Are Location Affordability and Fair Housing on a Collision Course? Race, Transportation Costs, and the Siting of Subsidized Housing

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Abstract

In this article, we explore whether efforts to incorporate location affordability, which account for housing and transportation costs, in the siting of subsidized housing present potential conflicts with the Fair Housing Act goals. To do so, we look at housing and transportation costs and the siting of subsidized housing through the Low-Income Housing Tax Credit (LIHTC) program by race across the country and then by the 25 largest metropolitan statistical areas. We find that areas with lower housing and transportation costs tend to be more highly minority, and units developed through the LIHTC program are often sited in these neighborhoods. We conclude by suggesting ways that location affordability can be incorporated in the siting of subsidized housing so that it does not have a disparate impact, and highlight that siting decisions should also account for the positive impact that LIHTC properties can have on low-income neighborhoods.

In 2014, the U.S. Department of Housing and Urban Development (HUD) released the Location Affordability Index (LAI), a publicly available online tool that allows users to compare the location affordability of various neighborhoods throughout the United States. Some have called for the LAI, or similar indices, to be considered in decision-making criteria on the siting of new publicly subsidized low-income rental housing developments (Belsky, Goodman, and Drew, 2005; Bogdon and Can, 1997; Coulombel, 2018; Haas et al., 2006; Hamidi, Ewing, and Renne, 2016; Holtzclaw, 1994; Holtzclaw et al., 2002; Jewkes and Delgadillo, 2010; Saberi et al., 2017). In this article, we explore whether such efforts to incorporate location affordability in the siting of subsidized housing could run counter to Fair Housing Act goals.

Because households spend more on transportation than on any other household budget item (other than housing), locating affordable housing in neighborhoods with low transportation costs could lead to substantial household savings. As a result, we have seen policies that promote more generous mortgages and affordable housing construction in areas with good transit access and lower than average transportation costs (Blackman and Krupnick, 2001; Center for Neighborhood Technology, n.d.; Chatman and Voorhoeve, 2010). However, we raise concerns in this article that efforts to use location affordability criteria in the siting of new affordable housing pose a tension with Fair Housing Act goals. This concern is of particular importance considering the 2015 ruling in *Texas Department of Housing and Community Affairs et al. v. Inclusive Communities Project, Inc., et al.* In this case, the Supreme Court ruled in favor of the Inclusive Communities Project, which argued that the way the State of Texas awarded funding through its Low-Income Housing Tax Credit (LIHTC) program resulted in properties being disproportionately developed in predominately Black neighborhoods.

In this article, we seek to answer a simple empirical question: is incorporating location affordability into the siting of new subsidized housing projects likely to steer such developments into predominantly Black and Hispanic neighborhoods? In other words, could the well-intentioned use of location affordability as a programmatic criterion for awarding housing subsidies inadvertently contradict local Fair Housing Act efforts? Conversely, could Fair Housing Act policies concentrate vulnerable households in areas with high transportation costs? Furthermore, does the answer vary across metropolitan regions, perhaps conditioned by differing spatial patterns of racial and ethnic segregation, housing costs, and transportation infrastructure?

To address these questions, the rest of the article is structured as follows. First, we briefly review existing scholarship on location affordability and the Fair Housing Act. Next, we describe the data we rely upon for location affordability and the locations of subsidized rental housing developments and the techniques we use to analyze them. We then present results of our national-scale analysis of whether location affordable places overlap with racialized enclaves, followed by metropolitan-specific analyses of the same. We then continue with a discussion of our findings, which in brief, are that Black and Hispanic households tend to live in neighborhoods with lower transportation costs, and these are often the neighborhoods where LIHTC units are sited. Although the insertion of subsidized housing into lower transportation cost areas is appealing from a housing affordability perspective, it also presents distinct fair housing challenges. Specifically, if our goal is to use existing programs to reduce racial concentration, particularly racial concentration in low

opportunity neighborhoods, then transportation costs may not be an ideal factor to consider when siting affordable housing.

