

**Supporting Information for**

**“Power Without Capacity? Local Self-Governance and**

**Economic Development on American Indian Reservations”**

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## A Treatment Adoption Across the Panel

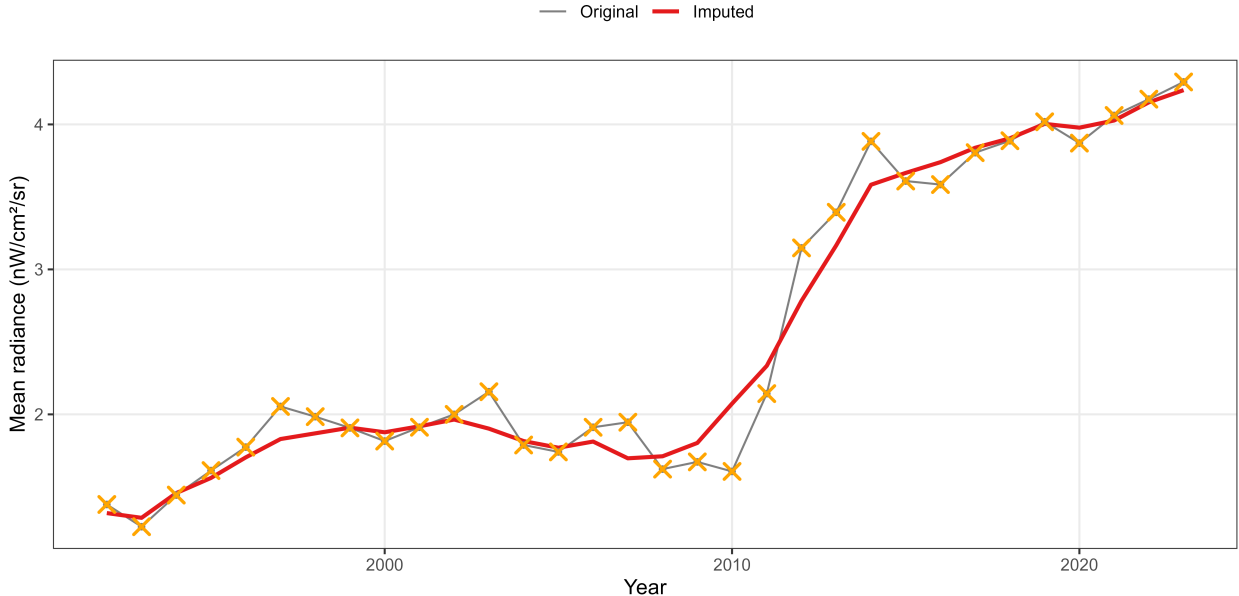


**Figure A1:** Panel view of self-governance compact adoption across reservations over time. Each row represents a reservation, ordered by treatment timing. Shading indicates treatment status by year.

# B VIIRS Nighttime Light Imputation

All Reservations (Average) — Original vs. Imputed Mean Radiance

Orange x marks = replaced outliers | Variable: light\_mean\_c25\_w25



**Figure B1:** Average nighttime light radiance across all reservations, before and after the loess-based outlier imputation. For each reservation, a loess line is fit to its NTL series and any value more than one standard deviation from the line is replaced with the corresponding loess value. This attenuates extreme year-to-year jumps in the raw Chen et al. (2024) data that are unlikely to reflect true changes in underlying development.

# C Outcome Validation: Effect of Casino Gaming

**Table C1:** Effect of Casino Gaming on Economic Development (Outcome Validation)

	FEct (1)	IFEct (2)	MC (3)
<i>Panel A: Developed Land Share</i>			
ATT	1.645* (0.724)	1.581* (0.772)	1.632* (0.787)
ATT <sub>t=1</sub>	0.690* (0.296)	0.537* (0.210)	0.695* (0.278)
ATT <sub>t=6</sub>	1.427** (0.481)	1.174** (0.451)	1.409** (0.494)
ATT <sub>t=12</sub>	1.991** (0.690)	2.018** (0.741)	1.941* (0.758)
ATT <sub>t=18</sub>	2.022* (0.892)	2.043* (1.005)	1.987* (0.994)
Tuning ( $r / \lambda$ )	0	3	0.0013
F-test p-value	0.215	0.338	0.054
TOST Equiv. p-value	0.727	0.021	0.404
Observations	11856	11037	11037
Years	39	39	39
Treated Reservations	230	209	209
<i>Panel B: NTL Radiancance</i>			
ATT	1.189** (0.265)	0.822** (0.251)	0.897** (0.281)
ATT <sub>t=1</sub>	0.153* (0.072)	0.131 (0.105)	0.186* (0.095)
ATT <sub>t=6</sub>	0.570** (0.166)	0.514** (0.199)	0.567** (0.193)
ATT <sub>t=12</sub>	0.796** (0.236)	0.826** (0.258)	0.955** (0.309)
ATT <sub>t=18</sub>	1.605** (0.378)	1.395** (0.515)	1.482** (0.545)
Tuning ( $r / \lambda$ )	0	2	0.0019
F-test p-value	0.675	0.481	0.441
TOST Equiv. p-value	0.096	0.024	0.018
Observations	7712	5216	5216
Years	32	32	32
Treated Reservations	168	90	90

*Note:* Treatment is casino gaming operation. Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates averaged across treated reservations. FEct uses two-way fixed effects; IFEct augments with  $r$  latent interactive fixed effects selected via cross-validation; MC uses matrix completion with regularization parameter  $\lambda$  selected via cross-validation. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to gaming adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

## **D Outcome Validation: Correlation with HH Income**

**Table D1:** Within-unit panel regressions of log household income on log remote sensing measures. Columns 1–4 use the 15-wave ACS 5-year rolling panel without fixed effects; columns 5–8 add reservation and 5-year-period fixed effects. Columns 9–12 use the four decennial census years (income observed in 1990 and 2000 only) without fixed effects; columns 13–16 add reservation and census-year fixed effects. All RS predictors enter as  $\log(x + 1)$  to accommodate zero-valued observations. Standard errors clustered at the reservation. 1990 VIIRS uses the 1992 reservation-level value as a proxy (nightlight coverage begins 1992).

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Dependent Variables: log(HHINC tot, ACS) log(HHINC AIAN, ACS) log(HHINC tot, ACS) ACS TWFE log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS) log(HHINC AIAN, ACS)																
Variables																
Constant	10.52*** (0.0409)	10.54** (0.0232)	10.42*** (0.0436)	10.44*** (0.0245)					9.885*** (0.0405)	9.930*** (0.0228)	9.777*** (0.0424)	9.800*** (0.0233)				
log(NLCD+1)	0.0306 (0.0187)		0.0461** (0.0198)		-0.3839 (0.3126)		-0.4073 (0.3777)		0.0530** (0.0214)		0.0479** (0.0216)		0.7413*** (0.2464)		0.7721** (0.3180)	
log(VIIRS+1)		0.0793*** (0.0271)		0.1186*** (0.0283)		-0.0137 (0.0632)		0.0374 (0.0733)		0.1352*** (0.0308)		0.1632*** (0.0332)		0.2558*** (0.0719)		0.3174*** (0.0840)
Fixed-effects																
Reservation		Yes			Yes	Yes	Yes	Yes					Yes	Yes	Yes	Yes
Period		Yes			Yes	Yes	Yes	Yes					Yes	Yes	Yes	Yes
Census Year																
Fit statistics																
Observations	4,023	3,992	3,879	3,858	4,019	3,990	3,875	3,854	477	472	454	450	372	370	342	342
R <sup>2</sup>	0.00594	0.02266	0.01117	0.04185	0.71172	0.71324	0.66963	0.66981	0.01553	0.04530	0.01101	0.05574	0.84603	0.84444	0.83705	0.83371
Within R <sup>2</sup>					0.00185	$7.12 \times 10^{-5}$	0.00148	0.00038					0.08948	0.05345	0.08299	0.06420

