Cboe DataShop

Option Trades Specifications

Description:

Our option trades files have the supporting information needed to provide context to trading activity. Included with each trade is the trade price and size, the exchange where the trade printed, the NBBO quote, and the underlying bid and ask. With the addition of our Calcs data, you receive the implied volatility and the calculated delta of the trade.

Coverage:

- Options on U.S. listed Stock, ETFs, and Indices disseminated over the Options Price Reporting Authority (OPRA) market data feed
- Global Trading Hours (GTH) trades are included if between 03:00am-09:15am U.S. Eastern, and for the 16:15pm-17:00pm Curb session. GTH trades outside of these time ranges will ***not*** be included.
- Note: Options on Futures & non-U.S. markets are not supported

Filename pattern:

- Orders with Calcs Included selected: UnderlyingOptionsTradesCalcs_YYYY-MM-DD.zip (Zipped CSV)
- Orders with Calcs Excluded selected: UnderlyingOptionsTrades_YYYY-MM-DD.zip (Zipped CSV)

File Layout:

Column Label	Data Type	Description
underlying_symbol	string	The underlying stock or index. An index will utilize a caret (^) prefix, i.e. ^NDX,^SPX,^VIX…etc. Underlyings with classes may utilize a dot (.) instead of a slash or space, i.e. BRK.B, RDS.A, RDS.B.
quote_datetime	datetime	The trading date and timestamp of the trade in U.S. Eastern time. Ex: yyyy-mm-dd hh:mm:ss.000
sequence_number	integer	Trade Sequence Number for the execution reported by OPRA
root	string	The option trading class symbol. Non-standard roots may end with a digit
expiration	date	The explicit expiration date of the option: yyyy-mm-dd
strike	numeric	The exercise/strike price of the option
option_type	string	C for Call options, P for Put options
exchange_id	integer	An identifier for the options exchange the trade was executed on. For a mapping, please see Exchange ID Mappings
trade_size	integer	The trade quantity
trade_price	numeric	The trade price
trade_condition_id	integer	The trade or sale condition of the execution. For a mapping, please see Trade Condition ID Mapping
canceled_trade_condition_id	integer	This field is no longer supported and will default to 0 (zero). See IDs 40-43 in the Trade Condition ID Mapping file above
best_bid	numeric	The best bid price (NBB) at the time of the trade
best_ask	numeric	The best ask/offer price (NBO) at the time of the trade
trade_iv[1,2]	numeric	A snapshot of the option implied volatility at the time of the trade
trade_delta[1]	numeric	A snapshot of the option delta at the time of the trade
underlying_bid[3]	numeric	The best bid price on the last quote for the underlying instrument on the date. Value of 0 (zero) if not available
underlying_ask[3]	numeric	The best ask price on the last quote for the underlying instrument on the date. Value of 0 (zero) if not available
number_of_exchanges	integer	This field is no longer supported and will default to 0 (zero)

Column Label	Data Type	Description
{exchange,bid_size,bid,ask_size,ask}[number_of_exchanges]	string	These regional exchange quotes are no longer supported and will be empty

Sample Format Excerpt:

The example below is for SPY on May 31, 2022 with the selection of Calcs Included.

```
underlying_symbol,quote_datetime,sequence_number,root,expiration,strike,option_type,exchange_id,trade_size,trade_price,trade_condition_id,canceled_trade_condition_id,best_bid,best_ask,trade_iv,trade_delta,underlying_bid,underlying_ask,number_of_exchanges,{exchange,bid_size,bid,ask_size,ask}[number_of_exchanges]

SPY,2022-05-31 15:52:45.844,1822109491,SPY,2022-05-31,255.000,C,4,500,159.8400,129,0,159.4100,159.9500,0.0000,0.0000,414.6900,414.7000,0

SPY,2022-05-31 09:30:05.544,529719,SPY,2022-05-31,255.000,P,11,1,0.0100,18,0,0.0000,0.0100,5.4246,-0.0006,413.6700,413.6800,0

SPY,2022-05-31 15:52:45.846,2065960561,SPY,2022-05-31,255.000,P,4,500,0.0100,129,0,0.0000,0.0100,0.0000,0.0000,414.6900,414.7000,0

SPY,2022-05-31 09:32:00.000,9585981,SPY,2022-05-31,280.000,P,65,1,0.0100,18,0,0.0000,0.0100,4.4298,-0.0007,413.1000,413.1200,0

SPY,2022-05-31 09:30:00.691,94737,SPY,2022-05-31,325.000,P,47,1,0.0100,18,0,0.0000,0.0100,2.8308,-0.0011,413.6000,413.6200,0
```

Notes:

1. *The trade_iv and trade_delta columns are only included for orders with a selection of Calcs Included.*
2. *Implied volatility will be zero in cases where the calculation model did not have sufficient input data (i.e. no quoted markets), the option price was below intrinsic value, or the implied volatility exceeded the acceptable upper limit.*
3. *Certain underlying instruments do not have an underlying bid & ask quote disseminated in their source feeds. These fields will default to 0.00 (zero) when no quote is available. i.e. Most indices will not have an underlying bid/ask, nor will underlyings on the OTC market.*