Abstract Title Page
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Title:

The Effects of High School Exit Exam Performance: New Evidence from Florida

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Abstract Body
Limit 5 pages single spaced.

Background/context:

As part of the trend toward "high stakes" testing in U.S. schools, 22 states have established a high school exit exam (Center on Education Policy, 2006). Also known as graduation exams, exit exams are standardized tests which students must pass in order to receive a high school diploma. Currently, more than half of public high school students in the United States face an exit exam requirement. By 2009, this number will increase to 70 percent overall, and to 80 percent for minority students (Center on Education Policy, 2004, p. 5). Despite their widespread use, exit exams are one of the most controversial policies in education. Testing opponents worry about the potential economic harm suffered by students who do not graduate as a consequence of failing the exam. The effect on socio-economically disadvantaged students attracts particular concern given their poor performance on standardized tests relative to that of their better-off peers.[1] Supporters answer these claims by arguing that exit exams motivate students to work harder precisely because they punish those who do not acquire the skills necessary to pass.

A central issue in this debate is the impact failing an exit exam has on student outcomes. Aside from being interesting in its own right, determining whether failing the test is costly for students is crucial for understanding whether exit exams confer educational benefits. The notion that exit exams motivate students would seem to true only insofar as not passing the test carries with it negative economic consequences.

The most obvious way exit exam performance could affect students is by affecting the likelihood of graduating from high school. By design, students who finish high school and complete all other requirements will not receive a diploma if they are unable to pass the exam. A subtler, but potentially more serious concern is that failing will cause some students to quit high school early. Exit exams are typically first administered in the 10^{th} or 11^{th} grade. And while opportunities to retest exist, students who initially fail may become discouraged and quit school, completing one to two years less schooling than they would have had they passed (Center on Education Policy, 2002, p. 25; Griffin and Heidorn, 1996). Given the evidence on the long-run impact of years of schooling (Card 2001), this "discouragement effect" could have large economic costs. Even without increasing the likelihood of dropping out, failing and not graduating could nonetheless be costly. For instance, high school degrees may serve as a signal of worker productivity (Spence, 1973). Not graduating could also reduce the attainment of post-secondary schooling since admission typically requires a high school credential.

Despite the economic and policy significance of this question, little is known about the effect of exit exam performance. No consensus exists even on the narrow question of whether

[1] Indeed, in Texas, the Mexican-American Legal Defense and Education Fund (MALDEF) filed a lawsuit alleging the state's exit exam had an "illegal discriminatory impact on Black and Hispanic students" (Haney, 2000). The State of Texas successfully maintained that the adverse impact suffered by minority students was legally permissible given the State's interest in promoting high educational standards (READ Institute, 2000). In addition to the MALDEF lawsuit, the Texas chapter of the National Association of Colored People filed a complaint with the Department of Education Office of Civil Rights also alleging that the state's exit exam had a discriminatory impact on Hispanic and Black students.

failing the test affects the likelihood of graduating. One challenge has been the lack of student-level data with information on both exit exam performance and student outcomes. Even with such data, isolating the causal impact of exit exam performance is difficult since students who fail are arguably less likely to graduate anyway. Moreover, the mechanism through which exit testing affects graduation rates remains unclear. This is due in part to the difficulty of distinguishing students who satisfy all other degree requirements except for passing the test from those who simply drop out (Center for Education Policy, 2004, p. 41).

This paper builds upon earlier research in Texas (Martorell, 2007) and investigates the effect of exit exam performance on students in Florida.

Purpose/objective/research question/focus of study:

This paper presents new evidence on the effects of exit exam performance on high school persistence and completion as well as on college attendance using data on students from Florida. Specifically, we examine whether initial exit exam performance causes students to drop out of school, changes the likelihood of graduating from high school, and affects the probability of enrolling in college. We also examine how these effects vary by student subgroups such as ethnicity, prior academic achievement and socioeconomic status.

