPG framework, OTC derivative products are defined to include interest rate, currency, equity, and commodity swaps; OTC options (including caps, floors, and collars); and currency forwards.

arising from their OTC derivatives activities. The reported information focuses on credit concentration and portfolio credit quality. Credit concentration is reported by separately identifying the top 20 net exposures on a counterparty-by-counterparty basis; this requirement allows regulators to assess the credit risk an affiliate has vis-à-vis a particular counterparty. The credit quality of the portfolio is reported by aggregating, by counterparty, gross and net replacement value and net exposure, organized by credit rating category, industry, and geographic location. Affiliates are also required to report net revenue data for various derivative product lines or business units.

In addition to the periodic reporting of credit risk exposure information, affiliates are required to submit financial statements prepared on a consolidated and consolidating basis. Affiliates provide this information quarterly and include balance sheets and income statements.

Evaluation of risk in relation to capital

As part of their risk evaluation activities, affiliates must develop methods to estimate market and credit risk exposures arising from their OTC derivatives activities and evaluate those risks in relation to capital. Under the preferred methodology for estimating risk in relation to capital, affiliates use quantitative models to calculate changes in portfolio values.

To ensure that the various proprietary models used by affiliates are rigorous, the DPG developed minimum standards and audit and verification criteria that all models must satisfy before they may be used to estimate capital at risk. Standardizing risk evaluation also required a common approach to estimating potential exposure or risk of loss associated with a given portfolio of derivative products. The DPG adopted as a reasonable estimate of capital at risk the maximum loss expected to be incurred by a given portfolio of OTC derivative products once in every 100 bi-weekly intervals (*i.e.*, a probability of one percent over a two-week period). In doing so, however, the DPG also acknowledged the limitations in using this approach as a predictive tool.[2]

With respect to credit risk, firms calculate the capital at risk as equal to the net replacement cost by counterparty multiplied by the applicable default ratio published by the rating agencies.[3] For each counterparty, the affiliate estimates the potential risk of loss or capital at risk

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[2] The DPG noted the following limitations of its capital at risk estimate model: (1) the past is an imperfect guide to the future; (2) the potential for loss beyond the estimated risk of loss remains, and the low probability events prompt the greatest concern because they are more likely to have systemic implications; and (3) capital levels that merely match estimates of capital at risk would be expected to be exhausted within the given test period.

[3] Default ratios are historically based and take into account the average maturity of relevant contracts and the credit rating of the counterparty.

on the basis of the one percent/two week standard, with the derived amount serving as a proxy for potential credit risk.[4] The derived amount is multiplied by the appropriate default ratio.

The DPG stated that these computations of market and credit risk exposures are not by themselves capital standards. Instead, affiliates need to make independent judgments about risk in the context of the entire DPG framework.

Counterparty relationships

The DPG framework also provided guidelines for relationships between professional intermediaries and their nonprofessional counterparties regarding OTC derivatives transactions. The DPG framework includes standards of behavior that are intended to discourage overreaching by OTC derivatives dealers and facilitate understanding of transactions by nonprofessional counterparties through full disclosure.

Under the DPG framework, affiliates are required to prepare marketing materials, transaction proposals, scenario or sensitivity analyses, and transaction valuations in good faith so as not to mislead counterparties. When dealing with new nonprofessional counterparties, affiliates are required to provide written statements identifying the principal risks associated with OTC derivatives activities and clarifying the nature of the relationship between the parties. Affiliates are also required to use written agreements, transaction confirmations, term sheets, or other written materials to clarify the terms and conditions of transactions. If by custom or practice no written agreements are prepared, affiliates are advised to exercise care to ensure a common understanding of the material economic terms of the transaction.

2. The Counterparty Risk Management Policy Group Initiative

In January 1999, a group of twelve major, internationally active investment and commercial banks formed the Counterparty Risk Management Policy Group ("Policy Group"). The Policy Group has said that it intends to develop better standards for risk management practices at securities firms and banks in providing credit-based services to major counterparties such as hedge funds. The Policy Group also says it will attempt to improve reporting of appropriate information to regulators and supervisors. Although hedge fund related difficulties helped precipitate the formation of the Policy Group, the scope of the Policy Group's work is broadly defined and is not limited to hedge fund relationships.

