Title

graph twoway fpfit — Twoway fractional-polynomial prediction plots

Syntax

`twoway fpfit` *yvar xvar* [*if*] [*in*] [*weight*] [, *options*]

options	Description
`estcmd(`*est_cmd*`)`	estimation command; default is `regress`
`estopts(`*est_opts*`)`	specifies *est_opts* to estimate the fractional polynomial regression
cline_options	change look of predicted line
axis_choice_options	associate plot with alternative axis
twoway_options	titles, legends, axes, added lines and text, by, regions, name, aspect ratio, etc.

est_cmd may be `clogit`, `glm`, `intreg`, `logistic`, `logit`, `mlogit`, `nbreg`, `ologit`, `oprobit`, `poisson`, `probit`, `regress`, `rreg`, `stcox`, `stcrreg`, `streg`, or `xtgee`.

See [G-3] ***cline_options***, [G-3] ***axis_choice_options***, and [G-3] ***twoway_options***.

Options `estcmd()` and `estopts()` 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**.

est_opts	Description
`degree(#)`	degree of fractional polynomial to fit; default is `degree(2)`
`noscaling`	suppress scaling of first independent variable
`noconstant`	suppress constant term
`powers(`*numlist*`)`	list of fractional polynomial powers from which models are chosen
`center(`*cent_list*`)`	specification of centering for the independent variables
`all`	include out-of-sample observations in generated variables
`log`	display iteration log
`compare`	compare models by degree
display_options	control column formats and line width
other_est_opts	other options allowed by *est_cmd*

cent_list is a comma-separated list with elements *varlist*`:{mean|#|no}`, except that the first element may optionally be of the form `{mean|#|no}` to specify the default for all variables.

Menu

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

Description

`twoway fpfit` calculates the prediction for *yvar* from estimation of a fractional polynomial of *xvar* and plots the resulting curve.

Options

`estcmd(`*est_cmd*`)` specifies the estimation command to be used; `estcmd(regress)` is the default.

`estopts(`*est_opts*`)` specifies the options to estimate the fractional polynomial regression from which the curve will be predicted. Available *est_opts* are

`degree(#)` determines the degree of FP to be fit. The default is `degree(2)`, that is, a model with two power terms.

`noscaling` suppresses scaling of $xvar_1$ and its powers.

`noconstant` suppresses the regression constant if this is permitted by *est_cmd*.

`powers(`*numlist*`)` is the set of FP powers from which models are to be chosen. The default is `powers(-2,-1,-.5,0,.5,1,2,3)` (0 means log).

`center(`*cent_list*`)` defines the centering for the covariates $xvar_1$, $xvar_2$, . . . , *xvarlist*. The default is `center(mean)`. A typical item in *cent_list* is *varlist*`:`{`mean` | `#` | `no`}. Items are separated by commas. The first item is special because *varlist*`:` is optional, and if omitted, the default is (re)set to the specified value (`mean` or `#` or `no`). For example, `center(no, age:mean)` sets the default to `no` and sets the centering for `age` to `mean`.

`all` includes out-of-sample observations when generating the best-fitting FP powers of $xvar_1$, $xvar_2$, etc. By default, the generated FP variables contain missing values outside the estimation sample.

`log` displays deviances and (for `regress`) residual standard deviations for each FP model fit.

`compare` reports a closed-test comparison between FP models.

display_options: `cformat(`*%fmt*`)`, `pformat(`*%fmt*`)`, `sformat(`*%fmt*`)`, and `nolstretch`; see [R] **estimation options**.

other_est_opts are options appropriate to the *est_cmd*; see the documentation for that *est_cmd*. For example, for `stcox`, *other_est_opts* may include `efron` or some alternate method for handling tied failures.

cline_options specify how the prediction line is rendered; see [G-3] ***cline_options***.

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

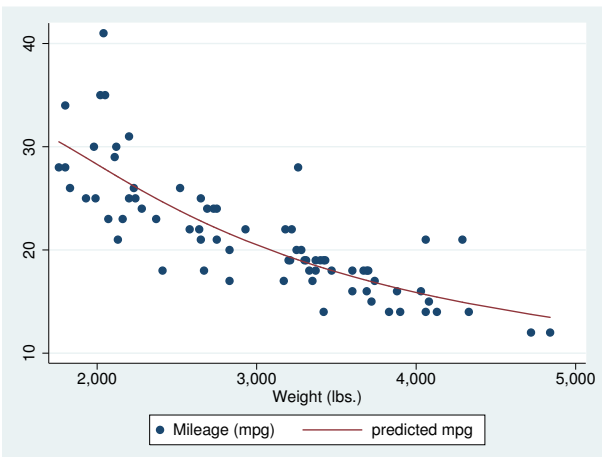
stata.com

Remarks are presented under the following headings:

Typical use

`twoway fpfit` is nearly always used in conjunction with other `twoway` plottypes, such as

```
. use http://www.stata-press.com/data/r13/auto
(1978 Automobile Data)
. scatter mpg weight || fpfit mpg weight
```



Cautions

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

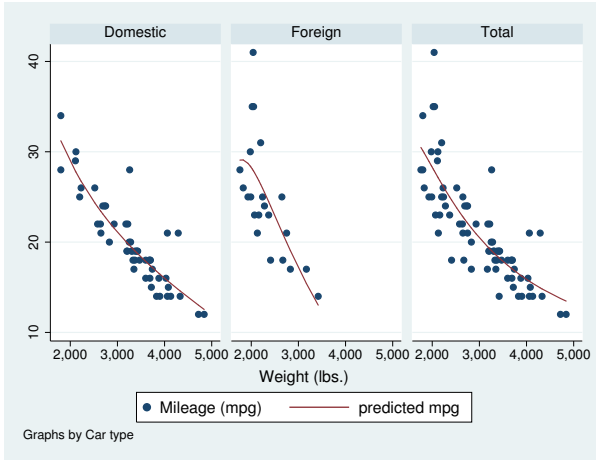
```
. scatter mpg weight, xscale(log) || fpfit mpg weight
```

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

Use with by()

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

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



Also see

[G-2] **graph twoway line** — Twoway line plots

[G-2] **graph twoway fpfitci** — Twoway fractional-polynomial prediction plots with CIs

[G-2] **graph twoway lfit** — Twoway linear prediction plots

[G-2] **graph twoway qfit** — Twoway quadratic prediction plots

[G-2] **graph twoway mband** — Twoway median-band plots

[G-2] **graph twoway mspline** — Twoway median-spline plots