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CDO/Credit Derivatives 2005 Conference Notes

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Panelists at the recent CDO/credit derivatives conferences expressed a generally positive outlook for the CDO and credit derivatives markets. However panelists repeatedly mentioned tight spreads, scarcity of collateral, and growing exposure to the real estate ABS sector as points of concern. In addition, panelists expressed a wide variety of views about correlation, indicating that market participants must continue wrestling with how to best handle correlation in their quantitative models.

The following summaries reflect remarks of the panelists who participated in selected sessions at the "CDOs/Credit Derivatives (U.S)" conference sponsored by Information Management Network at the Plaza Hotel in New York City on March 23-30. For the most part, the summaries have been drawn from notes taken during the sessions by Nomura employees. The summaries have not been reviewed or approved by the panelists. While we have tried to capture panelists' remarks accurately, we apologize in advance for any inaccuracies and omissions. In addition, we wish to acknowledge the excellent work of the conference organizers in hosting the conference.

The summaries below do not necessarily reflect the views of Nomura Securities International or any of its subsidiaries or affiliates.

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This report and others are available online at Nomura's new research website. To obtain a user id and password, please contact Diana Berezina at dberezina@us.nomura.com. The web address is **http://www.nomura.com/research/s16**

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8:20 a.m. – Chairpersons' Opening Roundtable

Market participants are focused on tight spreads on CDOs. CDOs experienced a period of transition over the past year. There are more types of buyers today, including hedge funds and high net worth individuals. Hedge funds are able to move quickly, which makes the CDO market more dynamic than it has been in the past.

There is also now a greater level of regulatory scrutiny on CDOs. CDOs arguably can be viewed not merely as a product on the fixed income landscape but as a *vehicle* for distributing fixed income products. Technology is a powerful driving force and it is improving transparency. There is increasingly a convergence between cash and synthetic products. CDOs remain a niche product with a high degree of customization – they are not a "cookie cutter" product.

Synthetic products allow investors to act on negative views by taking short positions.

Some new CLO structures use lower leverage (e.g., 5x) instead of the more common 9x to 10x.

CDOs of ABS is a rapidly developing area. Some ABS CDOs combine cash and synthetic features. For example, the manager of such a CDO can use synthetics to increase his exposure to securities for which he did not receive a full allocation in the initial offering.

Cash Flow CDOs: Spread compression is the headline of the cash CDO arena. Managers are seeking amendments to change the spread covenants in their deals. Some deals are being called (redeemed) immediately at the end of their re-investment periods. Initial equity returns are declining; some are now in the high single digits. Managers are interested in creating buckets for second-lien loans and unusual assets. Above all, investors are being asked to accept lower spread for greater risk.

Like other types of CDOs, ABS CDOs also are reaching for spread. Mezzanine assets are increasingly included in the deals and some have very high concentrations in real estate ABS. Synthetic ABS CDOs are growing. Many are partial capital structures. Some municipal CDOs are occurring, but it is hard to pass through the tax attributes. The pipeline of new deals also includes portions of deals backed by trust preferred securities (TRUPS), emerging market (EM) debt, loans to small- and medium sized entities (SMEs), and esoteric assets such as commodities. The pipeline of upcoming activity also includes "market value" deals.

Synthetic CDOs: The past year saw the growth of synthetic, static, single-tranche deals. Last year also was the year in which CDOs^2 (CDOs squared) really came into their own. Fungible subordination was an important structural development for CDOs^2.

CDOs^2 have highlighted the problem/challenge of default correlation. It is difficult to measure default correlation. Therefore, the market has turned to proxies, such as asset correlation or equity correlation. From another perspective, market participants sometimes focus on implied correlation.[1] Long-term investors and rating agencies tend to look for correlation assumptions that are stable and useful over the long-term. Other players, such as trading desks, may be willing to change correlation assumptions frequently.[2]

[1] Implied correlation is the level of correlation implied by actual market prices on CDO tranches. It is analogous to calculating a stock's implied volatility from option prices using the Black-Scholes model.

[2] The issue is whether performance dependency relationships among assets – which are described by correlation parameters in CDO models – are sufficiently stable to allow the models to produce results that are useful over the long run. Long-term investors and rating agencies have greater need for results that have predictive relevance over time horizons measured in years.

Managers can have key roles in synthetic transactions. Synthetic deals allow managers to take short positions. Synthetic deals now involve diverse assets including EM debt, ABS, and credit default swaps (CDS) on high yield (HY) corporate credits.

Market value structures trending toward lower leverage.

Volumes: High-yield CLOs and cash flow ABS CDOs were very hot areas in 2004. Both areas experienced substantial increases in activity relative to 2003. But, there is still relatively little interest in cash flow CBOs backed by HY corporate bonds. In other areas, investors have returned to the CDO area after having retreated because of frequent downgrades a few years ago. The secondary market for CDOs is becoming more liquid.

"Second lien" loans are becoming a significant asset class for CLO.

The recent concentration of real estate assets (MBS and real estate ABS) in new ABS CDOs may be a positive development because of the strong performance of those assets. However, the concentration may become a problem if performance takes a turn for the worse.

U.S. CDOs have displayed reasonable credit performance compared to other fixed income sectors (as measured by S&P rating transitions). Some HY CBOs are now receiving upgrades. However, downgrades continue to outpace upgrades in that sector. Now, the ABS CDO sector is the one experiencing the greatest amount of ratings volatility.

Manufactured housing (MH) ABS deals are not all the same. Some ABS CDOs have high concentrations of MH ABS that have not suffered downgrades. Other ABS CDOs have suffered numerous downgrades to their MH ABS positions.

About 89% of the downgrades of ABS CDOs are in ABS CDO from just 10 managers. Those managers account for only about 18% of the issued ABS CDOs.

Sourcing collateral for new deals is the main challenge for CDO managers. Spread compression is the main culprit. Pricing of CDOs does not differentiate among managers.

9:00 a.m. – Global Perspectives and Outlook on the CDO Market…What Can We Expect in the Year Ahead?

Overview of the Product Pipeline for 2005: The pipeline of upcoming deals backed by corporate credits is very full. New deals provide larger buckets for second lien loans. There is concern that some managers do not really understand second lien loans. Mezzanine notes and PIK (pay-in-kind) notes are entering the CLO market (to satisfy the thirst for spread). Market value deals are on the rise. Some new deals include greater amounts of non-rated assets. Corporate-backed CDOs increasingly include a bucket for synthetics. Raw real estate assets, such as commercial mortgage loan "B notes," are increasingly entering CDOs.

Investors are hungry for yield because of spread tightening in all areas of the fixed income landscape. Traditional fixed income investors are turning to CDOs as a way to get incremental yield. Alternative investors (who have previously focused on alternative investments) are buying CDO equity tranches and subordinate/mezzanine debt tranches.

ABS CDO issuance is likely to slow down somewhat because spreads are so tight. CLOs now include many second lien and mezzanine loans and loans to middle-market borrowers.

The main products for which there remains strong investor demand are CLOs and ABS CDOs. Another product in demand is market value CDOs. On the CLO front, there has been a shift from traditional equity investors toward having the sponsors retain all the equity. Some managers are using CLOs as a way to lock in term financing at attractive rates. Hedge fund CDO issuers also are

attracted to the ability to lock in low-cost term financing. This somewhat resembles a bank balance sheet CDO from the late 1990s.

Investors arguably should consider deals from first-time managers because those managers may have accumulated better asset portfolios before deciding to issue CDOs. For example, an MBS investor decided to issue a CDO and included 250 MBS from a variety of different vintages in the collateral pool for its first deal. A new deal from an established manager probably could not have included such a diverse and strong portfolio.

CLO managers today have a hard time finding collateral. Collateral spreads are extremely tight. A greater proportion of today's collateral is coming at the single-B level. It is harder to hit WARF (weighted-average rating) targets today than it was before. In response to the tough environment, managers seek longer ramp-up periods and use carry from their warehouses to subsidize collateral purchases. A key question is whether managers adhere to their core competencies or whether they reach beyond their comfort zones in search of yield.

