**Description**

The `cat_axis_line_options` determine the look of the categorical $x$ axis in `graph bar`, `graph hbar`, `graph dot`, and `graph box`; see [G-2] `graph bar`, [G-2] `graph dot`, [G-2] `graph box`. These options are rarely specified but when specified, they are specified inside `axis()` of `over()`:

```
  . graph ..., over(varname, ... axis(cat_axis_line_options) ...)
```

**Quick start**

Force display of the categorical axis for plots drawn over categorical variable `catvar`

```
  graph_command ..., over(catvar, axis(line))
```

Suppress display of the categorical axis

```
  graph_command ..., over(catvar, axis(noline))
```

Make the categorical axis a thick line

```
  graph_command ..., over(catvar, axis(lwidth(thick)))
```

As above, but specify line width as 18 point

```
  graph_command ..., over(catvar, axis(lwidth(18pt)))
```

Make the categorical axis line green

```
  graph_command ..., over(catvar, axis(lcolor(green)))
```

Note: Categorical axis-line options can be used only with `graph bar`, `graph box`, `graph dot`, or `graph hbar`.

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**Title**

`cat_axis_line_options` — Options for specifying look of categorical axis line

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Syntax

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<th><code>cat_axis_line_options</code></th>
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<td><code>lpattern(linepatternstyle)</code></td>
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Options

off and on suppress or force the display of the axis.

fill goes with off and is seldom specified. If you turned an axis off but still wanted the space to be allocated for the axis, you could specify fill.

fextend, extend, noextend, line, and noline determine how much of the line representing the axis is to be drawn. They are alternatives.
	noline specifies that the line not be drawn at all. The axis is there, ticks and labels will appear, but the axis line itself will not be drawn.

line is the opposite of noline, for use if the axis line somehow got turned off.

noextend specifies that the axis line not extend beyond the range of the axis, defined by the first and last categories.

extend specifies that the line be longer than that and extend all the way across the plot region.

fextend specifies that the line be longer than that and extend across the plot region and across the plot region’s margins. For a definition of the plot region’s margins, see [G-3] region_options. If the plot region has no margins (which would be rare), then fextend means the same as extend. If the plot region does have margins, extend would result in the y and x axes not meeting. With fextend, they touch.

fextend is the default with most schemes.

titlegap(size) specifies the margin to be inserted between the axis title and the axis’s tick labels; see [G-4] size.

outergap(size) specifies the margin to be inserted outside the axis title; see [G-4] size.

lstyle(linestyle), lcolor(colorstyle), lwidth(linewidthstyle), and lpattern(linepatternstyle) determine the overall look of the line that is the axis; see [G-4] Concept: lines.
Remarks and examples

The `cat_axis_label_options` are rarely specified.

Also see

[G-2] `graph bar` — Bar charts
[G-2] `graph box` — Box plots
[G-2] `graph dot` — Dot charts (summary statistics)