

xtcloglog postestimation — Postestimation tools for xtcloglog

Description
Also see

Syntax for predict

Menu for predict

Remarks and examples

Description

The following postestimation commands are available after `xtcloglog`:

Command	Description
<code>contrast</code>	contrasts and ANOVA-style joint tests of estimates
<code>estat ic</code> ¹	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> ²	dynamic forecasts and simulations
<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>	predictions, residuals, influence statistics, and other diagnostic measures
<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

¹ `estat ic` is not appropriate after `xtcloglog`, `pa`.

² `forecast` is not appropriate with `mi` estimation results.

Syntax for predict

Random-effects (RE) model

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

Population-averaged (PA) model

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

RE_statistic Description

Main

xb	linear prediction; the default
pu0	probability of a positive outcome
stdp	standard error of the linear prediction

PA_statistic Description

Main

mu	predicted probability of <i>depvar</i> ; considers the <code>offset()</code> ; the default
rate	predicted probability of <i>depvar</i>
xb	linear prediction
stdp	standard error of the linear prediction
score	first derivative of the log likelihood with respect to $\mathbf{x}_j\beta$

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 calculates the linear prediction. This is the default for the random-effects model.

pu0 calculates the probability of a positive outcome, assuming that the random effect for that observation's panel is zero ($\nu = 0$). This may not be similar to the proportion of observed outcomes in the group.

stdp calculates the standard error of the linear prediction.

mu and **rate** both calculate the predicted probability of *depvar*. **mu** takes into account the `offset()`. **rate** ignores those adjustments. **mu** and **rate** are equivalent if you did not specify `offset()`. **mu** is the default for the population-averaged model.

score calculates the equation-level score, $u_j = \partial \ln L_j(\mathbf{x}_j\beta) / \partial (\mathbf{x}_j\beta)$.

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

Remarks and examples

▷ Example 1

In [example 1](#) of [\[XT\] xtcloglog](#), we fit the model

```
. use http://www.stata-press.com/data/r13/union
(NLS Women 14-24 in 1968)

. xtcloglog union age grade not_smsa south##c.year, pa
(output omitted)
```

Here we use `margins` to determine the average effect each regressor has on the probability of a positive response in the sample.

```
. margins, dydx(*)
Average marginal effects           Number of obs   =       26200
Model VCE      : Conventional
Expression    : Pr(union != 0), predict()
dy/dx w.r.t.  : age grade not_smsa 1.south year
```

	Delta-method		z	P> z	[95% Conf. Interval]	
	dy/dx	Std. Err.				
age	.0028297	.0014952	1.89	0.058	-.000101	.0057603
grade	.0101144	.0017498	5.78	0.000	.0066848	.013544
not_smsa	-.0192384	.0079304	-2.43	0.015	-.0347818	-.0036951
1.south	-.0913197	.0073101	-12.49	0.000	-.1056473	-.0769921
year	-.0012694	.001534	-0.83	0.408	-.004276	.0017371

Note: dy/dx for factor levels is the discrete change from the base level.

We see that an additional year of schooling (covariate `grade`) increases the probability that a woman belongs to a union by an average of about one percentage point.

◀

Also see

[\[XT\] xtcloglog](#) — Random-effects and population-averaged cloglog models

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