

The Gender Gap in Charter School Enrollment

SUPPLEMENTAL ONLINE APPENDIX

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DATA SOURCES

National Panel of Schools (CCD)

Our school-level panel was constructed using twelve annual waves of the Common Core of Data (CCD) Public Elementary/Secondary School Universe Survey, published by the National Center for Education Statistics.¹ The CCD began identifying charter schools in 1998-99, but many charters appear to be incorrectly coded in that year. Thus, for this paper we used the 1999-00 through 2010-11 waves, and restricted our attention to the 41 states (including D.C.) that had at least one charter school during this period.²

Charter schools were identified in the CCD using the code CHARTR=1. While conversion charter schools conceivably may switch from non-charter to charter over the course of our 12-year panel (or the opposite), we found a number of likely miscodes in the panel that had changed charter status. For example, a few schools that were *not* coded as charters in year t were identified as charters in *both* $t-1$ and $t+1$. In such cases, we assumed the school was a charter for all three successive years. Similar assumptions were made for non-charter schools in year t that were coded as charters in year $t-2$ or $t-3$ and in $t+2$ or $t+3$. States most affected by these recodes were New Jersey (44 school observations), Missouri (29), California (28), and Georgia (23). A similar procedure was used to re-code schools coded as charters in year t but as non-charters in years before and after t . Fewer observations were affected in this case, with Kansas (6 observations) being the most affected.

As noted in Section III of the paper, we limited our panel to “regular” (TYPE=1) and “other/alternative” schools (TYPE=4), and excluded schools that provided exclusively vocational or special education services (TYPE=2 and TYPE=3). Only schools coded as operational (STATUS codes 1, 3, 4, 5, and 8) with positive, non-missing enrollment were included. Table A.1 provides the total number of charter schools meeting these criteria in each state and year.

For this paper we needed information on enrollment by gender, which is reported in the CCD disaggregated by race and grade level. We also wished to exclude schools that appeared to provide single-sex education, which we defined as those with greater than 95 percent or fewer than 5 percent girls. (Nationwide, anywhere from 408 to 680 schools fall into this category each year). A number of schools in the CCD lacked enrollment by gender and grade, although schools with missing data appeared to be concentrated in a few states and earlier years (specifically, select years in D.C., Idaho, Massachusetts, Oregon, Pennsylvania, and Tennessee). By contacting state education agencies, we were able to obtain missing data for Massachusetts (1999 and 2000), Ohio (2001), D.C. (1999), and Nevada (2004).³ Table A.1 shows the number of eligible charter schools with the necessary enrollment data for our analysis.

¹ All CCD files are publicly available for download at: <http://nces.ed.gov/ccd/pubschuniv.asp>.

² States that had no charter schools during the study period include: Alabama, Kentucky, Maine, Montana, Nebraska, North Dakota, South Dakota, Vermont, Washington, and West Virginia. Puerto Rico has charter schools, but the territory was not included in this analysis. Two schools in Maine were coded as charters. Because Maine has no charter school law, we assumed these were coding errors.

³ According to their respective state education agencies, Oregon and Pennsylvania did not collect enrollment by gender until 2004-05. Idaho did not collect until 2002-03. We obtained enrollment by gender for *non-charter* D.C. public schools for 1999-00 and 2000-01, but charter data was only obtained for 1999-00.

One might wish to exclude “other/alternative” (TYPE=4) schools from this analysis. However, we found that charter schools were much more likely than non-charter schools to be coded in this way (11.0% versus 5.8%). We suspected that many charter schools identified as TYPE 4 were not serving atypical student populations, but were mistakenly classified as “other” school types by the administrator completing the survey. To the extent “other/alternative” schools primarily serve “at-risk” students with a history of academic failure, truancy, or delinquency, they might be expected to have disproportionately *male* enrollment. This appears to be true for the non-charter schools in the CCD, but less so for charter schools. Only 37.4% of non-charter TYPE 4 schools were female, while 46.3% of enrollment in charter TYPE 4 schools were girls. This comparison suggests that many charter schools coded as “other” were simply miscoded “regular” schools. As a robustness check, we alternatively performed analyses with “other/alternative” schools excluded.

