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Symposium

Small Area Fair Market Rents

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Guest Editors' Introduction

Small Area Fair Market Rents

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This *Cityscape* symposium focuses on multiple aspects of Small Area Fair Market Rents (SAFMRs). These elements include outcomes based on the experience of early forays into the use of SAFMRs along with insights regarding the implementation of SAFMRs among the public housing agencies (PHAs) required to do so. Before delving into the research, we begin with a brief overview of the importance of Fair Market Rents (FMRs) on the Housing Choice Voucher (HCV) Program and a discussion of the history of SAFMRs. We conclude with a summary of the research contained within the Symposium.

Introduction

Fair Market Rents (FMRs) are primarily used to determine payment standard amounts for the Housing Choice Voucher (HCV) Program. Local administrators of the HCV program set payment standards that are used to calculate the value of the housing subsidy for each voucher family. FMRs are gross rent estimates; they include the shelter rent plus the cost of all necessary utilities, but do not include telephones, cable or satellite television service, and internet service. The U.S. Department of Housing and Urban Development (HUD) sets FMRs to assure that a sufficient supply of rental housing is available to program participants. To accomplish this objective, FMRs must be both high enough to permit a selection of units and neighborhoods and low enough to serve as many low-income families as possible.

Traditionally, HUD calculated a single FMR[1] for each FMR area. HUD defines FMR areas as metropolitan areas and non-metropolitan counties. HUD's FMR areas are based on the most

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[1] HUD estimates FMRs for units of different sizes as measured by the number of bedrooms and publishes FMRs for zero-bedroom (efficiency) units to four-bedroom units. For purposes of this discussion, the set of FMRs HUD estimates for an area is referred to as "the FMR."

current Office of Management and Budget (OMB) definitions of metropolitan areas[2] with some exceptions.[3]

Beginning in 2009, the Office of Policy Development and Research (PD&R) undertook the task of developing FMRs that vary within metropolitan areas. After examining a variety of levels of geography, PD&R developed Small Area Fair Market Rents (SAFMRs) for ZIP Codes within metropolitan areas. SAFMRs are designed to enable HCV tenants to access more units in neighborhoods of opportunity because they more accurately reflect the cost of rental housing in these areas. At the same time, and for the same reason, SAFMRs will discourage HCV tenants from locating in neighborhoods of concentrated poverty.

Fair Market Rents and the Housing Choice Voucher Program[4]

The HCV program is the federal government's major program for assisting very low-income families, the elderly, and people with disabilities in affording decent, safe, and sanitary housing in the private market. Housing choice vouchers are administered locally by public housing agencies (PHAs). PHAs receive federal funds from HUD to administer the voucher program.

A family that is issued a housing voucher is responsible for finding a suitable housing unit of their choice where the owner agrees to rent under the program. This unit may include the family's present residence. Rental units must meet minimum HUD standards of health and safety, as determined by the local PHA. The participant is free to choose any housing that meets the requirements of the program and is not limited to units located in subsidized housing projects.

A housing subsidy is paid to the landlord directly by the PHA on behalf of the participating family. The family then pays the difference between the actual rent charged by the landlord and the amount subsidized by the program. Because housing assistance is provided on behalf of the family or individual, participants can find their own housing, including single-family homes, townhouses, and apartments.

At the most basic level, the amount of housing assistance provided to each family is a function of two components: (1) the family's level of income, and (2) the PHA payment standard. In the HCV program, families are required to pay 30 percent of their income toward rent. The PHA administering the voucher program sets the payment standard. With some exceptions, payment standards are calculated between 90 and 110 percent of the FMR for the area. Payment standards are the amounts generally needed to rent a moderately-priced rental unit in the local market. PHAs may set multiple payment standards for different parts of their operating area.

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[2] HUD updates the metropolitan area definitions once the metropolitan area definitions are incorporated into the American Community Survey (ACS) data used in the calculation of FMRs.

[3] In general, HUD makes exceptions to the OMB metropolitan area definitions when the OMB definition is larger than HUD's definition of housing market areas. The annual Federal Register notices announcing the FMRs for the upcoming fiscal year (FY), typically published around September 1, contain explanations of how HUD constructs the FMR geography.

[4] The description of the Housing Choice Voucher Program is adapted from information obtained at https://www.hud.gov/program_offices/public_indian_housing/programs/hcv/about/fact_sheet.

FMRs are calculated based on gross rents paid for standard quality rental units occupied by recent movers collected locally through the American Community Survey (ACS).[5] The level at which FMRs are set is expressed as a percentile point within the rent distribution of standard-quality rental housing units.[6] The current definition used is the 40th percentile rent,[7] the dollar amount below which 40 percent of the standard-quality rental housing units are rented. The 40th percentile rent is drawn from the distribution of rents of all units occupied by recent movers (renter households who moved to their present residence within the current or previous year of responding to the ACS). HUD is required to ensure that FMRs exclude non-market rental housing in their computation. Therefore, HUD excludes all units falling below a specified rent level determined from public housing rents in HUD's program databases as likely to be either assisted housing or otherwise at a below-market rent, and units less than 2 years old.[8]

The History of Small Area Fair Market Rents

HUD has been calculating FMRs since at least 1974 (39 FR 43943). Over the years, the data sources, calculations methods, and geographic area definitions have changed. Notwithstanding these changes, two constants have remained: FMRs have been calculated for "market areas"[9] and there was a single FMR for each area.

Original Calculation of Small Area Fair Market Rents

A Government Accountability Office (GAO) report from 1994 titled "Rental Housing: Use of Small Market Areas to Set Rent Subsidy Levels Has Drawbacks" (GAO/RCED-94-112)[10] states "fair market rents based on smaller geographic areas would better reflect the rent levels typically prevailing within those smaller markets" (page 5 of the report). The drawbacks, as summarized below, were too great to allow the use of smaller rent geographies in determining FMRs at that time.

- The cost of collecting the additional data needed to accurately and reliably determine and update FMRs could be substantial—ranging from $5 million to as much as $750 million annually.

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[5] The ACS is the primary socioeconomic and demographic survey of the U.S. Census Bureau. It has been conducted since 2005. See https://www.census.gov/programs-surveys/acs.

[6] Standard-quality rental housing units have the following attributes: occupied rental units paying cash rent; specified renter on 10 acres or less; full plumbing; full kitchen; unit more than 2 years old, and meals not included in rent.

[7] There is no statutory requirement for the FMR percentile. Effective 9/14/95, HUD promulgated a regulatory change (60 FR 42222) which set the FMR percentile at the 40th, down from their estimation at 45th percentile as a cost savings measure.

[8] The specified rent level is known as the "Public Housing Cut Off" and is described more fully at: https://www.huduser.gov/portal/datasets/fmr/fmrs/FY2014_code/Public_Housing_Adjustments_for_FMRs_Final.pdf.

[9] Little is known about how the earliest FMR calculations were completed. A visual inspection of the referenced Federal Register notice lists the FMRs for "Market Areas" which appear to be areas larger than single counties. As examples, market areas are listed as "Atlanta" or "Chicago" or "San Francisco."

[10] The report is available at https://www.gao.gov/products/RCED-94-112.

- The costs per assisted household could increase and result in a smaller number of households being served by the Section 8 program unless the program's total funding was increased, which is unlikely. Program costs could increase if the assisted households moved from market areas where the FMR was reduced to market areas where it was increased. In addition, costs could rise if FMRs could increase but not decrease from the current levels.

- FMR could decrease in some areas, thereby restricting housing choices for the assisted households seeking units in those areas.

50th Percentile Rents as a De-Concentration Tool

In 2000, HUD identified a pattern of high voucher concentration in relatively low-cost areas. To provide a broad range of housing opportunities throughout the metropolitan area, HUD established FMRs at the 50th percentile by an interim rule published on October 2, 2000. Areas had to meet the following eligibility criteria to use 50th percentile FMRs:

- contain at least 100 census tracts;

- at most, 70 percent of the census tracts with at least 10 two-bedroom units are in census tracts where at least 30 percent of two-bedroom rental units have gross rents at or below the 40th percentile FMR;

- at least 25 percent of the tenants in the FMR area reside in the 5 percent of the census tracts within the FMR area that have the largest number of program participants.

After an area was selected to use 50th percentile FMRs, they would have 3 years to show measurable de-concentration of program participants. If de-concentration was not shown or if the FMR area deconcentrated but fell below 25 percent of the tenants' rule, the FMR area would not be allowed to continue to use 50th percentile FMRs. The objective of 50th percentile FMRs was to give PHAs a tool to assist them in de-concentrating voucher program use patterns. The theory behind 50th percentile FMRs was that by providing certain areas with larger subsidy thresholds, voucher holders would be able to use higher subsidy levels to move into higher opportunity neighborhoods. Unfortunately, as HUD would later discover, raising the level of FMRs uniformly throughout an FMR area did not provide a suitable incentive structure to move and the implementation of 50th percentile FMRs led to administrative complexities for PHAs.[11]

Current Analysis of Small Area Fair Market Rents

At the beginning of the Obama administration, PD&R was challenged to explore the possibility of calculating FMRs for geographies smaller than metropolitan areas. The first 5 years of ACS data became available in 2010. This allowed access to smaller geographies that would be updated at least every 5 years, which negated the first and most important cost concern expressed in the GAO report.

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[11] Establishing a More Effective Fair Market Rent System; Using Small Area Fair Market Rents in the Housing Choice Voucher Program Instead of the Current 50th Percentile FMRs (Small Area FMR Final Rule, 81 FR 80567), Section II – Background, page 80570.

In 2009, when HUD began to research calculating FMRs for areas smaller than metropolitan areas, one of the first questions to be addressed was "what level of geography should HUD target?" Some possible candidates were counties, census tracts, congressional districts, school zones, and ZIP Codes. There are plusses and minuses for each of these geographic definitions. Counties may still be too large. For example, the Flagstaff, Arizona metropolitan statistical area (MSA) is comprised solely of Coconino County, Arizona. There would be no additional geographic delineations for Flagstaff if counties were selected. An individual census tract is typically too small to be considered a housing market, and easily determining what census tract a housing unit is in is not trivial while in the midst of a housing search. Identification is a similar issue for congressional districts and school zones. In the end, HUD decided to use ZIP Codes because:

- ZIP Codes are widely understood by HUD's clients;

- ZIP Codes are small enough to localize rents;

- ZIP Codes are large enough in many cases to have statistically reliable, annually updated data available from the U.S. Census Bureau.

Originally, SAFMRs were calculated by establishing the relationship between rents in the ZIP Code to rents in the metropolitan area where the ZIP Code is found. HUD identified this relationship as a "rent ratio." The rent ratio was determined by dividing the median gross rent across all standard quality units for the small area (a ZIP Code) by the similar median gross rent for the metropolitan area (the Core Based Statistical Area or CBSA) of the ZIP Code.[12] HUD adopted the rent ratio method for calculating SAFMRs under the assumption that inter-area rent relationships are stable over time and to ensure that an SAFMR value would be calculatable for each small area.

The rent ratio was calculated using median gross rents provided by the Census Bureau for both the small area and its encompassing metropolitan area. HUD restricted the use of ZIP Code level median gross rents to those areas for which the margin of error of the ACS estimate is smaller than the estimate itself. The rent relationship was calculated in the following manner for those ZIP Codes within the metropolitan area that have a sufficiently small margin of error:

Rent Ratio = Median Gross Rent for ZIP Code Area/Median Gross Rent for CBSA

The rent relationship was capped at 150 percent for areas that would otherwise be greater. This cap was instituted as a mechanism for ensuring that HCV program funds are used as judiciously as possible. At the time of the institution of the SAFMR demonstration program, 2000 census data showed that only 1 percent of all metropolitan ZIP Codes had rents above this 150 percent.

If the gross rent estimate for a ZIP Code within the CBSA either did not exist or had a margin of error that is greater than the estimate, then the median gross rent for the county within the state containing the ZIP Code was divided by the similar median gross rent for the CBSA of the ZIP Code; the gross rent relationship is calculated as:

Rent Ratio = Median Gross Rent of the County/Median Gross Rent of the CBSA

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[12] Median gross rents were used in this analysis because no special tabulations were needed to acquire the data.

To estimate the rent for a two-bedroom unit in a small area for the current year, HUD multiplied the rent ratio by the current estimate of the 40th percentile two-bedroom rent for recent movers, who had moved into standard quality units, for the entire metropolitan area containing the small area. HUD used data from the ACS tabulations for ZIP Code Tabulation Areas (ZCTAs). The Census Bureau requires the use of ZCTAs to report data for ZIP Codes, because ZCTAs are a standard census geography. In addition to Census Bureau defined-ZCTAs, HUD produces SAFMR estimates for ZIP Codes obtained from the U.S. Postal Service where the number of residential addresses is greater than zero. The rent ratio set for these ZIP Codes is based on the county-to-metropolitan relationship for the ZIP Code in question.

To set the floor for SAFMRs in a metropolitan area, HUD compared two-bedroom SAFMR estimates with the state nonmetropolitan minimum two-bedroom rent for the state in which the area is located that is established as a floor for all FMRs. If the ZIP Code-rent determined using the rental rate ratio is less than the state minimum, the ZIP Code-rent is set at this state nonmetropolitan minimum. SAFMR for bedroom counts other than two-bedroom units are based on the bedroom-size relationships estimated for the metropolitan area. The final calculated rents were then rounded to the nearest $10.

The Use of Small Area Fair Market Rents in the Dallas, Texas HUD Metro Fair Market Rent Area

In 2007, The Inclusive Communities Project (ICP), a non-profit fair housing focused organization working in the Dallas metropolitan area, sued HUD alleging that "HUD is violating its obligation to set market area fair market rentals for the Dallas-area Section 8 programs."[13] ICP objected to HUD's use of a multicounty area definition for the Dallas metropolitan area. While not admitting guilt, HUD agreed to settle with the plaintiff by naming the Dallas, Texas HUD Metro FMR area (HMFA) as an SAFMR Demonstration Participant. The intent to run an SAFMR demonstration was announced in May 2010 through a Federal Register notice (75 FR 27808). HUD announced the Dallas, Texas HMFA as a demonstration participant via the Federal Register notice announcing proposed fiscal year (FY) 2011 FMRs (75 FR 46958). This marked the first time that SAFMRs were required to be used in the administration of the HCV program.

The Volunteer Demonstration

Within the same Federal Register notice announcing Dallas' required use of SAFMRs, HUD solicited volunteers to participate in the demonstration. To be eligible to apply, "the PHA or a group of PHAs must represent at least 80 percent of the Section 8 voucher tenants in a metropolitan area. Any PHA that is part of the Demonstration Project must use payment schedules based on these SAFMRs, beginning October 1, 2010, or when they are designated as a Small Area Demonstration Project in a subsequent Federal Register Notice."

Response to HUD's call for volunteers may best be described as non-existent. From personal conversations with the managers of apparently suitable PHAs, HUD leadership determined that

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[13] Paragraph 9 of Plaintiff's complaint, Case 3:07-cv-00945, filed in the United States District Court Northern District of Texas Dallas Division, May 29, 2007.

PHAs were unwilling to volunteer due to the financial uncertainties of operating their programs using SAFMRs.

After further considerations, using some Transformation Initiative[14] funding, HUD devised a strategy to offer SAFMR demonstration participants additional funding to be used to offset the necessary administrative expenses incurred due to the switch to SAFMRs. HUD further decided that rather than ask for volunteers, HUD would randomly select PHAs to participate in the demonstration. PHAs who were selected to participate had the opportunity to decline the invitation. HUD made three rounds of offers to PHAs to participate in the Demonstration between July and September 2012. In all, five PHAs accepted HUD's invitation to participate in the SAFMR demonstration and they joined the PHAs in the Dallas, Texas HMFA[15] in using SAFMRs in their service area beginning in 2012.

The Small Area Fair Market Rent Demonstration Evaluation

In 2015, an evaluation was launched to evaluate the extent to which SAFMRs could provide an effective means for HCV holders to move into higher-opportunity areas without significantly raising overall subsidy costs. The five PHAs[16] that agreed to participate in the SAFMR Demonstration, along with two PHAs from the Dallas metropolitan area, were examined in this SAFMR Demonstration Evaluation study. These seven SAFMR PHAs were compared with a group of 138 PHAs that had similar economic and demographic factors as those in the demonstration. The evaluation revealed that voucher families in the PHAs using SAFMRs were more likely to move to areas of high-opportunity than the "Comparison PHAs," that were using area-wide FMRs. This was especially the case for families with children in the SAFMR PHAs. There was a loss of about 3 percent of the units available for the SAFMR PHAs.

The Rulemaking

Although the demonstration was still ongoing, research concerning the benefits of SAFMRs began to appear. One aspect of this research was the benefits of SAFMRs as a tool to assist PHAs and voucher holders in tackling the problem of high voucher concentration in high poverty or low-income areas.[17]

HUD began the process of changing the voucher program rules pertaining to FMRs (along with ancillary program rules related to FMRs) through the publication of an Advanced Notice of Proposed Rulemaking on June 2, 2015 (80 FR 31332). This notice was followed by a Notice of Proposed Rulemaking issued June 16, 2016 (81 FR 39218), and the Notice of Final Rulemaking on November 16, 2016 (81 FR 80567). The final rule became effective on January 17, 2017.

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[14] More information about the Transformation Initiative is available at https://www.huduser.gov/portal/about/trans_init.html.

[15] Additional details regarding the process HUD used to randomly select PHAs for the demonstration may be found in HUD's November 20, 2012 Federal Register notice (77 FR 69651).

[16] The five PHAs that agreed to participate in the demonstration included the Housing Authority of the City of Laredo (Texas), the Town of Mamaroneck Housing Authority (New York), the Chattanooga Housing Authority (Tennessee), the Housing Authority of Cook County (Illinois), and the City of Long Beach Housing Authority (California).

[17] Collinson, Robert A., Ganong, Peter. "The Incidence of Housing Voucher Generosity" Cambridge, MA: Harvard University, 2015.

Through the rule, HUD established an alternative to its 50th percentile FMR criteria to evaluate the concentration of voucher holders in metropolitan areas and to determine if SAFMRs would be a good candidate to help solve the high concentration issues in each area.

In a Federal Register notice accompanying the Final Rule (81 FR 80678), HUD identified 24[18] metropolitan areas where vouchers are highly concentrated in areas of high poverty or low-income and where SAFMRs would likely help. PHAs with jurisdiction in these areas were ultimately mandated to use SAFMRs to determine payment standards rather than metropolitan FMRs. Other PHAs were given the opportunity to opt-in with HUD approval.

The Implementation of the Rule

HUD designated 24 metropolitan areas where the use of SAFMRs is mandatory. PHAs that directly administered HCV assistance for families within the 24 designated metropolitan areas, or "Designated SAFMR PHAs" areas were required to implement SAFMRs by April 1, 2018. In contrast to FMRs, SAFMRs do not apply to any programs other than the HCV program. Other programs that use FMRs (for example, the HOME Investment Partnerships Program) continue to use metropolitan area-wide FMRs regardless of whether SAFMRs have been designated for HCV tenant-based assistance within the same metropolitan area. Designated SAFMR PHAs are not required to, but have the option to, use them for their Project-Based Voucher (PBV) Program as well.

Following a new SAFMR becoming effective, designated PHAs and opt-in PHAs have 3 months to implement new payment standards that fall within the 90 to 110 percent range of the SAFMR.[19] The rule offers PHAs the flexibility to group multiple ZIP Codes into larger payment standard areas or to adopt unique payment standards for each ZIP Code within its jurisdiction.

In the year that a metropolitan area first implements SAFMRs, the SAFMR for each ZIP Code cannot be less than 90 percent of the Metro Area FMR of the previous FY. In subsequent years, the SAFMR for an area is not allowed to be less than 90 percent of the SAFMR for the previous FY.

Once an area has been designated as a SAFMR area, it remains so permanently. HUD will review and update the list of designated SAFMR areas every 5 years as new data becomes available.

Current Calculation Methods

Current calculation of SAFMRs begins by examining each ZIP Code's 40th percentile gross rent estimates. If a ZIP Code has a statistically reliable (based on the margin of error and sample size) gross rent in at least two of the most recent three ACS releases, the average of those rents is used as the current year's "base rent". HUD uses the average to account for inherent volatility of estimates at low levels of geography in the ACS. Because the base rent represents a 5-year, all-mover estimate, the base rent is updated using the recent mover factor, inflation update factor, and inflation trend factor of the ZIP Code's parent metropolitan area. For ZIP Codes without a useable base rent, a

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[18] One of the areas identified through the rulemaking process was the Dallas, Texas HMFA. Consequently, only 23 additional areas were required to start using SAFMRs as part of the rulemaking.

[19] The rule implements a 3-month window for setting payment standards within the basic range for all newly published FMRs, not only SAFMRs.

rent ratio is calculated as discussed previously, although the current practice is to consider the parent HMFA rather than the entire CBSA to further localize SAFMRs. If a ZIP Code does not have a useable base rent or ratio and is bordered by ZIP Codes which do, an average of its neighboring SAFMRs is used. Otherwise, a county-based ratio is used. SAFMRs remain subject to the state minimum, 150 percent cap, and a year-to-year maximum decrease of 10 percent.

The Symposium Papers

Research conducted and presented within this symposium falls into two general categories. First, several contributions extend on the research and findings related to the SAFMR Demonstration. Second, researchers examined the activities pertaining to the implementation of SAFMRs in the areas required by the rule to do so and to look at alternative measures of rent to assess the quality of SAFMRs in these areas. Submissions for this Symposium were advertised through a Call for Papers published on HUDUSER.gov. The guest editors received 14 proposals for the edition. The guest editors reviewed the proposals and considered how each proposal would contribute to the body of knowledge concerning SAFMRs. The guest editors selected 10 of the proposals to move forward. Each of the nine submissions summarized below was reviewed by each of the guest editors who provided comments on the initial submissions. Each submission was assigned a specific corresponding editor who worked with each corresponding author to complete a finished product. Finally, the guest editors reached out to the two international commentators asking for their review of several of the submissions vis-a-vis their experience with housing assistance programs on an international stage.

Small Area Fair Market Rent Demonstration Articles

Work in the first category includes research by Dastrup, Ellen, and Finkel which extends the work completed by the SAFMR Demonstration Evaluation with a specific focus on the impacts of the implementation of SAFMRs on families with children. The authors test whether varying housing assistance subsidy caps with ZIP Code rent levels (that is, introducing SAFMRs) increases the likelihood that voucher-holder families with children relocated in higher-opportunity neighborhoods, as proxied by poverty rates, the proficiency levels of local elementary schools, jobs proximity, and environmental hazards. Because Dastrup et al. focus on families with children, they focus on school proficiency levels and poverty rates. To estimate impacts, the authors use a difference-in-differences specification on a repeated cross-section of administrative data to estimate the effect of the introduction of SAFMRs in seven PHAs as compared with a large group of agencies that continued to operate under metro area FMRs. Five years after implementation, SAFMRs do not appear to affect overall move rates, but they meaningfully affect the locational outcomes among families with children who move. The share of such families settling in neighborhoods in the top quartile of our opportunity index measure increases by 11 percentage points (a 120 percent increase).

McClure and Schwartz examine the interplay between SAFMRs and locational choice for voucher families of different races. McClure and Schwartz explore the idea that the efficacy of the SAFMR program may ultimately hinge on the race and ethnicity of the voucher holder. The authors consider the role that race will play in voucher holders maximizing the benefits of SAFMRs by

acknowledging the persistence of racial segregation in the United States and the potential implications of this given that a majority of voucher holders are either Black or Hispanic. Their analysis of all metropolitan areas exceeding a population of 1 million or more shows that nearly all the growth in HCV-eligible units would occur in ZIP Code areas that are either predominantly White or that are integrated. The consequence of this finding is that widespread implementation of SAFMRs could make it more difficult for minority voucher holders to find eligible units because the maximum qualifying rents would be reduced in many neighborhoods with large concentrations of minority voucher holders. McClure and Schwartz conclude that more will need to be done to help Black and Hispanic HCV recipients learn about predominantly White and integrated neighborhoods and their housing opportunities, because most people live in segregated areas dominated by people of their own race or ethnicity. Most likely, these needs will have to be addressed by PHAs and their nonprofit partners providing transportation assistance and other forms of support to help HCV recipients in segregated low-income communities find housing in opportunity neighborhoods and to provide services to help remain in their new neighborhoods. Housing counseling and case management will need to be enhanced.

Geyer, Dastrup, and Finkel examine whether the implementation of SAFMRs impacts a voucher family's length of stay in the HCV program. This research looks at the seven SAFMR PHAs compared with 138 "Comparison PHAs" from the SAFMR Demonstration Evaluation. The authors find that using SAFMRs reduces the length of stay for voucher tenants. The study found a median length of participation in the HCV program of 11 years. For those seven PHAs using SAFMRs, this exit rate declined by about 2 years to 9 years. Increased attrition effects are largest among households living in lower- and moderate-rent areas at the time of SAFMR introduction. While tenants in lower-rent areas may be forced out by landlords refusing to rent at lower SAFMRs, the greater attrition in moderate rent households is not easily explained. Although households with a working-age adult, as opposed to households with seniors, are more likely to have increased attrition under SAFMRs in the HCV program, this does not translate into improved financial resources. This merits further study to determine why working adults are leaving the program when they still need housing resources.

Edgar Olsen examines the assertion that HUD overpays for housing units in the HCV program and opines on SAFMRs impact on this issue. Olsen's research provides a comprehensive theoretical analysis that leads to the expectation that the worst voucher units and those in the worst neighborhoods will usually rent for more than the mean market rent of identical units and the best units in the best neighborhoods will rent for less than this amount. This paper summarizes and assesses the data, methods, and results of the major studies examining overpayment. The evidence is consistent with the general pattern predicted by the comprehensive theoretical analysis. It is also consistent with an alternative explanation that challenges its interpretation as overpayments and underpayments for voucher units. The mix of units with estimated overpayments and underpayments varies across studies. The weight of the evidence is that these aggregate differences are modest. Finally, the evidence available indicates that SAFMRs will decrease the rents paid for voucher units with any specified set of characteristics in the worst neighborhoods and increase the rents of such units in the best neighborhoods.

Marietta Haffner, a senior researcher at the Delft University of Technology, and Christine Whitehead, Emeritus Professor of Housing Economics at the London School of Economics, reviewed research from this first category and lend their commentary from an international perspective.

Alternative Measures of Market Rents

In the second category of research, Patterson and Silverman evaluate the early implementation strategies of the 24 PHAs required to implement SAFMRs with an emphasis on their payment standard setting behavior. Overall, the authors find that the payment setting practices of these PHAs show low fidelity to the SAFMR Rule's opportunity advancement goals. Although average payment standards hovered around 100 percent of the published SAFMRs, those in low-opportunity areas were generally above 100 percent and offset by payment standards below 100 percent in high opportunity ZIP Codes. In addition, the practice of tiering payment standards, adopted by at least one PHA in 22 of the 24 mandated areas further exacerbates the low fidelity to opportunity advancement goals. The authors recommend that HUD improve its monitoring of the 24 mandated areas, which are currently not required to provide HUD with copies of their payment standards and establish rules for tiering payment standards that conform to the opportunity advancement goals of the SAFMR rule. The authors also indicate that HUD should ensure Moving to Work (MTW) agencies in the mandatory areas remain faithful to the goals of the SAFMR rule. The guest editors note that all PHAs face tensions between supplying deep subsidies that provide access to high opportunity areas—at the cost of serving fewer families—and providing shallower subsidies so more families may be assisted—at the cost of potentially limiting access to highest opportunity areas. Further, the guest editors believe that MTW agencies must continue to serve as laboratories that test the most effective use of limited housing subsidy dollars against many competing program goals, including ending homelessness, promoting self-sufficiency, and improving access to opportunity areas.

In "Comparing Small Area Fair Market Rents to Other Rental Measures Across Diverse Housing Markets," Hess, Walter, Acolin, and Chasins compare SAFMRs with rents measured using webscraped rental listings and other private sources of data for three markets in which the PHAs have shifted to localized payment standards: (1) Fort Lauderdale, Florida; (2) San Antonio, Texas; and (3) Seattle, Washington. They explore correlations among the different sources and synthesize the private data into a combined ZIP Code-level rent estimate. They show spatial correlations among the ratios between SAFMRs and combined rent estimates and examine the difference in neighborhood-level housing stock characteristics. Finally, they explore the PHAs' decision making process in choosing how to incorporate SAFMRs and identify challenges and risks going forward based on the data analysis.

Blackhurst, Briem, and Deitrick show that, in the case of Pittsburgh, Pennsylvania, moving from SAFMRs has helped to increase the number of eligible units across different rental markets, however, increases in eligible units are less noteworthy in markets with higher rents. The authors observe that the disparity between SAFMRs and estimated rents for Pittsburgh, Pennsylvania (from listings available through Rent Jungle), increases substantially in areas with higher estimated rents. This finding offers insight on a potential implication of the 150 percent cap of the FMR on SAFMR.

Lastly, this article evaluates the effectiveness of using ZIP Codes as a suitable geographical unit for delineating rental markets and presents an approach for constructing rental market clusters that are representative of varying spatial amenities. The authors conclude that using a combination of clustering and nearest neighbor algorithms are better predictors of market rents than ZIP Codes and require fewer market delineations.

Aksel Olsen examines the impact of implementing SAFMRs through comparisons with rental data acquired from Craigslist. Nationally, the study found that FMRs represented 35 percent of the rental distribution, which is reasonably close to the target 40 percent, but for the 24 mandatory SAFMR areas FMRs provide only 32 percent. With the implementation of SAFMRs, however, the rental distribution for the 24 SAFMR areas increases to more than 40 percent. The change from using FMRs to using SAFMRs increases the count of units available in higher cost and higher opportunity areas with only a relatively minor loss of availability in low opportunity areas. The authors found that the highest opportunity areas have more than 45 percent of listings using SAFMRs. While this boost was largest for the 24 mandatory areas, it was nonetheless significant for a group of 625 metropolitan areas assuming the use of SAFMRs. This result shows that a broader application of SAFMRs will increase housing availability, especially in higher opportunity areas. Challenges remain in dealing with existing tenants in areas where payment standards will decline on implementation of SAFMRs, however, especially in very tight markets. While the most constrained markets, where rents are very high and availability very low, have the greatest need to use SAFMRs to allocate scarce resources to higher opportunity areas, the tight housing market in these areas may be an impediment to a successful SAFMR implementation.

Finally, Casey examines similar comparisons using Zillow data. Monthly lease prices for 1- to 4-bedroom rental units (about 12 million) are collected from the Zillow platform for the 24 metro areas mandated to use SAFMRs. The author finds that under the SAFMR rule, there is an increase in the number of units that are affordable to voucher holders compared with the number of units when using the areawide FMR in low poverty ZIP Codes. On the other hand, the number of units affordable to voucher recipients using SAFMR is less than the number of units using the areawide FMR for high-poverty ZIP Codes. Because this is a case study, it remains to be seen if the findings will hold true for other segments of advertised rental listings.

Conclusion

The research conducted as part of the first group of papers is conducted on a limited set of PHAs and metropolitan areas. Furthermore, PHAs required to use SAFMRs as part of the rulemaking criteria have been doing so for less than 2 years. The articles in this symposium tremendously expand the body of knowledge surrounding the use of SAFMRs; however, we postulate that this is but a fraction of the work to come.

Acknowledgments

Guest Editors

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Each of the guest editors is a member of the Program Parameters Research Division. The division is responsible for calculating a variety of HUD program parameters including Fair Market Rents and Small Area Fair Market Rents.

Small Area Fair Market Rent Demonstration

- *The Effects of Small Area Fair Market Rents on the Neighborhood Choices of Families with Children*

- *Small Area Fair Market Rents, Race, and Neighborhood Opportunity*

- *Impact of Expanded Choice on Attrition in the Housing Voucher Program*

- *Does HUD Overpay for Voucher Units, and Will SAFMRs Reduce the Overpayment?*

- *Reflections on Demand Assistance in the Rental Sector: A European Perspective*

- *Aspects of the Housing Choice Voucher Program and the Impact of Small Area Fair Market Rents Ceilings: a British Perspective*

The Effects of Small Area Fair Market Rents on the Neighborhood Choices of Families with Children

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Disclaimer: The authors are solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the views of the U.S. Government.

Abstract

This paper reports and extends the quantitative findings of the Small Area Fair Market Rent Demonstration Evaluation, focusing on the important subgroup of families with children. We test whether varying housing assistance subsidy caps with ZIP Code rent levels (that is, introducing Small Area Fair Market Rents or SAFMRs) increases the likelihood that voucher-holder families with children locate in higher opportunity neighborhoods, as proxied by poverty rates, the proficiency levels of local elementary schools, jobs proximity, and environmental hazards. Because of our focus on families with children, we pay particular attention to school proficiency levels and poverty rates. We estimate a difference-in-differences specification on a repeated cross-section of administrative data to estimate the effect of the introduction of SAFMRs in seven public housing agencies as compared to a large group of agencies that continued to operate under metro area FMRs. Five years after implementation, Small Area FMRs do not appear to affect overall move rates, but they meaningfully affect the locational outcomes among families with children who move. The share of such families settling in neighborhoods in the top quartile of our opportunity index measure increases by 11 percentage points (a 120-percent increase).

Introduction

The Housing Choice Voucher (HCV) program, the largest housing assistance program administered by the United States Department of Housing and Urban Development (HUD), provides rental subsidies to over 2.5 million children under the age of 18. The median of these children's families' annual income is approximately $15,000 (in 2008), with 73 percent having family incomes below the federal poverty level (Horn, Ellen, and Schwartz, 2014).[1]

HCV subsidies allow households to rent units on the private market. In theory, voucher holders can locate in a wide variety of neighborhoods, including low-poverty neighborhoods that offer a rich set of resources and opportunities. In practice, however, households with vouchers are frequently concentrated in high-poverty neighborhoods with limited access to the amenities and services associated with economic opportunity.

A growing body of evidence, summarized below, documents that low-income children benefit from spending more of their childhood living in neighborhoods with lower poverty rates and with schools that have higher proficiency rates. So, a key question for policy makers is how to enable more voucher families with children to move to higher-opportunity areas. Because resources for such policies are limited, strategies that can encourage such moves without significantly raising overall subsidy costs are especially needed.

We explore the efficacy of one particular policy reform aimed at encouraging moves to higher-opportunity neighborhoods: Small Area Fair Market Rents (SAFMRs), voucher ceiling rents that vary with ZIP Code rent levels.[2] Traditionally, ceiling rents in the HCV program have been based on a Fair Market Rent (FMR) set for an entire metropolitan area (metro FMR). We evaluate the effect of a demonstration that HUD launched in late 2012 to test Small Area FMRs in five randomly selected public housing agencies (PHAs): Chattanooga Housing Authority (Tennessee), Housing Authority of Cook County (Illinois), Housing Authority of the City of Laredo (Texas), Housing Authority of the City of Long Beach (California), Town of Mamaroneck Housing Authority (New York).[3] We also include two housing agencies in the Dallas, Texas metro area, where SAFMRs were introduced in 2011 as part of a legal settlement (Housing Authority of the City of Dallas and Housing Authority of Plano). We compare pre to post changes in opportunity measures for the ZIP Codes where voucher families with children locate in these seven SAFMR PHAs to the same location outcomes over the same time period for a large sample of voucher families with children assisted by PHAs that were eligible for the demonstration but were not randomly selected to participate.

Our empirical analysis shows that, as intended, SAFMRs increase the pool of units affordable to voucher holders in high-opportunity neighborhoods and decrease the number affordable in low-opportunity neighborhoods. Further, we find evidence that the shift to SAFMRs affects voucher holder families' choice of locations. We find that HCV families with children are no more or less

[1] With an estimated 6.1 million families with children with incomes below the poverty line in 2008, the HCV program provides rental subsidies to approximately 12 percent of families with children with below-poverty incomes.

[2] While the FMR plays a key role in determining the subsidy amount, the actual voucher ceiling, or payment standard, is set by the PHAs. Payment standards generally fall between 90 and 110 percent of the FMR.

[3] Many of the findings we report here are also reported by the authors in the Small Area Fair Market Rent Demonstration Evaluation: Final Report, Dastrup et al. (2018).

likely to move after the implementation of SAFMRs. We find strong effects, however, among those that do move. Using a difference-in-differences regression framework, we find that these mover households are 6.7 percentage points more likely to locate in a ZIP Code that ranks at least one decile higher (within the metro area) in our ZIP Code opportunity index as a result of the introduction of SAFMRs. Although effects are largest among movers, we also see shifts in the locational choices of new voucher holder families with children. Nonetheless, after 5 years, one-third of voucher holders with children in our study area still live in neighborhoods in the bottom quartile of our opportunity measure.

We find variation across housing authorities depending on local housing market conditions. Specifically, the extent to which the catchment area of the housing agency includes rental units where voucher holders can enjoy higher subsidies after the introduction of SAFMRs plays an important role in whether the policy can encourage moves to higher rent neighborhoods. In some cases, most ZIP Codes in the catchment area, or service area of a housing agency, have average rents that are lower than the 40th percentile rent in the larger metro area. In such a housing agency, the SAFMRs will largely fall below original FMRs, meaning that the number of units that rent below the voucher ceiling will fall. Switching to SAFMRs in such a housing agency may be problematic, as the pool of available units may shrink. At the other extreme, if the ZIP Codes in the housing agency's service area have rents that are generally above the metro area rents, a switch to SAFMRs will generally increase the pool of available units.

In late 2016, HUD made SAFMRs optional for all PHAs, and beginning in 2018, it required the housing agencies in 24 metro areas to administer their tenant-based voucher program using SAFMRs. By mandating SAFMRs in entire metropolitan areas rather than individual housing agencies, HUD limited the change in the pool of available units within a metro area. Given this mandate, together with the greater flexibility nationwide, we will see increased use of SAFMRs in the coming years, and this article sheds important light on their potential effect on voucher holder families with children.

Background and Literature

Housing Choice Voucher Program and Neighborhood Access

One of the long-standing arguments for tenant-based subsidies is that they give people far more choice about where to live and allow them to reach a broader set of neighborhoods (Orlebeke, 2000; Schwartz, 2006). Research shows that neighborhoods make a difference in people's lives. The strongest such evidence comes from the Moving to Opportunity (MTO) for Fair Housing demonstration program experiment. Analysis of the MTO experiment found that children who moved to lower-poverty neighborhoods through the program had improved academic outcomes (Turner, Nichols, and Comey, 2012) and enjoyed significantly improved college attendance rates and earnings in young adulthood (Chetty, Hendren, and Katz, 2016). Adults also benefited from increased time in lower-poverty neighborhoods, with significant improvements to their health and well-being (Ludwig et al., 2011) and some evidence of employment and earnings gains (Turner, Nichols, and Comey, 2012).

Despite these potential benefits, however, housing choice voucher holders, including families with children, rarely use their vouchers to live in low-poverty neighborhoods. A number of research papers have documented that voucher holders, especially Black and Hispanic voucher holders, tend to live in highly disadvantaged areas (Devine et al., 2003; Galvez, 2010; McClure, 2008, 2011; Owens, 2012; Pendall, 2000). On average, voucher holders live in less disadvantaged neighborhoods than the residents of public or other HUD-assisted housing (Devine et al., 2003; Hartung and Henig, 1997; Kingsley et al., 2003; Pendall, 2000), but only in slightly less disadvantaged neighborhoods than the average low-income household (Galvez, 2010; Pendall, 2000; Wood, Turnham, and Mills, 2008). These same patterns generally hold for neighborhood poverty, socioeconomic disadvantage, violence, and school performance (Horn, Ellen, and Schwartz, 2014; Lens, Ellen, and O'Regan, 2011).

One factor that is likely contributing to this concentration is the spatial distribution of homes that are affordable to voucher holders under metro area-wide ceiling rents. In a recent contribution to this body of research, McClure, Schwartz, and Taghavi (2015) conclude that "if the nation wants to pursue poverty deconcentration through the [voucher] program, we cannot rely on the program, as it is now structured, to accomplish this goal. Additional incentives and constraints will be needed…." We test the impact of the new set of incentives offered by shifting to SAFMRs.

Small Area Fair Market Rents

Historically, rental subsidies provided by the voucher program have been subject to a single, metro area-wide cap, the area's metro FMR, generally set at the 40th percentile of rents paid by recent movers in the area. With a single rent cap, voucher holders have access to relatively few units in high-rent neighborhoods. In late 2012, HUD launched the SAFMR demonstration to test whether replacing traditional metro FMRs with subsidy limits that vary with ZIP Code rent levels enable more voucher holders to reach neighborhoods of opportunity.[4] Specifically, to set SAFMRs in the demonstration, HUD multiplied the metro FMR by the ratio of the ZIP Code median rent to the metro area median rent, the "rent ratio" that HUD calculates for each ZIP Code from special tabulations of U.S. Census Bureau (Census) data:

SAFMR = Rent Ratio ∗ Metro FMR

As explained in the Dastrup et al. (2018) report, switching from metro FMRs to SAFMRs should make a higher share of units available to voucher holders in higher rent neighborhoods, and a lower share in lower rent neighborhoods. The share is the same where the rent ratio equals 1, and the SAFMR equals the metro FMR.[5]

When SAFMRs are implemented at the level of the housing agency rather than the metro area, it is also possible that a disproportionate share of ZIP Codes in PHA catchment areas have median rents that fall below the metro median. This will mean that most ZIP Codes in that PHA will see a

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[4] SAFMR became effective in demonstration PHAs in late 2012.

[5] See Kahn and Newton (2013) for a contemporary description of the demonstration. Full documentation of how metro FMRs and SAFMRs are currently calculated by HUD is available at huduser.gov/portal/datasets/fmr.html and huduser.gov/portal/datasets/fmr/smallarea/index.html.

reduction in the share of units renting under the SAFMR. This is much more likely to happen in a PHA whose jurisdiction is small relative to the full metro area.[6]

Two prior studies have modeled the likely effects of SAFMRs (or a similarly structured policy reform) on voucher holder location outcomes. Geyer (2017) and Collinson and Ganong (2018) introduce useful models that show that allowing subsidies to vary with small geographies within a metro area may be effective in encouraging voucher holders to move to higher opportunity neighborhoods. However, there are reasons to question the extent to which switching to SAFMRs will help families with children reach higher opportunity areas. First, while SAFMRs may be necessary to help families reach higher-rent neighborhoods, they may not be sufficient; it is unclear in practice if landlords in higher-rent areas will be willing to participate in the voucher program. Further, higher rent does not necessarily mean higher opportunity for families with children; higher rents may capitalize amenities that have little relevance for children.

Two prior studies have also empirically examined the effects of SAFMRs. Reina, Acolin, and Bostic (2018) study the short-term impact of the introduction of SAFMRs on locational outcomes in Dallas and in HUD's demonstration sites. They find that after the shift to SAFMRs, voucher households live in higher opportunity neighborhoods in Dallas than voucher holders in surrounding counties, but they find no positive association with access to opportunity in the other demonstration sites. Significantly, however, they only examine outcomes in 2014, just two years after sites adopted SAFMRs, and the voucher program (including the demonstration) exempts sitting tenants who stay in place from subsidy cap reductions for 1 to 2 years. Collinson and Ganong (2018) also include an empirical analysis of the switch to SAFMRs in the Dallas metro area and find that, after the adoption of SAFMRs, more voucher holders lived in high opportunity neighborhoods, at no additional subsidy cost.

We build on these earlier papers in several ways. First, while Collinson and Ganong's analysis is restricted to the Dallas metro area, we offer an empirical analysis of the impacts of SAFMRs in five additional jurisdictions across the country, which allows us to examine the effect of SAFMRs when implemented in a variety of housing market contexts. Second, we analyze longer-term results than any of the prior studies, observing voucher holders 5 years after implementation. This is

[6] The ability of PHAs to set payment standards between 90 to 110 percent of FMRs (and SAFMRs) may ameliorate the effects of this reduction. Voucher holders are allowed to use their vouchers in other jurisdictions, but such portability can be administratively difficult and is relatively rare. In our analysis sample here, only a small fraction of households used their voucher in another jurisdiction, and preliminary analysis indicates that this did not change after the adoption of SAFMRs. We omit these households from our sample. We also note that the within-ZIP Code distribution of rents for rental units in ZIP Codes with median rents below and above the metro area median rent may also matter. Consider, for example, a metro area in which the variance of rents is greater in ZIP Codes with median rents above the metro area median than it is in ZIP Codes with median rents below the metro area median. In such a metro area, a SAFMR that is 10 percent higher than the FMR in higher-rent neighborhoods will add fewer units than will be lost in a ZIP Code where the SAFMR is 10 percent lower than the FMR. To illustrate this possibility, consider a hypothetical geography of three ZIP Codes, A, B, and C, each with three rental units. The units in A rent for $10, $11, and $12, the units in B rent for $12, $13, and $14, while units in C are more dispersed, renting for $13, $15, and $17. The 40th percentile of all the rents is 12. Four of the units (three in A and one in B) have rents at or below this 40th percentile. The median of all the rents is 13. The median rent of 11 in ZIP Code A is 15 percent lower, so a "SAFMR" for ZIP Code A would be 0.85*12 = 10.2, with one unit renting below this amount. ZIP Code B shares its median with the overall median, and still has one unit at or below 12. The median rent of 15 in ZIP Code C is 15 percent higher than the median of all rents. At a resulting SAFMR of 1.15*12=13.8, one unit is now below the threshold. With only one unit in each neighborhood now below SAFMR, the total number of units affordable has fallen from four to three.

especially critical given that the voucher program contains provisions that existing voucher holders are held harmless from declines in the subsidy cap that applies to them for 1 to 2 years after the implementation of SAFMRs. Third, we focus on the key subgroup of families with children. As discussed above, the potential for neighborhood opportunity to alter long-term outcomes makes housing policy particularly relevant for these voucher holders. Finally, we also analyze the initial location decisions of families with children newly receiving a voucher and distinguish them from those of existing voucher holders who move.

Data and Methods

Our core interest lies in examining whether the shift to ZIP-Code level SAFMRs has enabled voucher families with children to reach neighborhoods that offer a richer set of amenities and opportunities for advancement, and at what, if any, additional cost. In this section we define the opportunity index we use, introduce our sample and data, and review our methods.

Data and Sample

Our analysis requires a variety of datasets, both publicly available measures of neighborhood opportunity and administrative data to which we gained access specifically for this study. Our core dataset consists of HUD administrative records with individual-level detail on household characteristics, income, and rent information for housing choice voucher holder families for the fourth quarter of 2008 (a baseline period for identifying moves in 2009) through the last quarter of 2017. The data include the ZIP Code and census tract where a voucher is used, tenant income and rent payments, the total monthly housing assistance payment subsidy amount provided, and household composition and demographics.

We also rely on the SAFMRs and metro FMRs that HUD publishes each year. For the analysis of the potential of SAFMRs to alter the location of homes affordable to voucher holders, we use fiscal year (FY) 2015 data only, since we want to capture changes that result from rent formula changes rather than any shifts in underlying rents.[7] For the analysis of voucher holder location outcomes over time, we use FY2009 (pre-SAFMR) through FY2017 data.

We use a special tabulation of American Community Survey (ACS) data that the Census produces for HUD in order to determine rent ratios and SAFMRs. The dataset reports estimates, by bedroom size, of the number of units with rents in reasonably narrow ranges for each ZIP Code. We merge 2008–2012 ACS 5-year estimates, which provide a more accurate count of the total number of rental units in each census tract, with HUD SAFMRs to determine the number of units below the respective FMR based on the proportions observed in the special tabulations.

Our sample includes voucher holder families in seven PHAs where SAFMRs have been implemented (SAFMR PHAs), together with all voucher holder families in a large set of

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[7] Of course, it is possible that neighborhoods with relatively high concentrations of voucher holders may see changes in rents over time with changes in the maximum subsidy available through the program in that neighborhood. We do not examine these market-level effects. The rent distribution data we rely on for the affordability analysis is based on the 5-year ACS estimates, which do not allow the year-over-year comparisons that would be required to address this question within our analysis framework.

Comparison PHAs, located in the same HUD-defined clusters as the treatment PHAs.[8] We define a voucher holder family with children as any household with at least one child below 18 years old. In total, the Comparison PHAs include 138 housing agencies serving slightly more than 550,000 voucher holder families with children (in 2015). Dallas and Plano were not part of any cluster as their programs pre-dated the demonstration program, but the clusters that they would have been assigned to are included in our comparison group.[9]

Defining Neighborhood Rent and Opportunity Levels

We assign ZIP Codes to three categories based on the ZIP Code's rent ratio. High-rent ZIP Codes are those in which the median rent is at least 10 percent higher than the metro area median (that is, the ZIP Code rent ratio is greater than 110 percent). In medium-rent ZIP Codes, the rent ratio is between 90 percent and 110 percent, while in low-rent ZIP Codes, the rent ratio is less than 90 percent.

We also rely on four measures of neighborhood opportunity: poverty, school proficiency, employment access, and environmental quality. The measures are detailed in exhibit 1. These are all measures that HUD has used to capture neighborhoods that offer better quality of life and greater opportunities for economic mobility. In all cases, we construct indices, so a higher number indicates higher opportunity.[10]

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[8] HUD invited the five SAFMR PHAs participating in the demonstration by randomly selecting them from clusters defined to ensure a variety of PHAs were included in the demonstration. The clusters were defined based on the number of vouchers administered, fair market rent levels, and the share of working-age heads-of-household among voucher recipients. We use all the remaining housing agencies that were in the same clusters as the SAFMR PHAs as a comparison group (Comparison PHAs).

[9] SAFMRs have been implemented in all 12 PHAs that administer HCVs in the Dallas metro area. Our analysis includes only the Housing Authority of the City of Dallas, which administers most of the vouchers in the area, and the Housing Authority of Plano, a smaller PHA which administers vouchers in a higher-rent area with high measures of opportunity. Finkel et al. (2017) provides more detail on cluster definition and assignment.

[10] The opportunity measures designed for this study are all initially derived from census tract-level measures. SAFMRs are defined for ZIP Codes, in part because ZIP Codes are easier for families seeking housing to use. To make our opportunity measures match the geography of SAFMRs, we convert the census tract measures to ZIP Code measures using population-weighted tract to ZIP Code crosswalks.

Exhibit 1

Opportunity Indicators

Opportunity Indicator (Data Source/s)	Description
Overall Opportunity Index (Composite of the Other Opportunity Indicators)	The Overall Opportunity Index was created specifically for this evaluation. It is the percentile rank by renters in the metropolitan area of the simple average of the percentile rank indexes for the share of nonpoor, public school proficiency, employment access, and environmental hazards.
Percent Nonpoor (ACS 5-Year Estimate, 2010–2014)	The ACS five-year estimates provide the percent nonpoor for each census tract. The percent nonpoor is the ratio of the population above the poverty level to the total population for whom poverty status was determined.
Public School Proficiency (2011–2012)	School-level data on state exams for grade 4 students approximate the quality of local public schools. The measure is based on the public school(s) nearest to each block group and school zone from the School Attendance Boundary Information System. Block group data were weighted by numbers of households to create census tract-level data. The higher the score, the higher the school system quality is in a neighborhood.
Jobs Proximity Access (HUD, 2010)	This index measures the access a neighborhood has to employment opportunities as measured by the distance between block groups and job locations weighted by employment size. Block group data were weighted by numbers of households to create census tract-level data. The higher the index value, the better the access to employment opportunities for residents in a neighborhood.
Environmental Hazards (Environmental Health Hazard Index, 2005)	The Environmental Health Hazard Index is a tract-level index of potential exposure to toxins based on National Air Toxic Assessment data from the U.S. Environmental Protection Agency. The higher the value, the better the environmental quality of a neighborhood.

To facilitate comparisons across measures and geographies, we normalize the Percent Nonpoor, School Proficiency, Employment Proximity Index, and Environmental Hazard Index to be the percentile of the raw index among rental units in the metro area.[11] To create an aggregate index, we average these component index percentile scores and calculate the percentile of the average score, again among rental units, in the metro area.[12] Because prior research has focused on neighborhood poverty rates and school proficiency measures as important markers of opportunity for families with children, we report findings separately for these measures in addition to our overall opportunity index.

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[11] We explored the possibility of including access to transportation in our neighborhood opportunity index. Data on this indicator are not available across all the SAFMR PHAs, and where data are available, they are highly correlated with employment access. Similarly, we explored using neighborhood crime rate data in our measurement of neighborhood opportunity but did not have uniform and consistent coverage in the data for our study geographies.

[12] The Overall Opportunity Index ranges from 0 to 100. A score of 50 for a ZIP Code means that the average of the four component indexes percentile ranks for that ZIP Code is greater than the average in ZIP Codes that contain half of the rental units in the metro area. Data on public school proficiency is missing in 10 percent of the ZIP Codes in our analysis and in under 6 percent of ZIP Codes in the SAFMR PHAs. In these ZIP Codes, we construct the Overall Opportunity Index as the average of the three other component indexes.

Methods

Our first aim is to produce a single point-in-time estimate of how the adoption of SAFMRs changes the set of housing units affordable to voucher holder families. We contrast the estimated count of units with rents below SAFMRs to the count of units with rent below the metro FMR in high-, medium-, and low-rent ZIP Codes. We also compare counts in high-, medium-, and low-opportunity ZIP Codes, as defined by bottom quartile, 25th–75th percentile, and top quartile on the aggregate opportunity index.[13]

Our second aim is to analyze changes in the neighborhoods where voucher holder families with children live. We estimate difference-in-differences regressions using a repeated cross section that includes 2 to 3 years before the implementation of SAFMRs, and 5 to 6 years after the implementation. This approach compares the change in location outcomes after the implementation of SAFMRs in the SAFMR PHAs with the change in location outcomes in the same time period for the Comparison PHAs where SAFMRs were not implemented. We look separately at families with children who newly acquired a voucher and existing voucher holders who moved, since second movers have more time to search for housing and thus may be better able to take advantage of opportunities provided by SAFMRs.[14]

Our primary outcome is whether a family with children moves to a higher (at least 10 percentile points) opportunity neighborhood in a given year. We also directly examine the change in the level of the continuous opportunity scores that result from a move. To isolate the effect of SAFMRs on families with children, we limit our sample to HCV holder households that include a child under the age of 18.[15] We examine the difference in the opportunity index of the initial and destination ZIP Codes for all voucher holder families with children and those who move. We organize our data into a household by year panel. That is, we have repeated observations for households receiving vouchers between 2009 and 2017. The panel is unbalanced because households enter and leave the sample as they newly receive a voucher or exit the voucher program. Our regression sample is all households in SAFMR or Comparison PHAs for these years. We fit the following model:

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[13] This analysis includes a simplifying assumption that PHAs set the payment standard, which generally must fall between 90 and 110 percent of the FMR or SAFMR, equal to 100 percent of the FMR or SAFMR. This gives PHAs some latitude in setting the maximum rent that is subsidized with the voucher (with higher payment standards resulting in fewer low-income households provided with subsidies). The findings we present here could be either mitigated or amplified by PHA decisions in setting payment standards.

[14] For data privacy reasons, we do not have access to exact voucher holder addresses or geocode coordinates. We determine that a family has moved if both the ZIP Code and census tract in which the family lives changes in the administrative record during a given year (or relative to the prior year). A household administrative record is updated at least annually (on a rolling basis) as a result of required annual income recertification. Additional administrative actions can generate an updated record, including a household move.

To streamline our unadjusted analyses of the proportion of families with a voucher living in each neighborhood type, we aggregate our move data to reflect four 2-year periods, one before the implementation of SAFMRs, and three after.

[15] Sensitivity analyses (not included) do not show meaningful differences in findings when the sample is restricted to households with children under the age of 13 or under the age of 5. The coefficient of interest in the models we estimate on a restricted sample are nearly identical to the analogous coefficients from models estimated on the full sample of HCV holders with a "families with children" subgroup indicator interacted with the difference-in-difference terms. We present the restricted sample results here for a cleaner exposition. The interacted model for the overall opportunity index outcome is reported in Dastrup et al. (2018).

$$MovedUp_{ist} = \alpha + \lambda D_t + \delta(SAPHA_s * D_t) + \beta X_{ist} + \gamma PHA_s + \varepsilon_{ist}$$

MovedUp$_{ist}$ is the binary outcome variable indicating if household *i* in PHA type *s* (SAFMR or Comparison) moved to a ZIP Code with at least a 10-point higher opportunity index score as compared with their initial ZIP Code in time period *t*. The term D_t is an indicator of whether period *t* is after SAFMR implementation (2013–2017 for all SAFMR PHAs, with an additional 2011–2012 indicator term added for the Dallas PHAs that implemented SAFMRs 2 years earlier). The term *SAPHA$_s$* $* D_t$ indicates that an observation is for a household in a SAFMR PHA in the periods after SAFMRs are implemented. The estimate for the parameter δ is our difference-in-differences effect of interest. It measures the additional percentage point likelihood that a household in the SAFMR PHAs will move to a higher opportunity ZIP Code as a result of the policy change.[16] Our identifying assumption is that no other factors are changing differentially in SAFMRs relative to Comparison PHAs that are correlated with the *MovedUp$_{ist}$* outcome. Our model includes a set of potentially time varying household-level characteristics X_{ist} observable in HUD's tenant-level data. We include PHA-level fixed effects, γPHA_s. The model has an individual, time, PHA error term, ε_{ist}.

We also estimate the same model with $\Delta Opportunity_{ist}$ as the outcome of interest. This outcome measures the change in neighborhood opportunity score that results from the move. Therefore, a value of 10 indicates that a family moved to a ZIP Code with a one decile higher score within the metro area in the given opportunity measure.

To capture the possibility that rent rules affect households in lower-rent neighborhoods differently than those in higher-rent neighborhoods, we interact the *SAPHA$_s$* term with indicators for whether the household lives in a high-, medium-, or low-rent neighborhood at the start of the period, as well as including the indicators separately in the model and interacted with D_t. This method allows us to estimate different δ coefficients for each neighborhood type.

To test whether the adoption of SAFMRs affect the unconditional probability of moving, we expand our sample to the full set of existing voucher families with children and estimate regressions where our outcome variable is an indicator of whether a family with children moved at all. Now the parameter δ is interpreted as indicating whether families with children are more likely to relocate at all (whether to a higher, similar, or lower opportunity neighborhood) as a result of SAFMRs. We also estimate our model on the outcomes of whether a household moved up a decile in opportunity using the full unconditional sample.

Results

This section begins with our analysis of how SAFMRs alter the share of units that are affordable in neighborhoods with different levels of rent and opportunity. We then present findings on actual location outcomes for voucher families with children.

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[16] The estimated coefficient on the indicator for Dallas metro area PHAs in 2011–2012 captures the initial effect of SAFMRs in these two PHAs.

Location of Units Affordable to Voucher Holder Families with Children

We start with a ZIP-Code level analysis for the seven PHAs where SAFMRs were implemented during our analysis period that explores shifts in the neighborhood distribution of rental units that are *potentially* affordable to voucher holder families in that they charge rents below the applicable FMR. Exhibit 2 shows the shift to SAFMRs clearly increased the number of rental units in high-rent neighborhoods that were affordable to voucher holder families (or renting under the applicable FMR cap) in the seven SAFMR PHAs. Under SAFMRs, 174,000 units in high-rent neighborhoods were affordable to voucher holder families, more than double the number that would have been affordable under metro FMRs (82,000). At the other end of the spectrum, the number of units with rents below the applicable FMR in low-rent neighborhoods fell with the switch from conventional to SAFMRs, from 278,000 to 174,000. The exhibit also shows that the reduction in units available in low-rent neighborhoods was larger than the increase in units available in higher rent neighborhoods, meaning that the total number of rental units affordable to voucher holder families fell slightly after the adoption of SAFMRs.

