Market Depth

This page describes the types of market depth data available from CME DataMine.

Market Depth files provide all market data messages required to recreate the order book: five to ten orders deep in futures markets and three orders deep in options markets, as well as trade data for all CME Globex-traded products. Market Depth data is available tick-by-tick, time stamped to the millisecond, and is available in FIX and RLC formats.

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Resources

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Dates Available

Market Depth data is available on four exchanges from as early as 2005. Prior to March 1, 2009, all files from all exchanges are available in RLC format. Starting January 5, 2009, all files are available in FIX format. See below for precise dataset availability by exchange, format, and product.

By Exchange

Exchange	Open Date	Close Date
CME (Electrics)	1/1/2005*	Present
CBOT (Electrics)	1/11/2008	Present
NYMEX (Electrics)	3/7/2007	Present
COMEX (Electrics)	3/7/2007	Present

*CME quotes only. CME quotes & trades available starting 2/10/2006.

By Format

Format	Exchange	Open Date	Close Date
RLC			
	CME (Electronic)	1/1/2005*	3/1/2009
	CBOT (Electronic)	1/11/2008	3/1/2009
	NYMEX (Electronic)	3/7/2007	3/1/2009
	COMEX (Electronic)	3/7/2007	3/1/2009
FIX			
	CME (Electronic)	1/5/2009	Present
	CBOT (Electronic)	1/5/2009	Present
	NYMEX (Electronic)	1/5/2009	Present
	COMEX (Electronic)	1/5/2009	Present

*CME quotes only. CME quotes & trades available starting 2/10/2006.

By Product

Filter by product, format, and exchange here.

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Security Definition Files

Tag Usage by Security Type

Tag	FIX Name	Future Outright	NYMEX Decay /Variable Future	Future Spread	Option Outright	Option Spread	UDS Combo	UDS Covered
Application Sequence Control								
5799	MatchEventIndicator	X	X	X	X	X	X	X
911	TotNumReports	c	c	c	c	c	c	c
980	SecurityUpdateAction	X	X	X	X	X	X	X
779	LastUpdateTime	X	X	X	X	X	X	X
1180	ApplID	X	X	X	X	X	X	X
Instrument Data								
1300	MarketSegmentID	X	X	X	X	X	X	X
55	Symbol	X	X	X	X	X	X	X
48	SecurityID	X	X	X	X	X	X	X
22	SecurityIDSource	X	X	X	X	X	X	X
200	MaturityMonthYear	X	X	X	X	X	X	X
1151	SecurityGroup	X	X	X	X	X	X	X
6937	Asset	X	X	X	X	X	X	X
167	SecurityType	FUT	FUT	FUT	OOF	OOF	OOF	MLEG
762	SecuritySubType	–	–	X	–	X	X	X
461	CFI Code	X	X	X	X	X	X	X
201	PutOrCall	–	–	–	X	–	–	–
462	UnderlyingProduct	X	X	X	X	–	–	–
207	SecurityExchange	X	X	X	X	X	X	X
1682	MDSecurityTradingStatus	c	c	c	c	c	c	c
202	StrikePrice	–	–	–	X	–	–	–
947	StrikeCurrency	–	–	–	X	–	–	–
15	Currency	X	X	X	X	X	X	X
120	SettlCurrency		–	-	c	–	–	–
9850	MinCabPrice	–	–	–	c	–	–	–
9779	UserDefinedInstrument	–	–	–	–	–	Y	Y
Underlying (options only)								
711	NoUnderlyings	-	-	-	X	-	-	-
311	UnderlyingSymbol	-	-	-	X	-	-	-
309	UnderlyingSecurityID	-	-	-	X	-	-	-
305	UnderlyingSecurityIDSource	-	-	-	X	-	-	-
Leg Group (spreads only)								
555	NoLegs	-	-	X	-	X	X	X
602	LegSecurityID	-	-	X	-	X	X	X
624	LegSide	-	-	X	-	X	X	X
623	LegRatioQty	-	-	X	-	X	X	X
566	LegPrice	-	-	-	-	-	-	X
1017	LegOptionDelta	-	-	-	-	-	-	X
Trading Rules								
1141	NoMdFeedTypes	X	X	X	X	X	X	X
1022	MDFeedType	X	X	X	X	X	X	X
264	MarketDepth	X	X	X	X	X	X	X
864	NoEvents	2	2	2	2	2	2	2
865	EventType	X	X	X	X	X	X	X
1145	EventTime	X	X	X	X	X	X	X
1142	MatchAlgorithm	X	X	X	X	X	X	X
1234	NoLotTypeRules	X	X	X	X	X	X	X
1093	LotType	X	X	X	X	X	X	X

