

October 10, 2008

Structured Credit

## Credit Derivatives Insights

### The Future of the CDS Market

**Lehman CDS auction:** With today's conclusion of the much-anticipated auction, we have put some uncertainty behind us. The low Lehman recovery is not materially different from where bonds traded prior to the auction, so cash collateral calls should be orderly.

**Much to consider:** As credit markets struggle through both fundamental and technical issues, the prospects for the CDS market is front and center in the debate for reform. We do not claim to have perfect foresight, but we offer our thoughts on the path and the balance of risks and flows.

**Central clearinghouse initiatives:** We strongly support a movement toward creating a central counterparty and clearinghouse for CDS transactions. We opine on the structure as well as the knock-on benefits.

**System meeting operational challenges:** Seven investment grade credit events over the course of a month, along with a major counterparty failure, is a huge test of the system. While credit losses from these defaults is significant, the settlement process to date has been orderly, with market participants collaborating to address ambiguities.

**CDS buyers and sellers:** We discuss thoughts on the balance of flows in CDS in the near-term, considering funding costs, balance sheet pressures, and policies.

**Structured credit's role:** Structured credit markets are perhaps the biggest "users" of CDS, both yesterday and today. As a portfolio investment, trading, and hedging market, we believe that flow domination will continue in the future, given the fragmented nature of credit generally. We offer some thoughts.

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## The Future of the CDS Market

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As credit markets struggle through a multitude of fundamental and technical issues, there is perhaps no bigger structural question than the one about the future of the much-quoted multi-trillion dollar credit default swap market. The questions and concerns are all valid given imbalances in the market, recent credit events, gap-risk-related losses post Lehman's bankruptcy, and performance of CDS tied to financials generally.

We do not claim to have perfect foresight on the direction of the credit default swap market, and what we know today will likely change in the near to medium-term. We do agree that there will likely be significant changes in the market, although that process started long before this credit crisis. We have thought about this topic quite a bit over the years and very recently, and in this note we offer current thinking, in the context of recent events and historical evolution (see Exhibit 4 at the end of this report for a detailed timeline).

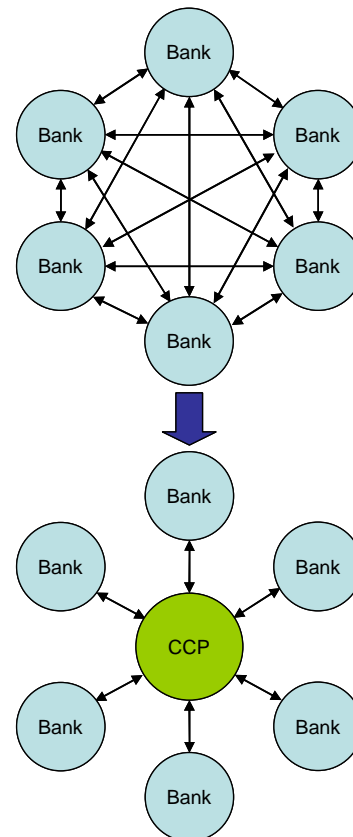
The focus of the market of late has moved slightly away from the operational issues (where the needle had been pointing for years) toward counterparty risk management issues, which has naturally led to discussions on central clearinghouse initiatives. We offer our thoughts on both topics as the market prepares for various forms of central clearinghouses and the numerous operational tests that have been successfully passed recently with derivatives close-outs and credit event settlement. We also discuss our views on the future structure of the CDS market, namely the relationship of CDS with cash instruments, the natural buyers and sellers of protection, and the role that structured credit can play in the process. Many market participants have been more critical than constructive on the future path of CDS, and for that audience, we argue that eliminating the market's foremost tool of hedging credit risk will solve little and risk much. A better use of rhetoric and resources is market reform. We start with our thoughts on today's Lehman CDS auction.

