**Description**

`graph twoway lowess` plots a lowess smooth of `yvar` on `xvar` using `graph twoway line`; see [G-2] `graph twoway line`.

**Quick start**

Local linear smooth plot of `y` versus `x` using Cleveland’s tricube weighting function with a bandwidth of 0.8

```
twoway lowess y x
```

As above, overlaid on a scatterplot of `y` versus `x`

```
twoway scatter y x || lowess y x
```

As above, but draw points with less intense color to make the line more visible

```
twoway scatter y x, mcolor(*.6) || lowess y x
```

Use running-mean smoothing

```
twoway scatter y x || lowess y x, mean
```

Specify a bandwidth of 0.5

```
twoway scatter y x || lowess y x, bwidth(.5)
```

Suppress use of Cleveland’s tricube weighting function

```
twoway scatter y x || lowess y x, noweight
```

**Menu**

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

```
twoway lowess  yvar  xvar  [if]  [in]  [,  options]
```

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Options

*bwidth(#)* specifies the bandwidth. *bwidth(.8)* is the default. Centered subsets of \(N \times bwidth()\) observations, \(N = \) number of observations, are used for calculating smoothed values for each point in the data except for endpoints, where smaller, uncentered subsets are used. The greater the *bwidth()*, the greater the smoothing.

*mean* specifies running-mean smoothing; the default is running-line least-squares smoothing.

*noweight* prevents the use of Cleveland’s (1979) tricube weighting function; the default is to use the weighting function.

*logit* transforms the smoothed *yvar* into logits.

*adjust* adjusts by multiplication the mean of the smoothed *yvar* to equal the mean of *yvar*. This is useful when smoothing binary (0/1) data.

*cline_options* specify how the lowess line is rendered and its appearance; 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

`graph twoway lowess  yvar  xvar` uses the `lowess` command—see [R] `lowess`—to obtain a local linear smooth of *yvar* on *xvar* and uses `graph twoway line` to plot the result.

Remarks are presented under the following headings:

- Typical use
- Use with *by()*
Typical use

The local linear smooth is often graphed on top of the data, possibly with other regression lines:

```
. use https://www.stata-press.com/data/r16/auto
    (1978 Automobile Data)
. twoway scatter mpg weight, mcolor(*.6) ||
    lfit mpg weight ||
    lowess mpg weight
```

Notice our use of `mcolor(*.6)` to dim the points and thus make the lines stand out; see [G-4] `colorstyle`. 
Use with by()

graph twoway lowess may be used with by():

```
. use https://www.stata-press.com/data/r16/auto, clear
   (1978 Automobile Data)
. twoway scatter mpg weight, mcolor(*.6) ||
    lfit mpg weight ||
    lowess mpg weight ||, by(foreign)
```

References


Also see

[R] lowess — Lowess smoothing

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