90-771, Applied Econometrics II
Heinz School, Carnegie Mellon University
Spring, 2004-5

Homework #2, due Thursday, March 3

Please use the MEPS data from the website for this assignment. We are curious about the determinants of having health insurance. For all questions, I am referring to a model with insurance as the LHS variable and age, sex, employment, and income as RHS variables.

1. Please calculate an estimate of and a 95% CI for the effect of employment on the probability of having health insurance. Do this using a logit model, a probit model, and a linear probability model. Do the calculation for an average person.

2. Let's compare the probit, logit and linear probability models. How often does the lpm predict probabilities outside the unit interval? How about logit and probit?

3. Consider the income effect. Please calculate the effect, for each person in the data, of a $1,000 increase in income on the probability of having health insurance. Take the average of this effect over all individuals in the data. How do the results for the logit, probit, and lpm compare?

4. Using the logit model, test the null hypothesis that employment has no effect on the probability of having health insurance.

5. Now test the joint hypothesis that neither age nor sex has an effect on the probability of having health insurance using the probit model.