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[4] In general, capital at risk is an estimate of the maximum potential loss expected over a fixed time period at a certain probability level. For example, a firm may use a capital at risk model with a ten-day (two business weeks) holding period and a 99 percentile criteria to calculate that its $100 million portfolio has a potential loss of $150,000. Stated differently, the firm's capital at risk model has forecasted (with a 99 percent confidence level) that $150,000 is the most the firm can expect to lose with this portfolio during the ten-day period. There is a one percent chance that the maximum loss over the period will exceed $150,000.

The Policy Group established three working groups to address issues relating to risk management, reporting, and risk reduction through shared efforts. Each working group is co-chaired by two members of the Policy Group and is comprised of other Policy Group members and market participants not part of the Policy Group (*e.g.*, hedge funds and pension funds).

The Credit and Market Risk Management working group plans to recommend best practices relating to counterparty credit and market risk management. This group will consider: (a) improving the understanding of how leverage, liquidity, and concentration issues interrelate and their implications for credit terms, collateral arrangements, and improvements in margin practices; and (b) enhancing valuation, exposure/risk measurement, stress testing, limit setting, and internal checks and balances. The group also will review issues relating to client due diligence, credit documentation, risk modeling and estimation tools, liquidity evaluation, and the role of independent controllers and auditors in model evaluation.

The Credit and Market Risk Reporting working group plans to consider the most effective ways to exchange information between major counterparties and their creditors, taking into account confidentiality concerns, and will examine how to improve internal risk management reporting. The group also will consider improving the availability of information to and from regulators, including the nature and timing of the reported information, and will review risk related public disclosure practices.

The Shared Industry Initiatives working group plans to assess how shared efforts among industry representatives might promote more orderly and disciplined management of counterparty credit risk. This group will explore potential measures such as: improved standard documentation practices, improved standard close-out and netting provisions, alternative approaches to dispute resolution among parties, opportunities for expanding the scope and effectiveness of netting arrangements, and shared initiatives for improving information on credit concentrations, valuations, and market liquidity (*e.g.*, a counterparty credit information clearing house)

The Policy Group and its three working groups have developed project plans and their work is underway. The Policy Group says it expects to publish its findings soon.

3. International Centralized Credit Database

One proposal that emerged in the aftermath of the LTCM episode, and one that the Policy Group plans to consider, is an international centralized credit database. As generally conceived, such a database would contain information about the outstanding credit exposure of hedge funds that would be reported on a timely basis by their major counterparties — banks and broker-dealers. Those creditors could access the database to learn the credit exposure of their potential counterparties. This arrangement is analogous to a mortgage lender's accessing data from a credit bureau in determining whether to extend credit for the purchase of a house. Such a database would provide up-to-date information regarding the current positions of potential counterparties in making a credit decision. To be effective and efficient, the database would need

to be set up and run by the private sector, and participation by creditors and counterparties would need to be global.

Several difficult issues would need to be resolved by the private sector before a credit database could be put in place. For instance, one of the challenges posed by the creation of a database would be to find a way to meaningfully convey the risk of positions — *e.g.*, whether reported positions are collateralized and whether positions are hedged. Second, as information about hedge fund positions can change rapidly, reporting would need to be frequent to be useful. Third, it would be necessary to determine who would operate and maintain the database. The success of the database would clearly be contingent on the reliable maintenance and accurate dissemination of the information provided to it by the participants. Fourth, the question of who would be permitted to access the database would need to be addressed.

4. International Swaps and Derivatives Association 1999 Collateral Review

In March, 1999, the International Swaps and Derivatives Association ("ISDA") issued an assessment of how collateralization and collateral management programs for OTC derivatives performed during the periods of market volatility in 1997-98, including the extreme volatility associated with the LTCM episode.