Location affordability: an emergent concept

Beginning in the late 1990s, scholarship began to draw specific attention to transportation costs often forming the largest share of basic household expenses after housing (Bogdon and Can, 1997; Belsky et al., 2005). The operationalization of location affordability took a major step forward when the Center for Neighborhood Technology (CNT) released its Housing + Transportation (H+T) Affordability Index (Haas et al., 2006). One early policy effort that aimed to take advantage of this new tool was the Location Efficient Mortgage (LEM). The LEM was predicated on modifying mortgage underwriting standards to allow homebuyers to borrow more than they normally could, provided they purchase homes in locations where they could save on transportation costs. Due to a variety of reasons, including skepticism from lenders and widely available credit alternatives, the LEM was abandoned in 2008 amidst anemic uptake (Hamidi, Ewing, and Renne, 2016).

Examining defaults on more than 8,000 Federal Housing Administration-insured loans, Blackman and Krupnick (2001) found no significant relationship between measures of location affordability and mortgage default. Recent studies have found that transportation costs play only a small role in household location decisions and that households do not shift transportation spending by much after moving to a more or less transportation affordable neighborhood (Tremoulet, Dann, and Adkins, 2016; Smart and Klein, 2017). One potential issue is that a focus on average and total expenditures measures of neighborhood affordability masks substantial variation in the expenditures of the households that live within them (Guerra and Kirschen, 2016). Individual factors, such as income and household size, explain much more of the variation in household transportation expenditures than location affordability (Guerra and Kirschen, 2016; Guerra et al., 2018; Smart and Klein, 2017).

Despite the failure of the LEM, and critiques of location affordability more generally, the concept of location affordability has grown, not receded, in prominence. An updated version of the H+T index fixed some of its methodological flaws and gained an official stamp of approval when HUD adopted the LAI in 2014 (Haas, Newmark, and Morrison, 2016). The LAI is in turn facilitating a widening array of research on topics as varied as the relationship between location affordability and Housing Choice Vouchers (Bieri and Dawkins, 2016); Transit Oriented Development (Zuk and Carlton, 2015; Dawkins and Moeckel, 2016; Renne et al., 2016); rental housing with expiring subsidies (Lens and Reina, 2016); the post-move outcomes of public housing residents displaced by a HOPE VI redevelopment (Nguyen et al., 2016); and in Rustbelt (Tighe and Ganning, 2016) and Canadian cities (Revington and Townsend, 2016).

Criteria that seek to steer the siting of subsidized rental housing developments to areas with amenities that result in household-level transportation cost savings are already embedded in some of the programs that allocate existing funding streams. For instance, as of 2014, 27 of the 50 states awarded additional points to applicants seeking LIHTCs who proposed projects near transit stations, and 24 awarded points to projects within walking distance of neighborhood amenities such as banks and schools (Zuk and Carlton, 2015).

However, calls for a more explicit link between evaluation criteria for the allocation of affordable housing subsidies and location affordability are beginning to emerge. For instance, Tremoulet, Dann, and Adkins (2016) recommended that Oregon add location affordability to its Qualified Allocation Plan (QAP) governing the disbursement of LIHTCs. Similarly, Hamidi, Ewing, and Renne (2016) presented empirical results that support apportioning HUD subsidies to location-affordable neighborhoods, which they argued is of greatest importance within auto-dependent regions. They argued that their results also support an equivalent argument applied to other funding streams, particularly the LIHTC. Because one recent study found that LIHTC developments are more location-affordable than housing in general, but still have considerable room for improvement (Adkins, Sanderford, and Pivo, 2017), it stands to reason that explicit location affordability requirements implemented as part of state QAPs would alter their locational patterns. However, might there be a risk of a conflict with Fair Housing Act arguments?

Fair Housing Act: a longstanding but contested tradition

Goetz (2015) traces the Fair Housing Act movement in the United States back to the 1950s. He argues that it has encompassed two prongs. The first is a fight to contest discrimination in the sale or rental of housing, wherever it occurs, which is an aspatial strategy and relatively uncontroversial among those generally in support of greater housing options for the poor. The second is to achieve racially and ethnically integrated communities, which is an inherently spatially-focused approach. This is where internal tensions have arisen within the Fair Housing Act community (Goetz, 2015).

