



**US STOCK &  
INDEXES DATABASES**  
FOR SAS, ASCII & R

**CRSP** | CENTER FOR RESEARCH  
IN SECURITY PRICES, LLC  
An Affiliate of the University of Chicago Booth School of Business

# CRSP US STOCK & INDEXES:SAS, ASCII & R FILES

## FLAT FILE TABLE LAYOUTS

Five sets of flat files are built from the CRSP Stock and Index databases. A number of our subscribers have long requested alternate formats of our databases in order to automate or streamline their processes and easily ingest CRSP data into them. These flat files are intended for these purposes.

- SIZ – 1925 US Stock and Indexes
- SAZ – 1925 US Stock
- SXZ – 1962 US Stock and Indexes
- S6Z – 1962 US Stock
- SFZ – 1925 US Indexes

STOCK FILES	FILE NAME	FILE EXTENSIONS
DELIST – DAILY RETURN INFORMATION	SFZ_DEL	SAS: *.SAS7BDAT ASCII: *.DAT R: *.RDS
DELIST – MONTHLY RETURN INFORMATION	SFZ_MDEL	
DISTRIBUTIONS	SFZ_DIS	
NAME HISTORY	SFZ_NAM	
NASDAQ HISTORY	SFZ_NDI	
SECURITY HEADER INFORMATION	SFZ_HDR	
SHARES HISTORY	SFZ_SHR	
TIME SERIES – DAILY PRIMARY	SFZ_DP_DLY	
TIME SERIES – DAILY SECONDARY	SFZ_DS_DLY	
TIME SERIES – MONTHLY	SFZ_MTH	
TIME SERIES – MONTHLY – AGGREGATED FROM DAILY DATA	SFZ_AGG_MTH	
TIME SERIES – QUARTERLY – AGGREGATED FROM DAILY DATA	SFZ_AGG_QTR	
TIME SERIES – ANNUAL – AGGREGATED FROM DAILY DATA	SFZ_AGG_ANN	

STOCK AND INDEX FILES *	FILE NAME	FILE EXTENSIONS
INDEX MEMBERSHIP	SFZ_MBR	SAS: *.SAS7BDAT
PORTFOLIO MEMBERSHIP – DAILY	SFZ_PORTD	ASCII: *.DAT
PORTFOLIO MEMBERSHIP – MONTHLY	SFZ_PORTM	R: *.RDS

INDEX FILES	FILE NAME	FILE EXTENSIONS
INDEX HEADER	SFZ_INDHDR	SAS: *.SAS7BDAT ASCII: *.DAT R: *.RDS
REBALANCE*	SFZ_RB	
TIME SERIES – DAILY INDEX	SFZ_DIND	
TIME SERIES – MONTHLY INDEX	SFZ_MIND	

\* Available in 1925 and 1962 US Stock & Indexes, and 1925 US Indexes, but are NOT available in 1925 and 1962 US Stock.

Index Header and Time Series data items are available in the stock-only database for a limited number of indexes. To receive complete index, a subscription that includes indexes is necessary.

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## OVERVIEW

Comparisons between the legacy CRSPAccess Stock and Index databases and the CRSP flat files will reveal differences, outlined here:

### DERIVED DATA

The flat files provide all of the underlying data that can be used to generate derived data items. Monthly, quarterly, and annual tables of many items aggregated from the daily time series are included. Examples of derived data that TSQuery and ts\_print can generate that are not found in the flat files include excess and cumulative returns, last non-missing, recent, previous period versions of time series data items.

### DOUBLE PRECISION

CRSPAccess stored most items, including commonly used Price (PRC), Ask or High Price (ASKHI), and Bid or Low Price (BIDLO), as 4-byte floating point numbers. The SAS and 'R' formats default to storing those items as 8-byte (double precision) floating point numbers. For the majority of historical values, this does not result in any difference. However, the conversion to double precision, makes more apparent a known issue of phantom precision related to decimal pricing. For example, IBM's price on 11/27/2015 of \$138.46 will, if displayed with five decimal places, show \$138.46001. For the post-2000 period, the flat files "round" these values by converting to a seven significant digits (the limit of a 4-byte floating point number) in scientific notation (e.g. 1.384600E+02) version of the number and storing it in a 8-byte floating point number. For the ASCII flat files, these are then output with 14 significant digits (the limit of the 8-byte floating point number) in scientific notation (e.g. 1.3846000000000E+02).

CRSP is re-engineering our back office to correct any remaining phantom precision and increase the real precision throughout the Stock and Indexes flat files.

### INDEX FILES CHANGES

- The investable CRSP Total Market Index is included in the index files associated with the stock and index database. Daily price-only and total returns, levels, and counts are included.
- Starting with the 202009 database
  - The breakpoint data that is projected based on partial year data is now removed. For example, in the 202009 cut of data, the capitalization breakpoints for 2021 are no longer projected based on 9/30/2020 data, and will not be included until after the 12/31/2020 data is available
  - The daily and monthly index files will no longer contain rows with missing data prior to the start of an index. The start date of the index is stored in Index Begin Date in the Index Header File.

### VOLUMES DIFFERENCES

The introduction of double precision allows for the volumes to be stored in same unit (1 share) as daily volumes rather than as a unit of 100 shares. Monthly volumes in the flat files are now stored as one hundred times the value in legacy CRSPAccess. The change also allowed for four missing daily volumes for Citigroup in 2009 and 2010 to be replaced with actual values that were in excess of two billion, and for those monthly volumes to be recalculated.

KYPERMNO	CALDT	NEW VOL	MCALDT	NEW MVOL
70519	08/05/2009	2,674,463,281	08/31/2009	22,798,732,177
70519	12/17/2009	3,772,638,437	12/31/2009	15,021,795,593
70519	12/18/2009	2,813,697,156		
70519	12/07/2010	3,267,829,406	08/31/2009	13,427,190,606

## DATA CATEGORY

Each data item in each table is associated with a Data Category. The Data Category identifies the type of item and the associated formats for use with SAS, ASCII, R, and SQL.

DATA CATEGORY	DESCRIPTION	SAS TYPE	SAS FORMAT	ASCII	SQL TYPE	R TYPE
DESCRIPTION	WIDE CHARACTER FIELD CONTAINING TEXT INFORMATION	CHARACTER	\$W.		VARCHAR(W)	TEXT
ID	FIELD CONTAINING AN ALPHANUMERIC IDENTIFIER	CHARACTER	\$W.		VARCHAR(W)	TEXT
FLAG	ALPHANUMERIC FIELD CONTAINING A CODE VALUE	CHARACTER	\$W.		VARCHAR(W)	TEXT
NAME	ALPHANUMERIC FIELD FOR NAMES	CHARACTER	\$W.		VARCHAR(W)	TEXT
DATE	DATE FIELD	NUMERIC	YYYYMMDD10.	YYYY-MM-DD	DATE	DATE
START DATE	START OF A DATE RANGE - PAIRED WITH AN END DATE	NUMERIC	YYYYMMDD10.	YYYY-MM-DD	DATE	DATE
END DATE	END OF A DATE RANGE - PAIRED WITH A START DATE	NUMERIC	YYYYMMDD10.	YYYY-MM-DD	DATE	DATE
TIMESTAMP	DATE AND TIME, INCLUDING SECONDS	NUMERIC	DATETIME	YYYY-MM-DD HH:MM:SS	DATETIME	DATETIME
AMOUNT	FIXED POINT NUMBER	NUMERIC	W.N	WW.NNNNN	DECIMAL (P,N)	FLOAT
RATIO	CALCULATED FLOATING POINT NUMBER	NUMERIC	PERCENTW.N	1.234567890123E+12	FLOAT	FLOAT
VALUE	FIELD WITH A WIDE RANGE OF VALUES	NUMERIC	E20.	1.234567890123E+12	FLOAT (OR DECIMAL)	FLOAT
CODE	INTEGER FIELD THAT REPRESENTS ONE OR MORE CHARACTERISTICS	NUMERIC	W.	NNNN	INT	INT
KEY	INTEGER FIELD THAT IS USED AS A KEY	NUMERIC	W.	NNNNNNN	INT	INT
NUMBER	INTEGER VALUE < 2,000,000,000	NUMERIC	W.	NNNNNNNNN	INT	INT
QUANTITY	INTEGER FIELD WITH SOME VALUES IN EXCESS OF 2,000,000,000	NUMERIC	COMMAW.	NNNNNNNNNNN	BIGINT	FLOAT

### MISSING VALUES

In CRSPAccess, missing values were indicated by the use of defined non-null values (e.g -99 for returns and 0 for prices). In the flat files, missing values are now represented by null values.

Missing values are displayed as follows:

- ASCII missing values, regardless of type, is an empty string.
- SAS missing values are an empty string for character fields and SAS missing (displayed as a.) for numeric fields.
- R missing values are an empty string for character fields, and 'R' missing (displayed as N/A) for float, int, date and datetime.

## STOCK DATA FILE LAYOUTS

Note: Sort column references items in each table that, combined in the prescribed order, will identify unique records. These fields are usually a combination of one key and one date field, but sometimes includes other fields.

