graph twoway rarea — Range plot with area shading

Syntax

```
twoway rarea y1var y2var xvar [if] [in] [, options]
```

<table>
<thead>
<tr>
<th>options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>vertical</code></td>
<td>vertical area plot; the default</td>
</tr>
<tr>
<td><code>horizontal</code></td>
<td>horizontal area plot</td>
</tr>
</tbody>
</table>
| `cmissing(y|n)`   | missing values do not force gaps in area; default is `cmissing(y)`
| `sort`           | sort by `xvar`; recommended                      |
| `area_options`   | change look of shaded areas                      |
| `axis_choice_options` | associate plot with alternative axis              |
| `twoway_options` | titles, legends, axes, added lines and text, by, regions, name, aspect ratio, etc. |


Menu

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

Description

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

`twoway rarea` plots range as a shaded area.

Also see [G-2] `graph twoway area` for area plots filled to the axis.

Options

`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, `y1var` 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 `y1var` and `y2var` are plotted in the `x` direction and `xvar` is treated as the `y` value.

`cmissing(y|n)` specifies whether missing values are to be ignored when drawing the area or if they are to create breaks in the area. The default is `cmissing(y)`, meaning that they are ignored.

Consider the following data:

```
1
```
Say that you graph these data by using `twoway rarea y x`. Do you want a break in the area between 3 and 5? If so, you type

```
   . twoway rarea y x, cmissing(n)
```

and two areas will be drawn, one for the observations before the missing values at observation 4 and one for the observations after the missing values.

If you omit the option (or type `cmissing(y)`), the data are treated as if they contained

```
   y  x
   1.  1  1
   2.  3  2
   3.  5  3
   4.  .  .
   5.  6  5
   6. 11  8
```

meaning that one contiguous area will be drawn over the range (1,8).

`sort` specifies that the data be sorted by `xvar` before plotting.

`area_options` set the look of the shaded areas. The most important of these options is `color(colorstyle)`, which specifies the color of both the area and its outline; see [G-4] `colorstyle` for a list of color choices. See [G-3] `area_options` for information on the other `area_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
- Cautions
Typical use

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

```
. use http://www.stata-press.com/data/r13/sp500
   (S&P 500)
. list date high low close in 1/5

<table>
<thead>
<tr>
<th>date</th>
<th>high</th>
<th>low</th>
<th>close</th>
</tr>
</thead>
<tbody>
<tr>
<td>02jan2001</td>
<td>1320.28</td>
<td>1276.05</td>
<td>1283.27</td>
</tr>
<tr>
<td>03jan2001</td>
<td>1347.76</td>
<td>1274.62</td>
<td>1347.56</td>
</tr>
<tr>
<td>04jan2001</td>
<td>1350.24</td>
<td>1329.14</td>
<td>1333.34</td>
</tr>
<tr>
<td>05jan2001</td>
<td>1334.77</td>
<td>1294.95</td>
<td>1298.35</td>
</tr>
<tr>
<td>08jan2001</td>
<td>1298.35</td>
<td>1276.29</td>
<td>1295.86</td>
</tr>
</tbody>
</table>
```

We will use the first 57 observations from these data:

```
. twoway rarea high low date in 1/57
```

Advanced use

```
. use http://www.stata-press.com/data/r13/auto, clear
   (1978 Automobile Data)
. quietly regress mpg weight
. predict hat
   (option xb assumed; fitted values)
. predict s, stdf
. generate low = hat - 1.96*s
. generate hi = hat + 1.96*s
```
Notice the use of option `color()` to change the color of the shaded area. Also, we graphed the shaded area first and then the scatter. Typing

```
. twoway scatter ... || rarea ... 
```

would not have produced the desired result because the shaded area would have covered up the scatterplot.

Also see [G-2] `graph twoway lfitci`.

**Cautions**

Be sure that the data are in the order of `xvar`, or specify `rarea`’s `sort` option. If you do neither, you will get something that looks like modern art; see *Cautions* in [G-2] `graph twoway area` for an example.

**Also see**

[G-2] `graph twoway area` — Twoway line plot with area shading

[G-2] `graph twoway rbar` — Range plot with bars

[G-2] `graph twoway rcap` — Range plot with capped spikes

[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