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ILLINOIS EDUCATION RESEARCH COUNCIL
Southern Illinois University Edwardsville

Examining the Relationship between Student Debt and Completion Rates at 4-Year Institutions in Illinois

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Introduction

College Completion Agenda

- United States now ranks 14th among 37 nation members of Organization for Economic Co-Operation and Development (OECD) in percentage of young working adults (25-34) with a postsecondary credential (OECD, 2014).
- If current trajectories hold, United States will fall short of the goal to have 60% of working adults with a postsecondary credential by 2025 (Lumina, 2014).

Increases in Cost of Attendance

- Since 2004, the average published costs for tuition and fees has increased 41 percent at public, four-year institutions and 24 percent at private, not-for-profit four year institutions (The College Board, 2015).

Rise of Student Debt

- 69 percent of undergraduate students leave a nonprofit postsecondary institution (public and private) with some amount of student loan debt – on average $28,000 (Project on Student Debt, 2014).
- African American students and students from low-SES families are most likely to borrow (Baum, 2010; Jackson & Reynolds, 2013).

Literature Review

- Since 1990s, loans have become primary source for paying postsecondary cost of attendance (Dynarski & Scott-Clayton, 2013).
- Recent research student borrowing and persistence rates find mixed results (Cadena & Keys, 2010; Houle, 2014; Jackson& Reynolds, 2013; Turner, 2012).
- Results from limited research examining the influence of institutional characteristics related to financial aid on persistence are more consistent (Chen, 2012; Hillman, 2014; Kim, 2007; Titus, 2004).
- Many of these studies use national-level data, limiting institution-specific comparisons. Additionally, research in this area tends to focus on impact of institutional characteristics related to student aid on persistence rather than degree completion.

Research Question

We examine potential relationships between borrowing, institutional type, and graduation rates among specific institutions in the same geographic context. More specifically, we use institutional-level data four-year colleges and universities to consider the following questions:

- Is there a correlation with average debt load at a university/college and the percent of students who are retained, as well as 4-year and 6-year completion rates, particularly African American and Hispanic student completion rates?
- Does this relationship of average debt and percent of students with debt with retention and completion rates vary by institutional sector?
- Does this relationship of average debt and percent of students with debt retention with completion rates vary by Barron's selectivity rating of the institution?

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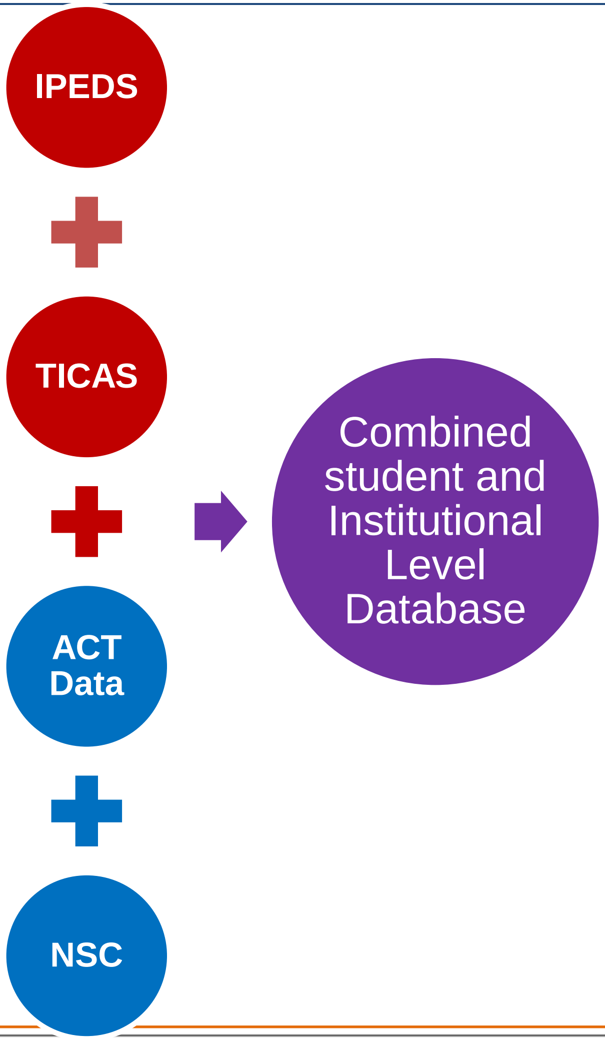
- Postsecondary rates in Illinois remain stagnant, increasing slightly from 40.2 percent in 2008 to 42.5 percent in 2012 (Lumina, 2014).
- Seventy percent of students attending four-year colleges in Illinois leave with some level of debt, the fourth highest percentage in the country (Project on Student Debt, 2014).
- . For students in Illinois, the average loan debt is approximately $28,500, slightly above the national average.

