CRSP U.S. STOCK & INDEX RELEASE NOTES

MARCH 2022 MONTHLY UPDATE

These release notes pertain to the March 2022 Monthly release of the CRSP US Stock and Index databases, available in April 2022.

AGGREGATE FILE CHANGES

CRSP has completed a review of the aggregate files and made some improvements for consistency, particularly with regard to the flags. The three categories of minor changes are:

- New Leading Rows for a Security – If a leading period for a security had only missing returns, it was previously excluded, and now these rows are included. The vast majority of these new rows are 509 rows for the first period in the CRSP file; the period ending 12/31/1925.
- Improved flagging for returns (xxxRETFLG) and volumes (xxxVOLFLG) that include partial period data due to a 10-or-more consecutive day gap in prices (Note that xxx would be replaced with ANN, QTR, or MTH, as appropriate.). The improved flags allow gaps to more easily be identified. The number of flags changing is very small, and ranges from less than 1% of annual rows to less than 0.1% of the monthly rows.
- Other changes were improved the consistency of including and flagging partial period data with extremely small numbers with values changes. Most other fields have changes impacting less than 0.1% and in some cases less than 0.001% of the rows, depending on the field and frequency. **See the Appendix for details.**

FILE VERSION SPECIFICS

This table contains version specific information for the CRSP Stock Files with data ending March 2022. It contains the number of securities and information about the maximums of the event arrays.

DATA FREQUENCY	# OF SECURITIES	MAX NAMES	MAX DISTS	MAX SHARES	MAX DELISTS	MAX GROUPS	MAX NASDIN	FIRST PERMNO	LAST PERMNO
DAILY	36437	28	1538	4271	1	4	2900	10000	93436
MONTHLY	36408	28	1538	4271	1	4	2900	10000	93436

CALENDAR	DATE RANGE	DATE INDEX RANGE
DAILY TRADING CALENDAR	19251231-20220331	1-25360
MONTH-END TRADING CALENDAR	19251231-20220331	1-1156
YEAR-END TRADING CALENDAR	19251231-20231229	1-99
QUARTER-END TRADING CALENDAR	19251231-20231229	1-393
WEEKLY TRADING CALENDAR	19260102-20220331	1-5022

MARCH 2022 DATA EDITS

INDIVIDUAL EDITS

PERMNO	COMNAM	DESC
90352	DYNEGY INC NEW DEL	CHANGED PAYMENT DATE TO 20000331 FROM 20000228 AND ADDED DECLARE DATE OF 20000217 ON EX-DATE 20000224 AND ADDED DECLARE DATE OF 2000315 ON EX-DATE 20001129
37197	FOOD LION INC	CHANGED START DATE TO 19830922 FROM 19830923 AND SECUTIRY STATUS TO W FROM R FOR 19830922-19831005 AND EXCHANGE CODE TO 33 FROM 3 FOR 19830922-19831005
10872	FARRAGUT MORTGAGE CO INC	REMOVED DISTRIBUTION WITH DISTRIBUTION CODE 1232 AND EX-DATE 19930211
21178	LOCKHEED MARTIN CORP	REMOVED DISTRIBUTION ON EX-DATE 20170930

PERMNO	COMNAM	DESC
81062	METROGAS S A	CHANGED DISTRIBUTION EX-DATE, RECORD DATE & PAY DATE FROM 19950102 TO 19950103
58632	MICKELBERRY COMMUNICATIONS INC	CHANGED DELISTING DISTRIBUTION EX-DATE TO 19951002 FROM 19950930
83727	TELEFONICA DEL PERU SA	CHANGED DELISTING DISTRIBUTION EX-DATE TO 20040301 FROM 20040227
89068	TRANSALTA CORP	CHANGED CASH DISTRIBUTION EX-DATE TO 20210528 FROM 20210531, DIVIDEND AMOUNT TO 0.03720375 FROM 0.03725 AND ADDED DECLARE DATE OF 20210503
16656	S O S LTD	CHANGED SHARES OUTSTANDING VALUES FOR 20180331-PRESENT
91522	ENERGY SERVICES OF AMERICA CORP	ADDED ZERO NAME LINTES TO REFLECT OFF- EXCHANGE ACTIVITY FOR 20121102-20220322
14505	ENLINK MIDSTREAM LLC	CHANGED SHARE CODE TO 71 FROM 11 FOR ENTIRE HISTORY
20410	Z I M INTEGRATED SHIP SERV LTD	CHANGED DISTRIBUTION CODE FOR EX-DATE 20210824 TO 1272 AND EX-DATE 20211215 TO 1232.
22262	ARHAUS INC	CHANGED SHARES OUTSTANDING FROM 136946 TO 50427 FOR 20211231-20220321

