**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><strong>vertical</strong></td>
<td>vertical spike plot; the default</td>
</tr>
<tr>
<td><strong>horizontal</strong></td>
<td>horizontal spike plot</td>
</tr>
<tr>
<td>base(#)</td>
<td>value to drop to; default is 0</td>
</tr>
<tr>
<td><strong>line_options</strong></td>
<td>change look of spike lines</td>
</tr>
<tr>
<td><strong>axis_choice_options</strong></td>
<td>associate plot with alternative axis</td>
</tr>
<tr>
<td><strong>twoway_options</strong></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
```
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
```

![Graph showing closing price changes](image1)

**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
```

![Graph combining closing price and spikes](image2)
We can improve this graph by typing

```
    . twoway
      line close date, yaxis(1)
      ||
      spike change date, yaxis(2)
      ||,
      ysc(axis(1) r(700 1400)) ylab(1000(100)1400, axis(1))
      ysc(aaxis(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