Outmigration and Human Capital: Homeward Bound or Gone for Good

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Illinois P20 Council Meeting

South Suburban Community College

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Motivation

• Outmigration

  – Illinois has historically ranked near the bottom in outmigration.
  
  – Compounding the problem is the fact that Illinois-based higher education institutions are unable to attract enough high school graduates from outside the state to make up for the loss.
  
  – In terms of net-migration, Illinois also ranks near the bottom.
  
  – Outmigrants are more likely to stay out-of-state upon graduation than their counterparts who enrolled in-state (Adelman, 2004).
  
  – This represents a significant loss of tax revenue for the state (Smith & Wall, 2006).
Outmigration

• Each year the state of Illinois experiences a net loss of roughly 11,000 students.
  – Summit
  – Plano
  – Minooka

• Outmigrants tend to be among the best and brightest Illinois high school graduates (Manley et al., 2013; Smalley et al., 2010).

• This represents a significant loss of human capital.
Research Questions

• Given the present and historical problem of outmigration, we are left with the following questions:
  – Do outmigrants return home to work and find employment in Illinois?
  – And if so, what are their earnings?
  – Also, among the outmigrants who returns?
  – How do these Illinois-specific workforce outcomes compare with an observationally equivalent comparison group?
Creating the ‘Treatment’ and Comparison Groups

End of Study Status (seven years out) for the Illinois High School Class of 2003 (N=128,323)

- No Degree, Not Enrolled: 53.9%
- Bachelor’s or higher: 32.7%
- Associate: 5.0%
- No Degree, but Still Enrolled: 7.1%
- Certificate: 1.3%
Figure 3 - Outmigration
Outmigration Status

N = 41,929

Outmigrant: 32%
Stayer: 68%
Study Group Composition Prior to Matching

Outmigrant   Stayer

N=41,929

32% 68%

Outmigrant   Stayer

Post Bachelor's Enrollment   No Post Bachelor's Enrollment

38% 62%

Outmigrant   Stayer

Valid SSN   No Valid SSN

68% 31%

Outmigrant   Stayer

Major Indicated   No Major Indicated

67% 33%

Outmigrant   Stayer

Major Indicated   No Major Indicated

91% 91%

Outmigrant   Stayer

Delimitation

n=25,806

n=21,508

n=19,503
Study Group Composition Prior to Matching

N=41,929

Post-Bachelor’s Enrollment

38%

No Post-Bachelor’s Enrollment

62%

n=25,806

Post Bachelor’s Enrollment

38%

No Bachelor’s Enrollment

62%

n=21,508

Valid SSN

67%

Invalid SSN

33%

n=19,503

No Major Indicated

31%

Major Indicated

69%
Study Group Composition Prior to Matching

Outmigrant  Stayer

N=41,929

- 32% Post Bachelor's Enrollment
- 68% No Post Bachelor's Enrollment

n=25,806

- 38% No Valid SSN
- 62% Valid SSN

n=21,508

- 31% No Major Indicated
- 69% Major Indicated

n=19,503

Stayers
69%
(n=13,416)

Outmigrants
31%
(n=6,087)
Conceptual Model Predicting Outmigration

Pre-College Characteristics

Environmental Factors

Geography

Involvement

Pathways

**Treatment vs. Control**

(Probability of being an Outmigrant)
Matched Pairs:

- Were from the same region and locale
- Had a similar likelihood of being an outmigrant
- Graduated from a four-year college with the same Barron’s competitiveness rating
- Had the exact same major associated with their bachelor’s degree
- The only observable difference between each member of the matched pairs was exposure to the ‘treatment’
Example of a Matched Pair

**Outmigrant**
- Aurora
- 62% likelihood of being an outmigrant
- Graduated from Ohio State
- Majored in Chemical Engineering

**Stayer**
- Aurora
- 62% likelihood of being an outmigrant
- Graduated from the University of Illinois at Urbana-Champaign
- Majored in Chemical Engineering
## Diagnostics – Environment

<table>
<thead>
<tr>
<th>Control</th>
<th>Prior to Matching</th>
<th>After Matching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outmigrants (n=6,087)</td>
<td>Stayers (n=13,416)</td>
</tr>
<tr>
<td><strong>High School Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS Mean Composite ACT</td>
<td>22.31</td>
<td>21.10</td>
</tr>
<tr>
<td>HS Percentage Low Income</td>
<td>0.16</td>
<td>0.21</td>
</tr>
<tr>
<td>HS Type: Public</td>
<td>0.79</td>
<td>0.84</td>
</tr>
<tr>
<td>HS Type: Non-Public</td>
<td>0.21</td>
<td>0.16</td>
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<tr>
<td><strong>Student Level</strong></td>
<td></td>
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<tr>
<td>Expected Financial Aid: Yes</td>
<td>0.58</td>
<td>0.67</td>
</tr>
<tr>
<td>Expected Financial Aid: No</td>
<td>0.23</td>
<td>0.14</td>
</tr>
<tr>
<td>Expected Financial Aid: Missing</td>
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<td>0.20</td>
</tr>
<tr>
<td>Planned Work Hours: 0</td>
<td>0.23</td>
<td>0.14</td>
</tr>
<tr>
<td>Planned Work Hours: 1-10</td>
<td>0.26</td>
<td>0.23</td>
</tr>
<tr>
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<td>0.24</td>
<td>0.32</td>
</tr>
<tr>
<td>Planned Work Hours: 21-30</td>
<td>0.05</td>
<td>0.09</td>
</tr>
<tr>
<td>Planned Work Hours: 31 or more</td>
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Cells are shaded according to their difference from zero. Differences favoring Outmigrants are shaded in red, and differences favoring Stayers are shaded in blue.
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Overall Rate of Post-Bachelor’s Illinois Employment

