Overriding Exclusion:

Compliance with affordable housing incentives in the Massachusetts 40B program

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Abstract:

Exclusionary land use policies implemented by local governments over decades have contributed to the spatial concentration of publicly subsidized housing in central cities and the development and preservation of affluent, racially homogeneous communities elsewhere. Various policy responses have been developed to overcome local regulatory barriers. In this paper we examine one of the longest-standing initiatives, the Chapter 40B permit override policy of the State of Massachusetts, and the pattern of subsidized housing development across all municipalities in the State. Between 1997 and 2017, the subsidized housing stock in Massachusetts increased by 58,975 units, rising from 7.8% of the housing stock statewide to 9.2%. Within the Boston metropolitan area, the subsidized stock increased by 37,417 units over this time period, increasing from 9.2% to 10.3% of the metro area's housing. Cities and towns in Massachusetts made steady progress in subsidized housing production over these years but did so unevenly. Boston metro area cities made the most progress. Multivariate analysis indicates that cities with higher percentage white population produced the least subsidized housing over the study period.

The lack of sufficient decent and affordable housing is a chronic and severe problem across the United States (Aurand et al., 2019; Watson et al., 2017). In American metropolitan areas, the lack of affordable housing has a common geography. Exclusionary land use policies implemented by suburban governments over decades have contributed to the spatial concentration of publicly subsidized housing in central cities and the development and preservation of affluent, racially homogeneous suburban communities. Central cities tend to have more of both "naturally occurring affordable housing" and publicly-subsidized units per capita than suburban areas. This geography has a racial component to it as well; people of color in the United States have incomes and wealth-levels well below that of whites and thus are disproportionately represented among those living in subsidized housing, and overly represented within low-cost, central city neighborhoods. Though American suburbs have become more diverse over time, areas of affluent white exclusion remain common and resistance to subsidized housing widespread.

The spatial distribution of subsidized housing has been a public policy concern since the advent of large programs of government assisted housing (Goetz 2019). Questions of where such housing is sited have been raised in relation to fair housing concerns about segregation since the 1960s (Saltman 1971), mentioned for it potential contribution to concentrations of poverty in the 1980s and 1990s (Massey and Kanaiaupuni 1993), and since the 1990s for the degree to which it is located – and therefore provides access to – "opportunity neighborhoods" (Galster and Killen 1995; Dawkins 2013). Across these decades the concern has been that more affluent and white communities have not received their fair share, or in many cases, *any* subsidized housing and that instead it has been concentrated in low-wealth communities of color. Save for a very brief period of time during the first Nixon administration, the federal government has largely stayed out of the question of overcoming the resistance of local governments to subsidized housing

(Danielson 1976; Bonastia, 2006; Taylor 2019; Goetz 2019). This has left it to state and regional authorities to fashion policies to incentivize or require local governments to build subsidized housing. One such effort, indeed the first statewide effort is its kind, is the "Chapter 40B" law in Massachusetts.

Chapter 40B allows for the appeal of local land use decisions that are adverse to subsidized housing proposals. The law created a state-level board of appeals with the authority to overturn such decisions. This type of 'permit override' is rare in the U.S. and all the more notable for the fact that it first appeared in Massachusetts, a state with unusually high rates of low-density, exclusionary zoning (Pendall et al., 2018; Gyourko, Saiz and Summers 2008)).

In this paper we examine the rate of subsidized housing development in Massachusetts communities. In so doing, we report on the record of 40B in getting local governments in Massachusetts to produce subsidized housing. Though our study is not designed to be a program evaluation, we are able to shed light on the level of compliance across the state and examine how the incentives of the program have been received by local officials. Second, by looking at the differential rate of compliance in affordable housing incentives we are able to identify community-level characteristics that are correlated with greater or lesser levels of subsidized housing development. In this way our study contributes to other research on the factors associated with acceptance of low-cost housing, including research on the factors associated with restrictive land-use regulations.

We find that over the past 20 years most communities in the State have increased their rate of subsidized housing and that the impact has been greatest in the suburbs of Boston, the state's largest metropolitan area. For communities in some parts of the state the requirements and the incentives of 40B are largely irrelevant and thus have little impact. The rate of subsidized housing development in communities overall is associated with race, municipalities with larger

shares of white population are producing less subsidized housing. Interviews reveal that local officials see the override program as an unwelcome intrusion into local prerogatives that conflicts with other local planning objectives and producing land use outcomes contrary to other goals related to smart growth and transit related development.

We begin the paper by discussing the effects of and motivations for exclusionary land use policies at the local level, and present policy approaches pursued at the sub-national level, to overcome the resistance of exclusionary communities to affordable housing. From this discussion we present three hypotheses that could explain the differential rate of subsidized housing development across communities. We then summarize the "permit override" policy approach and the findings of previous research on this strategy. The last section of the paper is an analysis of subsidized housing development in Massachusetts communities between 1997 and 2017.

Exclusionary Land Use Regulations

The local land use practices in predominantly white, affluent communities are a significant contributor to the spatial patterns of race and poverty in American metropolitan areas. Specific features of local zoning regulations such as density limits, minimum lot sizes, minimum square footages for living space, parking requirements, and other requirements that drive up the per-unit cost of housing have come to be known collectively as exclusionary zoning. These features of local zoning are typically part of a larger exclusionary regime of regulatory barriers related to permitting processes, fees, and related policies that together limit the development of lower-cost housing. Suburban exclusionism is a long-standing feature of American metropolitan development (Danielson 1976, Bonastia 2006). The exclusionary practices of suburban governments have long been the target of efforts by fair housing and affordable housing advocates seeking to improve the chances for low-income people and people of color to locate

affordable housing outside of the central city (King 1978). Indeed, the identification of local barriers to affordable housing has attracted much attention from policy makers at all levels of government. In 1990, the Department of Housing and Urban Development appointed a national commission to examine the extent and nature of local barriers to affordable housing and the creation of a website devoted to local innovations in reducing these barriers (Kean and Ashley, 1991; Downs 1991; www.huduser.gov/portal/rbc/home.html).

The Impact of Exclusionary Regulations

That local land use regulations affect the supply and cost of housing has been repeatedly demonstrated (see Quigley 2006; Schuetz 2009; Quigley and Raphael 2004). Empirical work on this question dates to the 1970s, when the exclusionary zoning practices of suburban governments were a matter of interest to housing activists and to scholars (see, e.g., Burns 1974; Danielson 1976). Branfman et al. (1973) and Shlay and Rossi (1981 estimated the impact of local zoning on residential mobility and economic integration and demonstrated how these regulations can reduce housing options and affect the degree of economic and social inclusion in local communities. As Schuetz (2009; 300-301) summarizes, "Overall, the literature on land use regulations and rental housing suggests that regulations contribute to lower levels of construction, higher rents, and a decrease in the supply of low-cost, low-quality rental housing that constitutes the unsubsidized portion of the affordable housing stock" (see also, Lens and Monkonnen 2016; Quigley and Rosenthal 2005; Glaeser, Gyourko, and Saks 2005; Gyourko, Saiz, and Summers 2008; Glaeser and Ward 2009; Schuetz 2009; Rothwell and Massey, 2009).

Why Exclusionism?