### DELIST – DAILY DELISTING RETURN INFORMATION – SFZ\_DEL

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	DLSTDT	DELIST DATE	DATE
	DLSTCD	DELIST CODE	CODE
	NWPERM	NEW PERMNO	KEY
	NWCOMP	NEW PERMCO	KEY
	NEXTDT	DATE OF NEXT AVAILABLE INFORMATION	DATE
	DLPRC	DELISTING PRICE	VALUE
	DLPDT	DELISTING PAYMENT DATE	DATE
	DLAMT	DELISTING AMOUNT	VALUE
	DLRET	DELISTING RETURN	RATIO
	DLRETX	DELISTING RETURN WITHOUT DIVIDENDS	RATIO

### DELIST – MONTHLY DELISTING RETURN INFORMATION – SFZ\_MDEL

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	MDLSTDT	DELIST DATE	DATE
	MDLSTCD	DELIST CODE	CODE
	MNWPERM	NEW PERMNO	KEY
	MNWCOMP	NEW PERMCO	KEY
	MNEXTDT	DATE OF NEXT AVAILABLE INFORMATION	DATE
	MDLPRC	DELISTING PRICE	VALUE
	MDLPDT	DELISTING PAYMENT DATE	DATE
	MDLAMT	DELISTING AMOUNT	VALUE
	MDLRET	DELISTING RETURN	RATIO
	MDLRETX	DELISTING RETURN WITHOUT DIVIDENDS	RATIO

### DISTRIBUTIONS – SFZ\_DIS

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
3	DISTCD	DISTRIBUTION CODE	CODE
	DIVAMT	DIVIDEND AMOUNT	VALUE
	FACPR	FACTOR TO ADJUST PRICE	RATIO
	FACSHR	FACTOR TO ADJUST SHARES	RATIO
	DCLRDT	DECLARATION DATE	DATE
2	EXDT	EX-DISTRIBUTION DATE	DATE
	RCRDDT	RECORD DATE	DATE
	PAYDT	PAYMENT DATE	DATE
4	ACPERM	ACQUIRING PERMNO	KEY
	ACCOMP	ACQUIRING PERMCO	KEY

### NAME HISTORY – SFZ\_NAM

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	NAMEDT	NAME HISTORY BEGIN DATE	START DATE
	NAMEENDDT	NAME HISTORY END DATE	END DATE
	NCUSIP	CUSIP	ID
	NCUSIP9	CUSIP9	ID
	TICKER	TICKER	ID
	COMNAM	COMPANY NAME	NAME
	SHRCLS	SHARE CLASS	FLAG
	SHRCD	SHARE CODE	CODE
	EXCHCD	EXCHANGE CODE	CODE
	SICCD	SIC CODE	CODE
	TSYMBOL	TRADING SYMBOL	ID
	SNAICS	NAICS CODE	ID
	PRIMEXCH	PRIMARY EXCHANGE	FLAG
	TRDSTAT	TRADING STATUS	FLAG
	SECSTAT	SECURITY STATUS	FLAG

### NASDAQ HISTORY – SFZ\_NDI

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	TRTSDT	NASDAQ TRAITS BEGIN DATE	START DATE
	TRTSEDDT	NASDAQ TRAITS END DATE	END DATE
	NSDINX	NASDAQ INDEX CODE	CODE
	NMSIND	NASDAQ MARKET INDICATOR	CODE
	MMCNT	NASDAQ MARKET MAKERS	NUMBER
	TRTSCD	NASDAQ STATUS CODE	CODE

### SECURITY HEADER INFORMATION – SFZ\_HDR

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
	CUSIP	CUSIP	ID
	CUSIP9	CUSIP9	ID
	HTICK	TICKER SYMBOL	ID
	PERMCO	PERMCO	KEY
	COMPNO	NASDAQ COMPANY NUMBER	KEY
	ISSUNO	NASDAQ ISSUE IDENTIFIER	KEY
	HEXCD	EXCHANGE CODE	CODE
	HSICCD	SIC CODE	CODE
	BEGDT	STOCK DATA BEGIN DATE	START DATE
	ENDDT	STOCK DATA END DATE	END DATE
	HDLSTCD	DELIST CODE	CODE
	HCOMNAM	COMPANY NAME	NAME
	HTSYMBOL	TRADING SYMBOL	ID

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
	HSNAICS	NAICS CODE	ID
	HSHRCD	SHARE CODE	CODE
	HPRIMEXCH	PRIMARY EXCHANGE	FLAG
	HTRDSTAT	TRADING STATUS	FLAG
	HSECSTAT	SECURITY STATUS	FLAG

### SHARES HISTORY – SFZ\_SHR

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	SHRSDT	SHARES OUT OBSERVATION DATE	START DATE
	SHRSEDDT	SHARES OUT OBSERVATION END DATE	END DATE
	SHROUT	SHARES OUTSTANDING	NUMBER
	SHRFLG	SHARES OUT OBSERVATION FLAG	CODE

### TIME SERIES – DAILY PRIMARY – SFZ\_DP\_DLY

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	CALDT	DATE	DATE
	PRC	PRICE OR BID/ASK AVERAGE	VALUE
	RET	TOTAL RETURN	RATIO
	RETX	RETURN WITHOUT DIVIDENDS	RATIO
	TCAP	CAPITALIZATION, END OF PERIOD	VALUE
	VOL	VOLUME	QUANTITY

### TIME SERIES – DAILY SECONDARY – SFZ\_DS\_DLY

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	CALDT	DATE	DATE
	BIDLO	BID OR LOW PRICE	VALUE
	ASKHI	ASK OR HIGH PRICE	VALUE
	BID	BID	VALUE
	ASK	ASK	VALUE
	NUMTRD	NASDAQ NUMBER OF TRADES	NUMBER
	OPENPRC	OPEN PRICE	VALUE

### TIME SERIES – MONTHLY – SFZ\_MTH

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	MCALDT	DATE	DATE
	MPRC	PRICE OR BID/ASK AVERAGE	VALUE
	MRET	TOTAL RETURN	RATIO
	MRETX	RETURN WITHOUT DIVIDENDS	RATIO
	MTCAP	CAPITALIZATION, END OF PERIOD	VALUE
	MVOL	VOLUME	QUANTITY

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
	MBIDLO	BID OR LOW PRICE	VALUE
	MASKHI	ASK OR HIGH PRICE	VALUE
	MBID	BID	VALUE
	MASK	ASK	VALUE
	MSPREAD	CLOSING BID/ASK SPREAD	VALUE
	MALTPRC	ALTERNATE PRICE	VALUE
	MALTPRCDT	ALTERNATE PRICE DATE	DATE

### TIME SERIES – MONTHLY – AGGREGATED FROM DAILY DATA – SFZ\_AGG\_MTH

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	YYYYMM	INTEGER YEAR AND MONTH	KEY
	MCALDT	DATE	DATE
	MTHPRC	MONTHLY PRICE OR BID/ASK AVERAGE	VALUE
	MTHPRCFLG	MONTHLY PRICE FLAG	FLAG
	MTHPRCDT	MONTHLY PRICE DATE	DATE
	MTHDTFLG	MONTHLY DATE FLAG	FLAG
	MTHDEFLG	MONTHLY DELISTING FLAG	FLAG
	MTHCAP	MONTHLY MARKET CAPITALIZATION	VALUE
	MTHPREVPRC	MONTHLY PREVIOUS PRICE	VALUE
	MTHPREVPRCFLG	MONTHLY PREVIOUS PRICE FLAG	FLAG
	MTHPREVDT	MONTHLY PREVIOUS DATE	DATE
	MTHPREVDTF LG	MONTHLY PREVIOUS DATE FLAG	FLAG
	MTHPREVCAP	MONTHLY PREVIOUS CAPITALIZATION	VALUE
	MTHRET	MONTHLY TOTAL RETURN	RATIO
	MTHRETX	MONTHLY RETURN WITHOUT DIVIDENDS	RATIO
	MTHRETF LG	MONTHLY RETURN FLAG	FLAG
	MTHDISCNT	MONTHLY DISTRIBUTION COUNT	NUMBER
	MTHVOL	MONTHLY VOLUME TRADED	QUANTITY
	MTHVOLFLG	MONTHLY VOLUME FLAG	FLAG
	MTHPRCVOL	MONTHLY PRICE VOLUME	VALUE
	MTHFACSHRFLG	MONTHLY SHARE FACTOR FLAG	FLAG
	MTHPRCVOLMISSCNT	MONTHLY COUNT OF MISSING PRICES OR VOLUMES	NUMBER
	NCUSIP	CUSIP ASSOCIATED WITH THE PERIOD	ID
	TICKER	TICKER ASSOCIATED WITH THE PERIOD	ID
	COMNAM	COMPANY NAME ASSOCIATED WITH THE PERIOD	NAME
	SHRCD	SHARE CODE ASSOCIATED WITH THE PERIOD	CODE
	NMSIND	NASDAQ MARKET INDICATOR ASSOCIATED WITH THE PERIOD	CODE
	PRIMEXCH	PRIMARY EXCHANGE ASSOCIATED WITH THE PERIOD	FLAG
	TRDSTAT	TRADING STATUS ASSOCIATED WITH THE PERIOD	FLAG
	SECSTAT	SECURITY STATUS ASSOCIATED WITH THE PERIOD	FLAG

**TIME SERIES – QUARTERLY – AGGREGATED FROM DAILY DATA – SFZ\_AGG\_QTR**

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	YYYYQ	INTEGER YEAR AND CALENDAR QUARTER IN THE YEAR	KEY
	QCALDT	DATE	DATE
	QTRPRC	QUARTERLY PRICE OR BID/ASK AVERAGE	VALUE
	QTRPRCFLG	QUARTERLY PRICE FLAG	FLAG
	QTRPRCDT	QUARTERLY PRICE DATE	DATE
	QTRDTFLG	QUARTERLY DATE FLAG	FLAG
	QTRDELFLG	QUARTERLY DELISTING FLAG	FLAG
	QTRCAP	QUARTERLY MARKET CAPITALIZATION	VALUE
	QTRPREVPRC	QUARTERLY PREVIOUS PRICE	VALUE
	QTRPREVPRCFLG	QUARTERLY PREVIOUS PRICE FLAG	FLAG
	QTRPREVDT	QUARTERLY PREVIOUS DATE	DATE
	QTRPREVDTFLG	QUARTERLY PREVIOUS DATE FLAG	FLAG
	QTRPREVCAP	QUARTERLY PREVIOUS CAPITALIZATION	VALUE
	QTRRET	QUARTERLY TOTAL RETURN	RATIO
	QTRRETFLG	QUARTERLY RETURN WITHOUT DIVIDENDS	RATIO
	QTRRETFLG	QUARTERLY RETURN FLAG	FLAG
	QTRDISCNT	QUARTERLY DISTRIBUTION COUNT	NUMBER
	QTRVOL	QUARTERLY VOLUME TRADED	QUANTITY
	QTRVOLFLG	QUARTERLY VOLUME FLAG	FLAG
	QTRPRCVOL	QUARTERLY PRICE VOLUME	VALUE
	QTRFACSHRFLG	QUARTERLY SHARE FACTOR FLAG	FLAG
	QTRPRCVOLMISSCNT	QUARTERLY COUNT OF MISSING PRICES OR VOLUMES	NUMBER
	NCUSIP	CUSIP ASSOCIATED WITH THE PERIOD	ID
	TICKER	TICKER ASSOCIATED WITH THE PERIOD	ID
	COMNAM	COMPANY NAME ASSOCIATED WITH THE PERIOD	NAME
	SHRCD	SHARE CODE ASSOCIATED WITH THE PERIOD	CODE
	NMSIND	NASDAQ MARKET INDICATOR ASSOCIATED WITH THE PERIOD	CODE
	PRIMEXCH	PRIMARY EXCHANGE ASSOCIATED WITH THE PERIOD	FLAG
	TRDSTAT	TRADING STATUS ASSOCIATED WITH THE PERIOD	FLAG
	SECSTAT	SECURITY STATUS ASSOCIATED WITH THE PERIOD	FLAG

