

Fighting Poverty, Mobilizing Voters: Housing Investment and Political Participation

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1 Introduction

Millions of Americans live in communities that lack an adequate stock of affordable housing (Schwartz 2010). The shortage poses an acute challenge for low- and moderate-income families, and can impede state and local efforts to stabilize neighborhoods and maintain a flexible labor force. While the governmental response to the affordability crisis has evolved over time, a key element has been programs to promote new construction and rehabilitation of affordable housing, primarily through the use of tax credits to private developers. The programs spur investment in the local housing infrastructure; when well-designed and sited, subsidized housing investments can simultaneously address the goals of affordability and neighborhood revitalization (Baum-Snow and Marion 2009; Ellen, O'Regan and Voicu 2009; Freedman and Owens 2011; Schwartz et al. 2006). A potential spillover related to these housing investments involves their effects on neighborhood political engagement.

Subsidized housing development may affect neighborhood political life either through changes in area composition, or changes in the behavior of area residents. First, an increase in the supply of affordable housing may alter the composition of an area, as existing residents move out and new residents move in. Greater residential mobility itself can affect political participation, at least in the short term (Highton 2000; Wolfinger and Rosenstone 1980). Moreover, if new residents and former residents differ in their propensity for engagement, then residential turnover could affect the level of participation in the area. Second, investments in new and rehabilitated housing may induce changes in the political behavior of an area's existing residents. If subsidized development improves neighborhood conditions in ways that make it easier for residents to get involved, enhances the perceived relevance of politics and government, or provides opportunities for credit-claiming and mobilization by incumbent politicians, it could affect the level of political participation (Verba, Schlozman and Brady 1995; Chen 2013; Campbell 2002; De La O 2013; Ansolabehere and Snyder 2006). The link between political participation and political influence heightens the importance of these potential spillovers.

This article examines the effect of subsidized housing development on political participation. Focusing in particular on the Low-Income Housing Tax Credit Program, the largest source of support for affordable housing production in the country, I consider whether construction of new

LIHTC developments leads to changes in rates of voter participation. The analysis exploits panel data on the LIHTC program to identify a positive effect of subsidized housing investment on turnout in gubernatorial and presidential elections. The effects are strong enough to be observable at the county-level, suggesting that the investments are not simply shifting low-propensity voters from one area to another. (Subsequent work will assess whether the increases in voter participation are localized to the immediate vicinity of the LIHTC-funded development.) The findings demonstrate that housing investments that address affordability and neighborhood revitalization also serve to boost political engagement.

2 Housing Investment and Political Spillovers

The nation's struggle to provide housing that meets the needs and budgets of low- and moderate-income households is decades-old, and has spawned a patchwork of programs providing subsidies to close the gap between what it costs to supply housing and what individuals can afford to pay (Schwartz 2010). The programs divide roughly into those that offer tenant-based assistance (vouchers that a recipient can use at a property of her choice as a form of rent payment) and those offering place-based assistance (subsidies directed to specific properties reserved for low-income tenants). For years, place-based assistance often took the form of large-scale public housing developments, an approach abandoned by the early-1990s in response to mounting evidence of its deleterious effects on concentrated poverty. At present, place-based assistance consists primarily of tax credits provided to private developers who build or substantially rehabilitate affordable housing. The Low-Income Housing Tax Credit Program, which will be described in more detail below, is at the center of this approach.

There is considerable debate over the efficacy of place-based assistance. To the extent that subsidized developments are located in areas of high-poverty, place-based assistance may steer low-income households toward economically distressed communities, further isolating them from the employment and educational opportunities critical to family well-being. On the other hand, subsidized investments can improve local amenities by eliminating vacant lots and abandoned buildings, and upgrading the housing stock, changes that may revitalize a blighted area, attract new investments and eventually reduce poverty levels.

Recent studies evaluating place-based housing assistance, particularly since the transition away from public housing projects, have uncovered these countervailing effects. Developments subsidized through the LIHTC are often sited in low-income communities, in part as a function of program rules and incentives; the clustering is most pronounced in the Northeast and Midwest, as well as in large metropolitan areas (Ellen, O'Regan and Voicu 2009; Dawkins 2011; Rohe and Freeman 2001; Freeman 2004). The developments have also been associated with at least a short term decline in local household income, though only in gentrifying neighborhoods (Baum-Snow and Marion 2009). At the same time, subsidized housing development has been linked to a variety of positive neighborhood spillovers. While LIHTC program rules incentivize developers to build in high-poverty areas, since 2000, they also instruct allocating agencies to give preference to those projects that 'contribute to a concerted community revitalization plan' (Orfield (2005), 1779).¹ New construction and preservation programs, when well-designed and properly sited, have been shown to produce higher quality affordable housing (Eriksen 2009); raise property values in previously declining areas (Baum-Snow and Marion 2009; Schwartz et al. 2006); reduce rates of violent crime (Freedman and Owens 2011); decrease neighborhood economic inequality (Freedman and McGavock 2013); and contribute to long term decline in poverty concentration and racial segregation (Ellen, O'Regan and Voicu 2009; Horn and O'Regan 2011).

