

fmm: poisson — Finite mixtures of Poisson regression models[Description](#)[Remarks and examples](#)[Quick start](#)[Stored results](#)[Menu](#)[Methods and formulas](#)[Syntax](#)[Also see](#)

Description

`fmm: poisson` fits mixtures of Poisson regression models; see [FMM] [fmm](#) and [R] [poisson](#) for details.

Quick start

Mixture of two Poisson distributions of `y`

```
fmm 2: poisson y
```

Mixture of two Poisson regression models of `y` on `x1` and `x2`

```
fmm 2: poisson y x1 x2
```

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

```
fmm 2, lcp(robust): poisson y x1 x2
```

With robust standard errors

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

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

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

Menu

Statistics > FMM (finite mixture models) > Count outcomes > Poisson regression

Syntax

Basic syntax

```
fmm # : poisson depvar [indepvars] [, options]
```

Full syntax

```
fmm # [if] [in] [weight] [, fmmopts]: poisson depvar [indepvars] [, options]
```

where # specifies the number of class models.

| <i>options</i> | Description |
|----------------|-------------|
|----------------|-------------|

Model

| | |
|--|---|
| <u>noconstant</u> | suppress the constant term |
| <u>exposure</u> (<i>varname_e</i>) | include $\ln(\text{varname}_e)$ in model with coefficient constrained to 1 |
| <u>offset</u> (<i>varname_o</i>) | include <i>varname_o</i> in model with coefficient constrained to 1 |

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**.

For a detailed description of *options*, see *Options* in [R] **poisson**.

| <i>fmmopts</i> | Description |
|--|--|
| Model | |
| <code>lcinvariant(<i>pclassname</i>)</code> | specify parameters that are equal across classes; default is <code>lcinvariant(none)</code> |
| <code>lcprob(<i>varlist</i>)</code> | specify independent variables for class probabilities |
| <code>lclabel(<i>name</i>)</code> | name of the categorical latent variable; default is <code>lclabel(Class)</code> |
| <code>lcbase(#)</code> | base latent class |
| <code>constraints(<i>constraints</i>)</code> | apply specified linear constraints |
| <code>collinear</code> | keep collinear variables |
| SE/Robust | |
| <code>vce(<i>vcetype</i>)</code> | <i>vcetype</i> may be <code>oim</code> , <code>robust</code> , or <code>cluster <i>clustvar</i></code> |
| Reporting | |
| <code>level(#)</code> | set confidence level; default is <code>level(95)</code> |
| <code>nocnsreport</code> | do not display constraints |
| <code>noheader</code> | do not display header above parameter table |
| <code>nodvheader</code> | do not display dependent variables information in the header |
| <code>notable</code> | do not display parameter table |
| <code>display_options</code> | control columns and column formats, row spacing, line width, display of omitted variables and base and empty cells, and factor-variable labeling |
| Maximization | |
| <code>maximize_options</code> | control the maximization process |
| <code>startvalues(<i>svmethod</i>)</code> | method for obtaining starting values; default is <code>startvalues(factor)</code> |
| <code>emopts(<i>maxopts</i>)</code> | control EM algorithm for improved starting values |
| <code>noestimate</code> | do not fit the model; show starting values instead |
| <code>coeflegend</code> | display legend instead of statistics |
| <p><i>varlist</i> may contain factor variables; see [U] 11.4.3 Factor variables.</p> <p><code>by</code>, <code>statsby</code>, and <code>svy</code> are allowed; see [U] 11.1.10 Prefix commands.</p> <p><code>vce()</code> and weights are not allowed with the <code>svy</code> prefix; see [SVY] <code>svy</code>.</p> <p><code>fweights</code>, <code>iweights</code>, and <code>pweights</code> are allowed; see [U] 11.1.6 weight.</p> <p><code>coeflegend</code> does not appear in the dialog box.</p> <p>See [U] 20 Estimation and postestimation commands for more capabilities of estimation commands.</p> <p>For a detailed description of <i>fmmopts</i>, see <i>Options</i> in [FMM] <code>fmm</code>.</p> | |
| <i>pclassname</i> | Description |
| <code>cons</code> | intercepts and cutpoints |
| <code>coef</code> | fixed coefficients |
| <code>errvar</code> | covariances of errors |
| <code>scale</code> | scaling parameters |
| <code>all</code> | all the above |
| <code>none</code> | 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 Poisson regression, see [R] **poisson**. 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] **example 2** — Mixture of Poisson regression models

[FMM] **example 3** — Zero-inflated models

[FMM] **Glossary**

[R] **poisson** — Poisson regression

[SVY] **svy estimation** — Estimation commands for survey data