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CDO Valuation Approach

Background:

Given the significant disruptions in the global credit markets, many concerns have arisen over the valuation of complex products, such as Collateralized Debt Obligations ("CDOs"). This memo addresses the procedures performed by EY on the valuation controls within the Cash CDO business, along with the related testing conclusions. Note that this memo addresses Cash CDOs only; please refer to EY London for documentation regarding synthetic CDOs.

Procedures:

EY auditors met with Brian Sciacca and Kevin McGovern of Lehman Credit Product Control ("PC") to discuss the valuation procedures performed on Lehman's Cash CDO portfolio.

PC uses a pricing hierarchy for purposes of valuing their CDO portfolio. For detail on Lehman's pricing hierarchy please refer to the CDO walkthrough memo at **BCDO.Memo**. However, due to current market conditions, PC was only able to utilize two primary methods to assess the reasonableness of the Front Office marks: (1) comparing the Front Office prices to recent trade activity (within 30 days of valuation date) or (2) using the Intex model, performing scenario stress analyses with respect to the key model inputs (discussed below).

For purposes of testing the CDO price verification process, EY auditor tested valuation controls through inquiry, observation, inspection, and re-performance. In accordance with firm guidance, EY auditor originally tested two months of price verification controls. April (BCDO3.1-5) and August (BBCDO3.1-5), and selected 25 CDO positions across these two months.

However, as of April, Lehman PC did not save any Intex downloads. EY auditors met with Lehman PC to observe the use of Intex, the assumptions used to model CDOs, and how Lehman PC concluded on the April Intex prices. However, Intex does not have the capability of going back historically. Since EY was performing the April testing in the

July/August timeframe, the quotes were not comparable to April because of market volatility at that time.

EY auditors concluded that as of April 2007, the lack of Intex documentation was not a control exception but rather a control deficiency. For the Intex samples that were selected as of April we found that the control was operating as designed, however there was a lack of documentation to support PC's conclusions. Therefore, EY auditor noted the lack of Intex documentation as a deficiency on the SOCD.

EY selected an additional two months to test that the controls around Intex were remediated (8/31/07 and 11/30/07).

As such, EY's testing samples were selected as follows:

- (1) 8 CDO samples for April 30, 2007 price verified through recent trading
- (2) 7 CDO samples price verified using Intex as of August 31, 2007
- (3) 11 CDO samples price verified using Intex as of year end, November 30, 2007

A. April Price Verification – Recent Trade History

For the month of April (BCDO3 Lead) EY auditor selected a sample of 8 CDO positions valued through alternative procedures, recent trade history.

Lehman has an informal policy of using recent trade history within 30-35 days. This policy is revisited by Lehman depending on market conditions. That is, as market volatility and lack of liquidity was prevalent in the latter half of 2007, Lehman used recent trades within two weeks (or less at times) as proxies for prices. As of April, the policy was within a month's trading time.

EY's April testing results were as follows:

- a) 1 sample had a recent trading history of December (stale price from 12/14/07 – about 135 days).
- b) 1 sample had a recent trading history of February (stale price from 2/28/07 – about 60 days).
- c) The remaining 6 samples had a recent trading history of April and thus were in the 30-35 day policy.

EY auditor notes that quoted prices in a relatively active market provide one of the best means of fair value. Although, transaction volume within CDOs has significantly declined in previous periods it does not necessarily mean that there is not an active market or that there are forced transactions.

For the two samples that were not within the policy of 30-35 day recent trading we have noted a deficiency on the 2007 SOCD. EY spoke with PC, and PC acknowledged that these positions should have been marked as "untested," as a true recent trading history was not applicable. EY addressed the materiality of this issue: the two samples had a combined market value of approximately \$7.6M. Had these positions been marked as

'untested', the percentage of untested market value would have changed from 23.56% to 24.36%. Lehman's percentage of tested market value would have changed from 76.44% to 75.63%. EY auditor notes a minimal impact on the pricing coverage and further an immaterial market value. Thus, EY auditor concluded that no further investigation was required.

