The Medium-Term Labor Market Returns to Community College Awards: Evidence From North Carolina

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North Carolina Labor Market

• July 2014 unemployment rate 6.5% (US: 6.2%)

• Seasonally adjusted labor force 4,670,000
  – Employed 4,370,000

• Major industries
  – Trade, Transportation & Utilities (780,000)
  – Government (700,000)
  – Professional & Business Services (590,000)
  – Education & Health Services (560,000)
Existing Evidence: Labor Market Gains from Community College

- Earnings premium for associate degree over a high school diploma is 13% (men) and 21% (women)
- Some earning gains from credits or years of study
- Mixed earnings gains across different subjects of study
  - Higher for quantitative or technical-vocational courses
- Minimal research on
  - Certificate awards
  - Looking across different cohorts or follow-up period for earnings
North Carolina Data

- 830,000 curriculum students in 58 NCCCS colleges
- Entering cohorts 2001-2010
- Student demographics
- Transcript information
- Financial aid record
- Quarterly earnings data from 1996 to 2012 first quarter (UI)
- Transfer information (National Student Clearing House)
Methods

• Ordinary Least Squares: outcomes 9 years after FTIC: average quarterly earnings in 2011 (2011 earnings gains)
• Fixed effects method (outcome: quarterly earnings)
OLS: 2011 Earnings Gains Over No Award

- Certificate: Women - $347
- Diploma: Women - $1,680
- Associate degree: Women - $2,136
- Bachelor’s degree: Women - $2,284

- Men:
  - Certificate: -$279
  - Diploma: -$545
  - Associate degree: $1,115
  - Bachelor’s degree: $1,588
2011 Earnings Gains for AA Degree-holder over Student with just Credits

- Transportation
- Education
- Humanities
- Cosmetology
- Business
- Protective Services
- Information science
- Engineering
- Other CTE
- Allied Health
- Mechanics
- Construction
- Nursing

Female
Male

Earnings Gains:
- $0
- $2,000
- $4,000
- $6,000
- $8,000
- $10,000
- $12,000
- $14,000
- $16,000
- $18,000
- $20,000

Capsee
## Huge Returns to Nursing

<table>
<thead>
<tr>
<th></th>
<th>2011 Earnings Gains Over Just Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing AA: female</td>
<td>$6,400</td>
</tr>
<tr>
<td>Nursing AA: male</td>
<td>$5,500</td>
</tr>
<tr>
<td>Nursing diploma: female</td>
<td>$3,700</td>
</tr>
<tr>
<td>Allied health diploma: female</td>
<td>$1,400</td>
</tr>
</tbody>
</table>
College Level Credits Earned

NCCCS credits within 9 years of enrollment (FTIC in 2002):

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just credits</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Certificate</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>Diploma</td>
<td>57</td>
<td>62</td>
</tr>
<tr>
<td>AA degree</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>BA degree</td>
<td>31</td>
<td>29</td>
</tr>
</tbody>
</table>
2011 Earnings Gain for Credits Relative to “Zero Credits” Student

<table>
<thead>
<tr>
<th>Per Credit</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCCCS</td>
<td>$22</td>
<td>$12</td>
</tr>
<tr>
<td>Post-NCCCS</td>
<td>$10</td>
<td>$7</td>
</tr>
</tbody>
</table>

![Graph showing earnings gain for credits for female and male students](image)
Earnings Gains for Awards Over Time

- Certificate
- Diploma
- Associate Degree
- Bachelor degree

2007 | 2009 | 2011
--- | --- | ---
Female | | |
Male | | |
Average Quarterly Earnings Gains 5 years after Enrollment by Cohort

Year: 2001-02 to 2007-08

- Certificate (M)
- Diploma (M)
- Associate (M)
- Certificate (F)
- Diploma (F)
- Associate (F)
Quarterly Earnings (Students aged 25+)

- No award
- Diploma
- Certificate
- Associate degree
- Bachelor
- Above Bachelor

Quarter (where Q0 specifies the first quarter enrolled)
# Quarterly Earnings Gain: Fixed Effects

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>$157*** [36]</td>
<td>$476*** [54]</td>
</tr>
<tr>
<td>Diploma</td>
<td>$1,565*** [50]</td>
<td>$564*** [85]</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>$1,907*** [30]</td>
<td>$1,133*** [43]</td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
<td>$3,292*** [36]</td>
<td>$3,002*** [53]</td>
</tr>
</tbody>
</table>
Takeaways

• Returns to certificates and diplomas are weak, but associate and bachelor’s degrees yield very strong returns

• Returns to health sector credentials are extremely high

• Returns are much higher for females than males

• Even small accumulations of credits have labor market value

• Little evidence that the returns fall over the latter half of the 2000s and the Great Recession

• Medium-term estimates likely understate the full value of college credentials, particularly bachelor’s degrees
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