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Volume Two

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Understanding Credit Derivatives

CDS Basics

CDS Concepts

ISDA Definitions

Credit Events

Settlement

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CDS Basics

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FOREWORD

Credit default swaps ("CDS") are the most common credit derivative instruments and are often the building blocks for more complex structured credit products. We will examine the economics and key contract terms of CDS in this volume, before going on to review structured products in later volumes.

CDS are bilateral contracts which set out, inter alia, whose credit risk is being transferred, what events can trigger settlement, what obligations can be delivered for settlement, and how contracts are settled. Definitions of terms such as Reference Entity, Credit Events, Deliverable Obligation and Settlement are key to the contracts. To promote transparency and liquidity in the CDS market, the International Swap Dealers Association ("ISDA") standardises these terms in the Credit Derivative Definitions, under which virtually all CDS contracts are documented. Our discussions which follow are based on the Definitions.

Chart 1: CDS key contract elements

Reference Entity:	Which entity's credit risk is being transferred from the protection buyer to the seller?
Obligations:	On what debt instruments or other obligations can Credit Events occur?
Credit Event:	What events constitute a "default" and can trigger settlement?
Protection Period:	What is the period of protection for Credit Events?
Reference Obligations:	What is the seniority of the credit exposure being transferred?
Deliverable Obligation:	Which are the obligations that can be used to physically settle the contract?
Settlement:	How is a CDS settled?

Source: BNP Paribas

1. CDS BASICS

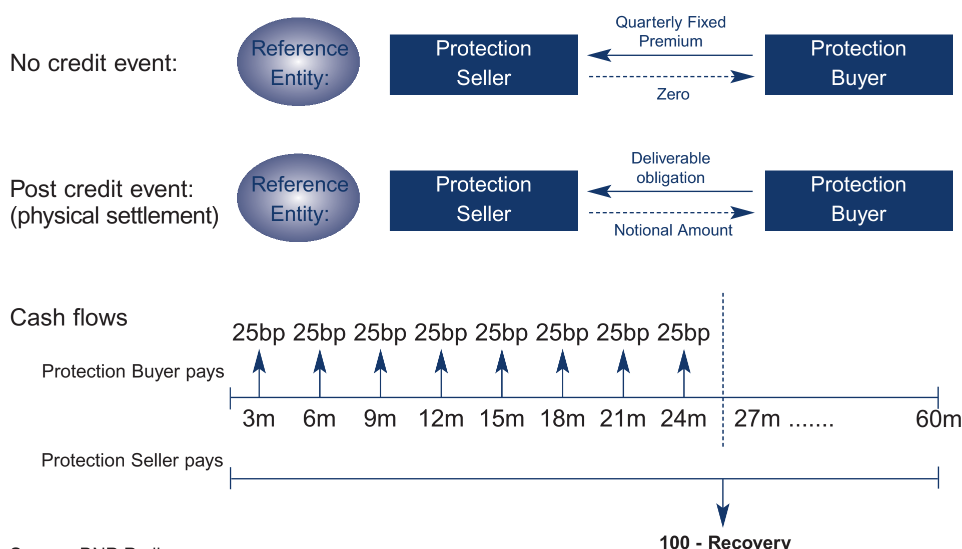
CDS counterparties are buying or selling protection

Credit default swaps are bilateral contracts that transfer defined credit risk from one party to another. The credit protection buyer pays a pre-determined premium periodically (usually quarterly) to the credit protection seller, in return for the payment of an agreed sum (or a sum calculated according to an agreed formula) should there be a Credit Event[1] (such as Bankruptcy) on the Reference Entity (such as a corporate).

Buyer pays periodic premiums for protection from a Credit Event Event

The cashflows under a CDS are as follows (Chart 2): if there is no Credit Event during the life of the contract, the protection buyer pays regular premiums on the notional amount of the contract and receives nothing; like many other swaps, there is no exchange of principal. Should a Credit Event occur, the protection buyer would stop paying premiums, and would typically deliver eligible debt instruments of the Reference Entity (defined as Deliverable Obligations) to the protection seller for payment of par, i.e., the notional amount of the contract. Since the Deliverable Obligations under a Credit Event would trade at distressed prices (implying recovery rates), the CDS contract covers the protection buyer for the difference between par and recovery rate, hence CDS are widely used for hedging purposes.

Chart 2: Cash flows of a CDS contract (an example)



Source: BNP Paribas

Physical settlement is market convention

Credit default swaps are typically subject to physical settlement, i.e., the protection buyer delivers a Deliverable Obligation for par payment upon the occurrence of a Credit Event. Nonetheless, it is also possible to adopt cash settlement, where the protection buyer does not deliver any obligations and the protection seller pays the difference between par and recovery rate. The net cash flow upon the occurrence of a Credit Event should therefore be the same as in physical settlement. The recovery rate is typically determined by a poll of market quotations for a Deliverable Obligation or the Reference Obligation, as the case may be.

Protection seller is long credit

It is clear from this that the protection seller assumes (or goes long) the credit risk of the Reference Entity; its credit position is similar to buying a bond of the Reference Entity. On the other hand, the protection buyer reduces (or goes short) credit risk; its credit position is similar to selling a bond.

[1] We define these capitalised terms in more detail in the following sections.