### Lehman CDS Auction

The much-anticipated Lehman CDS auction concluded today with a final clearing value of 8.625%. Since Lehman's bankruptcy, the market has been pricing in increasingly lower recovery value for Lehman bonds, so today's final price should not be a surprise to market participants. In terms of losses in the system, the vast majority of CDS contracts referencing Lehman require daily collateral posting, so most of the loss on Lehman is already in the system. The final price is about 4 points lower than bond prices before the auction, so this amount will be collected next week during collateral calls.

Exhibit 1

### Moving to a Central Counterparty



Source: Morgan Stanley

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## Imagine a World with No CDS

CDS is simply a swap instrument, much like interest rate or currency swaps. The latter two play a very simple but important role in the markets. Interest rate swaps allow market participants to manage interest rate risk efficiently. It is hard to imagine a world where one could not manage interest rate risk. The fixed income portfolio management books would have to be re-written. Currency swaps allow market participants to manage currency risk. Similarly, it is hard to imagine a world where one could not manage currency risk. Corporations could not function effectively in a global economy if that were the case.

Credit default swaps were designed with the same goal, namely permitting market participants to manage credit risk. CDS instruments are much more volatile than interest rate or currency swaps, because of the credit component, however. The fact that the world lived for so long without tools to manage credit risk is not an argument for going back to that world, as it was itself painful. Without credit derivatives, the lenders of credit will not be able to manage their exposures. This was clearly evident in the 1991 US recession, when banks fared poorly (although not as poorly as this credit crisis), largely because of their corporate portfolios. Since 1991, banks have not felt much pain on the mainstream corporate side, in either the 2001 recession or this period, because active loan exposure management (CPM) is practiced by most large institutions using credit derivatives. These contracts were initially standardized in the late 1990s and the 2001 recessionary period provided many opportunities to improve on these standards.

While this credit crisis is certainly not over, it has largely been about different types of credit risk, including loans to high yield companies, and both residential and commercial mortgages. And these are the corners of the market where CDS are still very new and not used in the same way as in the mainstream corporate world. If the leveraged loan and mortgage-related CDS markets had been better developed, would this crisis have been different? Perhaps, although there may not be any point debating it now, given what has happened. However, one point we are comfortable making is that there will not be any further lending in these markets (in securitized form or otherwise) without a well-developed market for hedging the risks. In short, credit hedging is very much part of the solution.

To be clear, most credit market participants do not expect the CDS market to disappear, and instead are focused on understanding the structure of the market going forward and making improvements to it. But the broader world can take a

bit more of a binary view on the market, which is partly why we started with this approach.

## CDS Central Clearinghouse

Perhaps the biggest focus issue among CDS market participants these days is the establishment of a central clearinghouse. This is by no means a new idea, and has been discussed very seriously with respect to credit default swaps since 2004 when the BIS issued an important document highlighting a set of recommendations for Central Counterparties (CCPs, see "Recommendations for Central Counterparties," BIS, November 2004). The BIS defines a CCP as follows:

*A central counterparty (CCP) interposes itself between counterparties to financial contracts traded in one or more markets, becoming the buyer to every seller and the seller to every buyer... A CCP has the potential to reduce significantly risks to market participants by imposing more robust risk controls on all participants, and, in many cases, by achieving multilateral netting of trades. It also tends to enhance the liquidity of the markets it serves, because it tends to reduce risks to participants and, in many cases, because it facilitates anonymous trading.*

The BIS' recommendation (a 70-page document) serves as a template for other policies, in particular the Counterparty Risk Management Policy Group (aka CRMPG III made up of sell-side and buy-side representatives), which issued guidelines in August of this year (post BSC but pre Lehman). The policy guidelines issued by this group focus on, among other topics, "strengthening the safeguards associated with the OTC derivatives markets with emphasis on credit default swaps (CDS)." The report "urges swift industry action to create a clearinghouse for OTC derivatives, starting with CDS."

With this background, there is a lot of market attention on specific central counterparties today, with The Clearing Corporation (TCC) plan being the most visible, but there are competing exchange-based plans as well. Recent press releases confirm that TCC is on track to establish a New York trust bank, regulated by the NY Fed, which will serve as a central clearinghouse with respect to CDS transactions. This trust bank will thus be capitalized and its members will "face" the CCP (instead of each other) for qualifying CDS transactions, which initially will be limited to indices, but eventually will cover many others, including single-name CDS.

