

Faculty of Economics & Politics  
Part 2A Paper 3: Microeconometrics and Panel Data  
Class 3

All datasets and accompanying variable description files, can be found on my web page and in J:\Students\mw217

1. Use CRAW for this exercise.
  - (i) Reestimate the unobserved effects model for crime in Example 13.9 but use fixed effects rather than differencing. Are there any notable sign or magnitude changes in the coefficients? What about statistical significance?
  - (ii) Add the logs of each wage variable in the data set and estimate the model by fixed effects. How does including these variables affect the coefficients on the criminal justice variables in part (i)?
  - (iii) Do the wage variables in part (ii) all have the expected sign? Explain. Are they jointly significant?

14.8 For this exercise, we use JTRAIN.RAW to determine the effect of the job training grant on hours of job training per employee. The basic model for the three year, is

$$hrsemp_u = \beta_0 + \delta_1 d88 + \delta_2 d89_t + \delta_1 grant_{it} + \delta_2 grant_{i,t-1} + \delta_3 \log(employ_u) + a_i + u_{it}.$$

- (i) Estimate the equation using fixed effects. How many firms are used in the FE estimation? How many total observations would be used if each firm had data on all variables (in particular, *hrsemp*) for all three years?
- (ii) Interpret the coefficient on *grant* and comment on its significance.
- (iii) Is it surprising that *grant<sub>-1</sub>* is insignificant? Explain.
- (iv) Do larger firms provide their employees with more or less training, on average? How big are the differences? (For example, if a firm has 10% more employees, what is the change in average hours of training?)