What has yet to be investigated is the impact of place-based assistance on neighborhood politics, and whether the spillovers associated with subsidized housing development extend to political behavior. There are two primary ways in which subsidized development could influence levels of political participation, though the direction of the effects is unclear. First, development can generate (or accelerate) neighborhood turnover (Baum-Snow and Marion 2009). New affordable housing may attract new residents, and displace existing ones. Wolfinger and Rosenstone (1980) show that residential mobility is associated with lower rates of voter turnout, and that participation increases with tenure in a community (see also Highton (2000)). By increasing the proportion of residents with short tenure, subsidized development may reduce participation, at least in the near term. Neighborhood turnover may also have the effect of altering the demographic composition of

¹Buron et al. (2000), in a study commissioned by HUD of LIHTC properties placed into service between 1992 and 1994, found that '51% of the properties were developed *primarily* to improve the neighborhood, 18% were developed *primarily* to meet affordable housing goals, and 31% were developed with more traditional real estate objectives (including profit) in mind' (p.xiv, emphasis in original).

an area, as newcomers may differ from displaced residents on attributes such as income, education or race. Because political participation is strongly correlated with socioeconomic status, changing the demographic mix of area residents can also change the level of participation (Verba, Schlozman and Brady 1995).

The second way in which new investments in affordable housing could generate political spillovers is through changes in the behavior of area residents. The improvements in local amenities and reductions in violent crime that have been identified as consequences of subsidized development may make it easier and safer for residents to participate more fully in neighborhood life, including participation in politics. By reducing the costs of participation (e.g. the risk of being victimized on the way from one's home to one's polling place), development may enable residents to be more politically active (Verba, Schlozman and Brady 1995; Cohen and Dawson 1993). To the extent that residents recognize the role of government investment in a community's revitalization, politics and public affairs also may take on greater relevance. As Lipset (1960) theorized, and Campbell (2002) and others have demonstrated empirically, individuals who view themselves as benefiting from government distributive aid are more likely to participate in politics, as a way of protecting their interests in the spending program (see also Mettler and Stonecash (2008); Wolfinger and Rosenstone (1980); Chen (2013))² This effect is evident even at the aggregate level, as counties respond to greater distributive outlays with higher voter turnout (Ansolabehere and Snyder 2006). Subsidized development, by increasing residents' perceived stake in government policy, may motivate greater participation in the political process. Finally, changes in individual behavior may result from the mobilizing efforts of incumbent politicians (De La O 2013). Improvements in housing infrastructure, and community revitalization more generally, provide opportunities to incumbents for claiming credit for things that area residents consider desirable (Mayhew 1974). Incumbents may seek to mobilize area residents around this issue, encouraging them to vote (for the incumbent) in order to ensure similar investments in the future.

Whether it is by changing individuals or changing individual behavior, subsidized housing development may have implications for neighborhood participation.

²Chen (2013) uncovers heterogeneity in the turnout response to distributive aid, with turnout increasing among incumbent-party voters but decreasing among opposition-party voters.

3 The Low-Income Housing Tax Credit Program

Originally established by Congress in the 1986 Tax Reform Act, and made permanent in 1993, the Low-Income Housing Tax Credit program is a keystone of the federal response to the affordability crisis and the primary source of support for subsidized housing production in the U.S today. Rental units constructed or rehabilitated with LIHTC funds now house a larger population than public housing, and in recent years have accounted for approximately one-third of all new multifamily housing built in the country (Khadduri et al. 2012; Schwartz 2010).