CCD locale types

Schools in the CCD are assigned one of eight locale codes: large city, mid-size city, urban fringe of a large city, urban fringe of a mid-size city, large town, small town, rural outside CBSA, and rural inside CBSA. In 2006-07, the CCD changed its system of coding locale types; thus, for that year we assigned consistent codes to schools in one of three ways: (1) used the school’s locale code in 2005, if that school existed; (2) used the modal locale code of schools in the same zip code in 2005; or (3) manually mapped the new code system to the old system. Virtually all schools were coded using the first two of these methods.

As might be expected, charter schools are less likely to be located outside of urban and suburban areas. Across years, 36.9% of charter schools were located in large cities (vs. 12.9% of traditional public schools); 17.9% were located in mid-sized cities (vs. 13.1%); and 18.3% were located in the suburban fringe of a large city (vs. 24.6%). While 38.6% of traditional public schools were located in towns of rural areas, only 20.0% of charter schools were.

Geocoding charter schools in the CCD

Our main regression specifications in the paper make use of school district fixed effects. These are difficult to implement using raw CCD data, as many charter schools are not formally linked to local school districts. In the CCD, these schools are assigned their own school district ID (LEAID) and not the ID of their surrounding school district. We used latitude and longitude coordinates for each school (provided in the CCD) together with Census 2000 cartographic boundary files and GIS software to identify the geographic school district for each charter school.⁴ Most school districts are unified (grades K-12), making it unambiguous which school district the charter school should be aligned with. In cases where the school resided in separate elementary and secondary districts, we assigned the school district most closely aligned with the charter school’s own grade span.

North Carolina Longitudinal Data

Individual student-level data from North Carolina was obtained from the North Carolina Education Data Research Center (NCEDRC). In this paper we rely primarily on the annual Masterbuild files, representing all students in grades 3-12 in the years 2005-06 through 2010-11. The Masterbuild files

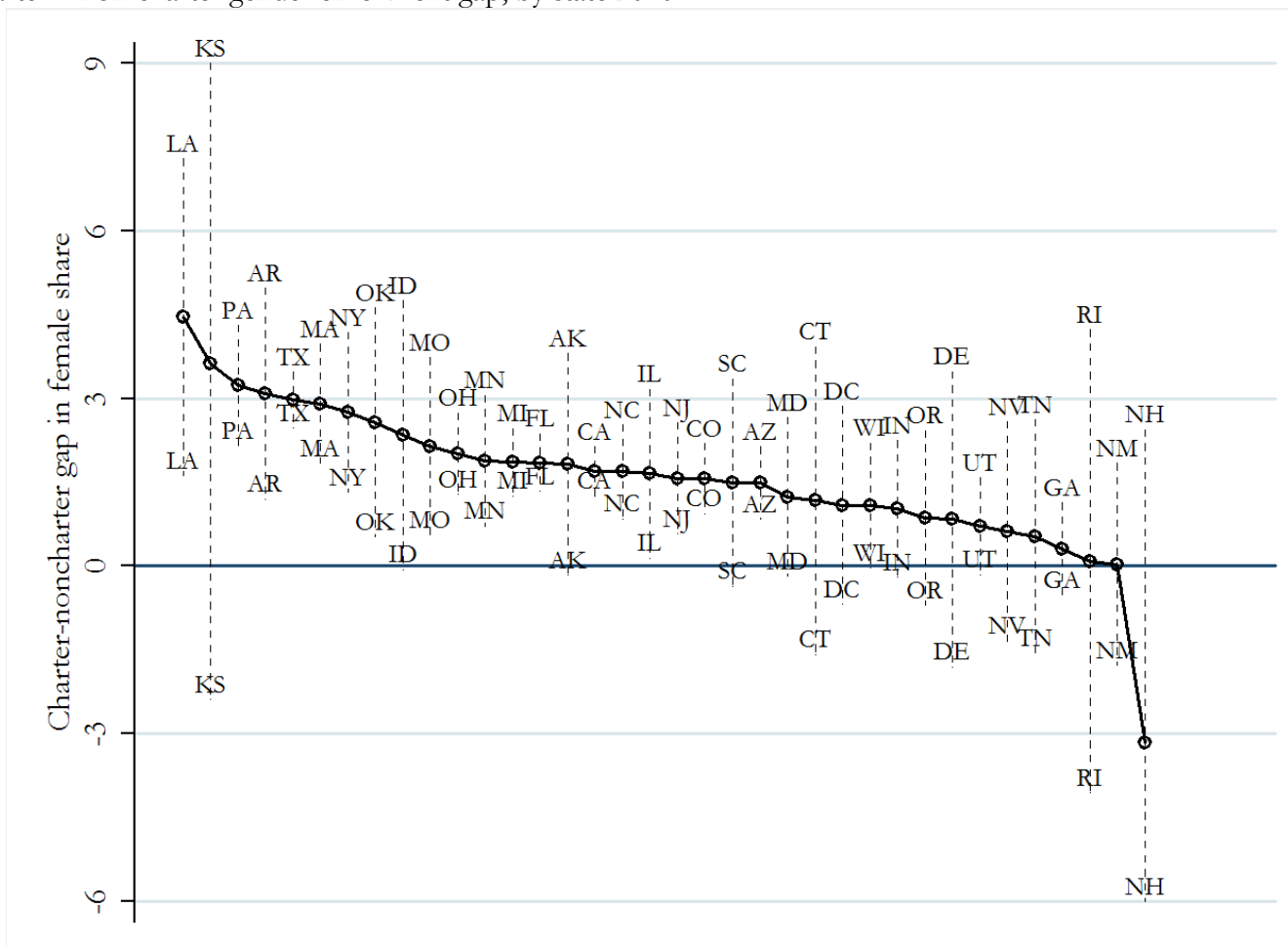
⁴ The 2000 boundary files are available for download from the U.S. Census Bureau here: https://www.census.gov/geo/maps-data/data/prev_cartbndry_names.html

