

Markit Credit Default Swap Calculator User Guide

November 2010

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Introduction

The Markit Credit Default Swap Calculator provides an independent cash settlement amount and market value service for CDS Single Name and Index trades. With the breadth and depth of credit data available from Markit's suite of fixed income products, Markit's calculator provides a thoroughly vetted online tool for valuing trades. Markit customers can leverage the vast breadth and quality of CDS data processed every day by Markit through the calculator page. The web-based calculator is useful for valuing Standardized CDS Contracts¹ using ISDA Standard CDS Model, yield curves and conventions². This user guide provides detailed instructions for users accessing the Markit Credit Default Swap Calculator.

Instruments Covered

Markit's Credit Default Swap Calculator may be used to value any of the following instrument types:

- Single-name CDS across regions
- Credit Indices, including CDX, iTraxx, SovX, and MCDX
- Loan Indices, including LevX and LCDX

Functionality Overview

Markit's Credit Default Swap Calculator uses industry-standard conventions and logic, providing counterparties with a cash settlement amount and market value for a given instrument. The key functionality includes:

- Automatic population of terms of the CDS contract based on reference entity input.
- Calculation of the market value for Standard CDS Contracts and upfront fees for trades.
- Ability to email the calculation inputs and results.

CDS Reference Entity and Contract Terms

The calculator populates the CDS contract terms automatically based on a name: ticker / company / index instrument. For example, if the users enters IBM, the calculator will automatically set the trade level unit to bps, 5Y maturity, 1 million notional, running coupon of 100bps, recovery rate of 40% and doc-clause of XR. The user can enter a value of 125 bps for the trade level and also may override the pre-defined primary contract terms. This minimizes user input and the use of standard conventions thereby reducing the probability of data entry errors.

Credit Curve

Two credit curves are viewable for the respective instrument, namely the Markit End of Day (EOD) Curve and a Transformed Curve. The Transformed curve is based on the Markit EOD Curve shifted (proportionally or parallel) to the trade level at the selected maturity. Calculator users have the ability to overwrite the transformed curve. Note: The public version of the calculator does not provide the Markit End of Day Composite Curve. Only a single flat curve based on the Trade Level is shown.

Calculation Results and Details

Calculation results include the Market Value, Cash Settlement Amount, Accrued Days and Accrued Amount. Detailed results are also provided, including the summary results listed above, as well as Credit DV01 and IRDV01 for the transformed curve and the flat trade level.

The Market Value represents the present value, or mark-to-market, calculated from the full term structure in the Transformed Curve.

The Cash Settlement Amount represents the upfront payment calculated from the traded level using flat hazard rates.

Yield Curve

The yield curve used within the calculator defaults to Trade date -1 based on the currency of the trade. The yield curve is the standard locked curve within the ISDA Standard CDS model².

¹ Refer to the CDS Big and Small Bang protocols on <u>http://www.markit.com/cds</u>

² Refer to <u>www.cdsmodel.com</u> for information regarding the Standardized CDS Contracts, ISDA Standard CDS Model and Interest Rates

Accessing the Calculator

The Credit Default Swap Calculator is available by selecting Fixed Income > CDS and Bonds > Calculators from the menu.

Quick Start

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The screen shot below shows the essentials to get started with the calculator. You can run the calculator by entering only the **Ticker** and **Trade Level**. Markit supplies default values for everything else, based on the selected Ticker and standard contract conventions.

• CDS C Index					Res	sulting		Default Swap Calculator User Guide
CDS Reference I		ict Terms		Credit Curv	re Cred	it Curve		Yield Curve
			(R) Required			Transform Metho	od Proportional 👻	Bate 12 km 2010
Trade Details				Maturity	Markit EOD	Transformed	Default Prob	
Ticker/Company	(R)	Red Code		6M		bps		snap 1000 - milezone. New Your
Trade Date	14-Jun-2010 (R)	Buyer/Seller	Buyer 💽 (R)	1Y		bps		Recalculate
Trade Level	bos v (R)			2Y		bps		
				3Y		bps		
CDS Contract Tern	ns			4Y		bps		
Maturity Date	20-Jun-2015 (R)	Running Cpn	bps (R)	5Y		bps		
Notional (MM)	1 (R)	Tier	SNRFOR 💽 (R)	7Y		bps		
Currency	USD 💽 (R)	Recovery Rate	% (R)	10Y		bps		
Counterparty		Restructuring	MR	15Y		bps		
				20Y		bps		
Advanced Terms				30Y		bps		
Cash Settlement	3	Roll Code	F	Recalculate				
Holiday Code	none 💽	Day Count Conv	A/360 🚽			Resulting		
Payment Freq	3M 🛒	Step In Date	15-Jun-2010	Calculation	i Results	Values		
	A.I.			Market Valu	e			
	All			Cash Settler	nent			
				Accrued Day	rs			
-mail Results firs	t.last@bank.com		Send	Accrued Arr	ıt			
25				Currency				
lease note:				Details		Shor	w Cash Flows 🗖	
ll cash flows and de	fault probabilities corre	espond to the trade le	evel and trade maturity.			Transformed	User	
aturities correspond	to: IMM dates			Market Valu	e			
				Clean Price	nent			
				Accrued Day	'S			
				Accrued Am	t			
				Credit DV01				
				IR DV01				

