



An Analysis of the Effects of State Financial Aid Policy on
the Timing of Postsecondary Enrollment:
A Focus on Income and Race Differences

May 24, 2011

Toronto, ON

2011 Annual AIR Forum

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Background of the Study

- State governments have moved toward greater reliance on merit-based aid programs away from need-based aid
- Widening socioeconomic and racial gaps in college participation rates and limited effectiveness of financial aid policy among underrepresented student population
- This study focuses on whether and how state aid differentially affect students' initial college enrollment and the types of institutions they attend depending on income and race/ethnicity.

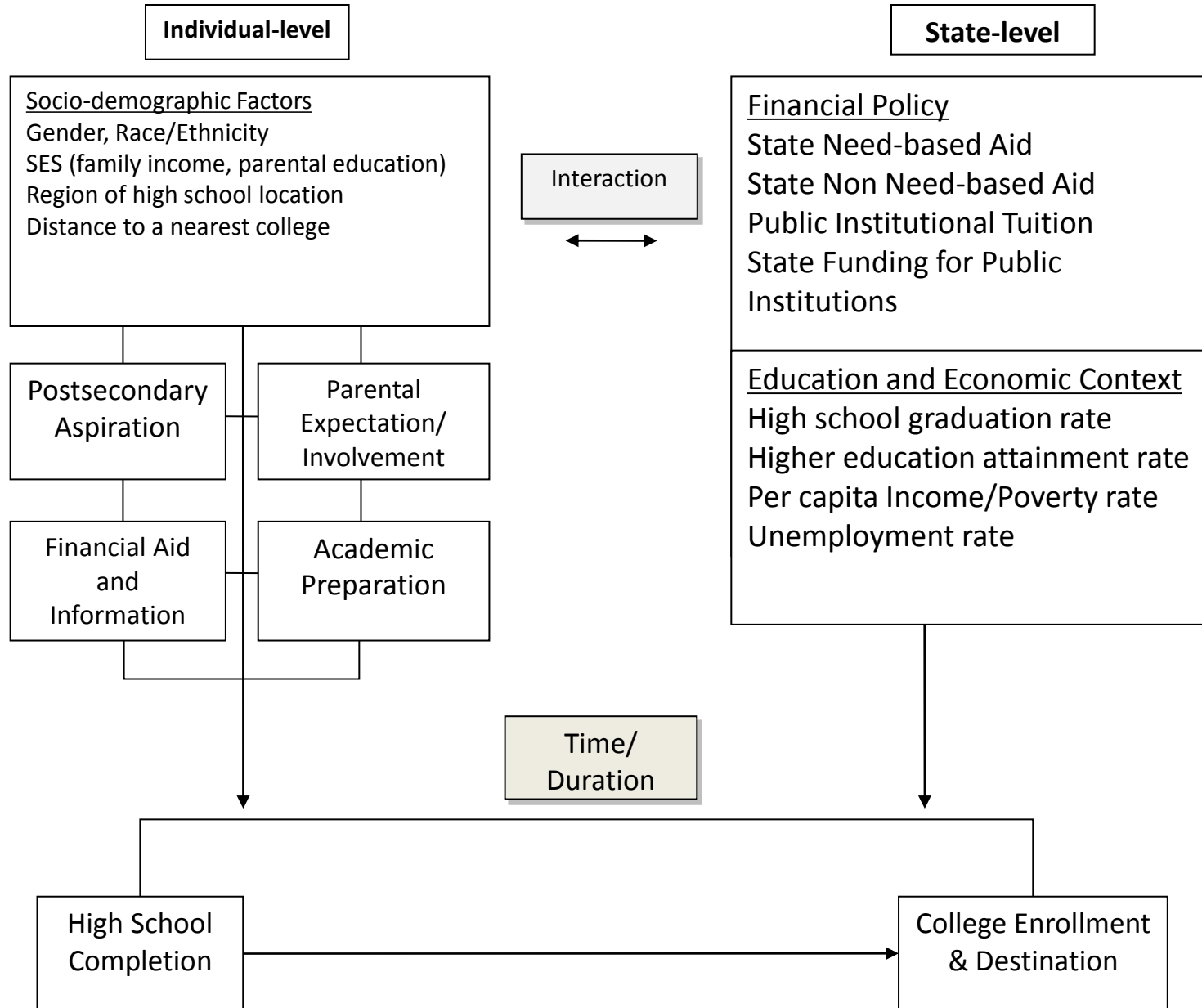
Literature Review

- Student responses to financial aid vary substantially by income and racial/ethnic backgrounds:
 - positive influences of need-based grants on enrollment decisions among low-income students (Perna & Titus, 2004; St. John et al., 2004)
 - disproportionate impact of merit aid on college attendance (esp. 4-yr) for whites and middle- to upper-income students (Cornwell, Mustard, & Sridhar, 2006; Dynarski, 2000; 2004)

Limitations of the Existing Literature

- Use of cross-sectional designs that fail to consider the longitudinal process of college enrollment
- Need for utilizing an appropriate longitudinal method to investigate the choice of students who enrolled in college at different time points

A Conceptual Framework



Research Questions

- Do time-to-enrollment trajectories differ for high school graduates who are from different income and race/ethnic groups?
- Do state-level financial aid policies influence a student's decision of whether, when, and where to enroll in college after completing high school?
- Does the effect of state aid on enrollment vary for students from different income and race/ethnic groups?

