Arefeva, Davis, Ghent, Park (2024) "The Effect of Capital Gains Taxes on Business Creation and Employment: The Case of Opportunity Zones"

A Online Appendix

Table A1: American Community Survey control variables

ACS Name	Description
B01003_001E	population
B02001_002E	white_population
C24020_001E	employed_population
B08131_001E	minutes_commute
B09010_002E	supplemental_income
B15003_021E	associate
B15003_022E	bachelor
B15003_023E	master
B15003_024E	professional_school
B15003_025E	doctoral
B16009_002E	poverty
B18140_001E	median_earnings
B19019_001E	median_household_income
B25011_001E	acs_total_housing
B25011_026E	renter_occupied
B25031_001E	median_gross_rent
B27020_002E	native_born
B27020_003E	native_born_hc_covered
acs_pct_white	white_population / population
acs_minutes_commute	minutes_commute / employed_population
acs_pct_higher_ed	(associate + bachelor + master + professional_school + doctoral)/population
acs_pct_rent	renter_occupied / total_housing
acs_pct_native_hc_covered	native_born_hc_covered / native_born
acs_pct_poverty	poverty / population
acs_log_median_earnings	log(median_earnings)
acs_log_median_household_income	log(median_household_income)
acs_log_median_gross_rent	log(median gross rent)
acs_pct_supplemental_income	supplemental_income / population
acs_pct_employed	employed_population / population

Notes: (1) Codes in ACS Name column correspond to the code from https://api.census.gov/data/2017/acs/acs5/variables.html, (2) the employed population is defined as all people 16 years old and over who usually worked 35 hours or more per week for 50 to 52 weeks in the (reference period). (3) The ACS controls are all variables with names starting with "acs".

Table A2: Robustness: Not Controlling for Median Commuting Time

	(1) OLS	(2) LAV	(3) OLS	(4) LAV	(5) OLS	(6) OLS	(7) GLS	(8) FE	(9) FE	(10) OLS
					Winsorized at				Winsorized at 1%	
					0.5%	1%	Weighted	Tract FE	CBSA FE	SEs Clustered
ACS Controls	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
No. of CBSAs									928	
Panel A: Employment Growth										
D_i	-0.025	-0.016***	-0.032**	-0.011***	-0.020***	-0.019***	-0.019***		-0.019***	-0.019***
	(0.020)	(0.002)	(0.017)	(0.002)	(0.004)	(0.004)	(0.003)		(0.004)	(0.003)
$Post_{t=2019}$	0.022*	-0.074***	0.009	-0.075***	-0.042***	-0.050***	-0.074***	-0.050***	-0.051***	-0.050***
	(0.012)	(0.001)	(0.010)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.012)
$Post_{t=2021}$	0.059***	0.002	0.060***	0.002	0.026***	0.018***	0.072***	0.018***	0.018***	0.018***
	(0.012)	(0.001)	(0.010)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
$D_iPost_{t=2019}$	0.006	0.023***	0.019	0.023***	0.040***	0.038***	0.019***	0.038***	0.038***	0.038***
	(0.028)	(0.003)	(0.023)	(0.003)	(0.006)	(0.005)	(0.004)	(0.005)	(0.005)	(0.007)
$D_iPost_{t=2021}$	0.029	0.018***	0.030	0.018***	0.032***	0.030***	0.031***	0.030***	0.030***	0.030***
	(0.028)	(0.003)	(0.023)	(0.003)	(0.006)	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)
$Emp.Growth_{2013-2015}$			0.100***	0.000	0.021***	0.012***	-0.014***		0.011***	0.012***
			(0.011)	(0.001)	(0.003)	(0.002)	(0.002)		(0.002)	(0.004)
Observations	122,513	122,513	122,473	122,473	122,473	122,473	122,473	122,473	122,473	122,473
R^2	0.000		0.002		0.010	0.012	0.058	0.013	0.012	0.012
Panel B: Establishment Growth										
D_i	-0.008	-0.009***	-0.014	-0.007***	-0.011***	-0.011***	-0.014***		-0.010***	-0.011**
	(0.009)	(0.002)	(0.009)	(0.002)	(0.003)	(0.002)	(0.002)		(0.002)	(0.004)
$Post_{t=2019}$	-0.096***	-0.097***	-0.100***	-0.098***	-0.113***	-0.113***	-0.106***	-0.113***	-0.114***	-0.113***
	(0.006)	(0.001)	(0.005)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.016)
$Post_{t=2021}$	0.105***	0.091***	0.105***	0.089***	0.088***	0.084***	0.105***	0.084***	0.084***	0.084***
	(0.006)	(0.001)	(0.005)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.007)
$D_iPost_{t=2019}$	0.019	0.025***	0.022*	0.023***	0.032***	0.032***	0.020***	0.032***	0.032***	0.032***
	(0.013)	(0.003)	(0.012)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.009)
$D_iPost_{t=2021}$	0.000	0.006**	0.000	0.005*	0.010***	0.010***	0.006**	0.011***	0.010***	0.010***
	(0.013)	(0.003)	(0.012)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
$Emp.Growth_{2013-2015}$			0.076***	0.019***	0.021***	0.017***	0.007***		0.014***	0.017***
			(0.006)	(0.001)	(0.002)	(0.002)	(0.001)		(0.002)	(0.003)
Observations	122,513	122,513	122,473	122,473	122,473	122,473	122,473	122,473	122,473	122,473
R^2	0.012		0.017		0.136	0.151	0.219	0.181	0.150	0.151

Notes: 1) Columns (2) and (4) report results for quantile regression to the median or Least Absolute Value (LAV). 2) Weight for column (7) is 2015 Census tract employment. 3) In column (10), standard errors are clustered by CBSA. 4) Standard errors in parentheses. 5) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 6) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 7) $P_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise. 8) There are substantially more observations in Table A2 than in our main regressions because we control for commute time from the ACS in our main regression specifications which is missing for many tracts.

