Title

> **graph twoway area** — Twoway line plot with area shading

Syntax   Menu   Description   Options
Remarks and examples   Also see

Syntax

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

options	Description
<u>vertical</u>	vertical area plot; the default
<u>horizontal</u>	horizontal area plot
cmissing(y│n)	missing values do not force gaps in area; default is cmissing(y)
base(*#*)	value to drop to; default is 0
<u>nodropbase</u>	programmer's option
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.

See [G-3] *area_options*, [G-3] *axis_choice_options*, and [G-3] *twoway_options*.

Option base() is *rightmost*; vertical, horizontal, nodropbase, and sort are *unique*; see [G-4] **concept: repeated options**.

Menu

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

Description

twoway area displays (y,x) connected by straight lines and shaded underneath.

Options

vertical and horizontal specify either a vertical or a horizontal area plot. vertical is the default. If horizontal is specified, the values recorded in *yvar* are treated as x values, and the values recorded in *xvar* are treated as y values. That is, to make horizontal plots, do not switch the order of the two variables specified.

In the vertical case, shading at each *xvar* value extends up or down from 0 according to the corresponding *yvar* values. If 0 is not in the range of the y axis, shading extends up or down to the x axis.

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In the `horizontal` case, shading at each *xvar* value extends left or right from 0 according to the corresponding *yvar* values. If 0 is not in the range of the x axis, shading extends left or right to the y axis.

`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:

	y1	y2	x
1.	1	2	1
2.	3	5	2
3.	5	4	3
4.	.	.	.
5.	6	7	5
6.	11	12	8

Say that you graph these data by using `twoway area y1 y2 x`. Do you want a break in the area between 3 and 5? If so, you type

```
. twoway area y1 y2 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

	y1	y2	x
1.	1	2	1
2.	3	5	2
3.	5	4	3
4.	6	7	5
5.	11	12	8

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

`base(#)` specifies the value from which the shading should extend. The default is `base(0)`, and in the above description of options `vertical` and `horizontal`, this default was assumed.

`nodropbase` is a programmer's option and is an alternative to `base()`. It specifies that rather than the enclosed area dropping to `base(#)`—or `base(0)`—it drops to the line formed by (y_1,x_1) and (y_N,x_N), where (y_1,x_1) are the y and x values in the first observation being plotted and (y_N,x_N) are the values in the last observation being plotted.

`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 quarterly data recording the U.S. GNP in constant 1996 dollars:

```
. use http://www.stata-press.com/data/r13/gnp96
. list in 1/5
```

	date	gnp96
1.	1967q1	3631.6
2.	1967q2	3644.5
3.	1967q3	3672
4.	1967q4	3703.1
5.	1968q1	3757.5

In our opinion, the area under a curve should be shaded only if the area is meaningful:

```
. use http://www.stata-press.com/data/r13/gnp96, clear
. twoway area d.gnp96 date
```
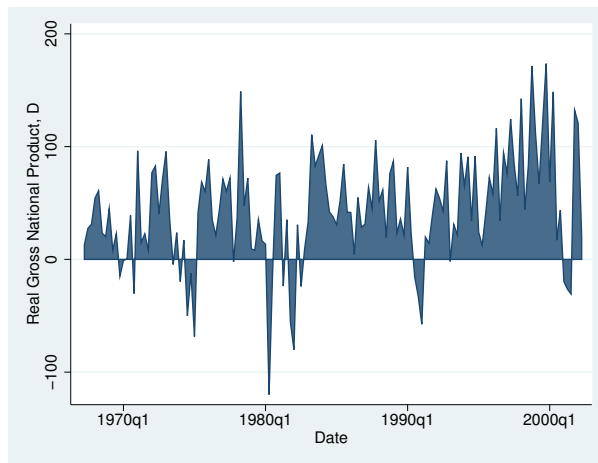
Advanced use

Here is the same graph, but greatly improved with some advanced options:

```
. twoway area d.gnp96 date, xlabel(36(8)164, angle(90))
        ylabel(-100(50)200, angle(0))
        ytitle("Billions of 1996 Dollars")
        xtitle("")
        subtitle("Change in U.S. GNP", position(11))
        note("Source: U.S. Department of Commerce,
                    Bureau of Economic Analysis")
```
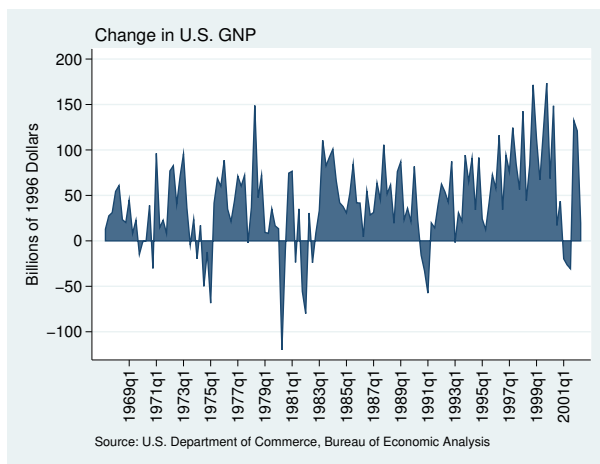
Cautions

Be sure that the data are in the order of *xvar*, or specify area's sort option. If you do neither, you will get something that looks like modern art:

```
. use http://www.stata-press.com/data/r13/gnp96, clear
. generate d = d.gnp96
(1 missing value generated)
. generate u = runiform()
. sort u                              (put in random order)
. twoway area d date
```


Also see

[G-2] **graph twoway scatter** — Twoway scatterplots

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

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

[G-2] **graph twoway histogram** — Histogram plots

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

[G-2] **graph bar** — Bar charts