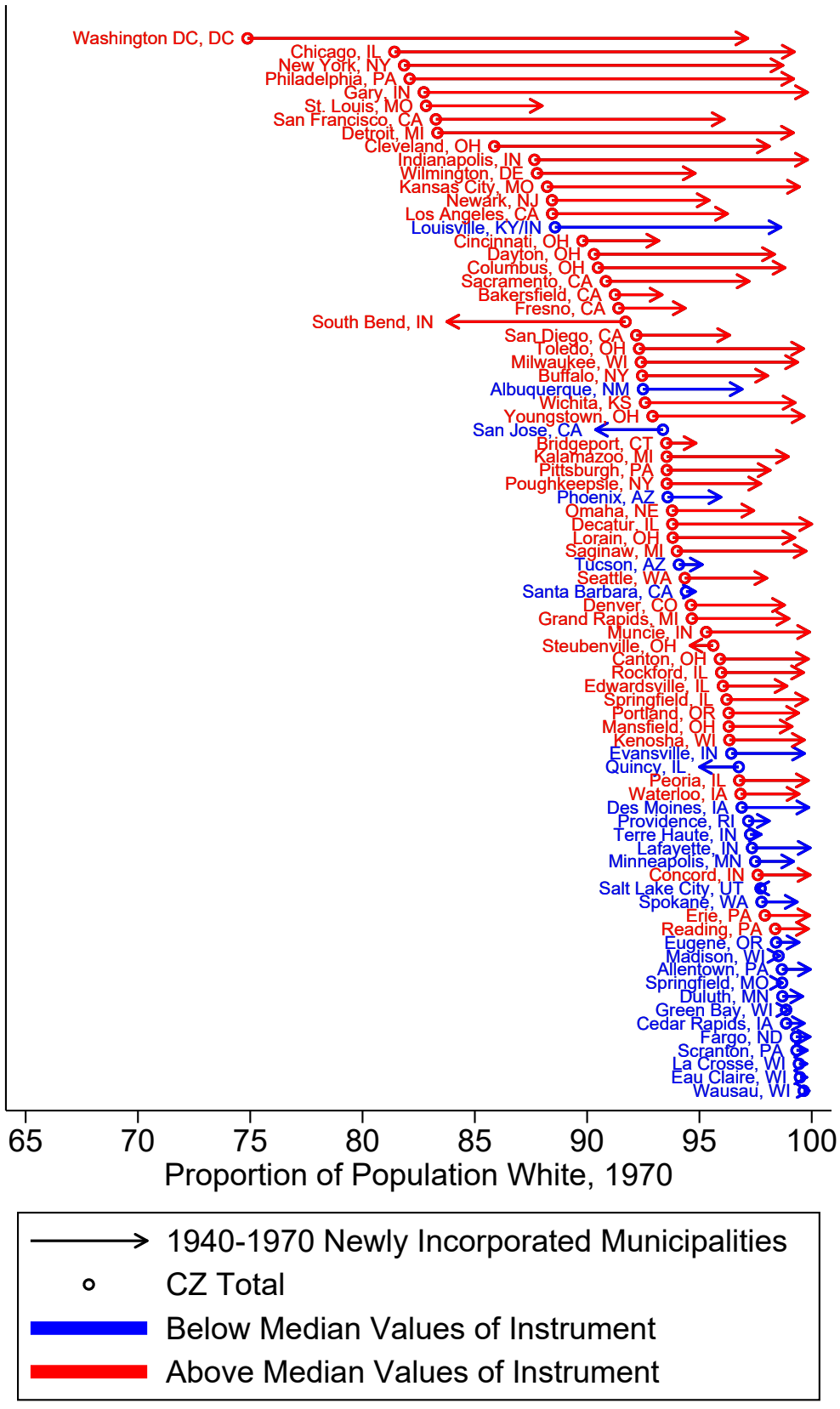
