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Challenges in the Creation of Mixed-Use Affordable Housing: Measuring and Explaining Its Limited Prevalence

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ABSTRACT

Mixed-use affordable housing buildings collocate residences and commercial uses. The Low-Income Housing Tax Credit (LIHTC) program provides one mechanism to fund such structures. But the literature offers little insight into the frequency of mixed-use LIHTC buildings, partly because of a lack of data identifying them, and it does not pinpoint conditions that facilitate their development. I explore these issues through a Chicago, Illinois, case study. First, I analyze imagery to create the first database of mixed-use LIHTC buildings. I show that only 5% of LIHTC structures incorporate commercial uses, and that these are concentrated in wealthier, whiter, and already retail-heavy neighborhoods. Second, I use stakeholder interviews to explain the low rate and selective location of mixed-use projects; I find that the stiffest barriers are conflicting governmental policies, difficulties securing financing in the context of a perception of weak retail demand and investor desires for reliable returns, and design constraints.

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Affordable housing projects mixing residential and commercial components are cited as marquee investments in many American cities. Advocacy for such mixed-use design, which typically combines ground-floor retail with upstairs apartments, is widespread among planners, public officials, and neighborhood groups. Many promote it as a mechanism to add vitality to urban environments by encouraging street-level pedestrian activity. Others see commercial uses as key to community revitalization, connecting the residents of low-amenity neighborhoods to additional resources; mixed-use designs offer the chance to kill two birds with one stone in places bereft of adequate housing and commercial activity. Yet as I show in the following section, the scholarship on affordable mixed-use development still has two major blind spots: we have yet to identify the frequency of such projects, and we have an insufficient understanding of the conditions that facilitate or hinder their completion.

This study endeavors to fill this twofold gap. To do so, it employs two empirical approaches. First, I take advantage of a geospatial analysis to determine the prevalence of commercial uses among Low-Income Housing Tax Credit (LIHTC) developments in a case study city, Chicago, Illinois. I find that mixed-use designs are rare, accounting for only about 9% of Chicago projects and just 5% of their component buildings. Moreover, in-building commercial uses are far more pervasive in wealthier, whiter, and already retail-heavy neighborhoods, suggesting that the LIHTC program is furthering inequitable access to commercial uses. Second, I use interviews with key stakeholders to understand the conditions that encourage or discourage them from undertaking such projects. I identify three key barriers that together explain the low rate of such developments: government

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Supplemental data for this article can be accessed here.
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policies that conflict with one another and, overall, prioritize housing over other uses; difficulties securing financing in the context of a perception of weak market demand for retail and investor focus on reliable returns over broader resident needs; and design constraints. These structural conditions inhibit mixed-use affordable housing construction from being more commonplace. I conclude by recommending regulatory changes that could increase the number of mixed-use projects, and discuss whether prioritizing this approach should be a policy goal for the LIHTC program.

Context for This Study

The separation of uses frequently espoused by mid-century planning in many American cities produced isolated, monofunctional construction, exemplified by public housing towers, but that sort of design has lost its prominence since the 1970s. For more than three decades, the influential New Urbanist movement has pushed for mixed-use projects, which collocate housing and commercial use in the same building, as an indispensable urban design element (Talen, 1999), particularly on infill sites and at the center of major developments (Duany, Plater-Zyberk, Krieger, & Lennertz, 1991). This combination of uses is described as an approach to improve livability by enlivening streetfronts while increasing residential density. The U.S. Department of Housing and Urban Development (HUD) has advanced this design philosophy in many redevelopments that it funds (Arigoni, 2001; Cisneros & Engdahl, 2009; U.S. Department of Housing and Urban Development, 1999); one prominent example is the North Beach Place in San Francisco, California, which includes 341 apartments above a grocery store.

Mixed-use buildings also potentially offer a mechanism to expand access to opportunity for low-income people. The segregation of a subset of poor, minority residents into *de-institutionalized ghettos*, such as mid-20th century public housing, reinforced patterns of limited access to local businesses and isolation of subsidized housing residents from community resources (Venkatesh, 2000; Wilson, 1990, 1995). This has led to a scholarly focus on the influence of neighborhood characteristics on life outcomes including test scores (Ellen & Horn, 2012), crime (Lens, Ellen, & O'Regan, 2011), and employment (Lens, 2014), and examinations of issues such as access to food stores among poor communities (Morland, Wing, Rous, & Poole, 2002; Orfield, Stancil, Luce, & Myott, 2015; Sharkey & Faber, 2014; Small & McDermott, 2006; Steil, De La Roca, & Ellen, 2015).[1] Such neighborhood uses may play an important role in offering connections that fill the gap for people who otherwise lack access (Allard & Small, 2013, p. 9) and offer support for working families in need of prepared food and other goods (Hayden, 2003). Making such links can be accomplished in multiple ways—including adding retail to nearby blocks or improving transportation options—but affordable mixed-use projects serve multiple purposes, all on one site: community inhabitants residing in subsidized housing above and new urban amenities such as groceries and restaurants below.

Because of the special role of the public sector in setting design guidelines, subsidizing projects, and attempting to revitalize urban neighborhoods, U.S. affordable housing policy offers a useful entry point to explore mixed-use development. This study focuses on the LIHTC program because it is the most common approach now used to fund affordable housing construction in the United States, and it has produced about 2.5 million units so far (Marcuse, 1995; Vale & Freemark, forthcoming). It supports housing developers by distributing tax credits *syndicated* through third parties in exchange for an affordability guarantee. Local and state government involvement in LIHTC is concentrated on selecting winners among competing private and nonprofit development proposals through Qualified Allocation Plans (QAP), policy statements that define how agencies prioritize tax-credit allocation (Erickson, 2006; Wallace, 1995) and which influence project locations (Ellen & Horn, 2018; Nedwick & Burnett, 2015). QAPs incentivize certain project characteristics, such

as siting, amenities, and unit counts, as determined by each state.[2] As I show in the findings section, the majority of state QAPs endorse the goal of encouraging resident access to retail uses. Winning projects come in a large variety of forms, including mixed-use buildings.

If we are to assess the scope of such development in the urban landscape, we must identify which forms of LIHTC projects are being privileged, and understand the motivations of, and interactions between, public, private, and nonprofit organizations involved in their development. Yet scholars have thus far offered little insight into how typical commercial uses are within affordable housing projects, in part because the data that would be necessary to distinguish mixed-use projects from monofunctional ones are largely missing. This study begins to answer this question by enhancing and combining existing sources of data in a case study city, as I will describe in the following section.