## Why Is a Central Clearinghouse a Good Thing?

There are many direct, secondary and even tertiary benefits. The most important one, in our view, is related to a big

component of systemic risk, namely inter-bank counterparty risk (see Exhibit 1). The member banks/dealers of a CCP would face a central counterparty instead of each other, and there would be both initial margin and varying margin to over-collateralize the trades. The gap-risk (market moves the day after a counterparty failure) would be first covered by the overcollateralization, then by the capital of the CCP, and finally by the banks/dealers that own the CCP. As such, banks/dealers would not need to hedge exposure to each other, since there is a mutualization of risk, and thus losses would be shared. As such, it is unlikely, in our view, that a non-regulated institution could become a member of a CCP, under this model at least. In fact, we expect only highly capitalized institutions would participate in such a model.

What are the other benefits? There are clearly operational efficiencies that would come out of implementation of a CCP, meaning that risks could be much more easily netted to reduce outstanding trade volumes. Other processes might be forced to become more robust, including derivatives close-outs (i.e., valuing swaps after a counterparty fails), which were a big source of tension post the Lehman bankruptcy.

In terms of knock-on market impacts, the biggest one that we can think of is the reduction in specific counterparty exposure among the members of a CCP. This implies that there will be much less demand from member banks to hedge exposure to one another, which could ease the burden on financial CDS. Indices and index-related products seem to be the easiest CDS contracts to implement via a CCP, since they are standardized products with fixed coupons. Much trading activity and risk is in index form, so it is a great place to start. In fact, such standardization, combined with today's poor liquidity environment, may actually encourage more trading and investment in standardized products.

For single-name CDS, however, the market might need to standardize ahead of any implementation in a CCP, as the par swap concept makes netting of risks cumbersome, and it will not reduce the IO risk in the market for single-name CDS trades. We do believe a successful CCP (for indices at least) will strongly motivate the market to move toward standard strikes on single-name CDS, and maybe even a re-couponing of old single-name CDS trades. This is clearly good news for the large community of investors who have been frustrated by CDS unwinds of off-market strikes trading at very different levels than par swaps, to compensate dealers for IO risk.

One potential negative that we see from CCP usage is that a standardized CDS with fixed coupons means that more capital will need to be used by market participants in single-name

trades. This is currently a problem in CDS unwinds, but in a standardized fixed coupon world, every trade that is away from the fixed strike will require someone to pay an upfront payment. For single-name CDS, this is an issue since the spread moves can be big, unlike IG indices, where they are smaller.

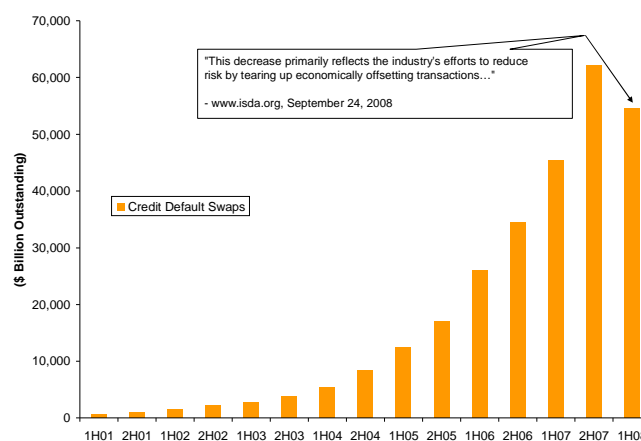
## What about Non-Corporate CDS?

Much of the market focus on CDS has been related to investment grade and high yield corporate credit because this market is where the bulk of volumes reside, the largest amount of single-name trading exists, and there are bigger "jump to default"-type risks. It is important to be mindful that the CDS that has contributed most to writedowns in global financials thus far have been in CDS referencing RMBS, CMBS, and CDOs, which are small in outstanding notional volumes relative to corporate CDS. The underlying contract motivation, design and mechanics are very different relative to corporate CDS. Despite the popular press accounts, it is important to distinguish these types of CDS contracts from corporate CDS.

