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Place-Based Tax Incentives and Minority Employment: Evidence from the New Market Tax Credit (NMTC) Program

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Motivation

- Advancing equity has become a major policy priority for the current administration (Executive order 13985)
- Consideration of place-based economic incentives for low-income communities (LICs) continues to be relevant given this policy priority
  - LICs generally have a high representation of racial and ethnic minorities
  - LICs are known to experience spatial mismatch in labor market and discrimination in credit market
- Place-based tax incentives have been featured notably as a solution to rectifying spatial mismatch and addressing access to capital issues in LICs
- One of the popular place-based programs is the New Market Tax Credit (NMTC) program
- The objective of this research is to study the effectiveness of the NMTC program on minority and rural populations

New Market Tax Credit (NMTC) Program

- A federal program designed to attract private investment to low-income communities (LICs)
- Created as part of the Community Renewal Tax Relief Act of 2000
- Administered by the Community Development Financial Institutions (CDFI) Fund at the Treasury
- Encourages capital investment in businesses located in qualified LICs (QLICs)

Qualified Low-Income Communities (QLICs)

- Median family income (MFI) threshold:
  - Census tracts in MSAs with MFI that does not exceed 80% of the greater of MSA MFI or statewide MFI
  - Tracts outside MSAs (rural) with MFI that does not exceed 80% of their state's MFI
- Tracts with poverty rates of at least 20%
- “Low-population” tracts: populations less than 2000, are located in Empowerment Zones, and are contiguous with another QLIC
- “Rural, high out-migration”: rural tracts, have MFI less than or equal to 85% of statewide MFI, and have net out-migration of at least 10%

What does the NMTC program do?

- Offers tax incentives to investors who make qualified equity investments (QEIs) in Community Development Entities (CDEs)
- CDEs: intermediary domestic corporations or partnerships that offer financial intermediation in QLICs
- CDEs must apply for certification from the CDFI Fund to qualify as a CDE
- The program starts when the CDFI Fund awards tax credit allocation authority to CDEs
- Investors investing in CDEs are granted a tax credit equal to 39 percent over a period of seven years
- In turn, the CDEs provide loans or equity investments to businesses in QLICs with better terms

NMTC Annual Investments

Year	number of projects	Amount (million $)	Year	number of projects	Amount (million $)
2001	1	1.1	2011	462	5637.5
2002	3	11.4	2012	426	4962.0
2003	11	34.6	2013	385	4102.0
2004	197	1069.9	2014	394	3361.9
2005	380	2194.8	2015	400	3104.6
2006	464	2882.8	2016	383	2759.4
2007	562	3275.6	2017	460	4277.6
2008	479	3215.3	2018	591	3999.7
2009	411	3295.8	2019	403	2983.6
2010	410	4825.9	**Total**	**6822**	**55995.5**

Source: ERS Calculations using CDFI data

These projects were located in 2,751 tracts

Literature

- Freedman (2012) studies the impact on home values, household income, poverty rate, unemployment, and household turnover
- Freedman (2015) studies the impact on local labor markets through employment gains
- Harger and Ross (2016) study how the NMTC program affects the sorting of industries across census tracts

Research Objectives

- Study the impact of NMTC program on tract-level employment
  - Total employment
    - Employment by place-based and residence-based
    - Impacts on rural tracts
  - Employment by race and ethnicity
    - Employment by place-based and residence-based
    - Impacts on rural tracts
- We focus on the time-period between 2010 and 2018
  - data on minority employment is not available for prior years

Identification Issues

- Identification issues mainly due to two reasons
  - Reverse causality: program receipt of a census tract may depend on its employment conditions
  - Selection bias: the receipt of the program and employment outcomes could be driven by common characteristics that may not be observable
  - OLS is not suitable and there are no appropriate instruments

Identification Strategy

- We use matching techniques
  - Potentially include all the NMTC recipient tracts and can recover the average treatment effect on the treated (ATET)
- Not without problems: strong assumption of no unobserved differences. To minimize this, we include:
  - Pre-treatment demographic and housing controls and employment outcomes
- Conduct further robustness checks for existence of unobserved differences