A.1 Robustness

In the exercises in this section, we include only tracts in metropolitan areas given that we find no employment effect for tracts in non-metropolitan areas.

A.1.1 LICs

A tract is eligible to be designated if it is an LIC or if it is contiguous to an LIC (non-LIC). We identify whether the effect of the program differs for LIC and non-LIC tracts by running the DiD regression (5) separately for the LIC and non-LIC tracts. Columns (1) and (2) of Table A3 show the results for tracts eligible by the LIC criteria. LIC tracts experienced similar growth in employment and establishments as the overall sample of all tracts in metropolitan areas, between 3.2 - 5.0 percentage points in the first two years of the program. Columns (3) and (4) repeat this analysis for tracts eligible by the contiguity criteria (non-LIC). Our point estimates suggest these tracts experienced faster employment growth, 12.6 - 14.2 percentage points, and faster establishment growth, 7.4 - 8.8 percentage points. However, the standard errors on these estimates are also higher.[15] Using the OLS results, the effect of the OZ program on employment growth is not significantly different in LIC and non-LIC tracts (p-value = 0.123), but the effect on establishment growth is statistically higher in non-LIC tracts (p-value = 0.021).

[15]Recall that states could select no more than 5% of the Designated tracts using the contiguity criteria. This reduced the non-LIC sample size to around 7,331 tracts, of which 126 were designated. The number of observations in column (3) of Table A3, 14,378 equals to three times 7,331 less 7,555 observations from census tracts where we do not have information on commuting time. 7,555 is not a multiple of 3 because our data is an unbalanced panel.

Table A3: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	LIC		Non-LIC		Contiguous		LIC + Contiguous		Placebo	
	LAV	OLS	LAV	OLS	LAV	OLS	LAV	OLS	LAV	OLS
Panel A: Employment Growth										
D_i	-0.016***	-0.024***	-0.002	0.002	-0.011***	-0.014**	-0.007**	-0.010**	-0.008***	-0.012***
	(0.003)	(0.005)	(0.020)	(0.029)	(0.004)	(0.006)	(0.003)	(0.004)	(0.002)	(0.003)
$Post_{t=2019}$	-0.094***	-0.082***	-0.078***	-0.057***	-0.081***	-0.061***	-0.110***	-0.130***	0.007***	0.007***
	(0.002)	(0.004)	(0.004)	(0.006)	(0.003)	(0.005)	(0.003)	(0.003)	(0.001)	(0.002)
$Post_{t=2021}$	-0.004	0.012***	-0.003	0.011**	0.000	0.021***	0.085***	0.083***		
	(0.002)	(0.004)	(0.004)	(0.006)	(0.003)	(0.005)	(0.003)	(0.003)		
$D_i Post_{t=2019}$	0.032***	0.050***	0.142***	0.126***	0.019***	0.028***	0.021***	0.031***	-0.006**	-0.007
	(0.005)	(0.007)	(0.029)	(0.042)	(0.005)	(0.008)	(0.004)	(0.005)	(0.003)	(0.005)
$D_i Post_{t=2021}$	0.022***	0.036***	-0.010	-0.009	0.013***	0.023***	0.003	0.007		
	(0.005)	(0.007)	(0.028)	(0.041)	(0.005)	(0.008)	(0.004)	(0.005)		
$Emp.Growth_{2013-2015}$	-0.003	0.003	-0.001	0.019*	-0.004	0.006	0.023***	0.021***	-0.013***	-0.024***
	(0.004)	(0.006)	(0.007)	(0.010)	(0.004)	(0.007)	(0.004)	(0.005)	(0.002)	(0.003)
Observations	47,383	47,383	14,378	14,378	34,464	34,464	34,464	34,464	41,774	41,774
R^2		0.022		0.014		0.017		0.174		0.028
Panel B: Establishment Growth										
D_i	-0.012***	-0.017***	-0.009	-0.016	-0.012***	-0.015**	-0.008**	-0.011***	-0.011***	-0.016***
	(0.003)	(0.004)	(0.018)	(0.019)	(0.004)	(0.006)	(0.003)	(0.004)	(0.002)	(0.003)
$Post_{t=2019}$	-0.119***	-0.142***	-0.111***	-0.133***	-0.085***	-0.067***	-0.113***	-0.133***	0.003*	0.004**
	(0.002)	(0.002)	(0.003)	(0.004)	(0.003)	(0.005)	(0.003)	(0.003)	(0.001)	(0.002)
$Post_{t=2021}$	0.084***	0.076***	0.087***	0.082***	-0.000	0.021***	0.084***	0.081***		
	(0.002)	(0.002)	(0.003)	(0.004)	(0.003)	(0.005)	(0.003)	(0.003)		
$D_i Post_{t=2019}$	0.032***	0.045***	0.074***	0.088***	0.021***	0.031***	0.024***	0.033***	0.005	0.007*
	(0.004)	(0.005)	(0.025)	(0.028)	(0.005)	(0.008)	(0.005)	(0.006)	(0.003)	(0.004)
$D_i Post_{t=2021}$	0.009**	0.017***	0.016	0.009	0.015***	0.024***	0.004	0.009		
	(0.004)	(0.005)	(0.025)	(0.027)	(0.005)	(0.008)	(0.005)	(0.006)		
$Emp.Growth_{2013-2015}$	0.013***	0.020***	0.034***	0.029***	-0.003	0.009	0.017***	0.020***	0.005**	0.017***
	(0.003)	(0.004)	(0.006)	(0.007)	(0.005)	(0.008)	(0.004)	(0.005)	(0.002)	(0.002)
Observations	47,383	47,383	14,378	14,378	28,849	28,849	28,849	28,849	41,774	41,774
R^2		0.180		0.193		0.018		0.172		0.071