2. ISDA DEFINITIONS: FROM CREDIT EVENT TO SETTLEMENT

In the previous section, we have used the terms Credit Event and Deliverable Obligation without defining them. In fact, these are among the key contract elements that set out the terms and conditions of a credit default swap, so their definitions are crucial. In the following sections we will clarify these issues:

- Reference Entity: Which entity's credit risk is being transferred?
- Obligations: On what debt instruments or other obligations can Credit Events occur?
- Credit Event: What events constitute a "default" and can trigger settlement?
- Protection Period: What is the period of protection for Credit Events?
- Reference Obligation: What is the seniority of the credit exposure being transferred?
- Deliverable Obligation: Which are the obligations that can be used to physically settle the contract?
- Settlement: How is a CDS settled?

These terms are among the key elements that set out the terms and conditions of a CDS contract

The definitions of these terms are in fact standardised, as credit default swaps are documented under standard ISDA derivative documentation, including the ISDA Credit Derivative Definitions. The standardised documentation has improved market liquidity; it also aims to eliminate legal basis risk and to manage conflicts of interest between counterparties.

In practice, if the Term Sheet and Confirmation of a CDS transaction state that the ISDA Credit Derivative Definitions apply, which is nearly always the case, then it is as if the contract included all the clauses of those definitions. The counterparties can then focus on making choices within the definitions' possibilities, and on making modifications to certain clauses if needed.

The latest version of the ISDA definitions, the 2003 ISDA Credit Derivatives Definitions ("2003 Definitions"), and the May Supplement to the 2003 Definitions, came into effect on 20 June, 2003. They represent an evolution from the 1999 Definitions and incorporate three supplements[2]. We will focus our discussions on the terms as per the 2003 Definitions.

Please note that the following discussions do not constitute legal interpretation of the 2003 Definitions, as full legal review is beyond the scope of this report. We advise readers to consult with their legal and other professional advisers before entering into credit default swaps.

[2] The three supplements to the 1999 Definitions are:
- the supplement relating to Restructuring, dated 11 May, 2001;
- the supplement relating to Convertible, Exchangeable or Accreting Obligations, dated 9 November, 2001; and
- the supplement relating to Successors and Credit Events, dated 28 November, 2001.

3. REFERENCE ENTITY

Specifying the Reference Entity

The Reference Entity of a CDS defines which underlying credit risk is being transferred, an issue of utmost importance for both parties to the contract. Although this seems to be a simple and straightforward question, it warrants scrutiny as many companies have a complex corporate web of affiliation, and the affiliates can have different types of debt instruments outstanding (see sidebar for an example).

Investors should be aware that the default risk of different entities within the same corporate group may not be identical, i.e., they may not all default together. In addition, their recovery rates may be even more divergent, as different affiliates own different amounts and types of assets. It is therefore vital to specify the Reference Entity precisely. Specifying a Reference Obligation, for example a particular bond of a particular issuer, also helps identify the exact Reference Entity.

Armstrong World Industries – In 2000, US company Armstrong World Industries missed payments on its debt, thereby triggering a Credit Event. The parent company Armstrong Holdings, however, did not default. Many market participants had failed to differentiate the two and had hedged their CDS positions in one with contracts on the other. Some had simply referenced "Armstrong", without specifying whether it was the parent or the subsidiary that was referenced. This case highlighted the importance of being precise in naming the Reference Entity.

Successors

Another issue is that, during the life of the CDS transaction, there can be corporate re-organisations of the Reference Entity, such as mergers, consolidations, transfers of assets or liabilities, de-mergers, spin-offs or other similar events (the Successor Events). In such cases, the debt of the original Reference Entity could become the debt of one or more entities, thereby leading to the question of who is/are the Successor(s), i.e., the new Reference Entities that succeed the original one (see sidebar).

According to the 2003 Definitions, when a Successor Event occurs, the Successor(s) should be determined as per these thresholds:

- If an entity succeeds to 75% or more of the bonds and loans of the original Reference Entity, then it is the sole Successor.
- If one or more entities succeed to between 25% and 75% of the bonds and loans of the original Reference Entity, then these entities are all Successors and the protection should be equally divided between them.
- If no entity exceeds the 25% threshold, then there are two scenarios:
    - if the original Reference Entity continues to exist, then it remains the Reference Entity;
    - if the original Reference Entity ceases to exist, then the entity that succeeds to the greatest percentage of bonds and loans of the original Reference Entity is the sole Successor.

National Power – In November 2000, UK company National Power plc de-merged into two entities: Innogy and International Power. Innogy assumed certain assets and debt obligations of National Power, and National Power changed its name to International Power. The de-merger prompted questions as to who was the Successor. The 1999 Definitions used at the time stipulated that the Successor should assume "all or substantially all of the obligations". Lacking numerical thresholds and court precedents, it was difficult to apply this criterion. Fortunately the case was not controversial by itself and market participants agreed that International Power was the Successor. Nevertheless, it made market participants realise the vagueness of the then prevailing definition on the subject. ISDA responded by introducing numerical thresholds in Successor tests through "the Supplement relating to Successor and Credit Events", dated 28 November, 2001. This supplement is incorporated in the 2003 Definitions.

