



Introduction to CME Credit Index Event Contracts¹

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The credit derivatives industry has experienced remarkable growth over the past decade and now represents the fastest growing segment of the over-the-counter (OTC) derivatives market by far. While credit default swaps (CDSs) are a relatively new form of derivative product, having emerged in the mid- to late 1990s, the outstanding notional value of this marketplace has grown to ≈\$20-26 trillion by mid 2006 according to available estimates.

Despite the remarkable growth and interest in credit derivatives, the industry has remained an OTC phenomenon exclusively to date while the exchange-traded segment of the derivatives industry, *i.e.*, the futures industry, has not developed products to appeal to this marketplace.

Chicago Mercantile Exchange (CME) intends to change these circumstances by offering CME Credit Index Event Contracts based upon a portfolio of corporate names. These products are intended to provide a transparent, liquid and facile means of acquiring protection against the risk of a corporate default, non-payment or other credit event.

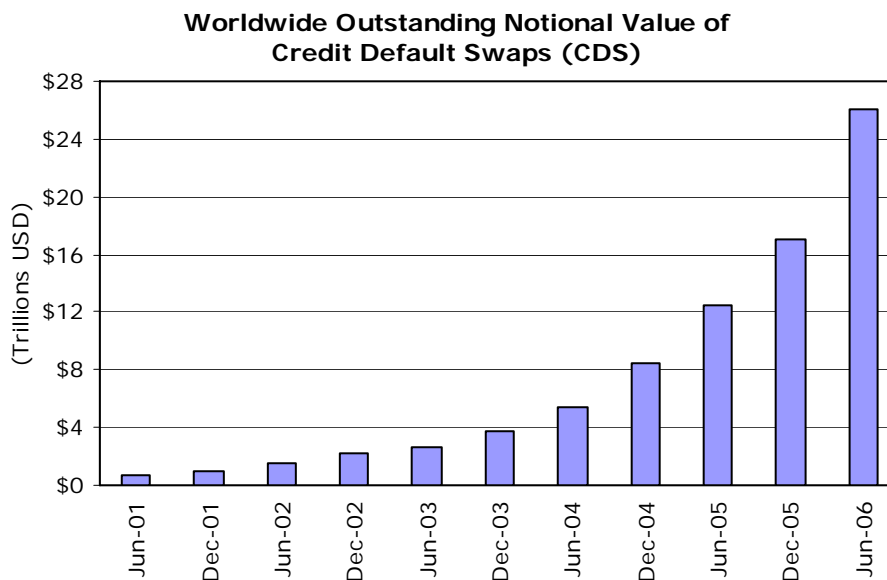
Credit derivatives are the fastest growing segment of the OTC derivatives industry. The market has grown from virtually nil to ≈\$20-26 trillion in outstanding notional value by mid-2006. CME Credit Index Event Contracts are expected to be introduced in the 2nd quarter of 2007.

¹ Chicago Mercantile Exchange is currently expecting to list CME Credit Index Event Contracts in the 2nd quarter of 2007.

CME Credit Index Event Contracts operate like a cross between a fixed recovery CDS instrument and an OTC credit index product. They entail a mark-to-market at a pre-defined and fixed amount upon the realization of a credit event such as bankruptcy, or failure to pay.

CME Credit Index Event Contracts are based on commonly accepted ISDA definitions and standards. But they further offer the capital efficiencies and sureties associated with a futures contract.

CME Credit Index Event Contracts operate much like a fixed recovery CDS product as available in the OTC markets. However, they are designed to dovetail with current futures accounting practices. *I.e.*, they require an initial performance bond deposit and are subsequently marked-to-market (MTM) on a daily basis. As the term of a CME Credit Index Event Contract draws near, the entire value of the protection will have been paid from long to short through the MTM process. Contrarily, if a credit event should occur, the CME Credit Index Event Contract will terminate and both longs and shorts are marked-to-market at fixed amount as defined by the Exchange.



A “credit event” may include bankruptcies, failures to pay, restructuring, obligation acceleration, obligation default, debt repudiations, or moratoriums. These events are defined by Article IV of 2003 International Swaps & Derivatives Association’s (ISDA) Credit Derivatives Definitions. These definitions and standards are well established and adopted for widespread use in the OTC markets.

As such, CME Credit Index Event Contracts merge the benefits of OTC credit default swaps with the benefits of trading futures. Specifically, CME Credit Index Event Contracts are cleared and guaranteed by the CME Clearing House. This promises interesting capital efficiencies for institutions that may cross-margin CME Credit Index Event Contracts against other credit products that may be introduced on CME ... or against other interest rate futures cleared by CME. Further note that exchange-traded derivatives that require an initial performance bond and a daily mark-to-market are generally exempt from reserve requirements per the provisions of Basle II.

Credit Derivative Marketplace

Measuring Credit Risk - Rating agencies such as Moody's, S&P and Fitch have provided credit ratings for corporate names for a considerable period of time. Note that corporate debt rated BBB- or higher is considered investment grade debt. The higher the credit grade listing, the more creditworthy the reference entity is considered to be. Corporate debt rated BB+ or lower is considered to be non-investment grade debt. Non-investment grade bonds are often referred to as high yield bonds. Lower rated high yield bonds are often referred to in the vernacular as junk bonds.

Rating agencies such as Moody's, S&P and Fitch rate corporate debt. Investment grade (IG) debt is rated BBB- or higher. Debt rated BB+ or lower is considered high-yield debt.

