

# New Features of Credit Default Swaps

Chris Lamoureux

March 25, 2013

# Table of contents

- 1 Brief History
- 2 Post-Crisis Standardization
  - Compression
  - Greece
  - Fixing Auctions
  - Evidence on Fixing Auctions
- 3 Credit Indices

# Origins

- The earliest credit default swaps involved banks attempting to manage their credit exposure –and regulatory capital requirements by purchasing credit protection on loans that they had made.
- The earliest sellers of credit protection were insurance companies and other banks.
- In 1998 AIG sold credit protection to JP Morgan–on CDOs of the bank’s liabilities. The story is told that AIG analyzed the risk and determined that in the state of nature that would require them to pay, their counterparty would not even exist.

## Early Regulation & Growth

- Initially regulators saw the shifting of credit risk as desirable.
- The Commodity Futures Modernization Act of 2000 classified swaps as neither futures nor securities, so they slipped through US regulations.
- In 1999 the ISDA standardized the structure of credit default swaps.
- The growth in outstanding notional principal after these events was exponential.
- Index CDS introduced in 2004 are extremely popular.
- Also CDS on Asset-backed securities and CDOs gained popularity.
- CDS were used to construct synthetic CDOs.

## The Crisis

- At the end of 2007 the (total gross) notional principal in CDS was \$62.3 trillion.
- By contrast the total amount of underlying corporate, municipal, and structured debt was less than \$25 trillion.
- In March 2005, Hank Greenburg, CEO of AIG, “retired.” (He was being investigated for accounting irregularities.) AIG was downgraded from AAA to AA, which meant that AIG was required to post an additional \$1 billion in collateral against its CDS positions.
- In light of the collapse of the housing market, counterparties, e.g., Goldman-Sachs, required an additional \$1.5 billion in collateral, in August 2007 (again if AIG had held on to its AAA rating, this would have been avoided).

## The Crisis 2.

- In February 2008, AIG announced estimated losses of \$11.5 billion, and the posting of an additional \$5.3 billion in collateral.
- In September 2008, with the rating agencies poised for another downgrade, AIG was on the verge of collapse, which would have exposed counterparties to potential losses.
- On September 16, 2008, the Fed took over control of AIG with an initial infusion of \$85 billion.

## Private Collateral Contracts

- This episode highlights an important feature of modern over-the-counter transactions: Counterparties require posting of collateral with a custodian to manage counterparty risk.
- Generally such accounts are marked-to-market periodically. At the onset of the crisis, some market participants told me that they switched from weekly to daily collateral monitoring—and requiring counterparties to mark-to-market at this higher frequency as well.
- Were these exchange-traded futures or options contracts, the margin accounts with the exchange would protect the clearinghouse, which in turn eliminates counterparty risk.
- In the AIG case we see the interaction between the ratings agencies' ratings and private (collateral) contracts.

## Lack of Standardization

- In light of the enormous growth in the CDS market, it experienced some growing pains which were put under intense scrutiny in the crisis.
- One example is the legal claim of passed through CDS was not always clear.
- Another is that careless traders were sometimes unaware of the ultimate counterparty.
- With the growth in CDS positions, it became obvious that settling in kind in the event of a default event would be impossible.



## Lack of Standardization 2.

- Finally, given the idiosyncratic nature of the contracts, the total notional principal probably dramatically overstated net positions. If I had bought protection that I no longer need, it was often easier to sell protection with a new CDS, which would double the notional principal of my position—rather than zeroing it out.
- In April 2009, the ISDA and CDS dealers promulgated the *Big Bang Protocol* to standardize CDS transactions, and respond to critics.

# Standardization

- In light of the negative publicity (much of it unfair) on the CDS market, there have been several reforms to this market.
- The following structures have been standardized:
  - Maturity Dates. Now:
    - March 20
    - June 20
    - September 20
    - December 20
  - Spread Payment Dates. Now: 3-months per each payment with the same dates as maturities.
  - Spread. Spread is either 100 or 500 bps (annual rate).
  - Upfront Fee. – Adjusts for the accrued spread and the standard spread.

