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## Description

`fmm: streg` fits mixtures of parametric survival regression models; see [\[FMM\] fmm](#) and [\[ST\] streg](#) for details.

## Quick start

Mixture of two Weibull distributions using `stset` data

```
fmm 2: streg, distribution(weibull)
```

Mixture of two exponential distributions

```
fmm 2: streg, distribution(exponential)
```

Mixture of two Weibull survival models with covariates `x1` and `x2`

```
fmm 2: streg y x1 x2, distribution(weibull)
```

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

```
fmm 2, lcprob(z1 z2): streg y x1 x2, distribution(weibull)
```

With robust standard errors

```
fmm 2, vce(robust): streg y x1 x2, distribution(weibull)
```

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

```
fmm 2, lcinvariant(coef): streg y x1 x2, distribution(weibull)
```

## Menu

Statistics > FMM (finite mixture models) > Parametric survival regression

## Syntax

### Basic syntax

```
fmm # : streg [ indepvars ] [ , options ]
```

### Full syntax

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

where # specifies the number of class models.

<i>options</i>	Description
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Model	
<code>noconstant</code>	suppress the constant term
* <code>distribution(<i>distname</i>)</code>	specify survival distribution
<code>time</code>	use accelerated failure-time metric
<code>offset(<i>varname</i>)</code>	include <i>varname</i> in model with coefficient constrained to 1

\*`distribution(distname)` is required.

You must `stset` your data before using `fmm: streg`; see [ST] `stset`.

*indepvars* may contain factor variables; see [U] 11.4.3 **Factor variables**.

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

For a detailed description of *options*, see *Options* in [ST] `streg`.

<i>distname</i>	Description
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<code>exponential</code>	exponential survival distribution
<code>loglogistic</code>	loglogistic survival distribution
<code>llogistic</code>	synonym for <code>loglogistic</code>
<code>weibull</code>	Weibull survival distribution
<code>lognormal</code>	lognormal survival distribution
<code>lnormal</code>	synonym for <code>lognormal</code>
* <code>gamma</code>	gamma survival distribution

\*`fmm: streg` uses the gamma survival distribution and not the generalized gamma distribution that is used by `streg`.

<i>fmmopts</i>	Description
<b>Model</b>	
<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
<b>SE/Robust</b>	
<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>
<b>Reporting</b>	
<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
<b>Maximization</b>	
<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 parametric survival models, see [ST] [streg](#). 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] [Example 4](#) — Mixture cure models for survival data

[FMM] [Glossary](#)

[ST] [streg](#) — Parametric survival models

[ST] [stset](#) — Declare data to be survival-time data

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

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