



# Why is Everybody so Jittery?



**Starbucks** Coffee Company is the leading retailer, roaster and brand of specialty coffee in the world. In addition to retail locations in North America, Latin America, Europe, the Middle East and the Pacific Rim, **Starbucks** sells coffee and tea products through its specialty operations. "During a period of uncertain and challenging economic times, we are particularly proud to deliver **Starbucks** tenth consecutive year of both comparable store sales gains of five percent or greater and 20 percent plus revenue growth," stated Howard Schultz, **Starbucks** chairman. "The worldwide acceptance of the **Starbucks** brand is evident in our fiscal 2002 revenue results, and we look forward to our continued rapid growth in fiscal 2003 and beyond."

Since revenue is dependent on the number of locations selling the product, let's look at **Starbucks** growth in regard to the number of locations.

- ✚ visit **Starbucks** website: <http://www.starbucks.com>
- ✚ roll over **About Us** and select **The Company**
- ✚ click on the **Timeline & History** link on the left
- ✚ scroll through **Timeline & History** the and get the number of locations for each year available from 1971 through 2002
- ✚ Make a scatterplot of these data. What do you observe?

Clearly these data are NOT linear.

1. Transform the response variable by taking the *log* of each value.
2. Make a scatterplot of *log* response vs. explanatory.
3. What do you observe?
4. Do you think a linear model will be appropriate? Why or why not?
5. Perform a linear regression using the transformed data. Interpret the slope. (be careful here, your response variable is NOT number of **Starbucks**, but *log* of the number of **Starbucks**)
6. Give the correlation coefficient, coefficient of determination, and correct interpretation of the coefficient of determination (again, be careful)
7. Examine a residual plot. Is this model still appropriate? Why or why not?
8. Transform the equation by UNDOING the transformation from step #1.
9. Use this equation to predict the number of **Starbucks** in the year 2010.
10. Does your prediction seem reasonable? Explain?

Write an article for a trendy magazine discussing your findings and conclusions. Your results should be typed, double spaced, 12 point Times New Roman, 1" Margins. Center any graphs. You may add addition graphics or pictures.