Title

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fvrevar — Factor-variables operator programming command

Description

fvrevar creates a variable list that includes equivalent, temporary variables in place of the factor variables, interactions, or time-series–operated variables in *varlist*. The resulting variable list can be used by commands that do not otherwise support factor variables or time-series–operated variables. The resulting list also could be used in a program to speed execution at the cost of using more memory.

Quick start

Create temporary indicator variables for the levels of categorical variable a and store names in r(varlist)

    fvrevar i.a

Create temporary variables corresponding to the levels of a, b, and their interaction

    fvrevar i.a##i.b

Same as above, and create a temporary variable for the lag of x using tsset data

    fvrevar i.a##i.b L.x

Return the list of unoperated variables (a, b, and x) in r(varlist)

    fvrevar i.a##i.b L.x, list

Create new variables a_1, a_2, ..., corresponding to the levels of a

    fvrevar i.a, stub(a_)

Create new variables ab_1, ab_2, ..., corresponding to the levels of the interaction between a and b

    fvrevar i.a#i.b, stub(ab_)

Syntax

> fvrevar [*varlist*] [*if*] [*in*] [, <u>sub</u>stitute <u>tso</u>nly list stub(*stub*)]

You must `tsset` your data before using `fvrevar` if *varlist* contains time-series operators; see [TS] **tsset**.
`collect` is allowed; see [U] **11.1.10 Prefix commands**.

Options

<u>sub</u>stitute specifies that equivalent, temporary variables be substituted for any factor variables, interactions, or time-series–operated variables in *varlist*. `substitute` is the default action taken by `fvrevar`; you do not need to specify the option.

<u>tso</u>nly specifies that equivalent, temporary variables be substituted for only the time-series–operated variables in *varlist*.

list specifies that all factor-variable operators and time-series operators be removed from *varlist* and the resulting list of base variables be returned in `r(varlist)`. No new variables are created with this option.

stub(*stub*) specifies that `fvrevar` generate named variables instead of temporary variables. The new variables will be named *stub#*.

Remarks and examples   stata.com

`fvrevar` might create no new variables, one new variable, or many new variables, depending on the number of factor variables, interactions, and time-series operators appearing in *varlist*. Any new variables created are temporary. The new, equivalent varlist is returned in `r(varlist)`. The new varlist corresponds one to one with the original *varlist*.

▷ Example 1

Typing

```
. use https://www.stata-press.com/data/r18/auto2
. fvrevar i.rep78 mpg turn
```

creates five temporary variables corresponding to the levels of `rep78`. No new variables are created for variables `mpg` and `turn` because they do not contain factor-variable or time-series operators.

The resulting variable list is

```
. display "`r(varlist)'"
__000000 __000001 __000002 __000003 __000004  mpg turn
```

(Your temporary variable names may be different, but that is of no consequence.)

Temporary variables automatically vanish when the program concludes.

◁

▷ Example 2

Suppose we want to create temporary variables for specific levels of a factor variable. To do this, we can use the parenthesis notation of factor-variable syntax.

```
. fvrevar i(2,3)bn.rep78 mpg
```

creates two temporary variables corresponding to levels 2 and 3 of `rep78`. Notice that we specified that neither level 2 nor 3 be set as the base level by using the `bn` notation. If we did not specify `bn`, level 2 would have been treated as the base level.

The resulting variable list is

```
. display "'r(varlist)'"
__000005 __000002 mpg
```

We can see the results by listing the new variables alongside the original value of `rep78`.

```
. list rep78 'r(varlist)' in 1/5
```

	rep78	__000005	__000002	mpg
1.	Average	0	1	22
2.	Average	0	1	17
3.	.	.	.	22
4.	Average	0	1	20
5.	Good	0	0	15

If we had needed only the base-variable names, we could have specified

```
. fvrevar i(2,3)bn.rep78 mpg, list
. display "'r(varlist)'"
mpg rep78
```

The order of the list will probably differ from that of the original list; base variables are listed only once.

◁

▷ Example 3

Now let's assume we have a *varlist* containing both an interaction and time-series–operated variables. If we want to create temporary variables for the entire equivalent *varlist*, we can specify `fvrevar` with no options.

```
. generate t = _n
. tsset t
        time variable:  t, 1 to 74
                delta:  1 unit
. fvrevar c.turn#i(2,3).rep78 L.mpg
```

The resulting variable list is

```
. display "'r(varlist)'"
__000006 __000007 __000008
```

If we want to create temporary variables only for the time-series–operated variables, we can specify the `tsonly` option.

```
. fvrevar c.turn#i(2,3).rep78 L.mpg, tsonly
```

The resulting variable list is

```
. display "'r(varlist)'"
2.rep78#c.turn 3.rep78#c.turn __000008
```

Notice that fvrevar returned the expanded factor-variable list with the tsonly option.

◁

❑ Technical note

fvrevar, substitute avoids creating duplicate variables. Consider

```
. fvrevar i.rep78 turn mpg i.rep78
```

i.rep78 appears twice in the varlist. fvrevar will create only one set of new variables for the five levels of rep78 and will use these new variables once in the resulting r(varlist). Moreover, fvrevar will do this even across multiple calls:

```
. fvrevar i.rep78 turn mpg
. fvrevar i.rep78
```

i.rep78 appears in two separate calls. At the first call, fvrevar creates five temporary variables corresponding to the five levels of rep78. At the second call, fvrevar remembers what it has done and uses the same temporary variables for i.rep78.

❑

Stored results

fvrevar stores the following in r():

Macros
    r(varlist)   the modified variable list or list of base-variable names

Also see

[TS] **tsrevar** — Time-series operator programming command

[P] **fvexpand** — Expand factor varlists

[P] **syntax** — Parse Stata syntax

[P] **unab** — Unabbreviate variable list

[U] **11 Language syntax**

[U] **11.4.4 Time-series varlists**

[U] **18 Programming Stata**