Clustered (Reservation) standard errors in parentheses  
 Signif. Codes: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1

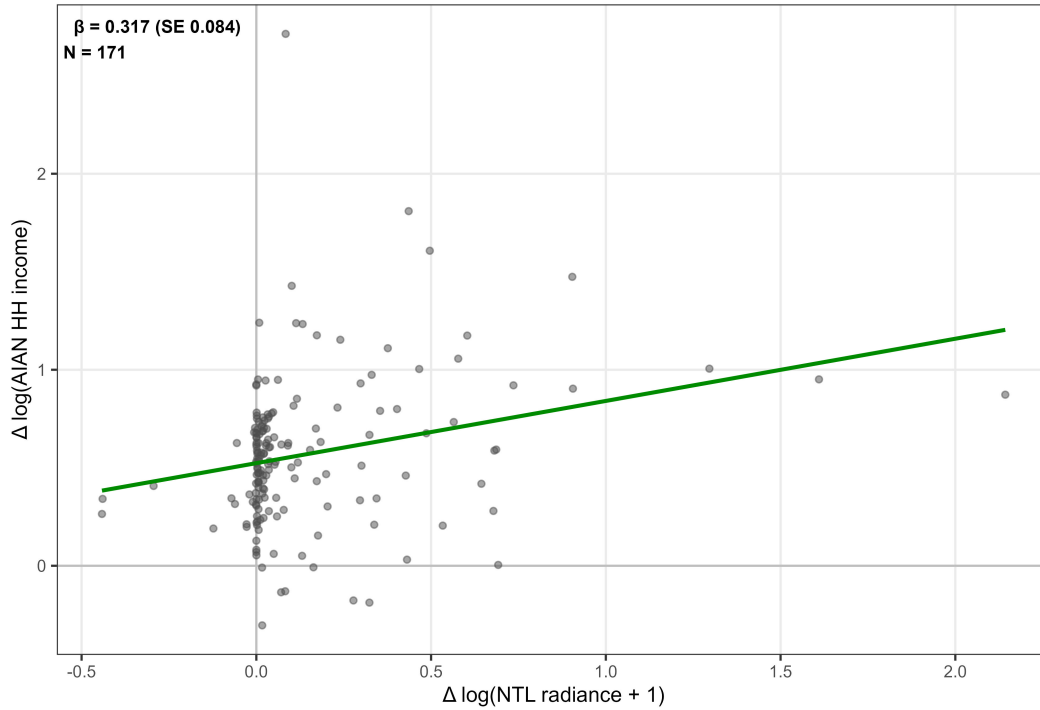
**Table D2:** Long-difference regressions of change in log household income on change in log remote sensing measures, one observation per reservation. Columns 1–4 use the change between the 2005–2009 and 2019–2023 ACS 5-year estimates; columns 5–8 use the change between the 1990 and 2000 decennial censuses. All variables enter as  $\log(x + 1)$  for the RS predictors and  $\log(x)$  for household income. Heteroskedasticity-robust standard errors. 1990 VIIRS uses the 1992 reservation-level value as a proxy (nightlight coverage begins 1992).

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variables: $\Delta \log(\text{HHINC tot, ACS})$ $\Delta \log(\text{HHINC AIAN, ACS})$ $\Delta \log(\text{HHINC tot, Census})$ $\Delta \log(\text{HHINC AIAN, Census})$								
ACS (2005-09 to 2019-23) Census (1990 to 2000)								
<i>Variables</i>								
Constant	0.4828*** (0.0440)	0.4840*** (0.0371)	0.4551*** (0.0515)	0.4194*** (0.0376)	0.3793*** (0.0299)	0.4277*** (0.0246)	0.4746*** (0.0354)	0.5235*** (0.0272)
$\Delta \log(\text{NLCD}+1)$	-0.1621 (0.3757)		-0.1281 (0.4948)		0.7413*** (0.2464)		0.7721** (0.3180)	
$\Delta \log(\text{VIIRS}+1)$		-0.0600 (0.0763)		0.0820 (0.0966)		0.2558*** (0.0719)		0.3174*** (0.0840)
<i>Fit statistics</i>								
Observations	242	241	230	230	186	185	171	171
R <sup>2</sup>	0.00101	0.00263	0.00044	0.00384	0.08948	0.05345	0.08299	0.06420
Adjusted R <sup>2</sup>	-0.00316	-0.00154	-0.00394	-0.00053	0.08453	0.04828	0.07757	0.05866

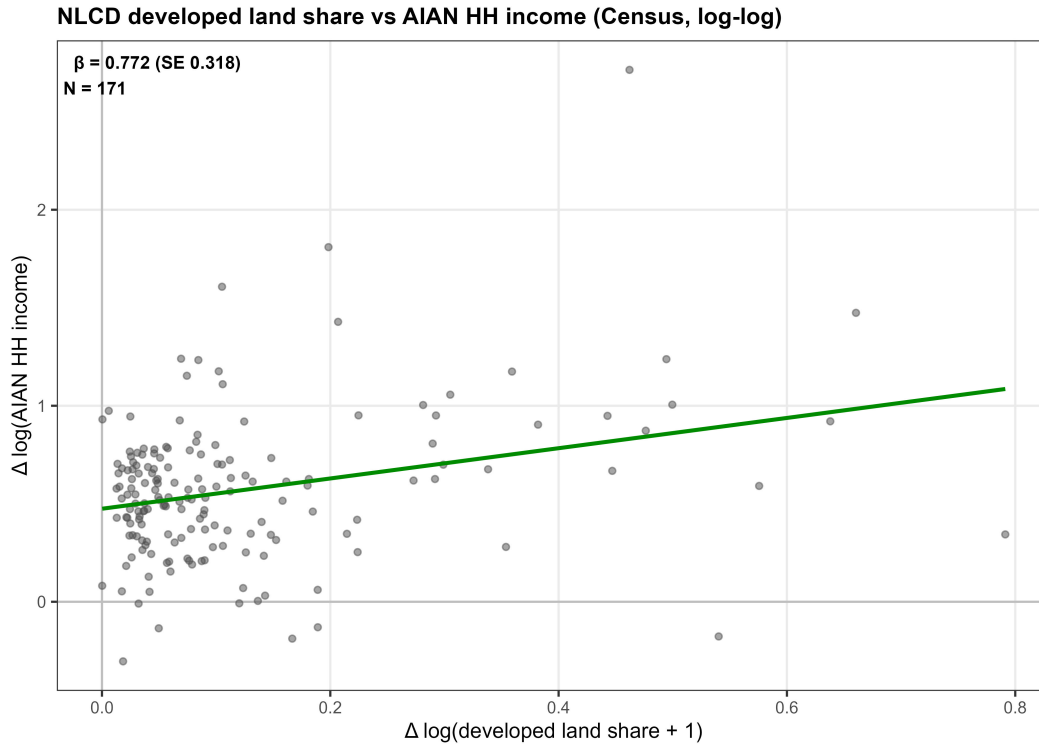
*Heteroskedasticity-robust standard-errors in parentheses*