**TIME SERIES – ANNUAL – AGGREGATED FROM DAILY DATA – SFZ\_AGG\_ANN**

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	YYYY	INTEGER YEAR	KEY
	ACALDT	DATE	DATE
	ANNPRC	ANNUAL PRICE OR BID/ASK AVERAGE	VALUE
	ANNPRCFLG	ANNUAL PRICE FLAG	FLAG
	ANNPRCDT	ANNUAL PRICE DATE	DATE
	ANNDTFLG	ANNUAL DATE FLAG	FLAG
	ANNDELFLG	ANNUAL DELISTING FLAG	FLAG

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
	ANNCAP	ANNUAL MARKET CAPITALIZATION	VALUE
	ANNPREVPRC	ANNUAL PREVIOUS PRICE	VALUE
	ANNPREVPRCFLG	ANNUAL PREVIOUS PRICE FLAG	FLAG
	ANNPREVDT	ANNUAL PREVIOUS DATE	DATE
	ANNPREVDTFLG	ANNUAL PREVIOUS DATE FLAG	FLAG
	ANNPREVCAP	ANNUAL PREVIOUS CAPITALIZATION	VALUE
	ANNRET	ANNUAL TOTAL RETURN	RATIO
	ANNRETFLG	ANNUAL RETURN WITHOUT DIVIDENDS	RATIO
	ANNRETFLG	ANNUAL RETURN FLAG	FLAG
	ANNDISCNT	ANNUAL DISTRIBUTION COUNT	NUMBER
	ANNVOL	ANNUAL VOLUME TRADED	QUANTITY
	ANNVOLFLG	ANNUAL VOLUME FLAG	FLAG
	ANNPRCVOL	ANNUAL PRICE VOLUME	VALUE
	ANNFACSHRFLG	ANNUAL SHARE FACTOR FLAG	FLAG
	ANNPRCVOLMISSCNT	ANNUAL COUNT OF MISSING PRICES OR VOLUMES	NUMBER
	NCUSIP	CUSIP ASSOCIATED WITH THE PERIOD	ID
	TICKER	TICKER ASSOCIATED WITH THE PERIOD	ID
	COMNAM	COMPANY NAME ASSOCIATED WITH THE PERIOD	NAME
	SHRCD	SHARE CODE ASSOCIATED WITH THE PERIOD	CODE
	NMSIND	NASDAQ MARKET INDICATOR ASSOCIATED WITH THE PERIOD	CODE
	PRIMEXCH	PRIMARY EXCHANGE ASSOCIATED WITH THE PERIOD	FLAG
	TRDSTAT	TRADING STATUS ASSOCIATED WITH THE PERIOD	FLAG
	SECSTAT	SECURITY STATUS ASSOCIATED WITH THE PERIOD	FLAG

**STOCK AND INDEX DATA FILE LAYOUTS**

Available in 1925 and 1962 US Stock & Indexes, but are NOT available in 1925 and 1962 US Stock.

**INDEX MEMBERSHIP – SFZ\_MBR**

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	KEYSET	INDEX FAMILY	KEY
3	MBRDT	MEMBER BEGIN DATE	START DATE
	MBREDDT	MEMBER END DATE	END DATE
	MBRFLAG	MEMBER FLAG	CODE

**PORTFOLIO MEMBERSHIP – DAILY – SFZ\_PORTD**

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	KEYSET	INDEX FAMILY†	KEY
3	ANNUAL	YEAR	NUMBER
	PPORTNUM	PORTFOLIO DECILE NUMBER	CODE
	PINDNO	INDEX INDNO FOR DAILY FAMILY	KEY
	PSTAT	PORTFOLIO STATISTIC FOR DAILY FAMILY	VALUE
	PPFLG	MEMBER FLAG FOR DAILY FAMILY	CODE



## PORTFOLIO MEMBERSHIP – MONTHLY – SFZ\_PORTM

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYPERMNO	PERMNO	KEY
2	KEYSET	INDEX FAMILY †	KEY
3	ANNUAL	YEAR OR YYYYMM FOR CAP-BASED	NUMBER
	MPPORTNUM	PORTFOLIO DECILE NUMBER	CODE
	MPINDNO	INDEX INDNO FOR MONTHLY FAMILY	KEY
	MPSTAT	PORTFOLIO STATISTIC FOR MONTHLY FAMILY	VALUE
	MPPFLG	MEMBER FLAG FOR MONTHLY FAMILY	CODE

## INDEX DATA FILE LAYOUTS

### INDEX HEADER – SFZ\_INDHDR

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYINDNO	INDNO	KEY
	INDNAME	INDEX NAME	NAME
	INDBEGDT	BEGINNING DATE OF INDEX	START DATE
	INDENDDT	END DATE OF INDEX	END DATE
	INDFAM	INDEX FAMILY	KEY
	PORTNUM	PORTFOLIO NUMBER	CODE
	BASELVL	INDEX BASE LEVEL	VALUE
	BASEDT	INDEX BASE DATE	DATE
	AVAILABILITY	INDEX ITEM AVAILABILITY	NAME
	CALCRULE	INDEX RULES	CODE
	LISTRULE	INDEX LISTING EXCEPTION RULES	CODE
	METHOD	INDEX METHODOLOGY	CODE
	REBALRULE	INDEX REBALANCE RULE	CODE
	PUNIVERSE	UNIVERSE SUBSET	CODE
	UNIVERSE	UNIVERSE USED	CODE

### REBALANCE – SFZ\_RB

Available in 1925 and 1962 US Stock & Indexes, and 1925 US Indexes, but are NOT available in 1925 and 1962 US Stock.

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYINDNO	INDNO	KEY
2	RBBEGDT	INDEX REBALANCING BEGIN DATE	START DATE
	RBENDDT	INDEX REBALANCING END DATE	END DATE
	RUSDCNT	INDEX REBALANCING COUNT	NUMBER
	MINID	PERMNO ASSOCIATED WITH MINIMUM STATISTIC	KEY
	MAXID	PERMNO ASSOCIATED WITH THE MAXIMUM STATISTIC	KEY
	MINSTAT	MINIMUM STATISTIC	VALUE
	MAXSTAT	MAXIMUM STATISTIC	VALUE

## DAILY INDEX TIME SERIES – SFZ\_DIND

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYINDNO	INDNO	KEY
2	CALDT	DATE	DATE
	TRET	TOTAL RETURN ON INDEX	RATIO
	TIND	TOTAL RETURN INDEX LEVEL	VALUE
	ARET	RETURN WITHOUT DIVIDENDS ON INDEX	RATIO
	AIND	RETURN WITHOUT DIVIDENDS INDEX LEVEL	VALUE
	IRET	INCOME RETURN ON INDEX	RATIO
	IIND	INCOME RETURN INDEX LEVEL	VALUE
	USDCNT	USED COUNT	NUMBER
	USDVAL	USED VALUE	VALUE
	TOTCNT	TOTAL COUNT	NUMBER
	TOTVAL	TOTAL VALUE	VALUE

## MONTHLY INDEX TIME SERIES – SFZ\_MIND

SORT	COLUMN NAME	DESCRIPTION	DATA CATEGORY
1	KYINDNO	INDNO	KEY
2	MCALDT	DATE	DATE
	MTRET	TOTAL RETURN ON INDEX	RATIO
	MTIND	TOTAL RETURN INDEX LEVEL	VALUE
	MARET	RETURN WITHOUT DIVIDENDS ON INDEX	RATIO
	MAIND	RETURN WITHOUT DIVIDENDS INDEX LEVEL	VALUE
	MIRET	INCOME RETURN ON INDEX	RATIO
	MIIND	INCOME RETURN INDEX LEVEL	VALUE
	MUSDCNT	USED COUNT	NUMBER
	MUSDVAL	USED VALUE	VALUE
	MTOTCNT	TOTAL COUNT	NUMBER
	MTOTVAL	TOTAL VALUE	VALUE

# FLAGS AND DATA CODING SCHEMES

## FLAGS

The CRSP Stock files contain several flags to provide more information about an observation. For most uses these distinctions are not important and the flags can be ignored, and that will include the most complete data. However, the flags could also be used to very easily exclude unusual cases in order to simplify the data by pro-actively removing potential outliers. With a large number of observations, either approach is unlikely to materially impact the results. However, if looking at a small subset of securities or observations, these flags, particularly the return flag, can identify observations that might require more investigation before including them or might point to causes if anomalies show up in the results.

### PRICE AND PREVIOUS PRICE FLAG

Price and Previous Price Flags describe the price used in the period. Closing Trade Prices account for about 81% of price and previous price values in the data set, and Bid/Ask Averages make up about 18%.

The arithmetic average of the Closing Bid and Closing Ask  $\left(\frac{BID + ASK}{2}\right)$  is the value used by CRSP to calculate security returns and capitalization when a closing trading price is unavailable. Closing trading prices are unavailable for securities across all exchanges and throughout the entire history on days when there is no trading. While for most research this flag can be ignored, the subtle differences among the characteristics and behavior of closing trade prices and bid-ask averages can be important. The PRCFLG and PREVPRCFLG are provided to allow that granularity if desired. While less critical in a monthly return than in a single day return, a return that has a mix of the two represents not just the change in value of the security, but also the change in the valuation method used.

