# Title

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**cloglog postestimation —** Postestimation tools for cloglog



## Postestimation commands

The following postestimation commands are available after `cloglog`:

| Command | Description |
|---|---|
| `contrast` | contrasts and ANOVA-style joint tests of estimates |
| `estat ic` | Akaike's, consistent Akaike's, corrected Akaike's, and Schwarz's Bayesian information criteria (AIC, CAIC, AICc, and BIC) |
| `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 coefficients |
| `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 coefficients |
| `predict` | probabilities, linear predictions and their SEs, etc. |
| `predictnl` | point estimates, standard errors, testing, and inference for generalized predictions |
| `pwcompare` | pairwise comparisons of estimates |
| `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. `forecast` is also not appropriate with `mi` estimation results.

# predict

## Description for predict

`predict` creates a new variable containing predictions such as probabilities, linear predictions, standard errors, and the equation-level score.

## Menu for predict

Statistics > Postestimation

## Syntax for predict

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

| *statistic* | Description |
|---|---|
| Main | |
| `pr` | probability of a positive outcome; the default |
| `xb` | linear prediction |
| `stdp` | standard error of the linear prediction |
| `score` | first derivative of the log likelihood with respect to $\mathbf{x}_j\boldsymbol{\beta}$ |

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.

`stdp` calculates the standard error of the linear prediction.

`score` calculates the equation-level score, $\partial \ln L/\partial(\mathbf{x}_j\boldsymbol{\beta})$.

`nooffset` is relevant only if you specified `offset(`*varname*`)` for `cloglog`. 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 $\mathbf{x}_j\mathbf{b} + \text{offset}_j$.

# 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 of a positive outcome; the default |
| `xb` | linear prediction |
| `stdp` | not allowed with `margins` |
| `score` | not allowed with `margins` |

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

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

## Remarks and examples

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Once you have fit a model, you can obtain the predicted probabilities by using the `predict` command for both the estimation sample and other samples; see **[U] 20 Estimation and postestimation commands** and [R] **predict**. Here we will make only a few comments.

`predict` without arguments calculates the predicted probability of a positive outcome. With the `xb` option, it calculates the linear 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 `stdp` option, `predict` calculates the standard error of the linear prediction, which is not adjusted for replicated covariate patterns in the data.

### ▷ Example 1

In example 1 in [R] **cloglog**, we fit the complementary log–log model `cloglog foreign weight mpg`. To obtain predicted probabilities,

```
. use https://www.stata-press.com/data/r18/auto
(1978 automobile data)
. cloglog foreign weight mpg
  (output omitted)
. predict p
(option pr assumed; Pr(foreign))
. summarize foreign p
```

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| foreign | 74 | .2972973 | .4601885 | 0 | 1 |
| p | 74 | .2928348 | .29732 | .0032726 | .9446067 |

◁

## Also see

[R] **cloglog** — Complementary log–log regression

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