Methods – Data Sources



Methods – Sample Selection

Institutions

- Illinois public and non-profit private
- Screened out all institutions with < 500 Fall FT enrollment
- 10 institutions did not have debt data
- Final sample of institutions, N = 43, n_{public} = 11, $n_{private}$ = 32

Students

- 2009 Illinois public high school graduating class, N = 109,031
- Selected those that entered one of the matched Illinois 4-year institutions in the fall 2009, n = 25,909

Methods – Institutional Measures

Outcomes

- IPEDS 4-year graduation rate
- IPEDS 6-year graduation rate
- IPEDS full time retention
- IPEDS African American 6-year graduation rate
- IPEDS Latino 6-year graduation rate

Debt Measures

- Average debt of graduates from institution
- Percent of graduates with debt from institution

Methods – Student Measures

Outcomes

- Retained from year 1 to year 2 at the same institution
- Completed Bachelor's degree in 4-years at the same institution

Student-Level Predictors

- Whether student met ACT English (18) or math benchmark (22)
- Income level of student's family:
  - low income: < $36,000
  - mid income: $36,000 to $100,000
  - mid-high income: $100,000 to $150,000
  - High income: > $150,000

Methods – Student Measures

Institutional-Level Predictors

- Average debt and percent of students graduating with debt
- Institutional sector: public or non-profit private
- Selectivity of the Institution (based on 2009 Barron's selectivity)
  - Highly competitive: combined Barron's "Most" (*n* = 2) and "Highly Competitive" (*n* = 6) categories
  - Very competitive: Barron's "Very Competitive" (*n* = 8)
  - Competitive: Barron's "Competitive" (*n* = 25), "Less Competitive" (*n* = 1) and "Special" (*n* = 1)

Institutional Debt & 4-Year Outcomes by Institutional Sector

			FT Retention	PT Retention	% 4-yr Grad	% 6-yr Grad	Af Am Grad Rate	Hisp Grad Rate
Average Debt	Private 4-year	*r*	.20	.15	.07	.14	-.12	-.18
		p	.25	.39	.72	.43	.51	.34
		n	34	34	33	33	33	32
	Public 4-year	*r*	-.27	-.13	-.05	-.05	.17	.11
		p	.42	.70	.88	.89	.64	.75
		n	11	11	11	11	11	11
% with debt	Private 4-year	*r*	**-.47****	.14	**-.43***	**-.53****	**-.64****	**-.60****
		p	.005	.42	.01	.001	.0001	.0001
		n	34	34	33	33	33	32
	Public 4-year	*r*	.46	-.18	***.57***†	**.72***	.44	***.54***†
		p	.16	.59	.07	.01	.17	.09
		n	11	11	11	11	11	11