Exhibit 2

Number of Units Renting Below Voucher Rent Cap Under FMR and SAFMR, by Rent Ratio
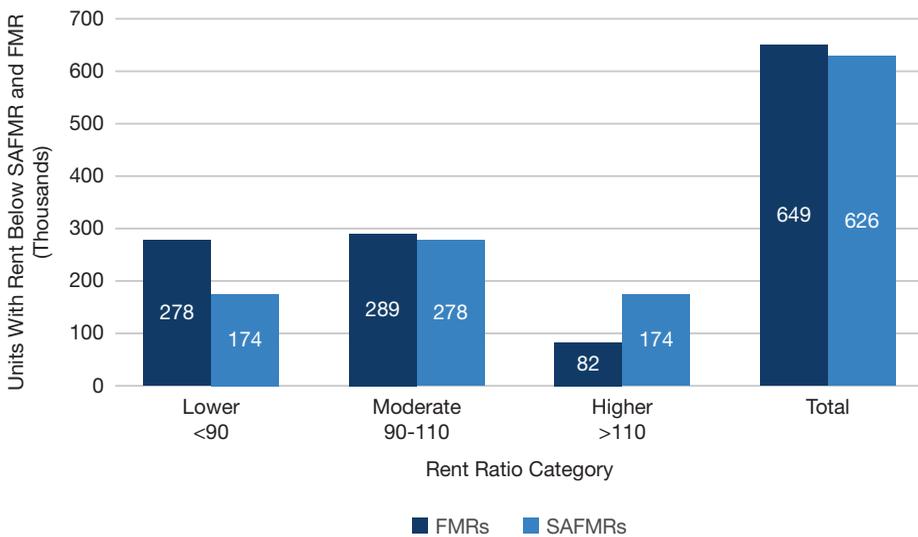
FMR= Fair Market Rent; Small Area FMR = Small Area Fair Market Rent.
Notes: Analysis dataset includes all ZIP Codes in the service areas of the seven Small Area FMR PHA's in our analysis.
Sources: HUD FY2015 Fair Market Rents; HUD FY2015 Small Area Fair Markets Rents; 2012 American Community Survey 5-Year Estimates (special tabulation for HUD of rent and rental units by ZCTA); 2012 American Community Survey 5-Year Estimates (total rental units), converted to ZIP Code estimates using HUD ZIP Code to census tract crosswalks

Exhibit 3 shows that there is a lot of variation across the seven geographic areas in the change in the number of affordable units across neighborhood rent types that results from the introduction of SAFMRs. The exhibit shows the percentage change in units renting below the applicable FMR in each of the PHAs where they were implemented.[17]

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[17] Specifically, we calculated the number of units renting below the SAFMR minus the number of units renting below the metro FMR, divided by the number of units renting below the metro FMR.

In the Mamaroneck, Dallas, and Cook County housing authorities, we see 14- to 17-percent declines in lower rent neighborhoods and similarly sized gains in units in higher rent neighborhoods. For these PHAs, relative to metro FMRs, SAFMRs shifted affordable units from lower to higher rent neighborhoods, with the overall number of units affordable staying about the same. In Chattanooga and Laredo, the direction of the change is the same, but magnitudes are smaller.

In Long Beach, by contrast, most of the affordable rental housing stock is in lower rent neighborhoods. Introducing SAFMRs in PHA results in large losses (23 percent) in the share of units affordable in low-rent neighborhoods that are not offset by gains in high-rent and moderate-rent neighborhoods. Very few rental units are available in the higher rent ZIP Codes within the Long Beach PHA's jurisdiction. Meanwhile, in Plano, where very few rental units are in low-rent areas, SAFMRs result in substantially more (nearly 40 percent) units that are affordable in high-rent neighborhoods relative to metro FMRs, with only a modest decrease in the low- and moderate-rent neighborhoods. Note that these differences are more pronounced because in the demonstration, SAFMRs were implemented in individual housing agencies rather than full metropolitan areas (NYU Furman Center, 2018).

Exhibit 3

Percent Change in Number of Units Renting Under FMR After Implementation of SAFMRs, by ZIP Code Rent Ratio
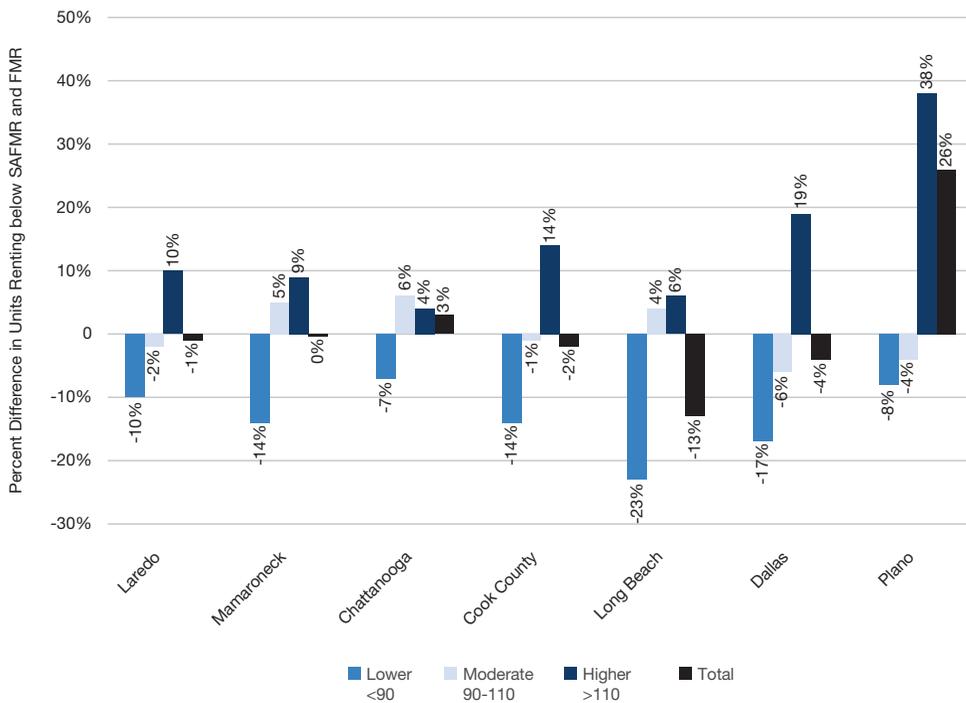
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Note: Analysis dataset includes all ZIP Codes in the service areas of the seven Small Area Fair Market Rent Public Housing Authorities in our analysis.
Sources: HUD FY2015 Fair Market Rents; HUD FY2015 Small Area Fair Markets Rents; 2012 American Community Survey 5-Year Estimates (special tabulation for HUD of rent and rental units by ZCTA); 2012 American Community Survey 5-Year Estimates (total rental units)

Exhibit 4 confirms that SAFMRs flatten the relationship between the share of units affordable with a housing choice voucher and ZIP Code rent levels. Fewer units rent below SAFMRs than FMRs in ZIP Codes with lower rent ratios and more units rent below SAFMRs than FMRs in ZIP Codes with higher rent ratios.

Exhibit 4

Fitted Relationship Between Share of Units Affordable Under SAFMRs and FMRs and ZIP Code Rent Ratio
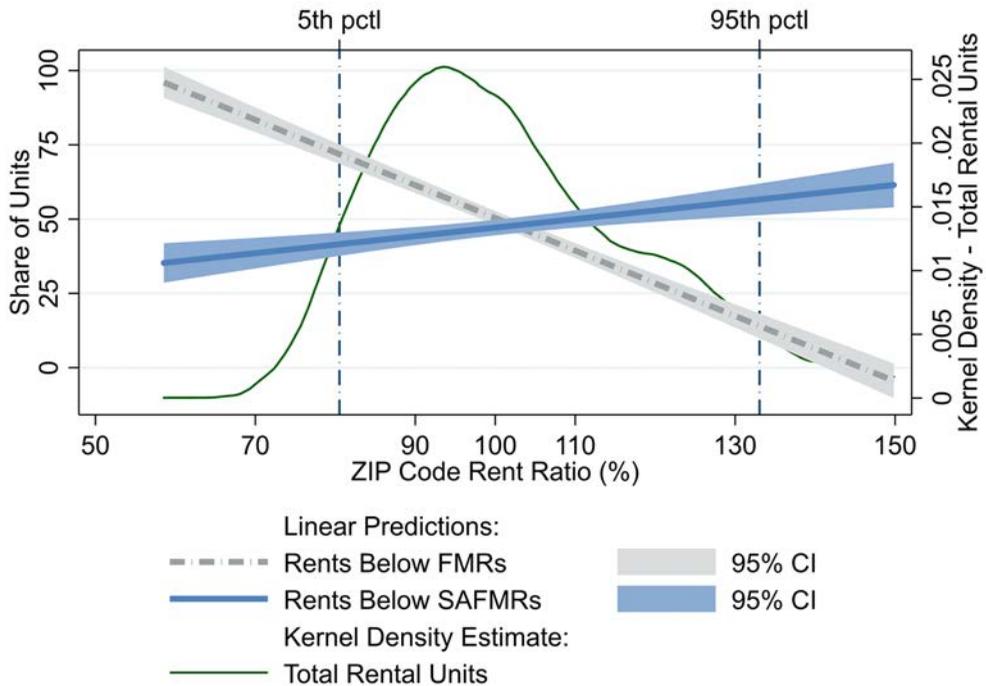
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Note: Analysis dataset includes all ZIP Codes in the service areas of the seven Small Area Fair Market Rent Public Housing Authorities in our analysis.
Sources: HUD FY2015 Fair Market Rents; HUD FY2015 Small Area Fair Markets Rents; 2012 American Community Survey 5-Year Estimates (special tabulation for HUD of rent and rental units by ZCTA); 2012 American Community Survey 5-Year Estimates (total rental units)

The switch to SAFMRs not only provides more options in high-rent areas but also in high-opportunity areas, or at least areas with lower poverty rates, higher performing schools, and cleaner air. Exhibit 5 shows that, for each index, more units are potentially available to voucher holder families in high-opportunity areas under SAFMRs compared with metro area FMRs, and fewer units are available in low-opportunity areas. For example, the share of units renting under the applicable FMR in low-poverty ZIP Codes rose from a third to over a half, while the share renting under the applicable FMR in high-poverty ZIP Codes fell from 70 percent to 48 percent under SAFMRs.

Exhibit 5

Changing Share of Units Affordable by Opportunity Measure Quartiles
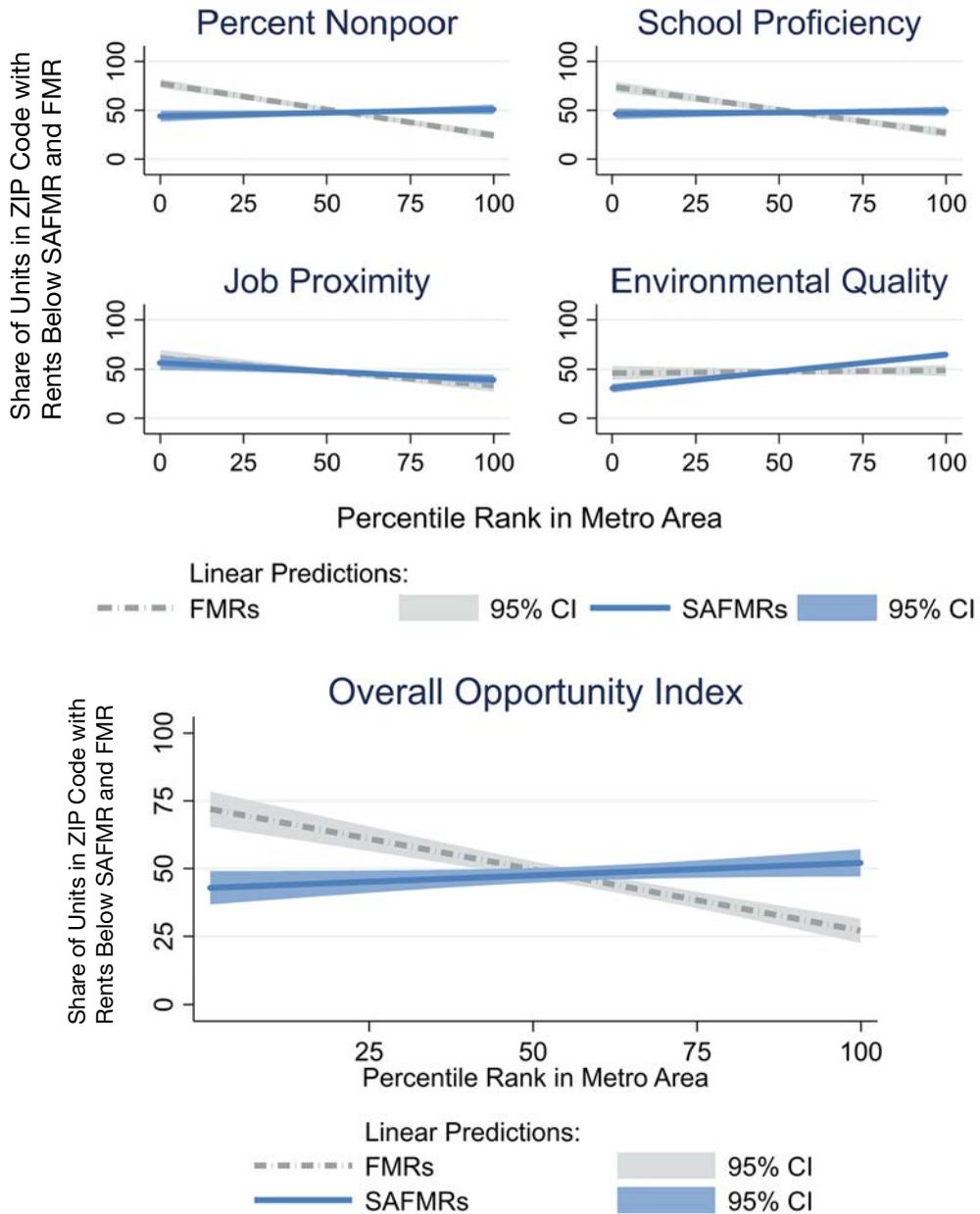
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.

Notes: All ZIP Codes in Small Area Fair Market Rent (SAFMR) public housing authority (PHA) service areas (seven PHAs where SAFMRs have been implemented). Overall index calculated as percentile rank within Metro Area of average of component indexes percentile ranks.

Sources: HUD FY2015 metro Fair Market Rents and SAFMR; 2012 American Community Survey (ACS) 5-year estimates (special tabulation for HUD of rent and rental units by ZCTA and public extract of total rental units; 2014 ACS 5-year estimates (poverty rate/percent nonpoor); School Proficiency Index, 2011–2012 (from HUD Open Data); Job Proximity Index, 2010 (from HUD Open Data); Environmental Health Hazard Index, 2005 (from HUD Open Data)

Actual Location of Voucher Holder Families with Children

The analyses above suggest that Small Area Fair Market Rents are doing what they were intended to do: opening up more opportunities for voucher holder families with children to move to high-rent areas that offer a richer set of resources and greater racial diversity. They do not, however, tell us whether voucher holder families with children are able to take advantage of those opportunities. In this section, we examine the actual location outcomes of voucher holder families with children before and after the adoption of SAFMRs.

Exhibit 6 reports the results of difference-in-differences regressions for the sample of voucher holders that moved in a given year. Here we see that SAFMRs increased the likelihood that voucher holder families with children who move reach higher-opportunity neighborhoods. In column 1, families with children who move are nearly 7 percentage points more likely to move to a neighborhood with a significantly higher (at least 10 points) opportunity index score than are their counterparts in Comparison PHAs as a result of the introduction of SAFMRs (the coefficient 0.067*** in column 1).[18] Given that 30 percent of moves in SAFMR PHAs meet this criterion before the introduction of SAFMRs, this statistic represents a 22-percent increase in the incidence of such moves.

Column 2 demonstrates that the effect is strongest for households that start in low-rent ZIP Codes (column 2), although the coefficient estimates for the different starting rent ratio categories are not statistically significantly different from each other.

The regression coefficients reported in Column 3 indicate an average 4.4-percentile increase in our opportunity index resulting from the introduction of SAFMRs. This is a 175-percent increase relative to the mean of 2.5 for pre-SAFMR moves in SAFMR PHAs. While families with children with a voucher who move under metro area FMRs also tend to locate to ZIP Codes with higher opportunity measures, the resulting *increase* in average metro area percentile ranking on opportunity more than doubles as a result of SAFMRs.

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[18] This is 2.4 percentage points higher and statistically significantly different than the effect for households without children.

Exhibit 6

Regression Estimates of Effect of SAFMRs on Overall Opportunity Index,
Conditional on Moving for HCV Holder Families with Children

		Model			
		(1) *Move Up*	*(2)* *Move Up, by* *Starting Rent* *Ratio*	*(3)* *Change in* *Overall Index*	*(4)* *Change in* *Overall Index* *by Starting* *Rent Ratio*
		Outcome Variable **Mean (SAFMR Pre-SAFMR)**			
		Moved Up *(10 Percentile)* **0.304**	*Moved Up* *(10 Percentile)* **0.304**	*ΔOpportunity* **2.51**	*ΔOpportunity* **2.51**
		Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)
SAFMR PHA Post-SAFMR		0.067*** (0.017)		4.38*** (1.11)	
SAFMR PHA Post-SAFMR ZIP Rent Ratio Interaction	Lower (<90) Moderate (90–110) Higher (>110)		0.095* (0.043) 0.073*** (0.015) 0.050 (0.026)		6.00 (3.66) 4.66** (1.28) 5.41** (1.89)
Dallas PHAs 2011–2012		0.042** (0.013)	Interacted	2.66** (0.82)	Interacted
Year = 2011–2012		− 0.004 (0.003)	Interacted	− 0.99*** (0.20)	Interacted
Post-SAFMR		− 0.012*** (0.004)	Interacted		
Household Characteristics		Yes	Yes	Yes	Yes
PHA Fixed Effects		Yes	Yes	Yes	Yes
Intercept		0.324*** (0.008)	0.316*** (0.010)	1.92*** (0.42)	1.13 (0.68)
Sample Size (Household Years)		376,180	376,180	376,180	376,180
Number of PHAs		145	145	145	145

HCV = Housing Choice Voucher. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.

*** = p<0.001. ** = <0.01. * = <0.05.

Sources: HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Markets Rents (rent ratios); HUD PIC data extract; opportunity index (see exhibit 1)

Results for school proficiency and neighborhood poverty measures are consistent with those for the average combined measure. As shown in exhibit 7, families with children with a voucher are about 6 percentage points more likely to move to a ZIP Code with local schools that are a decile higher within the metropolitan area in terms of the percent of students that are proficient (column 1).

The average increase in percentile gains in school proficiency for movers goes up by 3.9 percentile points (column 3) as a result of the introduction of SAFMRs.

Exhibit 7

Regression Estimates of Effect of SAFMRs on Move Outcomes with Respect to School Proficiency, Conditional on Moving for HCV Holder Families with Children

		Model			
		(1) *Move Up*	*(2)* *Move Up, by Starting Rent Ratio*	*(3)* *Change in Overall Index*	*(4)* *Change in Overall Index by Starting Rent Ratio*
		Outcome Variable **Mean (SAFMR Pre-SAFMR)**			
		Moved Up School (10 Percentile) **0.307**	*Moved Up School (10 Percentile)* **0.307**	*ΔPctl School Proficiency* **1.56**	*ΔPctl School Proficiency* **1.56**
		Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)
SAFMR PHA Post-SAFMR		0.059*** (0.015)		3.87** (1.24)	
SAFMR PHA Post-SAFMR ZIP Rent Ratio Interaction	Lower (<90)		0.074*** (0.015)		4.34*** (1.01)
	Moderate (90–110)		0.081** (0.024)		5.51* (2.32)
	Higher (>110)		0.017 (0.037)		2.34 (1.93)
Dallas PHAs 2011–2012		0.013 (0.009)	Interacted	1.38 (0.79)	Interacted
Year = 2011–2012		– 0.006* (0.003)	Interacted	– 0.93*** (0.18)	Interacted
Post-SAFMR		– 0.010* (0.004)	Interacted	– 1.48*** (0.25)	Interacted
Household Characteristics		Yes	Yes	Yes	Yes
PHA Fixed Effects		Yes	Yes	Yes	Yes
Intercept		0.324*** (0.007)	0.365*** (0.012)	1.51*** (0.42)	5.09*** (0.91)
Sample Size (Household Years)		365,156	365,156	365,156	365,156
Number of PHAs		137	137	137	137

HCV = Housing Choice Voucher. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
***=p<0.001. **=p<0.01. *=p<0.05.
Sources: HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Markets Rents (rent ratios); HUD PIC data extract; opportunity index (see exhibit 1)

As shown in exhibit 8, families with children with vouchers are also more likely to move to lower poverty ZIP Codes after the introduction of SAFMRs.

Exhibit 8

Regression Estimates of Effect of SAFMRs on Move Outcomes with Respect to Percent Nonpoor, Conditional on Moving for HCV Holder Families with Children

		Model			
		(1) *Move Up Percent Nonpoor*	*(2)* *Move Up Percent Nonpoor, by Starting Rent Ratio*	*(3)* *Change Percent Nonpoor Percentile*	*(4)* *Change in Percent Nonpoor Percentile by Starting Rent Ratio*
		Outcome Variable Mean (SAFMR Pre-SAFMR)			
		Moved Up Percent Nonpoor (10 Percentile) **0.320**	*Moved Up Percent Nonpoor (10 Percentile)* **0.320**	*ΔPctl Percent Nonpoor* **3.20**	*ΔPctl Percent Nonpoor* **3.20**
		Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)
SAFMR PHA Post-SAFMR		0.060*** (0.016)		4.27*** (0.93)	
SAFMR PHA Post-SAFMR ZIP Rent Ratio Interaction	Lower (<90)		0.014 (0.047)		3.34 (3.99)
	Moderate (90–110)		0.097*** (0.016)		5.25*** (1.16)
	Higher (>110)		0.102*** (0.018)		8.36** (2.18)
Dallas PHAs 2011–2012		0.036** (0.012)	Interacted	3.13*** (0.71)	Interacted
Year = 2011–2012		– 0.004 (0.003)	Interacted	– 1.01*** (0.22)	Interacted
Post-SAFMR		– 0.012** (0.004)	Interacted	– 1.74*** (0.26)	Interacted
Household Characteristics		Yes	Yes	Yes	Yes
PHA Fixed Effects		Yes	Yes	Yes	Yes
Intercept		0.34*** (0.007)	0.45*** (0.01)	2.65*** (0.42)	10.90*** (0.96)
Sample Size (Household Years)		376,180	376,180	376,180	376,180
Number of PHAs		145	145	145	145

HCV = Housing Choice Voucher. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
*** = p<0.001. ** = p< 0.01. * = p< 0.05.
Sources: HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Markets Rents (rent ratios); HUD PIC data extract. Opportunity index (see exhibit 1)

As for families with children newly receiving a voucher, exhibit 9 shows that, after the implementation of SAFMRs, families with children newly receiving a voucher locate in ZIP Codes that are at a 4.8 higher percentile on average in the metropolitan area distribution of overall opportunity (column 1), a 3.7 higher percentile in school proficiency (column 2), and a 5.3 higher percentile in the percent of households that are nonpoor (column 3).

Exhibit 9

Regression Estimates of Effect of SAFMRs on Location Outcomes for New HCV Holder Families with Children

| | Model | | |
| | (1) | (2) | (3) |
	Overall Index Percentile	*School Proficiency Percentile*	*Percent Nonpoor Percentile*
	Outcome Variable Mean (SAFMR Pre-SAFMR)		
	Overall Index Percentile **33.1**	*School Proficiency Percentile* **35.4**	*Percent Nonpoor Percentile* **36.5**
	Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)
SAFMR PHA Post-SAFMR	4.80*** (1.39)	3.72*** (0.89)	5.33*** (1.26)
Dallas PHAs 2011–2012	0.55 (0.87)	− 0.55 (0.75)	1.32 (0.79)
Year = 2011–2012	− 0.15 (0.26)	− 0.35 (0.27)	− 0.18 (0.28)
Post-SAFMR	− 1.17*** (0.33)	− 1.48*** (0.30)	− 0.92** (0.30)
Household Characteristics	Yes	Yes	Yes
PHA Fixed Effects	Yes	Yes	Yes
Intercept	33.76*** (0.71)		36.03*** (0.67)
Sample Size (Household Years)	161,712	154,963	161,712
Number of PHAs	144	136	144

HCV = Housing Choice Voucher. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
*** = p<0.001. ** = p< 0.01. * = p< 0.05.
Sources: HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Markets Rents (rent ratios); HUD PIC data extract; opportunity index (see exhibit 1)

The regression estimates presented in exhibit 10 show that SAFMRs do not change the overall incidence of moves among all families with children with vouchers (column 1) and result in only a small statistically significant decrease in moves from lower-rent ZIP Codes (column 2). However, column 3 shows that the unconditional likelihood of moving to a higher-opportunity neighborhood increases by a half a percentage point (on a base of 4.2 percent) after SAFMR adoption.

Exhibit 10

Regression Estimates of Effect of SAFMRs on Location Outcomes for All HCV Holder Families with Children

		Model			
		(1) *Moved Neighborhood*	*(2)* *Moved Neighborhood, by Starting Rent Ratio*	*(3)* *Moved Up a Decile in Opportunity Index*	*(4)* *Moved Up a Decile in Opportunity, by Starting Rent Ratio*
		Outcome Variable Mean (SAFMR Pre-SAFMR)			
		Moved **0.139**	*Moved* **0.139**	*Moved Up* **0.042**	*Moved Up* **0.042**
		Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)	Coefficient (Std Err)
SAFMR PHA Post-SAFMR		-0.004 (0.008)		0.007*** (0.002)	
SAFMR PHA Post-SAFMR ZIP Rent Ratio Interaction	Lower (<90)		– 0.007 (0.005)		0.010 (0.005)
	Moderate (90–110)		– 0.001 (0.010)		0.009** (0.004)
	Higher (>110)		– 0.003 (0.010)		0.005 (0.003)
Dallas PHAs 2011–2012		– 0.012 (0.007)	Interacted	0.003 (0.002)	Interacted
Year = 2011–2012		0.005 (0.004)	Interacted	0.001 (0.001)	Interacted
Post-SAFMR		– 0.018*** (0.003)	Interacted	– 0.007*** (0.001)	Interacted
Household Characteristics		Yes	Yes	Yes	Yes
PHA Fixed Effects		Yes	Yes	Yes	Yes
Intercept		0.141*** (0.004)	0.147*** (0.005)	0.045*** (0.002)	0.055*** (0.003)
Sample Size (Household Years)		2,707,779	2,707,779	2,707,779	2,707,779
Number of PHAs		145	145	145	145

HCV = Housing Choice Voucher. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
*** = p<0.001. ** = p< 0.01. * = p< 0.05.
Note: Sample includes all families with children with a voucher in each year except new voucher holders in the first year they receive a voucher.
Sources: HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Markets Rents (rent ratios); HUD PIC data extract; opportunity index (see exhibit 1)

The combined result of these effects in terms of neighborhood opportunity outcomes for families with children with a voucher is summarized in exhibit 11. By 2017, 15 percent of voucher holder families with children in SAFMR PHAs lived in neighborhoods in the highest quartile of our opportunity index as compared with 10 percent in 2010. Changes were even larger for families

with children that moved and those initially receiving a voucher. By 2017, 20 percent of families with children with a voucher that moved were locating to neighborhoods in the top quartile of the opportunity distribution, and 18 percent of new voucher holder families with children were using their voucher in these types of ZIP Codes. Meanwhile, in Comparison PHAs we see essentially no changes over the same period.

Exhibit 11

The Share of Voucher Holder Families with Children Who Live (After Any Moves) in ZIP Codes by Opportunity Level Over Time, in SAFMR and Comparison PHAs
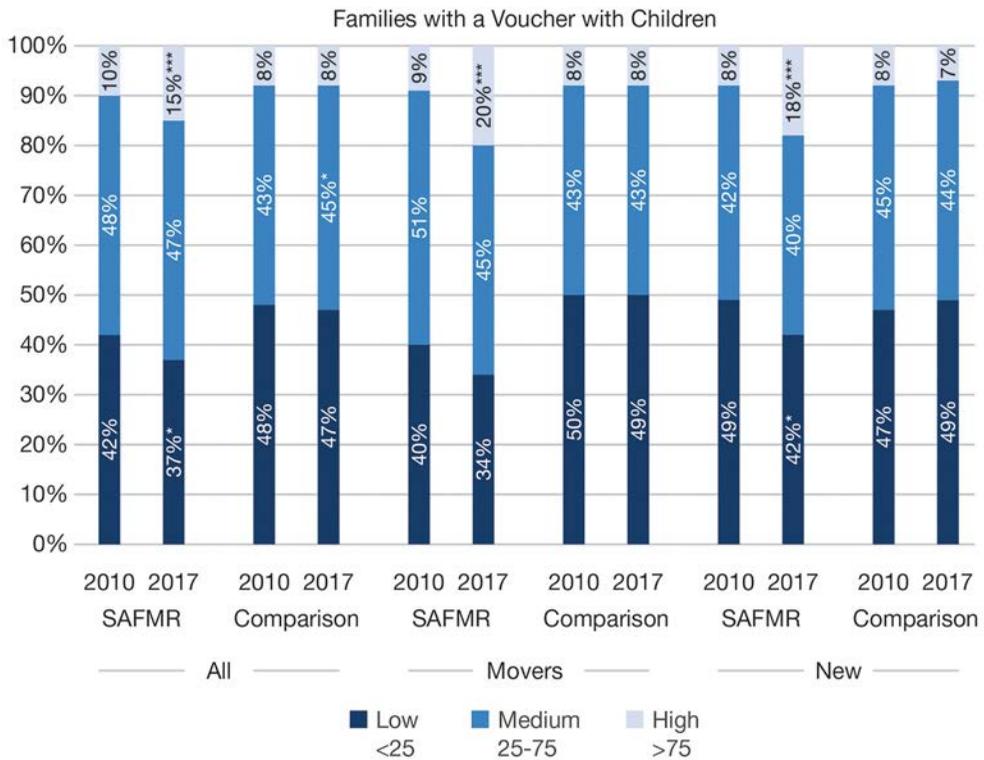
PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
Notes: All voucher holder families with children in ZIP Codes in Small Area FMR PHA service areas (seven PHAs where Small Area FMRs have been implemented) and in 144 Comparison PHAs. Statistically significantly different from the same proportion in 2010 at p-value < 0.001 ***, < 0.01 **, and < 0.05 *.
Sources: HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Markets Rents (rent ratios); HUD PIC data extract (counts); opportunity index (see exhibit 1)

Conclusion and Policy Implications

Our analysis shows that SAFMRs show promise as a strategy to enable more voucher holder families with children to reach high-opportunity neighborhoods. First, SAFMRs increase the pool of units potentially available to housing choice voucher holder families in high-opportunity neighborhoods and reduce the number in neighborhoods that offer more minimal opportunities. Further, the shift to SAFMRs appears to affect voucher holder families' *actual* choice of locations. Among voucher holder families with children who move, the share locating in ZIP Codes in the top

quartile of opportunity levels increases by 11 percentage points after the introduction of SAFMRs. No changes are observed in a set of comparison jurisdictions. Combined with prior research findings on long-term benefits from moves to higher opportunity neighborhoods to children in households receiving housing assistance, our research suggests that the implementation of SAFMRs may transform the HCV program toward achieving some gains in intergenerational economic well-being of low-income households. Notably, as detailed in Dastrup et al. (2018), these effects appear to be achieved at no additional cost to the government 5 years after implementation, reflecting lower subsidies to voucher holder families in low-opportunity neighborhoods more than offset the increased subsidies in higher opportunity areas.

While effects are largest among movers, we also see shifts in the locational choices of new voucher holder families with children. Given the time pressure that new voucher holder families face to find a home that meets voucher program quality standards and rents for less than the ceiling rent, it is perhaps not surprising that we see a more modest change for new voucher holder families as compared with continuing voucher holder families who have more time to search for new homes. As more PHAs adopt SAFMRs, they might pay more attention to helping new voucher holder families navigate the market and reach better neighborhoods. They may also need to do more work to recruit more landlords in high-rent areas, and at least for those with catchment areas dominated by low-rent ZIP Codes, adopt reforms to make it easier for voucher holder families to move to other jurisdictions.

Appendix A: Additional Exhibits

Exhibit A.1

Rental Units and ZIP Codes by ZIP Code Rent Ratio for SAFMR PHAs

		n	ZIP Code Rent Ratio					
			<0.9		0.9-1.1		>1.1	
All SAFMR PHAs	Units (%)	1,290,864	380,598	(29)	588,330	(46)	321,936	(25)
	ZIP Codes (%)	411	87	(21)	186	(45)	138	(34)
Laredo	Units (%)	25,544	6,582	(26)	15,228	(60)	3,734	(15)
	ZIP Codes (%)	5	1	(20)	3	(60)	1	(20)
Mamaroneck	Units (%)	143,226	51,090	(36)	64,066	(45)	28,069	(20)
	ZIP Codes (%)	67	9	(13)	32	(48)	26	(39)
Chattanooga	Units (%)	53,390	8,638	(16)	36,152	(68)	8,600	(16)
	ZIP Codes (%)	30	6	(20)	21	(70)	3	(10)
Cook County	Units (%)	291,302	96,374	(33)	130,023	(45)	64,904	(22)
	ZIP Codes (%)	127	37	(29)	53	(42)	37	(29)
Long Beach	Units (%)	107,946	60,531	(56)	35,990	(33)	11,425	(11)
	ZIP Codes (%)	13	5	(38)	5	(38)	3	(23)
Dallas	Units (%)	668,981	157,382	(24)	306,396	(46)	20,523	(31)
	ZIP Codes (%)	168	29	(17)	71	(42)	68	(40)
Plano	Units (%)	236,040	21,549	(9)	111,166	(47)	103,324	(44)
	ZIP Codes (%)	52	1	(2)	21	(40)	30	(58)

PHA=Public Housing Agency. SAFMR=Small Area Fair Market Rent.
Notes: Analysis dataset includes all ZIP Codes in PHA service areas where SAFMRs have been implemented. Services areas determined based on review of PHA administrative documents. Percentage of total for each row in parentheses.
Sources: Rent ratios calculated using HUD FY2015 Fair Market Rents and HUD FY2015 Small Area Fair Market Rents; total rental units recovered from 2012 American Community Survey 5-year estimates, converted to ZIP Code estimates using HUD ZIP Code to census tract crosswalks

Exhibit A.2

Substantial Variation Across PHAs in Number of Units Renting Below FMRs and SAFMRs

	Total Units with Rents Below FMR, All ZIP Code Rent Ratios		Difference	Percent Change SAFMR vs. FMR
	SAFMR	FMR		
All SAFMR PHAs	626,483	648,607	– 22,125	– 3.4
Laredo	14,163	14,317	– 208	– 1.4
Mamaroneck	90,665	90,955	– 290	– 0.3
Chattanooga	23,395	22,673	721	3.2
Cook County	152,749	155,401	– 2,652	– 1.7
Long Beach	54,140	62,575	– 8,435	– 13.5
Dallas	291,066	302,246	– 11,180	– 3.7
Plano	101,009	80,163	20,846	26.0

FMR = Fair Market Rent. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.

Note: Analysis dataset includes all ZIP Codes in PHA service areas where SAFMRs have been implemented.

Sources: HUD FY2015 Fair Market Rents; HUD FY2015 Small Area Fair Market Rents; 2012 American Community Survey 5-year estimates (special tabulation for HUD of rent and rental units by ZCTA); 2012 American Community Survey 5-year estimates (total rental units)

Exhibit A.3

Summary Statistics for Regression Sample of Families with Children with a Voucher That Move

Pre or Post SAFMRs	Sample			
	SAFMR PHAs		Comparison PHAs	
	Pre	Post	Pre	Post
N (Household Years)	18,886	20,293	252,832	269,859
Outcome Variables				
Move Up at Least 10 Points in Opportunity Index	31.2%	35.2%**	30.5%	29.5%**
Change in Overall Opportunity Index	2.9	4.5*	1.5	0.4***
Analysis Subgroup				
Household Includes Children	69.2%	63.5%***	71.0%	64.7%***
Other Household Characteristics Regression Covariates				
Single Female Head of Household	92.3%	90.0%***	90.5%**	87.9%***
Adults in Household				
Ages 18-24				
1	20.0%	19.9%	19.3%	16.7%***
2 or More	5.6%	5.6%	3.6%***	3.4%***
Ages 25-61				
1	83.0%	80.3%***	79.6%***	80.0%*
2 or More	8.3%	8.7%	8.6%	9.2%***
Ages 62 Plus				
1	8.0%	9.9%***	7.3%	9.5%***
2 or More	0.5%	0.6%	0.5%***	0.6%***
Presence of Children				
Under Age 5	24.2%	23.0%*	32.1%***	26.6%***
Ages 5-12	48.4%	44.4%***	51.5%**	47.4%***
Ages 13-17	37.7%	34.9%***	32.3%***	32.0%
Race/Ethnicity				
White (Non-Hispanic)	11.8%	11.3%	27.5%***	25.6%***
Black	84.9%	86.1%	70.5%***	72.8%***
Hispanic	6.8%	6.6%	14.8%***	13.0%***
Other	3.3%	2.4%*	1.9%	1.7%***

Note: Statistical tests compare: SAFMR Pre, SAFMR Post; SAFMR Pre, Comp Pre; Comp Pre, Comp Post.
*** = p<0.001. ** = p< 0.01. * = p< 0.05.*

Exhibit A.4

Summary Statistics for Regression Sample of All Families with Children with a Voucher

Pre or Post SAFMRs	Sample			
	SAFMR PHAs		Comparison PHAs	
	Pre	Post	Pre	Post
N (Household Years)	180,584	236,669	2,300,476	2,820,158
Outcome Variables				
Move to a New ZIP Code	10.5%	8.6%***	11.0%	9.6%***
Move Up at Least 10 Points in Opportunity Index	3.3%	3.1%	3.4%	2.9%***
Analysis Subgroup				
Household Includes Children	53.8%	48.5%***	55.4%	50.5%***
Includes Adult(s) 62 or Older	18.8%	21.0%***	17.2%	19.9%***
Includes Head or Co-Head with a Disability	38.0%	39.4%**	37.8%	40.2%***
Other Household Characteristics Regression Covariates				
Single Female Head of Household	86.2%	83.6%***	83.9%*	82.0%***
Adults in Household				
Ages 18-24				
1	18.8%	18.1%*	17.2%**	15.6%***
2 or More	5.2%	4.9%	3.4%***	3.4%**
Ages 25-61				
1	73.6%	71.2%***	71.9%	70.8%***
2 or More	8.5%	8.7%	9.0%	9.7%***
Ages 62 Plus				
1	16.9%	19.1%***	15.8%	18.5%***
2 or More	1.9%	1.8%	1.3%	1.5%***
Presence of Children				
Under Age 5	16.6%	15.1%***	21.8%***	17.7%***
Ages 5-12	35.4%	31.8%***	38.1%*	35.0%***
Ages 13-17	30.3%	26.8%***	26.5%***	25.9%***
Race/Ethnicity				
White (Non-Hispanic)	19.0%	19.0%	38.3%***	35.9%***
Black	75.4%	75.9%	58.7%***	61.3%***
Hispanic	8.4%	9.0%	16.1%***	14.8%***
Other	5.4%	4.8%**	3.0%	2.9%*

Note: Statistical tests compare: SAFMR Pre, SAFMR Post; SAFMR Pre, Comp Pre; Comp Pre, Comp Post

*** = p<0.001. ** = p< 0.01. * = p< 0.05.

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Small Area Fair Market Rents, Race, and Neighborhood Opportunity

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Abstract

This article assesses the potential of Small Area Fair Market Rents (SAFMRs) to help Housing Choice Voucher (HCV) recipients, especially Black and Hispanic recipients, secure housing in high-opportunity neighborhoods. Examining large metropolitan areas, it is estimated that increasing the availability of rental housing in high-opportunity neighborhoods may not work well, especially when HCV recipients are Black or Hispanic. Racial segregation and discrimination may still discourage Black and Hispanic voucher holders from moving into high-opportunity neighborhoods when these neighborhoods are predominantly White. Moreover, widespread implementation of SAFMRs could make it more difficult for minority voucher holders to find eligible units because the maximum qualifying rents would be reduced in many neighborhoods with large concentrations of minority voucher holders. For the SAFMR program to succeed, supporting transportation and housing counseling services will be needed in addition to extensive landlord outreach.

Introduction

Although Housing Choice Vouchers (HCV) are used in the vast majority of neighborhoods in the United States—80 percent of all Census tracts with rental housing as of 2017—most voucher holders tend to live in areas with relatively high levels of poverty, and many live in racially segregated neighborhoods (Schwartz, McClure, and Taghavi, 2016). The federal government established Small Area Fair Market Rents (SAFMRs) as a way to reduce the concentration of HCV holders in poor neighborhoods and help them access higher-income neighborhoods with good schools, employment opportunities, low crime, and recreational amenities. SAFMRs are based on the premise that neighborhoods with higher rents offer more opportunity for low-income households than those with lower rents.

The maximum rental subsidy that HCV recipients receive is keyed to the Fair Market Rent (FMR) of their metropolitan area or the county in a non-metropolitan area. The U.S. Department of Housing and Urban Development (HUD) currently defines the FMR as the 40th percentile of gross rents for typical, non-substandard rental units occupied by recent movers in the local housing market.[1] Public Housing Authorities establish a Payment Standard that can range from 90 to 110 percent of the FMR to set the maximum allowable rent that can be covered by the HCV program—tenants may pay rents in excess of this standard provided that they spend no more than 40 percent of their income on rent.

With a single FMR set for an entire metropolitan area, neighborhoods with lower rents are more likely to have substantially more housing that qualifies for the HCV program than would neighborhoods with higher rents. With SAFMRs, each ZIP Code area is assigned its own FMR (HUD provides a table listing SAFMRs for each metropolitan ZIP Code area in the United States and its territories). These SAFMRs are calculated in a manner similar to the calculation of FMRs, except that the unit of analysis is a ZIP Code area rather than a metropolitan area or county. SAFMRs in the more expensive ZIP Code areas of a metropolitan area may be set above the metro-wide FMR, and SAFMRs in the least expensive ZIP Code areas may be set lower. When the SAFMR exceeds the metro-wide FMR, the availability of rental housing eligible for the HCV program would increase, as units with rents above the metro-wide FMR, but at or below the SAFMR would now be accessible. On the other hand, if the SAFMR falls below the metro-wide FMR, units that cost less than the metro-wide FMR but more than the SAFMR would no longer be eligible for the HCV program—unless the owner of these units lowered their rents to the new SAFMR.

SAFMRs were first implemented in the Dallas, TX, metropolitan area in 2011 as part of the settlement of a fair housing lawsuit initiated by the Inclusive Housing Project (*Inclusive Communities Project, Inc. v. HUD, 2009*)[2]. The settlement required all PHAs in the Dallas metropolitan area to institute SAFMRs. In 2012, HUD launched a demonstration program to test the effect of the SAFMR on the HCV program, including its efficacy in helping voucher recipients access higher opportunity neighborhoods. The demonstration involved two PHAs in the Dallas metropolitan area that had already adopted SAFMRs and five additional PHAs (Dastrup et al, 2018; Reina, Acolin, and Bostic, 2018). In 2016, at the end of the Obama Administration, HUD issued a final rule mandating that PHAs in 24 metropolitan areas adopt SAFMRs (HUD, 2016). In 2017 under the Trump Administration, however, HUD decided to delay the implementation of this rule until at least 2020 (Matthew, 2017; NYU Furman Center, 2018). This decision was subsequently suspended by a court order, effectively requiring the implementation of SAFMRs in the 24 metropolitan areas to begin in 2018.

The purpose of this article is to assess the potential of SAFMRs to help HCV recipients, especially Black and Hispanic recipients, secure housing in "opportunity" neighborhoods, neighborhoods with low levels of poverty, high-performing schools, and other desirable characteristics. Our hypothesis is that increasing the availability of rental housing in high-opportunity neighborhoods

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[1] Until recently, HUD set the FMR at the 50th percentile in 17 high-cost metropolitan areas; those areas will now use SAFMRs.

[2] Inclusive Communities Project, Inc. v. HUD, 12–11211, 13–10306, (U.S. District Court of Northern District Texas Dallas Division, 2009).

may not be sufficient by itself in increasing the utilization of HCVs in these neighborhoods, especially when HCV recipients are Black or Hispanic. Racial segregation and discrimination may still discourage African-American and Hispanic voucher holders from moving into high-opportunity neighborhoods when these neighborhoods are predominantly White. Moreover, widespread implementation of SAFMRs could make it more difficult for minority voucher holders to find eligible units because the maximum qualifying rents would be reduced in many neighborhoods with large concentrations of minority voucher holders. In this article we estimate how SAFMR would affect the availability of HCV-eligible units in ZIP Codes with varying levels of opportunity and with varying racial and ethnic characteristics.

The article is motivated in part by the outcomes of the SAFMR Demonstration program (Demonstration). Both the final evaluation of the Demonstration (Dastrup et al., 2018) conducted for HUD and an independent study (Reina, Acolin, and Bostic, 2018) found that the implementation of SAFMRs yielded a small but significant effect on the likelihood that HCV recipients would reside in higher-opportunity neighborhoods. The final evaluation of the Demonstration found that 14 percent of HCV recipients in SAFMR PHAs resided in high-opportunity neighborhoods after the introduction of SAFMRs, compared with 9 percent before the SAFMRs; in a control group of PHAs similar to those with SAFMRs, 9 percent of HCV participants resided in higher-opportunity neighborhoods throughout the study period (Dastrup et al., 2018). Three of the seven SAFMR PHAs accounted for most of the increase in higher-opportunity residency; the other four PHAs experienced little change (Dastrup et al., 2018). Reina, Acolin, and Bostic (2018), using a different analytic approach including a somewhat different measure of opportunity, also found that some sites (most notably Dallas) saw significant increases among HCV recipients in high-opportunity ZIP Code areas, while others saw little if any increase. Neither study compared the effect of SAFMR on HCV recipients of different races and ethnicities, or the relationship between opportunity and the racial/ethnic composition of the ZIP Code areas.

This article builds on these studies of the Demonstration by estimating how the implementation of SAFMRs in the nation's largest metropolitan areas would affect the availability of rental housing in ZIP Codes with varying levels of "opportunity" and with varying racial and ethnic profiles. Whereas the Demonstration focused on PHAs in six metropolitan areas (including two in the Dallas area), we cover all metropolitan areas with populations of at least 1 million as of 2017—53 in total. These large metropolitan areas held 57 percent of all vouchers in 2017. The article also builds on NYU Furman Center's estimation of the impact effect of SAFMRs on the number of rental units affordable to voucher holders in the 24 metropolitan areas that the Obama Administration designated for SAFMRs (NYU Furman Center, 2018).

Like the HUD evaluation, we examine the extent to which SAFMR would affect the number of rental units that would be eligible (assuming payment standards are set at the SAFMR) for the HCV program in ZIP Code areas with varying levels of "opportunity." Opportunity, as with the HUD study, is defined in terms of poverty exposure, school performance (test scores), labor force involvement, and environmental health hazards.

Unlike the HUD evaluation, however, we also examine how the implementation of SAFMR would affect the number of voucher-eligible rental units in ZIP Code areas that are dominated

by a particular racial or ethnic group and that are "integrated." Given the persistence of racial segregation in the United States, we argue that the efficacy of the SAFMR program may depend on the race and ethnicity of the voucher holder.

Voucher holders, like most households tend to live either in neighborhoods that are populated mostly by people of their own race or ethnicity, or in integrated neighborhoods (Schwartz, McClure, and Taghavi, 2016). Given the high degree of racial segregation among voucher holders, it is important to understand the relationship between the racial/ethnic composition of ZIP Code areas and the distribution of "opportunity" across areas with different racial or ethnic characteristics. Segregation would be less important if predominantly White, predominantly Black, predominantly Hispanic, and integrated ZIP Code areas shared similar distributions of "opportunity"—that is, if similar proportions of each group were classified as high opportunity or low opportunity. But if ZIP Code areas dominated by certain racial groups are more likely than other ZIP Code areas to rank as high opportunity, then those ZIP Code areas are most likely to benefit from SAFMRs.

The persistence of racial segregation is particularly relevant for the HCV program since 72 percent of all voucher holders in the largest metropolitan areas are either Black (53 percent) or Hispanic (19 percent). Non-Hispanic Whites account for 24 percent of all voucher holders (see exhibit 1). Black and Hispanic voucher holders reside mostly in ZIP Code areas dominated by their own racial/ethnic group or in integrated areas, so it is particularly important to examine how opportunity levels vary across ZIP Code areas with different racial and ethnic compositions.

Exhibit 1

Households with Housing Choice Vouchers 2017 by Race, Ethnicity, Disability, and Age Located in Core-Based Statistical Areas with a Population Larger than 1 Million

	Household Race, Ethnicity, Age, and Disability Status	Households	Percent
Non-Elderly and Nondisabled	White Non-Hispanic	73,710	7
	Black Non-Hispanic	335,541	31
	Other Non-Hispanic	15,453	1
	Hispanic	94,114	9
	Total Non-Elderly Nondisabled	518,818	48
Elderly or Disabled	White Non-Hispanic	184,231	17
	Black Non-Hispanic	238,930	22
	Other Non-Hispanic	30,209	3
	Hispanic	107,629	10
	Total Elderly or Disabled	560,999	52
All Households	White Non-Hispanic	257,941	24
	Black Non-Hispanic	574,471	53
	Other Non-Hispanic	45,662	4
	Hispanic	201,743	19
	Total All Households	1,079,817	100

This article is organized as follows: The Methodology section summarizes the data sources and analytic approach. The Racial/Ethnic Composition section compares the ZIP Code areas in the nation's largest metro areas (with populations of 1 million or more) in terms of their racial/ethnic composition and their level of opportunity as indicated from the index developed for this study. The Change in HCV-Eligible Units by Category section presents estimates of the aggregate change in HCV-eligible rental units that would occur in ZIP Code areas in each opportunity category. This is followed by an examination of the Change in HCV-Eligible Units by Opportunity Level and Racial/Ethnic Category. The Gain and Loss of HCV-Eligible Units in Integrated ZIP Codes section examines the effect of SAFMRs in integrated ZIP Code areas. The article concludes with a summary of findings and a discussion of policy implications.

Methodology

This study focuses on the 53 metropolitan areas with populations of more than 1 million in 2017.

This analysis of the impact of SAFMRs on the availability of HCV-eligible housing in these metro areas is based on the following data sources:

HUD: Location and race and ethnicity of HCV recipients in 2017;
        Metro-wide FMRs in 2017 by county;
        SAFMRs in 2017;
        Poverty exposure, public school performance, labor force engagement, and health hazards in 2017 by census tract. These indicators of neighborhood opportunity are taken from HUD's Affirmatively Further Fair Housing data and mapping tool. The tool provides publicly available data for fair housing analysis (HUD, 2017).

Census (American Community Survey):
        Median rents by ZIP Code area in 2017;
        Racial and ethnic composition of ZIP Code areas.

The analysis required all data to be tabulated to ZIP Code areas. While some data were available for ZIP Code areas, other data needed to be converted from census tracts. To do so we applied "cross-walks" provided by HUD. To estimate current FMRs at the ZIP Code levels, it was necessary to apply county-level FMRs to census tracts, and then allocate rental units from the tract to the ZIP Code level using another crosswalk provided by HUD.

Categorization of ZIP Code Areas by Race and Ethnicity
Each ZIP Code was classified into one of the following categories:
        Non-Hispanic White (75 percent or more of total population)
        Non-Hispanic Black (50 percent or more of total population)
        Non-Hispanic Other (50 percent or more of total population)
        Hispanic (50 percent or more of total population)
        Integrated (all other ZIP Code areas).[3]

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[3] Because most ZIP Code areas in the nation have a majority White population, we set the threshold for defining predominantly White areas at 75 percent to identify those areas with very-low levels of racial or ethnic integration.

Categorization of ZIP Code Areas by the Level of Opportunity

Following the approach taken in HUD's evaluation of the SAFMR Demonstration program, we constructed a composite index of opportunity based on poverty exposure, school quality, labor force involvement, and health hazards. Z-scores were generated for each ZIP Code area for each variable. The Z-scores were then summed. The approximately 9,000 ZIP Code areas in the large metropolitan areas were then divided into the following quintiles based on their summed Z scores:

> Very high opportunity (top quintile)
> High opportunity (2nd quintile)
> Moderate opportunity (3rd quintile)
> Low opportunity (4th quintile)
> Very-low opportunity (bottom quintile)

To estimate the impact of SAFMRs in each ZIP Code area, we subtracted the number of HCV-eligible rental units that would be present with the current metro-wide FMR from the number that would exist if SAFMRs were in effect. The results of these calculations were then aggregated for each racial/ethnic category and for each opportunity category. In carrying out these projections we assumed that PHAs set their payment standard for the HCV program at 100 percent of the FMR/SAFMR.

Racial/Ethnic Composition and Opportunity Levels

Nearly one-half of the 8,763 ZIP Code areas in the largest metro areas are predominantly non-Hispanic White. Exhibit 2 shows that these ZIP Code areas, defined as having 75 percent or more of the population as non-Hispanic White, comprise 48 percent of all ZIP Code areas. Predominantly Black ZIP Code areas (50 percent or more non-Hispanic Black) account for 6 percent of the total, and predominantly Hispanic areas (50 percent or more) for 7 percent. ZIP Code areas in which Asian and other racial groups make up 50 percent or more of the population make up 1 percent of the total. Integrated areas, in which Whites constitute less than 75 percent of the population and all other racial or ethnic groups less than 50 percent, are the second most common category, accounting for 38 percent of the total (exhibit 2).

Exhibit 2

ZIP Code Areas in Core-Based Statistical Areas with Population Larger than 1 Million by Dominant Racial and Ethnic Population

		ZIP Code Areas	Percent
Predominant Racial or Ethnic Group in ZIP Code Area	White Non-Hispanic (75 Percent or More)	4,181	48
	Black Non-Hispanic (50 Percent or More)	537	6
	Other Non-Hispanic (50 Percent or More)	86	1
	Hispanic of Any Race (50 Percent or More)	598	7
	Integrated	3,361	38
	Total ZIP Code Areas	8,763	100

Exhibit 3 presents the distribution of HCV recipients of different races and ethnicities across ZIP Code areas with different racial/ethnic compositions. It shows that 33 percent of all White voucher holders live in predominantly White ZIP Code areas, and 55 percent live in integrated ones. More than 80 percent of all Black voucher recipients reside either in predominantly Black ZIP Code areas (34 percent) or in integrated areas (47 percent). The great majority of Hispanic voucher holders live either in predominantly Hispanic (48 percent) or in integrated (40 percent) ZIP Code areas. Very few Black or Hispanic voucher recipients reside in predominantly White ZIP Code areas (6 and 5 percent, respectively), and similarly few White voucher holders reside in predominantly Black or Hispanic areas. These patterns are nearly identical for voucher holders who are elderly or disabled and for voucher holders who are not.

Exhibit 3

Percent of Housing Choice Voucher Households by Race, Ethnicity, Disability, and Age Located in Core-Based Statistical Areas with a Population Larger than 1 Million by Dominant Racial and Ethnic Population in 2017

		Dominant Racial or Ethnic Group in ZIP Code Area (Percent)				Integrated	All Areas
		White Non-Hispanic	Black Non-Hispanic	Other Non-Hispanic	Hispanic		
Race and Household Type	White Non-Hispanic	**33**	3	1	8	**55**	100
	Black Non-Hispanic	6	**34**	0	13	**47**	100
	Other Non-Hispanic	6	6	**14**	19	**55**	100
	Hispanic of Any Race	5	6	**1**	48	**40**	100
	Total	12	20	1	19	48	100

Note: The significant numbers are bold.

Exhibit 4 cross-tabulates the ZIP Code areas by opportunity category and dominant racial/ethnic group. It shows that while more than 60 percent of all White areas rank in the top two opportunity categories, the same is true for only 3 percent of all Black and Hispanic ZIP Code areas. Conversely, whereas only 5 percent of all White tracts are in the lowest opportunity category, they are joined by 77 percent of all Black areas and 75 percent of all Hispanic areas. Integrated ZIP Code areas, on the other hand, are more evenly distributed across the opportunity categories, with each category claiming from 12 to 25 percent of all integrated ZIP Code areas.

The near absence of predominantly Black and Hispanic ZIP Code areas in the top two opportunity categories means that if Black or Hispanic voucher recipients wish to live in an opportunity area, they almost always choose between predominantly White or integrated areas. If they reside in a predominantly Black or Hispanic ZIP Code area, these areas will almost always rank in the lowest opportunity categories.

Exhibit 4

Opportunity Level for ZIP Code Areas by Dominant Racial and Ethnic Population in 2017 in Core-Based Statistical Areas with a Population Larger than 1 Million

		Dominant Racial or Ethnic Group in ZIP Code Area (Percent)				Integrated	All Areas
		White Non-Hispanic	Black Non-Hispanic	Other Non-Hispanic	Hispanic		
Combined Opportunity Category of ZIP Code Areas	Very High Opportunity	37	0	26	1	12	22
	High Opportunity	25	3	25	2	19	20
	Moderate Opportunity	20	4	14	5	22	19
	Low Opportunity	12	16	25	17	25	18
	Very Low Opportunity	5	77	11	75	21	21
	Total ZIP Code Areas	100	100	100	100	100	100
	Number of Areas	3,604	509	73	553	3,029	7,768

Change in HCV-Eligible Units by Opportunity Category

True to the expectations of SAFMR's architects, the implementation of SAFMRs across all large metropolitan areas would increase the number of HCV-eligible units in high-opportunity ZIP Code areas. Exhibit 5 shows that more than 250,000 additional rental units would become available in very-high opportunity ZIP Code areas and nearly 220,000 additional units would be gained in high-opportunity areas. On the other hand, SAFMRs would cause the number of HCV-eligible units to decrease in all other ZIP Code areas, especially in very-low opportunity areas, which would see a decrease of nearly 555,000 units. In most low-opportunity areas, the SAFMR would be less than the metropolitan-wide FMR. As a result, units that rent for more than the SAFMR but less than the metro FMR would no longer qualify for the HCV program. On net, implementation of SAFMR in large metropolitan areas would engender a decrease of more than 370,000 HCV-eligible units, as the increase of 1,470,000 units in ZIP Code areas gaining units falls short of the decrease of 1,840,000 units in ZIP Codes losing units.

The correlation between rent levels and opportunity is not perfect. Exhibit 5 shows that while most high opportunity ZIP Code areas would gain HCV-eligible units, some will lose them. Similarly, most but not all low-opportunity areas would lose such units. For example, while 1,248 very-high opportunity ZIP Code areas would gain HCV-eligible units, 315,832 in total, 487 other very-high opportunity areas would lose them (64,221). As a result of these divergent outcomes, very-high opportunity ZIP Code areas would realize an estimated net gain of 251,611 additional HCV-eligible units. At the other extreme, 1,066 very-low opportunity ZIP Code areas are projected to lose a total of 817,280 HCV-eligible units, but this loss will be partially mitigated by a gain of 262,586 units among 626 very-low opportunity ZIP Code areas.