*Signif. Codes: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1*

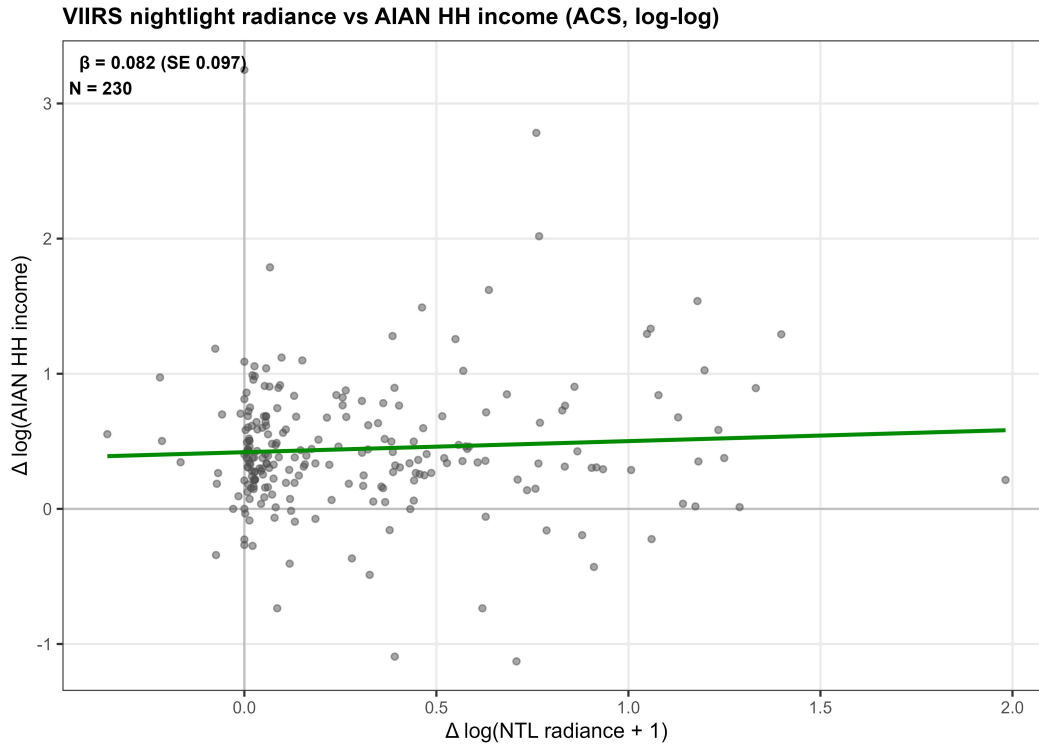
VIIRS nightlight radiance vs AIAN HH income (Census, log-log)



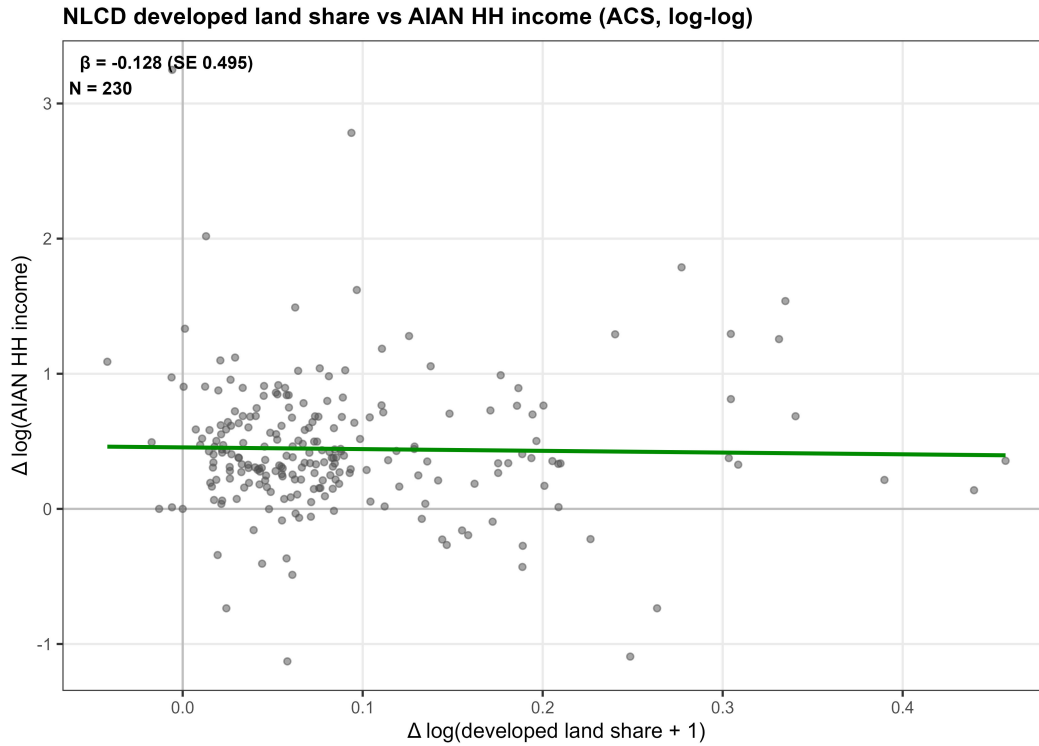
**Figure D1:** Long-difference scatter of change in log(median AIAN household income) on change in log(mean VIIRS nightlight radiance + 1) between the 1990 and 2000 decennial censuses; each point is one reservation. The fitted line reflects the OLS slope reported in the upper-left corner, with heteroskedasticity-robust standard errors. The 1990 VIIRS value is proxied by the 1992 reservation-level reading because the DMSP-OLS nightlight series begins in 1992. Construction follows the long-difference panel of Henderson, Storeygard, and Weil (2012, Figure 6).



**Figure D2:** Long-difference scatter of change in log(median AIAN household income) on change in log(developed land share + 1) between the 1990 and 2000 decennial censuses; each point is one reservation. The fitted line reflects the OLS slope reported in the upper-left corner, with heteroskedasticity-robust standard errors.