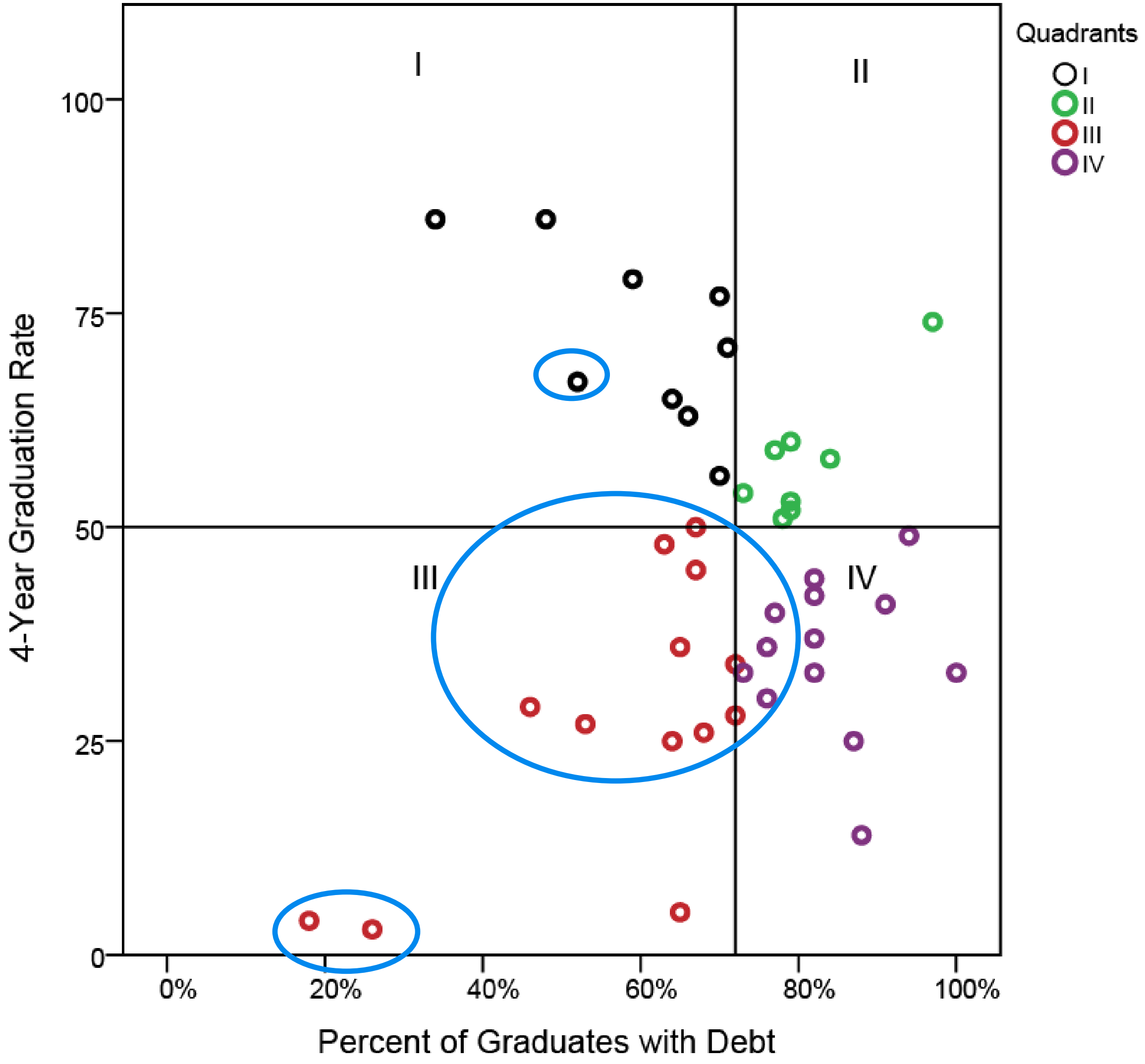
***p*< .01. **p* < .05. † *p* < .10.

Institutional Debt & 4-Year Outcomes by Barron's Selectivity

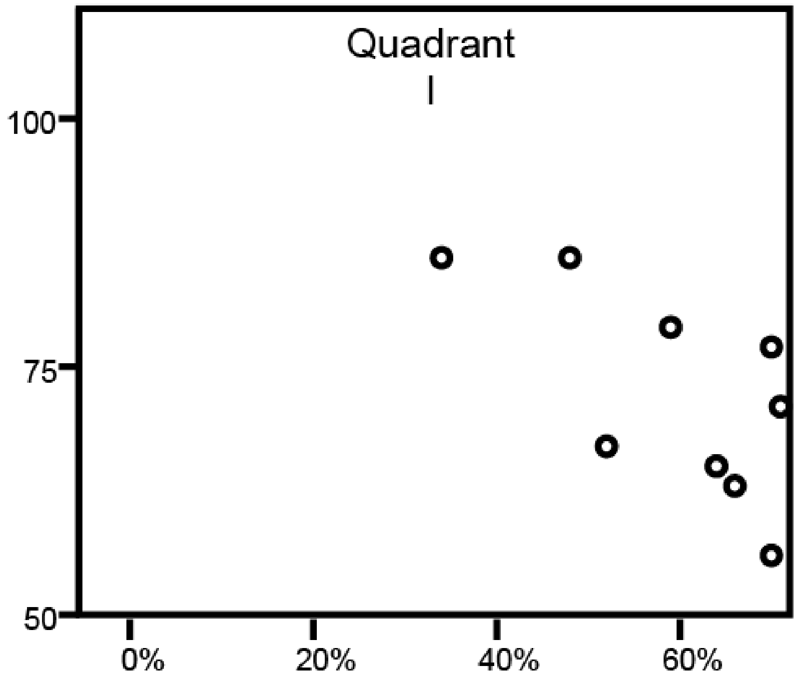
			FT Retention	PT Retention	% 4-yr Grad	% 6-yr Grad	Af Am Grad Rate	Hisp Grad Rate
Average Debt	Highly Competitive	*r*	**-.86***	-.16	-.61	**-.79***	***-.77****	***-.75†***
		p	.01	.74	.15	.03	.04	.06
		n	7	7	7	7	7	7
	Very Competitive	*r*	.36	.03	.55	.10	.13	.08
		p	.38	.95	.16	.81	.76	.86
		n	8	8	8	8	8	7
	Competitive	*r*	**.44***	.25	.27	***.38†***	.17	.06
		p	.03	.25	.21	.07	.44	.80
		n	24	24	24	24	24	24
% with Debt	Highly Competitive	*r*	**-.90****	-.14	-.53	***-.71†***	-.53	-.64
		p	.006	.76	.22	.07	.22	.12
		n	7	7	7	7	7	7
	Very Competitive	*r*	-.29	.41	-.44	**-.81***	**-.81***	.18
		p	.48	.31	.27	.02	.02	.71
		n	8	8	8	8	8	7
	Competitive	*r*	.30	-.29	**.66****	**.49***	**.49***	.27
		p	.16	.16	.0001	.02	.02	.20
		n	24	24	24	24	24	24

$^{**}p < .01$. $^{*}p < .05$. $^{\dagger}p < .10$.

