graph twoway rcap — Range plot with capped spikes

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Description

A range plot has two y variables, such as high and low daily stock prices or upper and lower 95% confidence limits.

twoway rcap plots a range, using capped spikes (I-beams) to connect the high and low values.

Quick start

Range plot with capped spikes

twoway rcap y1 y2 x

Same as above, with horizontal spikes

twoway rcap y1 y2 x, horizontal

Specify small caps

twoway rcap y1 y2 x, msize(small)

Same as above, but specify orange spikes

twoway rcap y1 y2 x, msize(small) lcolor(orange)

Use approximately 5 tick marks at round values on the y axis and label them twoway rcap y1 y2 x, ylabel(#5)

Menu

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

Syntax

twoway rcap ylvar y2var xvar [if] [in] [, options]

options	Description
<u>msiz</u> e(<i>markersizestyle</i>) <u>vert</u> ical <u>hor</u> izontal	width of cap vertical spikes; the default horizontal spikes
line_options	change look of spike and cap lines
colorvar_options	change color of spike and cap lines based on values of a variable
axis_choice_options	associate plot with alternative axis
twoway_options	titles, legends, axes, added lines and text, by, regions, name, aspect ratio, etc.

All explicit options are *rightmost*, except vertical and horizontal, which are *unique*; see [G-4] Concept: repeated options.

Options

- msize(markersizestyle) specifies the width of the cap. Option msize() is in fact twoway scatter's
 marker_option that sets the size of the marker symbol, but here msymbol() is borrowed to set the cap
 width. See [G-4] markersizestyle for a list of size choices.
- vertical and horizontal specify whether the high and low y values are to be presented vertically (the default) or horizontally.

In the default vertical case, ylvar and y2var record the minimum and maximum (or maximum and minimum) y values to be graphed against each xvar value.

If horizontal is specified, the values recorded in ylvar and y2var are plotted in the x direction, and xvar is treated as the y value.

- *line_options* specify the look of the lines used to draw the spikes and their caps, including pattern, width, and color; see [G-3] *line_options*.
- *colorvar_options* specify that the color of the lines used to draw the spikes and their caps be determined by the levels of the numeric variable *colorvar*; see [G-3] *colorvar_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 Advanced use Advanced use 2

Typical use

We have daily data recording the values for the S&P 500 in 2001:

. use https://www.stata-press.com/data/r19/sp500 (S&P 500)

. list date high low close in 1/5

	date	high	low	close
1.	02jan2001	1320.28	1276.05	1283.27
2.	03jan2001	1347.76	1274.62	1347.56
з.	04jan2001	1350.24	1329.14	1333.34
4.	05jan2001	1334.77	1294.95	1298.35
5.	08jan2001	1298.35	1276.29	1295.86

We will use the first 37 observations from these data:

. twoway rcap high low date in 1/37



Advanced use

twoway rcap works well when combined with a horizontal line representing a base value:

```
. use https://www.stata-press.com/data/r19/sp500, clear
(S&P 500)
. generate month = month(date)
. sort month
. by month: egen lo = min(volume)
. by month: egen hi = max(volume)
. format lo hi %10.0gc
 summarize volume
                                          Std. dev.
   Variable
                      Obs
                                 Mean
                                                          Min
                                                                      Max
      volume
                      248
                             12320.68
                                          2585.929
                                                         4103
                                                                  23308.3
. by month: keep if _n==_N
(236 observations deleted)
. twoway rcap lo hi month,
   xlabel(1 "J" 2 "F" 3 "M" 4 "A" 5 "M" 6 "J"
           7 "J" 8 "A" 9 "S" 10 "O" 11 "N" 12 "D")
  xtitle("Month of 2001")
  ytitle("High and Low Volume")
  yaxis(1 2)
  ylabel(12321 "12,321 (mean)", axis(2) angle(0))
  ytitle("", axis(2))
  yline(12321, lstyle(foreground))
  msize(*2)
  title("Volume of the S& P 500", margin(b+2.5))
  note("Source: Yahoo!Finance and Commodity Systems Inc.")
```





Advanced use 2

twoway rcap also works well when combined with a scatterplot to produce hi-lo-middle graphs. Returning to the first 37 observations of the S&P 500 used in the first example, we add a scatterplot of the closing value:



Also see

- [G-2] graph twoway rarea Range plot with area shading
- [G-2] graph twoway rbar Range plot with bars
- [G-2] graph twoway rcapsym Range plot with spikes capped with marker symbols
- [G-2] graph twoway rconnected Range plot with connected lines
- [G-2] graph twoway rline Range plot with lines
- [G-2] graph twoway rscatter Range plot with markers
- [G-2] graph twoway rspike Range plot with spikes

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