What might be termed the "integration" objective itself focuses on three subsidiary goals. These are, in order of an increasing level of governmental intervention required, the "opening up" of predominantly White (usually suburban) communities to affordable housing; ending governmental actions that preserve or create racialized enclaves; and public and private action to eliminate already existing racialized enclaves (Goetz, 2015). The concerns we raise in this article relate primarily—although not exclusively—to the second and are informed by past efforts by Fair Housing Act advocates to contest the construction of new subsidized rental housing developments in predominantly Black or Hispanic neighborhoods.

Underlying the internal tensions among those generally sympathetic to the Fair Housing Act movement and legal tradition is, at base, a fundamental disagreement between those who prioritize aggressive action to introduce affordable housing into high-opportunity areas and those who advocate above all for community development in existing disadvantaged neighborhoods (Goetz and Chapple, 2010). As we discuss in the following, the rise to prominence of location affordability may be opening a new front in the long-running schism within the Fair Housing Act movement.

Emerging critiques of location affordability invoking the Fair Housing Act

Although much of the emergent location affordability literature summarized earlier does not examine geographical patterns by race, studies that have done so recently have found some disquieting patterns. For instance, Koschinsky and Talen (2016) found that, although some

of the nation's 3.8 million HUD-assisted tenants have greater opportunities to access walkable neighborhoods—generally those neighborhoods with lower transportation costs—than they would in the absence of those subsidies, disadvantaged tenants benefit less. Specifically, those Hispanic and Black tenants living within walkable neighborhoods and receiving Project-Based Section 8 subsidies or Housing Choice Vouchers, or living in public housing, tend to live in racially isolated and high-poverty areas. Similarly, in an examination of single-parent, low-income renter families with children in the 100 largest metros, another study found that a one-quintile increase in a child opportunity index resulted in a 2.5-point increase in the "H" (housing) component of the LAI but also a 0.6-point increase in "T" (transportation; Acevedo-Garcia et al., 2016). The clear implication: "Policies that rely on a definition of affordability that combines housing and transportation costs alone, such as the LAI, risk directing low-income families to low-opportunity neighborhoods, which may eventually result in poorer child outcomes" (Acevedo-Garcia et al., 2016: 624).

Thus, incorporating location affordability into siting decisions for subsidized housing is risky: it could make an already bad situation worse, because newly-constructed affordable housing has largely failed to further the integration goals of the Fair Housing Act agenda. For instance, 71 percent of LIHTC units within New York City and seven surrounding counties in New York state opened between 1998 and 2007 are in areas of high or extreme poverty, and fully 77 percent are in neighborhoods with a majority minority population (Kawitzky et al., 2013). Relatedly, LIHTC-funded developments have tended to locate in submarkets within metropolitan areas with little or no overall shortage of housing (McClure, 2010), even if they have been more likely to be built in the suburbs than developments funded by earlier direct assistance programs (McClure, 2006).

However, if the current record of LIHTC-funded developments in fostering integration is middling, nationally-prominent Fair Housing Act activists are now raising concerns that incorporating location affordability into siting decisions could make it worse (Tegeler and Chouest, 2010; see also Tegeler's argument against Bernstein in Tegeler and Bernstein, 2013). These concerns are amplified still further by two recent developments that make successful Fair Housing Act challenges to LIHTC developments sited in disadvantaged neighborhoods more likely than before.

The first is the U.S. Supreme Court's 2015 ruling in the case of *Texas Department of Housing & Community Affairs v. Inclusive Communities Project, Inc.* The court accepted the Dallas-based plaintiffs' use of the broad "disparate impact" legal theory. The plaintiffs used this theory to challenge the State of Texas' LIHTC allocation procedures, which had resulted in LIHTC developments in Dallas being overwhelmingly sited in low-income, predominantly Black and Hispanic neighborhoods. This decision sets a far-reaching precedent for future challenges (Epstein et al., 2015). Consequently, the State of Texas completely overhauled its QAP, which now heavily emphasizes location within low-poverty neighborhoods and high-performing school districts, criteria that in Texas metropolitan areas almost always lead towards neighborhoods that are *not* "low T," that is, places where residents have few transportation choices other than automobiles.[1]

1 To cite one admittedly anecdotal but striking example, three of the four 9-percent LIHTC awards allocated to the Austin metropolitan area in 2016 were given to developments located along a 2-mile stretch of road in suburban, overwhelmingly auto-dominated Georgetown (TDHCA, 2016).

