

CHE384 Data to Decisions
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Homework #6 – Correlated Residuals and Autoregression

Notes:

- Please name the file using this format: HW6_yourname.xlsx
 - Please email the finished spreadsheet to: chris@lithoguru.com
1. Using the Body Fat data set, perform a first order (straight line) OLS regression of % Body Fat versus Abdomen circumference.
 - a. Construct a residual sequence plot assuming the original order in the data set was the sequence of measurements. What do you notice?
 - b. Construct of lag 1 residual plot. What can you conclude?
 - c. Perform a Durbin-Watson test. What can you conclude?
 2. I think you will find that one data point in problem 1 is an outlier. Repeat the steps of Problem 1 with that outlier removed. Do any of your conclusions change?
 3. Using the Time Series data set from Data_Sets_3.xls, perform a first order (straight line) OLS regression of Y versus time.
 - a. Construct a residual sequence plot assuming the original order in the data set was the sequence of measurements. What do you notice?
 - b. Construct of lag 1 residual plot. What can you conclude?
 - c. Perform a Durbin-Watson test. What can you conclude?
 - d. Perform an AR(1) autoregressive transformation on the data. Repeat steps a – c above on the transformed data. What do you conclude?