

fmm: probit — Finite mixtures of probit regression models

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Description

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

Quick start

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

```
fmm 2: probit y x1 x2
```

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

```
fmm 2, lcp( z1 z2 ): probit y x1 x2
```

With robust standard errors

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

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

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

Menu

Statistics > FMM (finite mixture models) > Binary outcomes > Probit regression

Syntax

Basic syntax

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

Full syntax

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

where # specifies the number of class models.

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

| | |
|-------------------------------|---|
| noconstant | suppress the constant term |
| offset(<i>varname</i>) | include <i>varname</i> in model with coefficient constrained to 1 |
| asis | retain perfect predictor variables |

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] [probit](#).

| <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><code>by</code>, <code>collect</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] svy.</p> <p><code>fweights</code>, <code>iweights</code>, and <code>pweights</code> are allowed; see [U] 11.1.6 weight.</p> <p><code>collinear</code> and <code>coeflegend</code> 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

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

For a general introduction to finite mixture models, see [FMM] [fmm intro](#). For general information about probit regression, see [R] [probit](#). 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] [probit](#) — Probit regression

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

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