Relative to other federal housing programs, the LIHTC is distinctive in its administrative and funding structures. Although part of the federal tax code, the program is wholly administered at the state and local level by designated housing finance agencies.³ Each state receives an annual allocation of tax credit authority based on population, and then enjoys broad discretion in distributing the credits and monitoring development projects for program compliance. The housing finance agencies overseeing the program award tax credits to private developers on a competitive basis, guided by local housing policy priorities (as laid out in the state's annual QAP) and federally-mandated income criteria.⁴ Successful applicants to the LIHTC Program receive a 10-year stream of tax credits, which then can be sold to investors (typically, large financial institutions) to raise equity for the approved construction or rehabilitation projects. By using the credits to leverage private capital, developers are able to borrow less than they would have otherwise and to charge lower rents as a result. Developments subsidized through the LIHTC are required to remain affordable for a period of 15 or 30 years, at the end of which development owners are no longer bound by program restrictions and are permitted to convert units to market-rate status.⁵

Currently, the LIHTC program provides states the equivalent of nearly \$8 billion in annual

³In addition to the 50 state housing finance agencies, there are also local allocating agencies for the District of Columbia, City of Chicago, and City of New York. Guam, Puerto Rico and Virgin Islands also each have allocating agencies that oversee the LIHTC program.

⁴For a project to be eligible for tax credits one of two income criteria for occupants must be met, 20-50 or 40-60: Twenty [40] percent of the units must be rent restricted and occupied by households with incomes at or below 50 [60] percent of area median income.

⁵Initially, federal law set a 15-year term on the affordability provisions. Beginning in 1990, the affordability period on new LIHTC properties was extended to 30 years. After the first 15 years (termed the 'initial compliance period'), owners can apply for regulatory relief and leave the program. Some states, however, require longer affordability restrictions as a condition of funding. A recent study of LIHTC properties reaching the end of their affordability period found that the vast majority remained affordable despite the absence of program restrictions (Khadduri et al. 2012).

budget authority to issue tax credits.⁶ Demand for these tax credits has been strong, with developer requests ordinarily outnumbering available credits by as much as four-to-one (National Council of State Housing Agencies 2010).⁷ As of 2011, more than 2.3 million affordable units have been placed in service through the LIHTC program. Although the pace of development slowed considerably during the recent financial crisis, as tax credit prices plummeted, an average of 1,400 affordable housing projects and more than 100,000 units are added each year.⁸ In the communities where these projects are sited, LIHTC development represents significant investment in the local housing infrastructure.

4 Data

4.1 Measures

To examine the effects of subsidized housing investment, I draw principally on a national database maintained by the Department of Housing and Urban Development that documents all LIHTC-supported housing projects placed in service through 2010.⁹ The database compiles program filings submitted annually by each state’s housing finance agency, and provides rich detail on the development history of every LIHTC project—when the tax credits were awarded; when the development was completed and placed in service; the number of housing units; the identity of the developer. The database also includes, in most cases, the address for the subsidized development, which permits me to map the spatial distribution of LIHTC projects in every state. I have usable data on 33,197 of the 36,364 LIHTC projects reported as placed-in-service between 1987 and 2010; the projects house approximately 2.1 million units, spread across 2,656 counties, 50 states, and the District of Columbia.¹⁰

Using the timing and location data available in HUD’s project-level LIHTC database, I con-

⁶<http://www.huduser.org/portal/datasets/lihtc.html>

⁷Demand for credits declined sharply during the financial crisis, as the most active investors in the tax credits (large financial institutions bound by the requirements of the Community Reinvestment Act) pulled out of the market (Desai, Dharmapala and Singhal 2010).

⁸Desai, Dharmapala and Singhal (2010) report that ‘prior to the crisis, \$1 of tax credits traded at an undiscounted price of nearly \$0.90; by early 2009, the corresponding price had fallen below \$0.70’ (p.191).

⁹This analysis uses the July 2012 version of the ‘HUD National Low Income Housing Tax Credit (LIHTC) Database, 1987-2010,’ which is downloadable here: <http://lihtc.huduser.org/>.

¹⁰Excluded from analysis are projects in Puerto Rico and the U.S. Virgin Islands; projects missing data on the placed-in-service year; and projects missing county FIPS codes. Of the 33,197 projects with usable data, 615 have incomplete data on the number of housing units.

struct a panel dataset that tracks by county and year the LIHTC–subsidized projects (and associated units) placed into service. In addition to new LIHTC developments, the data also measure the cumulated stock of LIHTC housing in each county each year. As described more fully below, the empirical analysis will focus on annual changes in the LIHTC stock within counties over a twenty–year span of the program. From 1993, the year that the LIHTC program was made permanent, through 2010, the stock of LIHTC developments nationwide grew by over 255%; the stock of subsidized units, by more than 550%. In the 1990s, counties on average housed 148 affordable units funded through the LIHTC program; by the 2000s, the average stock had increased to 501 subsidized units. Table 1 provides descriptive statistics for the housing data on which the analysis is based.