Breaking down by Quadrants

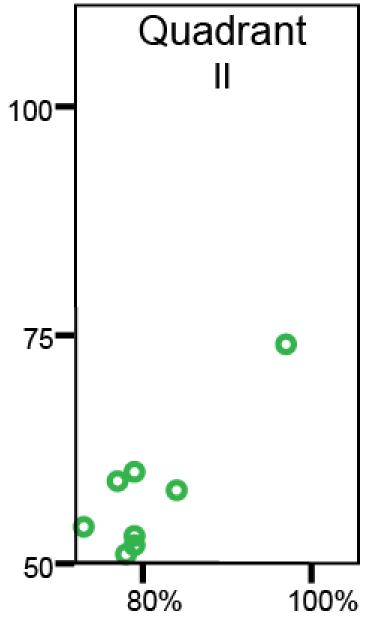


Quadrant I – Characteristics of institutions



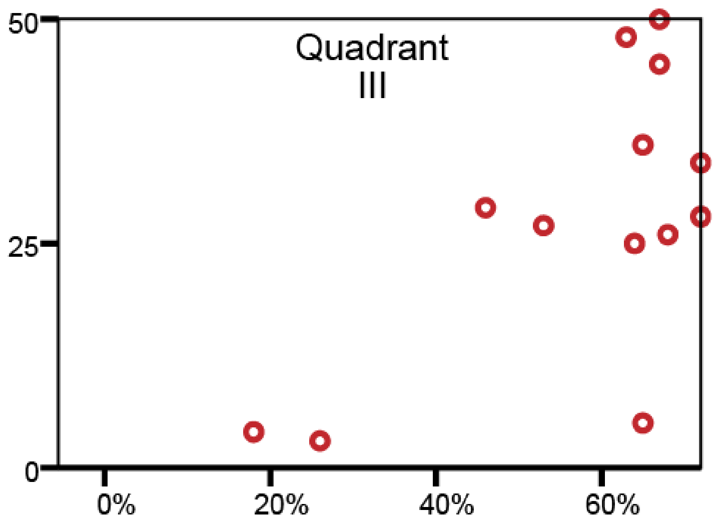
- Contains public flagship institution main campus and rest are non-profit private
- Has highest median tuition and fees
- 43% *mdn* instructional expenditures;
  14% *mdn* students services expenditures
- Most are highly competitive (67%)
- 20% *mdn* percent Pell grant recipients

Quadrant II – Characteristics of institutions



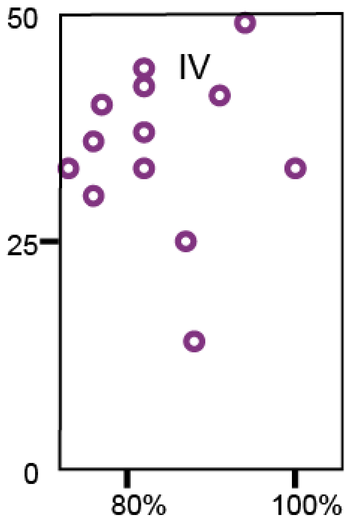
- 47% *mdn* instructional expenditures;
  20% *mdn* students services expenditures
- 75% competitive and 25% very competitive
- All are non-profit private
- 35% *mdn* percent Pell grant recipients

Quadrant III – Characteristics of institutions



- 47% *mdn* instructional expenditures; 11% *mdn* students services expenditures
- 1 institution highly competitive, 23% very competitive and 62% competitive
- Has highest fall FT enrollment
- Has lowest tuition and fees
- 69% public, 31% non-profit private
- 39% *mdn* percent Pell grant recipients

Quadrant IV – Characteristics of institutions



- 43% *mdn* instructional expenditures;
  24% *mdn* students services expenditures
- 92% competitive and 1 institution is very competitive
- 92% non-profit private and 1 public
- 40.5% *mdn* percent Pell grant recipients