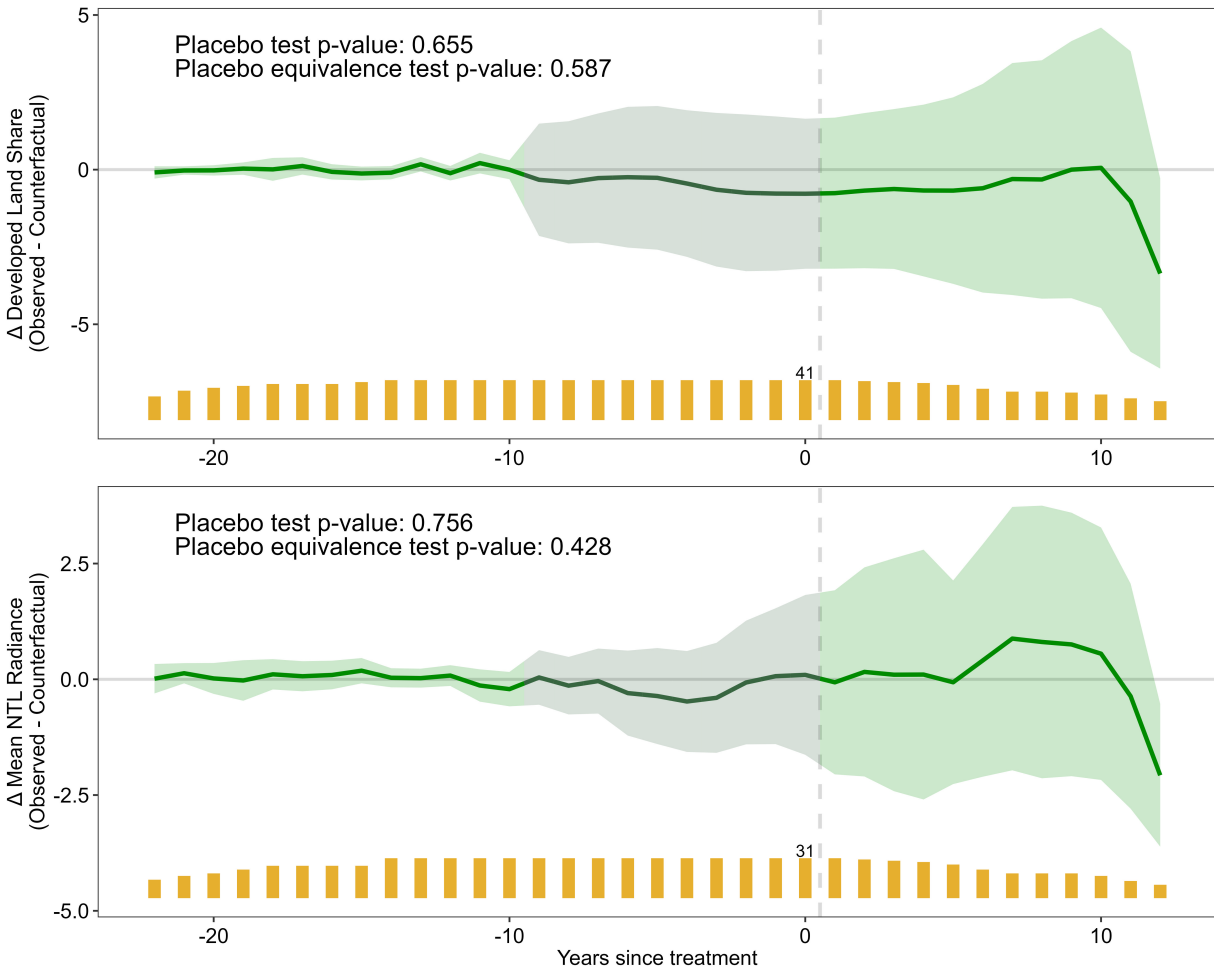


**Figure D3:** Long-difference scatter of change in log(median AIAN household income) on change in log(mean VIIRS nightlight radiance + 1) between the 2005–2009 and 2019–2023 ACS 5-year estimates; each point is one reservation. The fitted line reflects the OLS slope reported in the upper-left corner, with heteroskedasticity-robust standard errors.



**Figure D4:** Long-difference scatter of change in log(median AIAN household income) on change in log(developed land share + 1) between the 2005–2009 and 2019–2023 ACS 5-year estimates; each point is one reservation. The fitted line reflects the OLS slope reported in the upper-left corner, with heteroskedasticity-robust standard errors.

## E Placebo Test



**Figure E1:** Placebo test results. Treatment timing is shifted 10 years prior to actual compact adoption, and the model is re-estimated to check for false treatment effects. The shaded region indicates the placebo post-treatment window.

## F Alternative Difference-in-Differences Estimators

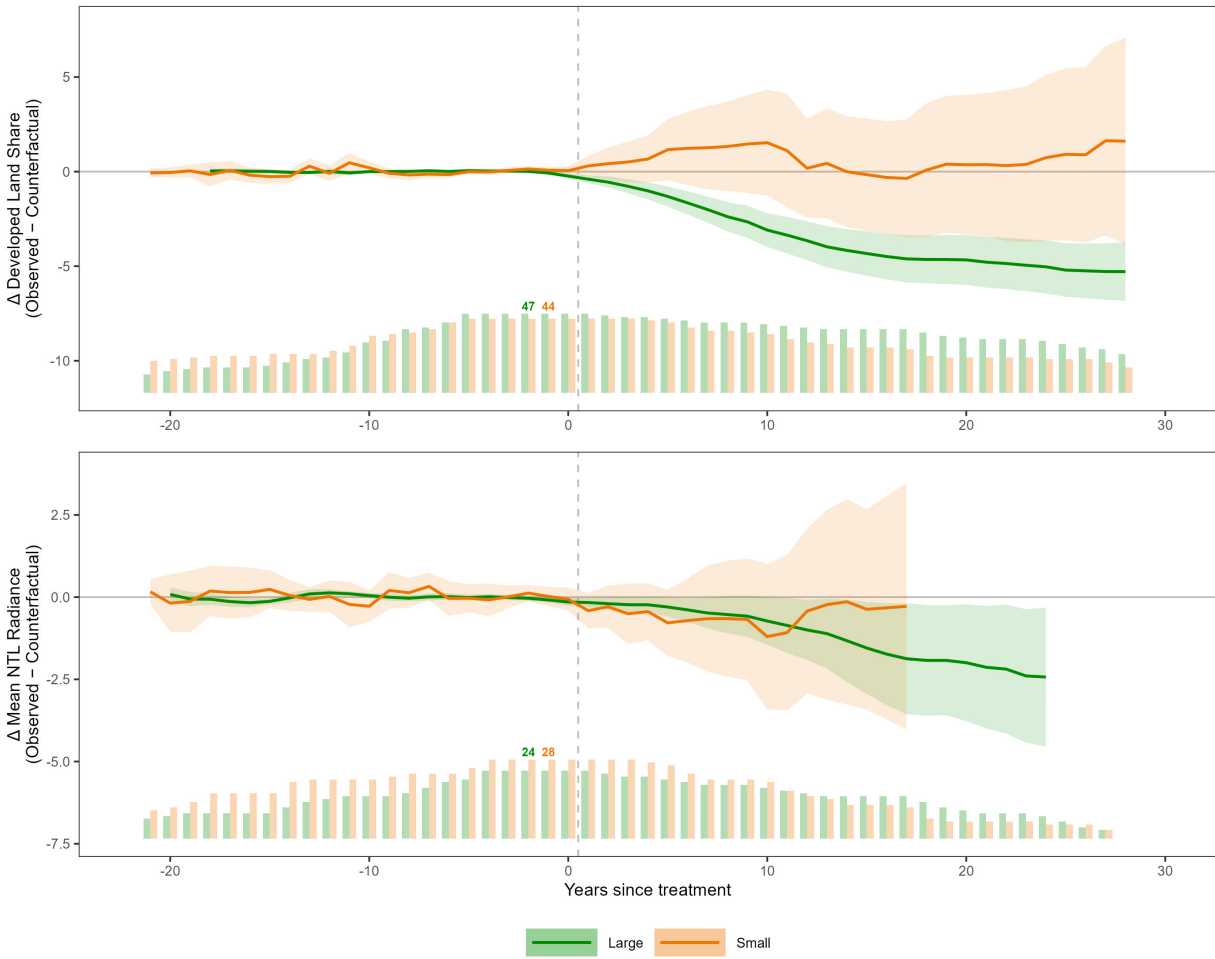
**Table F1: SGC Effect Across Alternative Estimators**

