graph twoway mband — Two-way median-band plots

Description

`twoway mband` calculates cross medians and then graphs the cross medians as a line plot.

Quick start

Median-band plot of y versus x

```
twoway mband y x
```

Overlaid on a scatterplot of the observed data

```
twoway scatter y x || mband y x
```

Same as above, but reduce the scatterplot markers to half their normal size

```
twoway scatter y x, msize(*.5) || mband y x
```

Same as above, but specify 20 bands

```
twoway scatter y x, msize(*.5) || mband y x, bands(20)
```

Add the title "My Title"

```
twoway scatter y x || mband y x, title("My Title")
```

Same as above, but suppress the legend

```
twoway scatter y x || mband y x, title("My Title") legend(off)
```

Menu

Graphics > Two-way graph (scatter, line, etc.)

Syntax

twoway mband *yvar xvar* [*if*] [*in*] [, *options*]

options	Description
bands(#)	number of bands
cline_options	change look of the 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**.

Options

bands(#) specifies the number of bands on which the calculation is to be based. The default is $\max(10, \text{round}(10 \times \log10(N)))$, where N is the number of observations.

In a median-band plot, the x axis is divided into # equal-width intervals and then the median of y and the median of x are calculated in each interval. It is these cross medians that mband graphs as a line plot.

cline_options specify how the median-band 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

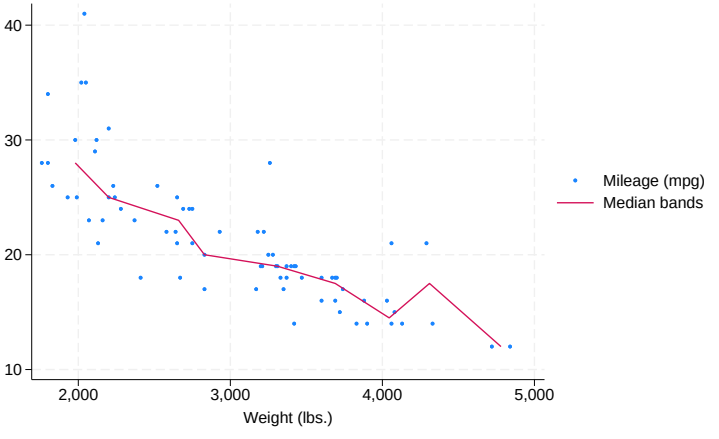
Remarks are presented under the following headings:

Typical use
Use with by( )

Typical use

Median bands provide a convenient but crude way to show the tendency in the relationship between y and x:

```
. use https://www.stata-press.com/data/r19/auto
(1978 automobile data)
. scatter mpg weight, msize(*.5) || mband mpg weight
```

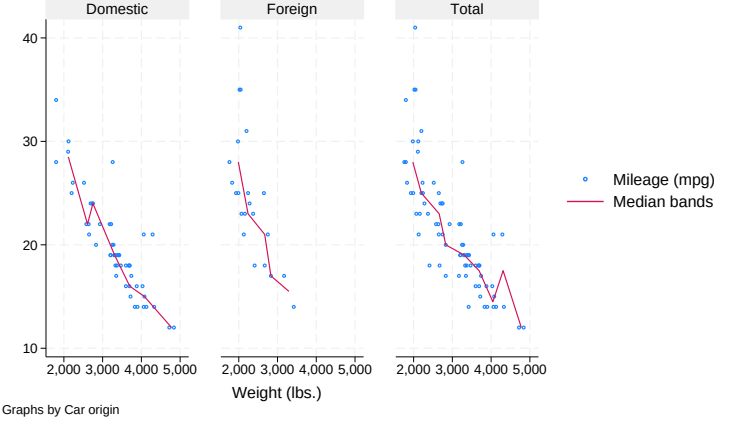


The important part of the above is "`mband mpg weight`". On the `scatter`, we specified `msize(*.5)` to make the marker symbols half their normal size; see [G-4] ***size***.

Use with by()

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

```
. scatter mpg weight, ms(oh) ||
  mband mpg weight ||, by(foreign, total row(1))
```



In the above graph, we specified `ms(oh)` so as to use hollow symbols; see [G-4] ***symbolstyle***.

Also see

[G-2] **graph twoway fpfit** — Two-way fractional-polynomial prediction plots

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

[G-2] **graph twoway line** — Two-way line plots

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

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