An investor panelist observes that value is hard to find in today's environment. CLOs arguably offer the best values among the choices. The investor focuses on diversification, on managers, and on structural features. At certain times over the past year, ABS CDO spreads were wider than CLO spreads and appeared to offer value opportunities.

CDO Sub-sectors (New Products): Spreads have tightened on mezzanine ABS collateral over the past 18 months. That has created a challenge for managers of ABS CDOs. Today, spreads on senior (triple-A and double-A) ABS also have tightened to levels that squeeze out the arbitrage opportunities for high-grade ABS CDOs.

Recently, some ABS CDO transactions had to unwind because they could not satisfy their spread requirements. Managers will need to explore ways to reduce costs in the transactions, but it seems unlikely that there is much room to do so. Money market and medium term note (MTN) structures have helped to reduce funding costs in the deals, but it is just not enough.

Broad distribution of equity helps a deal. Broad equity distribution assures that the arranger has not sold the equity at "off market" terms just to get a specific deal done. One shop imposes a limit of 35% of a CDO's equity being sold to high net worth individuals (*i.e.*, there must be significant institutional absorption of the equity).

A positive development is the emergence of credit default swaps (CDS) on ABS. A driver of the ABS CDS has been ABS CDOs looking for collateral. It is possible to construct reasonable (index) portfolios to use as spread hedges. Dealers seek to hedge risk by buying protection on pools of ABS. It is possible that single-name ABS CDS will evolve in a pattern that mirrors the development of the corporate CDS market. Some portfolio trades will get done and the market will grow.

Another panelist expresses the view that synthetic ABS (*i.e.*, ABS CDS) are a fantastic development for the ABS CDO market. However, there are some obvious challenges. There is no standard template for ABS CDS documentation. Positions may be illiquid. CDS on a whole portfolio of ABS may offer an arbitrage advantage for the person doing the deal. It is tougher for an investor to trade on equal terms with a dealer in either synthetic ABS portfolios or (especially) synthetic single-tranche ABS deals. The dealer is likely to have a substantial technological advantage. The simple path for investors is to buy a managed cash deal, where the manager is a fiduciary and the equity tranche bears most of the cost of paying the manager.

The downgrades in ABS CDOs are largely attributable to MH collateral, but not all MH collateral was created equal. Multi-sector CDO deals from 2000 and 2001 probably have not yet seen the worst of their credit problems. Deals backed by "higher quality" (*i.e.*, higher rated) collateral have greater leverage (*i.e.*, thinner equity tranches) and, therefore, have higher vulnerability to potential credit deterioration. Franchise, aircraft, and 12b-1 fees were all sectors that experienced stress that hurt CDOs.

Secondary Market Liquidity: Secondary market liquidity has improved significantly over the last few years. Last year there was an active secondary market for CDOs. Good liquidity is partly a reflection of the benign credit environment. Some investors who left the CDO market after the last credit cycle still have not returned. Another key driver has been the growing activity in mezzanine tranches. Investors now feel more comfortable with their understanding of mezzanine tranches valuation. Technology (*e.g.*, Intex) has been another key factor in improving secondary liquidity of CDOs. Spread tightening for mezzanine and equity CDO tranches has further boosted secondary liquidity. However, there remains plenty of room for liquidity to improve further. The sub-sector with the greater room for further improvement is ABS CDSs.

Predictions for 2005 and Beyond: One panelist feels that 2005 will be a great year for CDOs. Secondary trading in ABS CDOs will increase. New issue ABS CDOs may decline somewhat after booming last year. But, single-name ABS (synthetics) will increase. The level of CLO issuance will depend on spreads; wider spreads should cause higher levels of issuance.

A second panelist feels that 2005 will be an active year and that spreads may grind tighter until default rates rise. There are many deals competing for a limited amount of collateral. The panelist suggests that there should be greater pricing differentiation among CDO managers and structures.

A third panelist (an issuer) expects that the next several years will be great for the CDO market. However, the portfolios being constructed today may face challenges when the credit cycle turns in 2006 or 2007. A fourth panelist observes that pro rata structures can lead to high rating volatility if there is back-end erosion (*i.e.*, late in deal's lifecycle). A key question for the next downturn will be the performance of second lien loans.

10:00 a.m. – The Latest CDO Structural Innovations and Enhancements

New funding structures, such as issuing asset-backed commercial paper (ABCP), are present in many new deals. Also, hedge funds are issuing multi-strategy CDOs

Some new cash flow deals have adopted "targeted OC structures" similar to regular ABS.

First-to-default (FTD) baskets and CDOs^2 have helped issuers achieve higher leverage. In addition, they permit investors to act on views about correlation as a way to earn higher spreads.

DBRS uses a Monte Carlo simulation approach to rating CDOs. In one sense or another, the rating agencies use "an actuarial approach to a series of stochastic risks." Analysis turns on assumptions about default rates and correlation [also loss severity]. Time decay is a key factor.

An investor in senior tranches favors deals that include interest reinvestment tests that require reinvestment of interest instead of allowing it to "leak out" to the equity. The test started showing up in 2003, along with other structural features intended to stabilize deals. The trigger generally is set at a level slightly outside (above) the interest coverage test for the lowest tranche.

A reverse turbo feature in a pro rata structure lowers the deal's overall interest expense.

The BMA is leading the charge to make a uniform style of monthly reports for CDOs so that investors will be able to use them more easily. The overall direction is toward less paper. All the reports should be available electronically.

"Pay as you go" structures try to replicate how an underlying ABS actually performs. Other synthetic ABS structures need to estimate (guess) performance measures such as net recoveries.

CDO investors have started asking for ABS structural features such as locked-out triple-A tranches. The pro rata pay structure helps a deal's arbitrage by retiring higher-coupon tranches more rapidly. If there is poor collateral performance, the deal can switch to the usual sequential structure.

CBO vs. CLO structures: There are now more corporate-backed CLOs than CBOs. Corporate-backed CBOs have displayed weak performance compared to CLOs. Default rates on loans have been lower than default rates on bonds. Recovery rates on loans have been better than recovery rates on bonds. Loan deals had lots of cushion in them. Loan prepayments were steady from 1999 through 2002, which allowed managers to choose between reinvesting and paying down their CLOs. The underlyings (loans vs. bonds) essentially come from two different markets. Loans came from banks and eventually found their way out to the secondary market. Today, CLOs are becoming part of the loan origination market. A key issue is whether the performance of old loans – originated in an environment where banks expected to hold those loans on their balance sheets – is a reliable basis from which to formulate performance expectations for the loans being originated today.

11:05 a.m. – Rating Agency Perspectives: Outlook & Methodologies

Competition: Competition among the rating agencies on credit enhancement levels presumes that ratings are fungible commodities and that investors do not differentiate among the rating agencies. If investors do not differentiate, then dealers will gravitate toward the rating agencies that provide the lowest credit enhancement levels because that makes deals more profitable.

Another panelist contends that if investors perceived that one rating agency was consistently more or less strict than the others, it would be reflected in the prices of securities. A third panelist replies that deals rated by different rating agencies actually do display pricing differences.

Another panelist observes that rating agencies also compete on service, access to analysts, and in providing timely commentary and analysis.

Market Evolution: Over the past few years, the rating agencies have encouraged the use of structural enhancements that have helped to steer manager behavior to be more favorable for CDO bond investors.

Credit Events for ABS CDS: In its basic form, "failure to pay" is not a suitable credit event for PIK securities. "Failure to pay" must be customized for handling PIK securities. S&P allows PIK-ing for up to 24 months, but then treats the security as having experienced a credit event. Likewise, the application of an "available funds cap" should not constitute a credit event. "Bankruptcy" is a proper credit event for ABS CDS. However, appointment of trustee or custodian obviously (by itself) should not be credit event. Downgrade to CCC- or CC reasonably can be a credit event. A write-down of the underlying securities principal can be a credit event if it is "mathematically impossible" for the instrument to be subsequently written-up.

Innovations: Many recent innovations or new structural features have been intended to address spread compression. CDOs of first-to-default baskets are correlation plays. Trading to model (rating agency model) alleviates some moral hazard.