There are several explanations for the prevalence of restrictive and exclusionary land use regulations at the local level. Opposition to subsidized housing may originate in the understanding that the occupants of such housing will be lower-income people and the

assumption that they are also likely to be people of color. Government subsidized housing is, of course, income-targeted, so applicants must demonstrate lack of earnings and wealth in order to qualify for assistance. Subsidized housing in the US is also disproportionately occupied by people of color, chiefly African Americans (Sturtevant, 2014). Thus, opposition to subsidized housing is frequently based on the issue of race (Thomas 1994; Tighe 2010, 2012; Pendall 1999). Land use controls, from the beginning, have served the purpose of racial exclusion (Silver 1997). The very origins of zoning in the United States are in the desire to limit the encroachment of rental housing into predominantly single-family districts (Babcock 1966; Silver 1997). Acceptance of subsidized, lower-income housing is resisted because it means acceptance of low-income families of color. The racial animus behind both NIMBY (Not In My Back Yard) responses to subsidized housing and local land use regulations has been well-demonstrated (see, e.g., Tighe 2012; James and Windsor 1978; Baldassare and Protash, 1982; Rolleston, 1987; Pendall 1999, 2000; Shertzer et al. 2016; Whittemore, 2018.). Exclusionary or restrictive land use policy can be understood as regulations and policies intentionally put in place by local officials to exclude by race and/or income. The Advisory Commission on Regulatory Barriers to Affordable Housing argued in 1990 that "the most potent" source of regulatory barriers to affordable housing is NIMBYism and the resistance of residents to affordable housing development (Advisory Commission, 1990).

There are, however, reasons to question the social exclusion explanation. Nguyen (2009), for example, fails to find a relationship between the social status of a community and its land use practices. Second, demographic changes in American suburban areas may be changing the political dynamics related to the development of lower-cost housing. American suburbs have diversified and become more differentiated from each other (Denton and Gibbons, 2013; Hall and Lee 2010). While affluent white suburbs continue to exist, of course, and perhaps even

dominate the suburban political economy, but more people of color, more immigrants, and more households below the poverty level reside in suburbs now than at any previous time (Allard 2017; Kneebone and Berube, 2011; Singer 2009). First ring suburbs in particular are characterized by a high percentage of lower-cost housing and evidence of decline that contrasts sharply with high-income, predominantly white, developing suburbs (Hanlon 2009; Short et al. 2007). The response to subsidized housing initiatives in these low-income, low-housing value communities is understudied, though there is some evidence that efforts to introduce subsidized housing in communities like these can also attract fierce resistance (see, e.g., Goering 2003; Albrecht et al., 1986). In such communities, typically inner-ring suburbs with large amounts of unsubsidized yet affordable housing, resistance to subsidized housing can be based on racial exclusion or on a sense that the community already has its "share" of affordable housing (Goetz 2003). There is even evidence of resistance to low-cost, subsidized housing in low-income central city neighborhoods (see, e.g., Danley and Weaver 2018). The opposition in these areas, however, is not based on exclusionary impulses but rather on concerns about displacement (Been 2018; Danley and Weaver 2018).

In addition to the potential for social exclusion, it has long been understood that there are possible fiscal reasons for local official reluctance to pursue subsidized housing development (James and Windsor 1976; Bates and Santerre 1994). Disincentives for affordable housing are built into the local public finance system in the U.S. Local government officials, dependent on property tax revenues, manage local fiscal conditions, in part, by generating land development and land uses to maximize revenues. Similarly, local officials have a disincentive to allow low-revenue land uses and/or engage in redistributive policy such as the construction of affordable housing (Peterson 1981). Thus, local governments may move to exclude lower-cost housing because such housing is considered by local officials to produce less in tax revenue than does

higher-end housing (Chernick and Reschovsky 2013; Fischel 2001). That is, the opposition of local officials, whether or not they share their constituents' racial or class prejudice, might hinge on the potentially negative fiscal impacts of low-cost housing. This type of "fiscal zoning" has been a widely acknowledged part of local policy making in the U.S. since the 1970s (see, e.g., White, 1975). Restrictive land use policies allow suburban governments to maximize property tax revenues from higher end land uses while minimizing costs by limiting access of lower-income households (Chernick and Reschovsky, 2013). Rolleston (1987) found support for the fiscal exclusion hypothesis in explaining the zoning practices of local governments in New Jersey.

Policy Responses to Local Exclusionism

Though the phenomenon of exclusionary land use policy is widely acknowledged and has been so for decades, higher levels of government are typically reluctant to intervene in what are seen as the local prerogatives of land use decision-making. The most extensive federal involvement in attempts to disperse subsidized housing has been the Moving to Opportunity (MTO) mobility program, a program that operated in only five cities and was almost immediately ended by Congress in the face of suburban resistance (Goering 2003). MTO and other, locally-created mobility programs are not, however, aimed at revising or reforming local land use practices but instead simply attempt to expand the use of subsidized housing vouchers in a wider range of communities.

Other government efforts are aimed at facilitating the development of subsidized or affordable housing in exclusionary communities, and thus directly attempt to alter prevailing land use practices. Such "housing dispersal" efforts include scattered site housing, "fair share" housing programs, and so-called "permit override" programs (Goetz 2003; Cowan 2006). On occasion, the Courts have moved to invalidate specific instances of exclusionary zoning (see e.g.,

Marantz and Zheng 2019; Aloi 1974), and mandate the dispersal of low-cost, subsidized housing throughout metropolitan areas (Haar 1996; Kirp et al. 1995; Rubinowitz and Rosenbaum 2000) Finally, some states have required local governments to plan for meeting low-cost housing needs, though these programs typically lack enforcement mechanisms (Ramsey-Musolf 2017, 2016).

Permit override laws

A few states have created laws that are aimed at overriding the tendency of local governments to use land use controls to limit affordable housing development. These laws typically allow the developers of a subsidized housing project to appeal a negative decision by local government related to approval of a proposed housing development and provide a means of overriding local decisions where those decisions have the effect of limiting subsidized housing development. The State of Massachusetts was the first to pursue this policy strategy, enacting a program (that would later be known as the "Chapter 40B" program) that established a system of state review of local subsidized housing decisions (Krefetz 2001). The objective of the law was to see that all municipalities in the state would get to a point where at least 10% of the housing stock was subsidized housing for low- and moderate-income households. For cities that had not met the 10% threshold, decisions on individual subsidized housing proposals were subject to state review. Importantly, at the review stage the burden of proof was on the local government to demonstrate that their decision to deny the housing proposal was in service of "a valid health, safety, environmental, design, open space, or other local concern" that outweighed the regional need for subsidized housing (Krefetz 2001; 72). Municipalities that meet the 10% threshold are immune from such appeals and overrides.

The states of Connecticut and Rhode Island enacted similar laws in 1989 and 1991. Both states also use the 10% threshold to immunize local governments from possible override of local

decisions. In Rhode Island the law created a State Housing Appeals Board to review cases in which low- and moderate-income housing was denied by local governments. Only 39 municipalities exist within the State of Rhode Island, and as of 2019, 10 had met the 10% threshold and are no longer subject to the appeals process (http://ohcd.ri.gov/policy-planning/affordablehousingreport.php). The municipalities that had met the threshold in 2010 tended to be urban rather than suburban, and have more dense land use patterns, small white populations, and lower median incomes (Bratt 2012). Among municipalities that are subject to the Appeals process, the production of low and moderate-income housing is positively correlated with a larger percentage of white residents, suggesting that the program is spurring development in the types of communities that have been exclusionary in the past. Cowan (2006) found that after the adoption of these override laws in Connecticut and Rhode Island, higher rates of subsidized housing development occurred than otherwise would have. At the same time, and in contrast to Bratt's finding, among municipalities that did produce subsidized housing, higher rates of subsidized housing development occurred in municipalities with relatively more minority households and fewer affluent households.

In the State of Illinois, the 2004 Affordable Housing Planning and Appeal Act allowed for appeals of local decisions to deny affordable housing proposals if the municipality has not met a threshold of 10% affordability within its housing stock (Golz 2006; Hoch 2007; Musolf-Ramsey 2017). One study of compliance with the Illinois law exists (Hoch 2007), but the study did not assess the impact of these plans on actual housing production.

