School District Size and Student Performance

Online Appendix

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Appendix A: Estimation Results

Table A1: Estimation results of impact of school district size on SAT composite score

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
Log of Total enrollment in school corporation	50.67***	48.66**	62.79***	56.58***	57.25***
	(8.747)	(21.70)	(11.59)	(8.914)	(9.273)
Log of Tuition support	7.705	-13.75	2.238	28.33	27.30
	(21.89)	(109.2)	(42.79)	(38.66)	(27.12)
Log of number of SAT takers	-25.88***	-19.82	-35.08***	-30.77***	-31.31***
	(9.245)	(17.10)	(9.754)	(8.865)	(9.726)
Share of free and reduced lunch in school corporation	-223.8***	-159.2**	-213.3***	-213.3***	-225.3***
	(23.32)	(75.59)	(30.28)	(33.48)	(26.74)
Share of African American students in school corporation	-137.0***	-379.5	-26.73	-7.032	-147.5***
	(35.99)	(875.2)	(236.3)	(149.6)	(32.81)
Share of Hispanic Students in school corporation	-20.76	94.52	3.721	-20.53	-14.84
	(24.18)	(88.04)	(43.59)	(30.47)	(24.57)
Counties in metro areas of 250,000 to 1 million population	1.989	42.74***	7.844	7.409	6.571
	(7.185)	(10.50)	(12.52)	(10.60)	(8.639)
Counties in metro areas of fewer than 250,000 population	17.26**	2.281	10.50	19.83**	16.55**
	(7.082)	(12.96)	(8.666)	(9.205)	(7.617)
Urban population of 20,000 or more, adjacent to a metro area	8.932	-8.465	3.757	8.736	8.603
	(5.769)	(16.49)	(7.512)	(6.295)	(5.859)
Urban population of 20,000 or more, not adjacent to a metro area	20.31***	-35.95**	17.74*	21.11***	20.36***
	(7.214)	(15.54)	(9.065)	(7.581)	(7.122)
Urban population of 2,500 to 19,999, adjacent to a metro area	8.116*	0.803	8.191	9.510*	8.137*
	(4.685)	(10.35)	(5.676)	(5.070)	(4.624)
Urban population of 2,500 to 19,999, not adjacent to a metro area	14.42*	16.10	11.38	16.10*	14.44*
	(8.704)	(14.58)	(10.30)	(8.363)	(8.488)
Completely rural or less than 2,500 urban population, not adjacent to	-4.107		-5.483	-2.520	-4.511
a metro area	(9.016)		(10.39)	(9.781)	(9.533)
Constant	731.9***	878.3	722.1*	522.6	537.4**
	(182.9)	(887.5)	(369.2)	(332.2)	(230.3)
Observations	812	116	415	602	724
Number of school districts	280	50	149	212	253
R-squared	0.572	0.257	0.387	0.407	0.519
Breusch and Pagan I M Test for random effects	255 14***				

Breusch and Pagan LM Test for random effects255.14***Robust Standard errors clustered by corporation id in parentheses. Year fixed effects in all models.