1231	MinLotSize	X	X	X	X	X	X	X
562	MinTradeVol	X	X	X	X	X	X	X
1140	MaxTradeVol	X	X	X	X	X	X	X
969	MinPriceIncrement	X	X	X	c	X	X	X
1146	MinPriceIncrementAmount	X	X	-	X	-	-	-
9787	DisplayFactor	X	X	X	X	X	X	X
5770	PriceRatio *(Implied Intercommodity Ratio Spreads only)*	–	–	c	–	–	–	–
6350	TickRule	–	–	–	c	c	–	–
37702	MainFraction	c	–	–	c	–	–	–
37703	SubFraction	c	–	–	c	–	–	–
9800	PriceDisplayFormat	c	_	–	c	–	–	–
Instrument Attribute								
870	NoInstAttrib	X	X	X	X	X	X	X
871=24	InstAttribType	X	X	X	X	X	X	X
872	InstAttribValue	X	X	X	X	X	X	X
Contract Lot Size / Measure / Unit								
1435	ContractMultiplierUnit	-	X	-	-	-	-	-
1439	FlowScheduleType	-	X	-	-	-	-	-
231	ContractMultiplier	-	X	-	-	-	-	-
996	UnitOfMeasure	X	X	X	X	X	X	X
1147	UnitOfMeasureQty	X	X	-	X	-	-	-
5818	DecayQty	-	c	-	-	-	-	-
5819	DecayStartDate	-	c	-	-	-	-	-
5849	OriginalContractSize	-	c	-	-	-	-	-
Statistics and Limits								
1150	TradingReferencePrice	c	c	c	c	c	c	c
731	SettlPriceType	c	c	c	c	c	c	c
5796	TradingReferenceDate	c	c	c	c	c	c	c
5792	OpenInterestQty	c	c	c	c	c	c	c
5791	ClearedVolume	c	c	c	c	c	c	c
1149	HighLimitPrice	c	c	c	c	c	c	c
1148	LowLimitPrice	c	c	c	c	c	c	c
1143	MaxPriceVariation	c	c	c	–	–	–	–

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Sample Files

	Agriculture	Energy	Equity	Foreign Exchange	Interest Rates	Metals
FIX (MDP 3.0)						
Futures	Soybean	Henry Hub Natural Gas	E-mini S&P 500	JPY/USD	Eurodollar	
Future Spreads	Soybean	Henry Hub Natural Gas	E-mini S&P 500	JPY/USD		
Options		Henry Hub Natural Gas	E-mini S&P 500	JPY/USD	Eurodollar	
Option Spreads		Henry Hub Natural Gas	E-mini S&P 500	JPY/USD		

Fix						
Futures	Corn 7/15/13	Light Sweet Crude Oil (WTI) 7/15/13	E-Mini S&P 500 (Dollar) 7/15/13	EUR/USD 7/15/13	Eurodollar 7/15/13	Gold 7/15/13
Options	Corn 7/15/13	Light Sweet Crude Oil (WTI) 7/15/13	E-Mini S&P 500 (Dollar) 7/15/13	EUR/USD 7/15/13	Eurodollar 7/15/13	Gold 7/15/13
RLC						
Futures	Corn 1/27/08 Corn 1/28/08	Light Sweet Crude Oil (WTI) 1/27/08 Light Sweet Crude Oil (WTI) 1/28/08	DJIA ($10) 1/27/08 DJIA ($10) 1/28/08	JPY/USD 1/27/08 JPY/USD 1/28/08	10-Year U.S. Treasury Notes 1/27/08 10-Year U.S. Treasury Notes 1/28/08 5-Year U.S. Treasury Notes 1/28/08 Eurodollar 1/27/08 Eurodollar 1/28/08	Gold 1/27/08 Gold 1/28/08
Options		Henry Hub Natural Gas 1/28/08	E-mini S&P 500 (Dollar) 1/28/08			

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Layout Guides

View layout guides and message specifications for the following market data formats.

