ECONOMETRICS FINAL EXAM 2022-23: PART A

Universidad Carlos III de Madrid Answer all questions in 1 hour

Use the **401ksubs** dataset from Wooldridge to estimate a LOGIT model to study the variables that determine the decision of a worker to subscribe a pension plan. The decision to subscribe the pension plan is described by the binary variable p401k. The explanatory variables are annual income of the individual in thousands of dollars (*inc*) and age (*age*). The income enters in the model in logarithms and age enters as a quadratic polynomial.

- 1. (6%) For a fixed level of income, when is more likely that the individual subscribes the pension plan?
- 2. (6%) What is the estimated probability that a 30 years old worker with annual income of \$20,000 subscribes a pension plan?
- (6%) Calculate the odds of subscribing a pension plan for an individual with the same age and income as the previous question (3%). Interpret the result (3%).
- 4. (6%) What is the change in the estimated probability of subscription when the income of an individual with the same characteristics as before increases a 1%?
- 5. (6%) Compute the odds ratio (OR) for the increment in the previous question (3%) and interpret the result (3%).