IVolatility US Intraday Options Trades Data Guide

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Overview

The IVolatility Historical Intraday Options Trades Data consists of trade by trade data for all US options (1,000,000+ as of now) and equities (4200+ including stocks, indices, funds). Database includes history since March 2014 and comes with data updates for new day.

Options Trades include following data:

- Options' trade prices with sizes during trading market hours
- Options' bid/ask quotations at the moment of trade
- Underlying's bid/ask/trade prices at the moment of option's trade
- Options' Implied Vols and Greeks
- History since Mar 2014
- Ongoing daily update right after the close
- Complimentary data such as dividends, rates, corporate actions are included as well.

Data is delivered in a native database format, in an archived package of csv files with tables, and can be easily imported into any database.

Intraday Options Trades Database is built by the same team and based on the same methodology that created our award-winning End-Of-the-Day database used by the leading firms.

To order the data, contact us at sales@ivolatility.com or call +1-201-275-1111.

Population and cleansing

Based on 20 years' experience building and supporting the best-known end of the day Options Implied Volatility database, we developed the technology and methodology to capture, cleanse and calculate derived data on an intraday basis as well.

Since our goal is to provide accurate and reliable data timely, we do the following:

- Use well-regarded market data vendors. This is the first step to get accurate market information like price, dividends, volume, etc...
- Our dedicated team tracks all corporate events such as splits, mergers, spin-offs, distributions, etc applying any ticker changes to maintain equity history continuity.
- Our analysts manually verify the data for accuracy of dividend and prices based on our own proprietary filters.
- When calculating implied volatilities, proprietary algorithms automatically filter bad data and replacing with interpolated volatilities, avoiding occasional spikes.
- Use a combination of Black&Scholes and Binomial Tree 100 steps, providing accuracy for the implied volatilities and Greeks.
- Various algorithms allow us to control data capturing in real time.
- After markets close, we perform some additional reviews to check the integrity of data and apply corrections if required.
- We register all found gaps in a special table for future reference.
- Quality of our data was tested as well by our clients over 20 years.
- We deliver the final product - completely verified with corrected data.

Data Delivery.

Compressed CSV file delivery:

Historical intraday options trades data are delivered either via FTP (for small orders) or via media device (HDD).

Daily Update data files are delivered via FTP. Non-scrubbed data is available at 4:50 PM EST every trading day, data with calculated IV and greeks is available after 5 PM EST.

By default, historical data are delivered in file(s) archived in zip.

The average size for all US market per day with about 1 million rows is:

- OptTradesRawIV (Options trade prices + calculated IV and greeks) – 250 Mb, ZIP – 45 Mb.
- OptTrades (Options trade prices) – 170 Mb, ZIP – 20 Mb.

Data files description.

The intraday historical database contains trade by trade data for all US options of indexes and equities of each data type (OptTrades, OptTradesRawIV) beginning 3/13/2014.

Data are divided into two groups: historical tables and auxiliary EOD (end of the day) tables.

Historical tables are: OptTrades (for just trades information) or OptTradesRawIV (options trades + IV&Greeks). This table is composed during each trading day with the data for last trading day.

End of the day tables are: Dividends, Yields, Interest Rate, etc.

Intraday data tables/files

Options trades prices with calculated IV and Greeks (OptTrades & OptTradesRawIV)

This table includes full intraday historical prices of options on stocks, indexes and ETFs. Prices are not adjusted for splits and dividends. Information about all corporate actions is available in a separate end of the day tables (Splits, CorpActions). All option chains are included, but non-standard options (i.e. options after corporate actions), have no IV&Greeks, just trades data information.

Column	Discription	Example
Symbol	Underlying symbol	A
Exchange	Underlying exchange code	NYSE
Company_name	Full company name	Agilent Technologies Inc
Trade_date	Trading date the data is as of	2014-12-19
Trade_time	Trade time	15:03:47
Option_trade_price	Option trade price	0.52
Trade_size	Option trade size	2
Trade_exchange	Option trade exchange	XO
Trade_condition	Option trade condition*	Spread
Option_symbol	Option symbol	A 150117C00047500
Option_expiration	Option expiration date	2015-01-17
Price_strike	Option strike price	47.5
Call/Put	'C' for Call, 'P' for Put	C
Style	Option style	A
Bid_price	Option bid quote**	0.45
Bid_time	Option bid time**	15:03:47
Bid_size	Option bid size**	253
Bid_exchange	Option bid exchange**	XO
Ask_price	Option ask quote**	0.59
Ask_time	Option ask time**	15:03:47
Ask_size	Option ask size**	2
Ask_exchange	Option ask exchange**	XO

