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

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)
```

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

```
fmm : (pointmass y, lcprob(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*])
  (*component*$_1$) [(*component*$_2$) ...]

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

options	Description
lcprob(*varlist*)	specify independent variables for class probability
value(#)	integer-valued location of the point mass

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

fmmopts	Description
Model	
lcinvariant(*pclassname*)	specify parameters that are equal across classes; default is lcinvariant(none)
lcprob(*varlist*)	specify independent variables for class probabilities
lclabel(*name*)	name of the categorical latent variable; default is lclabel(Class)
lcbase(#)	base latent class
constraints(*constraints*)	apply specified linear constraints
collinear	keep collinear variables
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
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**.

coeflegend 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
coef	fixed coefficients
errvar	covariances of errors
scale	scaling parameters
all	all the above
none	none of the above; the default

Options

lcprob(*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

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] **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