B. August and November Price Verification- Intex

Due to the illiquidity of the CDO market and the events within the subprime market during 2007, Intex was used as a valuation tool for purposes of pricing a portion of Lehman's CDO portfolio. Intex is a valuation tool in which assumptions are entered into the model to derive an estimated fair value of the CDO based on historical activity of the underlying.

There are several assumptions that are used to value a CDO. These assumptions include:

- (1) Collateral
- (2) Prepayment Rate
- (3) Default Rate
- (4) Loss Severity
- (5) Spread
- (6) Rating/Tranche

I. Collateral

The assets underlying a CDO are important in reflecting the fair value of a CDO. The type of collateral underlying the CDO usually consists of corporate-backed debt and/or subprime assets both either investment grade and/or non-investment grade. As of November 30, 2007, the market value of Lehman's global Cash CDO inventory totaled \$2.7 billion. The \$2.7 billion was comprised of \$1.3 billion of sub-prime and \$1.4 billion of corporate-backed CDOs. Due to the 2007 market conditions, subprime backed debt has proven to be less liquid than corporate backed debt. Thus, depending on the type of CDO collateral, different assumptions are used for purposes of valuing a CDO.

If a CDO's collateral is primarily subprime investment grade debt, one would expect a lower price/value of the CDO compared to a corporate-backed CDO, as the CDO would be more likely to default. In addition, if a CDO's collateral is primarily subprime non-investment grade debt there would be a further decrease in the value of the CDO as non-investment grade debt has lower ratings than investment grade debt. However, a CDO that is primarily backed by corporate investment grade debt would typically have a higher price/value as it is less risky and less likely to default.

II. Prepayment Rate

Prepayment rate relates to the proportion of the unpaid principal balance that is assumed to be paid off prematurely in each period. CDOs typically tend to be less sensitive to

prepayment rate. Further, prepayments have decreased in 2007, whereby creating little sensitivity to the valuation of a CDO.

III. Default Rate

Default rate relates to the rate at which debtholders default on the amount of interest and principal owed. CDOs have great sensitivity to the number of defaults that may occur within a given year. Further, subprime defaults have increased in 2007 due to illiquidity and deteriorating market conditions. Generally speaking, if a CDO has large amounts of defaults the value of that CDO would decrease. On the contrary, a CDO that does not have an increased chance of default would have a higher value.

IV. Loss Severity

The loss severity rate is the portion of the unpaid principal balance that would not be recovered if the CDO defaults. Loss severity potentially shows the impact that defaults can have with respect to the value of a CDO. For example if the loss severity rate is 35% then there would be an expected recovery rate of 65%. As loss severity increases there will be a decrease in the valuation of the CDO as one would recover less.

V. Spread

The spread is the discount rate (spread above LIBOR) and typically has a significant impact on the price of a CDO. As spreads widen, the fair value of the CDO will decrease. Lehman PC uses spreads from a report published by JP Morgan's Global Structured Finance Research. Lehman PC obtains a spread from the report depending on the related CDO's collateral sector. Such sectors are HY Loans, HY Loans, HG SF CDO, IG Syn, etc. JP Morgan provides spreads for each sector within the respective tranche. Due to current market conditions, PC stressed the trades further, and thus uses the spread for one rating below what the actual CDO is rated. As an example, if a CDO is rated "A", PC will apply a spread from the "BBB" tranche.

VI. Ratings/Tranches

S&P or Moody's will give bonds a rating to reflect their credit quality. A higher rating shows greater strength in credit quality, and thus the bond is assumed to be less likely to default. However, it is important to note that current market conditions can have an effect on the value of a CDO regardless of how high the rating is. Thus, a security rated 'AAA' at acquisition may have significantly less credit enhancement beneath it in the structure today depending on the performance of the underlying assets in the structure (collateral). Further, the credit spread on a "AAA" rated CDO may widen, which decreases the position's value.

Further, lower-level tranches within a given structure will usually have lower ratings and any losses will occur on these pieces first, thus increasing risk.

EY auditor tested 7 CDO samples for August. Two of the 7 samples, Corona and Ceago, were related to subprime, super senior tranches held by Lehman. Please refer to the YE-BCDO11 workpapers for further details regarding the valuation of these securities.

