

Chapter 8: A Brief Introduction to PROC SGPLOT

- PROC SGPLOT is the newest major graphics procedure in SAS.
- It has many (all?) of the same capabilities as its predecessor, PROC GGPLOT.
- However, it has some more flexibility and capabilities, and usually produces nicer-looking plots.
- Note that all of the graphics resulting from PROC SGPLOT can be placed into pdf, rtf, etc. files using ODS statements as we discussed in Chapter 5.

Bar Charts with PROC SGPLOT

- The `VBAR` statement produces vertical bar charts and `HBAR` produces horizontal bar charts.
- A categorical variable should be specified in the `VBAR` statement.
- By default, frequency counts for each category are plotted.
- Stacked bar charts can be created with the `GROUP` option if there is a second categorical variable.
- If the `RESPONSE` option is specified, summary statistics (sums, means, etc.) can be plotted separately for each category of the specified response variable.

Histograms and Box Plots with PROC SGPLOT

- For describing distributions of continuous variables, histograms and box plots are good choices.
- The HISTOGRAM statement produces a traditional histogram and DENSITY produces a (smooth) density estimate.
- You can also plot a histogram with a smooth density estimate overlain on it.
- The VBOX statement produces vertical box plots and HBOX produces horizontal box plots.
- You can create separate box plots for each level of some categorical variable by using the CATEGORY option.

Scatter Plots and Regression Fits with PROC SGPLOT

- Scatter plots show the bivariate association between two continuous variables.
- The `SCATTER` statement produces a traditional scatter plot.
- You can use separate plotting symbols depending on the level of some categorical variable by using the `GROUP` option.
- You can add a fitted least squares regression line or a nonparametric regression curve to the plot.

Time Series Plots with PROC SGPLOT

- The `SERIES` statement produces time series plots.
- The `VLINE` statement is another way to produce line plots, and Bar-line plots can be created using `VBAR` and `VLINE` together.

Panel Graphs with PROC SGPANEL

- The `SGPANEL` procedure produces panel (multi-cell) graphs, which allow you to put several scatter plots on one graph.
- The `BY` statement with `PROC SGPlot` is another way to produce several scatter plots (one for each level of some grouping variable), but that approach would produce several graphs rather than one graph with several panels.

Controlling the Look of your Graph

- Sections 8.8, 8.9, and 8.10 discuss how to control axes, reference lines, legends, inserts, and attributes of your graphs.
- These tools allow some of the same flexibility and control over the appearance of the graphs as we get in R.