include records for every student in grades 3-12 enrolled in a North Carolina school. In addition to achievement test scores, the files contain other student-level variables such as demographics (e.g. gender and race/ethnicity), exceptionalities, days absent, limited English proficiency status, and test modifications. Students who were exempt from or absent during testing are included.

North Carolina district and school codes

North Carolina has 115 school districts, or LEAs. Most, if not all, North Carolina charter schools are chartered by the state board of education. In these cases, schools are assigned their own unique LEA number, not the LEA number of the school district in which they are physically located. In order to compare students in charter schools with those in traditional public schools in the same district, a match to geographic school districts was needed. As most school districts in North Carolina are contiguous with counties, the majority of charter schools were matched to a district based on their county location. In cases where more than one district resides within a county (e.g. the Chapel Hill/Carrboro School District lies within the boundaries of the Orange County district), we matched charters to districts based on their city location (or address, if required).

Figure A.1: Charter – non-charter gender enrollment gap, by state 2010-11



Notes: each data point is estimated from a separate regression for each state, and dotted lines provide a 95-percent confidence interval around these estimates. The regression specification used here is identical to that used in Table 2, with district fixed effects.

Table A.1: Counts of operating charter schools by state, CCD, 1999 – 2010

State	Law year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AK	1995	18	19	15	15	19	21	23	23	23	24	25	27
AR	1995	2	3	6	7	13	17	19	18	24	30	38	41
AZ	1994	222	291	362	317	484	491	491	459	453	473	497	497
CA	1992	242	299	349	407	444	498	545	617	681	742	792	893
CO	1993	69	77	86	92	96	111	121	134	140	147	157	167
CT	1996	16	16	15	13	12	14	14	16	15	17	18	17
DC	1996	27	†	28	34	37	40	52	48	66	84	91	92
DE	1995	5	7	10	11	13	13	13	17	17	18	18	19
FL	1996	114	147	186	225	258	297	325	340	335	364	382	426
GA	1993	25	30	40	46	49	49	55	53	65	70	57	60
HI	1994	2	6	22	25	26	27	27	28	28	31	31	31
IA	2002						2	5	6	4	4	3	3
ID	1998	8	9	10	13	17	19	25	28	31	31	36	39
IL	1996	17	19	23	22	23	26	29	33	35	39	39	48
IN	2001			†	11	15	22	28	37	40	49	54	61
KS	1994	1	1	8	16	13	21	24	26	29	35	35	26
LA	1995	15	19	20	20	16	17	24	42	52	65	77	90
MA	1993	40	42	43	47	51	57	59	59	61	61	62	63
MD	2003					1	1	15	23	30	34	42	45
MI	1993	171	178	201	190	201	238	262	266	268	269	283	283
MN	1991	55	67	72	88	100	122	148	154	167	169	177	174
MO	1998	15	21	21	25	26	23	23	18	39	41	45	48
MS	1997	1	1	1	1	1	1	1	1	1	1	1	1
NC	1996	77	90	92	93	93	97	99	93	98	95	96	99
NH	1995						3	6	9	10	12	14	12
NJ	1996	44	51	49	50	48	49	51	53	57	61	70	75
NM	1993	5	10	20	27	33	42	51	59	63	66	71	80
NV	1997	5	8	10	13	14	19	17	19	20	29	32	33
NY	1998	†	†	†	37	50	58	78	91	95	105	136	168
OH	1997	48	64	85	127	163	245	290	273	295	289	287	302
OK	1999		6	10	10	12	12	14	16	15	16	18	18
OR	1999	1	9	16	21	23	37	44	65	78	87	101	109
PA	1997	47	65	77	91	102	109	116	118	123	125	132	142
RI	1995	2	3	6	7	7	10	9	9	9	10	11	14
SC	1996	4	6	5	10	16	22	26	28	28	35	37	43
TN	2002					4	7	12	12	12	13	19	29
TX	1995	165	198	236	256	270	295	312	384	432	497	535	555
UT	1998	6	8	9	11	18	26	36	51	57	65	71	77
VA	1998	1	1	6	7	6	4	3	3	3	4	3	4
WI	1993	52	78	107	128	135	149	169	178	215	205	195	200
WY	1995				1	1	2	3	3	3	3	3	3

