Labor Economics
Final Exam

Date: Thursday, August 25 2019

- Time: 90 minutes
- This exam is open-book. You may use your notes, books, papers. No electronic devices such as computers, tablets, and phones are allowed.
- You may write your answers as a series of bullet points rather than full paragraphs. However, these bullet points should still be complete sentences.
- Please write legibly.
- There are four parts to this exam:
    1. Questions about readings [30 points; answer 3 out of 5 questions]
    2. Interpreting new research [20 points; answer 1 out of 1 question]
    3. Responses to prompts [20 points; answer 1 out of 3 questions]
    4. Reflections [10 points; answer 2 out of 2 questions]
- This exam is out of 80 points. I recommend spending approximately 1 minute per point.
- There are no bonus points or extra credit questions.

Part 1 Readings

Answer **three** of the following five questions: **[10 points each]**

1. Arteaga (2018) discusses a policy change at the University of Los Andes that changed the coursework requirements. The regression the author estimates for a graduate i at time t is:

$$\ln wage_{it} = \beta_0 + \beta_1 Andes_i \times Post_t + \beta_2 Andes_i + \beta_3 Post_t + \beta_4 Experience_{it} + \varepsilon_{it}$$

   where $Andes_i$ is a dummy for attending Los Andes and $Post_t$ is an indicator for starting school after the reform. Answer the following questions:

   (a) What is the identification strategy used here?

   (b) Why does the author argue we can use this setting to study whether college has a signaling effect?

   (c) What is the main coefficient of interest?

2. Miller (2017) looks at affirmative action policies in federal contractors. For a firm i in area d at year t, the regression the author estimates is:

$$\begin{aligned}\text{black share}_{idt} =& \alpha_i + \lambda_{dt} + \gamma X_{it} + \beta\left(t \times Cont_i\right) \\ &+ \Delta\beta\left(t - \tau_i + 1\right) \times Cont_i \times Post_{it} + \varepsilon_{idt}\end{aligned}$$

   $Cont_i$ is a dummy for whether the firm ever becomes a contractor. The first year that it becomes a contractor (if at all) is year τ_i. $Post_{it}$ is a dummy for time t being after τ_i. Answer the following questions:

   (a) Consider a firm i that becomes a contractor for the first time in 1989. Show what it's regression equation would look like in 1988, 1989, and 1990.

   (b) Interpret the results from Table 2 of the paper. Does this show whether the affirmative action policies were effective at raising the share of black employees? Are there pre-trends that we should be concerned about?

Outcome: Black share *Panel A: Overlapping sample*	(1)	(2)	(3)
β	−0.006	0.018	0.022
	(0.029)	(0.027)	(0.027)
$\Delta\beta$	0.182	0.167	0.148
	(0.040)	(0.039)	(0.037)
Number of treated establishments		36,030	
Division × year FEs	✓		
MSA × year FEs		✓	
Industry × division × year FEs			✓
Establishment FEs	✓	✓	✓
Balanced			

Source: Miller (2017), Table 2

3. Chyn (2018) looks at the long-term effect of moving children out of public housing using demolitions in Chicago.

(a) Explain the instrument used by the author and why we need this exogenous variation to find the causal effect of moving out of public housing

(b) The following table compares children and adults prior to the demolitions. Are there any significant differences that we should be concerned about? Does this table support the validity of the author's instrument?

	All children			Adults	
	Control mean (1)	Difference: treated–control, within estimate (2)		Control mean (7)	Difference: treated–control, within estimate (8)
Demographics			*Demographics*		
Age	11.714	0.035	Age	28.851	0.810
		(0.159)			(0.312)
Male (= 1)	0.489	−0.008	Male (= 1)	0.128	−0.001
		(0.017)			(0.011)
Teen mom (= 1)†			Teen mom (= 1)†	0.371	−0.018
					(0.024)
School outcomes			*Economic activity*		
Enrolled (= 1)	0.948	0.003	Employed (= 1)	0.173	0.006
		(0.015)			(0.016)
Reading score (SD)	−0.443	0.024	Earnings‡	$1,493.75	−$45.91
		(0.074)			(193.358)
Math score (SD)	−0.449	0.048			
		(0.061)			
Observations (individuals)		5,250	Observations (individuals)		4,331

Source: Chyn (2018), Table 3

4. DiNardo and Lee (2004) study the effects of unionization by looking at close union elections. At an establishment, a union is recognized if more than 50% of workers in favor of the union. Answer the following questions:

   (a) What is the identification strategy used by the authors?

