# Title

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



## Syntax

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

| *options* | Description |
|---|---|
| *fpfit_options* | estimation command and options |
| `level(#)` | set confidence level; default is `level(95)` |
| `nofit` | prevent plotting the prediction |
| `fitplot(`*plottype*`)` | how to plot fit; default is `fitplot(line)` |
| `ciplot(`*plottype*`)` | how to plot CIs; default is `ciplot(rarea)` |
| *fcline_options* | change look of predicted line |
| *fitarea_options* | 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**.

`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**.

## Menu

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

## 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.

## 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

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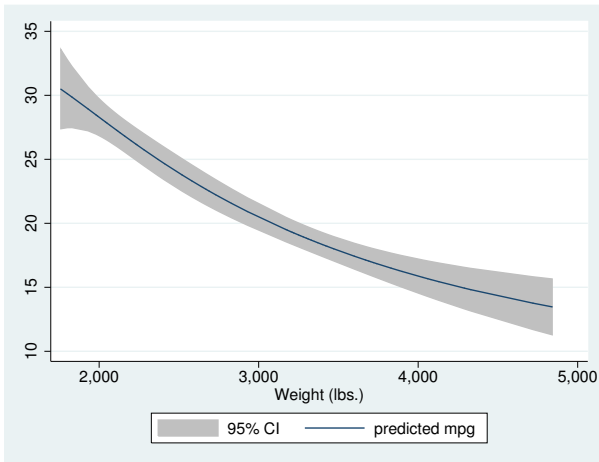
Remarks are presented under the following headings:



## Typical use

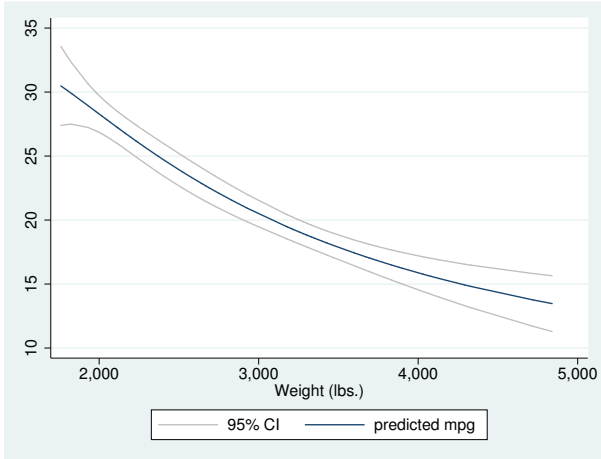
`twoway fpfitci` by default draws the confidence interval of the predicted mean:

```
. use http://www.stata-press.com/data/r13/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:

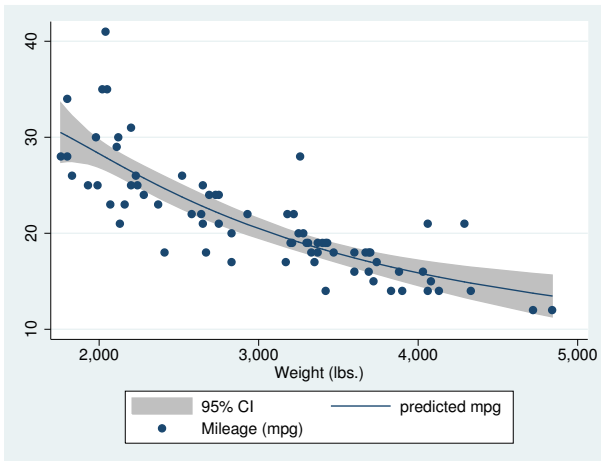
```
. twoway fpfitci mpg weight, ciplot(rline)
```




## Advanced use

`fpfitci` can be usefully overlaid with other plots:

```
. use http://www.stata-press.com/data/r13/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)
```

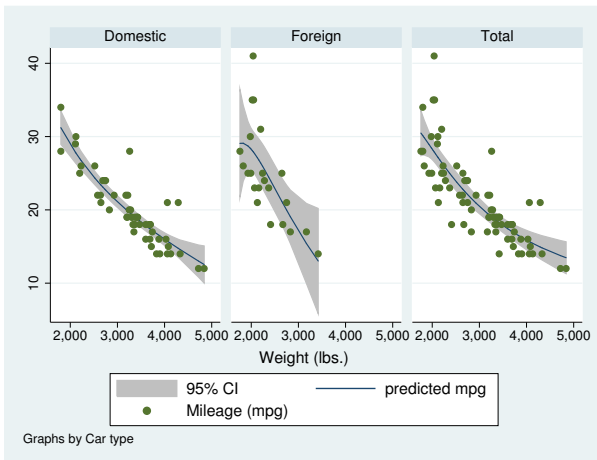
will produce a curve that will be fit from a fractional polynomial regression of `mpg` on `weight` rather than `log(weight)`.

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