

npregress kernel postestimation — Postestimation tools for npregress kernel

Postestimation commands
 npregraph
 References

predict
 Remarks and examples
 Also see

margins
 Methods and formulas

Postestimation commands

The following postestimation command is of special interest after `npregress kernel`:

Command	Description
<code>npregraph</code>	plot of conditional means

The following standard postestimation commands are also available:

Command	Description
<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>lincom</code>	point estimates, standard errors, testing, and inference for linear combinations of coefficients
<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 coefficients
<code>predict</code>	conditional means and residuals
<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

predict

Description for predict

`predict` creates a new variable containing predictions such as conditional mean of the outcome, residuals, or derivatives of the mean function.

Menu for predict

Statistics > Postestimation

Syntax for predict

```
predict [type] newvar [if] [in] [, statistic]
```

```
predict [type] { stub* | newvarlist } [if] [in], derivatives
```

<i>statistic</i>	Description
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Main

<code>mean</code>	conditional mean of the outcome; the default
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<code><u>r</u>esiduals</code>	residuals
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These statistics are calculated only for the estimation sample.

Options for predict

Main

`mean`, the default, calculates the conditional mean of the outcome variable.

`residuals` calculates the residuals.

`derivatives` calculates the derivatives of the conditional mean.

margins

Description for margins

`margins` estimates margins of the conditional mean.

Menu for margins

Statistics > Postestimation

Syntax for margins

```
margins [marginlist] [, options]
```

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

<i>statistic</i>	Description
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Main

<code>mean</code>	conditional mean of the outcome; the default
<code><u>r</u>esiduals</code>	not allowed with <code>margins</code>
<code><u>d</u>erivatives</code>	not allowed with <code>margins</code>

<i>options</i>	Description
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SE

<code>nose</code>	do not estimate standard errors; the default
<code>vce(bootstrap)</code>	estimate bootstrap standard errors
<code><u>r</u>eps(#)</code>	equivalent to <code>vce(bootstrap, reps(#))</code>
<code>seed(#)</code>	set random-number seed to #; must also specify <code>reps(#)</code>

Reporting

<code>citype(<i>citype</i>)</code>	method to compute bootstrap confidence intervals; default is <code>citype(percentile)</code>
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<i>citype</i>	Description
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<code>percentile</code>	percentile confidence intervals; the default
<code>bc</code>	bias-corrected confidence intervals
<code><u>n</u>ormal</code>	normal-based confidence intervals

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

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

Options for margins

SE

`nose` suppresses calculation of the VCE and standard errors. This is the default.

`vce(bootstrap)` specifies that bootstrap standard errors are reported; see [R] [vce_option](#).

We recommend that you select the number of replications using `reps(#)` instead of specifying `vce(bootstrap)`, which defaults to 50 replications. Be aware that the number of replications needed to produce good estimates of the standard errors varies depending on the problem.

`reps(#)` specifies the number of bootstrap replications to be performed. Specifying this option is equivalent to specifying `vce(bootstrap, reps(#))`.

`seed(#)` sets the random-number seed. You must specify `reps(#)` with `seed(#)`.

Reporting

`ciptype(citype)` specifies the type of confidence interval to be computed. By default, bootstrap percentile confidence intervals are reported as recommended by [Cattaneo and Jansson \(2018\)](#). *citype* may be one of `percentile`, `bc`, or `normal`.

npgraph

Description for npgraph

`npgraph` plots the conditional mean estimated by `npregress kernel` overlaid on a scatterplot of the data. `npgraph` is available only after fitting models with one covariate.

Syntax for npgraph

```
npgraph [if] [in] [, options]
```

<i>options</i>	Description
Plot	
marker_options	change look of markers (color, size, etc.)
marker_label_options	add marker labels; change look or position
<code>nosscatter</code>	suppress scatterplot
Smoothed line	
<code>lineopts(cline_options)</code>	affect rendition of the smoothed line
Add plots	
<code>addplot(<i>plot</i>)</code>	add other plots to the generated graph
Y axis, X axis, Titles, Legend, Overall	
twoway_options	any options other than <code>by()</code> documented in [G-3] twoway_options

Options for ngraph

Plot

marker_options affect the rendition of markers drawn at the plotted points, including their shape, size, color, and outline; see [G-3] [marker_options](#).

marker_label_options specify if and how the markers are to be labeled; see [G-3] [marker_label_options](#).

nosscatter suppresses superimposing a scatterplot of the observed data over the smooth. This option is useful when the number of resulting points would be so large as to clutter the graph.

Smoothed line

lineopts(*cline_options*) affects the rendition of the smoothed line; see [G-3] [cline_options](#).

Add plots

addplot(*plot*) provides a way to add other plots to the generated graph; see [G-3] [addplot_option](#).

Y axis, X axis, Titles, Legend, Overall

tway_options are any of the options documented in [G-3] [tway_options](#), excluding *by*(). These include options for titling the graph (see [G-3] [title_options](#)) and for saving the graph to disk (see [G-3] [saving_option](#)).

Remarks and examples

[stata.com](https://www.stata.com)

For examples of *margins* after *npregress kernel*, see [example 4](#), [example 5](#), and [example 6](#) in [R] [npregress kernel](#).

For examples of *marginsplot*, see [example 7](#) in [R] [npregress kernel](#).

For an example of *ngraph*, see [example 2](#) in [R] [npregress kernel](#).

Methods and formulas

The formulas used by *predict* and *margins* for the conditional mean function and the mean marginal effect of a covariate are given in [Methods and formulas](#) of [R] [npregress kernel](#).

References

- Cattaneo, M. D., and M. Jansson. 2018. Kernel-based semiparametric estimators: Small bandwidth asymptotics and bootstrap consistency. *Econometrica* 86: 955–995. <https://doi.org/10.3982/ECTA12701>.
- MacDonald, K. 2018. Exploring results of nonparametric regression models. *The Stata Blog: Not Elsewhere Classified*. <https://blog.stata.com/2018/06/18/exploring-results-of-nonparametric-regression-models/>.

Also see

- [R] [npregress kernel](#) — Nonparametric kernel regression
- [R] [bootstrap postestimation](#) — Postestimation tools for bootstrap
- [U] [20 Estimation and postestimation commands](#)

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