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SEC Risk Management Review of Consolidated Supervised Entities (September 5, 2007)

United States: Securities and Exchange Commission: Office of Prudential Supervision and Risk Analysis (OPSRA)

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MEMORANDUM

September 5, 2007

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THROUGH: Matthew J. Eichner, Assistant Director

FROM: Financial Economist
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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 current market and credit risk packages.

There were several common themes in discussions with firms:

- **Liquidity in the mortgage markets is severely constrained.** As one mortgage trader emphatically put it, "liquidity is horrible." Poor performance has now extended beyond 2006-vintage subprime loans into Alt-A, prime option ARMs, and 2007-vintage subprime loans. Investors have become very risk averse, leading to virtually no subprime securitizations taking place in July and August. One CSE firm reported it was able to sell a pool of whole loans in bulk, but at a loss. CSEs that own originators have slowed down loan production, with Lehman announcing the closure of their subprime originator which had been originating $1 billion per month at its peak. Given that the output of the securitization factory has stopped, loan production is ending up on the firms' balance sheets, raising funding and marking issues.

- **Moreover, the feared spillover of the subprime situation into the broader asset-backed markets has occurred.** Non-CSE mortgage originators that rely upon external sources of funds have run into serious problems accessing additional money, regardless of whether their loans are high quality or not. CSE firms have greatly reduced their secured lending activities through mortgage-backed warehouse lines to finance production over the past several months. This month, financing through Asset-Backed Commercial Paper ("ABCP") programs, which issue short-term commercial paper backed by the value of the originated mortgages and other assets, has also been severely curtailed. Investors in ABCP have the option to "roll the paper" (i.e., renew the investment) at each maturity date. If investors do not roll the paper, some forms of ABCP allow it to be extended by the issuer for a specified period of time, typically 30-180 days, and the underlying collateral is liquidated.

Backup liquidity and credit enhancement programs are often wrapped around these facilities. For the first time in the history of these structures, ABCP facilities are extending as investors do not wish to purchase paper backed by mortgage assets. Many CSE firms act as dealers in the paper. They may choose to purchase the paper for relationship and reputational reasons if it cannot be placed, but they are not under an obligation to do so and have not yet done so to a significant extent. One CSE also provides backup liquidity facilities through its Utah bank, which means that they must take either the ABCP or the underlying collateral if investors do not roll, exposing them to funding and market risk.

Liquidity problems have extended beyond subprime mortgage originators with suspect underwriting standards. Thornburg, a prime jumbo originator with a good track record, experienced a liquidity crunch as it had difficulties rolling ABCP facilities and was declared in default by at least one of its creditors. As companies experience liquidity issues, they look to other sources, notably by selling their holdings of very liquid assets such as equities and highly rated securities. The impact of the selling of large amounts of assets on the market was notable. Credit spreads widened across the board while liquidity was down. Equity prices were down globally as implied volatility increased. Currency exchange rates also had exceptionally large statistical moves.

- **The losses suffered by Statistical Arbitrage strategies shocked risk managers.** Statistical arbitrage ("stat arb") strategies take long and short equity positions using computer models to pick the names. The models are value-driven using metrics such as price-earnings ratios to drive buy and sell decisions. The strategies tend to have relatively small positions in thousands of names. As equity markets moved during the month, computer models across the Street signaled for managers to sell. As managers sold, a downward spiral resulted whereby once an unwind starts in a particular name, everyone's models signal for them to unwind. The result was a break with historical asset correlations and large losses across stat arb funds, including certain stat arb funds at Goldman Sachs Asset Management ("GSAM"). Goldman Sachs and other investors injected $3 billion in one such fund, which appears to have had the effect of calming equity markets. Risk managers stated that stat arb funds historically have very low risk, and they were shocked to see the magnitude of losses and also disappointed by how the funds' models operated in lock-step to buy and sell the same stocks. From a counterparty credit risk perspective, this was essentially a non-event for CSE firms. However, CSE firms with stat arb units in their proprietary trading groups had significant losses throughout the month.