PRCFLG PREVPRCFLG	DESCRIPTION	DEFINITION
TR	TRADE PRICE	CLOSING TRADE PRICE
BA	BID-ASK AVERAGE	THE AVERAGE OF THE CLOSING BID AND THE CLOSING ASK IF NO TRADE PRICE IS AVAILABLE
MP	MISSING PRICE	IF MISSING, THE PRICE IS SET TO NULL
MI	MISSING	PREVPRCFLG ONLY: PREVIOUS PERIOD IS BEFORE BEGDT

### DATE AND PREVIOUS DATE FLAG

Depending on the frequency, between 90% and 98% of the flags indicate period-end (PE) dates. The vast majority of the remaining previous data flags indicate the first day of trading for a new security (NS) and the remaining date flags indicate the end date (ED) we have for the security.

The vast majority of returns, and the most comparable across securities, is a return calculated from the previous period-end price to a current period-end price. However, CRSP provides flags to identify uncommon circumstances so that they can easily be excluded, if desired, or used to select the uncommon data to determine if they are applicable before including.

For example:

- PREVDTFLG = NS will select the all-first period of trading records, and could be used to see how newly listed securities perform.
- PREVDTFLG <> NS will exclude the first period of trading for any security and could be used to simulate if a portfolio selection process happened once a period.
- DTFLG = ED will select all last month of trading records and could be used to see which securities have delisted in your sample.
- PREVDTFLG = PE and DTFLG = PE could be used to exclude all uncommon cases and restrict the data to only the most comparable data.

DTFLG PREVDTFLG	DESCRIPTION	DEFINITION
PE	PERIOD-END	THE DATE USED IS THE LAST TRADING DAY OF THE PERIOD
LA	LAST AVAILABLE	THE LAST AVAILABLE NON-MISSING VALUE FOR THE PERIOD. SEE PRICE DATE FOR THE DATE OF THE VALUE USED
NS	NEW SECURITY	THE PRICE IS FROM THE BEGINNING DATE OF THE SECURITY
ED	END DATE	DTFLG ONLY: THE DATE IS THE END DATE OF THE SECURITY (NEVER PREVDTFLG)
MI	MISSING/NOT TRACKED	THERE ARE NO PRICES FOR THE ENTIRE PERIOD, THE PRICE AND RETURN ARE SET TO MISSING
NT	NOT TRACKED	PREVDTFLG ONLY: PREVIOUS PERIOD IS BEFORE BEGDT

### DELISTING FLAG

Delisting Flag indicates where the returns from Delists (see above) are included in the compounded period return. Therefore there is at most one record per security where the Delisting Flag is not set to N (no delist). Therefore DELFLG = N for over 99% of monthly records, 98% quarterly, and 93% for annual. The delisting flag (DELFLG) can be used to filter data for various delisting events. For example:

- DELFLG = N will select all records where the security did not delist during the period.
- Looking at the characteristics of the final period's return by the DELFLG could determine the applicability and potential bias of including or excluding period returns that include delists.
- DELFLG = A or DELFLG = P could be used to identify the rows and recalculate the period aggregate return to exclude the delisting return (TS\_print default) with the formula:

$$ReturnWithoutDelistingReturn = \left(\frac{1 + RETMTH}{1 + DLRET}\right) - 1$$

DELFLG	DESCRIPTION	DEFINITION
N	NO (NOT APPLICABLE)	THIS SECURITY DID NOT DELIST DURING THIS PERIOD. THE COMPOUNDED PERIOD RETURN DOES NOT INCLUDE THE DELISTING RETURN
A	AMOUNT	THE COMPOUNDED PERIOD RETURN INCLUDES A DELISTING RETURN CALCULATED FROM A DELISTING AMOUNT (SEE DLPDT AND DLAMT IN DELISTS)
P	PRICE	THE COMPOUNDED PERIOD RETURN INCLUDES A DELISTING RETURN CALCULATED FROM A NEXT AVAILABLE PRICE (SEE DLPRC AND NEXTDT IN DELISTS)
M	MISSING	THE COMPOUNDED PERIOD RETURN DOES NOT INCLUDE THE DELISTING RETURN, BECAUSE IT IS MISSING. SEE DELISTS FOR MORE INFORMATION
G	GAP	THE COMPOUNDED PERIOD RETURN DOES NOT INCLUDE THE DELISTING RETURN, BECAUSE THE DATE ASSOCIATED WITH THE DELISTING RETURN IS GREATER THAN TEN TRADING DATES FROM THE DELISTING DATE. SEE DELISTS FOR MORE INFORMATION

### RETURN FLAG

Return Flags describe the completeness of the return, and some of its characteristics. The vast majority of records have daily returns for the entire period with no missing returns and are flagged as Complete Returns (CR). However, there is a wide variation among the frequencies, with approximately 95% of monthly records, 90% quarterly, and 80% annual.

The intent of the Return Flag (RETFLG) is to provide the ability to easily include or exclude returns that have common characteristics. For example, if calculating an excess period return, excluding returns with partial period data to avoid comparing a one-period market return with a security return that might be much shorter and therefore not a valid excess return. There is overlap between the RETFLG and the other flags, but there are important distinctions and they can be used alone or in conjunction with the other flags to include or exclude even more granular cases. For example:

- RETFLG = NS is a subset of PREVDTFLG = NS. PREVDTFLG = NS will identify all securities for their first period of trading, but RETFLG = NS will identify only those ones where once listed the security has no missing prices in the period.



- Similarly, RETFLG = DE is a subset of DTFLG=ED. DTFLG=ED will identify all securities in their last period of trading, but RETFLG = DE will identify only those where the security has no missing prices during the period or on the previous period end.

RETFLG	DESCRIPTION	DEFINITION
CR	COMPOUNDED RETURN	DAILY RETURNS ARE COMPOUNDED INTO A PERIOD RETURN FROM LAST TRADING DAY OF THE PREVIOUS PERIOD TO THE LAST TRADING DAY OF THIS PERIOD, WITH NO MISSING RETURNS
DE	COMPOUNDED RETURN - DELISTS	DAILY RETURNS ARE COMPOUNDED INTO A PERIOD RETURN FROM LAST TRADING DAY OF THE PREVIOUS PERIOD TO THE DELISTING DATE WITH NO MISSING RETURNS AND, WHEN APPROPRIATE, THE DELISTING RETURN IS ALSO COMPOUNDED INTO THIS RETURN. SEE DELIST FLAG
NS	NEW SECURITY	DAILY RETURNS ARE COMPOUNDED INTO A PERIOD RETURN FROM BEGINNING DATE OF THE SECURITY UNTIL THE LAST TRADING DAY OF THIS PERIOD WITH NO MISSING RETURNS
MP	COMPOUNDED RETURN - MISSING PRICE(S)	DAILY RETURNS ARE COMPOUNDED INTO A PERIOD RETURN FROM LAST TRADING DAY OF THE PREVIOUS PERIOD TO THE LAST TRADING DAY OF THIS MONTH, WITH ONE OR MORE MISSING RETURNS
GP	GAP BETWEEN PRICES IS TOO LARGE	THE PERIOD RETURN IS SET TO MISSING, BECAUSE THE PRICE ON THE PRCDT IS AFTER A GAP IN THE DAILY RETURNS DATA OF GREATER THAN 10 TRADING DAYS FOR THE SECURITY
NT	NOT TRACKED	THE PERIOD RETURN IS SET TO MISSING, BECAUSE THERE IS NO RETURN DATA FOR THE ENTIRE PERIOD IN THE DAILY FILE
IP	COMPOUNDED RETURN - INCOMPLETE PERIOD	THE PERIOD RETURN IS COMPOUNDED FROM THE DAILY RETURN, BUT IT IS AN UNUSUAL CIRCUMSTANCE THAT DOESN'T MATCH ANY OF THE ABOVE CONDITIONS

## VOLUME FLAG

Volume Flags describe the completeness of the aggregated volume and price volume. The completeness of volumes is similar to the completeness of returns, but due primarily to data source limitations for NASDAQ securities between 1972 and 1982, completeness is lower. Approximately, 90% of the monthly records have complete volumes, 85% of quarterly, and 70% of annual. The intent of the Volume Flag (VOLFLG) is to provide the ability to easily include or exclude volumes or price volumes that have common characteristics. For example, if calculating a median annual volume across all securities, excluding annual volumes with only partial annual data would avoid skewing the distribution with incomplete data. The volume flag can also be used to determine the completeness of the data. For example:

- After subsetting to securities and periods of interest, calculating a COUNT of VOLFLG by PERIOD would provide information about the percent with complete data to determine the appropriateness of certain analysis.
- VOLFLG = MV will select trading records where there are one or more missing volumes. These records could then be further filtered to determine which records are acceptable for the intended use. For example, the MISSPRCVOLCNT could be used to divide the subset into those with less than 5 missing values during the period.

VOLFLG	DESCRIPTION	DEFINITION
CV	COMPLETE VOLUME	COMPLETE DATA FOR THE ENTIRE PERIOD
MI	MISSING	DATA IS MISSING FOR THE ENTIRE PERIOD
MV	MISSING VOLUME	ONE OR MORE VOLUMES ARE MISSING DURING THE PERIOD
DE	DELISTING	DELISTED, BUT DATA IS COMPLETE IN THE PERIOD UNTIL THE DELISTING DATE
NS	NEW SECURITY	NEW SECURITY, BUT DATA IS COMPLETE IN THE PERIOD AFTER START DATE
GP	GAP DURING PERIOD	AGGREGATE VALUE IS COMPUTED FROM THE ENTIRE PERIOD, BUT THE PRICE ON THE PRCDT IS AFTER A GAP OF 10 OR MORE CONSECUTIVE TRADING DAYS OF MISSING DATA
IP	INCOMPLETE PERIOD	AGGREGATE VALUE IS COMPUTED, BUT IT IS AN UNUSUAL CIRCUMSTANCE THAT DOESN'T MATCH ANY OF THE ABOVE CONDITIONS

## SHARE FACTOR FLAG

Factor to Adjust Shares Flags (FACSHRFLG) indicate where there were any distributions with a factor to adjust shares during the period. The vast majority of periods have no share factors at all (FACSHRFLG=N); over 99% of the monthly records, over 97% of the quarterly records, and about 90% of the annual records. By far, the most common (about 90%) distribution types with a factor to adjust shares are stock splits and stock dividends (DISTCD between 5500 and 5599 – see table below). The factor to adjust shares (FACSHR) and distribution code (DISTCD) fields are in the Distribution File (SFZ\_DIS). The purpose of this flag is to identify periods where the previous period price and the period end price are not directly comparable and where the total volumes might need special consideration. For example:

- FACSHRFLG = N when combined with VOLFLG = CV (no missing volumes) will select trading records that are consistent and complete over the entire period to eliminate periods that might require special consideration.
- After subsetting to securities and period of interest, FACSHRFLG = O or FACSHRFLG = B would quickly identify the trading records with unusual distributions, and, if desired, the underlying distributions could be examined in the SFZ\_DIS table to determine if the records should be kept in the subset or excluded from further processing.

