

Product Briefing - Credit Default Swaps

A credit default swap (CDS) is a bilateral contract that allows one entity to buy protection against the possibility that a particular reference entity (or basket of reference entities) will suffer a specific credit event. The buyer of this credit protection pays a fixed premium that is typically paid quarterly to a protection seller.

The protection seller will agree to 'make whole' the protection buyer by agreeing to pay an amount of compensation, if the agreed credit event occurs. The fee that the protection buyer agrees to pay is referred to as a premium or a spread. Upon the occurrence of the credit event, the premium payments stop and the contract will terminate.

The buyer of protection is considered to be short the credit risk as economically their position is equivalent to selling the credit risky asset. The protection seller is 'long' the credit risk; similar to the buyer of a bond, they are accepting the risk that a particular entity will suffer a credit event and are being paid a regular cash flow as compensation. By convention the protection seller is sometimes termed an investor as this position can be viewed as being economically equivalent to buying a bond.

Diagrammatically the CDS can be represented as follows in figure 1:

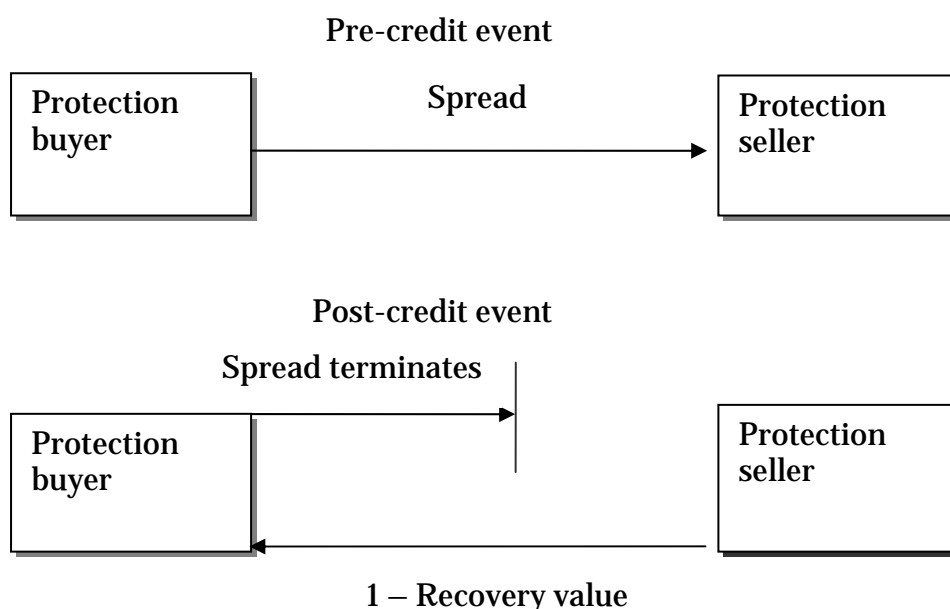


Figure 1: Credit Default Swaps

The spread of a CDS can be estimated by using the following shortcut formula:

$$\text{Spread} = (100\% - \text{recovery value}) \times \text{probability of default}$$

In the US and Europe, CDS trade with fixed coupons; 100 and 500 basis points for the US and 25, 100, 500 and 1,000 basis points for Europe. Higher yielding names will trade with higher coupons, while investment grade names will trade with lower coupons.

These coupons will not necessarily reflect the current market value of the spread and so an upfront cash adjustment will be necessary. Suppose an investment grade name is trading with a fixed coupon of 100 basis points but the market believes that the current value of the spread is 90 basis points. The buyer of protection will be required to pay the spread on a quarterly basis but is locking into a value that is 10 basis points higher than the market spread at the time the deal is executed. As a result, he will receive an upfront cash adjustment of 10 basis points per annum, discounted to reflect the time value of money and the probability that the company may default.

Originally, physical settlement was the norm upon the advent of a credit event and it required the protection seller to deliver the agreed notional amount of the transaction to the protection buyer. In return, the protection buyer delivered an asset issued by the agreed reference entity that conformed to the terms of the agreed contract. This could have been a defaulted asset or a non-defaulted asset that was considered *pari passu*.

Physical settlement was preferred because banks typically ran a 'matched position' i.e. they held an offsetting position with identical terms and conditions. As a result, if a credit event were to occur, physical settlement would allow the bank to pay and receive the notional amounts on the offsetting contracts and receive and deliver the agreed obligation. In this situation there is no price risk on the delivered obligation, as long as the notional amounts on the transactions were equal. The market value of the delivered obligation was irrelevant as the notional amounts that are associated with the trades are for a fixed monetary value and the transfer of the obligation involves nothing other than a change of title of an asset.

Cash settlement was less popular as a bank holding a matched position would be subject to price risk. In the early days of the market if a credit event were to occur, unless the institution were able to ensure that the settlement of both legs coincided, there was no guarantee that the value of the delivered obligation on one side of the transaction would match that of the obligation received.

As the CDS market grew, inevitably the total notional amount of outstanding transactions outstripped the supply of outstanding obligations. This meant that if a credit event occurred, the protection buyers (who are not obligated to actually own obligations issued by the reference entity) often encountered difficulties in sourcing the required obligations. To avoid the introduction of price risk in the settlement of the CDS contract, the market has now moved to an auction process where a panel of traders agree on a post-default value of the deliverable obligations. This single value is then used by all market participants, removing the potential price mis-match.

The CDS contract has a number of key characteristics:

Reference entity: It is very important for the two counterparties to agree the exact legal entity on which protection is being bought or sold

Reference obligation: Stated in the deal confirmation is a debt obligation issued by the reference entity that identifies the exact nature of the credit risk being transferred.

This is because different obligations within a capital structure will have different degrees of credit risk depending on the amount that would be recovered by the lender in the event of a default. Typically the reference obligation is the senior unsecured portion of the reference entity's capital structure but some transactions may be based on a different component (i.e. subordinated debt) in order to express a different view. Knowing the reference obligation will allow the contracts to be fairly priced (as the price must reflect the potential loss to the protection seller) and will also determine the nature of the asset that will be delivered if a credit event is activated.

Credit events: The market participants will agree a number of market standard events that will cause the contingent compensation to be paid by the protection seller. These are:

- Bankruptcy
- Failure to pay
- Restructuring (of which there are different variations)
- Obligation acceleration / default
- Repudiation / moratorium (for sovereign reference obligations)

Not all contracts will include all of the default terms. Over time, each market has developed particular conventions as to which terms should be included. For example, in the USA the convention is to trade bankruptcy and failure to pay.

Obligations: Once the credit events have been specified the entities must agree the population of the issuer's obligations which could lead to a credit event being triggered. The market standard is typically 'borrowed money' (although there are differences between markets). This is defined to include such things as bonds, loans, and certificates of deposit.

Deliverable obligations: If a credit event is triggered and the deal is physically settled then the protection seller will deliver a cash sum equal to the agreed notional amount. In return the buyer will be required to deliver an acceptable asset issued by the reference entity. This need not be the reference obligation as the supply of this component may be limited. As a result the market allows for some leeway in terms of the actual asset. Although a number of criteria apply, the most significant is that it should not be subordinated to the reference obligation, as those assets possess a different degree of credit risk.

In recent times the credit derivatives market and principally the CDS component have experienced considerable growth. The spread of the CDS is viewed by market participants as representative of the 'pure' credit risk of a particular reference entity. As such it is now used as a benchmark to assess and price credit risk in the bond markets. CDS instruments will trade with many different maturities even where there is no debt of an equivalent maturity. This has given rise to the concept of the credit curve which is a representation of CDS spreads of different maturities.