The other major recent development in fair housing was HUD's unveiling of the Affirmatively Furthering Fair Housing (AFFH) standard for local governments and other governmental entities that accept HUD funding (HUD, 2015). This standard has since been deferred under the Trump administration. Although the long-term probability of this mandate existing and the level of impact it will have if reinstated are still uncertain, many observers have interpreted it as a portend of sharpened federal scrutiny of local and state actions that hurt efforts to overcome historic patterns of segregation.

Even considering these developments, it is a complex legal question whether the likelihood of success is heightened for a legal challenge that established that incorporating location affordability criteria into siting decisions for LIHTC developments would tend to steer them even more strongly towards Black and Hispanic-majority neighborhoods than at present. However, even aside from possible future legal issues, the basic empirical question is whether this intensified steering would be the likely outcome, to which we now turn.

Description of data sets and methods

The primary goal of this article is to explore variation in transportation costs across regions and identify what this means for Fair Housing Act goals. This article uses three primary data sources to explore this question. First, it uses U.S. Census data from the 2000 and 2010 decennial censuses along with the 2012–2016 American Community Survey to identify demographics, and changes in demographics, over time. Second, it uses the Center for Neighborhood Technology's H+T Affordability Index to identify tract-level housing and transportation costs. This affordability index divides estimated average housing and transportation costs in a census tract by metropolitan median income to predict what share of income a typical household would likely spend on housing and transportation (Center for Neighborhood Technology, 2017). Finally, the article uses the National Housing Preservation Database to identify the location of all LIHTC properties. These three data sets, used in combination, allow us to look at how tract-level racial composition relates to housing and transportation costs and the location of units developed through the LIHTC program.

The nature of this analysis is associative rather than causal. In taking this approach, we follow the type of evidence often presented in Fair Housing Act jurisprudence, which emphasizes correlations between key variables rather than causal relationships. If a relevant association exists—in this case, between the presence of LIHTC developments, location affordability, and the percentage of Black and Hispanic residents at the tract level—then an action that further reinforces it is likely to be problematic from a Fair Housing Act standpoint. Two dominant theories explain why minority households are likely to concentrate in tracts with low transportation costs. The first, and most significant, is that contemporary and historical racial and socioeconomic discrimination in zoning and housing policy and practices prevented minority households from moving to suburban, and higher opportunity, neighborhoods and accessing mortgages (Kain 1992; Massey and Denton, 1993; Levine, 2010; Rothstein, 2017). The second is that low-income households and minority households concentrate in cities specifically to take advantage of lower transportation costs (Glaeser, Kahn, and Rappaport, 2008). For a subset of Hispanic households, another plausible but

partial explanation may relate to immigrants' higher likelihood of using transit, walking, biking, and carpooling relative to the native-born (Chatman and Klein, 2009).

We begin by providing a series of descriptive tables that show housing and transportation costs across the country. We then use several linear regressions to further explore the relationship between race and housing costs, race and transportation costs, subsidized housing and race, subsidized housing and housing costs, and subsidized housing and transportation costs within and across metropolitan areas. To account for variation within metropolitan areas and the metropolitan nature of housing and transportation markets, we include fixed effects for each metropolitan area.

Analysis

Across the United States, Black and Hispanic households are disproportionately concentrated in neighborhoods that rank well in terms of transportation affordability. Across the 66,256 census tracts for which housing and transportation cost data is available, clear differences in transportation costs by race emerge (exhibit 1). In general, minority households tend to live in census tracts with lower transportation costs, whereas White households[2] tend to live in higher transportation cost tracts.