Notes: authors' calculations using the CCD. Includes all charter schools not coded as closed (STATUS=2, 6, 7), not a special education or vocational school (TYPE=2, 3), with positive enrollment. Charter flags adjusted for likely miscodes. † = charter schools expected in this year but missing from the CCD.

Table A.2: Counts of charter schools with non-missing gender enrollment data, and not single sex, by state, 1999 – 2010

State	Law year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AK	1995	18	19	15	15	19	21	23	23	23	24	25	27
AR	1995	2	3	6	7	13	17	19	18	24	30	38	40
AZ	1994	214	279	333	296	462	472	489	457	451	470	497	497
CA	1992	240	294	344	403	442	495	537	613	676	738	783	875
CO	1993	66	77	85	91	94	110	121	134	139	147	157	166
CT	1996	16	16	15	13	12	14	14	16	15	17	18	17
DC	1996		†	†	31	†	39	50	46	64	81	89	90
DE	1995	5	7	10	11	13	13	13	17	17	17	17	17
FL	1996	113	145	184	224	258	295	323	338	334	363	381	424
GA	1993	25	30	40	46	49	49	55	53	65	69	57	60
HI	1994	2	6	22	25	26	27	27	28	28	31	31	31
IA	2002						2	5	5	4	4	3	3
ID	1998				13	16	19	24	28	31	31	36	39
IL	1996	17	18	22	21	22	25	28	31	33	37	37	43
IN	2001			†	10	15	22	28	37	40	49	54	61
KS	1994	1	1	7	15	12	21	24	26	29	34	35	26
LA	1995	15	18	20	20	16	17	24	42	52	62	74	87
MA	1993	40	39	43	47	51	57	59	59	61	61	62	63
MD	2003					1	1	15	23	29	33	39	41
MI	1993	170	178	196	185	196	231	249	256	262	261	274	275
MN	1991	54	67	71	88	100	122	148	154	166	168	175	173
MO	1998	15	21	21	25	26	23	23	18	39	41	45	48
MS	1997	1	1	1	1	1	1	1	1	1	1	1	1
NC	1996	76	89	92	93	93	97	99	93	98	95	96	99
NH	1995						2	6	8	9	11	13	12
NJ	1996	44	51	49	50	48	49	51	53	56	61	69	75
NM	1993	5	10	20	27	33	42	51	59	63	66	71	80
NV	1997	5	8	10	13	13	19	17	19	20	28	32	33
NY	1998	†	†	†	35	48	58	73	87	91	99	127	155
OH	1997	45	60	59	121	162	242	287	272	294	288	286	301
OK	1999		6	10	10	12	12	14	16	15	16	18	17
OR	1999	†	†	†	†	†	36	42	65	78	86	99	107
PA	1997	†	†	†	†	†	108	115	117	121	124	130	140
RI	1995	2	3	6	7	7	10	9	9	9	10	11	14
SC	1996	4	5	4	9	15	21	25	27	28	35	37	43
TN	2002					†	†	12	12	12	13	17	27
TX	1995	156	181	221	236	249	274	295	370	410	473	508	533
UT	1998	6	7	9	11	18	26	36	51	57	65	71	77
VA	1998		1	6	7	6	4	3	3	3	4	3	4
WI	1993	50	77	102	124	129	144	164	174	210	202	191	194
WY	1995				1	1	2	3	3	3	3	3	3

