tsrevar — Time-series operator programming command

Description

tsrevar, substitute takes a varlist that might contain op.varname combinations and substitutes equivalent temporary variables for the combinations.

ntsrevar, list creates no new variables. It returns in r(varlist) the list of base variables corresponding to varlist.

Quick start

Create temporary variables containing the first lag and difference of y using tsset data, and store the temporary variable names in r(varlist)

    tsrevar l.y d.y

Store the name of the base variable, y, in r(varlist), and do not create any temporary variables

    tsrevar l.y d.y, list

Syntax

    tsrevar [varlist] [if] [in] [ , substitute list ]

You must tsset your data before using tsrevar; see [TS] tsset.

Options

substitute specifies that tsrevar resolve op.varname combinations by creating temporary variables as described above. substitute is the default action taken by tsrevar; you do not need to specify the option.

list specifies that tsrevar return a list of base variable names.

Remarks and examples

    tsrevar substitutes temporary variables for any op.varname combinations in a variable list. For instance, the original varlist might be “gnp L.gnp r”, and tsrevar, substitute would create newvar = L.gnp and create the equivalent varlist “gnp newvar r”. This new varlist could then be used with commands that do not otherwise support time-series operators, or it could be used in a program to make execution faster at the expense of using more memory.
tsrevar, substitute might create no new variables, one new variable, or many new variables, depending on the number of op.varname combinations 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.

tsrevar, list returns in r(varlist) the list of base variable names of varlist with the time-series operators removed. tsrevar, list creates no new variables. For instance, if the original varlist were “gnp l.gnp 12.gnp r l.cd”, then r(varlist) would contain “gnp r cd”. This is useful for programmers who might want to create programs to keep only the variables corresponding to varlist.

Example 1

. use https://www.stata-press.com/data/r16/tsrevarex
. tsrevar l.gnp d.gnp r

creates two temporary variables containing the values for l.gnp and d.gnp. The variable r appears in the new variable list but does not require a temporary variable.

The resulting variable list is

. display "r(varlist)"
   __00014P __00014Q r

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

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

. list gnp 'r(varlist)' in 1/5

<table>
<thead>
<tr>
<th></th>
<th>gnp</th>
<th>__00014P</th>
<th>__00014Q</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>128</td>
<td></td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>135</td>
<td>128</td>
<td>7 3.8</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>132</td>
<td>135</td>
<td>-3 2.6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>138</td>
<td>132</td>
<td>6 3.9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>145</td>
<td>138</td>
<td>7 4.2</td>
<td></td>
</tr>
</tbody>
</table>

Temporary variables automatically vanish when the program concludes.

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

. tsrevar l.gnp d.gnp r, list
. display "r(varlist)"
   gnp r

The order of the list will probably differ from that of the original list; base variables are listed only once and are listed in the order that they appear in the dataset.
Technical note

tsrevar, substitute avoids creating duplicate variables. Consider

```
.tsrevar gnp 1.gnp r cd 1.cd l.gnp
```

1.gnp appears twice in the varlist. tsrevar will create only one new variable for 1.gnp and use that new variable twice in the resulting r(varlist). Moreover, tsrevar will even do this across multiple calls:

```
.tsrevar gnp l.gnp cd 1.cd
.tsrevar cpi l.gnp
```

1.gnp appears in two separate calls. At the first call, tsrevar creates a temporary variable corresponding to 1.gnp. At the second call, tsrevar remembers what it has done and uses that same temporary variable for 1.gnp again.

Stored results

tsrevar stores the following in r():

Macros

```
<table>
<thead>
<tr>
<th>Macro</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>r(varlist)</td>
<td>the modified variable list or list of base variable names</td>
</tr>
</tbody>
</table>
```

Also see

[P] syntax — Parse Stata syntax

[P] unab — Unabbreviate variable list

[R] fvrevar — Factor-variables operator programming command

[U] 11 Language syntax

[U] 11.4.4 Time-series varlists

[U] 18 Programming Stata