

postfile — Post results in Stata dataset

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Description

These commands are utilities to assist Stata programmers in performing Monte Carlo-type experiments. They post results to a file on disk. To post results to a frame in memory, see [\[P\] frame post](#).

`postfile` declares the variable names and the filename of a (new) Stata dataset where results will be saved.

`post` adds a new observation to the declared dataset.

`postclose` declares an end to the posting of observations. After `postclose`, the new dataset contains the posted results and may be loaded using `use`; see [\[D\] use](#).

`postutil dir` lists all open postfiles. `postutil clear` closes all open postfiles.

All five commands manipulate the new dataset without disturbing the data in memory.

If *filename* is specified without an extension, `.dta` is assumed.

Syntax

Declare variable names and filename of dataset where results will be saved

```
postfile postname newvarlist using filename [ , every(#) replace ]
```

Add new observation to declared dataset

```
post postname (exp) (exp) ... (exp)
```

Declare end to posting of observations

```
postclose postname
```

List all open postfiles

```
postutil dir
```

Close all open postfiles

```
postutil clear
```

Options

`every(#)` specifies that results be written to disk every `#`th call to `post`. `post` temporarily holds results in memory and periodically opens the Stata dataset being built to append the saved results.

`every()` should typically not be specified, because you are unlikely to choose a value for `#` that is as efficient as the number `post` chooses on its own, which is a function of the number of results being written and their storage type.

`replace` indicates that the file specified may already exist, and if it does, that `postfile` may erase the file and create a new one.

Remarks and examples

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The typical use of the `post` commands is

```
tempname memhold
tempfile results
...
postfile `memhold' ... using "results"
...
while ... {
    ...
    post `memhold' ...
    ...
}
postclose `memhold'
...
use "results", clear
...
```

Two names are specified with `postfile`: *postname* is a name assigned to internal memory buffers, and *filename* is the name of the file to be created. Subsequent `posts` and the `postclose` are followed by *postname* so that Stata will know to what file they refer.

In our sample, we obtain both names from Stata's temporary name facility (see [P] [macro](#)), although, in some programming situations, you may wish to substitute a hard-coded *filename*. We recommend that *postname* always be obtained from `tempname`. This ensures that your program can be nested within any other program and ensures that the memory used by `post` is freed if anything goes wrong. Using a temporary filename, too, ensures that the file will be erased if the user presses *Break*. Sometimes, however, you may wish to leave the file of incomplete results behind. That is allowed, but remember that the file is not fully up to date if `postclose` has not been executed. `post` buffers results in memory and only periodically updates the file.

Because `postfile` accepts a *newvarlist*, storage types may be interspersed, so you could have

```
postfile `memhold' a b str20 c double(d e f) using "results"
```

Note that *newvarlist* does not allow `strL` as the variable storage type. A similar utility that allows `strL` as a variable storage type is [frame post](#).

▷ Example 1

We wish to write a program to collect means and variances from 10,000 randomly constructed 100-observation samples of lognormal data and save the results in `results.dta`. Suppose that we are evaluating the coverage of the 95%, t -based confidence interval when applied to lognormal data. As background, we can obtain a 100-observation lognormal sample by typing

```
drop _all
set obs 100
generate z = exp(rnormal())
```

We can obtain the mean and standard deviation by typing

```
summarize z
```

Moreover, `summarize` stores the sample mean in `r(mean)` and variance in `r(Var)`. It is those two values we wish to collect. Our program is

```
program lnsim
version 18.0
tempname sim
postfile 'sim' mean var using results, replace
quietly {
    forvalues i = 1/10000 {
        drop _all
        set obs 100
        generate z = exp(rnormal())
        summarize z
        post 'sim' (r(mean)) (r(Var))
    }
}
postclose 'sim'
end
```

The `postfile` command begins the accumulation of results. `'sim'` is the name assigned to the internal memory buffers where results will be held; `mean` and `var` are the names to be given to the two variables that will contain the information we collect; and variables will be saved in the file named `results.dta`. Because two variable names were specified on the `postfile` line, two expressions must be specified following `post`. Here the expressions are simply `r(mean)` and `r(Var)`. If we had wanted, however, to store the mean divided by the standard deviation and the standard deviation, we could have typed

```
post 'sim' (r(mean)/r(sd)) (r(sd))
```

Finally, `postclose 'sim'` concluded the simulation. The dataset `results.dta` is now complete.

```
. set seed 12345
. lnsim
(file results.dta not found)
. use results, clear
. describe
Contains data from results.dta
Observations:      10,000
Variables:         2                               23 Mar 2023 17:19
```

Variable name	Storage type	Display format	Value label	Variable label
mean	float	%9.0g		
var	float	%9.0g		

Sorted by:

```
. summarize
```

Variable	Obs	Mean	Std. dev.	Min	Max
mean	10,000	1.649184	.217526	.9933856	3.087867
var	10,000	4.624283	4.144868	.6665277	97.41853

We set the random-number seed to an arbitrary value, 12345, so that this example would be reproducible.



References

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Also see

[P] **frame post** — Post results to dataset in another frame

[R] **simulate** — Monte Carlo simulations

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