Does Enrolling in a Public Four-Year College Pay Off for Georgia Students?

Georgia State University | Andrew Young School of Policy Studies

Georgia Policy Labs

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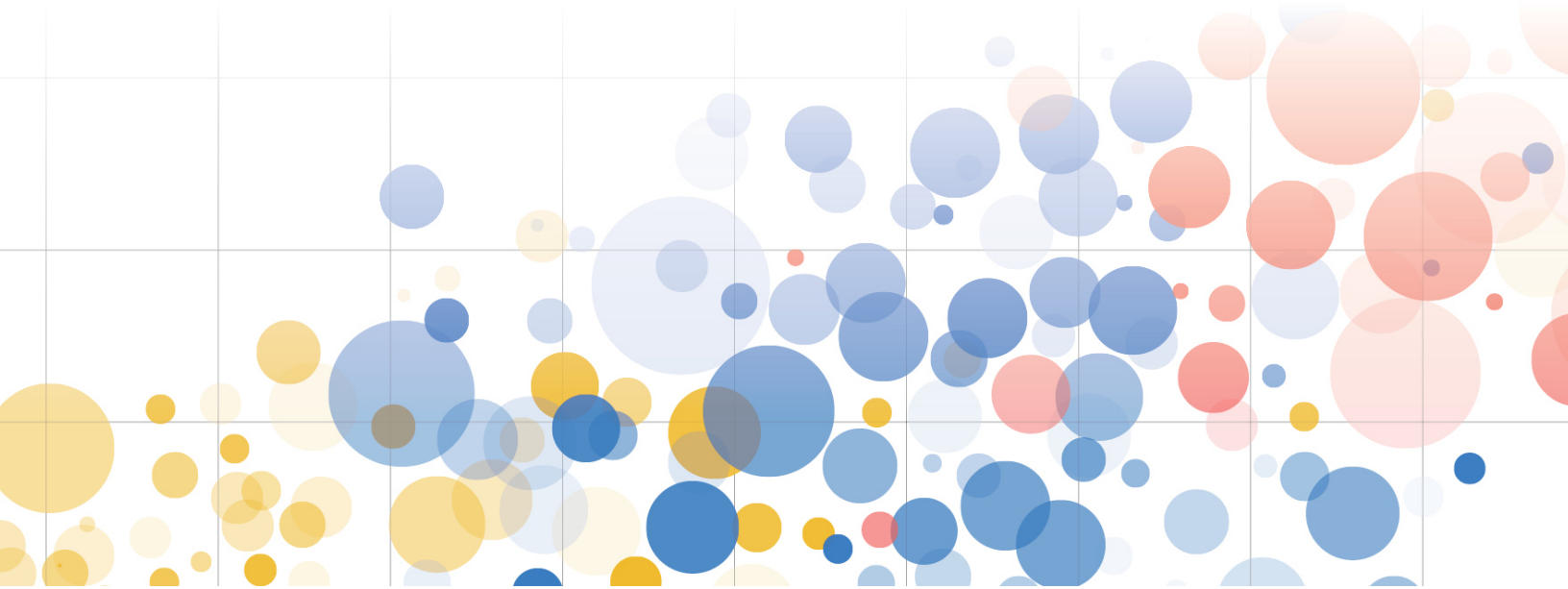

HIGHLIGHTS

- The University System of Georgia's SAT and ACT minimum admission thresholds frequently sort academically and non-academically similar students into public four-year universities versus an alternative educational path, which tend to be public two-year colleges.
- For Georgia students scoring near the SAT admission margin, starting at a public four-year university increases the chances of earning a bachelor's degree by 38 percentage points compared to similar students who enroll elsewhere.
- It also increases household incomes by an average of 20 percent (about $11,000) around age 30. This is due primarily to 40 percent increases for students who attended low-income high schools.
- Students who enroll in a public four-year university in Georgia pay higher tuition than the students at the typical two-year college but quickly recoup the additional educational expenses through higher household incomes.
- The state of Georgia recoups the additional expenditures to educate a student at a public four-year university versus students enrolling taking alternative educational path in about 10 years and receives a substantial return after 20 years through increased income tax revenue.

