Written Preliminary Ph.D. Examination

Applied Economics Graduate Program
June 23, 2017

Labor Economics

Instructions

• Answer a total of FOUR out of the six questions.

• Identify yourself by code letter, not name, on all pages.

• Start each answer at the top of a new page.

• Number the pages of your answers.

• You have four hours to complete the examination.

• This is a closed book exam. No notes, articles, books or other sources may be used other than the copy of the article that is provided with this exam.

• Always identify your assumptions and define any notation used. Some questions intentionally do not fully specify assumptions or methods. You should make appropriate choices to complete your answers. Explain your choices carefully.
**QUESTION #1: “Effects of the Affordable Care Act on Part-Time Employment: Early Evidence”**

This question is related to the paper by Dillender, Heinrich, and Houseman distributed in advance. For purposes of this question assume the employer mandate applies to all employees, not just those who work 30 hours or more.

a. The first paragraphs of Section 2 discuss how the employer mandate can be regarded as a tax on the employer and how the incidence of the tax depends on worker preferences and constraints imposed by public policy or contracts. Consider the labor demand decision of an employer facing a competitive labor market. Assume the employer does not provide health insurance in the absence of the mandate. Use a simple graphical or algebraic model to show: (i) If employees value health insurance at its cost to the employer, labor demand of the firm will remain unchanged. (ii) If employees value health insurance below its cost to the employer, labor demand of the firm will unambiguously be reduced. *Be sure to correctly and clearly label axes and/or define variables.*

b. Suppose the employer pays all workers minimum wage *and* is a monopsonist in the labor market. Show that whether there is a reduction in labor demanded by the firm depends on the cost of the employer mandate as well as the extent to which employees value the health insurance. Explain.
QUESTION # 2: “Effects of the Affordable Care Act on Part-Time Employment: Early Evidence”

This question concerns the empirical analysis in the paper by Dillender, Heinrich, and Houseman distributed in advance.

a. Carefully describe the rationale behind the difference-in-differences estimates shown in Panel B of Table 1. Critique the choice of this empirical strategy: what seems convincing, what seems troubling?

b. Assess the results in light of the methodological strengths and weaknesses you identified in part (a): what seems convincing, what seems troubling?

c. Describe in words the logic behind the triple difference estimates in Table 2. (You may ignore the “fraction of placebo estimates” results.) Note: You must explain the logic more thoroughly than the authors do.
QUESTION #3: Discrimination in the Job Market

A metropolitan area consists of two neighborhoods, Westwood and Eastwood. Westwood is majority white, and Eastwood is majority black. You conduct an audit study in which you distribute resumes to businesses in Westwood and Eastwood. These resumes vary along two dimensions: (1) whether the address of the applicant is based in Westwood or Eastwood; and also (2) whether race can be reliably inferred from the applicant’s name or the name is race-neutral.

a. Suppose that you obtained the regression results shown in the table below. Describe a hedonic (i.e., non-statistical) theory of discrimination that would be consistent with these results.

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.113</td>
<td>(0.002)</td>
</tr>
<tr>
<td>black name</td>
<td>0.024</td>
<td>(0.005)</td>
</tr>
<tr>
<td>white name</td>
<td>-0.011</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Westwood employer</td>
<td>0.005</td>
<td>(0.005)</td>
</tr>
<tr>
<td>(Westwood employer) x (black name)</td>
<td>-0.027</td>
<td>(0.003)</td>
</tr>
<tr>
<td>(Westwood employer) x (white name)</td>
<td>0.039</td>
<td>(0.008)</td>
</tr>
</tbody>
</table>

b. Could this result be evidence of statistical discrimination? Carefully explain your reasoning. If yes, explain how you could distinguish between hedonic and statistical discrimination?

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QUESTION # 4: Returns to education

a) Suppose there are two types of workers, high and low ability, which is not observable to employers. Describe how each type chooses the optimal level of educational attainment using a very simple human capital model. Discuss any assumptions you make with regards to how ability affects productivity in the workplace and in the acquisition of education. Which type will invest in more education? State your assumptions and explain. Compare the conclusions of this model with those of a signaling model.

b) Suppose we want to measure the effect of education on earnings when a worker’s ability is unobserved. Describe four distinct econometric approaches that have been used to identify the causal effect of education on earnings. For each of the four methods, provide a specific example of an existing study or describe how a study could be conducted using an existing data set. Be sure to discuss the key identification assumptions needed for each approach.
**QUESTION #5: Overtime and labor supply**

The United States Department of Labor is considering a change in the Fair Labor Standards Act (FLSA). The change would require employers to pay some workers on an hourly basis (e.g. $15 per hour) and make it illegal to pay these workers a salary (e.g. $30,000 per year).

Now suppose that a given firm only employs salaried workers, and if a salaried worker works fewer than 20 hours per week, then that worker is terminated by the firm. If the Department of Labor changes the FLSA, then this firm would be required to be pay these employees an hourly rate, with overtime (150% of regular pay) for working more than 40 hours per week. In this case, the firm has decided it will not terminate workers who work fewer than 20 hours, but will allow workers to set their own hours.

a. Produce a figure illustrating the relationship between pay and hours worked if the FLSA does not change. Show the indifference curves of a worker who would exert effort and one who would not. Explain.

b. Use the static labor supply model to illustrate how with the following outcomes can occur if the FLSA does change. The worker (1) supplies zero hours, (2) supplies up to 40 hours, (3) works overtime. Explain each carefully; a diagram alone is not sufficient.

c. If workers’ psychic cost of hours worked is always increasing and convex, is it possible that a worker who prefers to work 20 hours per week (rather than zero) at the salaried rate then instead works 10 hours per week under hourly pay? Explain.

d. Suppose that the FLSA changes pass, a worker could choose his/her hours, and chooses to work 50 hours per week. Then the employer decides to pay 200% of regular pay, instead of 150%, for overtime hours. Would the worker prefer to work more hours, fewer hours, or is it theoretically ambiguous? Explain.
QUESTION 6: Dynamic Labor Supply and Behavioral Economics

The standard neoclassical dynamic labor supply model predicts that workers who can choose their hours of work will work more during time periods when wages are higher, all else equal. Yet a number of studies find some workers “quitting early” on good days, that is, working fewer hours when returns to work are higher than usual.

a. Write out a general utility maximization model for an intertemporal labor supply decision (including the objective function and the constraints). Define all terms. Explain the major assumptions about the lifetime utility function. What does intertemporal separability imply about the labor supply decision in a lifecycle framework and for the first-order condition(s) for optimization? (You don’t need to solve for first order conditions, just explain in words what the key condition is for an interior solution assuming intertemporal substitutability.)

b. Describe an alternative model of labor supply behavior that is consistent with the finding that workers “quit early” on good days, that is, when the returns to work are higher than usual. Explain the assumptions and constraints in this alternative model.

c. Describe the findings of at least two empirical studies that have attempted to estimate an intertemporal labor supply elasticity. Discuss the empirical strategies that were used in these studies (or could be used) to distinguish between competing models of labor supply behavior.

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