tsrevar — Time-series operator programming command

Syntax

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

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

Description

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

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

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 1.gnp 12.gnp r 1.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`.

1
Example 1

```
. use http://www.stata-press.com/data/r13/tsrevarex
. tsrevar l.gnp d.gnp r
```

creates two temporary variables containing the values for \texttt{l.gnp} and \texttt{d.gnp}. The variable \texttt{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 \texttt{gnp}.

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

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

\section*{Technical note}

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

```
. tsrevar l.gnp l.gnp cd l.cd l.gnp
```

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

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

\texttt{l.gnp} appears in two separate calls. At the first call, \texttt{tsrevar} creates a temporary variable corresponding to \texttt{l.gnp}. At the second call, \texttt{tsrevar} remembers what it has done and uses that same temporary variable for \texttt{l.gnp} again.
**Stored results**

tsrevar stores the following in \( r() \):

Macros

\[
\text{r(varlist)} \quad \text{the modified variable list or list of base variable names}
\]

**Also see**

[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