Data

- Information on NMTC eligibility tracts (31,680) and NMTC investment was obtained from the CDFI Fund
  - NMTC projects were located in 2,751 tracts
- Demographic and housing information was from the ACS (2006-10)
- All tract-level employment data were compiled from the Census LODES (Longitudinal Employer-Household Dynamics Local Origin-Destination Employment Statistics) dataset
  - LODES data are available for the years 2002–2018, but employment data based on race and ethnicity are available from 2009 onward only
- Employment outcomes are measured as the difference between 2010 and 2018

Matching Estimation

- Use kernel matching based on Mahalanobis distance - more efficient than *k* pairs matching (Heckman, et al.,1998)
  - Considers all tracts from the control group weighted by the inverse of the covariates' variance–covariance matrix
- Also use one-to-one (nn=1) and one-to-two matching (nn=2) based on Mahalanobis distance
- Use bias-corrected version of the Mahalanobis matching estimator (Abadie and Imbens, 2011)
- Exclude Gulf Opportunity (GO) Zones tracts and all the tracts that received NMTC investments prior to 2010
- Limit the control tracts sample to QLIC tracts designated by the CDFI Fund (approach suggested by Neumark and Simpson, 2015)

Matching

- Matched on pre-treatment total workplace- and residence-based employment change between 2007 and 2009
- Matched demographic and housing variables from ACS
- Exact-matched census tracts based on RUCA codes for 2010
- Balancing statistics show matching procedure ensures balance across these covariates
  - Mean difference within the matched pairs is closer to zero and the variance ratio remains around 1
  - The equality of immediate pre-treatment employment outcomes ensures parallel trends

Matching Results

Employment change	Kernel	Nearest Neighbor (nn=1)	Nearest Neighbor (nn=2)
Panel A			
Chg. workplace jobs (2010-18)	239.66***	237.78***	243.04***
	(57.15)	(72.65)	(68.58)
White	110.30***	102.99**	106.37**
	(37.85)	(51.93)	(47.58)
Black	66.93***	66.28***	69.62***
	(14.49)	(16.63)	(16.52)
Hispanic	86.59***	103.29***	104.50***
	(12.26)	(14.37)	(13.62)
Panel B			
Chg. resident jobs (2010-18)	34.28***	47.82***	39.13***
	(9.54)	(11.79)	(10.73)
White	31.43***	37.17***	30.61***
	(6.86)	(8.54)	(7.81)
Black	-1.43	4.37	3.57
	(3.53)	(4.59)	(3.99)
Hispanic	-6.09**	1.66	-2.04
	(2.79)	(3.50)	(3.18)

- Estimated coefficients show number of jobs
- NMTC investments increased both total place-based and residence-based employment
- Individuals live outside the treated tract hold many of these jobs
- Increased place-based employment for all racial and ethnic categories
- Resident-based employment growth is significantly positive only for Whites

Matching Results – Rural Tracts

Employment change	Kernel	Nearest Neighbor (nn=1)	Nearest Neighbor (nn=2)
Panel A - Workplace			
Chg. workplace jobs (2010-18)	50.23	75.41	32.99
	(53.84)	(66.60)	(64.81)
White	16.83	47.10	8.58
	(47.33)	(59.39)	(54.86)
Black	18.82**	23.59**	15.33
	(7.81)	(9.18)	(12.01)
Hispanic	11.20	13.64	10.54
Pane B - Resident	(8.47)	(10.91)	(10.72)
Chg. resident jobs (2010-18)	-14.22	-11.69	-6.45
	(21.31)	(27.96)	(25.63)
White	-6.31	0.95	3.96
	(14.90)	(19.45)	(17.85)
Black	-8.23	-12.67	-9.36
	(7.85)	(10.93)	(10.13)
Hispanic	-6.62*	-5.90	-6.21
	(3.95)	(5.25)	(4.90)

