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The Stata Journal is published quarterly by the Stata Press, College Station, Texas, USA.

Address changes should be sent to the Stata Journal, StataCorp, 4905 Lakeway Drive, College Station TX 77845, USA, or email sj@stata.com.
Stata tip 10: Fine control of axis title positions

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`ytitle()`, `xtitle()`, and other similar options specify the titles that appear on
the axes of Stata graphs (see [G] `axis` `title` options). Usually, Stata’s default settings
produce titles with a satisfactory format and position relative to the axis. Sometimes,
however, you will need finer control over position, especially if there is inadequate sep-
aration of the title and the numeric axis labels. This might happen, for example, with
certain combinations of the font of the axis labels, the angle the labels make with the
axis, the length of the labels, and the size of the graph region.

Although the options `ylabel()` and `xlabel()` have a suboption `labgap()` allowing
user control of the gap between tick marks and labels (see [G] `axis` `label` options),
the axis title options have no such suboption. The flexibility needed is provided by options
controlling the textbox that surrounds the axis title (see [G] `textbox` options). This
box is invisible by default but can be displayed using the `box` suboption on the axis title
option:

```
. graph twoway scatter price weight,
   ytitle("Price of Cars in \{cS|US\}", box)
   ylab(0(1000)15000, angle(horizontal) labsize(medium))
```

(Note the use of a SMCL directive to render the dollar sign; see [P] `smcl`, page 393.)

We can manipulate the relative size of the height of the textbox or the margins around
the text within the box to induce the appearance of a larger or smaller gap between the
axis title and the axis labels. For a larger gap, we might try one of these solutions:

```
. graph twoway scatter price weight,
   ytitle("Price of Cars in \{c S|US\}", height(10))
   ylab(0(1000)15000, angle(horizontal) labsize(medium))
```

For a smaller gap, specify negative arguments, say, `height(-1)` in the first com-
mand or `margin(0 -4 0 0)` in the second. A bit of trial and error will quickly give a
satisfactory result.

Note that a sufficiently large negative argument in either `height()` or `margin()` will
permit an axis title to be placed within the inner plot region, namely, inside of the axis.
However, this, in turn, may cause the axis labels to disappear off the graph, so that
some fiddling with the `graphregion()` option and its own `margin()` suboption may
then be required (see [G] `region` `options` and [G] `marginstyle`). For example,

```
. graph twoway scatter price weight,
   ytitle("Price of Cars in \{c S|US\}", height(-20))
   ylab(0(1000)15000, angle(horizontal) labsize(medium))
```
margin() allows more flexibility in axis title positioning than does height(), but the price is a slightly more complicated syntax. For example, the y axis title may be moved farther from the axis labels and closer to the top of the graph by specifying both the right-hand margin and the bottom margin of the text within the box:

```
. graph twoway scatter price weight,
    ytitle("Price of Cars in {c $\}$US", margin(0 10 40 0))
    ylab(0(1000)15000, ang(hor) labsize(medium))
```