Notes: authors' calculations using the CCD. Includes all charter schools not coded as closed (STATUS=2, 6, 7), not a special education or vocational school (TYPE=2, 3), with positive enrollment. Restricts schools to those with non-missing enrollment by gender and are not single-sex (defined as >5% and <95% female). Charter flags adjusted for likely miscodes. † = charter schools expected in this year but missing from CCD, or gender data missing from CCD and was not obtainable from the state education agency.

Table A.3: Complete regression results for Table 2 – full sample and full sample excluding other/alternative

	Full sample				Excluding other/alternative			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Charter school	1.950*** (0.083)	1.993*** (0.084)	1.989*** (0.086)	1.888*** (0.100)	1.809*** (0.083)	1.830*** (0.083)	1.847*** (0.085)	1.797*** (0.098)
Percent black	0.011*** (0.001)	0.010*** (0.001)	0.010*** (0.001)	0.013*** (0.002)	0.012*** (0.001)	0.010*** (0.001)	0.011*** (0.001)	0.014*** (0.002)
Percent Hispanic	0.004*** (0.001)	0.004*** (0.001)	0.006*** (0.001)	0.010*** (0.002)	0.004*** (0.001)	0.004*** (0.001)	0.006*** (0.001)	0.010*** (0.002)
Percent Asian/ Pacific Islander	-0.003* (0.001)	-0.005** (0.002)	-0.003 (0.002)	-0.001 (0.003)	-0.004** (0.001)	-0.006*** (0.002)	-0.003 (0.002)	-0.001 (0.003)
Percent Am. Indian	0.005** (0.002)	0.005** (0.002)	0.009** (0.003)	0.000 (0.007)	0.004* (0.002)	0.006** (0.002)	0.010** (0.003)	0.004 (0.007)
Percent 2+ races	-0.015*** (0.003)	0.001 (0.003)	0.005 (0.003)	0.010 (0.006)	-0.014*** (0.003)	0.003 (0.003)	0.006* (0.003)	0.011* (0.006)
Percent free lunch	-0.013*** (0.001)	-0.011*** (0.001)	-0.014*** (0.001)	-0.023*** (0.002)	-0.012*** (0.001)	-0.010*** (0.001)	-0.013*** (0.001)	-0.021*** (0.002)
Percent reduced price lunch	0.015*** (0.002)	0.014*** (0.002)	0.018*** (0.003)	0.029*** (0.005)	0.012*** (0.002)	0.011*** (0.002)	0.014*** (0.003)	0.022*** (0.005)
Other/alt school	-5.041*** (0.295)	-5.363*** (0.298)	-5.621*** (0.313)	-4.789*** (0.329)				
Fixed effect	None	State	County	District	None	State	County	District
_cons	49.245*** (0.056)	49.160*** (0.057)	49.251*** (0.077)	49.168*** (0.132)	49.167*** (0.054)	49.079*** (0.055)	49.152*** (0.074)	49.123*** (0.125)
N	449578	449578	449528	449566	432554	432554	432504	432542
adj. R ²	0.015	0.034	0.032	0.002	0.008	0.028	0.027	-0.002

Note: compare to the “full sample” and “full sample excluding other/alternative” rows in Table 2. Standard errors in parentheses with clustering at the school level (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$). Panel data consists of observations on grades within schools. The regressions in columns (2) – (4) and (6)-(8) include grade-specific location effects and controls for enrollment shares by race/ethnicity and grade, the percent eligible for free lunch and eligible for reduced price lunch at the school level, and an indicator for “other/alternative” schools. Regressions are weighted using school-by-grade enrollment.

