

PROMOTING OR PERTURBING ACCESS:

ASHE 2008 Annual
Conference
Jacob P.K. Gross

AN EVENT HISTORY ANALYSIS OF THE EFFECTS OF FINANCIAL
AID ON LATINO STUDENTS' EDUCATIONAL ATTAINMENT

The Need for Research on Aid and Attainment Among Latinos

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“Demographics and affordability—they seem to be on a collision course.”

Chronicle of Higher Education Survey, Male admissions official at a religious institution (May 2, 2008 p.B4)

- Growth in Latino population not limited to *Traditional Settlement* states (e.g., CA) but includes a host of *New Settlement* states like GA, NC, IN and others
- Affordability threatens access and success
- The postsecondary achievement *gulf* between Whites and Latinos continues to widen

Ficklen, E., & Stone, J. E. (2002). *Empty promises: The myth of college access in America*. A report of the Advisory Committee on Student Financial Assistance. Washington, D.C.: Advisory Committee on Student Financial Assistance.

Fry, R. (2005). *A statistical portrait of Hispanics at mid-decade*. Washington, D.C.: Pew Hispanic Center.

Fry, R. (2007). *The changing racial and ethnic composition of U.S. public schools*. Washington, DC: Pew Hispanic Center.

Suro, R., & Fry, R. (2005). Leaving the newcomers behind. In R. H. Hersh & J. Merrow (Eds.), *Declining by Degrees: Higher Education at Risk* (pp. 169-183). New York, NY: Palgrave MacMillan.

The Need for Longitudinal Approaches

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- Educational attainment is inherently longitudinal, yet we often conceptualize these processes without consideration of time
- Students' lives are dynamic and so are the factors that influence their decisions to remain enrolled
- Event history analysis (EHA) incorporates temporal aspects of attainment into models and allows for time-varying factors

DesJardins, S. L., Ahlburg, D. A., & McCall, B. P. (1999). An event history model of student departure. *Economics of Education Review*, 18(3), 375-390.

Willett, J. B., & Singer, J. D. (1991). From whether to when: New methods for studying student dropout and teacher attrition. *Review of Educational Research*, 61(4), 407-450.

Research Questions

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- To what extent do different forms of financial aid affect departure, academic momentum, and academic performance? How do the effects of aid on progress-toward-degree change over time?
 - Loans, need and non-need-based
 - Grants, federal and state
 - Grants, private and institutional
 - Work-study

Data and Sample

- Statewide Longitudinal Education Data System (SLED) developed at IU covering State of Indiana
 - Student information systems data from all publics
 - Free Application for Federal Student Aid for all IN citizens
 - Indiana Department of Education Secondary School Data
 - Integrated Postsecondary Education Data System
- Study population: All first-time, first-year Latinos enrolled in public baccalaureate granting institutions in IN from 1999-2005 who attempted at least six credits in first year of enrollment (n=4,963)

Methods

Main Analysis

- Discrete-time event history models
- Outcome of interest was first departure
- Time measured in academic years

Secondary Analysis

- OLS regression models used to look at effects of aid packages on GPA and credits attempted
- Competing-risks, discrete-time model to test robustness of main EH findings
- Missing data were imputed via multiple random imputation

Conceptual Model

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Student Background	Academic Preparation	Academic Momentum	College Enrollment Characteristics	Financial Aid*
Gender	High school rank	Credits attempted*	Campus residence*	Institutional aid
Income*	Combined SAT score		State residency	State grants
Age*	High school diploma		Declared major*	Federal grants
			Developmental education*	Private grants
			Institutional type*	Need-based loans
			College GPA	Non-need-based loans
			Twenty-first Century Scholar	Work-study
				Cost
				Received aid
				Applied for aid

*Time-varying explanatory variables

Limitations

- No controls for generational or immigration status
- Selection criteria (>6 credits in YR1) may not adequately distinguish between educational aspirations
- Annual data used in this study likely do not capture dynamic enrollment patterns
- Data on credits earned each term is not available

