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Importing Federal Reserve economic data

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Abstract. This note describes `freduse`, which imports datasets from the Federal Reserve economic data (FRED®) repository.

Keywords: st0110, freduse, Federal Reserve economic data repository

The Federal Reserve Economic Data (FRED®) repository at http://research.stlouisfed.org/fred2/ contains more than 3,000 U.S. economic time series. Each time series is stored in a separate file that also contains a string-date variable and header with information about the series. `freduse` imports series from a list of files into a Stata dataset.

1 The freduse command

1.1 Syntax

`freduse` can import data directly from the FRED repository or from your local disk. The syntax of `freduse` is

`freduse` *series*$_1$ [*series*$_2$ ... *series*$_k$] [*if*] [*in*] [, `file clear`]

where *series*$_1$ through *series*$_k$ are the names of the FRED series to import.

> The names of the FRED series are case sensitive. If the name of the series specified at http://research.stlouisfed.org/fred2/ is in capital letters, as most are, you must use capital letters when specifying the name to `freduse`.

1.2 Options

`file` specifies that *series* refer to files stored on a local disk. By default, `freduse` downloads the FRED series from the repository and imports the downloaded data. You do not need to append `.txt` to the series names, but you must prepend the directory if the files are not in the current directory.

`clear` specifies that `freduse` replace any data in memory with the imported data.

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2 Using freduse to import FRED data

2.1 Single-series example

The example below uses `freduse` to download and import the GDP series `GDPC96` and lists the first 3 observations.

```
. freduse GDPC96
(236 observations read)
. list in 1/3
```

	date	GDPC96	daten
1.	1947-01-01	1570.519	01jan1947
2.	1947-04-01	1568.653	01apr1947
3.	1947-07-01	1567.966	01jul1947

`freduse` gives the series variable the FRED series name and names the FRED string-date variable `date`. `freduse` creates a numeric, daily-format, date variable called `daten` from `date`.

As shown in the output below, `freduse` saves the information in the series-file header in the series variable's characteristics.[1] (See [P] **char** for information about variable characteristics.)

```
. char list GDPC96[]
GDPC96[Notes]:              A Guide to the National Income and Product Accounts
                            of the United States (NIPA) -
                            (http://www.bea.doc.gov/bea/an/nipaguid.pdf)
GDPC96[Last_Updated]:       2006-01-27 10:05 AM CT
GDPC96[Date_Range]:         1947-01-01 to 2005-10-01
GDPC96[Units]:              Billions of Chained 2000 Dollars
GDPC96[Frequency]:          Quarterly
GDPC96[Seasonal_Adjustment]:
                            Seasonally Adjusted Annual Rate
GDPC96[Release]:            Gross Domestic Product
GDPC96[Source]:             U.S. Department of Commerce: Bureau of Economic
                            Analysis
GDPC96[Series_ID]:          GDPC96
GDPC96[Title]:              Real Gross Domestic Product, 3 Decimal
```

`freduse` labels the series variable with the title from the FRED header.

2.2 Multiple-series example

When multiple series are specified, `freduse` imports the first series and then imports and merges the remaining series.[2]

1. If you run this example, your output may differ because the St. Louis Federal Reserve regularly updates the series.
2. `freduse` uses `daten` as the key variable for the merges.

The example below uses `freduse` to download and import the investment series `GDPC96` and `GPDIC96`.

```
. freduse GDPC96 GPDIC96, clear
(234 observations read)
(234 observations read)
. list in 1/3
```

	date	GPDIC96	daten	GDPC96
1.	1947-01-01	170.215	01jan1947	1570.519
2.	1947-04-01	156.747	01apr1947	1568.653
3.	1947-07-01	151.645	01jul1947	1567.966

Each series variable is named after the FRED series it contains, and the `date` and `daten` variables come from merging the dates in the two series' files.

When importing multiple series, `freduse` stores the header information from each series' file header in characteristics of the corresponding variable and labels each series variable with the corresponding title information.

2.3 Local file example

Suppose that we have already downloaded ASCII (`.txt`) files of the series into the subdirectory `freddata`. In the example below, we do not need to include the `.txt` file extension.

```
. freduse GDPC96 GPDIC96, clear file
(234 observations read)
(234 observations read)
. list in 1/3
```

	date	GPDIC96	daten	GDPC96
1.	1947-01-01	170.215	01jan1947	1570.519
2.	1947-04-01	156.747	01apr1947	1568.653
3.	1947-07-01	151.645	01jul1947	1567.966

3 Conclusion

This note has shown how to use `freduse` to import data from the FRED repository into Stata. Go to http://research.stlouisfed.org/fred2/ for more information about the FRED series.

About the author

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