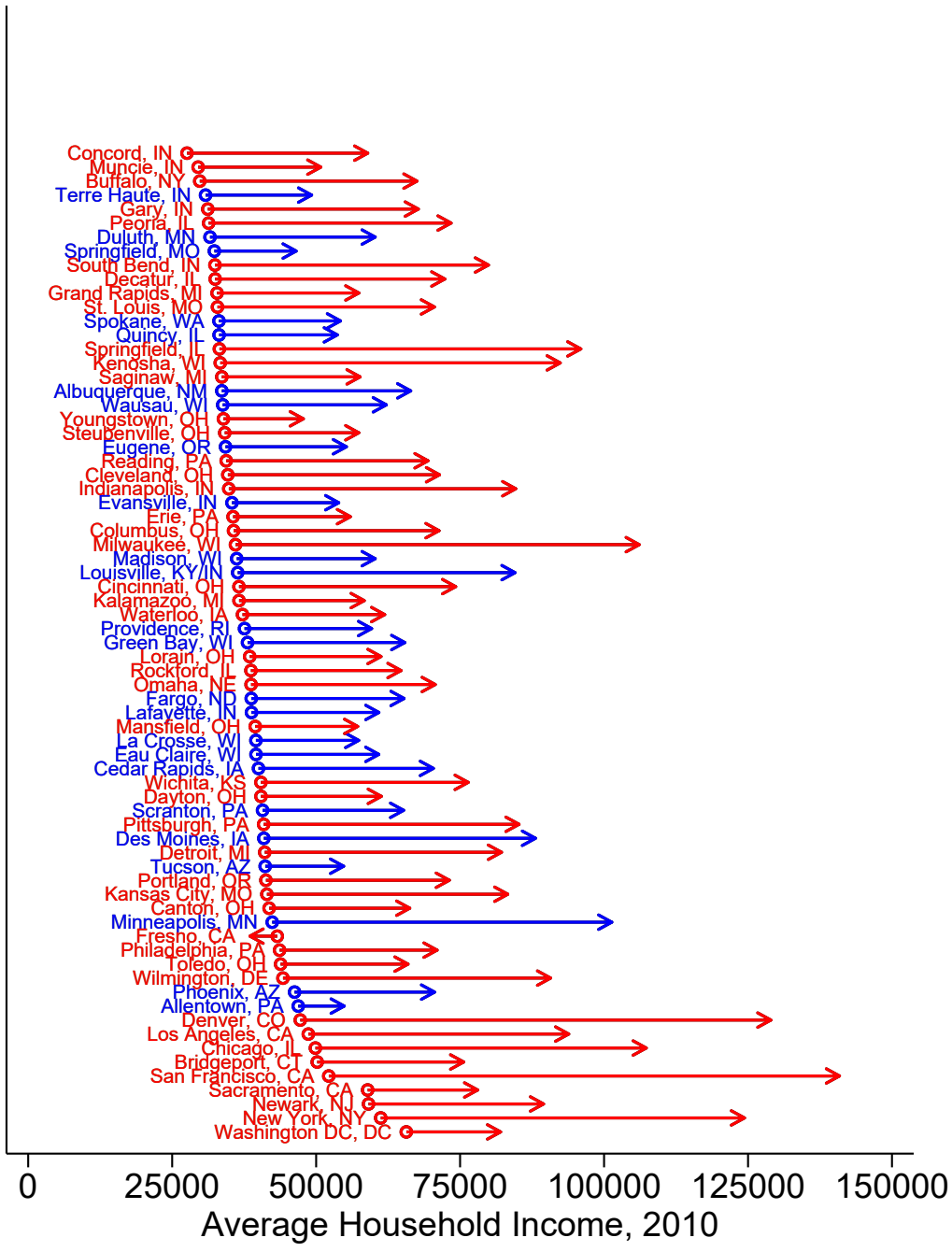
Counterfactuals