Protections that the Market Would Want: The market should want a perfect interest rate hedge. Interest rate mismatch is a problem that has exacerbated some downgrade situations. In the past, the market under-appreciated the interest rate issue, but now the market is more savvy and sensitive to the issue.

Surveillance: Moody's recently formed a centralized monitoring group to improve monitoring on the 800+ CDOs that it rates. There is now an automated system that produces monthly reports on each of the deals.

Adverse Developments: Some CDOs now purchase mezzanine or subordinate tranches of similar CDOs from other managers who have similar investment styles. This somewhat undermines diversification (amplifies correlation) while boosting leverage. Another possible area of concern is the going trend of including unrated assets in CDOs.

Synthetics – Cheapest to Deliver: In some synthetic CDOs, the calculation agent has the option to deliver the cheapest deliverable after a credit event. This is detrimental to the CDO. In response, a rating agency can apply a haircut to recoveries if there is a cheapest to deliver option.

Outlook for Downgrades/Upgrades: According to one panelist, the 2000 and 2001 vintages of ABS CDOs are likely to experience a bit more deterioration. Other CDO sectors should display rating stability.

A second panelist feels that the declining default rate for speculative-grade corporate bonds will help HY CBOs. HY CLOs will continue to do well but ABS CDOs probably will continue to show some deterioration.

A third panelist feels that 2005 should be similar to 2004. Performance should continue to be better than it was in 2003. There were many withdrawals in 2004 because of bonds being called (redeemed). ABS CDOs were the poor performer in 2004. That sector accounts for most of the downgrades that have already occurred in 2005.

The fourth panelist feels that interest-only CMBS mezzanine tranches are an area of particular concern.

Interesting Innovations for 2005: One panelist feels that commercial real estate CDOs backed by unrated assets may be a major development of 2005 (they started appearing at the end of 2004). That kind of deal may have real staying power. A second panelist feels that synthetic CDOs^2 with cross subordination will be a hot item in 2005. They are already happening in Europe. A third panelist feels that second lien loans and middle market loans will be a growing area in 2005. The fourth panelist expects that some managers will seek to include commodities or CDS linked to commodities in their deals in order to boost diversification.

11:50 a.m. – Researchers' Insights on the CDO Market

Are the Newer CDO Vintages Safer than the Ones that Suffered Heavy Downgrades?: One panelist feels that newer CDOs should display credit performance that is more predictable (safer) than older vintages. The older deals were not structured tightly enough, which let the equity tranches receive too much at the expense of bondholders. Managers were able to manipulate their activities to the detriment of bondholders. Purchase price requirements, triple-C haircuts, supplemental OC tests, and other new features help a lot.

Another panelist feels that deals from the 2004 vintage show some deterioration of structural protections compared to 2003 deals. This is because of the continuing push for yield. Today's deals are clearly better than those of the 2000 vintage. However, it's hard to say whether deals from before 2000 would have survived if they had today's structural features.

A cynical view might be that structure does not matter at all; everything is in picking the assets. More realistically, there is greater variation among managers than among structures. The spring of 2003 was the peak for structural protections. Today, the range between the best structures and the worst structures is fairly narrow. However, there is wide variability in the degree of debt-friendliness among managers. From an equity perspective, the manager is paramount.

Managers have achieved differing levels of equity performance for HY CDOs and ABS CDOs from the 2000 vintage. CLO managers have achieved better performance for the equity tranches of their deals. Analysts can compare managers based on overcollateralization (OC) erosion and WARF preservation. However, it is still hard to directly measure manager behavior separately from the fee structure under which a manager operates.

In HY CLOs, equity investors are driving innovation. In ABS CDOs, debt investors are driving innovation.

It is debatable whether CDO investors actually care about structural innovations. Overlap within CDOs^2 is an example of an investor-driven issue. Cross-collateralization among the inner tranches of a CDO^2 also may be an investor-driven issue. One panelist argues that although investors care most about spread and ratings, they also care about structural features. However, the panelist argues that investors do not place enough emphasis on structural features. He speculates that investors do not necessarily appreciate the differences in risk among different deals and that they sometimes take incremental risk without realizing it.

Many more "alternative investors" now participate in the CDO equity space. They are drawn to CDO equity because of low projected returns for the stock market over the near future.

A key question is whether CDO investors simply continue buying the same risk repeatedly in different deals.

Right now CDO investors do not have much market power. They are not in a position to dictate the credit terms of the deals. Equity investors have much more power.

The non-credit terms of CDO tranches are becoming more idiosyncratic. In February there were about eight or nine different CLOs, each of which had unique non-credit features in their debt tranches. This is somewhat surprising because investors were pushing for uniformity just a few years ago. However, the customization responds to the demands of debt investors who are willing to accept low spreads only with the idiosyncratic structures.

What's Good and Bad about the New Models: Credit derivative technology has drawn heavily from CDOs. One approach for considering value and risk is to look at historical defaults and correlations. That is the rating agency approach. A second approach is to look at market implied default probabilities and correlations (*i.e.*, default probabilities and correlations implied by market prices of bonds and credit derivatives). The latter approach has the benefit of being forward looking rather than backward looking. In effect, we now have a Black-Scholes type language (paradigm) for talking about default probability and correlations. The new mathematical models based on market implied default probabilities and correlations provide the market with a common vocabulary.

The move toward Monte Carlo simulations for cash CDOs is a positive development. It is an improvement over analyses based on constant annual default rates. On the other hand, a clear weakness (of the present environment) is that some professionals are using "the last three months" data on correlation. Their correlation modeling assumptions change monthly. Some professionals ascribe too much precision to an inherently noisy and foggy phenomenon. However, there is a benefit in rapidly adjusting default probabilities and correlation assumptions because doing so allows dealers to rapidly adjust their correlation books.

Models still do not have good solutions to describe the linkage between credit risk and interest rate risk in CDOs. The call risk involves embedded options that must be addressed.

It would be harder to actually model cash flow CDOs with Monte Carlo approaches and copulas than with the customary approaches. One panelist contends that constant annual default rates and static default rates are the wrong way to look at cash flow CDOs. The real world effects of back-end loading or front-end loading of defaults can be extremely important in whether investors get paid or not.

CDO research has moved away from an educational role and toward a benchmarking role. CDO researches are where ABS researchers were about five years ago. They are being called on to make relative value calls and to find hidden values in the market. CDO investors do not fully appreciate prepayment risk and how loan prepayments have affected the CDO (CLO) market.

There is value within CDO research of having all sub-sectors brought together. ABS research has become too sub-segmented and fractured. Another panelist contends that CDO research still has an important educational role because the universe of CDO investors continues to expand.

Relative Value Picks: New issue spreads are tight. AAA CLOs have a great record. Maybe CLOs present the best value. Double-Bs are good if you can find them. The secondary market has good technicals. Sometimes, a week after issuance, it is possible to buy a tranche for 5 or 10 bps cheaper than the level at which it was offered. One panelist likes the high-grade ABS CDOs but he is skeptical of the mezzanine ABS CDOs. He likes CLO equity.

2:00 p.m. – Recent Trends in Loan Collateral in Middle-Market CLO Structures

The move toward middle-market loans[3] as collateral for CLOs is a further expression of the search for spread. Some middle-market lenders have become CLO issuers for funding. In addition, some middle-market lenders have started using CLO technology for analyzing and pricing middle-market loans. The introduction of middle-market loans into CLOs has spurred investor interest in middle-market whole loans because the product has become more liquid. [This seems debatable.]

Best practices in underwriting middle market loans include following consistent underwriting practices. One panelist (from a middle market lender) observes that his company applies a "zero loss" underwriting philosophy. Underwriting must include analysis of both the borrower's business and any assets posted as collateral. A second panelist emphasizes the importance of applying consistent standards through economic cycles. It is temping for a lender to loosen its standards when the market is hot. It is challenging to book assets when other lenders are tripping over each other to lend money.

A panelist from a hedge fund notes that smart lenders should be willing to reduce the level of their lending activity when the market becomes too hot. It is advantageous for a lender not to be under pressure to put money to work every month.

