graph twoway qfit — Twoway quadratic prediction plots

Syntax

twoway qfit yvar xvar [if] [in] [weight] [, options]

options Description

range(# #) range over which predictions calculated
n(#) number of prediction points
atobs calculate predictions at xvar
estopts(regress_options) options for regress
predopts(predict_options) options for predict
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.

All options are rightmost; see [G-4] concept: repeated options.
yvar and xvar may contain time-series operators; see [U] 11.4.4 Time-series varlists.
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.

Menu

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

Description

twoway qfit calculates the prediction for yvar from a linear regression of yvar on xvar and xvar^2
and plots the resulting curve.

Options

range(# #) specifies the x range over which predictions are calculated. The default is range(. .),
meaning the minimum and maximum values of xvar. range(0 10) would make the range 0 to 10,
range(. 10) would make the range the minimum to 10, and range(0 .) would make the range 0 to the maximum.
n(#) specifies the number of points at which predictions over range() are to be calculated. The default is n(100).

atobs is an alternative to n(). It specifies that the predictions be calculated at the xvar values. atobs is the default if predopts() is specified and any statistic other than xb is requested.

estopts(regress_options) specifies options to be passed along to regress to estimate the linear regression from which the curve will be predicted; see [R] regress. If this option is specified, commonly specified is estopts(nocons).

predopts(predict_options) specifies options to be passed along to predict to obtain the predictions after estimation by regress; see [R] regress postestimation.

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

Remarks are presented under the following headings:

Typical use
Cautions
Use with by()

Typical use

twoway qfit 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 || qfit mpg weight
```

![Graph showing scatter plot and quadratic fit]
Results are visually the same as typing

```
. generate tempvar = weight^2
. regress mpg weight tempvar
. predict fitted
. scatter mpg weight || line fitted weight
```

Cautions

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

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

produces something that is not a parabola because the regression estimated for the prediction was for `mpg` on `weight` and `weight^2`, not `mpg` on `log(weight)` and `log(weight)^2`.

Use with `by()`

`qfit` may be used with `by()` (as can all the `twoway` plot commands):
```
. scatter mpg weight || qfit mpg weight ||, by(foreign, total row(1))
```

Also see

[G-2] `graph twoway line` — Twoway line plots
[G-2] `graph twoway lfit` — Twoway linear prediction plots
[G-2] `graph twoway fpfit` — Twoway fractional-polynomial prediction plots
[G-2] `graph twoway mband` — Twoway median-band plots
[G-2] `graph twoway mspline` — Twoway median-spline plots
[G-2] `graph twoway qfitci` — Twoway quadratic prediction plots with CIs
[R] `regress` — Linear regression