Local governments and residents tend to place a high value on their land use prerogatives and generally resist mandates from higher levels of government in this policy area, seeing any interference with those prerogatives as a diminution of local power (Bollens 2003; Hoch 2007). As Hoch (2007, 96) pointed out for the Illinois planning requirement, "most municipal officials

did not agree with the reasoning behind the mandate, and did the minimum required. A minority refused outright to comply."

Chapter 40B and Subsidized Housing Development in Massachusetts

Advocacy in Massachusetts to 'open up' communities to more subsidized housing began at the state legislature in 1967 (Krefetz 2001). Activists identified exclusionary local land use regulations as the chief obstacle to a more equitable distribution of subsidized housing in the state. At the time the law was passed in 1969, only Boston and two other communities in the state had subsidized housing in excess of 10% of the housing stock, and none of the suburban communities in the Boston region met the threshold. The law created a state-level Housing Appeals Committee (HAC) that could review and overturn local government denials of subsidized housing applications made by (public and private) developers. The appeal process is triggered only when a developer makes a proposal for building subsidized housing that is denied by a local government that has not met the threshold. As Danielson (1976) noted, passage of the law in Massachusetts, "a heavily suburbanized state with strong home-rule traditions" was a somewhat unlikely outcome. The program has survived a number of legislative attacks as opponents have tried to weaken or eliminate the program frequently since its original passage. In 2010, a ballot initiative was presented to the state's voters that would have repealed Chapter 40B. The initiative was rejected by 58% of those who voted, indicating strong popular support for the program (Bratt 2012; Reid et al. 2016).

In the first 25 years of the program the HAC overturned 76 local decisions denying approval of subsidized housing proposals out of 94 appeals that were heard (Krefetz 2001). It quickly became clear to local governments that if they denied permit applications from developers proposing subsidized housing, their decision was likely to be reversed by the State. In more recent years most appeals by developers have been resolved through settlement

negotiations with local governments rather than by decision of the Appeals Board (Fisher 2013). In response, the rate at which local governments denied the applications of subsidized housing developers declined over time and negotiation between developers and local governments became more common (Ibid). In the first 25 years of the program the number of cities meeting the 10% threshold increased from 3 to 23, the number of cities with no subsidized housing at all declined from 173 to 55. Still, after 28 years, 93% of Massachusetts cities had not achieved the program goal of 10%.

Bratt's (2012) analyses of Chapter 40B finds that over 58,000 units have been developed pursuant to the appeals process. Subsidized housing built through the process "is more often produced in municipalities with greater densities and higher median incomes, while production is less often associated with municipalities with larger white populations" (Bratt 2012, XI). Fisher and Marantz (2015) found that the law was more successful in generating the development of multifamily rental housing than condominiums.

Methods

Our analysis has two objectives, to provide an updated assessment of the 40B program in Massachusetts, and to analyze the community-level correlates of housing responsiveness. We utilize State of Massachusetts data on 40B compliance across all municipalities in the state. The Massachusetts Department of Housing and Community Development (DHCD) monitors compliance with the program through the maintenance of a Subsidized Housing Inventory (SHI). DHCD also collects the number of year-round housing units in each municipality from the most recent decennial census. The percentage of subsidized housing is computed by dividing the SHI of a municipality (a number that is updated annually) by its total housing stock from the most

recent decennial census.[1] We analyze the subsidized housing production of Massachusetts cities since 1997, the first year for which production data appears on DHCD's on-line SHI database. We combine these program data with information from the Census and the American Community Survey (ACS) on community-level characteristics.

In addition to the analysis of publicly-available data at the municipal level, we conducted interviews with a sample of local officials to assess their strategies for meeting the objectives of the Chapter 40B program. Interviews were conducted in 2019 in six communities, four suburbs of Boston and two municipalities in the Springfield region of Western Massachusetts. These communities were chosen for their geographic location and on the basis of their program performance as revealed by our quantitative analysis of the 40B data. The six cities included three that in 2019 were above the 10% subsidized housing threshold and three that were not, with non-compliant cities both from the Boston metro area and from Western Massachusetts. Interviews were conducted with 16 officials in these six communities. In each case we interviewed the highest-ranking elected official (the mayor in three cases and the Chair of the Board of Selectmen in three other cases), and the director of the municipality's planning or

[1] Not all housing units counted in the SHI are affordable for low- to moderate- income families. In rental projects, Chapter 40B designates that all the housing units in a given development built through the comprehensive permit process count toward the 10% goal if at least 25% of them are affordable to households earning 80% or less of the AMI or at least 20% of them are occupied by households earning 50% or less of the AMI. If the percentage of affordable units in a development is below those thresholds, only the affordable units are counted in the SHI. In homeownership developments, only the income-restricted units count toward the 10% goal (DHCD, 2014, pp.II-4-II-5).

housing and community development department. In two communities we also interviewed additional development and planning staff.

Notes from the interviews were transcribed and recordings of the interviews were consulted to produce a full written summary of the interviews. The summaries were analyzed for the common themes they contained as well as for experiences that were distinctive across the municipalities represented. In this paper we focus on the reactions of local officials to Chapter 40B that were shared across most of the interview sites.

Hypotheses

We test three hypotheses about the distribution of subsidized housing across Massachusetts communities. The first two hypotheses are about *social exclusion.*

H1: The larger the white population within a community, the less subsidized housing that community will develop.

H2: The greater the wealth and income within a community, the less subsidized housing that community will develop.

As noted, however, there is a chance that the relationship between race, income, and subsidized housing production might be the opposite of what is suggested by the social exclusion hypotheses. Resistance and opposition to subsidized housing might appear in greater levels in communities already characterized by low-cost housing, greater percentages of people of color, and higher poverty rates. Such opposition in these cases would not be an attempt to exclude or maintain homogeneity, but rather compensate for what local actors might regard as their having done their fair share in terms of low-cost housing. Resistance would not be coming so much from a NIMBY perspective, but from an *Already In My Backyard* outlook. Thus, we also look for what we call a "compensatory" pattern in the production of subsidized housing in which

communities with fewer whites, and/or with lower income levels are less like to develop low-cost housing.

The third hypothesis we test for is the *fiscal exclusion* hypothesis:

H3: The greater the fiscal health of a community the less likely the community will be to produce subsidized housing.

This hypotheses, like the social exclusion hypotheses, is about the protection of advantage, describing communities with healthy fiscal conditions avoiding a land-use, low-cost housing to protect their fiscal health. As with the social exclusion explanation, there exists the possibility that the relationship between fiscal health and subsidized housing production could run in the opposite direction, producing a pattern in which communities with worse fiscal conditions attempt to compensate for their disadvantaged positions by resisting subsidized housing development, or in which cities that are not experiencing fiscal stress feel greater latitude in building subsidized housing than other cities.

Dependent variable.

We measure our dependent variable in three different ways. The first is the number of subsidized housing units per 1,000 population. This measure provides a normalized indicator of a community's commitment to the production of subsidized housing. Strictly speaking, however, it does not provide information on program compliance, or the degree to which cities have met the 10% affordability threshold. Thus, we also conduct an analysis on a dependent variable that is defined dichotomously, taking the value of 1 if the city has achieved the 10% goal and 0 otherwise. Finally, because we also wish to know where the incentives of the 40B program have had little to no effect, we create a third dependent variable, also a dummy variable differentiating the low-performers from the rest of the communities in the State. Low-performance is defined as

having 2% or less of their housing stock subsidized in 2017. This variable takes on the value of 1 for low performance and 0 for all other cases.

