

Credit Default Swaps



Credit default swap, popularly known as CDS, is one of the best instruments to manage the credit risk of investors. With the Reserve Bank of India (RBI) allowing these kind of instruments in India, it has opened up another opportunity for investors and other professionals. This article covers the basis of CDS, its features, uses, merits, demerits and its journey in the international market including entities and sectors which are having highest exposures. It also covers in brief the recent guidelines of the RBI product requirements, *settlement* methodologies, policy and risk management requirement, prudential norms, accounting concept, disclosure and reporting requirement, while highlighting the professional opportunities available for Chartered Accountants in this arena. Read on...



CA. Hemraj Joshi

(The author is a member of the Institute who may be contacted at cahemraj@gmail.com)



Shakuntala Pareek

(The author is a Faculty of Commerce)

Credit risk is an investor's risk of loss arising from a borrower who does not make payments as promised. Credit originators (bank & financial institutions) had little option but to hold on to the credit till its maturity and bear the credit risk. However, the introduction of credit derivatives allowed the trading in credit risk much in the same way as market risk. Now they could manage their portfolio's credit risk by retaining it and entering into a credit derivatives contract.

In case of credit event, settlement can be cash settlement or physical settlement. In the former method, the CDS buyer receives face value of CDS minus the expected recovery while in the latter method, the reference asset and right of recovery is handed over to the CDS Seller in lieu of the face value of CDS.

Credit derivatives are synthetic instruments for transfer of credit risk in a financial transaction or a portfolio consisting of financial assets. These are financial contracts that provide insurance against credit risk. These contracts give investors, debt issuers, and banks a new avenue for managing credit risk that complement the loan sales and asset securitisation methods.

A credit derivative is usually a bilaterally entered contract. The value of the contract is derived from the credit risk of the underlying asset like a bond, a bank loan, or some other credit instrument. The value of a credit derivative is linked to the change in credit quality of these instruments. Different variants of credit derivatives are *total-returns swap*, *credit-linked notes*, *collateralised debt/loan obligations (CDO/CLO)*, *credit spread options*, etc. *Credit default swap*, popularly known as CDS, is also one of the types of such credit derivatives. CDS amplifies the options available to the credit originator for controlling or transferring their credit risks rather than just being confined to the traditional means, viz. restricting assumption of fresh exposures, outright sale of an existing fund-based exposure, obtaining credit guarantee cover, obtaining credit insurance and securitisation.

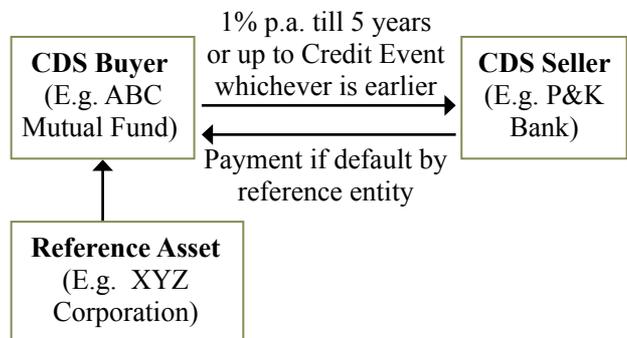
Introduction

A CDS contract provides insurance/security against the risk of default by an organisation (known as the reference entity) and default by such an organisation is known as the credit event. It is a bilateral contract where the protection buyer, i.e. *CDS Buyer*, buys the protection against the credit default by the reference entity. Against such protection, he makes periodic payment to the *CDS Seller* for specified (agreed) period or until the credit event occurs. The *CDS Buyer* has the right to sell the defaulted obligation, i.e. *Reference Asset*, of the reference entity for face value when a credit event occurs and the CDS Seller agrees to buy the defaulted obligation for their face value. The face value is known as the Swap's *Notional Principal*.

Features

A CDS may be used by the eligible protection buyers, for buying protection on specified loans and advances, or investments where the protection buyer has a credit risk exposure; and by the eligible protection sellers, for selling protection on specified loans and advances, or investments on which the protection buyer has a credit risk exposure.