	Median	Mean	Std.Deviation	Min	Max
<i>Housing Measures</i>					
LIHTC projects	2	6.3	22.0	0	675
LIHTC units	48	333.2	1465.4	0	52,134
<i>VAP Turnout Measures</i>					
Gubernatorial Elections	43.4	44.3	12.0	4.1	98.3
Presidential Elections	56.3	56.4	9.9	9.6	98.0
<i>Demographic Measures</i>					
Ln(Population Size)	10.1	10.2	1.4	4.2	16.1
Prop. Black	.02	.09	.14	0	.86
Ln(Median HH Income)	10.6	10.6	.24	9.6	11.7
Poverty rate	.15	.16	.07	0	.63

Table 1: Descriptive Statistics: Numbers are county averages over the years 1990–2010. Housing figures are author’s calculations using the LIHTC database from the Department of Housing and Urban Development. Turnout figures are author’s calculations using *CQ Press Voting and Elections Collection* and U.S. Census. Demographic measures are from the U.S. Census and American Community Survey.

I merge the housing data to electoral data documenting county voter turnout rates in all gubernatorial and presidential elections held between 1990 and 2010. The data on county election returns are assembled from the *CQ Press Voting and Elections Collections*. I calculate voter turnout as a proportion of the county’s voting age population, using population figures from the decennial census and linear interpolation for inter–census years. For each county, the data cover 5–6 guber-

natorial elections and five presidential elections.¹¹ Table 1 provides descriptive statistics for the electoral data in the sample. Voting-age turnout in gubernatorial elections was generally lower than turnout in presidential elections. Gubernatorial turnout over the period 1990–2010 averaged 45%, compared with 56% turnout for presidential elections.

Finally, I draw on demographic data from the 1990, 2000 and 2010 U.S. Census, and the 2006–2010 American Community Survey, to take into account county socio-economic conditions that may influence both the amount of subsidized housing development and levels of voter turnout. The census and ACS data include county population size, median household income, poverty rate and racial composition (proportion black).¹²

4.2 Aggregation

The analysis focuses on county LIHTC investment and voter turnout. While data on LIHTC investment can be compiled at a more disaggregated geographic level, e.g. the census tract, there is no similarly disaggregated national dataset with voter turnout over time. Fine-grained electoral data are available for only some states and years—thus limiting the generalizability of results derived from such samples—or, at the level of political jurisdictions, e.g. polling precinct, whose boundaries have no straightforward relationship to census geographies. A county-level analysis allows for direct mapping of housing data to electoral data, while also providing a sufficiently large sample.¹³

The analysis, however, faces some limitations. What is lost in a county-level analysis includes potentially important information on the geography of voter turnout. If the effects of housing investment on turnout are highly localized, with impacts limited to the immediate areas targeted for development, then counties may be too large to identify the relationships of interest. Areas that are geographically proximate to development may be greatly outnumbered, particularly in terms

¹¹Sixty-eight percent of the counties in the estimation sample have data for six gubernatorial elections; the remainder have data for five gubernatorial elections. Excluded from the gubernatorial estimation sample are New Hampshire and Vermont which hold gubernatorial elections every two years; for the analysis, the periodicity of the election cycles had to be constant at four years. All states are included in the presidential estimation sample, and all but 7 of the counties have data for each of the five presidential elections in the period.

¹²I use linear interpolation for population size and racial composition in the inter-census years. I use Census 1990 figures for income and poverty for the period 1990–1999; Census 2000, for the period 2000–2005; the ACS, for the period 2006–2010.

¹³The estimation strategy pursued here, which identifies the effect of LIHTC investment based on within area changes in investment and turnout, requires a large sample.

of their contribution to overall county voter turnout, by areas not targeted for investment. Even a large effect in an area representing a small share of a county’s voters may be hard to detect based only on county data. Similarly lost in the process of aggregation is evidence of offsetting effects linked to residential displacement. If housing investment merely shifts voters from one area in a county to another, a highly aggregated analysis will capture the net null effect while obscuring its precise geographic source.¹⁴

5 Methodology

The relationship of interest is between county voter turnout in either a gubernatorial or presidential general election and the amount of subsidized housing development in the county, as measured by the total number of LIHTC units placed in service. The size of LIHTC–supported development projects varies substantially. A quarter of the projects put in service between 1987 and 2010 had fewer than 20 units; another quarter included over 80 units, with more than half of those developments housing hundreds of units. The variation in project size makes the number of projects an imprecise measure of the scale of LIHTC investment in an area. Moreover, Schwartz et al. (2006) find that the positive spillovers associated with LIHTC development increase with project size. For these reasons, I focus instead on the number of units as the measure of LIHTC investment.

