algoseek
THE MARKET DATA COMPANY

US Equity Industry Standard Daily OHLC Adjusted Guide

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algoseek | the market data company

We provide research market data for machine learning and quantitative trading

CONTACT US

We are here to help you do great things with our market and reference data. For questions, feedback, and other concerns, you may reach our team of experts using the following contact information:

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INTRODUCTION

This guide describes the Daily OHLC Adjusted data calculated using Industry Standard logic available for US Equities.

The dataset is based on Industry Standard logic for selecting Open/High/Low/Close trades from the Trades of the Securities Information Processor (SIP) data, also known as the "Consolidated Feed" for all listed stocks, ETNs, ETFs, ADRs, and funds. This dataset contains OHLCV data adjusted by corporate events along with raw data.

For all information about corporate events applied to adjust the data and implemented logic for adjusting, see the 'Corporate Events' section.

There are two data aggregation options for this dataset that provide exactly the same data fields:

tradedate: one CSV file with data for all symbols per trading day

secid: one CSV file with data for all trading days per Security ID - a unique security identifier used by algoseek that remains unchanged when the ticker changes

EXCHANGE MARKET HOURS

The US Stock Market trading hours are split into the pre-market, market, and post-market hours.

Pre-Market Hours: 04:00:00 to 09:30:00 (excluding)

Market Hours: 09:30:00 to 16:00:00 (excluding)

Post-Market Hours: 16:00:00 to 20:00:00

Note: Occasionally, trade events are recorded several minutes after 20:00.

Market Holidays and Early Closes

The stock market is closed for trading on most US holidays. For reference, algoseek publishes a list of historical holiday,s which is available at `s3://us-equity-market-holidays/holidays.csv` (direct download link: https://us-equity-market-holidays.s3.amazonaws.com/holidays.csv).

Markets sometimes close early at 13:00:00 on the day before holidays such as Independence Day and Thanksgiving. You can download algoseek's early close date and time list from AWS S3 storage at `s3://us-equity-market-holidays/earlycloses.csv` (or use a direct link us-equity-market-holidays.s3.amazonaws.com/earlycloses.csv).

DATA ORGANIZATION AND FILE FORMAT

algoseek provides Equity market data in plain-text CSV files. The first row of the CSV file is a fixed header, and then rows of data corresponding to individual events (see Table 3). By default, the dataset is organized either by trading day or by secid. It means, for example, that all daily Open/Close data for Mar 3, 2020, are stored in a separate CSV file under a tradedate aggregation. For the secid-based aggregation, all data for the security with an ID 33449 (AAPL) for a single year is stored in a separate CSV file.

Table 3 below summarizes the name, description, and data type for each data field (column). The Field order below is for SecId-based aggregation. For tradedate-based data aggregation, the “TradeDate” is the first column and “SecId” is the second.

Table 3: CSV File Fields Schema

Field	Type (Format)	Description
TradeDate	string (yyyymmdd)	Trading date in yyyymmdd format
Ticker	string	Symbol name
SecId	integer	algoseek unique Security ID
Open	decimal	Primary exchange opening trade (see section “Opening Trade Identification”)
High	decimal	Highest trade price from any exchange or Trade Reporting Facility (TRF)
Low	decimal	Lowest trade price from any exchange or Trade Reporting Facility (TRF)
Close	decimal	Primary exchange closing trade (see section “Closing Trade Identification”)
MarketHoursVolume	integer	Total trading volume during regular market hours only
MarketHoursFinraVolume	integer	FINRA/TRF trading volume during regular market hours only (normal trade day is 09:30:00 to 16:00:00 ET). FINRA/TRF represents off-exchange trading.

DailyVolume	integer	Total trading volume for the whole day (includes pre, regular, and post-market)
DailyFinraVolume	integer	FINRA/TRF trading volume for the whole day (includes pre-, regular, and post-market)
MarketHoursVWAP	decimal	Volume weighted average price during regular market hours, normally between 09:30:00 and 16:00:00 ET plus the Opening and Closing Cross (which may be after 16:00:00 ET).
DailyVWAP	decimal	Volume weighted average price for the whole day including pre, regular, and post-market trades.
OpenAdj	decimal	Backward adjusted price of opening trade
HighAdj	decimal	Backward adjusted trade with the highest price
LowAdj	decimal	Backward adjusted trade with the lowest price
CloseAdj	decimal	Backward adjusted price of closing trade
MarketHoursVolumeAdj	integer	Backward adjusted total trading volume during regular market hours only
MarketHoursFinraVolumeAdj	integer	Backward adjusted FINRA/TRF trading volume during regular market hours only
DailyVolumeAdj	integer	Backward adjusted total trading volume for the whole day
DailyFinraVolumeAdj	integer	Backward adjusted FINRA/TRF trading volume for the whole day
MarketHoursVWAPAdj	decimal	Backward adjusted volume weighted average price during regular market hours
DailyVWAP	decimal	Backward adjusted volume weighted average price for the whole trading day

Bar Notes

MarketHoursVWAP and DailyVWAP: Market hours volume weighted average price (VWAP) is calculated as

```
sum(TradePrice x TradeSize) / sum(TradeSize)
```

where

```
sum(TradeSize) = MarketHoursVolume
```

Open/High/Low/Close with Limited Trades or Single Trade

Some stocks may only have a single trade during the entire day. For example, with a single trade at 12:00:00 ET then,

```
Open = High = Low = Close = 12:00:00 Trade price
```

FINRA/TRF vs Exchange Trades

FINRA Trade Reporting Facility (TRF) allows for reporting of trades that do not take place on an exchange, this includes Dark Pools, Broker-Dealer internal trading, Over the Counter (OTC), etc.