The review identified lessons that collateral practitioners had learned during these periods of markets stress. The practitioners found that collateralization proved to be a highly successful credit risk mitigation tool during the market stress of 1997 and 1998. Several firms reported credit losses as a result, for example, of defaults by hedge funds in 1998 were significantly reduced or even eliminated because robust collateral agreements were in operation. However, the practitioners also emphasized that collateral does not solve all problems. It does introduce risks of its own — principally legal and operational risk, but also risks associated with the issuer of collateral assets, concentration in the pool of assets taken as collateral, correlation between an underlying exposure and collateral taken to mitigate that exposure, and the potential difficulty of selling collateral assets at a strong price. Experience over 1997-98 also indicated that problems can arise with internal data quality, the speed of market movements, and extreme conditions (such as the Russian debt moratorium and consequent disruptions in pricing transparency and market operation). Any of these potential risks can reduce the effectiveness of even the most advanced collateral management program.

Based on the lessons learned, the practitioners identified (and ISDA endorsed) 22 recommendations to enhance the effectiveness of collateral management practices.

The recommendations called for the individual institutions to review their practices and consider the applicability of measures designed to:

- understand the role of collateral in credit risk management;

- evaluate organizational structure and operational risks of the collateral management function;
- minimize collateral-related disputes;
- review policies regarding acceptable collateral types, haircuts, cash, and initial margin requirements; and
- create awareness of the legal environment in which the collateral function operates.

Other recommendations were directed to ISDA itself, which was asked to:

- establish working groups to discuss specific recommendations affecting the industry, including collateral types, haircut methodology (including the possibility of a benchmark asset pricing service), and cash collateral;
- review and enhance the structure, provisions, and negotiating mechanisms of the existing ISDA standard documents;
- continue its survey of the secured transaction laws in various jurisdictions; and
- continue its efforts to advance cross-product netting and cross-product collateralization.

Finally, several recommendations were addressed to legislators and regulators, which were urged to:

- review regulatory requirements to remove barriers to advancements in risk management methodologies and to facilitate the advancement of cross-product netting and cross-product collateralization; and
- consider simplification and modernization of laws governing secured transactions.

The review also included an action plan to promote implementation of the recommendations.

APPENDIX G

SUPERVISORY EFFORTS AND STATEMENTS POST-LTCM

1. Basle Committee on Banking Supervision

On January 28, 1999, the Basle Committee on Banking Supervision issued a report and accompanying sound practices guidance with respect to banks' interactions with highly leveraged institutions ("HLIs"), which include hedge funds. The report was issued to encourage the development of prudent approaches to the assessment, measurement, and management of exposure to HLIs.

The Basle Committee emphasizes the importance of fully understanding and prudently managing particular risks generated from banks' interactions with HLIs. The recommended sound practices include:

- establishing clear policies and practices for interacting with HLIs;
- employing sound information gathering, due diligence and credit analysis practices as they specifically relate to HLIs;
- developing more accurate measures of exposures resulting from trading and derivatives transactions;
- setting meaningful overall credit limits for dealings with HLIs;
- linking credit enhancement tools, including collateral and early termination provisions, to the specific characteristics of HLIs; and
- closely monitoring credit exposures of HLIs.

In its report, the Basle Committee emphasized that many of the risks associated with HLIs can be addressed at the counterparty level through better risk management. This additional risk management at the counterparty level is thought to have the potential of limiting or reducing the leverage of HLIs and their portfolios. While the Committee considered the direct regulation of HLIs, it determined that focusing on the bank counterparties of HLIs would be a quicker and more effective way of influencing the behavior of HLIs.

2. International Organization of Securities Commissions

The Technical Committee of the International Organization of Securities Commissions ("IOSCO") has established a Task Force on hedge funds and HLIs. This task force is studying risk management, internal controls, and disclosure issues as they relate to securities firms' interactions with HLIs. In addition, the Technical Committee and its working groups are considering ways to increase the transparency of HLI activities.

3. G-7 Finance Ministers and Central Bank Governors

The G-7 Finance Ministers and Central Bank Governors issued a statement of concerns involving HLIs and their activities in the world financial markets after its February 20, 1999,

meeting.[1] They endorsed the above-noted recommendations of the Basle Committee on Banking Supervision and took note of the ongoing work of IOSCO in relation to HLIs. The G-7 will continue to review the implications arising from the operations of HLIs and of offshore financial centers, with particular attention to the possibility of additional reporting and disclosure regarding HLIs.