Methodology: Data

- Main data source: For student-level, National Education Longitudinal Study (NELS: 88/2000).
- Additional student-level data: Common Core of Data (CCD) and the National Postsecondary Student Aid Study (NPSAS: 93); to calculate distance to a nearest college (using zip code) & to impute expected amount of financial aid
- State-level finance policy, education, and economic variables for 1992-2000
 - collected from sources including National Association of State Student Grant & Aid Programs (NASSGAP), *Digest of Education Statistics*, and Census

Methodology: Variables

- **Outcome:** 1) Binary: whether or not a student who graduated high school in or after 1992 was enrolled in college
2) Categorical measure that differentiates enrollment in terms of selectivity (*Barron's*) and the type (not enrolled / 2-yr or less / 4-yr non-selective / 4-yr selective public / 4-yr selective private)
- Student-level: demographics, family backgrounds, HS academic preparation, expected financial aid (imputed), and FA information
- State-level: state need-based and non-need based aid, public tuition, state funding for public institutions (per FTE), per capita income, unemployment rate, public HS graduation rate, % poverty, % bachelor's or higher degree
- Test *interactions* between race & state aid, income & state aid

Statistical Approach: Event History Modeling

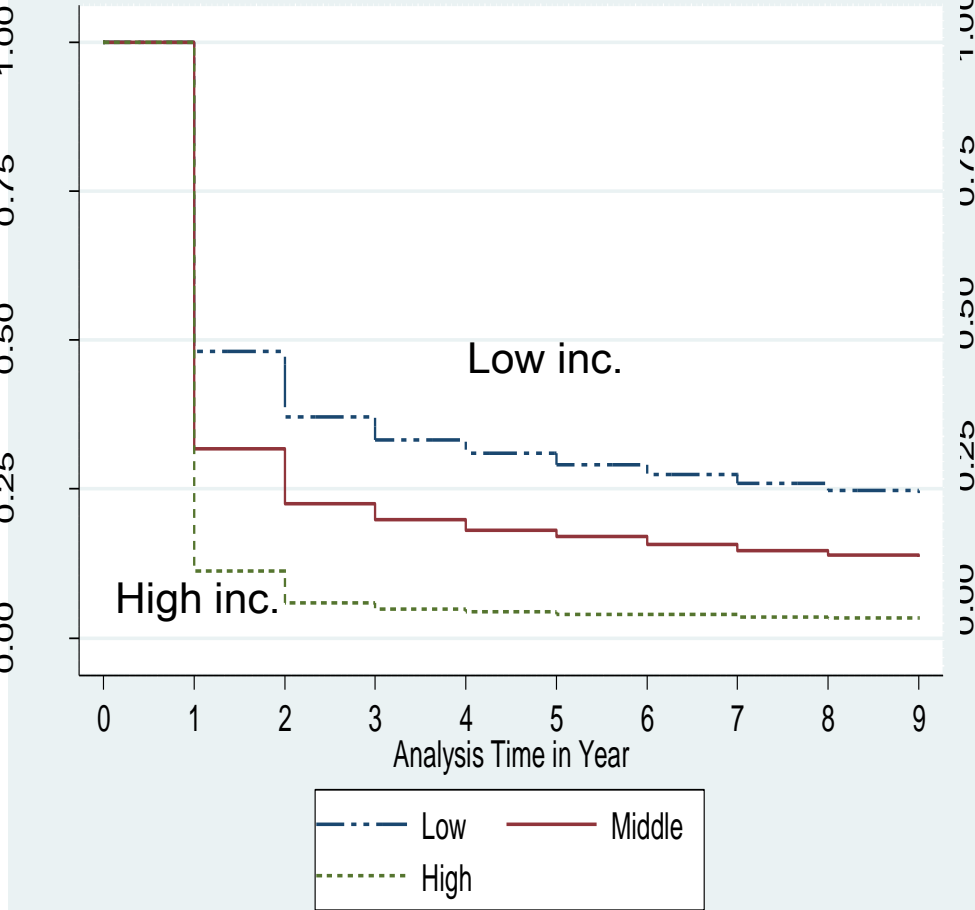
- Event: transition from high school to college
- Time-to-event is measured discretely (by year): Discrete time event history modeling (using Binary/Multinomial logit regression)
- Hazard rate: conditional probability that a student experiences an event in each discrete time period t (Singer & Willett, 1991).
- Will estimate how state FA policy affects the hazard of enrollment (controlling for other covariates)

Steps in the Data Analysis

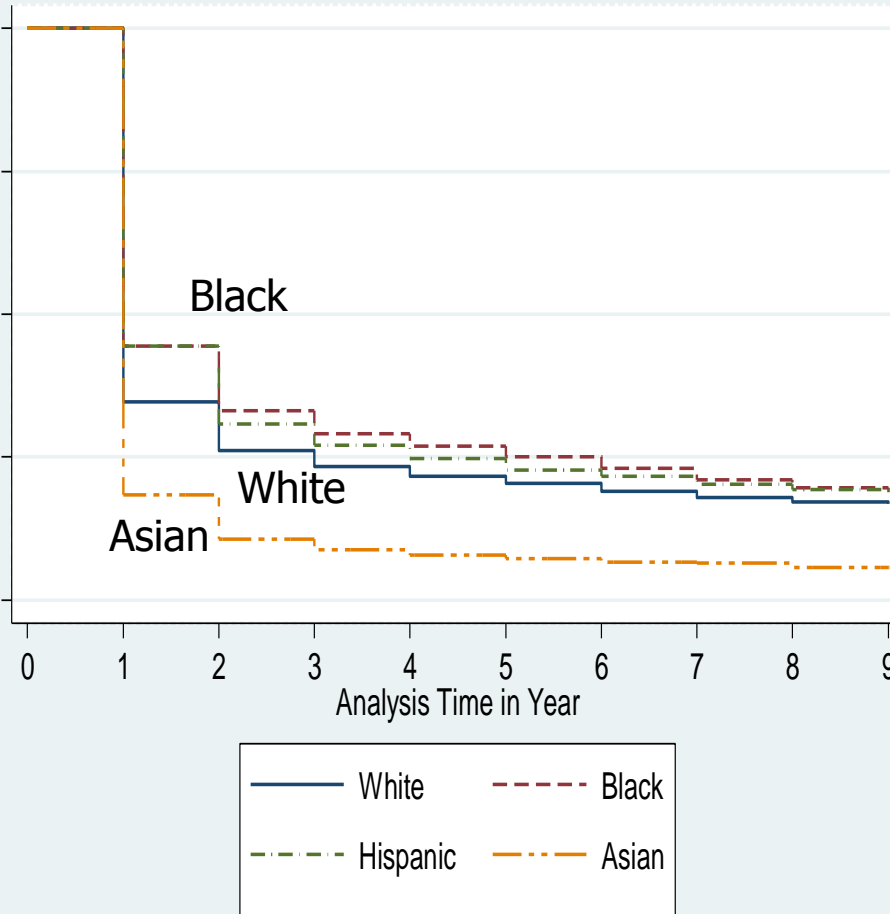
- Descriptive and exploratory methods to estimate baseline hazard rates of college enrollment
- Estimate a discrete-time hazard model (binary and multinomial regressions) controlling for a set of covariates
- Graphical simulations to explore the differential FA impact on enrollment behavior by race and income in response to changes in state aid schemes

