

Fannie Mae & Freddie Mac CDS Cash Settlement Protocol:

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Topics to Cover

- Background to Protocols
- Auction Timeline
- Auction Methodology in detail
 - Calculating Inside Market Midpoint
 - Calculating Open Interest
 - Calculating Final Price



Background to Protocols

ISDA Protocols

- Basics of ISDA Protocols:
 - ISDA Protocol first developed to allow parties to make amendments to ISDA Master Agreements to deal with European Monetary Union on a multi-lateral, standard basis, rather than a bilateral, negotiated basis
 - ISDA publishes standard amendment terms
 - To effect an amendment, two parties simply have to “adhere” to the Protocol by sending their notice to ISDA prior to the cut-off date. An adhering party automatically amends its ISDA Master (or related documentation) with any other adhering party.
 - Participation is completely voluntary

ISDA CDS Protocol

- If parties adhere:
 - No scope for negotiation of terms
 - Affects Index and most Non-Index Transactions between them – whether physically or cash settled
 - Excluded Non-Index Transactions include:
 - CDS backing CLNs and intending to settle in line with CLN terms
 - Reference Obligation only transactions
 - Loan only transactions
 - Fixed Recovery transactions
 - Credit Event Notice, Notice of Publicly Available Information and (if applicable) Notice of Physical Settlement deemed to have been given as of a specified Common Event Determination Date
 - Deliverable Obligations as specified in the Protocol
 - Both Cash and Physically settled trades settle in cash at Final Price on Cash Settlement Date specified in Protocol

ISDA CDS protocols have 3 primary goals

- Permit rapid amendment of existing CDS documentation to allow settlement at a single Final Price for all adhering parties
- Ensure that Final Price is reflective of market value of the defaulted entity's obligations, taking into account CDS parties' net physical settlement requirements
- Allow bonds to be traded to permit 'physical settlement' at Final Price
 - Bonds can be bought or sold in the auction to allow participants to finish with same bond position they would have had under physical settlement
 - Ensures resulting position from original settlement mechanism is effectively preserved for those who desire it

Prevents price and settlement distortions that could result where CDS exposure to a particular entity is disproportionately larger than the amount of actual obligations of such entity



Auction Timeline

Timeline

■ On Auction Date:

- **8:30 – 9:20 (Initial Bidding Period):** Participating Bidders submit Inside Market Bids and Offers and Physical Settlement Requests
 - 8:30 - 8:35 (Senior Auction for Fannie Mae)
 - 8:45 - 8:50 (Subordinate Auction for Fannie Mae)
 - 9:00 - 9:05 (Senior Auction for Freddie Mac)
 - 9:15 - 9:20 (Subordinate Auction for Freddie Mac)
- **9:30 - 11:00:** Creditex/Markit calculate Inside Market Midpoint and Open Interest
- **11:00:** Inside Market Midpoint and Open Interest published
- **11:00 - Noon:** Dealers canvass Limit Orders
- **Noon – 2:30 (Subsequent Bidding Period):** Limit Orders submitted
 - Noon - 12:15 (Senior Auction for Fannie Mae)
 - 12:45 - 1:00 (Subordinate Auction for Fannie Mae)
 - 1:30 - 1:45 (Senior Auction for Freddie Mac)
 - 2:15 - 2:30 (Subordinate Auction for Freddie Mac)
- **4:00:** Final Price calculated and published, details of Market Trades published
- All results published at www.creditfixings.com

Timeline

■ Post Auction

- Transactions covered by the Auction cash settle at the Final Price on the Cash Settlement Date specified in the Protocol (October 15, 2008)
- Trades formed in the Auction are matched and notified by Administrators and settled by the relevant participants directly.
 - The effective “Buyer” will need to deliver a Notice of Physical Settlement specifying the Deliverable Obligation(s) it proposes to deliver.
 - The effective “Seller” will pay the Final Price for such Deliverable Obligations.



