

[Description](#)[Remarks and examples](#)[Quick start](#)[Stored results](#)[Menu](#)[Methods and formulas](#)[Syntax](#)[Also see](#)

Description

`fmm: nbreg` fits mixtures of negative binomial regression models; see [\[FMM\] fmm](#) and [\[R\] nbreg](#) for details.

Quick start

Mixture of two negative binomial distributions of y

```
fmm 2: nbreg y
```

Mixture of two negative binomial regression models of y on x_1 and x_2

```
fmm 2: nbreg y x1 x2
```

Same as above, but with class probabilities depending on z_1 and z_2

```
fmm 2, lcpb(z1 z2): nbreg y x1 x2
```

With robust standard errors

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

Constrain coefficients on x_1 and x_2 to be equal across classes

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

Menu

Statistics > FMM (finite mixture models) > Count outcomes > Negative binomial regression

Syntax

Basic syntax

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

Full syntax

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

where # specifies the number of class models.

<i>options</i>	Description
<code>noconstant</code>	suppress the constant term
<code>dispersion(mean)</code>	parameterization of dispersion; the default
<code>dispersion(constant)</code>	constant dispersion for all observations
<code>exposure(<i>varname_e</i>)</code>	include $\ln(\textit{varname}_e)$ in model with coefficient constrained to 1
<code>offset(<i>varname_o</i>)</code>	include <i>varname_o</i> in model with coefficient constrained to 1

Model

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 for nbreg in [R] nbreg.

<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
SE/Robust	
<code>vce(<i>vcetype</i>)</code>	<i>vcetype</i> may be <code>oim</code> , <code>opg</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>collinear</code>	keep collinear variables
<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>by, collect, statsby, and svy are allowed; see [U] 11.1.10 Prefix commands.</p> <p>vce() and weights are not allowed with the svy prefix; see [SVY] svy.</p> <p>fweights, iweights, and pweights are allowed; see [U] 11.1.6 weight.</p> <p>collinear and coeflegend do 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] fmm.</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 negative binomial regression, see [R] [nbreg](#). 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] [nbreg](#) — Negative binomial regression

[SVY] [svy estimation](#) — Estimation commands for survey data

Stata, Stata Press, and Mata are registered trademarks of StataCorp LLC. Stata and Stata Press are registered trademarks with the World Intellectual Property Organization of the United Nations. StataNow and NetCourseNow are trademarks of StataCorp LLC. Other brand and product names are registered trademarks or trademarks of their respective companies. Copyright © 1985–2025 StataCorp LLC, College Station, TX, USA. All rights reserved.

For suggested citations, see the FAQ on [citing Stata documentation](#).