*** p<0.01, ** p<0.05, * p<0.1

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
	1.170 /////	0.570	0.057	1.0104444	1.000
log of Total enrollment in school corporation	1.172***	0.579	0.857**	1.210***	1.283***
	(0.183)	(1.172)	(0.421)	(0.263)	(0.205)
Log of Tuition support	1.948	-1.551	3.042	3.432*	3.428**
	(1.195)	(6.149)	(2.403)	(1.896)	(1.390)
Log of number of ACT takers	-0.472***	0.136	-0.423**	-0.428***	-0.418***
	(0.139)	(0.404)	(0.193)	(0.155)	(0.145)
Share of free and reduced lunch in school corporation	-7.314***	1.621	-6.765***	-7.090***	-7.443***
	(0.910)	(3.966)	(1.832)	(1.366)	(1.024)
Share of Black students in school corporation	-3.803***	11.01	-3.143	-2.444	-4.506***
	(1.104)	(51.84)	(5.231)	(3.058)	(1.199)
Share of Hispanic Students in school corporation	-1.772*	-15.46	-3.664	-2.945**	-1.662*
	(0.961)	(10.69)	(2.353)	(1.375)	(0.975)
Counties in metro areas of 250,000 to 1 million population	0.0974	-1.428	0.106	-0.0220	0.191
	(0.258)	(0.995)	(0.449)	(0.381)	(0.318)
Counties in metro areas of fewer than 250,000 population	0.416*	-0.935	-0.238	0.315	0.445*
	(0.220)	(1.167)	(0.295)	(0.272)	(0.235)
Urban population of 20,000 or more, adjacent to a metro area	0.385	-0.0643	0.0460	0.263	0.380
	(0.294)	(1.283)	(0.420)	(0.326)	(0.294)
Urban population of 20,000 or more, not adjacent to a metro area	0.677	-3.336**	0.424	0.689	0.677*
	(0.422)	(1.521)	(0.598)	(0.466)	(0.412)
Urban population of 2,500 to 19,999, adjacent to a metro area	0.353	-1.596	0.0301	0.326	0.362
	(0.220)	(1.236)	(0.326)	(0.247)	(0.227)
Urban population of 2,500 to 19,999, not adjacent to a metro area	0.860	0.0366	0.376	0.829	0.889
	(0.559)	(1.511)	(0.713)	(0.565)	(0.558)
Completely rural or less than 2,500 urban population, not adjacent to	0.231		0.0963	0.179	0.231
a metro area	(0.358)		(0.411)	(0.375)	(0.372)
Constant	0.843	31.07	-6.529	-12.41	-12.82
	(10.30)	(53.06)	(20.84)	(16.55)	(12.01)
Observations	803	109	406	593	715
Number of school districts	281	51	150	213	254
R-squared	0.376	0.118	0.191	0.241	0.322
Breusch and Pagan LM Test for random effects	33.08***				

Table A2: Estimation results of impact of school district size on ACT composite score

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
log of Total enrollment in school corporation	0.116***	0.0532	0.145***	0.131***	0.134***
	(0.0132)	(0.120)	(0.0435)	(0.0268)	(0.0172)
Log of Tuition support	0.0986	-0.423	-0.0194	0.190	0.161
	(0.0982)	(0.523)	(0.192)	(0.159)	(0.122)
Share of free and reduced lunch in school corporation	-0.554***	-0.153	-0.398***	-0.520***	-0.521***
	(0.0862)	(0.377)	(0.152)	(0.128)	(0.0980)
Share of Black students in school corporation	-0.196*	-4.658	0.294	0.536	-0.168
	(0.115)	(4.498)	(0.631)	(0.383)	(0.144)
Share of Hispanic Students in school corporation	0.139	-0.374	-0.138	-0.0167	0.120
	(0.0899)	(0.380)	(0.154)	(0.116)	(0.0961)
Counties in metro areas of 250,000 to 1 million population	0.0116	0.106	0.120**	0.107**	0.0966**
	(0.0404)	(0.116)	(0.0521)	(0.0505)	(0.0414)
Counties in metro areas of fewer than 250,000 population	0.00617	-0.0510	-0.0513	0.00235	0.00740
	(0.0305)	(0.126)	(0.0524)	(0.0440)	(0.0342)
Urban population of 20,000 or more, adjacent to a metro area	0.0257	-0.0690	-0.0623	0.0185	0.0306
	(0.0387)	(0.132)	(0.0437)	(0.0410)	(0.0376)
Urban population of 20,000 or more, not adjacent to a metro area	0.0601	0.0781	0.0357	0.0601	0.0679
	(0.0700)	(0.119)	(0.0919)	(0.0744)	(0.0688)
Urban population of 2,500 to 19,999, adjacent to a metro area	-0.0127	-0.0420	-0.00175	0.00621	-0.00462
	(0.0278)	(0.100)	(0.0340)	(0.0303)	(0.0284)
Urban population of 2,500 to 19,999, not adjacent to a metro area	-0.0154	0.0126	-0.0239	0.00204	-0.00418
	(0.0549)	(0.136)	(0.0716)	(0.0550)	(0.0549)
Completely rural or less than 2,500 urban population, not adjacent to	-0.00484		-0.0234	0.00806	0.00368
a metro area	(0.0460)		(0.0512)	(0.0474)	(0.0462)
Constant	-1.155	3.657	-0.397	-2.073	-1.847*
	(0.854)	(4.665)	(1.707)	(1.404)	(1.062)
Observations	787	102	393	577	699
Number of school districts	276	46	145	208	249
R-squared	0.298	0.114	0.145	0.169	0.255
Breusch and Pagan LM Test for random effects	203.43***				

Table A3: Estimation results of impact of school district size on share of AP students passing the AP exam