Table A.4a: Regressions for Table 2, *not* excluding single sex schools, full sample

	No covariates				With covariates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Charter school	1.798*** (0.097)	1.827*** (0.097)	1.850*** (0.098)	1.798*** (0.116)	1.868*** (0.096)	1.914*** (0.097)	1.899*** (0.099)	1.754*** (0.118)
Percent black					0.010*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.010*** (0.002)
Percent Hispanic					0.003*** (0.001)	0.004*** (0.001)	0.006*** (0.001)	0.008*** (0.002)
Percent Asian/ Pacific Islander					-0.003* (0.001)	-0.005** (0.002)	-0.003 (0.002)	-0.001 (0.003)
Percent Am. Indian					0.005** (0.002)	0.005** (0.002)	0.008** (0.003)	-0.001 (0.007)
Percent 2+ races					-0.014*** (0.003)	0.002 (0.003)	0.006 (0.003)	0.013* (0.006)
Percent free lunch					-0.013*** (0.001)	-0.011*** (0.001)	-0.014*** (0.001)	-0.021*** (0.002)
Percent reduced price lunch					0.018*** (0.003)	0.018*** (0.002)	0.023*** (0.003)	0.034*** (0.006)
Other/alt school					-5.725*** (0.326)	-6.055*** (0.330)	-6.299*** (0.344)	-4.937*** (0.368)
Fixed effect	None	State	County	District	None	State	County	District
_cons	48.934*** (0.047)	48.975*** (0.047)	48.948*** (0.069)	48.829*** (0.113)	49.321*** (0.059)	49.238*** (0.060)	49.301*** (0.082)	49.195*** (0.140)
<i>N</i>	455357	455357	455307	455345	452867	452867	452817	452855
adj. <i>R</i> ²	0.004	0.022	0.014	-0.022	0.016	0.034	0.027	-0.012

Notes: compare to the “full sample” row in Table 2. Standard errors in parentheses with clustering at the school level (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$). Panel data consists of observations on grades within schools. The regressions in columns (2) – (4) and (6)-(8) include grade-specific location effects and controls for enrollment shares by race/ethnicity and grade, the percent eligible for free lunch and eligible for reduced price lunch at the school level, and an indicator for “other/ alternative” schools. Regressions are weighted using school-by-grade enrollment.

Table A.4b: Regressions for Table 2, *not* excluding single sex schools, full sample excluding other/alternative

	No covariates				With covariates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Charter school	1.894*** (0.097)	1.910*** (0.096)	1.911*** (0.098)	1.901*** (0.117)	1.725*** (0.095)	1.747*** (0.095)	1.752*** (0.098)	1.682*** (0.117)
Percent black					0.011*** (0.001)	0.009*** (0.001)	0.010*** (0.001)	0.013*** (0.002)
Percent Hispanic					0.004*** (0.001)	0.004*** (0.001)	0.007*** (0.001)	0.010*** (0.002)
Percent Asian/ Pacific Islander					-0.003* (0.001)	-0.005** (0.002)	-0.003 (0.002)	-0.000 (0.003)
Percent Am. Indian					0.004* (0.002)	0.006** (0.002)	0.010** (0.003)	0.004 (0.007)
Percent 2+ races					-0.014*** (0.003)	0.004 (0.003)	0.007* (0.003)	0.013* (0.006)
Percent free lunch					-0.012*** (0.001)	-0.010*** (0.001)	-0.013*** (0.001)	-0.021*** (0.002)
Percent reduced price lunch					0.014*** (0.002)	0.012*** (0.002)	0.016*** (0.003)	0.025*** (0.006)
Fixed effect	None	State	County	District	None	State	County	District
_cons	48.989*** (0.046)	49.036*** (0.046)	49.012*** (0.065)	48.920*** (0.106)	49.218*** (0.057)	49.127*** (0.057)	49.167*** (0.078)	49.152*** (0.132)
N	435052	435052	435002	435040	433238	433238	433188	433226
adj. R ²	0.005	0.025	0.022	-0.019	0.007	0.026	0.023	-0.017

Notes: compare to the “full sample excluding other/alternative” row in Table 2. Standard errors in parentheses with clustering at the school level (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$). Panel data consists of observations on grades within schools. The regressions in columns (2) – (4) and (6)-(8) include grade-specific location effects and controls for enrollment shares by race/ethnicity and grade, the percent eligible for free lunch and eligible for reduced price lunch at the school level. Regressions are weighted using school-by-grade enrollment.