Let's try to understand this using an example: ABC Mutual Fund enters into a five-year CDS with CDS Seller (P&K Bank) on 1st January 2013, for a loan it has extended to XYZ Corporation of face value ₹100 million. In consideration of that, ABC Mutual Fund agrees to pay 1% annually for protection against default.



The total amount paid every year, as percentage of the notional principal (face value) to buy CDS is known as *CDS Spread* which is market-driven.

Notional Principal Amount is the face value or par value of a reference asset which the issuer repays at maturity if it does not default. In the above example, the loan amount of ₹100 million is notional principal amount. *CDS Spread of Premium* is the periodic payment made by the CDS buyer to the CDS Seller and is set by the market for the seller to take the credit risk. In the above example, ₹1 million calculated as 1% of notional principal amount is CDS Spread. *CDS Tenor* is the door-to-door maturity period over which the contractual agreement is structured. In the above example, CDS tenor is 5 years.

Credit Event is also known as *triggering events* or *events of defaults*, which is predefined in the agreement. Below are a few examples of credit events which may be included in the agreement

- Failure to pay (a most common credit event included in the CDS agreement)
- Bankruptcy (generally applicable for corporate reference entities and not for sovereign entities, e.g. XYZ Corporation filing for bankruptcy application/petition)

- Obligation Default & Obligation Acceleration (A covenant breach on one debt instrument leads to the acceleration of other debt obligations. Acceleration means the holders of a debt obligation can demand immediate repayment in full)
- Repudiation/Moratorium (provides for compensation after specified actions of a government reference entity and is generally relevant only to emerging market reference entities)
- Restructuring (reduction of coupon, i.e. interest rate, extension of maturity date for reference asset or other obligation).

Settlement Methods: In case of a credit event, settlement can be cash settlement or physical settlement. In the former method, the CDS buyer receives the face value of CDS minus the expected recovery while in later method the reference asset and right of recovery is handed over to the CDS Seller in lieu of the face value of CDS.

Purpose/Advantages

Credit derivatives including *credit default swap* may be used for a variety of reasons that include:

- To reduce capital required to support credit risk exposures;
- To release credit exposure limits to counterparty (For example, a particular NBFC has exposure of ₹1,000 million to XYZ Power Company Limited. Let's assume that this is the maximum permitted per company limit for exposure as per internal/regulatory guidelines. However, XYZ Ltd. has approached the NBFC for further credit of ₹500 million, which the NBFC intends to sanction considering its strong financial position. Now to ensure that all internal/regulatory limits are adhered to, the NBFC should grant the additional exposure and simultaneously buy CDS in the market to the tune of ₹500 million from the CDS Seller. This will ensure that the net exposure to the existing counterparty remains at ₹1,000 million and

additional exposure of ₹500 million is considered on CDS Seller);

- To reduce concentrations by shedding exposures to a counterparty without affecting the relationship with the borrower since there is no transfer of title of the asset, or, to a sector (let us extend our previous example to discuss this point. Assume that with change in regulation/internal process, the NBFC intends to reduce the existing exposure of ₹1,000 million on XYZ Ltd. to ₹800 million. The traditional way of doing this is to ask for early payment from XYZ Limited. However, such action may not be affected immediately since it may be considered as breach of loan agreement or it may jeopardise the relationship. To overcome such an instance, the NBFC can again take the help of CDS and can buy it from the market to the tune of ₹200 million. Say, it buys the same from ABC Bank, the exposure of ₹800 million will be considered on XYZ Ltd. and ₹200 million exposure on ABC Bank. This action also results into diversifying the concentration risk from the power sector, i.e. XYZ Ltd., to the banking sector, i.e. ABC Bank;
- To assume exposures to a counter-party or to a sector to diversify risks or to fill gaps in the credit quality spectrum; and
- To diversify revenue through the unfunded way.

Gross notional outstanding and net notional outstanding: Before we move ahead, it important to understand the two more technical terminologies used in the CDS market. Gross notional refers to the sum of CDS contracts bought (or equivalently sold). Aggregate gross notional value and contract data provided are calculated on a per-trade basis. For example, a transaction of ₹10 million notional between buyer and seller of protection is reported as one contract and ₹10 million gross notional, as opposed to two contracts worth ₹20 million.

