

CDS Market

The Big Picture

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CDS – Credit Default Swap

- CDS is an agreement between two parties in reference to an external entity known as *Reference Entity*, in which one party known as *Protection Buyer* pays the periodic fee to another party known as *Protection Seller* and in return *Seller* compensates *Buyer* in case of *Reference Entity* faces any *Credit Event*.
- Buyer is transferring credit risk to Seller
- *Credit Event* - events such as default, failure to pay obligation, restructuring and bankruptcy of the reference entity
- Reference entity – Corporate debt, sovereign debt etc
- Periodic fee/Premium - Spread or Upfront fee

Why CDS are popular?

- Credit Risk Exposure Management - Typically financial institutions like Banks buy CDS to transfer Credit Risk to Seller
 - Banks can manage the credit risk of owning Corporate Bonds, Loans and hence they can take larger credit exposure
 - Promotes easy flow of capital for financing
 - Allows low cost hedging
- CDS short-sell – creates synthetic economic effects of shorting a loan (which is not possible otherwise) and hence creation of synthetic loan portfolio
- CDS creates an independent market for Credit Risk trading, thereby efficient pricing, creation of Term Structure of Credit rates
 - Promotes Comparable financing rates
 - CDS are off-balance sheet instruments
 - CDS in OTC market are tailor-made for specific requirements

Market Players

- Banks, Bond Portfolio managers, other financial institutions
- Swap Dealers
- Research Intuitions
- Market Data Providers
- Clearing & Settlement Agencies
- Custodians
- Industry Regulators
- Industry Consortiums
- Technology/Software Service Providers

Example

- 1 year \$10mm 50bp standard CDS traded in Feb 09 and maturing Mar2010 of entity XYZ Corp
 - Protection for 1 Year starts in Feb 09 and ends in Mar 10
 - Protection amount \$10mm
 - Annual Fee is 50 bp paid to Protection Seller
 - $\$10,000,000 * 0.005 \Rightarrow \$50,000$ per annum
- Assume XYZ defaults in Jan '10
 - Buyer hands over the debt (reference entity bond)
 - Seller pays the par value of the bond
- Settlement could be wither physical settlement or cash settlement (*More on this in future presentation*)

CDS & Market Crash Myths & Facts

Myth:

CDS instruments have key role in recent (2008) market crash?

Fact: Visit link for [detailed response from ISDA and More](#)

Myth:

AIG was loaded with CDS which caused its almost collapse?

Fact: It is clearly the mismanagement of risk from AIG side. Learn more from [testimony to congress](#)

CDS Trading – Categories

- Single name
 - Protection on a single corporate entity
- Basket
 - Protection on a set of corporate entities
- Indices
 - Standardized CDS instruments covering various sets of reference entities and bonds covering different industries, sectors etc
 - CDS covering pools of mortgage backed securities (Asset backed securities/ABS)
 - Markit CDX Indices, Markit iTraxx, S&P CDS indices
 - Eg: iTraxx TMT - This index covers 20 names from Telecommunication, Media and Technology industries

CDS Types/options

- Vanilla CDS /Simple CDS
- Amortizing CDS
 - Capital structure can be amortized
- Digital CDS
 - Protection amount is fixed as part of the contract terms. when default happens this amount is paid to the protection buyer. This could be either fixed amount or the specific rate
- Forward Start CDS
 - CDS with future start date
- LCDS – Loan Only CDS
 - Protection on a specific syndicated secured loan of the corporate entity
- CDS Indices (CDX)

CDS Pricing /Sample Quote

- Price of CDS is
 - Spread to be paid to buy protection OR
 - Upfront percentage of notional to be paid to buy protection
- For eg: Alcoa CDS is trading at 80 bp Spread
 - To buy protection on Alcoa buyer needs to pay 80 bp spread

CDS Pricing Models

- Two popular Models
 - ISDA CDS Standard Model (more at <http://www.cdsmodel.com/cdsmodel>)
 - Arbitrage Free Credit Spread Model (more at <http://www.smartquant.com/references/SWAP/swap2.pdf>)
- Inputs for pricing
 - Market Data
 - Yield Curve (To discount premium flows)
 - Credit Curve (To compute non-default probabilities of reference entity)
 - Recovery Rates (To estimate the bond price after default)

Market Data Requirements

- Daily CDS Spreads/Prices
- Market Implied Ratings (MIR)
- Popular Market data sources are
 - Markit (<http://www.markit.com>)
 - S&P (<http://www.standardandpoors.com>)
 - Moody's (<http://www.moody.com/>)
- Yield Curve, Credit Curve etc
- Default Probabilities, Recovery Rates, etc.