Findings: Aid and the Temporal Profile of Persistence

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More Likely to Persist

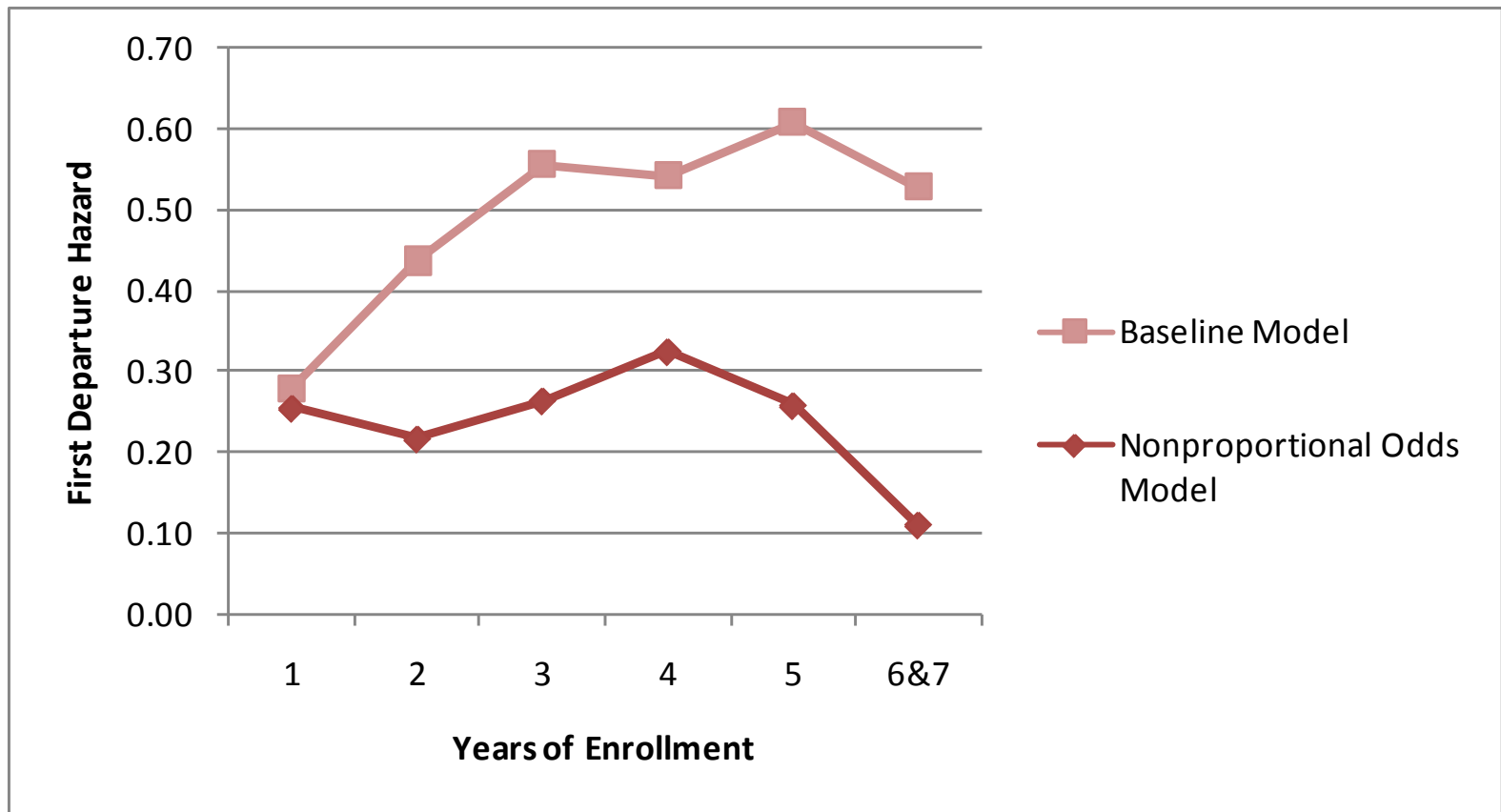
\$1,000 increase in federal grants, need- and non-need based loans, *ceteris paribus*

Less Likely to Persist

\$1,000 increase in net price, *ceteris paribus*

- The conditional probabilities of departure were lowest at the end of year two and highest at the end of year four
- Efficacy of loans varied by time and type
- Cost had an increasingly negative effect

A Fitted Temporal Profile of Persistence



Conditional probability of departure in years six and seven was not significantly different from year one.

Findings: Aid and the Temporal Profile of Persistence (continued)

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- Fourth year seems to be a particularly important moment to explore for understanding persistence
- Relatively greater use and efficacy of Parent Loans initially may be related to familial investment in student's education, contrary to some deficit perspectives of the role of Latino's families in persistence
- Modest effects of aid coupled with relatively greater effects of cost suggest perceptions of cost, debt, and aid are connected in complex ways

Findings: College Experiences

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More Likely to Persist

Having a declared major

Attending a regional institution

Attempting more credits

Earning a higher cumulative GPA

Less Likely to Persist

Attending a research or state university

Earning developmental education credits

- Students enrolled in regional institutions were most likely to remain enrolled
- Competing events analysis suggests students more likely to earn a postsecondary credential at a regional institution
- Yet, students attempted fewer credits than peers elsewhere and had lower cumulative GPAs

Implications for Research

- Longitudinal approaches illuminate nuances in the study of attainment
- Still much to learn about Latinos' enrollment patterns and their relationships to academic success
- Additional consideration of the other 'clocks,' e.g., development of college-going identities

Implications for Policy and Practice

- Program directors should consider crucial moments in the pathways of their students and target support (financial or otherwise)
- Informational efforts about use of aid should be ongoing and account for differences in utilization of aid
- Changes in Federal aid policy should be made with an eye toward their effects on Latinos

