Problem Set IV: ML-Estimation

1. You want to analyze the determinants of women's labor force participation. To this end, open the mroz.dta dataset in Stata.

   (a) Re-estimate the baseline specification presented in the textbook and in class by OLS, logit and probit. Compute the APEs and PEAs for the continuous variables.

   (b) Compute the partial effect of age evaluated at the first, second, and third quartile of the distribution of the other regressors.

   (c) Compute the average partial effect of experience both analytically (as a general function of $\mathbf{x}$ and $\boldsymbol{\theta}$) and empirically (for the dataset at hand). Take into account that both *exper* and *expersq* are included as regressors!

   (d) Add father's years of education, $fatheduc$, and mother's years of education, *motheduc*, as explanatory variables. Test for joint significance of these two regressors using (a) a Wald test and (b) a likelihood ratio test.

   (e) Split the quantitative variable *kidslt6* into dummy variables $kid0 = 1$ if no young kids and zero else, $kid1 = 1$ if one young kid and zero else, and so on. Which specification is more restrictive? Test the more against the less restrictive specification using (a) a Wald test and (b) a likelihood ratio test.