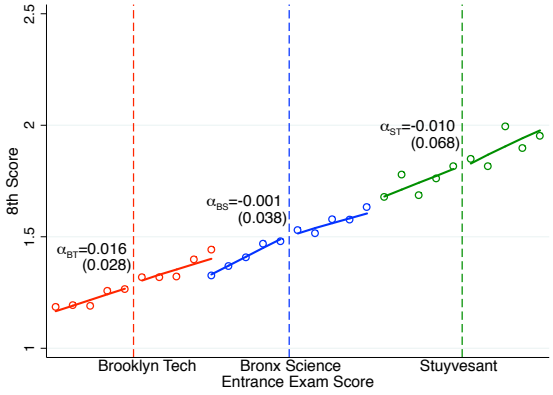
The Impact of Attending a School with High-Achieving Peers: Evidence from the New York City Exam Schools
Web Appendix

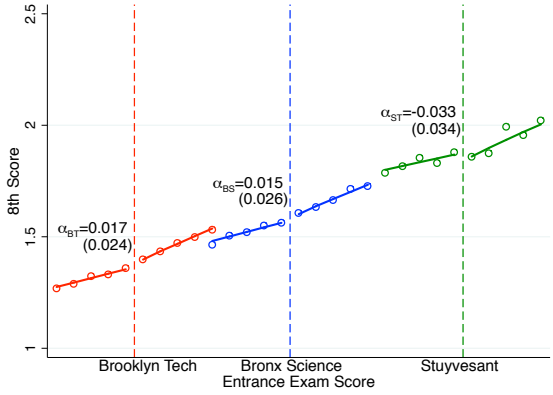
July 2013

Appendix Figure 1
Exam School Eligibility and Baseline Characteristics

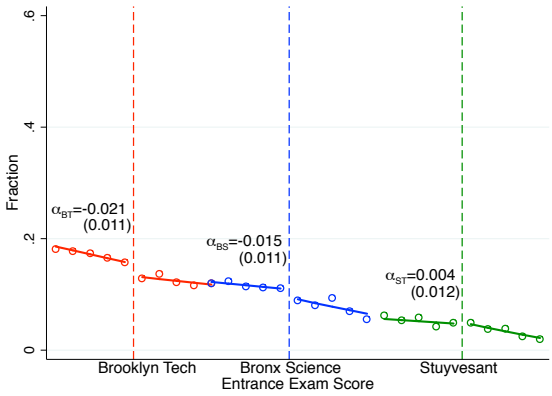
Appx. Figure 1A: Baseline ELA Score



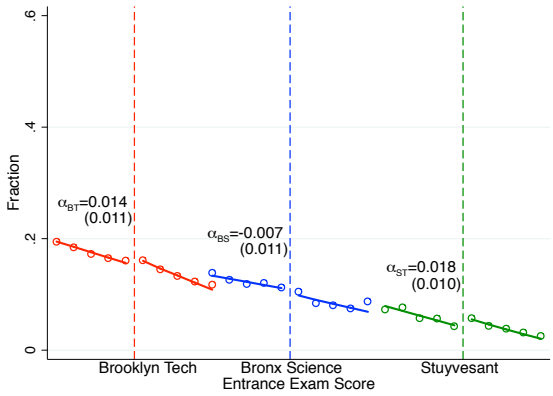
Appx. Figure 1B: Baseline Math Score



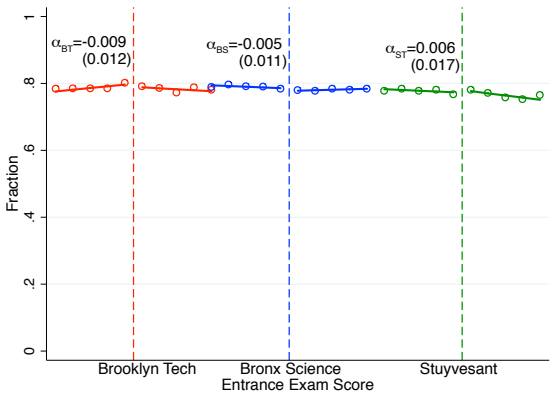
Appx. Figure 1C: Black



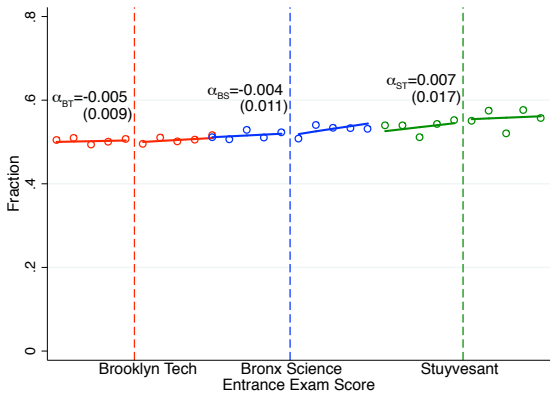
Appx. Figure 1D: Hispanic



Appx. Figure 1E: Public Middle School

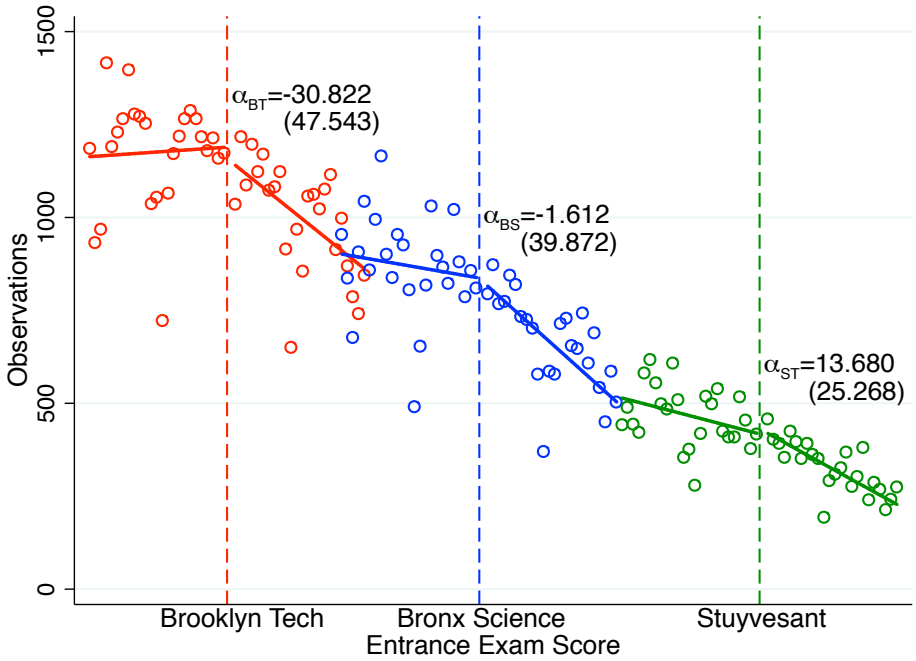


Appx. Figure 1F: Male



Notes: These figures plot exam school eligibility and baseline characteristics of test takers. The sample for test score outcomes includes exam school applicants in the 2002 - 2013 high school cohorts. The sample for ethnicity includes exam school applicants in the 2008 - 2013 high school cohorts. The sample for gender and middle school type includes exam school applicants in the 1994 - 2013 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. See text for additional details.

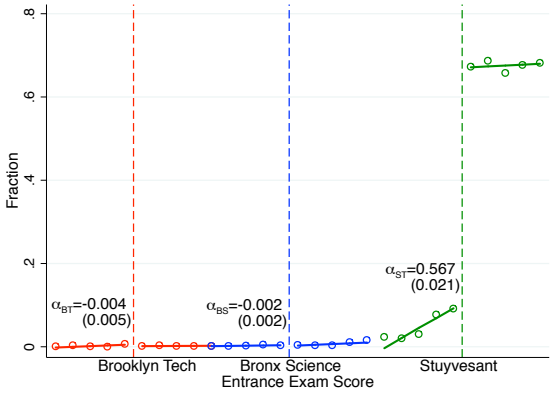
Appendix Figure 2
Exam School Eligibility and the Number of Test Takers



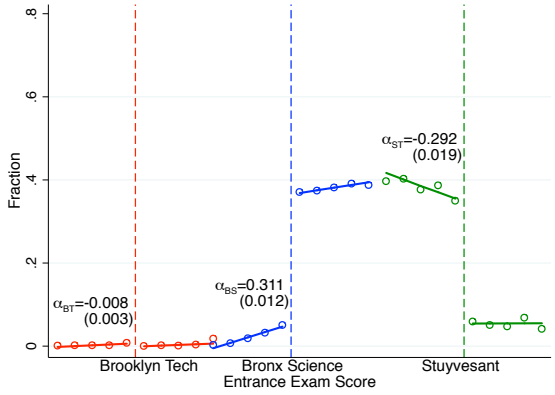
Notes: This figure plots exam school eligibility and the number of test takers. The sample includes exam school applicants in the 1994 - 2013 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. See text for additional details.

