APPLIED REGRESSION **Home Work - 10** **SPRING**

Problem 1: Employee Data (in excel file) gives the number of employees (in thousands) for a metal fabricator and one of their primary vendors for each month over a 5-year period, so n = 60.

a. Fit a simple linear regression model to predict employees for a metal fabricator from employees of primary vendors using this data. Plot the residuals versus time. Is there any indication of autocorrelation?

b. Use the DurbinWatson test to determine if there is positive autocorrelation in the errors. What are your conclusions?

c. Use one iteration of the CochraneOrcutt procedure to estimate the regression coefficients.

d. Is there positive autocorrelation remaining after the first iteration? Would you conclude that the iterative parameter estimation technique has been successful?

Problem - 2 The data in the excel file (Problem2) gives the percentage share of market of a particular brand of canned peaches for the past 15 months and the relative selling price.

a. Fit a simple linear regression model to predict share using price using this data. Plot the residuals versus time. Is there any indication of autocorrelation?

b. Use the DurbinWatson test to determine if there is positive autocorrelation in the errors. What are your conclusions?

c. Use one iteration of the CochraneOrcutt procedure to estimate the regression coefficients.

d. Is there positive autocorrelation remaining after the first iteration? Would you conclude that the iterative parameter estimation technique has been successful?