

Online Appendix
For
The Long-Term Consequences of Free School Choice
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Not For Publication

**Table A1: Simple, Controlled and Difference-in-Differences Estimated Effects of School Choice on High School Outcomes:
Tel Aviv District 9 vs. Comparison Group**

Dependent variable	1992	1993	1994	DID	
				True	False
				92/3 vs. 94	92 vs. 93
	(1)	(2)	(3)	(4)	(5)
Drop out					
Control group mean	0.128	0.123	0.133		
Treatment-control difference	0.052 (0.028)	0.070 (0.024)	-0.006 (0.023)	-0.073 (0.017)	0.013 (0.021)
Treatment-control <i>controlled</i> difference	0.014 (0.017)	0.031 (0.021)	-0.041 (0.018)	-0.084 (0.015)	0.013 (0.019)
Eligible for Bagrut					
Control group mean	0.504	0.542	0.528		
Treatment-control difference	-0.067 (0.063)	-0.097 (0.043)	-0.008 (0.044)	0.081 (0.023)	-0.025 (0.026)
Treatment-control <i>controlled</i> difference	0.043 (0.043)	-0.016 (0.022)	0.053 (0.027)	0.061 (0.023)	-0.041 (0.025)
Average score					
Control group mean	68.068	69.401	69.251		
Treatment-control difference	-8.225 (3.771)	-9.325 (3.078)	-2.553 (3.305)	6.883 (1.541)	-0.654 (1.860)
Treatment-control <i>controlled</i> difference	-1.101 (2.023)	-3.368 (1.998)	2.553 (2.029)	6.580 (1.452)	-1.695 (1.733)
Number of Bagrut credits					
Control group mean	18.526	18.936	18.621		
Treatment-control difference	-2.855 (1.103)	-3.130 (1.022)	-1.047 (0.973)	2.113 (0.494)	-0.075 (0.582)
Treatment-control <i>controlled</i> difference	-0.564 (0.595)	-1.093 (0.648)	0.592 (0.709)	1.962 (0.476)	-0.311 (0.548)
Number of science credits					
Control group mean	2.603	2.427	2.414		
Treatment-control difference	-1.021 (0.385)	-0.935 (0.253)	-0.685 (0.276)	0.331 (0.161)	0.132 (0.184)
Treatment-control <i>controlled</i> difference	-0.285 (0.209)	-0.317 (0.146)	-0.130 (0.138)	0.269 (0.157)	0.040 (0.180)
Number of honor-level subjects					
Control group mean	2.029	2.093	2.057		
Treatment-control difference	-0.531 (0.160)	-0.542 (0.151)	-0.282 (0.143)	0.275 (0.069)	0.020 (0.078)
Treatment-control <i>controlled</i> difference	-0.198 (0.080)	-0.223 (0.094)	-0.024 (0.088)	0.236 (0.066)	-0.003 (0.073)
Number of students					
Control group	4,037	4,095	4,411	12,543	8,132
Treatment group	761	829	791	2,381	1,590

Notes: The estimates presented in the table are from difference-in-differences regressions that include primary school fixed effects. Standard errors in parentheses are adjusted for (primary) school level clustering. The sample is restricted to include schools that appear both before and after treatment.

Table A2: Simple, Controlled and Difference-in-Differences Estimated Effects of School Choice on High School Outcomes, Geographys Discontinuity Sample