4. OBLIGATIONS

Obligation Categories and Obligation Characteristics

Defining the scope of Obligations is also important, as it sets out on what obligations of the Reference Entity a Credit Event can occur. For example, if a Reference Entity disputes a procurement payment, does it constitute a "Failure to Pay" Credit Event? Or does such a Credit Event require a failure to pay regarding the Reference Entity's bonds?

The market norm in the US and Europe is to use the Obligation Category of Borrowed Money, and not to select any Obligation Characteristics

The 2003 Definitions list six Obligation Categories: Payment, Borrowed Money, Bond, Loan, Bond or Loan, and Reference Obligations Only. The market standard is to use Borrowed Money, which includes not only bonds and loans, but also items such as deposits and reimbursement obligations under letters of credit. It is worth mentioning that undrawn credit facilities are excluded. This ensures that a restructuring of such facilities will not trigger a Restructuring credit event (more on Restructuring in the next section).

Besides Obligation Categories, the 2003 Definitions also offer a selection of Obligation Characteristics, such as Not Subordinated and Specified Currency. ***Although these allow further narrowing of the scope of Obligations, it is the market norm in the US and Europe not to select any Obligation Characteristics.***

Guaranteed Obligations

Some debt instruments may be guaranteed by a Reference Entity. Which of these Guaranteed Obligations may trigger a Credit Event? The 2003 Definitions give two options: All Guarantees and Qualifying Affiliate Guarantee. Before we see details of these two terms, let us first look at what qualifies as a guarantee under the 2003 Definitions.

Which Obligations guaranteed by a Reference Entity may trigger a Credit Event?

Qualifying Guarantee: A Qualifying Guarantee must be an irrevocable guarantee in writing given by the Reference Entity in respect of debt of another obligor. The benefit of the Qualifying Guarantee must be capable of being delivered together with the delivery of the underlying Obligation. Qualifying Guarantees explicitly exclude surety bonds, financial guaranty insurance policies, letters of credit or equivalent legal arrangements.

The following two options given by the 2003 Definitions define which Obligations may trigger a Credit Event, and which Obligations may be delivered for physical settlement or valued for cash settlement.

Qualifying Affiliate Guarantee: This is a Qualifying Guarantee given by a Reference Entity for the benefit of its Downstream Affiliate, which is an entity whose outstanding voting shares are more than 50% owned by the Reference Entity. Unless "All Guarantees" is selected in the relevant confirmation, Qualifying Affiliate Guarantees apply.

All Guarantees: If this is selected, any Qualifying Guarantee given by a Reference Entity will be an eligible Obligation. This includes not only guarantees for a downstream entity, but also those for upstream and sidestream entities as well as those for unrelated third parties.

The current market norm is to trade US names with Qualifying Affiliate Guarantees and Reference Entities of other regions with All Guarantees.

Monoline Insurer as Reference Entity

Since Qualifying Guarantees exclude financial guaranty, ISDA published Additional Provisions[3] on 09 May, 2003 to address the issue of Monoline Insurers as Reference Entities. By stating that these provisions apply to their transactions, market participants can reference Monoline Insurers and trigger a Credit Event on financial guaranty insurance policies. The definition of Obligation, and the definition of Deliverable Obligation if the transaction is physically settled, are slightly modified by the Additional Provisions to encompass the particulars of financial guaranty insurance policies.

[3] "Additional Provisions for Physically Settled Default Swaps – Monoline Insurer as Reference Entity"

5. CREDIT EVENTS

Credit Event definitions: some are used more often than others

A Credit Event is an event that will trigger settlement in a credit derivative transaction. The 2003 Definitions list six Credit Events:

- Bankruptcy
- Failure to Pay
- Obligation Acceleration
- Obligation Default
- Repudiation/Moratorium
- Restructuring

A Credit Event may occur at the level of the Reference Entity, as in the case of Bankruptcy, or at the level of the Obligations of the Reference Entity, as in the case of Restructuring.

Counterparties to a transaction will select a set of Credit Events from the list. The applicable Credit Events may be different from transaction to transaction. For example, Bankruptcy usually applies to corporate Reference Entities but not to sovereigns, while Repudiation/Moratorium usually applies to sovereigns but not to corporates (except for emerging market corporates).

Bankruptcy

Bankruptcy occurs when the Reference Entity has been dissolved or becomes insolvent. To constitute a Bankruptcy Credit Event, the 2003 Definitions require, for example, the commencement of some formal bankruptcy proceeding, or an admission in writing of a general inability to repay debts, and that such admission be part of a judicial, regulatory or administrative proceeding or filing.

To avoid ambiguity, the 2003 Definitions also removed the language contained in the 1999 Definitions that included situations where the Reference Entity "takes any action in furtherance of, or indicates its consent to, approval of, or acquiescence in" Bankruptcy as defined.

Failure to Pay

This refers to a failure by the Reference Entity to pay any Obligation when and where due. A Failure to Pay only occurs after the expiration of any applicable grace period, and is usually subject to a materiality threshold (the Payment Requirement) of USD 1m.

Obligation Acceleration

This occurs when one or more Obligations of the Reference Entity become due and payable prior to maturity because of default.

It is market convention not to use this Credit Event with G7 corporates, whereas it is in use in some emerging market contracts.

Obligation Default

This occurs when one or more Obligations are capable of being declared due and payable prior to maturity, for example if a bank loan covenant has been breached. It means that this Credit Event can be triggered without any Obligation Acceleration occurring.

