

fmm: pointmass — Finite mixtures models with a density mass at a single point

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Description

`fmm: pointmass` is a degenerate distribution that takes on a single integer value with probability one. This distribution cannot be used by itself and is always combined with other `fmm` distributions, often to model zero-inflated outcomes.

Quick start

Zero-inflated Poisson regression of `y` on `x1` and `x2`

```
fmm : (pointmass y) (poisson y x1 x2)
```

Same as above, but add predictors `w1` and `w2` to model the pointmass class probability

```
fmm : (pointmass y, lcprow(w1 w2)) (poisson y x1 x2)
```

Ordered logistic regression of `y` on `x1` and `x2` with inflation at 1

```
fmm : (pointmass y, value(1)) (ologit y x1 x2)
```

Menu

Statistics > FMM (finite mixture models) > General estimation and regression

Syntax

```
fmm [if] [in] [weight] [, fmmopts]: (pointmass depvar [, options])
      (component1) [(component2) ...]
```

component is defined in [FMM] **fmm**.

<i>options</i>	Description
<u>lcp</u> rob(<i>varlist</i>)	specify independent variables for class probability
<u>val</u> ue(#)	integer-valued location of the point mass

depvar may contain time-series operators; see [U] 11.4.4 **Time-series varlists**.

<i>fmmopts</i>	Description
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Model

<u>l</u> cinvariant(<i>pclassname</i>)	specify parameters that are equal across classes; default is <code>lcinvariant(none)</code>
<u>l</u> cp <u>ro</u> b(<i>varlist</i>)	specify independent variables for class probabilities
<u>l</u> cl <u>ab</u> el(<i>name</i>)	name of the categorical latent variable; default is <code>lclabel(Class)</code>
<u>l</u> cb <u>as</u> e(#)	base latent class
<u>co</u> nstraints(<i>constraints</i>)	apply specified linear constraints

SE/Robust

<u>v</u> ce(<i>vcetype</i>)	<i>vcetype</i> may be <code>oim</code> , <code>opg</code> , <code>robust</code> , or <code>cluster clustvar</code>
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Reporting

<u>l</u> ev <u>e</u> l(#)	set confidence level; default is <code>level(95)</code>
<u>no</u> cn <u>s</u> report	do not display constraints
<u>no</u> h <u>e</u> ader	do not display header above parameter table
<u>no</u> dv <u>h</u> ead <u>e</u> r	do not display dependent variables information in the header
<u>no</u> tab <u>l</u> e	do not display parameter table
<i>display_options</i>	control columns and column formats, row spacing, line width, display of omitted variables and base and empty cells, and factor-variable labeling

Maximization

<i>maximize_options</i>	control the maximization process
<u>st</u> art <u>val</u> ues(<i>svmethod</i>)	method for obtaining starting values; default is <code>startvalues(factor)</code>
<u>em</u> opt <u>s</u> (<i>maxopts</i>)	control EM algorithm for improved starting values
<u>no</u> est <u>im</u> ate	do not fit the model; show starting values instead
<u>co</u> ll <u>in</u> ear	keep collinear variables
<u>co</u> ef <u>l</u> egend	display legend instead of statistics

varlist may contain factor variables; see [U] 11.4.3 [Factor variables](#).

by, *collect*, *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](#).

collinear and *coeflegend* do 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](#).

<i>pclassname</i>	Description
<i>cons</i>	intercepts and cutpoints
<i>coef</i>	fixed coefficients
<i>errvar</i>	covariances of errors
<i>scale</i>	scaling parameters
<i>all</i>	all the above
<i>none</i>	none of the above; the default

Options

lcp(*varlist*) specifies that the linear prediction for belonging to the point mass component includes the variables in *varlist*. *lcinvariant*() has no effect on these parameters.

value(#) specifies the value of *depvar* at which the latent class has a singular point mass. The default is *value*(0). Only integer values are allowed for #.

Remarks and examples

[stata.com](http://www.stata.com)

For a general introduction to finite mixture models, see [FMM] [fmm intro](#). See [FMM] [Example 3](#) where *pointmass* is used to fit a zero-inflated Poisson model. See [FMM] [Example 4](#) where *pointmass* is used to fit a mixture cure model to survival data. Other examples are available; 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] **Example 3** — Zero-inflated models
- [FMM] **Example 4** — Mixture cure models for survival data
- [FMM] **Glossary**
- [R] **zinb** — Zero-inflated negative binomial regression
- [R] **zioprobit** — Zero-inflated ordered probit regression
- [R] **zip** — Zero-inflated Poisson regression
- [SVY] **svy estimation** — Estimation commands for survey data

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