Dependent variable	1993	1994	DID 93 vs. 94
	(1)	(2)	(3)
Drop out			
Control group mean	0.065	0.091	...
Treatment-control difference	0.090 (0.034)	0.028 (0.036)	-0.070 (0.030)
Treatment-control <i>controlled</i> difference	0.051 (0.028)	-0.008 (0.028)	-0.064 (0.029)
Eligible for Bagrut			
Control group mean	0.638	0.582	...
Treatment-control difference	-0.121 (0.083)	-0.015 (0.072)	0.115 (0.048)
Treatment-control <i>controlled</i> difference	-0.018 (0.048)	0.077 (0.051)	0.095 (0.048)
Average score			
Control group mean	78.677	75.723	...
Treatment-control difference	-14.528 (4.802)	-5.494 (5.268)	9.738 (2.983)
Treatment-control <i>controlled</i> difference	-7.813 (2.160)	0.444 (3.128)	8.681 (2.879)
Number of Bagrut credits			
Control group mean	21.334	20.138	...
Treatment-control difference	-3.717 (1.426)	-1.557 (1.452)	2.478 (0.982)
Treatment-control <i>controlled</i> difference	-1.213 (0.927)	0.138 (1.138)	1.800 (0.965)
Number of science credits			
Control group mean	3.142	2.894	...
Treatment-control difference	-1.264 (0.486)	-0.772 (0.491)	0.542 (0.389)
Treatment-control <i>controlled</i> difference	-0.498 (0.320)	-0.194 (0.266)	0.309 (0.374)
Number of honor-level subjects			
Control group mean	2.513	2.357	...
Treatment-control difference	-0.726 (0.231)	-0.371 (0.236)	0.396 (0.151)
Treatment-control <i>controlled</i> difference	-0.321 (0.149)	-0.067 (0.167)	0.282 (0.147)
Number of students			
Control group	464	471	935
Treatment group	329	344	344

Notes: The estimates presented in the table are from difference-in-differences regressions for the geography discontinuity sample described in the paper that include primary school fixed effects. Standard errors in parentheses are adjusted for (primary) school level clustering. The sample is restricted to include schools that appear both before and after treatment.

Table A3: Effect of School Choice on Post-Secondary Schooling with Control for Family Earnings, 12 Years Since High School Graduation

	Enrollment		Years of Schooling	
	Mean, 1992-1993		Mean, 1992-1993	
	Cohorts in Treated Schools	Treatment	Cohorts in Treated Schools	Treatment
	(1)	(2)	(3)	(4)
A. Post Secondary Schooling	0.425 (0.494)	0.046 (0.022)	1.648 (2.363)	0.172 (0.086)
B. University Schooling	0.179 (0.383)	0.003 (0.013)	0.717 (1.801)	0.025 (0.059)
C. College Schooling	0.209 (0.407)	0.041 (0.018)	0.589 (1.361)	0.170 (0.050)
Number of Observations	1539	14656	1539	14656

Notes: This table presents the differences-in-differences estimates of the effect of the School Choice program on post-secondary schooling with control for family earnings. Columns 1-2 measure enrollment into different types of post-secondary institutions, while columns 3-4 measure completed years of post-secondary education by institution type. The results are for 12 years after high school graduation. The variable "Any Post-Secondary Education" refers to all different post-secondary institutions. Columns 1 and 3 represent the mean and standard deviation for the 1992-1993 (untreated) cohorts in the treated schools. Columns 2 and 4 report the differences-in-differences estimates for each of the dependent variables. Standard errors are clustered at the school level.

Table A4: Effect of School Choice on Employment and Income with Control for Family Earnings, By Years Since High School Graduation

	11 Years		12 Years		13 Years		Stacked Regression 11-13 Years	
	mean 1992- 1993 Cohorts in Treated Schools	Estimate	mean 1992- 1993 Cohorts in Treated Schools	Estimate	mean 1992- 1993 Cohorts in Treated Schools	Estimate	mean 1992- 1993 Cohorts in Treated Schools	Estimate
	(1)	(2)	(4)	(5)	(7)	(8)	(10)	(11)
Employment Indicator (1 = Yes, 0 = No)	0.870 (0.337)	-0.029 (0.015)	0.852 (0.355)	-0.008 (0.013)	0.854 (0.353)	-0.006 (0.012)	0.858 (0.349)	-0.013 (0.011)
Total Annual Earnings (2009 NIS)	74,709 (64,595)	3,904 (2,331)	78,313 (67,521)	5,608 (2,589)	81,230 (70,432)	5,890 (2,768)	78,188 (67,808)	4,974 (2,350)
Total Annual Earnings (2009 NIS)	9.310 (4.354)	-0.298 (0.201)	9.251 (4.453)	-0.283 (0.152)	9.170 (4.456)	-0.127 (0.158)	9.228 (4.433)	-0.216 (0.148)
Number of Observations	1,537	14,622	1,532	14,605	1,527	14,569	4,668	44,229

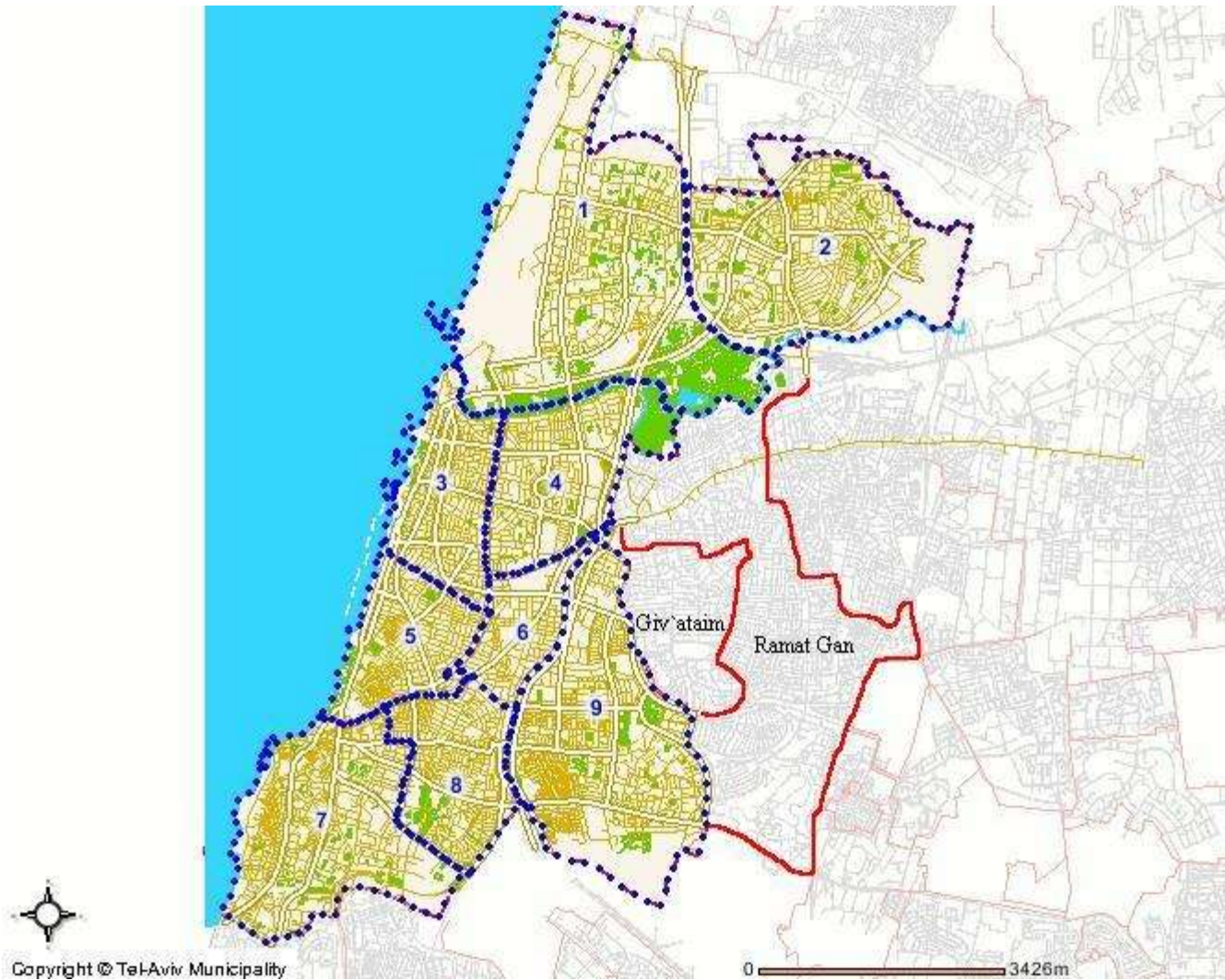
Notes: This table presents the differences-in-differences estimates of the effect of the School Choice program on different employment and earnings outcomes. Columns 1-2 report results for 11 years after high school graduation, columns 3-4 report results for 12 years after high school graduation and columns 5-6 report results for 13. The variable "Employment Indicator" equals 1 if an individual has any work record for the given year and 0 otherwise. Columns 1,3, 5 and 7 report the mean and standard deviation for the 1992-1993 (untreated) cohorts in the treated schools. Columns 2, 4, 6 and 8 report the differences-in-differences estimates for each of the dependent variables listed above. Standard errors are clustered at the school level.

Table A5: OLS Relationships between High School Matriculation Outcomes, College Schooling, and Earnings at Adulthood

	1992-1993 Cohorts in Treated Schools (Stacked Sample)	Annual Earnings, 13 Years after High-School Graduation			Annual Earnings, Stacked Regression 11-13 Years After High School graduation		
		Separate Estimate	Joint Estimate Panel A/B	Joint Estimate Panels A + B	Separate Estimate	Joint Estimate Panel A/B	Joint Estimate Panels A + B
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. High School Matriculation Outcomes							
Average Matriculation Score	59.669 (35.6)	641 (24)	187 (36)	122 (36)	610 (22)	173 (36)	129 (35)
Received High School Matriculation (1 = Yes, 0 = No)	0.439 (0.5)	39,249 (1,998)	5,830 (2,194)	-325 (2,143)	37,902 (1,714)	7,009 (1,891)	1,918 (1,929)
Number of Credit Units in Matriculation Exams	15.748 (11.0)	2,031 (69)	828 (127)	747 (127)	1,935 (61)	770 (117)	645 (118)
Number of Science Credit Units	1.525 (3.3)	5,356 (282)	3,188 (281)	2,464 (289)	5,043 (235)	2,942 (230)	2,612 (250)
B. Post Secondary Schooling							
Enrollment in Any Post Secondary Schooling (1 = Yes, 0 = No)	0.415 (0.5)	42,185 (1,784)	17,628 (3,823)	7,932 (3,705)	38,854 (1,580)	6,549 (3,085)	-691 (3,094)
Completed Years of Any Post Secondary Schooling	1.545 (2.2)	8,737 (389)	760 (891)	1 (905)	7,766 (314)	4,727 (753)	3,305 (763)
Enrollment in University or Academic College (1 = Yes, 0 = No)	0.331 (0.5)	43,911 (1,662)	11,374 (4,092)	11,232 (3,925)	39,830 (1,456)	26,361 (2,963)	22,972 (2,900)
Completed Years of University or Academic College	1.208 (2.0)	9,132 (412)	3,808 (1,123)	1,526 (1,087)	6,769 (307)	775 (32,030)	-3,666 (765)
Number of Observations	10,544	10,544	10,544	10,544	32,030	32,030	32,030

Notes: This table presents OLS relationships between high school matriculation outcomes, college schooling, and earnings at adulthood. Column 1 reports means and standard deviations for the 1992-1993 (untreated) cohorts in treated schools. Columns 2-4 represent the OLS estimates of a regression where the dependent variable is the annual wage for 13 years after high school graduation and the independent variables include the same control variables as in the main model presented in tables 2-6, in addition to the outcome variable described in the table. Columns 3 and 6 report the OLS estimate when all the variables that appear in Panel A are controlled for in the wage regression in addition to the rest of the control variables of the model. Columns 4 and 7 report the OLS estimate from a wage regression where all the explanatory variables in the table are controlled simultaneously. Standard errors are clustered at the school level.

Map 1 – Tel Aviv City, School Districts 1-9, and the cities Giv'atim and Ramat Gan



Map 2 – Tel Aviv School District 9 and Tangent Neighborhoods of Giv'atim and Ramat Gan.



Note: The red lines approximately draw the band.