Notes: 1) Table includes only tracts in metropolitan area such that the total sample corresponds to that analyzed in columns (1) and (2) of Table 3. 2) Columns (1), (3), (5), (7), (9) report results for quantile regression to the median or Least Absolute Value (LAV). 3) The dependent variable is winsorized at the 1% level in Columns (2), (4), (6), (8), and (10). 4) Standard errors in parentheses. 5) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 6) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 7) D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise. 8) In columns (1)-(8), $Post_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise. In columns (9) and (10), $Post_{t=year}$ is equal to 1 for the 2015-2017 period, 0 otherwise.

A.1.2 Nearby tracts

In this section we restrict the control group to non-selected eligible tracts bordering Designated OZ tracts. The treatment group consists of Designated tracts, as before. By restricting tracts in the control group to be geographically near non-selected eligible tracts, we hope to control for any unobserved local economic forces. Columns (5) and (6) of Table A3 show estimates from this restricted sample. The point estimates are a bit lower than the results shown in Section 4.2 due to the positive spillover documented in Table 9, as they suggest employment and establishment growth increased by 1.9-2.8 and 2.1-3.1 percentage points, respectively. These estimates are robust to further restricting the sample to LIC tracts, as can be seen in columns (7) and (8).

A.1.3 Placebo test

We check the robustness of our results by running a placebo test in which we pretend that legislation for the OZ program occurred in 2015. In implementing the DiD, we compare employment and establishment growth from 2015-2017 with 2013-2015 for Designated tracts relative to Other tracts in metropolitan areas. Columns (9) and (10) of Table A3 report the results. The point estimates of the coefficient on the interaction term $D_i P_t$ are nearly zero and negative for employment growth and nearly zero and positive for establishment growth. Only the small negative coefficient on employment growth in the median regression (column (9)) is statistically significant at a 5% level. We conclude the results of this placebo test reinforce the validity of our findings of a positive impact of the OZ designation on employment and establishment growth in tracts in metropolitan areas.

A.1.4 Doubly Robust Difference-in-Difference estimator

We verify the robustness of our results by using an alternative estimator that matches on the propensity score, called Doubly Robust Difference-in-Difference or DRDiD (Sant'Anna and Zhao, 2020).[16] The advantage of the DRDiD estimator is that it is consistent even if either the propensity score function or the regression model for the outcome is not correctly specified (but not both). We use our ACS covariates to propensity score match following (Chen et al., 2023). Table A4 shows the DRDiD estimates of the impact of the policy, 4.6 and 3.4 percentage points for employment and establishment growth, respectively. These estimates are on the higher end of our baseline specification and are statistically significant.[17]

[16]Since our analysis includes three years of data, we use multi-period (three or more) doubly robust DiD (Callaway and Sant'Anna, 2021). We use a Stata package *csdid*.

[17]We thank Jiafeng Chen, Edward Glaeser, David Wessel for sharing their code for (Chen et al., 2023) to perform the DRDiD estimation.

Table A4: DRDiD Results

	(1) Raw	(2) Winsorized at 1%
Panel A: Employment Growth		
$\hat{\tau}_{2019}$	0.057***	0.046***
	(0.017)	(0.008)
$\hat{\tau}_{2021}$	0.030**	0.030***
	((0.014)	(0.007)
Observations	61,117	61,117
Panel B: Establishment Growth		
$\hat{\tau}_{2019}$	0.033***	0.034***
	(0.008)	(0.006)
$\hat{\tau}_{2021}$	0.003	0.016***
	(0.008)	(0.005)
Observations	61,117	61,117

Notes: 1) Includes only tracts in metropolitan areas. 2) Standard errors in parentheses. 3) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 4) We construct the propensity score used to match observations using our ACS controls detailed in Section 3.3.

A.1.5 One-year employment growth

Our main analysis in Section 4.1 studies the effect of OZs on two-year growth in employment and establishment growth from 2017 to 2019 to avoid 2018 during which legislation was finalized. In this section, we check the robustness of our findings by using one-year growth in employment and establishment growth to include the growth from 2017 to 2018 and from 2018 to 2019. Table A5 summarizes our findings. The effect of the policy on employment growth is significant and positive both in 2018 and 2019 in most specifications that we found an effect when we grouped the two years of data together.

Table A5: One-year Employment and Establishment Growth Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	LAV	Tract FE	LAV	OLS	LAV	OLS	IPW	DrDiD	IPW	DrDiD
		Winsorized at 1%	Metro Area		Non-Metro Area		All		Metro Area	
ACS Controls	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel A: Employment Growth										
$D_i Post_{t=2018}$	0.007***	0.015***	0.008***	0.016***	-0.005	0.016	0.026***	0.025***	0.022***	0.021***
	(0.002)	(0.005)	(0.003)	(0.005)	(0.005)	(0.012)	(0.006)	(0.006)	(0.007)	(0.007)
$D_i Post_{t=2019}$	0.004	0.010**	0.005**	0.011**	-0.002	0.005	0.010***	0.011***	0.009***	0.013***
	(0.002)	(0.005)	(0.003)	(0.005)	(0.005)	(0.012)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	78,077	78,077	63,874	63,874	14,203	14,203	58109	58104	48798	48626
R^2		0.020		0.027		0.012	0.022		0.036	
Panel B: Establishment Growth										
$D_i Post_{t=2018}$	0.016***	0.024***	0.008***	0.016***	-0.005	0.016	0.023***	0.022***	0.022***	0.022***
	(0.002)	(0.003)	(0.003)	(0.005)	(0.005)	(0.012)	(0.004)	(0.004)	(0.004)	(0.004)
$D_i Post_{t=2019}$	0.000	0.001	0.005**	0.011**	-0.002	0.005	0.000	0.002	0.001	0.003*
	(0.002)	(0.003)	(0.003)	(0.005)	(0.005)	(0.012)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	78,077	78,077	63,874	63,874	14,203	14,203	58109	58104	48798	48626
R^2		0.114		0.027		0.012				