MOTIVATION

Two-thirds of American college students seeking bachelor's degrees enroll in public four-year colleges and universities, which are partially subsidized by state appropriations.[1] In-state residents enter these colleges with the hopes of attaining an affordable degree that will improve their future economic circumstance. But increases in tuition, often corresponding with state budget cuts, and concerns about student debt has led to discussions on the value of a college degree.[2]

Whether students or states should enroll in or subsidize, respectively, public four-year colleges and universities is both an important question and difficult one to answer. Those who choose to attend public four-year colleges and universities differ from those who choose otherwise, making this empirically challenging. Fortunately, the University System of Georgia (USG), the focus of this research brief, has minimum SAT scores admission requirements that allow us to assess the causal impact of starting at a four-year public university in Georgia on degree completion and longer-term financial outcomes for similar students.

RESEARCH QUESTIONS

1) Does enrolling in one of Georgia's public four-year universities increase students' chances of earning a bachelor's degree compared to the typical alternative educational path?
2) Does enrolling in one of Georgia's public four-year universities increase students'

[1] See Table 3 of nscresearchcenter.org/wp-content/uploads/CurrentTermEnrollmentReport-Spring-2019.pdf.

[2] See Trends in College Pricing (2019) and Trends in Student Aid (2019), available here: research.collegeboard.org/trends/trends-higher-education.

household income and overall financial health around age 30?

3) Do students and the state of Georgia financially benefit from paying the tuition and educational subsidies, respectively, by enrolling in one of Georgia's public four-year universities compared to taking the typical alternative educational path?

DATA AND METHODOLOGY

Our primary data include the over 120,000 Georgia students from the high school graduating cohorts of 2004 to 2008 who first take the SAT their senior year. Along with their SAT scores and basic demographics, these data are linked to the National Student Clearinghouse (NSC) data, which include all enrollment spells at almost all colleges and universities in the United States and degrees earned. The data are also linked to students' economic and financial outcomes from a major credit bureau, including estimated income, student loans, mortgages, state of residence, and other measures of financial health, as measured in November 2017 when students are approximately 30 years old.

We study the impacts of starting at a four-year public university in Georgia. Within the state, the USG includes 17 public four-year universities that have a minimum SAT score to be eligible for admission—400 math and 430 verbal. This minimum score requirement gives us the opportunity to compare students who just barely scored high enough for admission at a USG university to those students who just barely scored below the admission threshold, despite being, on average, similar to one another. Formally, this is implemented with a regression discontinuity design that uses students' first SAT score relative to the admission thresholds.

RESULTS

RESEARCH QUESTION 1

We find that students who enroll in a public four-year university in Georgia are 38 percentage points more likely to earn a bachelor's degree than similar students who enroll elsewhere. Most, but not all, students who do not enroll in a public four-year university enroll in a public two-year college. The remaining students enroll in private four-year colleges or no college at all. And only 10 percent of students who enroll outside a public four-year university earn a bachelor's degree, despite having nearly identical SAT scores and, presumably, aspirations and resources.

RESEARCH QUESTION 2

We find that enrollment in a public four-year university in Georgia substantially boosts household income as measured around age 30, driven largely by students from low-income high schools. In particular, enrollment in Georgia's public four-year universities increases annual household income by 20 percent, or over $11,000. This increase is the average of a 40 percent increase for students from low-income high schools and no clear increases for those from middle- and high-income high schools.

We do not find substantive differences in other economic and financial outcomes based on initial college enrollment. Notably, student loan balances as of 2017 are similar (though imprecise) for students who start at a public four-year university and those who do not, despite the former having higher average tuition. There is some evidence that more advantaged students have higher outstanding student loan balances but no evidence that they are missing more payments or in poor financial

health. We also find no differences in whether students hold a mortgage.

RESEARCH QUESTION 3

Our back-of-the-envelope calculations suggest that short-run increases in tuition costs are rapidly offset by increased incomes such that the personal return to public four-year university enrollment becomes positive and large fairly quickly. Enrollment in a public four-year university is a break-even proposition after 10 years but has a return on investment after 20 years equivalent to nearly $100,000 and a return after 30 years of over $150,000.[3]

To compute public returns for the state of Georgia, we take a similar approach, balancing Georgia's increased expenditures on college subsidies for an additional student against the increased state income tax revenue from increased earnings, accounting for students moving out of state. Notably, we find no difference in whether students live in Georgia in 2017 after beginning at a public four-year university. After 10 years the state roughly breaks even on its initial investment and after 30 years the return of that investment is close to $10,000. The large increase in income tax revenue generated by these additional bachelor's degrees more than offsets the cost of subsidizing their education at a four-year university. Accounting for additional effects of college education on co-worker productivity, sales tax revenue, and health would likely make this calculation even more favorable for the state.