The panelist from a hedge fund notes that his company does mostly second lien lending. The company has a loan portfolio of about $2.2 billion and borrows primarily through CDOs. At one extreme, the company sees syndicated second lien loans from the broker-dealer community. Those loans have high leverage and no fees, producing all-in returns of 8% to 11%. The broker-dealers are responsible for structuring the loans and the buyers have little participation in structuring. The panelist's company does not participate in that area at all. Instead, the company is active at the other extreme, where leverage is lower (2.5x to 3.5x) and there are up front fees. The all-in returns are in the range of 11% to 14%. The buyers (lenders) participate actively in structuring the loans.

A first lien lender usually is an asset based lender rather than a cash flow lender. That leaves somewhat more "meat on the bone" for a second lien lender. A second lien lender may be able to get a first lien position on non-U.S. assets or on intangible assets. The private (non-syndicated) side gives greater rights to second lien lenders. On the private side, the second lien lender is not subordinated and gets covenants. Also, the second lien lender in a private loan often has the right to buy out the first lien. On the syndicated side, the second lien loan is often glorified mezzanine financing because of an inter-creditor agreement that favors the first lien lender.

Monitoring and Servicing: Regular communication with borrowers and equity investors is essential in servicing middle market cash flow loans. In asset-based loans, it is necessary to continually re-evaluate the collateral. Monitoring middle market loans is critical. Waiting for a covenant breach or a rating downgrade is too late.

Broker-dealers are likely to side with borrowers and to push lenders to waive covenant breaches because they hope to win further business from their relationship with the borrower.

When a hedge fund lender wants to get out of a loan it brings in an asset-based lender that will maintain daily scrutiny over collateral. The company specializes in lending to borrowers in certain

[3] A typical "middle market loan" is one to a private companies with annual revenue between $25 million and $500 million. The borrowers usually are unrated.

industries (such as pawn shops and payday loan companies) that other lenders are reluctant to serve.

Outlook: The middle-market loan sector appears overheated and aggressive right now. There may be some trauma in the leveraged loan market, in the second lien loan market, and in the privately negotiated loan market (though somewhat less than in the others). Some of the workout firms and vulture firms are staffing up in anticipation of the shakeout. A second panelist agrees but believes that opportunities will remain for the careful lenders. A third panelist is starting to see cracks in some of the larger middle -market loans. Bankers are pushing back on the borrowers. Overheated real estate in the U.S. and in the U.K. probably contributes to the pressure. Interest rates could go up for reasons other than a strong economy. Default rates could start to rise within the next 12 months.

2:45 p.m. – Repackaging of Stressed Corporate and Distressed Structured Finance Assets

A distressed security of substantial size can be a good candidate for repackaging. The MH sector has supplied much raw material for repackagings. However, most of the best opportunities for repackaging distressed MH ABS have already been exploited. An ideal case for repackaging is where a security's rating and its pricing conflict. The best repackaging candidates now arguably are the ABS CDOs from 2000 and 2001. Those deals tend to have high concentrations in MH, franchise, and other troubled ABS asset classes.

Dealers have looked at many potential opportunities in doing repacks. However, there is now such a strong bid for unrated collateral that much of the motivation for doing repacks has been eliminated.

One panelist contends that equity and senior debt should like combo notes.[4] Holders of mezzanine tranches should be wary of them.

Repacks and CDOs^2 arguably make market participants slaves to the rating agency methodologies. The risk for a manager or structurer is putting his own judgment and experience aside just to follow the rating agencies' models. A different panelist contends that his firm has not been able to make combo notes fit within the constraints of the rating agency methodologies.

Analytics, Transparency, Liquidity: Synthetic CDOs^2 permit investors to drill down to the underlying exposure and to apply rigorous analytics. However, in dealing with distressed managed deals, those steps may not be practical.

The technology is all there with Intex. The whole game is in picking assumptions.

In both the synthetic market and the cash market, correlation is the big uncertainty. The difference is that the synthetic market allows hedging correlation while the cash market does not.

Another panelist contends that the analytics have come very far and are very "tight." That makes it harder to make money (because many market participants use the same valuation methodologies). It means that pushing into distressed credits is more necessary as a strategy for making money.

3:45 p.m. – Examining the Latest Trends and Outlook for the Leveraged Loan Market

The quality of leverage loan deals is declining. Structures are getting looser. Covenants are weaker. That makes cash flow modeling more important. There is plenty of collateral out there, but the quality is generally weak.

[4] In the CDO context, the term "combo note" generally refers to an instrument created by combining two separately rated tranches of the same deal. For example, combining the triple-A and triple-B tranches of a deal might result in a single-A-rated combo note.

The performance of CLOs has been quite good. Even those that got into slight trouble have recovered. Additionally, structures have gotten tighter over the past year. However, some deals have greater leverage. There is growing use of total return swaps (TRS).

Trends: Many investors have come into the loan market in the past five years. This should make the competition for capital in the loan markets more efficient. Spreads have permanently tightened. There are sixty retail funds today that focus on loans and a typical loan syndication has 80 [??!! – maybe the speaker said 18??] potential lenders rather than 12 to 14, as it did just a few years ago.

In the loan market, once structural protections (*i.e.*, standards) erode, they never really return. In some respects, the bond market has tougher standards and is more adept at structuring for tough situations. The pricing of loans may suffer when market participants realize that how risky loans have become and that lenders truly can suffer losses. In the meantime, though, there is no clear event that is likely to trigger the re-pricing.

Equity investors today are willing to accept lower yields than they would have demanded a few years ago. In the past, the objective was always to take the first dollar out as soon as possible.

Managers of existing deals want to get looser restrictions on new deals. They want to be allowed to take short positions by using CDS.

Minimizing the Impact of Structure on a Manager's Ability to Manage: There are no restrictions that are entirely benign.[5] Managers can readily handle minimum purchase price requirements. In contrast, a triple-C haircut provision is tougher because it puts the manager at the mercy of the rating agencies. If the rating agencies downgrade a whole industry, a manager may get clobbered. The most critical question for a manager is whether his management style fits within the constraints built into his deals.

Another panelist criticizes deals that automatically treat defaulted assets as being worth 50¢ on the dollar because trading desks with which the deal's manager trades will exploit that requirement. That is, even if the fair value of a defaulted asset is 70¢ on the dollar, the trading desk will bid 51¢. The panelist amended indentures six times over three years for a number of his deals from the 1997 and 1998 vintages.

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[5] All the rating agencies focus on manager quality. *See, e.g., Global Cash Flow and Synthetic CDO Criteria*, Standard & Poor's special report, at 54-60. However, rating agencies differ in their emphasis on manager trading restrictions. *See* Russotto, E. and J. Schiavetta, *Enhanceing the Structural Foundation of Cash Flow CDOs: What Investors Should Ask*, Fitch special report (19 May 2003); Harris, G., *Commonly Asked CDO Questions: Moody's Responds*, Moody's special report (23 Feb 2003); Chen, N., *CDONotes – Post-Reinvestment Period Reinvesting in Actively-Managed CDOs*, Moody's special report (18 Feb 2004). Among the three major rating agencies, Fitch now appears to place the greatest emphasis on manager quality and the least emphasis on structural restrictions. A recent Fitch presentation highlights that emphasis as follows:

No Asset Manager Trading Restrictions

Fitch Guidelines	Other Agencies' Requirements
> Max WARF	> Max WARF
	> OC Haircuts
	> RR tests
	> Limitation on trading if CDO notes are downgraded
	> Minimum percentage of assets rated and notching policy
	> Forced sale of defaulted assets within specified timeframe

Why? Fitch places most emphasis on asset managers experience and ability

Benefits of a Fitch Rating – A Structured Finance CDO Presentation, Fitch presentation (2005). Imposing fewer trading restrictions on a CDO manager makes the CDO more like an operating company and less like a traditional (static) securitization. The concept is not entirely new to structured finance; there have been numerous operating company securitizations, especially in Europe. However, analyzing such deals arguably relies more heavily on qualitative factors. That, in turn, seemingly runs against the prevailing trend in the CDO market toward ever increasing reliance on quantitative analytic tools. It remains to be seen whether increased emphasis on manager quality (and manager discretion) can co-exist in harmony with quantitative rigor.