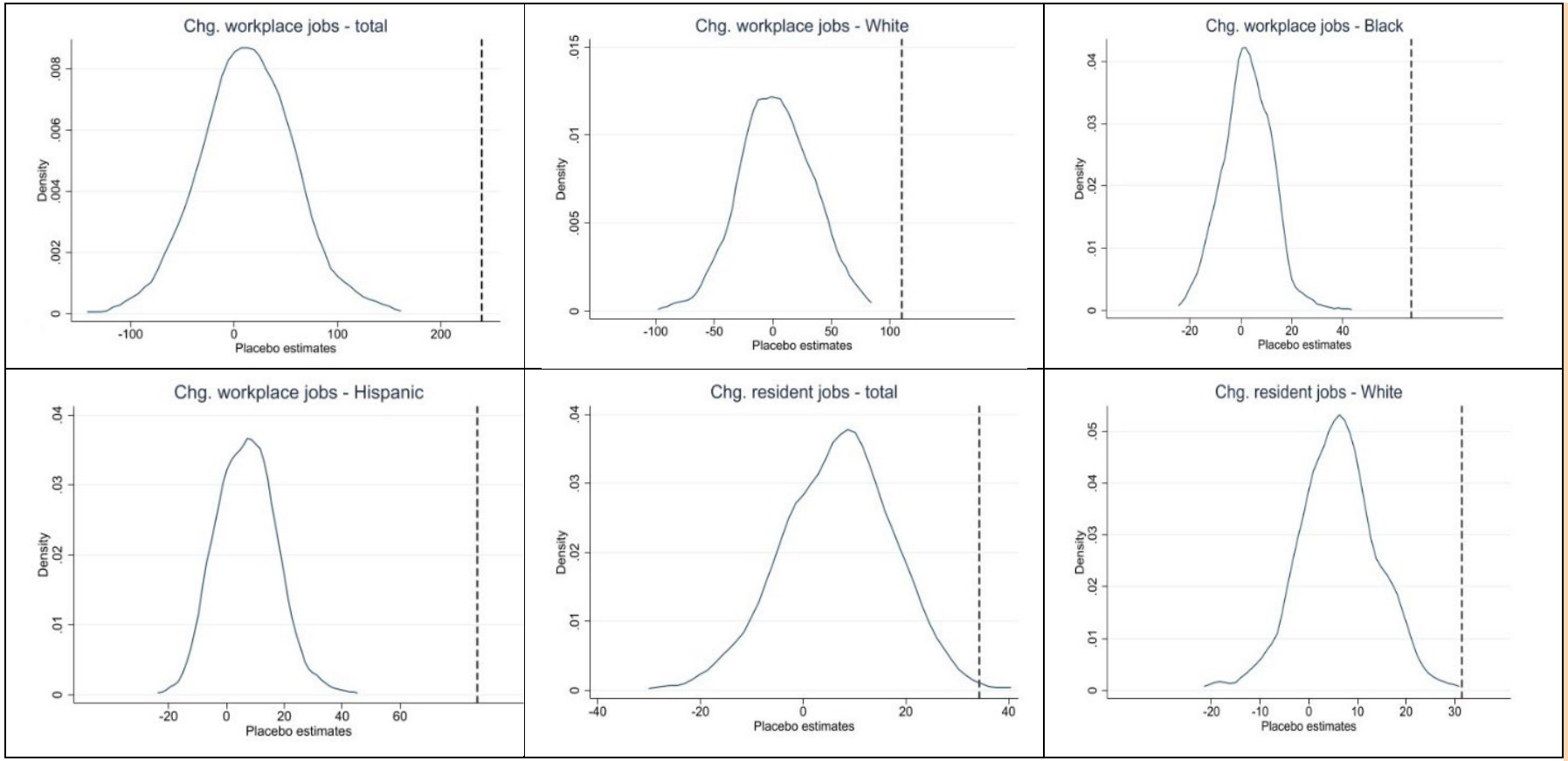
- Overall, the program had no impact on job growth in rural treated tracts
- Place-based employment for Blacks shows some positive impacts

Placebo Analysis (1)

Employment change	Kernel	Nearest Neighbor (nn=1)	Nearest Neighbor (nn=2)
Panel A			
Chg. workplace jobs (2002-05)	-43.12	-40.17	-39.54
	(26.40)	(30.29)	(32.38)
Chg. resident jobs (2002-05)	-2.33	-6.65	-4.09
	(8.36)	(11.53)	(9.97)

- Move the NMTC investment period prior to 2002, which is earlier than the true intervention period considered in the analysis
- Looked for treatment effect for 2002-2005 period
- The expectation is that the estimated mean differences in outcomes between treated and control tracts should not be statistically significantly different from zero

Placebo Analysis (2)