Exhibit 1

Transportation Costs at Tract Level by Quintile and Race (1 of 2)

Race	Transportation Cost Quintile	Region		Percentage Point Change 2000-2016 for USA	Percentage Point Change 2000-2016 for Top 25 MSAs
		USA (Overall Sample)	Top 25 MSAs		
Share non-Hispanic White alone	1	12.6%	13.0%	– 2.0%	0.6%
	2	17.5%	14.1%	– 3.5%	– 2.6%
	3	21.1%	17.9%	– 0.5%	– 3.2%
	4	24.5%	24.9%	3.4%	– 0.4%
	5	24.2%	30.1%	2.6%	5.6%
	Total for Whites	100.0%	100.0%		
Share non-Hispanic Black alone	1	27.3%	27.3%	– 4.0%	– 5.7%
	2	20.5%	24.7%	– 1.2%	– 1.4%
	3	20.7%	22.6%	2.5%	0.4%
	4	16.8%	15.5%	2.6%	3.4%
	5	14.5%	9.7%	0.1%	3.4%
	Total for Blacks	100.0%	100.0%		

2 In the rest of this article we follow the standard convention and use the term "White" to refer to people who identify solely as White non-Hispanic. "Black" refers to those who identify solely as Black as well as non-Hispanic. "Hispanic" refers to all who identify as "Hispanic" or "Latino" regardless of racial identification.

Exhibit 1

Transportation Costs at Tract Level by Quintile and Race (2 of 2)

Race	Transportation Cost Quintile	Region		Percentage Point Change 2000-2016 for USA	Percentage Point Change 2000-2016 for Top 25 MSAs
		USA (Overall Sample)	Top 25 MSAs		
Share Hispanic	1	26.5%	22.3%	– 5.6%	– 5.4%
	2	22.7%	23.9%	– 1.3%	– 2.1%
	3	20.7%	21.9%	2.5%	0.5%
	4	15.6%	18.3%	3.6%	3.0%
	5	14.3%	13.5%	0.9%	4.1%
	Total for Hispanics	100.0%	100.0%		

The same relationship holds true when looking at only the largest 25 MSAs in the country, a subset of metros that we repeatedly examine in the remainder of the article to focus analysis on the places where non-car transportation is generally most viable. In the top 25 MSAs, only 13 percent of Whites live in tracts in the lowest quintile of transportation costs, compared to 27 percent of Blacks and 22 percent of Hispanics.[3]

Across the 25 largest MSAs, we can see considerable differences in the distribution of transportation costs by race.[4] For example, only 16 percent of Black residents live in tracts in the lowest quintile of transportation costs in the Seattle MSA, whereas 48 percent in the San Francisco MSA live in such tracts (appendix A). In addition, just over 2 percent of Blacks in Chicago live in the highest quintile of transportation costs, whereas 20 percent do in Boston. Regardless of the variation, across all of the major MSAs in the country, the general reality is that lower transportation cost areas tend to be exceedingly Black and Hispanic.

As seen in exhibit 1, there appears to be a general movement of all races away from lower transportation quartiles, but this movement is roughly within the error term of the data and should therefore be interpreted cautiously. However, it is important to note that movement of households across metropolitan areas varies (appendix B). For example, between 2000 and 2016, the share of Black households who were in the lowest quintile of transportation costs in Philadelphia decreased 32 percentage points, whereas in San Francisco, it increased 26 percentage points. During this time, the share of Hispanic households in the lowest quintile of transportation costs in Boston decreased 27 percentage points, whereas again in San Francisco, it increased almost 19 percentage points. Several realities could explain these trends. In many metropolitan areas, a demographic "inversion" has occurred, with higher income households moving to the center of cities where transportation costs are often lower, and lower income households moving further from the

3 Quintiles were calculated at the metropolitan level and represent the relative distribution of rents, transportation costs, location of LIHTC units, and race of the head of household within each metropolitan area.

4 Even though the Census makes a distinction between respondents' race (White vs. Black vs. Asian vs. American Indian vs. more than one race, and so on) and ethnicity (Hispanic or non-Hispanic), in the rest of this article we use the term "race" as shorthand for a distinction between White non-Hispanics, Black non-Hispanics, and Hispanics. We focus our analysis on these three groups, since together they comprise a supermajority (93%) of the U.S. population and receive the most attention in fair housing jurisprudence, advocacy, and scholarship.

center city to areas where transportation costs are higher (Ehrenhalt, 2012; Edlund, Machado, and Sviatschi, 2015). In addition, population growth has been greater in these higher cost transportation areas, as urban core neighborhoods gain little population and as outward greenfield urbanization continues much as it has for decades (Landis, 2017).

