



## Title

**svarih postestimation** — Postestimation tools for **svarih**

## Description

The following postestimation commands are of special interest after **svarih**:

Command	Description
<b>dsimih</b>	create and analyze SIRFs and SFEVDs
<b>svarih, cmat</b>	display estimated coefficients in matrix form

There is no direct interface to apply VAR postestimation tools to the underlying VAR of **svarih**. If you want to do this run the VAR separately using **var**, then apply the VAR postestimation tools. See **vargranger**, **valmar**, **varnorm**, **varsoc**, **varstable**, and **varwle**. Remember that these tools have to be applied in concordance with the assumption of distinct volatility regimes.

Forecasts for **svarih** are not implemented in **fcast**-type commands. Instead, use **predict** (see below).

The following standard postestimation commands are also available:

Command	Description
<b>estat</b>	AIC, BIC, VCE, and estimation sample summary
<b>estimates</b>	cataloging estimation results
<b>lincom</b>	point estimates, standard errors, testing, and inference for linear combinations of coefficients
<b>lrtest</b>	likelihood-ratio test
<b>nlcom</b>	point estimates, standard errors, testing, and inference for nonlinear combinations of coefficients
<b>predict</b>	fitted values, residuals, shocks, historical decompositions
<b>test</b>	Wald tests of simple and composite linear hypotheses
<b>testnl</b>	Wald tests of nonlinear hypotheses

## Syntax for predict

```
predict [type] {newvar|stub} [if] [in] [, statistic {equation(eqno|eqname)
llu_suboptions | hd_suboptions} ]
```

<i>statistic</i>	Description
<b>xb</b>	fitted values; the default
<b>residuals</b>	residuals
<b>shocks</b>	shock series
<b>hdecomp</b>	historical decompositions

<i>llu_suboptions</i>	Description
<b>notnormalized</b>	generate shocks whose variances in regime 2 correspond to the elements of the L-matrix rather than being 1

<i>hd_suboptions</i>	Description
<b>hdshock</b> ( <i>eqno</i>   <i>eqname</i> )	equation whose shock is examined
<b>hdbeg</b> ( <i>t1</i> )	beginning date of historical decomposition
<b>hdend</b> ( <i>tN</i> )	ending date of historical decomposition

**fitted values**, **residuals** and **shocks** are available both in and out of sample; type **predict ... if e(sample)** if wanted only for the estimation sample. Predictions for **svarih bac** and **svarih llu** are based on GLS-VAR coefficients if option **glsiter**(#), #>0, was used, and on VAR coefficients otherwise.

Options for predict

## Main

**xb** calculates fitted values. The default. Each call to **predict** generates one fitted values series.

**residuals** calculates residuals. Each call to **predict** generates one residual series.

Note that the fitted values or residuals generated are the ones from the underlying GLS-VAR or VAR regression(s). Official Stata's **svvar** will not let you create VAR residuals if your **svvar** specification produces an overidentified model. No such check is performed in **svvarih**. In the **svvar** case, you can easily generate VAR residuals by running an equivalent **var** command and then using **predict** afterwards. In the **svvarih** case, the generation of correct VAR residuals underlying **svvarih** estimation would be too cumbersome for the user, so **predict** after **svvarih** will always let you generate residuals.

**shocks** calculates the implied shock series. Each call to **predict** generates one shock series.

**hdecomp** calculates historical decompositions. Required complementary options are **hdbeg** and **hdend**. Option **hdshock** may optionally be supplied.

In contrast to options **xb**, **residuals** and **shocks**, each call to **predict** generates *neqs* variables, where *neqs* is the number of equations in the model. The naming convention for the *neqs* new variables is *stub+eqname*, where *eqname* is the name of a model equation. The data set may not contain a variable named *stub*.

**equation(eqno|eqname)** is allowed with options **residuals** and **shocks** only and specifies the equation to which you are referring.

**equation()** is filled in with one *eqno* or *eqname* for options **residuals** and **shocks**. **equation(#1)** would mean that the calculation is to be made for the first equation, **equation(#2)** would mean the second, and so on. You could also refer to the equation by its name; thus, **equation(income)** would refer to the equation named *income* and **equation(hours)**, to the equation named *hours*.

If you do not specify **equation()**, the results are the same as if you specified **equation(#1)**.

## Suboptions for svvarih llutkepohl

**notnormalized** will calculate series  $L^{(0.5)}e_t$ , not  $e_t$ . For the basic equations of the model, see section Model equations of **svvarih llutkepohl**.

## Suboptions for historical decompositions

**hdshock(eqno|eqname)** uses the calculated shock for the equation corresponding to *eqno* or *eqname* in order to calculate the historical decomposition. *eqno* or *eqname* can be specified as in option **equation**. The *i*-th variable created contains a counterfactual series for the *i*-th endogenous variable between periods *hdbeg* and *hdend*, assuming that only shocks for the equation corresponding to *eqno/eqname* are present.

If you do not specify option **hdshock**, the 'baseline' forecast, i.e. the regular forecast is calculated. This is identical to forecasts produced by **fcast compute**. Usually, what is of interest is the difference between the counterfactual of only one shock and the baseline where no shock occurs. In order to create such series, two calls to **predict** and additional variable subtraction statements are necessary.

**hdbeg**(*t1*) and **hdend**(*tN*) specify the beginning and ending periods of the historical decomposition. *t1* and *tN* can be numeric values that refer to the numeric date encoding of the frequency of the data set. In addition, they can be date strings conformable with the frequency of the data set.

Like the option **dynamic** of **fcast compute**, option **hdbeg** of **predict** creates series starting in period *hdbeg-1*. In contrast to **fcast compute**, option **hdecomp** does not automatically extend the data set if necessitated by option **hdend**. This can be accommodated easily through a previous **tsappend** statement.

If exogenous variables are in the model, they should have nonmissing values in the date range *t1-tN*. If a missing value occurs in a certain period, all calculated values subsequent to that period would be missing too which is why **predict** generates an error in these cases.

Historical decompositions currently can only be calculated for daily and lower frequencies.

For more information on using **predict** after multiple-equation commands, see **[R]**