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Technical Appendix to

DO STUDENTS BENEFIT FROM ATTENDING BETTER SCHOOLS? EVIDENCE FROM RULE-BASED STUDENT ASSIGNMENTS IN TRINIDAD AND TOBAGO

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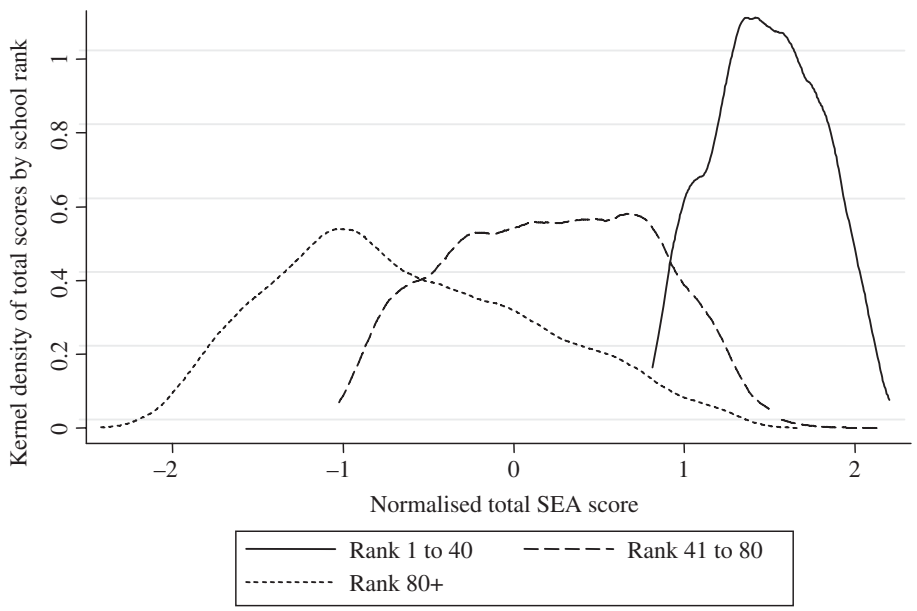