The literature *does* provide insight into how close LIHTC projects are to *neighboring* commercial uses that are not themselves part of those projects. Several researchers have studied the degree to which affordable housing has been placed in walkable, mixed-use communities, incorporating questions of access to nearby stores (Houston, Basolo, & Yang, 2013; Kim & Woo, 2016; Koschinsky & Talen, 2015; Nedwick & Burnett, 2015; Talen & Koschinsky, 2014). Steffel-Johnson and Talen (2008) and Talen (2013) conducted surveys to understand how affordable housing is incorporated into mixed-income, walkable neighborhoods with New Urbanist designs. They identified considerable obstacles to such combinations at the neighborhood scale, focusing specifically on the challenges of assembling adequate financing—a theme that extends to mixed-use construction, as I find below. There is little available research on the social consequences of mixed-use projects, other than in terms of transportation impacts (Rabianski, Gilber, Tidwell, & Clements, 2009), and given a lack of empirical evidence on the subject, there are reasons to be skeptical about whether such developments serve the goal of increasing social equity. These issues are beyond the scope of this study, which does not weigh in on their benefits and does not pass judgment on whether they should become more commonplace.[3]

Whereas the literature on mixed-use construction is sparse, several descriptive articles evaluate individual projects (e.g., Salama, 1999), and the broader HOPE VI (e.g., Clancy & Quigley, 2001) and Choice Neighborhoods grants (e.g., Pendall & Hendey, 2013), both of which have produced many mixed-use buildings. Moreover, anecdotal evidence suggests that new construction of mixed-use affordable housing buildings is uncommon (Jones & Serpas, 2016; Zipperer, 2006).[4] But we do not have a systematic evaluation of the conditions of their development, an issue with which this study engages through interviews.

Data and Methods

Quantification of Mixed-Use Projects

I focus this research on developments within the city of Chicago, which contains many LIHTC projects featuring a variety of built forms in a multitude of urban settings. Chicago has a diverse real estate market, including low-income, low-density, largely residential communities with little private investment and high levels of vacancy; highly sought-after districts such as the tower-laden, high-income downtown; and virtually everything in between. In addition, it has a multistakeholder, public- and private-sector environment involved in housing development. Together, it encompasses conditions present in many American cities, from down-and-out, impoverished locales to wealthy boomtowns, but it is important to note that the findings of this study should be interpreted as directly reflective of one city's circumstances.

To explore conditions in Chicago, I take advantage of the HUD LIHTC Database (U.S. Department of Housing and Urban Development, 2016), which provides detailed information about the characteristics of affordable housing projects around the country. It includes project location, number

of housing units, and year opened, and it is frequently used by researchers examining the LIHTC program because it is the most comprehensive database of tax-credit projects (e.g., Ellen & Horn, 2012; Koschinsky & Talen, 2015).[5] As of 2014, the database identifies 451 individual projects in Chicago, composed of 41,372 housing units.

Yet this database offers no information about nonresidential uses within tax-credit properties, and it does not provide data at the *building* level, inhibiting measurement of mixed-use developments. California (but not Illinois or any other state I could locate information on) provides information on commercial uses in LIHTC projects, but these data are also not disaggregated to the building scale. This is a problem because LIHTC developments are often comprised of multiple structures and/or on scattered sites, and these are coded as if all of their units were located at a single geographical point. Yet there is a fundamental difference between a project with one retail store and 20 structures distributed across a community, and another with one structure and three retail stores, for example. This may explain why in my review of the literature I was unable to identify any effort to specifically quantify the presence of mixed-use buildings.

To prepare my data set, I took the LIHTC database, excluded duplicates and inactive projects, and refined the list to 410 projects with 38,714 units. The original database thus overestimates LIHTC unit count in the city by about 7%. I used Google Maps and Google Street View, which offer satellite and pedestrian-scale imagery of city streets, combined with other publicly available information,[6] to expand and improve information on each project. These tools allowed me to use photographs to decompose each LIHTC project into its constituent buildings, a necessary step to establish the presence of in-building mixed uses. Images were available for all LIHTC buildings and for all but 10 of the projects, these images were photographed between 2015 and 2017. A similar approach has been used successfully to accurately represent neighborhood environments in other contexts (Kelly, Wilson, Baker, Miller, & Schootman, 2013; Rundle, Bader, Richards, Neckerman, & Teitler, 2011). This method has the advantage of providing identical street-front and satellite perspectives from which to examine each building; this is an efficient manner to identify where each LIHTC building is located, the purpose of this step.

Through this process, I refined the location data for 334 of the projects, updated the names of 20 of the projects, and edited information on the years in which 18 of the projects were placed into service (about 5% of projects had no such information in the database in the first place). For 75 of the projects, I identified more than one building per development, and I pinpointed the location of each constituent building.

Through the construction of this data set, I identified 1,099 buildings forming part of active LIHTC developments in Chicago. Figure 1 illustrates the location of projects in the neighborhood around Humboldt Park, on Chicago's northwest side, to compare (a) HUD's original, one-point-per-project data set with (b) the refined multibuilding data set that I developed. This neighborhood (its location in the city as a whole is shown in Figure 2) was selected because of the clarity with which it shows the difference between these two data sets, but similar conditions can be found in many Chicago neighborhoods, such as Bronzeville or Woodlawn (see the online appendix).

To determine which of these buildings are mixed-use, I again used Google Street View to pinpoint publicly accessible commercial uses in each of the previously identified LIHTC buildings. Looking at the buildings using the photographs of each of their respective street frontages, I recorded all commercial uses indicated by visible signs (as well as storefronts denoted as vacant through *for lease* or similar signs); all were on the ground floor. It is worth noting that this approach has its limitations; it may not account for stores with small, hard-to-see signs, which may be more common in less wealthy neighborhoods. It also does not account for retail facilities *within* buildings (i.e., for residents only), although I found no evidence for these in Chicago. Although this approach is reliable in representing a neighborhood's characteristics in terms of building location and storefronts, it does not allow for the sort of on-the-ground, detailed examination of how retail works within its surroundings, which may be relevant for further interpretations of the urban design implications of mixed-use projects.