Table A-1: Rating Agency Credit Descriptions

Moody's	S&P	Fitch	Description
Investment Grade Debt			
Aaa	AAA	AAA	Prime. Maximum Safety
Aa1	AA+	AA+	High Grade High Quality
Aa2	AA	AA	
Aa3	AA-	AA-	
A1	A+	A+	Upper Medium Grade
A2	A	A	
A3	A-	A-	
Baa1	BBB+	BBB+	Lower Medium Grade
Baa2	BBB	BBB	
Baa3	BBB-	BBB-	
Non Investment Grade or "High-Yield" Debt			
Ba1	BB+	BB+	
Ba2	BB	BB	Speculative
Ba3	BB-	BB-	
B1	B+	B+	Highly Speculative
B2	B	B	
B3	B-	B-	
Caa1	CCC+	CCC	Substantial Risk
Caa2	CCC	-	In Poor Standing
Caa3	CCC-	-	
Ca	-	-	Extremely Speculative
C	-	-	May be in Default
-	-	DDD	Default
-	-	DD	
-	D	D	

U.S. Treasury securities are generally viewed as the U.S. dollar benchmark for default free or risk-free fixed income securities. U. S. Treasuries securities will always imply an element of market risk associated with interest rate fluctuations but are nonetheless viewed as implying zero credit risk. The basic rationale is that the U.S. Treasury cannot default, noting that the Treasury Department's Bureau of Engraving and Printing has quite a number of printing presses capable of creating additional paper currency.

Treasuries are considered risk-free instruments and other debt including corporate debt is often priced as a spread against Treasuries.

Credit spreads rise as a function of the declining rating of a corporate debt and as the term to maturity grows larger.

Credit ratings cited in the accompanying tables are reference points to establish a credit spread for the relative default or non-payment risk associated with corporate debt instruments. Credit spreads are a function of both credit rating and yield to maturity. A credit spread may be aggregated with the yield on a comparable maturity Treasury security yield to determine the credit-adjusted corporate bond yield. Higher (lower) corporate bond credit ratings imply smaller (larger) credit spreads.

As creditworthiness decreases, credit spreads increase. *E.g.*, the buyer of a 5-year corporate bond might demand a 54 basis point credit spread premium from an AA corporate borrower. Alternatively, the buyer of a 5-year corporate bond would demand a much greater credit spread premium of perhaps 79 basis points from a BBB+ corporate borrower.

Treasury, Swap & Corporate Bond (Industrials) Yields (%)

	US Treasury	USD Swap	AA Corporate	A Corporate	BBB+ Corporate	BBB Corporate	BBB- Corporate	BB+ Corporate
2-year	4.85	5.21	5.13	5.22	5.41	5.47	5.65	5.98
3-year	4.77	5.14	5.20	5.27	5.45	5.51	5.68	6.04
5-year	4.72	5.13	5.26	5.34	5.51	5.60	5.90	6.28
10-year	4.73	5.22	5.40	5.48	5.78	5.97	6.20	6.74
30-year	4.82	5.34	5.51	5.74	6.18	6.34	6.51	6.92

Source: Bloomberg as of 4 PM on Thursday, January 11, 2007

Further, borrowers will typically demand a higher credit spread premium as the term to maturity of a corporate bond increases due to the increased probability of credit default over a longer term time horizon.

Bond (Industrials) Yield Spread to U.S. Treasuries (In basis points)

	US Treasury	USD Swap	AA Corporate	A Corporate	BBB+ Corporate	BBB Corporate	BBB- Corporate	BB+ Corporate
2-year	0.00	36	28	37	56	62	80	113
3-year	0.00	37	43	50	68	74	91	127
5-year	0.00	41	54	62	79	88	118	156
10-year	0.00	49	67	75	105	124	147	201
30-year	0.00	52	69	92	136	152	169	210

Source: Bloomberg as of 4 PM on Thursday, January 11, 2007

Bond (Industrials) Yield Spread to USD Swap Rates (In basis points)

	USD Swap	AA Corporate	A Corporate	BBB+ Corporate	BBB Corporate	BBB- Corporate	BB+ Corporate
2-year	0	-8	1	20	26	44	77
3-year	0	6	13	31	37	54	90
5-year	0	13	21	38	47	77	115
10-year	0	18	26	56	75	98	152
30-year	0	17	40	84	100	117	158

Source: Bloomberg as of 4 PM on Thursday, January 11, 2007

Credit Default Swaps - The credit default swap (CDS) market may be divided into three sectors: (i) corporate bonds and loans; (ii) bank credits; and (iii) emerging market sovereigns. CDS can reference a single credit or reference obligation (a single bond or single loan) or a basket/portfolio of credits, all issued by a specific reference entity (e.g., a corporation or sovereign entity). CDS Indexes may be constructed which reference a standard or customized portfolio of credits agreed upon by the buyer and seller. The most frequently traded maturity for a CDS is five years though the range of CDS maturities may extend from one to 10 years. The CDS swap premium or cost of a credit default swap attempts to capture the economic value of the credit risk associated with corporate or sovereign debt.

What constitutes a credit event? Any possible circumstance that may lead to a diminished market value for a corporate debt security may be viewed as a credit event. Under the current, standard International Swaps & Derivatives Association (ISDA) credit default swap agreement, a default event may be defined as: (i) bankruptcy; (ii) failure to pay; (iii) debt restructuring; (iv) obligation default or acceleration; (v) debt payment moratorium. Of course, some of these events may be applicable to a particular reference entity and included in the transaction documentation while others may be excluded.

A “*Bankruptcy*” event implies that the reference entity for the CDS has become insolvent or lacks the financial capacity to meet its debt obligations. A “*Failure to Pay*” event implies that the reference entity for the CDS simply fails to make a scheduled interest or principal payment. A “*Debt Restructuring*” event is one where the seniority of a payment due to the holder of the reference entity has been degraded. An “*Obligation Default or Acceleration*” event represents one where a debt covenant(s) for the reference entity has been violated, thereby making the debt obligation come due prior to the original maturity date. A “*Debt Payment Moratorium*” event arises when the reference entity refuses to make scheduled debt service payments.