FACSHRFLG	DESCRIPTION	DEFINITION
N	NONE	THERE ARE NO FACTORS TO ADJUST SHARES DURING THE PERIOD
S	STOCK SPLIT	THERE ARE ONE OR MORE STOCK SPLITS AND/OR STOCK DIVIDENDS (DISTCD - 5500-5599) DURING THE PERIOD
O	OTHER	THERE ARE ONE OR MORE DISTRIBUTIONS WITH A FACTOR TO ADJUST SHARES THAT ARE NEITHER STOCK SPLITS NOR STOCK DIVIDENDS DURING THE PERIOD
B	BOTH	THERE ARE DISTRIBUTIONS DURING THE PERIOD WITH BOTH STOCK SPLITS/DIVIDENDS AND OTHER FACTORS

## DATA CODING SCHEMES

### DISTRIBUTION CODES

The following table describes some of the most commonly coded distribution events in the CRSP stock files. CRSP did not verify the tax status of ordinary dividends in the NYSE/NYSE American file after April 1987, or in the Supplemental NASDAQ file at any time. Instead, CRSP assigned ordinary dividends the default tax code (12\*2); that is, US cash dividend, taxable in the normal way as a dividend. If a dividend received is in the form of a security which is traded on the CRSP Stock files, the dividend code will be in the form\*7\*\*.

DIVIDEND	
CODE	DESCRIPTION
1212	US CASH DIVIDEND, UNSPECIFIED FREQUENCY, TAXABLE SAME RATE AS DIVIDENDS
1214	US CASH DIVIDEND, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
1222	US CASH DIVIDEND, MONTHLY, TAXABLE SAME RATE AS DIVIDENDS
1224	US CASH DIVIDEND, MONTHLY, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
1232	US CASH DIVIDEND, QUARTERLY, TAXABLE SAME RATE AS DIVIDENDS
1234	US CASH DIVIDEND, QUARTERLY, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
1242	US CASH DIVIDEND, SEMI-ANNUAL, TAXABLE SAME RATE AS DIVIDENDS
1244	US CASH DIVIDEND, SEMI-ANNUAL, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
1252	US CASH DIVIDEND, ANNUAL, TAXABLE SAME RATE AS DIVIDENDS
1254	US CASH DIVIDEND, ANNUAL, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
1262	US CASH DIVIDEND, YEAR-END OR FINAL, TAXABLE SAME RATE AS DIVIDENDS
1272	US CASH DIVIDEND, EXTRA OR SPECIAL, TAXABLE SAME RATE AS DIVIDENDS
1274	US CASH DIVIDEND, EXTRA OR SPECIAL, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
1292	US CASH DIVIDEND, NON-RECURRING, OR PROCEEDS FROM SALE OF RIGHTS, TAXABLE SAME RATE AS DIVIDENDS

DIVIDEND	
CODE	DESCRIPTION
1312	CASH DIVIDEND (FOREIGN CURRENCY CONVERTED TO US), UNSPECIFIED FREQUENCY, TAX STATUS - UNSPECIFIED OR NOT APPLICABLE
1332	CASH DIVIDEND (FOREIGN CURRENCY CONVERTED TO US), QUARTERLY, TAXABLE SAME RATE AS DIVIDENDS
1342	CASH DIVIDEND (FOREIGN CURRENCY CONVERTED TO US), SEMI-ANNUAL, TAXABLE SAME RATE DIVIDENDS
1348	CASH DIVIDEND (FOREIGN CURRENCY CONVERTED TO US), SEMI-ANNUAL, FULLY TAXABLE AS ORDINARY INCOME TO INDIVIDUALS
1352	CASH DIVIDEND (FOREIGN CURRENCY CONVERTED TO US), ANNUAL, TAXABLE SAME RATE AS DIVIDENDS
1372	CASH DIVIDEND (FOREIGN CURRENCY CONVERTED TO US), EXTRA OR SPECIAL, TAXABLE SAME RATE AS DIVIDENDS

LIQUIDATION	
CODE	DESCRIPTION
2216	CASH PAID IN DISTRIBUTION, TAX STATUS - REALIZED CAPITAL GAINS, (INVESTMENT COMPANIES)
2234	CASH PAID IN PARTIAL LIQUIDATION, TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
2243	CASH PAID AS A STEP IN LIQUIDATION, NON-TAXABLE
2244	CASH PAID AS A STEP IN LIQUIDATION TAX STATUS - RETURN OF CAPITAL, GAIN RECOGNIZED, LOSS NOT
2245	CASH PAID AS A STEP IN LIQUIDATION, TAX STATUS - RETURN OF CAPITAL, GAIN OR LOSS REALIZED
2255	CASH PAID AS A FINAL LIQUIDATING PAYMENT, TAX STATUS - RETURN OF CAPITAL, GAIN OR LOSS REALIZED

ACQUISITION/REORGANIZATION	
CODE	DESCRIPTION
3225	CASH RECEIVED IN A MERGER, TAX STATUS - GAIN OR LOSS REALIZED COMPARED WITH COST
3285	CASH RECEIVED IN AN EXCHANGE OF STOCK, TAX STATUS - GAIN OR LOSS REALIZED COMPARED WITH COST
3723	ISSUE OF FILE, RECEIVED IN A NON-TAXABLE MERGER
3753	ISSUE ON FILE, RECEIVED AS A NON-ORDINARY STOCK DISTRIBUTION, NON-TAXABLE
3763	ISSUE ON FILE, RECEIVED AS A SPIN-OFF IN REORGANIZATION, NON-TAXABLE
3783	ISSUE ON FILE, RECEIVED AS AN EXCHANGE, NON-TAXABLE
3823	ISSUE NOT ON FILE, RECEIVED IN A MERGER, NON-TAXABLE
3853	ISSUE NOT ON FILE, RECEIVED AS A NON-ORDINARY DISTRIBUTION, NON-TAXABLE
3862	ISSUE NOT ON FILE, RECEIVED IN A REORGANIZATION, TAXABLE AS DIVIDEND
3863	ISSUE NOT ON FILE, RECEIVED IN A REORGANIZATION, NON-TAXABLE
3883	ISSUE NOT ON FILE, RECEIVED IN AN EXCHANGE OF STOCK, NON-TAXABLE
3888*	PARTIALLY CODED FINAL OR OTHER NON-ORDINARY DISTRIBUTION; AMOUNT OR SOME TERMS MISSING; TAX STATUS UNKNOWN

RIGHTS	
CODE	DESCRIPTION
4523	RIGHTS TO BUY MORE OF THIS SECURITY, AT MARKET VALUE, NON-TAXABLE
4533	RIGHTS TO BUY MORE OF THIS SECURITY AT INDICATED VALUE, NON-TAXABLE
4563	RIGHTS TO BUY MORE OF THIS SECURITY, NON-TRANSFERABLE VALUE AT EXDATE, CALCULATED (BASED ON RECDATE IF EXDATE UNAVAILABLE), NON-TAXABLE
4623	RIGHTS TO BUY 'UNITS' THAT INCLUDE THIS SECURITY, NON-TAXABLE
4823	RIGHTS TO BUY OTHER SECURITIES, NONTAXABLE
4999*	MISSING RIGHTS DISTRIBUTION, TAX STATUS - DIVIDEND REINVESTMENT PLAN QUALIFIES FOR THE LIMITED EXCLUSION PROVIDED BY SEC. 305(E) OF THE INTERNAL REVENUE CODE

STOCK	
CODE	DESCRIPTION
5523	STOCK SPLIT, NON-TAXABLE
5533	STOCK DIVIDEND, NON-TAXABLE
5538	STOCK DIVIDEND, FULLY TAXABLE AS ORDINARY INCOME TO INDIVIDUALS
5763	STOCK DISTRIBUTION IN DIFFERENT ISSUE OF SAME COMPANY WHICH TRADES ON THE FILE, NON-TAXABLE
5773	INITIAL STOCK DISTRIBUTION OF OTHER CLASS OF COMMON, SAME COMPANY, WHICH IS ON THE FILE, NON-TAXABLE

\*This code alerts the user to information that is not coded, and is inconsistent with the conventional distribution-coding scheme.

