

## Postestimation commands

The following postestimation commands are available after `nlsur`:

Command	Description
<code>estat ic</code>	Akaike's, consistent Akaike's, corrected Akaike's, and Schwarz's Bayesian information criteria (AIC, CAIC, AICc, and BIC, respectively)
<code>estat summarize</code>	summary statistics for the estimation sample
<code>estat vce</code>	variance–covariance matrix of the estimators (VCE)
<code>estimates</code>	cataloging estimation results
<code>etable</code>	table of estimation results
<code>forecast</code>	dynamic forecasts and simulations
<code>hausman</code>	Hausman's specification test
<code>lincom</code>	point estimates, standard errors, testing, and inference for linear combinations of parameters
<code>lrtest</code>	likelihood-ratio test
<code>*margins</code>	marginal means, predictive margins, marginal effects, and average marginal effects
<code>marginsplot</code>	graph the results from margins (profile plots, interaction plots, etc.)
<code>nlcom</code>	point estimates, standard errors, testing, and inference for nonlinear combinations of parameters
<code>predict</code>	fitted values, residuals, etc.
<code>predictnl</code>	point estimates, standard errors, testing, and inference for generalized predictions
<code>test</code>	Wald tests of simple and composite linear hypotheses
<code>testnl</code>	Wald tests of nonlinear hypotheses

\*You must specify the `variables()` option with `nlsur`.

# predict

## Description for predict

`predict` creates a new variable containing predictions such as fitted values and residuals.

## Menu for predict

Statistics > Postestimation

## Syntax for predict

```
predict [type] newvar [if] [in] [ , equation(eqno) yhat residuals ]
```

These statistics are available both in and out of sample; type `predict ... if e(sample) ...` if wanted only for the estimation sample.

## Options for predict

### Main

`equation(eqno)` specifies to which equation you are referring. `equation(#1)` would mean that the calculation is to be made for the first equation, `equation(#2)` would mean the second, and so on. If you do not specify `equation()`, results are the same as if you had specified `equation(#1)`.

`yhat`, the default, calculates the fitted values for the specified equation.

`residuals` calculates the residuals for the specified equation.

# margins

## Description for margins

margins estimates margins of response for fitted values.

## Menu for margins

Statistics > Postestimation

## Syntax for margins

```
margins [marginlist] [ , options ]
margins [marginlist] , predict (statistic ...) [ options ]
```

<i>statistic</i>	Description
<u>y</u> hat	fitted values; the default
<u>r</u> esiduals	not allowed with margins

Statistics not allowed with margins are functions of stochastic quantities other than  $e(b)$ .

For the full syntax, see [R] [margins](#).

## Remarks and examples

### ➤ Example 1

In [example 2](#) of [R] [nlsur](#), we fit a four-factor translog cost function to data for the US economy. The own-price elasticity for a factor measures the percentage change in its usage as a result of a 1% increase in the factor's price, assuming that output is held constant. For the translog production function, the own-price factor elasticities are

$$\eta_i = \frac{\delta_{ii} + s_i(s_i - 1)}{s_i}$$

Here we compute the elasticity for capital at the sample mean of capital’s factor share. First, we use `summarize` to get the mean of `s_k` and store that value in a scalar:

```
. use https://www.stata-press.com/data/r19/mfgcost
(Manufacturing cost)
. nlsur (s_k = {bk} + {dkk}*ln(pk/pm) + {dkl}*ln(pl/pm) + {dke}*ln(pe/pm))
>      (s_l = {bl} + {dkl}*ln(pk/pm) + {dll}*ln(pl/pm) + {dle}*ln(pe/pm))
>      (s_e = {be} + {dke}*ln(pk/pm) + {dle}*ln(pl/pm) + {dee}*ln(pe/pm)),
>      ifgnls
(output omitted)
. summarize s_k
```

Variable	Obs	Mean	Std. dev.	Min	Max
s_k	25	.053488	.0044795	.04602	.06185

```
. scalar kmean = r(mean)
```

Now, we can use `nlcom` to calculate the elasticity:

```
. nlcom (([dkk]_cons + kmean*(kmean-1)) / kmean)
       _nl_1: ([dkk]_cons + kmean*(kmean-1)) / kmean
```

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
_nl_1	-.3952986	.1083535	-3.65	0.000	-.6076676    -.1829295

If the price of capital increases by 1%, its usage will decrease by about 0.4%. To maintain its current level of output, a firm would increase its usage of other inputs to compensate for the lower capital usage. The standard error reported by `nlcom` reflects the sampling variance of the estimated parameter  $\widehat{\delta_{kk}}$ , but `nlcom` treats the sample mean of `s_k` as a fixed parameter that does not contribute to the sampling variance of the estimated elasticity.

◀

## Also see

[R] [nlsur](#) — Estimation of nonlinear system of equations

[U] [20 Estimation and postestimation commands](#)