To examine the strength and statistical significance of these relationships within and across metropolitan areas, we predict transportation costs as a function of race using linear regression. As seen in exhibit 2, a 1-percentage point increase in the share of Black households in a tract is associated with a 5.5-percentage point decrease in transportation costs. For Hispanics, the corresponding drop is 5.9 percentage points. The magnitude remains roughly the same even when controlling for differences across MSAs and restricting the sample to the largest MSAs in the country (exhibit 2).

Exhibit 2

Linear Regression of Transportation Costs at Tract Level on Race

		Base Model	With MSA Fixed Effect	Top 25 MSAs w/ MSA Fixed Effect
Intercept	Estimate	25.423***	32.592***	25.328***
	Standard Error	0.034	0.043	0.113
Percent non-Hispanic Black alone	Estimate	– 5.544***	– 4.499***	– 5.079***
	Standard Error	0.107	0.067	0.095
Percent Hispanic	Estimate	– 5.874***	– 4.667***	– 4.662***
	Standard Error	0.109	0.082	0.102
	Sample Size	66,256	66,256	27,517
	R2	0.070	0.714	0.597

***p<0.01, **p<0.05, *p<0.1

Next, we can see variation in housing costs by race (exhibit 3). On the whole, minority households tend to live in tracts with lower housing costs. We know that the levels of services and amenities in a neighborhood are often capitalized into housing costs, which means that these lower costs likely reflect lower opportunity neighborhoods. Again, similar to transportation costs, housing costs by race across regions vary significantly. For example, as seen in appendix C, more than 52 percent of Black households in the Philadelphia MSA live in tracts in the lowest quintile of housing costs, whereas only 19 percent do in San Antonio. On the other end of the cost spectrum, just over 5 percent of Blacks in Baltimore live in the highest housing cost quintile of their MSA, whereas nearly 20 percent do in the Riverside-San Bernardino MSA. Although the distribution of Blacks and Hispanics across the housing cost spectrum is similar in many ways, some notable differences exist. For example, more than 50 percent of Hispanics in the Boston MSA live in the lowest housing cost quintile, whereas only 38 percent of Blacks live in such tracts. Again, the linear regression confirms these relationships (exhibit 4), but it also highlights the considerably higher housing costs for Blacks and Hispanics in the top 25 MSAs relative to the rest of the country. Interestingly, the share Black or Hispanic in a tract explains nearly 43 percent of the variation in housing costs in the top 25 MSAs. This reality shows the distinct Fair Housing Act challenges in the major urban areas of the United States.

Exhibit 3

Housing Costs at Tract Level by Quintile and Race

Race	Housing Cost Quintile	Region	
		USA (Overall Sample)	Top 25 MSAs
Share non-Hispanic White alone	1	11.5%	9.0%
	2	18.2%	15.4%
	3	22.0%	20.3%
	4	24.1%	25.5%
	5	24.1%	29.8%
Share non-Hispanic Black alone	1	33.2%	33.9%
	2	23.7%	24.1%
	3	18.4%	18.8%
	4	14.6%	14.8%
	5	9.8%	8.1%
Share Hispanic	1	23.0%	29.1%
	2	21.6%	24.8%
	3	20.1%	20.5%
	4	18.4%	15.5%
	5	16.7%	10.0%

Exhibit 4

Linear Regression of Housing Costs on Race, by Tract

		Base Model	With MSA Fixed Effect	Top 25 MSAs w/ MSA Fixed Effect
Intercept	Estimate	34.143***	32.028***	39.407***
	Standard Error	0.055	0.103	0.314
Percent non-Hispanic Black alone	Estimate	– 15.718***	– 18.506***	– 20.093***
	Standard Error	0.172	0.160	0.263
Percent Hispanic	Estimate	– 8.421***	– 24.781***	– 27.238***
	Standard Error	0.175	0.196	0.284
	Sample Size	66,256	66,256	27,517
	R2	0.129	0.401	0.427

***p<0.01, **p<0.05, *p<0.1

As seen in exhibit 5, nationally, a 1-percentage point increase in the share of Black households in a census tract is associated with 87 more LIHTC units in a tract, and 106 more units in the top 25 MSAs. Similarly, nationally, a 1-percentage point increase in the share Hispanic is associated with nearly 45 more units in a tract, and 62 in the largest 25 metro areas. On the one hand, these patterns raise concerns about LIHTC units being disproportionately located in areas with a high share of Black and/or Hispanic households. Conversely, as seen in exhibit 6, LIHTC units tend to be in tracts with lower transportation costs, particularly in the top 25 MSAs. In fact, as seen in exhibit 7, more than 46 percent of existing LIHTC units are in tracts with the lowest transportation costs, and this number is as high as 61 percent in the New York MSA (appendix D). Similarly, few MSAs have LIHTC units

located in the highest transportation cost tracts. For example, fewer than 2 percent of LIHTC units are in tracts in the highest quintile of transportation costs in the Seattle MSA.