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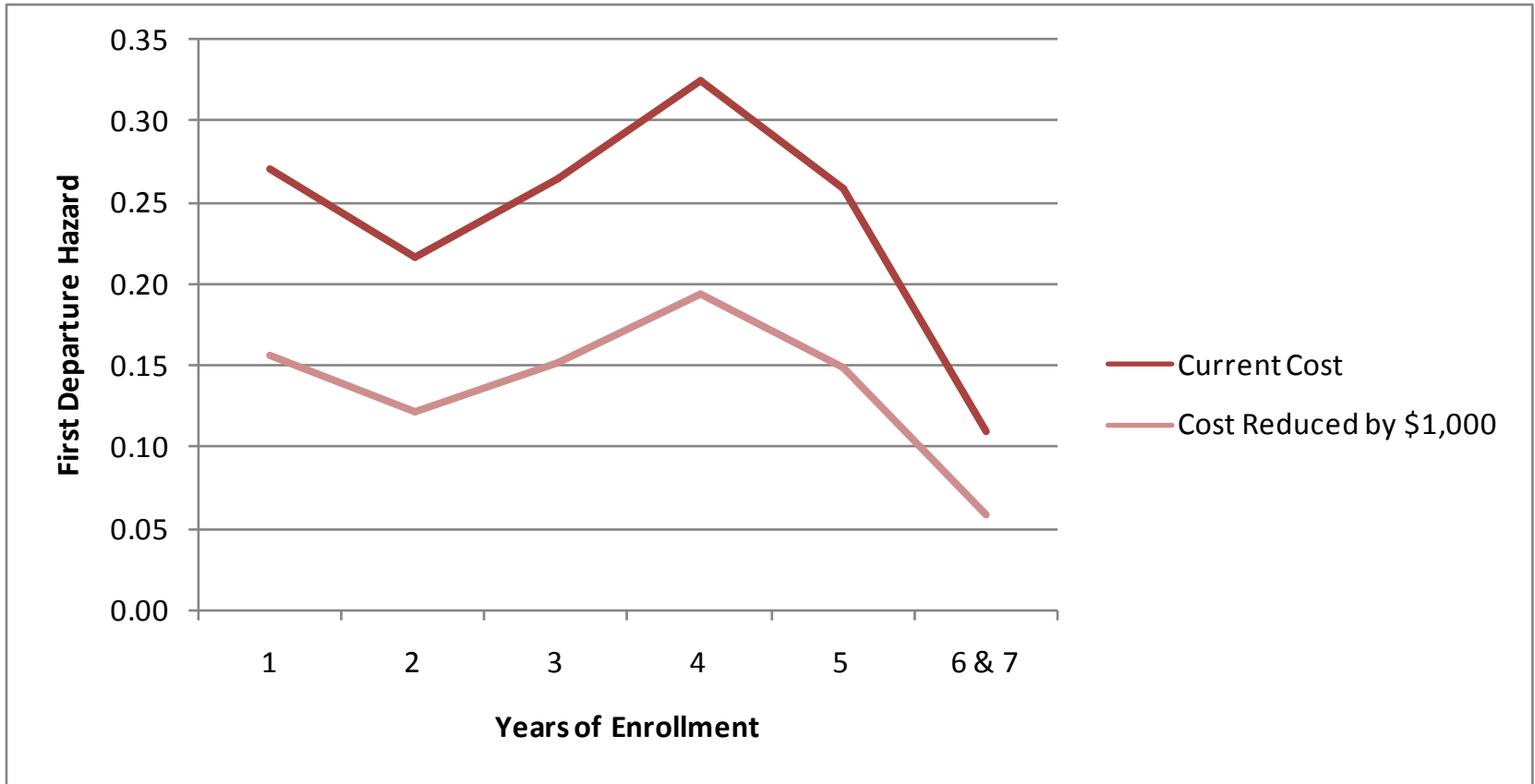
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Appended Slides

Selected Student Characteristics, Year of First Entry

Variables		Number of Students	Column %
Institution type	State universities	434	9
	Regional universities	2453	49
	Urban university	387	8
	Research universities	1689	34
Applied for Aid		3882	78
Received Aid		3589	72
Received Need-Based Aid		2818	57
Gender	Female	2199	44
	Male	2764	56
Combined SAT Score	Low SAT (<=910)	2124	43
	Mid SAT (920-1020)	1226	25
	High SAT (>=1030)	1606	32
College GPA	A	657	13
	B	2064	42
	C or Less	2242	45
Student housing	On-campus housing	1807	36
	Off-campus housing	2931	59
	Lived with parents	185	4
	Housing unknown or lived overseas	40	1
Major Declared	No	1003	20
	Yes	3960	80
Twenty-first Century Scholar	Yes	649	13
	No	4314	87
Total		4963	100.0

Simulated Effects of \$1,000 Reduction in Total Cost on Departure Profile



Conditional probability of departure in years six and seven was not significantly different from year one.

Event History Basics

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- Longitudinal analysis of when individuals or organizations experience an event of interest
- The dependent outcome is always the rate at which transition occurs from one state to another at a given point in time (hazard or survival rate)
- EHA encompasses a variety of methodological techniques
- Terminology and central concepts of EHA differ from regression (though EHA can include regression)

Event History Basics (continued)

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- EHA techniques developed in biostatistics, engineering, and to some degree economics
- Much of the terminology derives from these fields
- Life history data, often collected retrospectively, is another example of event history analysis

Allison, P. D. (1984). *Event history analysis: Regression for longitudinal event data*. Newbury Park: Sage Publications.

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford: Oxford University Press.