Inputs

	CDS Reference	Entity And Contra	ct Terms		
Type a Ticker (1) and 2	AT&T Corp.			(8)	Required
verify the Company	Trade Details				
	Ticker/Company	T (8)	Red Code	001AEC	
Sponify the Trade	Trade Date	14-Jun-2010 (R)	Buyer/Seller	Buyer	- (R)
Level (3) and press	Trade Level	44.000 bps - (R)			
Calculate (4).	CDS Contract Terr	ns			21
	Maturity Date	20-Jun-2015 (R)	Running Cpn	100 bp)S (R)
\	Notional (MM)	1 (R)	Tier	SNRFOR	- (R)
\	Currency	USD 💽 (R)	Recovery Rate	40	% (8)
	Counterparty		Restructuring	XR	•
	Advanced Terms				
$\langle \rangle$	Cash Settlement	3	Roll Code	F	-
	Holiday Code	none 💽	Day Count Conv	A/360	-
\backslash	Payment Freq	3М 📕	Step In Date	15-Jun-2010	(i)
4	Calculate Clear	All			

Resulting Credit Curve

2	5

Maturity/ Tenor (1)

Markit EOD Composite Spread (2)

Transformed Curve based on user input (3)

create carv				
		Transfor	m Method	Proportional 🖵
Maturity	Markit EOD	Transfo	rmed	Default Prob
6M	19.057 bps	18.274	bps	0.3831 %
1Y	20.992 bps	20.130	bps	0.7507 %
2Y	27.703 bps	26.565	bps	1.4857 %
ЗY	33.218 bps	31.853	bps	2.2133 %
4Y	39.685 bps	38.055	bps	2.9355 %
5Y	45.885 bps	44.000	bps	3.6524 %
7Y	55.467 bps	53.188	bps	5.0723 %
10Y	61.005 bps	58.499	bps	7.1620 %
15Y	66.051 bps	63.338	bps	10.5419 %
20Y	68.944 bps	66.112	bps	13.7988 %
30Y	92.090 bps	88.307	bps	19.9627 %

Resulting Calculations

Market Value	-29,190	
Cash Settlement	-29,086	
Accrued Days	85	
Accrued Amt	2,361.11	3
Currency	USD	
2 etails	Shov	v Cash Flows
	Transformed	User
Market Value	-29,190	-29,085
Clean Price	102.68 %	102.67 %
Cash Settlement	-29,191	-29,086
out out out of the		05
Accrued Days	85	05
Accrued Days Accrued Amt	2,361.11	2,361.11
Accrued Days Accrued Amt Credit DV01	85 2,361.11 490	2,361.11 488

Using the Calculator for Single Name Valuations

This chapter provides details for using the Markit Default Swap Calculator to value a single-name CDS instrument.

Getting Started

You can get started using the calculator with minimal input data. The only required inputs supplied by the user are **Ticker (1)** and **Trade Level (3)**. All other inputs have default values supplied by Markit, including:

- Trade Date (2) defaults to today
- Maturity Date (4) defaults to the 5Y point
- Notional (5) defaults to 1 million using the default currency for the Ticker
- When you click Calculate (6), the Credit Curve (7) is populated with Markit's end-of-day composites across the entire curve for the Trade Date. The Trade Level provides the User flat curve within the Credit Curve.
 Calculation Results (8) display calculated Market Value, Cash Settlement Amount, and accrued interest details. The Yield Curve (9) displays the standard locked interest rate curve for the Currency selected in the CDS contract Terms. Note, the standard locked interest curve is always a day previous to the Trade Date, Trade Date is in GMT time zone.

CDS Mindex								Default Swap Calculator User Guide
CDS Reference I	Entity And Contra	ct Terms		Credit Curv	/e			Yield Curve
AT&T Corp.			(R) Required			Transform Meth	od Proportional 🚽	Pata 12 hr 2010
Trade Details				Maturity	Markit EOD	Transformed	Default Prob	
Ticker/Company	T (R)	Red Code	001AEC	6M		bps		shap 1000 Third Conor
Frade Date	14-Jun-2010 (R)	Buyer/Seller	Buyer 🔽 (R)	1Y		bps		Recalculate
frade Level	44.000 bos = (R)			2Y		bps		
				3Y		bps		
CDS Contract Term	IS			4Y		bps		
Maturity Date	20-Jun-2015 (R)	Running Cpn	100 bps (R)	5Y		bps		
lotional (MM)	1 (R)	Tier	SNRFOR 💽 (R)	7Y		bps		
Currency		Recovery Rate	40 % (R)	10Y		bps		
Countorporty		Destructuring	VP III	15Y		bps		
Counterparty		Restructuring		20Y		bps		
Advanced Terms				30Y		bps		
Cash Settlement	3	Roll Code	F	Recalculate				
Holiday Code	none	Day Count Conv	A/360 -	8	-			
Payment Freq	3M 👻	Step In Date	15-Jun-2010	Calculation	n Results		22	
			<i></i>	Market Valu	e			
Calculate Clear	All			Cash Settler	ment			
				Accrued Day	/s			
-mail Results ash	win.hajarnavis@markit.c	om	Send	Accrued Arr	nt			
				Currency				
lease note:				Details		Sho	w Cash Flows 🛛	
I cash flows and det	ault probabilities corre	espond to the trade I	evel and trade maturity.			Transformed	User	
laturities correspond	to: IMM dates			Market Valu	e			
				Clean Price				
				Cash Settler	nent			
				Accrued Am	it .			
				Credit DV01				
				IR DV01				

Inputs

Inputs are listed below in the same order they are organized on screen, from top left to bottom right within each panel. To perform a valuation using inputs other than the default values, step through the following sections, which provide details on every input field.

Trade Details

Review and confirm the information in the Trade Details panel, all of which are pre-populated for you based on the selected **Ticker**, except for **Trade Level**.

• Enter a **Ticker**, then select the correct entity from the matches provided.