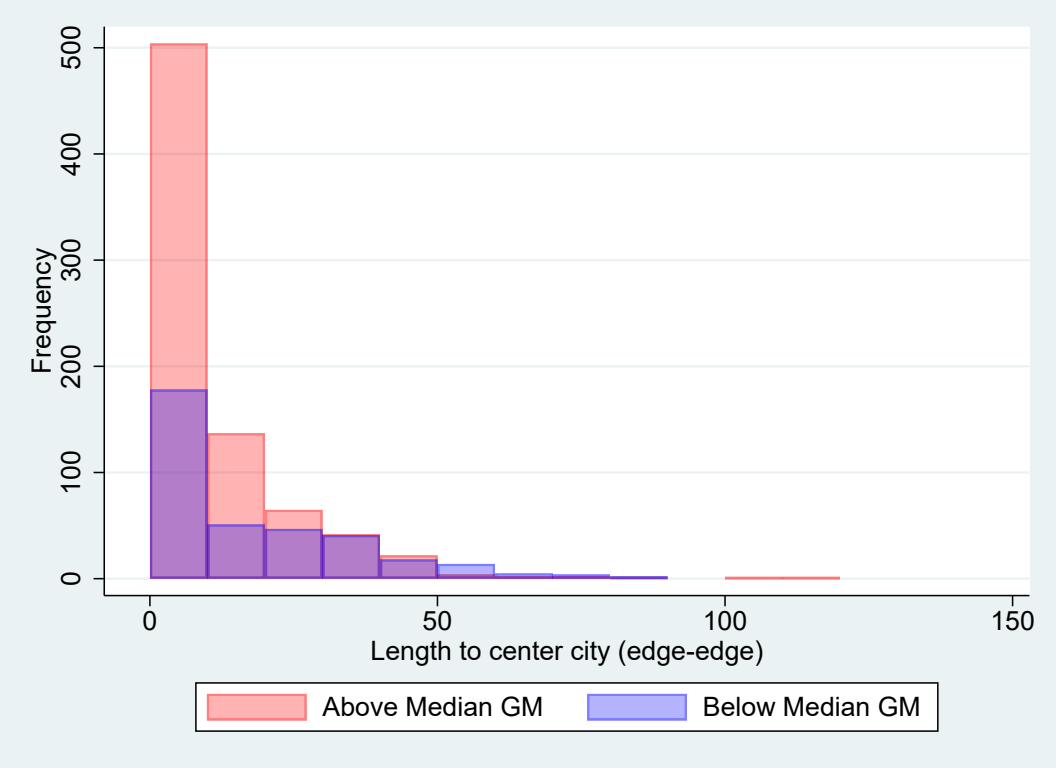
September 18, 2024

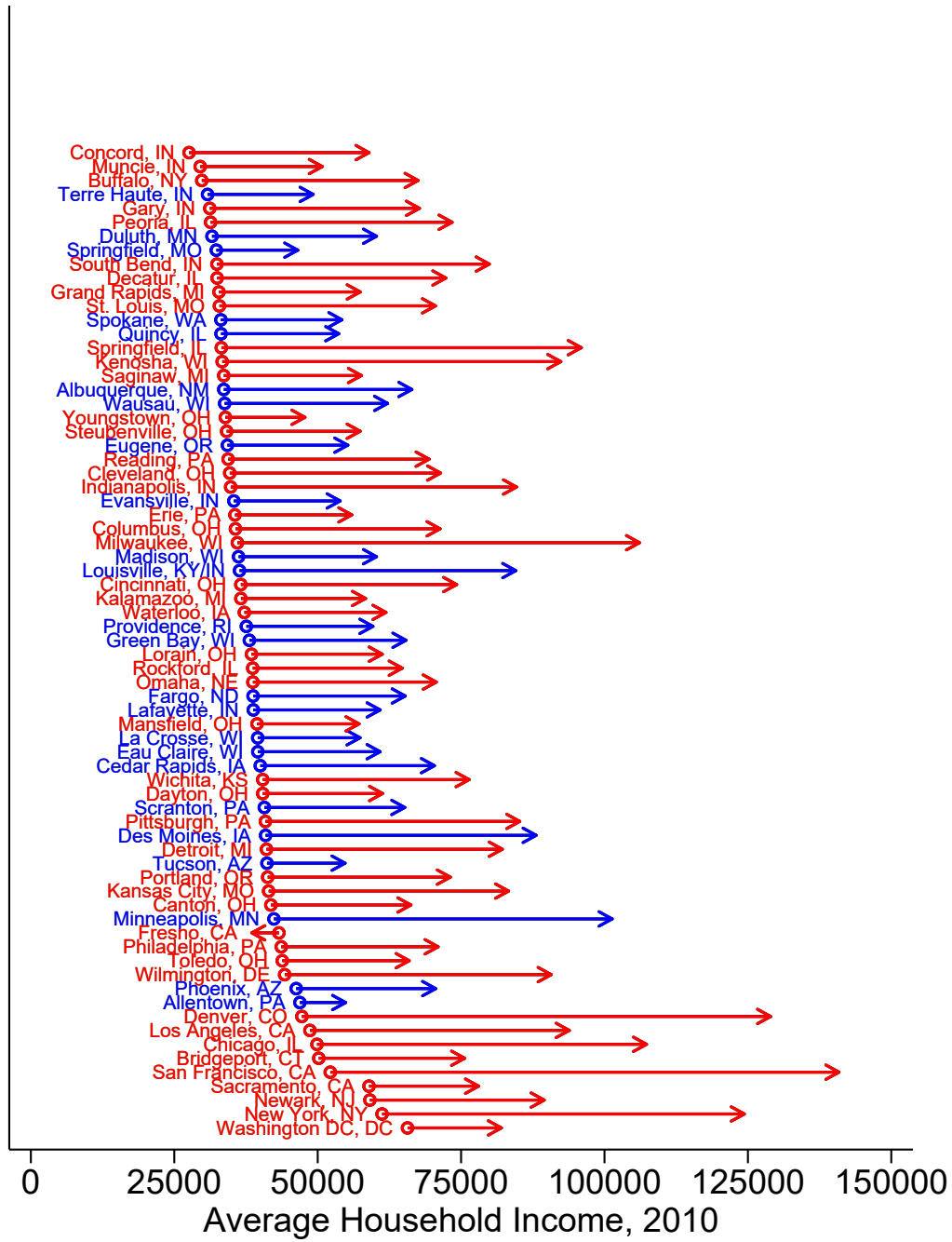

Washington DC, DC
Chicago, IL
New York, NY
Philadelphia, PA
Gary, IN
St. Louis, MO
San Francisco, CA
Detroit, MI
Cleveland, OH
Indianapolis, IN
Wilmington, DE
Kansas City, MO
Newark, NJ
Los Angeles, CA
Louisville, KY/IN
Cincinnati, OH
Dayton, OH
Columbus, OH
Sacramento, CA
Bakersfield, CA
Fresno, CA
South Bend, IN
San Diego, CA
Toledo, OH
Milwaukee, WI
Buffalo, NY
Albuquerque, NM
Wichita, KS
Youngstown, OH
San Jose, CA
Bridgeport, CT
Kalamazoo, MI
Pittsburgh, PA
Poughkeepsie, NY
Phoenix, AZ
Omaha, NE
Decatur, IL
Lorain, OH
Saginaw, MI
Tucson, AZ
Seattle, WA
Santa Barbara, CA
Denver, CO
Grand Rapids, MI
Muncie, IN
Steubenville, OH
Canton, OH
Rockford, IL
Edwardsville, IL
Springfield, IL
Portland, OR
Mansfield, OH
Kenosha, WI
Evansville, IN
Quincy, IL
Peoria, IL
Waterloo, IA
Des Moines, IA
Providence, RI
Terre Haute, IN
Lafayette, IN
Minneapolis, MN
Concord, IN
Salt Lake City, UT
Spokane, WA
Erie, PA
Reading, PA
Eugene, OR
Madison, WI
Allentown, PA
Springfield, MO
Duluth, MN
Green Bay, WI
Cedar Rapids, IA
Fargo, ND
Scranton, PA
La Crosse, WI
Eau Claire, WI
Wausau, WI
65
70
75
80
85
90
95
100
Proportion of Population White, 1970
1940-1970 Newly Incorporated Municipalities
CZ Total
Below Median Values of Instrument
Above Median Values of Instrument