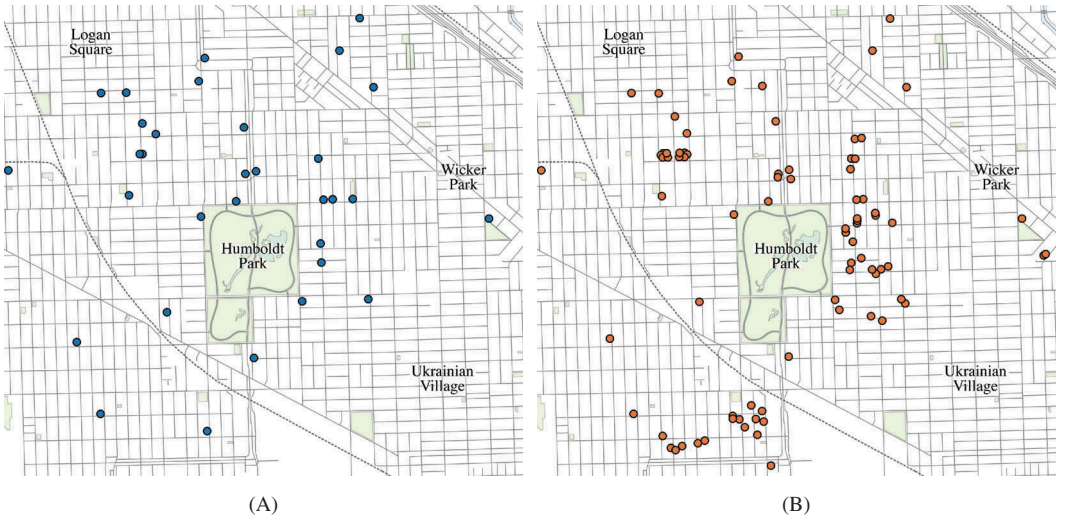

Figure 1. Humboldt Park neighborhood in Chicago. (a) U.S. Department of Housing and Urban Development data; (b) refined multibuilding data.

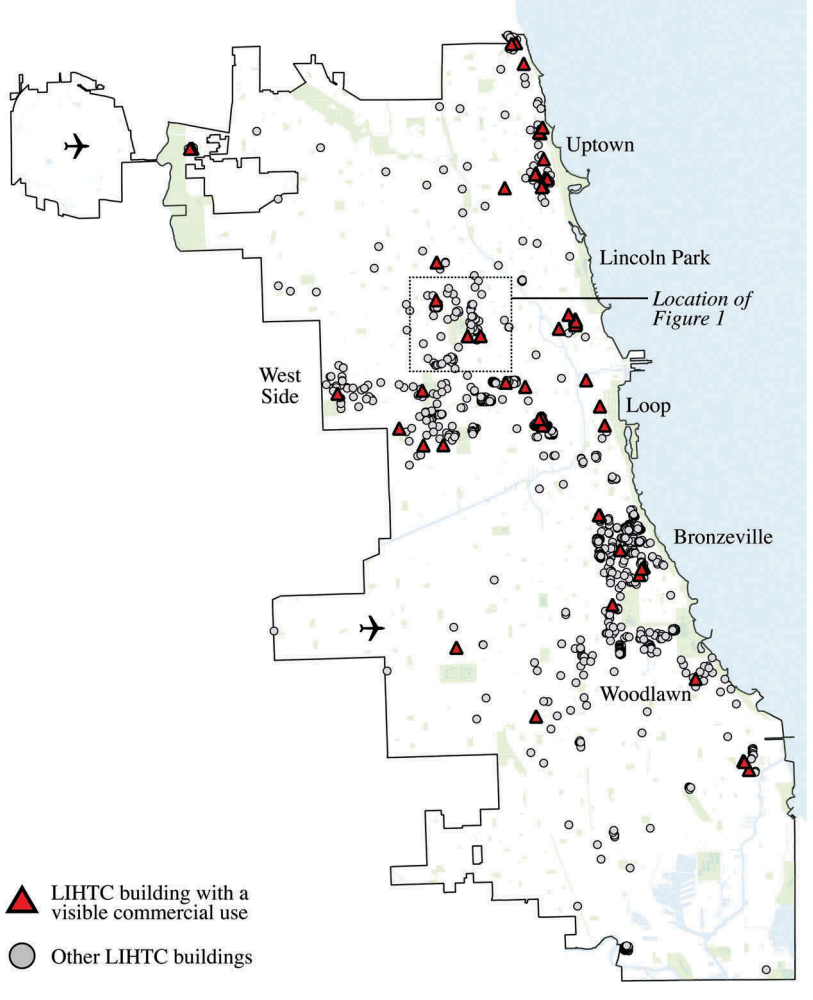

Figure 2. Location of Low-Income Housing Tax Credit (LIHTC) buildings in Chicago, Illinois, by presence of commercial uses.

I then undertook an analysis using geographic information system (GIS) software that identified each building's encompassing census tract, which I use as a proxy for its neighborhood (a common assumption; e.g., Lens, 2014). I collected tract-level data from the 2011–2015 American Community Survey (U.S. Census Bureau, 2016) on household incomes, share of inhabitants in poverty, and race to establish community characteristics. For each building, I used a GIS tool to create a quarter-mile buffer to determine the number of nearby food businesses, data originally sourced from the City of Chicago.

Interviews With Stakeholders

To further understand what explains the presence and location of mixed-use LIHTC projects, I conducted a series of in-person and over-the-phone interviews in 2017 with 30 stakeholders directly involved in the affordable housing development process. All but one of the interviewees was directly working in the Chicago real estate market; their collective experience offers deep understanding of relevant issues. To identify interviewees, I contacted representatives of all development firms that won LIHTC awards for Chicago projects from the State of Illinois between 2010 and 2015, I contacted individuals with whom I had professional connections, and I used snowball sampling to connect with others. Interviewees were approached via email and then signed a consent form (or, if interviewed over the phone, verbally consented), under a process approved by the Massachusetts Institute of Technology Institutional Review Board. Table 1 summarizes interviewee characteristics.

In a semi-structured format lasting on average 1 hour, all interviewees were asked questions about their affordable housing experience, their involvement in typical LIHTC projects, and their techniques in addressing issues related to mixed-use development. I asked each interviewee to focus on factors that support the presence of commercial uses in affordable housing, or, on the contrary, factors that make such uses difficult to implement. With permission, I recorded 26 of the interviews, and I took extensive notes on all of them. Data were stored on a password-protected server to ensure confidentiality.

Once interviews were completed, I transcribed conversations and coded statements line by line twice, then assembled them in Microsoft Excel to identify the most commonly mentioned issues. Colleagues in my department reviewed codes. I then grouped statements, noting contrasts in opinion, allowing me to assemble statements by theme, which I discuss below. I have chosen not to name any of my interviewees, and I generally do not note the organization they represent. This is to avoid potentially identifying one of the seven individuals who asked to remain anonymous.

