Long-Term Outcomes of Community College Transfer versus Native Bachelor’s Degree Recipients

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“College-for-all” (Rosenbaum 2001)

Enroll over 40% of all new students, including disproportionate numbers of:

- Low-income students
- Non-white students

Growth in community college enrollment is correlated with diminishing racial gaps in college enrollment nationally (Adelman 2003; NCES 2009).
Outcomes of Community Colleges?

Democratization
(Medsker 1960)

OR

Diversion
Community Colleges as a Diversion?

- “Cooling-Out” (Clark 1960)

Research has found community colleges to have negative effects on:

- academic credits earned (Reynolds 2009; Rouse 1995)
- years of schooling obtained (Anderson 1984; Velez 1985)
- bachelor’s degree completion (Dougherty 1994)

On-average different types of students
Why Look Beyond Graduation?

“Merely counting caps and gowns presents an inaccurate and misleading picture of what is going on.”

~Gold and Albert (2006)
Research Question

- Comparing community college transfer students with native four-year students, do they have different long-term outcomes?
  - Annual income
  - Graduate school attendance and completion
  - Overall job satisfaction
  - Satisfaction with pay
Similar Research

  - 2 find no differences while the 3rd finds statistically significant differences in outcomes (income and occupational status)
- Drawbacks of previous research:
  - Relatively old data
  - Sparse control variables
  - Regression analysis
Analytic Strategy

- Propensity Score Matching
  - Compare differences in outcomes between Treatment (Community College) and Control (Four-Year Only) groups based on their probability of receiving treatment
Steps for Propensity Score Matching:

- Estimate logistic regression to predict probability of treatment
  - Control Variables
    - Gender, SES, parental education
    - High school GPA, test scores, degree goals
    - Reasons for attending college
- Calculate propensity score
- Match cases (kernel matching)
- Estimate Average Treatment on Treated (ATT)
Data for this study

- National Educational Longitudinal Study (NELS: 88)
  - Base Year 1988: National sample of 8th Graders
  - N=10,827 for all waves
- Includes:
  - Demographic Information
  - Educational and Occupational Aspirations
  - School Experiences
  - Coursework and Curriculum
  - Standardized Test Scores
  - Parent Interactions
Sample

- Those who earn bachelor’s degrees (N=4,060)

- Matched Sample (N=2,839)
  - 173 Community College Respondents
  - 2,666 4-Year Respondents
Matching creates groups that are more comparable:

For example:

| SES          | CC Mean | 4-Year Mean | T-test | P>|t| |
|--------------|---------|-------------|--------|-----|
| Unmatched    | -0.210  | -0.067      | -6.27  | 0.000 |
| Matched      | 0.064   | 0.090       | 1.41   | 0.159 |

| Postsecondary Goal | CC Mean | 4-Year Mean | T-test | P>|t| |
|--------------------|---------|-------------|--------|-----|
| Unmatched          | 0.720   | 0.635       | 6.09   | 0.000 |
| Matched            | 0.694   | 0.688       | -0.95  | 0.340 |
Outcome Variables

- Annual Income in 2000
  - Logged
  - Only including those who report an annual income greater than $0 and working 35+ hours per week
  - Range = 3.714-13.122

- Job Satisfaction
- Pay Satisfaction
- Graduate Degree
- Graduate School Attendance
Community college transfer students earn significantly less:

Average Treatment Effect on Treated = \(-0.215\)

SE = 0.057

P-value = 0.000

Based on kernel matching. Std error of ATT are bootstrapped with 50 replications.
However, there are no significant differences in the job satisfaction variables:

<table>
<thead>
<tr>
<th></th>
<th>Community College</th>
<th>Four-Year</th>
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</thead>
<tbody>
<tr>
<td>Average Treatment Effect</td>
<td>0.873</td>
<td>0.882</td>
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<tr>
<td>SE</td>
<td>0.029</td>
<td>0.029</td>
</tr>
<tr>
<td>P-value</td>
<td>0.749</td>
<td>0.749</td>
</tr>
</tbody>
</table>

**Job Satisfaction - Overall**

Average Treatment Effect on Treated = **-0.009**
SE = 0.029
P-value = 0.749

**Job Satisfaction - Pay**

Average Treatment Effect on Treated: **-0.046**
SE = 0.036
P-value = 0.203
Significant differences were found in graduate degrees earned but not in graduate degree enrollment:

Average Treatment Effect on Treated: **-0.039**
SE: 0.016
P-Value: 0.012

Average Treatment Effect on Treated: **-0.029**
SE: 0.023
P-Value: 0.171
Possible Mechanisms

- “Cooling-out” (Clark 1960) from ambitions to transfer to higher prestige universities or from certain majors
- Lower educational quality of courses at community colleges (Monk-Turner 1990, 1998)
- Differences in time-to-degree (Dougherty 1994) - less time to gain work experience or return for a graduate degree

Policy Implications
Summary

- Long-term outcomes
- Propensity score matching
- With extensive set of covariates and matching, still significant differences between community college and four-year students in:
  - Annual income
  - Graduate degree attainment
- Mechanisms?
Thank You!!

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