US Equity Detailed Adjustment Factors 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

The Adjustment Factors dataset provides information about corporate events affecting price and/or volume for historical backtesting. algoseek provides two versions of the US Equity Adjustment Factors datasets: a basic version and a detailed version that contains several extra fields. In this document, they are collectively referred to as Adjustment Factors datasets.

algoseek uses a unique identifier called Security ID (SecId) to identify each equity, including stocks, ETFs, ETNs, ADRs, preferred stocks, and stock warrants, among others. The SecId remains unchanged when a security's ticker name changes.

For each SecId, this dataset provides a list of events, with adjustment factors and event details, to create forward- or backward-adjusted pricing for any date from 2007 to the present.

To find the SecId for a combination of exchange ticker and trade date, use the algoseek Lookup File. Please contact your account manager if you do not have access to the Lookup File.

DATA ORGANIZATION AND FILE FORMAT

There are two data aggregation options for this dataset:

> **tradedate**: one CSV file with data per symbol per effective date

> **SecId**: one CSV file with data for all effective dates per Security ID - a unique security identifier used by algoseek that remains unchanged when the ticker changes

Both aggregation options provide exactly the same data fields.

algoseek provides Equity adjustment 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 bars (see Table 1).

Data files are organized with one file per effective date or by SecId. For example, all corporate events that occurred on Mar 3, 2020 are stored in a separate CSV file under a tradedate aggregation.

In SecId-based aggregation, all adjustment data for the security with an ID 33449 (AAPL) for a single year is stored in a single CSV file.

Table 1: Sample Detailed Adjustment Data

SecId	33449	33449	33449
Ticker	AAPL	AAPL	AAPL
EffectiveDate	20140206	20140508	20140609
Name	Apple Inc	Apple Inc	Apple Inc
ReportDate	20140206	20140508	20140609
Adjustment Factor	0.994049825396516	0.994445663734742	0.142857142857143
Adjustment Reason	CashDiv	CashDiv	BonusSame
EventType	DIV	DIV	BON
EventId	765842	795226	3018370
Detail	INT Dividend (cash) of USD3.050000000/EQS [DIVPAYRATE=3.05000000 00] [DIVCURRENCY=USD] [DIVPERIOD=INT] [OPTION=1] [EXCHGCD=USNASD]	INT Dividend (cash) of USD3.290000000/EQS [DIVPAYRATE=3.2900000 00] [DIVCURRENCY=USD] [DIVPERIOD=INT] [OPTION=1] [EXCHGCD=USNASD]	Bonus of 6 AAPL (33449) for 1 AAPL (33449) [EXCHGCD=USNASD]
ISIN	US0378331005	US0378331005	US0378331005

Table 2 below summarizes the name, brief description, and data type for each data field (column) in an Equity Adjustment Factor CSV file.

Table 2: Adjustment Factor Fields and Descriptions

Field	Type (Format)	Description
SecId	integer	Unique security identifier
Ticker	string	Ticker on the Effective Date
EffectiveDate	string (YYYYMMDD)	Date that the event becomes effective
Name	string	Name of the company
ReportDate	string (YYYYMMDD[_N])	Date and version (_N suffix) of the algoseek event report file
AdjustmentFactor	decimal	The value of the Adjustment factor for the event
AdjustmentReason	string	The reason for the Corporate Event. See subsection "Adjustment Reason" below for a list of types.

EventType	string	Type of event. See section "Adjustment Reason Table" below for a list of types.
EventId	integer	Unique Event ID under the AdjustmentReason, i.e., each pair of AdjustmentReason and EventId is unique.
Detail	string	Details of the event including Dividend Amount, Period (e.g., Interim), etc. See "Detail Field" below for further information.
ISIN	string	ISIN (International Securities Identification Number) Identifier.

Detail Field

Take the most common event type, Dividend, as an example:

```
INT Dividend (cash) of USD0.470000000/EQS
[DIVPAYRATE=0.470000000] [DIVCURRENCY=USD] [DIVPERIOD=INT]
[OPTION=1] [EXCHGCD=USNASD]
```

This is an interim dividend (DIVPERIOD=INT) with a dividend rate of $0.47 per share (DIVPAYRATE=0.47) in currency USD (DIVCURRENCY=USD).

Another typical event type is Split.

```
Subdivision of 2 for 1 [EXCHGCD=USNYSE]
```

This is a split (subdivision) of 2 for 1. It means that shareholders receive two additional shares for each they already own.

```
Demerger of 1 AA (4920498) for 3 ARNC (33008) [OPTION=1]
[EXCHGCD=USNYSE],US03965L1008
```

This is a demerger (spinoff) of Alcoa Corporation (AA) from Alcoa Inc. (AA), which changed its name to Arconic Inc. (ARNC). At the time of separation, Alcoa Inc. shareholders receive one share of Alcoa Corporation common stock for every three shares of Alcoa Inc. common stock held as of the record date.