When "restructuring" is included as a default event for a CDS, it has the potential to generate controversy. Some bank purchasers of CDS

OTC credit default swaps (CDSs) may be tied to specific reference entities (e.g., corporate bonds and loans) issued by specific reference entities (e.g., corporate or sovereign entities).

Article IV of the 2003 ISDA Credit Derivatives Definitions provides the standards per which to define credit events including bankruptcy, obligation acceleration, default, failure to pay, repudiation, moratorium, or restructuring.

protection have also been purported to have outstanding loans to the reference entity for a CDS. These banks, on the buy side of CDS protection, may be in a position to approve or accept a debt restructuring by that obligor, which would then trigger a payment (to the protection buyer) under a CDS agreement.

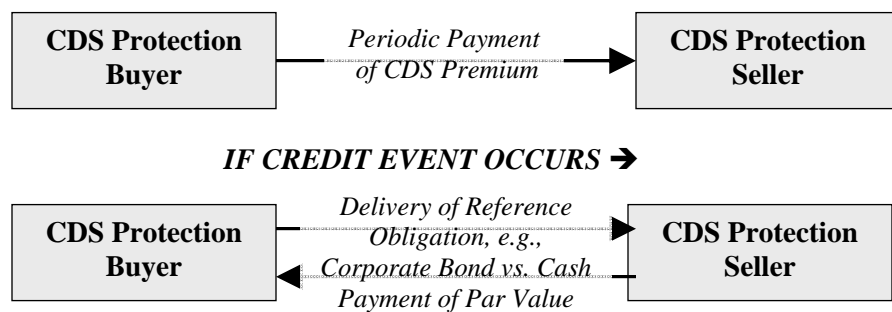
There may further be situations where a debt restructuring has not resulted in financial harm to the debt holder. Protection sellers sometimes object to making payment to a protection buyer under this type of circumstance. Thus, there are pros and cons of including restructuring as a default event.

CDS Structure - In a typical single name CDS the “Protection Buyer” agrees to make periodic payments over a designated period of time to the “Protection Seller.” In exchange for this “swap” payment, or premium, the Protection Buyer establishes the right to sell the reference obligation (*e.g.*, a bond or note) issued by a reference entity (*e.g.*, a corporation or a sovereign entity) to the Protection Seller at the agreed upon notional value frequently established at par, if a credit event should occur.

Per a typical single-name CDS, protection buyers make periodic payments to protection sellers. As such, protection buyers effectively purchase insurance against the risk of a credit event associated with a reference obligation, typically a corporate bond, loan or other debenture, issued by a reference entity, such as a corporation.

In effect the Protection Buyer is reducing or hedging the credit risk component of the reference bond by transferring the credit risk to the Protection Seller. The Protection Buyer’s asset remains subject to non-credit related elements of market risk.

Plain Vanilla Credit Default Swap (CDS)



At the time a CDS is created, neither the protection buyer nor the protection seller has a comparative advantage. The present value of the payments made by the protection buyer is approximately equal to the expected value of the payment to be received from the protection seller.

Credit Indexes – In addition to CDSs tied to a single Reference Entity, derivatives based upon indexes or baskets of Reference Entities have likewise emerged in the over-the-counter markets. These products evolved from the TRACERS product line first introduced in 2001 by JP Morgan and Morgan Stanley are currently marketed under the brand

names CDX and iTraxx Indexes. These Index products are designed to provide exposure to specific credit market segments such as investment grade, high-yield; or, to credit categorized by geographic origin such as North American, European, Asian. These products are typically based on a static basket of credits and are offered with a specific maturity, commonly five years.

The flagship of the CDX Index product line represents a credit default swap index referencing one-hundred twenty-five (125) North American (NA) investment grade (IG) corporate bonds (reference obligations). The product is often referred to as the “CDX.NA.IG” Index. Upon original issue, these derivatives carry a 5-year term. These baskets may be reconstituted on a semi-annual basis and relaunched as the “on-the-run” index series with older series continuing to endure until their maturity. As of this writing, the 7th series of this index has been issued and dubbed CDX.NA.IG.7. Index composition is based on submissions by a consortium of 16 OTC credit dealers. Other OTC index products have been constructed based upon high-yield (HY), high-volatility (HV) and crossover (XO) corporate securities. A corporate name may fall into the crossover category where its credit rating straddles the investment grade/speculative grade (*i.e.*, BBB/BB) line as determined by different rating agencies.

CDS Pricing - Two factors play the dominant role when the time comes to evaluate the price of a credit default swap: (i) the *probability* that the reference entity will default; and (ii) the *recovery rate*, *i.e.*, the amount the protection seller expects to recover in the event a default occurs.

Changes in expected default probability and/or the recovery rate will have an impact on CDS valuation. The larger the anticipated probability of default, the larger the credit default swap premium will be. If the market perceives that a reference entity’s financial condition is improving, the CDS swap premium will tighten, *i.e.*, the CDS swap price will cheapen. If the price for CDS protection on a specific name is widening significantly, this is generally an indication that perceived credit quality is rapidly deteriorating.

The CDS market often responds more quickly than the cash market to changes in credit perception. Hence prices in the CDS market may serve as an important leading indicator that credit spreads on a particular bond issue are likely to change.

