

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

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Description

`twoway fptestci` 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 fptestci y1 x
```

As above, with a 90% confidence interval

```
twoway fptestci y1 x, level(90)
```

As above, but estimate fractional polynomial of degree 4

```
twoway fptestci y1 x, level(90) estopts(degree(4))
```

Overlay a scatterplot

```
twoway fptestci y1 x || scatter y x
```

As above, but use small circles as markers

```
twoway fptestci y1 x || scatter y x, msymbol(o)
```

Display confidence limits as a pair of lines

```
twoway fptestci y1 x, ciplot(rline)
```

As above, with an overlaid scatterplot and medium-thick line for predicted values

```
twoway fptestci y1 x, ciplot(rline) clwidth(medthick) || scatter y1 x
```

Predictions from estimation command `logit` with binary dependent variable *y2*

```
twoway fptestci y2 x, estcmd(logit)
```

Add “My Title” as the title of the graph

```
twoway fptestci y1 x || scatter y x, title("My Title")
```

Menu

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

Syntax

```
twoway fptestci yvar xvar [if] [in] [weight] [, options]
```

| <i>options</i> | Description |
|--------------------------------------|--|
| <i>fpfit_options</i> | any of the options of [G-2] graph twoway fpfit |
| <code>level(#)</code> | set confidence level; default is <code>level(95)</code> |
| <code>nofit</code> | prevent plotting the prediction |
| <code>fitplot(<i>plotype</i>)</code> | how to plot fit; default is <code>fitplot(line)</code> |
| <code>ciplot(<i>plotype</i>)</code> | how to plot CIs; default is <code>ciplot(rarea)</code> |
| <i>fcline_options</i> | change look of predicted line |
| <i>fitarea_options</i> | change look of CI |
| <i>axis_choice_options</i> | associate plot with alternative axis |
| <i>twoway_options</i> | 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**.

`aweight`s, `fweight`s, and `pweight`s 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] **20.8 Specifying the width of confidence intervals**.

`nofit` prevents the prediction from being plotted.

`fitplot(plotype)` 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 *plotype* choices. You may choose any *plotypes* that expect one *y* variable and one *x* variable.

`ciplot(plotype)` 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 *plotype* choices. You may choose any *plotypes* 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 *plotype* 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](http://www.stata.com)

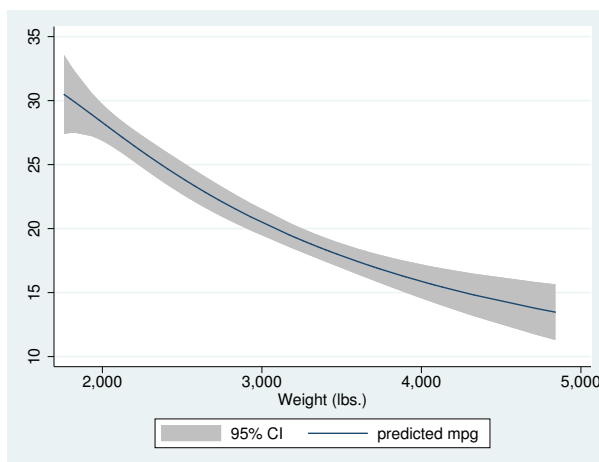
Remarks are presented under the following headings:

Typical use
Advanced use
Cautions
Use with by()

Typical use

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

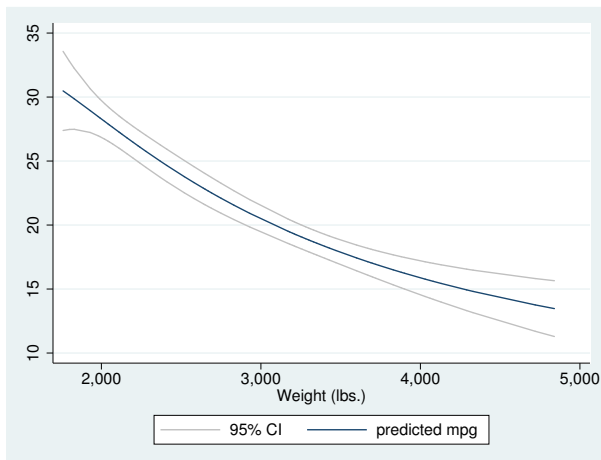
```
. use http://www.stata-press.com/data/r15/auto
(1978 Automobile Data)
. twoway fptestci mpg weight
```



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

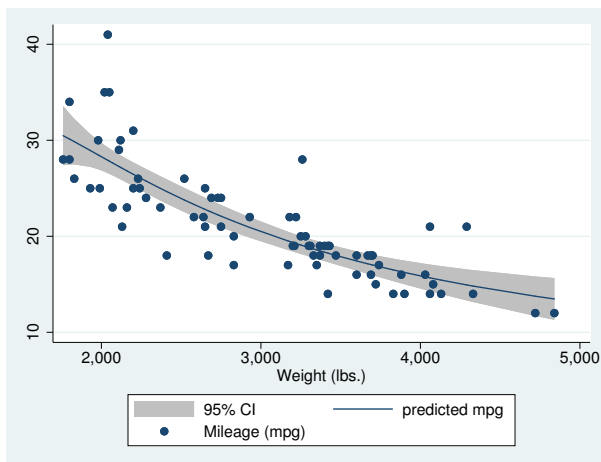
```
. twoway fpfitci mpg weight, ciplot(rline)
```



Advanced use

`fpfitci` can be usefully overlaid with other plots:

```
. use http://www.stata-press.com/data/r15/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 fptestci ... || scatter ...
```

and not

```
. twoway scatter ... || fptestci ...
```

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

Cautions

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

```
. twoway fptestci mpg weight || scatter mpg weight ||, xscale(log)
```

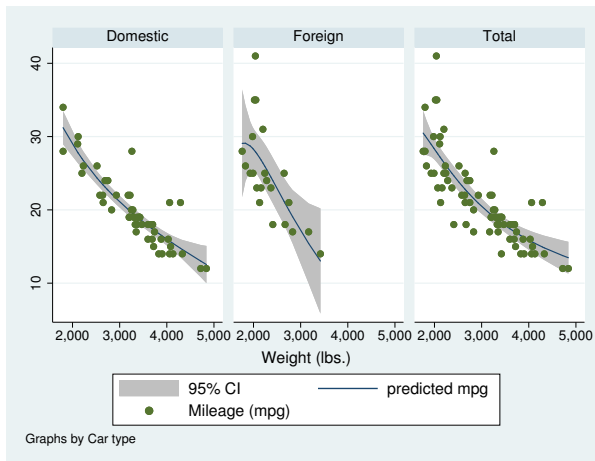
will produce a curve that will be fit from a fractional polynomial regression of mpg on weight rather than `log(weight)`.

See *Cautions* in [G-2] [graph twoway lfptestci](#).

Use with by()

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

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



Also see

[G-2] [graph twoway lfptestci](#) — Twoway linear prediction plots with CIs

[G-2] [graph twoway qfptestci](#) — Twoway quadratic prediction plots with CIs

[G-2] [graph twoway fptestci](#) — Twoway fractional-polynomial prediction plots