

PROBLEM SET 5

PROBLEMS DUE FRIDAY 3/10

Do Problem 1,2 and 3 from Hayashi's Chapter 7 Analytical Exercises, as well as the following problems:

Problem 1:

Provide primitive conditions for consistency and asymptotic normality of the NLS and WNLS estimator of β_0 in the logit model:

$$\Pr(Y_i = 1|X_i) = \frac{\exp(X_i\beta_0)}{1 + \exp(X_i\beta_0)}$$

and derive their asymptotic distributions.

Problem 2:

This problem uses the data set MROZ.ASC. The data set is described in the file READMROZ.DOC. It contains 753 observations on women in 1975. Estimate an LPM, Logit and Probit model of married women's labor force participation as a function of the variables KL6, K618, WA, WE, UN, CIT, which are provided in the data set, a variable say PRIN (property income) generated as FAMINC-(WHRS·WW), and an additional variable, say LWW constructed as follows: Restricting your sample to workers (i.e. the first 428 observations) take the natural logarithm of the wife's wage rate variable WW. Call this new variable LW. Then for the entire sample construct the square of the wife's experience variable, say EX2. Next, using only the 428 observations form the working sample, estimate by OLS a typical wage determination equation in which LW is regressed on a constant, WA, WE, CIT, EX, and EX2. Then use the parameter estimates of this model for the 325 non-working women to generate predicted or fitted log-wages, say FLW. The variable LWW is just LW for the working sample and FLW for the non-working sample.

(a) For each model provide both the estimates of the unknown coefficients of interest and their standard errors. How do they compare across the different models after you make the appropriate rescalings?

(b) Estimate the marginal effect of the variable LWW (evaluated at the sample average of the regressors) and provide an estimate of its standard error. Make sure you justify the computation of the latter.