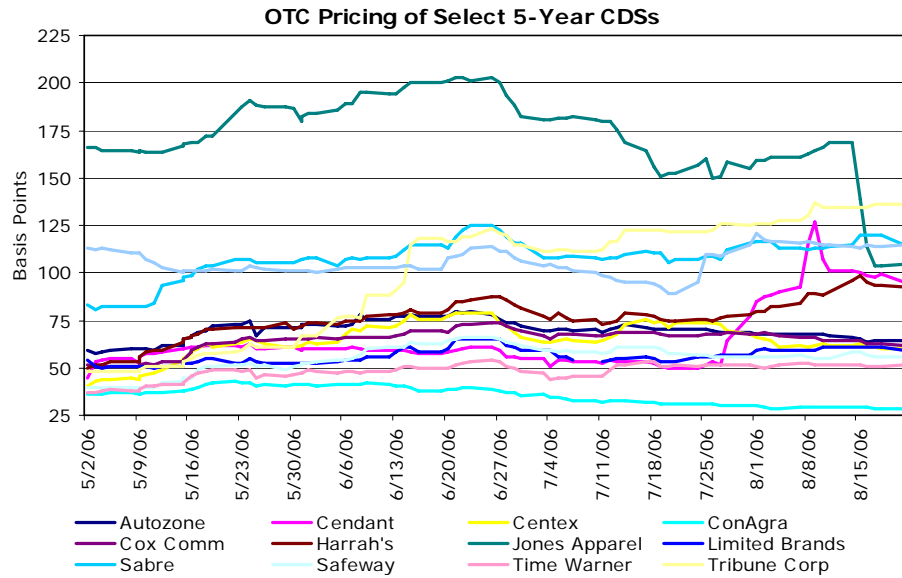
Taking on the role of a protection seller via a CDS is akin to taking a long position in a corporate bond with the interest rate risk fully hedged. Another way of viewing this risk is that it is equivalent to purchasing a corporate bond with funds obtained by shorting an equivalent duration Treasury note. Any change in the value of this (long corporate/short Treasury) bond position would be attributable to a change in the

OTC products are also available based on indexes or baskets of corporate credits. These index products are based on different segments of the credit markets including investment grade (IG), high-yield (HY), high-volatility (HV) and crossover (XO) corporate names.

CDS pricing is a function of the probability of default and the recovery rate or expected residual value of a defaulted security.

A CDS allows the buyer to hedge the risk of default or other credit event while retaining other risks, notably including market risk, associated with the reference entity.

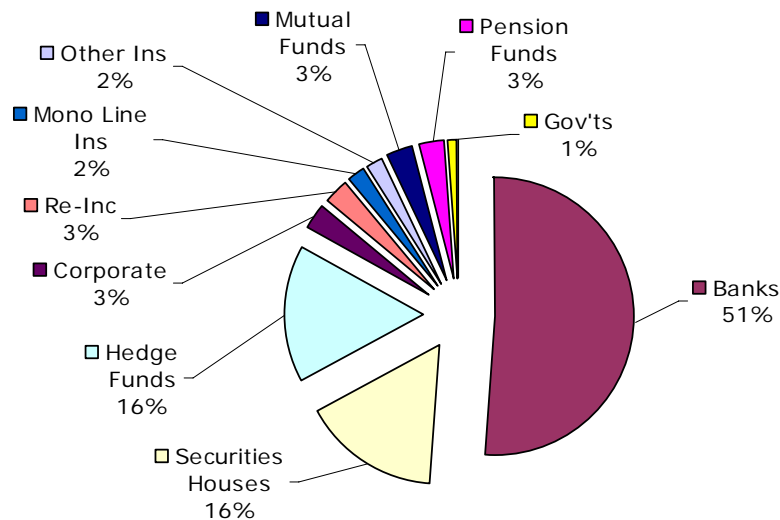
reference entity's credit spread, *i.e.* attributable to a change in the perceived credit quality of the corporate bond issuer. Buying CDS protection may be viewed as taking a short position on corporate credit, which in the corporate bond cash market is generally not practicable.



Commercial banks are generally the largest players in the CDS markets.

Credit Market Participants - Who are the major participants in the credit default swap market? Surveys reveal that commercial banks, *i.e.*, holders of large corporate loan exposure, are the largest participants in this market. Commercial banks are more active as CDS protection buyers, but they also hold very significant positions as protection sellers. Banks often attempt to minimize a portion of their credit risk in order to preserve capital.

Profile of CDS Protection Buyers

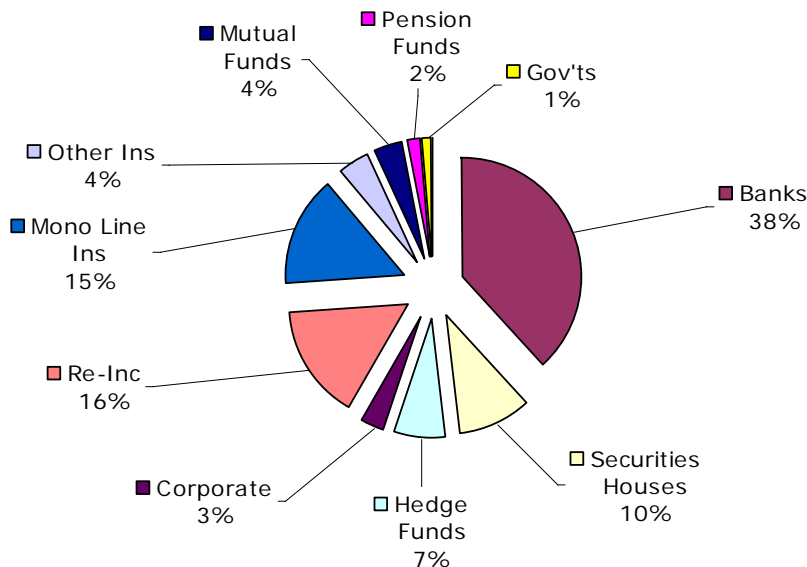


Source: BBA Credit Derivatives Report 2003/2004

Insurance companies, both re-insurers and other insurers, represent a growing percentage of CDS users, especially on the protection sell side. Insurance companies more often serve as CDS protection sellers because their traditional area of expertise is in analyzing and accepting risk. Hedge funds also have taken a very active role in this segment of the OTC derivatives market. Hedge funds are about twice as active on the credit protection buy side *vis-à-vis* the protection sell side.