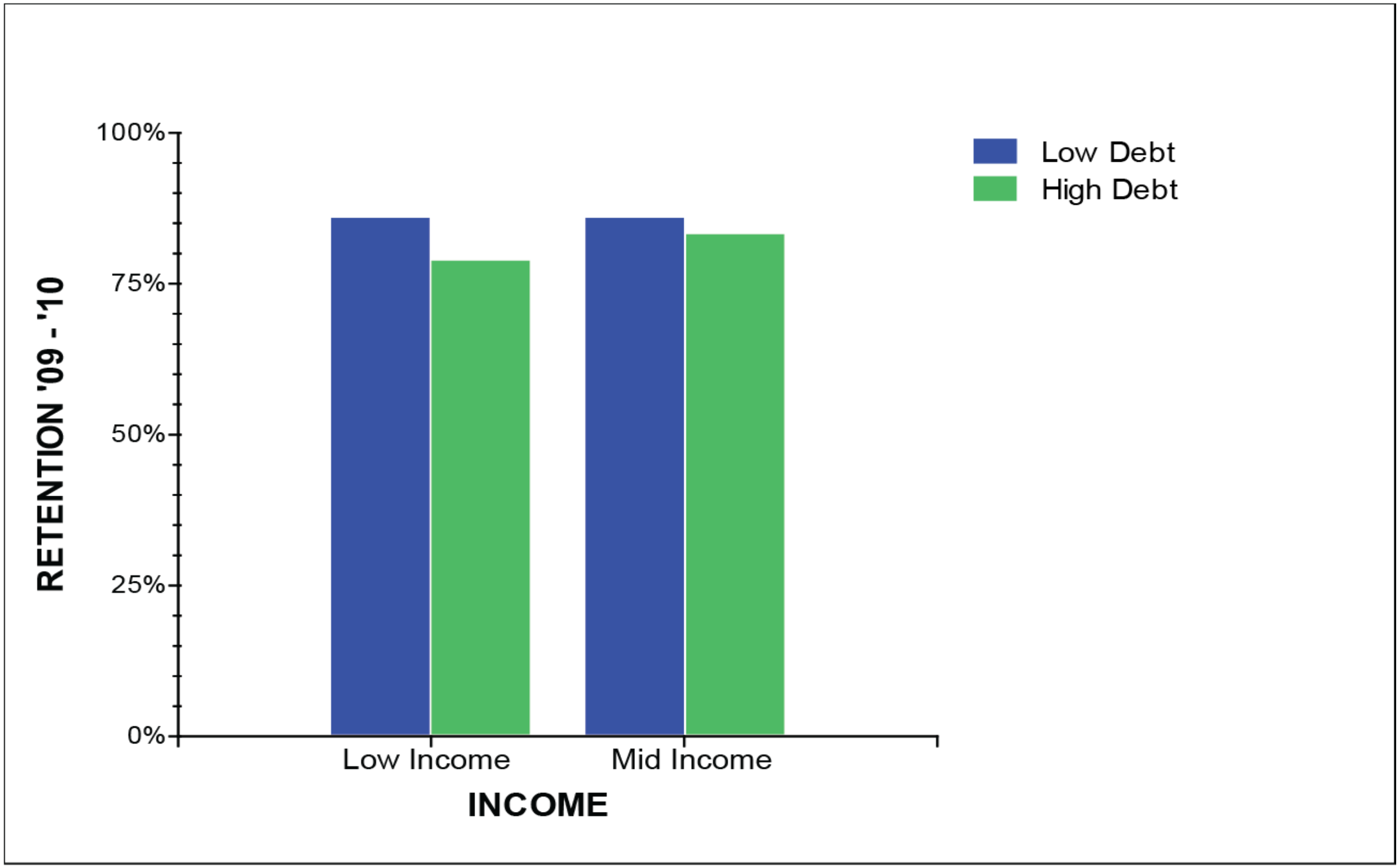
Multilevel Analysis

- Used multilevel logistic regression, using a Bernoulli distribution to model the binary student-level outcomes from student and institutional predictors
- Used unit-specific models with robust standard errors so results indicate effects for a typical institution assuming large sample size
- Primary focus is the effect of the institutional level variables (level 2 variables)

Retention & % Debt

- Attendance at an institution with high % debt was associated with 50% less odds of retention
  - Same odds when controlling for English benchmark
  - High % debt associated with 40% less odds of retention when controlling for math benchmark
- Attendance at a high debt institution had less of a negative impact (i.e., 1.4 times the odds of being retained) if they were from mid income families as compared to low income families (p = .03; see next slide).