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
log of Total enrollment in school corporation	-0.00485	0.0304	-0.00302	-0.00818	-0.00365
	(0.00377)	(0.0376)	(0.00979)	(0.00679)	(0.00471)
Log of Tuition support	-0.139***	-0.465**	-0.185*	-0.159**	-0.143**
	(0.0471)	(0.192)	(0.0945)	(0.0720)	(0.0557)
Share of free and reduced lunch in school corporation	-0.311***	0.0293	-0.271***	-0.282***	-0.303***
	(0.0250)	(0.130)	(0.0506)	(0.0349)	(0.0280)
Share of Black students in school corporation	-0.181***	-2.257*	-0.335*	-0.204	-0.178***
	(0.0425)	(1.197)	(0.187)	(0.140)	(0.0575)
Share of Hispanic Students in school corporation	0.0589	-0.271	0.140*	0.104*	0.0702
	(0.0450)	(0.183)	(0.0823)	(0.0569)	(0.0476)
Counties in metro areas of 250,000 to 1 million population	-0.0166*	-0.0452**	-0.0131	-0.0244*	-0.0166
	(0.00926)	(0.0196)	(0.0169)	(0.0134)	(0.0124)
Counties in metro areas of fewer than 250,000 population	-0.00618	-0.0213	0.00291	0.00394	-0.00454
	(0.00707)	(0.0275)	(0.0110)	(0.00844)	(0.00756)
Urban population of 20,000 or more, adjacent to a metro area	-0.0200*	-0.0667**	-0.0165	-0.0164	-0.0201*
	(0.0102)	(0.0339)	(0.0140)	(0.0119)	(0.0103)
Urban population of 20,000 or more, not adjacent to a metro area	-0.00998	-0.148***	-0.0244*	-0.0133	-0.00956
	(0.0124)	(0.0338)	(0.0131)	(0.0121)	(0.0122)
Urban population of 2,500 to 19,999, adjacent to a metro area	-0.0136*	-0.0361	-0.0109	-0.0120	-0.0133*
	(0.00770)	(0.0242)	(0.00991)	(0.00856)	(0.00782)
Urban population of 2,500 to 19,999, not adjacent to a metro area	0.00292	0.0167	0.0231	0.00501	0.00371
	(0.0218)	(0.0377)	(0.0267)	(0.0220)	(0.0221)
Completely rural or less than 2,500 urban population, not adjacent to	-0.0197		-0.0163	-0.0158	-0.0188
a metro area	(0.0142)		(0.0164)	(0.0148)	(0.0144)
Constant	2.156***	4.623***	2.518***	2.338***	2.173***
	(0.402)	(1.658)	(0.805)	(0.618)	(0.479)
Observations	819	123	422	609	731
Number of school districts	282	52	151	214	255
R-squared	0.596	0.410	0.368	0.400	0.510
Breusch and Pagan LM Test for random effects	100.83***				

Table A4: Estimation results of impact of school district size on share of high school graduates that passed ECA English

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
log of Total enrollment in school corporation	0.0137	0.0634	0.0236	0.0330**	0.0288***
	(0.00901)	(0.0548)	(0.0215)	(0.0149)	(0.0109)
Log of Tuition support	-0.218***	-1.234***	-0.330*	-0.285**	-0.217**
	(0.0752)	(0.313)	(0.171)	(0.124)	(0.0911)
Share of free and reduced lunch in school corporation	-0.353***	0.257	-0.281***	-0.262***	-0.318***
	(0.0536)	(0.211)	(0.105)	(0.0773)	(0.0604)
Share of Black students in school corporation	-0.240***	-1.499	-0.744	-0.510	-0.270***
	(0.0553)	(1.814)	(0.750)	(0.452)	(0.0631)
Share of Hispanic Students in school corporation	0.132	-0.650**	0.150	0.173	0.174**
	(0.0882)	(0.286)	(0.159)	(0.108)	(0.0811)
Counties in metro areas of 250,000 to 1 million population	-0.0616**	-0.331***	-0.0924*	-0.0634	-0.0458
	(0.0260)	(0.0500)	(0.0537)	(0.0386)	(0.0315)
Counties in metro areas of fewer than 250,000 population	-0.000169	-0.0534	-0.0232	0.00955	0.0167
	(0.0199)	(0.0747)	(0.0287)	(0.0231)	(0.0189)
Urban population of 20,000 or more, adjacent to a metro area	0.00587	-0.0940	-0.0304	0.00384	0.00713
	(0.0221)	(0.0586)	(0.0280)	(0.0251)	(0.0218)
Urban population of 20,000 or more, not adjacent to a metro area	-0.0410	-0.428***	-0.0759*	-0.0576*	-0.0377
	(0.0317)	(0.0737)	(0.0400)	(0.0327)	(0.0310)
Urban population of 2,500 to 19,999, adjacent to a metro area	-0.0143	-0.0222	-0.0354	-0.0211	-0.0105
	(0.0196)	(0.0635)	(0.0247)	(0.0206)	(0.0196)
Urban population of 2,500 to 19,999, not adjacent to a metro area	-0.00815	-0.0239	-0.0219	-0.00978	-0.000225
	(0.0287)	(0.0667)	(0.0385)	(0.0305)	(0.0295)
Completely rural or less than 2,500 urban population, not adjacent to	0.0330		0.0154	0.0279	0.0386
a metro area	(0.0246)		(0.0285)	(0.0263)	(0.0249)
Constant	2.645***	10.89***	3.521**	3.046***	2.503***
	(0.651)	(2.638)	(1.467)	(1.086)	(0.797)
Observations	818	122	421	608	730
Number of school districts	282	52	151	214	255
R-squared	0.310	0.421	0.197	0.206	0.257
Breusch and Pagan LM Test for random effects	247.51***				