Insurance companies and re-insurance companies are major participants on the sell side. Hedge funds are taking an increasingly active role as well.

Profile of CDS Protection Sellers



Source: BBA Credit Derivatives Report 2003/2004

Credit Index Event Contract Design

CME Credit Index Event Contracts are intended to provide a transparent, liquid and facile means of acquiring protection against the risk of a bankruptcy of a basket of corporations or non-payment of debt. As such, CME intends to extend the benefits of exchange-traded product to the credit derivatives industry which heretofore has only been available on an over-the-counter (OTC) basis.

They are designed to dovetail with current futures accounting practices, *i.e.*, they require an initial performance bond deposit and are subsequently marked-to-market (MTM) on a daily basis. As the expiration date of a CME Credit Index Event Contract draws near, the entire value of the protection will have been paid from long to short through the MTM process.

Thus, CME Credit Index Event Contracts merge the benefits of OTC credit default swaps based upon a Index of obligations with the benefits of trading futures. Specifically, CME Credit Index Event Contracts are cleared and guaranteed by the CME Clearing House. This may result in

CME Credit Index Event Contracts offer much the same protections to market participants as OTC credit products with the added benefits associated with futures trading including a centralized, multi-lateral clearing facility.

capital efficiencies for institutions that may cross-margin CME Credit Index Event Contracts against other credit contracts that may be introduced on CME ... or against other interest rate futures cleared by CME.

CME Credit Index Event Contracts are digital in character, calling for a final cash settlement at a value of zero in the absence of any credit events associated with index constituents. Or, a final cash settlement that formulaically reflects the number of Index constituents that actually experience a credit event during the life of the Contract.

Index Event Concept - CME Credit Index Event Contracts call for a final cash settlement which is digital in character. In the absence of any credit events associated with any of the Index constituents, the Final Settlement Price of the contract will be established at zero (\$0) as of the Final Settlement Date. However, if there is a credit event associated with any of the Index constituents, the Final Settlement Price will be established at some non-zero value.

The Final Settlement Price, expressed in basis points, may be calculated by reference to the following formula. For each Index constituent, a determination is made that a credit event has or has not occurred. In the absence of a credit event associated with any particular Index constituent, that constituent will add zero value to the final settlement price. We apply a binary Credit Event Indicator (E) that is established at either 1 or 0 contingent upon the declaration of a credit event or not.

If a credit event is declared with respect to a particular Index constituent, on or before the determination of the Final Settlement Price on the Final Settlement Date, then a value equal to the Weight (W) of the constituent in the Index, multiplied by the Final Settlement Rate (F) for the Index constituent, is added to the Final Settlement Price. This process is continued across all Index constituents to arrive at a Final Settlement Price. Note that Weights and Final Settlement Rates are established for each Index constituent and may vary across constituents.

$$\text{Final Settlement Price} = \sum_{i=1}^n E_i \times W_i \times F_i$$

Where:

n = Number of constituents referenced in the Index

A binary Credit Event Indicator ...

E_i = *IF* credit event declared for constituent *i* *THEN* $E_i=1$
IF credit event is not declared for Index constituent *i* *THEN* $E_i=0$

W_i = Weight of Index constituent *i* as established by the Exchange

F_i = Final Settlement Rate for Index constituent *i*

The Final Settlement Price expressed in basis points may be converted to a monetary value by multiplying the Final Settlement Price by the Notional Value (NV) of the contract as established by the Exchange.

$$\text{Final Settlement Value} = \text{NV} \times \text{Final Settlement Price}$$

Where:

$$\text{NV} = \text{Notional value of contract}$$

For example, let us consider the hypothetical Index consisting of thirty-two (32) Reference Entities and their Reference Obligations as shown below. We have assumed that each item carries a uniform Weight of 3.125% with a uniform Final Settlement Rate of 60%. Assume that a single Index constituent experiences a credit event. As such, the Final Settlement Price for this constituent is set equal to 3.125% multiplied times 0.60% which equals 1.875% or 187.5 basis points. This equates to a Final Settlement Value of \$1,875 for a contract with a notional value of \$100,000 (calculated at 187.5 basis points or 1.875% of \$100,000).

Reference Entity	Credit Event Indicator (E)	Weight (W)	Final Settlement Rate (F)	E x W x F
Corporation 1	0	3.125%	60%	0
Corporation 2	0	3.125%	60%	0
Corporation 3	0	3.125%	60%	0
Corporation 4	0	3.125%	60%	0
Corporation 5	1	3.125%	60%	1.875%
Corporation 6	0	3.125%	60%	0
Corporation 7	0	3.125%	60%	0
Corporation 8	0	3.125%	60%	0
Corporation 9	0	3.125%	60%	0
...	
Corporation 32	0	3.125%	60%	0
TOTAL				1.875%

If two (2) Index constituents should experience a credit event, then the contract is settled at 375 basis points or \$3,750. If three (3) Index constituents should experience a credit event, then the contract is settled at 562.5 basis points or \$5,625. In the (presumably unlikely) event that all 100 Index constituents should experience a credit event, then the contract is finally settled at \$60,000 in this example. If all Index constituents should experience a credit event prior to the regularly scheduled Final Settlement Date, then the contract is settled early at that maximal Final Settlement Price.

Thus, CME Credit Index Event Contracts may be characterized as a form of digital event contract. The “events” include defined Credit Events suffered by any of the Reference Entities included in the Index. We have carefully constructed the contract so that it may not be characterized as a security futures contract. In particular, it is not a contract for future delivery of a single security or Index of securities; or, for delivery of any measure of value based on a single security or an Index of securities. The Final Settlement Price is digital in nature and does not vary in relation to the price of any obligation issued by any Reference Entity or Entities.