   (b) Write out the regression they run and describe each variable. (Note: it doesn't have to be exactly the same as in the paper as long as the main variable of interest is there)

5. Hershbein and Kahn (2018) study how recessions affect routine-biased technological change. They use a Bartik shock to instrument employment shocks in each area. For a MSA m at time t, the instrument is constructed as follows:

$$\Delta \hat{E}_{mt} = \sum_{k=1}^{K} \phi_{mk} \left(\ln E_{kt} - \ln E_{k,t-1} \right)$$

   where $\hat{E}_{mt}$ is the predicted employment growth (i.e. the instrument), ϕ_{mk} is the employment share of industry k in MSA m, and $\ln E_{kt}$ is the log of national employment in industry k at time t. Answer the following questions:

   (a) What are the two components for a Bartik instrument? Identify where they are in the above formula.

   (b) They estimate $\Delta \hat{E}_{mt}$ for 2006 and 2009. What years would be appropriate to use to calculate ϕ_{mk} (and why)?

   (c) Explain why technological change is more likely to occur during recessions. Does the paper find evidence in favor of this theory?

Part 2 New Research

Answer the following question: **[20 points]**

6. Hoynes and Schanzenbach (2012) study the introduction of the Food Stamp Program (FSP) in the 1960s and 1970s, which is now known as SNAP. The FSP is a government program that provides benefits ("food stamps") to help low-income families purchase food. Food stamps can effectively be treated as an income transfer. The FSP was introduced gradually in different counties between 1964 and 1975. In this paper, the authors use the variation in the timing of FSP introduction to estimate the causal effect of the program.

   The authors run the following regression for a family i living in county c, within state s, in year t:

   $$y_{ict} = \alpha + \delta FSP_{ct} + \beta X_{it} + \gamma Z_{ct} + \eta_c + \lambda_t + \mu_{st} + \varepsilon_{ict}$$

   where y_{ict} is the outcome of interest, FSP_{ct} is an indicator for whether the county c had the FSP at time t (once it was introduced, it remained there), X_{it} are family characteristics, and Z_{ct} are county characteristics.

   (a) What assumptions would we need to make (or test) to ensure that the results were indeed causal?

   (b) There are three fixed effects in the regression equation. Describe what they capture.

   (c) The table below shows the results from their regression. Each panel is a different outcome. A is when y_{ict} is an indicator for the family being on food stamps themselves. B is when y_{ict} is an indicator for whether the head of households works at all. C, D, E are for outcomes that are continuous measures of employment outcomes. Columns (3) and (4) are when the sample is restricted to families where the head of household has 12 or fewer years of education. How do you interpret the results? (you can focus on columns (2) and (4)).

	All nonelderly households		Nonelderly, head educ<=12	
	(1)	(2)	(3)	(4)
A. Any food stamps = 1				
County FSP implemented	0.037	0.041	0.051	0.060
	(0.007)***	(0.008)***	(0.009)***	(0.010)***
Number of observations	39,607	39,607	30,889	30,889
B. Head any work = 1				
County FSP implemented	0.000	0.010	0.006	0.019
	(0.005)	(0.008)	(0.007)	(0.010)*
Dependent variable mean	0.926	0.926	0.904	0.904
C. Head annual hours				
County FSP implemented	8	35	16	36
	(20)	(25)	(24)	(31)
Dependent variable mean	1947	1947	1879	1879
D. Head annual earnings				
County FSP implemented	270	−445	−32	−219
	(729)	(960)	(643)	(966)
Dependent variable mean	41,742	41,742	34,600	34,600
E. Log (family income)				
County FSP implemented	0.004	−0.003	−0.001	−0.008
	(0.015)	(0.020)	(0.017)	(0.023)
Number of observations	48,148	48,148	37,447	37,447

Source: Hoynes and Schanzenbach (2012), Table 1

Part 3 Responses

Answer **one** of the following three questions: **[20 points]**

7. In a 2019 Boston Globe op-ed, Jennifer Braceras wrote:

> "Last week, Sen. Kamala Harris became the latest politician to peddle the wage-gap myth that American women earn only 80 cents for every dollar earned by a man...
>
> As Harris no doubt knows, the 80-cents-on-the-dollar statistic is deliberately misleading. It is based on a raw comparison of the average yearly pay of all female workers and all male workers — irrespective of profession, job category, experience, training, college major, hours worked, or other relevant factors...
>
> If the comparison of male and female salaries in Harris's office seems unfair, the nationwide comparison of men's and women's wages is even more so. National averages look not only at cushy congressional jobs, they lump together all jobs (blue collar, white collar, and everything in between).
>
> But men and women are not equally represented in all fields. More men than women still choose careers in high-skill or high-risk industries such as plumbing, commercial fishing, mining, and law enforcement. And more women than men still choose careers in lower-skill or lower-risk industries such as child care and retail...
>
> The truth is that when studies that compare the earnings of similarly-situated men and women [by controlling for a number of factors such as job title, years of experience, industry and location] show a wage gap of only 2 percent (98 cents for every dollar earned by a man)"

With reference to the research covered in class, to what extent do you agree with Braceras' argument? How does the cause of the gender pay gap affect what policies (if any) should be used to close the gap?