Exhibit 5

ZIP Code Areas Gaining or Losing HCV-Eligible Units by Opportunity Level and Net Change in HCV-Eligible Units

Combined Opportunity Category of ZIP Code Areas	Gaining Units				Losing Units				All ZIP Code Areas	
	Total Zip Code Areas	Total Units Gained	Total Units Below FMR	Percent Gain in Eligible Units	Total Zip Code Areas	Total Units Lost	Total Units Below FMR	Percent Loss in Eligible Units	Net Change in Eligible Units	Percent Net Change in Eligible Units
Very High Opportunity	1,248	315,832	935,981	34%	487	-64,221	402,775	-16%	251,611	19%
High Opportunity	907	397,558	1,317,638	30%	621	-180,073	919,608	-20%	217,485	10%
Moderate Opportunity	741	289,253	1,165,498	25%	721	-311,835	1,358,374	-23%	-22,582	-1%
Low Opportunity	566	204,330	956,235	21%	818	-467,730	2,096,852	-22%	-263,400	-9%
Very Low Opportunity	626	262,586	1,491,319	18%	1,006	-817,280	3,525,741	-23%	-554,694	-11%
Total	4,088	1,469,559	5,866,670	25%	3,653	-1,841,139	8,303,351	-22%	-371,580	-3%

The gains and losses are not trivial in scale. The gains in program eligible units in the very high and high opportunity areas are estimated to be 34 percent and 30 percent gains over the number of units eligible under the FMRs. The losses in program eligible units with the adoption of SAFMRs are estimated to range from 16 to 22 percent.

As noted earlier, we find that implementation of SAFMRs would yield a net decrease in the number of HCV-eligible rental units. The loss of 371,580 program eligible units is about 1.5 percent of the occupied rental stock in these large metropolitan areas and about 2.6 percent of the HCV program eligible rental stock. This finding is consistent with the Final Evaluation of the SAFMR Demonstration, which estimated that SAFMRs caused the number of HCV-eligible units in the seven participating PHAs to decrease by a total of 22,000 (3.4 percent). Most of this decrease occurred at two sites (Dastrup et al., 2018). The NYU Furman Center, however, in its analysis of the potential impact of SAFMRs in the 24 designated metropolitan areas, notes that the Final Rule authorizes PHAs to adopt several strategies to diminish if not eliminate the loss of HCV-eligible rental units. These strategies include the ability to set payment standards at 110 percent of the SAFMR (thereby increasing the number of eligible units), and if that is not sufficient, PHAs may obtain permission from HUD to increase payment standards above 110 percent of SAFMR. The Final Rule also allows PHAs to set payment standards for HCV recipients who remain in place at an amount up to the family's current payment standard at the time SAFMRs were implemented (NYU Furman Center, 2018; Treat, 2018). Finally, it is also possible that some landlords would cut rents in response to reduced payment standards, thereby mitigating the potential loss of HCV-eligible units.

HUD assessed all metropolitan areas for inclusion within the SAFMR rulemaking. Only 24 metropolitan areas met the specified criteria: (1) 2,500 or more vouchers under lease, (2) HCV families are found to be 55 percent more likely to live in high poverty or low-income areas than renters in general, (3) 20 percent of the rental stock in ZIP Code areas had rents such that SAFMRs are more than 110 percent of the metropolitan FMR, and (4) rental vacancy rate was above 4 percent. HUD believes these are areas where voucher holders are much worse off than renters in general and are in markets where SAFMRs are likely to be useful. Fourteen of the 24 selected markets are among the 53 large metropolitan areas with populations of 1 million or more. Exhibit 6 repeats the estimation of rental units gained and lost for the 14 large markets selected by HUD for implementation of the SAFMRs. The results for these 14 metropolitan areas are very similar to the results, detailed in Exhibit 5, among all large markets. The ZIP Code areas that gained units typically realized a 26-percent gain in units. The ZIP Code areas that lost units typically realized a 25-percent loss of units. The result was a net loss in rental units eligible for participation in the HCV program.

Exhibit 6

ZIP Code Areas in the Large Metropolitan Areas Among HUD's Selected SAFMR Markets Gaining or Losing HCV-Eligible Units by Opportunity Level and Net Change in HCV-Eligible Units

Combined Opportunity Category of ZIP Code Areas	Gaining Units				Losing Units				All ZIP Code Areas	
	Total Zip Code Areas	Total Units Gained	Total Units Below FMR	Percent Gain in Eligible Units	Total Zip Code Areas	Total Units Lost	Total Units Below FMR	Percent Loss in Eligible Units	Net Change in Eligible Units	Percent Net Change in Eligible Units
Very High Opportunity	278	77,572	238,561	33%	109	-12,080	70,602	-17%	65,492	21%
High Opportunity	251	100,933	298,429	34%	195	-67,026	278,439	-24%	33,908	6%
Moderate Opportunity	225	79,957	310,591	26%	229	-99,420	386,502	-26%	-19,464	-3%
Low Opportunity	171	54,846	231,027	24%	291	-181,830	680,088	-27%	-126,984	-14%
Very Low Opportunity	162	57,237	347,549	16%	318	-217,643	892,555	-24%	-160,406	-13%
Total	1,087	370,545	1,426,157	26%	1,142	-578,000	2,308,185	-25%	-207,455	-6%

Change in HCV-Eligible Units by Opportunity and Racial/Ethnic Category

As would be expected given the paucity of predominantly Black and Hispanic ZIP Code areas that are classified as high or very-high opportunity, nearly all of the growth in HCV program-eligible units would occur in ZIP Code areas that are either predominantly White or that are integrated. Exhibit 7 shows that of the 252,000 additional HCV-eligible units that would be gained in very-high opportunity ZIP Code areas, 97 percent would be located in predominantly White (53 percent) or integrated (44 percent) areas. Similarly, 94 percent of the additional HCV program-eligible units in high-opportunity ZIP Code areas would also be located in White and integrated areas—although integrated ZIP Code areas would account for most of the increase (87 percent).

Exhibit 7

Aggregate Gain or Loss of Rental Units Eligible to Participate in the HCV Program in ZIP Code Areas Within Core-Based Statistical Areas with a Population Larger than 1 Million by Dominant Racial and Ethnic Population and Opportunity Level

		Opportunity Level					
		Very High	High	Moderate	Low	Very Low	Net Gain or Loss
Predominant Racial or Ethnic Group in ZIP Code Area	White Non-Hispanic (75 Percent or More)	133,011	16,279	-45,246	-30,310	-13,639	60,095
	Black Non-Hispanic (50 Percent or More)	73	1,158	-2,206	-18,202	-60,173	-79,349
	Other Non-Hispanic (50 Percent or More)	4,753	2,117	3,950	-1,150	-2,743	6,928
	Hispanic of Any Race (50 Percent or More)	1,840	7,870	2,273	-11,064	-228,566	-227,647
	Integrated	111,933	190,061	18,647	-202,675	-249,573	-131,606
	All ZIP Code Areas	251,611	217,485	-22,582	-263,400	-554,694	-371,580

Whereas exhibit 7 shows that nearly all of the increase in HCV-eligible units in high- and very-high opportunity ZIP Code areas would occur either in White or integrated areas, exhibit 8 arrives at the same finding from a different perspective. Here, high- and very-high-opportunity ZIP Code areas that are projected to see an increase in HCV-eligible units are sorted by their dominant racial/ethnic group, as are the low- and very-low-opportunity areas that are projected to lose eligible units. It shows that 65 percent of the high-opportunity ZIP Code areas projected to gain HCV-eligible units are predominantly White and 33 percent are integrated. Less than 1 percent are predominantly Black, and only 1 percent are Hispanic. Conversely, the exhibit also shows that 31 percent of the low- or very-low-opportunity ZIP Code areas that would lose HCV-eligible units are predominantly Black or Hispanic; predominantly White ZIP Code areas constitute 20 percent of all areas projected to lose units, integrated areas, 48 percent. In sum, while White and integrated ZIP Code areas account for virtually all of the high-and very-high-opportunity ZIP Code areas that would gain HCV-eligible units, low- and very-low-opportunity areas that would lose eligible units are more evenly divided across the racial categories.

Exhibit 8

Racial and Ethnic Composition of ZIP Code Areas Gaining or Losing HCV Program Eligible Units by Opportunity Level
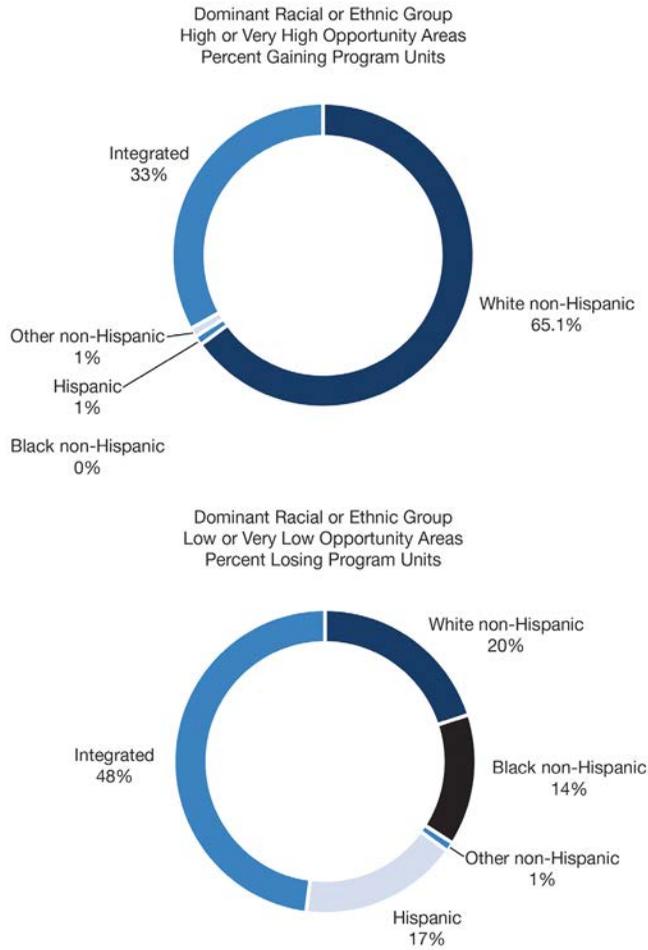
Exhibits 6–8 examine the distribution of ZIP Code areas that would gain and lose HCV-eligible units on an aggregate level for all 53 metropolitan areas with populations of 1 million or more. Exhibit 9 focuses on the change in HCV-eligible units in high- and very-high-opportunity ZIP Code areas within each metropolitan area. It shows that 45 metropolitan areas' high- and very-high-opportunity ZIP Codes would experience an increase in eligible units and 8 would lose units.

In all but 7 of the 45 metropolitan areas with high- or very-high-opportunity ZIP Codes that would gain HCV-eligible units, 95 percent or more of these ZIP Codes are either predominantly White or integrated. In four metropolitan areas (Los Angeles, San Francisco, San Jose, and San Diego), ZIP Code areas that are predominantly populated by Asian or other racial groups account for 6 percent or more of the gain. In two metropolitan areas, Miami and San Antonio, predominantly Hispanic high-opportunity areas account for 28 and 63 percent, respectively, of the total increase in HCV-eligible units.

Exhibit 9

Large CBSAs by Change in Units in High and Very High Opportunity ZIP Code Areas (1 of 3)

	Metropolitan Area	Change in Units in High and Very High Opportunity ZIP Code Areas by Racial/Ethnic Composition									
		White Non-Hispanic ZIP Code Areas	Black Non-Hispanic ZIP Code Areas	Other Non-Hispanic ZIP Code Areas	Hispanic ZIP Code Areas	Integrated ZIP Code Areas	All ZIP Code Areas	Percent in White or Integrated Areas	Percent White or Integrated > 95%	Percent in Other	Percent in Hispanic
1	New York-Newark-Jersey City, NY-NJ-PA MSA	38,698	0	121	1,525	73,173	113,518	99%	1	0%	1%
2	Los Angeles-Long Beach-Anaheim, CA MSA	20,285	0	5,579	219	75,120	101,203	94%	0	6%	0%
3	Dallas-Fort Worth-Arlington, TX MSA	3,580	0	-2,848	0	29,770	30,502	109%	1	-9%	0%
4	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	704	405	0	0	20,979	22,088	98%	1	0%	0%
5	Minneapolis-St. Paul-Bloomington, MN-WI MSA	14,552	0	0	0	3,944	18,496	100%	1	0%	0%
6	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	14,626	0	0	0	2,819	17,445	100%	1	0%	0%
7	Houston-The Woodlands-Sugar Land, TX MSA	339	0	0	0	14,730	15,070	100%	1	0%	0%
8	Miami-Fort Lauderdale-West Palm Beach, FL MSA	1,250	0	0	4,174	9,418	14,842	72%	0	0%	28%
9	Detroit-Warren-Dearborn, MI MSA	7,654	0	0	0	6,158	13,812	100%	1	0%	0%
10	Baltimore-Columbia-Towson, MD MSA	-826	429	0	0	9,878	9,481	95%	1	0%	0%
11	St. Louis, MO-IL MSA	7,667	0	0	0	719	8,385	100%	1	0%	0%
12	Orlando-Kissimmee-Sanford, FL MSA	-67	0	0	5	7,792	7,729	100%	1	0%	0%
13	Cleveland-Elyria, OH MSA	5,797	0	0	0	1,646	7,443	100%	1	0%	0%
14	Indianapolis-Carmel-Anderson, IN MSA	6,937	0	0	0	-461	6,476	100%	1	0%	0%
15	San Francisco-Oakland-Hayward, CA MSA	728	0	1,097	0	4,454	6,279	83%	0	17%	0%
16	San Antonio-New Braunfels, TX MSA	217	0	0	3,785	1,966	5,968	37%	0	0%	63%

Exhibit 9

Large CBSAs by Change in Units in High and Very High Opportunity ZIP Code Areas (2 of 3)

		Change in Units in High and Very High Opportunity ZIP Code Areas by Racial/Ethnic Composition									
	Metropolitan Area	White Non-Hispanic ZIP Code Areas	Black Non-Hispanic ZIP Code Areas	Other Non-Hispanic ZIP Code Areas	Hispanic ZIP Code Areas	Integrated ZIP Code Areas	All ZIP Code Areas	Percent in White or Integrated Areas	Percent White or Integrated > 95%	Percent in Other	Percent in Hispanic
17	Sacramento-Roseville-Arden-Arcade, CA MSA	1,139	0	0	0	4,764	5,903	100%	1	0%	0%
18	Pittsburgh, PA MSA	5,215	0	0	0	0	5,215	100%	1	0%	0%
19	Richmond, VA MSA	1,393	47	0	0	3,644	5,084	99%	1	0%	0%
20	Austin-Round Rock, TX MSA	4,426	0	0	0	560	4,986	100%	1	0%	0%
21	Portland-Vancouver-Hillsboro, OR-WA MSA	2,864	0	0	0	2,108	4,972	100%	1	0%	0%
22	Memphis, TN-MS-AR MSA	382	0	0	0	4,528	4,910	100%	1	0%	0%
23	Nashville-Davidson-Murfreesboro-Franklin, TN MSA	4,901	0	0	0	0	4,901	100%	1	0%	0%
24	Cincinnati, OH-KY-IN MSA	3,739	0	0	0	562	4,300	100%	1	0%	0%
25	Oklahoma City, OK MSA	1,667	0	0	0	2,359	4,026	100%	1	0%	0%
26	Atlanta-Sandy Springs-Roswell, GA MSA	218	0	0	0	3,690	3,908	100%	1	0%	0%
27	Virginia Beach-Norfolk-Newport News, VA-NC MSA	-687	0	0	0	4,566	3,879	100%	1	0%	0%
28	Providence-Warwick, RI-MA MSA	4,478	0	0	0	-892	3,586	100%	1	0%	0%
29	San Diego-Carlsbad, CA MSA	-2,644	0	1,621	0	4,460	3,438	53%	0	47%	0%
30	Buffalo-Cheektowaga-Niagara Falls, NY MSA	2,882	0	0	0	117	3,000	100%	1	0%	0%
31	Louisville/Jefferson County, KY-IN MSA	2,818	0	0	0	0	2,818	100%	1	0%	0%
32	Tampa-St. Petersburg-Clearwater, FL MSA	176	0	0	0	2,437	2,613	100%	1	0%	0%
33	Rochester, NY MSA	1,594	0	0	0	976	2,570	100%	1	0%	0%
34	Salt Lake City, UT MSA	2,366	0	0	0	34	2,400	100%	1	0%	0%

Exhibit 9

Large CBSAs by Change in Units in High and Very High Opportunity ZIP Code Areas (3 of 3)

	Metropolitan Area	White Non-Hispanic ZIP Code Areas	Black Non-Hispanic ZIP Code Areas	Other Non-Hispanic ZIP Code Areas	Hispanic ZIP Code Areas	Integrated ZIP Code Areas	All ZIP Code Areas	Percent in White or Integrated Areas	Percent White or Integrated > 95%	Percent in Other	Percent in Hispanic
								Change in Units in High and Very High Opportunity ZIP Code Areas by Racial/Ethnic Composition			
35	Charlotte-Concord-Gastonia, NC-SC MSA	1,988	0	0	0	71	2,059	100%	1	0%	0%
36	Hartford-West Hartford-East Hartford, CT MSA	-252	389	0	0	1,102	1,239	69%	0	0%	0%
37	Tucson, AZ MSA	-293	0	0	0	1,437	1,144	100%	1	0%	0%
38	Boston-Cambridge-Newton, MA-NH MSA	-3,626	0	0	0	4,620	994	100%	1	0%	0%
39	Birmingham-Hoover, AL MSA	421	0	0	0	391	813	100%	1	0%	0%
40	Raleigh, NC MSA	553	0	0	0	162	715	100%	1	0%	0%
41	Las Vegas-Henderson-Paradise, NV MSA	233	0	0	0	275	508	100%	1	0%	0%
42	San Jose-Sunnyvale-Santa Clara, CA MSA	236	0	1,300	0	-1,052	484	-169%	0	269%	0%
43	Jacksonville, FL MSA	2,655	0	0	0	-2,198	457	100%	1	0%	0%
44	New Orleans-Metairie, LA MSA	361	6	0	0	90	456	99%	1	0%	0%
45	Phoenix-Mesa-Scottsdale, AZ MSA	-1,415	0	0	0	1,594	179	100%	1	0%	0%
46	Milwaukee-Waukesha-West Allis, WI MSA	115	0	0	0	-837	-722	100%	1	0%	0%
47	Grand Rapids-Wyoming, MI MSA	-863	0	0	0	0	-863	100%	1	0%	0%
48	Seattle-Tacoma-Bellevue, WA MSA	-3,629	0	0	0	2,676	-952	100%	1	0%	0%
49	Denver-Aurora-Lakewood, CO MSA	1,196	0	0	0	-2,300	-1,104	100%	1	0%	0%
50	Riverside-San Bernardino-Ontario, CA MSA	-62	0	0	0	-1,256	-1,318	100%	1	0%	0%
51	Columbus, OH MSA	-848	0	0	0	-515	-1,363	100%	1	0%	0%
52	Chicago-Naperville-Elgin, IL-IN-WI MSA	-3,530	-44	0	0	2,057	-1,517	97%	1	0%	0%
53	Kansas City, MO-KS MSA	-1,995	0	0	0	-104	-2,099	100%	1	0%	0%

Gain and Loss of HCV-Eligible Units in Integrated ZIP Code Areas

We have seen that, if SAFMRs were adopted, nearly all of the projected increase in HCV-eligible units found in high- and very-high-opportunity ZIP Code areas would occur either in predominantly White or integrated areas. Integrated ZIP Code areas, however, also account for nearly half of all low- and very-low opportunity areas that would lose units. Indeed, integrated ZIP Code areas would see an overall *loss* of HCV-eligible units while White ZIP Code areas would post a net gain.

A key reason for this difference is that a much higher proportion (46 percent) of integrated ZIP Codes fall in the low- and very-low opportunity categories—which are most likely to lose HCV-eligible units—compared with predominantly White areas (17 percent). Moreover, only 12 percent of all integrated ZIP Code areas fall in the very-high opportunity category, which would gain the most HCV-units. In contrast, more than 37 percent of all White ZIP Code areas are in the very-high opportunity group (see exhibit 4).

The integrated category covers a large and varied assortment of ZIP Code areas. It accounts for 38 percent of the 8,763 ZIP Code areas in large metropolitan areas, second only to predominantly White ZIP Code areas, which account for 48 percent of the total. As noted earlier, integrated ZIP areas are defined as those in which non-Hispanic Whites make up less than 75 percent of the population and all other racial and ethnic groups comprise less than 50 percent.

To shed more light on the impact of SAFMRs on integrated ZIP Code areas, Exhibit 9 partitions them into two categories: Majority White areas where non-Hispanic Whites constitute 50 to 75 percent of the population, and minority White areas where they account for less than 50 percent. About two-thirds (65 percent) of all integrated ZIP Code areas are majority White.

The two subgroups of integrated ZIP Code areas diverge sharply in their representation within the high- and very-high opportunity categories. Whereas 41 percent of all majority White integrated areas are classified as high- or very high-opportunity (compared with 62 percent of all predominantly White areas), the same is true for just 16 percent of all minority White areas. While 17 percent of all majority White integrated areas rank in the very-high-opportunity category, only 4 percent of all minority White areas fall in this category. Conversely, 36 percent of all majority White integrated ZIP Code areas are in the low- and very-low-opportunity categories, as against 64 percent of all minority White areas.

Exhibit 10

Integrated Zip Code Areas by Majority-White and Minority-White by Opportunity Level

	Majority White (50-75%)		Minority White (<50%)		All Integrated	
	ZIP Code Areas	Percent	ZIP Code Areas	Percent	ZIP Code Areas	Percent
Very High Opportunity	340	17%	37	4%	377	12%
High Opportunity	468	24%	122	12%	590	19%
Moderate Opportunity	453	23%	224	21%	677	22%
Low Opportunity	448	23%	313	30%	761	25%
Very Low Opportunity	266	13%	358	34%	624	21%
Total	1,975	100%	1,054	100%	3,029	100%

Partly as a result of these differences, more than one-half (55 percent) of all majority White ZIP Code areas that are projected to gain HCV-eligible units are classified as a high- or very-high-opportunity, compared to 23 percent of all minority White areas (see exhibit 11). Conversely, 23 percent of all majority White ZIP Code areas projected to gain HCV-eligible units are low- or very-low opportunity, compared with 50 percent of all minority White areas. While both majority-White and minority-White ZIP Code areas are projected to see net losses in HCV-eligible units with SAFMRs, the latter account for 96 percent of this loss.

Exhibit 11

Increases and Decreases in HCV Program-Eligible Units in Integrated Zip Code Areas by Majority White and Minority White

	Areas Gaining HCV-Eligible Units				Areas Losing HCV-Eligible Units			
	Majority White	Number of Areas	Minority White	Number of Areas	Majority White	Number of Areas	Minority White	Number of Areas
Very High Opportunity	110,635	283	19,041	32	-16,270	55	-1,472	5
High Opportunity	220,558	302	57,055	88	-75,688	163	-11,864	34
Moderate Opportunity	136,724	232	90,713	141	-148,877	219	-59,912	82
Low Opportunity	60,136	167	80,393	138	-205,957	281	-137,247	175
Very Low Opportunity	22,807	81	60,866	124	-109,136	184	-224,111	234

Conclusions

SAFMRs have the potential to make housing located in high "opportunity" neighborhoods substantially more available to HCV recipients. In metropolitan areas with populations of 1 million or more, nearly one-half million additional units in very-high- and high-opportunity ZIP Code areas would become eligible for the HCV program if SAFMRs were adopted. This potential is unlikely to be realized, however, if governments and nonprofit organizations do not also address the barriers of racial discrimination and segregation.

This article shows that the great majority of ZIP Code areas that fall in the top two "opportunity" quintiles are predominantly White or integrated. Only 3 percent of all predominantly Black ZIP Code areas rank as very high- or high-opportunity (and only one of 509 Black ZIP Codes is in the top opportunity quintile), as do 3 percent of all predominantly Hispanic ZIP Codes. About three-fourths of all predominantly Black and Hispanic ZIP Codes sit in the lowest opportunity quintile.

The concentration of "opportunity" within predominantly White and integrated ZIP Code areas means that if an HCV recipient wishes to live in an opportunity neighborhood, he or she would essentially need to choose between White and integrated areas. At present, about one-half of all HCV recipients in large metropolitan areas reside in integrated ZIP Code areas. Most of the rest live in segregated areas dominated by people of their own race or ethnicity and are highly unlikely to benefit from SAFMRs unless they move out of a segregated neighborhood.

Predominantly White ZIP Code areas stand to benefit the most from SAFMRs. They, along with the much smaller category of other non-Hispanic ZIP Code areas, are the only ones estimated to post net gains in HCV-eligible units. Predominantly White ZIP Code areas are especially well positioned to gain HCV-eligible units in very-high-opportunity areas. Integrated ZIP Code areas also stand to gain many HCV program-eligible units in opportunity areas; indeed, they would gain more units than would predominantly White areas in very-high- and high-opportunity ZIP Code areas combined. Unlike predominantly White ZIP Code areas, however, integrated areas are also likely to see large *decreases* in HCV-eligible units. Much of this decrease is due to the fact that integrated ZIP Code areas encompass many more low- and very-low-opportunity areas than their predominantly White counterparts. For example, while 21 percent of all integrated ZIP Code areas are in the bottom opportunity quintile, the same is true of just 5 percent of all predominantly White ZIP Code areas. Thus, of ZIP Code areas that are projected to gain HCV program-eligible units, 65 percent are predominantly White, the same is true for just 33 percent of integrated ZIP Code areas projected to gain program-eligible units.

We estimate that SAFMRs would result in a net loss of HCV program-eligible units, with most of this loss occurring in low-opportunity ZIP Code areas. It is important to emphasize, however, that this potential loss could be reduced or prevented through the various strategies included in HUD's Final Rule of 2016 for instituting SAFMRs in 24 metropolitan areas (NYU Furman Center, 2018; Treat, 2018). Even if SAFMRs were implemented so as to minimize the loss of HCV-eligible units in low-opportunity and other areas, these measures would do little if anything to address the racial barriers that make it very difficult for many Black and Hispanic HCV recipients to access high-opportunity neighborhoods.

We conclude that while SAFMRs may be necessary to improve the ability of the HCV program to reach high-opportunity neighborhoods, they are not sufficient. In order to realize its potential, more will need to be done to help Black and Hispanic HCV recipients learn about predominantly White and integrated neighborhoods and their housing opportunities. Most likely, PHAs and their nonprofit partners would need to provide transportation assistance and other forms of support to help HCV recipients in segregated low-income communities find housing in opportunity neighborhoods and to provide services to help remain in their new neighborhoods. Housing counseling and case management will need to be enhanced. The Baltimore Housing Mobility Program, established in the late 1990s as part of a court-ordered consent decree from a fair housing lawsuit (*Thompson v. HUD*),[4] demonstrates the value of "emotionally supportive counseling, housing search assistance, and landlord recruitment" in successfully encouraging HCV recipients to relocate to high-opportunity neighborhoods (DeLuca and Rosenblatt, 2017). Greater outreach to landlords will be needed. Expanding the potential supply of HCV program eligible units will mean little if landlords continue to resist participation in the program. This resistance can be overcome through education and incentivizing participation. If the SAFMR program is to realize its potential and if the HCV program is to affirmatively further fair housing, the SAFMR program will require significant improvements.

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Impact of Expanded Choice on Attrition in the Housing Voucher Program

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Abstract

This paper examines whether expanding neighborhood choice by adding a more localized approach to setting the rental payment standard affects length-of-stay in the U.S. Housing Choice Voucher (HCV) program. Payment standards are typically constant within a metropolitan area, rather than small geographic areas such as ZIP Codes. Using data from the Small Area Fair Market Rent (SAFMR) Demonstration by the U.S. Department of Housing and Urban Development (HUD), we observed changes in program exit rates over time in housing agencies adopting ZIP-Code-based payment standards and compare these with changes in exit rates in programs that continued under metropolitan-area-based standards. We expand the analysis by looking at subgroups, specifically households with children, seniors, adults with disabilities, and residents in lower, average, or higher rent neighborhoods. We find that the introduction of SAFMRs increased program attrition, with exit rates that imply about a 2-year reduction in the median length of program participation (from a base of about 11 years). Effects are largest among working-age adults and in households living in lower- and moderate-rent areas at the time of program introduction. We conclude with a discussion of how our findings on program attrition and housing independence inform recent proposals to adopt more flexible payment standards or increase public housing agencies (PHAs) authority to change payment standards under Moving to Work (MTW) authority.

Introduction

The Small Area Fair Market Rent (SAFMR) Demonstration by the U.S. Department of Housing and Urban Development (HUD) set out to determine whether replacing metropolitan-area Fair Market Rents (FMRs) with ZIP-Code-based SAFMRs increased voucher holders' access to and location in higher-opportunity neighborhoods. Evidence to date finds that, on average, switching to SAFMRs

makes voucher holders more likely to locate in higher-opportunity neighborhoods (Dastrup, et al., 2018; Reina, Acolin, and Bostic, 2018; Collinson and Ganong, 2018), particularly among households with children (Dastrup, Ellen, and Finkel, 2019). There is not yet evidence, however, on whether introducing SAFMRs affects voucher holders' length of participation in the voucher program; that is, whether maintaining subsidized tenancy over time is affected by the introduction of SAFMRs. This article studies how the replacement of metropolitan-area rent standards with ZIP-Code-level rent standards affects the average length of stay in the Housing Choice Voucher (HCV) program.

Leaving the voucher program can represent a positive development in a household's self-sufficiency and economic well-being if it is the result of increases in household income. Although there are no comprehensive data sets reliably detailing reasons for exit from the HCV program, a common perception is that most exits are not associated with incomes so high as to make the voucher recipient income ineligible or even to make the net subsidy so small as to make it not worth the administrative requirements of the program (Gubits, Khadduri, and Turnham, 2009; Lubell, Shroder, and Steffen, 2003). Rather, program exit typically represents a substantial loss in resources that the household continues to need.[1] Many factors may contribute to program attrition other than income: for example, tenant-landlord relationships, quality of the unit and neighborhood, availability of local informal welfare networks (family, friends), moves to nursing homes, death, and proximity to employment.

SAMFRs may interact with many of these factors that affect a household's continued receipt of assistance. Relative to the metropolitan-area-wide FMRs, SAFMRs result in lower maximum subsidies in neighborhoods with prevailing rents lower than the metropolitan-area-wide FMR, and SAFMRs result in higher maximum subsidies in neighborhoods with prevailing rents above the metropolitan-area-wide FMR. This may make the program less attractive to landlords and voucher recipients in lower rent neighborhoods, where a relatively large share of voucher holders has historically been located. Conversely, this may make the program more attractive to landlords and voucher recipients in higher rent neighborhoods. Different subsidy caps in different ZIP Codes within a metropolitan area also represent added complexity for both voucher holders and landlords participating in the program. This added complexity may result in shorter program participation, for example by making it more difficult for tenants to understand the applicable payment standard when searching apartment listings for a new apartment, or by increasing landlords' costs of navigating the program.

In this article, we estimate the effect of the introduction of SAFMRs on the length of participation in the HCV program. We estimate Weibull survival models on a large longitudinal administrative data set representing approximately one million program participants in 145 public housing agencies (PHAs), from 1995 through 2017. We find that the introduction of SAFMR increased program attrition, particularly among working-age adults and in households living in low- and average-rent areas at the time of program introduction. Our estimated model implies exit rates

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[1] A family with one full-time worker earning minimum wage cannot afford the local FMR for a two-bedroom apartment anywhere in the United States (HUD, 2018). A recent study finds that for every 100 families with incomes less than 30 percent of the area median income, there are only 22 affordable units that are not already occupied by a higher income household or a household with children (Airgood-Obrycki and Molinsky, 2019).

over time that would cumulatively result in about a 2-year reduction in median length of program participation (from a base of about 11 years). Effects are largest particularly among working-age adults and in households living in lower and moderate rent areas at the time of program introduction. These findings highlight the need for additional research to determine the factors resulting in program attrition.

Literature Review and the SAFMR Study

Previous studies have shown that length of stay in the voucher program varies by several household characteristics. Senior heads of household are less likely to leave the program than households headed by a nonsenior person; households headed by people with disabilities are less likely to leave than households headed by people without disabilities; African-Americans are less likely to leave than Whites; and women are less likely to leave than men (McClure, 2017; Lubell, Shroder, and Steffen, 2003). Households with infants or toddlers are less likely to leave the voucher program, but households with older children are more likely to leave (Cortes, Lam, and Fein, 2008). Our analysis controls for all these household characteristics when testing whether a policy change affects the probability of a household leaving the program and examines whether SAFMR affects program attrition among certain demographic groups compared with others.

Household income also influences attrition in the housing voucher program but less than one might expect. The most positive reason for leaving the voucher program is through increased financial self-sufficiency in the form of improved earnings. Only one-third of all participants leaving the housing voucher program have earnings, however, and income is not a good predictor of exit (Olsen et al., 2005; McClure, 2017). HUD cannot track a household's income after they leave the program, so most previous studies (and this current one) have imperfect income measurement. One way SAFMR policy may affect attrition is through access to better neighborhoods. If SAFMR policy can improve access to higher opportunity neighborhoods, we might expect participants to improve financial self-sufficiency and for this to be associated with a greater likelihood of leaving the program. The Moving to Opportunity study found mixed evidence on how moving to higher opportunity neighborhoods affected the employment and earnings of adults (Sanbonmatsu et al., 2011; Turner, Nichols, and Comey, 2012).[2]

Patterns of exit in the SAFMR Demonstration households are similar to those found in other studies. The analysis of the SAFMR Demonstration included five Demonstration PHAs and two PHAs in the Dallas area where SAFMRs were imposed due to a legal settlement; we will refer to these seven PHAs collectively as "the seven SAFMR PHAs". Exhibit 1 compares the distribution of household characteristics in the seven SAFMR PHAs prior to the switch from FMR to SAFMR, with the distribution of household characteristics of households that exited the program at some point between the introduction of SAFMR and December 31, 2017. Using simple t-tests (Chi-square tests for categorical variables), households that eventually left the program have different characteristics compared with the full sample of households served by the program (p < .001 in all cases). Households that eventually exited the program are less likely to be headed by a woman,

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[2] Chetty, Hendren, and Katz (2016) found that the future earnings of children is positively impacted by moving to lower poverty neighborhoods, but this evidence is too indirect to suggest a strong association between SAFMR and an increased rate of exit due to improved tenant self-sufficiency.

less likely to have children of any age, more likely to be White (than African-American), more likely to be Hispanic, less likely to be disabled, and more likely to be living in a neighborhood with average or higher than average rent. Households that left the program are more likely to be senior (we do not have sufficient detail to know how many of these exits are due to death) and to have a higher income.

Exhibit 1

Characteristics of SAFMR PHA Program Participants: At Time of Intervention Introduction and at Time of Exit

Characteristic	Mean at Intervention Introduction (%)	Mean at Exit, Among Leavers (%)
Female	85.9	84.1
Senior	18.5	22.7
No Kids	40.7	53.9
Kids Under Age 5	23.2	11.1
Kids Age 5 to 12	42.4	28.6
Kids Age 13 to 17	37.0	27.8
White	19.4	22.4
African-American	75.3	73.3
Hispanic	8.9	10.5
People with Disabilities	36.7	37.0
Lives in Neighborhood With Average Rent Ratio <90% FMR[a]	39.2	38.2
Lives in Neighborhood With Average Rent Ratio Between 90% and 110% of FMR[a]	44.1	44.2
Lives in Neighborhood With Average Rent Ratio >1.1[a]	16.6	17.5
Any Income	99.0	98.4
Average Income	$17,734	$20,624
N	48,819	19,793

FMR = Fair Market Rent. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
a Sample sizes are 48,134 and 19,479 due to missing data on rent ratios.
Notes: This analysis includes only households participating in the voucher program at the time of the introduction of SAFMR policy. The difference in the means of each row is statistically significant (p<.001, using Chi-squared tests for binary variables and t-tests for continuous variables). The categories "kids under age 5," "kids age 5 to 12," and "kids age 13 to 17" are not mutually exclusive, as households have can children across a wide age range.
Source: SAFMR Demonstration Data, SAFMR PHAs only

In addition to household characteristics, some studies have found that neighborhood features are associated with attrition in the voucher program. Ambrose (2005) found that greater neighborhood poverty is associated with a lower probability of leaving the voucher program, but there is no information on why this association arises. Olsen, Davis, and Carillo (2005) find that greater vacancy rates are associated with lower probability of leaving the program, but, again, the reason for this association is not clear. Under SAFMR, higher poverty neighborhoods become less attractive because of the PHA's lower payment standards in those neighborhoods, forcing either

landlords to accept lower rents or program participants to make larger contributions to the rental payment. Olsen, Davis, and Carillo (2005) found that increasing the tenant rent contribution leads to small positive increases in the probability of leaving the program.

The switch from FMR to SAFMR reduces the percent of units affordable to program participants in lower rent neighborhoods and increases the percent of units affordable to program participants in higher rent neighborhoods. For neighborhoods with median rents that were less than 90 percent of the metropolitan-area median rent, the SAFMR demonstration found that 73 percent of all units had rents below FMR, but only 46 percent had rents below the SAFMR. This reduction in the proportion of units affordable to participants suggests that the introduction of the SAFMR payment standard may make it more difficult for program participants residing in lower rent/high-poverty neighborhoods to remain in their housing unit, because landlords may be less motivated to participate in the program (Dastrup et al., 2018). At the same time, a higher share of units was affordable in higher rent neighborhoods (26 percent affordable under FMR and 64 percent under SAFMR), increasing the value proposition of the voucher to landlords and program participants who would like to reside in higher rent neighborhoods.[3]

Effect of SAFMR on Attrition in the Housing Choice Voucher Program

In this section, we describe our approach to estimating the causal effect of SAFMRs on program attrition in the voucher program. We estimate the impact of the change from metropolitan-area FMRs to SAFMRs using a difference-in-differences approach within a survival analysis model. To examine the robustness of our main specification, we test alternatives specifications of the hazard function and use Monte Carlo analysis. We omit a detailed description of the data and the HUD demonstration from which they derived, as these are extensively described in Dastrup et al. (2018).

The difference-in-differences component compares the exit rates of voucher program tenants before the introduction of SAFMRs with exit rates of tenants after the introduction, and then it compares this difference across treated PHAs and untreated PHAs. The unit of observation is a household-"stay."[4]

This approach offers causal estimates under the assumption that SAFMR PHAs would have had parallel trends in exit rates during our study period in the absence of SAFMRs. The difference-in-difference approach removes potential bias from the impact estimate due to unobservable PHA

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[3] A recent HUD study found that refusal rates were much higher in low-poverty neighborhoods compared with the rates in higher-poverty neighborhoods (Cunningham et al., 2018).

[4] As we cannot observe long stays post-intervention, we restrict the analysis sample to households that entered the voucher program after 1980. We also restrict the estimation to time periods beginning in 2009 which is when our historical HUD data set begins, so that households entering prior to 2009 do not bias the estimation of the survival function. For example, consider two households that enter the voucher program in 2000, where Household A leaves the voucher program in 2005 and Household B leaves the voucher program in 2015. Household A is not observed in our data, because household-stays that ended prior to 2009 are not observed. Household B is observed, but we only use information about that household's "survival" at $t \geq 108$ months ($108=12*(2009 – 2000)$), so that Household B does not contribute an upwards bias of the survival probability at $0 < t < 108$. A household that entered, exited, and re-entered the program will appear in our data twice, if the exit took place during or after January 1, 2009, and the second re-entry took place between January 1, 2009, and December 31, 2017.

characteristics that are constant over the analysis time period (for example, local PHA practices and preferences in tenant selection). While the impact estimates could still be biased due to time-varying characteristics that coincided with the introduction of SAFMR and that affected the SAFMR PHAs and PHAs metropolitan-area-wide FMRs differently, we find that possibility unlikely, as the comparison sample is very large and the SAFMR demonstration sites were selected within clusters of PHAs that were similarly sized, in markets with similar FMRs, and had similar percentages of voucher holders that were working age (see Dastrup et al., 2018).

We estimate a Weibull survivor function using Stata's survival analysis packages, which models the probability that an existing tenant is still in the voucher program after t months. We considered other specifications (including the more typical proportional hazard model), but the data yield linear, parallel trends (straight lines) in log cumulative hazard over log time, suggesting that Weibull is the most appropriate specification. Equation 1 shows the Weibull cumulative hazard function, including household characteristics X; PHA characteristics Z; an indicator of PHA ever randomly assigned to using SAFMRs, SA; an indicator for pre- and post-introduction of the SAFMR policy, $POST_t$; and a random error term ϵ. The coefficient β_2 is the primary coefficient of interest, as it provides the estimate of whether the introduction of SAFMRs affected tenants' probability of leaving the program. Our findings are robust to the use of alternative hazard models (Gompertz) and consideration of correlated random errors at the PHA-level using a shared frailty parameter.

(1) $\qquad H(t) = \exp(\beta_1 + \beta_2 SA * POST_t + \beta_3 SA + \beta_4 POST_t + \beta_2 X + \beta_3 Z + \epsilon) \, t^a.$

All households are censored at 15 years duration to avoid longer term households' outsized influence on the shape parameters of the Weibull model (our main findings are robust to their inclusion).

To visualize the analysis, exhibit 2 shows the probability (and confidence intervals around those probabilities) that a household will remain in the voucher program after t months (a) prior to the SAFMR demonstration and (b) after the SAFMR demonstration. These graphs begin at 1.0 (a 100 percent probability of remaining in the voucher program at the time of move-in) and decrease to roughly 0.25 by the 175th month of participation (a 25 percent probability of still being in the voucher program after roughly 14.5 years). The median length of stay is the number of months at which 50 percent (0.5 on the y-axis) are still in the program.[5] The solid line shows this probability for households participating in PHAs assigned to use the SAFMRs, and the dashed line shows the probability for households participating in PHAs using the typical (metropolitan-wide) payment standards. The solid line is higher than the dashed line in exhibit 2(a), showing that households in PHAs that will later participate in the SAFMR demonstration are more likely to "survive," such as, persist in the program, prior to the introduction of the SAFMR policy than households in PHAs that will not participate in the SAFMR demonstration. In an experiment with a larger sample, we would expect the two lines in exhibit 2(a) to overlap perfectly, indicating no differences between the treatment and comparison group prior to the demonstration. Two of the SAFMR sites (Cook County and Mamaroneck) were the biggest influence in generating the gap in the pre-demonstration survival curves, and note that this gap is not surprising given that a sample size of

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[5] McClure estimated that the median length of stay in the voucher program is 4 years. Our data suggest that the median is much longer at 11 years (2017). One reason for this discrepancy may be that we do not include stays of less than 1 month.

seven PHAs is small and cannot be expected to reflect the average of a group of 138 comparison PHAs. This difference could be due to the combination of the housing market and participant types served in these PHAs.

The survival function of the SAFMR PHAs looks markedly different after the introduction of SAFMR policy. It nearly overlaps with the survival function of the non-SAFMR PHAs, as shown in exhibit 2(b). These data strongly suggest that the introduction of SAFMR led to induced program exit.

Exhibit 2(a)

Probability of Remaining in the Voucher Program, by Months Since Entry: Prior to SAFMR Demonstration
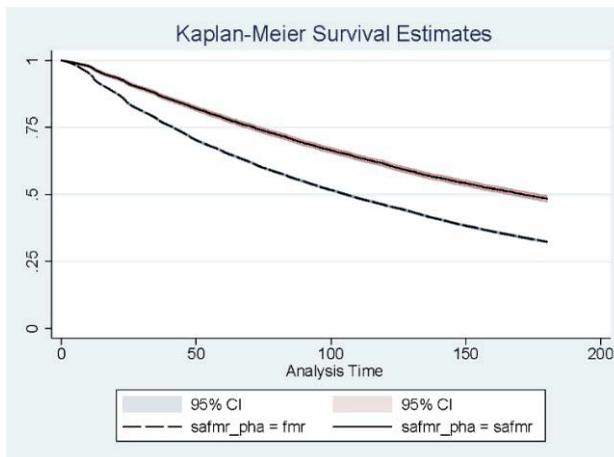
Exhibit 2(b)

Probability of Remaining in the Voucher Program, by Months Since Entry: After SAFMR Demonstration
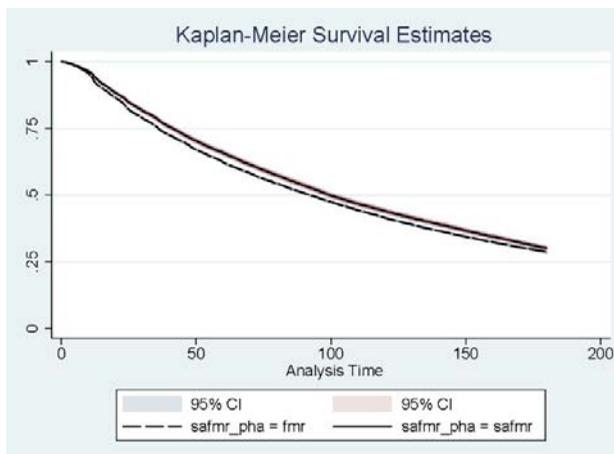
Consistent with exhibits 2(a) and 2(b), estimation of the survival regression model reveals that the introduction of SAFMR increased program exit. For any given length of time in the program and household characteristic, the introduction of SAFMR increased the probability of exit by 27 percent (a hazard ratio of 1.269). Exhibit A.1 in the appendix shows the full set of hazard ratios for all covariates in the regression model. This result is robust to alternative specifications, including the exclusion of random effects at the PHA-level and use of the Gompertz model instead of the Weibull model (see exhibit A.1). Of course, the increased probability of program attrition leads to shorter lengths of stay in the voucher program. Using the main model estimates, exhibit 3 shows the regression-adjusted median length of stay in months for households in treatment and comparison PHAs, both before and after the introduction of SAFMR. These medians are consistent with the survival rates in exhibit 2 and suggest that the introduction of SAFMR decreased the median length of stay by 20 percent (-27 divided by 134).[6]

Exhibit 3

Regression-Adjusted Median Length of Stay in the Voucher Program (Months)

	SAFMR PHAs	Comparison PHAs	Difference
After SAFMR	92	93	− 1
Before SAFMR	134	108	26
Difference	− 42***	− 15***	− 27***

*** p < 0.001

Notes: For SAFMR PHAs, the data include 54,860 households participating in the voucher program prior to the intervention and 56,061 households participating in the voucher program after the introduction of the intervention, of which 37,021 participated in the program in both periods. For comparison PHAs, the data include 738,807 households participating in the voucher program prior to the intervention and 668,602 households participating in the voucher program after the introduction of the intervention, of which 474,863 households participated in the program in both periods.

We were surprised at the large estimated impact of the change from metropolitan area FMR to SAFMR on attrition. One hypothesis we had is that our findings could be due to chance, owing to the small number of PHAs in the treatment group (7 out of 145 in the full sample). To explore this hypothesis, we conducted a Monte Carlo analysis using the 138 PHAs in the comparison group. Over 100 iterations, we randomly assigned 6 to 7 comparison PHAs to a "treatment" group and ran the same difference-in-difference Weibull model. On average, those simulations found no impact (a hazard ratio of 0.997, i.e. nearly 1). Despite the small number of PHAs in the simulated "treatment" groups, only one out of the hundred simulations yielded an impact estimate as large as the impact in our main analysis. In fact, our main finding is 2.31 standard deviations larger than the average simulated impact estimate. From this exercise, we conclude that although our main finding is puzzlingly large, there is roughly a one percent probability that it is due to random chance.

We tested to see if the impact was different across various tenant groups. We use the standard triple-difference specification, shown Equation (2), with W being a dummy (binary indicator) variable for subgroup inclusion. Table A.2 in the appendix shows the full set of estimated hazard ratios for all coefficients in the subgroup analyses.

$$(2) \quad H(t) = \exp{(\beta_1 + \beta_2 SA * POST_t * W + \beta_3 SA * W + \beta_4 POST_t * W + \beta_5 W + \beta_2 SA * POST_t + \beta_3 SA + \beta_4 POST_t + \beta_2 X + \beta_3 Z + \epsilon)} \ t^a$$

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[6] The SAFMR demonstration data suggest longer median lengths of stay than previously reported (McClure, 2017).

Similar to previous studies, our main finding and subgroup analysis finds that heads of household with disabilities are less likely to exit, in general, compared to nondisabled heads of household. Interestingly, we find no evidence that heads of household with disabilities were differently affected by the introduction of SAFMR compared to nondisabled heads of household. Stated differently, the introduction of SAFMR increased the hazard of exit for heads of household with disabilities just as much as it did for nondisabled heads of household.

We also compared households with children, to households without children. Similar to previous studies, our main finding and subgroup analysis find that households with children are less likely to exit, in general, compared with households without children. We find no evidence that households with children were differently affected by the introduction of SAFMR compared with households without. Stated differently, the introduction of SAFMR increased the likelihood of exit for households with children just as much as it did for households without children.

We next looked at households living in high rent neighborhoods at the time the SAFMR demonstration began. (We do not do a subgroup analysis based on neighborhood type at time of exit because neighborhood type at time of exit is endogenous to the policy change, as shown by Dastrup, Ellen, and Finkel, 2019.) Similar to Dastrup et al. (2018), high-rent neighborhoods are defined as neighborhoods where the median rent is 110 percent higher than the metropolitan area FMR. Unlike for households living in neighborhoods with rents lower than the 110 percent of the metropolitan area FMR, there is no evidence that households living in high-rent neighborhoods are more likely to exit the program after the introduction of SAFMR than before the introduction of SAFMR. The difference in impact for household participants in higher rent neighborhoods compared with all other households is statistically significant (p < .001). This finding suggests that the introduction of SAFMR increased attrition in lower and moderate rent neighborhoods but not in higher rent ones.

To investigate further, we closely examined households that live in lower and moderate rent neighborhoods at the beginning of the SAFMR Demonstration. As in Dastrup et al. (2018), lower rent neighborhoods are defined as ZIP Codes where the median rent is at most 90 percent of the metropolitan area median rent. We found that in general (prior to the SAFMR Demonstration and in non-SAFMR PHAs) households living in lower rent neighborhoods are more likely to leave the program than households in moderate rent neighborhoods (median rents between 90 and 110 percent the metropolitan median). For households that live in lower rent neighborhoods, the introduction of the SAFMR increased the probability of exit by 26 percent. For households that live in moderate rent neighborhoods, SAFMR increased the probability of exit by 41 percent, which statistical tests show is significantly larger than the increase in probability of exit for lower rent neighborhood participants. Therefore, we reject the hypothesis that the main result is driven solely by voucher participants living in lower rent neighborhoods; rather, it is driven both by participants in lower rent neighborhoods and participants in moderate rent neighborhoods. This finding is surprising since the SAFMR formula results in SAFMRs that are similar or identical to FMRs in these ZIP Codes. Further research is needed to determine the contribution to this finding of payment standards (set by PHAs within the 90 to 110 percent of either SAFMR or FMR), program complexity, and other factors.

Last, we examined subgroups defined by age. The introduction of SAFMR had a different effect on program attrition for households with seniors (age 62 and over) compared with households with no seniors. Both groups were more likely to exit after the introduction of SAFMR, but the increased hazard was smaller for households with seniors than households with no seniors (hazard ratio of 1.106 for seniors, 1.303 for nonseniors). The difference is statistically significant (p < .001). We can speculate on possible explanations for this difference (for example, seniors are otherwise less likely to move), but future research should clarify how the introduction of SAFMR had a different effect on these two types of households. In the SAFMR PHAs, a slightly smaller percentage of households with seniors live in high-rent neighborhoods than households with no seniors (16.8 percent compared with 15.9 percent). Therefore, the differential result for seniors is not tied to the results on average neighborhood rent levels.

Discussion

The results show increased rates of program attrition after the introduction of SAFMRs. Further research is needed to shed light on the reasons for the increased program attrition. It is theoretically ambiguous how the change from metropolitan area FMRs to SAFMRs would affect the length of stay in the program. The change from metropolitan area FMRs to SAFMRs may *decrease* attrition in higher rent neighborhoods because the program's generosity has increased. At the same time, if higher rent neighborhoods coincide with better economic possibilities for financial self-sufficiency, SAFMRs would ultimately *increase* attrition in higher rent neighborhoods. We found that households residing in higher rent neighborhoods were less likely to leave the program after the introduction of SAFMR than before, suggesting that, in the first 5 years after implementation, the effects of increased generosity of the subsidy in those neighborhoods outweigh factors that might decrease participation.

Another reason SAFMR might affect attrition is that it may *increase* attrition in lower rent neighborhoods because landlords may be less willing to accept the lower payment standards or interface with a more complicated program. Also, HCV participants with a lower valued subsidy might decide that the program's paperwork requirements are too burdensome. Indeed, we found that households residing in lower rent neighborhoods were more likely to leave the program after the introduction of SAFMR than before. Puzzlingly, households in moderate rent neighborhoods were also more likely (in fact, even more likely than those in lower rent neighborhoods) to leave the program after the introduction of SAFMR. Prior to this analysis, HUD recognized the potential burden to existing program participants at PHAs that switch from FMR to SAFMR. In part to address this possibility, Section 107 of the recently enacted Housing Opportunity Through Modernization Act (HOTMA) provides PHAs with flexibility in how they set payment standards in areas where the new payment standard falls below the metropolitan-area FMR. Under this new rule, PHAs are explicitly given the option of allowing higher PHA rental contributions for units whose new payment standard falls below the previous metropolitan-area FMR payment standard. These protections and additional experience with SAFMRs may result in different outcomes than we find for the SAFMR demonstration PHAs in our analysis.

Attrition from the voucher program is puzzling in general because most households are not financially better off as a result of leaving the program. Researchers would be able to document tenant experience and explain demonstration impacts on attrition if the HUD Form 50058 that describes each participating household recorded reasons for program exits. This article and the previous literature suggest that the list of categorical responses recording the exit reason should include: (1) death, (2) moving to co-habit with partner, (3) leaving geographic service area, (3) eviction, (4) no longer in need of housing subsidy, (5) difficulty finding an apartment, and (6) moving to a nursing or other more intensive care facility, as well as others. Increased resources and improved processes for gathering this exit information would likely allow for more focused research conclusions to inform policies that can affect program attrition.

Conclusion

During the SAFMR demonstration, the seven participating PHAs saw increased attrition rates from the HCV program that imply a decrease in median length of program participation of about 2 years (from a median base of about 11 years of participation). The increase in attrition is attributable to the change from metropolitan area rents to SAFMRs. Households in lower and moderate rent neighborhoods were affected but households in high-rent neighborhoods were not. Working-age adults were more affected than households with adults over age 62. Characteristics of participants exiting the program suggest that exits represent a decrease in household resources. Additional research and data collection are needed to understand the reasons for program exits and how the introduction of SAFMRs interacts with these reasons. Although the demonstration evaluation and related research have found that SAFMRs led to an increase in households—especially those with children—moving to high-rent neighborhoods, a more complete welfare analysis of SAFMRs is needed to take into account its impact on attrition from the voucher program.

Acknowledgments

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Appendix A: Additional Exhibits

Exhibit A.1

Main Results (1 of 2)

	Weibull Model Without PHA-Cluster Robust Standard Errors	Gompertz Model Without PHA-Cluster Robust Standard Errors	Weibull Model With PHA-Cluster Robust Standard Errors
Interaction of Post Dummy and SAFMR-PHA Dummy	1.399*** [1.357,1.443]	1.387*** [1.344,1.430]	1.270*** [1.230,1.311]
Indicator for Time ≥ Post-Intervention	1.089*** [1.081,1.097]	1.106*** [1.099,1.114]	1.171*** [1.163,1.179]
PHAs Using SAFMRs	0.720*** [0.701,0.739]	0.730*** [0.711,0.749]	0.795 [0.589,1.074]
Cluster = 2	1.040*** [1.028,1.052]	1.038*** [1.026,1.050]	1.053 [0.900,1.232]
Cluster = 4	0.552*** [0.542,0.562]	0.558*** [0.548,0.568]	0.520*** [0.424,0.640]
Cluster = 5	(omitted)	(omitted)	(omitted)
Cluster = 6	0.766*** [0.759,0.773]	0.772*** [0.764,0.779]	-0.195* [0.678,0.998]
Cluster = 7	0.456*** [0.448,0.464]	0.464*** [0.456,0.472]	0.438*** [0.322,0.596]
Household Head is a Woman	0.729*** [0.723,0.736]	0.745*** [0.739,0.752]	0.740*** [0.733,0.747]
Head of Household with Disability	0.822*** [0.815,0.829]	0.833*** [0.826,0.840]	0.793*** [0.786,0.800]
Household Head is White	1.419*** [1.406,1.430]	1.419*** [1.406,1.430]	1.265*** [1.252,1.276]
Household Head is Hispanic	0.950*** [0.939,0.960]	0.951*** [0.941,0.961]	0.870*** [0.860,0.882]
Children Under Age 5 Present	0.974*** [0.966,0.983]	0.960*** [0.952,0.969]	0.947*** [0.939,0.955]
Children Age 5 to 12 Present	0.846*** [0.839,0.853]	0.851*** [0.845,0.858]	0.842*** [0.835,0.849]
Children Age 13 to 17 Present	0.918*** [0.910,0.926]	0.934*** [0.926,0.942]	0.928*** [0.920,0.936]
More Than One Adult in Household	0.844*** [0.836,0.850]	0.854*** [0.846,0.861]	0.877*** [0.869,0.884]
At Least One Adult Age 62+	1.005 [0.994,1.015]	1.018*** [1.008,1.029]	1.025*** [1.014,1.036]
Income > $0 and < $5K	0.941*** [0.922,0.960]	0.944*** [0.925,0.963]	0.904*** [0.886,0.923]
Income ≥ $5K and < $10K	0.947*** [0.929,0.966]	0.952*** [0.934,0.971]	0.921*** [0.903,0.940]

Exhibit A.1

Main Results (2 of 2)

	Weibull Model Without PHA-Cluster Robust Standard Errors	Gompertz Model Without PHA-Cluster Robust Standard Errors	Weibull Model With PHA-Cluster Robust Standard Errors
Income ≥ $10K and < $15K	0.964*** [0.945,0.983]	0.970** [0.951,0.990]	0.960*** [0.941,0.979]
Income ≥ $15K and < $20K	1.052*** [1.031,1.073]	1.054*** [1.033,1.075]	1.046*** [1.025,1.068]
Income ≥ $20K and < $25K	1.195*** [1.170,1.220]	1.198*** [1.174,1.224]	1.206*** [1.181,1.231]
Income ≥ $25K	1.735*** [1.699,1.770]	1.747*** [1.713,1.782]	1.818*** [1.782,1.857]
Constant	0.008*** [0.008,0.008]	0.010*** [0.009,0.010]	0.007*** [0.007,0.008]
Weibull Shape Parameter	1.036*** [1.033,1.039]		1.066*** [1.062,1.069]
Gompertz Shape Parameter		0.999*** [0.999,0.999]	
Theta			0.151*** [0.120,0.189]

PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.
* p < 0.05, ** p < 0.01, *** p < 0.001
Notes: This table displays the model results as hazard ratios, which are exp(coeff) where coeff are the estimated model coefficients. For the SAFMR PHAs, there are 54,860 observations pre-intervention and 56,061 observations post-intervention. For the metropolitan area FMR PHAs, there are 738,807 observations pre-intervention and 668,602 observations post-intervention. Income is inflation adjusted to 2018 dollars. Ninety-five percent confidence intervals in brackets.