Findings: Time-to-enrollment Trajectories

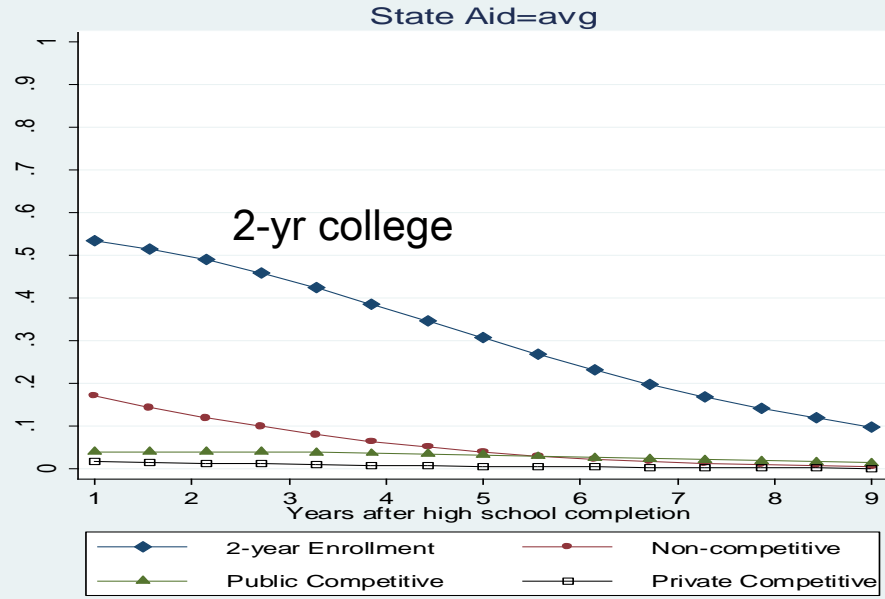
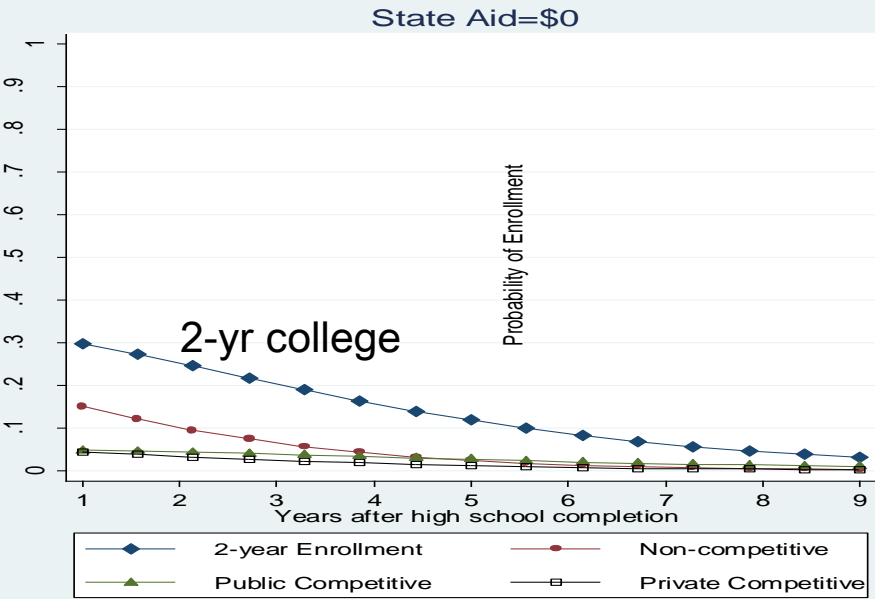
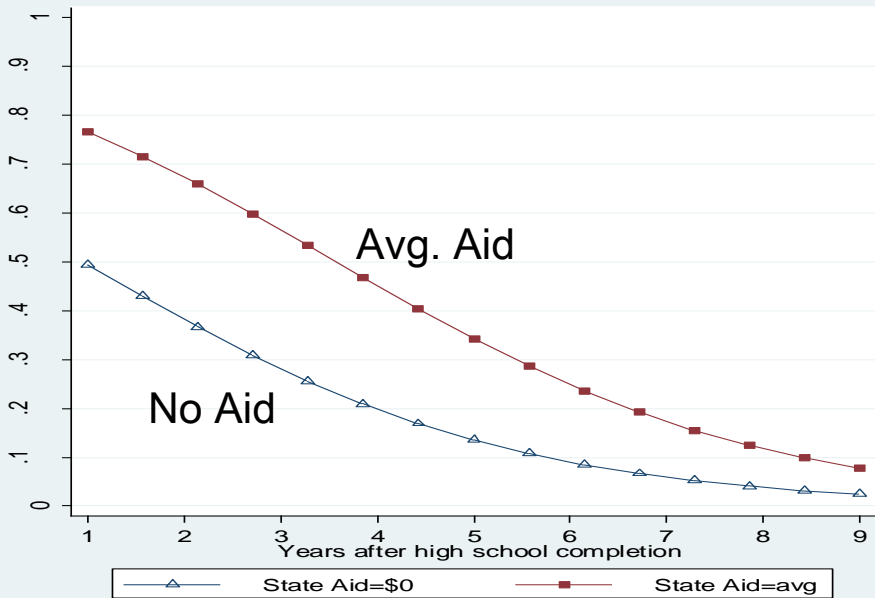
Time-to-Enrollment Trajectories by Income