Underlying_bid_price	Underlying bid price**	41.1
Underlying_bid_time	Underlying bid time**	15:03:47
Underlying_ask_price	Underlying ask price**	41.35
Underlying_ask_time	Underlying ask time**	15:03:47
Underlying_last_price	Underlying last price**	41.295
Underlying_last_time	Underlying last time**	15:03:47
Price_for_IV&Greeks	Underlying Price used for IV calculation	41.295
IsTradePrice	'*' - if price for IV is a trade price of an underlying, '' – if price for IV is a middle price (stock [bid+ask]/2). We choose first one (stock trade price) if trade on stock is closer then bid/ask quotes to option trade's time, second one (mid) in other cases.	
IV	Calculated option volatility, "-1" value indicates that no reasonable IV can't be calculated by option model	0.503267
Delta	Delta greek (change in option price for $1 increase in underlying)	0.175841
Gamma	Gamma greek (change in delta for $1 increase in underlying)	0.044215
Theta	Theta greek (change in option price from today to tomorrow)	-0.026064
Vega	Vega greek (change in option price for 1% (absolute) change in implied volatility)	0.030043
Rho	Rho greek (change in option price for 1% (absolute) change in interest rate)	0.005349

* - see table TradeConditions for full description of condition statement below.
** - values are captured at the moment when trade occures.
Fields are *marked in italics* available only for OptTradesRawIV dataset

TradeConditions

SHORT_DISCRIPTION	FULL_DESCRIPTION	comment
Regular	Indicates that the transaction was a regular sale and was made without stated conditions.	NULL
Out Of Sequence	Transaction is being reported late and is out-of-sequence, i.e., later transactions have been reported for the particular option contract.	Continued Effective November 4, 2019
Late	Transaction is being reported late in the correct sequence. i.e., no later transactions have been reported for the particular option contract.	Continued Effective November 4, 2019
Open	Transaction is a late report of the opening trade and is out of sequence, i.e., other transactions have been reported for the particular option contract.	Continued Effective November 4, 2019
Late Open	Transaction is a late report of the opening trade, but is in the correct sequence, i.e., no other transactions have been reported for this particular option contract.	Continued Effective November 4, 2019
Auto	Transaction was executed electronically. This prefix appears solely for information; process as a regular transaction.	Continued Effective November 4, 2019
Re-Open	Transaction is a reopening of an option contract in which trading has been previously halted. This prefix appears solely for information; process as a regular transaction.	Continued Effective November 4, 2019
Adjusted	Transaction is an option contract for which the terms have been adjusted to reflect a stock dividend, stock split, or similar event. This prefix appears solely for information; process as a regular transaction.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Spread	Transaction represents a trade in two options in the same option class (a buy and sell in the same class). This prefix appears solely for information; process as a regular transaction.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Straddle	Transaction represents a trade in two options in the same option class (a buy and sell in a put and a call). This prefix appears solely for information; process as a regular transaction.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Stopped	Transaction is the execution of a sale at a price agreed upon by the floor personnel involved, where a condition of the trade is that it be reported following a non-stopped trade of the same series at the same price.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Buy/Write	Transaction represents the option portion of an order involving a single option leg (buy or sell of a call or put) and stock. The prefix appears solely for information; process as a regular transaction.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Combination	Transaction represents the buying of a call and the selling of a put for the same underlying stock or index. This prefix appears solely for information; process as a regular transaction.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Stopped	Transaction was the execution of an order that was 'stopped' at a price that did not constitute a Trade-Through on another market at the time of the stop.	Will be obsolete after the fallback period (week of November 4, 2019) concludes