- **Risk measures such as Value-at-Risk have been tested by recent market events and P&L volatility is on the rise.** Value-at-Risk ("VaR") models utilize historical data, typically for the last four years, to calculate the amount of losses that would be expected from a portfolio once or twice a year. With equity prices moving in such an anomalous way during the stat arb meltdown, losses at CSE firms with stat arb units far exceeded the amount of losses predicted by the VaR models. Large moves in other asset areas, such as spreads on mortgage-related products and exchange rates, led to actual losses by the CSEs that exceeded the losses predicted by VaR.

  An interesting phenomena noted by several risk managers was that VaR was increasing even as risk-taking was decreasing, especially in mortgage-related areas. This is due to the increased volatility of the recent historical data and is especially evident in firms that place more weight on recent data observations. Several risk managers noted that the calculation of their mortgage VaR was not particularly granular and thus could either be an understatement or overstatement of actual risk.

Likewise, the volatility of P&L is increasing due to large market moves in both directions.

Firms are also seeing volatility in P&L from utilizing liquid hedges on relatively illiquid positions. The hedges are marked to market daily, while the illiquid positions are marked less frequently. The hedges have exhibited large daily price movements, causing large gains or losses throughout the month, without a corresponding remark of the illiquid position. Risk managers and finance personnel are focused on this and have been in close communication with senior management to explain the reasons for the P&L volatility.

- **Highly rated assets are not immune to the market turmoil.** A few CSE firms hold large positions of super senior tranches of Asset-Backed Securities Collateralized Debt Obligations ("ABS CDO"). During the past few years, the firms structured ABS CDOs, which pool ABS collateral, including subprime, prime, or Alt-A mortgages, auto loans, commercial mortgage-backed securities, and even pieces of other ABS CDOs, and sell tranches based on the losses of the pools of collateral. ABS CDOs typically contain an equity piece which covers the first 3% of losses, a mezzanine piece which covers losses from 3% to 20%, and a super senior piece which covers losses above 20%. Super senior tranches are AAA-rated. The firms were able to sell the equity and mezzanine pieces of the structure easily during the past few years, yet they retained most of the super senior pieces which had few buyers because of the low yields associated with them as a result of low perceived risk.

  Recent market events have changed the outlook of the riskiness of these super senior positions. Losses on the underlying ABS collateral have been larger than anticipated. In addition, firms have been unable to purchase protection against the losses to the super senior tranches. Monoline insurance companies have been the predominant source of credit protection against such losses, but they have sold very limited amounts of protection recently because of the uncertainty as to future losses. The result has been significant markdowns at CSE firms holding these positions. Risk managers have highlighted these large positions in the past, but given their AAA-rating most considered them very low risk.

  Monoline insurance companies themselves are coming under fire as investors are becoming more wary of their capital adequacy and financial strength. The business model of a monoline is to provide credit protection, or "wrapping," on ABS deals and other bonds, most notably in the municipal space. Like other insurance companies, they invest premiums in other assets with the goal to maintain a strong capital position. Because they are AAA-rated, monolines do not post variation margin with firms as the value of the protection they are providing is marked to market. This exposes CSE firms who have purchased protection from monolines to counterparty credit risk. Market risk managers have generally taken the view that some protection on these outstanding positions, even if it is from a monoline, is better than none.

- **Valuations are a challenge in this liquidity-constrained environment.** CSE firms rely upon price transparency in the markets to value their positions. Given the lack of liquidity in some markets recently, determining the market value of positions has been an enormous challenge. The super senior tranche of an ABS CDO is a good example. Trading in these tranches has completely stopped, thus there are no indicative prices for traders and product controllers to use to value the inventory. In some cases, traders are working on fundamental approaches relying upon analyses of discounted cash flows to determine an appropriate mark. However, these methods are highly subjective and pose a challenge to risk managers and product controllers to verify the accuracy of the valuation. In other cases, traders are benchmarking positions to observed market indices and product controllers are

forcing trades to gain price transparency. Risk managers and product controllers are very focused on this issue.