- Review the Company Long Name, shown just above the Trade Details panel. If the Long Name appears
 incorrect, verify that you have selected the appropriate Ticker.
- **Trade Date.** Today's date is pre-populated. Any previous business day may be used. Trade Date uses GMT.
- Enter the Trade Level as Upfront or Spread. Upfronts are entered in points; spreads are entered in bps. Note the Upfront plus Recovery Rate cannot be greater than 100%.
- Based on the Ticker selected, the Trade Level Unit³ populates with percent (%) if the primary price type is designated as Upfront. Adjust to bps when necessary.
- Six-Digit **RED Code** of the entity is populated based on the Ticker and cannot be updated by the user.
- **Buyer/Seller.** Pre-populated to Buyer of protection. You may change to Seller when necessary.

CDS Contract Terms

Review and confirm the information in the CDS Contract and Terms panel, all of which are pre-populated based on the selected Ticker.

- Maturity Date. The common 5Y tenor is used. You may enter another value using either the tenor (6M, 1Y, 2Y, 10Y, etc) or the actual date in DD-Mon-YYYY format. Tenors are resolved to the closest IMM date. The Maturity Date must be after the Trade Date.
- Notional value defaults to one (1) million. Update the notional value of the contract in millions if necessary.
- **Currency** is pre-populated based on the Ticker selected. Only currencies listed on ISDA's Credit Derivative Physical Settlement Matrix for the standard contracts can be picked.
- Enter a **Counterparty** name (optional).
- Running Coupon.³ is pre-populated based on the primary standard running coupon of the selected Ticker. Running coupon value can be edited as the user sees fit.
- The default Tier for most entities is SNRFOR (Senior Unsecured Debt). Other tiers including SUBLT2, JRSUBT2, PREFT1, SECDOM may be selected from the list. Tiers are defined in more detail in the Appendix. Note that changing the Tier affects the Recovery Rate value, as Tiers are set up for their respective Recovery Rates.
- The Recovery Rate is pre-populated based on the recovery rate set for the Ticker + Tier combination. May be adjusted if necessary to any value up to 100.⁴
- Restructuring is pre-populated based on the default restructuring clause for the selected Ticker. The user will
 have the option to select a different restructuring clause including one of XR, MM, CR and MM. The Restructuring
 clauses are defined in more detail in the Appendix.

Advanced Terms

Review and confirm the information in the Advanced Terms panel, all of which are pre-populated for you based on the selected Ticker.

- Cash Settlement Days is set to three (3) days for standard contracts. Select another value from the list when necessary.
- Holiday Code is pre-populated to None. None implies no holiday code is applied, as per standard conventions. If the selected Currency is JPY, then the Holiday Code changes to Tokyo (TYO).
- **Payment Frequency** defaults and is locked to 3M (quarterly) for standard contracts.
- The **Roll Code** indicating the business day convention is set to Following, which is the default for standard contracts. No other values are allowed.
- The payment Day Count Convention is set to ACT/360, which is the default for standard contracts. . No other values are allowed
- Step-In Date is pre-populated to Trade Date + 1 day, which is the default for standard contracts. No other values are allowed.

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 ³ Running Coupon and Trade Level Unit (% or bps) are defaulted from the Ticker, using the most popular trading conventions. Trading conventions are monitored and updated periodically by Markit analysts as market conditions change.
 ⁴ Reference: <u>http://www.cdsmodel.com/cdsmodel/fee-computations.page</u>.

E-mail Results

To send calculation results via email to yourself, a colleague, or a counterparty, enter the email address(es) separated by commas, then click **Send**. A confirmation message is displayed and verifies that your results were sent.

Credit Curve

This panel shows the complete credit curve across all tenors for the specified entity-tier combination.

• **Transform Method.** Pre-populated to Proportional. The Transform Method determines whether to shift the endof-day Markit Composite Curve proportionally or in parallel. Adjust this value to Parallel when necessary.

Calculation results

 The calculation results including Market Value, Cash Settlement Amount and other related details are displayed middle of the screen in the panel called Calculation Results. For a full explanation of results, see the Calculation Results section below.

Results

The calculator screen with results for a single-name valuation is shown below.

