

MEMORANDUM

October 6, 2006

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Robert L. D. Colby, Deputy Director  
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THROUGH: Matthew J. Eichner, Assistant Director

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RE: Risk Management Reviews of Consolidated Supervised Entities

Office of Prudential Supervision and Risk Analysis ("OPSRA") staff met over the past four weeks with senior risk managers at the CSEs to review August market and credit risk packages.

There were several common themes in discussions with firms:

- **The lessons of Amaranth for risk management remain unclear.** On September 18<sup>th</sup>, Amaranth, a hedge fund with approximately \$9 billion in assets at the end of August, announced that it had sustained significant losses (in excess of \$5 billion) on natural gas positions. Although all of the CSEs had multi-faceted trading relationships with Amaranth – including several which served as prime brokers for the fund – none have experienced any credit-related losses to date. In fact, the orderliness of the meltdown caused risk managers at all of the firms to query whether the events at Amaranth will be good or bad for risk management. On the one hand, credit risk managers recognize that they now have a recent event to reference when negotiating margin terms. On the other hand, some funds may cite the orderly unwinding of Amaranth's positions as an indication that the risks of concentrated positions are easily dealt with by the financial system, and no changes in practices are necessary. In short, the lessons of Amaranth are not obvious and are open to multiple interpretations.
- **Hedge fund exposures and crowded trades are a continued focus.** Distinct from Amaranth, credit risk managers at several firms described renewed senior management attention on the risks posed by hedge funds. Specifically, they cited concerns about "crowded trades", strategies pursued simultaneously by multiple market participants, as well as large credit exposures that might result from macro-economic shocks. In this vein, firms have begun developing their stress tests of hedge funds' positions to ascertain worst-case credit exposures under various scenarios. Changes include increased granularity of stresses, for example considering steepening and flattening of yield curves in addition to simple parallel shifts, and more sophisticated cross-asset and cross-risk factor exposure aggregation.

- **Markets are very benign – almost uncomfortably so.** Equity markets are up. Credit spreads are tight. Realized and implied volatilities are low across nearly all asset classes, from rates to foreign exchange to equities. Investor demand for leveraged loans, collateralized debt obligations, and mortgage- and asset-backed paper continues unabated. Investors have also returned to emerging markets after taking losses in May and June. Some risk managers commented that these very benign market conditions “feel a little like the Fall of 1998” prior to the implosion of Long Term Capital Management (LTCM). Market risk managers’ focus on stress and scenario testing has increased, especially in the traded credit space where certain markets are less mature and/or less deep (e.g., distressed debt, leveraged and whole loans, structured credit, etc.), and emerging markets, especially local currency assets. In these markets, value-at-risk (VaR) measures by themselves may not adequately convey the risk, particularly if certain liquidity providers were to withdraw from the market. Notably, some risk managers have adjusted the credit risk shocks they use in stress and scenario testing from percentage terms to absolute level shocks, resulting in more severe predicted losses. They noted that in today’s very tight credit spread environment, percentage shocks, even those based on 1998 LTCM, likely underestimate the potential severity of losses.
- **Commercial Mortgage Backed Securities (CMBS)-related activities are expanding.** Traditionally, the CSEs active in the commercial real estate loan space focused overwhelmingly on securitization – that is, originating and/or acquiring commercial loans, accumulating them into pools, structuring securities from those pools, and distributing those securities to investors. More recently, however, firms have begun to expand the scope of activities to include proprietary trading in CMBS derivatives and mezzanine debt, or even providing “bridge equity” for large commercial property deals. Bridge equity involves co-investing equity capital with a deal sponsor under the expectation that a potential co-investor, such as a pension fund or insurance company, will eventually eliminate the CSE firm’s exposure by buying its equity stake.
- **In equities, many of the CSEs reduced their downside gamma protection.** Generally, the CSEs are long directional exposure to equities or “delta”, which exposes them to declining equity prices. Traditionally, this has been mitigated by positive gamma provided by long options positions. Recently, many of the CSEs have been willing to run flatter gamma profiles, in part to lessen the time decay cost of holding options, known as theta bleed. Typically, this reduction in downside protection leads to higher measured risk. However, firms have simultaneously increased their long exposure to volatility, as measured by vega sensitivity, often through positions in variance swaps, which has mitigated increases in measured risk. Some risk managers have been careful to point out the differences between gamma protection and vega protection, noting that for certain market moves vega protection may be less effective as a hedge to directional risk.