Independent variables

To test the racial exclusion hypothesis, we measure the percentage of the population in each Massachusetts community that is white, taken from U.S. Census data. Our examination of the income exclusion hypothesis utilizes Census and ACS data on median household income and poverty rate. To examine fiscal exclusion, we incorporate a number of measures of fiscal conditions. As Chernick and Reschovsky (2013) and others point out, measuring the fiscal health of cities is difficult given the wide variation in services funded locally and variation in revenue sources. Fiscal health, furthermore, is a ratio of service costs and expenditures on the one hand and revenue rates on the other. We attempt to capture, therefore, both the capacity and need elements of fiscal conditions. In Massachusetts, two-thirds of local government revenues are own-source (U.S. Census 2016). Of those own-source revenues, property taxes make up 80% (Ibid.). We use two measures of fiscal health. The first focuses on local governments' own-source revenue-raising capacity and it measures the ratio of total general expenditure to local revenue are incorporated as two fiscal health indicators.[2] The second measure is the ratio of debt service to total general expenditure. The data are taken from the Massachusetts Department of Revenue and is available annually since 2003.

While primarily interested in these exclusionary dynamics, we control for a number of other community characteristics. First, we include percentage of the population with a bachelor's degree as a measure of socio-economic status. We control for population size, percentage of the

[2] "Own source" revenues include taxes, service charges, licenses and permits, special assessments, fines and forfeitures, and miscellaneous sources. The general fund expenditures include police, fire, public safety, education, public works, human services, culture and recreation, fixed costs, intergovernmental assessments, "other" expenditures, and debt service.

population over the age of 65, percentage of the female-headed households, home values and rent levels, percentage of the renter-occupied households, percentage of the rent-burdened households, and the number of jobs. These variables come from the 2000 U.S. Census, the 2017 American Community Survey, the Executive Office of Labor and Workforce Development (EOLWD), and MassGIS. Because of the potential for housing market and social dynamics to differ significantly between the Boston metropolitan area and the more rural areas of Western Massachusetts, we also utilize a dummy variable to control for the location of communities within the Boston metro region.

SUMMARY OF THE PROGRAM

1. **Production information**

Between 1997 and 2017, the subsidized housing stock in Massachusetts increased by 58,975 units, rising from 7.8% of the total housing stock statewide to 9.2%. Within the Boston metropolitan area, the subsidized stock increased by 37,417 units over this time period. In 1997 9.2% of the metro area's housing stock was subsidized, compared to 10.3% in 2017. As shown in Figure 1, in general, cities and towns in Massachusetts made steady progress in subsidized housing production from 1997 to 2017. In 1997, only 24 cities (6.8%) had met the program's 10% threshold, and there were 56 cities with no subsidized housing. Twenty years later, 65 cities (18.5%) had achieved the 10% goal, and the number of cities with no subsidized housing decreased to 42 (11.9%). In 2017, more than half of the municipalities in the State have either met the 10% goal or are more than half-way there. Twenty years earlier, only one-third of the municipalities were that far along.

[figure 1 here]

The data show significant increases in the number of cities that reached the 10% goal in the second and fourth five-year periods, while there was also a large decline in the number of

cities that hit the goal in the third five-year period. This pattern is likely the result of the way in which the State of Massachusetts calculates the rate of compliance. Compliance rate is computed by *x/y* where *x* is the number of subsidized units within a municipality and *y* is the total number of housing units. The inventory of subsidized housing which provides the numerator in the compliance rate is updated every year but the total number of housing units, the denominator, is updated only every 10 years through the decennial census. The subsidized housing proportions in 2002 and 2007 were calculated using the year-round housing stock data from the 2000 census, and the subsidized housing rates for 2012 and 2017 were thus calculated using the 2010 census data as the denominator. The rate of compliance is therefore likely to be over-estimated for 2007 and 2017, the years for which the number of total units (the denominator) are most outdated and undercounted.

[figure 2 here]

The maps in figure 2 show that there is a geographic pattern in the response to the incentive of the 40B statute and reveal the growing number of communities meeting the 10% threshold over the three time periods. Communities that have met the program goal, shown in blue in the maps, are geographically concentrated within the Boston metropolitan area where a large number of suburban communities have met the 10% threshold in 2017. The contrast with 1997 is especially noticeable for suburban Boston municipalities. Outside of the Boston metro, the cities that have met the program threshold are the larger cities in western and southern Massachusetts, including Northampton, Springfield, Worcester, and Fall River.

Table 1 provides details on the metro/non-metro split in subsidized housing development. Seventy-one percent of Boston metropolitan area municipalities have met the 10% threshold in 2017 compared to only 35% of municipalities outside the metro area. Put another way, 31% of

the Massachusetts communities that have met the 10% threshold are in the Boston metro area even though the metro area accounts for only 19% of all Massachusetts communities.

[table 1 here]

Despite the progress made by a number of communities, the data show that more than 8 in 10 communities have not reached the 10% threshold for immunity under the program. This standard alone, however, hides the sometimes considerable progress made by communities that have not yet reached the 10% goal. Between 1997 and 2007, 235 (67%) communities increased their percentage of subsidized housing. Of communities that increased their stock over this period of time, they averaged a change of 2.69% percentage points. At the same time, 81 (23%) actually lost subsidized housing as a percentage of their overall housing stock; these communities declined in subsidized housing ratio by an average of -1.01% percentage points. Finally, 35 (10%) communities made no progress. These 35 communities had no subsidized housing in 1997 and still have no subsidized units in 2017 (Table 2).

[table 2 here]

As indicated in the maps discussed earlier, cities within the Boston metropolitan area made greater gains over this time period than other cities in the state. Eighty-three percent of the municipalities inside the Boston metropolitan area increased the percentage of subsidized housing over the 20-year study period compared to just more than half (55%) of cities outside the Boston metro area. More than a quarter of cities outside the Boston metro lost ground between 1997 and 2017, while another 16% made no progress. In the Boston area, in contrast, 16% of cities lost ground and just 1% made no progress.

2. Characteristics associated with provision of subsidized housing

Our examination thus far has shown that some communities are making progress in increasing the amount of subsidized housing while others are doing less-well and some have

done nothing at all for the twenty-year period between 1997 and 2017. In this section we look at the community characteristics associated with the provision of subsidized housing in Massachusetts cities. Table 3 presents bi-variate correlation coefficients of selected community characteristics and subsidized housing in 2017 among the 351 municipalities in the State. We measure the prevalence of subsidized housing in two ways; as a percentage of all housing in a community and normalized by population (subsidized housing per 1000 residents).

[table 3 here]

The data show that at the bivariate level, a number of community characteristics are associated with the relative size of the subsidized housing stock in Massachusetts cities. The bivariate correlation between log of population and subsidized housing (measured both as a percentage of all housing units and per 1000 population) is large both in magnitude and statistical significance (r=.53 and .50, respectively, both significant at <.001). There is strong evidence at the bivariate level for the racial version of the exclusionary hypothesis. Regarding the second social exclusion hypothesis, the log of median household income is not significantly correlated with size of the subsidized housing stock in 2017 while poverty rate is positively correlated – cities with lower poverty rates had less subsidized housing. At the bivariate level the fiscal exclusion hypothesis is also supported: Both the ratio of debt to total expenditure and the ratio of total expenditure to local revenue have statistically significant positive relationships with subsidized housing provision. Communities with better fiscal conditions produce fewer units of subsidized housing.

To further analyze the performance of Massachusetts cities under 40B, we look specifically at "high performers" (cities that meet the program's goals of having 10% of the housing stock subsidized) and "low performers" (cities having only two percent or less of the housing stock subsidized). Table 4 shows that low and high performer cities looked dramatically

different on a number of dimensions. The average low-performer city had a population of 2,968, (standard deviation of 3,069) while high performer cities were much more varied (standard deviation 86,552) and, on average much larger in population (mean = 45,106). Low performer cities were on average 95% white (*s.d.* = 3), while higher performing cities were 80% white (*s.d.* = 15). Low performing cities also had fewer college graduates and more seniors than did high performing cities.