CDS Reference	Entity And Contra	ict Terms		Credit Curv					Yield C	irve	
AT&T Corp.			(R) Required			Transfo	rm Meth	od Proportional 👤	Date 13	-Jun-2010	
Trade Details				Maturity	Markit EOE) Transfo	rmed	Default Prob	Span 1		Zone: New York
Ticker/Company	T (R)	Red Code	001AEC	6M	19.057 bp:	18.274	bps	0.3831 %	Sugh L		
Trade Date	14-Jun-2010 (R)	Buver/Seller	Buyer (R)	17	20 992 bp	20,130	bps	0 7507 %	Recalcul	late	
.				27	20.002 bp	26 565	hns	1 4957 %	Period	Туре	Rate
ITaue Level	144.000 bbs • (n)			21	21.100 bp.	21.052	hpo	0.0400.00	1M	Deposit	0.3497 %
OS Contract Tern	ne			ЗY	33.218 bp:	5 31.803	- ups	2.2133 %	2M	Deposit	0.4350 %
and contract form		Duration Com	Less have train	4Y	39.685 bp:	38.055	bps	2.9355 %	ЗМ	Deposit	0.5371 %
Maturity Date	[20-Jun-2015 [R]	Running Cpn	100 bps (R)	5Y	45.885 bp:	44.000	bps	3.6524 %	6M	Deposit	0.7461 %
lotional (MM)	1 (R)	Tier	SNRFOR 💽 (R)	7Y	55.467 bp:	53.188	bps	5.0723 %	9M	Deposit	0.9554 %
Currency		Recovery Rate	40 % (R)	10Y	61.005 bp;	58.499	bps	7,1620 %	1Y	Deposit	1.1803 %
				15V	66 051 bp:	63 338	bps	10 5410 %	2Y	Swap	1.1228 %
Counterparty		Restructuring	XR	151	00.001 bp.			10.3413 %	3Y	Swap	1.5536 %
door and Transmission				204	68.944 bp:	5 [66.112	- ups	13.7988 %	4Y	Swap	1.9745 %
uvanceu rerms				30Y	92.090 bp:	s 88.307	bps	19.9627 %	5Y	Swap	2.3402 %
Cash Settlement	3 📕	Roll Code	F	Recalculate					6Y	Swap	2.6410 %
Holiday Code	none 🚽	Day Count Conv	A/360 🚽						79	Swap	2.8699 %
Desember 1	214	Stop In Data	17.1	Calculation	n Results				8Y 0)(Swap	3.0540 %
ayment rieq	3101	Step in Date	19-300-2010						91	Swap	3.2030 %
Calculate Clear	All			Market Valu	e	-29,190			101	Swap	3.3274 %
				Cash Settler	nent	-29,086			121	Swap	3.3224 %
				Accrued Day	rs	85			202	Swen	3,8795 %
mail Desults	t last@bank.com		Send	Accrued Am	ıt	2,361.11			251	Swan	3 9495 %
	c.last@balk.com		35110	Currency		USD			30Y	Swap	3.9912 %
				Details			Sho	w Cash Flows	Interest	Rate Conven	tions
ease note:				Detuno			5110		Spot Date	: 16-Jun-2010	Swap DCC: 30/36
l cash flows and de	fault probabilities corre	espond to the trade l	level and trade maturity.			Transform	med	User	MM DCC:	A/360	Swap Interval: 6N
aturities correspond	to: IMM dates			Market Value	e	-29	9,190	-29,085	Floating	DCC: A/360	Holidays: none
				Clean Price		102.6	68 %	102.67 %	Floating	nterval: 3M	Bad Day Conv: M
				Cash Settler	nent	-29	9,191	-29,086			
				Accrued Day	S		85	85			
				Accrued Am	t	2,36	51.11	2,361.11			
				Credit DV01			490	488			
				IK DV01			(1			

Calculation Results

This Calculation Results panel displays the calculator results, based on your inputs.

Market Value	-29,190	
Cash Settlement	-29,086	
Accrued Days	85	
Accrued Amt	2,361.11	
Currency	USD	
Details	Shov	w Cash Flows
Details	Shov	w Cash Flows
Details	Shov Transformed	v Cash Flows User
Details Market Value	Shov Transformed -29,190	v Cash Flows User -29,085
Details Market Value Clean Price	Shov Transformed -29,190 102.68 %	v Cash Flows User -29,085 102.67 %
Details Market Value Clean Price Cash Settlement	Show Transformed -29,190 102.68 % -29,191	v Cash Flows User -29,085 102.67 % -29,086
Details Market Value Clean Price Cash Settlement Accrued Days	Show Transformed -29,190 102.68 % -29,191 85	v Cash Flows User -29,085 102.67 % -29,086 85
Details Market Value Clean Price Cash Settlement Accrued Days Accrued Amt	Show Transformed 1 -29,190 1 102.68 % 1 -29,191 1 20,191 1 20,191 1 20,191 1 20,361.11 1	v Cash Flows -29,085 102.67 % -29,086 85 2,361.11
Details Market Value Clean Price Cash Settlement Accrued Days Accrued Amt Credit DV01	Show Transformed 1 -29,190 1 102.68 % 1 29,191 1 20,29,191 1 20,29,191 1 20,29,191 1 20,361.11 1 490 1	v Cash Flows -29,085 102.67 % -29,086 85 2,361.11 488

Based on the inputs provided, the Markit Default Swap Calculator performs the valuation of the selected instrument and provides Market Value and Cash Settlement results. The details of each output field are listed below.

- The **Market Value**, represents the present value of this trade using the full credit curve (**Transformed** curve) as if it were settled on the same date as the trade date in the specific currency of the index.
- **Cash Settlement** amount if you agreed to settle this trade upfront with cash settlement date of Trade Date + 3 days.
- Accrued Days displays the number of days since the last IMM date that interest has been accruing.
- Accrued Amount shows how much interest has been accrued in the fixed leg since the last coupon date.

Details

The Details panel provides further details of the calculation.

Click the link Show Cash Flows to display dates and present value of the fee leg in a pop-up window. A sample is shown below:

Cash Flow		X
Date	Fee	
21-Jun-2010	\$2,527.30	
20-Sep-2010	\$2,519.02	
20-Dec-2010	\$2,508.18	
21-Mar-2011	\$2,494.71	
20-Jun-2011	\$2,478.83	
20-Sep-2011	\$2,494.78	
20-Dec-2011	\$2,456.68	
20-Mar-2012	\$2,445.73	
20-Jun-2012	\$2,461.29	
20-Sep-2012	\$2,441.71	
20-Dec-2012	\$2,396.15	
20-Mar-2013	\$2,351.37	
20-Jun-2013	\$2,384.33	
20-Sep-2013	\$2,360.30	
20-Dec-2013	\$2,311.38	
20-Mar-2014	\$2,263.44	
20-Jun-2014	\$2,290.27	
22-Sep-2014	\$2,312.40	
22-Dec-2014	\$2,212.98	
20-Mar-2015	\$2,116.33	
22-Jun-2015	\$2,210.05	

- Market Value displayed using the Transformed Curve. If you traded today, this is the cash value.
- The Clean Price is calculated as (1 Points Upfront) and displayed as a percent, where Points Upfront is calculated using the standard converter, conventional spread, and recovery rate.
- Cash Settlement amount, as calculated based on the User Curve, indicates how much cash the transaction
 participant would need to settle upfront.
- Accrued Days displays the number of days since the last IMM date that interest has been accruing.
- Accrued Amount shows how much interest has been accrued in the fixed leg since the last coupon date.
- **Credit DV01** is the difference between the current market value and the market value by shifting the credit curve by 1 basis point up.
- **IRDV01** is the difference between the current market value and the market value by shifting the interest rate curve by 1 basis point up.

