**bayes: ologit — Bayesian ordered logistic regression**

**Description**

`bayes: ologit` fits a Bayesian ordered logistic regression to an ordinal outcome; see `[BAYES] bayes` and `[R] ologit` for details.

**Quick start**

Bayesian ordered logistic regression of `y` on `x1` and `x2`, using default normal priors for regression coefficients and flat priors for cutpoints

```
bayes: ologit y x1 x2
```

Use a standard deviation of 10 instead of 100 for the default normal priors

```
bayes, normalprior(10): ologit y x1 x2
```

Use uniform priors for the slopes and a normal prior for the intercept

```
bayes, prior({y: x1 x2}, uniform(-10,10)) ///
prior({y:_cons}, normal(0,10)): ologit y x1 x2
```

Save simulation results to `simdata.dta`, and use a random-number seed for reproducibility

```
bayes, saving(simdata) rseed(123): ologit y x1 x2
```

Specify 20,000 MCMC samples, set length of the burn-in period to 5,000, and request that a dot be displayed every 500 simulations

```
bayes, mcmcsize(20000) burnin(5000) dots(500): ologit y x1 x2
```

In the above, request that the 90% HPD credible interval be displayed instead of the default 95% equal-tailed credible interval

```
bayes, clevel(90) hpd
```

Display odds ratios instead of coefficients

```
bayes: ologit y x1 x2, or
```

Display odds ratios on replay

```
bayes, or
```

Also see Quick start in `[BAYES] bayes` and Quick start in `[R] ologit`.

**Menu**

Statistics > Ordinal outcomes > Bayesian regression > Ordered logistic regression
Syntax

bayes [ , bayesopts ]: ologit depvar [ indepvars ] [ if ] [ in ] [ weight ] [ , options ]

options

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indepvars may contain factor variables; see [U] 11.4.3 Factor variables.

depvar and indepvars may contain time-series operators; see [U] 11.4.4 Time-series varlists.
fweights are allowed; see [U] 11.1.6 weight.
bayes: ologit, level() is equivalent to bayes, clevel(): ologit.
For a detailed description of options, see Options in [R] ologit.

bayesopts

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Adaptation
\texttt{adaptation(adaptopts)} control the adaptive MCMC procedure
\texttt{scale(#)} initial multiplier for scale factor; default is \texttt{scale(2.38)}
\texttt{covariance(cov)} initial proposal covariance; default is the identity matrix

Reporting
\texttt{clevel(#)} set credible interval level; default is \texttt{clevel(95)}
\texttt{hpd} display HPD credible intervals instead of the default equal-tailed credible intervals
* or \texttt{eform[ (string)]} report odds ratios
\texttt{batch(#)} specify length of block for batch-means calculations; default is \texttt{batch(0)}
\texttt{saving(filename[, replace])} save simulation results to \texttt{filename.dta}
\texttt{nomodelsummary} suppress model summary
\texttt{chainsdetail} display detailed simulation summary for each chain
\texttt{[no] dots} suppress dots or display dots every 100 iterations and iteration numbers every 1,000 iterations; default is \texttt{nодots}
\texttt{dots(#[, every(#)])} display dots as simulation is performed
\texttt{[no] show(paramref)} specify model parameters to be excluded from or included in the output
\texttt{notable} suppress estimation table
\texttt{noheader} suppress output header
\texttt{title(string)} display \texttt{string} as title above the table of parameter estimates
\texttt{display_options} control spacing, line width, and base and empty cells

Advanced
\texttt{search(search_options)} control the search for feasible initial values
\texttt{corrlag(#)} specify maximum autocorrelation lag; default varies
\texttt{corrtol(#)} specify autocorrelation tolerance; default is \texttt{corrtol(0.01)}

*Starred options are specific to the \texttt{bayes} prefix; other options are common between \texttt{bayes} and \texttt{bayesmh}.
Options \texttt{prior() and block()} may be repeated.
\texttt{priorspec} and \texttt{paramref} are defined in [BAYES] \texttt{bayesmh}.
\texttt{paramref} may contain factor variables; see [U] 11.4.3 Factor variables.
See [U] 20 Estimation and postestimation commands for more capabilities of estimation commands.
Model parameters are regression coefficients \{\texttt{depvar}:\texttt{indepvars}\} and cutpoints \{\texttt{cut1}, \texttt{cut2}\}, and so on. Use the \texttt{dryrun} option to see the definitions of model parameters prior to estimation.
Flat priors, \texttt{flat}, are used by default for cutpoints.
For a detailed description of \texttt{bayesopts}, see Options in [BAYES] \texttt{bayes}.

Remarks and examples stata.com

For a general introduction to Bayesian analysis, see [BAYES] Intro. For a general introduction to Bayesian estimation using an adaptive Metropolis–Hastings algorithm, see [BAYES] \texttt{bayesmh}. For remarks and examples specific to the \texttt{bayes} prefix, see [BAYES] \texttt{bayes}. For details about the estimation command, see [R] \texttt{ologit}.

For a simple example of the \texttt{bayes} prefix, see Introductory example in [BAYES] \texttt{bayes}.
Stored results

See Stored results in [BAYES] bayes.

Methods and formulas

See Methods and formulas in [BAYES] bayesmh.

Also see

[BAYES] bayes — Bayesian regression models using the bayes prefix

[R] ologit — Ordered logistic regression

[BAYES] Bayesian postestimation — Postestimation tools for bayesmh and the bayes prefix

[BAYES] Bayesian estimation — Bayesian estimation commands

[BAYES] Bayesian commands — Introduction to commands for Bayesian analysis

[BAYES] Intro — Introduction to Bayesian analysis

[BAYES] Glossary