In practice, Obligation Default is almost never used as a Credit Event.

Repudiation/Moratorium

According to the 2003 Definitions, this refers to situations where an authorised officer of the Reference Entity, or a government authority, refuses to honour Obligations or imposes a moratorium preventing an entity from making payments. This Credit Event will only be triggered if it is followed by a Failure to Pay or Restructuring within a certain period of time. The determination of Failure to Pay or Restructuring in this case, however, is not subject to any materiality thresholds.

It is market norm not to use this Credit Event with G7 corporates, however it is used in emerging market contracts.

Restructuring

Restructuring is a comprehensive concept...

Restructuring refers to one or more of the following situations:

- Reduction of interest rate or amount;
- Reduction of principal amount;
- Postponement of interest or principal payments;
- Change in an Obligation's seniority resulting in subordination;
- Change in the currency of interest or principal payments to currencies other than a Permitted Currency[4] .

...and therefore is subject to more detailed criteria

Apart from the above five occurrences, the 2003 Definitions also require the following in order to constitute a Restructuring Credit Event:

- The event must be associated with a credit deterioration of the Reference Entity;
- A Restructuring must be binding on all holders of the Obligation;
- Unless specified as being not applicable in a confirmation, the restructured Obligation must be a Multiple Holder Obligation[5]. This effectively excludes bilateral loans from a Restructuring event and aims to prevent the engineering of Restructuring. A Multiple Holder Obligation is, at the time of Restructuring:
  - held by more than three unaffiliated holders; and
  - unless it is a bond, at least two-thirds of the holders are required to consent to the Restructuring event.
- The amount of the Obligation being restructured must be greater than the specified Default Requirement;
- An Obligation Exchange, as defined in the 1999 Definitions, will not constitute a Restructuring event;
- Multiple Credit Event Notices may be delivered after a Restructuring Credit Event, as originally introduced in the Restructuring Supplement.

The 2003 Definitions allow four options regarding the Restructuring Credit Event, which entail detailed discussions. We put these discussions in a separate section at the end of this chapter.

[4] A G7 currency or any currency of an OECD country rated Aaa, AAA or AAA by Moody's, S&P or Fitch. This concept was first introduced by the Successor and Credit Events Supplement dated 28 November, 2001.
[5] This concept was originally introduced in the Restructuring Supplement dated 11 May 2001.

6. PROTECTION PERIOD

The standard rule: from the Effective Date to the Scheduled Termination Date

The Effective Date: T+1

A CDS contract comes into effect (i.e. the protection starts) on the Effective Date, which is the calendar day following the trade date. The protection ends on the Scheduled Termination Date of the contract.

Most CDS contracts have a 5-year tenor, however, dealers are making an effort to improve liquidity in other key maturities, such as 3 and 10 years, in order to develop a full CDS curve for major credits.

An Obligation's grace period and Potential Failure to Pay: no exception to the rule

The Scheduled Termination Date remains the cut-off point of protection

Regarding the "Failure to Pay" Credit Event, the Obligation in question may have a grace period under the terms of this Obligation, which is typically aimed at protecting the borrower against technical defaults due to factors such as settlement errors. A missed payment therefore first becomes a Potential Failure to Pay, which only develops into a Failure to Pay after the grace period ends. If an Obligation does not have a specified grace period, or has one shorter than three business days, the CDS contract will apply a grace period of three business days, according to the 2003 ISDA Definitions.

In the event that a Potential Failure to Pay occurs before the Scheduled Termination Date but the grace period ends after the Scheduled Termination Date, the protection buyer is not covered for this missed payment, because the Protection Period ends before a Failure to Pay Credit Event materialises.

Grace Period Extension in the CDS Confirmation: an exception to the rule

The Protection Period can be extended to cover the Grace Period in this case

ISDA Definitions offer an option to cover grace periods that straddle the Scheduled Termination Date. Counterparties can choose "Grace Period Extension Applicable" when entering into the CDS contract. In this case, the protection buyer is covered as long as the missed payment occurs before the Scheduled Termination Date and is not cured at the end of the Grace Period specified in the CDS Confirmation. If the Confirmation has "Grace Period Extension Applicable" but has not specified the length of the Grace Period, then the Grace Period will be the lesser of 30 calendar days and the grace period of the relevant Obligation under the terms of this Obligation.

It is market norm not to select "Grace Period Extension" for G7 corporates, but it is used for emerging market contracts.

7. REFERENCE OBLIGATIONS

Reference Obligation sets the seniority of the credit exposure being transferred

CDS counterparties can designate a Reference Obligation, which is typically a large bond issue of, or guaranteed by, the Reference Entity. The function of such designation is to fix the seniority of the credit exposure being transferred. For example, if a senior unsecured bond is selected, then upon the occurrence of a Credit Event, any Deliverable Obligation must rank pari passu with, or senior to, this bond. The seniority of the Reference Obligation is determined as of the later of the derivative transaction Trade Date and the bond issue date; subsequent changes in its ranking will not be taken into account.

The Reference Obligation is not necessarily the one for delivery

Note that the protection buyer does not necessarily deliver the Reference Obligation; it can deliver any Deliverable Obligation ranking pari passu. If one such Obligation trades at a lower price than the Reference Obligation upon the occurrence of a Credit Event, the protection buyer may choose to deliver it. Designating a Reference Obligation does not remove this “cheapest-to-deliver” option.

