

xtmlogit postestimation — Postestimation tools for xtmlogit

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Postestimation commands

The following postestimation command is of special interest after `xtmlogit`:

Command	Description
<code>estat sd</code>	display variance components as standard deviations and correlations

The following standard postestimation commands are also available:

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>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>	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

*`hausman` and `lrtest` are not appropriate with `svy` estimation results.

predict

Description for predict

`predict` creates a new variable containing predictions such as probabilities and linear predictions.

Menu for predict

Statistics > Postestimation

Syntax for predict

Random-effects model

```
predict [type] { stub* | newvar | newvarlist } [if] [in] [, RE_statistic
    outcome(outcome) ]
```

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

Fixed-effects model

```
predict [type] { stub* | newvar | newvarlist } [if] [in] [, FE_statistic
    outcome(outcome) ]
```

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

RE_statistic Description

Main	
<code>pr</code>	marginal probability of the specified outcome; the default
<code>pcr</code>	conditional probability of the specified outcome
<code>pu0</code>	probability of the specified outcome, assuming zero random effects
<code>xb</code>	linear prediction of the specified outcome, including random effects
<code>xb0</code>	linear prediction of the specified outcome, assuming zero random effects

FE_statistic Description

Main	
<code>pu0</code>	probability of the specified outcome, assuming zero fixed effects; the default
<code>xb</code>	linear prediction for the specified outcome, assuming zero fixed effects

You specify one or k new variables, where k is the number of outcomes. If you specify one new variable and you do not specify `outcome()`, then `outcome(#1)` is assumed.

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

- pr** (after `xtmlogit`, `re` only) calculates predicted probabilities that are marginal with respect to the random effects, which means that the probabilities are calculated by integrating the prediction function with respect to the random effect over its entire support. If `outcome()` is not specified, `pr` defaults to the first outcome. This is the default for the random-effects model.
- pcr** (after `xtmlogit`, `re` only) calculates predicted probabilities that are conditional on the random effects. If `outcome()` is not specified, `pcr` defaults to the first outcome.
- pu0** calculates predicted probabilities, assuming that the fixed or random effect for that observation's panel is zero ($u_i = 0$). If `outcome()` is not specified, `pu0` defaults to the first outcome. This is the default for the fixed-effects model.
- xb** calculates the linear prediction. This includes the random effect in the case of `xtmlogit`, `re`. In the case of `xtmlogit`, `fe`, the fixed effect is assumed to be zero. If `outcome()` is not specified, `xb` defaults to the first outcome.
- xb0** (after `xtmlogit`, `re` only) calculates the linear prediction, excluding the random effect. If `outcome()` is not specified, `xb0` defaults to the first outcome.
- scores** calculates parameter-level scores, the first derivatives of the log likelihood with respect to β_j .
- outcome(*outcome*)** specifies the outcome for which the predicted probabilities or linear predictions are to be calculated. `outcome()` can only be used when one variable is specified. `outcome()` should contain either one value of the dependent variable or one of `#1`, `#2`, `...`, with `#1` meaning the first category of the dependent variable, `#2` meaning the second category, etc.

margins

Description for margins

`margins` estimates margins of response for probabilities and linear predictions.

Menu for margins

Statistics > Postestimation

Syntax for margins

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

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

Random-effects model

<i>statistic</i>	Description
default	marginal probability for each outcome
pr	marginal probability of the specified outcome
pu0	probability of the specified outcome, assuming random effect is zero
xb	linear prediction of the specified outcome equation, including random effect
xb0	linear prediction of the specified outcome equation, assuming random effect is zero
pcr	not allowed with <code>margins</code>

Fixed-effects model

<i>statistic</i>	Description
default	probability for each outcome, assuming fixed effect is zero
pu0	probability of the specified outcome, assuming fixed effect is zero
xb	linear prediction of the specified outcome equation, assuming fixed effect is zero

`pr`, `pu0`, `xb`, and `xb0` default to the first outcome when `outcome()` is not specified.

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

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

Also see

[XT] [xtmlogit](#) — Fixed-effects and random-effects multinomial logit models

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