Time-to-Enrollment Trajectories by Race

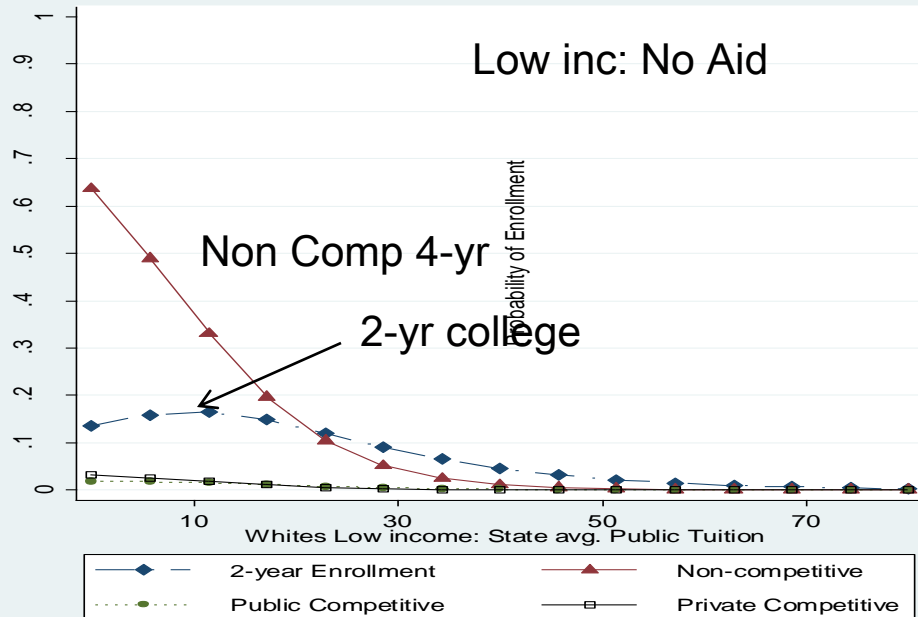


Changes in the Prob. of Enrollment Over Time: All Students

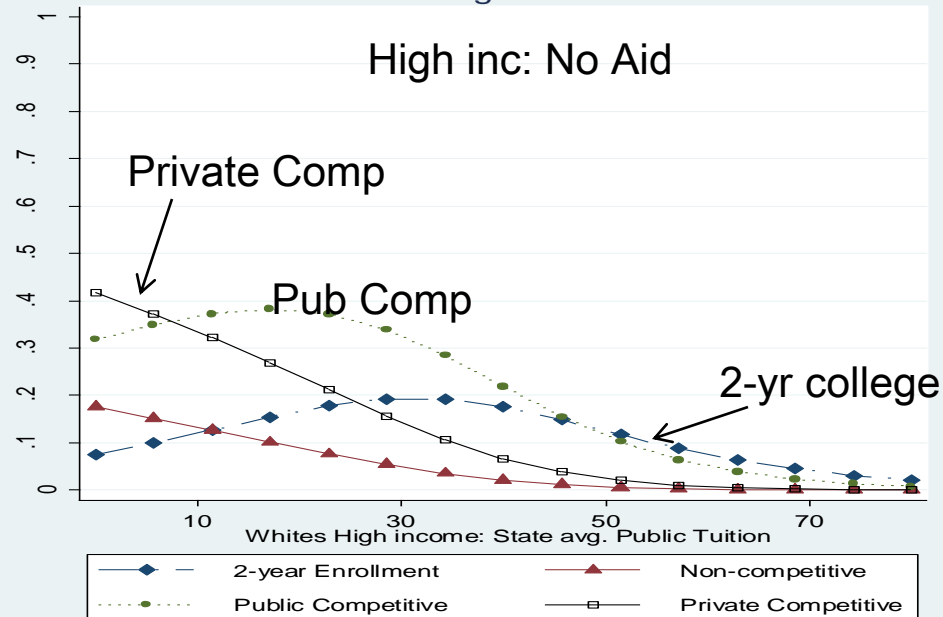


Prob. of Enrollment by Type of Institutions: White

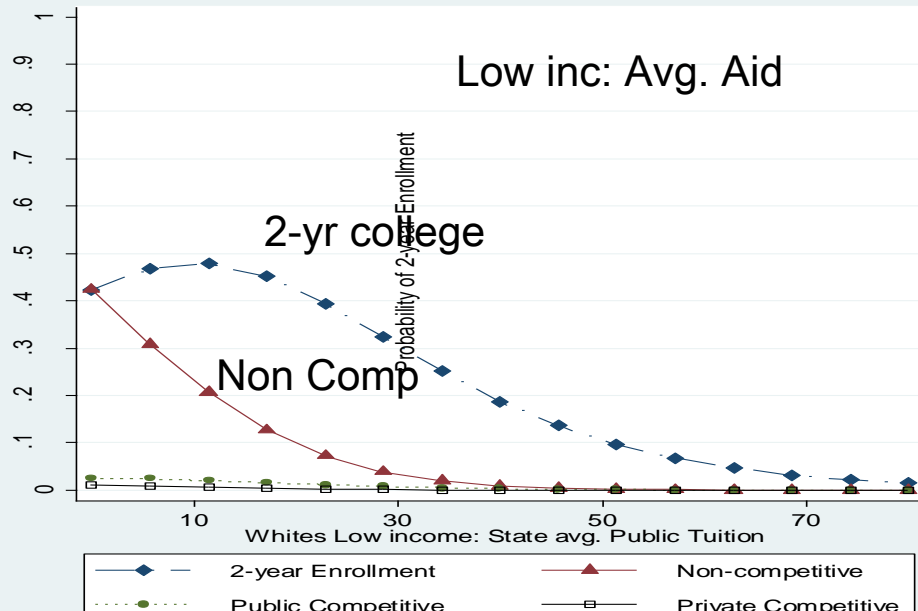
2-1. Whites Low Income: No Aid



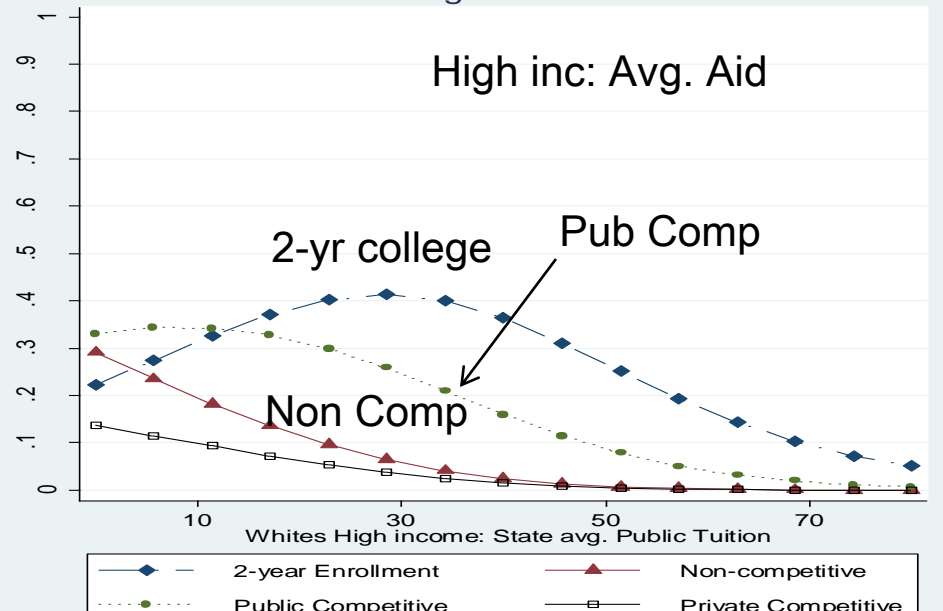
2-2. Whites High Income: No Aid



2-3. Whites Low Income: Middle Aid

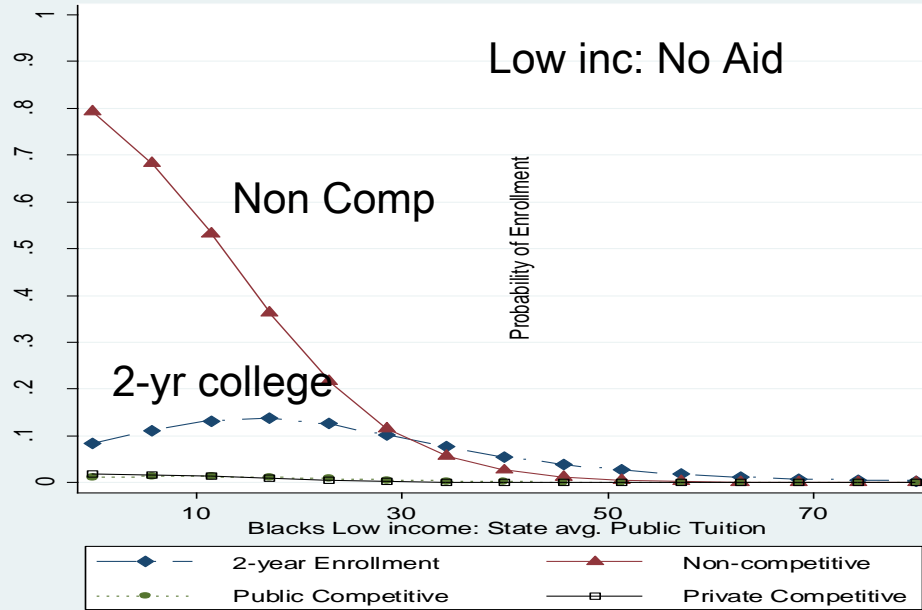