Above Median Average Difference: 92.82%
Below Median Average Difference: 69.28%

	Panel A: Below Median GM CZs							
	1940-70 Incorporations		All other munis		Principle Cities		CZ Average	
	mean	sd	mean	sd	mean	sd	mean	sd
HH Income, 1970	13128	3524	10894	1846	11424	766	10249	1208
Home Value, 1970	24653.28	8448.91	19433.84	5120.08	20428.93	3721.66	16704.70	3683.49
HH Income, 2010	98307.57	38028.95	69839.80	21204.47	71448.29	15176.55	64193.71	11133.63
Pct White, 1970	97.71	3.95	96.98	2.85	93.78	1.35	97.57	2.38
Pct White, 2010	79.35	17.18	77.91	14.90	65.62	12.41	87.56	8.02
	Panel B: Above Median GM CZs							
	1940-70 Incorporations		All other munis		Principle Cities		CZ Average	
	mean	sd	mean	sd	mean	sd	mean	sd
HH Income, 1970	13780	4726	12948	4875	11072	756	11561	1050
Home Value, 1970	24549.73	9622.18	20545.65	9261.05	19684.60	5286.08	19469.02	4371.02
HH Income, 2010	85199.11	47900.82	74128.10	41661.26	59341.63	13605.17	68475.28	12857.98
Pct White, 1970	96.75	9.74	96.57	8.14	80.31	11.12	92.06	5.41
Pct White, 2010	77.76	24.07	87.72	17.55	58.16	15.15	79.32	11.02
	Panel C: All CZs							
	1940-70 Incorporations		All other munis		Principle Cities		CZ Average	
	mean	sd	mean	sd	mean	sd	mean	sd
HH Income, 1970	13664	4687	12420	4585	10928	929	10770	1299
Home Value, 1970	23989.17	9701.89	19184.66	8769.87	19135.87	4885.79	17769.27	4186.59
HH Income, 2010	82893.81	46340.63	69613.05	36385.55	60522.27	14829.21	64918.35	11982.74
Pct White, 1970	96.83	8.87	97.08	7.25	87.41	11.22	94.86	4.97
Pct White, 2010	81.12	22.16	90.09	15.52	66.63	17.82	83.86	10.64


Frequency
0
100
200
300
400
500
0
50
100
150
Length to center city (edge-edge)
Above Median GM
Below Median GM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Wilmington, DE
Phoenix, AZ
Allentown, PA
Denver, CO
Los Angeles, CA
Chicago, IL
Bridgeport, CT
San Francisco, CA
Sacramento, CA
Newark, NJ
New York, NY
Washington DC, DC
0
25000
50000
75000
100000
125000
150000
Average Household Income, 2010
1940-1970 Newly Incorporated Municipalities
CZ Total
Below Median Values of Instrument
Above Median Values of Instrument

Table 1: Raw Splits

	(1) agg_fam_inc_place1970	(2) agg_house_value_place1970	(3) mean_hh_inc_place	(4) prop_white1970	(5) prop_white2010	(6) place_pop1970	(7) place_land
samp_dest	1087.121	-7254.719	8465.569	10.056**	9.164	-6894554.204***	-5.739e+07
	(2309.335)	(4728.906)	(16932.581)	(4.890)	(11.448)	(1236989.222)	(61514152.505)
above_x_med	207.101	520.511	-4974.573	-7.318***	-6.841	424795.628	278467.519
	(329.818)	(928.211)	(3956.591)	(1.463)	(5.489)	(319333.915)	(10236335.651)
samp_destXabove_x_med	-583.189	-2192.153	-12345.204*	7.532***	3.675	-414796.063	-1.927e+07*
	(813.064)	(1461.735)	(7444.362)	(1.271)	(4.129)	(320434.280)	(10517400.992)
N	3626	5132	8819	5251	8819	8836	8512
R^2	0.127	0.567	0.212	0.617	0.539	0.863	0.377

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Raw Splits

	(1) agg_fam_inc_place1970	(2) agg_house_value_place1970	(3) mean_hh_inc_place	(4) prop_white1970	(5) prop_white2010	(6) place_pop1970	(7) place_land
samp_dest	2120.193	-5164.475	24997.458	12.941***	6.369	-7007869.311***	-4.767e+08***
	(2205.933)	(4537.410)	(17093.031)	(3.305)	(13.412)	(618372.385)	(1.166e+08)
above_x_med	-53.621	85.399	-6464.374**	-11.021***	-4.920	668963.747**	2.263e+08***
	(255.675)	(693.521)	(3257.549)	(2.137)	(5.302)	(322438.391)	(36812344.090)
samp_destXabove_x_med	-322.468	-1757.042	-10855.403	11.235***	1.755	-658964.189**	-2.453e+08***
	(861.037)	(1872.250)	(7959.225)	(2.010)	(4.147)	(322702.741)	(36545668.569)
N	861	1020	1467	1049	1467	1467	1461
R^2	0.378	0.799	0.551	0.853	0.711	0.956	0.915

