US Equity Daily Cumulative Adjustment Factors Guide

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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 Daily Cumulative Adjustment Factors dataset provides cumulative adjustments for US equities calculated with the backward approach. The dataset also contains information about corporate event types affecting price and/or volume for historical backtesting.

algoseek uses a unique identifier called Security ID (SecId) for 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 cumulative adjustment factors and event types for the creation of backward adjusted pricing and/or volume 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 don't have the access to Lookup File.

The dataset is continuous in terms of trade dates. It means that data files contain all trade dates and effective dates when a corporate event has happened and provide corresponding cumulative adjustment factors for price and volume. algoseek rebuilds data daily for each security when it has a new corporate event or adds a new trade date otherwise. Please refer to the "Daily Updates" section to find more details about updates.

DATA ORGANIZATION AND FILE FORMAT

algoseek provides Equity adjustment data in plain-text CSV files. Data files have fixed headers and rows of corresponding data (see Table 1). The data is SecId-based aggregated, for example, all adjustments for the security with an ID 33449 (AAPL) are stored in a single CSV file. Also, there is a possibility to get the data separated by year.

Table 1: Sample Daily Cumulative Adjustment Data

SecId	33449	33449	33449
Ticker	AAPL	AAPL	AAPL
TradeDate	20140606	20140609	20140610
AdjustmentFactor		0.142857142857143	
CumulativeFactorPrice	0.032233144343822	0.225632010406754	0.225632010406754
CumulativeFactorVolume	0.0357142857142858	0.25	0.25
AdjustmentReason		BonusSame	
EventType		BON	

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

Table 2: Daily Cumulative Adjustment Factor Fields and Descriptions

Field	Type (Format)	Description
SecId	integer	Unique security identifier
Ticker	string	Ticker on Effective Date
TradeDate	string (YYYYMMDD)	Trade date or the date when the event becomes effective
AdjustmentFactor	decimal	The value of the Adjustment factor for the event. Available only for dates when the event happened
CumulativeFactorPrice	decimal	Cumulative factor for equity price, calculated with a backward methodology
CumulativeFactorVolume	decimal	Cumulative factor for equity trading volume, calculated with a backward methodology
AdjustmentReason	string	The reason for the Corporate Event (e.g. CashDiv=Cash Dividend). See section “Adjustment Reason” below for a list of adjustment reasons. Available only for dates when the event happened
EventType	string	Type of event (e.g. DIV=Dividend). See column “Adjustment Event Type” in Table 3 for a list of types. Available only for dates when the event happened

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 whether it affects Price and/or Volume.

Table 3: Adjustment Reasons

Adjustment 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
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: if SecId (Ticker) doesn't have any corporate events, the TradeDate field will show the date when security was listed in algoseek's records, all factors will be equal to 1 (one), and AdjustmentReason and EventType fields will have the value START (see Table 4).

Table 4: Sample Initial Row in Daily Cumulative Adjustment Data

SecId	4533372	4533372	4533372
Ticker	MNST	MNST	MNST
TradeDate	20150615	20150616	20150617
AdjustmentFactor	1		
CumulativeFactorPrice	1	1	1
CumulativeFactorVolume	1	1	1
AdjustmentReason	START		
EventType	START		

HOW TO APPLY DAILY CUMULATIVE ADJUSTMENT FACTORS

When backtesting the historical "as-is" prices and volumes, they need to be adjusted in order 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.

The table below shows AAPL cumulative backward adjustments from 05/06/2014 to 12/06/2014.

Table 5: AAPL Corporate Events in 2012-2014

SecId	Ticker	Trade Date	AdjustmentFactor	CumulativeFactorPrice	CumulativeFactorVolume	Adjustment Reason	Event Type
33449	AAPL	20140605		0.032233144343822	0.0357142857142858		
33449	AAPL	20140206		0.032233144343822	0.0357142857142858		
33449	AAPL	20140606		0.032233144343822	0.0357142857142858		
33449	AAPL	20140609	0.142857142857143	0.225632010406754	0.25	BonusSame	BON
33449	AAPL	20140610		0.225632010406754	0.25		
33449	AAPL	20140611		0.225632010406754	0.25		
33449	AAPL	20140612		0.225632010406754	0.25		

Steps below describe creating backward adjusted (starting from the latest date) time series:

- The Pricing data on a specific date should be multiplied by a corresponding cumulative factor on that date. For example, to adjust the prices on 20140605, you will need to use cumulative factor AF=0.032233144343822 (Table 5) from column "CumulativeFactorPrice".
- The Volume data on a specific date should be divided by a corresponding cumulative factor on that date. For example, to adjust the volume on 20140605 you will need to

use cumulative factor AF=0.0357142857142858 (Table 5) from column “CumulativeFactorVolume”.

