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Description

`bayesirf cgraph` makes a combined graph of Bayesian impulse–response function (IRF) results. A graph is made for specified combinations of named IRF results, impulse variables, response variables, and statistics. `bayesirf cgraph` combines these graphs into one image, unless separate graphs are requested.

Quick start

Combine graphs of an orthogonalized IRF `birf` and cumulative IRF `cirf` for dependent variable `y1` and `y2`.

```
bayesirf cgraph (birf y1 y2 oirf) (birf y1 y2 cirf)
```

Same as above, but with maximum steps of 4 and 80% credible interval

```
bayesirf cgraph (birf y1 y2 oirf) (birf y1 y2 cirf), ustep(4) clevel(80)
```

Note: `bayesirf` commands can be used after `bayes: var`, `bayes: dsge`, or `bayes: dsngen1`; see [\[BAYES\] bayes: var](#), [\[BAYES\] bayes: dsge](#), or [\[BAYES\] bayes: dsngen1](#).

Menu

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

Syntax

```
bayesirf cgraph (spec1) [(spec2) ... (specN) ] [ , 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. *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

Notes: 1. No statistic may appear more than once.

2. If credible intervals are included (the default), only two statistics may be included.

3. If credible intervals are suppressed (option *nocri*), up to four statistics may be included.

4. 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 cgraph
Bayesian	
<i>nocri</i>	suppress credible intervals
<i>clevel</i> (#)	set credible interval level; default is set by <i>bayesirf create</i>
<i>equaltailed</i>	display equal-tailed credible intervals; default is set by <i>bayesirf create</i>
<i>hpd</i>	display HPD credible intervals; default is set by <i>bayesirf create</i>
<i>median</i>	display posterior medians instead of posterior means
Crl plot	
<i>cri</i> # <i>opts</i> (<i>area_options</i>)	affect rendition of the credible interval for the # <i>stat</i>

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

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 cgraph
Bayesian	
<i>nocri</i>	suppress credible intervals
<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>cri#opts</i> (<i>area_options</i>)	affect rendition of the credible interval for the # <i>stat</i>

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 cgraph](#). *level*(#) is a synonym for *clevel*(#), *nocri* is a synonym for *nocri*, and *ci#opts*() is a synonym for *cri#opts*(). Synonymous options do not appear in the dialog box.

Bayesian

nocri suppresses displaying the credible intervals for each statistic.

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

`cri1opts(area_options)` and `cri2opts(area_options)` affect the rendition of the credible intervals for the first (`cri1opts()`) and second (`cri2opts()`) statistics in *stat*. *area_options* are as described in [G-3] *area_options*. `irf`'s `ci#opts()` is a synonym for `cri#opts()`.

The **CrI plot** tab replaces the **CI plot** tab of [TS] **irf cgraph**.

Remarks and examples

See [TS] **irf cgraph** for a general discussion about combined IRF and other graphs.

Also see [BAYES] **bayesirf graph**, which produces individual graphs; [BAYES] **bayesirf ograph**, which produces overlaid graphs; and [BAYES] **bayesirf table**, which displays results in tabular form.

Stored results

For stored results, see *Stored results* in [TS] **irf cgraph**.

Also see

[TS] **irf cgraph** — Combined graphs of IRFs, dynamic-multiplier functions, and FEVDs

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

[BAYES] **bayesirf ograph** — Overlaid graphs of Bayesian IRF results

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

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

[BAYES] **bayesirf** — Bayesian IRFs, dynamic-multiplier functions, and FEVDs

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