I exploit the longitudinal nature of the data to model the relationship between voter turnout and LIHTC investment using county–level fixed effects. This strategy relies only on within–county variation over time to estimate the relationship of interest. (Thus, while the LIHTC measure is a stock, causal identification comes from *change* in the number of units.) The virtue of within–county comparisons is that they are not susceptible to bias or unmeasured confounding due to omitted, time–invariant covariates. In effect, each county serves as its own control, which facilitates causal inference.

The baseline estimation model for voting–age turnout in county i at time t takes the following form:

$$vapTurnout_{it} = \alpha_i + \lambda_t + \rho LIHTCunits_{it} + X'_{it}\beta + \epsilon_{it},$$

¹⁴By the same token, if we find a net positive effect at the county–level (i.e. an increase in the overall turnout level), we might reasonably conclude that, within counties, LIHTC investment in one neighborhood does not merely attract voters away from neighborhoods without LIHTC investment.

where α_i is the county fixed effect, λ_t is the election year fixed effect, and X_{it} is a vector of time-varying covariates. Time fixed effects capture short-term variations and trends in turnout affecting all counties similarly. The covariates in the baseline model include county population size and a lag of turnout. As a program that is tied to population levels—population determines the size of a state’s annual allocation of tax credit authority—controlling for population is clearly important.¹⁵ By including lagged turnout, the baseline model controls for the many factors beyond housing investment that account for participation. The estimated coefficient for LIHTC development, ρ , represents the average within-county relationship between the number of subsidized units in service and gubernatorial or presidential voter turnout.

The fixed-effects approach requires sufficient within-county variability, particularly on the predictor, to obtain reliable estimates; the standard error of a coefficient for a predictor that varies little within county will be large because estimation is based solely on the within-county variability. A variance decomposition reveals that while both county LIHTC investments and county turnout vary much more between counties than within, 34% of the variance in subsidized development is within-county.¹⁶ This should allow for a reasonably precise coefficient estimate.

6 The Effect of Subsidized Development on County Voter Turnout

Table 2 reports results from the baseline fixed-effects models predicting gubernatorial (column 1) and presidential (column 3) voting-age turnout. The models are estimated with robust standard errors adjusted for heteroskedasticity and clusters at the county-level. The baseline models estimate positive effects of housing investment on county voter turnout. The estimated effect is statistically significant at $p < .05$ for presidential turnout, but falls short of statistical significance for gubernatorial turnout. For a given county, 1500 additional affordable housing units placed in service (one standard deviation) over a four-year period is predicted to increase voter turnout in the next presidential election by a half-percentage point ($.45 \pm .21$), controlling for prior turnout and county population size.

To the baseline model, I add a set of demographic covariates—county poverty, (logged) median

¹⁵For the analysis, I take the log of county population in order to reduce the effect of outlier counties.

¹⁶Fourteen percent of the variance in gubernatorial turnout, and 19% of the variance in presidential turnout, is within-county.

	Gubernatorial Turnout (1990–2010)		Presidential Turnout (1992–2008)	
	(1)	(2)	(3)	(4)
	LIHTC Units	0.00008 (0.00004)	0.0001* (0.00003)	0.0003* (0.00007)
Lag Turnout	0.05* (0.01)	0.08* (0.02)	0.30* (0.02)	0.23* (0.02)
Ln(Population Size)	6.85* (0.81)	3.96* (0.81)	10.84* (0.87)	7.58* (0.87)
Proportion Poor		3.94 (2.99)		2.83 (2.47)
Ln(Median Income)		-0.19 (1.07)		-.044 (0.78)
Proportion Black		-18.32* (5.55)		-13.82 (7.34)
Intercept	-27.29* (8.16)	2.96 (12.96)	-75.92* (8.52)	-35.47* (11.45)
County Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
State–Year Fixed Effects		✓		✓
N	14424	14424	12418	12418
R^2	0.19	0.57	0.54	0.74

Table 2: Fixed Effects Estimates of County Voting–Age Turnout on LIHTC units. Robust standard errors in parentheses. *p<.05.

household income, and proportion black—that may affect both the amount of affordable housing built in a county and the level of voter turnout. LIHTC developments are disproportionately sited in low-income neighborhoods, in part as a function of program rules that give priority to developers who build housing in high-poverty areas (Ellen, O’Regan and Voicu 2009; Rohe and Freeman 2001; Freeman 2004).¹⁷ High-poverty, low-income areas also typically exhibit lower rates of voter turnout (Cohen and Dawson 1993). Failing to account for the socio-economic characteristics of the county may bias the estimated effect of LIHTC development downward. Similarly, proportion minority is another area characteristic found relevant in previous research on LIHTC siting decisions (Dawkins 2011; Rohe and Freeman 2001), and whose negative relationship to voter turnout may downwardly bias the LIHTC effect if omitted.¹⁸ The expanded model also includes state-year fixed effects, in order to capture the influence of state electoral conditions (including election laws) on registration and voting, as well as changes in these conditions.