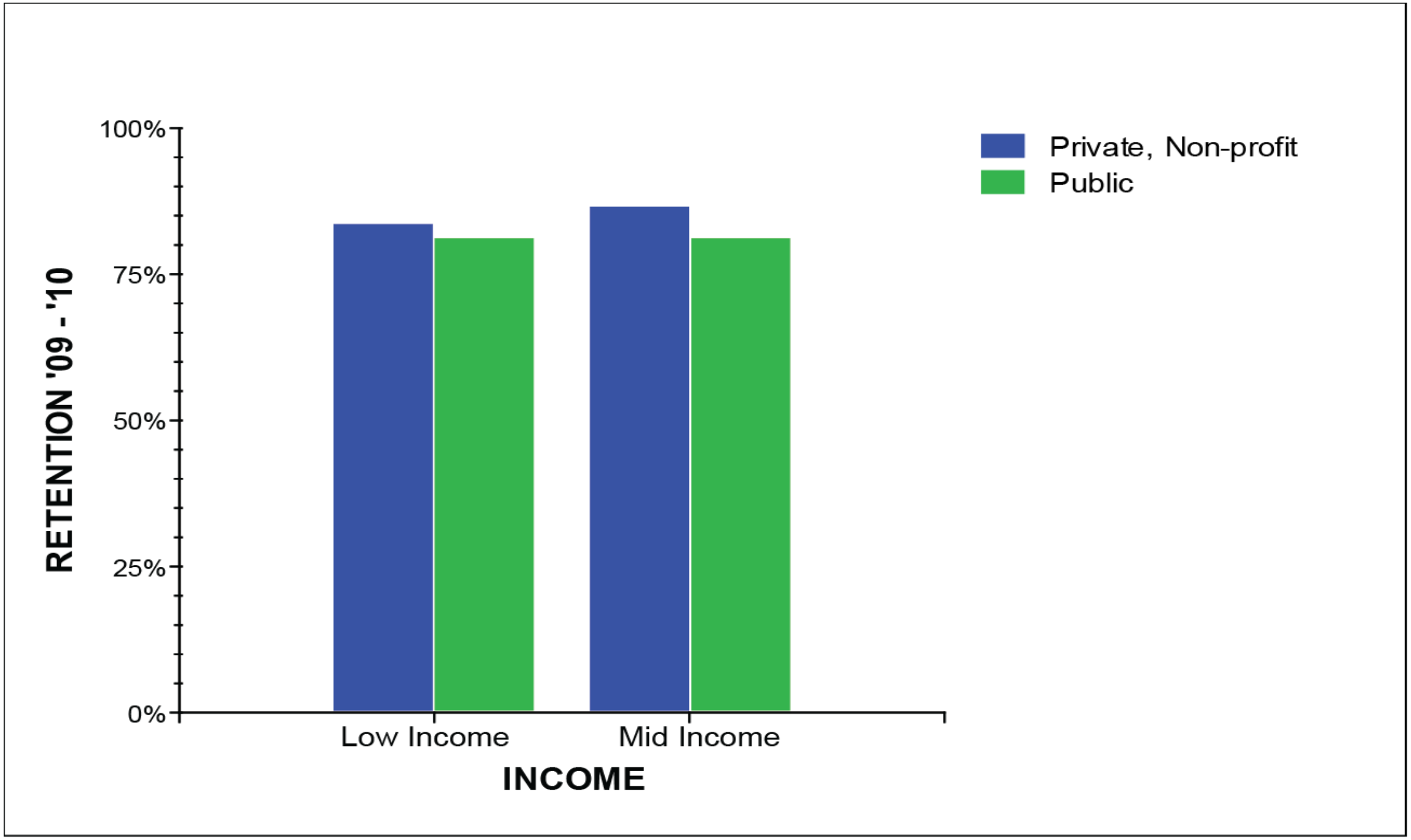
Retention by % Debt and Income Level



Retention and Barron's Selectivity

- Students from highly competitive institutions had twice the odds of retention than if they were from a competitive institution (p =.03)
- Trend (p = .06) such that the positive effect of meeting the math benchmark was accentuated at very competitive vs. competitive institutions
- Barron's selectivity did not counter the negative effect of poverty on retention