## Tear - Ups

- Much of the growth in the notional principal involved the creation of offsetting contracts.
- In the context of the financial crisis, CDS market participants moved aggressively to net out (and cancel) offsetting contracts.
- TriOptima, Markit, and Creditex all provided services to dealers to compress or tear-up offsetting positions in their CDS portfolios.
- One implication is that size comparisons based on outstanding notional principals are meaningless.
- In 2008 TriOptima, alone claims that it accounted for at least \$24.5 trillion drop in notional principal.
- Moving forward, market participants are much more conscious of tightening up their positions (a major reason for the standardization).

## “Default”

Perhaps the most important question in a CDS is: What constitutes default?

While this may seem trivial, the recent Greek sovereign debt fiasco highlights its complexity. To understand the who, what, where, and hows, let's look at the events in the Greek debt episode.

**October 31, 2011** The ISDA asserts that a **determination committee** (DC) will be the arbiter to decide if and when Greece defaults on its debt.

- This DC comprises 10 sell-side and 5 buy-side firms.
- ISDA is secretary to—but does not serve on—the DC.
- 12 members must vote to find that a credit event has occurred.

## “Default” 2.

October 31, 2011 (Continued) ISDA: “Based on what we know now, it appears . . . that the Eurozone proposal involves a voluntary exchange that would not be binding on all holders. As such, it does not appear to be likely that the Eurozone proposal will trigger payments under existing CDS contracts.”

March 1, 2012 The DC agreed to answer two questions that had been posed to it.

- 1 The DC says that the Greek debt is not being subordinated to ECB debt.
- 2 The DC says that it has no evidence of any agreement between Greece and any debt holders that would constitute a restructuring.

Thus: Still no credit event as of this date.

## “Default” 3.

**March 9, 2012** The DC resolved unanimously that a Restructuring Credit Event has occurred. The key seems to be that the DC found that Greece invoked a collective action clause and in forcing its restructuring plan (i.e., imposing a haircut) on all Greek debt holders.

**March 19, 2012** Auction to settle CDS on Greek debt.

## “Default” 4.

- March 19, 2012 (Continued). The fixing Auction
- According to the Depository Trust & Clearing Corp., there were 4,369 outstanding credit default swaps outstanding
  - with *net* notional principal of €3.2 billion.
  - At the auction, 14 dealers submitted initial bids and offers, physical settlement requests and limit orders to the auction administered by Creditex and Markit.
  - The midpoint of the 14 spreads was 21.75,
  - and the net of physical settlement requests was €291.6 million to sell,
  - so the final price was 21.5.
  - Thus payments to the buyers of credit protection from the sellers totaled some €2.5 billion.

# Fixing Auctions

- Data from the auctions is here:  
<http://www.creditfixings.com/CreditEventAuctions/AuctionByYear.jsp?year=2013>
- The auction ensures that all outstanding contracts will settle at the same price.
- The auction is transparent and allows participants to settle in cash or physically.
- The actual auction procedure has 2 parts:



## Fixing Auctions 2.

Step 1. Dealers submit initial bid and offer and physical settlement requests.

- quotation size of the quotes is determined before the auction.
- minimum bid/ask spread is determined before the auction. In the Hellenic Republic March 19, 2012 auction all spreads were 200 basis points wide.
- Administrator ranks the bids in descending order and asks in ascending order.
- Any crossed bids are discarded.
- The average midpoint from the top half is reported (rounded to nearest  $\frac{1}{8}$ ).

## Fixing Auctions 3.

- Step 2. If the net open interest is to sell (buy) then dealers submit limit bids (asks).
- These bids (asks) are capped (floored) at the initial midpoint plus (minus) one-half of the maximum spread.
  - The final price is determined by that bid (ask) that satisfies the net limit order demand to sell (buy).

I have a spreadsheet with the results from the Greek Sovereign debt fixing auction of March 19, 2012. The final price in the auction was 21.5, which is 6.7% lower than the 23% valuation of the Greek payoff.

## Fixing Auctions: Evidence

Chernov, Gorbenko, and Makarov (*RFS* 2013) analyze 26 fixing auctions in 2009. Their findings include:

- In 22 cases the net open interest after Step 1 was to sell (as it was in the Greek case).
- Auction prices are lower than secondary market prices around the auction (average  $\sim 6\%$ ).
- This raises the specter of manipulation. (Clearly buyers of credit protection would like to drive the settlement price lower, whereas sellers would like to drive it up.)

# Credit Indices

- Trading in CDS indices is more active than in individual names.
- Example: CDX.NA.IG
  - 125 Names – North American Investment Grade.
  - A new one is issued every 6 months. (Series).