Setting:

This study uses data on Florida high school students who first took the exit exam between the spring of 2001 through 2004. During this time period, students were required to pass the Florida Comprehensive Assessment Test (FCAT) in order to receive a regular high school diploma. The FCAT consists of two sections: math and reading. Both need to be passed to meet the graduation requirement. Students who fail any subject of the test can retake it. The test is offered three times a year; once in spring, once in the fall and once in the summer. In our sample, one-third of students fail the reading test on the first attempt and one quarter fail the math test on the first attempt.

Population/Participants/Subjects:

We use data on all Florida high school students during the years of the study. Some students are not required to take the FCAT because of special education exemptions. Therefore, we exclude any students for whom we do not find exit exam records. In addition, we limit the sample to students who first took the test in 10^{th} grade (when they are first eligible to take the test) and who have valid scores for both subjects of the test.

Our final sample has over 500,000 first-time exit exam takers.

Intervention/Program/Practice:

The intervention examined in this paper is whether or not a student fails the exit exam. We are mainly concerned with understanding how student outcomes are affected by passing or failing the exit exam. Since all of our data is from a time period where the exit exam requirement was imposed across the state, this paper does *not* attempt to estimate the effect of having an exit exam policy. Instead, these results will be informative about whether students who fail are adversely affected by their exit exam performance, and if, so in what ways.

Research Design:

Students who fail the exit exam are likely to differ from students who pass in a number of crucial ways. These differences make it difficult to attribute any differences in outcomes to exit exam performance per se. To circumvent this issue, we use a regression discontinuity (RD) research design (Imbens and Lemieux, 2007). The idea behind this approach is that students who are very close to passing or failing will differ in all ways aside from their passing status. Thus, any differences in later outcomes will be due to passing status and not some unobserved confounding factor.

A limitation of this approach is that it will not directly address the effect for students far away from the cutoffs. In particular, there may be much larger adverse effects of failing for those students who fail very badly. Nonetheless, our results will be informative about whether there is a "pure" effect of failing. In addition, students at the margin are clearly policy relevant because they are the ones who school administrators and officials deem to be at the cusp of meeting the standard set for high school graduation.

In ongoing work, we are implementing a new econometric procedure developed by one of the coauthors on the study (Yang, 2008) that identifies treatment effects in a RD context away from the cutoff. Although these methods require much stronger assumptions to be valid than a conventional RD estimate, we will have some new evidence on whether the effects are likely to be very different for students who are far below the passing cutoff.

Data Collection and Analysis:

This paper uses data from the Florida Department of Education (DoE). They have provided us with data files that cover enrollment, FCAT scores, high school completion and enrollment in the public postsecondary schooling system in Florida. Linkages across data files can be made on the basis of an individual's encrypted student ID number, which enables researchers to construct longitudinal data files.

These data files allow us to construct detailed measures of student persistence and success in high school. One such measure is whether a student enrolls in 12^{th} grade. A second is whether a student is officially deemed to be a drop out. Neither is a perfect measure of true dropping out. The first will overstate the true dropout rate to the extent that students leave Florida but are enrolled in a different state (or at a private school in Florida). The second will understate drop outs if there is underreporting of drop outs on the part of school administrators. Therefore, we will examine the results using each measure to see if they are consistent with each other. We will also create measures of high school graduation. The DoE files distinguish diploma type, so we will be able to examine the receipt of a standard diploma (which requires the passage of the FCAT) from certificates of completion which are given to students who do not pass the FCAT, but satisfy the other graduation requirements. Finally, we will use the information on postsecondary schooling to examine whether students who fail the FCAT are less likely to enroll in a public college or university in Florida. Although this outcome will miss students who enroll out of the state public college system, Florida is a large state with an extensive system of postsecondary schooling options, so we anticipate this will be a minor issue.