Net notional values with respect to any single reference entity are the sum of the net protection bought by net buyers, or, equivalently net protection sold by net sellers. Net notional positions generally represent the maximum possible net funds transfers between net sellers of protection and net buyers of protection that could be required upon the occurrence of a credit event relating to particular reference entities. Actual net fund transfers are dependent on the recovery rate for the underlying bonds or other debt instruments.

Let us have a simple example to understand this:

According to the Depository Trust & Clearing Corporation (DTCC) recent data, single-name reference entities account for 57%, indices account for 35% and tranches account for 8% of notional amount outstanding. The CDS credit product constitutes 52% of all credit products in value term while making up 90% of the total number of contracts.

Assume three banks engaged in four CDS trades for reference entity XYZ Corporation. Here, a positive number means the dealer is a buyer of CDS protection, and negative is a seller.

	Bank A	Bank B	Bank C	Gross
Trade 1	10	-10		10
Trade 2		-25	25	25
Trade 3	-40		40	40
Trade 4	20	-20		20
Net Position	-10	-55	65	95

In the above example, Bank A buys ₹10 million CDS protection from Bank B and, hence, there is ₹10 million of *gross notional* from that trade. Looking at the above example, the total gross notional outstanding is ₹95 million while net notional amount is ₹65 million (net position of overall buyers A & B; ₹10 million + ₹55 million) or just the net position of overall seller (₹65 million of Bank C).

CDS gross and net notional are two key measures of exposures across the market. Each conveys different information, with net notional being more relevant for most applications. While gross notional is a measure of all existing CDS contracts, net notional best reflects the size of the CDS market.

CDS in International Market

The market of credit derivatives is matured to a certain extent around the globe. CDS can be written on single-name reference entities, indices and tranches. According to the Depository Trust & Clearing

Corporation (DTCC) recent data, single-name reference entities account for 57%, indices account for 35% and tranches account for 8% of notional amount outstanding. The CDS credit product constitutes 52% of all credit products in value term with 90% of total number of contracts.

The user type break-up of the same is as follows:

User Type	Total for CDS Credit Products		Total for all Credit Products	
	Gross Notional (\$ EQ in Mn)	No. of Contracts	Gross Notional (\$ EQ in Mn)	No. of Contracts
Dealer	9,967,197	1,510,845	17,654,653	1,644,986
Non Dealer/ Customer	1,839,948	222,860	5,036,393	275,729
TOTAL	11,807,145	1,733,705	22,691,046	1,920,715
<i>Percentage (%)</i>	<i>52</i>	<i>90</i>		

Source: DTCC, Weekly Report dated 20th September, 2013

Internationally, continuous efforts are made to further strengthen and improve the CDS market. The facility of central counterparty clearing is used quite proactively and 85% of the CDS contracts are cleared through it. Efforts are being made to enhance market transparency and increase operational efficiency. Internationally, the practice of having CDS on a sovereign entity is quite prevalent.

The following table provides top 10 reference sovereign entities by net notional amount:

Sr. No.	Reference Entity	Region	Gross Notional (\$ EQ in million)	Net Notional (\$ EQ in million)	Net Notional as % of Gross Notional	No. of Contracts
1	Republic of Italy	Europe	377,321	16,427	4%	11,388
2	Federative Republic of Brazil	Americas	134,222	14,098	11%	9,298
3	Federal Republic of Germany	Europe	132,287	13,128	10%	4,231
4	French Republic	Europe	150,911	11,716	8%	6,125
5	Kingdom of Spain	Europe	176,643	9,321	5%	7,414
6	Japan	Japan	74,712	9,159	12%	6,885
7	Republic of Turkey	Europe	137,420	8,194	6%	9,962
8	United Mexican States	Americas	107,139	7,821	7%	7,667
9	People's Republic of China	Asia Ex-Japan	67,293	7,195	11%	5,673
10	Republic of Korea	Asia Ex-Japan	77,319	6,930	9%	6,575