Credit Curve

This panel displays the credit curve across all tenors, based on the Transform Method selected (Proportional or Parallel).

- Maturity. This column shows the pre-defined maturity points along the credit curve.
- Markit EOD. The composite end-of-day spreads/upfronts for the selected ticker, one business day prior to the Trade Date.
- Transformed. The Transformed curve shows the Markit EOD levels transformed using the selected Transform Method (Proportional or Parallel). The transformed level for the Maturity Date selected in the CDS Contract and Terms panel displays the Trade Level value. Users can adjust the Transformed spread for a given maturity point as necessary and click **Recalculate** to refresh the entire curve and Calculation Results.
- Default Probability. Default Probabilities are calculated for each point along the flat User Curve equal to the Trade Level. Default Probabilities are cumulative.

Yield Curve

The Yield curve for the business day previous to the Trade Date is provided, since it is used to calculate the Credit Curve. You can adjust the Date and Snap time used for the Yield Curve. The Time Zone is fixed based on the currency of the selected Ticker.



- Click **Recalculate** to refresh the Credit Curve for a different Date and/or Snap time.
- Interest Rate Conventions are listed at the bottom of the Yield Curve panel, for your reference.⁴

Using the Calculator for Index Valuations

Markit's Default Swap Calculator can be used for Index valuations on Credit and Loan indices. Steps for performing an index valuation are very similar to the single name valuation with a few exceptions. The next section details the steps to value an index.

You can get started using the calculator with minimal input data. The only required inputs supplied by the user are **Index Name (Ticker/Company) (1)** and **Trade Level (4)**. All other inputs have default values supplied by Markit, including:

- Long Name (2) displays the Long Name of the Index; verify Tenor, Series and Version.
- Trade Date (3) defaults to today
- Notional (5) defaults to 1 million

When you click **Calculate (6)**, the **Credit Curve (7)** is populated with Markit's end-of-day composites across the entire curve under **Markit EOD** for the Trade Date - 1. **Calculation Results (8)** display calculated Market Value, Cash Settlement Amount, and accrued amount details. The **Yield Curve (9)** displays the curve for one day prior to the Trade Date.

C _{CDS} ⊙ Index				7				9 Default Swap Calculator User Guide 📵
CDS Reference	Entity And Contra	ct Terms		Credit Curv	e			Yield Curve
CDX.NA.HY.14-V	1 5Y		(R) Required			Transform Meth	od Proportional 🚽	Date 12. Jun-2010
Trade Details				Maturity	Markit EOD	Transformed	Default Prob	Span 1800 TimeZone: New York
Ticker/Company	CDX-NAHY (R)	Red Code	2165BRHJ2	6M		%		
Long Name	CDX.NA.HY.14-VI 5Y		💌 (R)	1Y		%		Recalculate
Trade Date	14-Jun-2010 (R)	Buyer/Seller	Buyer 💌 (R)	2Y		%		
Trade Level	88 000 X - (R)			3Y		%		
				4Y		%		
CDS Contract Terr	าร			5Y		%		
Maturity Date	20-Jun-2015 (R)	Running Cpn	500 bps (R)	7Y		%		
Notional (MM)	1 (R)	Recovery Rate	30 % (R)	10Y		%		
Currency	USD 🚽 (R)	Restructuring	XR	15Y		%		
Counterparty				20Y		%		
Advanced Terme				30Y		1 %		
Cash Settlement	3	Poll Code	E al	Recalculate				
				8 Colombotion	D			
noliday Code	none 💌	Day Count Conv	49300	Calculation	rresuns			
Payment Freq	3M. ↓	Step In Date	15-Jun-2010	Market Valu	e			
Effective Date	22-Mar-2010	Index Factor	1	Cash Settler	nent			
Calculate Clear	All			Accrued Day	s +			
				Currency				
E-mail Results firs	t.last@bank.com		Send	Details		Sho	w Cash Flows 🔊	
						Transformed	User	
Please note:				Market Valu	e			
All cash flows and de	fault probabilities corre	spond to the trade le	evel and trade maturity	Clean Price	nont			
faturities correspond	to: IMM dates			Accrued Day	s			
				Accrued Am	t			
				Credit DV01				
				IR DV01				

Getting Started

You can get started with the calculator very easily following the Quick Start tips above. The only required inputs supplied by the user are **Index Family (Ticker/Company), Long Name** (including tenor, series and version) and **Trade Level**. All other inputs have default values supplied by Markit.

To perform a valuation using inputs other than the default values, step through the following sections, which provide details on every input field.

Inputs

Inputs are listed below in the same order they are organized on screen, from top left to bottom right within each panel. To perform a valuation using inputs other than the default values, step through the following sections, which provide details on every input field.

Trade Details

Review and confirm the information in the Trade Details panel, all of which are pre-populated for you based on the selected **Ticker**, except for **Trade Level**.

- Enter an Index Family (Ticker/Company) and select the correct index from the matches provided.
- Select the Index Long Name from the list.
- Trade Date Today's date is pre-populated. Any previous business day may be used. Trade Date uses GMT.
- Enter the **Trade Level** as Spread or Price, following the convention of the selected index.
- Trade Level Unit³ populates with price (%) or spread (bps), following the convention for the selected index.
- Nine-Digit RED Code of the entity is populated based on the Ticker and cannot be updated by the user. Note the RED Code is not displayed to users of the free calculator.
- Buyer/Seller. Pre-populated to Buyer of protection. You may change to Seller of protection when necessary.