Findings: Quantifying Mixed-Use LIHTC Projects Through Geospatial Analysis

Using the methods described above, I find that 9.0% of Chicago LIHTC developments and 5.4% of their constituent buildings incorporate a mix of uses, summarized in Table 2 and divided by retail

Table 1. Characteristics of interviewees.

Sector	Category	Number	Roles
Public	City government	3	Deputy Commissioner (2), Director of Real Estate Development
	State government	2	Managing Director, Planner
Private	Development firms	16	President (3), Vice President (7), Director of Development, Project Manager (2), Developer (2), Commercial Asset Manager
	Banking	2	Vice President, Investment Director
	Law	1	Attorney
Nonprofit	Community development financial institutions	4	Vice President (2), Director, Development Manager
	Advocacy nonprofits	2	Vice President, Director
	Total interviews	30	

Table 2. On-site mixed uses in Chicago Low-Income Housing Tax Credit projects.

	Category	Number	
On-site mixed uses	Projects	37 (9.0% of total)	
	Buildings	59 (5.4% of total)	Share chains with multiple outlets (%)
Type of publicly accessible commercial use	Food	26	42
	American/pizza/bar	9	11
	Café/desserts	8	75
	Sandwich	4	100
	Other	5	—
	Office	12	8
	Hair/nail salon	10	20
	Gym/fitness	7	43
	Health center	7	—
	Apparel/boutique	6	17
	Convenience store	4	—
	Bank	4	75
	Political office	4	—
	Art/theater	3	—
	Florist	3	67
	Pharmacy	3	67
	Cell phone store	2	100
	Mail shop	2	100
	Grocery	2	50
	Other	4	25
	Empty storefront	13	—
	Total commercial spaces	112	29

type.[7] Uses are oriented toward a mix of resident and neighborhood characteristics, ranging, for example, from Dunkin' Donuts to Edible Arrangements, from independent boutiques to Payless shoe stores, from community health centers to Core Power Yoga, and from Harold's, featuring chicken dinners starting at $3.25, to Francesca's, offering *Branzino con Capesante* at $30. Other than two large groceries and four small convenience stores, retail uses do not provide fresh food for home cooking. Table 2 highlights the share of stores of each type that is part of an outlet with multiple locations; chains are more common among food providers (there are three Starbucks coffee shops and three Subway sandwich outlets within Chicago LIHTC structures), and fitness and florist shops, and account for all of the cell phone stores and mail shops. On the other hand, boutiques and hair and nail salons are mostly independent outlets. Overall, about 29% of retail spaces are held by chains. The vacancy rate of storefronts (not of square footage, the more important figure for landlords) is about 12%.

Figure 2 illustrates the location of Chicago LIHTC buildings, identifying those with mixed uses. Many projects are located in clusters, especially in Bronzeville on the South Side, on the West Side generally, and in Uptown on the North Side. Table 3 summarizes a comparison of building location and the characteristics of surrounding communities, the product of the GIS analysis that I described in the preceding section. It shows that LIHTC buildings with commercial uses are typically in far different neighborhood environments than those without them. On average, when weighting by housing unit and comparing them with their encompassing census tracts (a), mixed-use buildings are found in communities with much wealthier inhabitants who are more than twice as likely to be white. At the same time, buildings with commercial uses are located within a quarter-mile of about three times as many nearby food businesses[8] as those without commercial uses—there are on average about 40 such businesses nearby, compared with just 13 otherwise. In other words, mixed-use LIHTC buildings are far more likely to be in already retail-dense neighborhoods. These differences are maintained even when just examining new-construction projects (b).

These findings demonstrate the rarity of mixed-use Chicago LIHTC buildings. The fact that those that do exist are concentrated in whiter, wealthier, and more retail-filled communities suggests that

Table 3. Average neighborhood characteristics of Low-Income Housing Tax Credit (LIHTC) buildings, weighted by unit.

	(a) All LIHTC buildings			(b) New-construction LIHTC buildings		
	No commercial uses	With commercial uses	Difference	No commercial uses	With commercial uses	Difference
Buildings	1,038	59		635	23	
Housing units	34,196	4,523		13,583	1,082	
Median household income	$31,918	$40,348	$8,430***	$35,855	$52,964	$17,109***
Households in poverty	36.4%	33.0%	− 3.4%	32.7%	27.2%	− 5.4%
Black (non-Hispanic)	64.3%	40.2%	− 24.2%***	58.7%	33.5%	− 25.1%***
White (non-Hispanic)	17.6%	38.4%	20.8%***	17.6%	36.4%	18.8%***
Latino	11.3%	9.9%	− 1.4%	15.6%	19.7%	4.1%
Food businesses within a quarter mile (excluding businesses within projects)	13.2	39.6	26.4***	12.5	31.9	19.3***

Note. Housing units are estimated for buildings as a share of the project total; for example, if a project has 100 units and 10 buildings, each building is estimated to have 10 units. Sources: American Community Survey 2011–2015 data (U.S. Census Bureau, 2016) at the census tract level (for wealth and ethnicity data) and City of Chicago business license data (Chicago Data Portal, by City of Chicago, 2017, retrieved from https://data.cityofchicago.org/).
***$p < .01$ on t-test of difference between means.

the commercial uses in them are, in general, not located in areas where underserved populations reside. One would expect commercial entities to choose to locate in what they perceive as less risky markets, as described below. These findings are nevertheless noteworthy because, since LIHTC buildings are publicly subsidized, their design and construction should reflect the public interest, especially since one argument for mixed uses is increasing access to retail for low-income populations. Yet the distribution of mixed-use LIHTC buildings is furthering existing unequal access to neighborhood commercial needs.

Findings: Explaining Conditions That Influence Mixed-Use Construction, Through Interviews With Stakeholders

Many of the developers with whom I spoke described their strong support for LIHTC projects that include mixed-use buildings. They believe that low-income residents benefit from living near amenities such as groceries or pharmacies, including within apartment buildings, and they suggested that community members, organizations, and aldermen generally agree and therefore support such projects. "Residential is not enough," the vice president of a national development firm told me. Others noted that, "if we can include ground-floor commercial or retail space, we think the project becomes more vibrant," and that "it keeps the appearance in a neighborhood and reduces vandalism…we want to go in and make these areas better." For supporters, commercial uses are essential neighborhood assets that go hand in hand with the effort to add affordable housing units.

