hetprobit postestimation — Postestimation tools for hetprobit

Postestimation commands predict margins Remarks and examples Also see

Postestimation commands

The following postestimation commands are available after `hetprobit`:

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)
`estat (svy)`	postestimation statistics for survey data
`estimates`	cataloging estimation results
`etable`	table of estimation results
* `forecast`	dynamic forecasts and simulations
* `hausman`	Hausman's specification test
`lincom`	point estimates, standard errors, testing, and inference for linear combinations of parameters
`linktest`	link test for model specification
* `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 parameters
`predict`	probabilities, linear predictions, etc.
`predictnl`	point estimates, standard errors, testing, and inference for generalized predictions
`pwcompare`	pairwise comparisons of parameters
`suest`	seemingly unrelated estimation
`test`	Wald tests of simple and composite linear hypotheses
`testnl`	Wald tests of nonlinear hypotheses

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

predict

Description for predict

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

Menu for predict

Statistics > Postestimation

Syntax for predict

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

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

statistic	Description
Main	
`pr`	probability of a positive outcome; the default
`xb`	linear prediction
`sigma`	standard deviation of the error term

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`, the default, calculates the probability of a positive outcome.

`xb` calculates the linear prediction.

`sigma` calculates the standard deviation of the error term.

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

`scores` calculates equation-level score variables.

The first new variable will contain $\partial \ln L/\partial(\mathbf{x}_j\boldsymbol{\beta})$.

The second new variable will contain $\partial \ln L/\partial(\mathbf{z}_j\boldsymbol{\gamma})$.

margins

Description for margins

`margins` estimates margins of response for probabilities, linear predictions, and standard deviations.

Menu for margins

Statistics > Postestimation

Syntax for margins

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

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

statistic	Description
`pr`	probability of a positive outcome; the default
`xb`	linear prediction
`sigma`	standard deviation of the error term

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

For the full syntax, see [R] **margins**.

Remarks and examples

Once you have fit a model, you can use the `predict` command to obtain the predicted probabilities for both the estimation sample and other samples; see **[U] 20 Estimation and postestimation commands** and [R] **predict**. `predict` without arguments calculates the predicted probability of a positive outcome. With the `xb` option, `predict` calculates the index function combination, $\mathbf{x}_j\mathbf{b}$, where $\mathbf{x}_j$ are the independent variables in the jth observation and $\mathbf{b}$ is the estimated parameter vector. With the `sigma` option, `predict` calculates the predicted standard deviation, $\sigma_j = \exp(\mathbf{z}_j\boldsymbol{\gamma})$.

Example 1

We use `predict` to compute the predicted probabilities and standard deviations based on the model in example 2 in [R] **hetprobit** to compare these with the actual values:

```
. predict phat
(option pr assumed; Pr(y))
. generate diff_p = phat - p
. summarize diff_p
    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
      diff_p |      1,000    .0082805    .0103027  -.0169849   .0396469
. predict sigmahat, sigma
. generate diff_s = sigmahat - sigma
. summarize diff_s
    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
      diff_s |      1,000   -.2579493    .2126614  -.7661171   -.000025
```

Also see

[R] **hetprobit** — Heteroskedastic probit model

[U] 20 Estimation and postestimation commands