[table 4 here]

3. Multivariate analysis

Our first multivariate analysis is a cross-sectional examination of the community characteristics associated with the production of subsidized housing in Massachusetts cities. The independent variables in the analysis include a range of community-level characteristics reflecting the racial/ethnic makeup of the city, other demographic characteristics, its income and socio-economic status, fiscal conditions, housing market conditions, and measures of economic development including the number of jobs and wage levels. Finally, given the geographic patterns revealed by the maps in figure 2, we include a geographic indicator, a dummy variable indicating location within the Boston metropolitan area or not. Given high correlations between some of the independent variables examined in the bivariate analysis, a subset of variables has been used in our regression analysis to avoid bias related to multicollinearity. Table 5 presents the first set of regression models.

[table 5 here]

The cross-sectional analysis indicates mixed support for our hypotheses. The racial exclusion hypothesis is supported both for the rate of subsidized housing per 1000 population, and the high-performer model. The larger the white population in 2017, the fewer subsidized units per 1000 population, and the lower the likelihood that the city is a high-performer. The

income exclusion hypothesis is supported only for the subsidized housing per 1000 population; higher income communities have produced fewer subsidized units. Population is a strong predictor of rate of subsidized housing and it is the only statistically significant predictor of low-performance (smaller communities are more likely to be low-performers). Location within the Boston MSA is associated with higher rates of subsidized housing production and with being a high-performer.

The results for the 2017 cross-sectional models are similar to the cross-sectional analysis for 2002 (data not shown). Race predicts to rate of production and high-performance status in 2002 as it does for the 2017 data. In 2002, income predicts to rate of production (as in 2017) but also to high-performance status (unlike in 2017). In both cases the social exclusion hypothesis is supported; whiter and more affluent communities performed less well in building subsidized housing than other communities. In 2002, location within the Boston metropolitan area was not associated with program outcomes in any way. The greater rate of subsidized housing production in the Boston metropolitan area is a pattern that has emerged between 2002 and 2017. Population size is also strongly significant in predicting to rate of subsidized housing production and low-performer status (similar to the 2017 cross-sectional findings).

In table 6 we present a fixed effects panel model incorporating change over the study period (2002 to 2017). This model includes a test for time effects with the addition of a dummy variable ("Y2017"). The model again indicates support for the racial exclusion hypothesis, showing that whiter communities produced fewer subsidized housing units over the study period. The income variable fails to obtain statistical significance, however. Only one of the fiscal exclusion variables is statistically significant. The sign of the significant variable is, however, in the opposite direction predicted by the fiscal exclusion hypothesis. Cities with better fiscal situations (as measured by the ratio of total expenditures to local revenues) produced greater

amounts of subsidized housing over the course of the study period. The coefficient on Y2017 indicates that the subsidized housing production was substantially better in 2017 than in the base year, 2002, keeping all the other factors constant.

[table 6 here]

None of the estimators in the logit models (predicting to high- or low-performer status) are statistically significant. This is likely due to the small portion of the municipalities in the sample that have changed their high- or low-performance status between 2002 and 2017. Estimates are based only on the 46 municipalities who changed their high-performer status between 2002 and 2017 and the 18 municipalities that changed their low-performer status over the study period. The relative lack of change at the very high and low end of the performance scales is itself a finding of note. Chapter 40B induced the biggest changes from cities in the middle of distribution in terms of subsidized housing production.

Finally, we tested for a plateau affect. The Chapter 40B program immunizes communities from legal challenges to land use decisions when they achieve a subsidized housing stock equal to or greater than 10% of the total housing stock. There is no additional programmatic incentive to build subsidized housing beyond the 10% threshold. Thus, it is possible that a municipality might show significant progress in response to the program incentive and increase their subsidized housing stock *until* it reaches 10% and then slacken production thereafter. Since the program goals are expressed as a percentage of the total housing stock, growing communities would need to continue to produce new subsidized units at a rate proportional to their growth to maintain program compliance, but there is no incentive to continue increasing subsidized housing ratio within a municipality.

To test the possibility that subsidized housing production may plateau after the 10% threshold is met, we analyzed subsidized housing production in three-year intervals (2000, 2005,

2008, 2011, 2014, and 2017). We used three-year intervals to avoid missing data and because for most municipalities, the annual change in percent of housing stock that is subsidized is too small (often there is no change) to capture the effect of meeting the goal on subsidized housing production. We used a fixed effects regression model to remove the unobserved heterogeneity across cities and dummy variables for 2005, 2008, 2011, and 2014 to control the time dependent effect that is the same across all municipalities. The results, summarized in table 7, indicate that meeting the 10% goal does have a slight negative effect on subsequent gains in the relative size of the subsidized housing stock. Once municipalities have met the 10% goals, they tend to slow down the relative rate of subsidized housing development.

(table 7 about here)

Local officials' perspectives

"Friendly" and "unfriendly" proposals

Local officials in Massachusetts make a distinction between what they call a "friendly" and "unfriendly" 40B projects. A friendly 40B is one in which the developer is working with the City to create a project that is agreeable to both parties. The City enters into these collaborations in order to contribute toward meeting the 10% threshold and doing so in a way that fits its development plans and priorities. Another incentive for the City is the desire to avoid an "unfriendly" 40B proposal which could have characteristics such as project size and location that the City objects to. Developers can resort to an unfriendly 40B because the experience of the 40B appeals process has significantly favored developers over City officials. An unfriendly 40B is a project in which the developer and the City are not collaborating, and which is an unwelcome proposal from the City's standpoint. All parties, developers and public officials, are aware of the overwhelming success of developers at the Appeals stage, so all parties understand who has the leverage. Developers can typically get what they desire in most circumstances and

strictly speaking, they do not need the cooperation of the local government to get a development built.

In some cases, local officials wish to meet the 10% in order to, as one official maintained, retain "control over development rather than being in a situation in which a developer could come in and simple force us to accept something." In Needham, MA for example, the City partnered with developers to produce 590 units in two projects for this reason.

An official in one western suburb of Boston described the City Council's opposition to subsidized housing and the hiring of an attorney to help them fight such proposals. As the official noted, "The lawyer stepped in and said to them, you could fight it if you want. As a lawyer I would make a lot of money contesting these proposals. You can take that approach and it will end up costing a lot of money and you may not win very often. Or you can sit down and negotiate with developers and you are likely to get something you can live with, and that the community can live with." The town decided to follow the attorney's advice and has been working to meet the 10% threshold since.

It is important to note in these instances, that such an approach, and therefore the subsidized housing that has been built in these towns, would not, in all likelihood, have been built but for the leverage of Chapter 40B. Towns that are building the units and making progress towards the 10% do so, in many cases, to make subsidized housing less unpalatable. The dynamic of resistance to subsidized housing remains, despite the progress being made in terms of the number of units being built.

Though the Appeals process has overwhelmingly favored developers, Cities still fight projects, typically on the basis of strong community opposition to a project. In one community in which we conducted interviews a planner told us a story of how the community had been subject to three 40B projects in a short period of time. The town had worked with the first two

developers to negotiate the outcome, but both resulted in subsidized housing. Not so with the third proposal. “People did not want that third affordable housing proposal; they had had their fill of 40B. The only way out of it was to purchase the property from the developer.” Town residents voted to direct City officials to “ask the developer what amount of money it would take to make him walk away” from the proposed project. Thus, the City bought the site for $13 million and then resold it at a lost to a medical developer who wished to build something other than subsidized housing on the site.