CDS Contract Terms

Review and confirm the information in the CDS Contract and Terms panel, all of which are pre-populated for you based on the selected Index Long Name.

- Maturity Date is populated based on the Index Long Name, which includes the series and version, and cannot be updated. To value a different maturity, select the corresponding index + tenor from the list of Index Long Names.
- Notional value defaults to one (1) million. Update the notional value of the contract in millions if necessary.
- Currency is pre-populated based on the index selected and cannot be changed by the user.
- Enter a **Counterparty** name (optional).
- **Running Coupon** is pre-populated based on the coupon of the selected index. Cannot be changed by the user.
- The Recovery Rate is pre-populated based on the recovery rate set for the index series and version. May be adjusted if necessary to any value up to 100.
- **Restructuring** is pre-populated based on the default restructuring clause for the selected index and cannot be changed by the user.

Advanced Terms

Review and confirm the information in the Advanced Terms panel, all of which are pre-populated for you based on the selected Index.

- Cash Settlement Days is set to three (3) days for standard contracts. Select another value from the list when necessary.
- Holiday Code is pre-populated to None. If the selected Currency is JPY, then the Holiday Code changes to Tokyo (TYO). Cannot be changed by the user.
- **Payment Frequency** defaults to 3M (quarterly) for standard contracts. Cannot be changed by the user.
- Effective Date indicates the inception date of the Index + Series + Version. Cannot be changed by the user.
- The **Roll Code** indicating the business day convention is set to Following, which is the default for standard contracts. Cannot be changed by the user.
- The payment Day Count Convention is set to ACT/360, which is the default for standard contracts. Cannot be changed by the user.
- Step-In Date is pre-populated to Trade Date + 1 day, which is the default for standard contracts. Cannot be changed by the user.

- Index Factor is the index version factor or percent, expressed as a decimal, that multiplied by the original notional amount yields the notional amount covered by the seller of protection
- Click the Calculate button to submit all inputs and run the calculator. The calculator displays results in the middle of the screen in the panel called Calculation Results. For a full explanation of results, see the Calculation Results section below.

E-mail Results

To send calculation results via email to yourself, a colleague, or a counterparty, enter the email address(es) separated by commas, then click **Send**. A confirmation message is displayed and verifies that your results were sent.

Credit Curve

This panel shows the complete credit curve across all tenors for the specified index + series + version combination.

 Transform Method. Pre-populated to Proportional. The Transform Method determines whether to shift the endof-day Markit Composite Curve proportionally or in parallel. Adjust this value to Parallel when necessary.

Results

This Calculation Results panel displays the calculator results, based on your inputs.

CDS Beference	Entity And Contra	act Torms		Credit Curv	n .				Vield C	1576	
	n ev	ice renns		Creute Curv	5				Tielu Ci	aive	
CDX.NA.HY.14-V	151		(R) Required			Transfor	m Meth	od Proportional 🗾	Date 13	-Jun-2010	
Trade Details				Maturity	Markit EOI) Transfo	rmed	Default Prob	Snap 1	600 🖵 Time	Zone: New York
Ticker/Company	CDX-NAHY (R)	Red Code	2165BRHJ2	6M	93.641 %	6 88.000	%	5.9937 %			
Long Name	CDX.NA.HY.14-VI 51	ŕ	• (R)	1Y	93.641 9	6 88.000	%	11.4255 %	Recalcu	late	
Trade Date	14- Jun-2010 (B)	Buner/Seller	Burer (R)	2Y	93.641 9	6 88.000	%	21.4173 %	Period	Туре	Rate
		bayerreener	1	37	93 641 9	L 88.000	%	30 2591 %	1M	Deposit	0.3497 %
frade Level	88.000 % 🖵 (R)		37	51	00.041 0	· · · · · · · · · · · · · · · · · · ·	~~~~	30.2331 %	2M	Deposit	0.4350 %
DC Canton of Tame				4Y	93.641 9	6 100.000		38.1060 %	ЗМ	Deposit	0.5371 %
US Contract Terr	ns			5Y	93.641 9	6 88.000		45.0701 %	6M	Deposit	0.7461 %
Naturity Date	20-Jun-2015 (R)	Running Cpn	500 bps (R)	7Y	93.641 9	6 88.000	%	56.7498 %	9M	Deposit	0.9554 %
lotional (MM)	1 (R)	Recovery Rate	30 % (R)	10Y	93.641 9	6 88.000	%	69.7776 %	1Y	Deposit	1.1803 %
Currency		Restructuring	XR	15Y	93.641 9	6 88.000	%	83.3663 %	2Y	Swap	1.1228 %
				2017	93 641 9	6 88.000	%	90.8452 %	3Y 4V	Swap	1.5536 %
counterparty				201/	02 644 9	/ 88.000	~ %	07 2279 %	41 5V	Swap	1.3745 %
Advanced Terms				301	33.041 7	6 100.000		37.2270 %	6Y	Swap	2.5402 %
		D-II C- d-	-	Recalculate					7Y	Swap	2.8699 %
cash Settlement	3	KUII COUE	1 <u>+</u>						8Y	Swap	3.0540 %
loliday Code	none 💌	Day Count Conv	A/360 -	Calculation	Results				9Y	Swap	3.2030 %
Payment Freq	3M 🖵	Step In Date	15-Jun-2010	Market Value		108 191			10Y	Swap	3.3274 %
Mastine Data		la dan Esstas		Cach Settlen	hent	108 194			12Y	Swap	3.5224 %
	22-Mar-2010	Index racioi		Accrued Date	p.	85			15Y	Swap	3.7220 %
Calculate Clear	All			Accrued Am	e.	11 805 56			20Y	Swap	3.8795 %
				Accided Anti-		11,005.50			25Y	Swap	3.9495 %
				Currency		030			30Y	Swap	3.9912 %
-mail Results firs	st.last@bank.com		Send	Details			Sho	w Cash Flows 🛜	Interest	Rate Conven	tions
						Transform	nad	lloor	Spot Date	a: 16-Jun-2010) Swap DCC: 30/360
				Market Value		109	101	109 101	MM DCC:	A/360	Swap Interval: 6M
lease note:				Clean Price		100	0.96	100,191	Floating I	DCC: A/360	Holidays: none
cash flows and de	fault probabilities corr	espond to the trade I	evel and trade maturity	Cash Settlen	nent	108	194	108.194	Floating I	nterval: 3M	Bad Day Conv: MF
aturities correspond	to: IMM dates			Accrued Dave	\$	100	85	85			202
				Accrued Am		11.80	15.56	11,805.56			
				Credit DV01			306	329			
				IR DV01			26	-28			