2-4. Whites High Income: Middle Aid

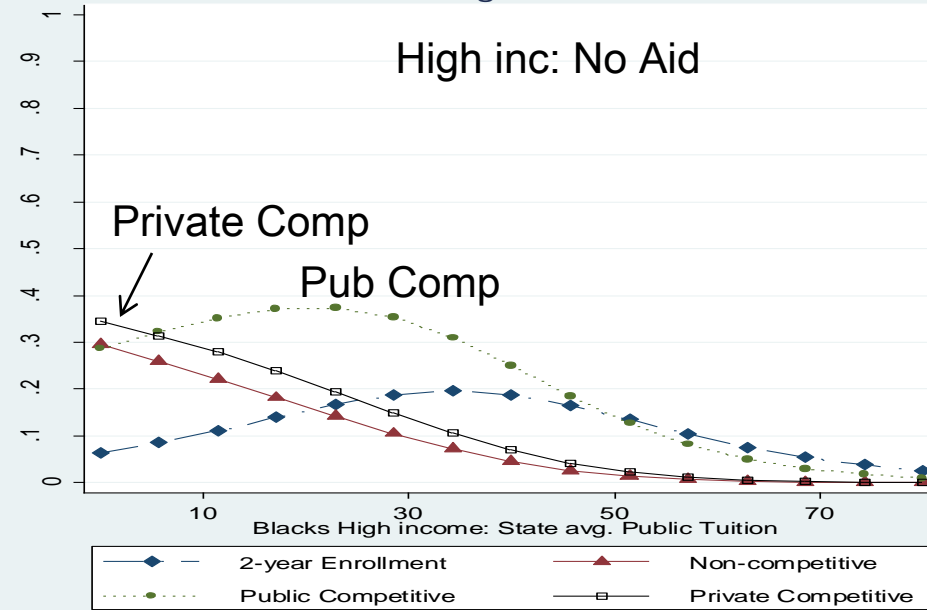


Prob. of Enrollment by Type of Institutions: African American

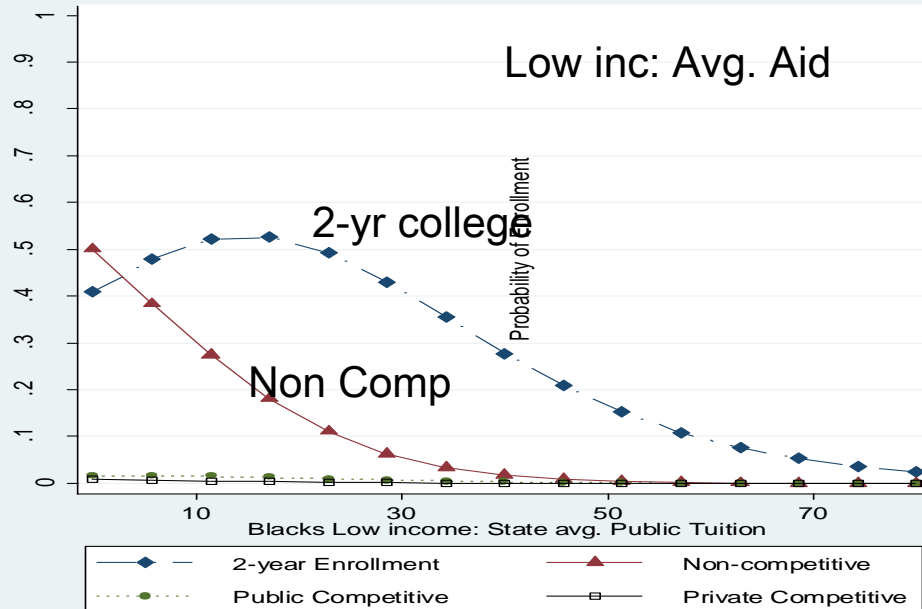
3-1. Blacks Low Income: No Aid



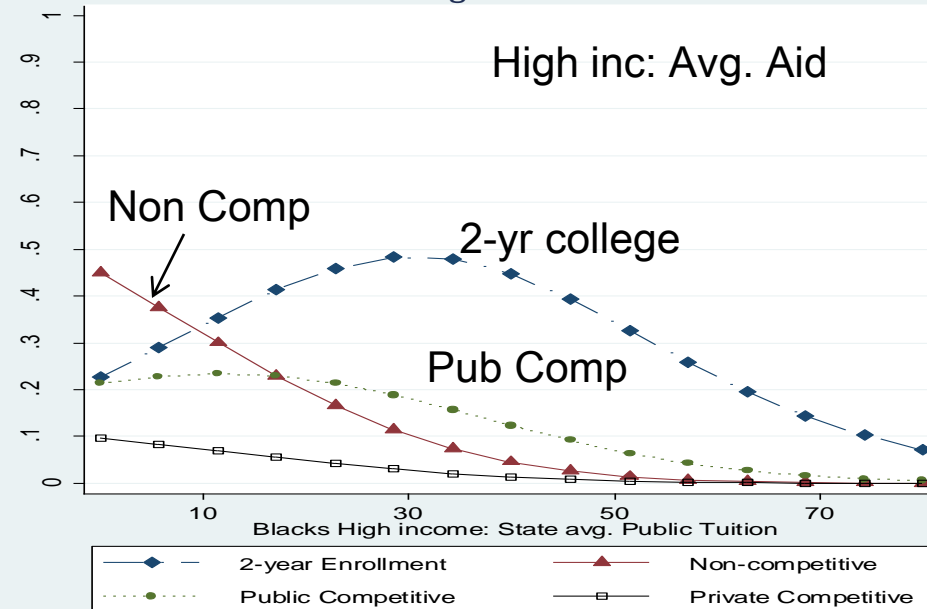
3-2. Blacks High Income: No Aid



3-3. Blacks Low Income: Middle Aid

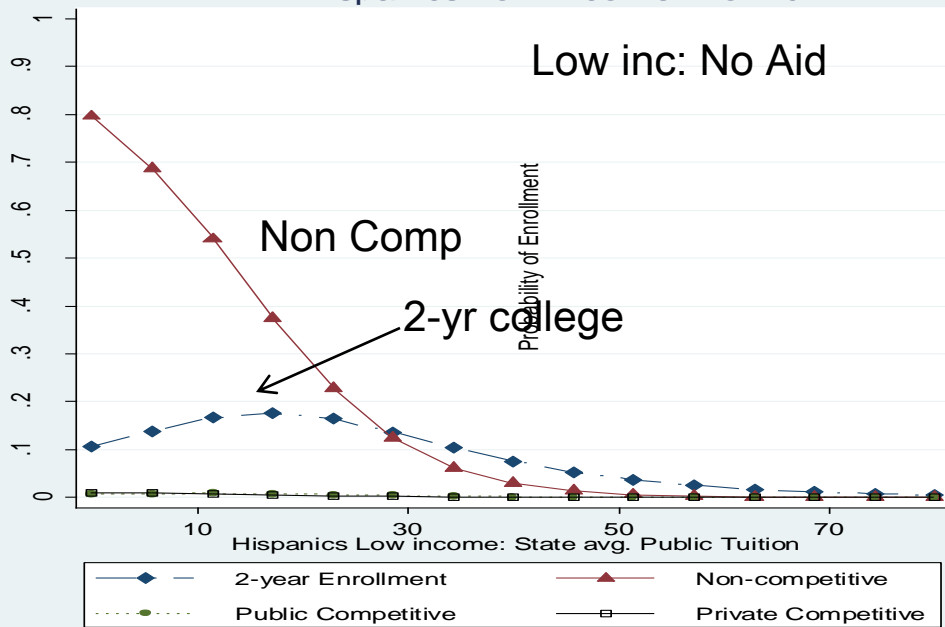


3-4. Blacks High Income: Middle Aid

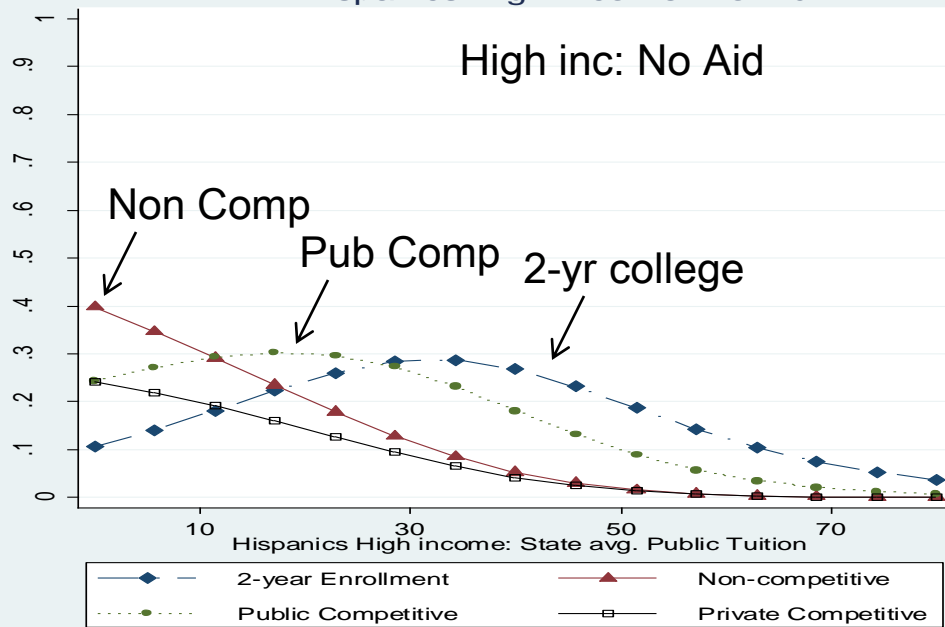


