What About the Non-Completers?
Labor Market Returns to Progress in Community College

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Importance of Non-Completion

• We know a lot about the labor market returns to CC students who complete awards:
  – Program: Associate, then diploma, then certificate
  – Field: Nursing and health… …humanities

• But two-thirds of CC students have no award:
  – What programs are they in? What fields?
  – Does differential program/field failure influence returns?
  – Does it matter if they are in a program/field?
Classifying Non-Completion

1. **Stated preference**
   - Not all students declare a major
   - Declared major only matches actual major 70%
   - Intent / goal based on closed-form questions
   - Confusion, ignorance

2. **Revealed preference**
   - Number of credits: but not all are created equal
   - Algorithm based on course-taking across all completers
Analysis

Data:

• State-wide administrative data from FTIC community college students 2002-2005 (n = 250,000)
• Transcript records merged with UI earnings data for 2011
• Exclude those who transfer and get a BA degree

Method:

• Mincerian earnings functions (control for student/college characteristics; by gender)
• Identify *ex ante* returns:

\[ R_{ExAnte} = \beta R_{Comp} + (1 - \beta)R_{Noncomp} \]
Non-Completion Classifications

1. Intent: Associate degree (vs. occupational award)
2. Goal: Associate degree (vs. skills upgrading)
3. Algorithm based on course-taking across all completers
   - Naïve-Bayes algorithm assigning non-completers to closest pattern for completers by program and then by program field
   - Derive “progression” as % of relevant credits of completers earned by non-completers
Assignment of Students to Programs

Algorithm:
- Dipl: Predicted+noaward
- Dipl: Predicted+award
- Cert: Predicted+noaward
- Cert: Predicted+award
- AA: Predicted+unawarded
- AA: Predicted+awarded

Intent:
- Other

Goal:
- Other
Result 1: Non-Completion Penalties Vary

Returns Over Diploma-holder

- 40% - 30% - 20% - 10% - 0% - 10% - 20%

Female

Male

AA Cert No AA No Cert No Dipl
Result 2: New Variation for *Ex Ante* Returns

<table>
<thead>
<tr>
<th>Relative to diplomas:</th>
<th>$R_{\text{Comp}}$</th>
<th>$\beta$</th>
<th>$R_{\text{Noncomp}}$</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA degree</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>Returns even <em>greater</em> after adjusting for non-completion</td>
</tr>
<tr>
<td>Certificates {females}</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>Returns even <em>lower</em> after adjusting for non-completion</td>
</tr>
<tr>
<td>Certificates {males}</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>Lower <em>ex post</em> returns fully offset by higher completion and returns to non-completion</td>
</tr>
</tbody>
</table>

- Values are quite different using intent or goal measures
Result 3: Compressed Returns to Subjects Ex Ante

Versus AA degrees in unknown subjects
female {male} returns are:
Non-completers (any subject)       -6%    {-8%}
Nursing awards                      +270%  {191%}
Health awards                       +46%   {29%}

Assigning non-completers to predicted subject groups:
Nursing awards                      +203%  {127%}
Health awards                       +30%   {9%}
Result 4: No Returns to “Progression” for Non-Completers

- Credits are positively correlated with earnings
- Similar for completers and non-completers
- $R$ per credit $\sim=0.3\%$

- Controlling for credits, “progression” is negatively associated with earnings for non-completers
- $R$ per credit unaffected
- Specialization not more valuable than generalization
- Buffet beats combo-meal?
Conclusions and Implications

• Lots of non-completers; many ways to classify them

• Ways matter for:
  – Program graduation rates
  – Program returns
  – Variance in returns to subjects

• Game rates through assigning non-completers?

• Need to improve stated and revealed preference approaches

• For non-completers, much work to be done on: what courses to take; what options to have at different momentum points
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