If one (1) Index constituent should experience a credit event, the final cash settlement value equals \$1,875 in this example. If two (2) should experience a credit event, the final cash settlement value equals \$3,750; if three (3), the final cash settlement value equals \$5,625. If all thirty-two (32) constituents experience a credit event, the final cash settlement value equals \$60,000.

CME will initially list an index based upon 32 North American Investment Grade High Volatility corporate Reference Entities.

Credit Index – We anticipate an initial listing of an Index consisting of thirty-two (32) North American (NA) Investment Grade (IG) High Volatility (HV) corporate Reference Entities. Each constituent will be associated with a Reference Obligation, *i.e.*, a specific corporate bond. The Index will be selected by CME by reference to a number of factors including ... (1) general representation of the broad marketplace in terms of industrial sectors; (2) liquidity of the CDSs associated with those corporate Reference Entities; and (3) conformance to OTC Index derivative practices with respect to the constitution of indexes.

CME North American Investment Grade High-Volatility Index, Series 1

	Reference Entity	Rating	Industry Sector	Weight (W)	Final Settlement Rate (F)
1	Arrow Electronics Inc	BBB	Consumer Cyclical	3.125%	60%
2	Autozone Inc	BBB	Consumer Cyclical	3.125%	60%
3	CBS Corporation	BBB	Comm and Technology	3.125%	60%
4	Centex Corp	BBB	Comm and Technology	3.125%	60%
5	CenturyTel Inc	BBB	Consumer Cyclical	3.125%	60%
6	Cox Communications Inc	BBB	Comm and Technology	3.125%	60%
7	Embarq Corp	BBB-	Consumer Cyclical	3.125%	60%
8	Expedia Inc	BBB-	Consumer Cyclical	3.125%	60%
9	Federated Department Stores	BBB	Consumer Cyclical	3.125%	60%
10	InterActiveCorp	BBB	Consumer Cyclical	3.125%	60%
11	International Paper Co	BBB	Comm and Technology	3.125%	60%
12	JC Penney Co	BBB-	Consumer Cyclical	3.125%	60%
13	Jones Apparel Group Inc	BBB	Consumer Cyclical	3.125%	60%
14	Kroger Co	BBB	Consumer Cyclical	3.125%	60%
15	Lennar Corp	BBB	Comm and Technology	3.125%	60%
16	Limited Brands	BBB	Consumer Cyclical	3.125%	60%
17	MeadWestvaco Corp	BBB	Materials	3.125%	60%
18	Pulte Homes Inc	BBB	Consumer Cyclical	3.125%	60%
19	R R Donnelley & Sons Co	BBB	Industrial	3.125%	60%
20	RadioShack Corp	BBB	Industrial	3.125%	60%
21	Residential Capital Corp	BBB	Consumer Cyclical	3.125%	60%
22	Safeway Inc	BBB	Consumer Stable	3.125%	60%
23	Sara Lee Corp	BBB	Consumer Stable	3.125%	60%
24	Sherwin-Williams Co	A-	Materials	3.125%	60%
25	Sprint Nextel	BBB+	Comm and Technology	3.125%	60%
26	Starwood Hotels & Resorts Worldwide Inc	BBB	Consumer Cyclical	3.125%	60%
27	Temple-Inland Inc	BBB	Materials	3.125%	60%
28	The Gap Inc	BBB	Consumer Cyclical	3.125%	60%
29	Time Warner Inc	BBB	Consumer Cyclical	3.125%	60%
30	Toll Brothers Inc	BBB	Consumer Cyclical	3.125%	60%
31	Viacom	BBB	Comm and Technology	3.125%	60%
32	Whirlpool Corp	BBB	Industrial	3.125%	60%

The initial “CME North American Investment Grade High Volatility Index, Series 1” is comprised of 32 Reference Entities as shown in the table above. “High-Volatility” Reference Entities generally include investment grade corporate names with ratings of BBB- or better (or equivalent rating) from rating agencies such as Standard & Poor’s and Fitch. These names are considered “Hi-Vol” in the sense that they may

be close to the investment grade/high-yield rating barrier and as such have experienced high volatility and activity in the OTC CDS markets.

Each Reference Entity is further associated with a specific Reference Obligation, *i.e.*, a debt item such as a corporate bond. These Reference Obligations are generally selected as representative of senior unsubordinated corporate debt. *E.g.*, the Reference Obligation for Arrow Electronics Inc. may be the 6.875% maturing June 1, 2018 (CUSIP: DD117613). A credit event may be triggered when a failure to pay occurs with respect to the identified Reference Obligation; or, with respect to any other corporate debt obligation that is equal to or higher than the Reference Obligation within the corporation's debt structure hierarchy.

New index series to be constituted semi-annually in March and September with original terms up to 5 years. Further Indexes may be introduced reflecting other market segments, *e.g.*, investment grade (IG), crossover (XO), high-yield (HY), industrial sectors, European and possibly Asian corporate Reference Entities.

Succession Events – On occasion, we may expect a particular Reference Entity included in an Index to experience a “Succession Event.” ISDA protocols define a Succession Event as inclusive of a merger, consolidation, amalgamation, transfer of assets or liabilities, demerger, spin-off or other similar event in which one Reference Entity succeeds to the obligations of another Reference Entity.

Should a Succession Event occur, the Index may be restructured to reflect that Event. For example, consider the situations where Reference Entity “Corporation 3” is split into two successor Reference Entities “Corporation 3a” and “Corporation 3b.” The Index constitution pre-Succession Event may be depicted as follows.

Index Construction Before Succession Event

	Reference Entity	Weight (W)	Final Settlement Rate (F)
1	Corporation 1	3.125%	60%
2	Corporation 2	3.125%	60%
3	<i>Corporation 3</i>	<i>3.125%</i>	<i>60%</i>
4	Corporation 4	3.125%	60%
...