The difficulty with marking positions has led to an increase in disputes with counterparties over the correct amount of margin due. CSE firms collect margin to mitigate the credit risk arising from the possibility that a counterparty will default at a time when the current value of outstanding trades is in the firm's favor. CSE firms use internal models to calculate the current value of trades, and thus the margin due from counterparties. Counterparties, especially those in distress, have increasingly been disputing the values computed by CSEs. Firms stand ready to defend their marks, and in fact the same marks are used to value their own inventory. Notably, several risk managers noted that hedge funds were generally meeting margin calls promptly in order to forestall any rumors that they are in financial distress and to maintain their existing credit lines. Moreover, the Street has experienced operational issues around margin calls as the volume of trades has increased significantly.

- **All eyes are focused on the weeks following Labor Day for the syndication of leveraged loans.** The syndication market for leveraged loans has essentially closed. Because CSE firms are now virtually unable to sell the loans they are originating without eating through their fees, they are forced to hold them on their balance sheets. Firms have taken large markdowns on retained positions and commitments due to the deterioration of the market. Treasurers are working closely with credit risk managers and the syndicates desks to ensure they know the pipeline of upcoming deals and the funding requirements. Underwriters, including CSE firms, are negotiating with sponsors of leveraged lending deals to revise the loan terms in order to make them more attractive to investors. A large acquisition financing deal in which two CSE firms were involved was recently restructured to decrease the purchase price, thus decreasing each underwriter's commitment. All CSE firms plan to attempt to syndicate deals in the weeks following Labor Day. Risk managers are hopeful that liquidity will return, but have funding contingencies in place in the event that does not happen. The structured vehicles such as CLOs that were large purchasers of loan assets earlier this year are now notably absent, as investor concerns over the reliability and confusion over the meaning of ratings of securities issued by these entities have mounted.

- **The globalization of the CSE's businesses acted as a mitigant to the largely U.S.-based events.** Revenues from activities outside the United States continue to rise at CSE firms. All of the firms have significant trading operations in London, and most are also well established in Asia. During the past month, markets in Europe and Asia were largely unaffected by the volatility seen in the U.S. resulting in these regions contributing a relatively large percentage of total revenue. Several firms have initiatives in place to expand into locations such as the Middle East, Turkey, and Brazil. Internal auditors are closely monitoring the establishment of new operations in far flung locations, which are often grown organically after the acquisition of small organizations with the appropriate licenses.

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

Bear Stearns

- The top concern of the chief risk officer at the time of our meeting was the market for asset-backed commercial paper. While Bear does not have any direct market risk exposure to this market in that it is neither a dealer nor a placement agent of asset-backed paper, nor does it provide liquidity backstops or credit enhancements to asset-backed conduits, the potential implications to the market as a whole of so much paper

trying to find a new home at a new price are significant. In the weeks preceding our meeting, numerous higher quality mortgage originators, focusing on Alt-A and prime products, came under distress largely due to an inability to roll asset-backed commercial paper. This led to the firm taking mortgage inventory onto its balance sheet from prime and alt-A mortgage originators to which funding was provided. However, in contrast to the size of the subprime warehouse lines last year, these repo facilities were much smaller. The credit losses from the closing of these warehouse lines were negligible but it left the firm longer inventory than it would otherwise have liked to be given current market conditions. Separately, another area of focus for the firm currently is the marking and price verification of mortgage inventory, which is quite challenging given the current lack of liquidity for many products. We will continue to discuss developments in this space with risk managers.

- Bear's leveraged lending business had not entered into a new loan commitment in the six weeks prior to our meeting. Thus the firm's commitments pipeline is currently relatively small, and is dominated by two large exposures: one which is expected to fund in early October and one, which if it closes at all, is likely to be restructured and done much later in the year. The concentrated commitment that is expected to close in early October is for the acquisition financing for Blackstone's purchase of Hilton Hotels. Bear is the lead on this deal and its share of this commitment was $5.3 billion, which has subsequently been brought down to $4.8 billion by bringing in other banks into the syndicate. Unlike most leveraged loan acquisitions, the take-out for this transaction is meant to be in the CMBS market rather than the bank loan market (similar to previous real estate deals such as Equity Office Properties and Extended Stay). However, this deal is more unique in that roughly half of the securitization exit is planned to be CMBS collateralized by the franchise and royalty fees that Hilton charges its franchisees (with the other half of the CMBS being collateralized by the hotel properties). If the securitization of the fees is pulled either because of unfavorable rating agency action or lack of investor demand, this portion of the financing would revert back to a traditional leveraged bank loan, which would likely be a loan that required a non-trivial mark down to be able to syndicate. We will continue to discuss with the firm developments regarding this transaction from both a risk and funding perspective.

