irf ograph — Overlaid graphs of IRFs, dynamic-multiplier functions, and FEVDs

DescriptionQuick startMenuSyntaxOptionsRemarks and examplesStored resultsAlso see

Description

irf ograph displays plots of irf results on one graph (one pair of axes).

Quick start

Graph of an orthogonalized IRF myirf overlayed on cumulative IRF mycirf for dependent variables y1 and y2

```
irf ograph (myirf y1 y2 oirf) (mycirf y1 y2 cirf)
```

Same as above, and include confidence bands and add a title

irf cgraph (myirf y1 y2 oirf) (mycirf y1 y2 cirf), ci ///
title("My Title")

Note: irf commands can be used after var, svar, ivsvar, vec, arima, arfima, lpirf, ivlpirf, dsge, dsgenl, or xtvar; see [TS] var, [TS] var svar, [TS] var ivsvar, [TS] vec, [TS] arima, [TS] arfima, [TS] lpirf, [TS] ivlpirf, [DSGE] dsge, [DSGE] dsgenl, or [XT] xtvar.

Menu

Statistics > Postestimation

Syntax

 $irf ograph (spec_1) [(spec_2) \dots [(spec_{15})]] [, options]$

where $(spec_k)$ is

(*irfname impulsevar responsevar stat* [, *plot_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:

stat	Description
Main	
irf	impulse-response function
oirf	orthogonalized impulse-response function
dm	dynamic-multiplier function
cirf	cumulative impulse-response function
coirf	cumulative orthogonalized impulse-response function
cdm	cumulative dynamic-multiplier function
fevd	Cholesky forecast-error variance decomposition
sirf	structural impulse-response function
csirf	cumulative structural impulse-response function
sfevd	structural forecast-error variance decomposition
plot_options	Description
Main	
ci	add confidence bands to the graph
<u>l</u> evel(#)	set confidence level; default is level(95)
<u>lst</u> ep(#)	use # for first step
<u>ust</u> ep(#)	use # for maximum step
Plot	
cline_options	affect rendition of the plotted lines
CI plot	
<pre>ciopts(area_options)</pre>	affect rendition of the confidence intervals
<i>plot_options</i> may be specified specification, <i>plot_options</i> a <i>plot_options</i> affect all plot sp take precedence.	within a plot specification, globally, or in both. When specified in a plot ffect only the specification in which they are used. When supplied globally, pecifications. When supplied in both places, options in the plot specification

options	Description
set(<i>filename</i>)	make <i>filename</i> active
Graph options	
graph_options	any options other than by() documented in [G-3] twoway_options

collect is allowed; see [U] 11.1.10 Prefix commands.

Options

set(filename) specifies the file to be made active; see [TS] irf set. If set() is not specified, the active
file is used.

plot_options affect the rendition of the specification and include the following:

Main

ci adds confidence bands to the graph. The noci option may be used within a plot specification to suppress its confidence bands when the ci option is supplied globally.

level(#) specifies the confidence level, as a percentage, for confidence bands; see [U] 20.8 Specifying the width of confidence intervals.

lstep(#) specifies the first step, or period, to be included in the graph. lstep(0) is the default.

ustep(#), $\# \ge 1$, specifies the maximum step, or period, to be included.

Plot

cline_options affect the rendition of the plotted lines; see [G-3] cline_options.

CI plot

ciopts(*area_options*) affects the rendition of the confidence bands for the plotted statistic; see [G-3] *area_options*. ciopts() implies ci.

Graph options

graph_options are any of the options documented in [G-3] *twoway_options*, excluding by(). These include options for titling the graph (see [G-3] *title_options*) and for saving the graph to disk (see [G-3] *saving_option*).

Remarks and examples

If you have not read [TS] irf, please do so.

irf ograph overlays plots of IRFs and FEVDs on one graph.

Example 1

We have previously issued the commands:

. use https://www.stata-press.com/data/r19/lutkepohl2

- . var dln_inv dln_inc dln_consump if qtr<=tq(1978q4), lags(1/2) dfk
- . irf create order1, step(10) set(myirf1, new)
- . irf create order2, step(10) order(dln_inc dln_inv dln_consump)

We now wish to compare the oirf for impulse dln_inc and response dln_consump for two different Cholesky orderings:



4

Technical note

Graph options allow you to change the appearance of each plot. The following graph contains the plots of the FEVDs for impulse dln_inc and each response using the results from the first collection of results in the active IRF file (using the "." shortcut). We specify ciopts(color()) with each plot to request confidence bands and specify a color that corresponds to the plotted line. In the second plot, we supply the clpat(dash) option (an abbreviation for clpattern(dash)) to give the line a dashed pattern. In the third plot, we supply the m(o), clpat(dash_dot), and recast(connected) options to get small circles connected by a line with a dash-dot pattern. We use the title() option to add a descriptive title to the graph.



The clpattern() option is described in [G-3] *connect_options*, msymbol() is described in [G-3] *marker_options*, title() is described in [G-3] *title_options*, and recast() is described in [G-3] *advanced_options*.

Stored results

irf ograph stores the following in r():

```
Scalars
                      number of plot specifications
    r(plots)
    r(ciplots)
                      number of plotted confidence bands
Macros
    r(irfname#)
                      irfname from (spec#)
    r(impulse#)
                      impulse from (spec#)
                      response from (spec#)
    r(response#)
                      statistics from (spec#)
    r(stat#)
                      level from (spec#) or noci
    r(ci#)
```

Also see

- [TS] irf Create and analyze IRFs, dynamic-multiplier functions, and FEVDs
- [TS] var intro Introduction to vector autoregressive models
- [TS] vec intro Introduction to vector error-correction models

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