Exhibit 5

Linear Regression of LIHTC Units and Race, by Tract

		Base Model	With MSA Fixed Effect	Top 25 MSAs w/ MSA Fixed Effect
Intercept	Estimate	13.288***	11.482***	23.316***
	Standard Error	0.538	1.201	4.059
Percent non-Hispanic Black alone	Estimate	87.380***	97.332***	105.928***
	Standard Error	1.683	1.868	3.397
Percent Hispanic	Estimate	44.845***	60.471***	61.988***
	Standard Error	1.716	0.196	0.284
	Sample Size	66,256	66,256	27,517
	R2	0.045	0.065	0.054

***p<0.01, **p<0.05, *p<0.1

Exhibit 6

Linear Regression of LIHTC Units and Transportation Costs, by Tract

		Base Model	With MSA Fixed Effect	Top 25 MSAs w/ MSA Fixed Effect
Intercept	Estimate	86.732***	200.361***	238.078***
	Standard Error	1.460	3.510	6.072
Transportation Cost	Estimate	– 2.268***	– 5.524***	– 7.447***
	Standard Error	0.060	0.104	0.202
	Sample Size	66,256	66,256	27,517
	R2	0.021	0.058	0.058

***p<0.01, **p<0.05, *p<0.1

Exhibit 7

Transportation Costs of LIHTC Units by Quintile and Race

	Transportation Cost Quintile	Region	
		USA (Overall Sample)	Top 25 MSAs
Share of LIHTC Units	1	33.8%	46.1%
	2	22.7%	22.6%
	3	18.1%	15.4%
	4	14.3%	10.4%
	5	11.1%	5.6%

Discussion

With increasing concerns about housing affordability, the idea of including transportation costs in location affordability measures is an important and worthwhile goal. However, the concept of location affordability does not come without tradeoffs. In this article, we show that transportation

and housing costs are strongly associated with race. As a result, policies that aim to decrease housing and transportation costs may steer units into areas with high minority populations, an outcome that runs counter to Fair Housing Act goals.

The LIHTC program is currently the largest affordable housing financing program in the United States, which means it is often viewed as a vessel for addressing some of our broader policy goals. Evidence shows that LIHTC properties increase local property values (Ellen et al., 2007), particularly when located in more distressed areas (Diamond and McQuade, 2016). This highlights an important positive externality of the program, which could support efforts that prioritize LIHTC units in more distressed neighborhoods. However, such siting has a disparate impact of furthering segregation. Incorporating location affordability metrics that aim to reduce transportation costs poses the same risk of increasing segregation as opposed to remedying it.

Several solutions can reconcile the tension between location affordability and fair housing. As discussed in this article, the relationship between location affordability and race varies across regions, which makes the case for using data to better estimate the Fair Housing Act implications of location affordability policies. Policies around location affordability may be less risky when implemented within a given city (that is, as a way of allocating locally generated funds to subsidize affordable housing) than statewide. This is challenging because in many states the Qualified Allocation Plans (QAP) that determine the point structure in the LIHTC program are determined at the state level. New York City and Chicago, which receive their own allocation of LIHTC financing, are well positioned to develop location affordability goals that better align with local Fair Housing Act needs. Statewide QAPs have room to include a requirement for the applicant to show how location affordability affects fair housing in the point structure.