<u>Goldman Sachs</u>

- As a result of the "major correction" that occurred in corporate credit markets in July, Goldman marked down corporate loans and loan commitments made through its origination business by approximately $1.1 billion. Offsetting these losses were approximately $300 million in gains on various hedges (including purchased CDX protection and equity puts). Credit risk managers were satisfied with both the ex ante risk measurement of its exposures, as well as the performance of the firm's hedging program. Regarding risk measurement, the feeling was that the credit spread widening scenario, which is the primary tool used for controlling this business, was probably overly conservative it its estimation of risk due to the omission of fee income in the measure. In terms of hedging systemic risk, the business (in consultation with risk management and senior management) had targeted a 25% to 30% spread widening hedge ratio, which was in line with actual performance.

- However, challenges remain for the leveraged lending business. The autumn calendar of bank loan deals (for the market as a whole) was described as massive, and it is very uncertain as to whether investor demand will be sufficient to allow lenders to distribute significant amounts of exposure. While the business is actively working to modify and restructure deals, Goldman is planning, from both a risk and liquidity perspective, for the possibility that the firm could be required to fund and hold all commitments. We will continue to monitor this planning process going forward.

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- During July, the head of the mortgage business described things as going from bad to worse, with the market "absolutely gapping down" and there being extremely little liquidity available for any products other than agency conforming prime loans and agency securities. Given the continued widening in mortgage credit spreads and the increased realized volatility in the time series used for VaR measurement, the business's stand alone VaR nearly doubled, reaching $97 million. This is more than twice the VaR exhibited in the earlier part of the year, despite the desk having only one third of the positions. We will continue to discuss with risk managers progress towards reducing mortgage risk, which is very challenging in this liquidity environment. We will also continue to review mortgage P/L with the controllers.

<u>Lehman Brothers</u>

- Lehman Brothers announced the closure of its subprime originator, BNC. BNC's loan production had fallen to $300 million per month from a peak of $1 billion due in part to more stringent underwriting standards. Plans had recently been announced to merge BNC, based in Irvine, California, with Lehman's Alt-A platform, Aurora Loan Services in Denver, Colorado into one entity. We will continue to monitor plans surrounding the future of Aurora.

- Lehman's pipeline of non-investment grade commitments has declined significantly from the second quarter of 2007, but still remains large at approximately $30 billion. Lehman provided one-third of the financing in the Home Depot Supply commitment, which was recently restructured with the sponsors to provide more attractive terms to investors and, thereby, ease the task for originating banks of selling the loans into the market. A few deals were closed and funded by Lehman in the weeks prior to our meeting, and several deals are targeted to close beginning in late September. Treasury personnel are closely involved in monitoring this situation as well and funding contingencies are in place.

- The real estate pipeline also remains large at close to $37 billion, including a $10.5 billion commitment to Archstone. A third party investor has agreed to purchase a large portion of the senior debt of Archstone, and the deal is expected to settle in October. One deal securitizing a large office building in France was only partially sold before being pulled from the market due to pricing levels. We will continue to watch this space for any further contagion from the fallout in the broader credit markets.

- Risk appetite, Lehman's holistic measure of risk-taking, recently reached its $3.3 billion "hard" limit as a result of both larger positions and increased market volatility. While the situation was being evaluated, at the time of our meeting no decision to increase risk appetite had been made. In addition, VaR continued to hover in the $100 million range, despite a reduction in outright risk-taking. Senior management did decide to increase Lehman's firmwide VaR to $125 million in order to account for a decrease in the diversification benefit between fixed income and equities, but did not raise either business' divisional limit.

<u>Merrill Lynch</u>

- Credit Risk Management is closely monitoring investors' appetite for leveraged loans. Merrill committed to provide $3.5 billion of financing for two deals, First Data and Home Depot Supply, which are expected to syndicate in market in September. With lackluster investor appetite for two previous Merrill deals syndicated in July and August, total leveraged finance loans funded by Merrill has grown significantly. If liquidity in the credit markets does not return, Merrill will likely be forced to fund positions which will then be risk managed down over a period of time. We will continue to monitor the planning around these possible funding needs.

