Problem Set #1

MACS 30000, Dr. Evans

Laurence Warner N.B. my first time using LaTex: go easy on me! Not sure how to get new lines?

Problem 1 Model from journal **Part (a).** "Illuminating a Dark Side of the American Dream: Assessing the Prevalence and Predictors of Mortgage Fraud across U.S. Counties" **Part (b).** Eric P. Baumer, J. W. Andrew Ranson, Ashley N. Arnio, Ann Fulmer, Shane De Zilwa American Journal of Sociology, Volume 123, Number 2 — September 2017, pp. 549?603 **Part (c).** Negative binomial distribution. Mathematical formula not given. **Part (d).** Endogenous: Mortgage fraud risk. Exogenous: 23 county level variables. E.g. fraud arrest rate, percent Latino. **Part (e).** Static: 2003-5. Nonlinear. Stochastic: regression model, so contains error term. Statistical: accounts for randomness. **Part (f).** County average: years of education. Perhaps more educated people are more aware of how to commit fraud/ aware of risks of doing so.

Problem 2 Own model **Part (a).**

$$Y_i = \beta_0 + \beta_1 attract_i + \beta_2 income_i + \epsilon_i$$

Part (b). where Y_i can take $1 = getmarried$ or $0 = notgetmarried$ **Part (c).** Given the βs we could simulate probability of getting married. **Part (d).** Obviously there are many other factors contained in epsilon. Marriage is like tango - it takes two. Attractiveness and income are good pull factors for finding a partner. **Part (e).** Would be popular interest to see which was more important of the two. **Part (f).** e.g. To test income. Could run experiment. matchmakers send out people pretending to have different levels of income: assess response rates for dates.