Table A5: Estimation results of impact of school district size on share of high school graduates that passed ECA Algebra

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
log of Total enrollment in school corporation	0.0464***	0.104**	0.0558***	0.0542***	0.0523***
	(0.00722)	(0.0492)	(0.0177)	(0.0128)	(0.00924)
Log of Tuition support	-0.0355	-0.297	-0.0802	-0.116	-0.0504
	(0.0788)	(0.298)	(0.156)	(0.128)	(0.0962)
Share of free and reduced lunch in school corporation	-0.551***	-0.460**	-0.511***	-0.458***	-0.524***
	(0.0529)	(0.186)	(0.0763)	(0.0737)	(0.0599)
Share of Black students in school corporation	-0.253***	0.706	-0.284	-0.227	-0.288***
	(0.0607)	(1.535)	(0.179)	(0.174)	(0.0860)
Share of Hispanic Students in school corporation	0.0756	0.276	0.178**	0.146**	0.0966*
	(0.0539)	(0.276)	(0.0833)	(0.0635)	(0.0558)
Counties in metro areas of 250,000 to 1 million population	-0.0186	-0.110***	0.0224	-0.00941	-0.000190
	(0.0254)	(0.0332)	(0.0392)	(0.0367)	(0.0303)
Counties in metro areas of fewer than 250,000 population	-0.00325	-0.0673*	-0.000692	0.0158	0.00467
	(0.0170)	(0.0406)	(0.0282)	(0.0228)	(0.0185)
Urban population of 20,000 or more, adjacent to a metro area	-0.0104	-0.107***	-0.0251	-0.0111	-0.00953
	(0.0219)	(0.0401)	(0.0272)	(0.0243)	(0.0220)
Urban population of 20,000 or more, not adjacent to a metro area	0.0289	-0.0645	0.0364	0.0295	0.0311
	(0.0378)	(0.0530)	(0.0513)	(0.0416)	(0.0378)
Urban population of 2,500 to 19,999, adjacent to a metro area	-0.0165	-0.0535	-0.0142	-0.0148	-0.0144
	(0.0160)	(0.0421)	(0.0201)	(0.0178)	(0.0164)
Urban population of 2,500 to 19,999, not adjacent to a metro area	0.0308	-0.0190	0.0233	0.0347	0.0349
	(0.0378)	(0.0718)	(0.0442)	(0.0378)	(0.0375)
Completely rural or less than 2,500 urban population, not adjacent to	0.0434		0.0421	0.0475	0.0466
a metro area	(0.0392)		(0.0408)	(0.0413)	(0.0398)
Constant	0.670	2.538	0.967	1.263	0.740
	(0.682)	(2.578)	(1.359)	(1.119)	(0.836)
Observations	815	120	418	605	727
Number of school districts	282	52	151	214	255
R-squared	0.465	0.373	0.326	0.320	0.417
Breusch and Pagan LM Test for random effects	192.39***				

Table A6: Estimation results of impact of school district size on share of high school graduates that passed ECA Biology