Second lien loans are here to stay. CLOs likely will continue to include relatively small buckets for second lien loans.

Second lien loans should be examined just like any other component of a borrower's capital structure. A second lien lender ought to analyze the borrower's cash flow as the primary means of getting repaid and should analyze the collateral as a secondary source of repayment. Some "first lien" loans have no real asset protection supporting them.

CDS can be used to hedge risk in a loan portfolio.

Concerns: CLO investors should be most concerned about the corporate credit environment and the possibility for future deterioration. Structural enhancements provide some protection, but deterioration of the corporate credit environment (especially in combination with rising interest rates) could jeopardize many deals. A second panelist believes that investors should be concerned about potential conflicts between holders of different tranches of a deal. He believes that deal structures still have not aligned interests all the way across capital structures. A third panelist is worried about the law of unintended consequences. He cautions against including elaborate restrictions that cover actions that a manager would not take in any case. The fourth panelist says that investors need to make sure that they understand the risks — the assets are still risky despite the frothiness of the cycle. Some managers are aggressive and some are conservative. Investors need to understand the differences among managers and to pick managers based on those differences.

It is likely that most many loans in the loan market will lack call protection in the near future. The balance of power now favors borrowers.

4:45 p.m. – CDO Valuation Approaches

Market participants use a variety of approaches for CDO valuation; scenario analysis, iterative analysis, and probabilistic analysis are the dominant approaches. Scenario analysis offers the advantage of not relying on steady default rates. Some market participants select stress scenarios based on historical default rates during stressful periods. Iterative analysis solves for "break even" rates of defaults or levels of correlation. The key to probabilistic analyses is their underlying assumptions.

Another panelist (a trader) observes that, market participants use a whole variety of approaches. Net asset value (NAV) has been a common approach, but it probably is a wrong way to look at cash flow deals (though it may be right for market value deals). For cash flow deals, it is necessary to run cash flows and yield tables. Most market participants do not rely heavily on ratings in the secondary market because the ratings too often are stale.

A third panelist feels that modeling cash flows with assumed collateral default rates is the best approach. NAV is a bad approach for analyzing CDO value.

The market arguably places less emphasis on manager quality today than it did in the past. An investor panelist asserts that he might give a new manager greater flexibility than an old one, but he would not give the new manager a spread concession (an old manager with a good track record might get the greatest degree of flexibility).

The market seems not to appreciate the value that a good manager brings to a deal. Because of their long tenors, most deals will have to weather a market cycle — having a good manager makes a big difference at the bottom of the cycle. Managers of leveraged loan CLOs tend to possess very strong expertise in leveraged loans. Managers of ABS CDOs tend to lack expertise in the full range of collateral types in which they have to trade.

Getting reliable price marks is a challenge for CDO investors. Another challenge is pricing the call risk embodied in CDO notes.

One panelist observes that the market is rich right now (*i.e.*, spreads are tight). However, he does not expect spread volatility within the next 12 months.

The fact that different market participants ascribe different prices to a bond may simply reflect the fact that they use different assumptions for modeling. Alternatively, it may indicate that some participants do insufficiently detailed modeling of the bonds. CDO investors too often fail to do the "nitty gritty" credit analysis of the collateral behind their deals.

Should CDO trades be posted on TRACE so that all market participants can see where bonds really have traded? CDO bonds generally do not trade frequently enough to produce meaningful data on TRACE.

Investors who buy low in the capital structure of deals need to focus on the underlying collateral. In contrast, it would be inefficient for an investor in triple-A CDO tranches to drill down on every bond. Triple-A investors need to use short-cuts to be able to make quick decisions. However, many triple-A investors do examine the "top 10" exposures in each deal to see whether they have overlapping exposure across multiple deals.

Even triple-A investors need to worry about buying into asset classes that become distressed. That problem affected some ABS CDOs from five years ago

<u>Where do modeling assumptions come from? Do they come from historical data? What is the best source for historical data</u>? One panelist explains that he has to justify all his assumptions to his management. He uses rating agency default and recovery rates. He also uses the actual default and recovery rates of a deal's manager. He argues that market participants need to look back at what the market did and think about it. He asks: What if the situation of 2000-2001 repeats and loan default rates hold at 6% to 7% for a couple of years? He argues for the need to look at real world historical experience.

A second panelist endorses the use of historical data but cautions against looking back 70 years. He recommends looking at prices in the market and assessing what assumptions are implied by the market prices.

Has the market forgotten the default rates of just a few years ago? Answer: The market always forgets. The market has a short memory. The memory of the underlying collateral markets is even shorter than the memory of the CDO market.

ABS CDOs arguably offer a great secondary market opportunity right now. Modeling of the deals seems oversimplified: the underlying deals are modeled at zero loss assumptions and then a static loss assumptions is layered on at the CDO level. Intex <u>does</u> permit specifying loss parameters for each item of underlying collateral in an ABS CDO. Running such an analysis takes a long time, but it can be done.

Thursday, 31 March 2005

8:30 a.m. – Co-Chairpersons' Recap Remarks

Yesterday's panelists noted the following positives: (1) the strong feeling of optimism in the market, (2) liquidity, and (3) the benign credit environment. They noted the following negatives: (i) the lack of differentiation among managers, (ii) longer warehousing periods for new deals, (iii) the dearth of double-B securities for CDO managers to buy for new deals. Panelist had mixed views about the outlook for CDOs backed by corporate credits. They generally had positive views about ABS CDOs and some other CDO sub-sectors. Researchers think that structural enhancements make today's deals safer than older deals.

In the leveraged loan area, SME loans arguably are stronger and safer than broker-dealer syndicated loans. Newer loans have weaker covenants than older loans. Many CLOs now seek to incorporate middle market loans and SME loans.

Balancing the interests of debt and equity in CDOs remains a key challenge.

8:50 a.m. – Worldwide Outlook for Credit Derivatives/Synthetic Securitization – The Industry Weighs In

Update: Issuance of single-name synthetic CDO is running at three times last year's level. Many new deals are backed by RMBS. Issuance of ABS CDOs also is three times as active as last year. There is an increase in managed trades. New deals include interesting new structures, such as leveraged super-senior tranches.

Asia: In Asia (as in Europe and the U.S.) there is lots of growth. Most of the deals are "plain vanilla" single-name CDS. There are many digital trades. Thailand, Taiwan, and Philippines have published guidelines of what they would like to see in deals. Most portfolios in Asia have been composed of primarily U.S. and European names, but they are likely to include a greater proportion of Asian credits going forward.

Europe: In Europe, there is a burst of activity in cross-collateralized CDOs^2.

Value: The best value arguably is in synthetic double-Bs. Savvy investors will use the ability to go short. Single-name synthetic tranches have become profitable. Triple-A tranche buyers want to increase the correlation in the underlying portfolios in order to get more spread on investment grade portfolios. Most deals continue to have tenors of five year, but a rising proportion have longer tenors.

Another panelist feels that spreads are even tighter in Europe than in America, which makes it even harder to find value there. CDOs arguably insulate investors from some measure of event risk. The panelist is wary of structural tweaks designed only to boost yield. He shuns mezzanine tranches of cash ABS CDOs, where collateral is heavily dominated by HEL ABS with a common interest rate risk. On the credit derivative side, there is opportunity over the next 12-18 months as investment banks strive to get the market going. Investors will be able to push for favorable documentation with respect to interest rate risk.

High Yield Loans: The sector is active on the synthetic side. Longer tenors bring increased analytical risk.

