

**graph twoway mband** — Twoway median-band plots[Description](#)  
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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
```

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

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

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")
```

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

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

<i>options</i>	Description
<b>bands</b> (#)	number of bands
<i>cline_options</i>	change look of the 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**.

## Options

**bands**(#) 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](http://www.stata.com)

Remarks are presented under the following headings:

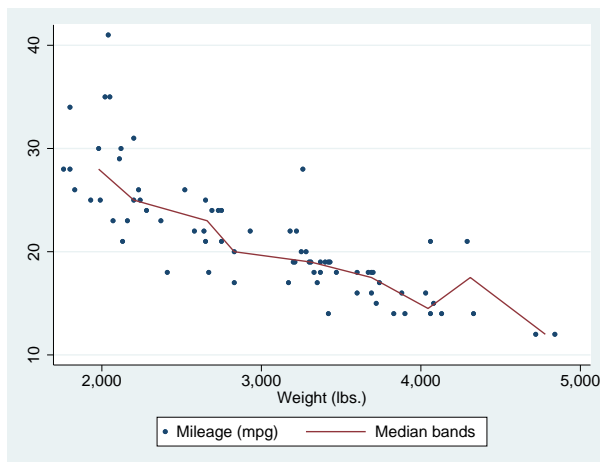
*Typical use*

*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/r17/auto
(1978 automobile data)
. scatter mpg weight, msize(*.5) || mband mpg weight
```

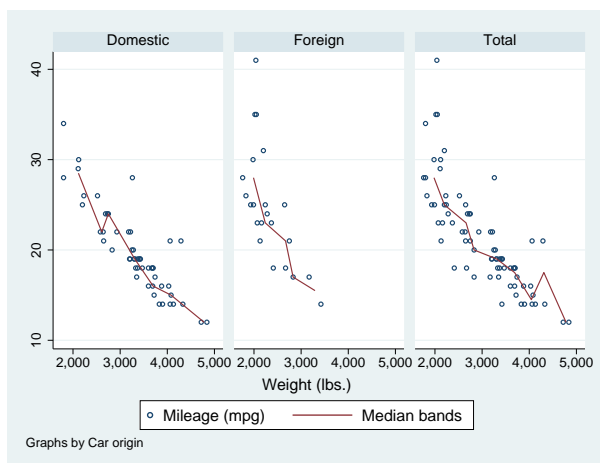


The important part of the above is “mband mpg weight”. On the *scatter*, we specified `msize(*.5)` to make the marker symbols half their normal size; see [\[G-4\] size](#).

## Use with by()

`mband` may be used with `by()` (as can all the *tway* 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 fplit** — Twoway fractional-polynomial prediction plots

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

[G-2] **graph twoway line** — Twoway line plots

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

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