Source: DTCC, Weekly Report dated 20th September, 2013

The below table illuminates top 10 corporate entities in terms of Net Notional Amount

Sr. No.	Reference Entity	Region	Gross Notional (\$ EQ in million)	Net Notional (\$ EQ in million)	Net Notional as % of Gross Notional	No. of Contracts
1	General Electric Capital Corporation	Americas	61,795	7,525	12%	5,129
2	Berkshire Hathaway Inc.	Americas	32,577	5,723	18%	3,193
3	Deutsche Bank Aktiengesellschaft	Europe	51,896	4,368	8%	5,995
4	JP Morgan Chase & Co.	Americas	54,216	4,060	7%	6,091
5	Metlife, Inc.	Americas	24,936	3,658	15%	3,229
6	Barclays Bank Plc	Europe	44,184	3,536	8%	5,435
7	Bank of America Corporation	Americas	54,734	3,391	6%	6,575
8	The Goldman Sachs Group, Inc.	Americas	54,822	3,331	6%	5,865
9	AXA	Europe	34,339	3,224	9%	4,359
10	Morgan Stanley	Americas	56,555	3,154	6%	6,113

Source: DTCC, Weekly Report dated 20th September 2013

It is interesting to note that all the above reference entities are from the financial sector. Even financial services companies are the heaviest users of credit derivatives, since much of their inherent business risk is concentrated in those areas.

The sector-wise analysis of the top 1,000 entities reveals the following picture:

Sr. No.	Sector	Gross Notional (\$ EQ in million)	Net Notional (\$ EQ in million)	% Share	Net Notional as % of Gross Notional	No. of Contracts
1	Government	2,747,313	192,495	22%	7%	191,227
2	Financials	2,542,651	174,666	20%	7%	364,444
3	Consumer Services	1,408,111	87,564	10%	6%	257,329
4	Consumer Goods	1,167,298	80,684	9%	7%	206,884
5	Industrials	925,506	69,569	8%	8%	169,946
6	Basic Materials	713,681	55,712	6%	8%	128,658
7	Telecommunications Services	625,226	40,354	5%	6%	102,143
8	Energy	417,478	38,075	4%	9%	77,627
9	Utilities	481,657	34,348	4%	7%	85,005
10	Technology	277,707	19,649	2%	7%	53,708
11	Healthcare	251,759	19,404	2%	8%	46,384
12	Others*	248,759	74,080	8%	30%	50,350
	Grand Total	11,807,145	886,600	100%		1,733,705

* Others represent residential Mortgage Back Securities (MBS), Commercial MBS, and CDS on Loans, etc.

Source: DTCC, Weekly Report dated 20th September 2013

Before we move on, let's also have a look at a few familiar Indian entities figuring in the list of the top 1,000 reference entities.

Reference Entity	Gross Notional (\$ EQ in million)	Net Notional (\$ EQ in million)	Net Notional as % of Gross Notional	No. of Contracts	Ranking
State Bank of India	6,782	725	11%	1,005	364
ICICI Bank Limited	5,619	607	11%	983	455
Reliance Industries Limited	4,165	417	10%	834	593
Vedanta Resources Plc	2,225	371	17%	609	642
IDBI Bank Limited	2,901	251	9%	553	803
Bank of India	1,518	244	16%	399	812

Source: DTCC, Weekly Report dated 20th September 2013

The CDS business has functioned well during the financial crisis. The CDS market remained open and CDS activity remained robust during a period when many parts of the credit markets shut down. In this environment, CDS was often the only credit product consistently available to allow firms to transfer risk. There had been over 90 credit events in the CDS market since 2007. All were managed in an orderly fashion with no major disruptions. This demonstrated the value of the *International Swaps and Derivatives Association, Inc.* (ISDA) and its members' work over the past 25 years in building a strong and robust operational infrastructure for the industry.

The CDS market, many times, acts as a precursor for any default that the market is anticipating. If there is a high jump in CDS rates, this signals the high risk of default. The failure of the sovereign bond issue by the Greece government during the year 2012 was highlighted by a sudden rise in the CDS rate.