Note: When we have more than one corporate event for the same SecId and TradeDate, in the “AdjustmentFactor” column for that date value will be a cumulative factor for all events on that date. The “AdjustmentReason” and the “EventType” columns will be joined by “and” adjustment reasons and event types for all events on that date.

DAILY UPDATES

The dataset contains backward cumulative adjustment factors. Whenever a new corporate event (e.g. dividend, split, etc) is published for a SecId, all data for this SecId will be rebuilt, otherwise, a new trade date will be added. For both cases, you need to re-download the data.

If you have access to the full universe of SecIDs, you can update the data using AWS CLI SYNC command. This setup will download only updated files from S3 bucket. To sync your local directory and S3 bucket, please make sure to point the SYNC command to your local copy of the dataset. For more details, please refer to algoseek’s AWS Access Guide. For example,

```
aws s3 sync s3://us-equity-cumulative-backward-adjustment-secid-all
your/local/folder --request-payer requester
```

If you have access to a subset of SecIds, you can check files with daily changes and only re-download data for securities from your subscription. For example, if you only subscribed for the following SecIds: 33449 (AAPL), 1914754 (TSLA), 38497 (IBM), and 33127 (AMZN) and would like to know if something has changed for these on Jan 21, 2021, you should download the file with daily changes using the following command:

```
aws s3 cp
s3://us-equity-cumulative-backward-adjustment-secid-all/daily-changes/20210121-c
orp-changes.csv 20210121_changes.csv --request-payer requester
```

and check if these SecIds are present in the file (see Table 6). The user then can download each individual data file with

```
aws s3 cp s3://us-equity-cumulative-backward-adjustment-secid-all/NN/NNNNN.csv
local/folder/NN/NNNNN.csv --request-payer requester
```

Where NNNNN: secid and NN: first two digits of secid.

Note: If the “Change” column in the file with daily changes contains “deleted” values, that SecIds should be deleted from the local copy.

Path to the file with daily changes has the following pattern:

```
s3://bucket_name/daily-changes/yyyymmdd-corp-changes.csv
```

where bucket_name can be one of

1. us-equity-cumulative-backward-adjustment-secid-all;
2. us-equity-cumulative-backward-adjustment-secid-yyyy;

yyyy - year.

Daily changes files are created by 2 am T+1 EST containing a list of SecIds that were updated.

Field “Change” in the “yyyymmdd-corp-changes.csv” files can be: “updated” - SecId was updated with a corporate event, “added” - new SecId was added, and “deleted” - SecId was deleted (see Table 6).

Table 6: Sample of Daily Changes File

SecId	Change
33449	updated
300669	updated
550037	updated
6726866	added
6729160	added
37111	deleted

There is a couple of ways to keep the data updated:

1. If you work with the data aggregated by SecId and would like to have the whole history for a specific security in one file, you can use the AWS CLI SYNC command on the `us-equity-cumulative-backward-adjustment-secid-all` bucket. This setup will download only files from the S3 bucket that are different from the local copy. To sync your local directory and S3 bucket, please make sure to point the SYNC command to your local copy of the dataset. In meantime, this approach may be expensive ($1.5 per month for the universe of 12 000 tickers) if you regularly update the full universe of securities. To overcome it, please check the approach below.

2. You can work with the data aggregated by SecId and by year. In this case, you can use AWS SYNC on `us-equity-cumulative-backward-adjustment-secid-year`

buckets that you need, where yyyy is the year. If you still need to keep the whole history for each security in a single file, you can merge them on your side locally. It will be cheaper than updating data using the `us-equity-cumulative-backward-adjustment-secid-all` bucket ($0.5 versus $1.5 per month for the universe of 12 000 tickers).

3. Also, algoseek provides a python script that you can use to keep data updated. Using this script, you can easily update data for a list of SecIds and merge all data for each SecId.

APPENDIX A. FREQUENTLY ASKED QUESTIONS

Why do I see a weird first row with AdjustmentReason = START and EventType = START in the data files?

Every file with the corporate events history for a SecId starts with the initial row that contains information on when the SecId was assigned to the security.