CONCLUSIONS

This paper presents evidence that access to public four-year universities substantially improves students' income, particularly for those from low-income high schools. We estimate that students on the margin of admissibility to the public four-year universities who ultimately enroll see a positive return on their investment in the relatively short run. Our estimates also suggest that expanding access to the public four-year sector might be revenue-neutral or even revenue-enhancing for Georgia in the long run.

Many states explicitly ration access to the public four-year sector through required academic qualifications such as minimum ACT and SAT scores and GPAs. Others states and universities implicitly ration such access through more subjective "holistic" admissions processes. Our estimates suggest that, though such rationing is understandable given short-run budget constraints, allocating state tax dollars to increasing the number of college enrollees might improve individuals' financial health and the states' budget outlooks in the long-run.

This policy brief is based on the working paper "The Economic Impact of Access to Public Four-Year Colleges."

[3] Formally, we take students' degrees and 2017 incomes and project incomes in other years based on wage growth for Georgian's in the 2017 American Community Survey. We then get a net present value (of total net tuition and income streams) from the year students graduate high school and convert everything to 2017 dollars.

ABOUT THE AUTHORS

Jonathan Smith is an assistant professor of economics at Georgia State University and faculty affiliate with the Georgia Policy Labs. His research focuses on the behavioral and institutional factors that determine how students transition from high school to college and the consequences of those decisions. His research is published in leading economics, policy, and education journals including the *Journal of Labor Economics*, *Journal of Human Resources*, and the *Journal of Policy Analysis and Management* and has been featured in numerous media outlets, including the *New York Times*. Prior to Georgia State, he worked as a Policy Research Scientist at the College Board. Smith received his Ph.D. in economics from Boston University and a B.A. in economics from Tufts University.

Joshua Goodman is an associate professor of economics at Brandeis University, where he works as an applied microeconomist on labor economics and education policy generally and postsecondary and STEM education specifically. His work has been published in numerous peer-reviewed outlets, has been cited in multiple White House reports, and has been featured by *The New York Times*, *The Washington Post*, and National Public Radio. He is a research fellow of NBER and CESifo and serves as co-editor of the *Journal of Policy Analysis and Management* (JPAM). Prior to joining Brandeis, he was an associate professor of public policy at Harvard's Kennedy School of Government. He has a B.A. in physics from Harvard, an M.Phil. in education from Cambridge University, and a Ph.D. in economics from Columbia.

Michael Hurwitz is the executive director of Policy Research at the College Board. His current research focuses on issues of college access, enrollment, and completion, and his previous research has been featured in outlets such as *The New York Times, The Atlantic*, *The Washington Post,* and *USA Today*. He received his bachelor's degree in chemistry from Williams College, a master's degree in meteorology from Penn State, and a doctorate in quantitative policy analysis from the Harvard Graduate School of Education.

ABOUT GEORGIA POLICY LABS

The Georgia Policy Labs (GPL) is a collaboration between Georgia State University and a variety of government agencies to promote evidence-based policy development and implementation. Housed in the Andrew Young School of Policy Studies, GPL works to create an environment where policymakers have the information and tools available to improve the effectiveness of existing government policies and programs, try out new ideas for addressing pressing issues, and decide what new initiatives are promising enough to scale up. The ultimate goal is to help government entities more effectively use scarce resources and make a positive difference in people's lives. GPL contains three focus areas: The Metro Atlanta Policy Lab for Education works to improve K-12 educational outcomes in metro Atlanta; the Career and Technical Education Policy Exchange focuses on high-school-based career and technical education in multiple U.S. states; and the Child & Family Policy Lab looks at issues of the whole child and whole family with Georgia's state agencies. In addition to conducting evidence-based policy research, GPL serves as a teaching and learning resource for state officials and policymakers, students, and other constituents. See more at gpl.gsu.edu.