Retention and Institutional Sector

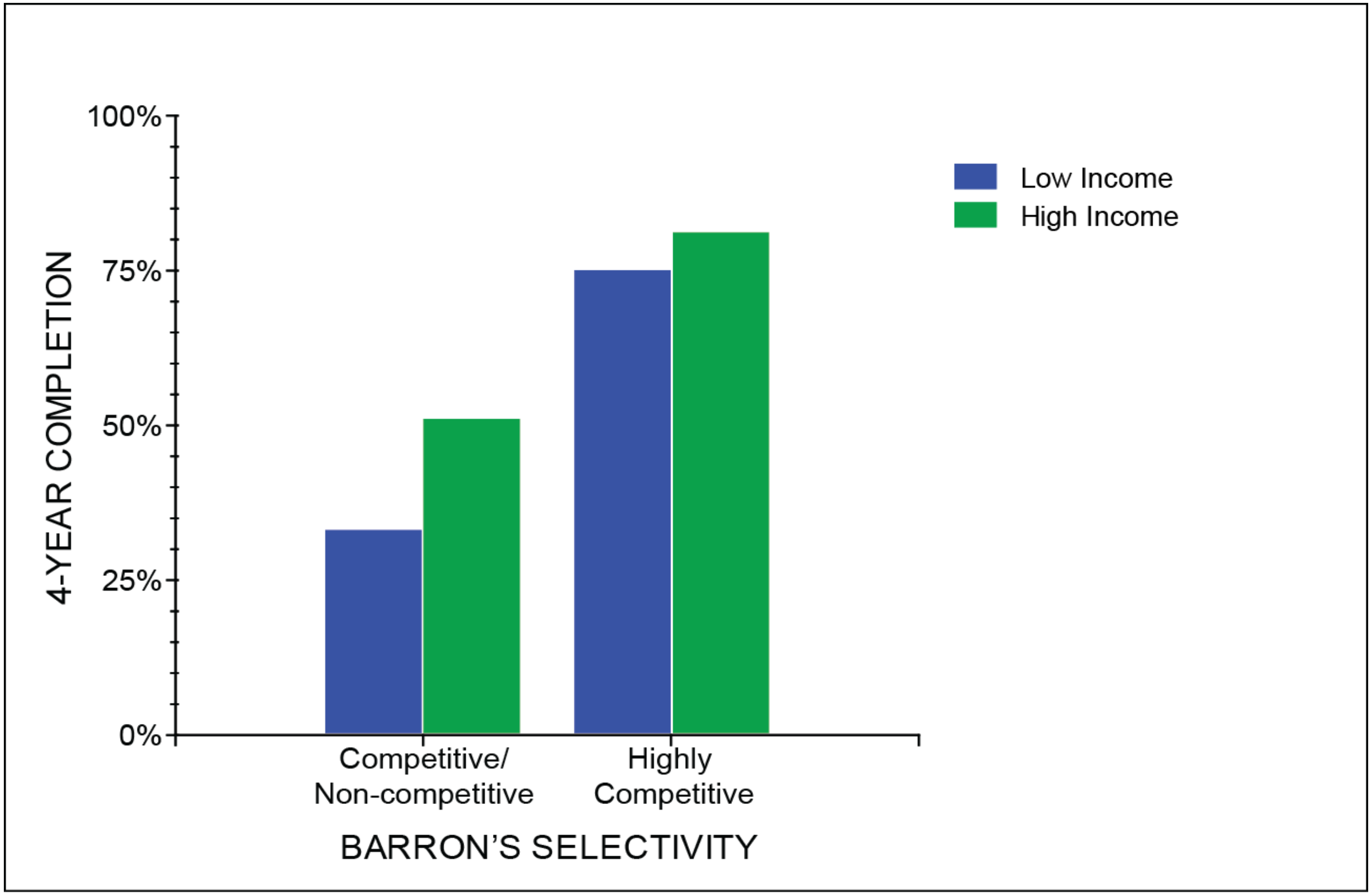


Bachelor's Degree Completion & % Debt

- Controlling for college readiness, neither % debt or avg. debt was related to bachelor's degree completion
- Income level did not affect this relationship