Table A.5: Counts of conversion charter schools by state

State	Conversions – list from states	Identified conversions in panel	Percent of charter schools in panel	Included in Table 3 models (2000 – 2009)
Arizona	No conversions	-	-	-
Arkansas	12 conversions 2003 – 2011	9	17.7	9
California	204 conversions 1993 – 2011	167	14.2	96
Colorado	16 conversions 1994 – 2011	16	7.9	6
Florida	21 conversions 1997 – 2010	20	3.2	18
Georgia	55 conversions 1998 – 2011	44	41.5	29
Maryland	13 conversions 2004 – 2011	13	27.1	13
Massachusetts	10 conversions 1999 – 2011	7	9.7	7
Michigan	8 conversions 1995 – 2011	8	2.3	2
Minnesota	1 conversion in 1999	0	0.5	0
New York	6 conversions 2000 – 2011	6	3.3	6
North Carolina	No conversions	-	-	-
Ohio	69 conversions 1999 – 2007	65	14.4	65
Oklahoma	3 conversions 2000 – 2011	3	14.3	3
Oregon	23 conversions 2000 – 2007	15	11.6	18
Pennsylvania	1 conversion in 2000	1	0.7	1
Texas	45 conversions 1996 – 2011	45	6.1	26
Wisconsin	32 conversions 1994 – 2007	27	8.3	25

Notes: data obtained by the authors from these respective state education agencies. Conversion charters used in identifying the models in Table 3 must have converted between 2000-01 and 2009-10.

Table A.6: Gender gap in charter school enrollment, North Carolina schools grades 3-12, 2010-11

	(1)	(2)	(3)	(4)
Data source:	CCD	CCD	NC	NC
Charter school	2.015*** (0.506)	1.489* (0.578)	2.143** (0.485)	1.451** (0.550)
Race and income covariates	NO	YES	NO	YES
School district by grade effects	YES	YES	YES	YES
<i>N</i>	8,558	8,551	8,891	8,891
adj. <i>R</i> ²	0.011	0.027	0.027	0.037

Notes: standard errors in parentheses adjusted for clustering at the school level (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$). Each column is the result from a separate regression model, and reports the estimated coefficient on the charter school indicator. Observations are at the school-by-grade level for grades 3-12 in North Carolina schools only, with columns (1)-(2) using data from the CCD, and (3)-(4) using aggregated student-level data from North Carolina. Columns (2) and (4) include controls for the racial/ethnic composition in the grade/school (black, Hispanic, Asian, American Indian, and other), as well as the percent eligible for free or reduced price meals. All regression models include grade and locale type effects. All observations are weighted by enrollment in the given grade and school.

Table A.7: Complete regression results for Table 6 – charter school students only