Exhibit A.2

Subgroup Analyses (1 of 3)

Subgroup (by Comparison)	Households with at Least One Person with a Disability Present (Households with No Persons with Disabilities Present)	Households with at Least One Senior Present (Households with No Seniors Present)	Households with at Least One Child Present (Households with No Children Present)	Higher Rent Neighborhood (Rent Ratio >1.1 Area Median Rent) (Average and Low Rent Neighborhoods)	Lower Rent Neighborhood (Rent Ratio <0.9 Area Median Rent) (Average Rent Neighborhoods)
Interaction of Subgroup Dummy, Post Dummy, and SAFMR Dummy	0.94 [0.880,1.004]	0.848*** [0.780,0.921]	1.023 [0.962,1.088]	0.784*** [0.717,0.858]	0.895** [0.834,0.960]
Interaction of Subgroup Dummy and Post Dummy	0.967*** [0.953,0.982]	0.935*** [0.916,0.953]	1.082*** [1.069,1.095]	1.111*** [1.086,1.134]	0.844*** [0.829,0.859]
Interaction of Subgroup Dummy and SAFMR Dummy	1.147*** [1.085,1.212]	1.078* [1.008,1.153]	0.877*** [0.833,0.924]	1.117** [1.045,1.209]	1.135*** [1.070,1.203]
Interaction of Post Dummy and SAFMR Dummy	1.297*** [1.249,1.347]	1.305*** [1.260,1.351]	1.255*** [1.197,1.314]	1.309*** [1.265,1.354]	1.413*** [1.353,1.478]
Post Dummy (Indicator for Time >>= Post-Intervention)	1.184*** [1.174,1.195]	1.183*** [1.174,1.192]	1.121*** [1.110,1.132]	1.158*** [1.149,1.166]	1.210*** [1.200,1.220]
SAFMR Dummy (Indicator for PHAs Using SAFMRs)	0.761 [0.563,1.029]	0.785 [0.581,1.061]	0.854 [0.631,1.155]	0.782 [0.579,1.057]	0.726* [0.536,0.984]
Cluster = 2	1.055 [0.901,1.234]	1.053 [0.899,1.232]	1.054 [0.900,1.234]	1.053 [0.900,1.232]	1.048 [0.895,1.228]
Cluster = 4	0.521*** [0.424,0.640]	0.520*** [0.424,0.639]	0.521*** [0.424,0.640]	0.520*** [0.423,0.639]	0.510*** [0.414,0.627]
Cluster = 5	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
Cluster = 6	-0.195* [0.678,0.999]	-0.196* [0.678,0.997]	0.823* [0.678,0.998]	0.823* [0.678,0.998]	0.819* [0.674,0.993]
Cluster = 7	0.437*** [0.321,0.595]	0.438*** [0.322,0.596]	0.437*** [0.321,0.595]	0.438*** [0.322,0.596]	0.421*** [0.309,0.573]

Exhibit A.2

Subgroup Analyses (2 of 3)

Subgroup (by Comparison)	Households with at Least One Person with a Disability Present (Households with No Persons with Disabilities Present)	Households with at Least One Senior Present (Households with No Seniors Present)	Households with at Least One Child Present (Households with No Children Present)	Higher Rent Neighborhood (Rent Ratio >1.1 Area Median Rent) (Average and Low Rent Neighborhoods)	Lower Rent Neighborhood (Rent Ratio <0.9 Area Median Rent) (Average Rent Neighborhoods)
Household Head is a Woman	0.740*** [0.733,0.747]	0.740*** [0.733,0.747]	0.736*** [0.730,0.743]	0.740*** [0.733,0.747]	0.731*** [0.725,0.739]
Head of Household with Disability	0.803*** [0.794,0.812]	0.793*** [0.786,0.799]	0.795*** [0.789,0.803]	0.793*** [0.786,0.800]	0.796*** [0.789,0.803]
Household Head is White	1.265*** [1.252,1.276]	1.265*** [1.252,1.276]	1.266*** [1.255,1.278]	1.264*** [1.252,1.276]	1.271*** [1.259,1.284]
Household Head is Hispanic	0.870*** [0.860,0.882]	0.871*** [0.860,0.882]	0.869*** [0.858,0.880]	0.870*** [0.860,0.882]	0.860*** [0.848,0.871]
Children Under Age 5 Present	0.946*** [0.938,0.955]	0.947*** [0.939,0.955]	0.933*** [0.925,0.941]	0.947*** [0.939,0.955]	0.954*** [0.945,0.963]
Children Age 5 to 12 Present	0.842*** [0.835,0.849]	0.842*** [0.835,0.849]	0.829*** [0.822,0.836]	0.841*** [0.834,0.848]	0.840*** [0.833,0.848]
Children Age 13 to 17 Present	0.928*** [0.920,0.936]	0.928*** [0.920,0.936]	0.917*** [0.909,0.925]	0.928*** [0.920,0.936]	0.923*** [0.914,0.932]
More Than One Adult in Household	0.877*** [0.869,0.884]	0.877*** [0.869,0.885]	0.875*** [0.868,0.883]	0.877*** [0.869,0.884]	0.874*** [0.866,0.882]
At Least One Adult Age 62+	1.023*** [1.012,1.034]	1.064*** [1.048,1.079]	1.028*** [1.017,1.039]	1.025*** [1.014,1.036]	1.022*** [1.010,1.034]
Income > $0 and < $5K	0.905*** [0.887,0.924]	0.905*** [0.886,0.923]	0.902*** [0.884,0.921]	0.904*** [0.886,0.923]	0.906*** [0.887,0.926]
Income ≥ $5K and < $10K	0.922*** [0.904,0.940]	0.922*** [0.904,0.940]	0.920*** [0.902,0.938]	0.921*** [0.903,0.940]	0.926*** [0.907,0.945]

Exhibit A.2

Subgroup Analyses (3 of 3)

Subgroup (by Comparison)	Households with at Least One Person with a Disability Present / Households with No Persons with Disabilities Present	Households with at Least One Senior Present / Households with No Seniors Present	Households with at Least One Child Present / Households with No Children Present	Higher Rent Neighborhood (Rent Ratio >1.1 Area Median Rent) / Average and Low Rent Neighborhoods	Lower Rent Neighborhood (Rent Ratio <0.9 Area Median Rent) / Average Rent Neighborhoods
Income ≥ $10K and < $15K	0.961*** [0.942,0.980]	0.961*** [0.942,0.980]	0.958*** [0.940,0.978]	0.960*** [0.941,0.979]	0.963*** [0.943,0.983]
Income ≥ $15K and < $20K	1.047*** [1.026,1.068]	1.047*** [1.025,1.068]	1.043*** [1.022,1.065]	1.046*** [1.025,1.068]	1.052*** [1.030,1.075]
Income ≥ $20K and < $25K	1.207*** [1.181,1.232]	1.206*** [1.181,1.232]	1.202*** [1.176,1.228]	1.206*** [1.179,1.231]	1.221*** [1.195,1.250]
Income ≥ $25K	1.820*** [1.784,1.859]	1.820*** [1.782,1.857]	1.815*** [1.779,1.853]	1.818*** [1.781,1.857]	1.861*** [1.820,1.900]
Ratio of Neighborhood Rent to FMR at Time of Intervention Introduction > 1.1				0.962*** [0.947,0.976]	
Ratio of Neighborhood Rent to FMR at Time of Intervention Introduction < 0.9					1.197*** [1.183,1.213]
Constant	0.007*** [0.007,0.008]	0.007*** [0.007,0.008]	0.008*** [0.007,0.008]	0.008*** [0.007,0.008]	0.007*** [0.007,0.008]
Weibull Shape Parameter	1.066*** [1.062,1.069]	1.065*** [1.062,1.068]	1.065*** [1.062,1.068]	1.065*** [1.062,1.068]	1.065*** [1.062,1.068]
Random Effect Parameter (Frailty)	0.151*** [0.120,0.189]	0.151*** [0.120,0.189]	0.151*** [0.121,0.189]	0.151*** [0.120,0.189]	0.152*** [0.121,0.190]

FMR = Fair Market Rent. PHA = Public Housing Authority. SAFMR = Small Area Fair Market Rent.

* p < 0.05, ** p < 0.01, *** p < 0.001

Notes: Each column is a separate regression. This table displays the model results as hazard ratios, which are exp(coeff) where coeff are the estimated model coefficients. The regression in the last column has smaller sample sizes because households living in neighborhoods with average rents greater than 110 percent of the area FMR at the time of the intervention introduction are omitted. For this subsample, the SAFMR PHAs have 40,254 observations pre-intervention and 45,791 observations post-intervention; the metropolitan area FMR PHAs have 594,308 observations pre-intervention and 574,464 observations post-intervention. Income is inflation adjusted to 2018 dollars. Ninety-five percent confidence intervals in brackets.

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Does HUD Overpay for Voucher Units, and Will SAFMRs Reduce the Overpayment?

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Abstract

One argument for Small Area Fair Market Rents (SAFMRs) is that they would reduce overpayment for voucher units in low-rent neighborhoods. This leads to the belief that the benefits of SAFMRs can be funded largely by reductions in landlord profits rather than by losses to voucher recipients who remain in low-rent areas. The usual theoretical argument that has led many to believe that voucher units are overpriced focuses on one implication of one feature of the Housing Choice Voucher program. This article provides a more comprehensive theoretical analysis that leads to the conclusion that the worst voucher units and those in the worst neighborhoods will usually rent for more than the mean market rent of identical units, and the best units in the best neighborhoods will rent for less than this amount. The debate over this matter has ignored the bulk of the available evidence. This article summarizes and assesses the data, methods, and results of the major studies. The evidence is consistent with the general pattern predicted by the comprehensive theoretical analysis but also with an alternative explanation that challenges its interpretation of overpayments and underpayments for voucher units. The mix of units with estimated overpayments and underpayments varies across studies, but the weight of the evidence is that the aggregate differences are modest. Finally, the evidence available indicates that SAFMRs will decrease the rents paid for voucher units with any specified set of characteristics in the worst neighborhoods and will increase the rents of such units in the best neighborhoods.

Introduction

Convincing evidence indicates that children in low-income households will have better outcomes as adults if they grow up in better neighborhoods (Chetty, Hendren, and Katz, 2016; Chyn, 2018). Evidence also indicates that Small Area Fair Market Rents (SAFMRs) will induce more voucher recipients with children to move to better neighborhoods without any significant increase in

taxpayer cost (Collinson and Ganong, 2018; Dastrup et al., 2018). If the decision makers in these families undervalue the benefits of a better neighborhood for themselves or their children, or if they fail to devote a sufficient share of the family's resources to their children in the eyes of others who care about them, this evidence provides a strong argument for SAFMRs.[1]

Another argument in the debate over the desirability of SAFMRs is on shakier ground. At several points in the Federal Register entries for the proposed SAFMR rule (81 FR 39218) and final rule (81 FR 80567), it is argued that another benefit of SAFMRs is that they would reduce overpayment of rent in areas where median neighborhood rent is below the average for the metropolitan area. The belief that the voucher program overpays for units in these areas is widespread among housing policy analysts and others involved in housing policy debates. This leads to the belief that the benefits of SAFMRs can be funded largely by reductions in landlord profits rather than losses to voucher recipients who remain in low-rent areas. If market rents are paid for voucher units in these areas, reduced payment standards would force these recipients to pay higher rents or move to less desirable units.

The usual theoretical argument that has led many to believe that voucher units are overpriced focuses on one feature of the Housing Choice Voucher (HCV) program and ignores other features that affect this outcome. The Federal Register entries for the proposed and final SAFMR rule are not specific about the nature of the evidence on this matter. They cite an early version of a recently published paper (Collinson and Ganong, 2015), however, that contained some evidence about the extent of overpayment for voucher units. Desmond and Perkins (2016) provide recent results for one county, but neither Collinson and Ganong nor Desmond and Perkins provide a good account of the major studies funded by the U.S. Department of Housing and Urban Development (HUD) that shed considerable light on this matter.

The purposes of this article are to explain the theoretical reasons for rents of voucher units to be greater or less than the mean rents of similar units occupied by unsubsidized households and to summarize and assess the data, methods, and results of the major empirical studies of this matter. Because the voucher program has changed over time and voucher programs with different features should be expected to have different outcomes, this assessment will account for the nature of the voucher program at the time of the data underlying the results of each study. This article will provide a comprehensive account of the state of the evidence on this matter.

Theory

The HCV program has features that lead to the expectation that HUD will pay more than the mean market rent of identical units for some units in some locations and less than the mean market rent of identical units for other units in other locations. This section analyzes the expected effect of these features.

The argument that has led many to expect that voucher units would be overpriced is based on a simplified version of the program. It assumes that a voucher recipient is allowed to occupy any

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[1] Otherwise, the evidence provides no rationale for incentivizing families with children to live in a better neighborhood at the expense of worse housing.

unit that meets the program's minimum housing standards and rents for less than a program parameter called the payment standard, the voucher recipient can agree to pay the landlord any rent up to the payment standard, and the recipient will contribute a fixed amount toward its rent, usually 30 percent of their countable income. Under these assumptions, if the market rent of a unit occupied by a voucher recipient is less than the payment standard, its tenant would have no reason to resist paying the landlord a rent equal to the payment standard. This leads to the conclusion that all landlords who serve voucher recipients will charge rents equal to this amount. Therefore, all voucher units with market rents less than the payment standard would be overpriced, and the worst units in the worst neighborhoods would be overpriced to the greatest extent.

The conclusion that all landlords who serve voucher recipients will set their rents equal to the payment standard is counterfactual. Collinson and Ganong (2018, Online Appendix, Figure B.5) reveal that this is true for only 12 percent of voucher recipients.[2] About 52 percent have rents less than the payment standard and, in many cases, substantially less. Their results also indicate HUD pays more for better units (Online Appendix, Figure B.1). The Freestanding Housing Voucher Demonstration produced similar results for the predecessor to the current HCV program.[3]

The argument that leads to the expectation that voucher units will be overpriced ignores an important aspect of reality and an important incentive in the simplified version of the program. Exhibit 1 illustrates their combined effect. The exhibit describes the relationship between the desirability and rents of the units in a given neighborhood. The units in the neighborhood differ in their desirability Q_H. Due to search cost, identical units in the neighborhood do not have the same rent. The points in the shaded area represent combinations of unit desirability and asking rents to unsubsidized tenants for units that meet the voucher program's minimum housing standards Q_H^{MIN}. PS is the program's ceiling rent. The units available to voucher recipients are the units in the shaded area to the right of Q_H^{MIN} and below PS. Landlords with asking rents above PS will not agree to rent to voucher recipients. Based on the assumptions of the usual argument, landlords with asking rents less than or equal to PS will agree to rent to voucher recipients for a rent equal to PS because they realize that voucher recipients have no reason to resist this rent for their unit.

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[2] https://assets.aeaweb.org/asset-server/files/6861.pdf

[3] Leger and Kennedy (1990b, Table G.17) at https://www.huduser.gov/portal/Publications/pdf/HUD-005555.pdf and Leger and Kennedy (1990c, Table E.25C) at https://www.huduser.gov/portal/Publications/pdf/HUD-005597.pdf

Exhibit 1

Units of Different Quality Potentially Available to Voucher Recipients in a Neighborhood
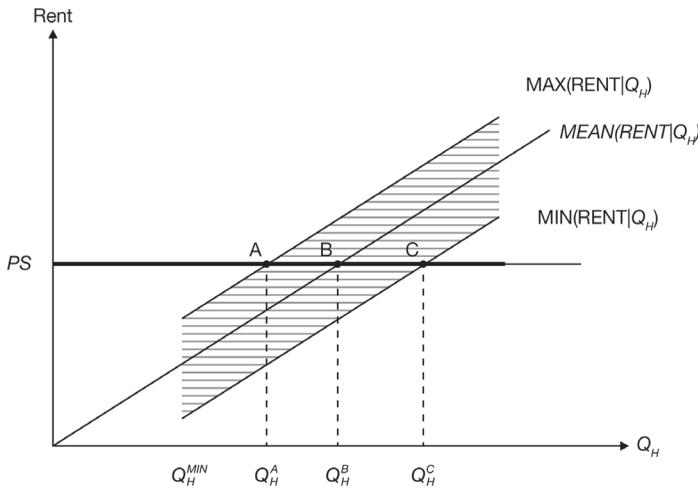
Like unsubsidized tenants, voucher recipients looking for a unit will contact a number of landlords and visit a number of units. Asking rent and a few rudimentary characteristics are nearly always stated in advertisements, but it is necessary to visit units to determine their desirability. Voucher recipients will limit their search to units in the shaded area to the right of Q_H^{MIN} and below PS, but due to search costs, they will not contact all landlords with vacant units. Because the rent that they pay does not depend on the desirability of the unit, they will occupy the best unit that they find during their search. This is a largely unrecognized implication of the assumptions of the usual argument. Recognizing that units with the higher asking rent usually have more desirable characteristics would motivate voucher recipients to search among units with asking rents slightly below PS.

On the usual argument, if the best unit found in a search has desirability between Q_H^B and Q_H^C, the recipient's combination of unit desirability and landlord rent would be on the line segment BC. Except for units with an initial asking rent equal to PS, these landlords would receive rents greater than their initial asking rents. In that sense, they would be overpriced. They would also, however, have rents less than the mean rent of identical units. In this sense, they would be underpriced. All empirical work on this topic is based on the second concept of underpayment and overpayment. It compares the actual rent of voucher units with an estimate of the mean market rent of units with the same characteristics.

Therefore, the fact that the tenant contribution to rent does not vary with the rent paid to the landlord does not imply that HUD pays rents greater than the mean market rent of identical units for units occupied by voucher recipients. Under the assumptions of the usual argument, two offsetting forces are at work—no incentive to avoid overpayment for units and an incentive to occupy the best possible unit. This leads to the expectation that the worst units occupied by voucher recipients in a neighborhood would be overpriced and the best units underpriced.

By reinterpreting Q_H, it is possible to get similar results for the pricing of identical units in neighborhoods of different quality or the pricing of a composite of unit and neighborhood quality across the entire housing market. Among units of identical quality, those in the worst neighborhoods will be overpriced and those in the best neighborhoods underpriced. Among all units, those with the lowest market rent will be overpriced and those with the highest, underpriced.

In assessing the likelihood of underpricing and overpricing in exhibit 1, it is important to realize that many landlords are unwilling to serve voucher recipients and the fraction willing to serve them is lower for landlords with higher asking rents (Phillips, 2017).[4] This will probably induce voucher recipients to modify their search in terms of neighborhoods and asking rent. As a result, the best option that results from their search are less likely to be between Q_H^B and Q_H^C in exhibit 1. This would lead to fewer underpriced and more overpriced units.

The simplified description of the voucher program ignores two important features of the HCV program. First, the housing agency rather than the tenant decides on the rent that will be paid for a voucher unit. HUD regulations require public housing agencies (PHAs) to conduct a rent reasonableness determination before units are leased and before rent increases are granted to owners. They use a variety of methods to comply with this requirement. The most common is based on the rents of unsubsidized units in the same building or nearby, adjusted for differences in their characteristics (ICF International, 2014, Exhibit IV-25).[5] Presumably, the PHA sets an upper limit on the amount it is willing to pay for each unit. Landlords who understand the program's operation might reasonably propose rents equal to the payment standard even for units with market rents well below these levels, but the housing agency will not agree to rent above its upper limit. Therefore, for the lowest quality units and units in the worst neighborhoods, the payment standard is not the effective upper limit on the rents paid to landlords. The effective upper limit is what the housing agency is willing to pay. In terms of exhibit 1, it varies with Q_H and is probably somewhere between MAX (RENT|Q_H) and MEAN (RENT|Q_H). Enforcement of the rent reasonableness test would reduce and possibly prevent overpayment for the worst units in the worst neighborhoods. If housing agencies were able to determine completely accurately the mean market rent of identical units and established it as an upper limit on a reasonable rent, no voucher units would be overpriced.

The HCV program differs from the simplified version in another important respect. A voucher recipient is allowed to occupy a unit renting for more than the payment standard but must pay the entire additional cost. On the initial lease, the maximum rent is the payment standard plus 10 percent of countable income. This ensures that the household will not devote more than 40 percent of its countable income to rent. This restriction does not apply beyond the initial lease. A household with a voucher might choose to occupy a unit renting for more than the payment standard if it places a particularly high value on better housing or a more desirable neighborhood, or if it is not worth the effort to find a unit renting for less. In 2018, the program's mean payment

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[4] In an online appendix at https://assets.aeaweb.org/asset-server/files/6861.pdf, Collinson and Ganong (2018) develop a model that focuses on this aspect of reality.

[5] https://www.huduser.gov/portal/publications/pubasst/QCinc_fy13.html

standard and mean countable income were about $1,100 a month. Therefore, the rent ceiling exceeded the payment standard by about 10 percent.

This feature affects many HCV recipients. In 2009, 36 percent of voucher units had rents greater than the applicable payment standard.[6] Because voucher recipients would bear the full cost of better housing over this range of asking rents, they face the same incentives as unsubsidized tenants. We would not expect the mean rent paid for voucher units in this range to differ from the mean market rent for identical unsubsidized units. Therefore, some voucher recipients living in the best units and neighborhoods are in this group. Others may live in units that are underpriced.

Taking account of incentives and features of the HCV program that are ignored in the usual argument suggests that the worst voucher units, and those in the worst neighborhoods, will usually rent for more than the mean market rent of identical units, and the best units in the best neighborhoods will rent for less than this amount. The following evidence supports that general pattern. It also sheds light on the mix of units in the two categories and the magnitudes of the differences.

Evidence

The best evidence about voucher rents relative to market rents comes from three major HUD-funded studies and one recent journal article. The HUD-funded studies use random sampling to estimate patterns for the country as a whole. The journal article produces results for one county. Most studies predict the market rent of voucher units based on estimated hedonic equations, but one used real estate appraisers.

Because there is no reason to believe that the HCV program has about the same effect in all localities, it is important to consider the evidence from the best older studies. However, since these studies produced results for different times in the history of the Section 8 Existing Housing Program (1979, 1987, 2000), it is also important to consider how the versions of the program that existed at the earlier times differed from the current program and how these differences are likely to affect the outcomes of interest. We are primarily interested in the performance of the current program, and the Section 8 program has undergone significant changes on several occasions (Olsen, 2003).

The earliest studies produced results for the rent certificate program. The only significant difference between the rent certificate program and the HCV program is that the certificate program's payment standard was its ceiling rent.[7] Unlike current recipients, certificate holders were not allowed to occupy a more expensive unit by paying the incremental cost. It is reasonable to believe that the recipients who would have chosen this option under the HCV program would have lived in the best units and neighborhoods under the certificate program. The earlier analysis suggests that these households would typically have paid below-market rents for their units under the certificate

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[6] Rob Collinson provided this number based on the data underlying Figure B.5 in the online appendix to Collinson and Ganong (2018).

[7] For most certificate holders, the payment standard was the applicable Fair Market Rent (FMR) that applied everywhere in a metropolitan area. Housing agencies were allowed to have payment standards called exception FMRs up to 10 percent greater than the applicable FMR for up to 20 percent of recipients, however.

program. Under the HCV program, they have the same incentive to avoid overpriced units as unsubsidized households. Therefore, they would, on average, pay market rents for their units, and we expect aggregate overpayment to be larger in the HCV program than in the certificate program. This is consistent with evidence from the only study that compared the two programs (ORC/Macro, 2001, Exhibit V-10).[8]

Participation and Benefits in the Urban Section 8 Program

Abt Associates (1981) provides the first evidence on the rents paid for voucher units relative to the mean market rent of similar units in similar neighborhoods.[9] This study is based on 1979 data for 276 randomly selected participants in the original housing certificate program from 16 randomly selected metropolitan areas. The authors predict the market rents of voucher units using hedonic equations estimated with detailed information on the characteristics of unsubsidized dwelling units and their neighborhoods from the Annual Housing Survey (AHS) and even better information collected by the contractor for the study. The AHS data contained information on 40,560 rental units; the latter information on 1,365 apartments in 13 metropolitan areas. With the smaller sample, the authors estimated separate hedonics for four regions with dummy variables for the standard metropolitan statistical areas (SMSAs) in those regions. For the larger sample, they estimated separate hedonics for each SMSA. The results indicate that the program's gross rent exceeded predicted rent by 4 to 5 percent.[10] Under standard assumptions, the premium was estimated with considerable precision. The authors did not estimate how the premium varied with the desirability of the unit or neighborhood.

Freestanding Housing Voucher Demonstration

The second major HUD-funded study that sheds light on the rents paid for units under voucher programs is the Freestanding Housing Voucher Demonstration, a random assignment experiment that compared selected outcomes of the old certificate and voucher programs.[11] The 1998 Housing Act created the HCV program as a hybrid of these two programs. With minor exceptions, the old voucher program provided a fixed subsidy to each household and placed no upper limit on the rent of the unit occupied. Every additional dollar paid in rent reduced the recipient's spending on other goods by that amount. Unlike the certificate program, the old housing voucher program did not have a rent reasonableness test.

The results of the experiment are based on data collected between 1985 and 1987 on recipients served by 17 randomly selected large urban PHAs and two statewide voucher agencies. The experiment assigned new recipients randomly to receive one of the two types of housing assistance. Many outcomes were studied, including the rents paid for certificate and voucher units with the same characteristics. Recipient housing is the subject of a lengthy report (Leger and Kennedy,

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[8] https://www.huduser.gov/portal/Publications/pdf/qualitycontrol.pdf

[9] This report is not available on HUD's website. A scanned version can be found at http://eoolsen.weebly.com/housing-policy-info.html.

[10] See tables 6-25 and 6-26 at http://eoolsen.weebly.com/housing-policy-info.html.

[11] The experiment generated reports totaling more than a thousand pages. The two final reports that contain the detailed results (Leger and Kennedy, 1990b; 1990c) are posted on HUD's website. Oddly, the summary report (Leger and Kennedy, 1990a) is not posted.

1990c). Its authors used data on households in the old housing voucher program to estimate a hedonic equation that was used to predict the market rents of units occupied by households with rent certificates. Because voucher recipients faced the full marginal cost of their housing, the authors assumed that they paid market rents for their units. The analysis is based on data from the 10 urban PHAs that had a specified minimum number of recipients in each program. The contractor assembled detailed information about the housing and its neighborhood for about 100 certificate and 100 voucher recipients in each site.

The study found that the mean rent paid for units in the certificate program was about 4 percent less than the mean of the market rents of its units.[12] Detailed results indicated a pattern of overpayment and underpayment consistent with the implications of the theoretical model in the preceding section. Certificate recipients paid higher than market rents for low-quality housing (broadly conceived) and the opposite for high-quality housing.[13] Specifically, the authors provide estimates of the mean actual and predicted rent for 15 ranges of predicted market rent relative to FMR to account for different rent levels in different localities.[14] For the 28 percent of certificate units that had predicted market rents less than 75 percent of the applicable local FMR, the mean actual rent exceeded the mean predicted market rent. With a trivial exception, the percentage difference was greater for units with the lower predicted market rent. The largest percentage difference (15 percent) was for units with predicted market rents less than 55 percent of the FMR. For units with predicted market rents between 75 and 85 percent of the FMR, there was essentially no difference between mean actual and market rents. For the 55 percent of certificate units with predicted market rents in excess of 85 percent of the FMR, the mean predicted market rent exceeded the mean rent paid for the units. The percentage difference tended to be greatest for units with the highest predicted market rent; the largest percentage difference (17 percent) was for units with predicted market rents greater than 140 percent of the FMR. Therefore, in most cases, the incentive of certificate recipients to find the best units renting for less than the payment standard outweighed the absence of an incentive to resist overpaying for the unit.

Quality Control for Rental Assistance Subsidies Determination

For many years, HUD has funded studies to assess the performance of PHAs in administering its rental assistance programs. To determine their effectiveness in enforcing the rent reasonableness test, one of these studies compared the rents paid for voucher units with their estimated market rents (ORC/Macro, 2001). Unlike other studies discussed in this paper, the contractor hired real estate appraisers to estimate market rents. Appraisers attempt to find comparable units that are nearby and account for differences in the characteristics of the units that significantly affect market rent. Whether appraisers or hedonics are more effective in predicting market rents is an open question.

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[12] Leger and Kennedy (1990b, Table D.21A, D.21B) at https://www.huduser.gov/portal/Publications/pdf/HUD-005555.pdf.

[13] The authors did not distinguish between unit and neighborhood quality. They used market rent as an index that captures both.

[14] Leger and Kennedy (1990b, Table D.22C) at https://www.huduser.gov/portal/Publications/pdf/HUD-005555.pdf and Leger and Kennedy (1990c, Table E.25C) at https://www.huduser.gov/portal/Publications/pdf/HUD-005597.pdf provide similar results based on ranges of predicted rent alone. The qualitative conclusions are the same.

This study is based on data for 752 recipients served by 107 randomly selected housing authorities in 2000. Different recipients were served by different voucher programs. In October 1999, HUD began the transition from the rent certificate and old voucher program to the current HCV program. At the time of the study, some units were under each of the three programs. The report does not contain information on the percentage served by each program. The results reported in exhibit V-10, however, imply that the rent certificate program served 53 percent of the total.[15] The study does not report results separately for the three programs, and the one result reported for different programs does not distinguish between the old and new voucher programs. Because the old voucher program was quite small relative to the certificate program, it seems likely that the current voucher program served many voucher recipients in the study.

ORC/Macro (2001) found that in aggregate the three programs paid 10 percent less than market rents for their units. Exhibit V-10 indicates that, on average, program units rent for less than predicted market rents for all types of households, dwelling units, and program parameters studied. Consistent with the implications of the model in the preceding section, the discount is greater in the certificate program than in the voucher programs ($120 versus $66 a month) and greater in high- than in low-cost submarkets ($244 versus $14 a month). Because each unit is classified as living in a high- or low-cost submarket based on whether its estimated market rent is greater or less than the FMR in the locality, the latter result is more accurately described as reflecting the overall desirability of the unit rather than only neighborhood desirability.

Milwaukee Study

In a recent study based on a random sample of rental units in Milwaukee County, WI, Desmond and Perkins (2016) estimated the difference between the rents of unsubsidized and voucher units based on excellent information about the housing, neighborhood, and tenant characteristics of 1,046 renters in 2010. They found that landlords received rents about $51 to $68 a month more than market rents for their units. The mean rent paid for voucher units was about $765 a month, so this amounted to 7 to 10 percent higher than market rents. The authors also present results for different quartiles of the distribution of an index of neighborhood disadvantage (Desmond and Perkins, 2016: Figure 3). They find that the excess cost in dollar terms is greatest and about equal for neighborhoods in the two quartiles with the greatest disadvantage. In the most advantaged neighborhoods, voucher recipients paid slightly less than market rents. If the results had been expressed as percentages, they undoubtedly would have indicated a monotonic relationship.

This study has several important virtues. All recipients participated in the current HCV program and hence the results apply directly to this program. Furthermore, its estimated hedonic equation is the equal of the best previous hedonics used to estimate differences between the rents of unsubsidized and voucher units.

Two disadvantages of this study compared with the other studies concern the generalizability of the results and the small sample of voucher recipients. The magnitudes of interest surely vary

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[15] The exhibit at https://www.huduser.gov/portal/Publications/pdf/qualitycontrol.pdf reports the mean difference between actual and market rent for all units and separately for certificate and voucher units. The percentage served by the certificate program can be calculated from these numbers.

from time to time and place to place. For example, some PHAs surely do a better job than others in enforcing the program's rent reasonableness test. The variance in outcomes could be large, and Milwaukee County could be far from average in its outcomes. The best previous studies produced estimates for a random sample of locations in an attempt to produce national average results. Furthermore, these studies base their estimates on much larger samples of voucher units ranging from 276 to about 1,000, as opposed to 57 in the Milwaukee study.

Another problem with this study is that some households identified as unassisted probably live in privately owned subsidized housing projects. Because they pay below-market rents, their inclusion in the analysis as unassisted households would bias the results in the direction of overstating the excess rent of voucher units. Despite the authors' efforts to avoid it, there are good reasons to believe that this inclusion is a problem. The sample is a stratified random sample of households in the county. About 57 of the 1,045 households used in the analysis were identified as voucher recipients. According to HUD's Picture of Subsidized Households, twice as many households in Milwaukee County live in privately owned subsidized housing projects as have housing vouchers. Therefore, the sample should be expected to contain about 114 households living in subsidized projects. Using address matching, Desmond and Perkins were able to identify only four households in their sample who lived in such projects. It is very unlikely that such a large difference resulted from random sampling. It is more likely to have resulted from the difficulties of address matching. The list of addresses of privately owned subsidized housing projects may have been incomplete. The address listed for a project may have been the address of a business office rather than the residences at the project. Only one address is listed for each project, and projects often contain multiple buildings with addresses that differ beyond differences in apartment numbers. Despite substantial efforts, HUD has been unable to identify most of the tax credit units in the American Housing Survey, and identifying units served by HUD's programs was no mean feat. This testifies to the challenges involved. It seems likely that about 10 percent of households identified as unassisted paid below-market rents. For this reason, the Desmond and Perkins (2016) results should be regarded as an upper bound on the overpayment for voucher units.

How Do Changes in Housing Voucher Design Affect Rent and Neighborhood Quality?

As suggested by its title, the most important contribution of Collinson and Ganong's published paper is its estimates of the effects of replacing uniform metro-wide FMRs with SAFMRs on the neighborhood choices of voucher recipients. Their results indicate that SAFMRs will induce voucher recipients to live in significantly better neighborhoods with minimal effect on the taxpayer cost per recipient and hence the number of recipients who can be served with a fixed budget. This contrasts sharply in both respects with the effect of uniform increases in FMRs across the entire metropolitan area. The paper also contains evidence, however, about whether HUD overpays for voucher units in the worst neighborhoods and whether SAFMR will reduce these overpayments.

The paper's evidence on the pattern of overpayment and underpayment for voucher units appears in Figure B.1 in their online appendix.[16] The figure displays the relationship between the actual

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[16] https://assets.aeaweb.org/asset-server/files/6861.pdf

rents and predicted market rents of voucher units in one of their event studies. It indicates that the mean of the actual rents exceeded the mean of the predicted market rents for nearly all levels of predicted market rent, and the difference is largest for units with the lowest predicted market rent. For units with a predicted market rent of about $450 a month in 2010, the estimated overpayment was about 90 percent. These large differences are well outside the range of other estimates. The most plausible explanation is that Collinson and Ganong's predicted market rents for this analysis are based on a hedonic equation with only a few unit and neighborhood characteristics, namely, number of bedrooms, structure age, structure type, and the unit's Public Use Microdata Area (PUMA). The other studies had much better information on housing and neighborhood characteristics.

The paper devotes considerable effort to estimating effects of changes in payment standards on (1) the rents paid for housing units, (2) indicators of neighborhood desirability, and (3) indices of unit desirability and combined unit and neighborhood desirability. These results are directly relevant to the effect of SAFMRs on the degree of overpayment and underpayment. The authors find that exogenous increases in payment standards will lead to much greater percentage increases in the rents of voucher units than in indices of the overall desirability of these units and their neighborhoods. Similarly, exogenous decreases in payment standards will lead to much greater percentage decreases in the rents of voucher units than in indices of the overall desirability of these units and their neighborhoods. If true, replacing current FMR with SAFMR would decrease net overpayment for voucher units in areas with less than average median rents and increase it in other areas.

Although the authors studied the effects of three events that created exogenous variation in payment standards, assembled the best available data for studying these events, and used it well, some uncertainty remains about this conclusion. Because the information on the desirability of the dwelling unit and its neighborhood available for studying two of the three events was meager, it is entirely possible that the increased payment standards led to a much larger percentage increase in the actual as opposed to the measured desirability of the unit and its neighborhood. A sensitivity analysis that attempted to hold constant unit characteristics by using unit fixed effects suggested a much smaller increase in voucher rent relative to housing desirability (Collinson and Ganong, 2018: 74–75). In the one event where detailed information about unit desirability was available, the circumstances arguably did not permit estimation of the long run effect of the increased payment standards. Increases in the payment standard were modest (about 5 percent on average in the first year), the time period studied was short (3 years), and most observations involved sitting tenants. It would not be surprising if few sitting voucher recipients found it in their interest to search for the very slightly better unit made available by the slightly higher payment standard. The effect of the increased payment standards on the desirability of the unit and neighborhood occupied might have been much larger after most recipients had moved from their initial units.

Caveat

It is important to realize that there is an alternative explanation for the preceding empirical results that challenges their interpretation as overpayments and underpayments for voucher units. All of

the empirical literature on this topic is based on the implicit assumption that, among all units that are the same with respect to the observed housing and neighborhood characteristics used to predict the market rents of voucher units, voucher units are neither better nor worse than unsubsidized units with respect to unobserved characteristics. It is reasonable to expect that this assumption is violated in a way that gives the appearance of overpayment in the worst, and underpayment in the best, neighborhoods. The voucher subsidy gives its recipients the resources and incentive to demand much better housing in their current low-rent neighborhoods. Some landlords in these neighborhoods substantially renovate their units to attract and retain voucher recipients (Rosen, 2014). The observed housing characteristics used in empirical studies will capture some of these improvements, but it is reasonable to believe that, among units that are equally good with respect to observed characteristics in these neighborhoods, units occupied by voucher recipients are better in unobserved respects. In the best neighborhoods, voucher recipients live in units that are the worst with respect to observed and unobserved characteristics in order to occupy a unit renting for less than the payment standard. To some extent, the apparent overpayments and underpayments reflect differences in unit quality. Empirical studies with the best data on the characteristics of the dwelling units and their neighborhoods should be expected to have the smallest bias in estimating overpayment and underpayment for voucher units.

Conclusion

The evidence available suggests that HUD overpays for voucher units in the worst neighborhoods. More generally, the current HCV program pays rents to landlords that are usually greater than the mean rents of similar unsubsidized units for the least desirable units and units in the worst neighborhoods. The opposite is true for the most desirable voucher units and units in the best neighborhoods. The mix of units in these categories varies across studies. Some find an aggregate overpayment and others an aggregate underpayment. The weight of the evidence is that these aggregate differences are modest.

These outcomes are the net result of several program features. Ignoring the program's rent reasonableness test and the possibility that tenants can occupy a unit renting for more than the payment standard by paying the entire extra cost, the tenant's rent does not depend on the total rent paid to the landlord for the unit. If the best unit resulting from the tenant's search has an initial asking rent less than the payment standard, the voucher recipient has no incentive to resist a rent increase up to the payment standard. The tenant, however, does have an incentive to find the best possible unit renting for no more than the payment standard. If the tenant's limited search leads to one of these units, the landlord's initial asking rent will be only slightly less than the payment standard and below the mean rents of similar units occupied by unsubsidized households. If the landlord is paid the payment standard for these units, these units would still be underpriced. The rent reasonableness test limits the extent to which HUD overpays for voucher units, especially for the worst units and units in the worst neighborhoods. The possibility that tenants can occupy a unit renting for more than the payment standard by paying the entire extra cost provides a significant fraction of voucher recipients with a strong incentive to avoid overpriced units.

Finally, Collinson and Ganong's results indicate that replacing current FMR with SAFMR would decrease net overpayment for voucher units in areas with less than average median rents and increase it in other areas. They also imply that lowering FMR across-the-board would have modest effects on the desirability of the units and neighborhoods occupied by voucher recipients. If these results are accurate, lowering the FMR would enable us to serve many more households with the same budget without significant negative effects on existing recipients. Since only about one-third of households with extremely low incomes receive any housing assistance, this reform would have considerable merit. It could be achieved gradually by freezing Fair Market Rent at current levels. Alternatively, current recipients could be grandfathered and the new schedule applied only to new voucher recipients. This reduction in base FMR could be combined with a tilting of the schedule using Small Area Fair Market Rent methodology to incentivize families, especially with children, to move to better neighborhoods.

Acknowledgments

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Reflections on Demand Assistance in the Rental Sector: A European Perspective

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Abstract

Demand-side or demand assistance with housing costs is known as housing allowance, housing benefit, or rent rebate in advanced economies and as housing vouchers in the United States. This type of assistance, which is also called a subject or person-based subsidy, aims to safeguard access to housing by making it affordable for consumers whose income is insufficient to pay for their housing costs.

This contribution aims to contextualize the newest development in the United States housing voucher implementation: the use of Small Area Fair Market Rents (SAFMRs) rather than metropolitan Fair Market Rents (FMRs) in the determination of the tenant subsidy amount. Some possible outcomes of this change in the design of the instrument are reported in three articles in this issue of Cityscape:

(1)   "The Effects of Small Area Fair Market Rents on the Neighborhood Choices of Families with Children" by Samuel Dastrup, Ingrid Ellen, and Meryl Finkel

(2)   "Impact of Expanded Choice on Tenure in the Housing Voucher Program" by Judy Geyer, Samuel Dastrup, and Meryl Finkel

(3)   "Small Area Fair Market Rents, Race, and Neighborhood Opportunity" by Kirk McClure and Alex Schwartz

This contribution summarizes these outcomes, after presenting a brief history of housing demand-side assistance schemes and their design characteristics. The contribution concludes by comparing different systems and the role played by demand-side assistance.

History in a Nutshell

In the second half of the 20th century, demand-side assistance schemes were introduced as complementary assistance systems to supply-side (object or brick-and-mortar) subsidy systems and

became important housing instruments in the housing policy tool box in many advanced welfare states (Kemp, 1997, 2007; Turner and Elsinga, 2005).[1] A manifold of reasons was put forward for the introduction, such as the desire to keep housing affordable in any situation of housing scarcity (Sweden), to be able to remove or lighten rent controls (Germany, the Netherlands), and to move to demand-side assistance (United Kingdom, United States).

Even though the latter reason might not have been the reason for its introduction, the shift away from production-oriented subsidization with which governments realized their public, social, or nonprofit housing (official name depends on a country's tenure system) became popular because of targeting. Demand-side subsidies operate as income- or means-tested instruments with a focus on lower to middle-income households. The subsidy type allows for adaptation of the subsidy amount when a household's resources change, while, as a typical example, tenants in public rental housing usually were not evicted once their income increased. Many expanding northwestern European welfare states welcomed this flexibility and decrease in their government budgets of the 1980s and 1990s (as in Britain, Germany, Sweden, and the Netherlands). The shift to demand-side subsidies frequently went together with a shifting discourse of governments from housing needs to housing affordability, and from housing as a good based on merit to housing as a commodity (Freeman, Kiddle, and Whitehead, 2000; Linneman and Megbolugbe, 1992; Whitehead, 1991).

The United States also shifted its policy from supply to demand subsidies based on the outcomes of an Experimental Housing Allowances Program (EHAP) that took 11 years (Gibb, 1995). The United States introduced the Section 8 Program, later renamed the Housing Choice Voucher (HCV) program (Priemus, Kemp, and Varady, 2005). At the time of writing, the HCV program is the largest housing assistance program that the U.S. Department of Housing and Urban Development (HUD) administers (Dastrup, Ellen, and Finkel, 2019).

Some Design Characteristics of Housing Demand Assistance: Tenure and Rent

One of the major design criteria for a demand subsidy is the main role it will serve. While in other countries demand assistance predominantly functioned as a safety net for tenants in the rental sector (the Netherlands and United Kingdom), tenants in the social rental sector (Belgium) or in the private[2] rental sector, as well as in the owner-occupied sector (Germany), the United States enforced a mobility objective[3] with the permanent introduction of the HCV program in 1987 (Reina and Winter, 2019). The expression "vouchering out" indicates that the voucher recipient is to move from a (possibly stigmatized) public rental dwelling to a suitable, decent-quality private rental dwelling in order to improve quality of life. The government ensures the quality by checking the dwelling against HUD's standard of housing quality (Priemus, Kemp, and Varady, 2005).

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[1] The conceptual and geographic contextualisation in this text is largely based on insights developed in Boelhouwer and Haffner (2002); Haffner and Boelhouwer (2006); Haffner, Henger, and Voigtländer (2013); Haffner, Hoekstra, Oxley, and Van der Heijden (2009); Priemus and Haffner (2017); Van den Broeck, Haffner, Winters, and Heylen (2017).

[2] Officially, the rental sector in Germany is a private rental sector. The private rental units might be temporarily subsidized with a supply subsidy to improve affordability in comparison to market rents (Haffner, Hoekstra, Oxley, and Van der Heijden, 2009; Kofner, 2014).

[3] Only in the case of a terminated place-based voucher, the tenant in question will be able to receive a voucher to safeguard from displacement or from paying a higher rent (Reina and Winter, 2019).

Another design characteristic involves the criteria that determine the level of subsidization. A tenant's income will play a role, next to household size and composition (for example, age in Sweden and the Netherlands; Boelhouwer and Haffner, 2002; Haffner and Boelhouwer, 2006; Haffner, Henger, and Voigtländer, 2013; Priemus, Kemp, and Varady, 2005).[4]

Furthermore, the type of rent that is being considered can influence the amount of demand assistance in two ways. In the *ex post assistance* (Gibb, 1995), demand assistance is linked to actual rent paid (the Netherlands; Boelhouwer and Haffner, 2002; Haffner and Boelhouwer, 2006). *Ex ante assistance*, like the HCV program in the United States, implies notional rent, a standard, or reference rent that the subsidy calculation is based on. From a welfare-theoretical perspective, the idea would be that using a notional rent rather than actual rent allows an optimum in consumer choice.

Germany and the United Kingdom were examples of countries which operated both types of systems at the same point in time (Haffner, Henger, and Voigtländer, 2013; Walker and Niner, 2012; see below). While the United Kingdom worked[5] with median area market rents for demand assistance (called Local Housing Allowance or LHA) in the private rental sector, Germany applied six region types[6] (absolute rent levels) across the country for determining the standard for rent that was to be taken into consideration for the calculation of the demand subsidy in the rental sector. In both cases, the notional rents were adapted to property size.

The United States used to set metropolitan FMRs that HUD designated to metropolitan areas (Dastrup, Ellen, and Finkel, 2019; Priemus, Kemp, and Varady, 2005). Payment standards are set by public housing agencies (PHAs) generally between 90 and 110 percent of FMR (Geyer, Dastrup, and Finkel, 2019). A voucher ceiling is or may also be applicable.

Problems with the HCV program implementation, including the concentration of voucher holders in low-opportunity areas, led to an overhaul of the calculation of the FMRs and the change from metropolitan-wide FMRs to SAFMRs. FMRs set at a lower geographic level would be more closely related to actual rents in ZIP Code areas and would therefore increase supply of voucher-eligible dwellings in more expensive ZIP Code neighborhoods and areas (Dastrup, Ellen, and Finkel, 2019; McClure and Schwartz, 2019). Such a change would allow voucher holders better access to these high-opportunity areas. As these areas are associated with access to better amenities and services, they allow better economic opportunities for the voucher holder. Furthermore, SAFMRs would be expected to counter any rent overcharging of voucher holders. Desmond and Perkins (2016) identified this "voucher premium" in Milwaukee, WI, areas where market rent was lower than FMR.

In 2012, the change to SAFMRs from metro FMRs took place, when HUD launched a SAFMR Demonstration Evaluation Project in five PHAs, which were randomly selected (Dastrup, Ellen,

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[4] As the years of the references show, the examples are not always state of the art, but may be, as is largely the case for the Netherlands and Germany. Since late 2013, the United Kingdom has been rolling out Universal Credit which combines several means-tested benefits (Goering and Whitehead, 2017).

[5] For the United Kingdom, Walker and Niner (2012) indicated that the government proposed to replace the median rent with the 30th percentile rent in the private rental sector.

[6] It is not clear how these regions are determined.

and Finkel, 2019). In 2011, two PHAs had already started with SAFMRs bringing the total up to seven PHAs.[7] From late 2016 on, SAFMRs became optional for all metropolitan PHAs and were aimed to be set as obligation for the PHAs in 24 metropolitan areas in October 2017. This was delayed until April 2018, however, as the Trump Administration attempted to delay the mandatory implementation for 2 years to give PHAs more time to prepare for the conversion (McClure and Schwartz, 2019).

Evaluation of Small Area Fair Market Rents

The implementation of SAFMRs in a couple of PHAs and not in others functions as an opportunity to treat the impact measurement of the policy change as a natural experiment. Dastrup, Ellen, and Finkel (2019) and Geyer, Dastrup, and Finkel (2019) both took the opportunity to apply an experimental methodology—the difference-in-differences (DiD) specification—in their evaluation of the introduction of the SAFMRs demonstration program in five plus an additional two 2011 PHAs (see previous section). DiD compares the outcomes of PHAs that applied SAFMRs with those that did not apply SAFMRs in order to identify "the winners and losers" of the policy change. The three articles listed above all present a quantitative assessment of the impacts of the SAFMR introduction, which are now briefly summarized.

Given the evidence that higher opportunity areas provide for long-term benefits for the development of children in low-income households, Dastrup and colleagues (2019) aimed to explore whether SAFMRs compared with FMRs allow voucher-recipient families with children to move to higher opportunity areas in the first 5 years after the introduction of SAFMRs. Dastrup and colleagues (2019) operationalized the benefits for the children in terms of poverty, school proficiency, employment access, and environmental quality in a composite indicator. Using repeated cross section regressions, the authors concluded that SAFMRs seem to deliver on their promises. In high-opportunity areas more supply of suitable units is created, while the share of families with children locating in better-opportunity areas also increased. These effects are larger for movers than for new voucher recipient households with children. Therefore, some PHA guidance would be welcomed, as well as landlord recruitment.

This all seems to be achieved without additional costs for the government, Dastrup, Ellen, and Finkel (2019) reported, implying that the savings achieved in low-opportunity areas compensate the increases in high-opportunity areas. On a metropolitan level, such an effect will depend on the composition of the rental stock and its distribution in the metropolitan area.

Also using data from the SAFMR demonstration project, Geyer, Dastrup, and Finkel (2019) examined the duration that an HCV recipient stays in the program. As in the previous paper, the outcomes of PHAs which continued operating with metropolitan FMR and those of the PHAs using SAFMR are compared, this time with a survival analysis. The authors found that the switch to SAFMR increases the program exit rate with a median of about 2 years (from a base of a median 11 years).

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[7] PHAs have the possibility to protect voucher recipients whose SAFMR is lower than FMR (Geyer, Dastrup, and Finkel, 2019).

For working-age adults and households not living in high-rent areas at the time of the switch, the effects are found to be largest. For the latter outcome, authors suggested that households are leaving the program because of "a decrease in household resources," which would make it an unexpected outcome, particularly for those in moderate-income area. For those in a lower income area, voucher takeup might be considered less attractive than before, while the number of total available dwellings has also decreased.

Authors indicated running into difficulty in explaining their outcomes and attribute this to missing data and research. On exit reasons, they proposed to improve data collection, particularly, registering a set of reasons when exiting the HCV program.

McClure and Schwartz (2019) investigated the potential success of Black and Hispanic voucher-eligible recipients in accessing high-opportunity areas because these target groups often live in disadvantaged neighborhoods. They reasoned that because the SAFMR demonstration project outcomes are very much differentiated across PHAs, with only some showing change, they "simulated" a switch to SAFMR of all metropolitan areas with more than a population of 1 million. Given the switch, more dwellings in high-opportunity areas would increase supply there, while less supply would be created in low-opportunity areas. The question is: what is the balance?

McClure and Schwartz found that the new HCV-eligible units in high-opportunity areas would be mostly located in non-segregated areas, and the supply of these voucher-eligible dwellings would have decreased. Given the barriers that arise in practice for minorities to move into non-segregated areas, these outcomes lead the authors to conclude that introducing SAFMR in these larger metropolitan areas will not be a sufficient condition to solve segregation.

They proposed a counseling program along the lines of the successful Baltimore Housing Mobility Program (DeLuca, Garboden, and Rosenblatt, 2013).

From the three papers, it can be derived that the change is a re-allocation of the budget rather than an increase of assistance. As with any budget-neutral policy change, the shift from FMR to SAFMRs produces winners (families with children and others successfully moving to high-opportunity areas) and losers (Black and Hispanic minorities; lower and middle-income households; middle-aged adults).

The new way of calculating notional rents on a geographic lower level—ZIP Code level rather than metro-level—seems to be suitable to the aim of the HCV instrument of stimulating mobility toward higher opportunity areas, given the lower estimated supply of voucher-eligible rental dwellings in lower opportunity areas. Does such a result imply that the introduction of the SAFMR lays the groundwork for those who have better life chances already rather than helping those most in need of affordable and decent housing?

Notional Rent vs. Actual Rent Assistance: Final Observations

Considering means-tested demand assistance as more effective and more cost-efficient than supply subsidies was one of the reasons for many governments to make the shift from supply to demand support. The subsequent design choices were complex and impacts often remain difficult to

measure (Shroder, 2002). Concerns of safety net, income support, price deduction, and mobility all can play a role, as the above shows. Also, what is considered affordable for a household (Stone, 2006) goes beyond the discussion here[8] about actual rent versus notional rent.

From a social protection point of view, considering access to decent-quality housing as a human and social right, targeting would take the actual rent a tenant pays as starting point, and it would set housing allowance as an entitlement. This would allow for tailor-made solutions. Conditions will be attached to the receipt of such a subsidy in order to make it an effective and efficient instrument.

An example here is the Dutch system (Priemus and Haffner, 2017; Rijksoverheid, 2016). The level of assistance is dependent on household size, composition, age, income, and rent. Housing allowance does not subsidize the first band of the rent (about 200 euros in months' rent)[9], as it is assumed that this will be covered by other income; in the case there is no income from work or pension, this will be (implicitly) covered by state welfare income support or state pension. The next band of rent of almost another 200 euros is paid in full by the housing allowance. For the next band of about 200 euros, 65 percent of the band is subsidized by the housing allowance in order to prevent the overconsumption of housing services. Above that amount of rent only single heads of household and senior-headed households will receive 40 percent of subsidy for the band up to the maximum amount of rent that is eligible for housing allowance (about 700 euros was the cap for rent eligible for housing allowance). As an entitlement, about 38 percent (16 percent) of Dutch tenants (households) received housing allowance, and on average, housing allowance paid about 40 percent of their rent in 2014 (Rijksoverheid, 2016).

For such an actual-rent-based system, society and politics make several "paternalistic" assumptions, such as when the quality consumed must be considered "too much." In that case, the quality discount (subsidy only covering 65 and 40 percent, respectively, as explained in the previous paragraph) comes into play to prevent the overconsumption of housing services (see also Gibb, 1995; Kemp, 2000; Priemus, Kemp, and Varady, 2005). Furthermore, this type of housing allowance is associated with a potentially big poverty trap, as the implicit marginal tax rate amounts to 27 to 43 percent (2015) and to more than 90 percent for some recipients, if other income-based subsidies are considered in the Dutch case.

A voucher system on the other hand, allows the "self-sufficient" recipients to make their own choices. From an economics perspective, a household will not choose a dwelling because of subsidy maximization (moral hazard) but because of preferences for a certain dwelling. This allows the choice of a more expensive dwelling or a less expensive one without losing the right to the voucher. Such an *ex ante* subsidy goes together with subsidizing some form of FMR rather than the actual rent that a tenant pays. In this line of thinking, can the shift in the United States from FMR to SAFMR be considered a move from notional rent towards actual rent? If so, will it become afflicted with housing allowance types of undesired effect, like a moral hazard?

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[8] This also applies to the topic of capitalization of demand assistance into rents as one of the possible undesired effects associated with demand assistance (see the example, Virén, 2012, for Finland).

[9] As of July 2019, 200 euros is equal to about $224 USD.

In the selection of countries at the beginning of this contribution, the choices and developments have variegated. Germany has implemented notional rents since the introduction of the scheme (Haffner, Henger, and Voigtländer, 2013; Kofner, 2007, 2014). For recipients of welfare income support, their housing assistance has been included in income support since 2005 and is based on actual rent, given suitable quality of the dwelling in relation to household composition (a move to a more suitable dwelling may be required). The housing allowance scheme remains serving those with an income from employment.

The United Kingdom made the opposite move from the one that Germany made, also implementing two types of demand assistance schemes in the end (Haffner, Henger, and Voigtländer, 2013; Stephens, 2005; Walker and Niner, 2012). As housing benefit was paid for out of welfare income support (called social security), and income support did not take housing costs into account, recipients of income support or households earning a comparable or lower income received housing benefit for 100 percent of actual rent and rent increases. Because of budgetary and overconsumption concerns, LHA was introduced in the private rental sector in 2008 after two rounds of experimenting that took place at the beginning of the century. LHA applies a notional rent to calculate the allowance, as explained above. Meanwhile for recipients of housing benefit, as in Germany, the number of rooms in the dwelling in relation to household size became important. As of April 2013, the number of rooms had to match household size, or the recipient was going to pay an under-occupancy charge, also known as the bedroom tax (Goering and Whitehead, 2017). This change implied that only when the dwelling was deemed suitable, actual rent and rent increases were paid in full by housing benefit.

In the Netherlands, academia has been promoting a shift from actual to notional rent practically in vain since the 2000s (Priemus and Haffner, 2017; Priemus, Kemp, and Varady, 2005). Only recently an intergovernmental advisory report included such a scenario for the first time. Such a scenario expected that the tenants would take responsibility upon introduction and the measure would help to reduce overconsumption and deliver government budget savings (Priemus and Boelhouwer, 2018). One of the questions that would need to be solved before the switch to notional rents from actual rents, is the matter of the first band non-subsidization. As explained above, this will be paid out of basic income support for citizens without any other or without "sufficient" other income paid for by the national government.

These examples show that demand-side housing assistance schemes are heavily interlinked with the welfare system in place in a country. Developments therefore differ across countries and are not necessarily converging as the examples show. Voucher-like systems with notional rents, like in the United States, are implemented, as are tailor-made schemes that subsidize actual rents. Some countries combine both types. An entitlement scheme, like in Germany, the Netherlands, and the United Kingdom, will be strong on horizontal equity. Academia generally support the notional rent scheme over and above an actual rent scheme. The housing market reality of the "new, global urban housing affordability crisis" will put equity and efficiency issues, as well as supply assistance, back on the agenda not only for those with the lowest incomes (Wetzstein, 2017: 3,160).

Acknowledgments

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Aspects of the Housing Choice Voucher Program and the Impact of Small Area Fair Market Rents Ceilings: a British Perspective

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Abstract

This paper reviews three of the four symposium papers on the Small Area Fair Market Rents (SAFMRs) Demonstration Evaluation—those by Dastrup, Ellen, and Finkel; Geyer, Dastrup, and Finkel; and McClure and Schwartz. These are all based on the very detailed data made available by the U.S. Department of Housing and Urban Development (HUD) to enable initial evaluation of this initiative. Together, these articles provide impressive, detailed approaches to different aspects of the program: the experience of family households in the areas where SAFMRs have been introduced as compared with metropolitan-wide fair market rents (FMRs); the importance of race in determining who may or may not be expected to benefit from the initiative; and the evidence on whether the introduction of SAFMR has affected how long people stay in the voucher programme. Taken together the findings reflect three main issues:

1   how even extensive datasets, while producing interesting results, can only cover some aspects of a full evaluation;

2   all the initial findings are mainly about what would normally be called outputs—that is, what has happened as a result of the initiative, rather than outcomes—which, to the extent that the objectives of the policy are clear, must be about the impact on the welfare of those affected, both in terms of housing and opportunity; and

3   whether, especially given the extent of locational segregation (between income groups as well as race and other household attributes), such an approach can be expected to generate significant changes in household decisions and outcomes.

Importantly, there is also no discussion of value for money from the point of view of government, which is often (usually) a major objective of such evaluations. Rather, success appears to be based on ensuring the money made available is used and used for the intended purposes.

Abstract (continued)

This review has three main sections: my understanding of the demonstration project and more generally of the Housing Choice Voucher (HCV) programme; a discussion of the UK housing allowance programme for private tenants, which includes the use of rent caps determined for broad market areas with a note on other European examples; and an attempt, which may be overambitious given the enormous differences in approach between countries, to learn lessons in both directions.