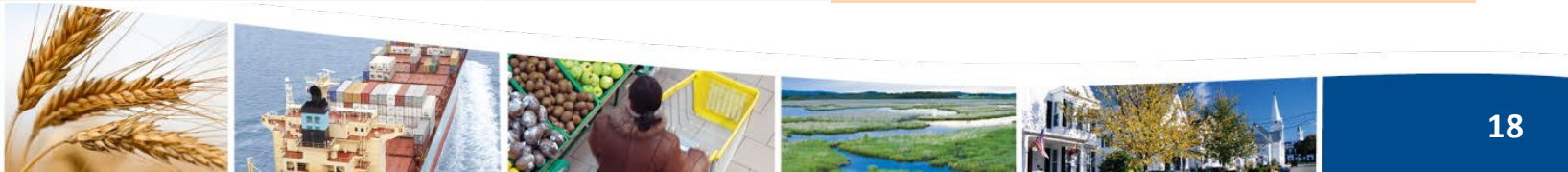


- Randomly assign treated tracts to all tracts in QLICs and conduct matching (kernel) for 500 random draws for each outcome variable
- Each chart for each outcome studied compares the distribution of estimated placebo effects to the estimated program effects
- Distribution of estimates from random appointments is centered around zero, and the actual estimates are located at the far-right tail, indicating no significant effect of the randomly selected treatment

Spatial Spillover Effects

	Kernel	Nearest Neighbor (nn=1)	Nearest Neighbor (nn=2)
Panel A			
Chg. workplace jobs (2010-18)	229.79***	230.91***	233.27***
	(57.71)	(72.97)	(69.42)
White	102.98***	98.40*	99.27**
	(38.19)	(52.19)	(48.08)
Black	65.78***	65.23***	68.84***
	(14.59)	(16.64)	(16.53)
Hispanic	86.54***	103.11***	103.52***
	(12.22)	(14.31)	(13.62)
Panel B			
Chg. resident jobs (2010-18)	33.44***	44.06***	39.23***
	(9.56)	(11.73)	(10.71)
White	30.69***	34.55***	30.56***
	(6.87)	(8.51)	(7.79)
Black	-1.45	3.19	3.56
	(3.53)	(4.59)	(3.99)
Hispanic	-6.74**	0.46	-2.59
	(2.80)	(3.49)	(3.18)

- Some of the matched control tracts could be bordering treated tracts and may be subject to spillover effects of the treatment
- Excluded control census tracts within less than 10 miles of a treated tract before matching
- New results align very closely with the base results



Conclusion

- There is clear evidence that the NMTC program increased place-based employment in treated tracts
- Individuals live out-side the program recipient tracts are holding many of these jobs
- Minority and rural populations living in the treated tracts did not seem to benefit from the program
- Caveats:
  - Possibility of additional financial capital flowing into treated tracts
  - Cannot rule out some degree of crowd-out of unsubsidized investments from recipient communities
  - Cannot fully rule out the effects of unobserved factors in the research design

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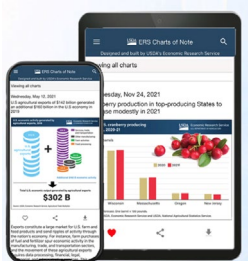

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Balance Table before and after Mahalanobis Distance Kernel Matching

	Raw			Matched		
Means	Treated	Untreated	Std.Diff.	Treated	Untreated	Std.Diff.
Log of total population	8.122	8.193	-0.144	8.130	8.130	0
Share Black	0.311	0.210	0.334	0.311	0.311	5.52E-16
Share Hispanic	0.200	0.226	-0.100	0.199	0.199	-8.42E-16
Share population under age 5	0.072	0.072	0.000	0.072	0.072	0
Share population over age 64	0.114	0.125	-0.170	0.114	0.114	2.06E-16
Share enrolled in school	0.292	0.280	0.119	0.291	0.291	0
Share HS degree	0.320	0.331	-0.117	0.321	0.321	0
Share some college degree	0.257	0.268	-0.139	0.257	0.257	7.04E-16
Share college or more degree	0.167	0.167	0.002	0.166	0.166	2.24E-16
Labor force participation rate	0.600	0.620	-0.192	0.601	0.601	0
Unemployment rate	0.076	0.066	0.260	0.076	0.076	3.68E-16
Log of total housing units	7.336	7.357	-0.046	7.343	7.343	0
Log of median home values	11.720	11.819	-0.147	11.720	11.720	0
Share move in population	0.216	0.202	0.104	0.213	0.213	2.03E-16
Chg. workplace jobs (2007-09)	-148.235	-73.747	-0.050	-126.555	-126.555	3.82E-17
Chg. resident jobs (2007-09)	-57.321	-53.355	-0.014	-54.949	-54.949	-4.89E-17