As such, the rest of the CDS market, covering sovereigns, munis, leveraged loans, ABS, and CMBS is currently not in the center of the spot light, but there are important improvements being made in most of these markets. In particular, the US version of the LCDS contract is moving toward a full bullet-like structure (non-cancellable).

Exhibit 2

## Netting Reduces Notional CDS Volumes



Source: Morgan Stanley, ISDA.

## CDS Operations and Credit Event Settlement

The CDS market has come a long way from the days of separate bilateral settlement of hundreds contracts in the early part of this decade to large-scale auctions that facilitate settlement in hundreds of thousands of contracts more recently (see “Stress Testing the CDS Market,” January 18, 2008 for our earlier thoughts on collateral posting, automation, novation, and other issues). Fortunately for the corporate CDS markets, corporate defaults are nothing new. Contracts were standardized ahead of the 2001 recession and improved during that recession, and there was tremendous growth post 2001. The “mini-credit cycle” the market went through in 2005 with the auto and airline sectors served as an important industry opportunity to set up centralized credit event settlement through the now popular ISDA auction protocols (see Exhibit 3).

Exhibit 3

### ISDA Global CDS Protocol – Auctions Administered

Credit	Bankruptcy Filing Date	CDS Auction Date	Adhering Parties	Final Price
Lehman	9/15/2008	10/10/2008	358	8.625
Fannie Mae (Senior)	9/7/2008	10/6/2008	652	91.510
Fannie Mae (Sub)	9/7/2008	10/6/2008	652	99.900
Freddie Mac (Senior)	9/7/2008	10/6/2008	652	94.000
Freddie Mac (Sub)	9/7/2008	10/6/2008	652	98.000
Tembec	9/4/2008	10/2/2008	320	83.000
Quebecor	1/21/2008	2/19/2008	589	41.250
Movie Gallery (LCDS)	10/16/2007	10/23/2007	n/a	91.500
Dura Senior	10/30/2006	11/28/2006	327	24.125
Dura Sub	10/30/2006	11/28/2006	327	3.500
Dana	3/3/2006	3/31/2006	340	75.000
Calpine	12/20/2005	1/17/2006	323	19.125
Delphi	10/10/2005	11/4/2005	577	63.375
Delta	9/15/2005	10/11/2005	71	18.000
Northwest	9/15/2005	10/11/2005	71	28.000
Collins & Aikman (Senior)	5/17/2005	6/14/2005	454	43.625
Collins & Aikman (Sub)	5/17/2005	6/23/2005	454	6.375

Source: Morgan Stanley, CreditEx.

One of the issues in CDS markets has been the astronomical growth that, in our view, reflects a lack of formal netting processes in the system. As such, we believe that the drop in outstanding notionals reported by ISDA last month as a sign that the formal netting processes are actually working quite well (see Exhibit 2).

The current market environment is a tremendous test of the system, with a total of seven major investment grade credit events (not counting sub debt) occurring in a one-month period, along with the failure of a major derivatives counterparty in Lehman. The close-out process on trades facing Lehman was onerous but largely successful, even

though many investors used the opportunity to de-risk instead of actually replacing all trades.

In terms of credit events, we would argue that the GSE settlements were the most complicated, given the circumstance surrounding “conservatorship” and non-accelerating bonds, but we believe the industry came together in a healthy manner to resolve the many ambiguous issues. The non-intuitive recovery values for senior and sub debt in the auction (sub debt recovered higher than senior) is a function of, in our view, a settlement process that was dominated by technicals, since the actual bonds in question did not accelerate. This introduced interest rate risk into the process. Could this have been avoided? There is an acceleration option in the original CDS contract, but it is rarely selected as most market participants prefer standardized contracts. While the same sub/senior outcome is less likely in a typical corporate bankruptcy, the issue is a likely to remain a matter for further debate.