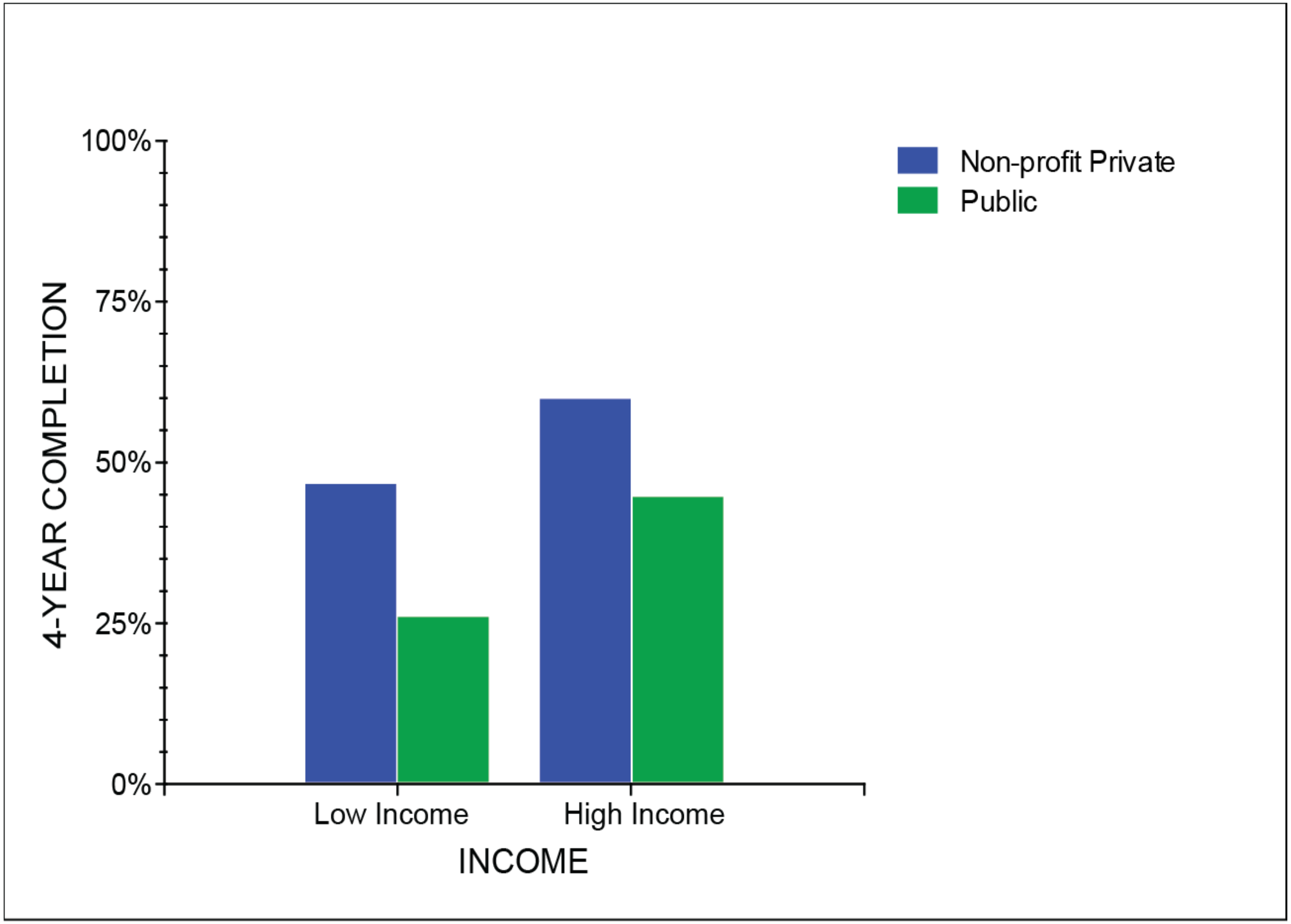
Bachelor's Degree Completion & Barron's Selectivity

- A middle income family had 1.5 times higher odds of completion than a low income family
  - but there was an approximately 40% decrease in these odds when attending a highly competitive institution compared to a competitive/non-competitive institution (see next slide)
- This effect of selectivity was present controlling for college readiness in English
- This effect of selectivity dissipated when controlling for college readiness in math


100%
75%
50%
25%
0%
4-YEAR COMPLETION
Competitive/
Non-competitive
Highly
Competitive
BARRON'S SELECTIVITY
Low Income
High Income

Bachelor's Degree Completion & Institutional Sector

- There was a trend in the interaction of institutional sector on the effect of income level (p = .06) such that there was less of a discrepancy between public and non-profit privates on completion for students from high income families vs. low income families (see next slide)
- The moderation of the effect of income on completion remained after controlling for college readiness in English or math.


100%
75%
50%
25%
0%
4-YEAR COMPLETION
Non-profit Private
Public
Low Income
High Income
INCOME

Summary – Institutional Effects

- Higher percent institutional debt
  - Lower retention and completion for non-profit private institutions
  - Higher retention and completion for publics (without outliers closer to 0)
  - Lower retention and completion for highly competitive institutions
  - Higher retention and completion for competitive institutions (without outliers closer to 0)
- Institutions with low % debt and high completion rates are
  - Mostly highly competitive
  - Relatively low student services expenditures
  - Relatively low percent Pell grantees
  - Mostly private institutions (8/9)

Summary – Institutional Effects (2)

- Institutions with high % debt and low completion rates are
  - Mostly competitive
  - 10% higher student services expenditures than those with low debt and high completion rates
  - Mostly private institutions (12/13)
  - Relatively high percent Pell grantees

Summary – Student Effects

- Institutional debt was negatively related to retention but not to 4-year completion
  - Same effects on retention when controlling for college readiness
  - Effects were greater for mid income than low income students
- Barron's selectivity was related to both retention and completion
  - Did not counter the effects of poverty on *retention*
  - Did counter the effect of poverty on *completion*
- More differential effect of income level on retention for students at non-profit privates
- Less difference in completion between students at publics and non-profit privates if from higher income family

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