GROUP EDITS

BEGDT	ENDDT	DESC
1990	2022	REVIEWED ALL QUARTERLY DIVIDEND DISTRIBUTIONS (DISTRIBUTION CODE 1232) WHERE ADJUSTED DIVIDEND AMOUNT DECREASED FROM 1990-2022. EDITS INCLUDE CHANGING DISTRIBUTION CODES, SPLITTING UP DIVIDENDS LABELED AS QUARTERLY TO SPECIAL AND QUARTERLY, REMOVING CANCELLED DIVIDENDS AND ADJUSTING DIVIDEND AMOUNTS TO REFLECT PRE OR POST SPLIT STATUS. CHANGES HAVE BEEN MADE TO ABOUT 200 DIVIDENDS. PROJECT IS 100% COMPLETE.

CRSPACCESS PRODUCT INFORMATION

To simplify installation for our subscribers, data are bundled into product groups. Information relevant to each product group is listed in the table below.

PRODUCT NAME	DATABASE	SIZE	INDEXES	PORTFOLIOS	COMPONENTS & DESCRIPTION
CRSP 1925 US STOCK AND INDEX DATABASE	FIZYYYYMM SIZYYYYMM (R/SAS/ASCII)	4.1 GB	ALL CRSP INDEXES AND PORTFOLIO ASSIGNMENTS	ALL PORTFOLIOS	DI - 1925 DAILY US STOCK & INDEX DATABASE MI - 1925 MONTHLY US STOCK & INDEX DATABASE IF - CRSP SUPPLEMENTAL US INDEXES
CRSP 1925 US STOCK	FAZYYYYMM SAZYYYYMM (R/SAS/ASCII)	3.7 GB	CRSP NYSE/ AMEX/ NASDAQ VALUE-WEIGHTED MARKET, CRSP NYSE/ AMEX/ NASDAQ EQUAL-WEIGHTED MARKET, S&P 500 COMPOSITE, NASDAQ COMPOSITE		DA - 1925 DAILY US STOCK MA - 1925 MONTHLY US STOCK IN - CRSP LIMITED US INDEXES
CRSP 1962 US STOCK	A6ZYYYYMM S6ZYYYYMM (SAS/ASCII)	3.3 GB	CRSP NYSE/ AMEX/ NASDAQ VALUE-WEIGHTED MARKET, CRSP NYSE/ AMEX/ NASDAQ EQUAL-WEIGHTED MARKET, S&P 500 COMPOSITE, NASDAQ COMPOSITE		D6 - 1962 DAILY US STOCK M6 - 1962 MONTHLY US STOCK IN - CRSP LIMITED US INDEXES
CRSP 1962 US STOCK AND INDEX DATABASE	AXZYYYYMM SXZYYYYMM (R/SAS/ASCII)	3.6 GB	SEE FIZ	ALL PORTFOLIOS	DX - 1962 DAILY US STOCK & INDEX DATABASE MX - 1962 MONTHLY US STOCK & INDEX DATABASE IF - CRSP SUPPLEMENTAL US INDEXES
CRSP 1925 US INDEXES	IFZYYYYMM SFZYYYYMM	122 MB			IF - CRSP SUPPLEMENTAL US INDEXES
CRSP 10	STZYYYYMM	121KB	ROLLING 10-YEAR WINDOW OF US STOCK DATA		MONTHLY DATA - ROLLING 10 YEARS
CRSP/COMPUSTAT MERGED DATABASE	CMZYYYYMM CFZYYYYMM (FULL PRODUCT) CLZYYYYMM (LINK PRODUCT) (R/SAS/ASCII)	10.37 GB			CM - COMPUSTAT DATA FORMATTED IN CRSPACCESS DATABASE
DAILY & MONTHLY TREASURIES IN CRSPSIFT	TRZYYYYMM	278 MB			TR - DATABASE FORMAT FOR USE WITH CRSPSIFT
DAILY & MONTHLY TREASURIES FILES	TFZYYYYMM	1.75 GB			TF - EXPANDED DAILY AND MONTHLY FILES IN EXCEL, SAS, AND ASCII FORMATS

