

graph twoway qfit — Twoway quadratic prediction plots[Description](#)
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Description

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

Quick start

Graph showing the quadratic prediction of *y* using *x* and x^2

```
twoway qfit y x
```

Overlay quadratic prediction graph on a scatterplot of the observed data

```
twoway scatter y x || qfit y x
```

As above, but with a separate graph area for each level of *catvar*

```
twoway scatter y x || qfit y x, by(catvar)
```

As above, but with an additional graph area for all levels of *catvar* combined

```
twoway scatter y x || qfit y x, by(catvar, total)
```

As above, but with all graphs in a single row

```
twoway scatter y x || qfit y x, by(catvar, total row(1))
```

Menu

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

Syntax

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

<i>options</i>	Description
<code>range(# #)</code>	range over which predictions calculated
<code>n(#)</code>	number of prediction points
<code>atobs</code>	calculate predictions at <i>xvar</i>
<code>estopts(<i>regress_options</i>)</code>	options for regress
<code>predopts(<i>predict_options</i>)</code>	options for predict
<i>cline_options</i>	change look of predicted line
<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.

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**.

`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

`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

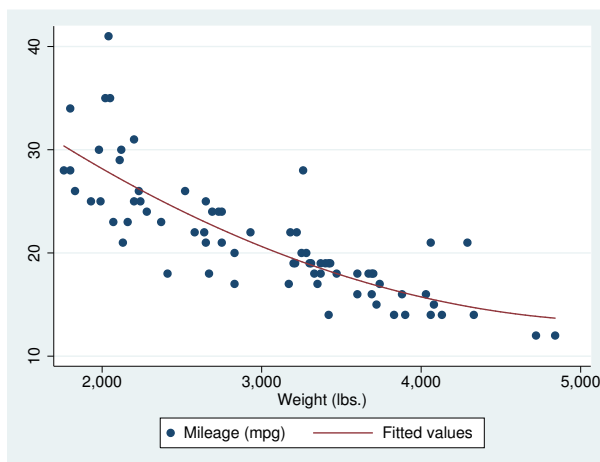
Remarks are presented under the following headings:

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/r14/auto
(1978 Automobile Data)
. scatter mpg weight || qfit mpg weight
```



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

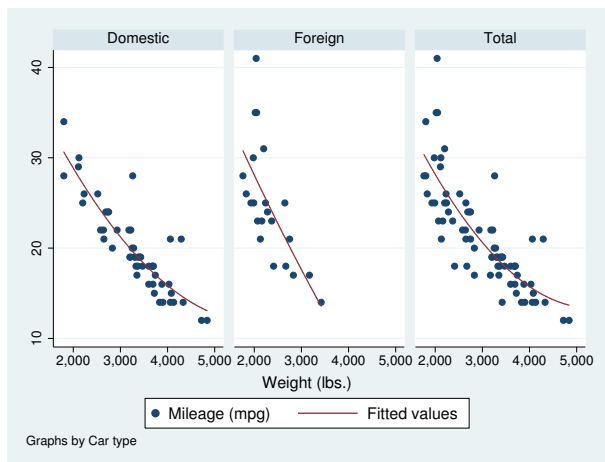
```
. scatter mpg weight, xscale(log) || qfit mpg weight
```

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