Should I Work or should I Borrow?: The Effect of Debt and Working While Enrolled on Baccalaureate Completion

A Counterfactual Analysis

Pilar Mendoza
University of Florida
2010 ASHE Indianapolis
Introduction

- Affordability is one of the major barriers in college achievement (e.g., Chen 2008; St. John, et al., 2005; Swail et al., 2003)

- In 2007-08, among all B.S. recipients (College Board, 2008):
  - 66% graduated with education debt
  - The median debt was $11,000
  - 66% borrowed a median of $20,000
  - 10% borrowed a median of $40,000 or more

- However some students:
  - Have high aversion to debt (Dowd, 2008; Gladieux & Perna, 2005)
  - Work more than 30 hours while enrolled (Perna, 2010)
Purpose

- The purpose of this study was to estimate the effect of debt and working while enrolled on college graduation controlling for self-selection bias.
Theoretical Framework

- Factors associated with student persistence (e.g. Chen, 2008):
  - Student background characteristics
  - Educational aspiration
  - Pre-college preparation
  - College experiences
  - Organizational characteristics
  - Financial factors
- Factors associated with college student debt (e.g. Dowd, 2008; Kim, 2007):
  - Social and cultural capital
  - Unmet need
  - Expected returns from a college degree
- Factors associated with employment experiences while enrolled
Dataset

- This study used the 2007-2008 NCES National Postsecondary Student Aid Study (NPSAS:08)
  - Considered the most comprehensive and representative
  - Complex survey design
  - Representative of all students enrolled in all types of postsecondary institutions in the nation
Sample

- The sample included students who have any amount of college debt by 2007-2008 and:
  - Are U.S. citizens or permanent residents
  - Family dependent
  - Enrolled for the first time in a degree granting institution in 2002-2003 seeking their first bachelor’s degree
  - Still enrolled by 2007-2008
  - \( N_w = 2,489.5 \)
Hypotheses

- Given the ratio Debt/EFC, the hypotheses of this study were:
  I. Students with a ratio Debt/EFC above the median are more likely to graduate in six years
  II. Students with a ratio Debt/EFC above the median work less than 30 hours a week while enrolled
  III. Students who work less than 30 hours a week while enrolled are more likely to graduate in six years
Analysis: Propensity Score Matching

- Causal effects are best estimated when treatment is assigned randomly to cases and comparisons are made against a control group.
- This is not possible in most observational studies in which individuals freely self-select into the treatment group.
- A method to overcome this is to use a conditional probability of being assigned to the treatment group given predetermined characteristics. This conditional probability is known as the propensity score (Rosenbaum and Robin, 1983).
Models Specification

- For each of the three hypotheses, I ran a logistic regression with propensity scores and normalized student, cluster and sample weights:

\[
\log(Y_{\text{Degree}}) = \alpha T_{\text{Debt} / \text{EFC}} + \beta \bar{X}_{\text{Degree}} + \delta \bar{P}_{\text{Debt} / \text{EFC}} + \epsilon_1
\]

\[
\log(Y_{\text{Working}}) = \alpha T_{\text{Debt} / \text{EFC}} + \beta \bar{X}_{\text{Working}} + \delta \bar{P}_{\text{Debt} / \text{EFC}} + \epsilon_2
\]

\[
\log(Y_{\text{Degree}}) = \alpha T_{\text{Working}} + \beta \bar{X}_{\text{Degree}} + \delta \bar{P}_{\text{Working}} + \epsilon_3
\]
Limitations

- Cross-sectional data
- Secondary data
- Self-reported measures
- Omitted variables
- Included students with debt only
Results: Descriptives

The distribution of students with income below $25,000 was:

- Asian males: 33.3%
- Hispanic males: 31.9%
- African American males: 28.4%
- Asian females: 27.5%
- African American females: 21.7%
- Hispanic females: 21.4%
- Whites: 10%
Results: Descriptives

- 60.8% completed their degree program in six years
- 35.7% had a ratio of Debt/EFC above the median
- 58% work while enrolled on average 19 hours a week
- 30.8% worked more than 30 hours a week
- 82.0% of working students did to cover college costs
- The average cumulative debt was $21,905
- 26.5% expected help from parents with repaying loans
Results: Descriptives

- Regardless of race/ethnicity and gender, the lowest income bracket had the largest proportion of students with Debt/EFC above the median.
- The higher the income was, the larger the proportion of students who have graduated by 2007-2008.
- The proportion of students working more than 30 hours a week varied by race/ethnicity, gender, and income.
Hypothesis I: (p=.021)
- Students with a Debt/EFC greater than the median are 1.6 times more likely to graduate than students with a smaller Debt/EFC

Hypothesis II: (p=.009)
- Students with a Debt/EFC greater than the median are 1.5 times more likely to work less than 30 hours a week while enrolled than students with a smaller Debt/EFC

Hypothesis III: (p=.032)
- Students who work less than 30 hours a week are 1.4 times more likely to graduate than students who work more than 30 hours a week while enrolled
Discussion

- Most students acquired debt in order to obtain a B.S.
- Those with a debt of 4 times their EFC or more and who work less than 30 hours a week are more likely to graduate in six years
- However, 30.8% of students work more than 30 hours a week and are less likely to graduate in six years
- The distribution of students’ debt, graduation rates, and work intensity varies by race/ethnicity, gender and income
Conclusion

- This study confirms the notion that higher education is increasingly becoming a private good.
- This is particularly problematic for low income student and minority students with higher risk aversion than other groups.
- Policymakers should re-evaluate the overemphasis on loans on current financial aid policies.
Thank you.