Notes: 1) The dependent variable is a one-year growth rate. It is winsorized at the 1% level in Columns (2), (4), and (6)-(10). 2) $Post_{t=year}$ is a dummy variable equal to 1 if the observation is from year t, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise. 3) Columns (1), (3), and (5) report results for quantile regression to the median or Least Absolute Value (LAV). 4) Columns (7) and (9) report inverse probability weighted (IPW) estimates of the treatment effect on the treated. Columns (8) and (10) report multi-period doubly robust estimates (Callaway and Sant'Anna, 2021). Census tracts are matched based on the propensity score, constructed using ACS controls and two-year employment growth rate in 2011-2013, 2013-2015, and 2015-2017 following Freedman et al. (2023)'s methodology. 5) Columns (3)-(4) include only tracts in metropolitan areas, and columns (5)-(6) only tracts in non-metropolitan areas. 6) Standard errors in parentheses. 7) ***, **, and * denote significance at the 1%, 5%, and 10% levels.

A.1.6 Political tract selection

Perhaps not surprisingly, (Frank et al., 2022) find that the process for selecting specific tracts to receive preferential tax treatment arising from the OZ legislation is somewhat political. To estimate whether this aspect of tract selection affects our results, we collect data on the party of the state Governor and lower house state legislators in 2018. We assign legislators to tracts using the lower chamber State Legislative District Block Equivalent File. As in (Frank et al., 2022), we define a tract to be politically affiliated with the governor if the tract's lower house representative and the governor belong to the same party.

Many tracts belong to one electoral district, which sends one representative to the lower house. In this case, one lower house representative represents a tract and we set the variable defining whether the political affiliation of the tract is the same as the governor, $\%sameparty$, equal to 1 if the lower house representative and the governor are in the same party, 0 otherwise. However, some tracts belong to several electoral districts. Ten U.S. states contain districts sending two or more representatives to the lower house. To capture these cases, we set $\%sameparty$ equal to the share of the tract's lower house representatives that belong to the same party as the governor to measure political affiliation of the tract.[18] As an alternative specification, we construct the variable $Nsameparty$, which counts the number of legislators representing that tract of the same party as the governor.

[18]Out of the 41,055 tracts we include in the analysis, 12,094 (29%) are matched with more than two legislators.

Table A6: OZ selection and Political Consideration

	(1)	(2)	(3)	(4)	(5)	(6)
ACS Controls	No	No	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
					Metropolitan Area	
$Nsameparty$	-0.009***		0.009**		0.007*	
	(0.003)		(0.004)		(0.004)	
$\%sameparty$		-0.011***		0.017***		0.012**
		(0.004)		(0.005)		(0.006)
Observations	41,055	41,055	25,920	25,920	20,890	20,890
R^2	0.003	0.003	0.099	0.099	0.101	0.101

Notes: 1) The outcome variable is an indicator if the tract is selected as OZ. 2) $Nsameparty$ ($\%sameparty$) is the number (share) of legislators representing that tract of the same party as the governor. 3) Standard errors in parentheses. 4) ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table A7: Employment and Establishment Growth with Political Consideration

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	LAV	OLS	LAV	OLS	LAV	OLS	LAV	OLS
ACS Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Employment Growth				Establishment Growth			
D_i	-0.016***	-0.022***	-0.015***	-0.024***	-0.010***	-0.016***	-0.008*	-0.013**
	(0.003)	(0.005)	(0.005)	(0.007)	(0.003)	(0.003)	(0.004)	(0.005)
$Post_{t=2019}$	-0.091***	-0.076***	-0.089***	-0.075***	-0.118***	-0.141***	-0.112***	-0.133***
	(0.002)	(0.003)	(0.003)	(0.005)	(0.002)	(0.002)	(0.003)	(0.003)
$Post_{t=2021}$	-0.004**	0.012***	-0.004	0.012***	0.083***	0.078***	0.087***	0.082***
	(0.002)	(0.003)	(0.003)	(0.005)	(0.002)	(0.002)	(0.003)	(0.003)
$D_i Post_{t=2019}$	0.030***	0.045***	0.033***	0.061***	0.032***	0.043***	0.026***	0.034***
	(0.004)	(0.007)	(0.007)	(0.011)	(0.004)	(0.005)	(0.006)	(0.007)
$D_i Post_{t=2021}$	0.021***	0.034***	0.021***	0.031***	0.010**	0.015***	0.004	0.007
	(0.004)	(0.007)	(0.007)	(0.010)	(0.004)	(0.005)	(0.006)	(0.007)
$\%sameparty$	0.004**	0.005*	0.004	0.006	0.001	0.002	0.005*	0.008**
	(0.002)	(0.003)	(0.003)	(0.005)	(0.002)	(0.002)	(0.003)	(0.003)
$D_i \%sameparty$			-0.001	0.004			-0.002	-0.006
			(0.006)	(0.010)			(0.006)	(0.007)
$Post_{t=2019} \%sameparty$			-0.003	-0.000			-0.010***	-0.013***
			(0.004)	(0.006)			(0.004)	(0.004)
$Post_{t=2021} \%sameparty$			-0.000	-0.001			-0.007**	-0.008*
			(0.004)	(0.006)			(0.004)	(0.004)
$D_i Post_{t=2019} \%sameparty$			-0.006	-0.029**			0.009	0.017*
			(0.009)	(0.015)			(0.009)	(0.010)
$D_i Post_{t=2021} \%sameparty$			0.001	0.006			0.011	0.013
			(0.009)	(0.014)			(0.009)	(0.010)
$Emp.Growth_{2013-2015}$	-0.008**	0.005	-0.008**	0.005	0.008**	0.015***	0.008**	0.015***
	(0.003)	(0.005)	(0.003)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	61,418	61,418	61,418	61,418	61,418	61,418	61,418	61,418
R^2		0.023		0.023		0.191		0.191

