

Do not write your name on the assignment. Write your name only on the back of this sheet of paper and staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point on the assignment.

Because this course has both a homework assignment and a test due during your last week in the course, the assignments must slowly begin moving to come due at the beginning of each week. Therefore, I propose that each assignment be due on the day of the week prior to the day of the previous assignment. Therefore, this assignment will be due Wednesday and the last one will be due on Tuesday. If any of those dates are poor, we can change them. .

This assignment covers chapter 10 section III C through chapter 11 section IID. This will leave only part of chapter 11 for the last assignment.

1) Use the data below to answer the questions below. Send the regression work to me in a file attached to an e-mail.

1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002  
500 510 490 550 542 599 602 664 676 672 718 727 758 807 804 794 789 803 769

A) (10 points) Use a simple linear model regression to estimate the equation that determines the value of the variable. Plot the residuals from the ex-post simulation.

B) (10 points) Use a semilog model regression to estimate the equation that determines the value of the variable. Plot the residuals from the ex-post simulation.

C) (10 points) Use a second degree polynomial model regression to estimate the equation that determines the value of the variable. Plot the residuals from the ex-post simulation.

D) (10 points) Given the plots of residuals, the  $R^2$ , and the significance of F, for all three parts, which do you feel is the best predictor? Explain your logic.

2) (20 points) Do parts A and B of question #2 on pages 357 and 358. Explain the logic of your conclusions.

3) (10 points each) For each of the parts, explain why that variable is either a leading indicator, a coincident indicator, or a lagging indicator.

A) Index of consumer expectations.

B) Average duration of unemployment.

C) New building permits.

4) (10 points) Why is smoothness important for an indicator to be a good predictor?