What explains the low rate of such developments despite many stakeholders' professed enthusiasm? Several interviewees pointed to an overriding problem with mixed uses, succinctly described by one developer: "It's a lot of work for very little return." Said another, "why add a layer of complication and risk you don't have to?" But the explanation is more nuanced than that and deserves parsing out, illustrated simply by the fact that, despite their rarity, mixed-use LIHTC projects continue to be built. Moreover, public officials continue to promote them as an effective design approach to encouraging commercial access in low-income neighborhoods.

I identify three themes that offer insight into what determines the decision to construct, and the location of, such developments: (1) conflicting public regulations with respect to mixed uses; (2) a real estate financing market that discourages including commercial uses with affordable housing because of investor demand for reliable returns and a perception of weak market demand for retail, particularly in the neighborhoods where LIHTC projects are typically

built; and (3) design challenges, a product of both regulatory and market forces, that hinder the combination of residential and commercial uses in the same building. When combined, these structural elements present a formidable barrier to achieving a mix of uses in LIHTC projects.

Conflicting Public-Sector Regulations With Respect to Mixed Uses

For developers looking to launch projects, "tax credits are the easiest way." As such, the LIHTC requirements of city and state governments, which award project funds, play a primary role in shaping proposals. For instance, in dealing with the city government and the Chicago Housing Authority (CHA), an independent agency overseen by the mayor, developers often follow requests for proposals, in which, according to a developer, city officials "will state what they want to see." These include guidelines in terms of nonresidential uses. All of the developers interviewed expressed some form of the sentiment "you're pushing for as many points as possible" when applying for 9% (higher value) LIHTC funds through the state QAP. The trouble is that city and state governments hold varying and sometimes contradictory views on whether to promote mixed-use projects.

Many state regulators have accepted the value of low-income household access to retail, particularly to food stores, as demonstrated by their inclusion of it as a key generator of QAP points. I reviewed the 2016 QAPs of all 50 states plus the District of Columbia, available on each state's website, and summarized the findings in Table 4. Only one state (Rhode Island) specifically encouraged in-building commercial uses (no state appears to ban mixed uses). But state support for neighborhood retail when selecting among competing development proposals was widespread. Of the 28 states allocating points for nearby commercial uses—typically within a half-mile to 2 miles of projects, the distance often reflecting differences between urban and rural sites—most encouraged grocery, general retail, and pharmacy access (as Table 2 demonstrates, these are not the primary tenants in Chicago projects), although a small number rewarded access to banks, convenience stores, department stores, laundromats, or restaurants. Of the 28 states, an average of 6.3% of total QAP points were directed for such uses, with incentives ranging from 0.6% of points (Texas) to 34% of points (North Carolina). Illinois, the focus of this study, provided 2.0% of points for this purpose.

This indicates a widespread state interest in encouraging developments that bring low-income residents closer to neighborhood amenities, suggesting a potential role for mixed-use projects. But this interest has not been translated into state policy that favors such projects, at least in Illinois. "[The state] wants nothing to do with supporting commercial," one developer said. State guidelines are tough, requiring an assumption of 50% vacancy in commercial uses, limiting a developer's ability to rely on future rent in its project financing, and the state has in some cases mandated separate construction contracts for two elements of the same building.

Table 4. States offering incentives for mixed uses or access to nearby retail, 2016 state Qualified Allocation Plans (QAP).

	Category	Number of states allocating QAP points
In-building mixed uses	Any retail	1
Nearby retail	Any retail	28
	Grocery	20
	General retail	16
	Pharmacy	15
	Bank	10
	Convenience store	4
	Department store	3
	Laundry	3
	Restaurant	3

From the perspective of state government representatives with whom I spoke, there is interest in mixed use—but a qualified one; "you would want to provide that space," and "philosophically we've always wanted to connect to the communities," but "we can't fund those roles…the state goal is a focus on housing." As a result, officials want to concentrate their limited funds on apartments, not commercial uses. Moreover, not only do developers get no extra QAP points for mixed-use projects, they also cannot count commercial amenities they plan for their projects on-site in the calculation of points for neighborhood retail.

QAP rules, however, are just one of several public policies that limit mixed uses. U.S. Internal Revenue Service (IRS) regulations disallow including costs for commercial space construction in what is referred to as eligible basis, which is a calculation of square footage designated for affordable housing residents—units and certain shared spaces—used by agencies to determine how many tax credits to award a project. As such, equity is limited, making direct tax subsidy of commercial uses impossible (although community service facilities, such as health centers, can be included).

Despite the roadblocks state QAP and federal IRS rules put in their way, mixed-use LIHTC projects are, in fact, often feasible. First, developers have the ability to apply for and assemble other sources of publicly available funds distributed by local and state agencies—a financing mechanism described below. Second, other federal programs are more receptive. HUD's Choice Neighborhoods grant program, which can be integrated with LIHTC awards, provides commercial-space funds. The New Markets Tax Credit program targets nonresidential uses, although those funds require commercial uses to account for more than 20% of revenues (difficult in a largely residential building of more than four stories), and 9% LIHTC funds cannot be combined with them. One developer's solution: in one project, she separated market-rate residential and retail uses into one condominium (using the New Markets Tax Credit), and put low-income residential into another (using 9% LIHTC).

Third, at the city level, recent policies have supported mixed uses. Until Mayor Rahm Emanuel's administration, Chicago divided city planning work into separate departments for housing and economic development. This division meant housing officials made little effort to encourage projects with commercial uses, and vice versa. As such, mixed-use projects were logistically complicated, especially when applicants desired aid for both commercial and residential. The departments have now been integrated[9] and have created an application process that incorporates multiple needs; developers reported support from city officials for LIHTC buildings with commercial spaces.

According to officials, the city's focus is on spurring a mix of uses at major nodes of activity in lower income neighborhoods identified by planning staff, such as at 63rd Street and Cottage Grove Avenue in the Woodlawn community. In such locations, when a developer proposes an LIHTC project—or responds to a request for proposals—the city identifies additional funds that can aid in the construction of nonresidential space.[10] In many cases, the city suggests it is looking for specific types of retailers, particularly grocery stores, that fit into its broader goal of adding access to fresh products in *food deserts*; deals to bring such retailers in are conducted case by case (and have been rare thus far, as Table 2 shows). The city also sometimes uses its bullying power to encourage retailers to move in. An official noted:

> We're aware of the impact these projects can have on these neighborhoods…. We're trying to intervene to bring more resources…I think it's garbage to not do anything on the first floor. To further injure commercial corridors shows that affordable housing only thinks about housing.