Appendix Figure 3
Exam School Eligibility and Graduation from Each School

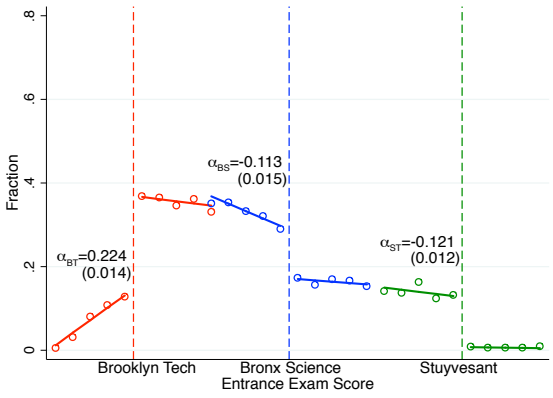
Appx. Figure 3A: Stuyvesant



Appx. Figure 3B: Bronx Science



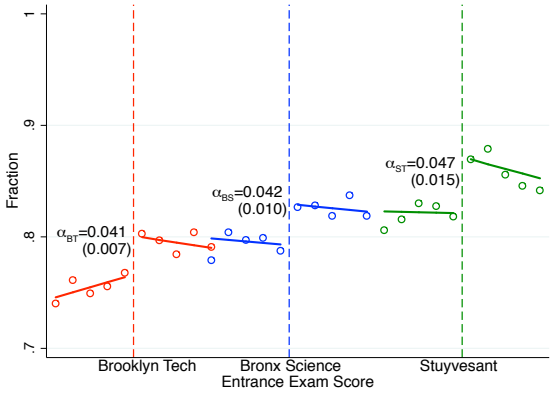
Appx. Figure 3C: Brooklyn Tech



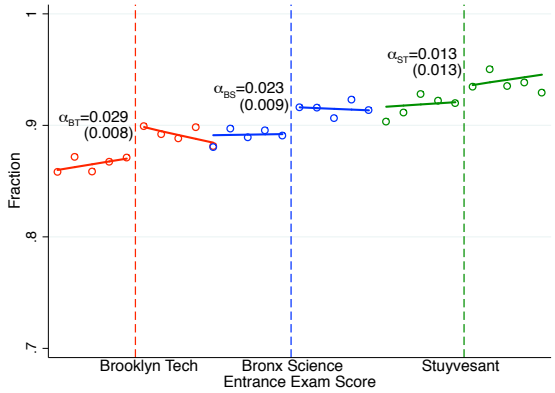
Notes: These figures plot exam school eligibility and the fraction of students graduating from each exam high school. The sample includes exam school applicants in the 2002 - 2009 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. The dependent variable in each figure is an indicator for graduating from the indicated high school. See text for additional details.

Appendix Figure 4
Exam School Eligibility and Enrollment in Any NYC Public High School

Appx. Figure 4A:
All Applicants



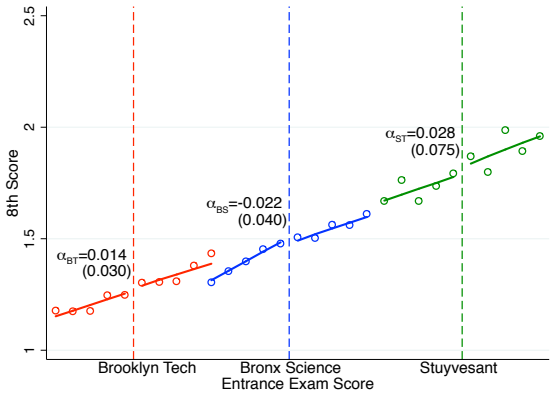
Appx. Figure 4B:
Applicants from Public MS



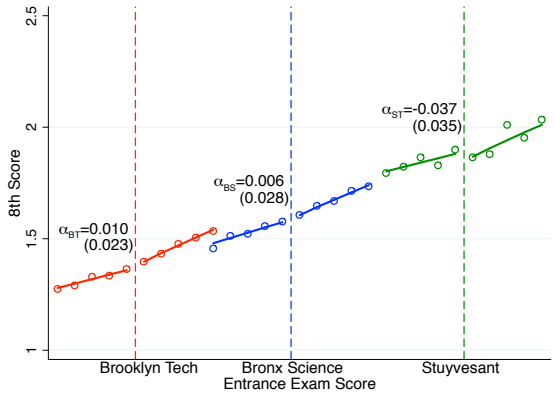
Notes: These figures plot exam school eligibility and the fraction of students enrolling in a NYC public high school. The sample for 1A includes exam school applicants in the 2002 - 2012 high school cohorts. The sample for 1B includes exam school applicants in the 2002 - 2012 high school cohorts who attended a NYC public middle school. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. See text for additional details.

Appendix Figure 5
Baseline Characteristics of Students Enrolling in Any NYC Public High School

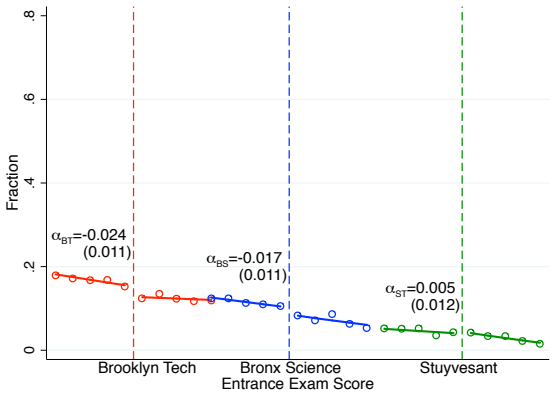
Appx. Figure 5A: Baseline ELA



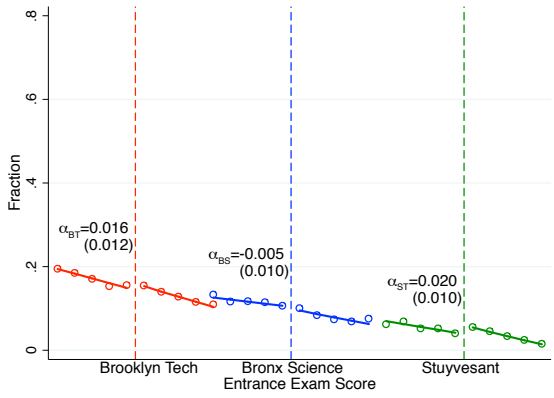
Appx. Figure 5B: Baseline Math



Appx. Figure 5C: Black



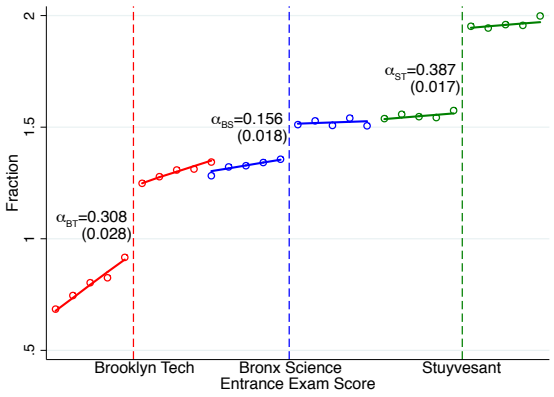
Appx. Figure 5D: Hispanic



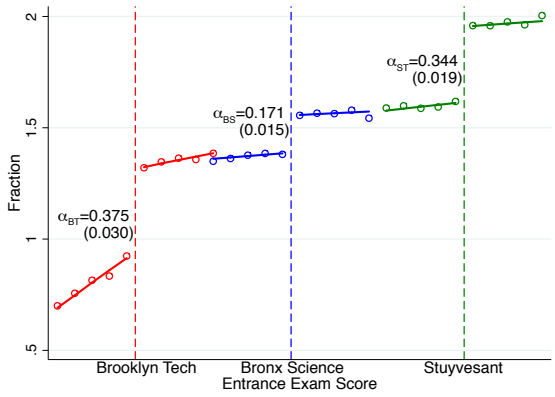
Notes: These figures plot exam school eligibility and the baseline characteristics of students enrolling in a NYC public high school. The sample for test score outcomes includes exam school applicants in the 2002 - 2012 high school cohorts. The sample for ethnicity outcomes includes exam school applicants in the 2008 - 2012 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. See text for additional details.

Appendix Figure 6
Exam School Eligibility and Baseline Peer Characteristics in Freshman Courses

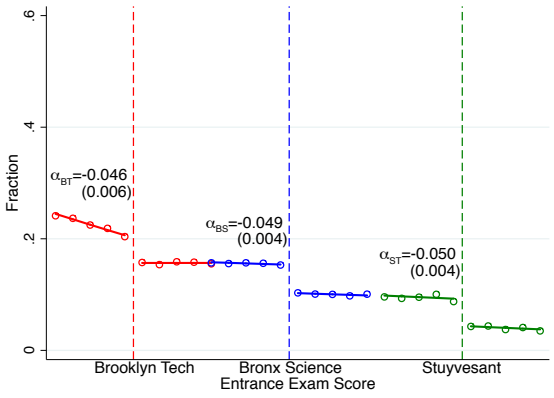
Appx. Figure 6A: Peer ELA Scores



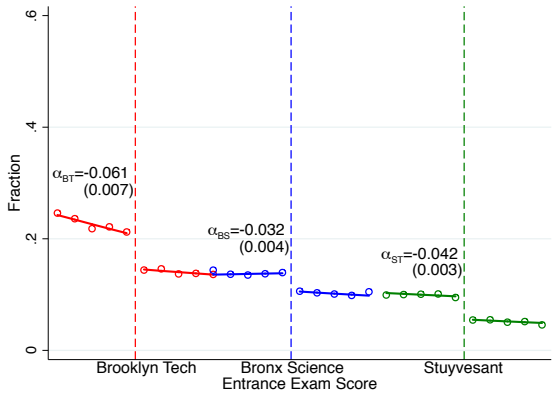
Appx. Figure 6B: Peer Math Scores



Appx. Figure 6C: Proportion Black



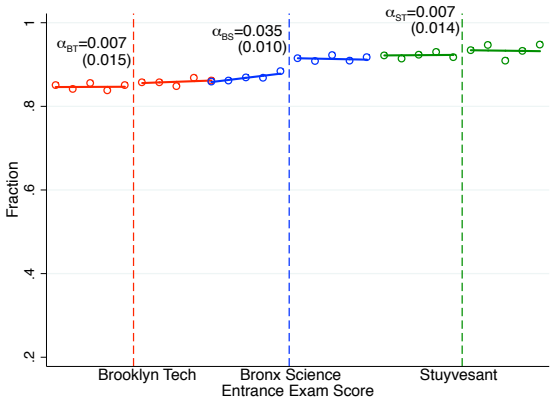
Appx. Figure 6D: Proportion Hispanic



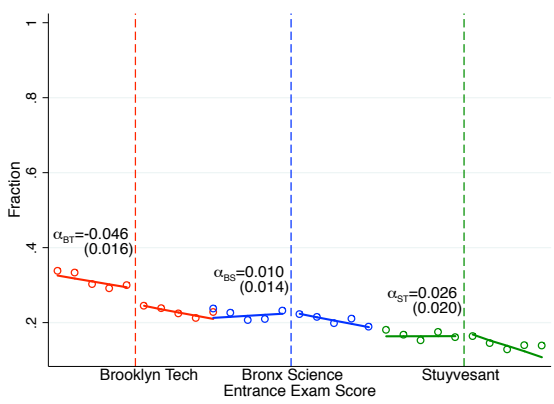
Notes: These figures plot exam school eligibility and average peer characteristics in a student's freshman year courses. The sample includes exam school applicants in the 2002 - 2006 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. The dependent variable for each regression is the average peer characteristic in the student's freshman year courses. See text for additional details.