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- Merrill Lynch provides liquidity backstop facilities to three ABCP issuers through its Utah banking entitity, MLBUSA. Each of these ABCP issuers has experienced problems with recent rolls, forcing Merrill to purchase either the underlying securities or the commercial paper. To date, Merrill has purchased approximately $4 billion in securities and $1 billion in commercial paper, and they have also made a $820 million collateralized loan to a conduit. Market risk management is working closely with treasury personnel to monitor this exposure, and they currently feel comfortable that the bank is sufficiently capitalized.

- The statistical arbitrage unit of Merrill's proprietary trading group, Global Strategic Risk Group ("GSRG"), suffered losses during late July and early August due to market movements. Most of the losses were within the U.S. broker dealer, Merrill Lynch, Pierce, Fenner & Smith. We are scheduled to meet with the GSRG business personnel and market risk managers in the coming weeks to discuss the positions in GSRG and corporate governance-related issues.

- Merrill Lynch currently has a $32 billion notional inventory of super senior ABS CDO. Valuing this inventory has been a significant challenge as liquidity in this market has been severely constrained. For July month-end, they used a Net Asset Value approach which generally involves mapping the exposure to the ABX index. Last week, they were able to purchase protection on $5 billion notional from a monoline. This purchase gave them price transparency, resulting in further markdowns. For August month-end, they are moving towards a fundamental analysis of the cash flows, and we will follow up on the methodology as it is finalized.

<u>Morgan Stanley</u>

- The firm has continued the process of subjecting its leveraged lending pipeline to a deal-by-deal review. From a fundamental credit perspective, the credit department has not changed its rating on any of the commitments and continues to have no fundamental credit concerns about the individual positions. However, as credit spreads in the leveraged loan market have continued to widen, the firm's estimate of its potential economic loss (on a mark-to-market basis) to distribute these deals has increased. By applying today's spread levels to its pipeline and taking into consideration all fees and pricing flex in the deals, the firm estimates an economic loss of approximately $200 million. However, in its "worst case" scenario, where spreads blow out another 200 basis points before it can sell out the exposures, the expected loss would grow to north of $1 billion. From a funding perspective, the list of "hung" deals has grown with the inclusion of the auto company portion of the Chrysler deal which closed and funded post month-end. Separately, we met with treasury to go over their contingency funding plans for this pipeline.

- The Co-Head of Credit discussed a potential counterparty credit loss the firm may take with respect to a derivative position entered into with a derivative product company ("DPC") named Structured Credit Company ("SCC"). While the magnitude of this potential loss is not overly material (i.e. the current exposure to SCC stands at $95 million), it is noteworthy based both on the type of counterparty and the derivative contract. First, SCC sells credit protection in various asset classes, including asset-backed securities, to other financial institutions. SCC was in the process of being rated by the rating agencies (generally speaking DPCs receive very high ratings) when it ran into liquidity problems. The liquidity problems resulted from the fact that unlike most DPCs, SCC agreed to mark-to-market agreements with its counterparties. With the extreme widening of spreads in the ABS market, SCC was hit with substantial margin calls. While most of the trades done with SCC were for the purchase of super senior protection on corporate credit CDO tranches, the firm did buy $100 million protection on

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an ABS CDO based on a bespoke basket of subprime mortgage collateral (i.e., ABSpoke). Given the recent mark downs in the ABS space, this derivative has moved substantially in Morgan Stanley's favor. SCC has not met its most recent margin call and is in default. ABSpoke positions like the one done with SCC have been the largest source of credit protection for the firm in hedging its subprime mortgage exposure. While the credit department doesn't currently have any credit concerns with the other counterparties that have provided it with protection in the ABS space, given the significant mark-to-market gains on and complexity of these derivatives, we will continue to discuss this area with the firm.

- After the risk meeting, staff was informed of losses suffered by the trading division. The bulk of the losses were sustained by the equities division's statistical arbitrage proprietary trading desk (PDT). We will be following up with market risk managers on what happened and how that risk is going to be managed going forward.

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