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
```

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] [ , substitute tsonly list stub(stub)]
```

You must `tsset` your data before using `fvrevar` if `varlist` contains time-series operators; see `[TS] tsset`.

Options

- `substitute` 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.
- `tsonly` 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

- `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 http://www.stata-press.com/data/r15/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

```
_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
```

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>rep78</td>
<td>__000005</td>
<td>__000002</td>
<td>mpg</td>
</tr>
<tr>
<td>1.</td>
<td>Average</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Average</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>4.</td>
<td>Average</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Good</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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 \texttt{fvrevar} returned the expanded factor-variable list with the \texttt{tsonly} option.

\section*{Technical note}

\texttt{fvrevar}, \texttt{substitute} avoids creating duplicate variables. Consider

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

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

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

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

\section*{Stored results}

\texttt{fvrevar} stores the following in \texttt{r}:

- \texttt{Macros}
  - \texttt{r(varlist)} the modified variable list or list of base-variable names

\section*{Also see}

- [TS] \texttt{tsrevar} — Time-series operator programming command
- [P] \texttt{fvexpand} — Expand factor varlists
- [P] \texttt{syntax} — Parse Stata syntax
- [P] \texttt{unab} — Unabbreviate variable list
- [U] 11 Language syntax
- [U] 11.4.4 Time-series varlists
- [U] 18 Programming Stata