Awareness of their status vis a vis 10% threshold

The officials we interviewed were acutely aware of where their community stood with regard to the 10% requirement of the 40B statute and thus whether they had a safe harbor from unfriendly 40B proposals. The officials we spoke with identified two concerns related to maintaining their compliance status. First, officials in the Boston suburban communities were acutely aware of the fact that the 2020 census (interviews were done in 2019) would reveal a growth in the number of housing units in their communities, which would have a deflationary effect on their subsidized housing ratio. Officials in communities that were barely above the 10% threshold worried that the census would knock them below that threshold. The second concern of local officials was the possibility of losing existing subsidized housing to expiring terms and conversion of those units to market rate. Such conversions would reduce the numerator in their subsidized housing ratio and thus deflate their compliance rate. As one said:

“What we are concerned about now is that some of the affordable housing deed restrictions are going to time out and expire soon. In a few years some will expire and then we will lose them and our count will go down. So, we have had discussions about extending deed restrictions. Otherwise with new census and expired deed restrictions, we’re telling people we’re

not done with affordable housing. We'll lose our status and so we'll need to work toward the 10%."

In one town, the planning director admitted that elected officials are not typically supportive of subsidized housing, but they are supportive of staying above the 10% threshold in order to avoid an unfriendly. Another official told us that "now that we're above 10% we can be more selective as to where [subsidized housing] goes in the community."

The 10% Plateau

It is also clear from the interviews we conducted that there is a plateau effect once a town achieves the 10% threshold. Officials spoke about the 10% threshold as the point at which they could regain control over the development of subsidized housing. In most cases, that means severely limiting future subsidized housing development. As one official put it, "we had a small project proposed on the edge of our city, just eight units that didn't fly. The Selectmen's perspective was, 'we've met our 10%, so we don't have to do this project.' So, getting to the 10% makes it more difficult to advance affordable housing projects."

Both awareness of where they are relative to the 10% threshold and the plateau effect strongly suggest that local officials regard the oversight of the State appeals board to be an unwanted intrusion that they wish to avoid. They constantly assessed their performance relative to the goal. Officials in communities who felt a potential override was more possible (the communities in the Boston metropolitan area) were most concerned with meeting the goal and relieving themselves of that potential. **NIMBY**

Our interviewees spoke to the attitudes of social exclusion characterizing the politics of subsidized housing in the State. These dynamics were mentioned much more frequently in the interviews done in the Boston suburbs than in western Massachusetts. As one respondent noted:

> The elephant in the room, the issue that no one would talk about is racial prejudice and socioeconomic prejudice. These people (residents who oppose affordable housing) would deny it if you claimed it, but the NIMBYists didn't want 'those people' to come into town.

In one community, the city planner recounted an episode of vitriolic NIMBY response to a proposed subsidized housing development:

> The opponents said the developments were out of scale in terms of what is around them. The project is now under construction. It was a firestorm when I got here. People were angry and they were nasty, writing letters to editors about how Town officials handled this. One letter said the Town Planner ought to resign. … It got ugly. They were visceral in their opposition. It got personal. I was ducking for cover…. There was backlash against the Board of Selectment… It was very unpleasant; the most difficult time of my career.

Another official noted, in a different community, regarding a different development, that:

> The opposition to [----] was about 'those people'. It wasn't about property values or quality of life… Was it racial? Slightly. 'Those people' are people who are not like them, people from Boston. Some of that is racial, but some of that also has to do with life circumstances and socioeconomic background.

A third officials also indicated a racial element to NIMBY opposition, and that it was implied by opponents that the likely residents would be less educated than current residents of the town and "involved in crime."

Others described opposition to subsidized housing as stemming more from socio-economic factors and from a more general opposition to change. As one said, affordable housing

is “a challenge because nobody wants it next to their house. It’s the snob factor: ‘I paid a lot for my house – how can someone get housing right next to me?’”

Another official characterized the resistance to subsidized housing among his constituency as the result of:

> a blue-collar community in which most people who came here fled Boston and Dorchester. It was White flight. A lot of those folks... these people have this piece of turf, they escaped the city, and they don’t want to experience what they fled, they don’t want to experience being surrounded by poverty... People don’t want a repeat of what happened to force them out of Dorchester. That is probably the dynamic that is occurring here.

“Good planning”

In addition to opposition to subsidized housing based on social exclusion, a phenomenon admitted by most of our interviewees, local officials in several of the communities noted that 40B also has the effect of distorting local planning objectives. The review process created by Chapter 40B essentially privileges affordable housing over other possible planning objectives. One planner told us that early in his career he “formed a negative opinion of 40B because legitimate environmental zoning can be overridden by the state which assumes suburban communities are exclusionary. It puts the affordable housing objective before all other possible zoning objectives related to the environment and smart growth.” Comments from officials in other cities echoed this. We heard from one official that “the problem with 40B is that you don’t necessarily get a project that makes sense from a planning standpoint; for example, one that is close to downtown or close to transit. I think the fact that you can plop affordable housing anywhere is a problem.” Officials in one community were especially unhappy with the way that 40B prioritizes subsidized housing:

> 40b makes things confrontational between the Town and the State, it is designed that way. So, the State comes out with all of these smart growth ideas and about where low-income housing should be sited. We had just changed our zoning to incentivize density near transit in keeping with these smart growth objectives. But (in a 40B Appeal) the State ignores all of that, they throw it out the window because they're in bed with the developers, and because it's about building subsidized housing anywhere. It's frustrating. They tell us on the one hand about smart growth, and on the other hand they ignore it.

Relevance of 40B in low-demand markets

As we have noted in this analysis, most of the activity generated by 40B is in the Boston metropolitan area where housing prices are high and rising, and where most of the population growth in the State is occurring. In large parts of Western Massachusetts, 40B does not play a large role in local development planning. Officials in one Western Massachusetts city told us that subsidized housing in that community was not all that different than market rate housing. This community had achieved its 10% and had done so by mixing subsidized housing into old mill redevelopments in its downtown core. The City had never had a 40B project. In another community that is not experiencing population growth, there is little to no new housing development occurring, and no developable land to work with. This community has never been subject to an unfriendly 40B and in fact has only pursued a single 40B project and that was for senior housing. The housing markets in Western Massachusetts lack the demand that would attract developers who might offer proposals that trigger the 40B process.

Discussion

Chapter 40B

Our analysis suggests that over the past 20 years cities in Massachusetts have responded to the incentives of the Chapter 40B program. Although we cannot say what would have happened in the absence of Chapter 40B, three findings suggest that the state law was influencing local actions related to subsidized housing development over this time period. First, the geographic pattern of subsidized housing development suggests that where development pressures were the greatest, in the Boston metropolitan area, cities responded with greater subsidized housing production. In large parts of western Massachusetts where there is little growth and where market rate housing is more affordable, local governments are less likely to be subject to an unfriendly 40B proposal. This makes these local governments less likely to build subsidized housing as a means of avoiding the override provisions of the state law. Second, the threshold effect that we found suggests that local governments are building just enough subsidized housing to exempt themselves from the override provisions. Third, our interviews confirm these statistical results; local officials are mindful of their status vis a vis the 10% threshold. They monitor their progress toward and beyond the 10% threshold and this drives their actions in terms of producing subsidized housing. In parts of the state, moreover, where the potential for an appeal to the state board is less likely, local governments see less urgency in producing subsidized housing. There are still large parts of rural western Massachusetts that have no subsidized housing at all, a situation that has not changed over the life of the program. The pattern of progress shown in the state in the development of subsidized housing makes sense given the incentive structure of the 40B program. For these reasons it is apparent that the program is producing results and is producing a greater responsiveness in the suburbs of the Boston metropolitan area.