PRODUCT NAME	DATABASE	SIZE	INDEXES	PORTFOLIOS	COMPONENTS & DESCRIPTION
MUTUAL FUND DATABASE	MFZYYYYMM	10 GB			MF - MUTUAL FUNDS
CRSP/ZIMAN DAILY & MONTHLY REIT	RAZYYYYMM	251 MB			RD - DAILY REITS RM - MONTHLY REITS

DELIVERY METHOD, INSTALLS, AND DATA FORMATS

DELIVERY

CRSP data delivery for all products is available only through the Cloud, utilizing IPSwitch's MOVEit Cloud product. (https://crsp.moveitcloud.com)

If you have not yet accessed your account, or need assistance, contact support@crsp.chicagobooth.edu, or call 312-263-6400, Option 2.

While DVDs are no longer available from CRSP, you are welcome to create your own once you have downloaded the data, and use as long as you have an active license to do so.

ZIP INSTALLS

CRSP uses a zip process for data installation. ZIP utilities that are standard on all platforms should work to unzip the databases. On Windows computers, CRSP recommends using 7-ZIP, which can be downloaded from this site: http://www.7-zip.org/

Several important items to note follow:

- All directories are extracted to lower case letters. For example: C:\crspdata\miz201308
- All Windows Users: Extracting a zipped file does not create an installed program in Windows. It will not show in the Windows Control Panel. When uninstalling the data, just delete the directories that contain the detailed files
- Red Hat Linux Users: If your version of Red Hat is earlier than 6.0, you will need to install an updated version of the "File Roller" program in order to install the data

EZIP FILE STRUCTURE AND PROCESS

WINDOWS 7/XP PRODUCTS:

PRODUCT LABEL	PRODUCT NAME	FILE NAME
A6Z1_YYYYMM_SLD	CRSP 1962 US STOCK	A6ZYYYYMM_CADB.ZIP
AXZ1_YYYYMM_SLD	CRSP 1962 US STOCK AND INDEX	AXZYYYYMM_CADB.ZIP
FAZ1_YYYYMM_SLD	CRSP 1925 US STOCK	FAZYYYYMM_CADB.ZIP
FIZ1_YYYYMM_SLD	CRSP 1925 US STOCK AND INDEX	FIZYYYYMM_CADB.ZIP
IFZ1_YYYYMM_SGD	CRSP 1925 INDEXES	IFZYYYYMM_CADB.ZIP

RED HAT LINUX PRODUCTS:

PRODUCT LABEL	PRODUCT NAME	FILE NAME
A6Z1_YYYYMM_SLD	CRSP 1962 US STOCK	A6ZYYYYMM_CADB.ZIP
AXZ1_YYYYMM_SLD	CRSP 1962 US STOCK AND INDEX	AXZYYYYMM_CADB.ZIP
FAZ1_YYYYMM_SLD	CRSP 1925 US STOCK	FAZYYYYMM_CADB.ZIP
FIZ1_YYYYMM_SLD	CRSP 1925 US STOCK AND INDEX	FIZYYYYMM_CADB.ZIP
IFZ1_YYYYMM_SGD	CRSP 1925 INDEXES	IFZYYYYMM_CADB.ZIP

FLAT FILE PRODUCTS:

PRODUCT NAME	FILE NAME
SAS ZIP	S*ZYYYYMM_SAS.ZIP
ASCII ZIP	S*ZYYYYMM_ASCII.ZIP
R ZIP	S*ZYYYYMM_R.ZIP

STEPS TO INSTALL:

- From the directory containing your downloaded zip file, right click (in Windows) or run File Roller (in Red Hat)
- Set the extract destination to the current higher level directory where data is normally stored and unzip will add the rest of the path (default is C:\ in Windows or /home in Red Hat)
- For example, in Windows, extracting to C:\ will install the data under C:\crspdata

Contact CRSP Client Services for assistance at: support@crsp.chicagobooth.edu or call 312-263-6400, Option 2.

SETTING ENVIRONMENT VARIABLES

The zip process will not automatically set environment variables for use with command line tools. The following steps will do so.

NOTE: CRSPSift does not use and therefore does not require environment variables.