Intermarket Sweep Order	Transaction was the execution of an order identified as an Intermarket Sweep Order.	Continued Effective November 4, 2019
Benchmark	Transaction reflects the execution of a 'benchmark trade'. A 'benchmark trade' is a trade resulting from the matching of 'Benchmark Orders'. A 'Benchmark Order' is an order for which the price is not based, directly or indirectly, on the quoted price of the option at the time of the order's execution and for which the material terms were not reasonably determinable at the time a commitment to trade the order was made.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Trade Through Exempt	Transaction is Trade Through Exempt. The transaction should be treated like a regular sale.	Will be obsolete after the fallback period (week of November 4, 2019) concludes
Single Leg Auction Non ISO	Transaction was the execution of an electronic order which was 'stopped' at a price and traded in a two sided auction mechanism that goes through an exposure period. Such auctions mechanisms include and not limited to Price Improvement, Facilitation or Solicitation Mechanism.	Implementation: November 4, 2019
Single Leg Auction ISO	Transaction was the execution of an Intermarket Sweep electronic order which was 'stopped' at a price and traded in a two sided auction mechanism that goes through an exposure period. Such auctions mechanisms include and not limited to Price Improvement, Facilitation or Solicitation Mechanism marked as ISO.	Implementation: November 4, 2019
Single Leg Cross Non ISO	Transaction was the execution of an electronic order which was 'stopped' at a price and traded in a two sided crossing mechanism that does not go through an exposure period. Such crossing mechanisms include and not limited to Customer to Customer Cross and QCC with a single option leg.	Implementation: November 4, 2019
Single Leg Cross ISO	Transaction was the execution of an Intermarket Sweep electronic order which was 'stopped' at a price and traded in a two sided crossing mechanism that does not go through an exposure period. Such crossing mechanisms include and not limited to Customer to Customer Cross.	Implementation: November 4, 2019
Single Leg Floor Trade	Transaction represents a non-electronic trade executed on a trading floor. Execution of Paired and Non-Paired Auctions and Cross orders on an exchange floor are also included in this category.	Implementation: November 4, 2019
Multi Leg auto electronic trade	Transaction represents an electronic execution of a multi leg order traded in a complex order book.	Implementation: November 4, 2019
Multi Leg Auction	Transaction was the execution of an electronic multi leg order which was 'stopped' at a price and traded in a two sided auction mechanism that goes through an exposure period in a complex order book. Such auctions mechanisms include and not limited to Price Improvement, Facilitation or Solicitation Mechanism.	Implementation: November 4, 2019
Multi Leg Cross	Transaction was the execution of an electronic multi leg order which was 'stopped' at a price and traded in a two sided crossing mechanism that does not go through an exposure period. Such crossing mechanisms include and not limited to Customer to Customer Cross and QCC with two or more options legs.	Implementation: November 4, 2019
Multi Leg floor trade	Transaction represents a non-electronic multi leg order trade executed against other multi-leg order(s) on a trading floor.	Implementation: November 4, 2019

	Execution of Paired and Non-Paired Auctions and Cross orders on an exchange floor are also included in this category.	
Multi Leg auto electronic trade against single leg(s)	Transaction represents an electronic execution of a multi Leg order traded against single leg orders/ quotes.	Implementation: November 4, 2019
Stock Options Auction	Transaction was the execution of an electronic multi leg stock/options order which was 'stopped' at a price and traded in a two sided auction mechanism that goes through an exposure period in a complex order book. Such auctions mechanisms include and not limited to Price Improvement, Facilitation or Solicitation Mechanism.	Implementation: November 4, 2019
Multi Leg Auction against single leg(s)	Transaction was the execution of an electronic multi leg order which was 'stopped' at a price and traded in a two sided auction mechanism that goes through an exposure period and trades against single leg orders/ quotes. Such auctions mechanisms include and not limited to Price Improvement, Facilitation or Solicitation Mechanism.	Implementation: November 4, 2019
Multi Leg floor trade against single leg(s)	Transaction represents a non-electronic multi leg order trade executed on a trading floor against single leg orders/ quotes. Execution of Paired and Non-Paired Auctions on an exchange floor are also included in this category.	Implementation: November 4, 2019
Stock Options auto electronic trade	Transaction represents an electronic execution of a multi leg stock/options order traded in a complex order book.	Implementation: November 4, 2019
Stock Options Cross	Transaction was the execution of an electronic multi leg stock/options order which was 'stopped' at a price and traded in a two sided crossing mechanism that does not go through an exposure period. Such crossing mechanisms include and not limited to Customer to Customer Cross.	Implementation: November 4, 2019
Stock Options floor trade	Transaction represents a non-electronic multi leg order stock/options trade executed on a trading floor in a Complex order book. Execution of Paired and Non-Paired Auctions and Cross orders on an exchange floor are also included in this category.	Implementation: November 4, 2019
Stock Options auto electronic trade against single leg(s)	Transaction represents an electronic execution of a multi Leg stock/options order traded against single leg orders/ quotes.	Implementation: November 4, 2019
Stock Options Auction against single leg(s)	Transaction was the execution of an electronic multi leg stock/options order which was 'stopped' at a price and traded in a two sided auction mechanism that goes through an exposure period and trades against single leg orders/ quotes. Such auctions mechanisms include and not limited to Price Improvement, Facilitation or Solicitation Mechanism.	Implementation: November 4, 2019
Stock Options floor trade against single leg(s)	Transaction represents a non-electronic multi leg stock/options order trade executed on a trading floor against single leg orders/ quotes. Execution of Paired and Non-Paired Auctions on an exchange floor are also included in this category.	Implementation: November 4, 2019
Multi Leg Floor Trade of Proprietary Products	Transaction represents execution of a proprietary product non-electronic multi leg order with at least 3 legs. The trade price may be outside the current NBBO.	Implementation: November 4, 2019
CANC	Transaction previously reported (other than as the last or opening report for the particular option contract) is now to be cancelled.	Has never been implemented in ACTIV feed. Continued Effective