In exhibit 8, we show the number and share of tracts in each metropolitan area that are both 1 standard deviation below the mean transportation cost for the metropolitan area *and* 1 standard deviation above the mean share White for the metropolitan area. This measure is not perfect, but it shows that fewer than 1 percent of tracts meet the 1 standard deviation criteria in San Antonio and more than 60 percent do in Boston. We do the same analysis at a more stringent standard of 1.96 standard deviations from the mean, and naturally the number of tracts goes down, but is still rather large in places like Boston and Minneapolis. Measures like this do not account for existing zoning or neighborhood resistance to housing development, both of which affect the ability to actually build multifamily properties. In addition, metropolitan areas cross city and state lines, which means the LIHTC units in any given metro can be governed by more than one QAP. However, this exercise shows that existing data can, and should, be used when factoring location affordability into decisions about the location of properties that receive LIHTCs or other forms of subsidy.

Exhibit 8

Tracts with Low Transportation Cost and High Share Non-Hispanic White Alone Households (1 of 2)

MSA Name	Tracts at 1 SD	% of Tracts	Tracts at 1.96 SD	% of Tracts
New York-Newark-Jersey City, NY-NJ-PA	1,389	29.9%	911	19.6%
Los Angeles-Long Beach-Anaheim, CA	199	6.8%	106	3.6%
Chicago-Naperville-Elgin, IL-IN-WI	21	20.4%	5	4.9%

Exhibit 8

Tracts with Low Transportation Cost and High Share Non-Hispanic White Alone Households (2 of 2)

MSA Name	Tracts at 1 SD	% of Tracts	Tracts at 1.96 SD	% of Tracts
Dallas-Fort Worth-Arlington, TX	125	9.5%	56	4.2%
Houston-The Woodlands-Sugar Land, TX	54	5.1%	25	2.4%
Washington-Arlington-Alexandria, DC-VA-MD-WV	395	29.5%	292	21.8%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	627	42.8%	412	28.1%
Miami-Fort Lauderdale-West Palm Beach, FL	66	5.5%	23	1.9%
Atlanta-Sandy Springs-Roswell, GA	43	4.7%	30	3.2%
Boston-Cambridge-Newton, MA-NH	662	66.3%	543	54.4%
San Francisco-Oakland-Hayward, CA	186	19.1%	110	11.3%
Phoenix-Mesa-Scottsdale, AZ	76	7.8%	27	2.8%
Riverside-San Bernardino-Ontario, CA	5	0.6%	0	0.0%
Detroit-Warren-Dearborn, MI	123	9.5%	31	2.4%
Seattle-Tacoma-Bellevue, WA	322	45.2%	177	24.9%
Minneapolis-St. Paul-Bloomington, MN-WI	467	59.3%	348	44.2%
San Diego-Carlsbad, CA	113	18.1%	41	6.6%
Tampa-St. Petersburg-Clearwater, FL	59	8.0%	31	4.2%
Denver-Aurora-Lakewood, CO	283	46.3%	184	30.1%
St. Louis, MO-IL	95	15.5%	42	6.8%
Baltimore-Columbia-Towson, MD	263	39.0%	182	27.0%
Charlotte-Concord-Gastonia, NC-SC	23	4.2%	10	1.8%
Portland-Vancouver-Hillsboro, OR-WA	232	47.3%	146	29.7%
Orlando-Kissimmee-Sanford, FL	9	2.3%	1	0.3%

Another policy suggestion is to conduct a state-level Fair Housing Act analysis before implementing any location affordability criteria within QAPs. If racial integration objectives are to be prioritized over siting in "low T" locations, QAPs and other mechanisms could incentivize measures that would offset the transportation costs that come with car-dependent locations. These might include elements as varied as the provision of on-site childcare; partnerships with local efforts to link tenants to low-cost cars or safe car loans; or the provision of an onsite shuttle bus that connects to job clusters, shopping, or transit hubs that are beyond walking distance. Finally, incentives, or programs, that reduce transportation costs in higher opportunity, largely White, neighborhoods should be coupled with mandates that enable low-income minority households to access these areas.

In this article, we highlight an important reality, which is that housing and transportation costs are strongly associated with race. This means that if we establish a policy goal aimed at reducing transportation costs in the siting of subsidized housing, then we are more likely to steer these units toward neighborhoods that already have high concentrations of Black or Hispanic residents, contrary to Fair Housing Act objectives. Given the current concentration of Black and Hispanic households in low transportation cost areas, we need to use the data at our disposal to develop clear and informed policies that reduce segregation and maximize location affordability.

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