Based on the inputs provided, the Markit Default Swap Calculator performs the valuation of the selected index and provides Market Value and Cash Settlement results. The details of each output field are listed below.

- The Market Value represents the present value of this trade using the full credit curve (transformed curve) as if it were settled on the same date as the trade date in the specific currency of the index.
- **Cash Settlement amount** if you agreed to settle this trade upfront, in the specified currency.
- Accrued Days displays the number of days since the last IMM date that interest has been accruing. The value is calculated as Trade Date Last IMM Date + 1
- Accrued Amount shows how much interest has been accrued in the fixed leg since the last coupon date.

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Details

The Details panel provides further details of the calculation.

Click the link Show Cash Flows to display dates and the present values of the fee leg in a pop-up window. A sample is shown below:

Cash Flow		×
Date	Fee	
21-Jun-2010	12,613	
20-Sep-2010	12,226	
20-Dec-2010	11,838	
21-Mar-2011	11,451	
20-Jun-2011	11,065	
20-Sep-2011	10,826	
20-Dec-2011	10,367	
20-Mar-2012	10,037	
20-Jun-2012	9,820	
20-Sep-2012	9,471	
20-Dec-2012	9,038	
20-Mar-2013	8,628	
20-Jun-2013	8,505	
20-Sep-2013	8,185	
20-Dec-2013	7,795	
20-Mar-2014	7,425	
20-Jun-2014	7,304	
22-Sep-2014	7,165	
22-Dec-2014	6,668	
20-Mar-2015	6,207	
22-Jun-2015	6,300	

- Market Value displayed using the Transformed Curve. If you traded today, this is the cash value. Negative values are shown in parentheses ()
- The Clean Price is calculated as (1 Points Upfront) and displayed as a percent, where Points Upfront is calculated using the standard converter, conventional spread, and recovery rate.
- **Cash Settlement** amount, as calculated based on the User Curve, indicates how much cash the transaction participant would need to settle upfront. Negative values are shown in parentheses ()
- Accrued Days displays the number of days since the last IMM date that interest has been accruing.
- Accrued Amount shows how much interest has been accrued in the fixed leg since the last coupon date.
- Credit DV01 is the difference between the current market value and the market value by shifting the credit curve by 1 basis point up.
- **IRDV01** is the difference between the current market value and the market value by shifting the interest rate curve by 1 basis point up.

Credit Curve

This panel displays the credit curve across all tenors, based on the Transform Method selected (Proportional or Parallel).

	Cradit Cup	20			
larkit EOD Composite (2)	Create Care	16	Transform	Method	Proportional 💽
ransformed Curve based	Maturity	Markit EOD	Transform	ned	Default Prob
on user input (3)	6M	93.641 %	88.000	%	5.9937 %
	1Y	93.641 %	88.000	%	11.4255 %
	2Y	93.641 %	88.000	%	21.4173 %
	ЗY	93.641 %	88.000	%	30.2591 %
	4Y	93.641 %	88.000	%	38.1060 %
	SY	93.641 %	88.000	%	45.0701 %
	7Y	93.641 %	88.000	%	56.7498 %
	10Y	93.641 %	88.000	%	69.7776 %
	15Y	93.641 %	88.000	%	83.3663 %
	20Y	93.641 %	88.000	%	90.8452 %
	30Y	93.641 %	88.000	%	97.2278 %

- Maturity. This column shows the maturity points along the credit curve.
- Markit EOD. The composite end-of-day spread or price for the selected index, as of one business day prior to the Trade Date.
- Transformed. The Transformed curve shows the Markit EOD levels transformed using the selected Transform Method (Proportional or Parallel). The transformed level for the Maturity Date selected in the CDS Contract and Terms panel displays the Trade Level value. Users can adjust the Transformed spread for a given maturity point as necessary and click **Recalculate** to refresh the entire curve.
- Default Probability. Default Probabilities are calculated for each point along the User Curve. Default Probabilities are cumulative.

Yield Curve

The Yield curve for the business day previous to the Trade Date is provided, since it is used to calculate the Credit Curve. You can adjust the Date and Snap time used for the Yield Curve. The Time Zone is fixed based on the currency of the selected index.

- Click **Recalculate** to refresh the Credit Curve for a different Date and/or Snap time.
- Interest Rate Conventions are listed at the bottom of the Yield Curve panel, for your reference.

Appendix

Field Definitions

The table below lists all fields available in the Default Swap Calculator with descriptions and possible values. Fields are grouped by panel name, as shown on screen. An "X" indicates if the field applies to the Single Name calculator or the Index calculator.

