

**American University**  
**Department of Economics**  
**Comprehensive Exam in Labor Economics**  
**January 2006**

PART ONE: Answer any TWO questions in this section

- 1) Suppose the U.S. decides to increase the number of work visas granted, but new visas are granted only to immigrants holding bachelor's degrees or their equivalent. The labor market is segmented into skilled labor and unskilled labor. Assume the labor markets are otherwise competitive. Predict the effect of the immigration law on wages in the two labor markets.
- 2) Wage inequality is larger in the US than in other OECD countries. How do labor market institutions affect wage inequality?
- 3) Show (graphically and mathematically) a scenario under which the substitution effect of a wage change is zero. What does this scenario indicate about the relationship between leisure and income/consumption goods? Why might such a relationship might hold?
- 4) Women's labor force participation has risen in recent decades. Discuss the relative importance of changes on the demand side and on the supply side in explaining the increase.
- 5) Discuss what various economic theories tell us should be the effects of an increase in a national minimum wage on employment. Discuss the following cases:
  - a) homogenous labor in a single competitive labor market
  - b) homogenous labor in a monopsonistic labor market
  - c) homogenous labor in a two sector model, where one sector is covered and the other is not, but both are competitive
  - d) heterogenous labor (varying degrees of skill) in competitive markets

PART TWO: Answer any TWO questions from this section

- 6) Two common causes of bias in OLS parameter estimates are omitted variables (“unobserved heterogeneity”) and endogenous right-hand-side variables (“reverse causality”).
  - a) Explain the conditions under which omitted variables lead to biased estimates, and why. Give an example. What kinds of variables can we safely omit?
  - b) Give an example of how fixed effects can be used to correct omitted variables bias; explain how this works and what it accomplishes.
  - c) Give an example of an equation in which reverse causality is a problem and explain why it creates biased estimates.
  - d) Explain how instrumental variables can be used to solve the problem of reverse causality. What must be true for an instrument to be legitimate? What are some of the reasons to be skeptical of IV estimates?
  
- 7) Explain the causes and consequences of measurement error in survey data. Be sure to cover:
  - a) What measurement error is, why it occurs, and how prevalent it is in economic data.
  - b) The effect that measurement error has on OLS estimates under classical assumptions.
  - c) Do the problems described in (b) get better or worse in a fixed effects model? Explain.
  
- 8) Explain the econometric difficulty associated with trying to figure out whether income has a significant effect on health outcomes, and describe some of the methods for addressing this problem.
  
- 9) Explain the econometric difficulties associated with measuring the effect of additional school resources on educational outcomes, and describe some of the methods used to address them.
  
- 10) Discuss the exploitation of quasi-experiments (also called natural experiments) in labor economics. Give two examples.