Appendix Figure 7
Exam School Eligibility and High School Graduation

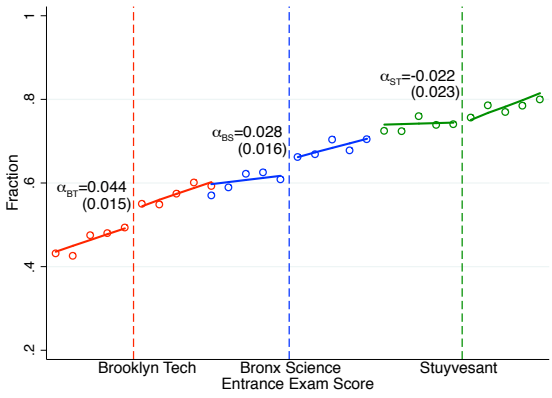
Appx. Figure 7A: Any Diploma



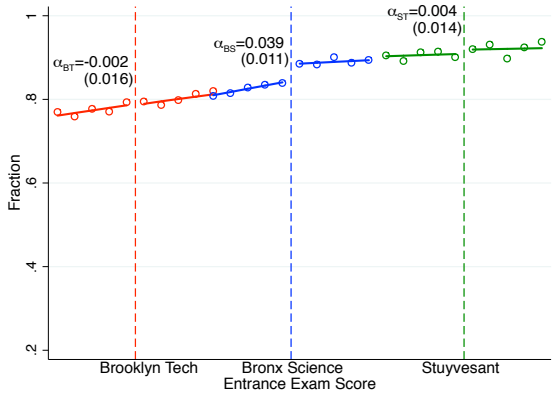
Appx. Figure 7B: Regents Diploma



Appx. Figure 7C: Adv. Regents Diploma



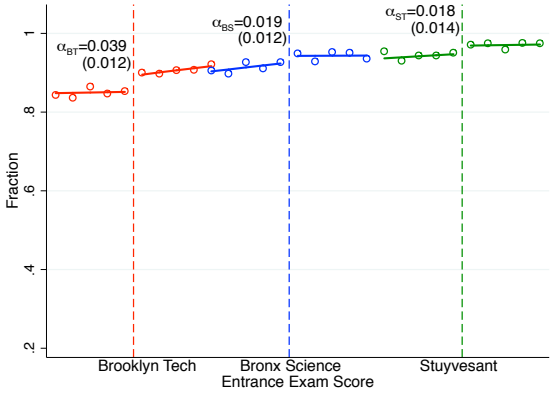
Appx. Figure 7D: Regents or Adv. Regents



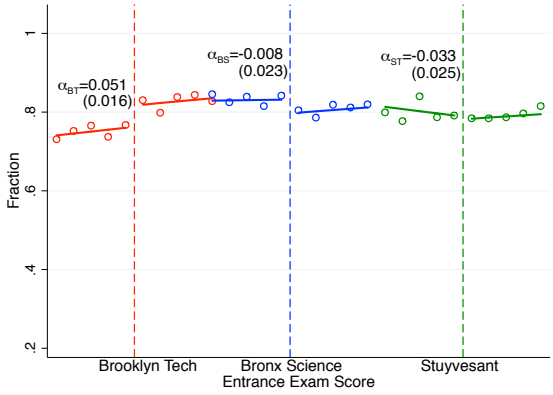
Notes: These figures plot exam school eligibility and high school graduation. The sample includes exam school applicants in the 2002 - 2009 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. The dependent variable for each regression is an indicator equal to one if the student graduates from a NYC public high school with the indicated diploma. See text for additional details.

Appendix Figure 8
Exam School Eligibility and Regents Completion

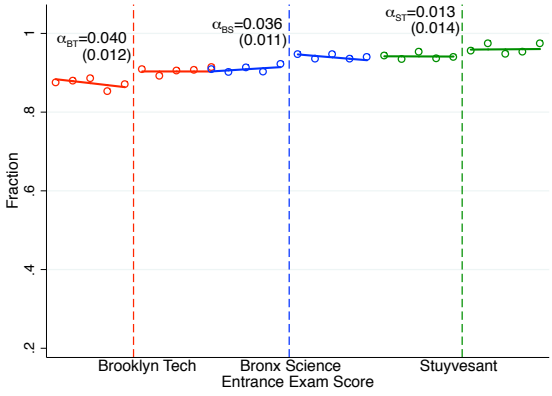
Appx. Figure 8A: Global History



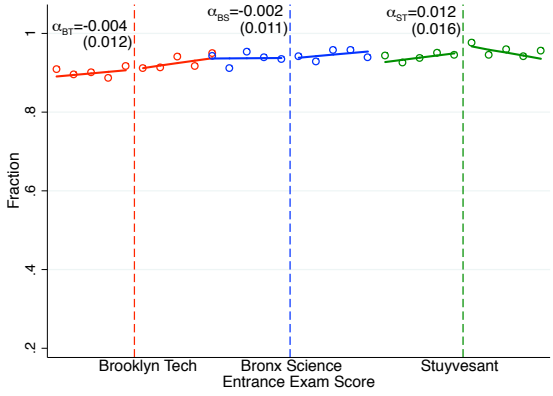
Appx. Figure 8B: U.S. History



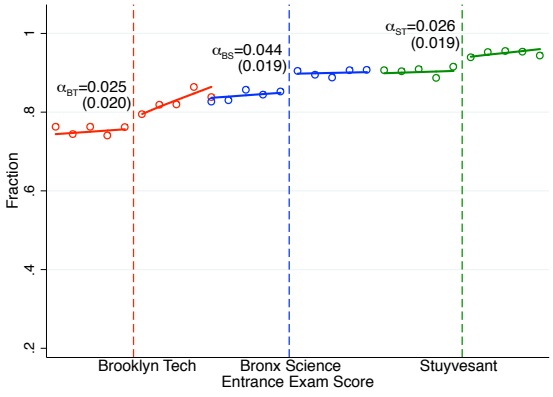
Appx. Figure 8C: ELA



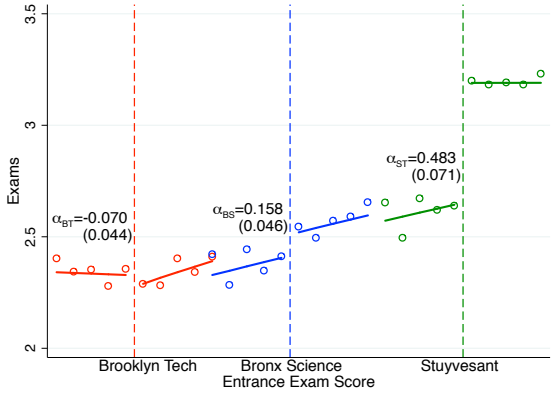
Appx. Figure 8D: Math 1



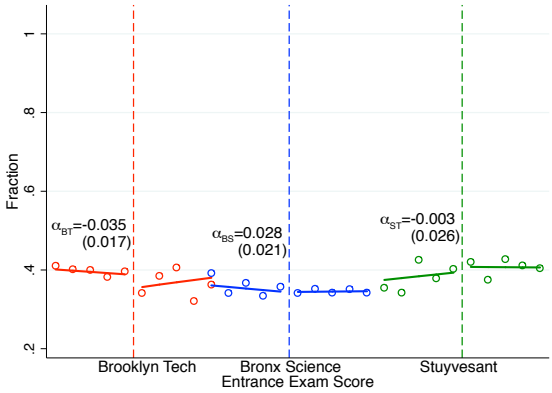
Appx. Figure 8E: Math 2



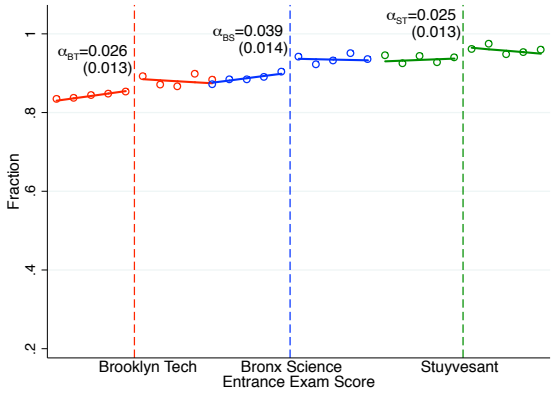
Appx. Figure 8F: Number of Science Exams



