

## Postestimation commands

The following postestimation commands are available after `hetprobit`:

| Command                      | Description   |
|------------------------------|---|
| <code>contrast</code>        | contrasts and ANOVA-style joint tests of parameters   |
| <code>estat ic</code>        | Akaike's, consistent Akaike's, corrected Akaike's, and Schwarz's Bayesian information criteria (AIC, CAIC, AICc, and BIC, respectively) |
| <code>estat summarize</code> | summary statistics for the estimation sample  |
| <code>estat vce</code>       | variance–covariance matrix of the estimators (VCE)  |
| <code>estat (svy)</code>     | postestimation statistics for survey data   |
| <code>estimates</code>       | cataloging estimation results   |
| <code>etable</code>          | table of estimation results   |
| * <code>forecast</code>      | dynamic forecasts and simulations   |
| * <code>hausman</code>       | Hausman's specification test  |
| <code>lincom</code>          | point estimates, standard errors, testing, and inference for linear combinations of parameters  |
| <code>linktest</code>        | link test for model specification   |
| * <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 parameters                                       |
| <code>predict</code>         | probabilities, linear predictions, etc.   |
| <code>predictnl</code>       | point estimates, standard errors, testing, and inference for generalized predictions  |
| <code>pwcompare</code>       | pairwise comparisons of parameters  |
| <code>suest</code>           | seemingly unrelated estimation  |
| <code>test</code>            | Wald tests of simple and composite linear hypotheses  |
| <code>testnl</code>          | 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
```

| <i>statistic</i> | Description |
|------------------|-------------|
|------------------|-------------|

Main

|                    |  |
|--------------------|--|
| <code>pr</code>    | probability of a positive outcome; the default |
| <code>xb</code>    | linear prediction                              |
| <code>sigma</code> | 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]
```

| <i>statistic</i>   | Description                                    |
|--------------------|--|
| <code>pr</code>    | probability of a positive outcome; the default |
| <code>xb</code>    | linear prediction                              |
| <code>sigma</code> | standard deviation of the error term           |

Statistics not allowed with `margins` are functions of stochastic quantities other than  $e(\mathbf{b})$ .

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  $j$ th 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](#)

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