graph twoway pcspike -	<ul> <li>Paired-coordinate plot with spikes</li> </ul>
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Description	Quick start	Menu	Syntax
Options	Remarks and examples	Reference	Also see

### Description

A paired-coordinate spike plot draws a spike (or line) for each observation in the dataset. The line starts at the coordinate (ylvar, xlvar) and ends at the coordinate (y2var, x2var).

# **Quick start**

Paired-coordinate spike plot with spikes from (y1, x1) to (y2, x2) twoway pcspike y1 x1 y2 x2

Same as above, with red lines

twoway pcspike y1 x1 y2 x2, lcolor(red)

### Menu

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

### Syntax

options	Description
<u>vert</u> ical <u>hor</u> izontal	orient plot naturally; the default orient plot transposing $y$ and $x$ values
line_options	change look of spike lines
colorvar_options	change color of spike 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.

<u>tw</u>oway pcspike *ylvar xlvar y2var x2var* [*if*] [*in*] [, *options*]

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

### Options

vertical and horizontal specify whether the y and x coordinates are to be swapped before plotting—vertical (the default) does not swap the coordinates, whereas horizontal does.

These options are rarely used when plotting only paired-coordinate data; they can, however, be used to good effect when combining paired-coordinate plots with range plots, such as twoway rspike or twoway rbar; see [G-2] graph twoway rspike and [G-2] graph twoway rbar.

- *line\_options* specify the look of the lines used to draw the spikes, including pattern, width, and color; see [G-3] *line\_options*.
- *colorvar\_options* specify that the color of the lines used to draw the spikes 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:

Basic use Advanced use Advanced use 2

### **Basic use**

We have longitudinal data from 1968 and 1988 on the earnings and total experience of US women by occupation.

```
    use https://www.stata-press.com/data/r19/nlswide1
    (National Longitudinal Survey of Young Women, 14-24 years old in 1968)
    list occ wage68 ttl_exp68 wage88 ttl_exp88
```

	occ	wage68	ttl_e~68	wage88	ttl_e~88
1.	Professionals	6.121874	.860618	10.94776	14.11177
2.	Managers	5.426208	1.354167	11.53928	13.88886
3.	Sales	4.836701	.9896552	7.290306	12.62823
4.	Clerical/Unskilled	4.088309	.640812	9.612672	11.08019
5.	Craftsmen	4.721373	1.091346	7.839769	12.64364
6.	Operatives	4.364782	.7959284	5.893025	11.99362
7.	Transport	1.987857	.5247414	3.200494	8.710394
8.	Laborers	3.724821	.775966	5.264415	10.56182
9.	13	5.58524	.8278245	8.628641	12.78389

We graph a spike showing the movement from 1968 values to 1988 values for each observation (each occupation):



. twoway pcspike wage68 ttl\_exp68 wage88 ttl\_exp88

#### Advanced use

twoway pcspike can be usefully combined with other twoway plottypes (see [G-2] graph twoway). Here we add markers and labeled markers along with titles and such to improve the graph:

```
. twoway pcspike wage68 ttl_exp68 wage88 ttl_exp88 ||
scatter wage68 ttl_exp68, msym(0) ||
scatter wage68 ttl_exp68, msym(0) pstyle(p4)
mlabel(occ) xscale(range(17))
title("Change in US women's experience and earnings")
subtitle("by occupation, 1968 to 1988")
ytitle(Earnings) xtitle(Total experience)
note("Source: National Longitudinal Survey of Young Women")
legend(order(2 "1968" 3 "1988"))
```



### Advanced use 2

Drawing the edges of network diagrams is often easier with twoway pcspike than with other plot-types.

```
. use https://www.stata-press.com/data/r19/network1 (Fictional network diagram data)
```

. twoway pcspike y\_c x\_c y\_l x\_l



As with our first example, this graph can be made prettier by combining twoway pcspike with other plottypes.



### Reference

Cox, N. J. 2009. Speaking Stata: Paired, parallel, or profile plots for changes, correlations, and other comparisons. *Stata Journal* 9: 621–639.

## Also see

- [G-2] graph twoway Two-way graphs
- [G-2] graph twoway line Two-way line plots
- [G-2] graph twoway pcarrow Paired-coordinate plot with arrows
- [G-2] graph twoway pccapsym Paired-coordinate plot with spikes and marker symbols
- [G-2] graph twoway pci Two-way paired-coordinate plot with immediate arguments
- [G-2] graph twoway pcscatter Paired-coordinate plot with markers
- [G-2] graph twoway rspike Range plot with spikes

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