Key Challenges in Estimating Returns to Community College Credentials

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Challenges in Estimating Returns to Community College Credentials

Measurement:

Distinguishing out-of-state migration from non-employment

Estimation:

Accounting for unobserved differences between those who do and do not earn a degree

Measurement of Earnings

- States that match postsecondary data to earnings use state-specific databases
  - Unemployment insurance
  - Workers' compensation
- UI & WC databases are aggregations of quarterly data submitted by employers to state offices
- A quarter showing no earnings could reflect that the former student is:
  - Not working
  - Self-employed
  - Working, but living in another state

Consequences of this Mismeasurement

- Estimates of returns for most mobile workers will be biased toward zero
  - More educated workers are more likely to migrate across states
  - False zeroes will rise with education, causing us to underestimate the positive relationship between education and earnings
- Estimates of returns for workers most likely to form own businesses will be biased toward zero
  - Consider efforts to help displaced workers and welfare recipients to form small businesses

How to Better Measure Earnings?

- More earnings microdata
  - Get income data from state tax authorities – captures self-employment
  - Get nationwide earnings and income data from Social Security & IRS
- Adjust for missing values with cell means
  - Ask SS & IRS for group means of earnings and self-employment income
    - Define groups by variables such as sex, college, degree program, entry year
    - Send names & DOB of group members
    - Agency returns cell means and variances
  - Use means to adjust estimates based on state-level data

Estimation of Returns

- Those who earn a credential differ from those who don't
  - Some differences are observable
  - Others are not captured in our limited data
- Standard approach has become the use of individual fixed-effects
  - This effectively compares earnings of each student before and after college
  - The average of these changes is the fixed-effects estimate
  - The idea is that the pre-college earnings are proxy for what the student would have earned had she not gone to college – her latent earnings capacity

Are Pre-College Earnings a Good Proxy for Potential Earnings?

- Fixed-effects methodology emerged from the displaced-worker literature, which compared earnings before and after training
- For traditional college students (age 18-22), pre-college earnings may have comparatively little predictive power
  - Weak attachment to labor force
- Literature focused on younger college students has used test scores to control for pre-existing differences between students
  - Pre-college test scores are strongly predictive of college completion and earnings after college
  - Can pre-college *earnings* stand in for test scores?

Test Scores & Pre-College Earnings

- Among older college students, there is a strong correlation between test scores and pre-college earnings
- Among younger students, the relationship is weak to zero

Average quarterly earnings in 3 years prior to enrollment

	All Ages	21-24	25-29	30-35	36-45
Reading Score	116.2***	18.28	106.8**	214.5**	191.5**
	(31.81)	(30.79)	(51.16)	(84.37)	(96.42)

Coefficient is from a regression of pre-college earnings against a standardized 11th grade test score. Model contains demographics and controls.

Conclusion

Measurement

- Gaps in earnings data hobble efforts to estimate returns to community college
- Need creative solutions to fill in gaps or assess the magnitude of biases they create

Estimation

- Fixed effects are appropriate for older students with substantial working histories
- Technical assumptions of fixed effects likely are not met for younger students with short earnings histories