Market Implied Ratings (MIR)

- MIR is derived by comparing the market price for a given company to median market prices for each rating category
- Provided by [Moody's Research Group](#)
- MIR is an important information to analyze Rating Change Risk of any corporate entity

Industry Agencies & Others

- ISDA – International Swaps and Derivatives Association
- BIS - Bank for International Settlements
- DTCC – Clearing Agency
- Markit - Market Data
- S&P – Ratings & Research
- Moody's – Ratings & Research

Role of ISDA

- ISDA is a global financial trade association in the privately negotiated derivatives industry
- World's major institutions are ISDA members
- Has more than 800 members from 54 countries
- ISDA Objectives are:
 - Produce and promote efficient business practices and required documentation
 - Promote better risk management practices, commercial conduct among members
 - Educating the members on various required topics
- Source - <http://www.isda.org>

DTCC – Deriv/SERV LLC

- Only agency that
 - Warehouses all OTC CDS trades
 - Post-trade processing (Clearing and settlement)
- DTCC processes most of the world's CDS transactions
 - More than 95% (Source - [DTCC](#))
- Post-trade Processing
 - Calculation, netting, central settlement of payment obligation, event lifecycle processing
- Provides the statistics on Weekly CDS trade volumes
- More information –
<http://www.dtcc.com/products/derivserv/index.php>

Key Risk Factors in CDS

- CR_{01} - Credit Sensitivity - CDS price change for 1bp shift in Credit par spread
- DV_{01} - Interest Rate Sensitivity - CDS Price change for 1 bp shift in Yield par spread
- RR_{01} - Recovery Rate Sensitivity - change for 1% shift in Recovery Rate of issuer

Central Clearing – What's going on?

- To reduce/avoid counterparty risk, Central Clearing has been introduced
- Central clearing is done by independent agency referred to as **Central Counterparty (CCP)**
- CCPs will stay between Buyer & Seller
- CCPs are responsible for settling in case of seller defaults??
- Some of the CCPs today are:
 - ICE Trust NA - https://www.theice.com/ice_trust.jhtml
 - ICE Clear Europe - https://www.theice.com/clear_europe_cds.jhtml
 - CME Clearing - <http://www.cmegroup.com/clearing/cme-clearing-overview/about-central-counterparties.html>
 - Eurex Credit Clear - http://www.eurexclearing.com/markets/credit_clear_en.html

CDS Related Terms

- Protection Buyer or CDS Buyer or just Buyer
- Protection Seller or CDS Seller or just Seller
- Reference Entity
- Fee or Spread or Upfront
- Credit Risk or Default Risk, Credit Exposure
- Credit Event
- Compensation, Notional, Recovery Rate, Default Probabilities
- Credit Portfolio/Asset Holding – Loans, Bonds, MBS and Other Credit Products
- Credit Quality, Credit Ratings
- Rating Agencies – S&P, Moody's, KMV
- Market Data – Ratings, Events, News, Spreads, Loan Prices, Index

References

- ISDA Market Place - <http://www.isdacdsmarketplace.com>
- Markit - <http://www.standardandpoors.com>
- Moody's - <http://www.moodyanalytics.com>
- S&P - <http://www.standardandpoors.com>
- Options, Futures & Other Derivatives by *John C. Hull*
- Understanding Credit Derivatives by *Antulio N. Boman*
- *And many more ...*

Thank you
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Your feedback is welcome.
Please email to khaderv@yahoo.com
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Note:

This presentation is intended only for technical and other non-business personal to understand CDS at high level.