Applying Credit Derivative Technology to ABS: A negative basis trade is a synthetic trade on a specific ABS (or CDO tranche). Economically, the trade splits the coupon on a cash instrument between the party buying protection (who holds the cash instrument) and the party selling protection. Protection buyers get the benefit of credit protection on the security, which can be a risk management tool. The buyer may get to book a hedge and may be able to hold less capital. The protection seller gets to take the risk on the bond without having to put up any cash to buy the bond. Investment banks and trading desks are active in negative basis trades. Trading desks use it as a synthetic short. Negative basis trades are a classic case of a square peg and a round hole – the documentation started from the corporate sector and needs to evolve to be fully suited to the ABS arena.

ABS CDS: In ABS CDS, "pay as you go" contracts make more sense than in corporate CDS because ABS/MBS die slowly, taking write-downs over months or years. The market does not really know what it wants yet. Most contracts still revert to physical settlement when a bond defaults or gets downgraded to triple-C. "Pay as you go" literally should not revert to physical settlement.

The question of settlement is critical. Physical settlement probably will not be a long-term solution. Cash settlement is even more problematic because the outstanding volume of specific bonds is very

small. The "pay as you go" concept should continue to be refined. However, it is likely that some kind of physical settlement will remain.

Liquidity is the real goal for everyone in the ABS CDS area.

The market may divide itself between the triple-A side and the rest. For ABS rated triple-A, deaths (defaults) are rare and slow. However, for ABS tranches that carry speculative-grade ratings, death comes quickly when it happens. Accordingly, lower-rated ABS tranches reasonably can be handled with either cash settlement or "pay as you go" CDS. The "slow death" character of triple-A-rated ABS tranches favors "pay as you go" CDS because the economics of a cash settlement may diverge significantly from the economics of the reference credit.

In "pay as you go" ABS CDS, should the seller have to pass through PIK payments? Should the synthetic be PIK-able? What about the issue of available funds caps in ABS backed by home equity loans (HELs)? The promise in the securities carves out that risk. Should activation of the available funds cap be a credit event (expected interest vs. promised interest)? Another issue with "pay as you go" is that a write-down may later be reversed, which gives rise to credit risk in the protection buyer. Yet another issue is optional termination.

Many of the hard issues with ABS CDS relate to trying to take a standardized approach to non-standardized products. ABS is not a homogenous area. It has different sub-sectors and individual securities have nuances. S&P has concluded that PIK-ing is an acceptable CDS credit event if a tranche PIKs for 24 consecutive months. In single-name pay-as-you-go swaps, the available funds cap is included, but it should be specifically disclosed. If the available funds cap is a credit event, it can erode principal and becomes a problem for rating.

One view is that there should not be a different between the cash instrument and the synthetic counterpart so that players can readily move back and forth between cash and synthetics.

100% Synthetic CDOs (backed entirely by CDS): Some dealers are creating "correlation books."[6] They use the correlation books to create 100% synthetic CDOs. Straight, arbitrage CDOs that are 100% synthetic are probably coming because they would have no supply constraints. "Two guys and a Bloomberg" will no longer be at a disadvantage for acquiring collateral.

Correlation models with respect to ABS present interesting issues. One view is that it would be good for the market if all the dealers embrace the same models for running their correlation books. Dealers arguably have not sufficiently analyzed how to run correlation books on ABS. Instead, many of them choose ABS and MBS to include in their CDOs based on their ABS/MBS warehouses and their trading inventories.

A protection seller ideally would want to get all the reports that a bondholder would get and to have all the voting rights that a bondholder would get. A protection seller should ask for that from the protection buyer (assuming that the protection buyer is long the underlying bond).

Are rating agencies asked to rate correlation? They have been asked to rate single-tranche pooled ABS synthetics. Passing through voting rights is impractical in pool situations.

Trading Strategies: The ABS CDS allows players to take short positions.

Managed Mono-Tranche: An investor panelist has been involved in a few managed single tranche transactions. Such transactions will never become anything more than a minor sideline for CDO managers. Managed single tranche deals have been developing more slowly than people think. Do trading gains stay in the deal or leak out? That is a key issue. If trading gains leak out, it can weaken the deal and erode protection.

[6] A "correlation book" is a system of hedging exposures to correlated credit risks. Dealers that create single-tranche synthetic CDOs maintain correlation books to hedge the risk from creating the securities.

Outlook: Volumes will increase this year. Maybe 500 deals in the U.S. and possibly 1,000 in Europe. The tight spread environment is spawning creativity. The market is trying to crack the code; it is trying to find the next big thing (like CDOs^2 were in 2003).

10:50 a.m. – Synthetic CDOs and CDS

The single-name CDS market has reached $8.5 trillion, which is more than three times the size of the underlying debt markets. The synthetic CDO had issuance last year of about $100 billion. Assuming five times leverage, the underlying credits would amount to $500 billion upon which risk was transferred. In comparison, actual corporate debt issued last year was about $300 billion. The point is that CDS accomplish a massive flow of credit risk transfer.

About 70% to 80% of new loans now go into cash CLOs.

In synthetic CDOs, the static market is much larger than the managed market. Most synthetic CDOs are based on investment grade corporate credits. But, there is a growing trend to do synthetic CDOs backed by speculative grade credit, ABS, EM credits, or municipal credits.

Single-tranche synthetic CDOs generally are based on pools of corporate credit (corporate CDS).

Investors in synthetic CDOs include banks, insurance companies, money managers, hedge funds (a huge presence), pension funds, re-insurers, and monoline bond insurers. About 55% of investors come from Europe, about 25% from North America, and about 20% from Asia.

Mezzanine investors arguably get more of the liquidity premium than they deserve. Synthetic CDOs are attractive because of spreads. Synthetic CDOs "work" (*i.e.*, the arbitrage works) when the spread on the DJ CDX.IG.NA is 46 or higher (it's now about 49).

Products and Innovations: We live in incredible times. Managed synthetics grew significantly over the past year.

A managed synthetic is a pool of CDS (or CDS and ABS) that gets adjusted from time to time by a manager. Compared to a regular managed CDO, a managed synthetic offers the manager greater flexibility with respect to what credits can be included in the deal. Most investors are interested in the mezzanine tranches of managed synthetic deals. Supply is not an issue because the constituent credit exposures are synthetic. Issuance can be "on demand." There is good liquidity on the synthetic CDOs themselves and there is somewhat frequent trading.

A constant maturity (CM) CDO allows an investor to protect himself form "mark-to-market" risk. The coupon includes participation in the level (widening) of the credit index.

A strong arranger or manager can execute synthetics based on any asset class.

There are CLO look-alikes where the arranger provides a fixed recovery on CDS on high yield names.

Market value synthetic deals may be a key development for 2005. For synthetic CDOs to reach the retail market managers need to create a principal guaranteed product with a leveraged coupon managed by a manager. The way to analyze those products is to do simulations because their returns are path-dependent. A panelist recommends analyzing them with Monte Carlo simulations to estimate their average IRR over many scenarios.

Marking to Market: Marking to market is a real issue for investors, even if it takes a back seat to credit. The most obvious strategy for mitigating mark-to-market volatility is to concentrate on high quality, short maturity deals. Focusing on well-diversified deals also helps. Another strategy is to combine a swap with a policy (from an insurance company), which is not subject to mark-to-market.

A third strategy is to sub-tranche a position and to sell-off the junior slice, retaining the senior sub-tranche.

Rating Stability: In general, a synthetic CDO^2 has the potential to have greater ratings volatility than a flat synthetic CDO. Also, a synthetic CDO^2 based on double-B tranches is likely to have greater volatility than one based on triple-A inner tranches. High overlap makes a CDO^2 display higher rating volatility. A CDO^2 is supposed to be primarily a play on systematic risk (the credit cycle) while a flat CDO entails more of a play on idiosyncratic risks. But, once losses start to eat into a CDO^2 tranche, each incremental loss is much more damaging. Time decay works in an investor's favor because a deal becomes less vulnerable to credit deterioration as the exposure horizon contracts. Compared to flat CDOs, CDOs^2 receive greater benefit from time decay.

CDOs^2 are more sensitive to correlation than flat CDOs.

Synthetic ABS: Some deals like B-of-A's RESI Finance deal involve synthetic underlying assets to make a "regular" ABS security.