LINUX

NOTE: The new zip installs are now saving to directories with lower case letters – for example, `~/crspdata/diz201308`

Check the current state of the environment variables by entering this command: `env | grep crsp`

- If you have admin privileges on your machine, open the .profile file, and make updates to the following lines to update the paths for the new data installed:
  - CRSP_DSTK=<full path name>/<daily stock directory> (*example:* `CRSP_DSTK=~/crspdata/diz201308`)
  - CRSP_MSTK==<full path name>/<monthly stock directory> (*example:* `CRSP_DSTK=~/crspdata/miz201308`)
  - CRSP_IND=<full path name>/<index directory> (*example:* `CRSP_IND=~/crspdata/ifz201308`)
- If you are using the bash shell (or any Bourne-style shell), enter the same commands above and export each one. This will make changes for your current session only and does not save to the .profile file.
- A shell script is available to make changes that can be reused for each update done. Note that this will only make changes to your current session and does not save to the .profile file.
  - Navigate to where the CUPL tools are loaded and then enter: `cd accbin`
  - Start the script by entering: `./crsp_setup.sh`
  - The script will prompt for the following:
    - File name (*will be appended with* `.kshrc`)
    - Top level directory (this should be where CUPL tools are located (*example:* `~/crsp`)
    - Scratch directory for error messages – name can be anything
    - Enter path for daily stock directory (*example:* `~/crspdata/diz201308`)
    - Enter path for monthly stock directory (*example:* `~/crspdata/miz201308`)
    - Enter path for index directory (*example:* `~/crspdata/ifz201308`)
    - Enter path for CCM directory – enter to leave blank
    - Enter path for CST directory – enter to leave blank
    - Execute script by running: `. ./<file name created above>.kshrc` (*note there is a space between the two dots*)

The CRSP Client Environment utility provides users a way to check the location of the software and to set environment variables. The utility can be started by locating it under installed programs CRSPAccess/CRSP Client Environment, or by navigating to the /accbin folder where the CUPL tools are installed and running: Client_Environment.exe (screen shot is displayed below). After making any changes, be sure to log off and back into Windows for the settings to be saved.

Note: For subscribers of the CRSP Compustat Merged database, additional CCM database environments will be displayed for the location of the Compustat data.

APPENDIX: AGGREGATE FILE CHANGES

Note that all numbers reflect differences for previous and current for the February data cut (202202). Also note that xxx would be replaced with ANN, QTR, or MTH, as appropriate. Throughout the Appendix, "Gap" refers to a 10-or-more consecutive day gap in prices, whether that gap is due to halts, suspends, or data availability.

NEW LEADING ROWS FOR A SECURITY

Periods at the beginning of a security that contained only missing returns are now included so that the data ranges align with the daily data and to provide whatever price and volume information, if any, is available.

TYPE/FREQUENCY	ANNUAL	QUARTERLY	MONTHLY
1925 WITH NON-MISSING PRICE AND VOLUME	503	503	503
1925 WITH MISSING PRICE AND VOLUME	6	6	6
OTHER LEADING WITH MISSING PRICES AND VOLUMES	5	12	39

NEW PRICES, BUT STILL MISSING RETURNS

There are a very small number of periods not at the beginning of a security that contained all missing returns with five fields (xxxPRC, xxxPRCFLG, xxxPRCDT, xxxDTFLG, and xxxCAP) set to missing, but that now contain information from the last available non-missing price from the period.

Further, in the next period, this changes these five fields: xxxPREVPRC, xxxPREVPRCFLG, xxxPREVDT, xxxPREVDTFLG, and xxxPREVCAP. For example, PERMNO 11236 has changes to ANNPRC, ANNPRCFLG, ANNPRCDT, ANNDTFLG, and ANNCAP for YYYY = 1931 and changes to ANNPREVPRC, ANNPREVPRCFLG, ANNPREVDT, ANNPREVDTFLG, and ANNPREVCAP for YYYY = 1932.

This resulted in 33 annual records being changed, 88 quarterly, and 194 monthly.

END PERIOD "GAP" RETURNS FILLED IN WITH PARTIAL PERIOD RETURNS

Prior to the 202203 data cut, by convention the returns for the period (xxxRET and xxxRETX) were set to missing with a xxxRETFLG = 'GP'. Starting with the 202203 data cut, the xxxRETFLG remains 'GP', but the partial period return is provided, so that, if desired, it can be used. This resulted in 23 ANNRET and ANNRETX being changed from missing to non-missing, and 41 QTRRET and QTRRETX and 56 MTHRET and MTHRETX values also changing from missing to non-missing.