It is also clear from our analysis that the override provision remains an unwelcome intrusion for local officials. Our interviews with local officials highlight the claims made by local

officials about how the override can pervert local development priorities. Local officials claimed that their best intentions in the areas of smart growth and connecting housing affordability to transit and commercial accessibility can be overridden when a developer decides to build subsidized housing in a different location within the community and the state facilitates the development by approving the proposal.

The fact that program compliance is measured as a ratio of subsidized-to-total housing also has implications for local governments. Safe harbor from unwanted subsidized housing proposals is achieved not by building a given number of subsidized units, but by achieving and maintaining a 10% ratio of subsidized housing to total housing stock. Thus, expiring use restrictions, and conversions of subsidized housing to market rate will negatively affect a municipality's compliance (by reducing the numerator of the ratio). Similarly, community growth and the production of new, non-subsidized housing units will also have implications for compliance by increasing the denominator and forcing local governments to build subsidized housing to keep up, if not make progress. These considerations make a ratio standard preferable from the standpoint of meeting affordable housing needs because it places subsidized housing development in the context of market and community dynamics.

Local characteristics associated with exclusion

The reluctance of local governments to produce subsidized housing has long been the subject of political attention and scholarship. Previous studies have shown that the existence of exclusionary zoning policies and regulatory barriers to affordable housing are associated with racial and fiscal conditions. Our analysis extends that research by suggesting that among Massachusetts cities between 1997 and 2017, racial exclusionism limited the actual production of subsidized housing in Massachusetts. We did not find evidence of income-based exclusion, income and poverty rates were not associated with subsidized housing production levels in our

study. Interestingly, we found that the impact of fiscal conditions was opposite the expectation of the exclusion hypothesis. Fiscally-healthy cities in Massachusetts produced more subsidized housing over the study period than did cities with greater fiscal constraints. This finding suggests that cities were not approaching subsidized housing decisions from the standpoint of attempting to protect fiscal health, but suggests instead that fiscal health may in fact enable local governments to act more expansively in producing subsidized housing. Conversely, fiscal problems may make local governments even more leery of building subsidized housing, fearing, perhaps, even greater strain on local finances.

Permit override as a means of addressing exclusion

Our analysis suggests that the permit override approach to addressing the lack of subsidized housing development by local governments has been effective in Massachusetts. The data show significant increases in the availability of subsidized housing in communities across the state and our interviews indicate that program incentives are shaping the behavior of local officials. This increase in subsidized housing notwithstanding, we nevertheless find evidence of racial exclusion in the pattern of production. The incentives of the program as well as the usurpation of local land use powers triggered by non-compliance have together been insufficient to overcome white exclusionism in Massachusetts over this time period. Given that hopes of a "post-racial" society may have been unrealistic in the first place (see Bonilla-Silva 2017) and that there is evidence both in the election of Trump and in public opinion surveys of a growing white consciousness and identity (see, e.g., Jardina 2019), the findings of our study confirm the durability of a local politics of whiteness (see Goetz, Williams, and Damiano 2020). Persistent patterns of white segregation (Feagin 2014) and areas of concentrated white affluence in metro areas across the nation (Goetz, Damiano, and Williams 2019) suggests that color-blind policy and planning approaches such as permit override statutes are insufficient in and of themselves to

alter patterns of white exclusionism and may need to be combined with a more sweeping set of strategies for dismantling white exclusion. This may recommend more direct approaches to planning and policy embodied in Steil's (2018) notion of "anti-subordination planning" or Williams' (forthcoming) "reparative planning" (see also the policy suggestions in Goetz, Williams, and Damiano, 2020).

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Figure 1. The distribution of municipalities by the percentage of subsidized housing units in total housing stock in 1997, 2002, 2007, 2012, and 2017

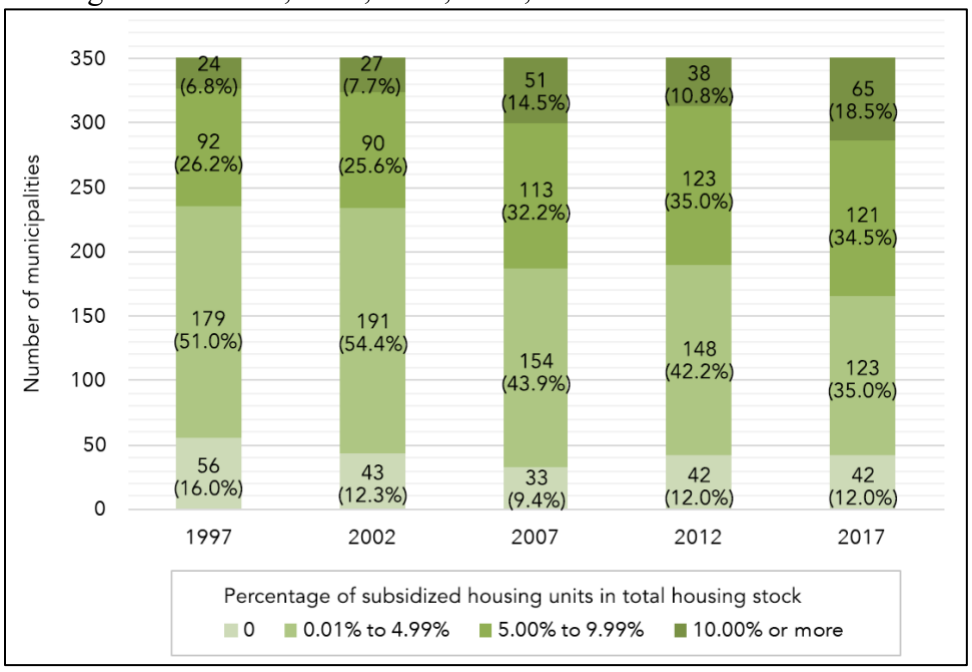

Figure 2. The subsidized housing production of municipalities in the state of Massachusetts in 1997, 2007, and 2017