Subsequent to the Succession Event, the Index may be adjusted to drop Corporation 3 and add Corporation 3a and Corporation 3b with Weights split evenly between the two successor Reference Entities as depicted below.

The Index is designated the CME North American Investment Grade High Volatility Index. It will be reconstituted on a semi-annual basis in March and September.

Occasionally, the Index construction need be adjusted given a Succession Event such as a merger, consolidation, demerger, etc. Adjustments will generally conform to established ISDA protocols.

Index Construction After Succession Event

	Reference Entity	Weight (W)	Final Settlement Rate (F)
1	Corporation 1	3.125%	60%
2	Corporation 2	3.125%	60%
3a	Corporation 3a	1.5625%	60%
3b	Corporation 3b	1.5625%	60%
4	Corporation 4	3.125%	60%
...

Or, a Reference Entity may be split into three (3) successor Reference Entities with a similar effect upon the Index underlying the CME Credit Index Event Contract. CME will handle Succession Events in a fashion analogous to established ISDA protocols.

Summary of CME Credit Index Event Contracts

Digital Final Settlement	Final Settlement Value (FSV) = $NV \times [\sum E_i \times W_i \times F_i]$ where NV=contract Notional Value; $E_i=1$ if credit event occurs for index constituent i or $E_i=0$ in absence of credit event; W_i =Weight for constituent i ; F_i =Final Settlement Rate for constituent i . <i>E.g., IF one constituent of 32 equally-weighted names ($W=3.125\%$) experiences credit event with $NV=\\$100,000$, and $F=60\%$ THEN $FSV=\\$1,875$. IF 2 constituents experience credit events with $F=60\%$ THEN $FSV=\\$3,750$; IF 5 experience credit events THEN $FSV=\\$9,375$. If no credit events are realized, contract settles on Final Settlement Date at $FSV=\\$0$.</i>
Index Constitution	Initial index comprised of 32 North American Investment Grade High-Volatility Reference Entities (“CME North American High-Volatility Index Series 1”) and associated Reference Obligations
Credit Event	Credit Event deemed to occur in the event of: 1) Bankruptcy, or 2) Failure to Pay, of a Reference Entity/Obligation
Quotation Convention	Quoted as total price of credit protection for remainder of term, expressed as fraction of Notional Value in basis points (bps). <i>E.g., contract worth 50 bps per annum with 5 years to expiration may be quoted at ~250.0 bps. The “time decay” in total price allows buyer effectively to compensate seller for cost of credit protection over time.</i>
Tick Size	0.5 Basis Points (bps), <i>IF Notional Value = \$100,000 THEN 0.5 bps = \$5.00</i>
Contract Months	Listed five (5) years out in March, June, September and December
Last Trading Day	Trading terminates at 12:00 noon on the Final Settlement Date.
Final Settle Date	The 2 nd Business Day preceding the third Wednesday of the contract month.
Trading Hours	Offered exclusively on CME Globex [®] electronic trading platform on Sundays thru Thursdays from 5:00 pm-4:00 pm (Chicago time) the following day.

Credit Event Definitions - CME Credit Index Event Contracts are triggered by the same events as standard OTC CDSs using ISDA conventions, specifically, bankruptcies and failures to pay. These contracts will rely upon the credit event definitions adopted from Article IV of the 2003 ISDA Credit Derivatives Definitions, subject to confirmation from public sources, also per ISDA conventions. Because of the digital nature of this contract, it does not rely upon a cash price series *per se* for purposes of final cash settlement.

Cash Flows – From a cash flow perspective, CME Credit Index Event Contracts operates akin to other cash settled contracts. One may buy or sell a contract, at which point, one is required to post an initial performance bond (or “initial margin”). Subsequently, the price of the contract may fluctuate up or down resulting in variation margin payments on a daily mark-to-market (“MTM”) basis. CME will list Credit Index Event Contracts maturing on the 2nd business day preceding the third Wednesday of the contract months of June and December extending out five years into the future. (Note that the most popular OTC credit derivatives typically carry a five-year term.)

Unlike a typical futures contract, however, the CME Credit Index Event Contracts may terminate prior to the regularly scheduled maturity date if a credit event such as bankruptcy or failure to pay should occur with respect to all Index constituents. At this point, the contract is promptly settled during the next clearing cycle at a value equal to the notional value (\$100,000) multiplied by the summation of the product of the Weights and associated Final Settlement Values of all the constituents. E.g., if X is established at 60% for all Index constituents, then both long and short are marked-to-market at a Final Settlement Price of \$60,000 (= 60% x \$100,000) or 6,000 basis points (bps).

It is reasonable to anticipate that the market prices will tend to rise in anticipation of the occurrence of a credit event. *I.e.*, the market should be efficiently priced. As such, the daily mark-to-market process will have the effect of transferring the value of the protection associated with the contract from protection seller to protection buyer. Effectively, shorts will pay longs an amount equal to the Final Settlement Value less the original transaction price through the accumulation of daily MTM pays and collects. Because this process will tend to be gradual in nature, risks to traders with outstanding positions in the contract are muted relative to a single-name credit product.

Contracts are quoted as the total remaining value of the credit protection in minimum increments of 0.5 basis points or \$5 (= 0.005% x \$100,000) or \$10 per full basis point. *E.g.*, a 5-year contract quoted as 250 bps implies an annualized quote of \approx 50 bps. Daily mark-to-market procedures ensure that the value of the protection is transferred from buyer to seller as maturity approaches in the absence of a credit event.

Credit Events that trigger the Contract will include bankruptcy and failures to pay, relying upon established ISDA definitions.

Cash flows and accounting practices on a day-to-day basis will parallel practices employed in other CME futures contracts. *I.e.*, buyers and sellers will post an initial performance bond (or “margin” in slang) and will mark-to-market daily thereafter.

