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Description

`bayesirf ograph` displays plots of Bayesian impulse–response function (IRF) results on one graph (one pair of axes).

Quick start

Graph of an orthogonalized IRF `birf` overlaid on cumulative IRF `birf` for dependent variable `y1` and `y2`
`bayesirf ograph (birf y1 y2 oirf) (birf y1 y2 cirf)`

Note: `bayesirf` commands can be used after `bayes: var`, `bayes: dsge`, or `bayes: dsge1`; see [\[BAYES\] bayes: var](#), [\[BAYES\] bayes: dsge](#), or [\[BAYES\] bayes: dsge1](#).

Menu

Statistics > Multivariate time series > Bayesian models > IRF and FEVD analysis

Syntax

```
bayesirf ograph (spec1) [ (spec2) ... [ (spec15) ] ] [ , options ]
```

where (*spec*_{*k*}) is

```
(irfname impulsevar responsevar stat [ , spec_options ] )
```

irfname is the name of a set of IRF results in the active IRF file or “.”, which means the first named result in the active IRF file. *impulsevar* should be specified as an endogenous variable for all statistics except *dm* and *cdm*; for those, specify as an exogenous variable. *responsevar* is an endogenous variable name. *stat* is one or more statistics from the list below:

<i>stat</i>	Description
Main	
<i>irf</i>	IRF
<i>oirf</i>	orthogonalized IRF
<i>dm</i>	dynamic-multiplier function
<i>cirf</i>	cumulative IRF
<i>coirf</i>	cumulative orthogonalized IRF
<i>cdm</i>	cumulative dynamic-multiplier function
<i>fevd</i>	Cholesky forecast-error variance decomposition

Note: Only *irf* is available after `bayes: dsge` and `bayes: dsge1`.

<i>options</i>	Description
<i>irf_options</i>	any <i>options</i> documented in [TS] irf ograph
Bayesian	
<i>cri</i>	add credible bands to the graph
<i>clevel</i> (#)	set credible interval level; default is set by <code>bayesirf create</code>
<i>equaltailed</i>	display equal-tailed credible intervals; default is set by <code>bayesirf create</code>
<i>hpd</i>	display HPD credible intervals; default is set by <code>bayesirf create</code>
<i>median</i>	display posterior medians instead of posterior means
CrI plot	
<i>criopts</i> (<i>area_options</i>)	affect rendition of the credible intervals

The **CrI plot** tab replaces the **CI plot** tab of [\[TS\] irf ograph](#).

`collect` is allowed; see [\[U\] 11.1.10 Prefix commands](#).

<i>spec_options</i>	Description
<i>irf_spec_options</i>	any <i>spec_options</i> documented in [TS] irf ograph
Bayesian	
<i>cri</i>	add credible bands to the graph
<i>clevel</i> (#)	set credible interval level; default is set by <code>bayesirf create</code>
<i>equaltailed</i>	display equal-tailed credible intervals; default is set by <code>bayesirf create</code>
<i>hpd</i>	display HPD credible intervals; default is set by <code>bayesirf create</code>
<i>median</i>	display posterior medians instead of posterior means
Cri plot	
<i>criopts</i> (<i>area_options</i>)	affect rendition of the credible intervals

spec_options may be specified within a graph specification, globally, or in both. When specified in a graph specification, the *spec_options* affect only the specification in which they are used. When supplied globally, the *spec_options* affect all graph specifications. When supplied in both places, options in the graph specification take precedence.

Options

irf_options and *irf_spec_options* are any of the *options* and *spec_options*, respectively, documented in [TS] [irf ograph](#). *level*(#) is a synonym for *clevel*(#), *ci* is a synonym for *cri*, and *criopts*() is a synonym for *criopts*(). Synonymous options do not appear in the dialog box.

Bayesian

cri displays the credible intervals for each statistic. It is implied if *hpd* or *equaltailed* is specified.

clevel(#), *equaltailed*, and *hpd* affect the calculation of credible intervals. When the specified options do not correspond to the default credible intervals saved in the current IRF file by `bayesirf create`, `bayesirf` will need an IRF MCMC sample to recompute the credible intervals. You can save this sample by specifying option `mcmcsaving()` with `bayesirf create`. Alternatively, if you would like to save the desired credible intervals as the default credible intervals in the current IRF file, you can specify the corresponding options directly with `bayesirf create`. See [Remarks and examples](#) in [BAYES] `bayesirf create`.

clevel(#) specifies the credible level, as a percentage, for equal-tailed and HPD credible intervals.

equaltailed displays the equal-tailed credible intervals. *equaltailed* may not be specified with *hpd*.

hpd displays the HPD credible intervals. *hpd* may not be specified with *equaltailed*.

median displays the posterior medians instead of the default posterior means.

Crl plot

`criopts(area_options)` affects the rendition of the credible intervals for the plotted statistics; see [G-3] [area_options](#). `criopts()` implies `cri.irf's criopts()` is a synonym for `criopts()`.

The **CrI plot** tab replaces the **CI plot** tab of [TS] [irf ograph](#).

Remarks and examples

See [TS] [irf ograph](#) for a general discussion about overlaid IRF and other graphs.

Also see [BAYES] [bayesirf graph](#), which produces individual graphs; [BAYES] [bayesirf cgraph](#), which produces combined graphs; and [BAYES] [bayesirf table](#), which displays results in tabular form.

Stored results

For stored results, see *Stored results* in [TS] [irf ograph](#).

Also see

[TS] [irf ograph](#) — Overlaid graphs of IRFs, dynamic-multiplier functions, and FEVDs

[BAYES] [bayesirf graph](#) — Graphs of Bayesian IRFs, dynamic-multiplier functions, and FEVDs

[BAYES] [bayesirf cgraph](#) — Combined graphs of Bayesian IRF results

[BAYES] [bayesirf table](#) — Tables of Bayesian IRFs, dynamic-multiplier functions, and FEVDs

[BAYES] [bayesirf create](#) — Obtain Bayesian IRFs, dynamic-multiplier functions, and FEVDs

[BAYES] [bayesirf](#) — Bayesian IRFs, dynamic-multiplier functions, and FEVDs