The SAFMR Initiative in the Context of the Housing Choice Voucher Programme

The starting point for any such commentary must be that housing systems and institutional frameworks differ so greatly between countries that understanding someone else's system is a major issue, and understanding it from, in this case, a U.S. perspective, almost an impossibility. In this note, I have not tried to bring that level of understanding to my comments—but rather to identify what strikes me as important from a European and, more specifically, a UK perspective. In particular, this means remembering that a federal system will inherently operate in a very different manner from our over-centralised form of government in the United Kingdom which starts from a belief that policies should, in principle, be operated consistently across the whole of the country (although, of course, the outcomes will differ greatly). In other words, policy in the UK is often more about equity, while in the United States, it is more about choice.

The core idea of the SAFMR initiative is to increase the extent to which households with vouchers are enabled to live in better-quality areas measured in terms of income, schools, access to employment, and environmental quality. Under the traditional voucher scheme, FMRs are identified for the whole metropolitan area and, given spatial inequalities, the eligible properties are almost inevitably concentrated in poorer areas where rents fall within the bottom 40 percent for the whole area. A relatively small number of properties will be eligible in better-off neighbourhoods (even allowing for the fact that households may top up their payments, as long as their rents remain below 40 percent of their income) because the vast majority will have rents in the top 60 percent of the overall distribution (top 50 percent in some contexts). By breaking up the large area into several much smaller ZIP Code areas and applying the bottom 40 percent rule to each area, the potential supply of eligible housing in the more expensive areas must increase significantly. Equally, however, the numbers of potential units in poorer areas will decline—and the evidence presented in these article shows, unsurprisingly, that as a result, the total supply of eligible housing in the metropolitan area also will decline. Whether that matters significantly is not clear to the outsider, as that depends not on the number of eligible units but on the numbers of eligible dwellings that landlords are actually prepared to put into the scheme in relation to the number of vouchers (an issue to which I return in the UK context). All that I can be sure of from the analyses is that the ratio will differ between different metropolitan areas and between types of small areas—although a priori one would expect landlords in higher valued areas to be less prepared to make their properties available.

Although these findings raise significant issues not just about numbers but also about the objectives of the program and how the trade-off between access to affordable housing and access to particular types of area might be assessed, this is not the main research interest of any of the three papers. The Dastrup et al. paper concentrates on family household decisions and finds that there is a significant shift towards these higher value neighbourhoods which might, in principle, help the children gain access to better schools and the families to live in a better environment with greater opportunities. The Dastrup et al. paper stresses that even though significant numbers of families have moved to higher valued areas, there is little evidence that these potential opportunities have been taken up, and no positive evidence of better outcomes. The same is true of the Geyer et al. paper on length of stay in the programme—which shows large reductions in how long people remain in the program. At first glance—at least for someone taking an international perspective, where most housing allowances are available as of right to all eligible households—one would expect this to mean that the households are doing better and are thus able to fund their own housing. The authors made it clear, however, that in the U.S. context, most of those who leave the program end up with fewer resources. Thus, both articles stress that there are clear and significant changes in household behaviour directly related to the policy change—but that there is no evidence of welfare improvement.

Finally, the McClure and Schwartz paper on the implications of the introduction of SAFMRs for racial segregation uses the data in a rather different way to compare small areas within metropolitan areas and show that race is an important part of understanding these small areas and how they differ from one another. The findings suggest strongly that the small area approach will be likely to harm racial minorities as supply in lower priced areas where they normally live will be reduced, while, it is likely to be far more difficult for them to find accommodation in the higher income areas because these areas are mainly White-dominated, even when they are, to some degree, integrated.

Overall, the evidence presented suggests that the small-area approach will limit rather than expand choice for many households. On the other hand, evidence cannot yet be provided to show positive effects, such as more landlords coming forward or households achieving better schooling, jobs, and incomes. Overall, from an outsider's perspective, what looked like a sensible approach to expanding opportunity and one which does result in changing behaviour—especially among family households—probably ends up making the situation worse for larger numbers of households. Moreover, those who suffer are almost certainly, on average, at the poorer end of the scale. However, it is early to make an overall assessment and it may be that positive outcomes, especially for children, could take more time to emerge. More fundamentally, however, the negative results stem from the extent of segregation to be found in large metropolitan areas which cannot be effectively addressed by relatively limited policy initiatives of this kind.

The UK Approach to Housing Allowances in the Private Rented Sector

In the United Kingdom, the question of how to develop housing-specific income support was part of the debate around the development of social security in general, initiated in the Beveridge

Report in 1942 (Beveridge, 1942). When Beveridge published his report on developing an effective post-war social security system, he recognised that the objective of ensuring that everyone would be able to achieve a reasonable standard of living through the national insurance system he was proposing was put at risk by rents—because of the extent to which the costs of minimally acceptable housing varied across the country. No other element of the necessities of life was seen as having variations that were significant enough to undermine his proposed nationally based system.

Beveridge therefore argued that a flat-rate benefit with an average allowance for housing (in line with his general principles) would leave people in more expensive homes below a subsistence level, once they had paid their rent, and people in cheaper homes with a surplus. The alternative—paying the actual rent as part of the insurance benefit—was seen as creating perverse incentives for people to move into more expensive accommodation just before they retired.

Throughout the post-war period until the early 1970s, the problem was addressed by holding rents down in both the public and private rented sectors. In the public sector rents simply had to cover the historic costs of provision less subsidies provided by central government across each local authority's stock of rental units. This applied to up to 30 percent of all dwellings in Great Britain and meant that the vast majority of tenants could pay their rent without significant difficulty. The vast majority of tenancies in the private rented sector were subject either to traditional rent controls put in place in 1917 or, to a "fair rents" regime put in place for new tenancies in 1965, which again made rents affordable for the majority of lower income tenants.

By the mid-1970s, however, the position was changing quite rapidly with increasing rents in both the social sector and much of private renting. Legal decisions also meant that rents had to relate to dwelling attributes not to the individual circumstances of the tenant, which rules out income related as a way forward. It was in this environment that housing allowances were introduced.

The scheme, ultimately known as Housing Benefit, not only took account of individual household circumstances but meant that housing support was seen as a "residual" benefit taking the strain across the overall welfare system. The principles behind the as-of-right scheme were that (1) social security rules would determine the income necessary to cover basic needs for each type of household at the national level (that is, with no allowance for variations in costs across the country); (2) housing costs would be treated separately, because rents varied so greatly both spatially and between similar households; (3) all those who paid rent were eligible to apply for benefits; and (4) the rebate or allowance would cover the whole rent (and allowable service charges) where the claimant's income was equal to the basic needs allowance. Above that level, a proportion of every additional pound was withdrawn until income reached a point where the system presumed that the rent could be fully paid by the tenant.

Thus, under the scheme, all tenants obtained the minimum income required to meet the full range of essential needs; differences in housing costs were fully addressed so basic housing standards could be achieved; and the subsidy withdrawal rate above that level was designed to ensure some, limited, incentive to work or to work longer hours.

This approach, however, meant that Beveridge's concerns about the distortionary effects of households' private-rented-sector housing decisions were left unchecked, except to the extent that some basic limits on the size of the dwelling in relation to household needs were introduced. The assumption made was that people on low incomes had few housing choices, so the incentive to live in a more expensive dwelling or area was rarely implementable.

Over time, the Housing Benefit system enabled massive changes in the mix of subsidy provided by government shifting support away from supply subsidies in the social rented sector to income-related benefits (Hills, 2001; Gibb and Whitehead, 2007). In the 1970s, 85 percent plus of all financial support helped supply and the impact of income related benefits was therefore quite small. Now, however, £22 billion[1]—over 95 percent of a larger housing subsidies bill in real terms than in the 1970s - goes to Housing Benefit and its successor Universal Credit (Stephens et al., 2018). Thus the UK spends $27 billion on income related housing assistance, while the United States with a population of around five times that of the UK, spends only $35 billion[2] on housing assistance in total—including tenant-based rental assistance, public housing operating funds, and project-based rental assistance.

Even so, in the UK, especially since austerity became the norm in 2010, several policy changes have limited the availability of income-related housing support, changing the picture almost out of recognition. In the private rented sector, the restructuring started earlier, in 2008, under a Labour government with the introduction of a maximum Local Housing Allowance (LHA),[3] instead of the introduction of simply accepting the individual tenant's rent bill for appropriately sized accommodation. This approach has something in common with the U.S. system, in that it uses the distribution of rents for those not on benefits in "Broad Market Areas" (defined as where a person could reasonably be expected to live taking into account of access to facilities and services such as schools) to determine the maximum support for which tenants could be eligible given the appropriate-sized dwelling. The original rule was set at the 50th percentile of rents in the area, which in itself raised issues as to the balance between demand and supply; given that in some particularly poor areas, up to 90 percent of privately renting households would be in receipt of housing benefit. In these areas, large numbers of households are therefore given a choice between making up the gap from their other income or moving to somewhere they might be able to find accommodation within the cap. In 2011 when austerity was at its height, the Coalition government reduced the cap from the 50th percentile to the 30th so that this problem has become much more widespread (Wilson, 2013).

Further in 2015, the government introduced a 4-year freeze on LHA levels. This inherently means that as actual rents have gone up, those paying around or above the third decile set at the beginning of the freeze will not be compensated for any rent increases.

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[1] As of July 2019, £1 equals $1.22. £22 billion equals approximately $26.8 billion.

[2] See https://www.hud.gov/sites/dfiles/CFO/documents/3%20-%20FY19CJ%20-%20Dept.%20Summary%20-%20 Budget%20Outlays%20-%20Updated.pdf

[3] There had been demonstration projects from 2002 in what were called pathfinder areas before the national roll-out in 2008.

Austerity policies underlie many of these changes, but there is also an attempt to increase incentives to move to more inexpensive accommodation or locations. Importantly, the principle of ensuring that residual income is enough to pay for the other necessities of life has been undermined very significantly. Rather, it is now assumed that people have choice and, therefore, it is their own decision to use money for housing rather than other necessities.

A report by the Institute for Fiscal Studies (IFS) published in 2017 (Joyce et al, 2017), gives the best estimates currently available of how much some of these changes have impacted lower income tenants. They showed that in 2013-2015, among private renters in the bottom 40 percent of incomes, the fraction whose housing benefit does not cover all their rent has increased quite steadily, from 74 percent in the mid-1990s to 90 percent in the mid-2010s. The biggest change occurred among low-income working-age households with children, where it rose from 63 percent to 90 percent over the same period. IFS estimated that reforms since 2011 have cut the Housing Benefit entitlements of 1.9 million privately renting households, some two-thirds of low-income private renters.

Another issue is how these constraints impact landlord preparedness to let to those on housing benefit or its replacement Universal Credit. Many landlords say they will not let to beneficiaries—although government statistics continue to show that more and more landlords are actually letting to such households.

More generally, private renting is not regarded as a suitable tenure for families and vulnerable households because of the very limited security of tenure available. At a minimum, the lease can be as little as 6 months and landlords have the right to evict without reason. Yet the sector has doubled since the turn of the century so that it now houses around one in five households in Great Britain and one in four in London (Rhodes and Rugg, 2018).

Comparing Housing Allowances in Europe

The Organisation for Economic Co-operation and Development (OECD) Affordable Housing Database (2016) provides an overview of housing allowances across OECD countries. Almost all such countries (except those in Eastern Europe) have at least one form of Housing Allowance, although in many countries they tend to be quite restrictive. Private tenants are the most likely group to be eligible and allowances are normally as of right for eligible households.

In most northwestern European countries, housing support has generally been developed that makes an allowance for housing costs within mainstream social security benefits. Housing allowance systems are based on the gap principle whereby, for a given income, the housing allowance meets a certain proportion of rent above a minimum contribution up to a maximum level. In circumstances where unmet housing costs take residual income below the social assistance minimum, the social assistance system itself often steps in (Kemp, 2007).

The biggest difference with the United Kingdom, however, is that most other European systems are more generous in that their more general welfare systems are based on a high proportion of earlier earnings. These higher benefits in countries such as Germany, Sweden, and France allow most

people to pay for their accommodation, with a top-up available if necessary. In part, this is possible because rents are generally a lower proportion of income in most of Europe (particularly Germany) except for areas of housing pressure. It is thus the case that a basic standard of residual income can generally be maintained because of these higher social security benefits, while enabling only a proportional approach to additional support.

In this context, it has suggested that the UK system, where social security payments are set at very low levels, means that it is inevitable that high proportions of housing costs must be covered (Griggs and Kemp, 2012). The system, while it looks generous taken on its own, is very much less so if instead one looks at housing benefit plus social security as a percentage of average income.

Lessons Across the Divide?

The most obvious lesson from this short review is that the need for income-related housing-specific allowances is prevalent across countries with very different institutional and ideological frameworks. This is for the fundamental reason that housing costs are often a large proportion of income for poorer households and that welfare systems find it difficult to address large scale spatial variations in cost without an additional element of support. Yet in the main we do not address this problem by expecting people to move long distances to find affordable accommodation. So, one important question is how much choice the individual household is given to use the allowance in the way that they might wish as compared with the government trying to influence moves either to lower cost areas or to areas of opportunity.

One of the most important issues raised by SAFMR in the United States is around the importance of opportunity for a relatively small proportion of households with vouchers against housing availability for a much larger proportion. This suggests the need for more research into whether location can have such a positive effect as to make that choice worthwhile. The answer is clearly linked with the more general question of the scale of the benefits associated with mixed communities, which have been an important aspect of UK housing policy.

Clearly, a core issue in the U.S. model is around the extent of demand as compared with the supply meeting the cap in ZIP Code areas. The United Kingdom faces similar problems—that the cap means there simply are not enough dwellings in the area to match potential demand, so tenants face additional costs. This is also an area where more research on how households find suitable accommodation is needed.

There are several behavioural issues associated with these programmes, notably with respect to which households take up the opportunity—are they families at the upper margin of the eligible incomes, for instance? Another issue is around landlord response—are landlords as prepared to let to those on vouchers or housing benefit despite administrative costs as they are to poor households without vouchers? In the United Kingdom, landlords often state that insurance companies and mortgage providers require landlords not to let to those on benefits—although they may "protest too much." More generally there are issues around the capacity to enforce quality standards given the incentives landlords face.

A final, very important, issue is why people leave the allowance/voucher programmes especially given the understanding, reflected in the Geyer et al. paper, that many are worse off when they leave. In the United Kingdom, the evidence is that the main reason for leaving is that family and particularly employment circumstances change for the better—although, we are very well aware of the instability of these circumstances, so many people return. Understanding exactly what happens in the U.S. context should be a high priority.

Acknowledgements

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Alternative Measures of Market Rents

- *The Best Laid Plans Often Go Awry: An Analysis of the Implementation of Small Area Fair Market Rents*

- *Comparing Small Area Fair Market Rents With Other Rental Measures Across Diverse Housing Markets*

- *Contrasting Different Geographies in Fair Market Rents: Implications for the Housing Choice Voucher Program in Pittsburgh, PA*

- *Examining the Transition to HUD Small Area Fair Market Rents Using Craigslist Data*

- *A Tweak to Housing Assistance Allows Low-Income Renters Access to High-Income Neighborhoods*

The Best Laid Plans Often Go Awry: An Analysis of the Implementation of Small Area Fair Market Rents

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Abstract

The U.S. Department of Housing and Urban Development's (HUD) new Small Area Fair Market Rents (SAFMRs) rule sets fair market rents at the ZIP Code level as opposed to an entire metropolitan region. The rule became effective on January 1, 2018. It is mandatory in 24 metropolitan areas and voluntary in the other metropolitan areas across the United States. SAFMRs allow for housing choice voucher (HCV) payment standards to vary across ZIP Codes within a region. This is a change from previous policy that based Fair Market Rents (FMRs) on the 40th percentile of gross rents in a region. This change opens properties in higher income areas to HCV holders because rents at the ZIP Code level often exceed regional FMRs. The use of SAFMRs is predicted to help to deconcentrate poverty and allow HCV holders to access high opportunity neighborhoods in core cities and their suburbs. SAFMRs have the potential to curb some of the effects of increasing rents in places experiencing gentrification, as well as promote housing mobility and fair housing across regions. This article examines the early implementation strategies for SAFMRs in the 24 metropolitan areas where they are currently mandated. Data were collected from the 180 public housing authorities (PHAs) in those 24 metropolitan areas. The analysis is based on 2018 HCV payment standards and other program documents related to tenant and landlord notification collected from PHAs, as well as content analysis of archival materials and public documents. The analysis is used to measure PHA fidelity to the SAFMR rule's opportunity advancement goals, identify best practices, and make policy recommendations for the broader implementation of SAFMRs.

Introduction

In November 2016, HUD issued its final rule for the implementation of Small Area Fair Market Rents (SAFMRs) (Federal Register, 2016). The purpose of the rule was to begin the process of changing the basis for setting payment standards for the Housing Choice Voucher (HCV) program.

Historically, payments standards were based on Fair Market Rents (FMRs), which represent the 40th percentile of gross rents paid in metropolitan areas. Under SAFMRs, payment standards are based on the 40th percentile of gross rents paid in ZIP Codes. The new rule was adopted to achieve two primary benefits (PRRAC, 2018). First, SAFMRs were expected to provide voucher holders with greater access to high-opportunity neighborhoods (that is, places that offered a better mix of employment, educational, and transportation opportunities). This outcome was anticipated because payment standards would increase in ZIP Codes where rents were higher than metropolitan FMRs. Second, SAFMRs were expected to make the voucher program more cost-effective. This outcome was anticipated for two main reasons. The adoption of SAFMRs would lower payment standards in ZIP Codes where rents were lower than metropolitan FMRs. This adjustment to payment standards on the lower spectrum of a region's rental market was expected to reduce the likelihood of landlords setting rents above the market rate for comparable units in these ZIP Codes. In addition, the adoption of SAFMRs had the potential to be more cost-effective in the long run because agencies administering the HCV program would no longer need to seek HUD's approval of exception payment standards.[1] This would be the case whether such approval was sought to increase payment standards in high-rent areas or lower them in low-rent areas. The adoption of SAFMRs would make these adjustments automatic.

Initially, the new rule became effective on January 1, 2018, with implementation in the 24 mandatory metropolitan areas beginning on April 1, 2018. The Dallas metropolitan area was one of these, but it was already required to use SAFMRs in the implementation of the HCV program under a separate court settlement in 2011. Implementation of the rule was voluntary in other metropolitan areas across the United States. In August of 2017, HUD attempted to suspend the new rule, but in December of 2017 a U.S. District Court judge ordered the rule to be reinstated (Thorpe, 2018).

This article examines the implementation strategies adopted by public housing authorities (PHAs) in metropolitan areas mandated to use SAFMRs. This analysis has a focus on the degree to which the setting of payment standards in 2018 supported the dual goals of expanding voucher holders' access to high-opportunity areas and enhancing the cost-effectiveness of the HCV program. In addition to examining how payment standards were set during the initial implementation of HUD's new SAFMR rule, the article is also informed by a content analysis of other archival materials, public documents, and primary materials supplied by local PHAs. The analysis of these data identifies best practices and policy frameworks for future HCV program implementation in areas mandated to use SAFMRs.

After results are presented, the article concludes with a set of recommendations. They focus on lessons learned from the analysis of metropolitan areas mandated to use SAFMRs. The recommendations had three targets audiences: administrators within HUD, local PHAs that implement the HCV program, and applied researchers and policy advocates.

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[1] Although administrative costs go up significantly during the initial implementation of SAFMRs, they are expected to decline once the new system is in place. Whether they return to the level they were when areawide FMRs were used, exceed them, or fall below depends on local conditions and administrative practices adopted by the public housing authorities (PHAs).

Small Area Fair Market Rents (SAFMRs)

This section provides background on programs and policies that led to the promulgation of HUD's SAFMR rule. The first subsection summarizes the historic backdrop of relevant housing mobility decisions in the courts and HUD actions in response to them. The second subsection focuses on the settlement to address voucher concentration in low-income areas of the Dallas metropolitan area and the SAFMR demonstration project. The third subsection discusses the genesis of HUD's new SAFMR rule.

The Lead-Up to SAFMRs

HUD's new SAFMR rule was developed in response to several concerns about the effectiveness of the HCV program in deconcentrating poverty and providing low-income households with access to upward mobility. Historically, these concerns date back to issues raised in cases like *Gautreaux v. Chicago Housing Authority* (1969) and *Southern Burlington County NAACP v. Township of Mount Laurel* (1975). In response to those decisions, programs and public policies were developed to increase opportunities for recipients of housing vouchers to move out of segregated, impoverished neighborhoods. Some of these programs included the Gautreaux program in Chicago, the Moving to Opportunity (MTO) for Fair Housing demonstration program, various fair share housing initiatives that grew out of the Mount Laurel doctrine, and other housing mobility programs that were adopted across the country on a demonstration basis. The development of policies scaling up these programs has become increasingly salient because HCVs are one of HUD's primary tools to provide affordable housing to low-income households. In 2017, HCVs were used for over 2.2 million rental units (HUD, 2017). These 2.2 million units represented over 48 percent of all rental units subsidized across the eight federal programs designed to subsidize rental housing. In 2017, almost 5.3 million people were housed using HCVs, comprising almost 55 percent of all renters receiving housing assistance across the eight federal rental subsidy programs.

In addition to programs and policies adopted in response to landmark decisions in the courts, advocates have encouraged HUD to pursue administrative rule changes to address shortcomings in the implementation of the HCV program. Advocates have been critical of how the use of metropolitan-wide FMRs, and the calculation of payment standards based on them, impede geographic mobility and housing searches in high-opportunity neighborhoods (Thorpe, 2018). In response to some of these concerns, HUD launched the Moving to Work (MTW) demonstration program in 1996. This program gave participating PHAs flexibility in the administration of HCVs in order to promote economic self-sufficiency and mobility to high-opportunity neighborhoods. A common tool used by PHAs in the MTW program has been the adoption of exception payment standards in high-opportunity geographic areas. Exception payment standards allow PHAs to set payment standards in excess of FMRs so that tenants can lease housing in high-opportunity areas. In some cases, PHAs in the MTW program have adopted exception payment standards for targeted geographic areas in excess of 150 percent of local FMRs.[2] In 1996, HUD approved 30

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[2] Although all PHAs can adopt exception payment standards, it is often easier for PHAs in the MTW program to have them approved under the stipulations of their contracts with HUD. In addition, exception payment standards for both MTW agencies and other PHAs may be over 150 percent of local FMRs. This amount is noteworthy, because SAFMRs are capped at 150 percent of the areawide FMR. This rule means that exception payment standards represent an additional tool available to PHAs in areas where SAFMRs do not provide access to high-opportunity neighborhoods in areas experiencing rapidly increasing rents.

PHAs across the country for the MTW demonstration program; that number grew to 39 PHAs by 2012 (HUD, 2019). Although the PHAs selected to participate in the MTW demonstration program represent a fraction (1.1 percent) of all PHAs in the United States, they tended to be in core cities and represent the largest unit shares in the metropolitan areas where they were located. Nevertheless, most metropolitan areas where a PHA was selected to participate in the MTW program have several other PHAs that were not selected to participate. For instance, the Chicago Housing Authority is a participant in the MTW program, but the other 12 PHAs in that metropolitan area are not. Similarly, the Atlanta Housing Authority is a participant in the MTW program, but the other 11 PHAs in that metropolitan area are not. Consequently, the scale and scope of the MTW demonstration program potentially limits regional mobility and raises additional concerns about the portability of vouchers within a region.

Although MTW is a demonstration program and not tested across a spectrum of local contexts, it has provided policymakers and administrators of affordable housing programs with several insights. One such insight is that metropolitan-wide FMRs fall short of providing tenants with adequate subsidies to rent in high-opportunity neighborhoods. Researchers have identified this as problematic because metropolitan-wide FMRs fall below rents in the most expensive submarkets in metropolitan areas (Palm, 2018; Thorpe 2018; Treat, 2018). This limitation of FMRs is compounded by data lag because FMRs are calculated using data from the American Community Survey (ACS) which is released 2 years from its date of collection. One rationale for HUD allowing PHAs to set payment standards within a 90–110 percent range of its published FMRs is to address some of these limitations. In localized housing markets experiencing gentrification and other forms of upward pressure on rents, however, the ability to set payment standards at 110 percent of FMRs still does not close the affordability gap. To address this issue, SAFMRs have been advocated for as a tool to promote housing opportunity on a metropolitan-wide scale.

The Dallas Settlement and the SAFMR Demonstration Project

The first opportunity to test this tool came in 2011 as a result of a court settlement that resolved a complaint charging that payment standards based on FMRs in the Dallas metropolitan areas resulted in the concentration of vouchers in low-income areas (Ellen, 2018; Treat, 2018). Under the settlement, all PHAs in metropolitan Dallas were required to use SAFMRs when setting payment standards. An early analysis of outcomes in Dallas suggested that the adoption of SAFMRs resulted in improved neighborhood quality for HCV recipients and modest cost savings for PHAs (Collinson and Ganong, 2014). It is noteworthy that Palm (2018) and Treat (2018) caution against assuming that those outcomes are easily replicable in other metropolitan areas. During the timeframe that data from Dallas were examined, vacancy rates exceeded 8 percent. In tighter housing markets, the improvements due to the adoption of SAFMRs are expected to be more modest.

Shortly after the Dallas settlement, HUD created its own SAFMR demonstration program. The purpose of the demonstration program was twofold (Kahn and Newton, 2013). First, it was created to test the effectiveness of SAFMRs in improving tenants' access to high-opportunity areas as well as the residual impacts on tenants' living in areas with SAFMRs below metropolitan FMRs. Second, the demonstration program was created to understand the administrative and budget effects on

PHAs that adopt SAFMRs. The demonstration program was designed to run from 2012–2016. Five PHAs were included in the demonstration program (see exhibit 1).[3] They were selected in order to include PHAs that administered different volumes of HCVs and that served clients from different demographic segments of the population. The five PHAs selected to participate in the demonstration program had the option not to participate. In addition to the five PHAs selected to participate in the SAFMR demonstration program, HUD added two PHAs from the Dallas metropolitan area that were already mandated to implement SAFMRs under the court settlement.[4] These two PHAs are also listed in exhibit 1.

Exhibit 1

2011 Characteristics of PHAs in the SAFMR Demonstration Program

PHA Name (State)	Total HCV Units	HCV Recipients (%)			Tracts with HCV Residents Total Population Minority (%)
		Minority	Hispanic	62 Years and Over	
SAFMR Demonstration Participants					
Chattanooga Housing Authority (TN)	3,183	82	2	15	54
Housing Authority of Cook County (IL)	12,622	83	3	58	52
Housing Authority of the City of Laredo (TX)	1,368	100	99	20	95
City of Long Beach Housing Authority (CA)	6,556	88	11	23	83
Town of Mamaroneck Housing Authority (NY)	647	54	22	39	32
PHAs Added from the Dallas Metropolitan Area					
Housing Authority of the City of Dallas (TX)	18,525	94	5	17	67
Housing Authority of Plano (TX)	908	65	3	29	39

HCV = Housing Choice Voucher. PHA = Public Housing Authority.
Source: Finkel et al, 2017

At the end of the demonstration program, HUD released an evaluation report (Finkel et al., 2017). The report focused on the two foci of the demonstration program: the effectiveness of SAFMRs in improving tenants' access to high opportunity areas and the effects of SAFMRs on HCV implementation costs. In terms of tenants' access to high-opportunity areas, the results of the evaluation indicated that SAFMRs had a positive impact. The switch to SAFMRs made HCV holders slightly more likely to live in high-rent ZIP Codes than they were before the demonstration program. This was the case for new HCV holders and tenants who already held vouchers and

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[3] The SAFMR demonstration program ended in 2016. At that time, four of the five PHAs participating in it continued to use SAFMRs on a voluntary basis; they included the Chattanooga Housing Authority, the Housing Authority of Cook County, the City of Long Beach Housing Authority, and the Mamaroneck Housing Authority. One of these PHAs, the Housing Authority of Cook County, is in the Chicago-Joliet-Naperville metropolitan area that was subsequently mandated to adopt the new SAFMR rule. The Housing Authority of Laredo was the only PHA to discontinue the use of SAFMRs after the demonstration program ended.

[4] Because the two PHAs in Dallas adopted SAFMRs due to a court settlement, they could not opt out. HUD added these two PHAs to the evaluation in order to increase the sample size for the evaluation.

moved to new ZIP Codes after the demonstration program began. Tenants who moved to these ZIP Codes accrued benefits due to the areas' lower poverty, higher school proficiency, proximity to employment, environmental quality, and lower crime.

In terms of PHA implementation costs, the switch to SAFMRs resulted in modest reductions in overall costs for PHAs. Although there was variation across the PHAs, on average, increases in payment standards in high-rent ZIP Codes were offset by lower payment standards in low-rent areas. Moreover, when the PHAs in the demonstration program were compared with a control group, the cost savings were greater in terms of payment standards and Housing Assistance Payment (HAP) contract costs for demonstration program participants. One caveat that explains the modest reduction in overall costs was that PHAs were required under the rules of the voucher program to hold existing tenants in low-rent ZIP Codes harmless from reduced payment standards until their units went through their second annual recertification. This meant that there was a lag in PHA savings from reduced payment standards in low-rent ZIP Codes, as well as a delay in any additional costs to tenants who chose to remain in those ZIP Codes after SAFMRs were adopted.

Additional administrative costs to PHAs involved those associated with changing software, systems, and staff training. These represented the largest up-front expenditures made by PHAs due to SAFMR implementation. One-time costs were often associated with the revamping of internal systems, however, and these costs were offset by long-term savings that PHAs would accrue. For instance, SAFMRs reduced administrative costs associated with collecting comparative data to determine rent reasonableness because the more discrete ZIP Code level geography makes it less difficult to find comparable rents, and baseline rents are embedded in SAFMR calculations. Moreover, areawide rent reasonableness studies are only if there is a 10-percent decrease in SAFMRs consistent with the floor for all FMRs under the Housing Opportunities Through Modernization Act (HOTMA). SAFMRs also eliminated the need to petition HUD for exception payment standards in many areas where rents exceeded FMRs, which allowed PHAs to reallocate staff resources.

The results from the evaluation of the SAFMR demonstration program provided HUD with guidance for the scaling up of SAFMRs, but they should be interpreted with some important qualifications. For example, except for the two PHAs added to the evaluation from metropolitan Dallas, the other participants in the demonstration program administered SAFMRs in regions where multiple PHAs continued to use metropolitan areawide FMRs in their HCV implementation. Two of these PHAs were in the largest metropolitan areas in the country. Consequently, issues related to the portability of vouchers where SAFMRs are used metropolitan-wide were not fully integrated in the evaluation. In addition, scholars have raised concerns about the representativeness of PHAs in the demonstration program and the generalizability of the findings from the evaluation to other PHAs across the United States (NYU Furman Center, 2018; Palm, 2018). A degree of caution was recommended, in particular, when applying the results of the evaluation of the demonstration program to metropolitan areas selected for the first phase of the mandatory implementation of HUD's new SAFMR rule.

The New SAFMR Rule

In November of 2016, HUD published the final version of the new SAFMR rule (Federal Register, 2016). This was followed by a series of technical documents including an implementation guidebook for PHAs that had adopted SAFMRs (HUD, 2018). The final version of the SAFMR rule included provisions for PHAs mandated to adopt SAFMRs as well as options for their voluntary implementation by other PHAs. In the SAFMR rule's initial implementation in 2018, 24 metropolitan areas were mandated to use SAFMRs when setting payment standards for HCVs. The Dallas metropolitan area was one of these areas but had already implemented SAFMRs under the terms of the 2011 court settlement under the provisions of the SAFMR rule. The next opportunity to expand the number of metropolitan areas mandated to use SAFMRs would occur after 5 years had passed. This meant that in 2018, there were a total of 180 PHAs across the 24 metropolitan areas mandated to use SAFMRs.[5] Those PHAs administered 413,591 vouchers, which accounted for about 19 percent of all HUD vouchers. Exhibit 2 lists all the metropolitan areas mandated to use SAFMRs.

Exhibit 2

Metropolitan Areas Mandated to Use SAFMRs (1 of 2)

Metropolitan Area	Total PHAs	Average HCVs Leased Q1 2017	PHAs in MTW Program
Atlanta-Sandy Springs-Roswell, GA	12	41,011	1
Bergen-Passaic, NJ	10	10,881	
Charlotte-Concord-Gastonia, NC-SC	6	8,151	1
Chicago-Joliet-Naperville, IL	13	71,275	1
Colorado Springs, CO	2	2,512	
Dallas, TX	11	29,467	
Fort Lauderdale, FL	6	11,529	
Fort Worth-Arlington, TX	5	12,308	
Gary, IN	3	3,097	
Hartford-West Hartford-East Hartford, CT	21	19,183	
Jackson, MS	2	5,641	
Jacksonville, FL	2	7,250	
Monmouth-Ocean, NJ	9	5,314	
North Port-Sarasota-Bradenton, FL	3	2,773	
Palm Bay-Melbourne-Titusville, FL	3	2,714	
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	19	37,610	1
Pittsburgh, PA	8	17,087	1
Sacramento-Roseville-Arden-Arcade, CA	4	12,837	
San Antonio-New Braunfels, TX	6	15,095	1

[5] Nine of the PHAs in the mandated areas were participants in the MTW program and could request an exemption from the SAFMR rule. These PHAs accounted for 33 percent of the vouchers in the 24 mandatory SAFMR areas and had the option to voluntarily adopt SAFMRs.

Exhibit 2

Metropolitan Areas Mandated to Use SAFMRs (2 of 2)

Metropolitan Area	Total PHAs	Average HCVs Leased Q1 2017	PHAs in MTW Program
San Diego-Carlsbad, CA	6	28,458	1
Tampa-St. Petersburg-Clearwater, FL	8	19,290	
Urban Honolulu, HI	2	6,040	
Washington-Arlington-Alexandria, DC-VA-MD	14	37,379	2
West Palm Beach-Boca Raton, FL	5	6,689	

HCV = Housing Choice Vouchers. MTW = Moving to Work. PHA = Public Housing Authority. Q1 = First Quarter.
Note: Total sample size is 24.
Source: HUD, Voucher Management System (VMS), retrieved by the Policy Race and Research Action Council

The SAFMR rule was published in its final form after a period of notice and comment from stakeholders. The changes made to the final rule had implications for the degree to which SAFMRs expanded HCV recipients' access to high-opportunity neighborhoods and the cost-effectiveness of voucher implementation. The changes also had implication for which metropolitan areas were selected for mandatory implementation of SAFMRs.

One of the main changes made to the SAFMR final rule was the addition of tenant protections. In the final rule, provisions were included to hold existing HCV holders harmless if the payment standards in the ZIP Code they lived in fell below metropolitan area FMRs. HUD provided PHAs with three options to hold existing tenants harmless during the SAFMR implementation process: (1) Under existing rules of the voucher program, PHAs could delay the reduction in payment standards until the second annual recertification of their rental contract. This would give tenants up to two years to weigh whether they would move to a different location or remain in their current unit with a lower subsidy; (2) PHAs could develop a schedule to gradually reduce payment standards over a period of time until they were at the new level set using SAFMRs; or (3) PHAs had the option to hold tenants harmless indefinitely. HUD was able to provide these tenant protections in the final rule, especially the last one, because of provisions within HOTMA.

Another noticeable change to the SAFMR rule involved how metropolitan areas were selected for mandatory implementation. Concerns were expressed about the feasibility of SAFMRs in regions with tight rental housing markets. Some of these concerns were supported by analysis in studies like Palm's (2018), which raised questions about replicating outcomes found in high vacancy metropolitan areas like Dallas when using SAFMRs in tighter housing markets like San Francisco and Oakland. In response to these concerns, HUD exempted areas with rental vacancy rates at 4 percent or less from mandatory adoption of the SAFMR rule.

In addition to these changes, HUD made others that essentially gave relief to PHAs. For instance, HUD exempted all current and future project-based vouchers from mandatory implementation of SAFMRs. This effectively made mandatory implementation of the SAFMR rule only applicable to portable vouchers, giving PHAs more flexibility in the setting of payment standards for properties they managed. Similarly, the final rule allowed PHAs participating in the MTW program to request

an exemption from mandatory implementation of SAFMRs. HUD also simplified the exception payment standard rules for PHAs that did not operate in mandatory SAFMR areas. Instead of going through the more rigorous exception payment standard approval process, PHAs were permitted to voluntarily adopt SAFMRs in individual ZIP Codes and notify HUD of this decision by email. Moreover, HUD made efforts to address concerns raised about PHAs and about the cost burden associated with the transition to SAFMRs. Although this was not addressed in the final rule per se, HUD offered PHAs up to $25,000 in reimbursements for costs directly related to mandatory SAFMR adoption.

Finally, HUD provides PHAs in non-mandatory SAFMR metropolitan areas with two options to use SAFMRs voluntarily. As noted earlier, PHAs had the option to set payment standards up to 110 percent of SAFMRs in individual ZIP Codes without going through the more rigorous approval process for exception payment standards. The second option for voluntary adoption of SAFMRs was to request HUD's approval to opt-in and apply SAFMRs metropolitan-wide. This allowed PHAs to both increase payment standards in high-rent ZIP Codes and reduce payment standards in low-rent ZIP Codes. PHAs that opted-in for full implementation of SAFMRs would have greater flexibility in pursuing the goal of providing tenants with opportunities to move to high-opportunity areas and garner broader cost savings in HCV administration.

Methodology

The results section of this article focuses on implementation strategies used by PHAs in the 24 metropolitan areas mandated to use SAFMRs when setting payment standards for HCVs. The results presented in this section are based on data collected following the initial implementation of SAFMRs in these jurisdictions during 2018. This is a critical timeframe to examine because jurisdictions were mandated to have their SAFMR strategy in place by April 2018. The scope and scale of the initial implementation provide one measure of the degree of PHAs' fidelity to the goals of the new SAFMR rule. Attempts were made to collect data from each of the 180 PHAs located in the 24 metropolitan areas mandated to use SAFMRs. Between June and September of 2018, members of the research team contacted individuals responsible for the administration of the HCV program by telephone, email, and mail. Requests were made for each PHA's: SAFMR payment standards, documentation of updates to their administrative plans since SAFMRs were adopted, materials distributed to voucher holders and landlords describing the PHA's SAFMR policies, and the approach adopted to render existing HCV holders harmless during the changeover to SAFMRs. In cases where PHAs did not respond to data requests by telephone, email, and mail, the research team searched for materials on PHAs' websites. At the end of the data collection period, materials were collected from 48 percent of the PHAs. These materials consisted largely of the SAFMR payment standards that were adopted by the PHAs. To a lesser extent, PHAs provided copies of other materials such as information provided to tenants and landlords about SAFMRs, policies to hold existing HCV holders harmless, and updates to their administrative plans. Although data were only available for 48 percent of the PHAs, all 24 metropolitan areas were represented in this subset and the PHAs that did provide data represented those with larger service areas in the metropolitan areas mandated to adopt SAFMRs. These PHAs were responsible for the administration of 79 percent of the 413,591 HCVs issued in the 24 metropolitan areas. PHAs for which data were

collected administered an average of 3,801 HCVs, compared with an average of 922 HCVs for PHAs where data were not collected. The data collected also included information for 55 percent of the 3,881 ZIP Codes contained in those metropolitan areas.

Payment standard data collected from PHAs were aggregated and presented in tabular form. These tables are discussed in the results section and presented in the appendix to this article. In addition to payment standard data, other data were collected from PHAs and public documents. Content analysis was used to examine these data following methods described in Silverman and Patterson (2015). The content analysis focused on information provided to tenants and landlords about SAFMRs, the degree to which participants in MTW programs plan to integrate SAFMRs into their HCV implementation strategies, rationales PHAs used in their requests for waivers, and the scope of HUD's monitoring of SAFMR implementation.

Results

Analysis of Year 1 Mandatory SAFMR Implementation

This section focuses on implementation strategies used by PHAs in the 24 metropolitan areas mandated to use SAFMRs. The section begins with an overview of how PHAs set payment standards for HCVs during the initial implementation of SAFMRs in 2018. It then examines information provided to tenants and landlords about PHAs' SAFMR policies and approaches adopted to render existing HCV holders harmless. Following this discussion, the article summarizes other topics pertinent to the implementation of the SAFMR rule including the degree to which participants in MTW programs plan to integrate SAFMRs into HCV implementation, requests for waivers to the SAFMR rule, and the scope of HUD's monitoring of SAFMR implementation.

Payment Standards

Data for payment standards were collected from 86 PHAs in the metropolitan areas mandated to use SAFMRs. These PHAs constituted 48 percent of all agencies. This group of PHAs administered 79 percent of the 413,591 HCVs issued in the 24 metropolitan areas. The HCV administered by this group of PHAs covered 55 percent of the 3,881 ZIP Codes in those metropolitan areas.

Under the new rule's guidelines, PHAs can set payment standards between 90 percent and 110 percent of SAFMRs. This range allows PHAs to account for local market conditions when adjusting payment standards. For example, in areas where market rents are changing rapidly and published SAFMRs are not in line with current trends, the 90 to 110 percent range gives PHAs flexibility to address data lag issues. This flexibility may be beneficial in areas experiencing upward pressure on rents due to gentrification, as well as in areas where rents are declining due to deteriorating neighborhood conditions. While taking these issues into consideration, at minimum, one would expect payment standards to cluster near 100 percent of published SAFMRs if a PHA had fidelity to the opportunity advancement goals of the new rule. Under this scenario, a PHA would strike a balance between ZIP Codes where SAFMRs were less than metropolitan-wide FMRs and ZIP Codes where SAFMRs were greater than metropolitan-wide FMRs. This is an important balance to strike because it generates the program cost savings necessary in low-rent ZIP Codes to free up resources

needed to enhance HCVs in high-rent ZIP Codes. Striking this balance is critical to maintaining a PHA's volume of HCVs while expanding housing options in opportunity areas.

If a PHA diverges from payment standards clustering near 100 percent of published SAFMRs, how payment standards are set can be viewed as an indication of relatively high or low fidelity to the new rule. In instances where there is high fidelity, a PHA would set payment standards in low-rent ZIP Codes closer to 90 percent of SAFMRs while setting payment standards closer to 110 percent of SAFMRs in high-rent ZIP Codes. Setting payment standards in this manner would maximize the incentive for tenants to move to high-opportunity areas while reducing possible overpayments to landlords in low-rent ZIP Codes. In contrast, low fidelity would be most pronounced in instances where a PHA sets payment standards in low-rent ZIP Codes closer to 110 percent of SAFMRs while setting payment standards closer to 90 percent of SAFMRs in high-rent ZIP Codes. Setting payment standards in this manner would minimize the incentive for tenants to move to high-opportunity areas while increasing overpayments to landlords in low-rent ZIP Codes. This scenario would effectively undercut the opportunity advancement goal of the SAFMR rule by bringing payment standards back in line with something approximating metropolitan-wide FMRs.

In order to measure this aspect of fidelity to the SAFMR rule, payments standards as a percent of SAFMRs were calculated for each ZIP Code in the 24 metropolitan areas. A total of 5,501 payment standards were reported for SAFMRs by all the PHAs from which data were collected. It should be noted that in several instances, multiple payment standards were reported for the same ZIP Codes. This variance was because different PHAs in the same metropolitan area often calculated their own unique payment standards for the same ZIP Codes. At least one set of payment standards was reported for 2,134 (55 percent) of the 3,881 ZIP Codes in the 24 metropolitan areas. More than one ZIP Code was reported in 679 (17.5 percent) of the cases. The presence of multiple payment standards in the same metropolitan areas can make the HCV process confusing to tenants and landlords. Exhibit 3 summarizes the number of payment standards reported per ZIP Code in all the 24 metropolitan areas combined.

Exhibit 3

Number and Percent of ZIP Codes Where Public Housing Authorities Reported Payment Standards

Number of PHAs Reporting Payment Standards	Number of ZIP Codes	Percent of ZIP Codes
0	1,725	45.0
1	1,477	38.1
2	218	5.6
3	213	5.5
4	117	3.0
5	55	1.4
6	55	1.4
7	20	0.5
8	1	0.0

PHA = Public Housing Authority.
Note: Total sample size is 3,881.

Exhibit 4 presents payment standards as a percent of SAFMRs in the aggregate for all 24 metropolitan areas. Exhibit 4 also reports payment standards as a percent of SAFMRs above metropolitan-wide FMRs and for SAFMRs below metropolitan-wide FMRs. Low-opportunity ZIP Codes were defined as ZIP Codes with SAFMRs less than 100 percent of area FMRs. High opportunity ZIP Codes were defined as ZIP Codes with SAFMRs greater than or equal to 100 percent of area FMRs. These data suggest that, in the aggregate, PHAs in the 24 metropolitan areas had low fidelity to the opportunity advancement goals of the SAFMR rule. Although average payment standards hovered around 100 percent of published SAFMRs, there was a divergence between the setting of payment standards in low-opportunity and high-opportunity ZIP Codes. This difference reflected the opposite of the pattern of setting payment standards that would be predicted where PHAs had high fidelity to the opportunity advancement goals of the SAFMR rule. Setting payment standards in this manner potentially creates disincentives for moves to high-opportunity neighborhoods and reinforces existing patterns of HCV concentration in low-opportunity areas. Moreover, setting payment standards in this manner increases the likelihood that landlords will be overpaid in low-rent areas and PHAs will forego cost-savings that can be used to enhance payment standards in high-opportunity ZIP Codes. The result is fewer HCVs overall, and fewer HCVs in high-rent ZIP Codes.

Exhibit 4

Payment Standards as a Percent of SAFMRs

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the 24 Metropolitan Areas	100.57	100.85	100.58	100.31	100.04
Payment Standards in Low-Opportunity ZIP Codes[1]	102.81	103.02	102.77	102.51	101.94
Payment Standards in High-Opportunity ZIP Codes[2]	98.71	98.09	98.82	98.29	98.13

SAFMR = Small Area Fair Market Rent.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size is 5,501.

The data presented in exhibit 4 is in the aggregate. It is important to note that there was variation in the degree to which payment standards diverged between high-opportunity and low-opportunity ZIP Codes in individual metropolitan areas. There were three main findings for payment standard behavior relative to the classification of ZIP Codes by opportunity. The first was in metropolitan areas where the payment standards followed a similar pattern to the aggregate data reflected in exhibit 4. Eleven of the 24 metropolitan areas fell into this category. They included the following metropolitan areas mandated to use SAFMRs: Atlanta-Sandy Springs-Roswell, Colorado Springs, Fort Lauderdale, Fort Worth-Arlington, Hartford-West Hartford-East Hartford, Jacksonville, Monmouth-Ocean, Pittsburgh, Sacramento-Roseville-Arden-Arcade, Tampa-St. Petersburg-Clearwater, and Urban Honolulu.

The second finding in payment standards involved eight metropolitan areas where payment standards were at or above 100 percent of SAFMRs in high-opportunity and low-opportunity ZIP

Codes. This outcome was found in the following metropolitan areas: Charlotte-Concord-Gastonia, Chicago-Joliet-Naperville, Dallas, Gary, Jackson, North Port-Sarasota-Bradenton, Philadelphia-Camden-Wilmington, and Washington-Arlington-Alexandria. These metropolitan areas exhibited a relatively moderate degree of fidelity to the opportunity advancement goals of the SAFMR rule in the sense that they erred on the side of adopting payment standards that were at or higher than 100 percent of SAFMRs across the board. In some cases, this error was justified due to a region's tight rental housing market, but in other metropolitan areas, setting payment standards above 100 percent of SAFMRs raises concerns about potentially overpaying landlords in low-rent areas. The payment standards reported for the Dallas metropolitan area in exhibit 5 are exemplar of this trend.

Exhibit 5

Payment Standards as a Percent of SAFMRs for the Dallas, TX Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	103.78	103.13	103.28	103.37	103.25
Payment Standards in Low-Opportunity ZIP Codes[1]	103.41	102.99	102.86	102.91	102.84
Payment Standards in High-Opportunity ZIP Codes[2]	104.11	103.23	103.67	103.80	103.64

SAFMR = Small Area Fair Market Rent.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for Dallas is 1,071.

The third finding in payment standards involved five metropolitan areas where payment standards were below 100 percent of SAFMRs in high-opportunity and low-opportunity ZIP Codes. This outcome was found in the following metropolitan areas: Bergen-Passaic, Palm Bay-Melbourne-Titusville, San Antonio-New Braunfels, and San Diego-Carlsbad. These metropolitan areas exhibited a relatively low degree of fidelity to the opportunity advancement goals of the SAFMR rule in the sense that they adopted payment standards that were below 100 percent of SAFMRs across the board. This had the effect of encouraging the concentration of HCVs in low-opportunity areas, particularly in metropolitan areas with tightening rental markets. One justification for setting HCVs in this manner might be to stretch a PHA's resources and issue the maximum number of vouchers possible, but this strategy results in placing the greatest constraints on HCV holders who seek to relocate to high-opportunity areas. The payment standards reported for the San Diego-Carlsbad metropolitan area in exhibit 6 show an extreme example of this trend.

Exhibit 6

Payment Standards as a Percent of SAFMRs for the San Diego-Carlsbad, CA
Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	85.82	86.96	85.77	84.22	80.37
Payment Standards in Low-Opportunity ZIP Codes[1]	89.04	91.13	87.79	88.81	84.36
Payment Standards in High-Opportunity ZIP Codes[2]	84.32	85.01	84.83	81.59	78.50

SAFMR = Small Area Fair Market Rent.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for San Diego-Carlsbad is 169.

Within the SAFMR rule, HUD preserved the ability of PHAs to set payment standards within the basic range by ZIP Code. This policy allowed PHAs to tier their payment standards. The use of tiers involves setting a single payment standard for a group of ZIP Codes in order to simplify the HCV implementation process. Tiering payment standards were common in the 24 metropolitan areas mandated to use SAFMRs. Tiers were adopted by 53 percent of the PHAs where data were collected and at least one PHA adopted them in 22 (92 percent) of the 24 metropolitan areas. PHAs adopted a variety of approaches to tiering. For example, some created zones based on jurisdictional boundaries of municipalities and counties, further grouping ZIP Codes within those boundaries. Others created payment standard zones based on land use characteristics, such as rural, business district, and standard zones. In other cases, it was clear that tiers reflected groupings of ZIP Codes based on broader geographies identified high to low rent areas.

On the surface, applying tiers presents HCV holders with a more discrete list of payment standards to reference when searching for housing. If applied with low fidelity to the opportunity advancement goals of the SAFMR rule, however, this approach may result in more limited access to high-opportunity areas and reproduce patterns of HCV concentration. Exhibit 7 provides an example of this outcome. This exhibit summarizes average payment standards across the five tiers set by the Hawaii Public Housing Authority for the 57 ZIP Codes in its service area, which encompasses the entire Urban Honolulu metropolitan area. Exhibit 7 provides a summary of the divergence between payment standards in low to high rent tiers. Tier 5 represented the lowest rent ZIP Codes in the metropolitan area, rents incrementally increased until the highest rents were found in tier 1. The data summarized in exhibit 7 shows that there was an inverse relationship between rents and payment standards as a percent of SAFMRs.

Exhibit 7

Average Payment Standards as a Percent of SAFMRs for the Hawaii Public Housing Authority

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Tier 5 (N=4)— Lowest Rent ZIP Codes	109.77	109.40	109.40	109.48	109.65
Tier 4 (N=40)	101.74	101.43	102.05	101.76	101.99
Tier 3 (N=10)	98.55	98.65	98.65	98.80	98.73
Tier 2 (N=2)	90.00	90.00	90.00	90.00	90.00
Tier 1 (N=1)— Highest Rent ZIP Code	90.00	90.00	90.00	90.00	90.11

Note: Total sample size for the Hawaii Public Housing Authority is 57.

The example of tiering in the Urban Honolulu metropolitan area illustrates how low fidelity can undercut the opportunity advancement goals of the SAFMR rule when the use of SAFMRs is mandated. In metropolitan areas where all PHAs are not required to use SAFMRs, tiering can have more noticeable effects. Exhibit 8 summarizes average exception payment standards set across the three tiers set by the San Diego Housing Commission for the 33 ZIP Codes in its service area.[6] Although this PHA is located in a mandatory SAFMR area, it can request an exemption from the SAFMR rule because it is a participant in the MTW program. This policy means that the San Diego Housing Commission was able to set its payment standards without the constraints of the SAFMR rule. The PHA's tiering showed a similar inverse relationship between rents and payment standards. Without the safeguards built into the SAFMR rule, however, average payment standards as a percent of SAFMRs fell below the 90-percent threshold in high-opportunity areas.

Exhibit 8

Average Payment Standards as a Percent of SAFMRs for the San Diego, CA Housing Commission

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Tier of Low Rent ZIP Codes (N=10)	96.77	96.50	96.47	96.48	85.20
Tier of Moderate Rent ZIP Codes (N=8)	82.97	82.73	82.54	82.65	72.86
Tier of High Rent ZIP Codes (N=15)	80.85	80.32	80.42	76.75	72.70

SAFMR = Small Area Fair Market Rent.
Note: Total sample size for the San Diego Housing Commission is 33.

Holding Tenants Harmless

The final SAFMR rule required PHAs to hold existing HCV holders living in low-rent areas harmless as FMRs were phased out during the SAFMR implementation process. PHAs had three options to do this: (1) they could delay the reduction in payment standards until the second

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[6] The San Diego Housing Commission based its tiers on ZIP Code boundaries making it possible to directly compare payment standards set by this PHA with others in the metropolitan area using ZIP Code based SAFMRs. This type of comparison was not possible with MTW participants that used different geographies when setting their exception payment standards.

annual recertification of their rental contract, (2) they could develop a schedule to gradually reduce payment standards over a period of time, or (3) they could hold tenants harmless indefinitely. It is important to stress that the requirement to hold tenants harmless only applied to existing HCV contract holders. Payment standards based on SAFMRs would be applied to new recipients of HCVs at the time they originated.

Tenant and landlord notification materials were used in the analysis to identify what option for holding tenants harmless was adopted by PHAs. Tenant notification materials were provided by 22 PHAs. Landlord notification materials were provided by 12 PHAs. These materials were analyzed using content analysis. Findings from the analysis indicated that the thrust of tenant notifications was to alert tenants that they would be held harmless if payment standards were reduced in their area due to the adoption of SAFMRs. The discussion of SAFMR opportunity advancement goals was secondary. In 11 of the letters analyzed, PHAs indicated that tenants would be held harmless until their second annual recertification took place. Similar language was included in most of the notifications that landlords received from these PHAs. The option to hold tenants harmless until their second annual recertification occurred was the only option explicitly mentioned in the materials analyzed.

In addition to notifying tenants that SAFMRs were being adopted and that this change may affect their level of rental assistance in the future, nine PHAs also included language explaining the opportunity advancement goals of the new policy. For example, the Sacramento Housing and Redevelopment Agency's notification explained that, "with the SAFMRs you will be able to use your voucher in more places than would have been possible before—including neighborhoods that have high-performing schools, reduced crime, access to grocery stores, parks, medical facilities, childcare, transportation, and other amenities." Similar language was found in six of the notices that went to landlords.

One contrast stood out in the materials circulated to tenants and landlords. Landlords received more detailed information about how payment standards were set by the PHAs. In four of the landlord notifications, tables showing the payment standards were included. This level of detail was absent from materials circulated to tenants. In addition to this contrast, the letters to landlords provided insights about the degree to which PHAs had fidelity to the SAFMR rule. For instance, the Cecil County Housing Authority informed landlords that most of its service area will have payment standards reduced, making it "more difficult for some tenants to rent your higher cost units, more difficult for you to get higher rents for some units, and more difficult for us to lease voucher holders in some areas." This PHA is in the Philadelphia-Camden-Wilmington metropolitan area, and 88 percent of the 16 ZIP Codes in its service area had SAFMRs below FMRs. This notification went on to describe how the PHA tiered its payment standards to buffer landlords from potential reductions in payment standards due to the use of SAFMRs. The PHA's letter to landlords said "in an effort to minimize the disturbance to your operations, limit our administrative burden, and maintain as much simplicity as possible for the tenants—while also attempting to adhere to the spirit and intention of the SAFMR program—using local authority we have reduced the 16 standards to 3 different rate areas." An examination of the FMRs, SAFMRs, and tiers adopted by this PHA indicated the effect of the tiers adopted by this PHA was to adjust payment standards upward in low-rent areas and downward in high-rent areas. Payment standard reductions using the

PHA's tiers were about one-third to one-half of what they would have been if posted SAFMRs were adopted without making these adjustments.

PHAs in the MTW Program and Others Requesting Waivers

Nine PHAs in the 24 metropolitan areas that were mandated to use SAFMRs were participants in the MTW program. These PHAs included the Atlanta Housing Authority, Charlotte Housing Authority, Chicago Housing Authority, District of Columbia Housing Authority, Fairfax County Redevelopment and Housing Authority, Philadelphia Housing Authority, Housing Authority of Pittsburgh, San Antonio Housing Authority, and San Diego Housing Commission. These PHAs could propose alternative payment standard policies to HUD and request exemptions from the mandate to use SAFMRs. Eight of the PHAs requested an exemption for at least 1 year when the rule was promulgated due to the administrative burden of adopting SAFMRs on short notice and the potential confusion it would cause with the alternative payment standard policies authorized under their MTW agreements. The Philadelphia Housing Authority did not request an exemption. PHAs requesting an exemption either implemented plans to phase in SAFMRs over a period of years, applied SAFMRs to a subgroup of ZIP Codes, developed exception payment standards using more flexible criteria based on metropolitan-wide FMRs, or used other metrics to set payment standards in a manner that aligned with the opportunity advancement goals of the SAFMR rule. Four MTW participants, including the Philadelphia Housing Authority, the Pittsburgh Housing Authority, the San Antonio Housing Authority, and the San Diego Housing Commission, adopted various plans to transition to SAFMRs. These PHAs set HCV subsidies based on payment standards applied to ZIP Codes (as opposed to other geographies like census tracts or locally demarcated neighborhood boundaries).

Another MTW participant, the Chicago Housing Authority, argued that their use of exception payment standards based on FMRs was more effective than SAFMRs. According to this argument, the use of SAFMRs would raise payment standards in all high-rent areas and increase the PHA's costs per voucher without additional funding from HUD. This variance would mean that the PHA could issue fewer HCVs. It was also argued that SAFMRs would lower payment standards in low-rent areas and increase housing costs for HCV holders who remained in them. Consequently, this MTW participant requested an exemption from the SAFMR rule in favor of the use of exception payment standards in a more discrete set of geographic areas.

Although MTW participants were able to request exemptions from the SAFMR rule, requests for exemptions by other PHAs were not granted. For example, the two PHAs in the Urban Honolulu metropolitan area jointly requested an exemption from the SAFMR rule based on unique characteristics linked to the Honolulu metropolitan area being located on a densely populated Pacific island (Department of Community Services, City and County of Honolulu, 2018). The request was denied. Other PHAs had greater success in obtaining temporary extensions to the deadline for implementation, citing issues related to administrative obstacles to implementing SAFMRs on-time. PHAs that requested temporary waivers of 3 months to 1 year in order to make the transition to SAFMRs more seamlessly were typically granted extensions (Federal Register, 2018).

HUD's Monitoring of SAFMR Implementation

In addition to issues related to the setting of payment standards, holding tenants harmless, and the parallel administration of the MTW program in mandatory SAFMR areas, the analysis found that the implementation of the SAFMR rule was hampered by a lack of proactive monitoring by HUD. For example, PHAs are not required to submit their administrative plans, payment standards, or materials used to notify tenants and landlords about their internal implementation policies related to the SAFMR rule to HUD. Instead, they are expected to keep these records in-house and available if HUD requests to inspect them. This procedure is problematic because there is no central repository where these materials are stored and made publicly available for inspection. Instead, information must be gathered from individual PHAs. This approach impedes public interest and advocacy groups from accessing information about the implementation of the SAFMR rule and shifts the burden of public disclosure from HUD to members of the general public. The lack of a public repository for implementation materials also hinders the free flow of information between PHAs interested in identifying best practices to adopt when planning their implementation strategies.