	Overall	under 1000	under 2000	under 4000	under 8000
VARIABLES	(1)	(2)	(3)	(4)	(5)
log of Total enrollment in school corporation	0.0234***	-0.0372	0.00102	0.0170*	0.0216***
	(0.00540)	(0.0378)	(0.0167)	(0.00963)	(0.00677)
Log of Tuition support	0.0943**	0.125	-0.0457	0.0419	0.0923*
	(0.0442)	(0.224)	(0.0895)	(0.0669)	(0.0517)
Share of free and reduced lunch in school corporation	-0.369***	-0.254	-0.217***	-0.295***	-0.363***
	(0.0391)	(0.159)	(0.0606)	(0.0521)	(0.0439)
Share of Black students in school corporation	-0.108**	-0.141	-0.0740	0.0153	-0.107**
	(0.0509)	(1.180)	(0.253)	(0.148)	(0.0435)
Share of Hispanic Students in school corporation	-0.0129	-0.104	-0.0757	-0.0768*	-0.00588
	(0.0307)	(0.125)	(0.0561)	(0.0395)	(0.0302)
Counties in metro areas of 250,000 to 1 million population	-0.0159	-0.0265	-0.00900	-0.00461	-0.0121
	(0.0135)	(0.0301)	(0.0267)	(0.0220)	(0.0172)
Counties in metro areas of fewer than 250,000 population	0.0303**	0.0148	0.0229	0.0414**	0.0329**
	(0.0127)	(0.0380)	(0.0193)	(0.0171)	(0.0133)
Urban population of 20,000 or more, adjacent to a metro area	0.00637	0.0525	-0.00599	0.00211	0.00741
	(0.0137)	(0.0334)	(0.0184)	(0.0148)	(0.0137)
Urban population of 20,000 or more, not adjacent to a metro area	0.0428***	0.0912**	0.0468**	0.0495***	0.0442***
	(0.0148)	(0.0383)	(0.0235)	(0.0177)	(0.0150)
Urban population of 2,500 to 19,999, adjacent to a metro area	0.0186*	0.0523*	0.0119	0.0226**	0.0196*
	(0.0101)	(0.0301)	(0.0145)	(0.0113)	(0.0102)
Urban population of 2,500 to 19,999, not adjacent to a metro area	0.0418**	0.0672	0.0446**	0.0450***	0.0424**
	(0.0167)	(0.0414)	(0.0227)	(0.0172)	(0.0168)
Completely rural or less than 2,500 urban population, not adjacent to	-0.0177		-0.0195	-0.0137	-0.0163
a metro area	(0.0217)		(0.0258)	(0.0244)	(0.0219)
Constant	-0.523	-0.454	0.783	-0.0593	-0.496
	(0.370)	(1.821)	(0.733)	(0.563)	(0.436)
Observations	818	123	421	608	730
Number of school districts	282	52	151	214	255
R-squared	0.407	0.113	0.185	0.259	0.353
Breusch and Pagan LM Test for random effects	245.94***				

Table A7: Estimation results of impact of school district size on share of high school graduates with Honors diploma

•	Overall	under 1000	under 2000	under 4000	under 8000
	(1)	(2)	(3)	(4)	(5)
VARIABLES					
log of Total enrollment in school corporation	0.0202***	-0.0146	0.0117	0.0159	0.0255***
	(0.00648)	(0.0480)	(0.0186)	(0.0115)	(0.00840)
Log of Tuition support	0.209***	-0.296	0.0399	0.132	0.190***
	(0.0551)	(0.299)	(0.114)	(0.0827)	(0.0664)
Share of free and reduced lunch in school corporation	-0.370***	-0.181	-0.306***	-0.345***	-0.353***
	(0.0394)	(0.192)	(0.0843)	(0.0594)	(0.0457)
Share of Black students in school corporation	-0.165**	0.970	0.322**	0.124	-0.113
	(0.0721)	(1.181)	(0.148)	(0.147)	(0.119)
Share of Hispanic Students in school corporation	-0.0184	0.312	-0.0653	-0.0801	-0.0102
	(0.0641)	(0.226)	(0.109)	(0.0790)	(0.0706)
Counties in metro areas of 250,000 to 1 million population	-0.0204	-0.0612	-0.00874	-0.0140	-0.0154
	(0.0139)	(0.0394)	(0.0315)	(0.0217)	(0.0165)
Counties in metro areas of fewer than 250,000 population	-0.0196	-0.0589	-0.0400*	-0.0191	-0.0161
	(0.0127)	(0.0469)	(0.0220)	(0.0168)	(0.0138)
Urban population of 20,000 or more, adjacent to a metro area	-0.0313**	-0.0766	-0.0402*	-0.0351**	-0.0305**
	(0.0142)	(0.0618)	(0.0215)	(0.0164)	(0.0142)
Urban population of 20,000 or more, not adjacent to a metro area	0.0161	-0.136**	0.0255	0.0242	0.0176
	(0.0254)	(0.0584)	(0.0359)	(0.0285)	(0.0257)
Urban population of 2,500 to 19,999, adjacent to a metro area	-0.00376	0.0168	0.00639	0.00379	-0.00121
	(0.0118)	(0.0492)	(0.0168)	(0.0128)	(0.0121)
Urban population of 2,500 to 19,999, not adjacent to a metro area	0.0174	0.0654	0.0360*	0.0239	0.0213
	(0.0156)	(0.0477)	(0.0188)	(0.0159)	(0.0167)
Completely rural or less than 2,500 urban population, not adjacent to	0.0203		0.0238	0.0268	0.0232
a metro area	(0.0293)		(0.0310)	(0.0300)	(0.0295)
Constant	-0.991**	3.502	0.500	-0.306	-0.869
	(0.485)	(2.670)	(1.020)	(0.743)	(0.591)
Observations	819	123	422	609	731
Number of school districts	282	52	151	214	255
R-squared	0.664	0.580	0.612	0.628	0.647
Breusch and Pagan LM Test for random effects	171.08***				