	TWFE (1)	Stacked (2)	Sun-Abraham (3)	CS (4)
<i>Panel A: Developed Land Share</i>				
ATT	-1.642* (0.643)	-1.793** (0.531)	-1.436* (0.612)	-1.213 (0.831)
ATT <sub>t=1</sub>	-0.050 (0.055)	-0.058 (0.051)	-0.070 (0.058)	-0.139 (0.119)
ATT <sub>t=6</sub>	-0.463 (0.329)	-0.501 (0.285)	-0.531 (0.320)	-0.616 (0.511)
ATT <sub>t=12</sub>	-1.447* (0.591)	-1.467** (0.477)	-1.374* (0.601)	-1.187 (0.867)
ATT <sub>t=18</sub>	-2.295** (0.745)	-2.289** (0.564)	-2.257** (0.825)	-1.787 (1.144)
Observations				
Years				
Treated Reservations	0	0	0	0
<i>Panel B: NTL Radiance</i>				
ATT	-0.348 (0.544)	-0.434 (0.469)	-0.505 (0.297)	-0.409 (0.289)
ATT <sub>t=1</sub>	-0.128 (0.082)	-0.140 (0.075)	-0.140* (0.070)	-0.137 (0.076)
ATT <sub>t=6</sub>	-0.250 (0.282)	-0.265 (0.251)	-0.360 (0.219)	-0.289 (0.221)
ATT <sub>t=12</sub>	-0.611* (0.260)	-0.589** (0.199)	-0.555** (0.209)	-0.472* (0.217)
ATT <sub>t=18</sub>	-1.076* (0.488)	-1.069** (0.304)	-0.941* (0.448)	-0.806* (0.404)
Observations				
Years				
Treated Reservations	0	0	0	0

*Note:* Each column reports the estimated ATT from a different estimator, all with gaming as a control. TWFE is the classic two-way fixed effects regression. Stacked uses cohort-specific 2×2 comparisons (Cengiz et al. 2019). Sun-Abraham is the interaction-weighted estimator (Sun & Abraham 2021). CS is the Callaway & Sant’Anna (2021) estimator using not-yet-treated controls. Standard errors in parentheses (cluster-robust for TWFE/Stacked/Sun-Abraham; analytical for CS). CS estimates may be less precise due to the large number of small treatment cohorts inherent in staggered SGC adoption. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

# G Heterogeneous Treatment Effects by Reservation Characteristics

## G.1 Reservation Size



**Figure G1:** Dynamic treatment effects by reservation size (median split on area). Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G1: Heterogeneous Effects of SGC by Reservation Size — Full Diagnostics**

	Large	Small
<i>Panel A: Developed Land Share</i>		
ATT	-3.405** (0.486)	0.795 (1.236)
ATT <sub>t=1</sub>	-0.397** (0.102)	0.300 (0.276)
ATT <sub>t=6</sub>	-1.655** (0.313)	1.231 (0.986)
ATT <sub>t=12</sub>	-3.652** (0.524)	0.178 (1.334)
ATT <sub>t=18</sub>	-4.643** (0.646)	0.084 (1.798)
Latent Factors ( <i>r</i> )	4	4
F-test p-value	0.100	0.100
TOST Equiv. p-value	0.044	0.044
Observations	12792	12792
Years	39	39
Treated Reservations	47	44
<i>Panel B: NTL Radiance</i>		
ATT	-1.019** (0.426)	-0.413 (0.794)
ATT <sub>t=1</sub>	-0.164* (0.077)	-0.413 (0.269)
ATT <sub>t=6</sub>	-0.388* (0.184)	-0.713 (0.651)
ATT <sub>t=12</sub>	-0.999* (0.465)	-0.427 (1.279)
ATT <sub>t=18</sub>	-1.924* (0.857)	-0.731 (1.560)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.763	0.763
TOST Equiv. p-value	0.300	0.300
Observations	9024	9024
Years	32	32
Treated Reservations	24	28

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

## G.2 AIAN Population



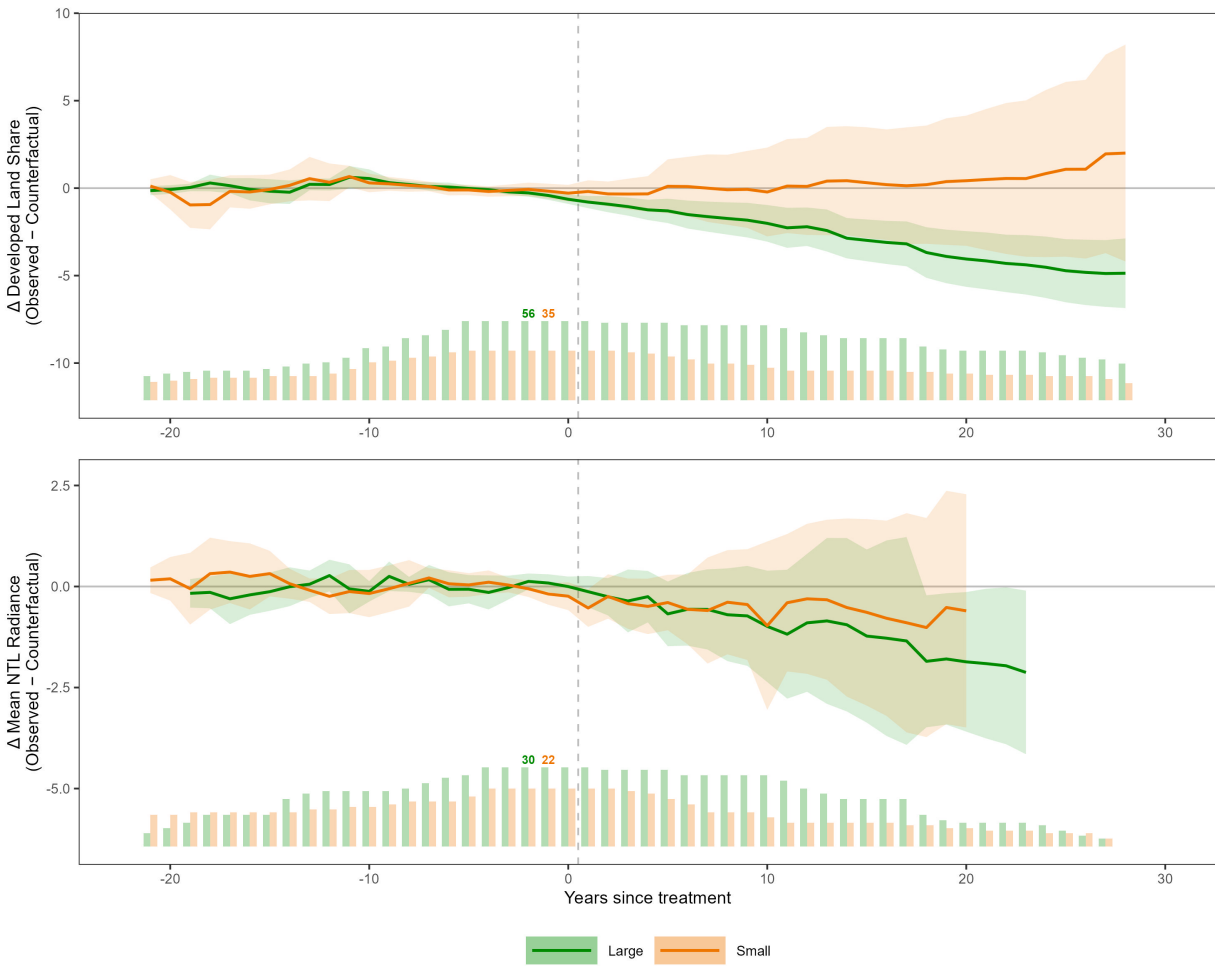
**Figure G2:** Dynamic treatment effects by AIAN population (median split). Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G2: Heterogeneous Effects of SGC by AIAN Population — Full Diagnostics**