4. Board of Governors of the Federal Reserve System

On February 1, 1999, the Board of Governors of the Federal Reserve System issued Supervisory Letter 99-3 ("the SR Letter"), which covers counterparty risk management. The SR Letter was issued to address apparent weaknesses in the risk management systems at large complex banking organizations that may need to be reviewed and/or enhanced. The guidance expands on existing counterparty credit risk management ("CRM") supervisory materials.

The SR Letter specifically addresses four basic elements of counterparty credit risk management systems:

- the assessment of counterparty creditworthiness;
- credit risk exposure measurement;
- the use of credit enhancements and contractual covenants; and
- credit risk exposure limit setting and monitoring systems

Banks are expected to have specific policies for assessing the unique risk profiles of hedge funds, including the scope of due diligence analysis and ongoing monitoring to be conducted, the type of information required from hedge fund counterparties, and the nature of stress-testing used in assessing credit exposures to hedge funds.

The Federal Reserve guidance also notes the importance of potential future exposure in managing trading positions. Institutions must ensure that potential future exposures for both secured and unsecured positions are better incorporated into their credit analyses and limits. The need for better stress-testing and scenario analysis of credit exposures that incorporates the interaction of credit and market risks is also highlighted. The guidance points to the need for a better balance between the qualitative and quantitative elements of exposure assessment and management for all types of counterparties, not just HLIs.

5. Office of the Comptroller of the Currency

On January 25, 1999, the Office of the Comptroller of the Currency ("OCC") issued OCC Bulletin 99-2 which included new risk management guidance on derivatives and other bank activities to supplement OCC Banking Circular 277 and *The Comptroller's Handbook for*

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[1] Member countries of the G-7, or Group of Seven, include the United States, Canada, France, Germany, Italy, Japan, and the United Kingdom

National Bank Examiners, Risk Management of Financial Derivatives. This Bulletin highlights existing weaknesses in the risk management systems within financial institutions and identifies sound risk management practices that banks should have in place for all significant derivatives and trading activities. Its perspective goes beyond hedge funds. It draws upon lessons learned, by both banks and other trading organizations, from turbulent trading conditions over the past several years. While it emphasizes credit risk, it also addresses other sources of risk, including market, liquidity, transaction, compliance and interconnection risk (*i.e.*, the risk that as market risks increase, there may be a concurrent increase in other risks).

The Bulletin provides enhanced guidance for examiners in their reviews of bank trading activities. It addresses five key risk management principles:

1. Banks must fully understand both the strengths and weaknesses of any risk management system, particularly models.

2 Risk outputs (*e.g.*, value-at-risk and pre-settlement risk) must be stress tested. Stress testing is an essential component of the market and credit risk management process, and requires the continuing attention of senior management.

3. Due diligence, careful customer selection and sound credit risk management, not competitive pressures, should drive the credit decision process

4. Risk oversight functions must possess independence, authority, expertise and corporate stature to provide effective early warning to senior management of negative market trends.

5. Banks need to have appropriate risk control mechanisms in place for new products and markets prior to entry and on an ongoing basis.

6. New York State Banking Department

The New York State Banking Department ("NYSBD") released a report on banks' hedge fund activities on March 8, 1999, which shares concerns about these activities and emphasizes the need for changes in the regulatory examination process to address these concerns. The report identifies banks' due diligence processes and risk management practices as two primary areas in need of improvement. In addition, the NYSBD emphasizes the importance of highly developed techniques for measuring credit; less reliance on fund management reputation; and greater disclosure of financial information and risk management practices from hedge funds and other similar counterparties as a condition of doing business.

THE NYSBD report also notes deficiencies in the examination process, particularly examiners' knowledge and appreciation for new methods of credit generation. Methods

specifically identified in the report are the use of leverage, out-of-the-money options trading, and off-market swap pricing.