## Who Are the Natural Buyers and Sellers?

For corporate credit, in the early days, the traditional buyers were bank loan hedgers, and the traditional sellers were “investors,” mainly banks and insurance companies through structured credit instruments. With the birth of credit hedge funds and formalization of counterparty hedging processes, the dynamics changed quite dramatically, and today we would argue that the landscape is quite complicated, with the number of end users of CDS exceeding bond and loan investors as the proliferation of CDS-based products brought many non-traditional credit players into the markets.

Given the complexities of the market, it is more important to understand the balance of CDS flows rather than who is actually buying and selling.

- The current theme of deleveraging is clearly bad for all risky asset classes, but in our view, as the system heals and market participants remain conservative with balance sheet usage, unfunded forms of credit risk will likely benefit vs. cash forms of credit risk.
- When healing in the system is a strong enough theme to impact cash assets positively (which depends on funding costs), the CDS flow could be tilted toward buying protection as investors arbitrage the hugely negative basis between cash and derivatives forms of credit.
- As we have written about in detail, the move from Basel I to Basel II is a net positive for investment grade credit, from both the bank loan hedging and credit investment

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perspectives (see “Bank Loan Hedging Today – CPM as a Market Force,” September 12, 2008). Much of this flow, particularly on the hedging side, will be in the form of CDS and structured credit trades.

- It is difficult to imagine positive credit flows from structured forms of CDS today, and we would argue that this phenomenon is more negative than positive for the market today, given pressures on outstanding mezzanine risk (see “State of the Mezz Market – The Next Chapter,” October 3, 2008). Over time, and later in the cycle, this flow could turn positive for many reasons (see next section).

## **Correlation and Volatility – Structured Credit’s Role**

The structured credit markets are perhaps the biggest “users” of CDS, both during credit’s bull market when lots of structures were created, and today when these structures are being revalued, restructured and re-traded. During the bull market, structured credit provided the “bid” for synthetic forms of corporate credit, and we then wondered who the natural buyers of protection really were, as these protection sellers were dominating market flows. Today we could easily ask the opposite question.

Structured credit is ultimately a portfolio investment, trading and hedging market, and one where the derivatives culture (tranches and options) resides. Given the poor liquidity and fragmentation of credit generally (through the cycle), we would argue that credit portfolio solutions are a very important part of the market and a major improvement over the old days of largely stagnant credit exposures.

Tranches, or more broadly securitized forms of credit pools, have been the preferred portfolio mechanism for investing in portfolios of credit, partly driven by the value of subordination that was conventional wisdom after the last credit cycle in 2001/2002, and of course credit ratings policies. As we now go through an idiosyncratic cycle that is beginning to parallel 2001/2002, the value of subordination is again loud and clear, and we have already witnessed huge performance differences between those transactions with large amounts of subordination vs. those with little.

At a broader level, we do not believe that the demand for cash or synthetic forms of securitization is something destined only for financial history books. There is value in protection for defaults, and we argued a year ago that a recessionary credit cycle will make that point loud and clear, as we see senior tranches outperform both junior tranches and the market at large. The opposite was true in the early leg of the systemic crisis.

