Applied Econometrics
Assignment IV

Due date: July 17, 2009, 12:00 (To be submitted to Mr. Liu and Ms. Guo)

Question 1 (Text Book C17.12 (i-iv and vi))

The data set on website of the course (charity.xls) contains observations on following variables:

1. respond = 1 if responded with gift
2. gift amount of gift, Dutch guilders
3. resplast = 1 if responded to most recent mailing
4. weekslast number of weeks since last response
5. propresp response rate to mailings
6. mailsyear number of mailings per year
7. giftlast amount of most recent gift
8. avggift average of past gifts

The database consists only people who have responded at least once in the past.

a. What fraction of people responded most recently?
b. Estimate a Probit model for respond, using resplast, weekslast, propresp, mailsyear, and avggift as explanatory variables. Which of the variables is statistically significant?
c. Find the average partial effect for mailsyear and compare it with the coefficient from a linear probability model.
d. Using the same explanatory variables, estimate a Tobit model for gift, the amount of the most recent gift. Now which explanatory variable is statistically significant?
e. Are the estimates from parts (b) and (d) entirely compatible? Explain.
One version of the permanent income hypothesis (PIH) of consumption is that the growth in consumption is unpredictable. Let $gc_t = \log(c_t) - \log(c_{t-1})$ be the growth in real per capita consumption (of nondurable and services). The PIH implies that $E[gc_t | I_{t-1}] = E[gc_t]$, where $I_{t-1}$ denotes information known at time (t-1), t denoting the year.

a. Test the PIH by estimating $gc_t = \beta_0 + \beta_1 gc_{t-1} + u_t$. Clearly state the null and alternative hypotheses. What is your conclusion?

b. To the regression in part (a), add $gy_{t-1}$ and $i3_{t-1}$, where they represent the growth in real per capita disposable income and interest rate on three month T-bills, respectively. Are these two additional variables jointly significant?

Instructions:
1. The same group of students will submit one set of HW.
2. The software to be used is TSP.
3. Do not attach the whole output, only the parts to be interpreted.
4. Interpretations should be clearly typed on a separate sheet of paper.
5. Late submissions will not be accepted. No makeup assignment will be given.