Description

`fmm: cloglog` fits mixtures of complementary log-log regression models; see [FMM] `fmm` and [R] `cloglog` for details.

Quick start

Mixture of two clog-log regression models of `y` on `x1` and `x2`

```
fmm 2: cloglog y x1 x2
```

As above, but with class probabilities depending on `z1` and `z2`

```
fmm 2, lcprob(z1 z2): cloglog y x1 x2
```

With robust standard errors

```
fmm 2, vce(robust): cloglog y x1 x2
```

Constrain coefficients on `x1` and `x2` to be equal across classes

```
fmm 2, lcinvariant(coef): cloglog y x1 x2
```

Menu

Statistics > FMM (finite mixture models) > Binary outcomes > Complementary log-log regression
Syntax

Basic syntax

\[ \text{fmm} \# : \text{cloglog} \ \text{depvar} \ [ \text{indepvars} ] \ [, \ \text{options} ] \]

Full syntax

\[ \text{fmm} \# \ [ \text{if} \] \ [ \text{in} \] \ [ \text{weight} ] \ [, \ \text{fmnomt} ] : \text{cloglog} \ \text{depvar} \ [ \text{indepvars} ] \ [, \ \text{options} ] \]

where \# specifies the number of class models.

\text{options} Description

\begin{tabular}{ll}
\hline
\textbf{Model} & \\
\textbf{noconstant} & suppress the constant term \\
\textbf{offset(varname)} & include varname in model with coefficient constrained to 1 \\
\textbf{asis} & retain perfect predictor variables \\
\hline
\end{tabular}

\text{indepvars} may contain factor variables; see \textbf{[U 11.4.3 Factor variables.}}

\text{depvar} and \text{indepvars} may contain time-series operators; see \textbf{[U 11.4.4 Time-series varlists.}}

For a detailed description of \text{options}, see \textbf{Options in \textit{[R] cloglog.}}
## Description

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>lcinvariant(qlname)</strong></td>
<td>specify parameters that are equal across classes; default is clcinvariant(none)</td>
</tr>
<tr>
<td><strong>lcprob(varlist)</strong></td>
<td>specify independent variables for class probabilities</td>
</tr>
<tr>
<td><strong>lclabel(name)</strong></td>
<td>name of the categorical latent variable; default is lclabel(Class)</td>
</tr>
<tr>
<td><strong>lcbase(#)</strong></td>
<td>base latent class</td>
</tr>
<tr>
<td><strong>constraints(constraints)</strong></td>
<td>apply specified linear constraints</td>
</tr>
</tbody>
</table>

**SE/Robust**

| vce(vcetype)                              | vcetype may be oim, robust, or cluster clustvar                             |

**Reporting**

| level(#)                                  | set confidence level; default is level(95)                                 |
| nocnsreport                               | do not display constraints                                                |
| noheader                                  | do not display header above parameter table                                |
| nodvheader                                | do not display dependent variables information in the header               |
| notable                                   | do not display parameter table                                             |

**display_options**

| control columns and column formats, row spacing, line width, display of omitted variables and base and empty cells, and factor-variable labeling |

**Maximization**

| maximize_options                         | control the maximization process                                           |
| startvalues(svmethod)                    | method for obtaining starting values; default is startvalues(factor)       |
| emopts(maxopts)                          | control EM algorithm for improved starting values                          |
| noestimate                               | do not fit the model; show starting values instead                         |

| collinear                                | keep collinear variables                                                  |
| coeflegend                               | display legend instead of statistics                                       |

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

by, statsby, and svy are allowed; see [U] 11.1.10 Prefix commands.

vce() and weights are not allowed with the svy prefix; see [SVY] svy.

fweights, iweights, and pweights are allowed; see [U] 11.1.6 weight.

coefflegend does not appear in the dialog box.

See [U] 20 Estimation and postestimation commands for more capabilities of estimation commands.

For a detailed description of *fmmopts*, see Options in [FMM] fmm.

## pclassname Description

| cons                                      | intercepts and cutpoints                                                  |
| coeff                                     | fixed coefficients                                                         |
| errvar                                    | covariances of errors                                                     |
| scale                                     | scaling parameters                                                        |
| all                                       | all the above                                                             |
| none                                      | none of the above; the default                                            |
Remarks and examples

For a general introduction to finite mixture models, see [FMM] fmm intro. For general information about complementary log-log regression, see [R] cloglog. For examples using fmm, see examples in Contents.

Stored results

See Stored results in [FMM] fmm.

Methods and formulas

See Methods and formulas in [FMM] fmm.

Also see

[FMM] fmm — Finite mixture models using the fmm prefix
[FMM] fmm intro — Introduction to finite mixture models
[FMM] fmm postestimation — Postestimation tools for fmm
[FMM] Glossary
[R] cloglog — Complementary log-log regression
[SVY] svy estimation — Estimation commands for survey data