	Large	Small
<i>Panel A: Developed Land Share</i>		
ATT	-2.849** (0.540)	0.823 (1.250)
ATT <sub>t=1</sub>	-0.281** (0.107)	0.313 (0.308)
ATT <sub>t=6</sub>	-1.085** (0.357)	1.041 (1.040)
ATT <sub>t=12</sub>	-2.857** (0.689)	-0.086 (1.388)
ATT <sub>t=18</sub>	-4.167** (0.741)	0.507 (2.083)
Latent Factors ( <i>r</i> )	3	3
F-test p-value	0.240	0.240
TOST Equiv. p-value	0.055	0.055
Observations	12714	12714
Years	39	39
Treated Reservations	48	42
<i>Panel B: NTL Radiance</i>		
ATT	-1.005** (0.394)	0.245 (0.776)
ATT <sub>t=1</sub>	-0.084 (0.111)	0.013 (0.419)
ATT <sub>t=6</sub>	-0.414 (0.269)	0.521 (0.946)
ATT <sub>t=12</sub>	-1.124* (0.542)	-0.730 (0.866)
ATT <sub>t=18</sub>	-1.767* (0.711)	-0.713 (1.734)
Latent Factors ( <i>r</i> )	3	3
F-test p-value	0.553	0.553
TOST Equiv. p-value	0.321	0.321
Observations	8992	8992
Years	32	32
Treated Reservations	22	29

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

### G.3 Tribal Enrollment



**Figure G3:** Dynamic treatment effects by tribal enrollment (median split). Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G3:** Heterogeneous Effects of SGC by Enrollment — Full Diagnostics

	Large	Small
<i>Panel A: Developed Land Share</i>		
ATT	-2.760** (0.552)	0.455 (1.375)
ATT <sub>t=1</sub>	-0.797** (0.177)	-0.190 (0.325)
ATT <sub>t=6</sub>	-1.510** (0.408)	0.091 (0.865)
ATT <sub>t=12</sub>	-2.206** (0.561)	0.100 (1.415)
ATT <sub>t=18</sub>	-3.681** (0.738)	0.198 (1.725)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.001	0.001
TOST Equiv. p-value	0.968	0.968
Observations	12714	12714
Years	39	39
Treated Reservations	56	35
<i>Panel B: NTL Radiance</i>		
ATT	-0.916 (0.558)	-0.391 (0.766)
ATT <sub>t=1</sub>	-0.128 (0.198)	-0.532* (0.238)
ATT <sub>t=6</sub>	-0.564 (0.459)	-0.565 (0.441)
ATT <sub>t=12</sub>	-0.899 (0.871)	-0.305 (0.947)
ATT <sub>t=18</sub>	-1.851* (0.833)	-1.016 (1.383)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.724	0.724
TOST Equiv. p-value	0.298	0.298
Observations	8960	8960
Years	32	32
Treated Reservations	30	22

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

### G.4 Distance to City



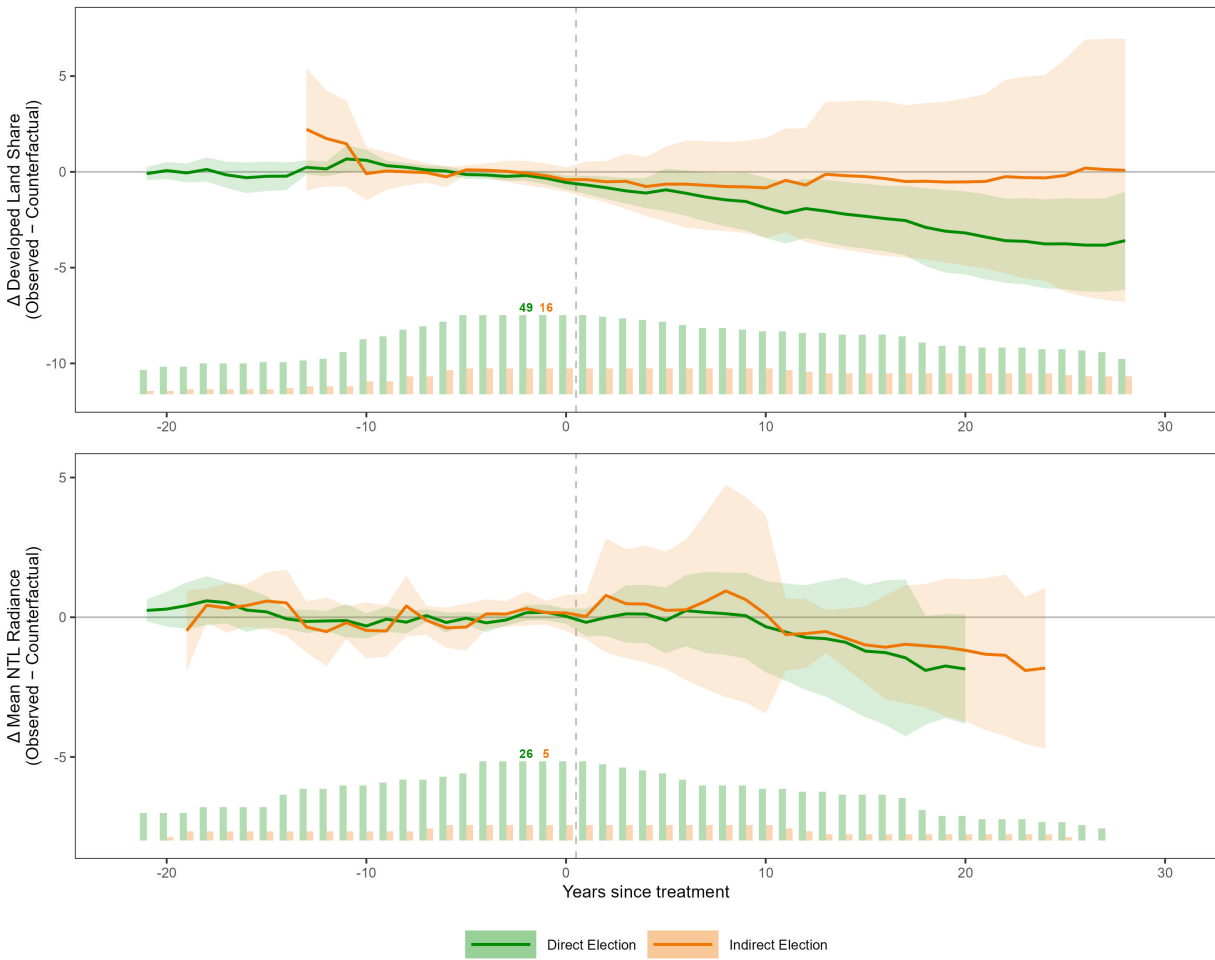
**Figure G4:** Dynamic treatment effects by distance to city with at least 100,000 residents (median split). Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G4:** Heterogeneous Effects of SGC by Distance to City — Full Diagnostics

	Far	Near
<i>Panel A: Developed Land Share</i>		
ATT	-1.599 (1.023)	-1.465 (0.782)
ATT <sub>t=1</sub>	-0.033 (0.223)	-0.084 (0.204)
ATT <sub>t=6</sub>	-0.159 (0.807)	-0.394 (0.612)
ATT <sub>t=12</sub>	-1.967 (1.026)	-1.954* (0.921)
ATT <sub>t=18</sub>	-3.086* (1.217)	-2.461* (1.159)
Latent Factors ( <i>r</i> )	4	4
F-test p-value	0.110	0.110
TOST Equiv. p-value	0.048	0.048
Observations	12714	12714
Years	39	39
Treated Reservations	48	43
<i>Panel B: NTL Radiance</i>		
ATT	-0.751 (0.438)	0.045 (0.802)
ATT <sub>t=1</sub>	-0.008 (0.147)	-0.046 (0.444)
ATT <sub>t=6</sub>	0.015 (0.608)	0.170 (0.769)
ATT <sub>t=12</sub>	-1.016* (0.505)	-0.828 (0.980)
ATT <sub>t=18</sub>	-1.622* (0.698)	-1.087 (1.645)
Latent Factors ( <i>r</i> )	3	3
F-test p-value	0.489	0.489
TOST Equiv. p-value	0.311	0.311
Observations	8960	8960
Years	32	32
Treated Reservations	26	26