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Raw Splits

	(1) touching	(2) below_len_edge	(3) len_edge_edge
samp_dest	0.095	-0.109	-1.050
	(0.312)	(0.242)	(8.510)
above_x_med	-0.041	-0.040	0.465
	(0.058)	(0.055)	(2.342)
samp_destXabove_x_med	0.021	-0.023	1.852
	(0.160)	(0.048)	(1.927)
N	8514	8514	8386
R^2	0.038	0.072	0.085

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Raw Splits

	(1) exclusive_district_place	(2) exclusive_district_shape	(3) psum_shared_boundary_muni	(4) min_hausdorff_muni
samp_dest	-0.972***	0.417	0.082	-0.070*
	(0.341)	(0.287)	(0.190)	(0.037)
above_x_med	-0.042	-0.309*	0.068	-0.005
	(0.069)	(0.166)	(0.044)	(0.011)
samp_destXabove_x_med	0.209***	0.403**	0.030	-0.020*
	(0.077)	(0.167)	(0.065)	(0.011)
N	8836	8836	8836	8836
R^2	0.163	0.480	0.166	0.446

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Raw Splits

	(1) exclusive_district_place	(2) exclusive_district_shape	(3) psum_shared_boundary_muni	(4) min_hausdorff_muni
samp_dest	-1.145***	0.682**	-0.082	0.024
	(0.309)	(0.319)	(0.297)	(0.057)
above_x_med	-0.051	-0.369**	0.100*	0.039**
	(0.089)	(0.179)	(0.059)	(0.017)
samp_destXabove_x_med	0.218**	0.463**	-0.002	-0.064***
	(0.104)	(0.182)	(0.079)	(0.016)
N	1467	1467	1467	1467
R^2	0.268	0.694	0.346	0.701

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Raw Splits

	(1) landuse_sfr	(2) landuse_apartment	(3) pct_rev_ff	(4) pct_rev_sa	(5) pct_rev_debt
samp_dest	27.137**	-2.910***	0.018	0.809	92.093
	(11.206)	(0.779)	(1.078)	(1.173)	(175.905)
above_x_med	-0.751	0.619**	0.391***	0.473	-61.021*
	(2.532)	(0.270)	(0.138)	(0.419)	(33.267)
samp_destXabove_x_med	10.255***	-0.731***	0.707**	-2.074***	40.542
	(2.933)	(0.231)	(0.309)	(0.566)	(52.894)
N	8699	8699	8694	8694	8694
R^2	0.791	0.785	0.158	0.117	0.207

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Raw Splits

	(1) landuse_sfr	(2) landuse_apartment	(3) pct_rev_ff	(4) pct_rev_sa	(5) pct_rev_debt
samp_dest	22.600*	-3.391**	0.863	0.103	155.056
	(13.016)	(1.448)	(1.051)	(1.398)	(174.801)
above_x_med	-4.672	1.045**	0.502**	0.718**	-83.421**
	(3.155)	(0.453)	(0.195)	(0.282)	(38.668)
samp_destXabove_x_med	14.176***	-1.156***	0.596	-2.320***	62.942
	(3.426)	(0.427)	(0.399)	(0.820)	(56.314)
N	1448	1448	1439	1439	1439
R^2	0.905	0.879	0.297	0.263	0.392

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Raw Splits

	(1) EI	(2) mean_dist_max_int	(3) mean_min_hausdorff_muni	(4) mean_psum_shared_muni	(5) mean_psum_shared_dist
GM_raw_pp	0.007***	0.011***	-0.004***	0.005	0.005
	(0.003)	(0.003)	(0.001)	(0.004)	(0.004)
N	118	118	118	118	118
R^2	0.681	0.709	0.742	0.342	0.151