Notes: 1) Table includes only tracts in metropolitan areas such that the total sample corresponds to that analyzed in columns (1) and (2) of Table 3. 2) Columns (1), (3), (5), and (7) report results for quantile regression to the median or Least Absolute Value (LAV). 3) The dependent variable is winsorized at the 1% level in columns (2), (4), (6), and (8). 4) Standard errors in parentheses. 5) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 6) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 7) $Post_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise.

Table A6 presents the estimates of a Linear Probability Model in which we check to see if tract political affiliation is predictive of a tract's Designation as an OZ, conditional on the tract being eligible. Columns (1) and (2) show results with the entire sample (inclusive of non-metropolitan tracts) with state fixed effects but no ACS controls for the two definitions of political affiliation. As in (Frank et al., 2022), tract political affiliation and designation as an OZ is negatively correlated without controlling for tract observable characteristics. Columns (3) and (4) add ACS controls to columns (1) and (2); these columns show that political affiliation and OZ designation are significantly positively correlated once we control for observable tract attributes. Finally, columns (5) and (6) are the same as (3) and (4), but with all non-metropolitan tracts removed from the sample. With this sample restriction, the point estimates fall slightly from those in columns (3) and (4), and the coefficient on $Nsameparty$ is no longer statistically significant at the 5% level.

Columns (1) and (2) of Table A7 show that the point estimates of the impact of OZ designation on employment and establishment growth in Section 4.2 are robust to controlling for the political affiliation of the tract, the $sameparty$ variable. In columns (3) and (4), we include interactions of the $sameparty$ variable with the $Post_{t=2019}$ and $Post_{t=2021}$ and D_i to see if the measured effect of the OZ program depends on the political affiliation of the tract. The estimate on the triple interaction term is negative and significant for employment growth. The estimate on the triple interaction term is small and insignificant for establishment growth.

A.1.7 Excluding top employment growth tracts

Apart from political affiliation, the governors' choices of tracts could have been driven by information on which tracts would have significant employment growth. To confound our estimates, these tracts would have to not be predictable based on past employment growth or tract characteristics from the ACS since we control for these observable variables.

To further reduce the chance our results are driven by such selection bias, we drop tracts with the highest 5% or 10% employment growth within each state (which amounts to 10 or 20 metro tracts per state), and reestimate our main specification. Table A8 shows the results together with the benchmark results from Table 3, column (1). In columns (2) and (3) of Table A8, we exclude tracts based on the employment growth measured over the two-year January 1, 2018 - December 31, 2019 period. In columns (4) and (5), we exclude tracts based on the employment growth measured over the four-year January 1, 2018 - December 31, 2021 period. The estimates of the effect of the program decrease in magnitude by design, but are still similar to our benchmark estimates.

A.1.8 Trends in demographic composition

Table A8: Excluding Top Employment Growth Tracts

	(1)	(2)	(3)	(4)	(5)
% of Excluded Tracts		5%	10%	5%	10 %
Based on	Benchmark	2017-2019 Emp. Growth		2017-2021 Emp. Growth	
D_i	-0.016***	-0.018***	-0.020***	-0.016***	-0.016***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$Post_{t=2019}$	-0.090***	-0.090***	-0.090***	-0.090***	-0.090***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$Post_{t=2021}$	-0.003*	-0.003*	-0.003*	-0.003*	-0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$D_i Post_{t=2019}$	0.029***	0.023***	0.018***	0.018***	0.006
	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)
$D_i Post_{t=2021}$	0.021***	0.018***	0.017***	0.017***	0.013***
	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)
$Emp.Growth_{2013-2015}$	-0.003	-0.002	-0.001	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	61,761	60,469	59,290	61,112	60,556

Note: 1) All columns report results for quantile regression to the median or Least Absolute Value (LAV). 2) We exclude Census tract whose employment growth is the top 5% and 10% within each state. 3) In columns (2) and (3), we exclude tracts based on the growth in employment measured over the two-year January 1, 2018 - December 31, 2019 period. In columns (4) and (5), growth is measured over the four-year January 1, 2018-December 31, 2021 period. 4) Standard errors in parentheses. 5) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 6) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 7) $Post_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise.

