

Stat 13 Lecture 24

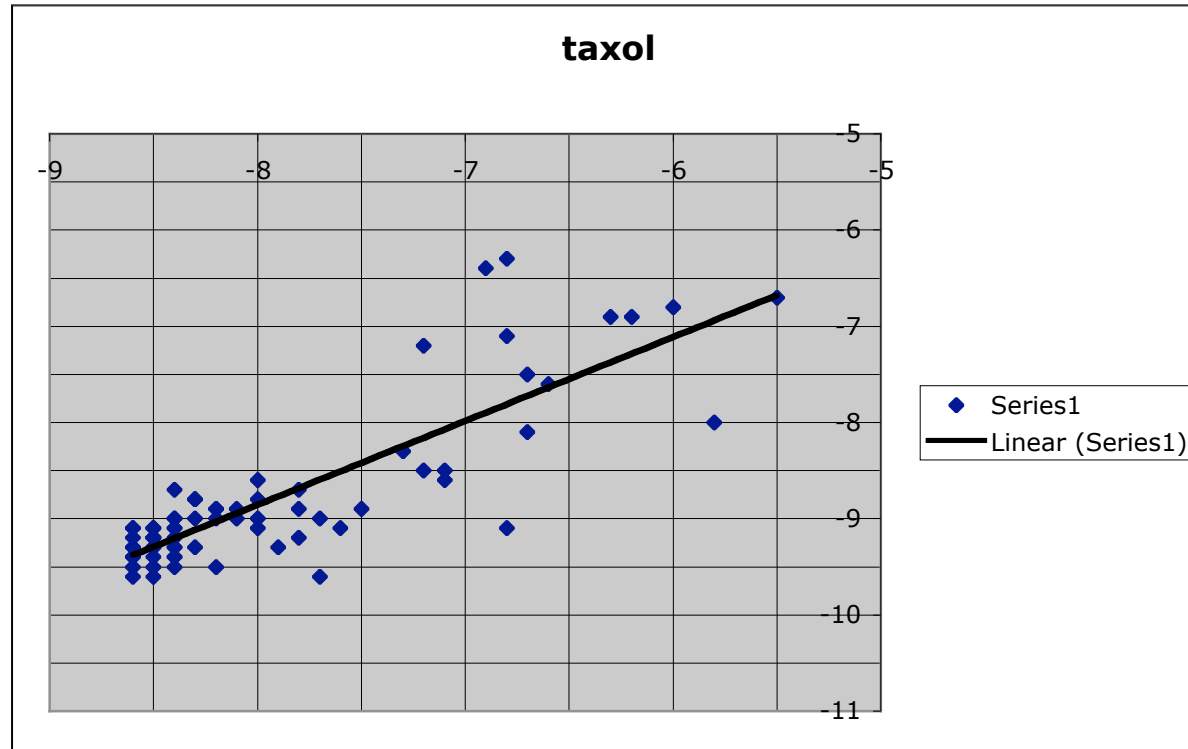
regression(continued)

- Application in drug discovery
(<http://dtp.nci.nih.gov>)
- COMPARE
- Antitubulin
- Taxol ($EX=-7.9$; $SD=.78$)
 - vinblastine sulfate ($EY=-8.1$; $SD=.81$) ; correlation =0.799
 - Prediction
 - Many cell-lines are not tested on Taxol, but were tested on vinblastine sulfate
 - Can use vinblastine sulfate to predict Taxol

$$\text{Taxol} = -7.9 + .799(7.8/8.1)(\text{vinblastine sulfate} + 8.1)$$

- Melanoma UABMEL3 -7.9 (vinblastine sulfate)
- No taxol data
- Predicted Taxol = $-7.9 + .799(7.8/8.1)(-7.9+8.1)$
- = -7.75

Vertical axis: vinblastine sulfate



Cannot use this line to predict Taxol from vinblastine sulfate;

Redraw the graph by exchanging X and Y

Percentile rank problem :

Suppose only the ranking of x is given. Predict the ranking for y .

The trick is to pretend X and Y both have mean 0 and standard deviation 1

The reason you can do so is because ranking does not change under scale changes

+++++vinblastine
sulfate

Step 1 convert the rank to x by using normal table

Step 2 find y by using $y = r x$

Step 3 convert y back to percentile rank using normal table again.

Example