Field Name	Description	Single Name	Index
CDS Reference Entity and Contract Terms			
Full Company Name	The full company name of the entity corresponding to the selected ticker is displayed. Example: Ford Mtr Co. Cannot be changed.	×	
Full Index Name	The full name of the index, including series and version. Example: CDX.NA.HY.14-V1 5Y. Cannot be changed.		×
Trade Details			
Ticker/Company	Ticker for the entity. Example: F	×	
Index Family	Index family abbreviation. Example: CDX		×
Long Name	The long name of the index, including series and version. Example: CDX.NA.HY.14-V1 5Y		×
Trade Date	Date the instrument was traded. DD-Mon- YYYY Trade Date must be today or in the past.	×	×
Trade Level	The level that the instrument was traded at (AKA trade price/ spread). May be entered as Upfront or Spread. Note if Trade Level is set to Upfront, then Recovery Rate + Trade Level cannot exceed 100%.	×	×
	For indices, the Trade Level unit (% or bps) is set by the convention of the index and cannot be changed.		
RED Code	Six-digit identifier for the selected entity. Cannot be changed.	×	×
	Nine-digit identifier for the selected index. Cannot be changed.		
Buyer/Seller	Your role in the transaction.	×	×
CDS Contract Terms			
Maturity Date	Date that the CDS contract matures. DD- Mon-YYYY Maturity Date must be after Trade Date.	×	×
Notional	The notional amount of the contract, in millions. Must be greater than 0.	×	×
Currency	The currency of the contract, populated based on the Ticker or Index selected.	×	×

Field Name	Description	Single Name	Index
Counterparty	A free- text box to enter the name of your counterparty, if desired.	×	×
Running Cpn	The primary running coupon for the entity. Must be greater than 0 but less than or equal to 1000.	×	×
Tier	The debt ranking or tier of the instrument. PREFT1, JRSUBUT2, SNRFOR, SECDOM, SUBLT2	×	
Recovery Rate	The Recovery Rate for the contract. Note if Trade Level is set to Upfront, then Recovery Rate + Trade Level cannot exceed 100%.	×	×
Restructuring	The restructuring clause for the selected entity, pre-populated based on the selected Ticker or Index. MR (Modified Restructuring), XR (No Restructuring), MM (Mod-Mod Restructuring), CR (With Restructuring).	×	×
Advanced Terms			
Cash Settlement	The number of days after which the contract must be settled. For standard contracts, this is 3 days.	×	×
Holiday Code	The holiday calendar used for the calculation. Set to None for all currencies except JPY. For JPY, set to TYO (Tokyo).	×	×
Payment Freq	Frequency of premium payments. 1M (monthly), 3M (quarterly), 6M (semi- annually), 1Y (annually).	×	×
Effective Date	The effective date at inception of the index.		×
Roll Code	The business day roll convention. Following. This is the only value allowed.	×	×
Day Count Conv	The payment day count convention. ACT/360. This is the only value allowed.	×	×
Step In Date	The Effective Date of the CDS contract, usually Trade Date + 1 day. DD-Mon-YYYY Step in Date must be after Trade Date.	×	×
Index Factor	Percent of total credits in the index that are still live as of Trade Date.		×
Credit Curve			
Transform Method	The Transform Method determines whether to shift the end-of-day Markit Composite Curve proportionally or in parallel.	×	×
Transformed	Curve showing the Markit EOD levels transformed using the selected Transform Method (Proportional or Parallel).	×	×
Yield Curve			

Field Name	Description	Single Name	Index
Date	Business day used to generate the Yield Curve. Defaulted to one business day previous to the Trade Date. DD-Mon-YYYY Must be before Trade Date.	×	×
Snap	The snap time for the yield curve, in 24-hour time (01:00 – 24:00) for the time zone shown. Time Zone is pre-populated based on the selected Ticker.	×	×
Calculation Results			
Market Value	Market value, as calculated using the Transformed Curve. Displayed in the default currency of the selected entity.	×	×
Cash Settlement	Cash settlement amount, as calculated based on the User Curve. Displayed in the default currency of the selected entity.	×	×
Accrued Days	Day count of accrued interest since the last coupon date.	×	×
Accrued Amount	Amount of accrued interest, as calculated using the User Curve, since last coupon date. Displayed in the default currency of the selected entity.	×	×
Details			
Market Value	Market value, as calculated using the Transformed Curve. Displayed in the default currency of the selected entity.	×	×
Clean Price	Calculated as 1 – Points Upfront, where Points Upfront is calculated using standard converter, conventional spread, and recovery rate.	×	×
Cash Settlement	Cash settlement amount, as calculated based on the User Curve. Displayed in the default currency of the selected entity.	×	×
Accrued Days	Day count of accrued interest since the last coupon date.	×	×
Accrued Amount	Amount of accrued interest, as calculated using the User Curve, since last coupon date. Displayed in the default currency of the selected entity.	×	×
Credit DV01	The market value difference between the current market value and the market value by shifting the credit curve by one basis point up.	×	×
IR DV01	The market value difference between the current market value and the market value by shifting the interest curve by one basis point up.	×	×

Seniority Levels

Seniority or Tier Abbreviation	Description
JRSUBUT2	Junior Subordinated or Upper Tier 2 Debt (Banks)
PREFT1	Preference Shares, or Tier 1 Capital (Banks)
SECDOM	Secured Debt (Corporate/Financial) or Domestic Currency Sovereign Debt
	(Government)
SNRFOR	Senior Unsecured Debt (Corporate/Financial), Foreign Currency Sovereign Debt
	(Government)
SUBLT2	Subordinated or Lower Tier 2 Debt (Banks)

Restructuring Clauses

Doc Clause Abbreviation	Description
CR	Cum-Restructuring or Old Restructuring
MR	Modified Restructuring
MM	Mod-Mod Restructuring (Introduced in June 2003)
XR	Ex-Restructuring