Title

xtmlogit postestimation — Postestimation tools for xtmlogit

Postestimation commands   predict   margins   Also see

Postestimation commands

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

Command	Description
estat sd	display variance components as standard deviations and correlations

The following standard postestimation commands are also available:

Command	Description
contrast	contrasts and ANOVA-style joint tests of estimates
estat ic	Akaike's, consistent Akaike's, corrected Akaike's, and Schwarz's Bayesian information criteria (AIC, CAIC, AICc, and BIC)
estat summarize	summary statistics for the estimation sample
estat vce	variance–covariance matrix of the estimators (VCE)
estimates	cataloging estimation results
etable	table of estimation results
* hausman	Hausman's specification test
lincom	point estimates, standard errors, testing, and inference for linear combinations of coefficients
* lrtest	likelihood-ratio test
margins	marginal means, predictive margins, marginal effects, and average marginal effects
marginsplot	graph the results from margins (profile plots, interaction plots, etc.)
nlcom	point estimates, standard errors, testing, and inference for nonlinear combinations of coefficients
predict	probabilities, etc.
predictnl	point estimates, standard errors, testing, and inference for generalized predictions
pwcompare	pairwise comparisons of estimates
test	Wald tests of simple and composite linear hypotheses
testnl	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*
>
> <u>o</u>utcome(*outcome*)]

> predict [*type*] { *stub** | *newvarlist* } [*if*] [*in*], <u>sc</u>ores

Fixed-effects model

> predict [*type*] { *stub** | *newvar* | *newvarlist* } [*if*] [*in*] [, *FE_statistic*
>
> <u>o</u>utcome(*outcome*)]

> predict [*type*] { *stub** | *newvarlist* } [*if*] [*in*], <u>sc</u>ores

RE_statistic	Description
Main	
pr	marginal probability of the specified outcome; the default
pcr	conditional probability of the specified outcome
pu0	probability of the specified outcome, assuming zero random effects
xb	linear prediction of the specified outcome, including random effects
xb0	linear prediction of the specified outcome, assuming zero random effects

FE_statistic	Description
Main	
pu0	probability of the specified outcome, assuming zero fixed effects; the default
xb	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. This prediction method is of primary interest if population-averaged probabilities are desired. 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. In contrast to predict, pr, the random effects are not integrated out but are set to their predicted value when predictions are computed from the logistic cumulative distribution function. The random effects are calculated using their posterior means, which are approximated using mean-variance adaptive Gaussian quadrature. This prediction method is useful if observation-level predictions, rather than averaged predicted probabilities, are of interest. 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*] , <u>predict</u>(*statistic* ...) [<u>predict</u>(*statistic* ...) ...] [*options*]

Random-effects model

statistic	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 margins

Fixed-effects model

statistic	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**