Table A9: Controlling for Changes in Resident Characteristics and Rent

	(1) OLS	(2) LAV	(3) OLS	(4) LAV	(5) OLS	(6) OLS	(7) GLS	(8) FE	(9) FE	(10) OLS
					Winsorized at				Winsorized at 1%	
					0.5%	1%	Weighted	Tract FE	CBSA FE	SEs Clustered
ACS Controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of CBSAs									928	
Panel A: Employment Growth										
$D_i Post_{t=2019}$	0.055***	0.029***	0.055***	0.029***	0.048***	0.045***	0.021***	0.046***	0.045***	0.045***
	(0.018)	(0.004)	(0.018)	(0.004)	(0.008)	(0.007)	(0.006)	(0.008)	(0.007)	(0.009)
$D_i Post_{t=2021}$	0.039**	0.021***	0.039**	0.021***	0.037***	0.035***	0.032***	0.035***	0.035***	0.035***
	(0.018)	(0.004)	(0.018)	(0.004)	(0.008)	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)
Δlog(median income)			-0.042*	-0.004	-0.018	-0.012	0.000		-0.015	-0.012
			(0.024)	(0.006)	(0.011)	(0.009)	(0.008)		(0.010)	(0.009)
Δ% poverty			0.032	0.007	0.006	0.004	0.014		0.011	0.004
			(0.065)	(0.015)	(0.028)	(0.025)	(0.023)		(0.025)	(0.019)
Δ% higher-ed			0.118	0.048**	0.032	0.029	-0.044		0.031	0.029
			(0.091)	(0.022)	(0.040)	(0.035)	(0.029)		(0.035)	(0.031)
Δ log(median gross rent)			0.007	0.003	0.017	0.014	0.028***		0.011	0.014
			(0.026)	(0.006)	(0.011)	(0.010)	(0.010)		(0.010)	(0.009)
Observations	61,761	61,761	61,713	61,713	61,713	61,713	61,713	61,713	61,713	61,713
R^2	0.003		0.005		0.016	0.020	0.072	0.024	0.020	0.020
Panel B: Establishment Growth										
$D_i Post_{t=2019}$	0.044***	0.032***	0.043***	0.032***	0.044***	0.043***	0.022***	0.046***	0.044***	0.043***
	(0.009)	(0.004)	(0.009)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.007)
$D_i Post_{t=2021}$	0.008	0.007	0.008	0.008**	0.016***	0.016***	0.010***	0.016***	0.016***	0.016***
	(0.009)	(0.004)	(0.009)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
Δ log(median income)			-0.015	0.012**	0.009	0.010	0.018***		0.006	0.010*
			(0.011)	(0.006)	(0.007)	(0.006)	(0.005)		(0.006)	(0.006)
Δ% poverty			0.010	0.020	0.017	0.017	0.005		0.029*	0.017
			(0.031)	(0.015)	(0.018)	(0.017)	(0.015)		(0.017)	(0.016)
Δ% higher-ed			0.056	0.047**	0.059**	0.055**	0.076***		0.040*	0.055***
			(0.043)	(0.021)	(0.026)	(0.024)	(0.019)		(0.024)	(0.021)
Δ log(median gross rent)			0.002	-0.004	-0.000	-0.001	0.003		0.002	-0.001
			(0.012)	(0.006)	(0.007)	(0.007)	(0.006)		(0.007)	(0.009)
Observations	61,761	61,761	61,713	61,713	61,713	61,713	61,713	61,713	61,713	61,713
R^2	0.070		0.073		0.166	0.182	0.232	0.220	0.183	0.182

Notes: 1) Table includes only tracts in metropolitan area such that the total sample corresponds to that analyzed in columns (1) and (2) of Table 3. 2) Columns (2) and (4) report results for quantile regression to the median or Least Absolute Value (LAV). 3) Weight for column (7) is 2015 Census tract employment. 4) In column (10), standard errors are clustered by CBSA. 5) Standard errors in parentheses. 6) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 7) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 8) $Post_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise.

In our benchmark specification, we control for the trend in employment growth in the tract. However, it remains possible that a different kind of trend influenced selection of the tracts. Specifically, in Table A9 we control for changes in the demographic composition of the neighborhood or what some commentators term gentrification. We focus on changes in residents' characteristics and housing cost to measure gentrification following (Guerrieri et al., 2013). The results are similar to those we estimate using our benchmark specification.

A.1.9 Excluding college towns

Critics of the OZ selection process have suggested that some tracts that are not truly poor but rather just eligible by proximity to a college were selected. To understand whether the employment growth we find from the program is due solely to such tracts, we repeat our analysis excluding tracts likely to be college tracts.

We define a Census tract as 'eligible-by-being-near-a-college' if it satisfies both the following criteria: (1) the median ages of male and female residents of the tract are below 30, and (2) it is located within a county with a 4-year college and the proportion of college members to the population of the county is greater than 10%. College locations and sizes are from the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS). These criteria detected 887 concerning Census tracts according to our criteria with 189 unique colleges such as University of Nebraska-Lincoln, SUNY Oneonta, and Cornell University. Our threshold captures many tracts that are not likely eligible solely because of adjacency to a college in the interest of being conservative in our methodology.

College tracts were more likely to be selected as OZs. 28% of these tracts were

designated as OZ while 18% of other tracts were designated. As Table A10 shows, our main results are the same when we exclude College tracts, however. Taken together, this implies that some tracts were selected because they were near a college, but our results are not driven by such tracts.