Table A8: Estimation results of impact of school district size on share of students who passed ISTEP in 4th grade

	Overall	under 1000	under 2000	under 4000	under 8000
	(1)	(2)	(3)	(4)	(5)
VARIABLES					
log of Total enrollment in school corporation	0.0392***	0.0837*	0.0592***	0.0523***	0.0441***
	(0.00614)	(0.0496)	(0.0180)	(0.0113)	(0.00792)
Log of Tuition support	0.0937	-0.0381	0.106	0.112	0.108
	(0.0693)	(0.275)	(0.118)	(0.0918)	(0.0824)
Share of free and reduced lunch in school corporation	-0.455***	-0.432***	-0.497***	-0.450***	-0.451***
1	(0.0366)	(0.158)	(0.0657)	(0.0475)	(0.0389)
Share of Black students in school corporation	-0.277***	1.536	0.273	0.139	-0.268***
-	(0.0519)	(2.472)	(0.294)	(0.205)	(0.0544)
Share of Hispanic Students in school corporation	0.0128	0.415**	0.0755	0.0155	0.0145
	(0.0434)	(0.189)	(0.0800)	(0.0574)	(0.0469)
Counties in metro areas of 250,000 to 1 million population	-0.0110	-0.0284	-0.00681	-0.00375	-0.00521
	(0.0117)	(0.0371)	(0.0193)	(0.0150)	(0.0130)
Counties in metro areas of fewer than 250,000 population	-0.0162	-0.0304	-0.0142	-0.00808	-0.0137
	(0.0116)	(0.0483)	(0.0230)	(0.0166)	(0.0131)
Urban population of 20,000 or more, adjacent to a metro area	-0.0300**	-0.0374	-0.0209	-0.0282*	-0.0294**
	(0.0145)	(0.0447)	(0.0212)	(0.0168)	(0.0146)
Urban population of 20,000 or more, not adjacent to a metro area	-0.00601	-0.152***	-0.00972	-0.00533	-0.00520
	(0.0166)	(0.0486)	(0.0218)	(0.0180)	(0.0166)
Urban population of 2,500 to 19,999, adjacent to a metro area	0.00933	-0.0214	0.0156	0.0145	0.0107
	(0.0120)	(0.0400)	(0.0167)	(0.0128)	(0.0121)
Urban population of 2,500 to 19,999, not adjacent to a metro area	0.0114	-0.00130	0.0201	0.0179	0.0134
	(0.0245)	(0.0572)	(0.0309)	(0.0241)	(0.0243)
Completely rural or less than 2,500 urban population, not adjacent to	0.0872***		0.0809**	0.0918***	0.0884***
a metro area	(0.0306)		(0.0353)	(0.0311)	(0.0307)
Constant	-0.178	0.663	-0.412	-0.438	-0.334
	(0.602)	(2.393)	(1.041)	(0.815)	(0.722)
Observations	818	122	421	608	730
Number of school districts	282	52	151	214	255
R-squared	0.756	0.701	0.700	0.719	0.744
Breusch and Pagan LM Test for random effects	121.64***				

Table A9: Estimation results of impact of school district size on share of students who passed ISTEP in 8th grade

Robust Standard errors clustered by corporation id in parentheses. Year fixed effects in all models.

*** p<0.01, ** p<0.05, * p<0.1