Findings/Results:

Our initial results indicate that students who initially fail the exit exam are somewhat less likely to graduate from high school. Figure 1 shows the fraction of students who graduate as a function of the FCAT score. The FCAT score is rescaled to be equal to zero at the passing cutoff. In addition, since passing both sections is required to meet the testing requirement, the minimum of the math and reading scores determines whether the entire exam was passed. The evidence in Figure 1 shows that there is a small but discernible difference in the graduation rate at the passing cutoff. Students who pass are about 2 percentage points more likely to graduate than are students who fail. How much of this effect is due to "discouragement" (e.g., students dropping out in response to failing) and how much is due to a mechanical effect whereby diplomas are denied to students who cannot pass the test? This question is examined in Figure 2 which shows the percent of students who enroll in school 2 years after initially taking the test (which would be 12^{th} grade for these students, barring any grade retention). Again, there is a small but detectable difference in the persistence rate. Students who pass the test are more likely to persist for 2 more years than are students who failed. The magnitude is about half as large as the magnitude in the discontinuity in the graduation rates, suggesting that some but not all of the effect on graduation rates is due to students not being able to pass the exit exam, while some is due to a behavioral response to failing the exam.

Conclusions:

Preliminary findings from this study suggest that students who fail the initial exit exam attempt in Florida are less likely to graduate from high school and are more likely to leave school before 12^{th} grade. Although these results are statistically significant, it is important to keep in mind that the magnitude of these effects is modest – the reduction in the graduation rate is slightly larger than 2 percentage points. On the other hand, the nature of our research design implies that our findings are pertinent for students scoring close to the passing cutoff. With multiple retest opportunities, the effects for students at the margin on the initial attempt are conceivably much different than they are for students doing very poorly on their fist try. In future work we will attempt to investigate this question further.

Appendixes

Appendix A. References

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Appendix B. Tables and Figures

Figure 1. Fraction Graduating from High School by Exit Exam Score

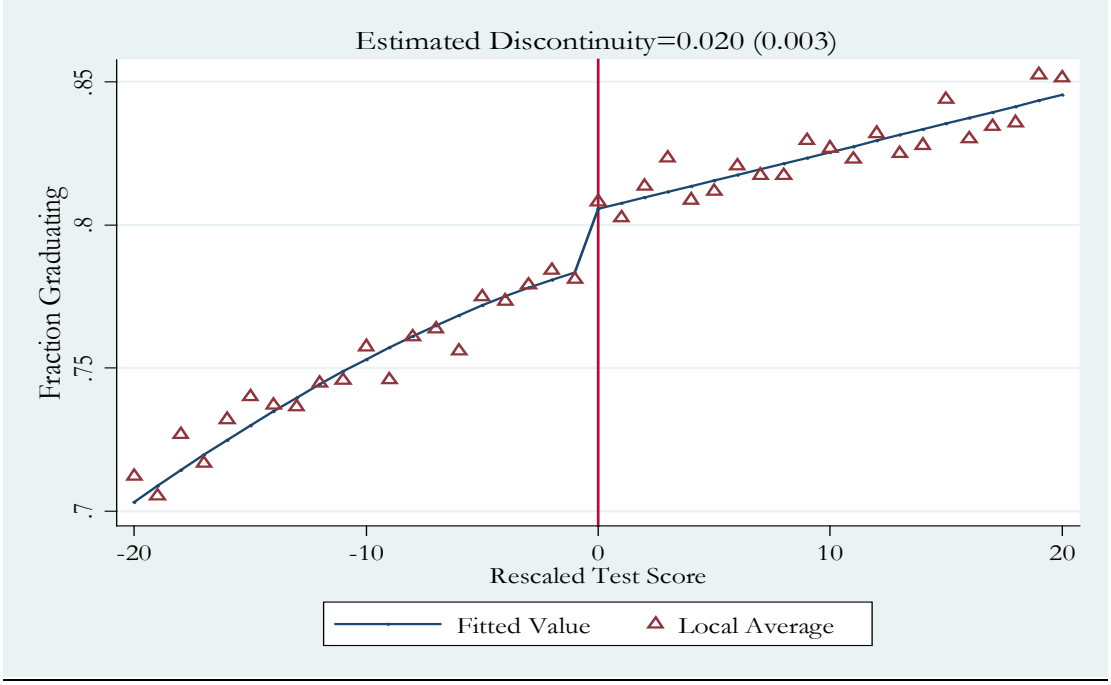

Figure 2. Fraction Leaving High School Before 12th Grade by Exit Exam Score