CORPORATE EVENTS

Table 4: Corporate Event's effect on Price and/or Volume

Corporate Event	Affects Price	Affects Volume
Bonus issue in the same class	Yes	Yes
Bonus issue in a different class	Yes	No
Capital Reduction	Yes	Yes
Consolidation	Yes	Yes
Distribution	Yes	No
Cash Dividend	Yes	No
Script dividend in the same class	Yes	Yes
Script dividend in a different class	Yes	No
De-merger	Yes	No
Entitlement in the same class	Yes	No
Entitlement in a different class	Yes	No
Capital Return	Yes	No
Rights in the same class	Yes	No
Rights in a different class	Yes	No
Security Swap	Yes	Yes
Reclassification	Yes	Yes

Any subdivision (by any stock split, stock dividend, reclassification, recapitalization, or otherwise) or combination (by the reverse stock split, reclassification, recapitalization, or otherwise) of the Class A Common Stock.	Yes	Yes

APPENDIX B. OHLCV CALCULATIONS FROM TRADE EVENTS

This section describes Industry Standard logic for daily bar calculations based on events from the Trade Only dataset. Please also refer to the Equity Trade Only Guide for more details on data fields and condition flags used.

In this section, Market hours refer to 9:30:00 (including) - 16:00:00 (excluding) for regular trading days and to 9:30:00 (including) - 13:00:00 (excluding) when there was an early close.

Filtering

- Exclude any trade with Price = 0
- Exclude any trade with Quantity = 0
- Exclude Trade Cancel events
- Exclude the original trade that was canceled later

Opening/Closing Trade

The Opening/Closing Trade is calculated from trades events based on the following logic:

The first (last) event starting from 09:30 am with TRADE NB EventType. If no event has TRADE NB type, the first (last) event with TRADE EventType is chosen instead.

The field is empty if no valid trades after 09:30 am are recorded.

Note: an event with a zero quantity does apply for Open/Close Price

Daily Highest/Lowest Trade

Daily High/Low is the first event satisfying all the conditions below:

The trade with the highest (lowest) price starting from 09:30 am is chosen for which the following two conditions are met:

- At least one flag from Table 5 is present
- None of the flags from Table 6 is present

If no trades apply for the condition above, the largest (smallest) price with TRADE NB (if available) starting from 09:30 am is chosen instead.

Note: we take into account Opening/Closing Trade when calculating Highest/Lowest Trade

Table 5: Flags for Trade Events to be Included During Daily High/Low Calculations

Bit Mask Position	Flags
0	tRegular
5	tIntermarketSweep
6	tOpeningPrints
7	tClosingPrints
14	tOutOfSequence
21	tCross
29	tTradeThroughExempt

Table 6: Flags for Trade Events to be Excluded During Daily High/Low Calculations

Bit Mask Position	Flags
1	tCash
2	tNextDay
3	tSeller
9	tDerivativelyPriced
10	tFormT
13	tExtendedHours
18	tStockOption
20	tAveragePrice
22	tPriceVariation
23	tRule155
24	tOfficialClose
25	tPriorReferencePrice
26	tOfficialOpen
27	tCapElection

31	tOddLot

Volume

All events are accounted unless any of the flags from Table 7 are present. For MarketHoursFinraVolume and DailyFinraVolume columns, only events from FINRA Exchange are accounted.

Table 7: Flags for Trade Events to be Excluded During Volume Calculations

Bit Mask Position	Flags
24	tOfficialClose
26	tOfficialOpen

APPENDIX C. ALGOSEEK VS INDUSTRY STANDARD LOGIC

algoseek	Industry Standard
Filtering	
• Exclude any trade with Price = 0 • Exclude any trade with Quantity = 0 • Exclude Trade Cancel events	• Exclude any trade with Price = 0 • Exclude any trade with Quantity = 0 • Exclude Trade Cancel events • Exclude the original trade that was canceled later
Open/Close	
By priority (from the Primary Exchange): The first/last event with tOfficialOpen/tOfficialClose flag The first/last event with tOpeningPrint/tClosingPrint flag The Regular Open/Close: • not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags) • not having tExtendedHours flag set • the largest volume between 09:30:00/16:00:00 (13:00:00 for an Early Close) (including) and 09:40:00/16:05:00 (13:05:00 for an Early Close) (including) Regular First/Last: • not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags) • not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155 • not having tOddLot flag set • not having tExtendedHours flag set • the event time is within market hours	The first/last event starting from 09:30 am with TRADE NB EventType. If no event has TRADE NB type, the first/last event with TRADE EventType is chosen instead. ***Note:*** an event with a zero quantity does apply for Open/Close
High/Low	

• not an Open/Close event (tOpeningPrints, tClosingPrints, tOfficialClose and tOfficialOpen flags) • not having either of the following flags set: tDerivativelyPrices, tStockOption, tAveragePrice, tRule155 • not having tOddLot flag set • not having tExtendedHours flag set • the exchange is not FINRA • the event with the largest price within market hours	The trade with the highest (lowest) price starting from 09:30 am is chosen for which the following two conditions are met: • At least one flag from Table 5 is present • None of the flags from Table 6 is present If no trades apply for the condition above, the largest (smallest) price with TRADE NB (if available) starting from 09:30 am is chosen instead ***Note:*** we take into account Opening/Closing Trade when calculating Highest/Lowest Trade
Volume	
• not having either of the following flags set: tOfficialOpen, tOfficialClose	• not having either of the following flags set: tOfficialOpen, tOfficialClose