Auction Methodology in Detail



What does the auction do?

1. Determines the **Inside Market Midpoint**
 - First indication of Final Price, and used to set limits on Final Price
 - Market participants penalized for trades which touch or cross by requiring a cash payment of **Adjustment Amount** (calculated by reference to Inside Market Midpoint)
2. Determines the **Open Interest**
 - For market participants that still want to physically settle or where dealers/customers want to be able to buy/sell the Deliverable Obligations at the Final Price
 - Open Interest is the net imbalance between buy and sell orders
3. Matches **Limit Orders** to create live trades to buy and sell Deliverable Obligations at the Final Price
4. Determines **Final Price**

Calculating the Inside Market Mid-point

- Dealers submit pairs of Inside Market Bids/Offers no more than 2% of par apart in a representative size (\$10m)
 - Inside Market Bid – commitment to enter as Seller (obligation buyer) into RAST
 - Inside Market Offer – commitment to enter as Buyer (obligation seller) into RAST
 - **RAST: Representative Auction-Settled Transaction** (effectively a bond purchase agreement, but with CDS buy-in rules – see later)
- Pairs separated and sorted in:
 - Inside Market Bids – Descending Order
 - Inside Market Offers – Ascending Order
- ‘Touching’ or ‘Crossing’ pairs discarded for these purposes
- Identify the ‘Best Half’ i.e. the rounded up half of Bid/Offer pairs with tightest spreads (e.g. if there are 11 pairs, the best half is the 6 tightest pairs)
- The Bid and Offer pairs in the Best Half are then averaged to calculate Inside Market Midpoint
- Inside Market Midpoint will serve as a limit on Final Price

Calculating the Inside Market Mid-point

- Dura Auction

	Dealer	Bid	Offer	Dealer
"Crossing" →	UBS	4.5	2.5	Goldman
"Best Half" {	Barclays	4	4.25	Morgan Stanley
	BofA	3.75	4.5	Bear Stearns
	Merrill	3.625	4.75	Deutsche
	Lehman	3.5	4.75	JPMorgan
	Credit Suisse	3.5	5.25	Citi
	Citi	3.25	5.5	Lehman
	Deutsche	2.75	5.5	Credit Suisse
	JPMorgan	2.75	5.625	Merrill
	Bear Stearns	2.5	5.75	BofA
	Morgan Stanley	2.25	6	Barclays
	Goldman	0.5	6.5	UBS

- Inside Market Mid-point = 4.25 (average of Best Half bids and offers)

Touching or Crossing Bid/Offer Pairs

- If a Bid is equal to or higher than an Offer
 - In earlier Auctions the parties were required to trade with each other
 - Now, one party will be required to pay an Adjustment Amount reflecting difference between Bid/Offer and the Inside Market Midpoint
 - If Open Interest is an offer to sell, Bidder pays; if Open Interest is an offer to buy, Seller pays
 - Adjustment Amount paid to ISDA to defray costs of auction
 - Operates as a penalty for perceived off-market quotes

Calculating the Open Interest

- Participating Bidders submit Physical Settlement Buy/Sell Requests: orders to trade bonds of a stated size at the Final Price (as ultimately determined in Auction)
 - Physical Settlement Buy Request: Firm commitment to enter as Seller (obligation buyer) into Representative Auction-Settled Transaction (**RAST**)
 - Physical Settlement Sell Request: Firm commitment to enter as Buyer (obligation seller) into RAST
- Physical Settlement Buy/Sell Requests must be in same “direction” as and not in excess of Participating Bidder’s or customer’s Market Position
 - Participant that has purchased a net \$100m in protection can only sell up to \$100M in Deliverable Obligations
 - Conversely, a participant that has sold a net of \$100M in protection can only buy up to \$100M in Deliverable Obligations
- **RAST** is a credit default swap, but on terms such that it takes effect as a bond sale and purchase of cheapest to deliver Deliverable Obligations, at Final Price, and with standard CDS non-delivery fall-backs.