Adjustment Reason

Each adjustment event relates to an Event Type, and each Event Type may include different Adjustment Reasons. The table below describes the different adjustment types and reasons, and if it affects Price and/or Volume.

Table 3: Adjustment Reason Table

Event Type	Adjustment Reason	Description	Affects Price	Affects Volume
BON	BonusSame	Bonus issue in the same class	Yes	Yes
	BonusDiff	Bonus issue in a different class	Yes	No
CAPRD	CapReduct	Capital Reduction	Yes	Yes
CONSD	Cons	Consolidation	Yes	Yes
DIST	Distrib	Distribution	Yes	No
DIV	CashDiv	Cash Dividend	Yes	No
	ScriptDiv	Script dividend in the same class	Yes	Yes
	ScriptDivDiff	Script dividend in a different class	Yes	No
LIQ	ParLiq	Partial liquidation	Yes	No
DMRGR	DeMerg	De-merger	Yes	No
ENT	EntSame	Entitlement in the same class	Yes	No
	EntDiff	Entitlement in a different class	Yes	No
RCAP	CapRet	Capital Return	Yes	No
RTS	RightsSame	Rights in the same class	Yes	No
	RightsDiff	Rights in a different class	Yes	No
SCSWP	SecSwap	Security Swap	Yes	Yes
SECRC	Reclass	Reclassification	Yes	Yes
SD	Subdiv	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

Note: All following adjustment reasons should be considered as splits (or reverse splits): BonusSame, ScriptDiv, Subdiv, and Cons.

HOW TO APPLY ADJUSTMENT FACTORS

When backtesting the historical "as-is" prices and volumes, they need to be adjusted to account for price events like a dividend and volume changes like a split. Use Table 3 Adjustment Reasons to determine if Price and/or Volume (a.k.a. Size) fields need to be adjusted.

Table 4: Some Corporate Events of Apple Inc. in 2014

SecId	Ticker	Effective Date	Adjustment Factor	Adjustment Reason
33449	AAPL	20140508	0.994445664	CashDiv
33449	AAPL	20140609	0.142857143	BonusSame
33449	AAPL	20140807	0.995050548	CashDiv

Creation of a backward (starting from the latest date) time series of Apple Inc. for 2014:

In this scenario, we start with the most recent data. The most recent corporate event happened on Aug 7, 2014 (see Table 4 for a sample of corporate events for Apple Inc. in 2014). All prices after this date (including itself) should be multiplied by the factor

$$AF = 1.$$

Before Aug 7, 2014, starting from Aug 6, 2014, up to (and including) Jun 9, 2014, the price should be multiplied by a cumulative factor

$$AF = 1 \cdot f_1 = 0.995050548,$$

where f_1 - adjustment factor on Aug 7, 2014. From Jun 6, 2014, up to May 8, 2014, the price should be adjusted by the factor

$$AF = 1 \cdot f_1 \cdot f_2 = 0.142150078,$$

where f_2 - adjustment factor on Jun 9, 2014. And finally, all prices before May 8, 2014, should be adjusted by the cumulative factor

$$AF = 1 \cdot f_1 \cdot f_2 \cdot f_3 = 0.141360529,$$

where f_3 - adjustment factor on May 8, 2014. This method is very convenient to use when you already have adjusted data and then need to accommodate new corporate events (dividend, split, etc.). You simply need to multiply all prices before that date by a corresponding factor.

If you want to adjust the volume as well, you should divide it by the corresponding factor. We have one event that affects volume on Jun 9, 2014. All volumes after this date (including itself) should be divided by the factor

$$AF = 1.$$

And all volumes before Jun 9, 2014, should be adjusted by the cumulative factor

$$AF = 1 \cdot f_1 = 0.142857143,$$

where f_1 - adjustment factor on Jun 9, 2014.

APPENDIX A. FREQUENTLY ASKED QUESTIONS

Why do I see two dividends for the same ticker on the same date?

When you work with a Detailed dataset, it is very clear because you have access to the columns with additional information. Using the Detail column, you can see that these dividends differ by dividend period (for example, interim and final dividends). If you use the Basic dataset, you do not have access to this information, and it looks like they are the same. You should keep in mind that they differentiate by payment time types.

Why do I sometimes see an empty "Ticker" field for corporate events?

There are a couple of securities that were publicly traded, then went OTC, and again back to public trading. In the period when they were OTC, securities couldn't be linked with appropriate tickers because algoseek doesn't work with OTC securities. And providing OTC symbols will cause inconsistency with the current database of symbols.