fmm: ivregress — Finite mixtures of linear regression models with endogenous covariates

Description

`fmm: ivregress` fits mixtures of linear regression models with endogenous covariates; see [FMM] **fmm** and [R] **ivregress** for details.

Quick start

Mixture of two linear regressions of `y1` on `x1` with endogenous regressor `y2` that is instrumented by `w1`

```
fmm 2: ivregress y1 x1 (y2 = w1)
```

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

```
fmm 2, lcprob(z1 z2): ivregress y1 x1 (y2 = w1)
```

With robust standard errors

```
fmm 2, vce(robust): ivregress y1 x1 (y2 = w1)
```

Constrain coefficients on `x1`, `w1`, and `y2` to be equal across classes

```
fmm 2, lcinvariant(coef): ivregress y1 x1 (y2 = w1)
```

Menu

Statistics > FMM (finite mixture models) > Continuous outcomes > Linear regression with endogenous covariates

Syntax

Basic syntax

```
fmm # : ivregress depvar [varlist1] (varlist2 = varlist_iv) [ , options]
```

Full syntax

```
fmm # [if] [in] [weight] [ , fmmopts] :
        ivregress depvar [varlist1] (varlist2 = varlist_iv) [ , options]
```

where # specifies the number of class models.

options	Description
Model	
noconstant	suppress the constant term

varlist$_1$ and *varlist_iv* may contain factor variables; see **[U] 11.4.3 Factor variables**.

depvar, *varlist*$_1$, and *varlist_iv* may contain time-series operators; see **[U] 11.4.4 Time-series varlists**.

For a detailed description of *options*, see *Options* in [R] **ivregress**.

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`, `opg`, `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

Remarks and examples

For a general introduction to finite mixture models, see [FMM] **fmm intro**. For general information about linear regression with endogenous covariates, see [R] **ivregress**. 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] **ivregress** — Single-equation instrumental-variables regression

[SVY] **svy estimation** — Estimation commands for survey data