Conclusions and Recommendations

The results presented in this article highlight how the successful implementation of SAFMRs hinges on the degree to which PHA administrators show fidelity to the opportunity advancement goals of the SAFMR rule. These goals focus on setting payment standards that provide HCV holders with greater chances to move to high-opportunity neighborhoods. To forward these goals, ZIP Code-based payment standards should be elevated in high-rent areas and lowered in low-rent areas. This behavior would create an incentive structure that encourages moves to high-opportunity neighborhoods. Importantly, the reduction of payment standards in low-rent areas provides PHAs with the cost savings needed to pay for higher payment standards in high-rent areas. The reduction in payment standards in low-rent areas also corrects for the tendency to overpay landlords when FMRs are used. Payment standards based on SAFMRs bring HCV subsidies in line with market-based rents across a metropolitan area.

The results presented in this article indicate that PHA administrators' behavior in setting payment standards lack high fidelity to the opportunity advancement goals of the SAFMR rule. This lack has led to less than optimal implementation in the 24 metropolitan areas required to use SAFMRs. Despite these findings, there are signs that once PHAs gain experience in the use of SAFMRs they will apply the policy with greater efficacy. For instance, all but one of the PHAs that participated in the SAFMR demonstration program continue to use them well beyond the end of that program. Likewise, some of the highest levels of fidelity to SAFMRs were found in the place with the most experience using them to set payment standards, the Dallas metropolitan area. Still, there is a need to fine-tune the SAFMR rule in anticipation of the scheduled addition of metropolitan areas mandated to adopt it. The expansion of mandatory SAFMR metropolitan areas is scheduled to occur in the fifth year of the new rule's implementation. Fine tuning the SAFMR rule would allow for a more rapid scaling up to occur. Ideally, this expansion would encompass the full implementation of the SAFMR rule nationally. With that goal in mind, recommendations are made to three target audiences: (1) administrators within HUD, (2) local PHAs that implement HCV programs, and (3) applied researchers and policy advocates.

Recommendations from the Analysis of PHAs Mandated to Use SAFMRs

Increase HUD's Emphasis on the Opportunity Advancement Goals of SAFMRs. Successful implementation of SAFMRs hinges on PHA administrators' fidelity to the opportunity advancement goals of the SAFMR rule. To foster this commitment to promoting HCV holders' mobility, HUD must invest more resources in educating PHAs, tenants, and landlords about these goals and their relationship to the setting of payment standards in high-rent and low-rent areas.

Increase Funding to Cover the Costs of Transitioning to SAFMRs. HUD should increase funding to support the transition to SAFMRs in two key areas. First, funding should be enhanced to cover the costs of training staff, developing educational materials for tenants and landlords, and upgrading software and other administrative systems. Currently, PHAs can request reimbursements up to $25,000 for costs directly related to SAFMR implementation. These funds are intended to cover the costs of outreach and briefing materials, hiring and training of staff, the development of new methodologies for reasonableness determinations, and software. These funds are available for PHAs adopting SAMFRs, but the level of funding and its continuation beyond the initial adoption phase of SAMFRs are not adequate to sustain the requisite capacity of a PHA. Second, HUD should reimburse PHAs for the costs of holding tenants harmless during the transition to SAFMRs, so payment standards can be raised in high-rent areas without reducing the overall number of vouchers.

Require More Metropolitan-Wide Collaboration. To curb the practice of individual PHAs setting multiple payment standards in the same ZIP Codes, HUD should encourage more metropolitan-wide collaboration across PHAs. Setting uniform payment standards in a metropolitan area will have the benefit of reducing confusion for renters and providing landlords with a more predictable environment. Metropolitan-wide collaboration can be encouraged with incentives to PHAs, such as awarding additional vouchers, funding for mobility counseling, and technical support to PHAs that join consortia and set uniform payment standards.

Scrutinize PHAs That Tier Payment Standards. HUD should establish a set of criteria for tiering payment standards that conforms to the opportunity advancement goals of the SAFMR rule. The establishment of criteria for tiering would provide PHAs with guidance on how to group PHAs. It would also require PHAs to document how tiering was implemented so its effectiveness in promoting opportunity advancement can be measured and evaluated. Generally, tiering payment standards should be discouraged unless PHAs can demonstrate that this approach is more effective at promoting moves to high opportunity ZIP Codes across a metropolitan area than setting distinct payment standards for every ZIP Code in a PHA's service area.

Reinforce the Purpose of Holding Tenants Harmless in all Communications with PHAs. HUD should continue to stress its policy on holding tenants harmless in all communications with PHAs. Communications with PHAs should continue to highlight that the policy of holding tenants harmless relates exclusively to current HCV holders during the phase-in period for SAFMRs. Reinforcement is needed so PHAs do not misinterpret this policy in ways that lead to increasing payment standards in low-rent areas across the board in order to protect new HCV holders and landlords. HUD should continue to stress that this policy was not designed to hold new HCV

holders and landlords harmless. It only applies to current HCV holders during the SAFMR phase-in period.

Transition MTW Participants to SAFMRs. HUD should increase dialogue with MTW participants about strategies to transition to SAFMRs. This dialogue should focus on requiring MTW participants to show they tested alternative payment setting strategies when requesting exemptions from SAFMRs. HUD should review and evaluate these alternative strategies. Following the evaluation, if HCV families are not advancing to high opportunity areas in accordance with non-MTW families, HUD should consider removing the MTW agency exemption and require the agency to adopt SAFMRs.

Increase HUD's Monitoring and Reporting Requirements. HUD should increase its monitoring and reporting requirements for the implementation of the SAFMR rule. Under its current administrative practices, PHAs are not required to submit their administrative plans, payment standards, or materials used to notify tenants and landlords about their internal implementation policies related to the SAFMR rule to HUD. A central repository needs to be created where these materials are stored and made publicly available for inspection. This repository can be used as a resource: by HUD when monitoring the implementation of the SAFMR rule, by public interest and advocacy groups, by PHAs interested in identifying best practices, and by the general public. This repository can be modeled after the one maintained on HUD's website for the MTW program.[7]

Acknowledgments

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[7] HUD maintains an electronic repository of annual plans and other documents for the MTW program at the following website: https://www.hud.gov/program_offices/public_indian_housing/programs/ph/mtw/mtwsites.

Appendix A: Additional Exhibits

Exhibit A.1

Payment Standards as a Percent of SAFMRs for the Atlanta-Sandy Springs-Roswell, GA Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	97.00	97.66	97.15	96.79	96.66
Payment Standards in Low-Opportunity ZIP Codes[1]	100.82	102.07	100.94	99.87	100.15
Payment Standards in High-Opportunity ZIP Codes[2]	95.74	96.24	95.90	95.77	95.51

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Atlanta-Sandy Springs-Roswell metropolitan area is 351.

Exhibit A.2

Payment Standards as a Percent of SAFMRs for the Bergen-Passaic, NJ Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	92.03	92.09	92.09	91.98	92.10
Payment Standards in Low-Opportunity ZIP Codes[1]	94.59	94.73	94.73	95.00	94.76
Payment Standards in High-Opportunity ZIP Codes[2]	90.00	90.00	90.00	89.59	90.00

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Bergen-Passaic metropolitan area is 136.

Exhibit A.3

Payment Standards as a Percent of SAFMRs for the Charlotte-Concord-Gastonia, NC-SC Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	101.37	101.10	100.65	100.78	101.35
Payment Standards in Low-Opportunity ZIP Codes[1]	101.37	101.10	100.65	100.78	101.35
Payment Standards in High-Opportunity ZIP Codes[2]	NA	NA	NA	NA	NA

FMR = Fair Market Rent. NA = Data Not Available. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Charlotte-Concord-Gastonia metropolitan area is 119.

Exhibit A.4

Payment Standards as a Percent of SAFMRs for the Chicago-Joliet-Naperville, IL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	104.25	106.04	103.95	101.08	98.83
Payment Standards in Low-Opportunity ZIP Codes[1]	104.01	105.97	104.04	101.30	98.11
Payment Standards in High-Opportunity ZIP Codes[2]	104.46	106.10	103.86	100.89	99.44

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Chicago-Joliet-Naperville metropolitan area is 345.

Exhibit A.5

Payment Standards as a Percent of SAFMRs for the Colorado Springs, CO Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	104.20	101.68	102.92	99.10	94.28
Payment Standards in Low-Opportunity ZIP Codes[1]	109.50	110.00	110.00	106.92	104.45
Payment Standards in High-Opportunity ZIP Codes[2]	99.07	94.16	101.47	92.03	92.20

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Colorado Springs metropolitan area is 60.

Exhibit A.6

Payment Standards as a Percent of SAFMRs for the Dallas, TX Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	103.78	103.13	103.28	103.37	103.25
Payment Standards in Low-Opportunity ZIP Codes[1]	103.41	102.99	102.86	102.91	102.84
Payment Standards in High-Opportunity ZIP Codes[2]	104.11	103.23	103.67	103.80	103.64

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Dallas metropolitan area is 1,071.

Exhibit A.7

Payment Standards as a Percent of SAFMRs for the Fort Lauderdale, FL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	97.27	97.79	95.93	95.59	95.84
Payment Standards in Low-Opportunity ZIP Codes[1]	100.93	101.92	99.85	99.25	96.55
Payment Standards in High-Opportunity ZIP Codes[2]	96.45	96.78	94.97	94.70	95.08

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Fort Lauderdale metropolitan area is 321.

Exhibit A.8

Payment Standards as a Percent of SAFMRs for the Fort Worth–Arlington, TX Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	98.93	100.50	100.17	99.78	99.86
Payment Standards in Low-Opportunity ZIP Codes[1]	106.71	107.08	105.25	105.03	105.07
Payment Standards in High-Opportunity ZIP Codes[2]	94.44	95.76	92.91	93.49	92.62

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Fort Worth-Arlington metropolitan area is 302.

Exhibit A.9

Payment Standards as a Percent of SAFMRs for the Gary, IN Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	101.21	100.96	101.03	100.92	100.81
Payment Standards in Low-Opportunity ZIP Codes[1]	102.37	101.61	102.02	101.72	101.82
Payment Standards in High-Opportunity ZIP Codes[2]	100.00	100.00	100.00	100.00	100.00

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Gary metropolitan area is 56.

Exhibit A.10

Payment Standards as a Percent of SAFMRs for the Hartford-West Hartford-East Hartford, CT Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	101.60	102.42	101.99	101.87	101.31
Payment Standards in Low-Opportunity ZIP Codes[1]	105.75	105.60	106.12	106.15	107.03
Payment Standards in High-Opportunity ZIP Codes[2]	99.08	100.90	99.75	99.55	98.22

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Hartford-West Hartford-East Hartford metropolitan area is 125.

Exhibit A.11

Payment Standards as a Percent of SAFMRs for the Jackson, MS Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	100.00	100.00	100.00	100.00	100.00
Payment Standards in Low-Opportunity ZIP Codes[1]	100.00	100.00	100.00	100.00	100.00
Payment Standards in High-Opportunity ZIP Codes[2]	100.00	100.00	100.00	100.00	100.00

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Jackson metropolitan area is 64.

Exhibit A.12

Payment Standards as a Percent of SAFMRs for the Jacksonville, FL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	96.80	96.79	96.80	96.77	96.77
Payment Standards in Low-Opportunity ZIP Codes[1]	104.16	104.46	104.49	104.43	104.44
Payment Standards in High-Opportunity ZIP Codes[2]	91.13	91.39	91.39	91.38	91.38

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Jacksonville metropolitan area is 80.

Exhibit A.13

Payment Standards as a Percent of SAFMRs for the Monmouth-Ocean, NJ Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	99.37	99.69	99.05	93.66	93.70
Payment Standards in Low-Opportunity ZIP Codes[1]	108.42	108.77	108.19	98.25	98.41
Payment Standards in High-Opportunity ZIP Codes[2]	95.22	95.53	94.85	91.56	91.55

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Monmouth-Ocean metropolitan area is 88.

Exhibit A.14

Payment Standards as a Percent of SAFMRs for the North Port-Sarasota-Bradenton, FL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	100.10	101.15	98.72	99.55	98.78
Payment Standards in Low-Opportunity ZIP Codes[1]	100.38	99.19	99.39	100.00	99.76
Payment Standards in High-Opportunity ZIP Codes[2]	99.81	103.15	98.05	99.09	97.78

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the North Port-Sarasota-Bradenton metropolitan area is 91.

Exhibit A.15

Payment Standards as a Percent of SAFMRs for the Palm Bay-Melbourne-Titusville, FL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	89.31	88.06	86.89	85.93	86.07
Payment Standards in Low-Opportunity ZIP Codes[1]	89.89	88.60	87.33	85.89	84.48
Payment Standards in High-Opportunity ZIP Codes[2]	88.99	87.66	86.64	85.94	86.95

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Palm Bay-Melbourne-Titusville metropolitan area is 42.

Exhibit A.16

Payment Standards as a Percent of SAFMRs for the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	103.13	103.76	103.81	103.77	103.83
Payment Standards in Low-Opportunity ZIP Codes[1]	103.33	104.55	104.59	104.48	104.62
Payment Standards in High-Opportunity ZIP Codes[2]	102.89	102.75	102.84	102.86	102.84

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR>=100 percent area FMR.
Note: Total sample size for the Philadelphia-Camden-Wilmington metropolitan area is 451.

Exhibit A17

Payment Standards as a Percent of SAFMRs for the Pittsburgh, PA Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	100.04	100.38	100.13	99.93	99.84
Payment Standards in Low-Opportunity ZIP Codes[1]	105.69	106.79	105.92	106.04	105.38
Payment Standards in High-Opportunity ZIP Codes[2]	95.12	95.76	95.55	95.32	95.45

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR>=100 percent area FMR.
Note: Total sample size for the Pittsburgh metropolitan area is 369.

Exhibit A.18

Payment Standards as a Percent of SAFMRs for the Sacramento-Roseville-Arden-Arcade, CA Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	102.72	102.55	102.54	102.61	102.60
Payment Standards in Low-Opportunity ZIP Codes[1]	110.00	110.00	110.00	110.00	110.00
Payment Standards in High-Opportunity ZIP Codes[2]	98.09	98.17	97.79	97.90	97.89

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR>=100 percent area FMR.
Note: Total sample size for the Sacramento-Roseville-Arden-Arcade metropolitan area is 128.

Exhibit A.19

Payment Standards as a Percent of SAFMRs for the San Antonio-New Braunfels, TX Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	91.76	91.68	91.76	91.66	91.60
Payment Standards in Low-Opportunity ZIP Codes[1]	91.73	91.21	91.50	91.19	91.60
Payment Standards in High-Opportunity ZIP Codes[2]	91.79	92.11	92.01	92.09	91.60

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the San Antonio-New Braunfels metropolitan area is 135.

Exhibit A.20

Payment Standards as a Percent of SAFMRs for the San Diego-Carlsbad, CA Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	85.82	86.96	85.77	84.22	80.37
Payment Standards in Low-Opportunity ZIP Codes[1]	89.04	91.13	87.79	88.81	84.36
Payment Standards in High-Opportunity ZIP Codes[2]	84.32	85.01	84.83	81.59	78.50

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the San Diego-Carlsbad metropolitan area is 169.

Exhibit A.21

Payment Standards as a Percent of SAFMRs for the Tampa-St. Petersburg-Clearwater, FL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	96.32	98.42	98.70	100.41	99.09
Payment Standards in Low-Opportunity ZIP Codes[1]	99.68	103.74	104.42	105.23	104.79
Payment Standards in High-Opportunity ZIP Codes[2]	94.00	94.62	94.74	96.96	95.15

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Tampa-St. Petersburg-Clearwater metropolitan area is 200.

Exhibit A.22

Payment Standards as a Percent of SAFMRs for the Urban Honolulu, HI Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	101.47	101.29	101.58	101.48	101.60
Payment Standards in Low-Opportunity ZIP Codes[1]	103.89	107.08	104.00	103.82	104.01
Payment Standards in High-Opportunity ZIP Codes[2]	96.97	99.05	97.08	97.12	97.10

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Urban Honolulu metropolitan area is 86.

Exhibit A.23

Payment Standards as a Percent of SAFMRs for the Washington-Arlington-Alexandria, DC-VA-MD Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	103.98	104.70	105.87	105.67	105.85
Payment Standards in Low-Opportunity ZIP Codes[1]	104.54	105.51	107.14	106.63	106.68
Payment Standards in High-Opportunity ZIP Codes[2]	102.46	102.38	102.36	103.00	103.58

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the Washington-Arlington-Alexandria metropolitan area is 491.

Exhibit A.24

Payment Standards as a Percent of SAFMRs for the West Palm Beach-Boca Raton, FL Metropolitan Area

	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
All Payment Standards Reported in the Metropolitan Area	100.00	98.72	98.50	98.55	98.97
Payment Standards in Low-Opportunity ZIP Codes[1]	100.00	99.00	98.60	98.76	99.45
Payment Standards in High-Opportunity ZIP Codes[2]	100.00	98.28	98.35	98.22	98.22

FMR = Fair Market Rent. SAFMRs = Small Area Fair Market Rents.
[1]Low-opportunity ZIP Codes = ZIP Codes with SAFMR<100 percent area FMR.
[2]High-opportunity ZIP Codes = ZIP Codes with SAFMR≥100 percent area FMR.
Note: Total sample size for the West Palm Beach-Boca Raton metropolitan area is 221.

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Comparing Small Area Fair Market Rents With Other Rental Measures Across Diverse Housing Markets

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Abstract

Small Area Fair Market Rents (SAFMRs) are calculated at the 40th percentile of the U.S. postal ZIP Code instead of the metropolitan area in an effort to capture localized rents to expand choice for voucher holders to access housing in higher-opportunity neighborhoods. Existing studies on the potential and actual outcomes of SAFMRs demonstrate that findings vary for different types of housing markets. Furthermore, the decisions public housing authorities (PHAs) make in the implementation process affect PHAs' program budget and the rent burden and locational outcomes for voucher households. This study aims to address how these implementation factors are affected by local rental market conditions for three PHAs—Housing Authority of the City of Fort Lauderdale, San Antonio Housing Authority, and Seattle Housing Authority—in diverse housing markets. By comparing different sources of market rent estimates with SAFMRs in each location, we contribute new information about how this rule is likely to produce different residential outcomes in terms of increased access to low-poverty neighborhoods and adjustments to payment standards in low-rent neighborhoods. The findings reveal differences across rent measures in terms of estimated levels and relative differences across ZIP Codes. These findings suggest that housing authorities may face challenges in meeting the objectives of the SAFMR final rule without some form of local adjustments.

Introduction

Over the past several decades, social science research has emphasized how neighborhoods matter through findings across disciplines that reveal associations between an individual's neighborhood conditions and their life outcomes. For example, distressed neighborhoods are often associated

with lower educational attainment and poorer health, whereas resource-rich neighborhoods provide opportunities for economic mobility and improved life outcomes (Brooks-Gunn et al., 1993; Chetty, Hendren, and Katz, 2016; Ellen and Turner, 1997; Gennetian et al., 2012; Ludwig et al., 2012). Scholars, policymakers, and practitioners have therefore emphasized the importance of providing low-income households with access to high-opportunity areas, that is, neighborhoods with attributes that foster economic mobility such as quality schools, low crime rates, employment opportunities, community resources, and healthy environments. This theoretical perspective has prompted housing strategies and policies that focus on reducing both income and racial residential segregation for low-income households.

The Housing Choice Voucher (HCV) program and its policies are seen as a vehicle capable of deconcentrating poverty and expanding housing opportunities for low-income renters. Low-income households that receive a voucher can use it for any unit in the private market that will accept a voucher and will pass U.S. Department of Housing and Urban Development (HUD) inspection standards. Voucher recipients pay approximately 30 percent of their income towards rent, with the housing authority administering the voucher covering the difference. The purpose of the flexibility provided to voucher households in choosing their unit relative to place-based housing subsidies is to provide them with the *choice* to select the neighborhood and unit that best meets their needs. Early evaluation of the HCV program demonstrates the failure of voucher households to benefit from this choice and access high-opportunity neighborhoods, however (Newman and Schnare, 1997). Subsequent studies continued to highlight this outcome, with voucher holders concentrating in high-poverty, minority-concentrated neighborhoods across varied research contexts (Devine et al., 2003; Feins and Patterson, 2005; Galvez, 2011; McClure, 2008; McClure, Schwarz, and Taghavi, 2015; Metzger, 2014; Varady and Walker, 2000; Walter, Li, and Atherwood, 2015; Wang and Varady, 2005).

Many explanations exist for why voucher holders are not accessing higher-opportunity neighborhoods even though, in theory, the voucher should remove geographic restrictions. For example, perceived and real discrimination by race, source of income, or family structure may limit choice for low-income households (Charles, 2005; Feins and Patterson, 2005; Ondrich, Stricker, and Yinger, 1999; Popkin et al., 2004; Popkin et al., 2003; Smith et al., 2002; Varady and Walker, 2003). Few cities in the United States have enacted "source of income discrimination" laws, which prevent landlords from discriminating against voucher-holding applicants who are otherwise qualified, but lack of enforcement in these areas stifles positive outcomes (Tighe, Hatch, and Mead, 2017). Some landlords will not participate in the HCV program because of their perception of voucher holders or other bureaucratic factors (Garboden et al., 2018). Informal search processes are another factor that may cause reconcentration and perpetuate segregation. Voucher holders often depend on their social networks, only consider neighborhoods that are familiar to them, or have incomplete information during the housing search process (Darrah and DeLuca, 2014; Krysan and Crowder, 2017). The design of the voucher program itself may also contribute to undesirable locational outcomes because the voucher holder is only given a limited timeframe (usually 60 days) to find and lease a unit that is within the allowable rent and meets the inspection requirements of the program (Basolo and Nguyen, 2005; DeLuca, Garboden, and Rosenblatt, 2013).

Furthermore, voucher holders' choice is restricted by the limited number of affordable rental units available in high-opportunity neighborhoods that offer access to employment, transit, and amenities (Schuetz, 2009; Tremoulet, Dann, and Adkins, 2016). Tight housing markets with low vacancy rates exacerbate this challenge (Briggs, Popkin, and Goering, 2010; Feins and Patterson, 2005). Fair Market Rents (FMRs), calculated by HUD for the HCV program, are used to determine payment standards for housing authorities and are established at the 40th percentile of all market rents in a metropolitan area (Kahn and Newton, 2013). These payment standards determine the maximum amount of rental subsidy that a housing authority may provide for each household. FMRs have contributed to the concentration of voucher holders in distressed communities because assisted households are unable to rent units in high-cost areas and therefore are often priced out of higher-opportunity neighborhoods (Collinson and Ganong, 2018; Fischer, 2015).

In response to this programmatic barrier, HUD issued a new rule called Small Area Fair Market Rents (SAFMRs) to expand housing choice in neighborhoods of opportunity for voucher households. SAFMRs are calculated at the 40th percentile of U.S. postal ZIP Codes instead of the overall metropolitan area. The purpose of this new rule is to provide housing authorities with estimates that capture localized rents in their jurisdiction in order to expand choices for voucher holders to access housing units in higher-opportunity neighborhoods.[1] Ellen, Horn, and Schwartz (2016) found that when provided the option, voucher holders will move to higher-opportunity neighborhoods with better schools. Studies on the potential impact of SAFMRs reveal they increase access to high-opportunity neighborhoods by expanding the number of units available to voucher holders in higher-income neighborhoods in most, but not all, metropolitan areas (NYU Furman Center, 2018; Palm, 2018).

Emerging evidence on the outcomes of SAFMRs is limited by its recent implementation in only 24 metropolitan areas. Most of these studies are based on a few years of data available from six demonstration markets. In the earliest evaluation of SAFMRs, Collinson and Ganong (2018) found that payment standards established at smaller geographies improve locational outcomes for voucher holders. Data from Dallas, Texas, the first metropolitan area mandated to implement SAFMRs as part of a court settlement in 2010, indicates voucher households have been able to move out of high-poverty, unsafe neighborhoods with the implementation of SAFMRs (Collinson and Ganong, 2018). The two studies that have been conducted on the other demonstration areas, however, highlight how outcomes may vary depending on the housing market in which SAFMRs are implemented (Finkel et al., 2017; Reina, Acolin, and Bostic, 2019).

What is apparent from this early research is where and how SAFMRs are implemented has implications for program outcomes. This research includes but is not limited to: the ability for households to secure a unit in high-opportunity neighborhoods; the impact on the reduction in rent paid by the housing authority to the landlord in lower-income neighborhoods; and the potential cost increase per voucher to housing authorities administering the program, which may result in fewer households being served by the voucher program over time. This study aims to address how these implementation factors are affected by local rental market conditions for three public housing authorities (PHAs)—Housing Authority of the City of Fort Lauderdale, San Antonio Housing

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[1] Published in the *Federal Register* as a final rule on January 16, 2016. 81 Fed. Reg. 80567.

Authority, and Seattle Housing Authority—in diverse housing markets. By comparing different sources of market rent estimates with SAFMRs in each location, we contribute new information about how this rule is likely to produce different residential outcomes in terms of increased access to low-poverty neighborhoods and adjustments to payment standards in low-rent neighborhoods.

Background

Designated PHAs in 24 metropolitan areas with substantial voucher concentration were required to adopt the new SAFMR rule for all tenant-based vouchers starting at the beginning of 2018. Project-based vouchers, which are housing subsidies attached to the housing unit instead of issued to a voucher household, are exempt from mandatory adoption. SAFMRs are used to establish payment standards for the voucher program. Payment standards determine the maximum amount that a housing authority pays towards rent for a voucher household. PHAs have some flexibility in establishing the payment standard amounts between 90 and 110 percent of the SAFMR, which is also known as the basic range. PHAs may also establish a payment standard for each ZIP Code in their service area, or group ZIP Codes that have SAFMRs within the basic range of all other ZIP Codes within the group (HUD, 2018). For example, Walter (2018) explored grouping ZIP Codes for several PHAs based on the objectives of the SAFMR rule instead of only using the basic range. Since the goal of the rule is to deconcentrate voucher holders and provide access to high-opportunity neighborhoods, ZIP Codes were first grouped by opportunity and voucher concentration, before grouping ZIP Codes by SAFMRs within the basic range. This strategy intends to make it easier for housing authorities to establish local policies and mobility strategies for each grouping and to better track program outcomes (Walter, 2018).

The number of units accessible to voucher holders depends on how the payment standards are established. In high-rent areas, the payment standard needs to be set at an amount that will maximize the availability of units. In lower-rent neighborhoods, PHAs must decide if payment standards should be held constant or reduced. Setting the initial payment standards is likely the greatest challenge for SAFMR PHAs (HUD, 2018). These decisions affect the rent burden for voucher households, the program budget for PHAs, and the locational outcomes for voucher holders.

Potential and Actual Outcomes of SAFMRs

Research on the potential and actual outcomes of SAFMRs demonstrates findings vary for different types of housing markets. Palm (2018) examined the number of rental listings that will become accessible to voucher holders in high-opportunity areas with the implementation of SAFMRs in five metropolitan statistical areas in California. The analysis reveals a range of results from a decline in accessible rentals in San Francisco ZIP Codes with low poverty rates (less than 10 percent) to a 34-percentage point increase in Sacramento. The decrease in San Francisco is likely due to SAFMR calculations not keeping pace in a market that is experiencing rapidly increasing rents (Palm, 2018).

In response to an interim report commissioned by HUD which found the total number of affordable rental units accessible to voucher holders would decrease by 3.4 percent with the implementation of SAFMRs (Finkel et al., 2017), the New York University (NYU) Furman Center specifically analyzed the 24 metropolitan areas mandated to adopt the rule by 2018. The Furman Center suspected the

findings could differ for the set of mandated areas, because the areas were selected based on specific market characteristics (for example, number of voucher holders concentrated in low-income areas, the percentage of renter units in ZIP Codes where the SAFMR is more than 110 percent of the metropolitan FMR, and vacancy rates higher than 4 percent). The findings of this analysis reveal that these markets would likely see an overall 9.1 percent increase in the affordable units available to voucher holders in the mandated metropolitan areas. This availability would vary by housing market, however, with four metropolitan areas—Gary, Indiana; Hartford, Connecticut; Monmouth-Ocean, New Jersey; and Sarasota, Florida—experiencing a decline in the number of affordable rental units. Of the remaining 20 housing markets that will experience an increase, the range is substantial, from a 1.1 percent increase in Pittsburgh, Pennsylvania, to a 28.3 percent increase in San Antonio, Texas. These findings reinforce the conclusion that the results of implementing SAFMRs are likely to vary across different housing markets.

The HUD-commissioned interim report also examines the performance of SAFMRs in the demonstration areas. This study highlights that SAFMRs provide access to more rental units in higher- opportunity areas in the demonstration areas, but again, these gains vary by housing market. For example, very few units are available in high-opportunity neighborhoods in Long Beach, whereas Cook County experienced large gains. In terms of low-opportunity areas, Laredo and Chattanooga lost some units, but Dallas and Long Beach lost substantially more. Overall, the percentage of voucher holders living in high-opportunity neighborhoods among the demonstration areas has risen slightly, from 11 percent to 13 percent. Still, outcomes for new voucher holders vary depending on the market. Laredo experienced the greatest gain; the share of households moving to high-rent ZIP Codes increased from 5 percent to 22 percent, whereas Mamaroneck experienced a decrease from 83 percent to 59 percent (Finkel et al., 2017).

Another study examining the ability of SAFMRs to improve locational outcomes for voucher households found similar regional variation. Reina, Acolin, and Bostic (2019) used tenant data from the six SAFMR demonstration sites—Dallas, Texas; Cook County, Illinois; Laredo, Texas; Long Beach, California; Mamaroneck, New York; and Chattanooga, Tennessee—to determine if increased payment standards allowed voucher holders to access higher-opportunity neighborhoods. Their findings indicate that voucher households in Dallas had the largest gains in moving to neighborhoods where the SAFMR rent was higher than the FMR. Otherwise, results were mixed; Laredo, Long Beach, and Mamaroneck experienced gains but Cook County and Chattanooga underwent decreases. In terms of neighborhood quality,[2] again voucher holders in Dallas experienced the greatest gains, while Chattanooga voucher holders experienced a decline in neighborhood quality (Reina, Acolin, and Bostic, 2019). Furthermore, Reina (2019), using the same demonstration sites, examined if SAFMRs reduce the number of voucher households living in minority concentrated neighborhoods. Findings indicate that SAFMRs only slightly improved access to lower poverty neighborhoods for Black voucher households, particularly in Dallas compared with the other locations. Overall, these studies highlight how differences in the housing markets where PHAs are required to implement SAFMRs are important to understanding variation in outcomes.

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[2] Neighborhood quality in this study is measured by: the poverty rate, unemployment rate, percentage of children living in households headed by single mothers, housing vacancy rate, percentage of fourth graders who are not proficient in math or reading, and violent crime rate (Reina, Acolin, and Bostic, 2018).

Implementation Challenges Relevant to SAFMR Outcomes

Neighborhoods with rapidly increasing rents present a problem for implementing SAFMRs. As Palm (2018) demonstrated in San Francisco, SAFMRs may not keep pace with the actual market; these neighborhoods will not gain units affordable to voucher holders because the payment standard will be set too low. This problem stems from two factors. First, in most markets, SAFMRs use regional and national instead of local inflation trend factors, ignoring the considerable heterogeneity in housing cost trends between metropolitan locations.[3] Second, SAFMRs are calculated from American Community Survey (ACS) estimates, and these data may already include unreliable local estimates with geographical bias and high uncertainty (Bazuin and Fraser, 2013; Folch et al., 2016; Treat, 2017). This issue may be especially true in neighborhoods that are experiencing considerable growth, where housing costs are rapidly increasing (Boeing and Waddell, 2016; Palm, 2018; Treat, 2017). These limitations have prompted researchers to compare SAFMRs with proprietary rental listing data sources to potentially improve housing cost estimates within local rental housing markets.

As an example, Palm (2018) used Rent Jungle data and compared it against Boeing and Waddell's (2016) Craigslist data, finding that the two proprietary sources are more aligned with each other than with the ACS data. Walter (2018) compared SAFMRs with CoStar and Apartments.com data in three housing markets—Fort Lauderdale and Jacksonville, Florida, and San Antonio, Texas. The results highlight considerable rent variations from the SAFMR in some neighborhoods that could lead to fewer families being served by the program or may continue to prevent some households from being able to access units in higher-cost neighborhoods (Walter, 2018). Proprietary sources allow for real-time rental listing estimates at very precise geographic scales, and combined temporal and spatial granularity may be able to provide insight for establishing payment standards in areas where SAFMRs are not accurately reflecting the current rental market.

Another implementation challenge is the impact on households in lower-income neighborhoods where SAFMRs reduce payment standards. Landlords may refuse to decrease rents for current voucher tenants. If the household stays, it will be responsible for paying more towards rent, causing a greater housing cost burden. Housing authorities may decide to implement a "hold harmless" policy for existing tenants that prevents a reduction in their payment standard, but new households admitted to the program may find it difficult to lease units in lower-income neighborhoods because of the payment standard reduction. Further, the interim report on the demonstration areas indicates that such rent adjustments particularly impact households with disabled and elderly members that do not have the means to move. The amount paid by tenants towards rent increased by 16 percent in a 5-year period, with the largest increases (22 percent) observed among lower-rent ZIP Codes (Finkel et al., 2017). In response, PHAs are implementing hold harmless policies, but this approach has financial implications on the number of voucher holders they are able to serve.

As a Moving to Work (MTW) agency with authorization from HUD to design strategies to use federal funding more effectively and request exemptions on voucher rules, King County Housing

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[3] In 23 markets, the local consumer price index produced by the Bureau of Labor Statistics is used, but even in these markets, the adjustments will not be able to account for neighborhood specific trends.

Authority in Washington has been implementing policies that use multiple payment standards to better reflect the local rental market since 2001. Although not required to adopt SAFMRs, King County is currently using a six-tier payment standard system. Given the concern over the impact on households in lower-cost areas, King County did not decrease payment standards in these areas at the time of implementation but instead chose to increase the payment standard in these areas to a lesser extent than high-cost neighborhoods. This decision prevented housing costs from rising for households in low-rent areas at the onset of implementation. The payment standard in low-cost areas is now held below the FMR (King County Housing Authority, 2017). This alternative may be one implementation option for housing authorities because they are not required to reduce the payment standard in low-rent areas (HUD, 2018). Holding the payment standard constant, however, increases program costs.

The extent to which new and existing households change their locational patterns in response to the implementation of the SAFMRs will affect the cost of the program and thus influence the number of households the housing authority is able to serve. The HUD interim analysis on the demonstration sites found that the amount housing authorities paid for rent and utilities on behalf of voucher holders decreased on average by 13 percent over a 5-year period. This decrease was substantial in lower-rent areas (30 percent), whereas higher-rent areas experienced an average increase of 3 percent (Finkel et al., 2017). If payment standards are reduced in low-rent areas during implementation, it is reasonable to assume that SAFMRs will result in cost savings for housing authorities. As more voucher holders move to higher-cost areas over time, however, total costs to agencies will likely increase. King County Housing Authority explored long-term cost implications and the hypothetical average payment they could expect, based on the number of households that move to higher-cost neighborhoods. They found that by 2019 the costs savings gained from using multiple payment standards rather than the FMR may be eliminated, and costs may rise based on future mobility trends (King County Housing Authority, 2017).

The points previously raised highlight the need for a comprehensive understanding of the rental markets in which SAFMRs are implemented, as there are significant implications for a household's ability to secure a unit in the neighborhood of their choice and for the cost to the housing authorities administering the program. This research aims to compare the SAFMRs with other rent measures and analyze how they compare in three very different markets. The findings will provide further insight for PHAs currently implementing and considering implementing SAFMRs.

Study Areas

The study areas were selected based on diverse market characteristics and the willingness of the local housing authorities to participate in the study. The three housing authorities that participated in this study vary by location, size, and programs. The Housing Authority of the City of Fort Lauderdale (HACFL) administers over 3,000 vouchers and manages 1,250 tax credit units, 170 affordable housing units, and 95 public housing units. HACFL's service area focuses on Fort Lauderdale but they manage housing units in other cities in Broward County with the exception of the City of Hollywood, which is the only housing authority in the county with which HACFL does not have an interjurisdictional agreement. In the final rule, HACFL was in an area that met the

SAFMR area criteria and was mandated to adopt SAFMRs. HACFL implemented SAFMRs in 2018 based on grouping all ZIP Codes that had SAFMRs within 10 percent of one another resulting in six different payment standards.

The San Antonio Housing Authority (SAHA) is one of the 39 public housing authorities that has MTW status, which gives housing authorities the flexibility to implement innovative activities and programs to enhance housing and services for residents. SAHA serves over 65,000 residents in the city with average incomes of less than $12,500 annually. SAHA administers over 14,000 vouchers and manages more than 6,000 public housing units along with approximately 7,000 mixed-income housing units. In the final rule, SAHA was also mandated to adopt SAFMRs. Based on extensive research, they established two payment standards in 2018 and established a SAFMR Committee to assess the potential impact of making additional changes to their two submarkets.

The Seattle Housing Authority (SHA) also has MTW designation. SHA serves 34,000 residents in the city of Seattle and administers over 10,000 vouchers. They also own and operate more than 8,000 housing units spanning 400 sites throughout Seattle. Although SHA is not one of the areas mandated to adopt SAFMRs, they have been working towards strategies to provide additional housing opportunities to voucher households. As a high-cost market that has seen rapidly increasing rents over the past few years, it has become difficult for voucher holders to locate housing within the city. SHA has implemented strategies like longer search times and is participating in pilot projects such as the Creating Moves to Opportunity that includes a counseling program and higher payment standards for families looking to move to high-opportunity areas with the goal of finding new approaches that will best assist their households and improve long-term outcomes. SHA also participated in a local survey led by King County Housing Authority to update FMRs for the region. The last local survey was completed in 2017 and was made effective for 2018. It resulted in an average FMR increase of 22 percent compared with the original FMR.

The three rental housing markets are diverse in terms of size, rent levels, and vacancy as shown in exhibit 1. Seattle is a higher-cost, lower-vacancy market with high income that results in the lowest levels of rent burden (45 percent). San Antonio is a low-cost, low-income market with relatively high vacancy and a 52 percent share of rent burden households. Fort Lauderdale, while having lower housing costs than Seattle and substantially higher vacancy, has lower household income resulting in a higher share of rent burden households (63 percent).

Exhibit 1

Rental Housing Market Profiles

	Fort Lauderdale	San Antonio	Seattle
Total Housing Units	93,917	552,520	355,293
Total Housing Units per Square Mile	2,587	1,187	2,501
Renter Occupied Units/Percent of Total Housing Units	33,690 (35.87%)	226,675 (41.03%)	174,245 (49.04%)
Rental Vacancy Rate	9.40%	9.10%	3.90%
Average Household Size of Renter-Occupied Units	2.40	2.70	1.90
Median Gross Rent	$1,217	$926	$1,555
Median Household Income	$56,309	$50,044	$86,822
Cost Burden Renter Households (Paying More Than 30 Percent of Income on Rent)	63.30%	51.90%	44.60%

Source: 2017 American Community Survey 1-year estimates

Data and Methods

Information on real estate markets is imperfect. In particular, measures of rent levels and changes are difficult to establish because, unlike sales, rental contracts are not recorded publicly. This lack of data means it is only possible to collect information about contract rent via an ad-hoc and decentralized process. Establishing constant quality in rental estimates is further complicated by the heterogeneous nature of housing units and cyclical variations in the units available for rent.

Traditionally, the main national source of rent estimates at small levels of geography (ZIP Code or below) was the Decennial U.S. Census, with measures for intercensal years extrapolated from the last Census figures. In the last decade, however, several new public and private national rental measures available at small levels of geography and updated at least annually have emerged. Since 2009, the 5-year estimates of the U.S. Census Bureau ACS have provided median contract and gross rent information down to the census tract level. These estimates are updated annually but only available with a lag—even at the time of release they still rely on information that is up to six years old. For example, a fifth of the data used for the 2012–2016 ACS estimates was collected in 2012 and the estimates were released in December 2017. Another limit is that the ACS provides a reliable estimate of rent paid by all renters but does not produce a precise estimate of current market rent because some of these rents reflect contracts that were signed several years ago. To account for these issues with the ACS, the FMRs and SAFMRs released annually by HUD rely on custom estimates of the data produced by the Census Bureau on recent movers in two-bedroom units adjusted for inflation as discussed above.

Several private sources for rental information have also emerged with estimates of local rental costs. Zillow, a residential real estate services firm, offers rental estimates down to the ZIP Code or neighborhood level on a monthly basis with a one-month lag. These estimates include the median asking rent and are available by building type or bedroom size along with their own adjusted rental

measures controlling for the characteristics of the units being advertised and seasonal variations. A limitation of these estimates is that the data used are dependent on unmeasured biases in the listings that are on the platform. A number of other online rental platforms also provide estimates based on their listings or those of their affiliates with similar sources of bias (for example, CoStar/ Apartments.com, StreetEasy, Zumper).

More recently, the potential of using the listings on online platforms to produce custom estimates with high levels of geographic specificity, unit type, and timeliness has emerged (Boeing and Waddell, 2016). Scraping these sources still has limits similar to the estimates produced by Zillow and other online listing platforms because they do not capture rental listings that are advertised through other channels such as signs in windows, newspaper ads, or posting boards at shops. The direction and extent of the bias of relying on online listings are unclear and further work is admittedly needed to examine how differences in coverage by online sources vary across communities. Another limit is that these data capture asking rent and not contract rent. Given that the rental market is generally considered to be a spot market with transactions taking place quickly for the advertised rent, this distinction is less of a concern than for sale transactions except in a few markets with oversupply in which renters might have some bargaining power. For the purpose of establishing rent estimates for voucher recipients, another shortfall is that only limited information about the quality of the units and utility payments will generally be provided in the listing.

In this article, existing rental estimates are compiled for three markets: Broward County, Florida; San Antonio, Texas; and Seattle, Washington. Existing rental estimates from HUD's SAFMRs, ACS, Zillow, and CoStar are compared with estimates produced from scraped Craigslist and Apartments. com listings (the methodology is described in the following paragraph). Next, rental estimates are compared in terms of overall descriptive statistics, coverage, and correlation to understand differences in the level and distribution of rents between market data sources and public data estimates like the ACS or HUD's SAFMRs. The differences between HUD's 2018 SAFMRs and the produced 40th percentile asking rent estimates are the presented summary evidence of systematic differences between study areas in terms of increased neighborhood access and potential for net reduction in subsidy, variations which we argue are related to the diverse resident and housing stock characteristics across these locations.

In order to collect rental data from Craigslist and Apartments.com for this project, we are using *Helena*, a novel programming by demonstration (PBD) tool that one of the authors is developing (Chasins and Bodik, 2017). Non-programmers can interact with Helena to specify what data they want to collect from a given webpage. To scrape a dataset, the user records himself interacting with a standard browser, demonstrating how to collect the first row of the data. To collect all the rental listings from a platform, the user demonstrates how to click on the first listing, then how to collect the price, number of bedrooms, address, and other target data from the listing's webpage.

We used Helena for collecting rental listings from February to August 2018. Each of these programs ran continuously, re-executing the program from the start as soon as it reached the end of the list of posts. Relative to scraping only periodically (for example, weekly), this method ensures that all listings posted on the platform were captured, even if they are only online for a few days. The listings are then geocoded based on street addresses included within metadata for the

listing. We have a very high geocoding success rate when listings include address information in their metadata or within their advertisement text, with approximately 98 percent or more of listings geocoded to a rooftop or range interpolated position on a road (if an address was present), or a buffer location (if cross-streets were provided).

Helena allows us to capture listings on multiple platforms and in multiple markets. The collected data still requires substantial post-collection processing to identify duplicate postings of the same units over time, however, both on the same platforms and across platforms. We first deduplicate scraped listings within each source to create sets of listings with unique values based on bedroom sizes, square footage, and spatial locations. To assess the overlap between Craigslist and Apartments.com, we explored different ways to match the listings. Our final implementation requires that location fields, bedroom size, and square footage must be the same between data sources, with an absolute difference of $50 allowed between the two listings being compared. This approach finds match rates of approximately 10 to 25 percent (relative to the number of Apartments.com listings). This assessment is an essential process as we found duplicates are particularly concentrated among higher-rent properties, biasing estimates upward if not removed.[4]

Our final dataset has more than 11,000 unique observations from which to derive rent estimates. We then compute bedroom-specific 40th percentiles of rent for each ZIP Code where we have more than five observations for a given unit size.[5] This function also estimates standard errors for quantiles of interest using a bootstrap approach allowing us to provide a measure of the margin of error for the estimates.

In an effort to produce robust estimates that account for differences in density of posting by bedroom size and spatial patterns in rental markets, we use Bayesian hierarchical smoothing models estimated using Integrated Nested Laplace Approximations (INLA). This estimation procedure is applicable to generalized linear regression models, which are themselves a case of a broader set of models called Latent Gaussian Models (LGMs). These models are expressed in terms of a conditionally independent likelihood function, a latent field which is Gaussian conditional on the hyperparameters, and prior distributions of the hyperparameters. INLA approximates the marginal posterior distributions of the parameters of interest, and in general, provides reliable estimates. We follow the specification of Besag, York, and Mollié (1991) in using an Intrinsic Conditional Autoregressive (ICAR) random effect and an exchangeable random effect for each unit to model spatial structure. As spatial (or space-time) models, they partially pool variation from contiguous spatial neighbors, other bedroom sizes or prior observations to smooth over local deviations in the estimated rent surface. The benefit of these models is that partial pooling induces shrinkage in the predicted estimates and also that they provide a model-based approach for imputing values where direct estimates were missing. Shrinkage towards the conditional mean reduces the bumpiness in the rent surface related to sampling variability (for example, low N). We calculated the margin of errors around these estimates, generally around 10 percent of the estimate. The estimates that are generated through this method using the Craigslist and Apartments.com data are referred to in the remaining sections of the paper as the combined rent estimates.

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[4] On the other end, it is possible we miss some units if one posting is used to advertise several units.

[5] This method is admittedly an arbitrary threshold based on the lowest number of observations for which the 40th percentile can be estimated.

Results

Market Level Summary Measures

Exhibit 2 presents summary measures of the nine rent estimates we compared for the three locations: HUD's SAFMR, the 2012–2016 ACS at the ZIP Code and Public Use Microdata Area (PUMA) level, Apartments.com, Craigslist, the combined rent estimates based on the Apartments. com and Craigslist data (our preferred estimate and the one used for comparison in the remaining section of the paper), CoStar, and Zillow.[6] When possible, we present the 40th percentile estimates for two-bedroom units.[7] Exceptions include the ACS data which uses the median for all units at the ZIP Code level, the 40th percentile for two-bedrooms at the PUMA level, and for Zillow where the only available estimate is the median value. All measures are based on asking rent for current listings with the exception of the ACS-derived measures that are based on the gross rent amount (contract rent plus utility costs) and CoStar that captures rents for existing tenants.

The first observation made is in terms of coverage. Only the estimates based on the ACS and the combined rent estimates have complete coverage in all three locations, providing a rent estimate for all ZIP Codes in these jurisdictions. CoStar estimates are also extensive with Zillow and Apartments.com having lower levels of coverage with variation across locations. Developing measures that ensure extensive coverage is crucial to support the decision process of public agencies that must cover their entire jurisdiction.

The second observation is that all sources are consistent on relative rent level of markets from lowest to highest based on mean or median. Rent estimates vary, however, even when excluding the ACS measures that are lagged. Average estimates range from $952 to $1,240 in San Antonio, from $1,403 to $1,860 in Broward, and from $1,683 to $2,547 in Seattle. Variations at the market level are also found through the variations in subareas' minimum and maximum levels across sources.

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[6] All rent measures are 2018 estimates in 2018 dollars, except for the ACS measures that are based on the 2012–2016 5-year estimates in 2016 dollars (which is used to create the 2018 SAFMR estimate).

[7] Throughout our analysis, we focus on rent estimates for two-bedroom units for two reasons: (1) it is the most common size for rental units; and (2) it is the size of units used for the custom ACS from which the SAFMR for all unit sizes are derived using a set ratio.

Exhibit 2

Summary Rent Estimates

	Mean	SD	Median	Min.	Max.	N
Broward						
SAFMR	1,531	252	1,460	1,180	2,080	47
ACS 2012–2016 [Median, All Unit Sizes]	1,191	298	1,073	854	2,130	47
Apartments.com	1,860	525	1,758	1,138	3,114	26
Craigslist	1,576	234	1,156	1,175	2,110	45
Combined Smoothed Estimate	1,626	210	1,597	1,271	2,261	47
CoStar	1,403	305	1,314	960	2,127	45
Zillow [Median]	1,598	304	1,500	1,250	2,500	42
ACS 2012–2016 Contract Rent [2 Bed, PUMA]	1,117	147	1,100	1,000	1,500	14
San Antonio						
SAFMR	1,041	175	995	870	1,500	60
ACS 2012–2016 [Median, All Unit Sizes]	752	212	711	454	1,354	60
Apartments.com	1,240	421	1,077	783	2,295	33
Craigslist	952	158	949	673	1,375	56
Combined Smoothed Estimate	1,015	226	947	780	1,718	60
CoStar	976	284	909	610	2,041	52
Zillow [Median]	1,109	322	1,005	880	2,208	20
ACS 2012–2016 Contract Rent [2 Bed, PUMA]	788	152	800	550	1,200	16
Seattle						
SAFMR	2,072	330	2,070	1,500	2,820	26
ACS 2012–2016 [Median, All Unit Sizes]	1,144	174	1,193	831	1,466	26
Apartments.com	2,547	522	2,557	1,604	3,697	18
Craigslist	1,786	257	1748	1,399	2,552	26
Combined Smoothed Estimate	2,163	355	2,099	1,532	3,102	26
CoStar	1,683	455	1,574	1,195	2,961	26
Zillow [Median]	2,239	394	2,223	1,673	2,891	11
ACS 2012–2016 Contract Rent [2 Bed, PUMA]	1,533	233	1,500	1,200	1,900	5

ACS = American Community Survey. PUMA = Public Use Microdata Areas. SAFMR = Small Area Fair Market Rents. SD = Standard Deviation.
Note: The year of the data is 2018 except for the ACS data that is based on 2012–2016, 5-year estimates.

In terms of variations across sources, the 2012–2016 ACS and CoStar measures tend to be the lowest while the Apartments.com and Zillow measures are generally the highest. The SAFMR, Craigslist, and the combined rent estimates are generally in between. This finding suggests that the bias in the data sources has a systematic component, likely linked to the data generation process. Potential sources of the differences include current asking rent versus contract rent for existing tenants, selection of higher or lower end of the housing stock, and median versus 40th percentile rents.[8]

Exhibit 3 reports the correlation between the ZIP Code-level rental estimates for the three locations for two-bedroom rent measures (except for the ACS measure that is for all unit sizes). The SAFMR and the ACS are highly correlated (.9 or above) as would be expected because the former is derived from the latter with most of the adjustments being made at the national level and not changing the relative estimates within a given market. The combined rent estimate is highly correlated with Zillow's median estimate with a correlation of .8 in Broward and close to 1.0 in San Antonio and Seattle. The correlation of the combined rent estimate with the Apartments.com, Craigslist, and CoStar measures are also generally high (somewhat less so in the case of CoStar). The high level of correlation between the combined rent estimate and other market measures in all three locations suggests that this similarity is a robust measure of local rent levels and variations despite the potential for biases due to differences in coverage and type of units posted on different platforms.

The correlation between the SAFMR measure and the other rental market measures varies by housing market. The correlation of the SAFMR with the combined rent estimate is positive and significant in the three locations but varies from .8 in Seattle and .6 in Broward to less than .4 in San Antonio. Similarly, the correlation of the SAFMR with CoStar and Zillow measures vary from .3 to .8. This variation shows that in a market like San Antonio, the SAFMRs substantially differ from other rental measures in ways that are not systematic while the other market measures (the combined rent estimate and the measures from CoStar and Zillow) are more closely correlated.[9]

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[8] Zillow and the Census summary data report median rent. HUD estimates that the difference between the median and the 40th percentile is about 11 percent based on the national-level gross rents for two-bedroom units in special tabulations of the 2017 ACS.

[9] If the difference between the SAFMR and other measures are systematic, for example if the difference is always 20 percent lower or higher, the correlation would be 1.0 even if the absolute difference was substantial.

Exhibit 3

Correlation Between ZIP Code Rent Estimates

	SAFMR	ACS 2012-2016	Apartments. com	Craigslist	Combined Rent Estimate	CoStar	Zillow
Broward							
SAFMR	1.00						
ACS 2012–2016 [Median, All Unit Sizes]	0.94	1.00					
Apartments.com	0.35	0.31	1.00				
Craigslist	0.51	0.50	0.75	1.00			
Combined Smoothed Estimate	0.61	0.62	0.81	0.87	1.00		
CoStar	0.78	0.83	0.31	0.52	0.59	1.00	
Zillow [Median]	0.34	0.30	0.85	0.75	0.80	0.23	1.00
San Antonio							
SAFMR	1.00						
ACS 2012–2016 [Median, All Unit Sizes]	0.95	1.00					
Apartments.com	0.35	0.31	1.00				
Craigslist	0.51	0.50	0.75	1.00			
Combined Smoothed Estimate	0.36	0.48	0.81	0.87	1.00		
CoStar	0.47	0.58	0.81	0.72	0.90	1.00	
Zillow [Median]	0.35	0.76	0.85	0.75	0.96	0.94	1.00
Seattle							
SAFMR	1.00						
ACS 2012–2016 [Median, All Unit Sizes]	0.89	1.00					
Apartments.com	0.75	0.70	1.00				
Craigslist	0.64	0.49	0.86	1.00			
Combined Smoothed Estimate	0.78	0.60	0.87	0.87	1.00		
CoStar	0.82	0.57	0.85	0.89	0.94	1.00	
Zillow [Median]	0.85	0.88	0.86	0.97	0.98	0.89	1.00

ACS = American Community Survey. SAFMR = Small Area Fair Market Rent.

Several ZIP Codes have estimated market rents that fall outside the basic range of 90 to 110 percent across the three study locations. Exhibit 4 summarizes the share of ZIP Codes in which the combined estimate is 10 percent or more below the SAFMR, within the basic range of 10 percent of the SAFMR, and more than 10 percent higher. In all three locations, the patterns are generally similar across bedroom size but with some variation. In Broward and Seattle, most estimates are within the basic range of the SAFMR. Among those that are not, there are generally more ZIP Codes in which the combined rent estimates are above the basic range of the SAFMR (over one-fourth of ZIP Codes for two-bedroom units in both locations) rather than below it. In San Antonio, more than one-third of all ZIP Codes have combined rent estimates that are below the basic range of the SAFMR for all unit sizes and less than 10 percent of the ZIP Codes are above the basic range. These variations indicate that, depending on local market dynamics, the difference between the SAFMR and other measures of market rents might not occur in the same direction.

Exhibit 4

Share of ZIP Codes Above, Within, and Below the SAFMR Basic Range, by Number of Bedrooms

	Number of Bedrooms	Below 0.9	Within 0.9-1.1	Above 1.1
Broward Total ZIP Codes = 47	1	3.8%	56.6%	28.3%
	2	3.8%	56.6%	28.3%
	3	47.2%	34.0%	7.5%
	4+	17.0%	58.5%	13.2%
San Antonio Total ZIP Codes = 60	1	38.4%	37.0%	6.8%
	2	34.2%	38.4%	9.6%
	3	42.5%	32.9%	6.8%
	4+	42.5%	32.9%	6.8%
Seattle Total ZIP Codes = 26	1	19.4%	51.6%	12.9%
	2	6.5%	51.6%	25.8%
	3	29.0%	48.4%	6.5%
	4+	12.9%	51.6%	19.4%

Exhibits 5, 6, and 7 show the ratio of the combined rent estimates relative to the SAFMR for two-bedroom units in the ZIP Codes covering the study locations. Areas in which the combined rent estimates are outside the basic range of the SAFMR are highlighted. Spatial patterns emerge in areas in which the combined rent estimates differ substantially from the SAFMRs suggesting that some of the differences may be systematically associated with housing stock and resident characteristics. The next subsection reveals that areas with lower or higher estimates compared with SAFMRs share common characteristics.

Exhibit 5

Difference Between Combined Rent Estimates and SAFMRs in Broward County,
Two-Bedroom 40th Percentile Rent

Broward County
ZIP Code, 40th Percentile Rent, 2 Bedroom,
Combined Rent Estimates as Percent SAFMR

Estimates/SAFMR
(2 Bedroom 40th Percentile Rent)

- <= 90%
- 91 - 110%
- > 110%
- NA

SAFMR = Small Area Fair Market Rent.
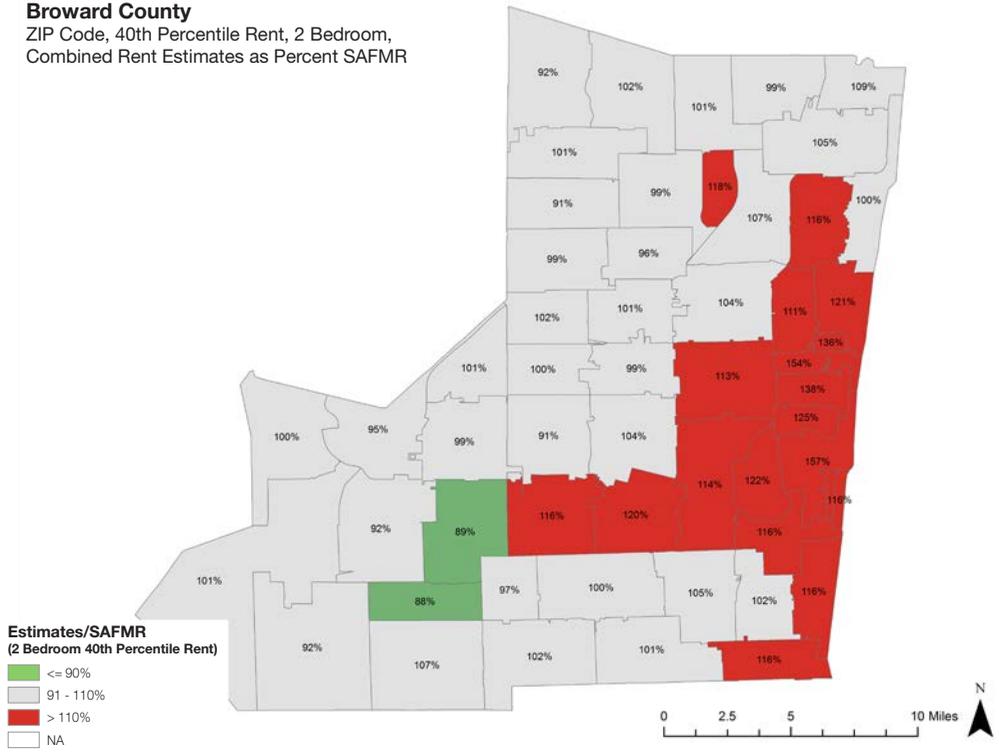
Exhibit 6

Difference Between Combined Rent Estimates and SAFMRs in San Antonio, Two-Bedroom 40th Percentile Rent
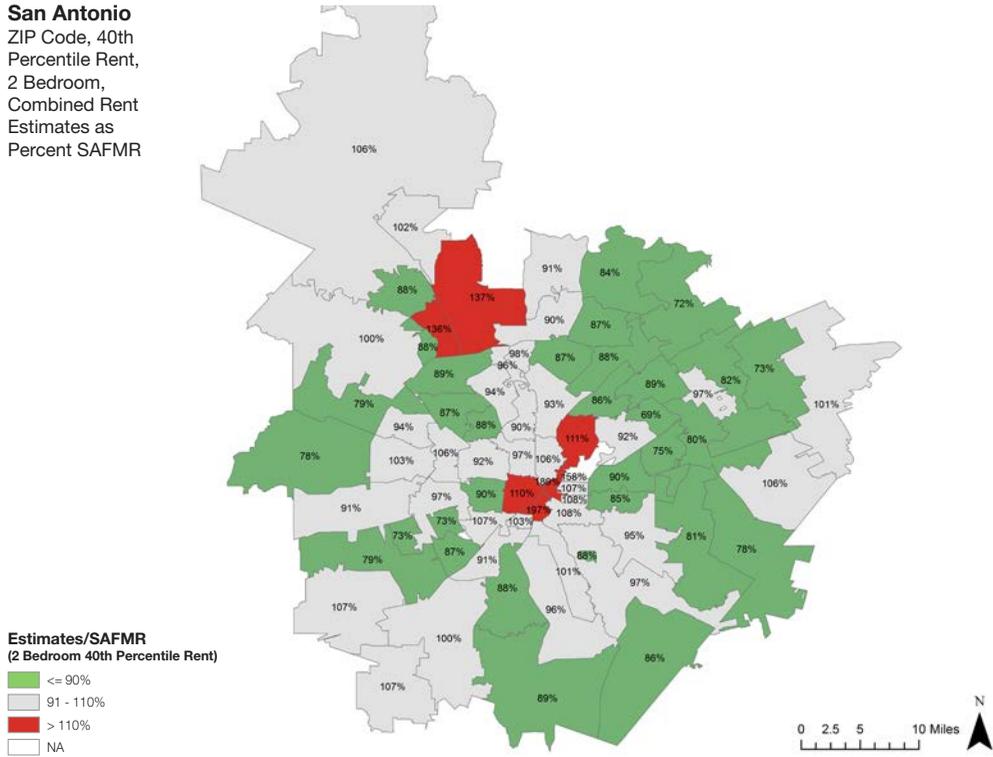
SAFMR = Small Area Fair Market Rent.