Prob. of Enrollment by Type of Institutions: Hispanic

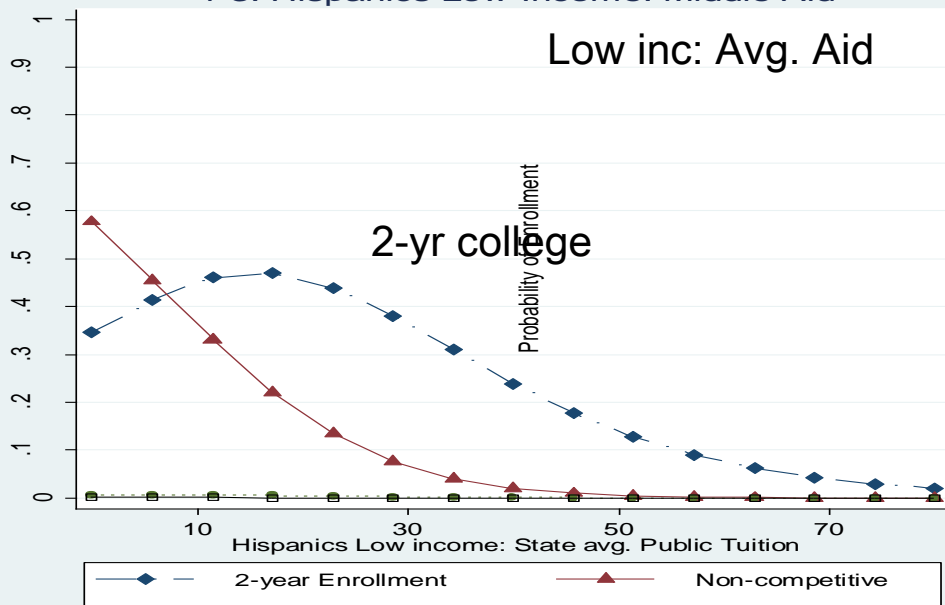
4-1. Hispanics Low Income: No Aid



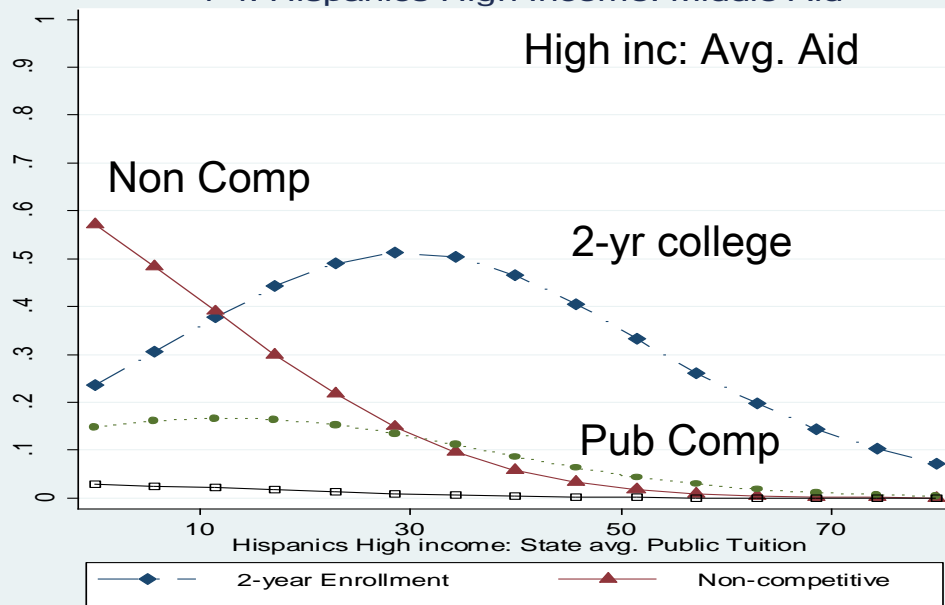
4-2. Hispanics High Income: No Aid



4-3. Hispanics Low Income: Middle Aid

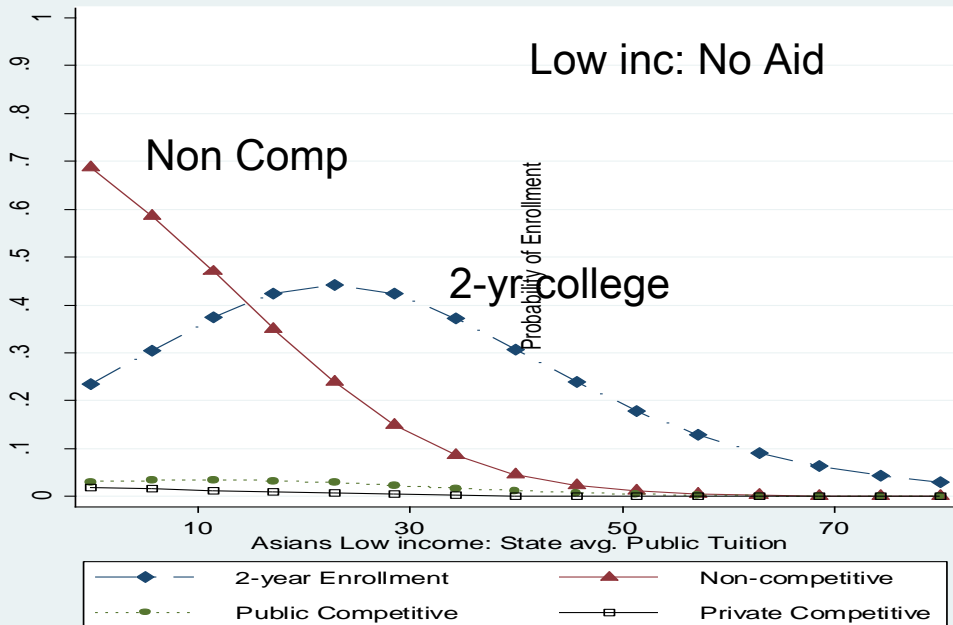


4-4. Hispanics High Income: Middle Aid

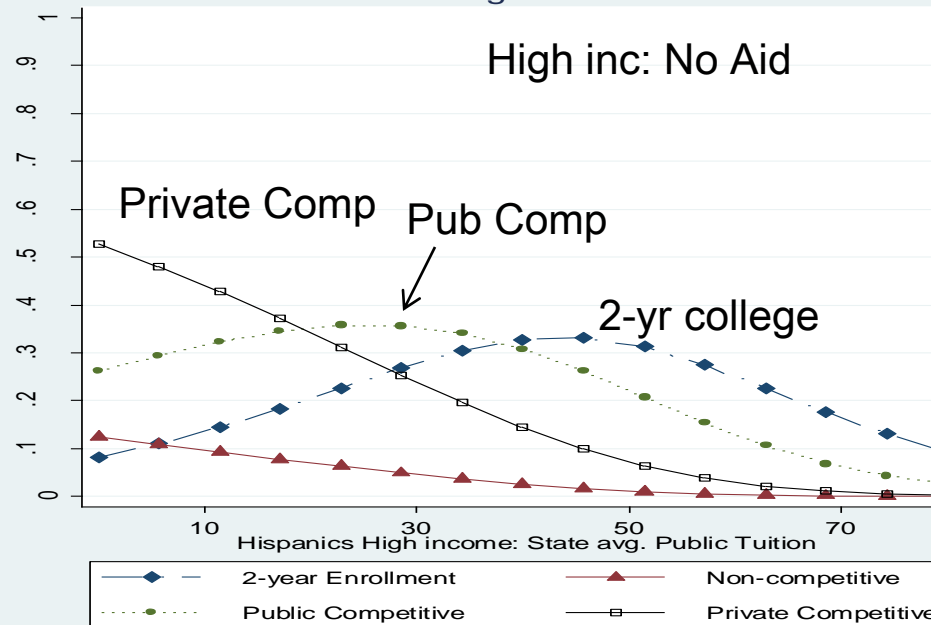


Prob. of Enrollment by Type of Institutions: Asian

