Syntax

graph twoway fpfitci — Twoway fractional-polynomial prediction plots with CIs

DescriptionQuick startMenuOptionsRemarks and examplesAlso see

Description

twoway fpfitci calculates the prediction for *yvar* from estimation of a fractional polynomial of *xvar* and plots the resulting curve along with the confidence interval of the mean.

Quick start

```
Fractional-polynomial prediction plot of y on x with 95% confidence interval
     twoway fpfitci y1 x
As above, with a 90% confidence interval
     twoway fpfitci y1 x, level(90)
As above, but estimate fractional polynomial of degree 4
     twoway fpfitci y1 x, level(90) estopts(degree(4))
Overlay a scatterplot
     twoway fpfitci y1 x || scatter y x
As above, but use small circles as markers
     twoway fpfitci y1 x || scatter y x, msymbol(o)
Display confidence limits as a pair of lines
     twoway fpfitci y1 x, ciplot(rline)
As above, with an overlaid scatterplot and medium-thick line for predicted values
     twoway fpfitci y1 x, ciplot(rline) clwidth(medthick) || scatter y1 x
Predictions from estimation command logit with binary dependent variable y2
     twoway fpfitci y2 x, estcmd(logit)
Add "My Title" as the title of the graph
     twoway fpfitci y1 x || scatter y x, title("My Title")
```

Menu

Graphics > Twoway graph (scatter, line, etc.)

Syntax

<u>tw</u>oway fpfitci yvar xvar [if] [in] [weight] [, options]

options	Description
<pre>fpfit_options level(#) nofit</pre>	any of the options of [G-2] graph twoway fpfit set confidence level; default is level(95) prevent plotting the prediction
<pre>fitplot(plottype) ciplot(plottype)</pre>	how to plot fit; default is fitplot(line) how to plot CIs; default is ciplot(rarea)
fcline_options fitarea_options	change look of predicted line change look of CI
axis_choice_options	associate plot with alternative axis
twoway_options	titles, legends, axes, added lines and text, by, regions, name, aspect ratio, etc.

See [G-2] graph twoway fpfit, [G-3] *fcline_options*, [G-3] *fitarea_options*, [G-3] *axis_choice_options*, and [G-3] *twoway_options*.

Option level() is *rightmost*; nofit, fitplot(), and ciplot() are *unique*; see [G-4] concept: repeated options.

aweights, fweights, and pweights are allowed. Weights, if specified, affect estimation but not how the weighted results are plotted. See [U] 11.1.6 weight.

Options

- *fpfit_options* refers to any of the options of graph twoway fpfit; see [G-2] graph twoway fpfit. These options are seldom specified.
- level(#) specifies the confidence level, as a percentage, for the confidence intervals. The default is level(95) or as set by set level; see [U] 20.7 Specifying the width of confidence intervals.

nofit prevents the prediction from being plotted.

- fitplot(plottype) is seldom specified. It specifies how the prediction is to be plotted. The default
 is fitplot(line), meaning that the prediction will be plotted by graph twoway line. See
 [G-2] graph twoway for a list of plottype choices. You may choose any plottypes that expect one
 y variable and one x variable.
- ciplot(*plottype*) specifies how the confidence interval is to be plotted. The default is ciplot(rarea), meaning that the prediction will be plotted by graph twoway rarea.

A reasonable alternative is ciplot(rline), which will substitute lines around the prediction for shading. See [G-2] graph twoway for a list of *plottype* choices. You may choose any plottypes that expect two y variables and one x variable.

- *fcline_options* specify how the prediction line is rendered; see [G-3] *fcline_options*. If you specify fitplot(), then rather than using *fcline_options*, you should select options that affect the specified *plottype* from the options in scatter; see [G-2] graph twoway scatter.
- *fitarea_options* specify how the confidence interval is rendered; see [G-3] *fitarea_options*. If you specify ciplot(), then rather than using *fitarea_options*, you should specify whatever is appropriate.

- *axis_choice_options* associate the plot with a particular y or x axis on the graph; see [G-3] *axis_choice_options*.
- *twoway_options* are a set of common options supported by all twoway graphs. These options allow you to title graphs, name graphs, control axes and legends, add lines and text, set aspect ratios, create graphs over by() groups, and change some advanced settings. See [G-3] *twoway_options*.

Remarks and examples

stata.com

Remarks are presented under the following headings:

Typical use Advanced use Cautions Use with by()

Typical use

twoway fpfitci by default draws the confidence interval of the predicted mean:

```
. use http://www.stata-press.com/data/r14/auto (1978 Automobile Data)
```

. twoway fpfitci mpg weight



If you specify the ciplot(rline) option, the confidence interval will be designated by lines rather than shading:

```
. twoway fpfitci mpg weight, ciplot(rline)
```



Advanced use

fpfitci can be usefully overlaid with other plots:

- . use http://www.stata-press.com/data/r14/auto, clear (1978 Automobile Data)
- . twoway fpfitci mpg weight || scatter mpg weight



In the above graph, the shaded area corresponds to the 95% confidence interval for the mean.

It is of great importance to note that we typed

. twoway fpfitci ... || scatter ...

and not

```
. twoway scatter ... || fpfitci ...
```

Had we drawn the scatter diagram first, the confidence interval would have covered up most of the points.

Cautions

```
Do not use twoway fpfitci when specifying the axis_scale_options yscale(log) or xscale(log) to create log scales. Typing
```

. twoway fpfitci mpg weight || scatter mpg weight ||, xscale(log)

will produce a curve that will be fit from a fractional polynomial regression of mpg on weight rather than log(weight).

See Cautions in [G-2] graph twoway lfitci.

Use with by()

fpfitci may be used with by() (as can all the twoway plot commands):

```
. twoway fpfitci mpg weight ||
scatter mpg weight ||
, by(foreign, total row(1))
```



Also see

- [G-2] graph twoway lfitci Twoway linear prediction plots with CIs
- [G-2] graph twoway qfitci Twoway quadratic prediction plots with CIs
- [G-2] graph twoway fpfit Twoway fractional-polynomial prediction plots