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

## G.5 Executive Selection



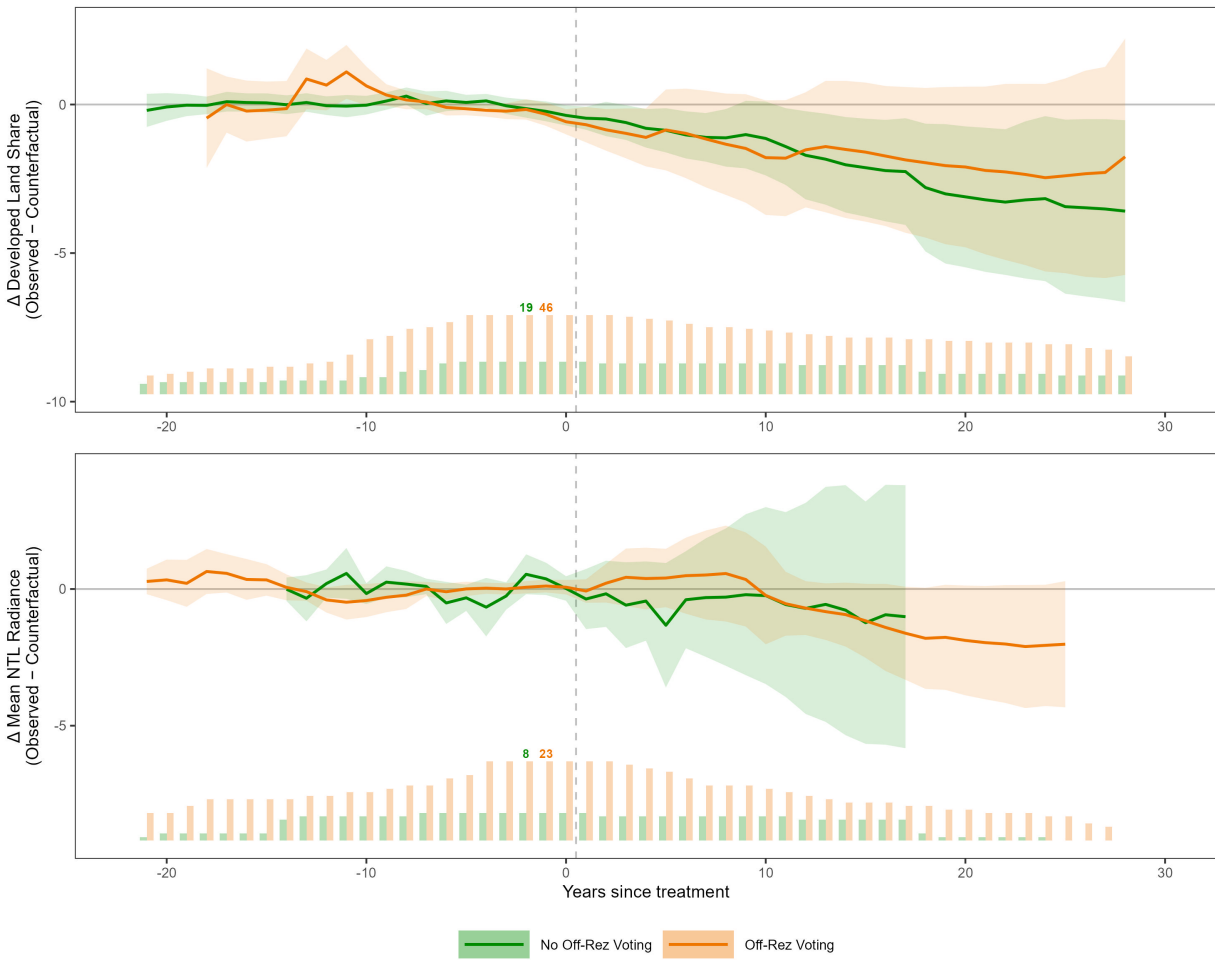
**Figure G5:** Dynamic treatment effects by executive selection method. Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G5: Heterogeneous Effects of SGC by Executive Selection — Full Diagnostics**

	Direct Election	Indirect Election
<i>Panel A: Developed Land Share</i>		
ATT	-2.180** (0.792)	-0.421 (1.811)
ATT <sub>t=1</sub>	-0.684** (0.244)	-0.405 (0.480)
ATT <sub>t=6</sub>	-1.116 (0.602)	-0.642 (1.159)
ATT <sub>t=12</sub>	-1.916* (0.787)	-0.688 (1.512)
ATT <sub>t=18</sub>	-2.896** (1.036)	-0.490 (2.078)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.029	0.029
TOST Equiv. p-value	0.939	0.939
Observations	8775	8775
Years	39	39
Treated Reservations	49	16
<i>Panel B: NTL Radiance</i>		
ATT	-0.592 (0.612)	-0.152 (1.107)
ATT <sub>t=1</sub>	-0.182 (0.253)	0.028 (0.418)
ATT <sub>t=6</sub>	0.236 (0.647)	0.265 (1.278)
ATT <sub>t=12</sub>	-0.724 (0.951)	-0.585 (0.630)
ATT <sub>t=18</sub>	-1.901 (0.991)	-1.023 (1.126)
Latent Factors ( <i>r</i> )	2	2
F-test p-value	0.936	0.936
TOST Equiv. p-value	0.655	0.655
Observations	5952	5952
Years	32	32
Treated Reservations	26	5

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

## G.6 Residency Voting Requirement



**Figure G6:** Dynamic treatment effects by residency voting requirement. Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G6:** Heterogeneous Effects of SGC by Residency Voting Requirement — Full Diagnostics

	No Off-Rez Voting	Off-Rez Voting
<i>Panel A: Developed Land Share</i>		
ATT	-2.046* (0.813)	-1.516 (1.061)
ATT <sub>t=1</sub>	-0.461* (0.198)	-0.679* (0.303)
ATT <sub>t=6</sub>	-1.023* (0.404)	-0.972 (0.768)
ATT <sub>t=12</sub>	-1.709* (0.757)	-1.525 (0.988)
ATT <sub>t=18</sub>	-2.795* (1.097)	-1.959 (1.284)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.029	0.029
TOST Equiv. p-value	0.939	0.939
Observations	8775	8775
Years	39	39
Treated Reservations	19	46
<i>Panel B: NTL Radiance</i>		
ATT	-0.591 (1.167)	-0.488 (0.533)
ATT <sub>t=1</sub>	-0.365 (0.561)	-0.073 (0.219)
ATT <sub>t=6</sub>	-0.392 (0.905)	0.488 (0.709)
ATT <sub>t=12</sub>	-0.709 (1.971)	-0.698 (0.503)
ATT <sub>t=18</sub>	-1.514 (1.490)	-1.803 (0.944)
Latent Factors ( <i>r</i> )	2	2
F-test p-value	0.936	0.936
TOST Equiv. p-value	0.655	0.655
Observations	5952	5952
Years	32	32
Treated Reservations	8	23