## DELISTING CODES

ACTIVE	
CODE	DESCRIPTION
100	ISSUE STILL TRADING NYSE/NYSE AMERICAN, NASDAQ, NYSE ARCA OR BATS

MERGERS	
CODE	DESCRIPTION
231	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK OR ADRS. REPLACES CODES 201, 202 AND 203. CODES 201-203 ARE NO LONGER ASSIGNED
232	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK OR ADRS. (MERGED STOCK IS NOT MAINTAINED ON THE CRSP FILE.) REPLACES CODES 210-220. CODES 210-220 ARE NO LONGER ASSIGNED
233	WHEN MERGED, SHAREHOLDERS RECEIVE CASH PAYMENTS
241	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK AND CASH, ISSUE ON CRSP FILE
242	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK AND PREFERRED STOCK OR WARRANTS OR RIGHTS OR DEBENTURES OR NOTES, ISSUE ON CRSP FILE
244	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK OR ADR, AND CASH AND PREFERRED STOCK OR WARRANTS OR RIGHTS OR DEBENTURES OR NOTES. ISSUE ON CRSP FILE
251	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK OR ADRS AND CASH. (MERGED STOCK IS NOT MAINTAINED ON THE CRSP FILE)
252	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE COMMON STOCK OR ADRS AND PREFERRED STOCK, OR WARRANTS, OR RIGHTS, OR DEBENTURES, OR NOTES
261	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE CASH AND PREFERRED STOCK, OR WARRANTS, OR RIGHTS, OR DEBENTURES, OR NOTES.
262	WHEN MERGED, SHAREHOLDERS PRIMARILY RECEIVE CASH AND OTHER PROPERTY

EXCHANGES	
CODE	DESCRIPTION
331	ISSUE EXCHANGED, PRIMARILY FOR ANOTHER CLASS OF COMMON STOCK. REPLACES CODES 301, 302, AND 303. CODES 301-303 ARE NO LONGER ASSIGNED
332	ISSUE EXCHANGED, PRIMARILY FOR ANOTHER CLASS OF COMMON STOCK. (OTHER STOCK IS NOT MAINTAINED ON THE CRSP FILE)
341	FLAGS AN EXCHANGE, SHAREHOLDERS RECEIVE COMMON STOCK AND CASH. ISSUE ON CRSP FILE
342	FLAGS AN EXCHANGE, SHAREHOLDERS RECEIVE COMMON STOCK AND PREFERRED STOCK OR WARRANTS OR RIGHTS OR DEBENTURES OR NOTES. ISSUE ON CRSP FILE

LIQUIDATIONS	
CODE	DESCRIPTION
450	ISSUE LIQUIDATED, FINAL DISTRIBUTION VERIFIED, ISSUE CLOSED TO FURTHER RESEARCH
470	ISSUE LIQUIDATED, NO FINAL DISTRIBUTION IS VERIFIED, ISSUE PENDING FURTHER RESEARCH
480	ISSUE LIQUIDATED, NO DISTRIBUTION INFORMATION IS AVAILABLE, ISSUE IS PENDING FURTHER RESEARCH

DROPPED	
CODE	DESCRIPTION
520	ISSUE STOPPED TRADING CURRENT EXCHANGE - TRADING OVER-THE-COUNTER
550	DELISTED BY CURRENT EXCHANGE - INSUFFICIENT NUMBER OF MARKET MAKERS
551	DELISTED BY CURRENT EXCHANGE - INSUFFICIENT NUMBER OF SHAREHOLDER
552	DELISTED BY CURRENT EXCHANGE - PRICE FELL BELOW ACCEPTABLE LEVEL
560	DELISTED BY CURRENT EXCHANGE - INSUFFICIENT CAPITAL, SURPLUS, AND/OR EQUITY
561	DELISTED BY CURRENT EXCHANGE - INSUFFICIENT (OR NON-COMPLIANCE WITH RULES OF) FLOAT OR ASSETS
570	DELISTED BY CURRENT EXCHANGE - COMPANY REQUEST (NO REASON GIVEN)
573	DELISTED BY CURRENT EXCHANGE - COMPANY REQUEST, DEREGISTRATION (GONE PRIVATE)
574	DELISTED BY CURRENT EXCHANGE - BANKRUPTCY, DECLARED INSOLVENT
575	DELISTED BY CURRENT EXCHANGE - COMPANY REQUEST, OFFER RESCINDED, ISSUE WITHDRAWN BY UNDERWRITER
580	DELISTED BY CURRENT EXCHANGE - DELINQUENT IN FILING, NON-PAYMENT OF FEES
582	DELISTED BY CURRENT EXCHANGE - FAILURE TO MEET EXCEPTION OR EQUITY REQUIREMENTS
584	DELISTED BY CURRENT EXCHANGE - DOES NOT MEET EXCHANGE'S FINANCIAL GUIDELINES FOR CONTINUED LISTING
585	DELISTED BY CURRENT EXCHANGE - PROTECTION OF INVESTORS AND THE PUBLIC INTEREST
587	DELISTED BY CURRENT EXCHANGE - CORPORATE GOVERNANCE VIOLATION
591	DELISTED BY CURRENT EXCHANGE - DELIST REQUIRED BY SECURITIES EXCHANGE COMMISSION (SEC)

## SHARE CODES

2-digit code as of end of period. First digit describes the type of security, second digit provides further security or company detail.

First Digit:

CODE	DESCRIPTION
1	ORDINARY COMMON SHARES
2	CERTIFICATES, AMERICUS TRUST COMPONENTS (PRIME, SCORE, & UNITS)
3	ADRS (AMERICAN DEPOSITARY RECEIPTS)
4	SBIS (SHARES OF BENEFICIAL INTEREST)
7	UNITS (DEPOSITARY UNITS, UNITS OF BENEFICIAL INTEREST, UNITS OF LIMITED PARTNERSHIP INTEREST, DEPOSITARY RECEIPTS, ETC), EXCHANGE TRADED FUNDS

Second Digit:

CODE	DESCRIPTION
0	SECURITIES WHICH HAVE NOT BEEN FURTHER DEFINED
1	SECURITIES WHICH NEED NOT BE FURTHER DEFINED
2	COMPANIES INCORPORATED OUTSIDE THE US
3	AMERICUS TRUST COMPONENTS (PRIME, SCORE, & UNITS), EXCHANGE TRADED FUNDS
4	CLOSED-END FUNDS
5	CLOSED-END FUND COMPANIES INCORPORATED OUTSIDE THE US
8	REIT'S (REAL ESTATE INVESTMENT TRUSTS)

The following table includes a mapping of Indexes to their location in the legacy files.

INDFAM	INDNO	INDNAME	START DATE	LEGACY FILE	LEGACY FILE DESCRIPTION
1100000	1000000	CRSP NYSE VALUE-WEIGHTED MARKET INDEX	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100001	1000001	CRSP NYSE EQUAL-WEIGHTED MARKET INDEX	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000002	CRSP NYSE MARKET CAPITALIZATION DECILE 1	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000003	CRSP NYSE MARKET CAPITALIZATION DECILE 2	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000004	CRSP NYSE MARKET CAPITALIZATION DECILE 3	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000005	CRSP NYSE MARKET CAPITALIZATION DECILE 4	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000006	CRSP NYSE MARKET CAPITALIZATION DECILE 5	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000007	CRSP NYSE MARKET CAPITALIZATION DECILE 6	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000008	CRSP NYSE MARKET CAPITALIZATION DECILE 7	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000009	CRSP NYSE MARKET CAPITALIZATION DECILE 8	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000010	CRSP NYSE MARKET CAPITALIZATION DECILE 9	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100012	1000011	CRSP NYSE MARKET CAPITALIZATION DECILE 10	1925	*SIA	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE
1100020	1000020	CRSP NYSE AMERICAN VALUE-WEIGHTED MARKET INDEX	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100021	1000021	CRSP NYSE AMERICAN EQUAL-WEIGHTED MARKET INDEX	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000022	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 1	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000023	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 2	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000024	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 3	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000025	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 4	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000026	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 5	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000027	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 6	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000028	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 7	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000029	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 8	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN
1100032	1000030	CRSP NYSE AMERICAN MARKET CAPITALIZATION DECILE 9	1962	*SIB	DAILY, MONTHLY, QUARTERLY, ANNUAL INDEXES BUILT ON MARKET CAP DECILES - NYSE AMERICAN







INDFAM	INDNO	INDNAME	START DATE	LEGACY FILE	LEGACY FILE DESCRIPTION
1100320	1000320	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 1	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000321	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 2	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000322	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 3	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000323	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 4	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000324	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 5	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000325	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 6	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000326	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 7	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000327	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 8	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000328	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 9	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100320	1000329	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 10	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100330	1000330	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 1-2	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100330	1000331	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 3-5	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100330	1000332	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 6-8	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100330	1000333	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 9-10	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100334	1000334	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 1-5	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100334	1000335	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO 6-10	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100336	1000336	CRSP NYSE/NYSE AMERICAN CAP-BASED PORTFOLIO MARKET	1925	MHISTA	MONTHLY CAP-BASED INDEXES RESULTS - NYSE + NYSE AMERICAN
1100340	1000340	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 1	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000341	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 2	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000342	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 3	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000343	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 4	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000344	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 5	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000345	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 6	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ

INDFAM	INDNO	INDNAME	START DATE	LEGACY FILE	LEGACY FILE DESCRIPTION
1100340	1000346	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 7	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000347	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 8	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000348	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 9	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100340	1000349	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 10	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100350	1000350	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 1-2	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100350	1000351	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 3-5	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100350	1000352	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 6-8	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100350	1000353	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 9-10	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100354	1000354	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 1-5	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100354	1000355	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO 6-10	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100356	1000356	CRSP NYSE/NYSE AMERICAN/NASDAQ CAP-BASED PORTFOLIO MARKET	1925	MHISTQ	MONTHLY CAP-BASED INDEXES RESULTS -NYSE + NYSE AMERICAN + NASDAQ
1100500	1000500	CRSP VALUE-WEIGHTED INDEX OF THE S&P 500 UNIVERSE	1925	*SP500	DAILY, MONTHLY CRSP INDEX FILE ON THE S&P 500 ©
1100501	1000501	CRSP EQUAL-WEIGHTED INDEX OF THE S&P 500 UNIVERSE	1925	*SP500	DAILY, MONTHLY CRSP INDEX FILE ON THE S&P 500 ©
1100502	1000502	S&P 500 COMPOSITE	1925 (DAILY 1962)		ALL FILES EXCEPT NASDAQ-ONLY, CAP-BASED, AND CTI FILES
1100503	1000503	NASDAQ COMPOSITE	1972	*SIO	ALL NASDAQ-ONLY FILES
1100510	1000510	CRSP VALUE-WEIGHTED PORTFOLIOS OF THE S&P 500 UNIVERSE	1925	*SP500P	DAILY, MONTHLY CRSP PORTFOLIOS ON THE S&P 500 ©
1100511	1000511	CRSP EQUAL-WEIGHTED PORTFOLIOS OF THE S&P 500 UNIVERSE	1925	*SP500P	DAILY, MONTHLY CRSP PORTFOLIOS ON THE S&P 500 ©
1100700	1000700	CRSP 30-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100701	1000701	CRSP 20-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100702	1000702	CRSP 10-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100703	1000703	CRSP 7-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100704	1000704	CRSP 5-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100705	1000705	CRSP 2-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100706	1000706	CRSP 1-YEAR BOND RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES



INDFAM	INDNO	INDNAME	START DATE	LEGACY FILE	LEGACY FILE DESCRIPTION
1100707	1000707	CRSP 90-DAY BILL RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100708	1000708	CRSP 30-DAY BILL RETURNS	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1100800	1000709	CONSUMER PRICE INDEX	1925	*CTI	MONTHLY, QUARTERLY, ANNUAL CRSP US TREASURY AND INFLATION INDEXES
1101330		CRSP US TOTAL MARKET INDEX	2011		NEW!
		S*RB FILES.		REBAL*	NYSE, NYSE AMERICAN, NASDAQ AND COMBINATIONS NOT AVAILABLE IN THE INDEX TABLES

# APPENDIX A: EXAMPLES

## AGGREGATE FILE EXAMPLES

### 1. LAST AVAILABLE AND INCOMPLETE PERIODS

This example demonstrates the use of flags to provide insight into the daily price and volume series used in the new aggregate files when a security did not trade for the entire period.

PERMNO 82670 - CURRENTLY T G THERAPEUTICS INC											
ROW IDENTIFIERS			CURRENT PERIOD INFO			PREV PERIOD INFO			RETURN AND VOLUME INFO		
KYPERMNO	YYYY	ACALDT	ANNPRCFLG	ANNPRCDT	ANNDTFLG	ANNPREVPRCFLG	ANNPREVDT	ANNPREVDFTFLG	ANNRETFLG	ANNVOLFLG	ANNPRCVOLMISSCNT
82670	2000	12/29/2000	TR	12/29/2000	PE	TR	12/31/1999	PE	CR	CV	0
82670	2001	12/31/2001	TR	8/22/2001	LA	TR	12/29/2000	PE	IP	IP	86
82670	2002	12/31/2002	MP		MI	TR	8/22/2001	LA	NT	MI	252
82670	2003	12/31/2003	MP		MI	MP		MI	NT	MI	252
82670	2004	12/31/2004	MP		MI	MP		MI	NT	MI	252
82670	2005	12/30/2005	TR	12/30/2005	PE	MP		MI	IP	IP	193
82670	2006	12/29/2006	TR	12/29/2006	PE	TR	12/30/2005	PE	CR	CV	0
82670	2007	12/31/2007	TR	12/31/2007	PE	TR	12/29/2006	PE	CR	CV	0
82670	2008	12/31/2008	TR	3/25/2008	LA	TR	12/31/2007	PE	IP	IP	196
82670	2009	12/31/2009	MP		MI	TR	3/25/2008	LA	NT	MI	252
82670	2010	12/31/2010	MP		MI	MP		MI	NT	MI	252
82670	2011	12/30/2011	MP		MI	MP		MI	NT	MI	252
82670	2012	12/31/2012	MP		MI	MP		MI	NT	MI	250
82670	2013	12/31/2013	TR	12/31/2013	PE	MP		MI	IP	IP	102
82670	2014	12/31/2014	TR	12/31/2014	PE	TR	12/31/2013	PE	CR	CV	0

### NOTES

- Security leaves a CRSP tracked exchange on 8/22/2001. For the 2001 year, the price is flagged with LA (Last Available) and the return and volume are flagged with IP (Incomplete period) and there are 86 missing prices or volumes during the period. However, a partial year return and partial year volume are calculated
- For the 2002-2004 years, the price date flag is MI (Missing for the entire year) and the price, price date, and cap values are set to missing and the price flag is set to MP (Missing Prices). The returns are set to missing and the return flag is set to NT (Not Tracked). The Volume and Price Volume are also set to missing values and the Volume Flag is set to MI to indicate the entire year is missing. The count of missing is 252.
- For 2005, the security is listed on a CRSP tracked exchange again. The Previous Price is still missing, but the current price is from the Period End (PE) on 12/30/2005. The Return Flag and Volume Flag are both set IP (Incomplete Period). The missing count is 196.

- Analogous to #1 above -- Security leaves a CRSP tracked exchange on 3/25/2008. For the 2008 year, the price is flagged with LA (Last Available) and the return and volume are flagged with IP (Incomplete period) and there are 196 missing prices or volumes during the period. However, a partial year return and partial year volume are calculated. The 3/25/2008 price is available in the 2009 year as the previous price, but is flagged as Last Available.
- Analogous to #2 above -- For the 2009-2012 years, the price date flag is MI (Missing for the entire year) and the price, price date, and cap values are set to missing and the price flag is set to MP (Missing Prices). The returns are set to missing and the return flag is set to NT (Not Tracked). The Volume and Price Volume are also set to missing values and the Volume Flag is set to MI to indicate the entire year is missing. The count of missing is 252.
- For 2013, the security is listed on a CRSP tracked exchange again. The Previous Price is still missing, but the current price is from the Period End (PE) on 12/31/2013. The Return Flag and Volume Flag are both set to IP (Incomplete Period). The missing count is 102.
- For completeness, in all of these rows, DELFLG = N, ANNFACSHRFLG = N DISCNT = 0, and do not impact these rows.
- Whether it is appropriate to use the rows flagged as "Incomplete Period" in your dataset will vary depending on the research design. It is also important to note that the aggregates are a convenience for some applications, but not intended to be a replacement in all cases, for the underlying data in SFZ\_DP\_DLY.

### 2. NEW SECURITY

This example demonstrates how the use of flags and new date fields provide additional context for first period of a security trading in the new aggregate files.

SIZ ANNUAL AGGREGATE - 1926 FOR IBM (PERMNO=12490) AND 1980 FOR APPLE (PERMNO = 14593) - SUBSET OF FIELDS																	
KYPERMNO	YYYY	ACALDT	ANNPRC	ANNPRCFLG	ANNPRCDT	ANNDTFLG	ANNCAP	ANNPREVPRC	ANNPREVPRCFLG	ANNPREVDT	ANNPREVDFTFLG	ANNPREVCAP	ANNRET	ANNRETX	ANNRETFLG	DISCNT	ANNVOL
12490	1926	12/31/1926	54.25	TR	12/31/1926	PE	31,410.75	144.50	TR	12/31/1925	NS	27,888.50	20.34%	12.63%	CR	6	353,300
14593	1980	12/31/1980	34.1875	BA	12/31/1980	PE	1,884,962.00	28.81	BA	12/12/1980	NS	1,588,606.00	18.66%	18.66%	NS	0	

### CHANGES AND ENHANCEMENTS

- For a New Security (ANNPREVDFTFLG = 'NS'), the previous price and cap are from the date in the ANNPREVDT field and not necessarily the end of the previous period. In this example, the previous price and cap for Apple are from 12/12/1980.
- The returns for the Aggregate match the ts\_print returns, because both start with the same 12/31/1925 price.
- Flags exist in the aggregate file to indicate whether the price and previous price is a closing price (TR - in the example above), a bid-ask average (BA) or a missing price (MP). See documentation for other values.
- Flags exist in the aggregate file to indicate whether the price and previous price are from the last trading date of the Period (PE) or the first price of a New Security (NS). See documentation for other values.
- Return flag was created (CR Complete return - no missing prices during period) - see documentation for other values; a row count of missing prices or volumes has also been added.
- The current price, cap, volume match as expected for other values and on or through the date stored in ANNPRCDT field. In these examples they are both the end of the trading period as indicated by the PE in ANNDTFLG.

### 3. DELIST

This example demonstrates how delisting information is provided in the new aggregate tables and how to associate with the existing delisting table.

NEW AGGREGATE ANNUAL FILE - SFZ_AGG_ANN (NOT ALL FIELDS SHOWN)																	
KYPERMNO	YYYY	ACALDT	ANNPRC	ANNPRCDT	ANNDFLGL	ANNDELFLG	ANNRET	ANNRETX	ANNRETFGL	NCUSIP	TICKER	COMNAM	SHRCD	NMSIND	PRIMEXCH	TRDSTAT	SECSTAT
14322	2005	12/30/2005	50.04	3/24/2005	ED	A	17.71%	17.18%	DE	81238710	S	SEARS ROEBUCK & CO	11		N	A	R
48071	2000	12/29/2000	165.50	12/29/2000	ED	A	32.34%	29.36%	DE	61688010	JPM	MORGAN J P & CO INC	11		N	A	R

EXISTING SFZ_DEL - DETAIL DELIST TABLE										
KYPERMNO	DLSTDT	DLSTCD	NWPERM	NWCOMP	NEXTDT	DLPRC	DLPDT	DLAMT	DLRET	DLRETX
14322	3/24/2005	241	89757	44118		0	3/28/2005	59.795	19.49%	19.49%
48071	12/29/2000	231	47896	20436		0	1/3/2001	163.8	-1.03%	-1.03%

#### NOTES

- When ANNDELFLG <> 'N', the Security information corresponds with the ANNPRCDT (3/24/2005 & 12/29/2000) and not the last trading day of the period (12/30/2005 & 12/29/2000 respectively). Note: PERMNO 48071 the data are the same.
- The returns in both examples includes the Delisting Returns (19.49% and -1.03%).
- YYYY exists so that the annual record can be found without needing to know that 12/30/2005 and 12/29/2000 were the last trading days of their respective years. Similarly YYYYQ has been added for quarterly and YYYYMM for monthly.
- Flags exist in the aggregate file to indicate a delisting return is included - RETFLG = DE (Delist included) and DELFLG = A (delist from distribution Amount).
- The date flag is set to ED (End of CRSP Data) and price date is set to the delisting date, so that the delisting date is available without going to the delist info in SFZ\_DEL
- The delisting info record (SFZ\_DEL) is still available and contains fields not available in the aggregate file. If the partial period return without the delist is desired, the calculation is  $[(1+\text{annret})/(1+\text{DLRET})]-1$
- Even though the Delisting Payment Date (DLPDT) is after, the end of the period (ACALDT), the return is still included if it is within 10 trading days of the delisting date.

### 4. APPLE EXAMPLE

Four separate tables – This example uses Apple to demonstrate the use of various new flags to provide information about presented data.