Are investors asking for cash flow traps in synthetic deals? Some managed synthetic deals use the concepts of trading gains and OC. Including cash flow traps makes analysis tougher because most dealers use the Bloomberg CDSM model, which does not contemplate cash flow traps. In some sense the concept of OC relates closely to attachment points.

11:50 a.m. – How are the Equity and Subordinated CDO Tranches Being Marketed and Sold?

CDO equity recently has moved to high net worth individuals and to hedge funds.

Equity tranches of CLOs have performed well recently because of the low default environment. The same holds for ABS CDOs. However, vintages from 1998, 1999, and 2000 include deals that are not paying their equity tranches. Where we stand today is better than where we stood two years or five years ago. Return expectations are now more reasonable (14% to 16% base case). Also, trigger tests are less onerous. The danger is that the rich get greedy and it's necessary to resist the push to boost yield at the expense of quality (higher risk).

CLO (CDO) performance recently has been strong because the market recently has been in the favorable part of the credit cycle. Manager quality makes a big difference in CLOs. Even when loans are large and highly liquid, a good manager is essential for getting good allocations, picking good credits, and handling workouts, when necessary.

A popular strategy is to barbell exposure among different spots on CDO capital structures.

It is possible to create principal guaranteed notes by combining a zero coupon Treasury note with CDO equity (or another a leveraged coupon instrument). The result is principal guaranteed credit linked notes.

Funds of CDO equity: Lehman has in-house funds for "private client" accounts. The funds provide diversification for the private clients. However, the arrangement creates an additional layer of fees and very complex reporting.

New Innovations the Improve Marketability: There is usually some conflict of interest between the mezzanine debt and the equity. One innovation is equity caps that require diverting cash to amortize mezzanine notes. Reserve funds are essentially the same thing.

The CDO market continues to expand into new asset classes, such as middle market loans. The assets may have equity kickers. De-levering of deals – larger equity classes – provide lower but more stable base case returns.

The world has changed. The days of attracting investors by promising that the stars would align perfectly are over. Managers are happier having deals with lower promised returns that they can actually deliver.

CDO equity investors have become sophisticated. Some of them essentially decide to start their own CDO equity hedge funds. Sometimes investors make reverse inquires for CDO equity. Some investors have decided to specifically concentrate in specific areas, such as loans.

Some CDO equity investors are concerned about tax issues because the taxable income can be higher than the cash flow (phantom income). Some managers are sensitive to the tax issues and try to minimize phantom income, but most are not. Broadening the types of assets that go into a deal.

What's coming next to further improve the product: Give managers an "opportunity bucket" that does not count against haircuts for the OC tests. "CDO is nothing more than a technology; it's not a product." Continued improvements in reporting and information should improve the product more for investors. Further development of the secondary market will help the primary market. Continued growth of new asset classes will help CDOs grow further.

12:30 p.m. – CDO Squared and ABS CDOs

ABS CDOs fall into three groups:

- (1) the first wave of multi-sector deals from 2000 and 2001
- (2) the real estate-dominated groups from 2002 to 2003
- (3) continuation of the real estate-dominated wave.

The only relative value opportunity in the first group is in senior tranches because the deals bought too much aircraft ABS and other asset classes that got into trouble. "Slightly distressed" senior bonds may offer discount margins of 200 to 300 basis points above LIBOR. The second grouping provides many opportunities because real estate deals from the 2000 through 2003 vintages were strong. The third grouping presents more risks than the second grouping (because of interest-only loans, interest rate risk on new deals) and, accordingly, is less appealing

A challenge for the latest crop of ABS CDOs is the high proportion of HEL ABS backed by collateral that includes interest-only sub-prime mortgage loans.

Some new ABS CDOs are likely to start including buckets for investing in other CDOs.

An irony of the ABS CDS arena is that it has not yet come to a common definition of credit events. PIK-ing and realization of losses vary greatly among different distressed securities. There may be opportunities for "language arbitrage" in ABS CDS.

Another interesting feature of ABS CDS is that all are done at par.

One panelist feels that high grade ABS CDOs should not include more than 20% to 25% underlying CDOs. Another analyst feels that large buckets for underlying CDOs allow managers "to fish out of more than one pond" and to achieve better diversification. He contends that diversification did not kill the first generation of ABS CDOs but rather a very bad credit cycle. Another panelist contends that in many ABS CDOs, the 80% of the deal composed of ABS (or RMBS or CMBS) is there to provide five times leverage on the synthetic corporate CDOs that make up the remainder of the deal.

What about Managers' Abilities and Systems? Over the past two years, there have been many innovations in modeling CDOs^2. The modeling of a CDO^2 must capture the overlap of names among the inner CDOs. Arrangers like names that are "juicy" (*i.e.*, offer wide spreads) for their rating level and the arrangers are prone to overlap such names.

Loss volatility and loss characteristics of CDOs^2 are different than those of flat CDOs, even through that the ratings may be the same.

One panelist recommends developing a view on each underlying assets. He recommends using a scenario analysis based on that view. He recommends sensitivity analysis. At the end of the day he does not "buy ratings" or "buy correlation", he buys deals.

Tiering: There is not a pricing difference between a CDO^2 and an ABS CDOs.

2:20 p.m. – High Grade CDOs

High grade ABS CDOs have become a significant component of the whole CDO market (20% to 30%) over the past few years. There is a broadening investor base across all layers of deals' capital structures, especially at the mezzanine and equity layers. Traditional ABS investors are becoming increasingly comfortable with ABS CDOs.

One panelist feels that a key question that equity investors should ask is when a deal's portfolio deal ramped up. Deals that ramped up over the past six months generally have collateral that has appreciated. Those deals also have locked in cheap liabilities. This is good for equities. However, newer deals face tighter asset spreads, though they have the benefit of all-time tight liabilities.

Attachment points on transactions are becoming more aggressive. It's getting tougher to put together deals of mezzanine ABS. High grade ABS CDOs should have higher rating stability on their underlying collateral. However, spread levels to buyers of triple-A CDO notes are roughly the same between deals backed by either high-grade or mezzanine ABS assets. One panelist favors high-grade deals because rating agencies are less likely to make mistakes at the top of a deal's capital structure.

Moody's uses double binomial analysis for many high grade CDOs to capture tail events from the 10% to 15% single-A bucket in the deals. For mezzanine ABS deals, Moody's also runs double binomials, but it is less critical. In mezzanine ABS deals, Moody's allows a cushion for the haircut triggers.

Another panelist feels that the attractiveness of the equity tranches of high grade ABS CDOs comes from the rating stability of the underlying assets. Equity investors would not accept assets that might have greater vulnerability to fraud risk, such as healthcare ABS.

However, a third panelist notes that the high grade deals have troubling concentrations in home equity and other real estate ABS. Subordination levels should be sufficient for expected scenarios but the concentration could be problematic in unexpected cases where MBS and real estate ABS suffer sector-wide deterioration.

Investors are becoming more sophisticated. They are wary of managers that do not have fully developed systems for monitoring and managing ABS CDOs.

A manager faces the challenge of reinvesting collateral in a tightening spread environment. Reinvestment is a huge issue. The effects on equity are very large when a deal has high leverage. Holding un-invested funds in cash is a negative for any deal, but it is most problematic in a high-grade deal. In a high-grade deal, managers may be reluctant to take losses by trading out of credit risk positions because doing so can severely damage the equity.

Equity investors arguably should be enticed by the opportunity to gain from spread widening on reinvestments for CDOs that have already locked in cheap debt funding.

Hedging: Given the high leverage in high-grade CDOs, the effects of a deal's hedges can be very important. The rating agencies traditionally have sized the hedges for a conservative collateral composition. Some deals are over-hedged and now it would be too expensive to unwind the hedges.

Managers may try to persuade the rating agencies to allow asset specific hedges. The rating agencies have a checkered track record on hedges – actual experience surpassed the scenarios that they used in 2001 and 2002. Although the rating agencies used tough stresses for analyzing hedges, the movement of interest rates over the past few years shows that they were not unreasonably tough. A typical high-grade deal has a 10% to 20% fixed-rate bucket.

Another panelist proposes a partial fix by allowing CDOs to issue fixed rate liabilities as a way to address basis risk.

Static vs. Managed Deals: Static structures arguably have the advantage of reducing uncertainty about the basis mismatch of assets and liabilities.

Beyond rating agencies, monoline bond insurers sometimes impose trading restrictions.

Some investors favor static structures because they know exactly what is going to be in the portfolio. However, the leverage in such a deal may be very high, even as high as 70:1.

Super Seniors and CP: Originally, may deals used commercial paper (CP) funding for the super-senior part of their capital structures. Now, deals increasingly use term funding for the super senior layer in order to lock in cheap funding for the entire lives of the transactions. The incremental cost of term funding is borne by a deal's equity investor. If there were no incremental cost, equity investors would always prefer term funding. About a year ago, the pricing advantage of CP was overwhelming. Now that term funding has gotten so cheap, it is too compelling not to lock in cheap funding with term bonds. Having said that, equity investors note the history of the CP market and know that it has never traded wide or disappeared for more than a few days.

One panelist notes the issue of whether ABS CDOs benefit from the diversification of risk among the large number of consumer assets backing ABS and MBS deals. However, she notes that her firm prefers to concentrate its risk in deals from certain seller/servicers and certain vintages. Another panelist notes the issue of high zip code or other geographic concentrations. The first panelist notes the need to focus on a mortgage lender's production platform when analyzing HEL ABS. Other panelists express concerns about interest-only loans and net interest margin (NIM) securities.

Recovery rates on underlying collateral: Recovery rates on tranches rated single-A and higher generally are higher than recoveries on collateral rated triple-B and lower.

3:10 p.m. – A Critical Look at CDO History: the Good, the Bad, and the Useless

Whatever we feel about the CDO market, it has grown a lot and lasted for a long time. There must be something good underneath it all.

Good: Michael Milken was the one to do the first CDO. CDOs give you something you cannot get elsewhere. They give you exposure that is diversified and customized. CDOs are also a great way to get leverage with a low cost of funds.

The Voodoo Concept: You want to do something bad to someone but you cannot do it. So, you do it to a doll. The idea is to inflict pain on the victim without actually touching him. The analogy is to synthetic CDOs, where the reference pool is not actually owned. The pain and suffering of the reference pool is transferred to the liability holders of the synthetic CDOs – just like in voodoo.

Martin Heidegger (1889-1976) was a German philosopher who introduced the concept of the idea of ideas (idea^2). Later, Christian Zugel of Zais introduced the ideal of the CDOs of CDOs (CDO^2). The CDO^2 offers a different risk profile than a flat CDO.

Bad: Suppose that you are going to take a test that covers two subjects: 90 questions on physics and 10 questions on chemistry. You have only 10 hours to study and you spend five hours on

physics and five hours on chemistry. Does this make sense? No. It would make more sense to spend more time studying physics. The rating agency approaches to interest rate risk embrace different scenarios including both ones that are very likely and ones that are very unlikely. Instead, we should use a probabilistic view of the future that ascribes different probabilities to different scenarios.

Monte Carlo simulations: The problem: Some portfolio manager on the buy side with an MBA and undergraduate degree in "non-quant" stuff wants some numbers (maybe a Monte Carlo simulation) to show his senior management. The solution is to have sell-side junior quants with Ph.D.'s run Monte Carlo simulations and package them in slick PowerPoint presentations so that the buy-side portfolio manager can be happy. BUT, there are probably 15 or 20 decisions the sell-side junior quants had to make in order to run the Monte Carlo simulation. The customer does not necessarily know (or care) about them.

Correlations – Asset, Equity, or Default?: The correlation that you really care about is the correlation of defaults between two assets. But, in Monte Carlo simulations, we usually model the asset correlation instead.

The real "big picture" CDO problem: Drivers of uncertainty include probability of default, recovery rates, and correlation. A CDO model must put those factors together to produce an answer in the form of losses or changes to internal rate of return (IRR) on a given tranche.

Useless: A CDO survives, fails, or thrives, depending largely upon whether its collateral pool suffers many defaults. The following features actually make little difference:

- cash flow waterfall: using interest vs. principal to cure trigger breaches
- cash flow waterfall: the presence of a turbo feature
- modeling: running many default scenarios without actually estimating the probability of different scenarios
- manager: having the manager buy equity in the deal (probably better to have him by triple-As)
- monitoring: CDO surveillance information that does not include detail on the hedges.

The Unknown: CDOs of real estate – we just don't know about the correlation among the assets that go into real estate CDOs.

The Future: More transparency, which means less fun.

3:55 p.m. – Managers' Focus

Investment Philosophy: A manager should be able to articulate how a deal is supposed to work and how he will manage in accordance with the deal's constraints/parameters. An investor should ask a manager how well he has performed under adverse market conditions. A manager that can admit to having faced challenging conditions can also talk about having learned from them.

Balancing Interests of Equity and Debt: There can be many conflicts within a deal. A good manager tries to address them up front by talking frankly with the equity investor about the manager's style. Equity must have reasonable expectations for what will happen if the base case scenario does not occur. Likewise, debt holders should receive solid explanation of what to expect.

A manager should have a solid process on which to fall back. The manager should articulate that process to both debt and equity. The onus is on the manager to tell the investors how he will approach the business.

On panelist describes conflict with potential investors who wanted to limit certain asset classes but the manager felt that it had experience and expertise with the asset class. Ultimately, there was not a fit between the manager and the customer.

Tiering: A second panelist says that the tiering in the market is with respect to how much flexibility investors allow managers to have. However, from a pricing perspective there is not differentiation.

High Yield CBO: One of the problems with the deals that got into trouble is that creating CDOs was a sideline for some of the managers. The deals took on their own inertia and got done even though conditions had changed so that they should not have. Loan deals are better because loans are floating rate and do not generate hedging costs.

Another panelist asserts that it is important for deals to have an initial cushion. Unfortunately, the rating agencies rated deals "to the expected case." Sometimes managers would buy up to par and then front-end equity releases instead of building up cushion (in excess of the required level of overcollateralization).

Static vs. Actively Managed: Depending on the type of assets, static deals can be OK. But, for example, a five year deal of leveraged loans needs to be managed. Also, depending on the sector, actively management may imply active trading (as opposed to just reinvesting).

Do Investors Have All the Information That They Would Need to Tell Which Managers Are "Best in Class"?: The answer is no. Otherwise, there would be visible price tiering. Intex does not give enough of the right kind of info. S&P feels it gets the info, but not until after it's too late.

How Active Should Managers Be in Decisions about Structuring: The idealized role of a manager is to maximize the collateral recovery for the benefit of debt holders, without preference to any particular class of debt holders. Sometimes, amendments to certain deal documents (*e.g.*, a swap for hedging) require the consent of majority of each class of debt holders affected or of a majority of all debt holders. Some managers are trying to amend weighted-average spread tests because they cannot put cash to work at the minimum spreads required by the documents. Some documents permit managers to "deem" to change the structure unless investors complain.

Restrictions: Restrictions exist to keep managers from doing bad things. But they need to be flexible enough to adapt over the five- to seven-year life of a deal. A second panelist counters that it is not possible to legislate good behavior. He argues that an unscrupulous manager can always find a way around something in an indenture. It is necessary to be able to trust the manager. A third panelist echoes the second's views. He argues that every deal is a "franchise deal." A manager must be able to absorb the fixed costs and maintain infrastructure. "It's a data game — thousands of line items and data elements every month."

Should There Be a Limit on How Fast a Manager Can Grow: If the market is not smart enough to limit managers' growth, no manager is going to volunteer to limit its own growth.

Keyman Provisions: For deals from small managers, investors arguably should insist on keyman provisions.

Outlook & Closing Thoughts: There will be greater "professionalization" of the CDO management business. CDOs will continue to grow and manager practices will continue to evolve.

— E N D —

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- U.S. Fixed Income 2004 Mid-Year Outlook/Review (1 Jul 2004)

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- Corporate Relative Value (31 Jan 2005)
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- Corporate Weekly - For the week ended (7 Jan 2005)

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