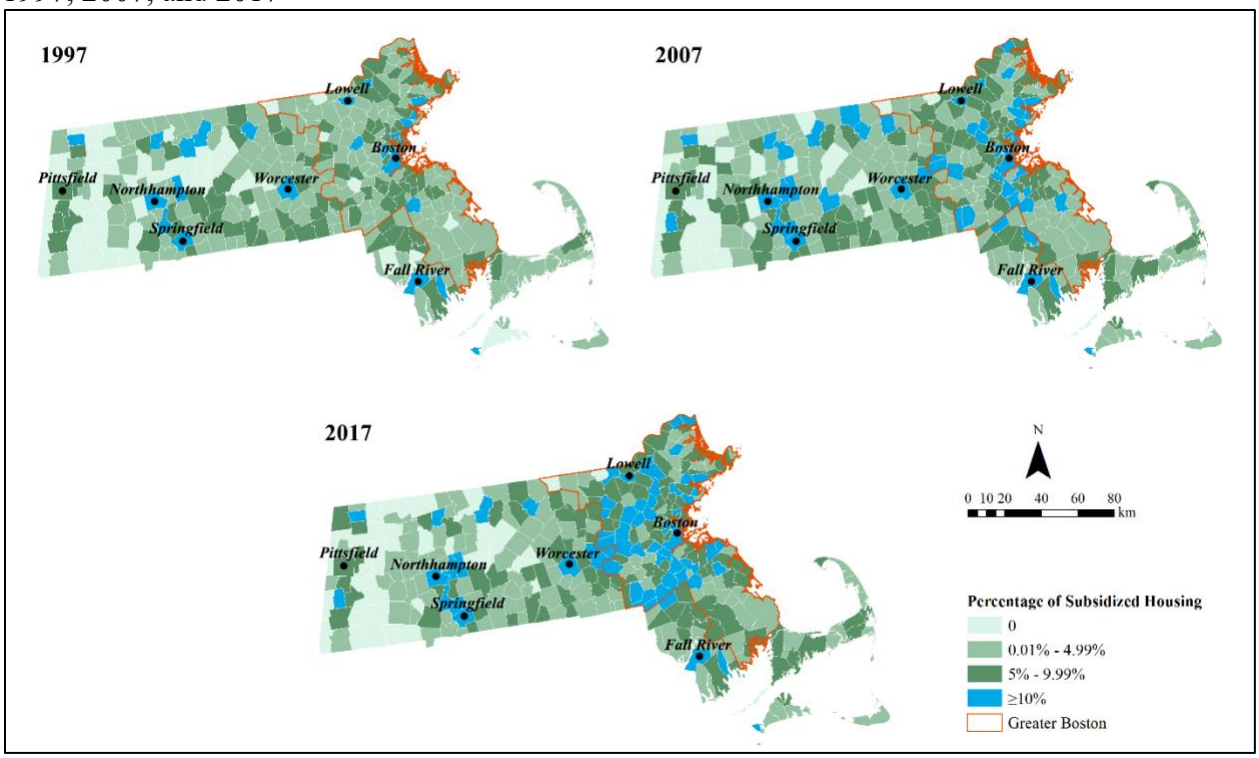

Table 1. The performance of municipality by location in 2017

Location \ Performance	Meet the 10% goal	Do not meet the 10% goal	Total
Inside Boston MSA (col pct) (row pct)	46 (70.8) (31.3)	101 (35.3) (68.7)	147 (41.9)
Outside Boston MSA (col pct) (row pct)	19 (29.2) (9.3)	185 (64.7) (90.7)	204 (58.1)
Total	65 (18.5%)	286 (81.5)	351 (100)

Source: Authors' calculations, SHI Inventory, 2018.

Table 2. The change of subsidized housing production of municipality by location from 1997 to 2017

	Municipality with increased pct of subsidized housing		Municipality with decreased pct of subsidized housing		Municipality with no progress		
	Number	Average pct point change	Number	Average pct point change	Number	Average pct points change	Total
Inside Boston MSA	122 (83)	3.48	23 (16)	-0.53	2 (1)	0.00	147
Outside Boston MSA	113 (55)	1.82	58 (28)	-1.20	33 (16)	0.00	204
Total	235 (67)	2.69	81 (23)	-1.01	35 (10)	0.00	351

Figures in parentheses are row percentages.

Table 3. Bivariate Correlation Coefficient of Selected Characteristics in 2017

	Subsidized Housing per 1,000 Population[#]	Percentage of Subsidized Housing[#]	n
Race and Ethnicity			
Percentage of White	-0.52***	-0.58***	351
Percentage of Black	0.36***	0.36***	351
Percentage of Asian	0.35***	0.39***	351
Percentage of Hispanic	0.42***	0.42***	351
Income and Poverty			
Natural log of household median income	-0.12*	0.00035	350
Poverty rate	0.39***	0.35***	351
Fiscal Health			
Ratio of total expenditure to local revenue	0.32***	0.31***	347
Ratio of debt service to total expenditure	0.27***	0.25***	347
Other Demographic Characteristics			
Natural log of total population	0.65***	0.65***	351
Percentage of population aged 65 and above	-0.21***	-0.31***	351
Percentage of population with bachelor's degree or higher	0.04	0.1	351
Percentage of female-headed households	0.48***	0.42***	351
Population density for residential land	0.44***	0.43***	351
Employment			
Natural log of average monthly employment	0.72***	0.71***	350
Housing			
Natural log of median home value	0.12*	0.19***	351
Natural log of median rent	0.11*	0.17**	341
Percentage of renter-occupied households	0.63***	0.57***	351
Percentage of rent-burdened households	0.07	0.08	351
Geography			
Boston MSA	0.32***	0.39***	351

*** p<.001, ** p<.01, * p <.05
# OLS regression

Table 4. Municipality Profile in 2017

	Low Performer (n=80)		High Performer (n=65)	
	Mean	SD	Mean	SD
Population	2,698	3,069	45,106	86,552
Median HH Income	78,384	26,162	89,025	36,216
pct White	95	3	80	15
pct Bach	40	14	47	20
pct 65+	21	7	16	4
Employment	645	1,180	29,755	80,476
Housing Value	319,996	157,600	420,623	188,066

Table 5. Cross-sectional model, 2017.

Independent Variables	Dependent Variables					
	Subsidized Housing per 1,000 in 2017#	*p*	High-performer^	*p*	Low-performer^	*p*
Intercept	105.34 (36.43)	**	-3.46 (9.26)		1.02 (16.59)	
Pct White	-0.35 (0.08)	***	-0.07 (0.02)	***	0.07 (0.04)	
Natural log of household median income	-10.73 (2.96)	***	0.37 (0.73)		1.15 (1.43)	
Total Exp/Local Rev	1.89 (2.96)		1.25 (0.83)		-0.24 (1.68)	
Debt Exp/Total Exp	41.55 (21.09)	*	3.16 (5.16)		-12.09 (10.58)	
Natural log of total population	6.50 (0.72)	***	0.33 (0.20)		-2.88 (0.55)	***
Pct 65 years +	0.25 (0.14)		-0.02 (0.04)		0.02 (0.05)	
Pct rent-burdened	0.01 (0.05)		-0.02 (0.02)		0.02 (0.02)	
Boston MSA	4.16 (1.78)	*	0.89 (0.44)	*	0.63 (1.08)	
R^2	*0.50*					
Adj R^2	*0.49*					
McFadden's pseudo R^2			*0.25*		*0.62*	
AIC	*2722.74*		*265.59*		*114.15*	
n	*345*		*345*		*345*	

OLS regression, ^ Logistic regression
*** p <.001, ** p < .01, * p < .05

Table 6. Panel model, 2002-2017

Independent Variables	Dependent Variables					
	Subsidized Housing per 1,000#	*p*	High-performer^	*p*	Low-performer^	*p*
Pct White	-0.44 (0.18)	*	-0.64 (0.44)		0.75 (0.61)	
Natural log of the household median income	-7.36 (7.59)		-8.58 (9.31)		-2.00 (7.14)	
Total Exp/Local Rev	-12.00 (4.10)	**	-15.60 (14.55)		-3.37 (5.36)	
Debt Exp/Total Exp	2.64 (18.64)		-12.56 (19.70)		-6.38 (13.55)	
Natural log of the total population	-11.06 (8.25)		29.27 (17.34)		-9.71 (9.32)	
Pct 65 years +	-1.48 (0.21)	***	0.43 (0.34)		-0.10 (0.23)	
Pct rent-burdened	-0.03 (0.05)		0.11 (0.08)		0.01 (0.05)	
y2017	28.04 (3.61)	***	0.09 (4.40)		1.95 (3.87)	
R^2	*0.73*					
Adj R^2	*0.46*					
Wald Chi-Square	*916.8*	***	*6.28*		*3.72*	
n	*341*		*341*		*341*	
Observations	*682*		*682*		*682*	

Fixed Effects regression, ^ Conditional Logistic regression (Fixed Effects Logistic Regression)
*** p <.001, ** p < .01, * p < .05

Table 7. The 10% Plateau Effect, 2002-2017

Independent Variables	Dependent Variables	
	Pct point change in the pct of subsidized housing#	*p*
Met the 10% goal in the previous period	-2.82 (0.20)	***
y2008	0.01 (0.10)	
y2011	-0.73 (0.10)	***
y2014	-0.38 (0.10)	***
y2017	-0.05 (0.10)	
R^2	*0.18*	
Wald Chi-Square	*305.22*	***
n	*351*	
Observations	*1,755*	

Fixed Effects regression
*** p <.001, ** p < .01, * p < .05