APPLE 1981-1984 - DATES AND DATE FLAGS						
KYPERMNO	YYYY	ACALDT	ANNPRCDT	ANNDFLGL	ANNPREVDT	ANNPREVDTFGL
14593	1981	12/31/1981	12/31/1981	PE	12/31/1980	PE
14593	1982	12/31/1982	12/31/1982	PE	12/31/1981	PE
14593	1983	12/30/1983	12/30/1983	PE	12/31/1982	PE

#### NOTES

- YYYY exists to allow the annual record to be matched without needing the last trading date of the period. In the example above, the 1983 record has a ACALDT and ANNPRCDT of 12/30/1983, rather than 12/31/1983, because 12/30/1983 is the last trading day of 1983. Similarly YYYYQ has been added for quarterly and YYYYMM for monthly.
- ANNDFLGL and ANNPREDTFGL provide additional information about the ANNPRCDT and ANNPREDT respectively. In the example above, and in the vast majority of records, the flag value indicates a Period End (PE); the last trading day of the period.
- The Price date and flag for one period become the previous price data and flag for the next year. In the example above, the 1981 ANNPRCDT and ANNDFLGL are the 1982 previous values and the 1982 ANNPRCDT and ANNDFLGL are the 1983 previous values.
- Acaldt is the last trading day of the period, regardless of the data available of the security. The ANNPRCDT is the date of the price used for the record. In the vast majority of case, and in the three records in this example, they will be equal.

APPLE 1981-1984 - PRICE AND CAPS												
KYPERMNO	YYYY	ACALDT	ANNPRC	ANNPRCFLG	ANNPRCDT	ANNDFLGL	ANNCAP	ANNPREVPRC	ANNPREVPRCFLG	ANNPREVDT	ANNPREVDTFGL	ANNPREVCAP
14593	1981	12/31/1981	22.1875	BA	12/31/1981	PE	1,229,653.44	34.1875	BA	12/31/1980	PE	1,884,962.00
14593	1982	12/31/1982	29.875	TR	12/31/1982	PE	1,722,234.00	22.1875	BA	12/31/1981	PE	1,229,653.44
14593	1983	12/30/1983	24.375	TR	12/30/1983	PE	1,448,118.75	29.875	TR	12/31/1982	PE	1,722,234.00

#### NOTES

- ANNPRCFLG and ANNPREDPRCFLG provide additional information ANNPRC and ANNPREDPRC respectively. In the example above, the 1981 PRC and PREVPRC and the 1982 PREVPRC are flagged as BA - BidAsk Average, and the 1982 PRC and the 1983 PRC and PREVPRC are flagged as TR - Closing Trade Price.
- The Price and Cap for one period, becomes the previous price and cap for the next period. In the example above, the 1981 PRC (22.1875) becomes the 1982 PREVPRC, the 1982 PRC (29.875) becomes the 1983 PREVPRC.

APPLE 1981-1984 - RETURNS AND RETURN RELATED FIELDS AND FLAGS										
KYPERMNO	YYYY	ACALDT	ANNDTFLG	ANNDELFLG	ANNPREVDFTLG	ANNRET	ANNRETX	ANNRETFLG	ANNDISCNT	ANNFACSHRFLG
14593	1981	12/31/1981	PE	N	PE	-35.10%	-35.10%	CR	0	N
14593	1982	12/31/1982	PE	N	PE	34.65%	34.65%	CR	0	N
14593	1983	12/30/1983	PE	N	PE	-18.41%	-18.41%	CR	0	N

#### NOTES

- ANNDTFLG provides context to the return. In the examples above, period end (PE) indicates that all the returns were calculated from an ending value from the last trading day of the current period.
- ANNDELFLG provides information about whether the return includes the securities delisting return. In the example above, the value N (no delist) indicates that the return does not contain a delisting return. See Delisting Example for more details.
- ANNPREVDFTLG provides context to the return. In the examples above, period end (PE) indicates that all the returns were calculated from a starting value from the last trading day of the previous period.
- ANNRETFLG provides summary information about the return. The four most common values are CR (Complete Return), NS (New Security - see NS example), DE (Delisting - see DE Example), and MP (Missing Prices). In the example above, they are the most common value of CR - complete return.
- ANNDISCNT provides additional context to the return, by providing the number of distributions during the period, most commonly cash dividends, that can be found in the SFZ\_DIS file, if details are desired. In the example above, Apple did not have distributions in any of the three years.
- ANNFACSHRFLG provides additional context to the return, by providing the a flag to indicate where distributions during the period impacted the shares outstanding, and that can be found in the SFZ\_DIS file, if details are desired. In the example above, Apple did not have distributions in any of the three years and therefore none that impacted the shares.

APPLE 1981-1984 - VOL & PRCVOL							
KYPERMNO	YYYY	ACALDT	ANNVOL	ANNVOLFLG	ANNPRCVOL	ANNFACSHRFLG	ANNPRCVOLMISSCNT
14593	1981	12/31/1981		MI		N	253
14593	1982	12/31/1982	14,104,087	MV	428,024,725.30	N	232
14593	1983	12/30/1983	201,395,359	CV	6,958,946,530.10	N	0

#### NOTES

- The ANNVOLFLG provides context for the ANNVOL and ANNPRCVOL values. In the 1983 record, CV (Complete Volume) - the most common value, indicates that there are no missing prices or volumes during the period and corresponds to the ANNPRCVOLMISSCNT of 0.
- The ANNVOLFLG provides context for the ANNVOL and ANNPRCVOL values. In the 1982 record, MV (Missing Volume) indicates that there are on or missing volumes or prices during the period, but that some volumes and prices exist and an aggregate is calculated missing. The ANNPRCVOLMISSCNT indicates that there were 232 missing volumes during the 1982 year (these were due to a data source limitation). These two fields provide a caution that the 1982 aggregate volume of approximately 14M is not comparable to the complete volume of 201M in 1983.
- The ANNVOLFLG provides context for the ANNVOL and ANNPRCVOL values. In the 1981 record, MI (Missing Data) indicates that the ANNVOL is and ANNVOLPRC are set to missing, because there was missing data for all of 1981.
- The ANNFACSHRFLG provides context for the ANNVOL and ANNPRCVOL values. In this examples, all the records are set N (No Share impacting distributions in the SFZ\_DIS file). The vast majority of the rows have a value of N.

## 5. MISSING PRICES/MISSING VOLUMES

This example demonstrates the use of flags in the new aggregate files to identify periods where a security had missing values for returns, volumes, and prices during the period or for the entire period.

PERMNO 75023 - CURRENTLY T G THERAPEUTICS INC - AMERICUS TR FOR UNION PAC SHS														
ROW IDENTIFIERS			CURRENT PERIOD INFO				PREV PERIOD INFO			RETURN AND VOLUME INFO				
KYPERMNO	YYYY	ACALDT	ANNPRCFLG	ANNPRCDT	ANNDTFLG	ANNDELFLG	ANNPREVPRCFLG	ANNPREVDT	ANNPREVDFTLG	ANNRETFLG	ANNDISCNT	ANNVOLFLG	ANNFACSHRFLG	ANNPRCVOLMISSCNT
75023	1987	12/31/1987	BA	12/31/1987	PE	N	BA	5/28/1987	NS	IP	3	IP	N	26
75023	1988	12/30/1988	BA	12/30/1988	PE	N	BA	12/31/1987	PE	MP	4	MV	N	11
75023	1989	12/29/1989	BA	12/29/1989	PE	N	BA	12/30/1988	PE	MP	4	MV	N	8
75023	1990	12/31/1990	TR	12/31/1990	PE	N	BA	12/29/1989	PE	MP	4	MV	N	5
75023	1991	12/31/1991	BA	12/31/1991	PE	N	TR	12/31/1990	PE	MP	5	MV	S	64
75023	1992	12/31/1992	BA	4/14/1992	ED	A	BA	12/31/1991	PE	IP	1	IP	N	3

#### NOTES

- For the 1987 row, the Previous Price Date (5/28/1987) and flag of NS indicates the first day of prices for the new security. Most commonly, the return and volume would be NS to indicate a partial period due to a new security, but because there are 26 missing prices or volumes after the starting date, this row is marked as IP (Incomplete Period) to indicate a combination of NS and MP cases.
- For 1988 to 1991, the security trades from beginning to end of the periods (ANNDTFLG and ANNPREDTFLG are both PE - Period End). Returns and volumes are calculated, but they are flagged with MP - Missing Price and MV - Missing Volumes to indicate that trading was not continuously reported. The missing count provides additional information and range from a very small 5 days during the year to a high of 64. See #3 below for more.
- Whether it is appropriate to use the rows flagged as "Missing Prices" or "Missing Volumes" in your dataset will vary depending on the research design. CRSP has a convention to set a daily return to missing if there are ten consecutive days of missing prices. So there is a potential for a missing returns to be have material impact on the compounded return. It is also important to note that the aggregates are a convenience for some applications, but not intended to be a replacement, in all cases, for the underlying data in SFZ\_DP\_DLY. In the example above, 1987 and 1988 rows do not have more than 10 consecutive days of missing prices, and therefore no missing return issue. However, 1991 does have one period of twelve consecutive days of missing prices and therefore a missing return. This was determined by looking at the SFZ\_DP\_DLY.
- For the 1992 row, the Price Date (4/14/1992) and flag of ED and a delisting flag of A indicates the end date of the security (Delisting Date) on 4/14/1992 and that a delisting return calculated (details in SFZ\_DEL) from a delisting amount (details in SFZ\_DIS) was included in the compounded return. Most commonly, the return and volume would be DE to indicate a partial period due to a delisted security, but because there are 3 missing prices or volumes after the start of the period and prior to the delisting date, this row is marked as IP (Incomplete Period) to indicate a combination of DE and MP cases.
- The distribution count, ranging from 1 to 5, indicate that this security paid distributions. Also note that the Share Factor Flag indicates that in 1991 the security had a stock split or stock dividend. If desired, details of these, or any, distributions can be found in SFZ\_DIS.
- It is worth noting that this security is an usual security type; an Americus Trust (SHRCD = 23). Some CRSP Indexes exclude this (and other) share code, and some include them. In order to provide the most complete and comparable file to the underlying daily data (SFZ\_DP\_DLY), the aggregate files do not do any share code, exchange, or NMS Indicator filtering or restrictions. However, it is therefore incumbent about the use to apply an restrictions or filtering that they would like to implement.