Fig. A1. *Distribution of Total SEA Scores by School Rank*

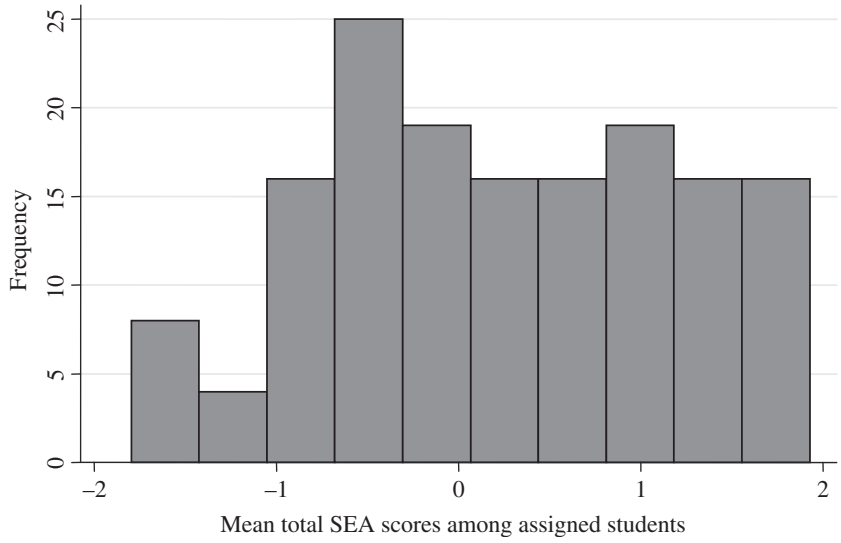

Fig. A2. *Distribution of Mean SEA Scores Across Actual School Assigents*

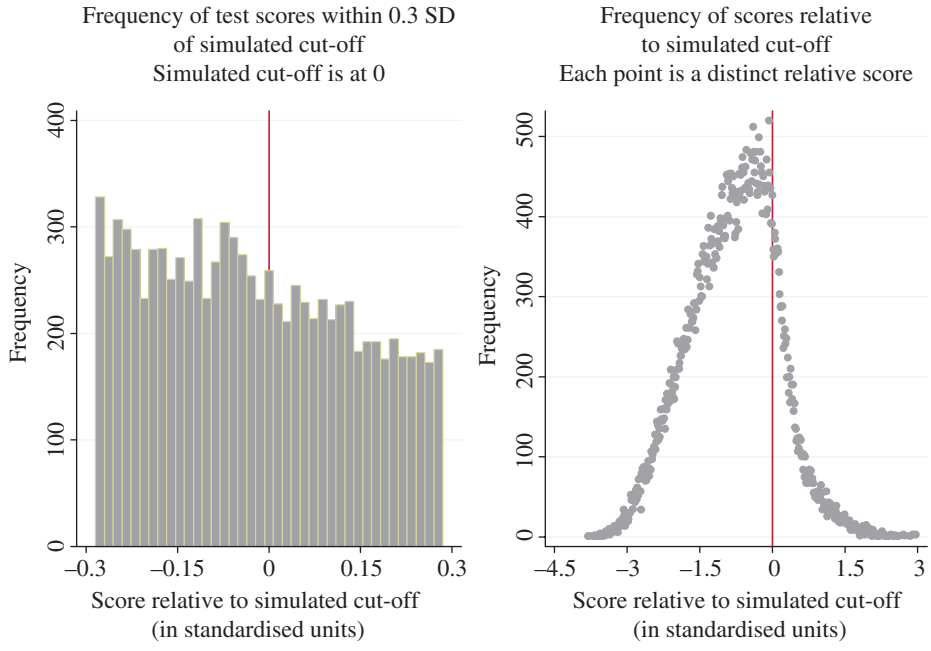

Fig. A3. *Test for Smoothness Through the Simulated Cut-Offs*

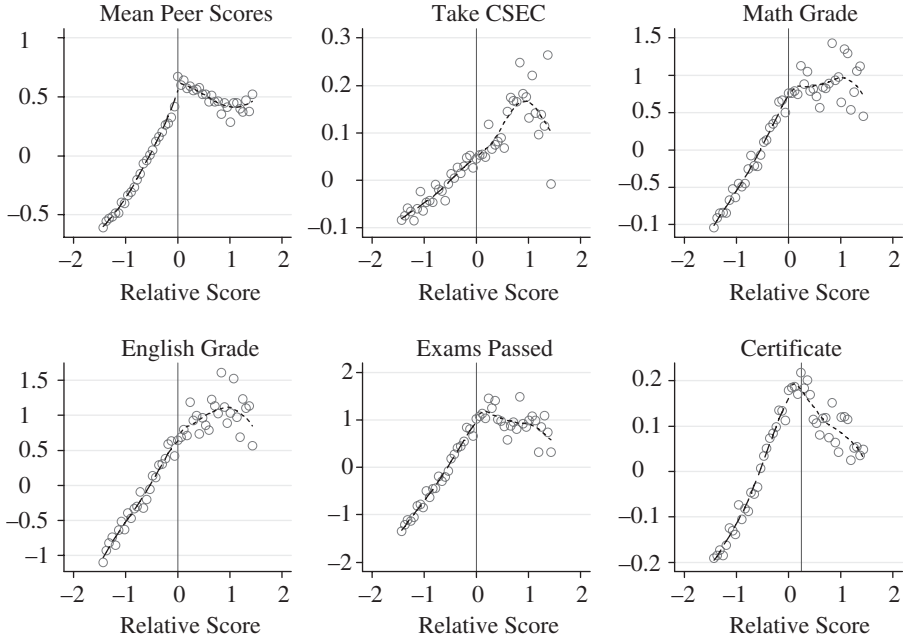

Fig. A4. *Visual Evidence of the Discontintuity at the Simulated Cut-off*
Note. Shows the outcome for each standard normalised relative SEA score bin. Bins are four raw points wide (the standard deviation of the raw scores is 67 points). This Figure shows residuals of the outcomes after taking out an intercept for each cut-off. The regression models estimated include cut-off fixed effect and are not subject to composition bias. This Figure is for illustrative purposes only.

Table A1
Discontinuity Based 2SLS Results by Gender

	1	2	3	4	5	6	
	Take	Take	Passes	Passes	Cert.	Cert.	Obs.
Male							
Mean Peer Scores	−0.006	−0.13	0.72	0.101	0.153	0.075	13,366
	(0.063)	(0.109)	(0.366)*	(0.503)	(0.071)*	(0.0909)$^{+}$	
Female							
Mean Peer Scores	0.046	−0.025	1.171	1.03	0.228	0.171	17,021
	(0.055)	(0.074)	(0.315)**	(0.443)*	(0.064)**	(0.078)*	
Polynomial order of total SEA	2	4	2	4	2	4	

$^{+}$ significant at 10%; * significant at 5%; ** significant at 1%
Robust standard errors in parenthesis are adjusted for clustering at the school level. The discontinuity model is based on observations with SEA scores within 1.5 standardised deviations of the simulated cut-off. All discontinuity models include preferred school cut-off fixed effects and the quartic of the total SEA score.

