grmeanby - Graph means and medians by categorical variables

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## Description

grmeanby graphs the (optionally weighted) means or medians of varname according to the values of the variables in varlist. The variables in varlist may be string or numeric and, if numeric, may be labeled.

## Quick start

Graph means of v1 for each level of categorical variables cvar1, cvar2, and cvar3
grmeanby cvar1 cvar2 cvar3, sum(v1)
Same as above, but graph medians
grmeanby cvar1 cvar2 cvar3, sum(v1) median
Same as above, but use + as the marker
grmeanby cvar1 cvar2 cvar3, sum(v1) median msymbol(+)

## Menu

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## Syntax

grmeanby varlist $[$ if $][$ in $][$ weight $]$, summarize(varname) [options]
options
Main

* summarize (varname)
median
Plot
cline_options
marker_options
marker_label_options
Y axis, X axis, Titles, Legend, Overall
twoway_options

Description
graph mean (or median) of varname
graph medians; default is to graph means
change look of the lines
change look of markers (color, size, etc.)
add marker labels; change look or position
any options other than by () documented in
[G-3] twoway_options
*summarize(varname) is required.
aweights and fweights are allowed; see [U] 11.1.6 weight.

## Options

$\qquad$ Main
summarize (varname) is required; it specifies the name of the variable whose mean or median is to be graphed.
median specifies that the graph is to be of medians, not means.
$\qquad$ Plot
cline_options affect the rendition of the lines through the markers, including their color, pattern, and width; see [G-3] cline_options.
marker_options affect the rendition of markers drawn at the plotted points, including their shape, size, color, and outline; see [G-3] marker_options.
marker_label_options specify if and how the markers are to be labeled; see [G-3] marker_label_options.
$\qquad$ Y axis, X axis, Titles, Legend, Overall
twoway_options are any of the options documented in [G-3] twoway_options, excluding by (). These include options for titling the graph (see [G-3] title_options) and for saving the graph to disk (see [G-3] saving_option).

## Remarks and examples

The idea of graphing means of categorical variables was shown in Chambers and Hastie (1992, 3). Because this was shown in the context of an $S$ function for making such graphs, it doubtless has roots going back further than that. grmeanby is, in any case, another implementation of what we will assume is their idea.

## > Example 1

Using a variation of our auto dataset, we graph the mean of mpg by foreign, rep77, rep78, and make:

```
. use https://www.stata-press.com/data/r18/auto1
(Automobile models)
```

. grmeanby foreign rep77 rep78 make, sum(mpg)

Means of mpg , Mileage (mpg)


If we had wanted a graph of medians rather than means, we could have typed

- grmeanby foreign rep77 rep78 make, sum(mpg) median


## References

Chambers, J. M., and T. J. Hastie, ed. 1992. Statistical Models in S. Pacific Grove, CA: Wadsworth and Brooks/Cole. Cox, N. J. 2014. Speaking Stata: Design plots for graphical summary of a response given factors. Stata Journal 14: 975-990.

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