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Raw Splits

	(1) vr_blwt_cz	(2) diss_blwt_cz	(3) SP_nexpd_1970	(4) rco1970
GM_raw_pp	0.016***	0.003***	0.007***	-0.033***
	(0.003)	(0.001)	(0.002)	(0.007)
N	118	118	130	130
R^2	0.724	0.582	0.258	0.433

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Raw Splits

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	math_test_pct_prof_midpt	read_test_pct_prof_midpt	mean_ap	totenroll	st_ratio_leaid	pct_white_leaid	pct_free_red_lunch_leaid
int_0	-82.538**	-59.371**	35.346	6533.812**	10.793	-2.042***	0.709
	(39.061)	(29.776)	(22.336)	(2730.419)	(12.830)	(0.549)	(0.771)
above_x_med	-5.644**	1.285	1.177	176.480**	1.843***	-0.096**	0.017
	(2.284)	(2.780)	(0.925)	(80.317)	(0.469)	(0.038)	(0.021)
above_x_med_int_0	5.598	1.882	-4.696	-894.681**	-2.714*	0.255***	0.031
	(8.753)	(6.840)	(3.479)	(397.454)	(1.407)	(0.077)	(0.139)
above_x_med_int_0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)
N	2835	2833	3089	4224	4199	4224	4224
R^2	0.246	0.247	0.118	0.097	0.398	0.370	0.083

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Raw Splits

	(1) bw_gap_math_raw	(2) bw_gap_math_pct	(3) bw_gap_read_raw	(4) bw_gap_read_pct	(5) bw_gap_grad_raw	(6) bw_gap_grad_pct
GM_raw_pp	0.037	-0.004	-0.093	-0.004	-0.181***	-0.002**
	(0.177)	(0.004)	(0.189)	(0.004)	(0.060)	(0.001)
N	108	108	108	108	115	115
R^2	0.555	0.517	0.587	0.594	0.341	0.453

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: School District Capital Expenditure

	(1) Capital outlays/Total Expenditure	(2) Capital outlays/Total Enrollment	(3) Log Capital Outlays	(4) log(Capital outlays/Total Enrollme
Prop Border with 40-70 incorporation	0.040	1.275	2.175	1.288
	(0.088)	(1318.729)	(2.454)	(1.254)
Above Median GM	-0.002	73.278	0.516**	0.137
	(0.009)	(105.966)	(0.214)	(0.104)
Prop Border 40-70 X Above Median GM	-0.036	-385.582	-1.882***	-0.520**
	(0.022)	(364.857)	(0.496)	(0.244)
Observations	4117	4117	4116	4116
R^2	0.063	0.013	0.180	0.055

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Raw Splits

	(1) mf	(2) mixed_use	(3) attached_sfr	(4) adu	(5) flex_zoning_br	(6) min_lot_size_mean	(7) min_lot_size_max
samp_dest	-0.094	-0.831	-0.760***	-1.184**	-0.154	49889.752**	139634.815
	(0.082)	(0.557)	(0.196)	(0.596)	(0.248)	(23167.306)	(84248.118)
above_x_med	-0.000	-0.128***	0.384***	0.093	0.189	-7415.561	-53398.490*
	(0.004)	(0.040)	(0.130)	(0.125)	(0.136)	(6868.233)	(31694.361)
samp_destXabove_x_med	0.002	0.037	-0.411***	-0.228*	-0.227	-2933.187	46993.519
	(0.008)	(0.090)	(0.096)	(0.137)	(0.163)	(9744.735)	(33741.665)
N	3349	3326	3401	3383	3402	3156	3150
R^2	0.008	0.086	0.382	0.321	0.192	0.228	0.230

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Raw Splits

	(1) mf	(2) mixed_use	(3) attached_sfr	(4) adu	(5) flex_zoning_br	(6) min_lot_size_mean	(7) min_lot_size_max
samp_dest	-0.090	-0.901	-0.978***	-1.774***	-0.047	82017.323**	290103.876*
	(.)	(0.581)	(0.298)	(0.562)	(0.402)	(37780.021)	(156098.843)
above_x_med	0.000	-0.039	0.507***	-0.066	0.521**	-11133.497	-89893.176**
	(.)	(0.034)	(0.159)	(0.135)	(0.231)	(8007.805)	(37177.727)
samp_destXabove_x_med	0.002	-0.052	-0.534***	-0.069	-0.559**	784.748	83488.202**
	(.)	(0.099)	(0.143)	(0.163)	(0.251)	(10460.136)	(39702.217)
N	765	735	776	773	774	705	699
R^2	0.029	0.306	0.637	0.531	0.496	0.471	0.433