Stayers
- Employed in Illinois at Least One Quarter: 92%
- Never Employed in Illinois: 8%

Outmigrants
- Employed in Illinois at Least One Quarter: 67%
- Never Employed in Illinois: 33%
Cumulative Rate of Illinois Employment by Outmigration Status

- Stayers (n=4,400)
- Outmigrants (n=4,400)
Quarterly Wages

$20,000
$19,000
$18,000
$17,000
$16,000
$15,000
$14,000
$13,000
$12,000
$11,000
$10,000
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

- Stayers (50th Percentile) - Outmigrants (50th Percentile)
Quarterly Wages
Quarterly Wage Thresholds: Overall and Conditional Upon Illinois Employment

Overall

<table>
<thead>
<tr>
<th>Range</th>
<th>Stayers (n=4,400)</th>
<th>Outmigrants (n=4,400)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; $0</td>
<td>92%</td>
<td>67%</td>
</tr>
<tr>
<td>$5,000</td>
<td>67%</td>
<td>81%</td>
</tr>
<tr>
<td>$7,500</td>
<td>57%</td>
<td>73%</td>
</tr>
<tr>
<td>$10,000</td>
<td>51%</td>
<td>59%</td>
</tr>
<tr>
<td>$12,500</td>
<td>43%</td>
<td>45%</td>
</tr>
<tr>
<td>$15,000</td>
<td>33%</td>
<td>34%</td>
</tr>
<tr>
<td>$20,000</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Conditional Upon Illinois Employment

<table>
<thead>
<tr>
<th>Range</th>
<th>Stayers (n=4,055)</th>
<th>Outmigrants (n=2,935)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5,000</td>
<td>88%</td>
<td>86%</td>
</tr>
<tr>
<td>$7,500</td>
<td>79%</td>
<td>77%</td>
</tr>
<tr>
<td>$10,000</td>
<td>64%</td>
<td>50%</td>
</tr>
<tr>
<td>$12,500</td>
<td>49%</td>
<td>50%</td>
</tr>
<tr>
<td>$15,000</td>
<td>37%</td>
<td>38%</td>
</tr>
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</table>
Rate of Illinois Employment by Graduation State for Matched Study Group Members
Cumulative Rate of Return among High Yield States
Who Returns?

[Bar charts and data visualizations showing various attributes such as Family Income, CIP Cluster, STEM, Barron's Selectivity, Locale, Race, Enrollment Pattern for Outmigrants, Region, GPA, Gender, and High School Type.]
Who Returns?

### GPA

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<th>GPA Range</th>
<th>Percentage</th>
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<tr>
<td>3.5+</td>
<td>63%</td>
</tr>
<tr>
<td>3.0 - 3.4</td>
<td>71%</td>
</tr>
<tr>
<td>2.5 - 2.9</td>
<td>74%</td>
</tr>
<tr>
<td>2.0 - 2.4</td>
<td>75%</td>
</tr>
<tr>
<td>&lt;2.0</td>
<td>67%</td>
</tr>
<tr>
<td>Missing</td>
<td>65%</td>
</tr>
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</table>
Who Returns?

**CIP Cluster**

- Ag and Natural Resources: 62%
- Business, Marketing, and Management: 71%
- Communications and Information Systems: 70%
- Health Sciences: 64%
- Human Sciences and Education: 65%
- Skilled and Technical Sciences: 56%
Who Returns?

STEM

58%
## Predicting Illinois Employment by Outmigration Status

<table>
<thead>
<tr>
<th>Major Grouping</th>
<th>Outmigrants Odds Ratio (n=4,400)</th>
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<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Ag and Natural Resource to Skilled and Technical Sciences</td>
<td>1.404</td>
<td></td>
<td>1.750</td>
<td></td>
</tr>
<tr>
<td>Business and Marketing to Skilled and Technical Sciences</td>
<td>1.774***</td>
<td></td>
<td>1.503*</td>
<td></td>
</tr>
<tr>
<td>Communications and Information to Skilled and Technical Sciences</td>
<td>1.698***</td>
<td></td>
<td>1.592*</td>
<td></td>
</tr>
<tr>
<td>Health to Skilled and Technical Sciences</td>
<td>1.455</td>
<td></td>
<td>2.968*</td>
<td></td>
</tr>
<tr>
<td>Human Sciences and Education to Skilled and Technical Sciences</td>
<td>1.368*</td>
<td></td>
<td>1.756**</td>
<td></td>
</tr>
<tr>
<td>STEM to Non-Stem</td>
<td>0.701***</td>
<td></td>
<td></td>
<td>0.769</td>
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*p<.05, **p<.01, ***p<.001
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Major Findings

• Outmigrants were significantly less likely to gain employment in Illinois relative to stayers.

• Among the outmigrants, those with stronger academic profiles were less likely to obtain Illinois employment.

• Further, the outmigrants with the degrees deemed most important for the Illinois economy were even less likely to return to Illinois for employment.
Consequences of Outmigration

• Outmigrants experienced significantly lower rates of Illinois-specific employment relative to the stayers resulting in substantially lower aggregate Illinois wages among the outmigrant group.

• Relatedly, substantially fewer outmigrants reached the various Illinois-specific earnings thresholds.

• This in turn, represents some of the negative economic impact that outmigration has on the state of Illinois.
Policy Recommendations

• Data specific recommendations:
  – Entering into data sharing agreements with neighboring states.
  – Graduates of private high schools and the ILDS.

• Education policy specific recommendations:
  – Increasing affordable postsecondary options for Illinois students.
  – Actively recruiting outmigrants to return to Illinois for work.
Questions
Illinois Education Research Council
Southern Illinois University Edwardsville

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866-799-IERC (4372)

http://www.siue.edu/ierc/