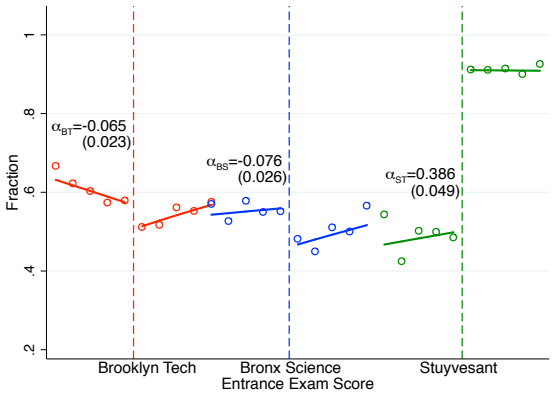
Appx. Figure 8G: Earth Systems Science



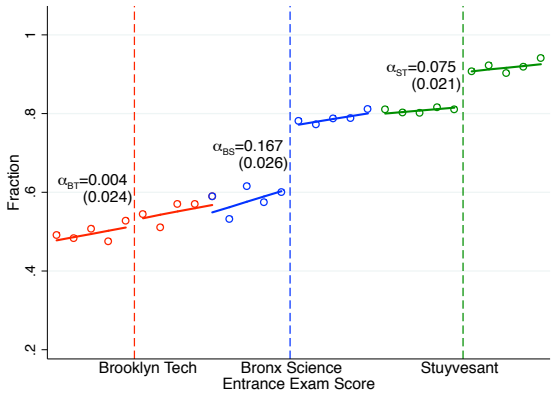
Appx. Figure 8H: Living Environment



Appx. Figure 8I: Chemistry



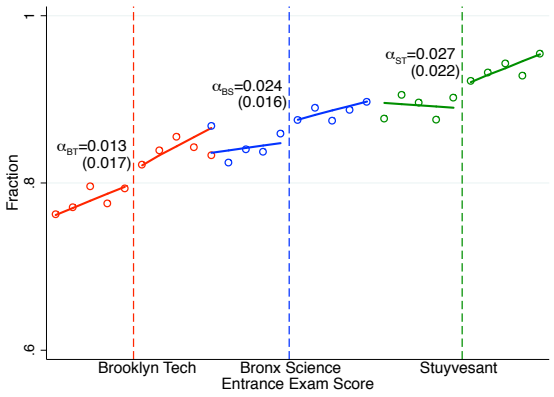
Appx. Figure 8J: Physics



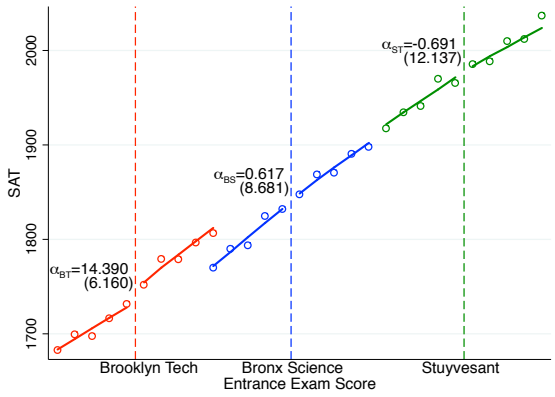
Notes: These figures plot exam school eligibility and high school Regents exam taking. The sample includes exam school applicants in the 2005 - 2009 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. The dependent variable for each regression is an indicator equal to one if the student passed the indicated Regents exam. See text for additional details.

Appendix Figure 9
Exam School Eligibility and SAT Outcomes

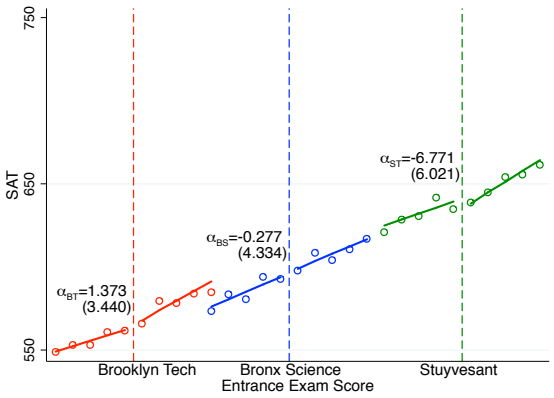
Appx. Figure 9A: Took SAT



Appx. Figure 9B: SAT Combined Score



Appx. Figure 9C: SAT Reading Score



Appx. Figure 9D: SAT Writing Score

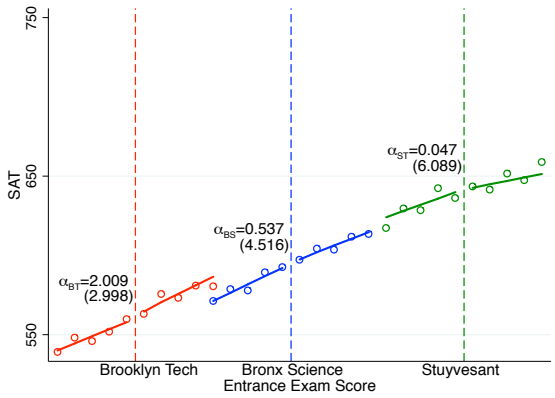
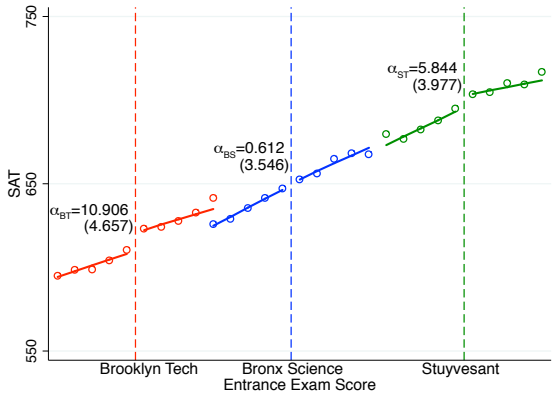


Figure 9E: SAT Math Score



Notes: These figures plot exam school eligibility and SAT taking and SAT scores conditional on taking. The sample includes exam school applicants in the 2007 - 2010 high school cohorts. The smoothed line in each figure comes a single local linear regression of each outcome on entrance exam score, school eligibility, and school eligibility interacted with the entrance exam score. Point estimates and standard errors clustered at the exam score level from an analogous regression that also controls for cohort fixed effects are presented next to each eligibility cutoff. See text for additional details.

Appendix Table 1
Admissions Cutoffs for NYC Exam Schools

		Stuyvsant		Bronx Science		Brooklyn Tech	
Grad Cohort	Exam Takers	Rank Cutoff	Score Cutoff	Rank Cutoff	Score Cutoff	Rank Cutoff	Score Cutoff
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1994	14173	728	1.691	1995	1.104	5305	0.288
1995	13963	683	1.712	1821	1.171	4444	0.454
1996	14481	688	1.735	2118	1.100	4658	0.443
1997	16087	766	1.739	2321	1.123	5040	0.452
1998	16907	710	1.734	2114	1.183	4745	0.578
1999	17188	817	1.725	2006	1.228	5021	0.537
2000	17618	933	1.673	2248	1.177	4738	0.604
2001	18280	888	1.741	2330	1.186	4092	0.773
2002	18516	813	1.730	2245	1.170	4043	0.764
2003	19202	865	1.744	2264	1.230	4088	0.814
2004	19763	880	1.728	2202	1.241	3905	0.862
2005	19921	958	1.727	2190	1.279	3701	0.929
2006	20679	957	1.726	2075	1.312	3567	0.963
2007	25037	866	1.871	2046	1.434	3211	1.172
2008	26322	876	1.939	2313	1.410	3974	1.057
2009	26619	1088	1.863	2641	1.362	4182	1.040
2010	26707	1175	1.780	2966	1.265	4788	0.936
2011	25080	1220	1.740	3108	1.213	4853	0.894
2012	25871	1190	1.774	3289	1.182	4921	0.897
2013	27650	1179	1.814	3046	1.284	4976	0.941

Notes: This table reports the SHSAT cutoffs for each school and cohort. Test results are ranked from the highest score to the lowest, and administrators place students in high schools starting with the students with the highest score. Each student is placed into their most preferred school that still has seats until no seats remain at any exam school. We report the rank and standardized test score of the last student admitted to a school in each cohort.

Appendix Table 2
Data Coverage by Cohort

Grad Cohort	Race Data	8th State Scores	Regents Scores	SAT Scores	HS Grad Data	College Enrollment
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1994	No	No	No	No	No	Yes
1995	No	No	No	No	No	Yes
1996	No	No	No	No	No	Yes
1997	No	No	No	No	No	Yes
1998	No	No	No	No	No	Yes
1999	No	No	No	No	No	Yes
2000	No	No	No	No	No	Yes
2001	No	No	No	No	No	Yes
2002	No	Yes	No	No	Yes	Yes
2003	No	Yes	No	No	Yes	Yes
2004	No	Yes	No	No	Yes	Yes
2005	No	Yes	Yes	No	Yes	Yes
2006	No	Yes	Yes	No	Yes	Yes
2007	No	Yes	Yes	Yes	Yes	Yes
2008	Yes	Yes	Yes	Yes	Yes	Yes
2009	Yes	Yes	Yes	Yes	Yes	Yes
2010	Yes	Yes	No	Yes	No	No
2011	Yes	Yes	No	No	No	No
2012	Yes	Yes	No	No	No	No
2013	Yes	Yes	No	No	No	No

Notes: This table reports the available data for each graduating high school cohort.

Appendix Table 3
Exam School Eligibility and Graduation for All Schools

	Stuyvesant	Bronx Science	Q. Sci/ Lehman	MSE	Brooklyn Tech
	(1)	(2)	(3)	(4)	(5)
Stuyvesant	0.695***	−0.336***	−0.006	−0.001	−0.157***
	(0.025)	(0.029)	(0.009)	(0.005)	(0.023)
	3004	3004	3004	3004	3004
Bronx Science	0.001	0.346***	−0.074***	−0.021**	−0.075**
	(0.002)	(0.021)	(0.014)	(0.009)	(0.030)
	5872	5872	5872	5872	5872
Queens Science/Lehman	−0.005*	−0.006*	0.082***	−0.031**	−0.060**
	(0.003)	(0.004)	(0.011)	(0.015)	(0.029)
	7563	7563	7563	7563	7563
MSE	−0.007	−0.012**	−0.020**	0.068***	0.128***
	(0.008)	(0.005)	(0.010)	(0.018)	(0.041)
	8046	8046	8046	8046	8046
Brooklyn Tech	−0.009	−0.015***	−0.026***	0.021	0.242***
	(0.011)	(0.005)	(0.009)	(0.019)	(0.030)
	8150	8150	8150	8150	8150

Notes: This table reports reduced form estimates of the impact of exam school eligibility on high school graduation for all exam schools. The sample includes exam school applicants in the 2007 - 2009 high school cohorts. Each row reports the coefficient on exam school eligibility at the indicated school. The dependent variable for each regression is an indicator for graduating from the school listed at the top of each column. All specifications control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. The Queens Science and Lehman results are combined as the cutoffs overlap in most years. When not overlapping, we use the lower of the two cutoffs. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 4
Exam School Eligibility and College Outcomes for All Schools

	Start 4-year	1200+ SAT	1300+ SAT	1400+ SAT
	(1)	(2)	(3)	(4)
Stuyvesant	−0.012	0.029	0.029	0.039
	(0.029)	(0.036)	(0.039)	(0.033)
	2720	2720	2720	2720
Bronx Science	0.005	0.012	0.000	−0.023
	(0.024)	(0.023)	(0.020)	(0.018)
	5111	5111	5111	5111
Queens Science/Lehman	−0.007	−0.015	−0.012	0.012
	(0.019)	(0.023)	(0.019)	(0.012)
	6415	6415	6415	6415
MSE	0.019	−0.010	−0.019	−0.029**
	(0.027)	(0.021)	(0.018)	(0.012)
	6778	6778	6778	6778
Brooklyn Tech	0.003	−0.021	−0.024	−0.029**
	(0.025)	(0.019)	(0.019)	(0.011)
	6855	6855	6855	6855

Notes: This table reports reduced form estimates of the impact of exam school eligibility on college outcomes for all exam schools. The sample includes exam school applicants in the 2007 - 2009 high school cohorts. Each row reports the coefficient on exam school eligibility at the indicated school. The dependent variable for each regression is indicated at the top of each column. All specifications control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. The Queens Science and Lehman results are combined as the cutoffs overlap in most years. When not overlapping, we use the lower of the two cutoffs. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 5
Exam School Eligibility and High School Graduation for All Schools

	Grad HS	Regents Diploma	Advanced Regents	Either Regents
	(1)	(2)	(3)	(4)
Stuyvesant	−0.008	−0.007	−0.006	−0.013
	(0.015)	(0.019)	(0.022)	(0.017)
	2251	2251	2251	2251
Bronx Science	0.057***	−0.031*	0.079***	0.048***
	(0.014)	(0.017)	(0.024)	(0.013)
	4319	4319	4319	4319
Queens Science/Lehman	0.021	−0.015	0.036	0.021
	(0.019)	(0.016)	(0.023)	(0.019)
	5488	5488	5488	5488
MSE	0.031*	−0.009	0.025	0.016
	(0.017)	(0.024)	(0.028)	(0.019)
	5789	5789	5789	5789
Brooklyn Tech	0.029*	−0.029	0.054*	0.025
	(0.017)	(0.026)	(0.028)	(0.017)
	5866	5866	5866	5866

Notes: This table reports reduced form estimates of the impact of exam school eligibility on high school outcomes for all exam schools. The sample includes exam school applicants in the 2007 - 2009 high school cohorts. Each row reports the coefficient on exam school eligibility at the indicated school. The dependent variable for each regression is indicated at the top of each column. All specifications control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. The Queens Science and Lehman results are combined as the cutoffs overlap in most years. When not overlapping, we use the lower of the two cutoffs. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 6
Exam School Eligibility and Regents Results for All Schools

	Global History	U.S. History	ELA	Math 1	Math 2	Numb. of Science	Earth Science	Living Env	Chemistry	Physics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Stuyvesant	0.011	0.012	0.001	0.007	0.003	0.335***	0.000	0.016	0.292***	0.027
	(0.014)	(0.016)	(0.013)	(0.012)	(0.017)	(0.088)	(0.038)	(0.013)	(0.066)	(0.020)
	2251	2251	2251	2251	2251	2251	2251	2251	2251	2251
Bronx Science	0.021	0.051**	0.028**	0.007	0.063**	0.132*	0.025	0.031*	−0.040	0.116***
	(0.016)	(0.024)	(0.012)	(0.014)	(0.027)	(0.075)	(0.032)	(0.016)	(0.034)	(0.031)
	4319	4319	4319	4319	4319	4319	4319	4319	4319	4319
Queens Science/Lehman	0.020	0.037*	0.005	0.024**	0.035*	0.074	0.004	0.000	0.050*	0.020
	(0.014)	(0.021)	(0.016)	(0.012)	(0.020)	(0.058)	(0.030)	(0.019)	(0.030)	(0.027)
	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488
MSE	0.012	0.021	0.025	−0.021*	0.039*	0.072	−0.027	0.027*	0.021	0.050*
	(0.014)	(0.019)	(0.017)	(0.012)	(0.020)	(0.055)	(0.032)	(0.016)	(0.028)	(0.028)
	5789	5789	5789	5789	5789	5789	5789	5789	5789	5789
Brooklyn Tech	0.027**	0.026	0.040***	0.008	0.037*	0.080*	−0.039	0.025*	0.015	0.079***
	(0.013)	(0.017)	(0.014)	(0.011)	(0.019)	(0.044)	(0.024)	(0.014)	(0.025)	(0.024)
	5866	5866	5866	5866	5866	5866	5866	5866	5866	5866

Notes: This table reports reduced form estimates of the impact of exam school eligibility on Regents completion for all exam schools. The sample includes exam school applicants in the 2007 - 2009 high school cohorts. Each row reports the coefficient on exam school eligibility at the indicated school. The dependent variable for each regression is indicated at the top of each column. All specifications control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. The Queens Science and Lehman results are combined as the cutoffs overlap in most years. When not overlapping, we use the lower of the two cutoffs. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 7
Exam School Eligibility and SAT Results for All Schools

	Took SAT	SAT Score
	(1)	(2)
Stuyvesant	0.023	−6.271
	(0.030)	(22.850)
	3159	1015
Bronx Science	0.022	19.274
	(0.021)	(12.618)
	5996	1800
Queens Science/Lehman	−0.005	2.030
	(0.020)	(12.703)
	7544	2195
MSE	−0.008	17.383
	(0.019)	(13.259)
	7998	2297
Brooklyn Tech	−0.003	−3.021
	(0.016)	(12.866)
	8075	2320

Notes: This table reports reduced form estimates of the impact of exam school eligibility on SAT outcomes for all exam schools. The sample includes exam school applicants in the 2007 - 2009 high school cohorts. Each row reports the coefficient on exam school eligibility at the indicated school. The dependent variable for each regression is indicated at the top of each column. All specifications control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. The Queens Science and Lehman results are combined as the cutoffs overlap in most years. When not overlapping, we use the lower of the two cutoffs. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 8
Exam School Eligibility and College Outcomes for NYC Matched Sample

	Start 4-year	Grad College	1200+ SAT	1300+ SAT	1400+ SAT	Post Grad
	(1)	(2)	(3)	(4)	(5)	(6)
Stuyvesant	−0.003	0.043	0.071**	0.042	0.036*	0.013
	(0.021)	(0.047)	(0.028)	(0.028)	(0.019)	(0.036)
	5569	1991	5569	5569	5569	1991
Bronx Science	−0.010	−0.007	0.005	−0.015	−0.022**	−0.048*
	(0.015)	(0.038)	(0.018)	(0.018)	(0.011)	(0.026)
	10504	4026	10504	10504	10504	4026
Brooklyn Tech	−0.001	−0.044	0.001	−0.002	−0.006	−0.018
	(0.016)	(0.030)	(0.013)	(0.010)	(0.006)	(0.022)
	13857	5389	13857	13857	13857	5389

Notes: This table reports reduced form estimates of the impact of exam school eligibility on college outcomes. The sample is restricted to exam school applicants in the 2002 - 2009 high school cohorts who attended a public NYC middle school. Each row reports the coefficient on exam school eligibility at the indicated school. The dependent variable for each regression is indicated at the top of each column. All specifications control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. The Queens Science and Lehman results are combined as the cutoffs overlap in most years. When not overlapping, we use the lower of the two cutoffs. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 9
Robustness of Main Outcomes

Polynomial Order	1	1	1	2	2	2
Bandwidth	0.15	0.25	0.35	0.15	0.25	0.35
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Start 4 year College						
Stuyvesant	−0.019	−0.013	−0.015	−0.032	−0.018	−0.014
	(0.017)	(0.014)	(0.012)	(0.028)	(0.019)	(0.017)
	8313	14156	20334	8313	14156	20334
Bronx Science	0.005	0.002	0.003	0.013	0.006	0.003
	(0.013)	(0.010)	(0.009)	(0.019)	(0.014)	(0.012)
	16110	27120	38241	16110	27120	38241
Brookyln Tech	0.002	−0.008	−0.010	0.016	0.004	−0.006
	(0.012)	(0.009)	(0.008)	(0.018)	(0.013)	(0.011)
	23059	39007	54879	23059	39007	54879
Panel B: Graduate from 4 year College						
Stuyvesant	−0.027	−0.016	−0.008	−0.059*	−0.028	−0.027
	(0.025)	(0.021)	(0.018)	(0.035)	(0.028)	(0.025)
	5624	9558	13624	5624	9558	13624
Bronx Science	0.012	−0.007	−0.008	0.028	0.021	0.001
	(0.019)	(0.018)	(0.015)	(0.022)	(0.020)	(0.020)
	11039	18709	26264	11039	18709	26264
Brookyln Tech	−0.013	−0.023*	−0.025**	0.009	−0.008	−0.021
	(0.015)	(0.012)	(0.010)	(0.023)	(0.017)	(0.015)
	16372	27850	38895	16372	27850	38895
Panel C: Graduate with Adv. Regents Diploma						
Stuyvesant	−0.042	−0.022	−0.022	−0.044	−0.042	−0.026
	(0.025)	(0.023)	(0.020)	(0.033)	(0.028)	(0.027)
	3363	5734	8315	3363	5734	8315
Bronx Science	0.035*	0.028*	0.023*	0.043	0.042*	0.034*
	(0.021)	(0.016)	(0.014)	(0.033)	(0.025)	(0.021)
	6501	10955	15510	6501	10955	15510
Brookyln Tech	0.054***	0.044***	0.040***	0.045*	0.058***	0.051***
	(0.018)	(0.015)	(0.013)	(0.026)	(0.021)	(0.019)
	8678	14688	20989	8678	14688	20989
Panel D: SAT Score						
Stuyvesant	4.384	−0.691	−3.193	18.485	5.428	2.121
	(13.555)	(12.137)	(10.754)	(17.561)	(15.017)	(14.256)
	1714	2874	4150	1714	2874	4150
Bronx Science	−2.259	0.617	1.249	−7.468	−3.965	−0.791
	(10.230)	(8.681)	(7.650)	(12.298)	(11.529)	(10.264)
	3113	5167	7228	3113	5167	7228
Brookyln Tech	8.184	14.390**	12.835**	13.576	6.092	15.037**
	(7.036)	(6.160)	(5.532)	(10.306)	(8.249)	(7.158)
	3839	6506	9150	3839	6506	9150

Notes: This table reports reduced form estimates of the impact of exam school eligibility using a variety of bandwidths and polynomial choices. The sample is restricted to exam school applicants in the 2002 - 2009 high school cohorts who attended a public NYC middle school. Each row reports the coefficient on exam school eligibility at the indicated school. All specifications control for entrance exam score and entrance exam score interacted with school eligibility with the indicated degree of polynomial, and cohort fixed effects. Standard errors are clustered at the exam score level. Additional outcomes are available on request. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 10
High School Graduation Results by Subsample

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Any Diploma												
Stuyvesant	0.007	–	0.611	0.009	0.004	0.856	0.001	−0.045	0.495	−0.001	−0.011	0.764
	(0.014)			(0.019)	(0.019)		(0.014)	(0.065)		(0.016)	(0.029)	
	5734	0		3134	2600		3915	463		2721	1657	
Bronx Science	0.036***	–	0.001	0.048***	0.022	0.322	0.033**	0.063*	0.442	0.013	0.056***	0.125
	(0.010)			(0.017)	(0.016)		(0.015)	(0.033)		(0.019)	(0.017)	
	10955	0		5613	5342		6073	2080		3292	4861	
Brooklyn Tech	0.007	–	0.627	0.006	0.008	0.931	0.026	0.020	0.832	0.018	0.029*	0.753
	(0.014)			(0.023)	(0.017)		(0.017)	(0.026)		(0.028)	(0.017)	
	14689	0		7479	7210		6427	4526		2640	8313	
Panel B: Regents Diploma												
Stuyvesant	0.026	–	0.196	0.031	0.022	0.843	−0.014	0.138**	0.032	0.002	0.012	0.794
	(0.020)			(0.030)	(0.030)		(0.020)	(0.067)		(0.018)	(0.037)	
	5734	0		3134	2600		3915	463		2721	1657	
Bronx Science	0.010	–	0.491	0.012	0.009	0.901	−0.025	−0.005	0.647	−0.036	−0.004	0.387
	(0.014)			(0.022)	(0.020)		(0.017)	(0.037)		(0.026)	(0.022)	
	10955	0		5613	5342		6073	2080		3292	4861	
Brooklyn Tech	−0.046***	–	0.004	−0.024	−0.068***	0.174	−0.011	−0.040	0.410	−0.057*	−0.012	0.187
	(0.016)			(0.021)	(0.024)		(0.023)	(0.025)		(0.032)	(0.018)	
	14689	0		7479	7210		6427	4526		2640	8313	
Panel C: Adv. Regents Diploma												
Stuyvesant	−0.021	–	0.361	−0.017	−0.030	0.804	0.011	−0.202**	0.013	−0.001	−0.049	0.288
	(0.023)			(0.033)	(0.038)		(0.022)	(0.084)		(0.023)	(0.042)	
	5734	0		3134	2600		3915	463		2721	1657	
Bronx Science	0.029*	–	0.070	0.032	0.024	0.839	0.059***	0.076*	0.767	0.046	0.066***	0.666
	(0.016)			(0.024)	(0.024)		(0.023)	(0.045)		(0.034)	(0.024)	
	10955	0		5613	5342		6073	2080		3292	4861	
Brooklyn Tech	0.044***	–	0.004	0.020	0.070***	0.199	0.031	0.059*	0.481	0.077**	0.035	0.235
	(0.015)			(0.024)	(0.026)		(0.024)	(0.032)		(0.033)	(0.022)	
	14688	0		7479	7209		6427	4526		2640	8313	

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel D: Regents or Adv Regents												
Stuyvesant	0.004	–	0.763	0.014	−0.008	0.442	−0.003	−0.063	0.368	0.002	−0.037	0.255
	(0.015)			(0.019)	(0.021)		(0.016)	(0.064)		(0.017)	(0.030)	
	5734	0		3134	2600		3915	463		2721	1657	
Bronx Science	0.039***	–	0.001	0.044**	0.033**	0.727	0.034**	0.071*	0.443	0.010	0.063***	0.120
	(0.011)			(0.022)	(0.016)		(0.015)	(0.038)		(0.022)	(0.018)	
	10955	0		5613	5342		6073	2080		3292	4861	
Brooklyn Tech	−0.002	–	0.921	−0.004	0.002	0.840	0.020	0.019	0.984	0.021	0.023	0.954
	(0.016)			(0.024)	(0.020)		(0.017)	(0.030)		(0.028)	(0.017)	
	14688	0		7479	7209		6427	4526		2640	8313	

Notes: This table reports reduced form estimates of the impact of exam school eligibility separately by baseline characteristic. The sample for enrollment outcomes includes exam school applicants in the 1994 - 2009 high school cohorts. The sample for graduation and Post-BA outcomes includes exam school applicants in the 1994 - 2002 high school cohorts. We report the coefficient on exam school eligibility estimated separately by baseline characteristic. We also control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. See text for additional details. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 11
Regents Results by Subsample

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Chemistry												
Stuyvesant	0.387***	–	0.000	0.360***	0.419***	0.270	0.408***	0.210***	0.005	0.416***	0.330***	0.191
	(0.049)			(0.057)	(0.055)		(0.050)	(0.078)		(0.051)	(0.070)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	−0.077***	–	0.004	−0.025	−0.129***	0.014	−0.078***	−0.063	0.783	−0.084***	−0.069**	0.701
	(0.026)			(0.030)	(0.037)		(0.026)	(0.053)		(0.028)	(0.035)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	−0.065***	–	0.005	−0.059**	−0.071**	0.751	−0.099***	−0.013	0.016	−0.034	−0.076***	0.402
	(0.023)			(0.027)	(0.031)		(0.026)	(0.033)		(0.042)	(0.028)	
	9295	0		4783	4512		5366	3752		2291	6827	
Panel B: Earth System Science												
Stuyvesant	−0.003	–	0.915	−0.022	0.019	0.492	0.001	−0.073	0.453	0.027	−0.075	0.201
	(0.026)			(0.038)	(0.042)		(0.027)	(0.094)		(0.039)	(0.058)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	0.027	–	0.196	0.033	0.022	0.789	0.042*	−0.008	0.348	0.028	0.028	0.999
	(0.021)			(0.030)	(0.028)		(0.024)	(0.046)		(0.032)	(0.027)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	−0.035**	–	0.047	−0.089***	0.024	0.005	−0.020	−0.060*	0.278	−0.014	−0.043**	0.535
	(0.018)			(0.026)	(0.027)		(0.019)	(0.032)		(0.039)	(0.021)	
	9295	0		4783	4512		5366	3752		2291	6827	
Panel C: English Language Arts												
Stuyvesant	0.014	–	0.338	0.004	0.025	0.545	0.016	0.007	0.884	0.019	0.006	0.712
	(0.014)			(0.021)	(0.023)		(0.014)	(0.059)		(0.018)	(0.026)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	0.036***	–	0.002	0.048***	0.024	0.366	0.020	0.082***	0.095	0.018	0.049***	0.265
	(0.011)			(0.018)	(0.017)		(0.015)	(0.030)		(0.019)	(0.017)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	0.040***	–	0.001	0.032*	0.049**	0.568	0.038**	0.040*	0.947	0.055**	0.036**	0.575
	(0.012)			(0.019)	(0.020)		(0.015)	(0.024)		(0.028)	(0.015)	
	9295	0		4783	4512		5366	3752		2291	6827	

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel D: Global History												
Stuyvesant	0.018	–	0.194	0.022	0.015	0.822	0.019	0.014	0.926	0.028*	−0.001	0.306
	(0.014)			(0.021)	(0.022)		(0.013)	(0.053)		(0.016)	(0.024)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	0.019	–	0.121	0.036*	0.000	0.193	0.017	0.031	0.705	0.013	0.026	0.661
	(0.012)			(0.019)	(0.018)		(0.017)	(0.029)		(0.021)	(0.018)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	0.039***	–	0.002	0.022	0.058***	0.191	0.040**	0.040*	0.990	0.058*	0.036**	0.558
	(0.012)			(0.020)	(0.017)		(0.016)	(0.023)		(0.030)	(0.015)	
	9295	0		4783	4512		5366	3752		2291	6827	
Panel E: Living Environment												
Stuyvesant	0.025**	–	0.047	0.020	0.033	0.675	0.030**	−0.045	0.226	0.024	0.015	0.768
	(0.012)			(0.018)	(0.023)		(0.013)	(0.059)		(0.017)	(0.025)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	0.039***	–	0.005	0.056***	0.023	0.232	0.052***	0.008	0.172	0.043**	0.039**	0.905
	(0.014)			(0.020)	(0.019)		(0.017)	(0.027)		(0.021)	(0.019)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	0.026**	–	0.045	0.024	0.027	0.942	0.022	0.034	0.699	0.041	0.024	0.677
	(0.013)			(0.020)	(0.021)		(0.017)	(0.024)		(0.034)	(0.017)	
	9295	0		4783	4512		5366	3752		2291	6827	
Panel F: Physics												
Stuyvesant	0.076***	–	0.000	0.065**	0.088**	0.646	0.094***	−0.114*	0.004	0.092***	0.036	0.166
	(0.022)			(0.028)	(0.038)		(0.022)	(0.068)		(0.022)	(0.038)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	0.167***	–	0.000	0.196***	0.137***	0.154	0.168***	0.176***	0.900	0.140***	0.192***	0.181
	(0.025)			(0.034)	(0.031)		(0.031)	(0.049)		(0.036)	(0.028)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	0.004	–	0.863	−0.044	0.055*	0.012	−0.023	0.050	0.088	0.023	0.003	0.728
	(0.024)			(0.030)	(0.033)		(0.028)	(0.037)		(0.049)	(0.029)	
	9295	0		4783	4512		5366	3752		2291	6827	

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel G: US History												
Stuyvesant	−0.032	–	0.197	−0.027	−0.040	0.827	−0.028	−0.076	0.452	−0.038	−0.031	0.870
	(0.025)			(0.026)	(0.052)		(0.027)	(0.057)		(0.032)	(0.033)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	−0.008	–	0.728	0.005	−0.022	0.488	−0.013	0.017	0.611	−0.024	0.004	0.581
	(0.023)			(0.034)	(0.025)		(0.023)	(0.055)		(0.034)	(0.033)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	0.051***	–	0.002	0.046*	0.055***	0.791	0.056***	0.055**	0.992	0.047	0.057***	0.821
	(0.016)			(0.026)	(0.018)		(0.021)	(0.023)		(0.037)	(0.020)	
	9295	0		4783	4512		5366	3752		2291	6827	
Panel H: Math 1												
Stuyvesant	0.012	–	0.450	0.013	0.012	0.971	0.025	−0.073	0.063	0.040*	−0.032	0.017
	(0.016)			(0.029)	(0.020)		(0.017)	(0.051)		(0.021)	(0.024)	
	2994	0		1613	1381		2605	339		1824	1120	
Bronx Science	−0.002	–	0.846	0.022	−0.027*	0.020	−0.013	0.036*	0.039	−0.031*	0.026*	0.011
	(0.011)			(0.016)	(0.015)		(0.014)	(0.018)		(0.016)	(0.015)	
	5625	0		2914	2711		4020	1503		2260	3263	
Brooklyn Tech	−0.004	–	0.767	−0.003	−0.005	0.966	−0.013	0.014	0.371	−0.040	0.012	0.098
	(0.012)			(0.018)	(0.019)		(0.017)	(0.023)		(0.026)	(0.015)	
	7627	0		3931	3696		4383	3113		1899	5597	
Panel I: Math 2												
Stuyvesant	0.026	–	0.176	0.028	0.024	0.919	0.047**	−0.151**	0.004	0.053***	−0.035	0.025
	(0.019)			(0.029)	(0.030)		(0.020)	(0.065)		(0.018)	(0.039)	
	2994	0		1613	1381		2605	339		1824	1120	
Bronx Science	0.044**	–	0.025	0.068**	0.020	0.234	0.023	0.113**	0.136	−0.007	0.085***	0.028
	(0.020)			(0.030)	(0.025)		(0.022)	(0.052)		(0.027)	(0.028)	
	5625	0		2914	2711		4020	1503		2260	3263	
Brooklyn Tech	0.025	–	0.204	0.001	0.051*	0.169	0.022	0.039	0.665	0.039	0.028	0.787
	(0.019)			(0.026)	(0.027)		(0.022)	(0.033)		(0.039)	(0.021)	
	7627	0		3931	3696		4383	3113		1899	5597	

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel J: Number of Science Exams												
Stuyvesant	0.485***	–	0.000	0.423***	0.560***	0.245	0.533***	−0.022	0.009	0.560***	0.306**	0.081
	(0.070)			(0.079)	(0.106)		(0.071)	(0.204)		(0.079)	(0.127)	
	3743	0		2006	1737		3288	394		2300	1382	
Bronx Science	0.157***	–	0.001	0.260***	0.053	0.028	0.185***	0.113	0.568	0.127*	0.191***	0.477
	(0.047)			(0.068)	(0.064)		(0.053)	(0.108)		(0.066)	(0.062)	
	6927	0		3574	3353		5028	1779		2804	4003	
Brooklyn Tech	−0.070	–	0.111	−0.168***	0.035	0.045	−0.119**	0.011	0.153	0.016	−0.092*	0.384
	(0.044)			(0.064)	(0.070)		(0.053)	(0.072)		(0.103)	(0.055)	
	9295	0		4783	4512		5366	3752		2291	6827	

Notes: This table reports reduced form estimates of the impact of exam school eligibility separately by baseline characteristic. The sample for enrollment outcomes includes exam school applicants in the 1994 - 2009 high school cohorts. The sample for graduation and Post-BA outcomes includes exam school applicants in the 1994 - 2002 high school cohorts. We report the coefficient on exam school eligibility estimated separately by baseline characteristic. We also control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. See text for additional details. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Appendix Table 12
SAT Results by Subsample

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Took SAT												
Stuyvesant	0.026	–	0.242	0.067**	−0.020	0.052	0.023	0.029	0.949	0.004	0.048	0.401
	(0.022)			(0.033)	(0.029)		(0.020)	(0.102)		(0.023)	(0.044)	
	3159	0		1678	1481		2686	430		1822	1294	
Bronx Science	0.024	–	0.123	0.060*	−0.013	0.108	−0.004	0.091**	0.051	−0.009	0.043*	0.240
	(0.016)			(0.031)	(0.023)		(0.021)	(0.037)		(0.031)	(0.023)	
	5996	0		3090	2906		4078	1823		2138	3763	
Brooklyn Tech	0.013	–	0.450	0.008	0.020	0.736	0.019	0.005	0.727	0.049	0.006	0.324
	(0.017)			(0.026)	(0.025)		(0.025)	(0.028)		(0.036)	(0.021)	
	8075	0		4128	3947		4341	3612		1809	6144	
Panel B: SAT Combined Score												
Stuyvesant	−1.877	–	0.879	0.635	−2.295	0.907	5.256	−47.547	0.151	−5.899	8.987	0.490
	(12.307)			(17.334)	(17.629)		(12.759)	(35.402)		(14.890)	(17.653)	
	2874	0		1495	1379		2469	367		1702	1134	
Bronx Science	0.325	–	0.971	−1.593	2.608	0.790	6.884	−7.043	0.530	−4.748	2.526	0.712
	(8.819)			(12.993)	(10.435)		(11.094)	(16.426)		(15.727)	(10.318)	
	5167	0		2573	2594		3566	1513		1892	3187	
Brooklyn Tech	14.357**	–	0.020	15.973	12.788	0.825	8.125	16.257*	0.600	7.350	16.415**	0.573
	(6.095)			(9.916)	(8.996)		(9.989)	(9.464)		(14.378)	(6.720)	
	6506	0		3201	3305		3613	2789		1533	4869	

	Public Middle	Private Middle	p-value	Male	Female	p-value	Upper Half	Lower Half	p-value	Upper Quartile	Lower 3 Quartiles	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel C: SAT Reading Score												
Stuyvesant	−7.209	–	0.229	−3.364	−10.683	0.558	−4.870	−23.632	0.345	−11.841*	1.744	0.182
	(5.976)			(9.053)	(8.288)		(5.989)	(19.566)		(6.892)	(8.963)	
	2874	0		1495	1379		2469	367		1702	1134	
Bronx Science	−0.438	–	0.920	−1.854	1.173	0.676	−0.333	−0.231	0.990	−2.302	−1.149	0.891
	(4.347)			(6.312)	(4.965)		(4.842)	(7.070)		(6.615)	(5.246)	
	5167	0		2573	2594		3566	1513		1892	3187	
Brooklyn Tech	1.357	–	0.700	0.399	2.290	0.787	1.359	−0.310	0.810	2.390	0.851	0.836
	(3.516)			(5.275)	(4.498)		(4.852)	(5.244)		(6.833)	(3.757)	
	6506	0		3201	3305		3613	2789		1533	4869	
Panel D: SAT Math Score												
Stuyvesant	6.411	–	0.102	8.157	3.413	0.543	7.336*	−3.167	0.482	5.008	7.603	0.811
	(3.897)			(5.651)	(5.442)		(4.303)	(13.716)		(5.753)	(7.493)	
	2874	0		1495	1379		2469	367		1702	1134	
Bronx Science	0.860	–	0.808	0.942	0.313	0.915	5.535	−7.884	0.102	2.003	1.093	0.898
	(3.537)			(4.841)	(4.389)		(4.164)	(7.030)		(5.445)	(4.765)	
	5167	0		2573	2594		3566	1513		1892	3187	
Brooklyn Tech	10.932**	–	0.027	10.993**	10.862*	0.984	8.248	13.380**	0.444	3.092	13.630***	0.195
	(4.895)			(5.548)	(5.902)		(6.109)	(5.374)		(8.015)	(5.113)	
	6506	0		3201	3305		3613	2789		1533	4869	
Panel E: SAT Writing Score												
Stuyvesant	−1.200	–	0.853	−3.002	3.305	0.598	2.127	−16.909	0.307	0.011	0.831	0.944
	(6.446)			(8.421)	(8.636)		(6.779)	(17.746)		(8.081)	(9.254)	
	2870	0		1492	1378		2466	366		1699	1133	
Bronx Science	0.146	–	0.976	−0.648	1.579	0.787	1.824	1.473	0.974	−4.394	2.908	0.430
	(4.824)			(6.502)	(5.717)		(6.234)	(7.699)		(8.243)	(4.957)	
	5165	0		2573	2592		3565	1512		1892	3185	
Brooklyn Tech	1.968	–	0.539	4.595	−0.591	0.485	−1.479	2.911	0.565	1.867	1.792	0.991
	(3.197)			(5.342)	(4.160)		(4.823)	(5.355)		(6.615)	(3.325)	
	6505	0		3201	3304		3613	2788		1533	4868	

Notes: This table reports reduced form estimates of the impact of exam school eligibility separately by baseline characteristic. The sample for enrollment outcomes includes exam school applicants in the 1994 - 2009 high school cohorts. The sample for graduation and Post-BA outcomes includes exam school applicants in the 1994 - 2002 high school cohorts. We report the coefficient on exam school eligibility estimated separately by baseline characteristic. We also control for entrance exam score, entrance exam score interacted with school eligibility, and cohort fixed effects. Standard errors are clustered at the exam score level. See text for additional details. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

1 Appendix B: Data Description and Construction of Variables

1.1 New York City Administrative Data

Demographic variables

Demographic information was pulled from New York City enrollment files spanning the 2003-04 to 2009 -10 school years, with precedence given to the most recent file. Race consisted of the following categories: Black, Hispanic, White, Asian, and Other. These categories are considered mutually exclusive.

A student was considered free lunch if he was coded as "A" or "1" in the raw data, which corresponds to free lunch or "2" which corresponds to reduced-price lunch. A student was considered non free lunch if the student was coded as a "3", which corresponds to Full Price. All other values, including blanks, were coded as missing.

New York State 8th Grade Test Scores

State test scores in eighth grade were pulled from the NYC test score files spanning the 1999 - 2000 to 2009 - 2010 school years. Scores were standardized by year and grade to have mean of zero and standard deviation of one. The state mathematics and English Language Arts tests, developed by McGraw-Hill, are exams conducted in the winters of third through eighth grade. The math test includes questions on number sense and operations, algebra, geometry, measurement, and statistics. Tests in later grades focus on advanced topics such as algebra and geometry. The ELA test is designed to assess students on three learning standards - information and understanding, literary response and expression, critical analysis and evaluation - and includes multiple-choice and short-response sections based on a reading and listening section, along with a brief editing task.

New York State Regents Test Scores

Regents test scores for high school subjects were pulled from the NYC Regents test score files for 1998 - 1999 through 2009 - 2010. For each subject we construct indicator variables for a student having taken the exam, for having passed the exam at the basic level (55 out of 100), for having passed the exam at the Regents level (65 out of 100), and for having obtained mastery in the subject (85 out of 100). As the structure of the Math exams have changed over our sample period, we combine Sequential Math 1, Math A and Integrated Algebra scores and Sequential Math 3, Math B, and Trigonometry scores (based on the advice of NYC staff). Results are identical if we restrict the results to Math A and B, which make up the majority of our observations.

Regents exams are administered within schools in January, June, and August of each calendar year and are given in a wide variety of subjects, but scores range from 0 to 100 for every Regents exam. Students typically take exams at the end of the corresponding course, so that most students take the exams in June. Unlike most other standardized exams, teachers grade the Regents exams for students in their own school. The State Education Department of New York provides explicit guidelines for how the teacher-based scoring of each Regents exam should be organized.

Regents exam requirements have changed somewhat during the years we examine (1998 to 2010). To graduate, students generally must score at least 55 on each of five core Regents examinations: English, Mathematics, Science, U.S. History and Government, and Global History and Geography. In order to receive a more prestigious Regents Diploma, students must receive a score of at least 65 in each of these five core subjects. To earn an Advanced Regents Diploma, students must also score at least a 65 on elective exams in math, science, and foreign language.

Currently, the option of receiving a local diploma is being eliminated entirely. Beginning with those who entered the ninth grade in the fall of 2008, students are required to meet the Regents Diploma requirements (score 65 or higher in each of the five core subjects) in order to graduate

from high school in New York State. The shift from local diploma to Regents diploma requirements was done gradually, with students entering ninth grade in fall 2005 having to score 65 in at least two core subjects, and each subsequent cohort facing stricter requirements.

A score of 85 is labeled as achieving mastery of the subject matter. While scoring 85 or higher is not relevant for high school graduation, meeting this cutoff is often used by high schools as a prerequisite for courses and by New York State colleges as either a prerequisite or qualification for credit towards a degree. Beginning with students who entered ninth grade in the fall of 2009, an additional accolade of Annotation of Mastery in science and/or math became available for students who score above 85 on three Regents exams in science and/or math.

Regents examinations contain both multiple-choice and open-response questions. The foreign language exams also contain a speaking component. Scoring materials provided to schools include the correct answers to multiple-choice questions and detailed, subject-specific instructions and procedures for evaluating open-ended and essay questions.

School Characteristics

School-level student variables were constructed for each school based on the population of students who were assigned to that high school in the NYC graduation files for the 2002 through 2009 high school cohorts.

School-level teacher variables were constructed for each school based on the 2008 - 2009 Human Resources file. We define teacher salaries as the mean salary for all school staff designated as full time teachers. Teacher experience is defined similarly. Student to teacher and staff ratios were constructed using 2008 - 2009 staffing levels and the average cohort size for the 2002 through 2009 high school cohorts.

High School Graduation variables

High school graduation variables were pulled from the 2002 through 2009 city and state graduation files. City files are available for all years, while state files are only available for 2002 - 2008. In overlapping years the state files are given precendence. A student is defined as having graduated if she received a local, Regents, or Advanced Regents diploma. We define students who transfer, drop out, receive a GED, or receive a special education diploma as having not graduated.

SAT variables

SAT score variables were pulled from the 2006 through 2009 city SAT files, which consists of SAT scores for all students enrolled in a public NYC school when taking the SAT. We use a student's best combined score during the testing period. All scores are out of 2400.

1.2 Specialized High Schools Admissions Test Data

Admissions to the academic SHS is determined by the Specialized High Schools admissions test (SHSAT). The test is broken into two sections, one math and one verbal, and students are given 2 hours and 30 minutes per section with no break. The verbal section is made up of 45 multiple-choice questions. 30 questions test reading comprehension, 10 questions test logical reasoning, and 5 questions require students to put sentences into the most logical order in a paragraph. The math section is comprised of 50 multiple-choice questions, which test basic math, algebra (factoring and substitution), geometry, basic graphing, logic, and word problems.

In scoring the SHSAT, there is no penalty for wrong answers and correct answers receive points. The raw number of questions correct is scaled through a Department of Education formula, and scores fall between 200 and 800. Due to the formula used by the DOE, students who score very

highly in one section but poorly in another are more likely to have a higher score than students who score well on both.

On the day of the exam, students rank the schools in order of where they want to go. Test results are ranked from the highest score to the lowest, and administrators place students in high schools starting with the students with the highest score. Each student is placed into their most preferred school that still has seats until no seats remain at any SHS.

SHSAT scores, gender and middle school type were pulled from the NYC test score for 1989 through 2008. Scores were standardized by year to have mean of zero and standard deviation of one in the sample of test takers. Eligibility rank and score cutoffs were defined as the first student who wanted to attend a specific school but was not accepted to that school. Gender was coded as male, non-male, or missing. Middle school type was coded as public, private, or missing. We consider only eighth grade admissions, dropping all SHSAT scores from ninth grade.

1.3 National Student Clearinghouse Data

Information on college attendance and graduation comes from the National Student Clearinghouse (NSC), a non-profit organization that maintains enrollment information for 92 percent of colleges nationwide. We provided each student's full name, date of birth and high school graduation date, which the NSC used to match to its database. The NSC data contain information on enrollment spells for all covered colleges that a student attended. Information is available on full or part-time status and degree receipt in some cases.

We code a student as having enrolled in a four-year college if she ever attends a four-year school in the NSC data. We code a student as having graduated from a four-year college if she if the NSC data indicates having received a degree from a four-year school. We code a student as having enrolled in a post-graduate university if they enroll in any non-two-year college after receiving a four-year degree.

To provide a measure of college quality, we match the NSC data to data on college characteristics from the U.S. News and World Report. The U.S. News and World Report collects data on college characteristics and statistics for four-year colleges in the U.S., including average class size, size of the faculty, graduation rates, tuition, room and board, average debt, loan size, percent of students receiving aid, acceptance rate, standardized test scores, high school GPA where available, demographic information on gender and the diversity index, freshman retention, and annual alumni donations. We use midpoint SAT score as our primary measure of college quality. When only ACT scores are available, we convert them to SAT scores using the ACT's official score concordance chart found at http://www.act.org/aap/concordance/. We code a student as having attended a school with an SAT over 1200/1300/1400 if any of the four-year schools attended by that student have a median SAT over that threshold.