Included in the above are 2 annual, 2 quarterly, and 3 monthly where the xxxDELFLG are changed from missing ('M') to amount ('A') and the delisting return is included in the partial period return with a "GAP".

XXXRETFLG CONVENTION CHANGES, PRIMARILY GAP FLAGS

Prior to the 202203 data cut, files set xxxRETFLG to a gap ('GP') only if the final trading day of the period was a gap. Starting with the 202203 data cut, files set xxxRETFLG to gap ('GP') if there is a gap return anywhere during the period, but the partial return is kept. The reason for this change is to allow a user to be able to easily identify and exclude, if desired, periods where there is a gap within the period.

There are approximately 3,500 xxxRETFLGs flags changing; which is less than 1% of annual rows and less than 0.1% of the monthly rows. More than 90% of the these 3,500 rows are changes to more explicitly flag a period with a gap.

XXXVOLFLG CONVENTION CHANGES, PRIMARILY GAP OR NEW SECURITY FLAGS

Analogous to the xxxRETFLG, prior to the 202203 data cut, files set xxxVOLFLG to a gap ('GP') only if the final trading day of the period was a gap. Starting with the 202203 data cut, files set xxxVOLFLG to gap ('GP') if there is a gap in prices anywhere during the period, but the xxxVOL and xxxPRCVOL continue to include partial period values. The reason for this change is to allow a user to be able to easily identify and exclude, if desired, periods where there is a gap within the period because the partial period volumes and price*volumes may not be directly comparable to full period volumes and price*volumes.

The magnitude of these are similar to the xxxRETFLG changes above, but smaller because for roughly the period from December 1972 to November 1982 daily volumes are missing for NASDAQ securities and therefore xxxVOLFLG is set

to missing ('MI') rather than gap ('GP'). In addition, a correction was made, where the previous file had set xxxVOLFLG to complete volume ('CV') in its first period, whereas it should have been set to new security ('NS') in order to allow the periods with partial periods volumes to be easily identified.

As with xxxRETFLG, the number of xxxVOLFLG value changing is very small and ranges from which is less than 1% of annual rows to less than 0.1% of the monthly rows.

XXXDTFLG CONVENTION CHANGE FOR ACTIVE SECURITIES IN LAST PERIOD

Previously, an active security had its xxxDTFLG set to end of date ('ED'), if the period end date was equal to the cut date. For example, if the cut date of the data was 12/31/2021, then annual rows (about 9,400-9,500) with YYYY=2021, quarterly rows with YYYYQ=20214, and the monthly rows with YYYYMM=202112 for active securities had ANNDTFLG, QTRDTFLG, and MTHDTFLG, respectively, set to End of Data ('ED').

The convention has been changed so that those rows now have their xxxDTFLG set to Period End ('PE'). This does not impact any of the calculations or values. It simply allows the data to be consistent from one release to the next. The active row from a security switches from xxxDTFLG = 'ED' and xxxDELFLG = 'N' in the old convention files to xxxDTFLG = 'PE' and xxxPRCDT = 'cut-date' and xxxDELFLG = 'N' in the new convention files.

XXXPRCVOLMISSCNT CONVENTION CHANGE FOR LEADING MISSING VALUES

Previously the xxxPRCVOLMISSCNT began after the first non-missing value for a security. Starting with the 202203 data cut, the convention begins the count on the BEGDT of the security. This minor convention change impacts only the first record for 51 PERMNOs in the annual file, 50 in the quarterly, and 51 in the monthly, and the xxxPRCVOLMISSCNT is increased by the number of missing values from BEGDT to the first non-missing value.

XXXDISCNT MINOR CONVENTION CHANGES FOR INCREASED CONSISTENCY

The xxxDISCNT has been reviewed and standardized. For consistency, the distribution count now excludes distributions after the ENDDT of the security (i.e. delisting distributions). It also now excludes rare distributions codes indicating "General Information Announcement for Dropped Issues related to Bankruptcy" (DISTCD in 7111, 7121, 7131, 7171, and 7181).

There are only 102 in the entire file and all were coded between 1962 and 1989. None contain values used in calculations (i.e. DIVAMT, FACPR, and FACSHR are uniformly missing). The time range for counting is a distribution with an EXDT after the last trading day of the last period and on or before the last trading day of this period, and also within the trading range of the security (i.e. BEGDT to ENDDT) regardless of whether there are valid prices.

This change impacts less than 0.1% of rows – with a total 335 rows in Annual, 749 in QTR, and 935 on MTH.