Table A2

Robustness of Discontinuity Estimates to Bandwidth and Smooth Functions of the Total Score

The Coefficient on Mean Peer SEA scores in Different Discontinuity Models are reported

		Quartic of total SEA			Quadratic of total SEA		
Outcome	Bandwidth[†]	Coef.	se_1	se_2	Coef.	se_1	se_2
Take CSEC	0.3	−0.998	(1.443)	(1.156)	−0.111	(0.160)	(0.160)
Take CSEC	0.45	−0.115	(0.209)	(0.233)	−0.104	(0.086)	(0.087)
Take CSEC	0.75	−0.015	(0.099)	(0.098)	−0.072	(0.053)	(0.052)
Take CSEC	1.5	−0.074	(0.058)	(0.050)	0.022	(0.047)	(0.032)
Take CSEC	3	0.036	(0.052)	(0.037)	0.056	(0.052)	(0.027)*
Take CSEC	all	0.051	(0.057)	(0.038)	0.058	(0.054)	(0.028)*
Exams Passed	0.3	3.158	(6.866)	(5.878)	0.138	(1.000)	(0.961)
Exams Passed	0.45	0.64	(1.448)	(1.403)	0.452	(0.614)	(0.516)
Exams Passed	0.75	0.449	(0.698)	(0.585)	0.621	(0.372)[+]	(0.299)*
Exams Passed	1.5	0.643	(0.355)[+]	(0.284)*	1.003	(0.270)**	(0.179)**
Exams Passed	3	0.77	(0.299)**	(0.211)**	1.008	(0.286)**	(0.156)**
Exams Passed	all	0.741	(0.306)*	(0.212)**	0.989	(0.296)**	(0.157)**
Certificate	0.3	0.179	(0.950)	(0.864)	0.062	(0.193)	(0.166)
Certificate	0.45	0.113	(0.282)	(0.245)	0.101	(0.108)	(0.089)
Certificate	0.75	0.11	(0.122)	(0.101)	0.137	(0.069)*	(0.050)**
Certificate	1.5	0.134	(0.064)*	(0.048)**	0.202	(0.057)**	(0.030)**
Certificate	3	0.158	(0.066)*	(0.036)**	0.211	(0.063)**	(0.027)**
Certificate	all	0.149	(0.070)*	(0.036)**	0.21	(0.063)**	(0.027)**

[+] significant at 10%; * significant at 5%; ** significant at 1%

[†] The bandwidth is the distance of students' scores relative to the cut-off used in the estimation sample. For example, the model estimated with a bandwidth of 1.5 includes students with SEA scores that lie within 1.5 standard deviations of the cut-off. The bandwidth is denoted in standard deviation units of the total SEA score. Robust standard errors in parenthesis are adjusted for clustering at the school level and student level for se_1 and se_2, respectively. All discontinuity models control for the preferred school cut-off fixed effects.

Appendix A. Visual Evidence of a Discontinuity in Outcomes

To provide visual evidence of a discontinuous shift in outcomes right around the simulated cut-off, I pool all the cut-offs and collapse the data into one cut-off where each student's score is presented relative to the cut-off for the preferred school. In the regression analysis all models include cut-off fixed effects so that comparisons are made between students just above and just below *the same cut-off*. However, *for purely illustrative purposes,* if one were to plot outcomes for each relative score based on the pooled data, one may not compare students just above and just below the same cut-off. For example, if the top score is 650 and the top ranked school has a cut-off score of 630, then there will be no students with a relative score of 50 at the top ranked school. In contrast, a school with a cut-off score of 500 may have several applicants with relative scores of 50 (absolute score of 550). This example illustrates that as one has a higher relative score, one actually is likely to have a lower absolute score if one does not limit one's analysis to students relative to the same cut-off. As such, in a plot of outcomes on the relative score with pooled data, outcomes should decline above the cut-off at higher relative scores (since they represent lower absolute scores). *I reiterate that all regression analysis is based on within cut-off comparisons so this only refers to the visual evidence from the pooled sample.*

Another important feature to note is what happens below the cut-off. Students who just miss the cut-off for a preferred school are likely to be assigned to a less preferred school with similar mean peer quality. As such, since students who miss the cut-off for a preferred school are assigned to less preferred schools and those with higher SEA scores will be assigned to 'better'

schools on average, there is a natural positive relationship between one's relative score and mean peer quality below any given cut-off. As such, while the likelihood of attending a preferred school may increase dramatically below and above any given cut-off, the actual difference in peer quality below and above a cut-off, while sharp, will not be as dramatic. In sum, due to (1) a negative correlation between the relative score and the absolute score above a cut-off in the pooled data, and (2) the fact that even below a cut-off there is a positive relationship between peer quality and the relative score, one would expect to see a positive relationship between outcomes and the relative score to the left of a cut-off, and a negative relationship between outcomes and the relative score to the right of a cut-off (in the pooled data).

To provide some visual evidence of a discontinuity, Figure A4 shows the residuals after taking out a fixed effect for each simulated cut-off. Discontinuities are evident in all outcomes except CSEC taking. This is consistent with the regression analysis using both the discontinuity design and the difference-indifference instrumental variables design.