		November 4, 2019
CNCL	Transaction is the last reported for the particular option contract and is now cancelled.	Has never been implemented in ACTIV feed. Continued Effective November 4, 2019
CNCO	Transaction was the first one (opening) reported this day for the particular option contract. Although later transactions have been reported, this transaction is now to be cancelled.	Has never been implemented in ACTIV feed. Continued Effective November 4, 2019
CNOL	Transaction was the only one reported this day for the particular option contract and is now to be cancelled.	Has never been implemented in ACTIV feed. Continued Effective November 4, 2019
CSTP	Cancel stopped transaction.	Has never been implemented in ACTIV feed. Will be obsolete after the fallback period (week of November 4, 2019) concludes

End of the day data/files

End of the tables are updated in the mornings before market is open. All of the tables except InterestRate are rewritten daily. InterestRate table is only updated with new data daily.

Dividends

We keep regular dividend data in this table.

For US stocks and ETFs we use periodical dividends in the form of date, amount and frequency for implied volatility calculations. As for the dividend date and amount data we use either data from the last paid dividend or information about the next declared dividend.

Column	Comment
Symbol	underlying symbol
Exchange	underlying exchange code
Date	start date of the period where this dividend record is valid
Term_date	end date of the period where this dividend record is valid
Dividend_Amount	dividend amount
Dividend_Date	dividend ex-date
Dividend_Freq	times per year (1 - annually, 2 - semiannually, 4 - quarterly, 12 - monthly)

Yield

Stock indexes yield are the Average 12 month dividend and used in implied volatility calculations for the indexes.

Column	Comment
Date	trading date the data is as of
Symbol	underlying symbol
Yield	yield

Interest Rates

We use interpolated interbank offered rates such as LIBORs with 1 day delay.

Column	Comment
Trade_date	trading date the data is as of
Period	period in calendar days. Standard periods are 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, 360, 720, 1080, 1440, 1800. Rates for other periods are interpolated
Currency	currency code
Rate	interest rate % value

QuoteExchanges

Contains information about data provider exchanges codes referring to exchange symbols in the OptTrades and OptTradesRawIV.

Column	Comment
Exchange_symbol	Symbol of the exchange
Name	Name of the exchange
MIC	MIC code of the exchange

Our clients

20 years working and constantly developing data resulted in more than 70,000 clients from all over the world using **IVolatility.com** trading and risk management systems for US, European and Asian market data and analytics.

IVolatility.com clients represent all segments of the global derivatives market. More than half of the top 30 options market makers and US options brokers use **IVolatility.com** financial data services. In addition, **IVolatility.com** clients include 3 out of 5 of the largest US banking institutions and more than half of the top 50 investment banks. Other important clients include the CBOE, the NYSE, RiskMetrics Group - a proven leader in risk management, corporate governance, financial research and analysis- along with the Options Clearing Corporation, as well as hundreds of investment and hedge funds.