Of the remaining five samples tested for August, 3 were related to subprime-backed CDOs, and 2 were related to corporate-backed CDOs. The samples are as follows:

Type of Collateral	Name	Tranche	Rating	Spread	Sector	CDR	Loss Severity	Price
Subprime	Ballyrock	D	BBB	2,480	Mezz. SF	2	65%	58.29
Subprime	Pyxis	B	AA	1,400	HG SF	2	65%	53.06
Subprime	Pyxis	C	A	2,000	HG SF	3	75%	47.08
Corporate	Coast	E	Ba1	1,300	HY Loans	1	35%	81.56
Corporate	Mt. Wilson	C	A	350	HY loans	1	35%	87.64

Note: For purposes of viewing the individual Intex screens and the relevant JP Morgan spreads please refer to the August pricing workpapers, at BBCDO.

EY auditor was able to gain comfort over the Intex assumptions used by Product Control in August by performing an analytical review in the following ways:

- (1) EY auditor reviewed the collateral that was underlying each CDO. The riskier the collateral, one would assume a higher chance of default. Thus, subprime, as being riskier than corporate-backed, used higher default assumptions.
- (2) Next, EY auditor reviewed the loss severity rates. Typically, those that were subprime-backed had loss severity rates in the 65% to 75% range, thus having a recovery on principal and interest payments if default occurred of about 35% to 25%, respectively. On the other hand, for a CDO that was corporate-backed the loss severity rate was typically lower meaning that recovery rate was higher as default risk was not as high.
- (3) Lastly, EY auditor reviewed the spread used for purposes of valuing the CDO. For example, EY auditor selected two different tranches of PYXIS for purposes of testing valuation. The collateral of Pyxis was the same (subprime) and both were within the same sector – High Grade Structured Finance. However, one tranche was B with a rating of AA, and the other tranche was C with a lower credit rating of A. EY auditor noted that Lehman differentiated between the tranches as a higher credit spread was taken for the lower tranche with a lower rating. Further the price used to value this tranche used greater defaults and greater loss severity than the higher tranche with a better rating.

EY auditor tested 10 CDO samples as of year end, which were price verified by Product Control using Intex. Two of the 10 samples, Corona and Ceago were related to significant

subprime, super senior tranches held by Lehman. Given the increased deterioration of the subprime market as well as the monoline insurance industry as of year end, the price verification procedures for these positions were performed separately, as these positions had significant subprime exposure and were therefore calibrated to the ABX as of year end. In addition, there were other valuation considerations (these positions were hedged via CDS' with monolines, ACA and XL, respectively). Please refer to the YE-BCDO11 workpapers for the valuation of these securities at year end.

The remaining 8 samples tested for November were related to corporate-backed CDOs. The samples are as follows:

Type of Collateral	Name	Tranche	Rating	Spread	Sector	CDR	Loss Severity	Price
Corporate	Callidus	A	Aaa	175	HY Loans	2	65%	98.72
Corporate	Ares	E	Ba1	850	HY Loans	2	65%	90.22
Corporate	Coast Inv.	B1	Baa1	400	HY CBO	1	35%	95.14
Corporate	Callidus	C	A	350	HY Loans	2	65%	96.26
Corporate	Centurion	B	AA	225	HY CLO	3	75%	105.73
Corporate	Mt. Wilson	C	A2	450	HY CLO	3	50%	85.77
Corporate	Juniper	A3A	Ca	1,400	HY CBO	3	75%	68.91
Corporate	Ing Inv.	A1	Aaa	150	HY CLO	1	35%	98.33

Note: For purposes of viewing the individual Intex screens and the relevant JP Morgan spreads please refer to the November pricing workpapers, at YE-BCDO.

EY auditor notes that the while the above scenarios do not look consistent, PC used a more case by case scenario for the purposes of valuing each of the CDOs, due to the unique features (including collateral mix) of each position. We note that since the assumptions used within Intex to reprice each CDO are subjective, PC enhanced its process and performed more stress scenarios as of year end.