The zoning code, itself a reflection of the planning department's approach, is an important consideration for planning mixed-use developments. Developers noted that most projects—mixed use or not—had to undergo zoning changes or request variances to move forward, but zoning was not a primary obstacle, since city staff and policy are generally receptive to the concept. High parking requirements for commercial uses in the zoning code, however, are a

physical and financial constraint.[11] "If I have to provide retail parking [to meet commercial needs] on top" of residential requirements, one developer said, "you end up with all parking and no building." Adding retail increases a development's needed land area or reduces the number of potential housing units, both of which diminish the financial attractiveness of a project's residential element.

The CHA, finally, has been ambivalent in its approach when integrating LIHTC projects into its mixed-income public housing redevelopments—a major factor as it has funded and supervised several large projects in recent years. In some cases, it has required retail—although it has generally not specified which types of commercial uses—such as at Roosevelt Square on the West Side. But according to one developer, "their primary mandate is building replacement units," and thus the agency has not asked developers to include commercial uses in most recent projects.

A Real Estate Market That Discourages Including Commercial Uses With Affordable Housing

The banks that supervise project funding and orchestrate tax-credit syndication to equity investors largely avoid mixed-use projects. The primary reason is that LIHTC investments are sold on the market as a source of reliable—if modest—returns because of minimal affordable-housing vacancy. "Investors know that people need housing. They're willing to take a low return," a development lawyer told me. For those making investments, the use value of LIHTC projects in the communities where they are built is overwhelmingly secondary to their exchange value as small but safe profit generators. By contrast, retail is perceived as risky; it can provide big returns but it can also suffer from high vacancy (described below). One representative of a community development financial institution (CDFI) noted: "LIHTC is a commodity…. There shouldn't be too many surprises…. By injecting a large mixed-use component, that's going to impact the risk profile of the investor."

Said a bank representative, "Generally banks are not interested [in] or thrilled about mixed uses…we're in the business to provide affordable housing, not to underwrite commercial retail"; said another, "We're very conservative with the underwriting of retail…[it] is often thought of as an afterthought." Banks do not insist on residential-only projects but rather ask developers to finance commercial uses separately, with investors allowing none of their debt to be related to commercial income. Typically this means mixed-use developers must identify other funds to support retail, whether that means *soft money* through grants from public sources or retail-specific loans.

Although financing for commercial uses may come from the same bank already investing in LIHTC projects, it originates in another department—and typically there is little conversation between the two, despite being located in the same building. Moreover, retail and residential operate on different development timelines. Identifying a site, designing a building, assembling financing, and construction may take a similar amount of time for retail and residential, but the added waiting and competitive process required to receive a 9% tax-credit allocation is a big impediment to combining uses. "It's very hard to get retail in advance," noted one developer; "what is typically the problem is sequencing—having all the money at the same time." Retailers do not want to sign a lease on a building that will not open for another 3 years—but the lack of a signed lease makes financing a mixed-use building more difficult to begin with. Finally, retail requires continuous management of commercial leases, which must be handled separately from those for the housing units.

Several developers pointed to the use of condominiums as a successful mechanism to implement mixed-use projects, as noted above. This requires creating separate financial entities for different parts of the same building, one for the residential and one for the commercial; this permits the LIHTC deal to move forward alone, without disrupting lenders and investors.[12] It also allows housing developers to bring in a development partner with more commercial experience to lead that component, relieving concerns about inadequate technical capacity and addressing state

and federal limits on commercial uses. This is, indeed, a logistically complicated process. One LIHTC project in a low-income South Side neighborhood, for example, was only made possible by the rare combination of a significant federal grant, development staff accustomed to building retail, and a developer with the resources to create a special-purpose subentity able to sign a long-term master lease on retail space to cover vacancy risks.

Smaller, less experienced developers are unlikely to jump through so many hoops. Several developers described their limited technical capacity to make such projects happen. This made them reluctant to engage with commercial uses, since their financial focus is on the housing side. One noted that "we don't know the market as well as market retail people…people who are good at affordable housing aren't good at retail." The issue is capacity: noted a banker, "retail isn't in their core knowledge set." A developer agreed, admitting that in her firm, "we focus first and foremost on housing." A portion of the developers suggested they wanted to avoid dealing with the complexity of issues raised by a mix of uses; one interviewee's project, for example, limits residents' in-building access to food items to a community-room vending machine. Financing and building commercial spaces, and attracting tenants, requires knowledge entirely different from that needed for residential development.

Lack of affordable housing developer knowledge about commercial space is undoubtedly partly a consequence of the market retail conditions they face. As documented above, mixed-use projects are more common in wealthier, whiter, and more retail-heavy neighborhoods; this is to a large degree because of prevailing market conditions that make retail feasible and that reinforce its feasibility with every additional investment. The city's Near North Side is one example of such a community; there, the redevelopment of the Cabrini-Green public housing complex has incorporated LIHTC projects featuring mixed-use buildings because of the higher rents retailers—often national chains—are willing to pay. "If we were doing a project in Lincoln Park [another wealthy, retail-rich neighborhood], I would feel a lot more comfortable" adding commercial space, noted a developer. Yet most affordable housing projects are not in strong retail markets. "We're trying to serve underserved areas, but it's difficult to find a tenant," a developer said. Another noted that "we're doing developments in low-income, distressed communities…that don't work." In the largely low-income, black, and retail-deficient South Side, commercial "rental rates are probably next to nothing."

Indeed, skepticism toward adding retail in low-income communities stems from the difficulty developers say they have retaining tenants in the retail that has been built, and because of the perception of what one developer called the "collapse" of walkable retail throughout the city. Three-quarters of one developer's retail portfolio "has really struggled. Some of the places really feel like a revolving door." Developers building in low-income communities are cautious in part because their investors require them to assume that construction debt for commercial uses will not be supported by future tenant leases. A banker noted, "we honestly will sometimes assume more than 50% vacancy [in project pro-formas]. One hundred percent vacancy is somewhat normal." These assumptions severely limit the amount of space available for commercial uses, to avoid burdening a development with unpaid leases (even though, as noted in Table 2, vacancy rates appear much lower than 50%). "If you set up your pro-forma so that you're not dependent, you can get by," said a nonprofit representative. By contrast, a New York municipal official told me in an interview that a majority of the LIHTC projects that city aids include retail space, despite the lack of specific QAP points for mixed uses and the limitations on eligible basis. New York's commercial market, which is more vibrant than Chicago's, is key here; the staffer said that retail rent "is very valuable as a gap financer that can reduce the mortgage…in almost all cases, the retail does provide significant value."