Calculating the Open Interest

- Customers submit requests through dealer counterparties. Participating Bidder may limit a customer to submitting requests no larger than its position with such Participating Bidder.
- Difference between the sum of all Quotation Amounts specified in all Physical Settlement Buy vs. Physical Settlement Sell Requests is “Open Interest”
- NB Terminology:
 - Bid Requests \approx position as Seller under RAST / CDS
 - Offer Request \approx position as Buyer under RAST / CDS

Calculating the Open Interest - example

- Dura auction

Physical Settlement Requests

Dealer	Bid / Offer	USD million
BofA	Offer	0
Barclays	Offer	6
Bear Stearns	Offer	0
Citi	Offer	3
Deutsche	Offer	22
Goldman	Offer	19
JP Morgan	Offer	1
Lehman	Offer	5
Merrill	Offer	13
Morgan Stanley	Offer	3
UBS	Offer	9
Credit Suisse	Bid	4

Σ Physical Settlement Sell Requests = 81

Σ Physical Settlement Buy Requests = 4

OPEN INTEREST = 77 (offer side)

Calculating the Open Interest

- Allows participants to maintain same cash position after auction as if they had physically settled
 - E.g. assume notional of \$100 and Final Price of 40%
 - Seller under Physically Settled CDS would pay \$100 and receive \$100 of Obligations worth \$40
 - Under Auction Seller will pay \$60 and, by placing Limit Orders, buy \$100 of Obligations for \$40
- If Open Interest is an offer to sell, it implies that, of the market participants wishing physical settlement, there are more net buyers of protection (since they would be the ones receiving Deliverable Obligations under a physically settled CDS)
- If Open Interest is an bid to purchase, it implies that, of the market participants wishing physical settlement, there are more net sellers of protection (since they would be the ones delivering Deliverable Obligations under a physically settled CDS)
- Value of Limit Orders is far below aggregate notional of CDS.
 - Vast majority of covered transactions do not trigger Physical Settlement Requests and are not reflected in Open Interest.

Calculating the Final Price

- Unmatched Limit Orders “matched” to Open Interest
- Last Unmatched Limit Order so matched is Final Price
- Unmatched Limit Orders comprise:
 - Limit Orders: firm commitment to enter into RAST at a specified price and specified size; and
 - Inside Market Bids/Offers submitted earlier
 - Includes Inside Market Bids/Offers which touched or crossed are still taken into account as Unmatched Limit Orders, but deemed to be at a price equal to the Inside Market Midpoint

Calculating the Final Price

- Where Limit Order book is greater than Open Interest, IMM serves as a limit on Final Price
 - match Unmatched Limit Orders until Open Interest closed or limit book runs out (depending on which is larger)
 - If Open Interest is bid, match all Limit Offers in ascending order
 - Highest Limit Offer so matched is **Final Price**
 - If Highest Limit Offer is below IMM minus Cap Amount, **Final Price = IMM minus Cap Amount**
 - If Open Interest is offer, match all Limit Bids in descending order
 - Lowest Limit Bid so matched is **Final Price**
 - If Lowest Limit Bid is above IMM plus Cap Amount, **Final Price = IMM plus Cap Amount**
- Where Open Interest is greater than Limit Order book, Final Price is:
 - If Open Interest is offer, **zero**
 - If Open Interest is a bid,
 - (a) for purposes of settling covered CDS trades, Final Price is **par** and
 - (b) for purposes of settling trades formed in the auction, Final Price is the highest offer received

Calculating the Final Price - example

- Dura auction sorted data

Open Interest = 77

Dealer	Bid	USD million
UBS	4.25	10
Barclays	4	10
BofA	3.75	10
Credit Suisse	3.75	20
Merrill	3.625	10
BofA	3.625	2
Credit Suisse	3.5	10
Lehman	3.5	10

Σ Bids = 62

Σ Bids = 82

FINAL PRICE = 3.5

Questions?

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