Title

> **xtologit postestimation** — Postestimation tools for xtologit

Description

The following postestimation commands are available after `xtologit`:

Command	Description
contrast	contrasts and ANOVA-style joint tests of estimates
estat ic	Akaike's and Schwarz's Bayesian information criteria (AIC and BIC)
estat summarize	summary statistics for the estimation sample
estat vce	variance–covariance matrix of the estimators (VCE)
estimates	cataloging 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	predictions, residuals, influence statistics, and other diagnostic measures
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

Syntax for predict

> predict [*type*] { *stub** | *newvar* | *newvarlist* } [*if*] [*in*] [, *statistic*
>
>   <u>outcome</u>(*outcome*) <u>nooff</u>set]

statistic	Description
Main	
xb	linear prediction; the default
pu0	probability of the specified outcome (outcome()) assuming that the random effect is zero
stdp	standard error of the linear prediction

If you do not specify outcome(), pu0 (with one new variable specified) assumes outcome(#1).

You specify one or k new variables with pu0, where k is the number of outcomes.

You specify one new variable with xb and stdp.

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

Menu for predict

Statistics > Postestimation > Predictions, residuals, etc.

Options for predict

> Main

xb, the default, calculates the linear prediction.

pu0 calculates predicted probabilities, assuming that the random effect for that observation's panel is zero ($\nu = 0$).

> You specify one or k new variables, where k is the number of categories of the dependent variable. If you specify the outcome() option, the probabilities will be predicted for the requested outcome only, in which case, you specify only one new variable. If you specify only one new variable and do not specify outcome(), outcome(1) is assumed.

stdp calculates the standard error of the linear prediction.

outcome(*outcome*) specifies the outcome for which the predicted probabilities are to be calculated. 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.

nooffset is relevant only if you specified offset(*varname*) for xtologit. This option modifies the calculations made by predict so that they ignore the offset variable; the linear prediction is treated as $\mathbf{x}_{it}\boldsymbol{\beta}$ rather than $\mathbf{x}_{it}\boldsymbol{\beta} + \text{offset}_{it}$.

Remarks and examples

stata.com

▷ Example 1

In example 1 of [XT] **xtologit**, we modeled the tobacco and health knowledge score (thk)—coded 1, 2, 3, 4—among students as a function of two treatments (cc and tv) using a random-effects ordered logistic model. Here we refit the model, obtain the predicted probabilities for all 4 outcomes, and list the first 10 observations.

```
. use http://www.stata-press.com/data/r13/tvsfpors
. xtset school
        panel variable:  school (unbalanced)
. xtologit thk prethk cc##tv
 (output omitted)
. predict pr*, pu0
(1 missing values generated)
. list thk pr1-pr4 in 1/10
```

	thk	pr1	pr2	pr3	pr4
1.	3	.1395758	.2200463	.2863958	.3539821
2.	4	.0675217	.1329124	.2484952	.5510707
3.	3	.0675217	.1329124	.2484952	.5510707
4.	4	.0977827	.1750507	.2765777	.4505889
5.	4	.0977827	.1750507	.2765777	.4505889
6.	3	.0675217	.1329124	.2484952	.5510707
7.	2	.1395758	.2200463	.2863958	.3539821
8.	4	.0675217	.1329124	.2484952	.5510707
9.	4	.0461466	.09731	.2089935	.6475499
10.	4	.0977827	.1750507	.2765777	.4505889

For each observation, our best guess for the predicted outcome is the one with the highest predicted probability. For example, for the very first observation in the table above, we would choose outcome 4 as the most likely to occur.

These predicted probabilities assume the random effects are zero for all panels. If you are interested in predicted probabilities that incorporate the random effects, see [ME] **meologit** and [ME] **meologit postestimation**.

◁

Also see

[XT] **xtologit** — Random-effects ordered logistic models

[U] **20 Estimation and postestimation commands**