Title

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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])
    (component1) [(component2) ...]
```

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
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`, `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**.

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

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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