**Description**

twoway spike displays numerical \((y, x)\) data as spikes. twoway spike is useful for drawing spike plots of time-series data or other equally spaced data and is useful as a programming tool. For sparse data, also see [G-2] graph bar.

**Quick start**

A spike plot displaying a spike between \((y, x)\) and 0

```
twoway spike y x
```

As above, with horizontal spikes

```
twoway spike y x, horizontal
```

Draw spikes from 200 instead of 0

```
twoway spike y x, base(200)
```

As above, but set overall appearance to that used by the Stata Journal

```
twoway spike y x, base(200) scheme(sj)
```

**Menu**

Graphics ➤ Twoway graph (scatter, line, etc.)
Syntax

```
twoway spike  yvar  xvar  [if]  [in]  [  ,  options ]
```

<table>
<thead>
<tr>
<th>options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>vertical</code></td>
<td>vertical spike plot; the default</td>
</tr>
<tr>
<td><code>horizontal</code></td>
<td>horizontal spike plot</td>
</tr>
<tr>
<td><code>base(#)</code></td>
<td>value to drop to; default is 0</td>
</tr>
<tr>
<td><code>line_options</code></td>
<td>change look of spike lines</td>
</tr>
<tr>
<td><code>axis_choice_options</code></td>
<td>associate plot with alternative axis</td>
</tr>
<tr>
<td><code>twoway_options</code></td>
<td>titles, legends, axes, added lines and text, by, regions, name, aspect ratio, etc.</td>
</tr>
</tbody>
</table>

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

**Options**

vertical and horizontal specify either a vertical or a horizontal spike 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, spikes are drawn at the specified xvar values and extend up or down from 0 according to the corresponding yvar values. If 0 is not in the range of the y axis, spikes extend up or down to the x axis.

In the horizontal case, spikes are drawn at the specified xvar values and extend left or right from 0 according to the corresponding yvar values. If 0 is not in the range of the x axis, spikes extend left or right to the y axis.

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

`line_options` specify the look of the lines used to draw the spikes, including pattern, width, and color; see [G-3] **line_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 https://www.stata-press.com/data/r16/sp500
(S&P 500)
. list date close change in 1/5
```

<table>
<thead>
<tr>
<th>date</th>
<th>close</th>
<th>change</th>
</tr>
</thead>
<tbody>
<tr>
<td>02jan2001</td>
<td>1283.27</td>
<td></td>
</tr>
<tr>
<td>03jan2001</td>
<td>1347.56</td>
<td>64.29004</td>
</tr>
<tr>
<td>04jan2001</td>
<td>1333.34</td>
<td>-14.22009</td>
</tr>
<tr>
<td>05jan2001</td>
<td>1298.35</td>
<td>-34.98999</td>
</tr>
<tr>
<td>08jan2001</td>
<td>1295.86</td>
<td>-2.48999</td>
</tr>
</tbody>
</table>

The example in [G-2] _graph twoway bar_ graphed the first 57 observations of these data by using bars. Here is the same graph presented as spikes:

```
. twoway spike change date in 1/57
```

![Spike graph of S&P 500 data](image-url)
Spikes are especially useful when there are a lot of data. The graph below shows the data for the entire year:

```
    . twoway spike change date
```

**Advanced use**

The useful thing about `twoway spike` is that it can be combined with other `twoway` plottypes (see [G-2] `graph twoway`):

```
    . twoway line close date || spike change date
```
We can improve this graph by typing

```
  . twoway
    line close date, yaxis(1)
  ||
    spike change date, yaxis(2)
  ||,
    yscale(axis(1) r(700 1400)) ylab(1000(100)1400, axis(1))
    yscale(axis(2) r(-50 300)) ylab(-50 0 50, axis(2))
    ytick(-50(25)50, axis(2) grid)
    legend(off)
    xtitle("Date")
    title("S&P 500")
    subtitle("January - December 2001")
    note("Source: Yahoo!Finance and Commodity Systems, Inc.")
    yline(950, axis(1) lstyle(foreground))
```

Concerning our use of

```
yline(950, axis(1) lstyle(foreground))
```

see *Advanced use: Overlaying* in [G-2] *graph twoway bar*.

### Cautions

See *Cautions* in [G-2] *graph twoway bar*, which applies equally to twoway spike.

### Also see

- [G-2] *graph twoway bar* — Twoway bar plots
- [G-2] *graph twoway dot* — Twoway dot plots
- [G-2] *graph twoway dropline* — Twoway dropped-line plots
- [G-2] *graph twoway scatter* — Twoway scatterplots