

bayesirf ograph — Overlaid graphs of Bayesian IRF results[Description](#)
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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

```
criopts(area_options) 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 | |
| cri | add credible bands to the graph |
| clevel(#) | set credible interval level; default is set by bayesirf create |
| equaltailed | display equal-tailed credible intervals; default is set by bayesirf create |
| hpd | display HPD credible intervals; default is set by bayesirf create |
| median | display posterior medians instead of posterior means |
| Crf plot | |
| criopts(area_options) | 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 on 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.

CrI 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

[stata.com](#)

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