If no Reference Obligation is selected, senior unsecured obligations are assumed to be the credit exposure.

8. DELIVERABLE OBLIGATIONS

Deliverable Obligations are Obligations with specified characteristics that can be delivered in a physically settled transaction, or valued in a cash-settled transaction, if so designated. ***Market convention is to elect the Deliverable Obligation Category of Bond or Loan, with the following Deliverable Obligation Characteristics:***

- Not Subordinated[6] : The delivered Obligation must not be subordinated to the most senior Reference Obligation in priority of payment, or if no Reference Obligation is specified, to any unsubordinated Borrowed Money Obligation of the Reference Entity.
- Standard Specified Currencies: G7 currencies, Euro or Swiss Francs.
- Not Contingent: This definition focuses on maintaining the principal of an obligation. The delivered Obligation must have an outstanding principal balance or Due and Payable Amount that may not be reduced as a result of the occurrence or non-occurrence of an event or circumstance (other than payment). This replaces the test of contingency in the 1999 Definitions as "payment or repayment of principal in respect of an amount determined by reference to any formula or index, or any other contingency". The 2003 Definitions incorporate the provisions of the Convertible Supplement of November 2001, and specifically states that Convertible, Exchangeable or Accreting Obligations satisfy the Not Contingent Characteristic (conversion must be solely at the option of the holders of the Obligation or the trustee or similar agent acting on their behalf. See sidebar).
- Assignable Loan: The delivered loan must be capable of being assigned or novated without the borrower's or any agent's consent.
- Consent Required Loan: Loans that will need borrower's or agent's consent to novation, assignment or transfer. If both Assignable Loan and Consent Required Loan are selected as applicable, the delivered Obligation need only satisfy one of these characteristics.
- Transferable: Whereas the above two characteristics apply to loans, this applies to all types of Obligations for delivery. Selection of this, in addition to the above two characteristics, ensures that non-loan Obligations have no restrictions on transferability.
- Not Bearer: The delivered Obligation must not be a bearer instrument, unless it is held and traded in Euroclear or other internationally recognised clearing systems.
- Maximum Maturity 30 Years: If a 30-year maximum maturity is specified, delivery of longer-dated or perpetual bonds is excluded. Note that in a Restructuring Credit Event, where most of the cheapest-to-deliver risk resides, there can be further maturity limitations, depending on the Restructuring language used (see Section 11).

In addition to the above, there are the following Deliverable Obligation Characteristics, which are not frequently used in the market: Not Sovereign Lender, Not Domestic Currency, Not Domestic Law, Not Domestic Issuance, Listed, Direct Loan Participation, Indirect Loan Participation, Accelerated or Matured.

Railtrack – In 2000, Railtrack plc was placed into Special Railway Administration by the UK government, which constituted a Bankruptcy Credit Event. The cheapest-to-deliver obligation was the 3.5% 2009 Exchangeable bond. The 1999 Definitions prevailing at the time did not explicitly specify whether Exchangeable bonds met the "Not Contingent" criteria. Some market participants argued that they did not (i.e., were contingent), as the principal would only be repayable if the bond had not been exchanged into shares. However, the dominant market opinion was that the Railtrack Exchangeable bond was deliverable, as the bondholders had the conversion option. The case was further complicated by the "widows and orphans" clause contained therein, whereby the trustee had the right to force conversion on the bondholders in certain circumstances where it would be deemed to be in the interests of the bondholders. Legal disputes ensued. In February 2003, UK courts ruled that the bond was deliverable. This dispute prompted ISDA to publish the Convertible Supplement in November 2001.

[6] This replaces the "Pari Passu Ranking" of the 1999 Definitions.

9. PHYSICAL SETTLEMENT

Physical Settlement is market norm

Most CDS are physically settled. Upon the occurrence of a Credit Event, the protection buyer delivers Deliverable Obligations to the protection seller, and receives from the latter the notional amount of the contract in cash. This settlement method is preferred to Cash Settlement, partly because it does not normally involve a valuation mechanism, which can potentially introduce more uncertainty into the settlement.

Conditions to Settlement

Typically, CEN can be served as late as 14 calendar days after the Scheduled Termination Date of the CDS

After a Credit Event occurs, three notices are typically served before settlement takes place, and these constitute the Conditions to Settlement. They are the Credit Event Notice, the Notice of Publicly Available Information and the Notice of Physical Settlement. Note that the first two are also the Conditions to Settlement in Cash Settlement.

Credit Event Notice (CEN):

After a Credit Event occurs, one counterparty needs to deliver a CEN to the other, which describes the Credit Event in reasonable detail. The latest this notice can be served is 14 calendar days after the Scheduled Termination Date of the CDS, if Grace Period Extension is not applicable, which is the market norm. The Credit Event itself, however, must take place before the Scheduled Termination Date.

The transaction confirmation specifies which party can serve the CEN. There are two alternatives: the Buyer only, or either the Buyer or the Seller. The latter is more common, as it allows market makers, who have both long and short positions, to simultaneously trigger Credit Events in offsetting transactions. This enables them to manage the settlement process so that they can deliver the Obligations received from contracts where they have sold protection, to counterparties in contracts where they have bought protection. This helps them avoid the timing basis risk in their hedges.