The expanded models are reported in columns 2 (gubernatorial turnout) and 4 (presidential turnout) of Table 2. The new estimates for the effect of housing investment are substantively unchanged from the baseline model, although the effects are now statistically significant for both presidential and gubernatorial turnout. The effect of 1500 new units on gubernatorial turnout is modest—a turnout increase of .15 (\pm .09) percentage points. For presidential turnout, a one standard deviation increase in the number of LIHTC-subsidized affordable units is still estimated to increase voting by a half-percentage point. In a county of average voting age population size (68,064 residents 18 and over), this effect translates into approximately 306 additional presidential voters for every 1500 new LIHTC units developed, a yield of .2 voters per LIHTC unit.

The geography of affordable housing is such that there are some counties in the United States with very high concentrations of LIHTC-subsidized development. For example, while the county average number of LIHTC units nationwide for the period 1990–2010 is only 333, the period average for Los Angeles County is over 21,000 units. Counties in which the level of LIHTC investment, or voter turnout, deviates substantially from the mean may have a disproportionately large effect on the regression results. To assess how sensitive the coefficient estimates are to these potentially high

¹⁷LIHTC program guidelines provide higher tax credit amounts to projects developed in areas designated by HUD as ‘qualified census tracts,’ defined as tracts where at least 50 percent of the households have incomes below 60 percent of their metropolitan area’s median family income or where the poverty rate exceeds 25 percent.

¹⁸Dawkins (2011), exploring the spatial distribution of LIHTC projects in the 10 largest metropolitan areas, finds that units are located disproportionately in areas characterized by lower proportions of non-Hispanic whites.

leverage observations, I re-estimated the fixed-effects models, with the full set of covariates, after alternately trimming the dataset of county clusters with extreme values on voter turnout or on the number of LIHTC units.¹⁹ I also generated jackknife estimates by selectively excluding from the dataset one state (and all counties within the state) at a time.

While no single state exercises substantial influence on the estimates of the effect of LIHTC investment on voter turnout, the model results are sensitive to investment outliers. Figure 1 plots the LIHTC coefficients (and 95% confidence intervals) estimated across the various sampling restrictions. When the model is estimated on a sample that *excludes* the 32 counties with the highest levels of LIHTC investment, the coefficient on LIHTC units increases substantially, for both the gubernatorial and presidential turnout models.²⁰ With these high-leverage observations removed, the estimated effect of LIHTC investment more than triples: a 1500-unit change in the level of affordable housing development increases presidential turnout by 1.4 ($\pm .31$) percentage points (compared to .45 ($\pm .18$) in the full sample) and gubernatorial turnout by .62 ($\pm .25$) percentage points (compared to .15 ($\pm .09$) in the full sample).²¹ Rather than an increase of roughly 300 presidential voters, as estimated on the full sample, the model with the 32 outlier counties removed estimates 920 new presidential voters for every 1500 new LIHTC units developed in the county, a yield of .6 voters per unit. By comparison, excluding the (larger number of) counties with extreme values on voter turnout leaves the coefficient estimates unchanged. Similarly, the bottom panels (c) and (d) of Figure 1 also show that the coefficient on LIHTC investment remains remarkably stable, in terms of both magnitude and statistical significance, as individual states are trimmed from the sample. Together, the sensitivity analysis confirms that in most counties in the United States, investments in affordable housing have a statistically significant effect that is also substantial

¹⁹I identify as outliers counties whose period average stock of LIHTC units [voter turnout] is above the 99th percentile or below the first percentile.