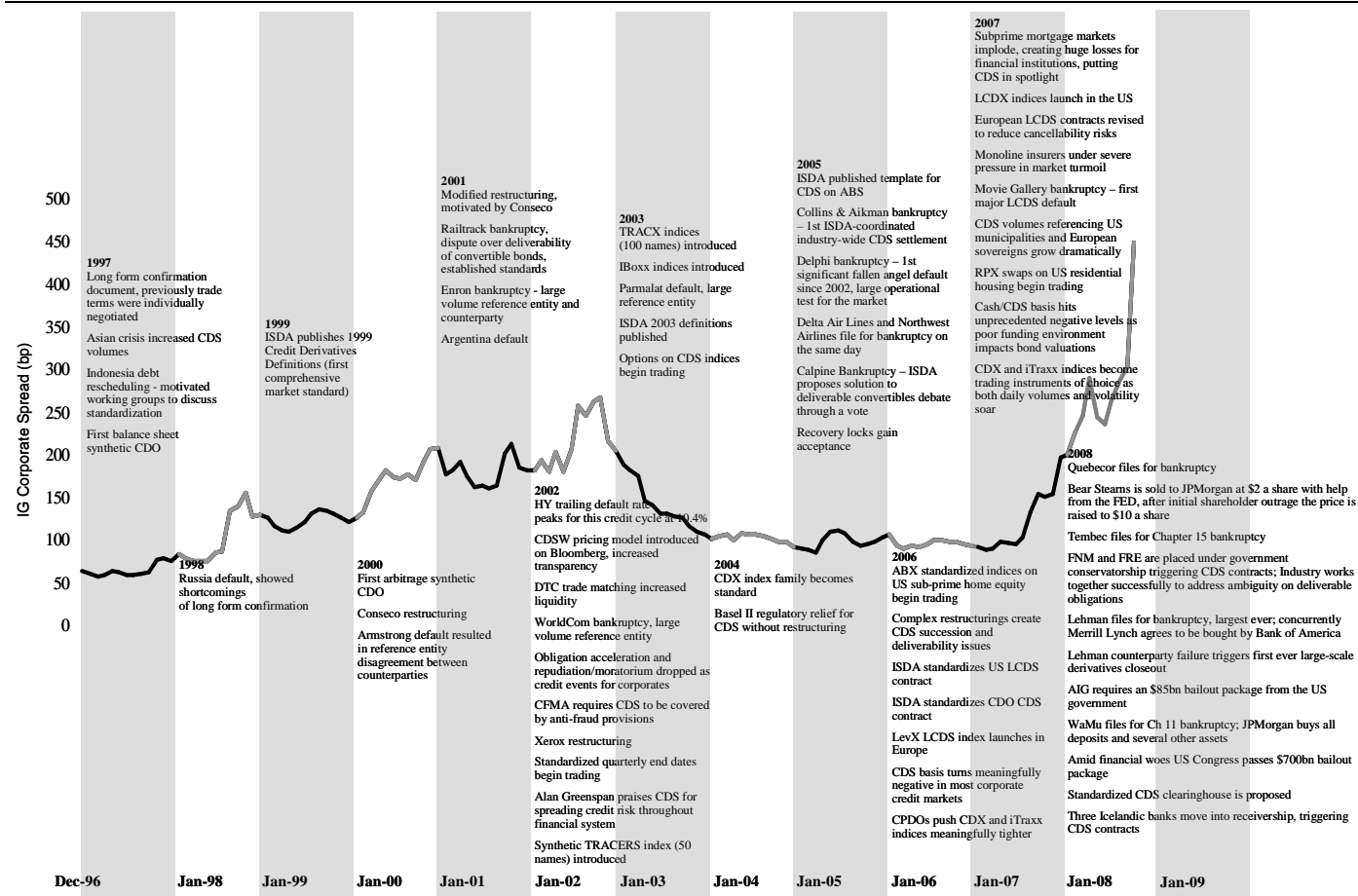
## **Conclusion**

The CDS market is destined for improvements, much as it has been for over a decade. We have learned important lessons over past credit cycles and the current one. We strongly support a movement toward a central clearinghouse and other market improvements to make consolidation of outstanding risks easier, including fixed coupons. Managing credit exposure is too important of a market requirement to allow it to disappear in the rhetoric, and it is certainly worth spending the resources to get it right.

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Exhibit 4

**Busy History – A Timeline of Major Events in the Credit Derivatives Markets**



Source: Morgan Stanley

**Credit Products Rating Distribution Table***(as of Sep 30, 2008)*

Rating	Coverage Universe		Investment Banking Clients (IBC)		
	Count	% of Total	Count	% of Total IBC	% of Rating Category
<b>Overweight</b>	82	36%	49	33%	60%
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<b>Underweight</b>	56	25%	37	25%	66%
<b>Total</b>	<b>227</b>		<b>147</b>		

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