For best results, use **right click + Save As** to download each file.

CME MDP 3.0 (Current Production Format)

The CME Group Market Data Platform (MDP) disseminates event-based bid, ask, trade, and statistical data for CME Group markets and also provides recovery and support services for market data processing. Click below to access layout guide.

- Complete documentation for CME MDP 3.0

Legacy FIX Format (3/2/2009-Present)

CME Globex legacy market data is transmitted on a given Market Data Platform (MDP) channel in the FIX message format using FAST compression. Click below to access layout guide.

- Functional Specifications for Legacy FIXFAST Files
- Legacy FIX-FAST Market Data Message Specification

RLC Format

CME market data dated before 2009 is available in RLC formats. Identify the desired date range of RLC files to access layout guide.

- 2/12/2006 - 3/1/2009 RLC Message Specifications
- 1/1/2005 - 2/11/2006 RLC Message Specifications

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FAQ

What format is the file delivered in?

Market Depth is delivered in various formats depending on the historical dates. Files can be delivered in RLC or FIX.

What is the precision level for timestamping in Market Depth?

Timestamp granularity will depend on the historical dates. The current form of market depth is delivered in nanosecond granularity.

What is the "Text (decoded)" file format?

This is the processed format of FIX Binary that is delivery in a readable text format similar to FIX Fast text.

Does Market Depth come from the same source as Top-of-Book and Time & Sales data?

No, our Market Depth files are produced from CME Globex Market Data Platform FIX/FAST feeds, while our Top-of-Book and Time & Sales data come from an internal post-trade processing system. The granularity of the timestamps for the data offerings is different due to the sources.

How is data aggregated? Is there a difference in aggregation between FIX/FAST and RLC formats?

Yes. RLC data aggregates partial fill trade messages to a single market data message whereas FIX/FAST sends out partial fills as individual trade messages. For example, a 100 lot trade that gets filled in four 25 lot partial fills would have been sent as a single 100 lot trade message in RLC, but four separate 25 lot trade messages in FIX/FAST.

How far back do you maintain Market Depth records?

The start date of Market Depth records depends on the product. View product start dates.

How many levels of depth are available? Has this depth changed over time?

All CME Globex futures markets are 10 orders deep and options markets are three orders deep. In the past, futures and options markets were five and one level deep, respectively.

Are spreads included in the Market Depth files?

Market Depth for Exchange-listed spread products is included for both futures and options spreads.

Are NYMEX Crack Spreads included in Market Depth files?

Crack spreads are included in the Market Depth files. Like all other spreads, they will be uploaded to customer directories in a separate file whenever an order is placed for the outright futures contract. For example, if an order for Market Depth for the Heating Oil contract, a separate file will be included containing Market Depth information for the Heating Oil/Crude Oil Crack Spread.

How are spreads prices reflected in the Market Depth files?

The Market Depth records for exchange-listed spreads contain the price as it is entered through CME Globex, which is the spread differential price.

Do you have sample files available?

Yes. View sample files.

Are there any known data quality issues?

There is no volume and open interest messaging for February 23, 2018.

When are these files delivered?

CME Group’s process to distribute Market Depth files begins at 5:00 p.m. Central Time (CT) and is typically complete by midnight.

If I purchase daily updates of Market Depth data, will I get historical data as well?

No. When an order is placed for daily updates of Market Depth data, the first file included will be generated for the start date of the subscription. However, files remain accessible for 30 days after purchase, enabling the customer to reference previous day’s data.

Where can I obtain Security Definitions for the data in the Market Depth data?

A security definition file is published daily and can be accessed here via ftp. A history of security definition files is also available by contacting the DataMine sales team at MarketTechSales@cmegroup.com.

How do I interpret market depth data?

MD files include all bids and offers, 5 deep, including size.

How large are the Market Depth files?

The average MD file exceeds 1 gigabyte in size. However, it is largely dependent on how far back in time one goes, as well as the liquidity of the product

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