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Raw Splits

	(1) mf_conversion_allowed	(2) inclusionary_zoning	(3) permit_cap_phasing	(4) n_approving_agencies	(5) mf_public_hearing	(6) max_review_days
samp_dest	-0.862***	-0.051	0.528	-1.586**	0.896***	100.217
	(0.225)	(0.343)	(0.407)	(0.749)	(0.303)	(133.085)
above_x_med	-0.455***	0.491***	0.121	-0.015	0.296**	151.064*
	(0.133)	(0.113)	(0.128)	(0.170)	(0.118)	(81.493)
samp_destXabove_x_med	0.481***	-0.776***	-0.115	0.728***	-0.204*	-128.238
	(0.150)	(0.124)	(0.137)	(0.230)	(0.108)	(85.599)
N	3394	3265	3405	3375	3357	2980
R^2	0.772	0.505	0.233	0.355	0.273	0.282

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16: Raw Splits

	(1) mf_conversion_allowed	(2) inclusionary_zoning	(3) permit_cap_phasing	(4) n_approving_agencies	(5) mf_public_hearing	(6) max_review_days
samp_dest	-0.576**	-0.256	-0.086	-1.141	0.580	30.721
	(0.248)	(0.430)	(0.343)	(1.308)	(0.463)	(145.700)
above_x_med	-0.590***	0.775***	0.470**	-0.510	0.583***	448.583***
	(0.122)	(0.133)	(0.180)	(0.367)	(0.161)	(101.521)
samp_destXabove_x_med	0.616***	-1.060***	-0.464**	1.223***	-0.491***	-425.757***
	(0.134)	(0.171)	(0.188)	(0.395)	(0.146)	(105.259)
N	774	743	776	764	760	676
R^2	0.865	0.754	0.528	0.575	0.534	0.724

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 17: Raw Splits

	(1) age_restrictions	(2) inclusionary_zoning_comply	(3) lot_size_nature_restriction	(4) max_frontage_req_sfr	(5) n_steps_mf	(6) First_PC	(7) Second_PC
samp_dest	0.261	0.157	-0.077	84.956	-1.577	-0.863	2.046***
	(0.842)	(0.142)	(0.268)	(56.563)	(1.665)	(1.455)	(0.643)
above_x_med	0.562***	0.059	0.011	4.612	0.235	1.726***	-0.356*
	(0.093)	(0.037)	(0.030)	(12.399)	(0.247)	(0.512)	(0.196)
samp_destXabove_x_med	-0.603***	-0.170***	-0.017	-23.377	-0.043	-2.475***	0.231
	(0.162)	(0.051)	(0.063)	(16.974)	(0.387)	(0.395)	(0.249)
N	3068	3397	2816	3060	3391	3405	3405
R^2	0.364	0.100	0.060	0.399	0.151	0.286	0.405

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 18: Raw Splits

	(1) age_restrictions	(2) inclusionary_zoning_comply	(3) lot_size_nature_restriction	(4) max_frontage_req_sfr	(5) n_steps_mf	(6) First_PC	(7) Second_PC
samp_dest	0.317	0.334	-0.179	72.126	-3.326*	-1.877	2.852***
	(0.763)	(0.229)	(0.228)	(69.967)	(1.991)	(1.272)	(0.888)
above_x_med	0.790***	0.094	0.035	9.632	0.966**	2.783***	-0.645**
	(0.101)	(0.120)	(0.046)	(19.832)	(0.382)	(0.461)	(0.269)
samp_destXabove_x_med	-0.831***	-0.205	-0.040	-28.398	-0.774	-3.533***	0.520*
	(0.163)	(0.130)	(0.080)	(24.575)	(0.514)	(0.406)	(0.301)
N	714	775	647	718	775	776	776
R^2	0.670	0.213	0.122	0.576	0.400	0.689	0.484

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$