EY auditor received the November year end pricing file as of 12/9/2007, and was able to gain comfort over Intex assumptions used for November by meeting with PC, Kevin McGovern on 12/12/2007 to discuss the above samples and to understand why he used the assumptions he did. Further, EY auditor asked Kevin to re-perform a stress analysis on the different assumptions, to observe how the various assumptions would change the price of a CDO.

For purposes of explaining the above, the Callidus samples will be explained in this memo. For the remaining samples, please refer to the YE-BCDO workpapers for further support and explanation.

For November testing we selected Callidus CDO – Tranches A and C. Our analytics showed the following:

(1) Kevin McGovern used a spread of 175 for Callidus Tranche A compared to a spread of 350 for the Tranche C CDO. When comparing back to the JP Morgan Chase report this appeared reasonable. Further, EY auditor noted that a wider spread indicated that PC was stressing the lower tranche which would suffer losses before the A tranche had the CDO defaulted. Further, when EY auditor met with Kevin McGovern, he pulled up Intex and used different spreads to demonstrate that Callidus was not very sensitive to spreads as it was of better quality collateral.

(2) PC used a default assumption of 2 for the Callidus Tranche A as well as 2 for Tranche C. This appeared reasonable as the underlying collateral for Callidus is not extremely risky. However, for purposes of gaining further comfort, EY auditor reviewed the other possible scenarios of 1 default or 3 defaults for Callidus Tranche C. Given a spread of 350, the number of defaults did not affect the price.

(3) Next, when EY auditor met with Kevin McGovern he demonstrated recent trading history related to Callidus Tranche A. As of our test date, the last time Callidus was traded was on 10/23/2007 at a price of 98.75. Although, the trade is slightly out of 30-35 day policy, EY auditor notes that it is close and the price is reasonable compared to Intex assumptions used (price of 98.72).

Conclusion:

Due to the volatile market conditions, there was much illiquidity in the CDO market during the latter half of 2007. As such, it was difficult to obtain sufficient audit evidence to support conclusions with respect to the valuation of these CDO positions. No market prices were found by Lehman PC for CDO inventory via IDC, EJV, EXTEL, Bloomberg, or Mark-It Partners. EY auditors validated these results by independently using EY ISP for IDC results, Bloomberg, and Mark-It partners. Lehman's results of no prices were consistent with EY auditors' findings.

For the 2007 audit, Lehman PC has been able to price verify between 75% to 80% of the CDO population. Lehman was able to obtain this coverage through performing alternative procedures, particularly recent trade history and the use of Intex.

Per FAS 157, fair value should reflect the price that would be received to sell an asset at measurement date. That price should be reflective of current market conditions, keeping in mind that it is not appropriate to assume that all transactions within an illiquid market

are forced or distressed transactions. Further, inputs in determining the fair value of the asset can be either observable or unobservable.

EY auditor concludes that Lehman appropriately valued its Cash CDO portfolio as of year end. Although, there are no direct unadjusted quoted prices available for this product, Lehman appropriately uses a valuation tool to measure fair value through inputs that are observable (interest rates, credit spreads, etc). In addition, EY auditor obtained reasonable assurance that the valuation process of CDOs was in fact, accurate, and classified appropriately on Lehman's books and records.

We tested the pricing file for completeness and for a sample of positions we evaluated the reasonableness of the inputs to the Intex model (default rate, loss severity, prepayment spend discount rate). As part of our substantive testing we reviewed valuation assumptions, write-downs, analyzed mark-to-market movements from period to period and performed data and industry analysis of the CDO positions per collateral type for reasonableness.

We noticed that PC differentiated inputs between subprime-backed verse corporate-backed. PC used higher default rates and larger spreads for collateral that was riskier compared to collateral that is of better quality. As part of our review, we observed that prices were lower for subprime-backed compared to corporate-backed, and further noticed that there was differentiation between those that were investment grade versus non-investment grade. Prices appeared reasonable when compared to CDOs throughout the portfolio.

We also obtained and inquired about any trading activity post year end, and noted due to significant market illiquidity, there was no significant CDO market activity.

As a result of our testing procedures performed, we conclude that Lehman's Cash CDO portfolio is fairly stated as of November 30, 2007.