²⁰The 32 counties with the largest LIHTC stock: Maricopa County, Arizona; Alameda County, Fresno County, Los Angeles County, Orange County, Riverside County, Sacramento County, San Diego County, and Santa Clara County, California; Miami-Dade County, and Orange County, Florida; Fulton County, Georgia; Cook County, Illinois; Marion County, Indiana; Baltimore City County, Maryland; Suffolk County, Massachusetts; Wayne County, Michigan; Jackson County, Missouri; Clark County, Nevada; Bronx County, New York County, and Kings County, New York; Cuyahoga County, Franklin County, and Hamilton County, Ohio; Multnomah County, Oregon; Philadelphia County, Pennsylvania; Shelby County, Tennessee; Dallas County, Harris County, and Tarrant County, Texas; King County, Washington

²¹Instead of excluding just the 32 counties with a high average LIHTC units, I also estimated models in which I excluded any county with at least one outlier election-year observation. This restriction trimmed 66 counties. The estimated LIHTC coefficients increased still further, to an effect size of 1.2 ($\pm .38$) percentage points for gubernatorial turnout and 2.6 ($\pm .45$) percentage points for presidential turnout.

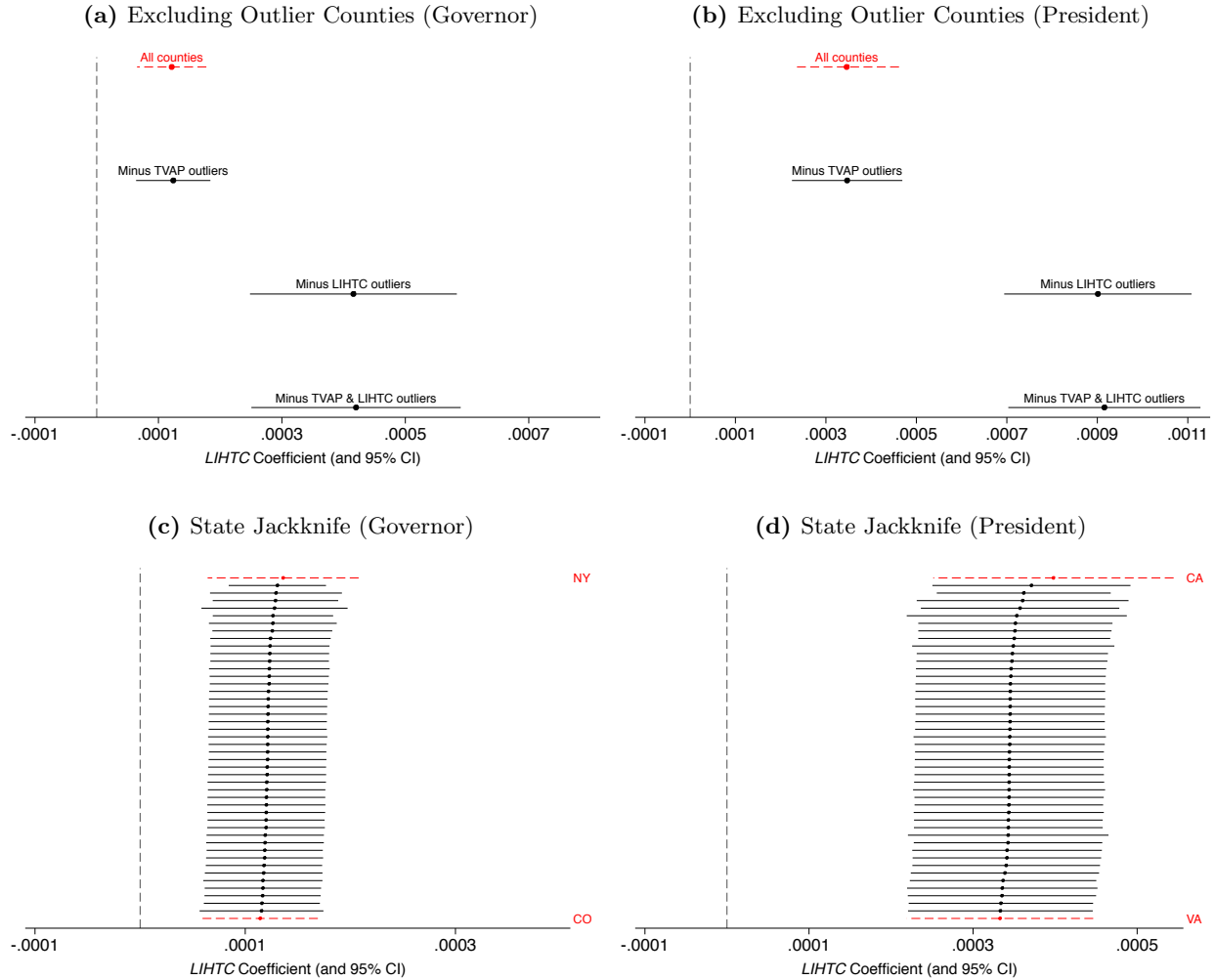


Figure 1: Sensitivity Analysis: Graphs (a) and (b) report the coefficient (and confidence interval) on LIHTC units for estimation with the full dataset, and with subsets that exclude counties with extreme values on turnout or the number of LIHTC units, for gubernatorial and presidential models respectively. Graphs (c) and (d) plot jackknife estimates of the LIHTC coefficients, generated from selectively eliminating a single state at a time, for gubernatorial and presidential turnout models respectively. Coefficient estimates are consistent across sampling restrictions, but increase substantially when LIHTC outliers are excluded. Graph (c) and (d) highlight (in red) states with a larger effect on the estimates: excluding California from the presidential turnout model biases the effect away from zero.

enough to be observable even at the county-level.

7 Discussion

The Low Income Housing Tax Credit program is at the center of federal efforts to address the affordability crisis, supporting the construction or rehabilitation of millions of housing units, while also helping to revitalize blighted areas. To the list of positive spillovers associated with LIHTC investment—a list that includes reductions in rates of violent crime and increases in property values—we can add another: greater political participation. Investments in affordable housing contribute to a net increase in rates of voter turnout. As the number of LIHTC-subsidized housing units in a county grows, so to does the proportion of the voting-age population turning out to vote in gubernatorial and presidential elections. Although tax credits are targeted to specific developments in specific neighborhoods, the political externalities they generate are sizable enough to be visible at a high level of geographic aggregation (county). The effects are strongest for presidential turnout, where the construction of an additional 1500 units over the course of four years increases county turnout by a half-percentage point on average, and by more than a percentage-point in the vast majority of counties. For the average county, this translates into as much as .6 additional voters for every new LIHTC unit developed.