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

## G.7 Direct Democracy



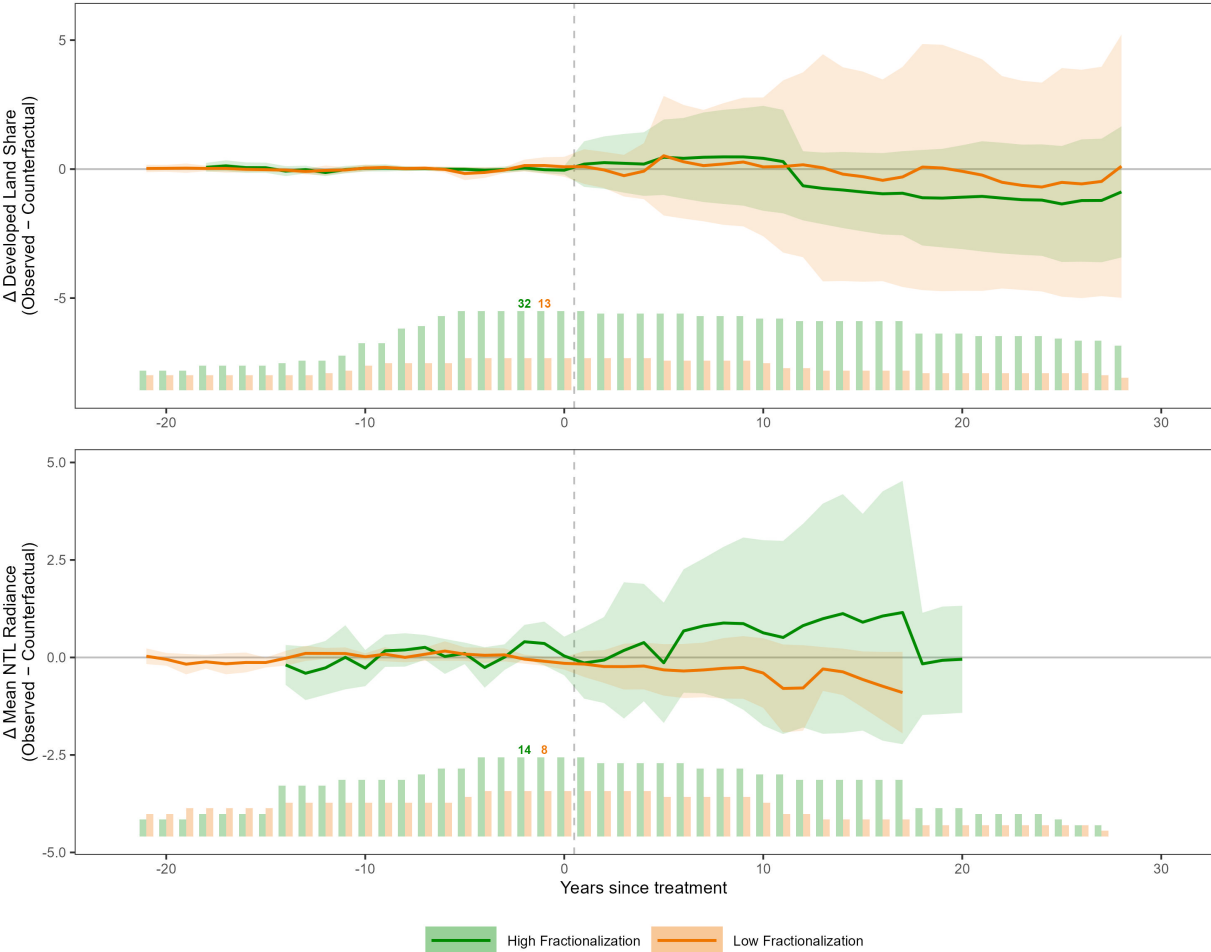
**Figure G7:** Dynamic treatment effects by direct democracy (general assembly vs. representative government). Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G7: Heterogeneous Effects of SGC by Direct Democracy — Full Diagnostics**

	General Assembly	No Assembly
<i>Panel A: Developed Land Share</i>		
ATT	-2.157** (0.853)	-1.034 (1.352)
ATT <sub>t=1</sub>	-0.707* (0.292)	-0.495 (0.320)
ATT <sub>t=6</sub>	-1.191 (0.706)	-0.710 (0.827)
ATT <sub>t=12</sub>	-1.881* (0.856)	-1.183 (1.136)
ATT <sub>t=18</sub>	-2.779* (1.124)	-1.478 (1.557)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.029	0.029
TOST Equiv. p-value	0.939	0.939
Observations	8775	8775
Years	39	39
Treated Reservations	37	28
<i>Panel B: NTL Radiance</i>		
ATT	-0.366 (0.718)	-0.715 (0.660)
ATT <sub>t=1</sub>	-0.216 (0.391)	-0.067 (0.160)
ATT <sub>t=6</sub>	0.557 (0.871)	-0.159 (0.701)
ATT <sub>t=12</sub>	-0.544 (1.196)	-0.918 (0.639)
ATT <sub>t=18</sub>	-1.603 (0.945)	-1.907 (1.092)
Latent Factors ( <i>r</i> )	2	2
F-test p-value	0.936	0.936
TOST Equiv. p-value	0.655	0.655
Observations	5952	5952
Years	32	32
Treated Reservations	17	14

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

# G.8 Ethnic Fractionalization



**Figure G8:** Dynamic treatment effects by ethnic fractionalization (median split). Top panel: Developed Land Share. Bottom panel: NTL Radiance.

**Table G8: Heterogeneous Effects of SGC by Ethnic Fractionalization — Full Diagnostics**

	High Fractionalization	Low Fractionalization
<i>Panel A: Developed Land Share</i>		
ATT	-0.428 (0.780)	0.042 (1.507)
ATT <sub>t=1</sub>	0.194 (0.451)	0.097 (0.342)
ATT <sub>t=6</sub>	0.418 (0.798)	0.284 (1.124)
ATT <sub>t=12</sub>	-0.647 (0.684)	0.168 (1.829)
ATT <sub>t=18</sub>	-1.110 (0.945)	0.080 (2.434)
Latent Factors ( <i>r</i> )	3	3
F-test p-value	0.781	0.781
TOST Equiv. p-value	0.004	0.004
Observations	7098	7098
Years	39	39
Treated Reservations	32	13
<i>Panel B: NTL Radiancance</i>		
ATT	0.468 (0.693)	-0.524 (0.322)
ATT <sub>t=1</sub>	-0.142 (0.467)	-0.170 (0.169)
ATT <sub>t=6</sub>	0.680 (0.807)	-0.347 (0.354)
ATT <sub>t=12</sub>	0.816 (1.332)	-0.783 (0.559)
ATT <sub>t=18</sub>	-0.164 (0.668)	-1.283* (0.612)
Latent Factors ( <i>r</i> )	1	1
F-test p-value	0.804	0.804
TOST Equiv. p-value	0.473	0.473
Observations	4992	4992
Years	32	32
Treated Reservations	14	8

*Note:* Coefficients represent the post-treatment difference between observed outcomes and reservation-specific counterfactual estimates, estimated separately for each subgroup using the IFect estimator with gaming control. The F-test examines whether all pre-treatment ATTs are jointly zero over the 10 years prior to compact adoption. The TOST equivalence test examines whether pre-treatment ATTs fall within  $\pm 0.25\hat{\sigma}_\varepsilon$  of zero. Pre-treatment diagnostics are model-level (not group-specific). Standard errors from 1,000 bootstrap replications in parentheses. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .