Labor Market Returns to 2-Year College Entry: Evidence from Virginia

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Outline

• Labor Market Returns
  – By credential and credits
  – By subject area
  – Over time

• Cost-Benefit Analysis – Transfer Students

• Summary
Motivation

• By credential and credits
  – Substantial body of evidence for bachelor and associate awards, but less for evidence on short (< 1 year) and long (≥1 year) certificates.
Motivation

• By subject area
  – Increasing evidence that subject matter impacts labor market returns
  – Provides additional information on value of credential specific to a field of study
Motivation

• Returns over time
  – Improved understanding of impact of credential in the future
  – Provides important information students can use when making investment decisions
Method: Mincerian Analysis

- Traditional approach to estimating labor market returns to education
- Similar to analyses in other states (NC, OH); provides comparable estimates
Merged Dataset

- **VCCS**: demographic transcripts on 24,000 credit-seeking FTIC who initially enrolled in one of 23 VA community colleges in 2004
- **NSC**: durations enrolled, award obtained at all subsequent colleges (2004-2012)
- **Dept. Commerce**: quarterly earnings from (Unemployment Insurance) UI records (2005-2013)
# Highest Award

## (2004 VCCS Cohort)

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Degree</td>
<td>68%</td>
<td>71%</td>
</tr>
<tr>
<td>Short Certificate</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Long Certificate</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Associate degree</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>Bachelor’s degree +</td>
<td>16%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Female n=13,885; Male n=10,420
## Returns to Highest Award
(2004 VCCS Cohort; quarterly wage earnings in 2013)

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Certificate</td>
<td>- $859**</td>
<td>- $985*</td>
</tr>
<tr>
<td>Long Certificate</td>
<td>$69</td>
<td>- $733</td>
</tr>
<tr>
<td>Associate degree</td>
<td>$648***</td>
<td>$126</td>
</tr>
<tr>
<td>≥ Bachelor’s degree</td>
<td>$1,523***</td>
<td>$1,373***</td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.1
Returns to Credits  
(2004 VCCS Cohort; quarterly wage earnings in 2013)

<table>
<thead>
<tr>
<th>Any Credit Type</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>$15***</td>
<td>$19***</td>
<td></td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.1

- Model includes awards and credit accumulation
- Interpreted as potential added labor market value -- even in presence of a credential
## Returns to Credits – restricted sample
(2004 VCCS Cohort; quarterly wage earnings in 2013)

<table>
<thead>
<tr>
<th>Any Credit Type</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Credit Type</td>
<td>$19***</td>
<td>$27***</td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.1

- Model restricted to students who never received any award
- Estimates increased from previous model
- Suggests labor market value even in absence of a credential
Returns by Subject Area

• Collapsed into 14 subject areas by CIP codes

• Examples:
  – Humanities & social sciences
  – Math & Science
  – Allied Health

• Does not include credits/awards post-VCCS
## Returns by Subject Area:
### Frequency of Findings by Credential

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short &amp; Long Certificate</td>
<td>Associate Degree</td>
<td>Short &amp; Long Certificate</td>
<td>Associate Degree</td>
</tr>
<tr>
<td>Positive Returns</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Negative Returns</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>No Findings</td>
<td>23</td>
<td>9</td>
<td>19</td>
<td>7</td>
</tr>
</tbody>
</table>
## Returns by Subject Area:
### Example Subject Areas

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive Returns</strong></td>
<td>Short &amp; Long Certificate</td>
<td>Allied Health; Nursing; Transportation</td>
</tr>
<tr>
<td><strong>Negative Returns</strong></td>
<td>Allied Health; Business/Marketing; Education/Childcare</td>
<td>Humanities/Social Sciences</td>
</tr>
</tbody>
</table>

*Note: Students categorized by highest degree earned. Thus, BA recipients excluded in subject area analysis. Consequently, some shorter-term degrees found to have negative returns may have positive returns if those awards led to four-year degree attainment. For example, an AA in humanities often serves as a transfer-oriented award and thus may lead to positive returns if the student ultimately transferred and earned a 4-year award.*
Returns by Subject Area

• Heterogeneous results
• Majority of short and long certificates negative and not statistically significant
• Subject area and credential type matter
• Higher estimated returns for male associate earners
Returns over Time
(2004 VCCS Cohort; quarterly wage earnings 2005-2013)

• Annual point estimates for short & long certificates = mostly statistically insignificant

• Associate and bachelor point estimates mostly statistically significant
Returns over Time - Female
(2004 VCCS Cohort; quarterly wage earnings 2005-2013)
Returns over Time - Male
(2004 VCCS Cohort; quarterly wage earnings 2005-2013)
Returns over Time

• Consistent with prior estimates
• Bachelor’s = initial drop followed by constant rise
• Associate = slow rise (steeper for females)
• Short and long certificate = slow decline
Overall Summary

• Credits matter – even in absence of an award
• Field of study matters – Heterogeneous impacts across fields and award type
• Returns over time consistent with prior estimates
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CAPSEE is funded through a grant (R305C110011) from the Institute of Education Sciences, U.S. Department of Education.