The mechanisms responsible for the net increase in turnout may be changes in the behavior of area residents or changes in their demographic composition. Neither can be effectively ruled out on the basis of the findings presented here. Affordable housing development may attract new and more politically engaged residents to the county, while displacing less engaged existing residents. LIHTC-sponsored development, which is typically characterized by high-quality construction and median non-land constructions costs that are higher than the median for unsubsidized rental developments (Desai, Dharmapala and Singhal 2010; Eriksen 2009; Cummings and DiPasquale 1999), tends to draw families with incomes well above those of traditional public housing (Buron et al. 2000; McClure 2006; Desai, Dharmapala and Singhal 2010). The developments also attract new homeowners to an area. Homeownership and higher incomes are demographic attributes strongly associated with political participation (Wolfinger and Rosenstone 1980; Verba, Schlozman and Brady 1995). The positive effect of LIHTC development on voter turnout may derive from the

in-migration of more socio-economically advantaged demographic groups. Notably, intra-county migration alone could not account for the estimated effect; if investment merely displaced high-propensity voters from one area to elsewhere in the same county, we would not expect aggregate turnout rates to change.

Alternatively, new investments in affordable housing may motivate existing area residents to greater political participation, by lowering the costs of participation or enhancing its perceived relevance. To the extent that subsidized development contributes to community revitalization, including reductions in violent crime and the elimination of blight (Schwartz et al. 2006; Baum-Snow and Marion 2009; Freedman and Owens 2011), area residents may find it safer to participate, and may feel encouraged to do so as a way of protecting their stake in government policy (Campbell 2002). Local incumbents in a position to claim credit for the new investment, e.g. state and local officials who oversee the LIHTC allocations, may be important to such mobilization (De La O 2013). In fact, the improvement in local amenities itself may make easier and safer to engage in canvassing and outreach. Interestingly, however, the largest turnout effects are observed for presidential rather than statewide gubernatorial elections, although gubernatorial incumbents are better positioned to claim credit for LIHTC development within their states. This suggests that any LIHTC effects on behavior are likely operating on those marginal voters who can be persuaded to vote in a high-salience presidential election but are unlikely to vote in a lower-salience gubernatorial election regardless of the level of investment in their community.²²

To clarify the mechanism of the LIHTC effect—new behavior or new residents—and to determine its geographic source—whether it is localized to the immediate area of development or extends more broadly—requires more fine-grained data. A productive direction for future research is to assess, for those jurisdictions where the data are available, the electoral impact of LIHTC investment on the census tracts in which the developments are sited. Are LIHTC effects large but highly localized, and thus lost in the process of aggregation? Or, do LIHTC effects ripple across both targeted and non-targeted neighborhoods? By trading geographic scope for greater geographic detail, additional research can unpack the positive aggregate effect of local housing investment on political participation.

²²I credit Ariel White for this observation.

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