Title

> **graph twoway mband —** Twoway median-band plots

Description   Quick start   Menu   Syntax
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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 > Twoway graph (scatter, line, etc.)

Syntax

> <u>tw</u>oway mband *yvar* *xvar* $\left[\,if\,\right]$ $\left[\,in\,\right]$ $\left[\,,\ options\,\right]$

options	Description
<u>band</u>s(*#*)	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

<u>band</u>s(*#*) specifies the number of bands on which the calculation is to be based. The default is $\max(10, \text{round}(10 \times \log 10(N)))$, 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   stata.com

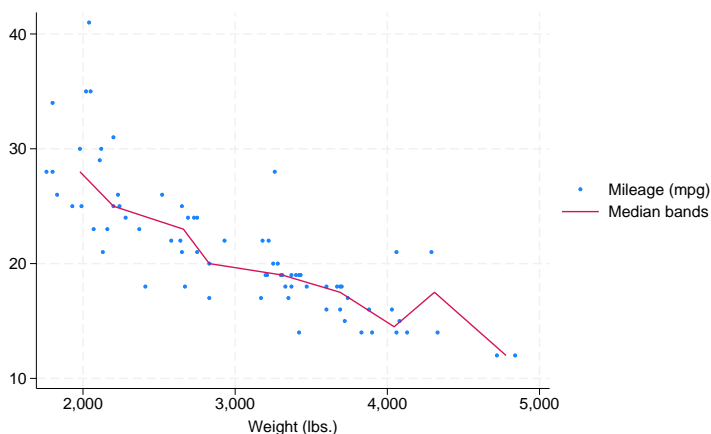Remarks are presented under the following headings:

> *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/r18/auto
(1978 automobile data)

. scatter mpg weight, msize(*.5) || mband mpg weight
```
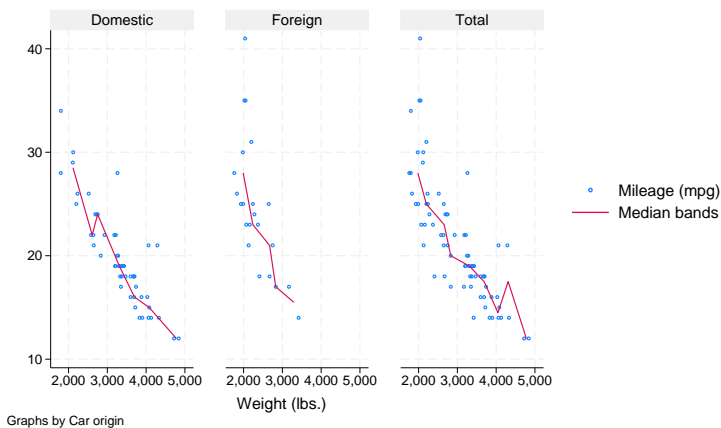

The important part of the above is "mband mpg weight". On the scatter, we specified msize(*.5) to make the marker symbols half their normal size; see [G-4] *size*.

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