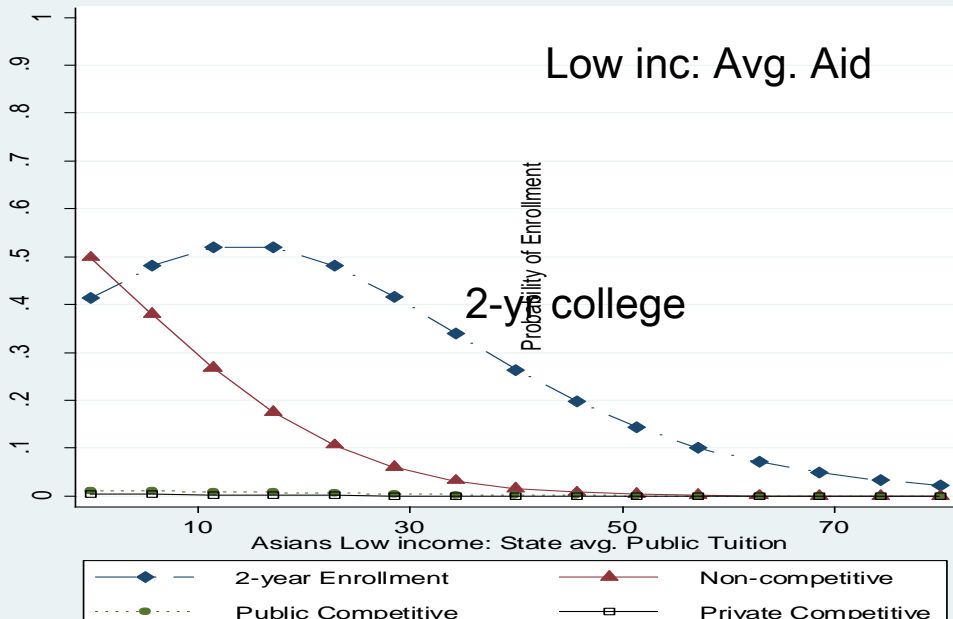
5-1. Asians Low Income: No Aid



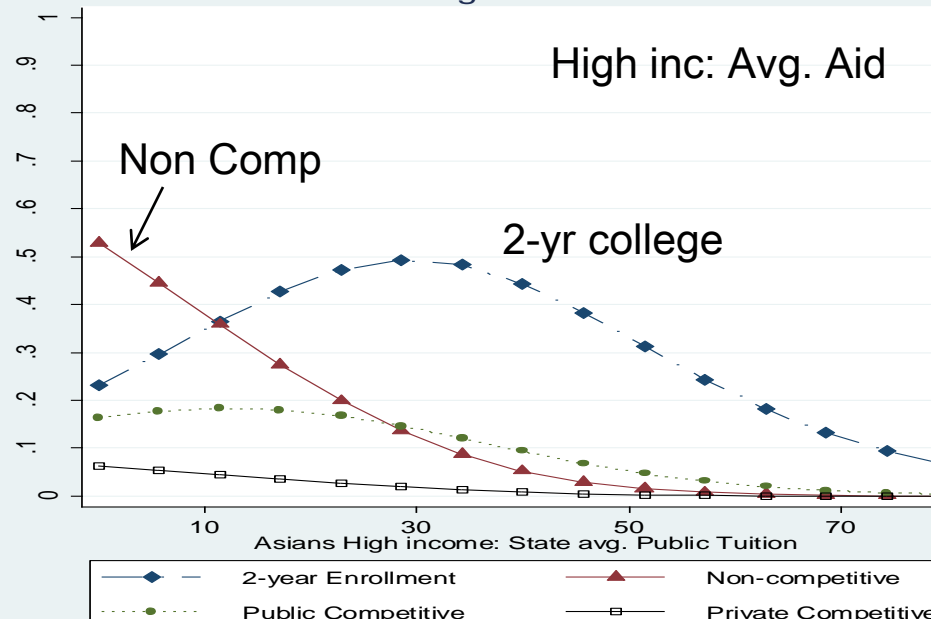
5-2. Asians High Income: No Aid



5-3. Asians Low Income: Middle Aid



5-4. Asians High Income: Middle Aid



Discussions & Implications

- Increases in state aid only promoted the prob. of enrollment in two-year or non-competitive institutions, having no substantial effect on enrollment in competitive institutions.
- African Americans and Hispanics (even among upper-income students) still lagged behind in terms of attending selective colleges even when more state aid was available.
- FA policy implemented in isolation with other postsecondary encouragement programs (e.g., providing information or academic prep) may not close socioeconomic and racial gaps in attending selective colleges.
 - Importance of comprehensive approach to expand equal access to competitive colleges