added_line_options — Options for adding lines to two-way graphs

Description

`yline()`, `xline()`, and `tline()` are used with `twoway` to add lines to the plot region. `tline()` is an extension to `xline()`; see [TS] **tsline** for examples using `tline()`.

Quick start

Add a horizontal line at the value 0

graph_command ..., ... `yline(0)`

Add horizontal lines at the values of 9, 11, and 17

graph_command ..., ... `yline(9 11 17)`

Add a vertical line at the value of 17.2

graph_command ..., ... `xline(17.2)`

Same as above, but add a thin red line

graph_command ..., ... `xline(17.2, lwidth(thin) lcolor(red))`

Same as above, but specify line width as 1 point

graph_command ..., ... `xline(17.2, lwidth(1pt) lcolor(red))`

Add a vertical line on June 29, 2016

graph_command ..., ... `tline(29jun2016)`

Add a red vertical line at 10 and a blue one at 20

graph_command ..., ... `xline(10, lcolor(red)) xline(20, lcolor(blue))`

Syntax

added_line_options	Description
`yline(`*linearg*`)`	add horizontal lines at specified y values
`xline(`*linearg*`)`	add vertical lines at specified x values
`tline(`*time_linearg*`)`	add vertical lines at specified t-values

`yline()`, `xline()`, and `tline()` are *merged-implicit*; see [G-4] **Concept: repeated options** and see *Interpretation of repeated options* below.

where *linearg* is

numlist [, *suboptions*]

For a description of *numlist*, see [U] **11.1.8 numlist**.

and where *time_linearg* is

datelist [, *suboptions*]

For a description of *datelist*, see [U] **11.1.9 datelist**.

suboptions	Description
`axis(#)`	which axis to use, $1 \leq \# \leq 9$
`style(`*addedlinestyle*`)`	overall style of added line
[`no`]`extend`	extend line through plot region's margins
`lstyle(`*linestyle*`)`	overall style of line
`lpattern(`*linepatternstyle*`)`	line pattern (solid, dashed, etc.)
`lwidth(`*linewidthstyle*`)`	thickness of line
`lalign(`*linealignmentstyle*`)`	outline alignment (inside, outside, center)
`lcolor(`*colorstyle*`)`	color and opacity of line

Options

`yline(`*linearg*`)`, `xline(`*linearg*`)`, and `tline(`*time_linearg*`)` specify the y, x, and t (time) values where lines should be added to the plot.

Suboptions

`axis(#)` is for use only when multiple y, x, or t axes are being used (see [G-3] ***axis_choice_options***). `axis()` specifies to which axis the `yline()`, `xline()`, or `tline()` is to be applied.

`style(`*addedlinestyle*`)` specifies the overall style of the added line, which includes [`no`]`extend` and `lstyle(`*linestyle*`)` documented below. See [G-4] ***addedlinestyle***. The [`no`]`extend` and `lstyle()` options allow you to change the added line's attributes individually, but `style()` is the starting point.

You need not specify `style()` just because there is something that you want to change, and in fact, most people seldom specify the `style()` option. You specify `style()` when another style exists that is exactly what you desire or when another style would allow you to specify fewer changes to obtain what you want.

`extend` and `noextend` specify whether the line should extend through the plot region's margin and touch the axis; see [G-3] ***region_options***. Usually `noextend` is the default, and `extend` is the option, but that is determined by the overall `style()` and, of course, the scheme; see [G-4] **Schemes intro**.

`lstyle(`*linestyle*`)`, `lpattern(`*linepatternstyle*`)`, `lwidth(`*linewidthstyle*`)`, `lalign(`*linealignmentstyle*`)`, and `lcolor(`*colorstyle*`)` specify the look of the line; see [G-2] **graph twoway line**. `lstyle()` can be of particular use:

To create a line with the same look as the lines used to draw axes, specify `lstyle(foreground)`.

To create a line with the same look as the lines used to draw grid lines, specify `lstyle(grid)`.

Remarks and examples

`yline()` and `xline()` add lines where specified. If, however, your interest is in obtaining grid lines, see the `grid` option in [G-3] ***axis_label_options***.

Remarks are presented under the following headings:

Typical use

`yline()` or `xline()` are typically used to add reference values:

```
. scatter yvar xvar, yline(10)
. scatter yvar year, xline(1944 1989)
```

To give the line in the first example the same look as used to draw an axis, we could specify

```
. scatter yvar xvar, yline(10, lstyle(foreground))
```

If we wanted to give the lines used in the second example the same look as used to draw grids, we could specify

```
. scatter yvar year, xline(1944 1989, lstyle(grid))
```

Interpretation of repeated options

Options `yline()` and `xline()` may be repeated, and each is executed separately. Thus different styles can be used for different lines on the same graph:

```
. scatter yvar year, xline(1944) xline(1989, lwidth(3))
```

References

Cox, N. J. 2009. Stata tip 82: Grounds for grids on graphs. *Stata Journal* 9: 648–651.

———. 2024. Stata tip 157: Adding extra lines to graphs. *Stata Journal* 24: 546–550.

Also see

[G-4] ***addedlinestyle*** — Choices for overall look of added lines

[G-4] ***colorstyle*** — Choices for color

[G-4] ***linealignmentstyle*** — Choices for whether outlines are inside, outside, or centered

[G-4] ***linepatternstyle*** — Choices for whether lines are solid, dashed, etc.

[G-4] ***linestyle*** — Choices for overall look of lines

[G-4] ***linewidthstyle*** — Choices for thickness of lines