Notice of Publicly Available Information (NPAI):

It is also necessary to serve a NPAI, which confirms the sources of information for the Credit Event as described in CEN. This can usually be done by referring to information reported by two recognised news sources, such as Bloomberg or Reuters.

The day on which CEN and NPAI are delivered is the Event Determination Date

These two notices should be delivered to the counterparty and the Calculation Agent. If the protection is materialised by a note, such as a Credit Linked Note, it is usually necessary to send the two notices to noteholders through the clearing systems. The day on which they are delivered is the Event Determination Date.

Notice of Physical Settlement (NoPS):

NoPS, if not replaced, will be binding on the Buyer

If the contract is physically settled, the protection buyer also needs to serve a NoPS within 30 calendar days of the Event Determination Date. It contains a description of the Deliverable Obligations that the buyer has selected and will deliver to the seller.

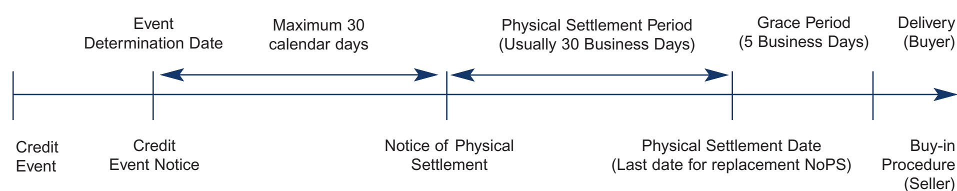
The NoPS in the 2003 Definitions replaces the Notice of Intended Physical Settlement in the 1999 Definitions. The NoPS, if not replaced, will be binding on the protection buyer. The intention is to bring some certainty to the protection seller as to what Deliverable Obligations it may be delivered. However, this certainty is diluted as the protection buyer is allowed to deliver subsequently such notices as to supersede the previous one(s) within the Physical Settlement Period (defined below). Effectively only the last NoPS will be binding on the protection buyer. This means the protection buyer will continue to have the cheapest-to-deliver option within the Physical Settlement Period.

The Physical Settlement Period

This period is the 30 business days after the first serving of the NoPS, the end of the period being the Physical Settlement Date (PSD). The protection buyer should deliver within this period; if not, it still has a grace period of five business days after PSD to make delivery.

The Buyer should deliver according to NoPS within this period

Chart 3: The timeline for physical settlement



Source: BNP Paribas

Buy-in of Bonds Not Delivered[7]

If this grace period elapses and the protection buyer has not been able to deliver, it can still attempt to make delivery for an uncapped period of time, and the protection seller has the option to exercise a "Buy-in" procedure. This is a new concept introduced by the 2003 Definitions. Under the 1999 Definitions, such a failure to deliver would have led to a termination of the credit derivative transaction and consequently a loss of the buyer's protection.

The protection seller starts the Buy-in procedure by giving notice to the buyer of its intention to do so. On the specified Buy-in Date, the seller will attempt to obtain at least five firm quotations for the undelivered bonds, the lowest or only offer being the Buy-in Price. The seller will then pay the buyer the difference between par and the Buy-in price for the principal balance as established by the Buy-in Price. The buyer will then be deemed to have delivered to the seller an amount of the Obligations for which the Buy-in Price has been established. For example, if only EUR 1m of bonds are offered during the Buy-in procedure, and the total protection notional balance is EUR 10m, then the buyer and seller will settle on EUR 1m notional using this Buy-in price, and the EUR 9m will remain outstanding.

[7] The 2003 Definitions also specify an alternative procedure relating to loans not delivered.

Market participants have introduced a definitive time cap

Until the protection is fully discharged, the buyer continues to have its right to deliver, which is only suspended during the period when the seller exercises the Buy-in procedure. So it is possible that the seller and buyer will attempt to deliver in alternate periods after the lapse of the five-business-day grace period following PSD. This process may go on until the final settlement of the credit derivative transaction. This has caused some controversy amongst dealers since potentially a transaction can be "open-ended" without a definitive termination date. Consequently, the European and Asian markets have adopted a standard cap of 60 business days after the grace period for delivery.

This Buy-in procedure can become important if there is a squeeze on the defaulted bonds, which can happen if the amount of protection sold on the Reference Entity is larger than the amount of Deliverable Obligations available for delivery at a given time.

10. CASH SETTLEMENT

Although physical settlement is the norm, the parties may elect that cash settlement applies. In this case, the parties need to pre-define a calculation method, which typically involves the Calculation Agent (usually the protection seller) polling eligible dealers for bid quotations of the Reference Obligation or Deliverable Obligations on a single valuation date or on multiple valuation dates. A Final Price is determined as the highest or the average price (as the case may be). The protection seller will then pay the difference between par and the Final Price for the notional amount of the transaction. The settlement timeline imitates that of physical settlement.

Cash settlement can create pricing volatility, as market quotations following a Credit Event can be extremely volatile. This is a key reason why physical settlement is preferred.

According to ISDA definitions, if a Reference Obligation is specified and Cash Settlement is elected, the Reference Obligation will be used for valuation. This removes the cheapest-to-deliver option for the protection buyer, making it different from physical settlement. Market participants get around this by inserting a section on Valuation Obligations in the trade confirmation, which allows eligible Deliverable Obligations to be used for valuation.