Exhibit 7

Difference Between Combined Rent Estimates and SAFMRs in Seattle,
Two-Bedroom 40th Percentile Rent

Seattle
ZIP Code, 40th
Percentile Rent,
2 Bedroom,
Combined Rent
Estimates as
Percent SAFMR

89.7%   91.2%

97.2%

100.1%   91.2%

108.1%   92.4%

102.8%   96.8%

103.0%   118.4%

93.7%   110.3%

101.4%

100.2%   111.8%

117.9%

130.6%   120.8%

103.5%   117.4%

104.3%   122.2%   129.0%

107.9%   112.8%

102.3%   87.5%

Estimates/SAFMR
(2 Bedroom 40th Percentile Rent)

-   <= 90%
-   91 - 110%
-   > 110%
-   NA

N

0   2.5   5   10 Miles
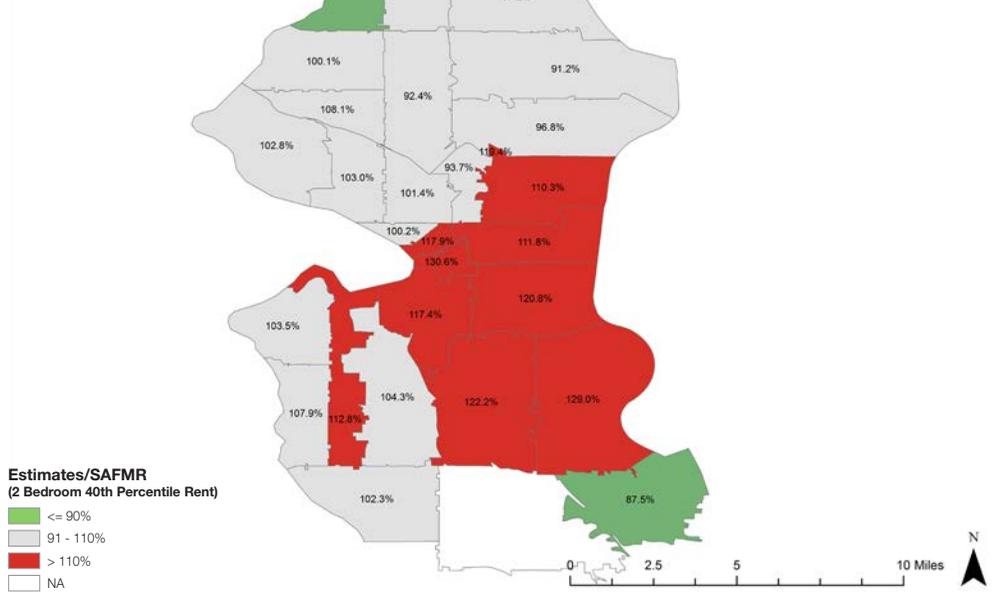
SAFMR = Small Area Fair Market Rent.

Characteristics of ZIP Codes Where SAFMRs and Combined Rent Estimates Differ

Exhibits 8 and 9 report differences in building stock and neighborhood characteristics where SAFMRs and the combined rent estimates differ. Exhibit 8 shows areas based on whether the estimated 40th percentile for two-bedroom units is below (dots), within (solid), or above (stripes) the basic range of the SAFMR. For ZIP Codes where the combined rent estimate is below the basic range, on average the combined rent estimates relative to those within the basic range are—$287 higher in Broward, $10 lower in San Antonio, and $406 lower in Seattle. The ZIP Codes where the combined rent estimate is above the basic range have higher rents on average and this observation holds across the three study locations—$103 higher in Broward, $487 higher in San Antonio, and $247 higher in Seattle.

Exhibit 8

Combined Rent Estimates for Two-Bedroom Units Below, Within, and Above the Basic Range
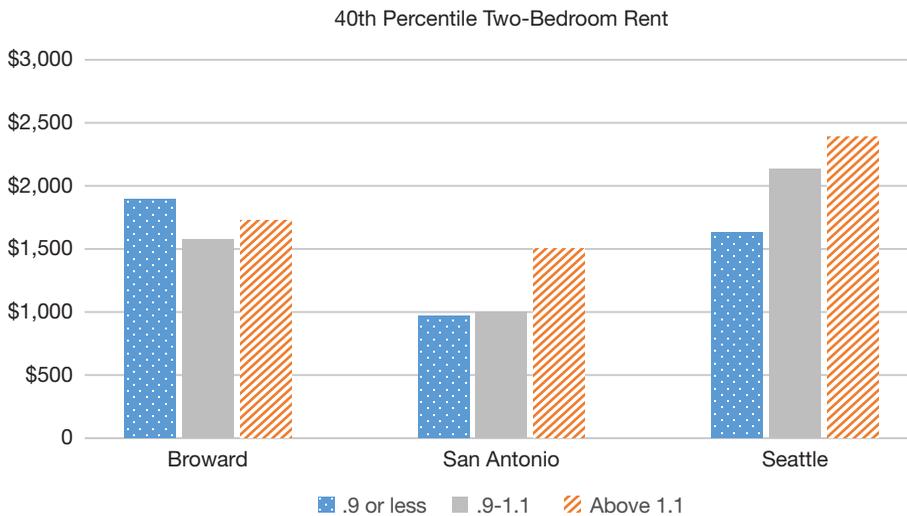
Exhibit 9 summarizes the neighborhood characteristics of ZIP Codes with combined estimates below, within, and above the basic range using ACS 5-year estimates for: poverty rate, homeownership rate, vacancy rate, share of multifamily units, and share of rental units built since 1990. The differences between the ZIP Codes that fall within each category are in the same direction across the three locations. In ZIP Codes that the combined rent estimate is above the basic range, there are higher poverty rates, vacancy rates, and share of multifamily buildings, with lower homeownership rates. The reverse relationship is found in ZIP Codes in which the combined rent estimate is below the basic range of the SAFMR. These findings suggest that the SAFMR is more likely to be underestimated compared with asking rents in neighborhoods with higher-vacancy rates and share of multifamily buildings. This outcome might be because multifamily buildings have higher turnovers and are therefore overrepresented in listings relative to their share of the housing stock. At the same time, the fact that the SAFMR is more likely to be above the combined rent estimate in areas with lower poverty rates and fewer rental options might support voucher recipients' access to these neighborhoods. Further work is needed to examine what might

explain these systematic differences between the combined rent estimate and the SAFMR. Some of the systematic differences could be driven by the adjustments made to produce the SAFMR estimates that, for example, exclude recent units, units lacking full kitchen and bathrooms, or that are below a certain rent level. The exclusion of these units is justified by regulations and policy goals but might explain why the SAFMR departs from other rental market measures.

We also looked at the relationship between the share of rental properties that were recently built (since 1990) and find that in the three locations the combined rent estimate is more likely to be above the SAFMR basic range in areas that have a higher share of recently built renter-occupied housing units. This outcome suggests that one of the contributors to the differences may be the fact that the SAFMR removes properties built within the last 2 years of the ACS to avoid including potential rent premiums associated with new construction. Further, Broward and San Antonio ZIP Codes where the combined rent estimate is below the SAFMR basic range also have a higher share of apartments built after 1990.

Discussion

The comparison of rental measures across three diverse housing markets—Broward, San Antonio, and Seattle—indicates SAFMRs broadly reflect local market conditions and HUD adjustments applied to the ACS data adjust point estimates closer towards asking rents. This study provides evidence of substantial differences across rent measures in terms of estimated levels and relative differences across ZIP Codes, however. Rent measures derived from asking rents on online platforms—Apartments.com, Craigslist, and Zillow—are generally more correlated to each other than compared with the SAFMRs or ACS data.

The combined rent estimates based on scraping and processing listings posted on Apartments.com and Craigslist are closely aligned with Zillow's rent estimates. The combined rent estimates have the benefit of providing a measure for every ZIP Code and can be produced for diverse geographies and time frames. When compared with the SAFMR, the combined rent estimates are below or above the basic range of the SAFMR in a substantial share of ZIP Codes. This finding suggests that housing authorities may face challenges in meeting the objectives of the SAFMR final rule without some form of local adjustments.

As an example, Broward County has a large share of ZIP Codes where the combined rent estimates are higher than the SAFMR. Many of these ZIP Codes are in areas that are opportunity rich in terms of accessibility to jobs and transit and score high in neighborhood quality.[10] If the Housing Authority of the City of Fort Lauderdale continues to base their payment standards on the SAFMRs in these particular ZIP Codes, the objectives of deconcentration and mobility to high-opportunity areas may be stifled because the payment standard is still too low for voucher holders to access these neighborhoods. The housing authority may need to consider an adjustment to the payment standard by providing evidence that the SAFMR is not keeping pace with rapidly increasing rents in these ZIP Codes. Seattle also has the same issue in a large number of ZIP Codes clustered in the southern half of the city whereas this issue is only prevalent in two distinct areas in San Antonio.

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[10] See Walter, Evans, and Atherwood (2016) for the accessibility and neighborhood quality indices in Broward County.

On the other hand, SAFMRs above the combined rent estimates present another potential problem for housing authorities. For example, the San Antonio Housing Authority has many ZIP Codes throughout the city where the combined rent estimates are substantially below the SAFMR. This situation is problematic for the San Antonio Housing Authority as an MTW agency because they must continue to serve the same number of households without additional funding for the voucher program. If the payment standard is set too high and overcharging is systematically occurring, the housing authority will not be able to continue to serve the same number of households while increasing payment standards in higher-opportunity, higher-cost areas. To balance the various goals of program implementation, which include maintaining the number of households served while minimizing any negative impacts to exiting voucher households in low-cost neighborhoods, the San Antonio Housing Authority has proposed the following in their 2020 Annual MTW Plan: (1) setting the payment standard schedule between 81 to 90 percent of SAFMRs to make sure the program is financially feasible; and (2) including a hold harmless and exception overlay policy. This policy protects existing voucher recipients from a payment standard reduction so they can stay in place if they so choose.

Further work is needed to understand why SAFMRs systematically differ from market conditions to guide adjustments to better align SAFMR estimates with local housing market conditions. Absent appropriate measures to make these adjustments, there is a risk that households will have difficulty accessing neighborhoods in which the combined rent estimates are substantially higher than the SAFMRs. Without adjustments, the stated goals of the SAFMR to deconcentrate voucher recipients and increase choice through the creation of localized rental estimates may be compromised. Conversely, as indicated by the San Antonio Housing Authority example, without careful consideration of local rental market data and setting payment standards solely based on SAFMRs, the financial feasibility of the program may be threatened. If not carefully monitored, payment standards based only on SAFMRs may result in a lower number of households being served by the voucher program.

The ability to monitor rental trends and have reliable estimates is essential for housing authorities using SAFMRs. This verification is particularly important in markets with high growth and in neighborhoods with rapidly changing conditions. Take, for example, the characteristics of ZIP Codes with combined rent estimates that are above the basic range of the SAFMR. These areas have a higher share of rental units in multifamily buildings, higher vacancy rates, and a higher share of apartments recently built. These characteristics are potentially contributing to mismeasurement and voucher recipients may have difficulty finding eligible units and successfully leasing in these neighborhoods if adjustments are not made. Therefore, it is vital for housing authorities to have access to and track local rental listing data in neighborhoods that are experiencing rapid growth. This monitoring will provide guidance for adjustments to payment standards that will better reflect the local market. ZIP Codes with combined rent estimates that are below the basic range of the SAFMR are just as important for housing authorities to monitor. Landlords may be able to extract higher rent from housing authorities than what is justified based on local market conditions. Biases in the underlying data sources that rental estimates are created from should be carefully considered to maximize the potential of using small area rental estimates to expand choice for voucher holders to access high-opportunity neighborhoods while maintaining the ability of housing authorities to continue to serve as many voucher households as possible.

Exhibit 9

Differences in Neighborhood Characteristics for ZIP Codes Below, Within, and Above the Basic Range
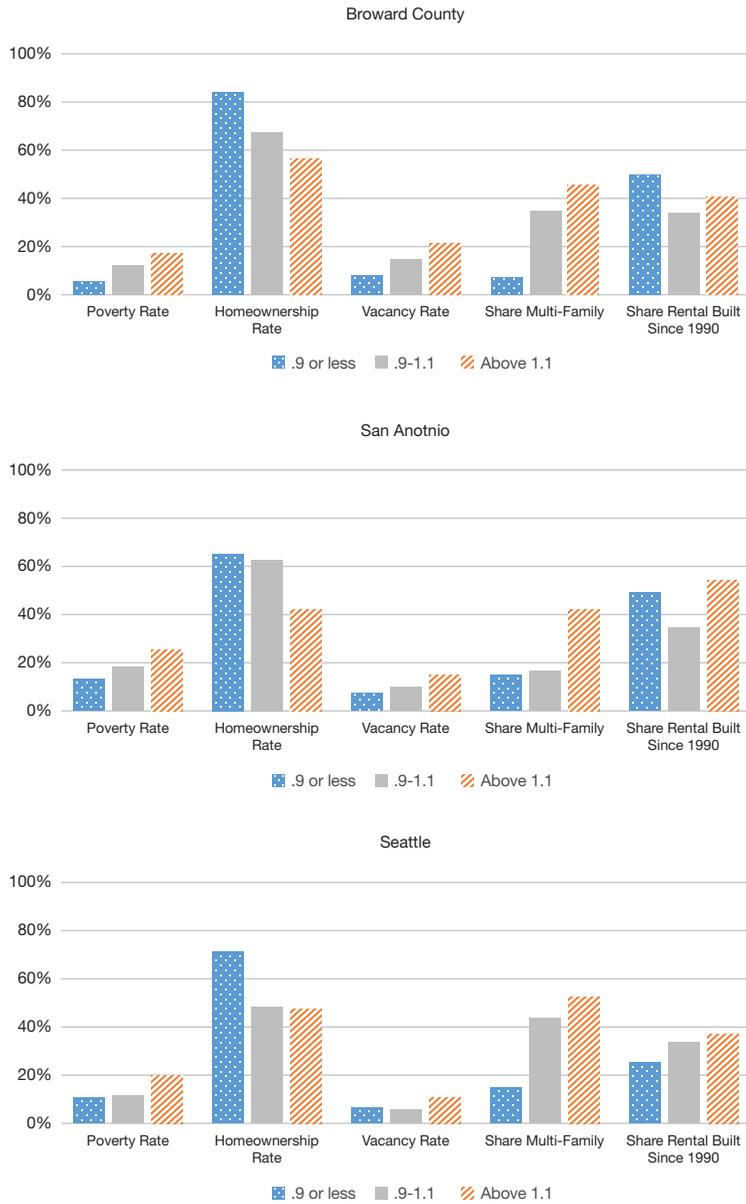
Broward County

San Anotnio

Seattle

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Contrasting Different Geographies in Fair Market Rents: Implications for the Housing Choice Voucher Program in Pittsburgh, PA

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Abstract

Local public housing authorities define the payment standards—the voucher amounts paid to landlords—for renting their property under the Housing Choice Voucher (HCV) Program. Payment standards have been historically based on 40th percentile Fair Market Rents (FMRs) calculated by the U.S. Department of Housing and Urban Development (HUD) for metropolitan areas and non-metro counties. To better align payment standards with market rents, HUD has developed 40th percentile Small Area Fair Market Rents (SAFMRs) at the ZIP-Code level and have mandated their use in 24 metropolitan areas. Public housing authorities using SAFMRs in lieu of FMRs must maintain payment standards within 10 percent of the SAFMR. This study compares the efficacy of SAFMRs with rents listed for Pittsburgh, PA, by Rent Jungle, a commercial aggregator of rental data. Correlations between SAFMRs and the sampled rents were relatively low at 37 percent. Results indicate that small area markets defined using a combination of clustering and nearest neighbor algorithms are better predictors of market rents than ZIP Codes and require fewer market delineations, as shown by the adjusted R-squared exceeding 60 percent with only three clusters (compared with the 26 ZIP Codes in Pittsburgh). Results suggest that SAFMR achieves its goal of increasing the eligible units relative to FMR. Those increases were disproportionately in low-rent areas, however, where the proposed SAFMR is competitive with market rents. In contrast, in high-rent areas, the SAFMR is more than 50 percent lower than market rents, on average, resulting in few eligible units. These observations suggest SAFMRs are likely to increase the number of landlords interested in the HCV program in low-rent areas, but not in high-rent areas. To increase the use of vouchers in high-rent areas, payments to landlords should adequately compete with market rents. Otherwise, only landlords in high-rent areas that have trouble renting in the private market, such as those that offer properties of marginal quality, are likely to participate in the HCV program.

Introduction

The U.S. Department of Housing and Urban Development (HUD) funds the Section 8 Housing Choice Voucher (HCV) program. Section 8 uses a public-private partnership model that allows qualified tenants to rent on the open market from willing landlords of private properties that meet federal housing quality standards. HUD disperses funds to public housing authorities (PHAs) who are responsible for administering Section 8 at the local level.

Landlords are compensated through a combination of public assistance (vouchers issued by housing authorities or the payment standard) and rent paid by tenants. HUD defines a market rent basis that, in turn, limits the range of voucher amounts—or payment standards—allowable by PHAs. Historically, HUD has defined the fair market rent (FMR) as the 40th percentile of gross rents by FMR area. The FMR area consists of either the parent metropolitan statistical area (MSA) surrounding a PHA or subset of geographies within the parent MSA customized by HUD for HCV called the "HUD Metro Fair Market Area" or "HMFA." Local PHAs are allowed to set payment standards to vary from 90 percent to 110 percent of the FMR. Pinning payment standards to 90 percent to 110 percent of the FMR kept payment standards relatively affordable but has also concentrated HCV tenants in lower market rent areas (per the 40th percentile FMR criteria), which is often in areas associated with fewer economic opportunities.

Recognizing that rental market boundaries are difficult for housing authorities to define, HUD proposed ZIP Codes serve as small area market boundaries and designed a method for estimating market rents by ZIP Code (HUD, 2019a), or Small Area Fair Market Rents (SAFMRs). In November 2016, HUD mandated the use of SAFMRs as opposed to FMRs in deriving payment standards for PHAs in 24 metropolitan areas. Notably, the minimum and maximum SAFMR is restricted to 50 percent and 150 percent of the FMR, respectively.

ZIP Codes were partly selected for convenience in that they are familiar to renters, landlords, and housing authorities. ZIP Codes are also sufficiently large such that rents can be estimated using the American Community Survey (ACS; Reina, Acolin, and Bostic, 2019). HUD also relied on early results from demonstrations of SAFMRs in Cook County, IL; Long Beach, CA; Chattanooga, TN; Mamaroneck, NY; Laredo, TX; and Dallas, TX, to suggest that ZIP Codes would increase access to opportunity in markets nationwide (Finkel, 2017; Reina, Acolin, and Bostic, 2019).

HUD's method for estimating 40th percentile SAFMRs by ZIP Code uses a series of reliability and consistency standards applied to rents collected by the U.S. Census Bureau through the ACS (HUD, 2019a). By defining market rents at geographies smaller than MSAs and counties, HCV tenants are more likely to find units in higher rental areas with more economic opportunities because PHAs can set payment standards better aligned with local market rents. The smaller geography associated with the SAFMR is anticipated to accommodate the twin goals of expanding access to higher income markets for HCV tenants and thus reducing the concentration of HCV tenants in higher poverty areas.

A primary concern regarding SAFMRs is determining how representative ZIP Codes are of true rental market boundaries. Ideally, market areas would be intuitive to PHAs, voucher holders, and landlords, and align ZIP Codes, which could create incentives for landlords to participate in the

HCV program and for households to move to areas of opportunity. Otherwise, payment standards would be misaligned with market rents.

Researchers and affordable housing stakeholders have expressed concern about the appropriateness of ZIP Codes for defining small area markets (CFR, 2016; Treat, 2018; Walter, 2018). ZIP Codes are geographic boundaries established to administer postal delivery. Thus, prima facie concerns are that ZIP Codes will not align with rental markets, where market variation within ZIP Codes could be significant, and ZIP Code boundaries could cross municipal boundaries.

In theory, additional concerns associated with transitioning to SAFMRs are (1) landlords participating in the HCV program under FMRs will exit the program because payment standards in many of these areas should decrease by definition (HCV properties whose rents are below the 40th percentile of gross FMR are likely in ZIP Codes with even lower market rents); (2) it will be harder to attract landlords in areas of opportunity given market competition and a history of discrimination toward voucher holders; (3) the total voucher budget may not support increased vouchers associated with significant moves to areas of opportunity; and (4) the transition may facilitate a net decline in total HCV units.

The limited research exploring these issues is mixed. SAFMR demonstration projects in five PHAs indicate households moving to higher rent areas increased from 18 percent in 2010 to 28 percent in 2015, where most of the cost increase was borne by tenants. The net housing units eligible for subsidies across the SAFMR demonstration regions declined by 3.4 percent, however, due to reductions in the eligible units in lower rent areas (Finkel et. al., 2017). Significant variation across regions was observed. These results suggest that moves to higher rent areas, with improved neighborhood conditions, may not have been motivated by tenants' interest in areas of opportunity but more simply by geographic shifts in eligible units. In contrast to the decline in overall units estimated by SAFMR demonstration efforts, the NYU Furman Center (NYU, 2018) estimated that the number of HCV-eligible units in the 24 areas mandated to adopt the new SAFMRs is expected to increase by 9 percent.

Reina, Acolin, and Bostic (2019) used a difference-in-differences method to examine the geographic distribution of subsidized households before and after the SAFMR demonstration, finding increased voucher holders in higher rent neighborhoods in Dallas, TX; Long Beach, CA; and Mamaroneck, NY. Collinson and Ganong (2014) similarly reported that voucher recipients in Dallas moved to neighborhoods improved with respect to crime, poverty, unemployment, educational attainment, and fourth-grade test scores in public schools. Reina, Acolin, and Bostic found marginal to negative impacts of SAFMR in Cook County, IL, and Chattanooga, TN, however. The authors reported a potential decline in neighborhood quality for voucher holders in Chattanooga following SAFMR changes, suggesting that there are too few neighborhoods of opportunity in Chattanooga for payment standards to have a meaningful effect. In Cook County, the authors indicated that an aggressive private rental market may have limited access to neighborhoods of opportunity.

Inconsistencies in either the FMR or SAFMR and the private market rents can significantly affect housing outcomes. First, in areas where enough HCV housing adopts payment standards that

exceed the market rate, rents may be artificially increased above market rates expected in the absence of HCV housing (Collinson and Ganong, 2018; Susin, 2002). The mechanisms for this are unclear but likely involve a combination of reducing the supply of market housing (housing not enrolled in HCV) and reactions to price ceilings associated with payment standards. Price increases to market housing would reduce affordability for renters that do not have vouchers. Previous research in Allegheny County, PA, has found that subsidized housing (public housing and HCV units) can constitute a significant portion of affordable housing supply for individuals below the 50 percent area median income (Deitrick et al., 2011).

Conversely, if payment standards are lower than the market, landlords are more likely to prefer to rent on the private market and thus opt out of Section 8. Stakeholders have emphasized this particular concern in the transition to SAFMR in that small area markets will depress voucher amounts in low-rent areas, where most existing subsidized households are located, potentially resulting in decreases in the number of total subsidized units (Walter, 2018; Treat, 2018).

Palm (2018) used commercially available rental data (sourced from the same supplier of data for this study) to estimate the counts of eligible units before and after the administration of SAFMRs in five metropolitan areas in California. Except for San Francisco, Palm found that using SAFMR's increased eligible units in low-poverty areas and decreased eligible units in high-poverty areas, with net increases in total eligible units reported by metropolitan area. San Francisco reported a loss of eligible units throughout the city, where the author suggested rents were rising faster than could be recorded by the ACS.

If voucher amounts are higher than the market, then landlords will be more likely to participate in Section 8 but may overcharge (Desmond and Perkins, 2016; Collinson and Ganong, 2014; McClure, Schwartz, and Taghavi, 2015) or even manipulate the HCV process to effectively strand tenants (Rosen, 2014), thus decreasing the cost-effectiveness of subsidized housing and the number of total families who can be served.

It is not yet clear how well-subsidized housing can compete with the market in areas of opportunity. Previous studies have shown, however, that landlords experience real and perceived barriers to enrolling in the HCV program, including, but not limited to, financial risks, challenges of meeting HCV inspection requirements, and an incomplete understanding of HCV (Greenlee, 2014; Pashup et al., 2005). Moreover, many studies have found discrimination against voucher holders and vouchers as a source of income (Pendall, 2000; Turner and Ross, 2005; Yinger, 1995). It is unclear how such discrimination will influence movement to opportunity. One early study in Chicago found that voucher holders were 10 percent more likely to be denied housing in mixed-income communities targeted for new subsidized housing than those seeking housing throughout Chicago (Lawyers Committee for Better Housing, 2002).

It is also unclear to what extent existing HCV tenants are interested in moving to higher rent areas and under what circumstances they would move. Schwartz, Mihaly, and Gala (2017) conducted an experiment in which HCV voucher holders were offered a $500 grant and mobility counseling to make opportunity moves in Chicago, IL, finding that these incentives did not increase the share of opportunity moves beyond the control group, which was 12 percent. Schwartz, Mihaly, and Gala

suggested 12 potential barriers influencing opportunity moves, including increased transaction times (including search costs) to find units in opportunity areas, insufficient resources to move or rent units in opportunity areas, no landlord recruiting in opportunity areas, and too stringent standards for areas of opportunity.

Housing authority staff have also expressed concern about administering a payment standard that needs to conform to SAFMRs across many ZIP Codes. Walter (2018) examined the implications of aggregating ZIP Codes in San Antonio, TX; Fort Lauderdale, FL; and Jacksonville, FL, finding significant disparities between commercially available rents and allowable payment standards for aggregated ZIP Codes. Walter ultimately concluded that ZIP Codes were simply too aggregate to align with commercially available rent, even though this would make it more difficult for landlords and housing authorities to administer HCV housing and for tenants to "shop" for leases.

In a review of HUD's SAFMR rule changes, Treat (2018) recommends giving housing authorities more flexibility to use "local knowledge" when geographically defining small area markets and improving the accuracy of payment standards. This study follows these recommendations by comparing observed and modeled prices of 11,214 market rental listings for the city of Pittsburgh, PA, to SAFMR and FMRs by MSA in light of moving to opportunity policy objectives.

Materials and Methods

Data used for this analysis were purchased from Rent Jungle (Rainmaker Group, 2017), a commercial aggregator of rental market data. The raw data include 1,006,857 listings aggregated from different websites advertising online properties for rent in the city of Pittsburgh for October 2016 and October 2017. As a result of pooling listings from multiple sources and landlords that repeatedly list properties, the raw data include duplicate listings. Rent Jungle applies a proprietary algorithm intended to distinguish unique listings from duplicate listings. The expected number of available unique listings in the city of Pittsburgh should roughly match those estimated using tenure data for rental units (U.S. Census, 2019) or 16,500 listings. We found Rent Jungle's algorithm indicated approximately 30,000 unique listings, or twice those expected using Census data. As a result, we allow only one advertised prototype per address to eliminate duplicates, where a unit prototype is defined by unique counts of bedrooms and bathrooms, floor space (where available), and price. While these criteria would exclude listings with the same floorplan simultaneously listed at the same address, their application leads to approximately 15,000 unique listings available for rent, which better matches the 16,500 available units estimated using Census data.

In addition to triaging duplicate listings, we also removed listings that did not include bedroom and bathroom information and 53 outliers where the monthly asking rent was below $25 or above $10,000. The final sample used for analysis consists of 11,214 listings, thus representing approximately 68 percent of estimated available listings across 84 neighborhoods and 26 ZIP Codes in the city of Pittsburgh. Exhibit 1 summarizes variation in price by counts of bedrooms and bathrooms. Counts by bedroom size are 436 efficiencies; 2,158 one-bedroom units, 3,898 two-bedroom units; 2,831 three-bedroom units; 983 four-bedroom units; and 308 units with five or more bedrooms. Nearly 19 percent of addresses in the sample reflect multiple units available;

approximately 1 percent report more than 10 units available; and three addresses report more than 80 units available. These diagnostics suggest our criteria for identifying unique listings did not eliminate addresses presenting multiple listings.

Exhibit 1

Variation in Advertised Rent by Bedrooms and Bathrooms for 11,214 Listings in the City of Pittsburgh between October 2016 and October 2017
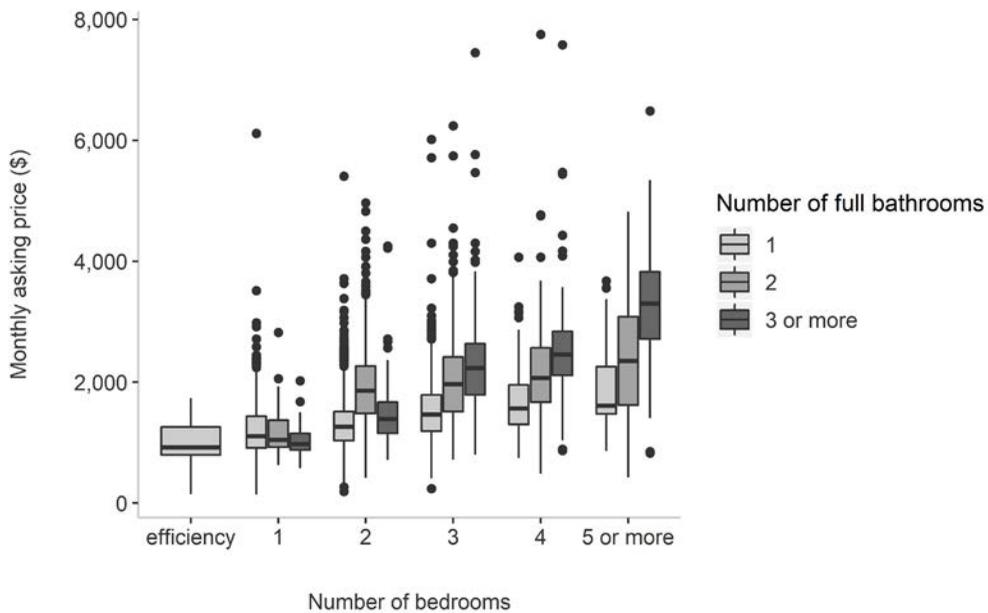
Gross rent—the rent value that includes both the lease amount and utilities—is the basis for HUD's fair market rent definitions (FMR and SAFMR). Combinations of the words "electric," "gas," "water," "utilities," "heat," "included," and "not" were used to identify listings likely to include utilities. Approximately 6 percent of listings in the Pittsburgh MSA were estimated as including utilities. None of these listings were in the city of Pittsburgh, however. Thus, expenditures on natural gas and electricity were estimated as the mean by bedroom and bathroom from pooled energy consumption survey data at broader geographic scales (urban homes in Pennsylvania taken from the U.S. Department of Energy [DOE], 2012; urban homes in the Middle Atlantic Census taken from DOE, 2018). Expenditures on water were estimated using water rates for the local Pittsburgh utility (PWSA, 2017) applied to a consumption of 62 gallons per capita per day (Dunham-Whitehead and Moya, 2007) and an average of 0.9 people per bedroom (DOE, 2012; DOE, 2018). On average, estimated utility expenditures resulted in electricity, natural gas, and water contributing to 5.4 percent, 2.5 percent, and 3.6 percent of gross rent, respectively, or a total share of 11.5 percent of gross rent spent on utilities.

To approximate spatial boundaries in rental markets, we first regress market prices in the Rent Jungle sample (n = 11,214) against bedrooms and counts of bathrooms (modeled as nominal variables shown in exhibit 1 and as continuous variables using equation 1).

(1)   *log(price) = B0 + B1 * beds + B2 * baths + B3 * beds * baths + ε*

In equation 1, the error (or residuals) term ε encompasses all contributions to market prices not explained by counts of bedrooms and bathrooms. Much—but not all—of these contributions will include renters' valuations of spatial amenities, such as access to transit. In order to approximate spatial boundaries in rental markets, we then cluster (k-means) the listings latitude, longitude, and residuals (ε) from equation 1 to estimate small area markets. The k-means clustering algorithm characterizing the "closeness" of listings with respect to space (latitude and longitude) and residual (ε) which largely represents spatial amenities.

We test between 2 and 26 clusters, as there are 26 unique ZIP Codes in the city of Pittsburgh. The initial cluster assignments provide point estimates indicating the cluster with which the listing is associated. Such point estimates derived from the Rent Jungle sample are helpful but do not completely account for all units that could potentially participate in the HCV program. To derive spatially continuous, complete coverage across the city, we assign to each parcel the most frequent cluster associated with its 50 nearest rental listings in our sample, which, in turn, involved re-assigning the cluster for some observations. We then regress listing prices according to equation 2.

(2)   *log(price) = B0 + B1 * beds + B2 * baths + B3 * beds * baths + B4 * geography + ε*

In equation 2, the geography was modeled using either ZIP Codes, the initial cluster assignment, or the clusters reassigned based on its nearest neighbors to evaluate the efficacy of different geographic representations of small area markets. Both geographic definitions (ZIP Codes, initial clusters, and reassigned clusters) and cluster counts were evaluated using the model adjusted R-squared estimated from applying the sample to equation 2.

We compare observed and fitted rents to the SAFMRs and FMRs[1] for the city of Pittsburgh (HUD, 2019b; HUD, 2019c) based on consistency, counts of households eligible for assistance, and differences in the estimated price. For point comparisons, we assume all payment standards are equal to 100 percent of SAFMRs or FMRs. Where ranges are compared, we assume payment standards vary from 90 percent to 110 percent of SAFMRs. Where fitted results were used as a comparison, the model fits reported herein were randomly drawn from the fitted mean and standard deviation, assuming the fitted results are normally distributed.

To estimate the effect of the SAFMR transition on a broader group of properties that could participate in HCV, we also applied our models to all 1–4 bedroom units not in large multi-family complexes, where the stock and location of 1–4 bedroom units were taken from Allegheny County (2018). This broader group of properties include 98,090 or approximately 73 percent of households in Pittsburgh (U.S. Census, 2019). In broadening our model to other potential HCV properties, we excluded multi-family complexes because the available data (Allegheny County, 2018) do not list bedroom and bathroom counts for each unit in multi-family complexes.

Analysis and results were prepared using the R programming language (R Core Team, 2018) in the R Studio software (RStudio Team, 2018), including using R packages authored by Wickham et. al.

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[1] The 2017 FMRs used for this study are those for the Pittsburgh HMFA geography.

(2019), Wickham (2016), and Zhu (2018).

Exhibit 2

Data Sources and Their Respective Geographic and Property Scopes Relevant for this Study

Data Set or Rent Benchmark	Smallest Available Geography Resolution	Scope of Properties Relevant for this Study	
		Geography	Properties Represented
Market Rents	Individual Unit	City of Pittsburgh	All Online Listings in Rainmaker (2017) that Meet the Criteria Described Herein
Small Area Fair Market Rent (SAFMR)	ZIP Code	City of Pittsburgh	All Rents Reported to the U.S. Census (see HUD, 2019c for Details)
Fair Market Rent (FMR)	HUD Metro Fair Market Area (HMFA)	HUD Metro Fair Market Area (HMFA)	All Rents Reported to the U.S. Census (see HUD, 2019b for Details)
Property Tax Assessments	Parcel	City of Pittsburgh	All Property Types Equal to or Smaller than Four-Family Units (Allegheny County, 2018)

Results

Exhibit 3 compares distributions of two-bedroom market rents with SAFMRs for two-bedroom units by ZIP Code. We limit the presentation of results to two-bedroom units for clarity. Two-bedroom units were the most frequently occurring unit size and largely represent trends observed for units of other sizes. Exhibit 3 indicates that SAFMRs are below the corresponding 40th percentile market rents for all ZIP Codes except 15235 and 15220. The market estimate tends to be increasingly higher than the SAFMR with increasing market price. Exhibit 3 indicates ZIP Codes crossing the city boundary may explain some of the discrepancies between listed rents; however, the most extreme differences occur where ZIP Codes do not cross city boundaries. Exhibit 3 also indicates that variation within ZIP Codes is much more significant in high-rent ZIP Codes completely contained by the city (see legend titled "Share ZIP in the city" in exhibit 3).

HUD's constraining SAFMR definitions to within 50 percent to 150 percent of the parent FMR (the 40th percentile FMR criteria) is likely influencing the degree to which market rents exceed the SAFMR in very high-rent markets (for example, 15222).

Exhibit 4 shows the adjusted R-squared estimated when applying equations 1 and 2 assuming different geographic variables during regression. As a point of reference, the correlation between the market data and SAFMR is approximately 37 percent, which is marginally better than the variation in SAFMR explained solely by bedrooms and bathrooms (the R-squared for equation 1 is 35 percent). Modeling spatial amenities using ZIP Codes as a proxy (applying equation 2 with ZIP Codes equal to geography) increases the adjusted R-squared to 50 percent. The model improves

Exhibit 3

Variation in Market Rent for Two-Bedroom Units by ZIP Code in the City of Pittsburgh Compared to Fair Market Rents Published by HUD

Estimates by ZIP Code

Sample of market rents (Rainmaker, 2017)

Share ZIP in city

- all
- mostly in
- mostly out

Q90
Q40*110%
Q40
Q40*90%
Q10

- - - 40th percentile market rent for the City of Pittsburgh ($1,260 for a two-bedroom unit estimated from Rainmaker, 2017).

—— Fair market rent (FMR) estimated as the 40th percentile for the Pittsburgh HFMA ($822 fro a two-bedroom unit)

●— *Small area fair market rent (SAFMR) estimated by HUD (2019c)*

Note: Rents reflect 11,214 listings advertised online between October 2016 and October 2017 (Rainmaker, 2017). The fair market rents published by HUD include the FY17 SAFMRs (HUD, 2019c) and 40th percentile for Pittsburgh FMR (HUD, 2019b). The variable "share ZIP in city" reflects those ZIP Codes completely contained by the city (a value of "all"), ZIPs whose area is 50 percent or more in the city (a value of "mostly in"), and ZIP Codes whose area is more than 50 percent outside of the City ("mostly out").

considerably, however, when spatial amenities are modeled by cluster. Compared with modeling all 26 ZIP Codes in Pittsburgh, only 2 clusters are needed to improve on the ZIP Code model. Moreover, if 26 clusters are assumed, the adjusted R-squared values are 90 percent and 71 percent assuming initial cluster assignments and clusters reassigned using nearest neighbors, respectively.

Exhibit 4

Adjusted R-Squared Applying Sample to Equation 1 and Equation 2 Assuming Different
Geographic Variables Represent Spatial Amenities
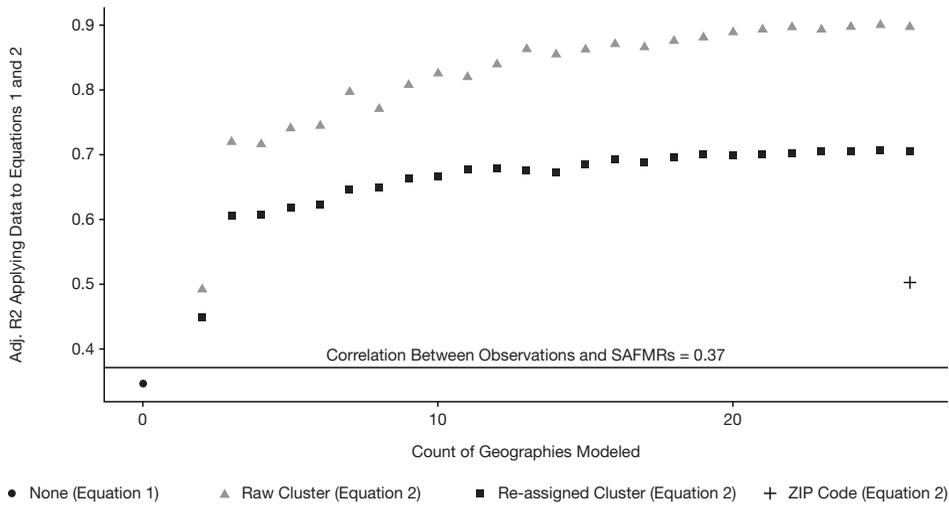
Note: Equation 1 does not include spatial amenities. Equation 2 assuming spatial amenities are represented by either ZIP Codes or clusters estimated using k-means, where both original cluster assignments and clusters re-assigned by nearest neighbors where modeled.

For subsequent analysis, we select a model with eight clusters that have been reassigned using nearest neighbor, which led to re-assigning the cluster for approximately 12 percent of the observations. Exhibit 5 summarizes this model. The selected model is relatively simple and administratively feasible given it covers the entire city and is reasonably predictive with an adjusted R-squared of 65 percent, which is considerably higher than the correlation between the SAFMR and market rents of 37 percent. Increases in R-squared beyond eight clusters are marginal (see

exhibit 4). The goal of this analysis is not to prescribe the number of clusters that Pittsburgh should employ but demonstrate how these data can be useful in transitioning to SAFMR.

Exhibit 5

Regression Results from Fitting the Sample to Equation 2 Assuming Eight Clusters

Variable	Estimate	Std. Error	P-value
(Intercept)	6.27	0.021	<0.001
Bedroom—1	0.34	0.023	<0.001
Bedrooms—2	0.37	0.021	<0.001
Bedrooms—3	0.52	0.022	<0.001
Bedrooms—4	0.62	0.027	<0.001
Bedrooms—5 or more	0.71	0.026	<0.001
Bathrooms	0.18	0.015	<0.001
Cluster 2	0.10	0.011	<0.001
Cluster 3	0.24	0.010	<0.001
Cluster 4	0.25	0.010	<0.001
Cluster 5	0.36	0.010	<0.001
Cluster 6	0.59	0.010	<0.001
Cluster 7	0.62	0.010	<0.001
Cluster 8	0.70	0.012	<0.001
Bedroom—1:Bathroom	-0.16	0.019	<0.001
Bedrooms—2:Bathrooms	-0.02	0.017	0.262
Bedrooms—3:Bathrooms	-0.01	0.016	0.414
Bedrooms—4:Bathrooms	-0.02	0.018	0.339

Notes: The initial cluster assignments were reassigned using nearest neighbors to ensure continuous and complete geographic coverage. Residual standard error: 0.23 on 11196 degrees of freedom. Adjusted R-squared: 0.649. F-statistic: 1220.06 on 17 and 11196 DF with a p-value < 2.2e-16.

Exhibit 6 maps the clusters from the selected model against ZIP Codes. Exhibit 6 indicates that ZIP Codes rarely align with the cluster boundaries and are more likely to contain a complete cluster at the outskirts of the city where geographic variation in cluster assignment is relatively low. Exhibit 6 also indicates more variation in cluster assignments for those ZIP Codes completely contained by the city, which include those areas in Pittsburgh that are more commercially active. For example,

ZIP Code 15219—which is between the most commercially active neighborhoods in the city—encompasses six of eight clusters.

Exhibit 6

Map of Spatial Clusters of Market Rents Compared with ZIP Code Boundaries
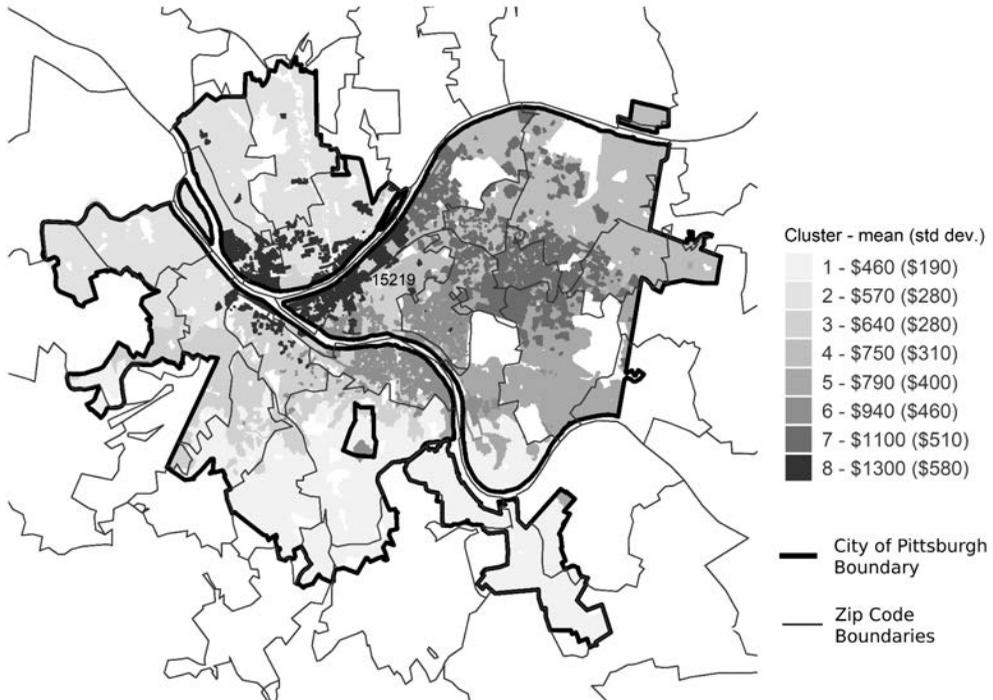
Note: Example ZIP Code 15219 is relatively centrally located and includes six different clusters, an example demonstrating that market rent variation within ZIP Codes is more pronounced near the city center.

Exhibit 7 also suggests that markets can be extremely small, extending only several blocks in some cases. This occurs even after smoothing out discontinuities using nearest neighbors. While it is beyond the scope of this study to identify the contributions of spatial amenities to rents, readers familiar with Pittsburgh will note several potential causes for these micro markets, including access to transportation, green space, rivers, or entertainment.

Exhibit 7 compares SAFMRs with prices fitted to all two-bedroom units (Allegheny County, 2018) applying equation 2 to the selected model of eight clusters derived by re-assigning the initial clusters using nearest neighbors. Exhibit 7 indicates that the fitted rents match relatively well the SAFMR for clusters 1 and 2. The fitted rents match SAFMRs for only a few ZIP Codes that overlap clusters 3 and 4. In clusters 5 through 8, which include the high-rent areas, SAFMRs are biased

Exhibit 7

Fitted Rents for Market Two-Bedrooms Compared with Two-Bedroom SAFMR
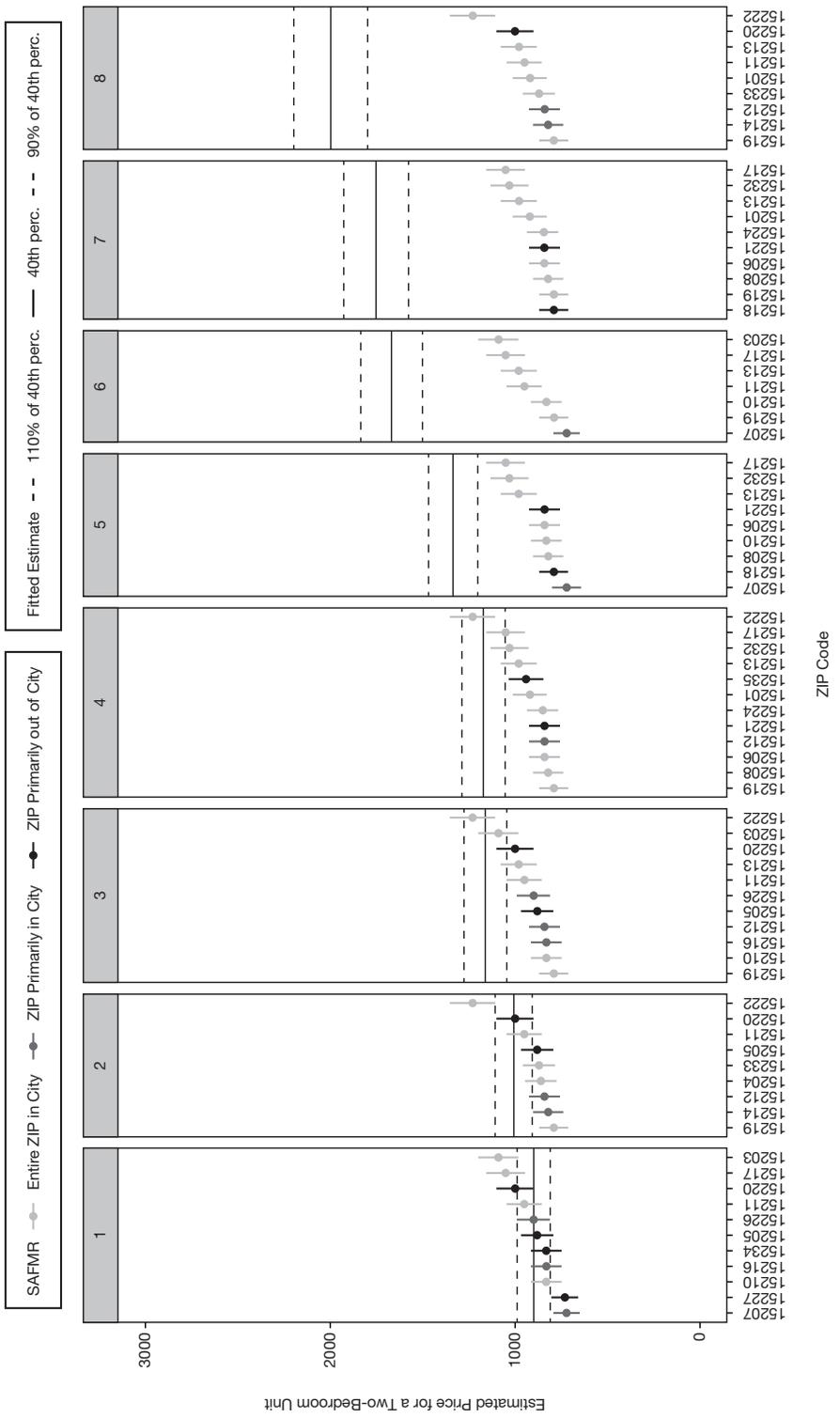
low such that the allowable high payment standard (110 percent of the 40th percentile by ZIP Code) are all below 90 percent of the 40th percentile of the fitted estimates.

Exhibit 8 compares the distribution of listings with rents below the FMR and SAFMRs for Pittsburgh, PA, to the (a) all 1–4 bedrooms in the Rent Jungle sample (11,214 potentially eligible units) and (b) the modeled estimates for all 1–4 bedrooms (98,090 potentially eligible units). Exhibit 8 suggests that the SAFMR does achieve the goal of increasing eligible units in higher rent areas. The increase in eligible units, however, declines considerably with increasing rent. Using fitted values for all 1–4 bedroom units (exhibit 8b), the transition from FMR to SAFMR increases by eligible units in the two highest rent clusters from 20 (7 + 13) to 66 (47 + 19), which accounts for less than 1 percent of total units in these two clusters. In contrast to the highest rent clusters, an increase in 4,400 units (2,500 + 1,900) is estimated for the lowest two clusters, which accounts for 22 percent of the total units in these two clusters. More importantly, the price differences between the SAFMR and the market rents vary considerably in magnitude between low- and high-rent

Exhibit 8

Total Counts of Households, Counts of Households Eligible for the HCV Program, and the Difference in Market and SAFMR Price by Cluster for (a) the Sample of Market Rents and (b) All One- to Four-Bedroom Units

a.

	Counts of Observations as Summarized in Exhibit 1					Compare SAFMR with Market Prices		
Cluster	Total Units	Observed Price Less than FMR	Observed Price Less than SAFMR	Change in Eligible Units	Change in Eligible Units Relative to Total Units	Mean Observed Price	Mean (SAFMR-Observed Price)	Difference Relative to Mean Observed Price
1	710	97	170	71 (180%)	10%	1,000	-110	-11%
2	1,000	110	220	110 (200%)	11%	1,100	-190	-17%
3	1,600	21	170	150 (810%)	9.10%	1,300	-290	-22%
4	1,900	71	130	62 (180%)	3.30%	1,300	-360	-28%
5	1,300	3	92	89 (3100%)	6.80%	1,500	-400	-27%
6	1,300	2	12	10 (600%)	0.77%	1,900	-800	-42%
7	1,900	22	39	17 (180%)	0.89%	1,900	-940	-49%
8	840	3	8	5 (270%)	0.60%	2,000	-1,000	-50%

b.

	Counts of All 1–4 Bedrooms*					Compare SAFMR with Market Prices		
Cluster	Total Units	Fitted Price Less than FMR	Fitted Price Less than SAFMR	Change in Eligible Units	Change in Eligible Units Relative to Total Units	Mean Fitted Price	Mean (SAFMR-Fitted Price)	Difference Relative to Mean Fitted Price
1	21,000	4,400	6,900	2,500 (160%)	12%	1,000	-100	-10%
2	19,000	2,000	3,900	1,900 (200%)	10%	1,200	-200	-17%
3	13,000	470	1,800	1,300 (380%)	10%	1,300	-310	-24%
4	18,000	590	1,400	820 (240%)	4.60%	1,400	-400	-29%
5	11,000	110	740	640 (670%)	5.80%	1,600	-540	-34%
6	4,500	6	69	63 (1200%)	1.40%	1,800	-770	-43%
7	9,000	13	47	34 (360%)	0.38%	2,100	-1,100	-52%
8	2,900	7	19	12 (270%)	0.41%	2,100	-1,100	-52%

Note: Units estimated as eligible for the HCV program assuming payment standards of 100 percent of FMR and SAFMR. The sample of market rents in exhibit 8a are those summarized in exhibit 1. The sample of units included in exhibit 8b includes one- to four-bedroom units in properties equal to or smaller than "four family" units as described by Allegheny County (2018). Fitted values were randomly assigned estimates within two standard deviations of the mean fit. Estimates rounded to two significant figures for clarity.

clusters. The SAFMR payment standard in low-rent clusters is approximately 10 percent below market rent, but more than 50 percent below market rent in high-rent areas.

Conclusions and Implications

Since its conception, affordable housing stakeholders have expressed concern about using ZIP Codes and latent American Community Survey (ACS) rent data as the basis for defining small area markets to define payment standards under HUD's Housing Choice Voucher (HCV) program. Inherent in the use of ZIP Codes to represent small area markets are prima facie concerns about misalignment with spatial amenities and the inclusion of rents from nearby but otherwise unserved municipalities as the basis for payment standards. Concerns about ACS data include representativeness and latency.

This study uses market rents in Pittsburgh, PA, to define small area markets and explore the implications of inconsistencies between market rents and Small Area Fair Market Rents (SAFMRs) and Fair Market Rents (FMRs). While correlations between market rents and SAFMRs are relatively low at 37 percent, correlations using markets derived from a combination of clustering and nearest neighbor algorithms can be as high as 71 percent. The model selected for this study includes only eight clusters, which is fewer than the 26 ZIP Codes in Pittsburgh, demonstrated by an adjusted R-squared of 65 percent.

Results suggest that the SAFMR achieves its goal of increasing the eligible units relative to HUD's previous standard using FMRs. Unlike previous studies using the same commercial data set, however, increases in eligible units were observed in all areas but were disproportionately in lower rent areas. The change in standard increased by only 46 eligible 1–4 bedroom units in the two highest rent areas. While this is a 330-percent absolute increase (from 20 to 66) the increase represents only 1 percent of total units.

The SAFMR is below the market rent in all ZIP Codes and generally increasingly so with the increasing rental price. All else equal, differences between market rent and the voucher amounts allowable under HUD's requirements are likely to affect landlords' willingness to participate in the HCV program. A competitive payment standard combined with a high count of eligible units is likely to increase HCV landlords in low-rent markets and, in some marginal units, may enhance established landlord behaviors of overcharging or manipulating the HCV program to make it more difficult for existing voucher holders to move. If landlords see an opportunity to overcharge in low rent areas, this SAFMR payment standard may increase HCV housing and, therefore, expenditures of public resources in low-rent areas.

High-rent markets demonstrate very few increases in eligible units combined with payment standards well below market rents. Thus, only landlords that have trouble renting to the private market, such as those that offer properties of marginal quality, are expected to participate in the HCV program. It is not fully clear how landlords and tenants will interact in leasing marginal properties in high-rent areas, but these findings suggest that search costs for tenants will be higher in high-rent neighborhoods. Moreover, it is also unclear how tenants will trade better onsite amenities in low-rent areas, such as a yard, with the neighborhood amenities typically associated

with the area of opportunity. These trade-offs are important given that the few properties in high-rent areas expected to become eligible under the proposed SAFMR standards are expected to be of marginal quality (assuming prices partly reflect quality). These results may explain previously observed declines in high-rent areas following the introduction of SAFMR into some markets (Reina, Acolin, and Bostic, 2019).

ACS ZIP Code rent data from nearby but otherwise unserved municipalities appears to not be significantly influencing inconsistencies between market rents and SAFMRs unless rents from these nearby municipalities are simply compensating for other inaccuracies in the payment standard. Conversely, it is not clear why the payment standards are biased low in higher rent areas associated with ZIP Codes completely within the city. Misalignment between the SAFMR and the market rents may be due to HUD's restricting SAFMRs to within 50 percent and 150 percent of the FMR. Future work should explore the potential misrepresentations of market rent introduced by the 50-percent to 150-percent FMR restriction. It could be that the ACS data are latent or simply inaccurate or that the market data are biased upward. Results do suggest significantly more variation in rent in high rent areas in ZIP Codes completely contained by the city, suggesting micro markets appear closer to areas of high commercial activity.

This study indicates that rental markets in Pittsburgh can be extremely local, extending for only several blocks in many locations. The underlying amenities (for example, access to education, transit, entertainment) reflected in these observations are speculative, but distinguishing their contribution to rental prices could better help interested families move to areas of opportunities. By better understanding the contributions of individual amenities to market rents, housing authorities could theoretically prioritize subsidies to towards amenities more aligned with opportunity (for example, access to education or employment).