As a result of banker reluctance to invest, planning for high vacancy requires developers to identify "soft" funds, typically city or state grants, to cover the gap between what tax credit equity provides and the construction cost of a commercial component. One frequently mentioned

strategy is to apply for federal HOME or the city's tax-increment financing funds to complement tax-credit equity. Although these grants cannot be directly used for commercial space, they open space in project budgets, in essence allowing LIHTC funds to be transferred to commercial costs. "You're cross-subsidizing the retail with the residential," a developer described.

Even after developers orchestrate financing for commercial uses in new buildings, they must identify tenants. Developers who receive loans for commercial space desire tenants who can sign long-term leases. Said a banker, "projects that are preleased to a strong tenant, we can rely on that. If you have preleasing from a national tenant…you're willing to invest." Yet such tenants are difficult to attract. One developer described a years-long battle to attract Starbucks that involved trips to the chain's headquarters. Moreover, tenants like Starbucks, with its expensive coffees, may not serve project residents. Indeed, the hostile reaction of residents to a retail plan on one public housing site—"people didn't want to lose acreage to a grocery store," perhaps because they feared it would not sell products for them, a developer hypothesized—has dissuaded the CHA from prioritizing mixed uses in certain cases. The conflict between commercial uses that are investor safe and those that appeal to developers' sense about what is right for the community is thus an added impediment.

Some developers plan for very high vacancy and low rental rates to select ideal tenants, but this is a difficult game to play. Developers repeatedly noted that they, and the community members with whom they planned their spaces, wanted local, independent stores and coffee shops, in some cases specifically designed for low-income residents. But developers argue that retailers able to pay leases in low-income communities are often stores featuring undesirable trades in check cashing, liquor, and cell phones. "Typically the uses you'd like cannot pay for the upfit [installation of inner walls, plumbing, etc.] of new spaces," said a developer. Although one active developer said that "we take on a lot of mom-and-pops, and end up putting a lot of work in them to keep them alive," that motivation was rare among those interviewed. Even so, within the LIHTC buildings I surveyed, there were no check-cashing stores, only one store that openly advertised liquor on the outside, and only two cell phone stores. Moreover, independent stores accounted for almost three quarters of the total (see Table 2). This suggests that, at least when storefronts are open for lease, they are not always filled by undesired uses.

Design Challenges

At the intersection of regulatory constraints and market limitations is project design. There is a fundamental divergence between the scale of a project that can be financed with tax credits and the scale of the space needed to attract retail. A bank lender noted that mixed use was more feasible with large, multiphase projects incorporating many buildings and larger footprints. Yet the roughly 100-unit scale of many tax-credit structures often leaves a ground-floor footprint of 10,000 square feet or less for commercial uses—adequate for a small retailer, but not enough for a major grocery or multiple stores. Said a developer, "a single retail tenant isn't going to attract the tenant you need. You need critical mass." Small space for nonresidential uses also limits the ability to subdivide projects into condominiums, because of the difficulty of attracting financing for such limited square footage.[13]

The building designs promoted by city agencies such as the CHA are also limiting. In the early stages of the CHA's Plan for Transformation, which was intended to replace conventional public housing with mixed-income units (a third of which were to be LIHTC funded), the agency insisted on three stories or fewer for most buildings to allow children easier ground access than had been the case in the high-rises previously built (which were perceived to have failed). But, as one developer noted, "it's impossible to build a nonelevator mixed-use building," since the Fair Housing Act requires the first residential floor to be visitable by people in wheelchairs. Adding elevators increases expense and management headaches.

City planners and many developers promote the New Urbanist view that buildings should front the street directly, with stores facing the sidewalk and parking in the rear. This design ideal fits in on retail streets "where there is foot traffic and wealth," according to a developer who completed a project in a dense district. A CDFI funder noted that "if you're on [a busy street], near an L [the city's metro rail system], we'll take a slightly hedged number for a [commercial] space—someone will use the space." Developers work to add retail when building on commercial streets even in poorer neighborhoods with fewer pedestrians. A developer described a recent project: "We really wanted to honor [the location] as a commercial street," by including storefronts. Yet that space may not actually attract any lessees; according to a city official, "if you have a commercial corridor with no one living near it, it won't work." One developer's project along a commercial strip included windows along the ground floor to make it appear as if it had retail, rather than actually dealing with a commercial lease.

Moreover, there is often a contradiction between the preferred urban design and building layout of LIHTC residences as expressed by public actors and the marketing needs of many retailers. Buildings with storefronts along the sidewalk may not be attractive to commercial tenants. The lack of easily accessible parking resulted in vacant retail "from day one" at one project, according to a CDFI representative who worked on the deal. Noted a developer: "These national chains have egregious parking and visibility requirements. Typically a solution is to have some degree of street-side parking—teaser parking—and then have structured parking behind. But that's very expensive."

Even the basic act of fitting diverse uses into the same building can be a design challenge. One developer described a rectangular mixed-use project originally conceived with elevators in the center to avoid long hallway walks to and from housing units upstairs. But this cut the ground-floor retail space into two; an interested retailer wanted the full space, requiring an elevator relocation. Yet this, in turn, would inconvenience the residents. There was no available compromise between the two demands.[14] Conflict between uses adds a final difficulty. Some chains are hostile to housing above stores. "They don't want to worry about what residents will say when the neighborhood gets busier and traffic gets in the way," said a city official who has worked with a grocery. And residents do sometimes "start to become cranky about noises and smells," a commercial manager noted.

Discussion and Conclusion

This study offers new insight into the presence of commercial uses in affordable housing by examining current conditions and exploring what makes mixed-use projects possible. It finds not only that such developments are rare, but also that those that exist are more likely to be located in wealthier, whiter, and already retail-rich communities. This suggests that there is a disconnect between the design vision of encouraging mixed uses, premised partly on the idea that it can expand opportunities for low-income residents, and the reality of affordable housing production, which relies on a willing market and is constrained by competing demands from investors and government.

This research suggests that there are multiple explanations for these conditions, in particular a public sector that is ambivalent about the value of mixed uses, difficulties assembling financing, and design constraints on incorporating varying uses. Though there is general agreement among interviewed developers and public officials that mixed-use affordable housing is beneficial from a design and amenities perspective, the policy, economic, and design environment is heavily biased toward the production of residential-only LIHTC projects. This study does not determine whether the justifications commonly used to support mixed-use projects are valid. But it finds that even when conditions allow for a mix, the goal of improving access to commercial uses—frequently endorsed by state and local policy documents and developers themselves—is largely ignored in favor of financial stability.