Table A10: Excluding College Tracts

	(1) OLS	(2) LAV	(3) OLS	(4) LAV	(5) OLS	(6) OLS	(7) GLS	(8) FE	(9) FE	(10) OLS
					Winsorized at				Winsorized at 1%	
					0.5%	1%	Weighted	Tract FE	CBSA FE	SEs Clustered
ACS Controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of CBSAs									928	
Panel A: Employment Growth										
D_i	-0.032**	-0.019***	-0.029**	-0.016***	-0.023***	-0.022***	-0.019***		-0.022***	-0.022***
	(0.013)	(0.003)	(0.013)	(0.003)	(0.006)	(0.005)	(0.004)		(0.005)	(0.004)
$Post_{t=2019}$	-0.053***	-0.088***	-0.053***	-0.090***	-0.071***	-0.075***	-0.084***	-0.077***	-0.075***	-0.075***
	(0.008)	(0.002)	(0.008)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.010)
$Post_{t=2021}$	0.042***	-0.003*	0.042***	-0.004*	0.018***	0.011***	0.068***	0.011***	0.011***	0.011*
	(0.008)	(0.002)	(0.008)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.006)
$D_i Post_{t=2019}$	0.056***	0.029***	0.057***	0.028***	0.048***	0.045***	0.022***	0.046***	0.045***	0.045***
	(0.019)	(0.004)	(0.019)	(0.004)	(0.008)	(0.007)	(0.006)	(0.008)	(0.007)	(0.009)
$D_i Post_{t=2021}$	0.037**	0.020***	0.037**	0.021***	0.036***	0.034***	0.032***	0.035***	0.034***	0.034***
	(0.018)	(0.004)	(0.018)	(0.004)	(0.008)	(0.007)	(0.006)	(0.008)	(0.007)	(0.006)
$Emp.Growth_{2013-2015}$			0.052***	-0.002	0.014**	0.009*	0.009***		0.005	0.009
			(0.013)	(0.003)	(0.006)	(0.005)	(0.003)		(0.005)	(0.007)
Observations	60,503	60,503	60,494	60,494	60,494	60,494	60,494	60,494	60,494	60,494
R^2	0.003		0.004		0.016	0.020	0.066	0.024	0.020	0.020
Panel B: Establishment Growth										
D_i	-0.013**	-0.011***	-0.014**	-0.011***	-0.015***	-0.015***	-0.018***		-0.016***	-0.015***
	(0.006)	(0.003)	(0.006)	(0.003)	(0.004)	(0.003)	(0.003)		(0.003)	(0.004)
$Post_{t=2019}$	-0.139***	-0.115***	-0.139***	-0.117***	-0.142***	-0.140***	-0.114***	-0.143***	-0.140***	-0.140***
	(0.004)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.015)
$Post_{t=2021}$	0.097***	0.086***	0.097***	0.085***	0.082***	0.078***	0.100***	0.077***	0.078***	0.078***
	(0.004)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.008)
$D_i Post_{t=2019}$	0.044***	0.032***	0.044***	0.032***	0.044***	0.043***	0.025***	0.045***	0.044***	0.043***
	(0.009)	(0.004)	(0.009)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.007)
$D_i Post_{t=2021}$	0.007	0.006	0.007	0.007*	0.015***	0.015***	0.010***	0.015***	0.015***	0.015***
	(0.009)	(0.004)	(0.009)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
$Emp.Growth_{2013-2015}$			0.041***	0.020***	0.024***	0.024***	0.005***		0.015***	0.024***
			(0.006)	(0.003)	(0.004)	(0.003)	(0.002)		(0.003)	(0.005)
Observations	60,503	60,503	60,494	60,494	60,494	60,494	60,494	60,494	60,494	60,494
R^2	0.071		0.074		0.167	0.183	0.231	0.221	0.183	0.183

Notes: 1) Table includes only tracts in metropolitan area such that the total sample corresponds to that analyzed in columns (1) and (2) of Table 3. 2) Columns (2) and (4) report results for quantile regression to the median or Least Absolute Value (LAV). 3) Weight for column (7) is 2015 Census tract employment. 4) In column (10), standard errors are clustered by CBSA. 5) Standard errors in parentheses. 6) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 7) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 8) $Post_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise.

Table A11: Robustness: Balanced Panel

	(1) OLS	(2) LAV	(3) OLS	(4) LAV	(5) OLS	(6) OLS	(7) GLS	(8) FE	(9) FE	(10) OLS
					Winsorized at				Winsorized at 1%	
					0.5%	1%	Weighted	Tract FE	CBSA FE	SEs Clustered
ACS Controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of CBSAs									928	
Panel A: Employment Growth										
D_i	-0.027**	-0.015***	-0.024*	-0.011***	-0.018***	-0.017***	-0.013***		-0.017***	-0.017***
	(0.014)	(0.003)	(0.014)	(0.003)	(0.005)	(0.005)	(0.004)		(0.005)	(0.004)
$Post_{t=2019}$	-0.003	-0.072***	-0.003	-0.073***	-0.040***	-0.048***	-0.078***	-0.048***	-0.049***	-0.048***
	(0.008)	(0.002)	(0.008)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.013)
$Post_{t=2021}$	0.049***	0.003*	0.049***	0.003*	0.026***	0.019***	0.075***	0.019***	0.018***	0.019***
	(0.008)	(0.002)	(0.008)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)
$D_iPost_{t=2019}$	0.029	0.021***	0.029	0.021***	0.039***	0.037***	0.018***	0.037***	0.037***	0.037***
	(0.019)	(0.004)	(0.019)	(0.004)	(0.007)	(0.006)	(0.005)	(0.007)	(0.006)	(0.008)
$D_iPost_{t=2021}$	0.037*	0.018***	0.037*	0.018***	0.035***	0.034***	0.026***	0.034***	0.034***	0.034***
	(0.019)	(0.004)	(0.019)	(0.004)	(0.007)	(0.006)	(0.005)	(0.007)	(0.006)	(0.005)
$Emp.Growth_{2013-2015}$			0.096***	-0.004	0.020***	0.012***	0.005*		0.009**	0.012*
			(0.013)	(0.003)	(0.005)	(0.004)	(0.003)		(0.004)	(0.007)
Observations	78,072	78,072	78,069	78,069	78,069	78,069	78,069	78,069	78,069	78,069
R^2	0.001		0.003		0.010	0.012	0.065	0.013	0.012	0.012
Panel B: Establishment Growth										
D_i	-0.007	-0.005**	-0.010	-0.006**	-0.010***	-0.010***	-0.013***		-0.010***	-0.010**
	(0.007)	(0.003)	(0.007)	(0.003)	(0.003)	(0.003)	(0.002)		(0.003)	(0.004)
$Post_{t=2019}$	-0.098***	-0.091***	-0.098***	-0.093***	-0.109***	-0.108***	-0.104***	-0.108***	-0.110***	-0.108***
	(0.004)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.016)
$Post_{t=2021}$	0.105***	0.094***	0.105***	0.092***	0.090***	0.086***	0.107***	0.086***	0.086***	0.086***
	(0.004)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.007)
$D_iPost_{t=2019}$	0.022**	0.020***	0.022**	0.019***	0.030***	0.030***	0.019***	0.030***	0.030***	0.030***
	(0.010)	(0.004)	(0.010)	(0.004)	(0.005)	(0.004)	(0.003)	(0.005)	(0.004)	(0.009)
$D_iPost_{t=2021}$	0.006	0.004	0.006	0.005	0.013***	0.013***	0.009***	0.013***	0.013***	0.013***
	(0.010)	(0.004)	(0.010)	(0.004)	(0.005)	(0.004)	(0.003)	(0.005)	(0.004)	(0.004)
$Emp.Growth_{2013-2015}$			0.100***	0.019***	0.025***	0.023***	0.005**		0.016***	0.023***
			(0.007)	(0.002)	(0.003)	(0.003)	(0.002)		(0.003)	(0.005)
Observations	78,072	78,072	78,069	78,069	78,069	78,069	78,069	78,069	78,069	78,069
R^2	0.034		0.038		0.134	0.149	0.224	0.178	0.149	0.149