11. RESTRUCTURING OPTIONS – MITIGATING THE IMPACT OF "SOFT" CREDIT EVENTS

Restructuring (R) can be a "soft" Credit Event, and new versions of R aim to limit its impact

Restructuring has been a controversial issue in the credit derivative market. Obviously, a reduction in interest or principal conforms to the traditional concept of default, as it brings about economic loss to investors. Maturity lengthening or a change in payment currency, on the other hand, can result from credit deterioration that falls short of a full default or bankruptcy, and may not result in material losses. The latter situations are often seen as "soft" Credit Events, indicating that credit losses are likely to be less severe.

In addition to the potential for a soft Credit Event to trigger settlement even if losses have not occurred, there is also the possibility that the value of the protection buyer's "cheapest-to-deliver" option will increase. In a "hard" default situation, various pari passu Obligations of the defaulted Reference Entity will trade at similar cash prices, indicating a common expected recovery rate for them. However, in a "soft" Credit Event situation, the Reference Entity has not gone into full default and its debt may still trade on a yield basis. Therefore the cash prices of its debt instruments may not converge. In particular, longer-dated bonds will typically trade at lower cash prices, due to their longer durations and the spread widening that occurs in these situations[8]. This increases the value of protection buyers' cheapest-to-deliver option, whereby they can choose to deliver the cheapest Deliverable Obligation, causing protection sellers larger credit losses (see sidebar).

Conseco – In October 2000, Conseco agreed with its banks to restructure its loans, which included a maturity extension by three months, but with an increased coupon. This helped head off a liquidity crisis; at the time, Conseco's credit deterioration was still short of default (Conseco only filed for Chapter 11 two years later). However, some banks who had bought protection triggered a Restructuring Credit Event, and delivered long-dated bonds which were trading at significantly lower prices than the restructured bank loans. Protection sellers' credit losses were therefore larger than the economic consequence of the loan restructuring. This case prompted the introduction of Mod-R in the US.

In response to investors' wariness of the "soft" nature of the Restructuring Credit Event, and to the rise of the cheapest-to-deliver option therefrom, the Restructuring language in CDS has undergone several modifications. Some of these changes aim to restrict the cheapest-to-deliver option by limiting the maturity of the Deliverable Obligation or Reference Obligation. Others aim to eliminate "soft" Credit Events altogether, by removing Restructuring as a Credit Event.

The 2003 Definitions allow counterparties to choose among the following options regarding Restructuring:

- Full Restructuring (Full-R): the original Restructuring language amended as described in Section 5;
- Modified Restructuring (Mod-R): Restructuring with Restructuring Maturity Limitation and Fully Transferable Obligation Applicable;
- Modified Modified Restructuring (Mod-Mod-R): Restructuring with Modified Restructuring Maturity Limitation and Conditionally Transferable Obligation Applicable;
- Restructuring is not selected as a Credit Event (No-R).

Different regions use different options

Market convention is to trade US, Australian and New Zealand Reference Entities on Mod-R, European names on Mod-Mod-R, and other regions, including Japan and emerging markets, on Full-R.

We will now define these options in more detail.

[8] Assuming that bonds of different maturities have similar coupons, or that the difference in coupons (e.g., higher coupons for longer-dated bonds) is not enough to offset the impact of the difference in durations.

Modified Restructuring

Modified Restructuring was introduced by the Restructuring Supplement of May 2001, which is now incorporated in the 2003 Definitions. It has two key elements: Restructuring Maturity Limitation and Fully Transferable Obligation.

Mod-R limits the value of the cheapest-to-deliver option, by restricting the scope of Deliverable Obligations

Restructuring Maturity Limitation: The protection buyer can only deliver an Obligation with a final maturity date not later than the Restructuring Maturity Limitation Date, which

(1) is the earlier of (a) 30 months following the restructuring date, and (b) the latest final maturity date of the restructured bond or loan which is the subject of a Credit Event Notice;

(2) but cannot be earlier than the Scheduled Termination Date of the credit derivative transaction or later than 30 months following the Scheduled Termination Date.

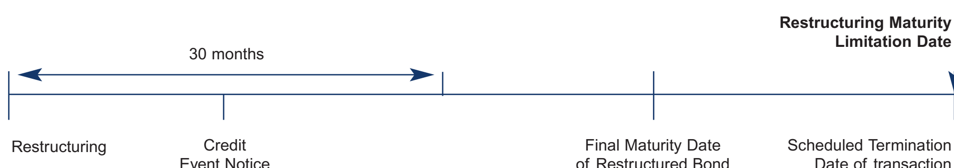
In other words, the date determined as per definition 1 above must fall within the 30-month period as per definition 2. Otherwise definition 2 overrules.

The following two scenarios should help clarify this complicated concept. In Scenario 1, the Restructuring Maturity Limitation Date is the Scheduled Termination Date of the CDS, because it cannot be earlier than this according to definition 2 above. In Scenario 2, the requirement of definition 2 is met, so the Restructuring Maturity Limitation Date is 30 months after the Restructuring date.