CDS in India

Credit derivatives including CDS are a new phenomenon for the Indian economy. After detailed study of the product by forming various internal groups and considering comments received by various stakeholders from time to time, the RBI has issued final guidelines on plain vanilla OTC single-name CDS for corporate bonds in India. The guidelines could not have come at a more opportune time, as several players are waiting eagerly to get appropriate instruments to manage credit risk in their portfolio.

The guidelines outline the following points:

- Product requirement
- Settlement methodologies

- Policy and risk management requirement
- Prudential norms
- Accounting and disclosure requirement
- Reporting requirement

The major parameters of the guidelines can be summarised as under:

- Guidelines have permitted CDS only on single legal resident entity.
- They have prescribed different market structure for market-makers and users. While market-makers are permitted to buy and sell protection, users are only permitted to hedge the underlying risk by buying CDS.
- Different eligibility norms are prescribed for market-makers and users.
- Commercial banks, standalone primary dealers (PDs), non-banking financial companies (NBFCs) are allowed to act as market-makers and users while provident funds, foreign institutional investors (FIIs) and listed corporates are allowed as users only.
- Insurance companies and mutual funds would be allowed as market-makers as and when permitted by their respective regulators (Insurance Regulatory and Development Authority/Securities and Exchange Board of India) and subject to their having strong financials and risk management capabilities.
- Difference norms with respect to net worth, non-performing assets (NPAs), capital risk adequacy ratio (CRAR), risk-management system are prescribed for market-makers depending upon their status as bank, NBFC or PD.
- Securities with original maturity up to one year are not eligible. This includes commercial papers (CPs), certificate of deposits (CDs) etc.

- Users are not allowed to maintain, at any point of time, naked CDS protection i.e. CDS is not to be bought without underlying.
- Users and market-makers would not be permitted to enter into CDS transactions having their related parties either as counterparties or as reference entities.
- All CDS trades shall have an RBI-regulated entity at least on one side of the transaction.
For example, trade between two insurance companies or between two mutual funds or between insurance company and provident fund, etc., are not permitted.
- For users physical settlement is mandatory. Market-makers can opt for any of the three settlement methods (physical, cash and auction).
- The Fixed Income Money Market and Derivatives Association of India (FIMMDA) is entrusted with devising master agreement for Indian CDS.

Challenges /Disadvantages

- *Credit Risk:* Credit risk remains intact for both buyer and seller in absence of clearing agencies. These are OTC trades lacking settlement guarantee by clearing houses.
- *Inadequate market:* Market for credit derivatives is nascent, especially in India. There is always a gap between the needs of buyer/seller and most of the contracts are done through OTC. The standardisation of the same poses a challenge.
- *Legal risk:* Banks/financial institutions involved in CDS need to be aware of the potential legal risk arising from an unenforceable contract, e.g. due to inadequate documentation, lack of authority for a counterparty to enter into the contract (or to transfer the asset upon occurrence of a credit event), uncertain payment procedure associated with

After a detailed study of the product by forming various internal groups and considering comments received by various stakeholders from time to time, the RBI has issued final guidelines on plain vanilla OTC single-name CDS for corporate bonds in India. The guidelines could not have come at a more opportune time, as several players are waiting eagerly to get appropriate instruments to manage credit risk in their portfolios.



bankruptcy proceedings or inability to determine market value when required.

- *Operational Risk:* Like any other credit derivative, CDS does suffer from operational risk, viz. understanding of product, lack of system to implement CDS, etc.

Conclusion

In today's financial markets, it is clear that CDS serves a valuable price-signalling function—a function that enables market participants and others to access better and timelier information about prices and risk. With the RBI taking initiative and allowing participants to use this instrument for hedging their risk, it is also important that all stakeholders have robust understanding of the risk and reward embedded in the relevant transaction. It's equally important for various regulators to ensure that proper risk management framework is in place before such contracts are undertaken by entities. With the support of various stakeholders, the importance of this product will definitely be proved in coming times.

It opens up an opportunity for professionals like chartered accountants to work in areas related to CDS like product designing, dealing, accounting, risk management, audit, documentation and agreement drafting. ■