8. The following comes a Washington Post article in 2018 discussing wage stagnation:

> "If rising monopsony power — that is, the increasing dominance of a small number of large firms — were fully to blame for recent wage stagnation, [EPI's Josh Bivens and Heidi Shierholz] argue, you'd expect to see wages stagnating across the board. If a coal mine has the leeway to skimp on pay for its low-skill workers, in other words, it's probably skimping on pay for high-skill workers, as well
>
> Bivens and Shierholz conclude that if policymakers are interested in boosting wages, they should work to increase the power of workers relative to employers by prioritizing strong unions, high minimum wages and full employment. "In short, the policy movement to disempower workers not only led to less equal growth, but was also associated with significantly slower growth," they write.
>
> Ioana Marinescu... thinks the EPI authors' emphasis on certain policy decisions is overstated. She points out that wage stagnation has happened in other wealthy countries that have pursued different economic policies. She also says that policies to reduce monopsony power have a real role to play in bringing wages up across the board.
>
> "There is no reason not to go after abuses of dominance in the labor market if we go after abuses of dominance in the product market," Marinescu said. Hence, antitrust legislation could have the double effect of lowering consumer prices and boosting wages."

With reference to the research covered in class, to what extent do you agree with Bivens and Shierholz's argument? Discuss what policies can be used to correct monopsony power and their potential effectiveness.

9. In a 2016 Politico Magazine opinion piece, George Borjas wrote:

> "Here's the problem with the current immigration debate: Neither side is revealing the whole picture. Trump might cite my work, but he overlooks my findings that the influx of immigrants can potentially be a net good for the nation, increasing the total wealth of the population. Clinton ignores the hard truth that not everyone benefits when immigrants arrive. For many Americans, the influx of immigrants hurts their prospects significantly.
>
> This second message might be hard for many Americans to process, but anyone who tells you that immigration doesn't have any negative effects doesn't understand how it really works. When the supply of workers goes up, the price that firms have to pay to hire workers goes down. Wage trends over the past half-century suggest that a 10 percent increase in the number of workers with a particular set of skills probably lowers the wage of that group by at least 3 percent. Even after the economy has fully adjusted, those skill groups that received the most immigrants will still offer lower pay relative to those that received fewer immigrants.
>
> Both low- and high-skilled natives are affected by the influx of immigrants. But because a disproportionate percentage of immigrants have few skills, it is low-skilled American workers, including many blacks and Hispanics, who have suffered most from this wage dip. The monetary loss is sizable. The typical high school dropout earns about $25,000 annually. According to census data, immigrants admitted in the past two decades lacking a high school diploma have increased the size of the low-skilled workforce by roughly 25 percent. As a result, the earnings of this particularly vulnerable group dropped by between $800 and $1,500 each year."

With reference to the research covered in class, to what extent do you agree with Borjas' argument? How might the effects of immigration change as job polarization rises?

Part 4 Reflections

Answer **all** of the following two questions: **[5 points each]**

10. Describe one of the papers that your classmates presented on (i.e. it cannot be one that you presented). What was the paper about (research question, setting, methodology) and what were the key takeaways?

11. What are the two most important/interesting things you learned in the course? These can be as narrow or as broad as you want, but you must support your answer with: i) specific papers or instances where you learned this, and ii) why it is important/interesting

References

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DiNardo, John, and David S Lee. 2004. "Economic Impacts of New Unionization on Private Sector Employers: 1984-2001." *The Quarterly Journal of Economics*, 119(4): 1383–1441.

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Articles

Braceras, Jennifer. "Kamala Harris's equal pay hoax" *The Boston Globe*, 27 May 2019.

Borjas, George. "Yes, Immigration Hurts American Workers" *Politico Magazine*, Sep./Oct. 2016: 3(5).

Ingraham, Christopher. "Politicians Have Caused a Pay 'Collapse' for the Bottom 90 Percent of Workers, Researchers Say" *The Washington Post*, 17 Dec. 2018.