cmmixlogit postestimation — Postestimation tools for cmmixlogit

Postestimation commands predict margins Methods and formulas
Also see

Postestimation commands

The following standard postestimation commands are available after `cmmixlogit`:

Command	Description
`contrast`	contrasts and ANOVA-style joint tests of parameters
`estat ic`	Akaike's, consistent Akaike's, corrected Akaike's, and Schwarz's Bayesian information criteria (AIC, CAIC, AICc, and BIC, respectively)
`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 parameters
* `lrtest`	likelihood-ratio test
`margins`	adjusted predictions, predictive margins, and 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 parameters
`predict`	probabilities, etc.
`predictnl`	point estimates, standard errors, testing, and inference for generalized predictions
`pwcompare`	pairwise comparisons of parameters
`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 or linear predictions.

Menu for predict

Statistics > Postestimation

Syntax for predict

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

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

statistic	Description
Main	
`pr`	probability alternative is chosen; the default
`xb`	linear prediction

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

`predict` omits missing values casewise if `cmmixlogit` used casewise deletion (the default); if `cmmixlogit` used alternativewise deletion (option `altwise`), `predict` uses alternativewise deletion.

Options for predict

Main

`pr`, the default, calculates the probability of choosing each alternative.

`xb` calculates the linear prediction.

`scores` calculates the scores for each coefficient in `e(b)`. This option requires a new variable list of length equal to the number of columns in `e(b)`. Otherwise, use the *stub*`*` syntax to have `predict` generate enumerated variables with prefix *stub*.

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*]

statistic	Description
`pr`	probability alternative is chosen; the default
`xb`	linear prediction
`scores`	not allowed with `margins`

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

For more details, see [CM] **margins**.

Methods and formulas

The predicted probability of case i choosing alternative a is

$$\hat{P}_{ia} = \frac{1}{M}\sum_{m=1}^{M} P_{ia}(\boldsymbol{\beta}^m)$$

where M is the number of random draws and $P_{ia}(\boldsymbol{\beta}^m)$ are the logistic probabilities,

$$P_{ia}(\boldsymbol{\beta}^m) = \frac{e^{\mathbf{x}_{ia}\boldsymbol{\beta}_i^m + \mathbf{w}_{ia}\boldsymbol{\alpha} + \mathbf{z}_i\boldsymbol{\delta}_a}}{\sum_{a=1}^{A} e^{\mathbf{x}_{ia}\boldsymbol{\beta}_i^m + \mathbf{w}_{ia}\boldsymbol{\alpha} + \mathbf{z}_i\boldsymbol{\delta}_a}}$$

evaluated at the simulated coefficients $\boldsymbol{\beta}^m$. The linear predictions are

$$\frac{1}{M}\sum_{m=1}^{M} \mathbf{x}_{ia}\boldsymbol{\beta}_i^m + \mathbf{w}_{ia}\boldsymbol{\alpha} + \mathbf{z}_i\boldsymbol{\delta}_a$$

See *Methods and formulas* in [CM] **cmmixlogit** for details.

Also see

[CM] **cmmixlogit** — Mixed logit choice model

[CM] **margins** — Adjusted predictions, predictive margins, and marginal effects

[U] 20 Estimation and postestimation commands

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