If no credit events should occur during the life of the contract, the contract will eventually be settled in cash at a value of zero.

Presumably, the contract price will trade down to zero during the life of the contract. Effectively, therefore, the cost of credit protection is transferred from buyer to seller in the daily mark-to-market process.

Or, that the value of the fixed payout is transferred from seller to buyer as contracts are cash settled early, triggered by a credit event.

Settlement at Zero - Assume it is June 11, 2007 and you purchase one (1) CME Credit Index Event Contract at a price of 320.0 bps maturing June 13, 2011 with a 4-year remaining term to maturity. (This translates into an annualized cost of approximately 80 basis points or $320 \text{ bps} \div 4 \text{ years}$.)

While the price of 320.0 bps represents \$3,200 ($= 3.2\% \times \$100,000$), the buyer does not actually pay \$3,200 in cash but rather secures this transaction with funds sufficient to cover the initial performance bond (“PB”) requirement. Assume that the initial performance bond requirement equals \$800. Although our example is constructed from the perspective of the buyer, both buyer and seller must post the initial performance bond and both are marked-to-market as market values fluctuate.

Date	Action	Market Price	Cash Flows
6/11/07	Buy 1 Credit Index Event Contract	320.0 bps	Posts \$800 initial PB
6/12/07		318.0 bps	MTM pay of \$20
6/13/07		317.0 bps	MTM pay of \$10
6/14/07		320.5 bps	MTM collect of \$35
6/15/07		323.0 bps	MTM collect of \$25
...
6/07/11		2.0 bps	Accumulated pays of \$3,180
6/08/11		1.0 bps	MTM pay of \$10
6/09/11		0.5 bps	MTM pay of \$5
6/10/11		0.5 bps	-
6/13/11	Final Cash Settlement	0.0 bps	MTM pay of \$5
			TOTAL PAYS = \$3,200

Assume that none of the Index Constituents experience a credit event throughout the next 4 years until full term. Under these circumstances, one would expect the market price to wind down to zero by the time the contract matures. Upon final settlement at a value of 0.0 bps, any performance bonds on deposit are released back to buyer and seller.

If both buyer and seller retain their long and short positions, respectively, and do not offset them during the next 4 years, the contract value winds down to 0.0 bps ... perhaps taking a circuitous path but winding down to zero nevertheless. As such, the buyer, through a series of MTM pays and collects, compensates the seller with the original 320.0 bps or \$3,200.

Occurrence of Credit Event – Assume that one buys the same CME Credit Index Event Contract at a price of 320.0 bps maturing 4 years hence. But this time, credit anxieties begin to mount. The price of the CME Credit Index Event Contract increases as the market factors in a higher probability for the occurrence of one or more credit events.

Commensurate with increasing volatility, performance bond requirements may be increased by CME Clearing House; or, they may be reduced in the event of declining volatility. Assume that performance bond (“PB”) requirements had been raised to \$1,000 and are increased to \$1,500 on April 16, 2008.

If a credit event should occur with respect to any one Index constituent, we would expect that the contract would trade at a minimum value equal to the minimum Final Settlement Value. Assume that the Index in question is comprised of thirty-two (32) constituents with equal weighting of 3.125% and a uniform Final Settlement Rate of 60%.

Thus, if one (1) credit event should occur, we would expect that the contract would trade at a minimum value of \$1,875.00 [= \$100,000 x (3.125% x 60%)]. If two (2) credit events should occur, we would expect that the contract would trade at a minimum value of \$3,750.00; if three (3) credit events should occur, we would expect that the contract would trade at a minimum value of \$5,625.00 and so forth.

If credit events do in fact occur during the life of the Contract, the final settlement value of the contract is adjusted per a pre-determined formula. Presumably, the price of the contract will reflect a floor equal to the minimum final cash settlement value plus an amount reflecting the probability of experiencing additional credit events.

Date	Action	Market Price	Cash Flows
6/11/07	Buy 1 Credit Index Event Contract	320.0 bps	Posts \$800 initial PB
6/12/07		318.0 bps	MTM pay of \$20
6/13/07		317.0 bps	MTM pay of \$10
6/14/07		320.5 bps	MTM collect of \$35
6/15/07		323.0 bps	MTM collect of \$25
...
4/14/08	1 credit event occurs, Minimum FSV=\$1,875.00 (187.5 bps)	520.0 bps	Accumulated collects of \$2,000
4/15/08	Credit concerns increasing	525.0 bps	MTM collect of \$50
4/16/08	CH increases PB requirement to \$1,500 from \$1,000	530.0 bps	MTM collect of \$50 Post \$500 in additional PBs
4/17/08	Credit concerns continue	540.0 bps	MTM collect of \$100
4/18/08	2 nd credit event occurs, Minimum FSV=\$3,750 or 375.0 bps	550.0 bps	MTM collect of \$100
4/21/08	Credit markets conditions stabilize	545.0 bps	MTM pay of \$50
...
11/01/10	3 rd credit event occurs, Minimum FSV=\$5,625.00 or 562.5 bps	640.0 bps	Accumulated collects of \$3,200
...
6/08/11		565.5 bps	Accumulated collects of \$2,455
6/09/11		564.5 bps	MTM pay of \$10
6/10/11		563.5 bps	MTM pay of \$10
6/13/11	Final Cash Settlement based on three (3) declared credit events	562.5 bps	MTM pay of \$10
			TOTAL COLLECTS = \$2,425

Unless all thirty-two (32) Reference Entities suffer a default event, the CME Credit Index Event Contract will not attain a settlement price of \$60,000 or 6,000 basis points [= \$100,000 x (32 x 3.125% x 60%)]. But if all components of an Index should suffer a credit event, the CME Credit Index Event Contract is subject to early settlement at its maximum value.