Notes: 1) Columns (2) and (4) report results for quantile regression to the median or Least Absolute Value (LAV). 2) Weight for column (7) is 2015 Census tract employment. 3) In column (10), standard errors are clustered by CBSA. 4) Standard errors in parentheses. 5) ***, **, and * denote significance at the 1%, 5%, and 10% levels. 6) $Emp.Growth_{2013-2015}$ is the growth in tract employment from 2013 to 2015. 7) $P_{t=year}$ is a dummy variable equal to 1 if the observation is from the year, 0 otherwise, D_i is a dummy variable that takes a value of 1 if the tract was designated an OZ and 0 otherwise. 7) To be included in the regression shown in Table A11, the tract had to have an observation for all three periods in our sample.

Table A12: (Non)Robustness of OZ Effect on Establishment Growth in Non-Metropolitan Area

	(1)	(2)
Matching on	ACS Control	ACS Control + Prior Year's Emp. Growth
	Panel A: IPW	
$\hat{\tau}_{2019}$	-0.004	-0.005
	(0.010)	(0.010)
$\hat{\tau}_{2021}$	-0.001	-0.001
	(0.010)	(0.010)
Observations	16,319	16,315
R-squared	0.075	0.075
	Panel B: DrDiD	
$\hat{\tau}_{2019}$	0.006	0.007
	(0.010)	(0.010)
$\hat{\tau}_{2021}$	-0.003	-0.004
	(0.010)	(0.010)
Observations	14,944	14,944

Notes: 1) Table includes only tracts in non-metropolitan area. 2) Dependent variable is two-year establishment growth rate winsorized at the 1% level. 3) Panel A report reports inverse probability weighted (IPW) estimates of the treatment effect on the treated. Panel B reports multi-period doubly robust estimates (Callaway and Sant'Anna, 2021). Census tracts are matched based on the propensity score, constructed using ACS controls in column (1), ACS controls and two-year employment growth rate in 2011-2013, 2013-2015, and 2015-2017 in column (2). 4) Standard errors in parentheses. 5) ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table A13: 1-digit NAICS Industries

2-digit NAICS Sectors	Description	1-digit NAICS Sectors
11	Agriculture, Forestry, Fishing and Hunting (not covered in economic census)	1
21	Mining, Quarrying, and Oil and Gas Extraction	
22	Utilities	2
23	Construction	
31-33	Manufacturing	3
42	Wholesale Trade	
44-45	Retail Trade	4
48-49	Transportation and Warehousing	
51	Information	
52	Finance and Insurance	
53	Real Estate and Rental and Leasing	
54	Professional, Scientific, and Technical Services	5
55	Management of Companies and Enterprises	
56	Administrative and Support and Waste Management and Remediation Services	
61	Educational Services	
62	Health Care and Social Assistance	
71	Arts, Entertainment, and Recreation	6
72	Accommodation and Food Services	
81	Other Services (except Public Administration)	
92	Public Administration (not covered in economic census)	

Source: https://www.census.gov/programs-surveys/economic-census/year/2022/guidance/understanding-naics.html.

References

CALLAWAY, B. AND P. H. SANT'ANNA (2021): "Difference-in-differences with multiple time periods," Journal of Econometrics, 225, 200–230.

CHEN, J., E. L. GLAESER, AND D. WESSEL (2023): "JUE Insight: The (non-) effect of Opportunity Zones on housing prices," Journal of Urban Economics, 133.

FRANK, M., J. L. HOOPES, AND R. LESTER (2022): "What determines where opportunity knocks? Political affiliation in the selection of Opportunity Zones," Journal of Public Economics, 206.

GUERRIERI, V., D. HARTLEY, AND E. HURST (2013): "Endogenous gentrification and housing price dynamics," Journal of Public Economics, 100, 45–60.

SANT'ANNA, P. H. AND J. ZHAO (2020): "Doubly robust difference-in-differences estimators," Journal of Econometrics, 219, 101–122.