Grade:	3	4	5	6	7	8	9	10	11
Female	0.001 (0.006)	-0.014* (0.006)	-0.025*** (0.007)	-0.020** (0.006)	-0.023*** (0.006)	-0.003 (0.006)	-0.022* (0.010)	-0.022* (0.011)	-0.028* (0.012)
2007	0.801*** (0.010)	0.176*** (0.011)	0.182*** (0.012)	0.200*** (0.011)	0.130*** (0.011)	0.123*** (0.011)	0.293*** (0.018)	0.046* (0.021)	0.042 (0.024)
2008	-0.007 (0.010)	-0.039*** (0.011)	-0.038*** (0.011)	-0.009 (0.010)	-0.046*** (0.011)	0.036*** (0.011)	-0.046* (0.018)	-0.097*** (0.020)	-0.098*** (0.023)
2009	-0.027** (0.010)	-0.080*** (0.011)	-0.063*** (0.011)	-0.043*** (0.010)	-0.076*** (0.011)	-0.002 (0.011)	-0.097*** (0.017)	-0.156*** (0.020)	-0.142*** (0.023)
2010	-0.044*** (0.009)	-0.079*** (0.010)	-0.072*** (0.011)	-0.058*** (0.010)	-0.078*** (0.010)	0.018 (0.010)	-0.074*** (0.017)	-0.121*** (0.019)	-0.066** (0.021)
Am indian x not free/red lunch	0.031 (0.041)	-0.026 (0.045)	0.120** (0.045)	0.002 (0.040)	-0.013 (0.039)	-0.071 (0.037)	-0.074 (0.055)	0.02 (0.055)	-0.002 (0.060)
Am indian x free/red lunch	-0.074 (0.053)	-0.140* (0.057)	-0.078 (0.063)	-0.181*** (0.034)	-0.155*** (0.031)	-0.128*** (0.030)	0.038 (0.060)	-0.011 (0.070)	0.061 (0.090)
Asian x not free/red lunch	0.035 (0.020)	-0.012 (0.024)	0.060* (0.026)	0.017 (0.024)	0.028 (0.025)	0.052 (0.027)	0.002 (0.037)	0.026 (0.043)	0.056 (0.051)
Asian x free/red lunch	0.143 (0.103)	-0.148 (0.112)	0.009 (0.103)	0.038 (0.102)	-0.112 (0.107)	0.012 (0.095)	-0.035 (0.239)	-0.148 (0.291)	-0.307 (0.236)
Hispanic x not free/red lunch	0.014 (0.022)	0.052* (0.024)	-0.060* (0.026)	0.024 (0.023)	0.065** (0.023)	0.012 (0.025)	0.064* (0.032)	0.153*** (0.037)	0.090* (0.041)
Hispanic x free/red lunch	-0.002 (0.025)	-0.036 (0.029)	0.003 (0.032)	0.009 (0.027)	0.001 (0.029)	-0.095** (0.030)	0.024 (0.079)	0.079 (0.098)	-0.033 (0.113)
Black x not free/red lunch	0.086*** (0.009)	0.071*** (0.010)	0.073*** (0.011)	0.061*** (0.010)	0.070*** (0.010)	-0.025* (0.010)	0.128*** (0.015)	0.146*** (0.016)	0.163*** (0.019)
Black x free/red lunch	0.068*** (0.010)	0.105*** (0.011)	0.068*** (0.011)	0.074*** (0.010)	0.068*** (0.011)	-0.088*** (0.011)	-0.001 (0.019)	0.027 (0.022)	0.002 (0.025)
White x free/red lunch	0.054*** (0.015)	0.037* (0.017)	0.019 (0.018)	0.064*** (0.018)	0.084*** (0.018)	-0.029 (0.018)	0.116*** (0.029)	0.073* (0.033)	0.057 (0.038)

Other race	0.01	0.028	0.01	0.03	0.013	0.002	0.023	0.041	-0.004
x not free/red lunch	(0.017)	(0.019)	(0.021)	(0.020)	(0.021)	(0.022)	(0.035)	(0.038)	(0.047)
Other race	0.095*	0.038	-0.035	0.04	0.193***	-0.151**	0.192*	-0.205*	-0.068
x free/red lunch	(0.041)	(0.046)	(0.046)	(0.044)	(0.047)	(0.051)	(0.087)	(0.103)	(0.102)
Limited English Proficient	0.021	0.037	0.014	0.018	-0.001	0.065	0.044	-0.002	0.016
	(0.025)	(0.032)	(0.035)	(0.031)	(0.033)	(0.036)	(0.063)	(0.081)	(0.107)
Special education	-0.029***	-0.007	-0.043***	-0.028**	-0.037***	-0.040***	0.027	0.057**	-0.001
	(0.009)	(0.010)	(0.011)	(0.010)	(0.011)	(0.011)	(0.016)	(0.018)	(0.021)
Other/alternative school	0.356***	0.421***	-0.070**	-0.134***	-0.062**	0.206***	0.075***	0.134***	0.133***
	(0.080)	(0.084)	(0.026)	(0.024)	(0.023)	(0.021)	(0.020)	(0.023)	(0.027)
Reading z-score	-0.013**	-0.013**	-0.011*	-0.004	-0.016**	-0.010*			
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)			
Math z-score	-0.024***	-0.025***	-0.026***	-0.045***	-0.045***	-0.021***			
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)			
Constant	0.176***	0.256***	0.180***	0.210***	0.187***	0.034*	0.301***	0.250***	0.219***
	(0.012)	(0.014)	(0.015)	(0.013)	(0.014)	(0.014)	(0.019)	(0.020)	(0.022)
N	13640	13372	14203	15301	14071	12553	7333	5848	4386
Mean of dependent variable	0.303	0.188	0.218	0.201	0.185	0.159	0.283	0.246	0.242
Adjusted R ²	0.494	0.104	0.075	0.098	0.093	0.062	0.157	0.092	0.098

Notes: each regression is a linear probability model for the probability of making a non-structural move in year $t+1$, conditional on being in grade g in year t . The sample consists of students in grades 3-11 in charter schools in 2006-2010. All models also include controls for locale type. Standard errors reported in parentheses (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).