The Effects of the Great Recession on the Enrollment Yield at Private Liberal Arts Colleges

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I. Abstract

This paper analyzes the effects of the Great Recession on enrollment yields at not-for-profit private baccalaureate arts and sciences colleges. We developed a demand function that relates the admissions yield of these schools to cost and quality explanatory variables and a macroeconomic term to account for the recession. The study utilized three metrics to account for the recession: per capita GDP, percentage change in GDP, and a dummy variable. It was determined that the use of the dummy variable was the most statistically significant measure of the recession. The results show that while controlling for changes in admissions rate, aid, and net tuition and fees, the recession had a negative effect on enrollment yield of about 3%.

II. Model

YIELDi,t=f(ADMITi,t, RNTFi,t,RAIDi,t, Xi,t)

- *YIELDi,t* = Admissions yield of the *i*th college in year *t*.
- *ADMITi,t*= Admissions rate of the *i*th college in year *t*.
- $RNTF_{i,t}$= Average net tuition and fees of all other colleges for the *i*th college in year *t*.
- *RAIDi,t*= Average aid of all other colleges for the *i*th college in year *t*.
- *Xi,t* = $REC_{i,t}$, $GDP_{i,t}$, or $\%GDP_{i,t}$; where
  - $REC_{i,t}$ = Dummy variable for the recession; 0 if not during the recession, 1 for years that were.
  - $GDP_{i,t}$= Gross domestic product in year *t*.
  - $\%GDP_{i,t}$= Percentage change in GDP from year *t-1*to *t*.
- A school is denoted by the subscript *I*, a year by the subscript *t*.

III. Theory

- $ADMIT_{i,t}$: (-) We hypothesize that the less selective a college is, the fewer students we would see choose to attend there. Thus there would be a negative relationship of ADMIT on YIELD.
- $RNTF_{i,t}$: (-) The higher the cost of attendance, the less likely a student is to attend that college. This implies the effect of RNTF on YIELD would be negative.
- $RAID_{i,t}$: (+) The more aid a student receives, the lower the cost of attending. This would make more students likely to attend. Therefore the effect of RAID on YIELD would be positive.
- $REC_{i,t}$: (+ or -) Less income during a recession makes it more difficult to pay for school, but fewer job opportunities make a recession an ideal time to reinvest in your skills. This means the effect of REC on YIELD would be either positive or negative.
- We use fixed effects to capture cross-section heterogeneity.

IV. Data

- College characteristics
  - Private
  - Liberal arts
  - 4 year
  - Non-profit
- From 2006 to 2011
- Cross-sectional, time series regression
  - 6 years
  - 203 colleges
  - 1,218 observations
- Primary source of data
  - Integrated Postsecondary Education Data System (IPEDS)

V. Empirical Results

		Regression 1	Regression 2	Regression 3	Regression 4
Variables					
Cost					
	RNTF	-0.92	-0.52	-0.18	-0.706
		(0)	(0)	(0)	(0)
	RAID	5.27	6.89	7.05	6.22
		(0)	(0)	(0)	(0)
Quality					
	ADMIT	-0.17	-0.021	-2.099	-0.262
		(.83)	(0.69)	(0)	(0)
Business Cycle					
	REC		-2.99		
			(0)		
	GDP			-0.0036	
				(0)	
	%GDP				0.553
					(0)
adj R-squared		.583	0.808	0.935	0.785

*p-values in parentheses.

VI. Summary

This study estimated the effects of the last recession on enrollment yield at private non-profit liberal arts four year colleges using a six year period in which two of the years contained a recession. The demand function for the enrollment yield was calculated using the total percent admitted as a quality variable, a relative aid variable, a relative price variable, and a dummy variable for the recession. We found that relative net tuition and fees and the admissions rate have an inelastic effect on enrollment yields, whereas relative aid and the recession had an elastic effect. The dummy variable suggests to us that **the effect of the last recession was to reduce enrollment yields by about three percent.**