We also expect to discuss the following firm-specific issues during the next round of meetings:

#### Bear Stearns

- During our discussion of counterparty credit risk to hedge funds, the Chief Risk Officer explained that his group was currently working on a "stress margin call" analysis, whereby all the hedge fund portfolios are subjected to a set of stresses and the sum of all the margin calls (across products) are added up. These stresses are akin to those used by the firm internally for managing the market risks of its inventory positions. The goal of this new analysis is to provide senior management with a more robust view of concentrated or correlated credit risk to hedge fund counterparties by addressing some of the shortcomings of the potential credit exposure (PE) metrics currently used as the primary risk measurement tool. Namely, the PE techniques measure risk by counterparty and product silo, and often capture only "first order" risks (e.g., broad increases or decreases in interest rates, as opposed to changes in the shapes of yield curves). We will discuss these analyses in more detail as they are implemented.
- The Head of Market and Credit Risk for Europe and Asia discussed his recent experiment in London of migrating some of the risk management duties typically performed by market risk personnel to credit officers who have significant fundamental credit experience. His focus is on certain desks that arguably require both skill sets, such as the distressed debt business. Conversely, he also discussed the use of market risk personnel in the credit quantitative group. We will continue to follow this integration initiative.
- During the past month, the Mark-to-Market Committee asked for a complete review of the firm's mortgage residual positions. The net change to marks as a result of this review was not material. However, due to the magnitude of these positions, we have asked for a detailed briefing.
- Bear is reorganizing its activities in several ways. The firm's prime brokerage business is being rolled into the Equities Division, which will be co-headed by the previous heads of cash and structured equities trading. Also, the firm has consolidated proprietary trading, or principal investing, into a separate business unit within the trading division (i.e., there will be one proprietary trading head who reports directly to the firm's senior management). Finally, the firm's Operations and Technology divisions have been formally merged under the management of one individual (who is also responsible for front office Equity Analytics). We will follow up regarding the implications of this reorganization, such as how the prime brokerage and independent credit risk management functions will (or will not) be integrated. ReOrg

#### Goldman Sachs

- Goldman recently entered into an unusual trade with a US airline, which entails the commodities desk providing jet fuel on a daily basis. While the structure of the trade minimizes market and counterparty credit risk, it leaves the firm with a certain reputational risk. If the airline becomes unable to pay for the fuel, Goldman could find itself in the position of being forced to withhold delivery and thereby potentially cause the grounding of flights. We will follow up on the details of this trade, and management's approach to this unique risk.

#### Lehman Brothers

- The VaR-based limit for Interest Rate Products ("IRP") was increased from \$16 to \$22 million, and usage for the month was at 98% of the limit. There is strong demand to increase risk-taking at Lehman, both in this business and in others as discussed last month. Market risk management is comfortable with growing the IRP business because of the liquidity in this market. However, total fixed income VaR and firmwide VaR were not increased and risk managers are monitoring utilization at these more aggregated levels closely. We will

continue to monitor the increased risk-taking at the firm as expressed through these and any additional limit changes.

#### Merrill Lynch

- As discussed in previous months, Merrill is revising its market risk limit structure. One of the limits being revised is the Stress Event Scenario ("SES") metric, which measures the impact of a worst case spread widening event across products. The relevant business managers have requested a substantial increase in the limit, while Market Risk Management countered with a proposal to raise it modestly. The Executive Committee will make the final decision about the size of the increase, and we will follow up on this next month.
- Merrill will begin calculating its Maximum Potential Exposure (PE at 99%) utilizing a Monte Carlo simulation by the end of October. Two major changes will affect calculated MPE: First, Merrill will utilize Basel recognition rules for collateral, which will add approximately \$1.26 billion to MPE. Second, some analytics will change resulting in decreases in measured exposures to sovereigns. We will monitor this transition over the coming months.

#### Morgan Stanley

- During the past month's risk meeting, the Credit Risk Department provided short-term tactical and long-term strategic plans for enhancing the overall effectiveness of its credit systems. We will continue to closely track the department's progress on these initiatives.
- The Credit Department now reports the impact on its hedge fund counterparty credit risk exposures of the firm's market risk scenarios (e.g., Dollar Crisis, Financial Distress). This is being done for both OTC derivatives counterparties and prime brokerage clients to better alert management to significant exposure concentrations that might materialize during market stress events. We will follow up on the results of this analysis.
- For internal risk management purposes, the Market Risk Department is adjusting its VaR metric from a 99<sup>th</sup> percentile measure to a 95<sup>th</sup> percentile measure. We will track the impact of this change on risk reporting and risk governance over the coming months.