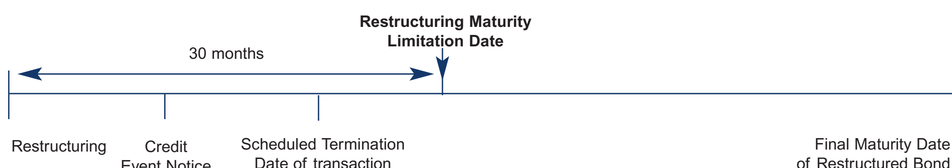
Note that the Restructuring Maturity Limitation only applies when the protection buyer triggers the Restructuring Credit Event, not the seller.

Chart 4: Selected scenarios for Mod-R

Scenario 1: Restructured Bond Deliverable



Scenario 2: Restructured Bond Not Deliverable



Source: BNP Paribas

Fully Transferable Obligation: Only Fully Transferable Obligations are deliverable. Loans that require the consent of the borrower for transfer are therefore excluded.

Modified Modified Restructuring

Mod-Mod-R also deals with the cheapest-to-deliver issue, and applies in Europe

The Restructuring Supplement of May 2001 kicked off trading with Mod-R in the US. However, Mod-R never took hold in Europe. This has been partly because European banks, as major protection buyers, see the Restructuring Maturity Limitation as too restrictive. The restriction can result in a situation where there are no obligations to deliver, as many European issuers are still new to the bond market and do not have a complete yield curve with bonds outstanding at various maturities. In addition, many European syndicated bank loans require borrower consent before transfer. Against this background, Mod-Mod-R was introduced.

In contrast to Mod-R, the two elements in Mod-Mod-R are Modified Restructuring Maturity Limitation and Conditionally Transferable Obligation.

Modified Restructuring Maturity Limitation: The protection buyer can only deliver an Obligation with a final maturity date not later than the Modified Restructuring Maturity Limitation Date, which is the later of:

(1) the Scheduled Termination Date of the credit derivative transaction; and

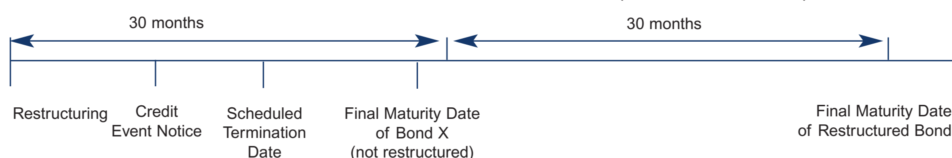
(2) 60 months following the restructuring date in the case of a restructured bond or loan, or 30 months following the restructuring date in the case of other Deliverable Obligations.

The following two scenarios should help clarify the concept. In Scenario 1, the Modified Restructuring Limitation Date is the Scheduled Termination Date of the CDS, according to definition 1 above. In Scenario 2, the Restructured Bond is not deliverable because its maturity date falls outside of the 60 months after the Restructuring date; Bond X (not restructured) is deliverable because it falls within the 30 months after the Restructuring Date.

Chart 5: Selected scenarios for Mod-Mod-R

Scenario 1: Restructured Bond Deliverable

Scenario 2: Restructured Bond not Deliverable, Bond X (not Restructured) Deliverable



Source: BNP Paribas

Conditionally Transferable Obligation: This can include consent required Obligations as long as such consent for novation, assignment or transfer cannot be unreasonably withheld or delayed.

While broadly similar to Mod-R, Mod-Mod-R gives protection buyers greater flexibility, enabling them to deliver a wider range of obligations.

No Restructuring

Some US contracts remove R altogether

Mod-R and Mod-Mod-R endeavour to limit protection buyers' cheapest-to-deliver option, but they do not address the fundamental issue that Restructuring can be a "soft" Credit Event. This is particularly an issue where banks extend loans and are also long protection on the borrower, leading to a potential conflict of interest should the banks trigger a Restructuring Credit Event. Insurance companies in particular, who are major protection sellers in the credit derivative market, have voiced their concerns in this regard.

This debate has led segments of the US market to trade without Restructuring as a Credit Event. Since banks are major protection buyers in the credit derivative market, widespread adoption of No-R trading depends on whether banks can get capital relief on credit positions hedged with No-R credit derivative transactions. There is some optimism in this respect but the outcome is still uncertain.

Table 1: Summary of the Restructuring alternatives

	Full-R	Mod-R	Mod-Mod-R	No-R
Obligations:				
Multiple Holder Obligation Requirement	Applies under the 2003 Definitions	Applies	Applies	NA
Deliverable Obligations:				
Maximum Maturity	The 30-year maximum is typically selected	Restructuring Maturity Limitation	Modified Restructuring Maturity Limitation	NA
Transferability	No restriction	Fully Transferable	Conditionally Transferable	NA

Source: BNP Paribas

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IMPORTANT DISCLOSURES:

Recommendation System:

Type	Terminology	Horizon
Credit Trend (1)	Positive/ Neutral/ Negative	6 months
Relative Value (2)	Outperform/ Market Perform/ Underperform	1 month
Investment Recommendation (3)	Buy/ Hold/ Reduce/ Sell	Up to 6 months

(1) Credit trend is based on underlying Credit fundamentals, business environment and industry trends;
(2) Relative Value is based on expected market performance relative to sector;
(3) Investment Recommendation is based on BNPP Credit Trend and Relative Value opinions.

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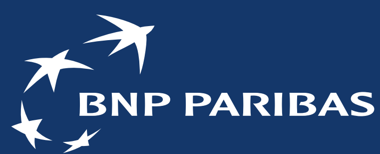
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