

xheckman postestimation — Postestimation tools for xheckman

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Postestimation commands

The following postestimation commands are available after `xheckman`:

Command	Description
<code>contrast</code>	contrasts and ANOVA-style joint tests of estimates
<code>estat ic</code>	Akaike's and Schwarz's Bayesian information criteria (AIC and BIC)
<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>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 coefficients
<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 coefficients
<code>predict</code>	linear predictions, probabilities, etc.
<code>predictnl</code>	point estimates, standard errors, testing, and inference for generalized predictions
<code>pwcompare</code>	pairwise comparisons of estimates
<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 linear predictions, probabilities, and expected values.

Menu for predict

Statistics > Postestimation

Syntax for predict

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

```
predict [type] stub* [if] [in], scores
```

<i>statistic</i>	Description
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Main

<code>xb</code>	linear prediction; the default
<code>xbse1</code>	linear prediction for selection equation
<code>pr(<i>a</i>,<i>b</i>)</code>	$\Pr(y_{it} \mid a < y_{it} < b)$
<code>e(<i>a</i>,<i>b</i>)</code>	$E(y_{it} \mid a < y_{it} < b)$
<code>ystar(<i>a</i>,<i>b</i>)</code>	$E(y_{it}^*), y_{it}^* = \max\{a, \min(y_{it}, b)\}$
<code>ycond</code>	$E(y_{it} \mid y_{it} \text{ observed})$
<code>psel</code>	$\Pr(y_{it} \text{ observed})$

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

where a and b may be numbers or variables; a missing ($a \geq .$) means $-\infty$, and b missing ($b \geq .$) means $+\infty$; see [U] 12.2.1 Missing values.

Options for predict

Main

`xb`, the default, calculates the linear prediction $\mathbf{x}_{it}\mathbf{b}$.

`xbse1` calculates the linear prediction for the selection equation.

`pr(a,b)` calculates $\Pr(a < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < b)$, the probability that $y_{it} \mid \mathbf{x}_{it}$ would be observed in the interval (a, b) .

a and b may be specified as numbers or variable names; lb and ub are variable names;

`pr(20,30)` calculates $\Pr(20 < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < 30)$; `pr(lb,ub)` calculates $\Pr(lb < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < ub)$; and `pr(20,ub)` calculates $\Pr(20 < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < ub)$.

a missing ($a \geq .$) means $-\infty$; `pr(. ,30)` calculates $\Pr(-\infty < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < 30)$;

`pr(lb,30)` calculates $\Pr(-\infty < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < 30)$ in observations for which $lb \geq .$ and calculates $\Pr(lb < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < 30)$ elsewhere.

b missing ($b \geq .$) means $+\infty$; `pr(20, .)` calculates $\Pr(+\infty > \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} > 20)$; `pr(20, ub)` calculates $\Pr(+\infty > \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} > 20)$ in observations for which $ub \geq .$ and calculates $\Pr(20 < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < ub)$ elsewhere.

`e(a, b)` calculates $E(\mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} \mid a < \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} < b)$, the expected value of $y_{it} \mid \mathbf{x}_{it}$ conditional on $y_{it} \mid \mathbf{x}_{it}$ being in the interval (a, b) , meaning that $y_{it} \mid \mathbf{x}_{it}$ is truncated.

a and b are specified as they are for `pr()`.

`ystar(a, b)` calculates $E(y_{it}^*)$, where $y_{it}^* = a$ if $\mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} \leq a$, $y_{it}^* = b$ if $\mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it} \geq b$, and $y_{it}^* = \mathbf{x}_{it}\mathbf{b} + \nu_{1i} + \epsilon_{1it}$ otherwise, meaning that y_{it}^* is not selected. a and b are specified as they are for `pr()`.

`ycond` calculates the expected value of the dependent variable conditional on the dependent variable being observed, that is, selected; $E(y_{it} \mid y_{it} \text{ observed})$.

`pssel` calculates the probability of selection (or being observed):

$$\Pr(y_{it} \text{ observed}) = \Pr(\mathbf{z}_{it}\boldsymbol{\alpha} + \nu_{2i} + \epsilon_{2it} > 0).$$

`noffset` is relevant when you specify `offset(varname)` for `xtheckman`. It modifies the calculations made by `predict` so that they ignore the offset variable; the linear prediction is treated as $\mathbf{x}_{it}\mathbf{b}$ rather than as $\mathbf{x}_{it}\mathbf{b} + \text{offset}_{it}$.

`scores` calculates parameter-level score variables.

margins

Description for margins

`margins` estimates margins of response for linear predictions, probabilities, and expected values.

Menu for margins

Statistics > Postestimation

Syntax for margins

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

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

<i>statistic</i>	Description
<code>xb</code>	linear prediction; the default
<code>xbssel</code>	linear prediction for selection equation
<code>pr(a, b)</code>	$\Pr(y_{it} \mid a < y_{it} < b)$
<code>e(a, b)</code>	$E(y_{it} \mid a < y_{it} < b)$
<code>ystar(a, b)</code>	$E(y_{it}^*), y_{it}^* = \max\{a, \min(y_{it}, b)\}$
<code>ycond</code>	$E(y_{it} \mid y_{it} \text{ observed})$
<code>pssel</code>	$\Pr(y_{it} \text{ observed})$

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

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

Remarks and examples

[stata.com](#)

The default statistic produced by `predict` after `xheckman` is the expected value of the dependent variable from the underlying distribution of the regression model. See [example 1](#) of [\[XT\] xheckman](#) for an example where `margins` is used to predict the conditional mean.

Also see

[\[XT\] xheckman](#) — Random-effects regression with sample selection

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