Should cities like Chicago do more to realize mixed-use LIHTC projects? "Long-standing CDCs [community developers] have huge waiting lists," an advocate noted. "They're driven to address that concern. How much can you expect one tool to do?" Said a lawyer, "the purpose of the credit is to support low-income people." Indeed, with limited funds and an urban affordability crisis, it may be odd to dedicate housing subsidies to commercial use, particularly when much of it features offerings too expensive for low-income residents. LIHTC might not be the right program to approach this issue, and that is the position officials in the Illinois state government —although not officials in the Chicago city government—have taken. Moreover, others may argue that mixed-use projects are not the appropriate mechanism to revitalize neighborhoods, if that is even a shared goal for public policy, and that their impact may spur increased gentrification.

On the other hand, LIHTC is readily available and developers were generally adamant that they are in the business to do more than just build housing; they emphasized that they hoped to produce better *communities*. In a dense city like Chicago, thinking only about housing is surely inadequate; LIHTC project residents may find themselves far from commercial amenities, and mixed-use projects address that concern on site. I do not take a side on the value of such development here, but decision makers who support such projects in the interest of achieving neighborhood vitality and better access for low-income residents should recognize that existing public policies are inadequate in the context of a private sector unwilling to take on additional risk.

Local, state, and federal policies all impede mixed-use projects, but New York's experience demonstrates that the federal rules do not, in themselves, make their widespread implementation impossible; it is possible to find a way around IRS regulations. Local and state rules may be the greater impediment, but they may also be easier to change. For example, city zoning policies can be altered with no fiscal impact to reduce parking requirements that increase the cost of retail space, and city staff can provide developers with technical support to create workable financing deals. State QAP requirements, which require developers to incorporate very high commercial vacancy rates in their assumptions, can be altered to counter investors' skepticism about nonresidential investment. Addressing the retail market in general, such as through public provision of more soft money to fund commercial upfit and subsidize retail operations, may be useful but ultimately would cut into limited budgets. Public officials must determine whether they are willing to financially support otherwise money-losing retail.

The research's quantitative findings were made possible thanks to the time-consuming identification of LIHTC buildings and examination of their physical conditions. As such, it would be difficult to replicate its approach at the national level with existing sources; better data are needed about the LIHTC program. The HUD database does not include data at the building scale, it fails to offer insight into nonresidential uses, and many of its values are incorrect. The department could improve our understanding of and scholarship on LIHTC through a revision of the database.

More research must evaluate several of the topics explored here. One avenue of potentially fruitful study would examine what commercial uses are most compatible with affordable housing, not only in terms of working around regulatory and financing obstacles, but also with regards to serving the use needs of residents—What are the impacts of living in a mixed-use building given different potential downstairs uses? Investing in—and often subsidizing—projects that include fancy coffee shops may revitalize communities by improving the lives of existing residents and the people living in affordable housing, or, in contrast, they may do little for them and encourage wealthier people to move in nearby. Further examination is necessary to determine how QAP changes alter developer choices about including amenities. A quantitative analysis using proprietary data is needed to establish whether developer and investor fears of retail vacancy play out in the real world, adding detail to this study's finding of relatively low rates of vacant storefronts. Finally, a comparative approach that considers conditions in various

cities and affordable housing programs other than LIHTC could offer insight into how different markets compare, while aiding in identifying whether factors that limit mixed uses in Chicago are endemic to it or widespread.

Notes

1. There are varying findings on the health benefits of access to food stores. Yen and Kaplan (1999) show that supermarkets in Alameda County, California, improved health outcomes, and Morland, Diez Roux, and Wing (2006) find that they lowered the prevalence of obesity. In contrast, Cummins, Flint, and Matthews (2014) document that the opening of a supermarket in a Philadelphia, Pennsylvania, *food desert* did not increase intake of healthy foods, and Fiechtner et al. (2013) suggest that living close to food stores increased body mass index among already overweight children.
2. Varying allocation of federal funds by states is hardly an issue confined to LIHTC projects; for a discussion on how such variation affects Community Development Block Grants, for example, see Brooks and Sinitsyn (2014).
3. As noted by a reviewer, there is no universal agreement on the need to *revitalize* low-income communities, and mixed-use projects may be seen in particular as generators of gentrification. This article, however, does not examine either the revitalization or the equity impacts of such developments, questions that require future research.
4. A relatively new program from Freddie Mac is making market-rate mixed-use projects more feasible (Langdon, 2017).
5. That said, the database is not fully accurate (Oakley, 2008; Vale & Freemark, forthcoming). The City of Chicago maintains an affordable housing database (also without building-level information), but for consistency and generalizability, I used the national database as the source for this research.
6. A full list of sources used to undertake this analysis is available upon request.
7. The presence of mixed uses remained relatively stable across project completion years, suggesting no general movement toward or away from mixed-use projects. The rarity of mixed uses among Chicago projects is likely not an outlier. I examined the California Housing Finance Agency's *project*-level data, which includes information about commercial space in LIHTC projects. This analysis showed that 7.3% of projects statewide include such uses; that rate is higher among new-construction LIHTC (8.75%), and in large cities like Los Angeles, San Francisco, and San Jose, California (9%, 25%, and 16%, respectively), but it still constitutes a small minority of projects.
8. Chicago business licenses make it simple to identify commercial entities offering food, so I used this category to characterize neighborhood use mix. The data do not, however, concisely encapsulate other types of commercial businesses.
9. In June 2018, Emanuel announced a plan to demerge the agencies to recreate a Department of Housing to refocus the city on addressing affordable housing needs (Spielman, 2018).
10. However, its sources largely do not support *operating* funds, which are often necessary to keep small-scale retailers alive.
11. The city's recent transit-oriented development ordinance reduced parking requirements for projects near rail stations.
12. In such circumstances, developers must use "a reasonable explanation," according to a tax-credit lawyer, to divide up capital costs for shared elements, such as the roof, lobby, and elevators.
13. For developers who work on projects involving rehabilitation of older buildings, there is typically little interest in adding commercial uses, even where it once existed. "Retail in rehabs is kind of a nonstarter because we don't want to lose units," a developer described. "If you take units away, it hurts our operating costs more directly than losing retail income."
14. One developer noted that "most of the buildings you can build with tax credits don't lend themselves to mixed use. The sweet spot," itself hard to achieve in a city like Chicago, "is suburban, garden buildings, stick-built construction."

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Disclosure Statement

The author notes, for the sake of full transparency, that he worked in the nonprofit sector in Chicago between 2013 and 2016 and interacted with many of the individuals and organizations described in this study during that time.

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