As previously reported by Palm (2018), the use of proprietary rental data, such as those employed in this study, in administering an HCV may not be feasible in that these data do not conform with the Government Accountable Office standards transparency, reproduction, and geographic consistency (GAO, 2005). These data could, however, guide improved data collection by HUD or the Census Bureau in support of moving to opportunity. There are also limitations to the raw Rent Jungle data, including, but not limited to, demonstrating an uncertain degree of duplicate listings, too limited coverage of onsite amenities outside of bedrooms and bathrooms (for example, floor space), and no sampling procedure such that the data may be unrepresentative.

Similarly, it should be noted that future work should explore other spatial clustering methods outside of k-means, such as including a distance function that attenuates the contribution of neighboring rents with distance or methods that reflect stark geographical barriers (for example, rivers and hillsides) characteristic of Pittsburgh.

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completing this work.

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Examining the Transition to HUD Small Area Fair Market Rents Using Craigslist Data

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Abstract

The limitations of the U.S. Department of Housing and Urban Development's (HUD) metropolitan-scale, American Community Survey (ACS)-driven annual Fair Market Rent (FMR) estimates are familiar to local housing officials. Each year, scores of comment letters are received by HUD as FMRs are updated and implications for local housing markets become known. The transition to Small Area Fair Market Rent (SAFMRs) holds great promise in mitigating key shortcomings of using areawide geography, offering a much more submarket-specific variable payment standard for use by public housing authorities (PHAs). This potentially opens up more high-opportunity areas to the program's users. A more formal, large-scale assessment of this key rental housing policy, however, has been difficult due to paucity of current national yet sufficiently local, datasets describing rental housing markets. Using recent and spatially comprehensive rental data from Craigslist, a listing website that includes housing, we analyze HUD data for 2,600 FMR areas nationwide and show rental gaps between the actual cost of rentals and what PHAs will pay per the FMR payment standard. We analyze how a shift to SAFMRs changes the potential availability of units, focusing on both the 24 HUD rule areas and the nation at large. Based on our findings, we argue that more areas should be included in the program if appropriate safeguards can be instituted.

Introduction

In a report to Congress in 2017, the U.S. Department of Housing and Urban Development (HUD) quantified the scarcity of affordable rental housing, noting that, "[n]ationwide, only 66 affordable units exist for every 100 extremely low-income renters" (Watson et al., 2017). The situation is not improving. Renters have faced a faster increase in rents relative to incomes, with 4 out of 10 renters paying rents that used to be in the top quartile in 2000. In coastal markets, affordability challenges are even more pronounced, with affordability having deteriorated considerably since 2000 (Myers and Park, 2019). While it is true that many markets could be substantially helped by an increase

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in the supply of affordable housing, how the existing stock is managed and available to different income groups, including through federal programs such as the HUD's Housing Choice Voucher (HCV) program, remains critical to low-income families throughout the country.

HUD has long provided a lifeline to millions of low-income renter households, subsidizing their housing each year. While the department has a range of programs supporting the poorest Americans, the largest by far in terms of outlays, is the HCV program (McClure, Schwartz, and Taghavi, 2015). The HCV program, administered by HUD, supports over 2.2 million households, or about 4.5 percent of all rental households, each receiving rental subsidies ensuring that their rent does not exceed 30 percent of their income. Forty percent of HCV holders are female-headed households with children (HUD, 2019). The program has undergone changes in funding and scope since its inception in the Housing and Community Development Act of 1974, yet it remains a key pillar of today's tenant-focused (as opposed to project-focused) federal housing policy.

One of the determinants for access to users of the voucher program is a key regulatory feature of the program's implementation: the scales and geographies of Fair Market Rents (FMRs), which are the HUD-provided metropolitan-scale maps denoting what a unit would rent for in a fair market transaction in a given FMR area. By definition, FMRs are set at the 40th percentile of rents for units of different bedroom counts, meaning about 4 out of 10 units should be nominally available to voucher holders. Two challenges have long been associated with the program. First, there is the issue of whether sufficient numbers of units are available to voucher holders in different markets. If a much smaller sliver than the 40th percentile would be available, it would create more competition and limit options for program participants (as well as to low-income households in general). Second, and relatedly, a limited stock typically translates to a limited geography, with households more prone to concentration in high-poverty, high-segregation neighborhoods.

Both factors—scarcity and concentration in high-poverty areas—have been demonstrated empirically over the years by HUD and others. As a way to address both, HUD recently transitioned a small number of areas to Small Area Fair Market Rents (SAFMRs), a much finer-grained estimate of rents. SAFMRs allow subsidies to be higher in more expensive areas, while conversely reducing them in more affordable ones. This could open access to new markets for many low-income Americans. The Final Rule on establishing SAFMRs was issued in the second half of 2016, requiring implementation for 24 HUD-defined metropolitan areas. HUD has issued interim and final reports on six pilot study areas, with early implementation of the shift from FMRs to SAFMRs. While interim and final evaluation reports suggest promising outcomes in terms of offering more units in higher opportunity neighborhoods, assessments including larger geographies have yet to be done.

This study relies on a recent national sample of rental data scraped from Craigslist, a listing website, to provide early insights into HUD's transition to SAFMRs. The rental listings are geocoded and can thus be classified by both the old "large area" FMRs as well as by the new SAFMRs, allowing us to identify transitions—listings that were too expensive in the old classification but fall below SAFMRs per the new schema. Although in many high-cost markets, the existing FMR system means many neighborhoods are de facto rental deserts, with few rental listings available below applicable FMRs, we find the situation to be much improved with SAFMRs. We discuss limitations with the analysis as well as offer suggestions for the program.

We start the article with a review on the background of the FMR program, highlighting key challenges, from concentration to measurement issues. We motivate the study in the context of data limitations and the value in triangulating with an independent source. We then describe the data and report on findings for the United States as a whole and for the 24 mandatory areas under the SAFMR final rule (Rule Areas). We suggest other areas that could be added and then discuss our findings.

Background: HUD's Housing Choice Voucher Program in Brief

The HCV program, also known as the Section 8 program, helps households afford housing in the private market by topping off the rent they are able to pay (set at 30 percent of their income), up to the going market rate for a standard quality unit.

The program hinges on annually published FMRs for each of about 2,600 metropolitan and non-metropolitan areas nationwide, determining the typical cost of a non-luxury unit. Local public housing authorities (PHAs), in turn, use FMRs to set the payment standard for how much a unit should rent for and, accordingly, what the size of the subsidy should be for individual voucher holders at lease-up. The tenant pays 30 percent of their income, and the program pays the difference up to the lesser of the gross rent for the unit or the payment standard amount set by the PHA.

The voucher program is not an *entitlement* where every eligible family receives a voucher but a benefit subject to waiting lists for vouchers to become available. Implementation details of the program, such as how FMRs are determined, have a big bearing on how many households can be supported and where those households will end up living *within* regions. As an example, potential voucher tenants accessing the Berkeley Housing Authority's website during the spring of 2019 would find the waiting list closed; it was last open for 5 days during the summer of 2010 and some 37,000 people applied for a spot there (Berkeley Housing Authority, 2019). Nationally, an eligible family that has secured a spot on the waiting list will wait an average of 2.5 years for a voucher (Watson et al., 2017). Some markets see much longer waiting times; for example, in 2017, Santa Cruz reported a waiting period of 8 years (Panetta, 2017). An unfortunate lack of centralized data on waiting lists compiled from individual PHAs precludes systematic analysis of the predictors of waiting list length. For many, the program is all but off-limits and not a predictably reliable plank on which to build a family's housing career.

In addition to being consequential for individuals, implementation details matter to the overall fiscal health of the local PHAs managing the programs for HUD. If FMRs are set too low, underestimating the "true" cost of rentals, many households won't be able to secure a lease as they cannot compete with non-subsidized renters; that would negatively affect the program's "success rate," which hovers in the mid-30s in percentage terms in a large national assessment (Finkel and Buron, 2001). To the extent that the payment standard is set too low in some FMR areas with scarce affordable housing stock, those markets may, from the vantage point of low-income renters and voucher holders, effectively function as rental deserts. In rental deserts, expansive and expensive housing searches are conducted, with considerable difficulties securing leases, particularly in neighborhoods offering opportunities. This scarcity is exacerbated by low turnover,

loss of landlords to the HCV program, as well as gentrification of typically amenity-rich, centrally located areas historically affordable to low-income individuals (Hwang and Lin, 2016; Somerville and Holmes, 2001).

Conversely, if rents are set too high with higher FMR levels, landlords may absorb the higher rents payable rather than provide more housing service, getting more money from the federal government in the process (Collinson and Ganong, 2018). This would deplete funds and could ultimately make fewer vouchers available for families in that area. Many local PHAs from high-cost areas watch, not surprisingly, with great interest as rents are published ahead of each fiscal year (FY), writing comment letters challenging local FMR determinations, using pointed language such as "unfathomable" to describe the published rents (Fredericks and Havlicek, 2017).

Well-Known Voucher Program Challenges

Metro-Level Rents Ignore Submarkets

High-cost areas with rapid rent increases will, all other things equal, have a harder time getting FMRs to catch up with local markets, but geography matters, too. The larger the region, the more internal variation of rental rates from one neighborhood to the next. This variation is attributable to a range of factors related to accessibility to jobs, open space, and other amenities, as has long been well documented by the hedonic housing price literature (Bayer et al., 2016; Knaap, 1998; Rosen, 1974). FMR areas as regions in their own right, typically have a number of relatively distinct housing submarkets, each with their own characteristics and cost structures (Bourassa et al., 1999). While PHAs can set payment standards from 90 to 110 percent of FMRs, many FMR areas exhibit a much larger variation in rental costs between submarkets. Having uniform FMRs for such areas means that the voucher subsidy will be the same in the most expensive areas as in the most affordable parts of the FMR area. This effectively limits the geography of *where* the vouchers will likely be used, increasing the likelihood that lease-ups will be in the least desirable parts of the region. This is in contrast with program objectives of poverty deconcentration, while certainly flying in the face of the key premise of the program: that households be given a meaningful choice of housing options.

Deconcentration

Deconcentration has long been recognized as an important objective of the affordable housing programs,[1] due to poor outcomes on a range of development indicators from growing up in high-poverty, segregated neighborhoods. While there was little doubt that living in concentrated poverty was not beneficial, the record on dispersal programs had long been less than convincing (Goetz and Chapple, 2010). HUD's own Moving to Opportunity (MTO) for Fair Housing demonstration program has provided important experimental data underlying the policy importance of neighborhood quality, even if the mechanisms may not be fully understood. Leveraging these longitudinal data, Chetty and collaborators (2015), in a set of groundbreaking studies, have provided new insights from the MTO program data linked to administrative records. They convincingly demonstrated the long-term, positive effects of moving away from poverty-

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[1] "Fair Housing Act of 1968." 1968. 42 U.S.C. 3601.

stricken neighborhoods before children reach adolescence, profoundly influencing individual life trajectories (Chetty, Hendren, and Katz, 2015). Whether the key policy implication of MTO is to address the root causes of poverty, fix the social fabric of existing neighborhoods, or encourage moving residents, concentration in high-poverty neighborhoods remains a reality for many voucher holders.

More than 20 years ago, Newman and Schnare (1997) found that, by giving tenants choices not present with a policy based on place-bound, project-based assistance, the voucher programs appeared to do little to help improve neighborhood quality of residents, although the voucher program appeared to "reduce the probability that families will live in the most economically and socially distressed areas." Almost twenty years later, McClure and Johnson (2015) revisited Newman and Schnare's work, noting some success in terms of moving more households into low-poverty, less distressed areas—including suburbs—though still finding much room for improvement on racial integration and other factors.

A considerable amount of research, including research from HUD, has documented this very challenge of deconcentration of voucher holders away from the most impoverished neighborhoods. A number of studies have assessed particular markets with respect to the deconcentration goals motivating the program (De Souza Briggs, Comey, and Weismann, 2010; Lens, Ellen, and O'Regan, 2011; McClure, 2008; McClure, Schwartz, and Taghavi, 2015; Varady et al., 2010). Section 8 households are concentrated in relatively high-poverty neighborhoods (Wang and Varady, 2005). McClure and colleagues (2015) found that one in five voucher households situate in low-poverty neighborhoods, although voucher holders were a small share of the housing stock and are not particularly spatially concentrated. Pendall (2000) documented an association between high rates of poverty and the concentration of voucher holders in neighborhoods of distress. Higher vacancy rates, however, were found to increase the ability of households to move to areas of higher opportunity (Galvez, 2010), a finding consistent with the concerns raised by commenters on HUD's Proposed Rule on SAFMRs: That the program would be less successful at providing deconcentrating in markets with very low vacancy rates (HUD, 2016c).

Why are Voucher Holders Persistently Concentrated?

Lack of deconcentration is thought to be due in no small part to the payment standard being too low for program design reasons. With the payment standard uniformly set for a metropolitan area, higher cost areas will automatically be off-limits. Recent supporting evidence comes from Wang's analysis of survey data from Florida, which show a marked difference between voucher holder stated preferences for safe and clean neighborhoods with good schools and the neighborhoods they could *actually* afford (Wang, 2018).

The assumption is that concentration has persisted for financial reasons, with payment standards set such that good neighborhoods were off-limits, although other plausible reasons have been identified.

Landlords may not actually lease to voucher holders, as was recently reported by both the *Los Angeles Times* and Pew Research (Khouri, 2019; Wiltz, 2018). In a landmark study of landlord behavior, particularly whether would-be voucher holders would be treated differently than other

prospective tenants, researchers found the housing search process fraught with denials of voucher holders in more than 75 percent of cases in some markets (Cunningham et al., 2018). This is a longer standing challenge, having accompanied the program perhaps since its inception (Tighe, Hatch, and Mead, 2017). Building trust and long-term relationships with landlords is accordingly critical to overall program success (Varady, Jaroscak, and Kleinhans, 2017). Many landlords are anecdotally leaving the program, however, representing an erosion of long-term relationships with PHAs.[2]

The program may fail to further deconcentration objectives for a number of reasons not necessarily directly related to the program itself, such as lack of social networks in higher opportunity neighborhoods or limited transportation options (McClure, 2008; Ruel et al., 2013).

Further, beyond payment standards, counseling appears to be an important factor for families to successfully secure housing in low-poverty neighborhoods (Turner and De Souza Briggs, 2008). Voucher holders generally have 60 days to search, select, and secure a lease after voucher assignment. Whether it is search difficulties, preferences, or discrimination, it follows that not all searches will be successfully turned into a lease, even if the listing price is technically within reach, or leases may not lead to the most promising neighborhoods given the typically higher cost they command (Shroder, 2002). In 2001, in a nationally comprehensive study, researchers found that the "success rate," or the rate of success of securing a lease for voucher families, was just 37 percent (Finkel and Buron, 2001).

A more structural reason for lack of deconcentration success is that demand-side programs such as vouchers are unable to address a key underlying reason for high housing costs in many areas, such as limited supply and low vacancies. In particular, as many high-cost markets are supply constrained, vouchers are of less use in those areas.

HUD, however, has long focused on addressing this programmatic challenge. Already in 2000, the agency issued an interim rule stipulating both that (1) some areas could base FMRs on 50th percentile levels, departing from the typical 40th percentile standard, and (2) that PHAs would have more flexibility in diverging from the areawide rent ceiling, allowing them to set the voucher "payment standard" to between 90 and 110 percent of the published FMR for each unit size (HUD, 2000). This devolution of authority to the local level could mean PHAs could be much more responsive to local conditions and knowledge. Ultimately though, HUD assessed that the 50th percentile approach failed to sufficiently reduce the concentration of voucher holders in high-poverty areas.

Toward Small Area Fair Market Rents

As the 50th percentile approach failed to sufficiently deconcentrate voucher holders, the most recent evolution involves adjustments to the geography of the FMRs. In tandem with yearly small-area data from the American Community Survey (ACS) that started to be available in 2011, HUD issued a notice that it would begin a pilot demonstration project for a small number of PHAs to

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[2] Contra Costa County, for example, reported a drop of 631 landlords in recent years as they could lease to non-HCV renters (Villareal, 2016).

use a new methodology of ZIP Code-based FMR areas, called SAFMRs (HUD, 2010).[3] By shifting to ZIP Codes instead of metropolitan statistical areas (MSAs), rents would be able to track submarkets better, instead of treating housing markets as wholly uniform within an MSA-wide FMR area (HUD, 2016a). The premise of geographically rescaling FMRs to the much smaller ZIP Code tabulation area geographies is to allow voucher payments to track actual rents much closer than the one-size-fits-all per the FMRs, meaning a much more variable payment standard within each FMR area. With the more nimble SAFMRs, households would therefore, in principle, be better able to locate in relatively higher opportunity areas, which typically are more expensive, than what they would have been able to with existing policy under prevailing FMRs. At the same time, the SAFMRs would also "prevent undue subsidy in lower-rent areas (HUD, 2010). Where the 2000 Interim Rule also increased the FMR ceiling for MSAs to the 50th percentile rent, the difference is the finer geographic scale. An areawide increase in allowable rents did little to combat the locating of voucher holders in areas of concentrated poverty and economic and racial segregation, while likely subsidizing landlords offering substandard units. In practical terms, whereas there are around 625 unique metropolitan area-based FMRs, the number of SAFMRs is almost 25,000, a forty-fold increase in geographic resolution, which is substantially better able to track real estate submarkets than the metro-wide delineations they may replace.

To test the effect of migrating to smaller-scale FMR areas as a way to better enable voucher holders to reside near jobs, transportation, and educational opportunities, five PHAs with different demographic and economic characteristics agreed to participate in the SAFMR demonstration in 2012 (Finkel et al., 2017). The demonstration project would test key outcomes for a handful of PHAs before rolling out the program as a replacement to the 50th percentile FMR areas.

Expectations and Early Assessments

By 2017, an Interim Report on the pilot areas was issued, demonstrating that this was indeed the case; that by re-carving metropolitan area geographies into ZIP Code-level specificity, the distribution of rental units tended to shift to relatively more expensive areas, often doubling as areas of higher opportunity (Finkel et al., 2017). The study also noted, however, an overall decline in units affordable to voucher holders in those areas.[4] Still, based on those findings, HUD issued a final rule that SAFMRs would become active in the 24 Rule Areas, generally higher cost FMR areas, or areas with a high concentration of voucher holders in poverty (HUD, 2016c). After pushback from stakeholders and some PHAs, HUD announced a delay in the implementation of SAFMRs for the 24 Rule Areas to FY 2020, citing the desire to complete the full pilot study and more fully analyze potential downsides of the transition (HUD, 2017b). A legal challenge was filed by two voucher holders and a nonprofit organization devoted to providing housing opportunities for low-income people in Connecticut, with the District of Columbia Circuit

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[3] The SAFMR demonstration consisted of five PHAs: The Housing Authority of the County of Cook (Illinois), the City of Long Beach (California) Housing Authority, the Chattanooga (Tennessee) Housing Authority, the Town of Mamaroneck (New York) Housing Authority, and the Housing Authority of Laredo (Texas). In addition, the evaluation of the demonstration study included two PHAs from the Dallas, Texas metropolitan area, the Housing Authority of the City of Dallas and the Housing Authority of Plano, which have both been using SAFMRs since 2011 as the result of a legal settlement.

[4] The opportunity index constructed for this study includes percent nonpoor, school proficiency, job proximity, and environmental quality.

Court enjoining HUD to continue with the SAFMR as HUD had not made the proper procedural findings necessary for a delay.[5]

As SAFMRs were officially rolled out in 2018, an early assessment came from the New York University (NYU) Furman Center. They expanded HUD's Interim Report analysis of the pilot SAFMRs demonstration to the 24 FMR areas mandated to use SAFMRs under the 2016 SAFMR Final Rule (NYU Furman Center, 2018). They analyzed the introduction of SAFMRs in these 24 Rule Areas, using ACS data tabulated for HUD on rental units and their rent distribution at the Zip Code Tabulation Area (ZCTA) level, and found that switching to SAFMRs *furthered* housing options in higher-rent ZIP Codes while *reducing* them in lower-rent ZIP Codes, which was consistent with program purposes. Somewhat in contrast with the pilot, their analysis also found that, in total, the number of units affordable to voucher tenants would increase with the use of SAFMRs when looking at the 24 Rule Areas as a whole (NYU Furman Center, 2018).

Palm (2018), in an assessment of the program using non-census rental data from Rent Jungle, a web listing aggregator, analyzed rents from two time periods in five FMR areas and similarly found that the switch to SAFMRs would positively influence availability of units in higher opportunity neighborhoods; that finding stresses the importance of the geographic scale of the program. He further found different trajectories in different areas. Sacramento, for example, would benefit from inclusion in the SAFMR program as the switch would mean a substantial increase in listings affordable in low-poverty neighborhoods, without an offsetting "cataclysmic loss" of listings in higher poverty areas. Overall, the assessments of the switch so far are encouraging, though issues of measurement will remain a challenge.

Key Measurement Challenges and Motivation

A difficulty in assessing FMRs comes from the data used to calculate FMRs in the first place; ACS data. While nationally comprehensive, the data are collected by an ongoing survey throughout the year with 1-year data released for larger geographies (areas representing more than 65,000 persons). For all its wonders as a timely, repeated, and comprehensive data resource for researchers, a sample-based survey such as ACS presents unique analytical and programmatic challenges when using it for program development and, in particular driving regulatory geographies of FMRs. HUD, in 2018, indeed noted that "[i]n general, it is difficult to measure the accuracy of FMRs for the simple reason that no single, widely accepted measure of gross rents exists to use as a benchmark to compare with the FMRs" (HUD, 2018). While it is instructive to assess unit availability below FMRs using the special tabulations of the inventory of rental units by rent at the level of ZCTAs provided by HUD, by definition, availability largely follows FMRs quite closely as program and evaluation is defined using the same source. Many PHAs, in their comments on annual releases of FMRs, indeed note the challenges related to using ACS data, the lags it necessarily entails, and the challenge of tracking fast-moving markets with higher than average increases in prices not captured by the current usage of national trend factors.

> "In 2013 and 2015 the eight PHAs in the [Oakland-Hayward-Berkeley, CA] Metro Division paid for and conducted a statistically valid rental survey in order to refute proposed FMRs

[5] *Open Communities Alliance Et Al v. Carson Et Al, Civil Action No. 17-2192 (BAH)*. 2017. Washington, D.C.

that either were drastically low given our rental market or reduced from the previous year. In both 2013 and 2015, the FMRs were significantly increased as a result of the study data (approximately 16 percent in 2013 and approximately 34 percent in 2015), thus demonstrating the inadequacy of HUD's FMR methodology" (Villareal, 2016).

While SAFMRs represent a clear conceptual and policy-wise great leap forward recognizing the significant intra-regional housing market heterogeneity, questions of measurement will nonetheless continue to be an issue. The core challenge, only made more acute when going to the smaller ZCTA level, is intrinsically related to capturing at relatively fine spatiotemporal detail the behavior of the rental housing market with a survey with a *locally* modest sample size, coupled with the requirement for both spatially and temporally detailed data on rents for different unit sizes. The need for timely data requires further subsetting to recent movers to capture recent inflation, further limiting the sample. HUD's guidelines are such that estimates with a margin of error ratio larger than 50 percent are not to be used for calculating base rents and recent move factors. This means a wide band around a point estimate would be acceptable, and necessary (HUD, 2015). HUD caps possible year-over-year decreases to 10 percent, effectively smoothing the effect of such measurement volatility (HUD, 2017a).

Apart from sampling error, there is the challenge of using a survey that is not ideally suited as a housing survey. Some commenters on annual FMR notices in the Federal Register have noted, in connection with the requirement that HUD exclude subsidized households from the ACS rental data, the difficulty of properly identifying and discarding them. HUD, however, handles that by truncating the bottom of the rental distribution using administrative data on assisted housing rents before calculating the 40th percentile. Similarly, some major cities, typically in expensive coastal markets, have rent control, which could serve to downward bias FMRs in exactly the costliest markets. In sum, inasmuch as these factors affect FMR levels, having external data to compare against FMR levels is critical, highlighting the value of separating training and validation data for FMRs.

Such assessments with ACS-independent data are rare, however, mainly because few nationally comprehensive datasets exist on rental markets. While there is a strong data infrastructure associated with home sales in the form of recorded transactions, rents leave far fewer traces to track them effectively and across geographies. It is typical for vendors to exist in particular markets. While the localized nature of rental information makes generalized, consistently measured assessments difficult, it by the same token makes it hard to do larger scale accounting of the housing program. Assessments have accordingly typically focused on individual areas due to data limitations. Holding some promise, but nonetheless representing the problem of aggregation, as well as of fair use, the increase in the number of web platforms has given rise to big data collection efforts; that potentially offers insights into a range of domains, including rental markets, if the data are available to harvest and prove to be reliable.

A few researchers have relied on such big datasets to answer questions related to housing markets and FMRs, offering a triangulation independent of ACS data. Boeing and Waddell (2017) used Craigslist to assess FMRs nationally in a demonstration project of using big data to address substantive social science research questions, while at the same time comparing the rental data to

federal sources. While they found 37 percent of listings to be below FMR levels, close to the 40th percentile defining the program, they found many variations between metropolitan areas, with costlier FMR areas falling in the single digits. More recently, Palm (2018) provided preliminary evidence that suggested the transition to SAFMRs would overall lead to more units in higher opportunity areas. While Boeing and Waddell analyzed listings relative to FMRs, this study extends the work by reporting on the transition from FMRs to SAFMRs. This article expands the conversation and provides more detail on the potential for the program to move households into higher opportunity neighborhoods with the transition to a more fine-grained regulatory geography.

The Current Study

What will Small Area Fair Market Rents mean for would-be voucher holders across the 24 Rule Areas? This study explores differences in rental listing availability using a national dataset following the introduction of SAFMRs in the 24 Rule Areas. While there are only 24 areas that were mandated to use SAFMRs under the final rule, we expand the comparative analysis to include all areas for which SAFMRs are published, to cast a wider net on the effect of this type of geographical-regulatory reclassification, including to assess which non-rule areas would be well suited for using SAFMRs.

To gauge the availability of units at the relevant price point, this study relies on data scraped from Craigslist, a rental listings site, to characterize the voucher program. Using alternate sources of data to illuminate large scale urban phenomena is part of a wider emergence of "urban analytics" (Goodspeed, 2017). These alternatives rely on an array—often implied to be "bigger" and more "real time"—of sources of data and are often of a volunteered nature from "citizen sensors," with questions as to both motivation and accuracy (Goodchild, 2007). In the case of data from Craigslist, listings are provided for business reasons by owners of units or companies managing units on an owner's behalf.

Description of Dataset

The national sample[6] covers the first 6.5 months of the federal FY 2019, beginning October 1, 2018. We note that using data covering the first half of the FY, should all other things be equal, leads to a better match with the FMRs, as it will cover the period least affected by inflation over the course of the year.[7]

While there are issues of accuracy and duplication, perhaps the most salient issue is that of coverage, since not all listings end up on Craigslist. As a non-research volunteered geographic information dataset, there is no standard for inclusion, no published benchmarks of market saturation and share, and coverage will vary over time and region, with usefulness needing to be determined on a case-by-case basis. Using data from a non-scientific sample, or in our case a form of "volunteered geographic information" (VGI) data, raises additional challenges, as the extensive

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[6] The listing data is scraped from Craigslist by UC Berkeley researchers using the Python-based Scrapy library. See Boeing and Waddell (2017) for details.

[7] The listing data have not been adjusted for inflation or seasonality, nor would it be appropriate to do so: the rents such as they are, over the course of a year, will be what is compared with the payment standard over the course of the year.

quality control measures associated with the federal statistical infrastructure are entirely absent; the data generating process is not a neatly curated, purpose-driven sample, but rather one from data "in the wild." The data are an artifact from the rental listing process; digital ephemera not meant to leave a footprint; and are in many ways the equivalent of looking at historical yellow page listings. To clean these, we went through a process similar to that described in Boeing and Waddell (2017), dropping formal duplicates (landlords reposting the same listing days later to generate more views). We similarly limited records to ones with valid geocoding. We filtered outliers using percentiles as well, but instead of defining outliers relative to the national distribution, we calculated outliers separately for each county to more closely reflect the norm for local markets.

To assess the dataset, we compared listings in our sample with the latest 1-year ACS release for 2017 at the core-based statistical area (CBSA) level for two pieces of information:

- Do the data roughly correspond to counts of recent mover households?

- Do the listing rents approximate those reported by ACS?

Listings and moves are distinctive conceptual worlds: Some people move more than once per year, but this is not captured by the ACS survey, asking "Where did this person live 1 year ago?" By the same token, the same unit may be listed more than once and appear more than once in the sample legitimately without being a duplicate. We would accordingly expect a larger number of listings than movers *if* the rental data represented the entire universe of listings, which of course they do not. Another difference is that listings may be akin to asking prices, and a lease may ultimately be signed with a rent below the advertised price, depending on the conditions of local markets.

In the aggregate, we found sufficient alignment in the two datasets to suggest reasonable accuracy. We found, first, a strong correlation (R^2: 0.84) between Craigslist listings and recent movers per ACS, and second, a strong correlation (R^2: 0.86) between median rents, both measured at the CBSA level. While these correlations were both strong, there were outliers particularly in the relationship between listings and moves. We mark a number of those on exhibit 1 and note that New York falls substantially below the regression line, having far fewer listings than the norm. New York's rental market is heavily dominated by brokers, with accordingly a lower utilization of services such as Craigslist (Boeing and Waddell, 2017). On the other hand, the Los Angeles area has more listings than expected, as do MSAs around Seattle; Washington, DC; Denver; San Francisco; and Portland, to name the larger ones. Those housing markets could either see above average relocation activity, or those areas could be more prone to duplicates not caught by the heuristic approach sketched in exhibit 1.

Exhibit 1

Comparing Craigslist, ACS on Listings and Median Rent, CBSA Level
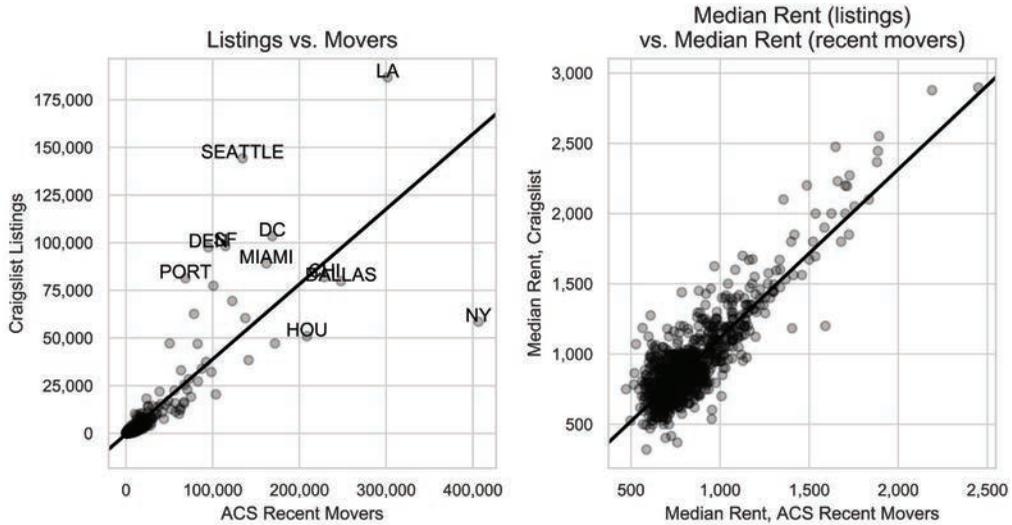
ACS = American Community Survey. CBSA = Core-Based Statistical Area.
Notes: Recent mover households comes from ACS table ACS_17_5YR_B25026, with the assumption that the share of recent mover renter households is the
same as the share of recent mover renter population. The median rent ACS estimate covers renters who moved since 2015, per table B25113_002E.

Geographical duplication was widespread in the dataset. The scraped data comes with the
listing ID assigned internally for tracking purposes by Craigslist. This ID will appear repeatedly
if users resubmit the same listing days or weeks later to appear as a more current listing. These
formal duplicates are removed. A more subtle class of duplicates involves new listings beyond
resubmitting an earlier listing. In this case, in substance, the same unit is offered through several
listings each with different IDs making them appear distinct. Depending on the market, this may
take place over the course of several months as landlords may wait for a tenant to take the offered
price, even on occasion lowering the rent to entice. We filter these by assuming that units on the
same location (latitude/longitude) that have the same size in square feet, the same bedroom count
and roughly the same price (within $100 intervals) within a quarter is a duplicate. There will be
boundary effects: Should the same listing be offered at the last day of the quarter and then a week
later, they will be treated as distinct and kept in the dataset, whereas if both listings had been in the
same quarter, they would have been flagged as duplicates.

This may falsely identify some listings as duplicates when they are in fact distinct units in larger
multifamily buildings, though as the relisting practice appeared to be pervasive, this de-duplication
approach was preferable to leaving them in the dataset. Absent a way to uniquely identify units in
a building at the national scale, any practical use of such data will have to weigh the trade-offs of
discarding too many or too few listings for filtering of the data for the purpose at hand. All said,
as seen in exhibit 2, the sample went from 9.3 million to 2.8 million following de-duping and
filtering procedures. A number of descriptive statistics are provided in the data appendix.

Exhibit 2

Key Descriptives for Dataset Before and After Filtering

Subset	Area	Listings (Count)	Square Feet			Rent		
			Median	Mean	Standard Deviation	Median	Mean	Standard Deviation
Unique	U.S.	9,392,930	900	1,084	27,169	1,324	10,040	4,545,939
Geo Deduped	U.S.	2,845,445	967	1,331	41,665	1,400	25,276	7,843,509
Outlier Filtered	U.S.	2,816,757	967	1,063	523	1,405	1,646	1,003

Notes: Unique data contains one listing per listing ID. Geo Deduped data removes likely geographical duplicates of the same listing. The Outlier Filtered data excludes outliers measured on a rent per square foot basis.

Data on Opportunity Areas

Researchers have long called for better accounting of what constitutes quality in a neighborhood. As bigger datasets have become available, researchers are better able to come up with measures of neighborhood quality that go beyond the most typical proxies for neighborhood quality such as poverty (Pendall, 2000). To classify listings, we largely follow the approach set out in the HUD interim report, creating a composite index based on census-tract level components obtained from HUD's open data site (Finkel et al., 2017). Opportunity is understood as a resource or amenity available to residents in a given neighborhood.[8] The components of the opportunity index include:

- A school proficiency index[9] measuring neighborhood performance of fourth-grade students on state exams,

- An environmental health hazard index,[10] measuring potential exposure to harmful toxins at a neighborhood level, including carcinogenic, respiratory, and neurological hazards,

- A jobs proximity index,[11] a gravity-based measure of jobs access within a CBSA,

- A low poverty index,[12] measuring share below the federal poverty limit.

Each is normalized on a scale from 0–100, with 100 considered higher opportunity. All indices are defined at the tract level. We average the components at the tract level to produce the composite opportunity index and then normalize it to a percentile ranking within each FMR area. A tract is accordingly classified in relative terms within the opportunity distribution of each FMR region with the implication that two tracts in different regions can have the same opportunity score though different underlying components. As we are interested in the relative opportunity for voucher

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[8] These are not to be confused with "opportunity zones," which denote areas offering tax preferential treatment to investors. See https://www.irs.gov/newsroom/opportunity-zones-frequently-asked-questions.

[9] http://hudgis-hud.opendata.arcgis.com/datasets/school-proficiency-index.

[10] http://hudgis-hud.opendata.arcgis.com/datasets/c7e2c62560bd4a999f0e0b2f4cee2494_0.

[11] http://hudgis-hud.opendata.arcgis.com/datasets/4e2ef54b88084fb5a2554281b2d89a8b_0.

[12] http://hudgis-hud.opendata.arcgis.com/datasets/3419cb4c7aa144b2bc54671f58b580f4_0.

holders searching for housing within a region, the normalization is appropriate, and we report on listings availability by four opportunity categories.

Findings

In the following sections when comparing the two, we refer to area-wide Fair Market Rent areas as MAFMRs, and the ZCTA-based FMRs as SAFMRs to avoid confusion. All other things equal, the expected number of listings below the FMR should represent 40 percent of the rental distribution as that threshold is used in their definition.

General Effect of Transition

Did the introduction to SAFMRs increase unit availability, overall, from MAFMR levels? Per exhibit 3, taken as a whole, nationally, we found that the share of listings was 5 percentage points below 40, at 35 percent, slightly smaller than the finding of 37 percent by Boeing and Waddell (2017).[13]

While the national count is reasonably close to the target 40 percent, many individual FMR areas see well below 40 percent of units available below the FMR level. For the 24 Rule Areas, the share is just 32 percent versus 35 percent for the United States as a whole. That availability is poorer in the 24 Rule Areas is not surprising given the selection criteria's focus on housing stock in relatively high-cost areas (HUD, 2016b). Consistent with program expectations, per exhibit 3, we note that the SAFMR transition, in the aggregate, moves availability up to the mid-40s, in percentage terms, for both the 24 Rule Areas and the larger list of 625 metro-based SAFMR regions, with more of an average increase for the 24 Rule Areas: Here, SAFMR would translate to an increase in available units by 14 percentage points given their lower starting point, consistent with the Rule Areas' selection criteria based in part on the low availability of units. Exhibit 3 further suggests benefits for a wider universe of areas than those identified in the Final Rule if the disruptive effects could be mitigated.

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[13] For FY 2019, only three areas relied on the 50th percentile FMRs, with many of the others having transitioned to SAFMRs. In the assessment of rents relative to FMRs, we use the 40th percentile FMRs for the areas currently using SAFMRs, which will mean poorer performance in those areas.

Exhibit 3

Overall Change in Listings Below Fair Market Rent Levels, by Area Category
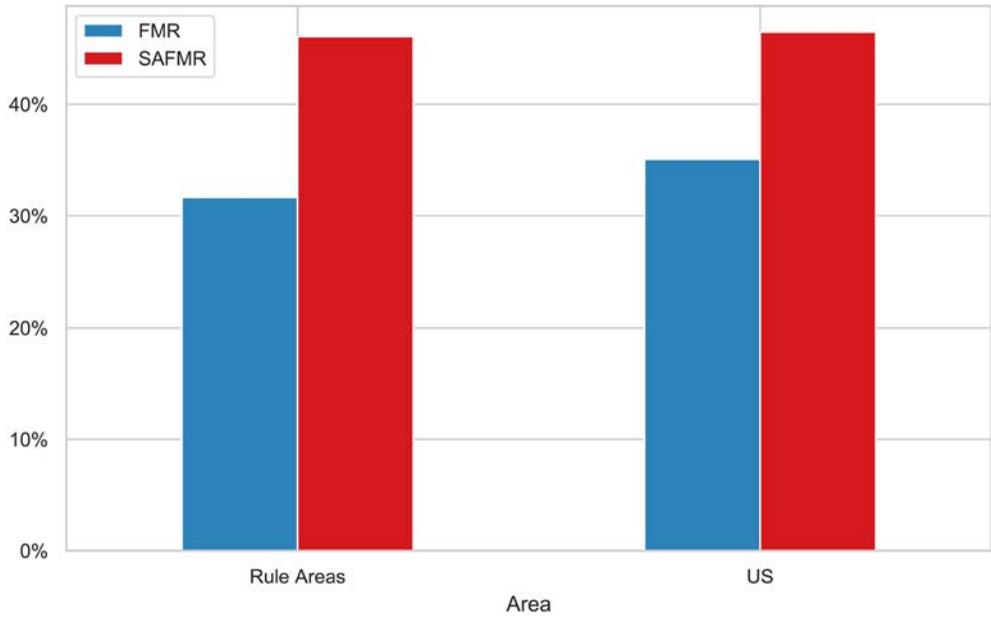
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

In some metropolitan areas, particularly in California, the share of units offered below FMR levels was markedly lower, with Sacramento and Los Angeles having the lowest shares in the state (exhibit 4). Of those two, Sacramento–Roseville–Arden-Arcade is one of the rule areas, whereas Los Angeles-Long Beach is not. Both areas are in California where the state's legislative analyst's office proclaimed a statewide under-production of housing by 100,000 units, severely impacting the availability of units (Alamo and Uhler, 2015), underlining the importance of supply-side issues as well to the success of the HUD program.

Notably, there is considerable variation with respect to availability even within high-cost areas. For the San Francisco Bay Area, core FMR areas differ considerably in their placement, with San Francisco having around 21 percent of units below FMR levels, while San Jose lands closer to the national average, at 39 percent. Seattle has above-average unit availability, suggesting that it is not simply a matter of the FMR methodology being unable to capture price increases in coastal tech-based economies: here, San Francisco and San Jose differ in how they perform on the FMR score, perhaps due to San Francisco's long-standing rent control policy, which could downward bias the payment standard.[14]

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[14] At the same time, it is conceivable rent control could upward bias FMR levels for a region insofar as the recent mover adjustment based on 1-year ACS data in the numerator is compared to the baseline rent data based on 5-year ACS data in the denominator. Rent control would likely impact the denominator more, leading to a larger upwards adjustment per the recent mover adjustment factor.

Exhibit 4

Share of Listings, Top 50 CBSAs Below FMR
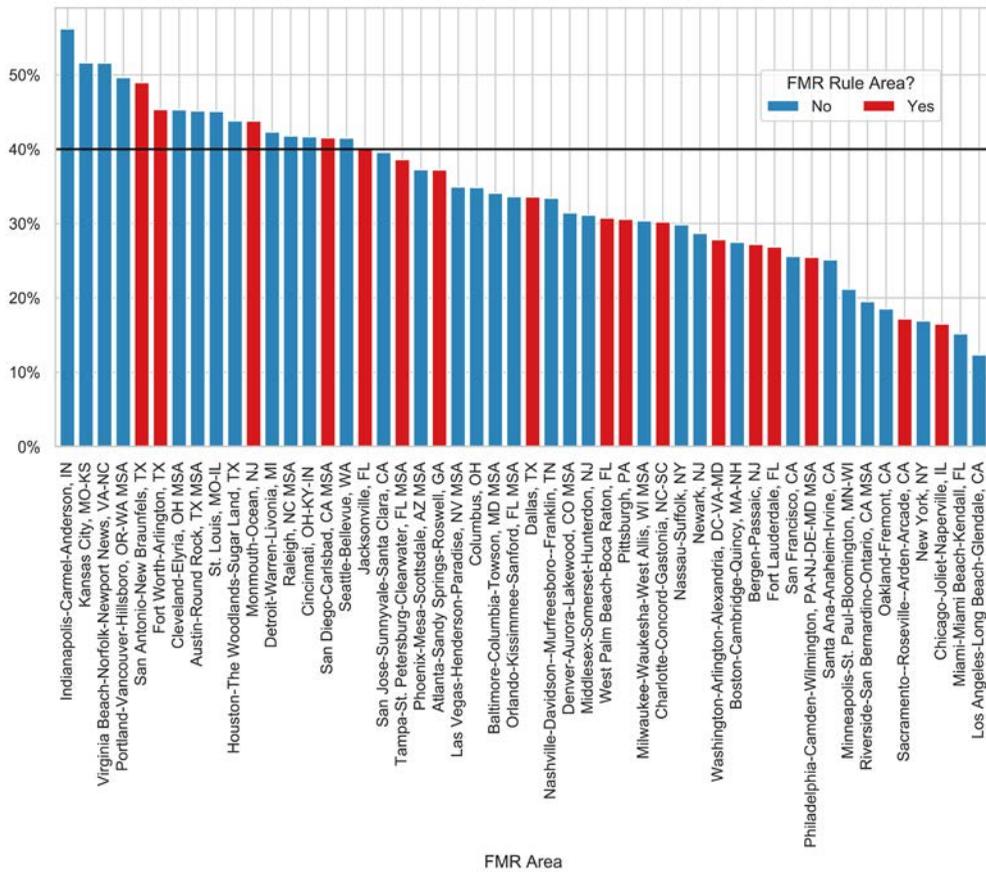
CBSA = Core-Based Statistical Areas. FMR = Fair Market Rent. MSA = Metropolitan Statistical Area.

Notes: For the top 50 CBSAs by population, the share of listings falling below FMRs. CBSAs in the 24 Rule Areas marked in red.

Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

To better appreciate the nature of the transition to SAFMRs in a spatial sense, exhibit 5 shows, at the ZCTA level of aggregation, the difference between FMR and SAFMRs for the 24 Rule Areas. Negative values, from the left side of the key, show that SAFMRs are *below* the FMR for the subarea, so subsidy payments for units in these areas will go down. The right side of the key denotes an *increase* in subsidy payments.

Overall, the map serves to illustrate the variety of submarkets in each region. In San Diego, for example, coastal areas tend to be the most expensive and inland areas the least, reflecting considerable geographic differences in rental costs; this is tracked more closely by a finer-grained SAFMR standard. Importantly, the submarket-specific location of listings and associated rents on those maps will determine the shift of the overall count of listings below FMR levels. If a plurality of units happens to fall in low-cost areas with a lower payment standard, it would lower the count

available below FMR level. Conversely, more units in high-cost areas would mean an overall increase in units available below FMR levels.

While the SAFMR data has been made available for a few years, making it possible to compare the specific areas of change (exhibit 5), those maps only tell a partial story. Areas that may *appear* to see dramatic changes in FMR levels may turn out to lead to ultimately modest changes if few rental units exist there, or if turnover is low. The address-level geographic specificity and ultimately microdata-nature of Craigslist data provides literal weights to those maps, telling us about where listings are, how much they rent for, and where any one particular listing falls in the price brackets defined by both the conventional FMR geography as well as by the potential SAFMR geographies. For example, a listing in an above-average price neighborhood may have been above FMR levels in the area-level schema and thus likely out of reach, but below SAFMR levels in the ZIP Code-based schema. That same listing can be accounted for as having "transitioned" from out of reach to within reach on monetary terms alone. We leverage the microdata nature of the data to analyze those transitions by comparing geocoded listing rents with both the areawide FMRs as well as with the SAFMRs. We subtract FMRs from the listing rent, where 0 means parity, positive means the listing is above (out of reach) FMR levels, and negative means it falls below FMR levels.

Exhibit 5

Difference at ZCTA Level, FMR to SAFMR, in Dollars, for 24 Rule Areas
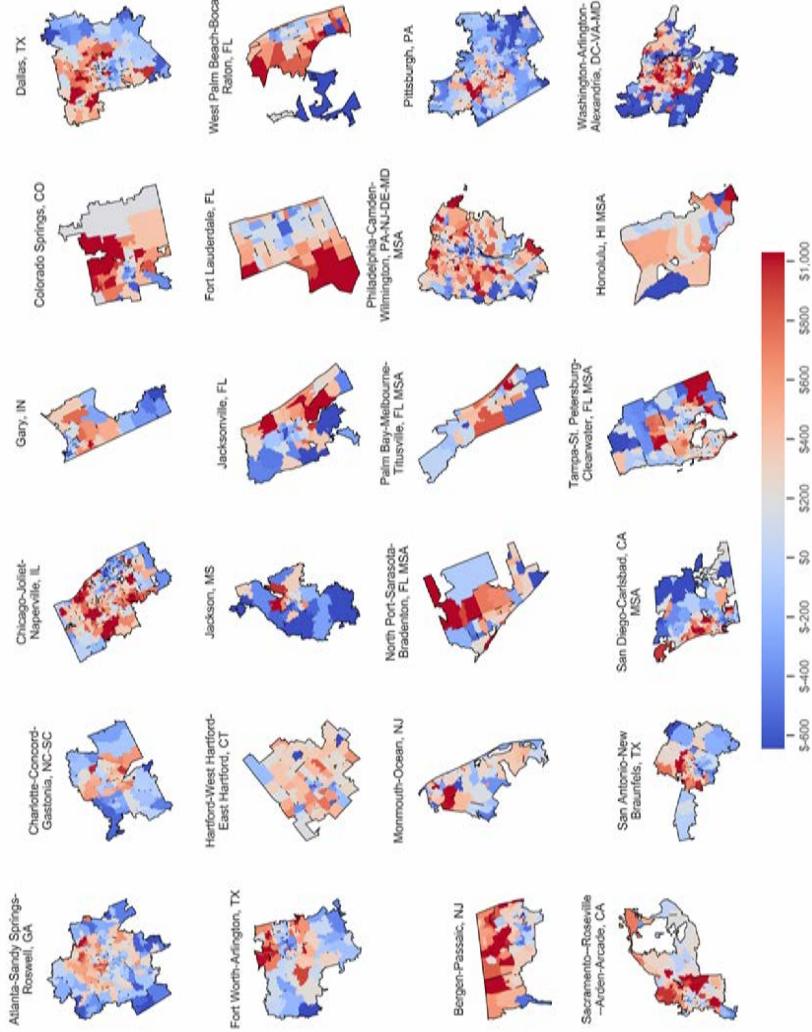
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent. ZCTA = Zip Code Tabulation Area.
Note: Maps shows ZCTA-level differences between SAFMRs and FMRs, which in effect is the same as the ratio of the ZCTA-level rent to the FMR-level rent, per HUD's methodology.
Sources: FMR/SAFMR data from HUD; ZCTA shapefile from U.S. Census Bureau

As an example of how a particular area has seen a change in the distribution of listings as SAFMRs were introduced, exhibit 6 shows the shift in units for San Diego, one of the 24 Rule Areas. We see a shift of listings in the lower, pricier rows in the figure where rents are well above FMR levels, to higher ones with SAFMR. Particularly for San Diego, we see a substantial upward shift in the availability of one-bedroom units, owing to listings in areas that are now subject to the higher SAFMRs.

Exhibit 6

Example Distributions, San Diego FMR Area
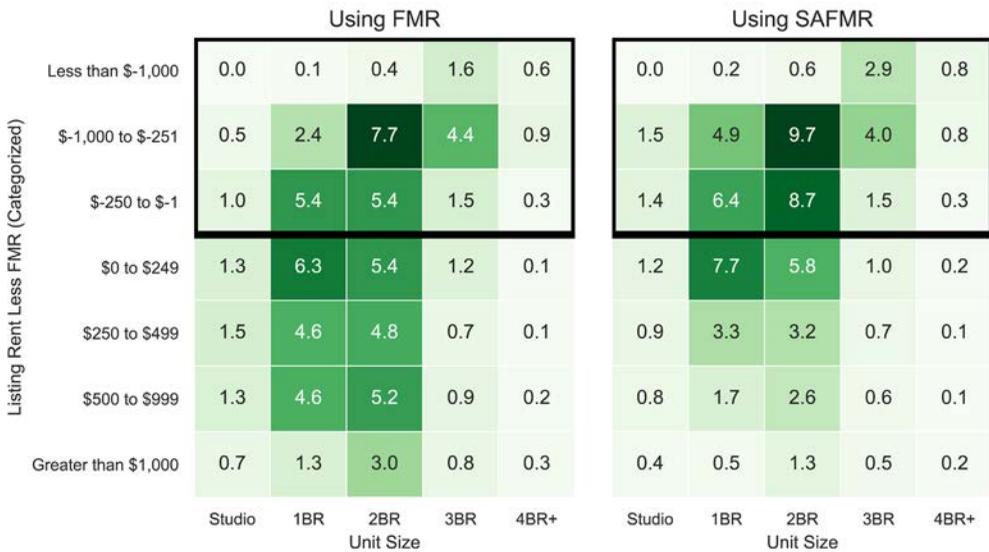
BR = Bedroom. FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Notes: Listings in thousands. The y-axis is listing rent minus FMR level (left panel) or SAFMR level (right panel). Positive categories (bottom three rows) means the listing rent for more than the prevailing FMR level; the top three rows, marked by a black rectangle, indicate listings costing less than the prevailing FMR level. Labels show count, in thousands, of listings.

To see the general distribution for the 24 Rule Areas, exhibit 7 shows the areas sorted by share below SAFMR in percentage points below the respective FMR level (FMR and SAFMR). The span between the dots shows the movement for each area. The overall impression is that a SAFMR transition for the 24 Rule Areas leads to a larger share of units falling below FMR levels and thereby being, in principle, accessible to voucher holders, while there is considerable between-area variation. Just 6 of the 24 Rule Areas have *less* than 40 percent of listings available below SAFMR, with Sacramento remaining in the bottom of the list. While SAFMRs shifted availability upwards by nearly 20 percentage points, the levels are substantially lower than what was reported using 2012–2013 data, whether due to inflation or data source coverage differences (Palm, 2018). Overall, however, as far as the basis for the payment standard goes, the number of units and areas available to voucher holders has increased.

Exhibit 7

HUD Final Rule Areas, Overall Shift in Share of Listings Below FMRs
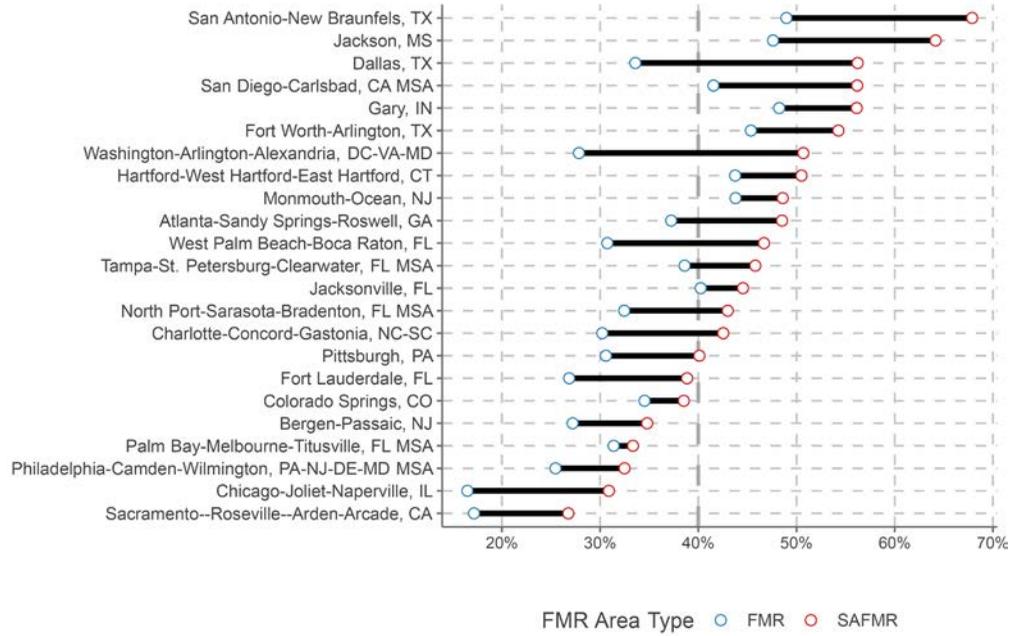
FMR = Fair Market Rent. MSA = Metropolitan Statistical Area. SAFMR = Small Area Fair Market Rent.

Note: The length of the line denotes the movement in percentage points of listings falling below FMRs in each classification.

Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

Effect by Opportunity Areas

How are listing rents relative to FMRs and SAFMRs distributed, and what is the relation to neighborhoods of opportunity? Exhibit 8 compares the distribution of listings in FMR areas but also under SAFMRs.

Exhibit 8

Distribution of Listing-Level Difference, to FMR and SAFMR, by Opportunity Index Category
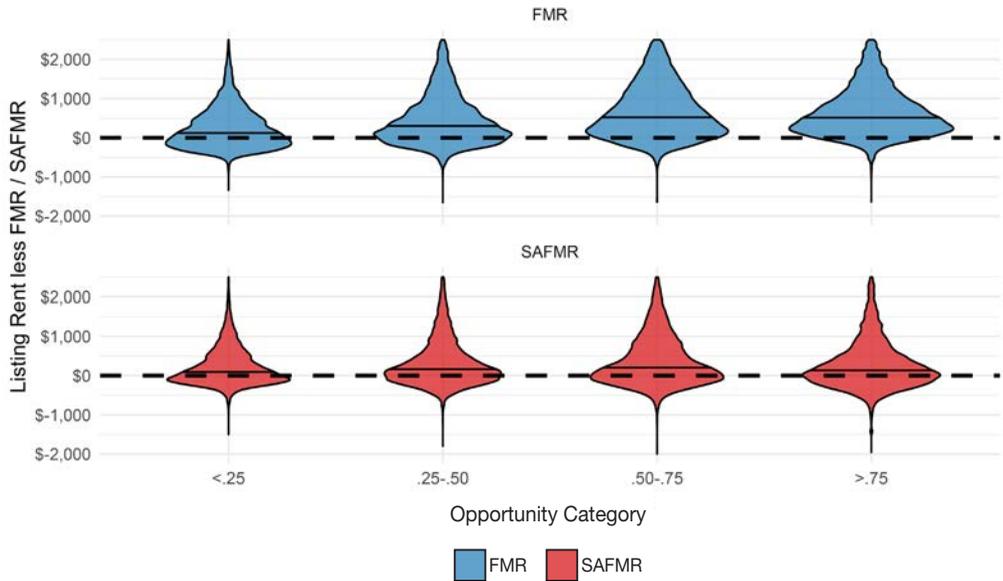
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

For each listing, the difference to the applicable FMR is calculated. Zero means parity; a positive value means the Craigslist listing is *more* expensive than the FMR; a negative one means it is priced below FMR. We further segment the data into four different opportunity categories. Each listing inherits the score from the containing census tract. Scores are quartiles at the tract level, but not necessarily at the rental listing level, and a panel is devoted to each segment. The left panel of the top row shows that for MAFMR areas, much of the distribution is below the zero line, meaning that listings are typically available at the fair market rent level on offer. The bottom row shows the listings classified according to SAFMR geographies. As we head rightward in the figure, toward higher opportunity areas, the share of units below parity generally drops: fewer units have traditionally been affordable to voucher holders in higher opportunity neighborhoods. This is most noticeable in the top row, with FMRs. The bottom row reveals that, with the SAFMR classification, as we move to higher opportunity categories, the number of units falling below parity *declines much less* than is the case in the top row: as the payment standard goes up in more costly, higher opportunity areas, listings are counted as reachable.

Exhibit 9

Share of Listings Above FMR Limits, FMR and SAFMR Variants, by Opportunity Index Category
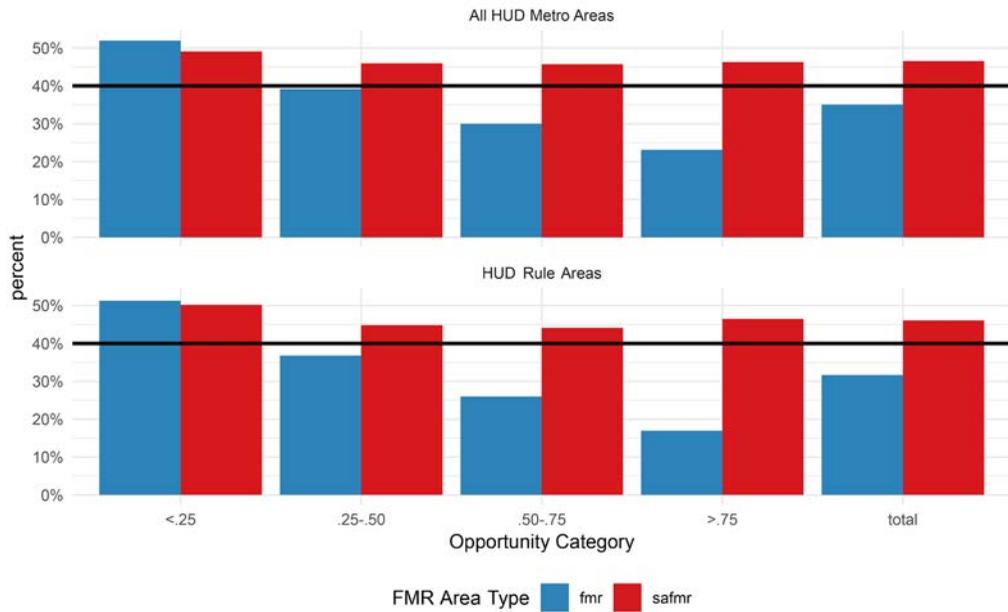
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

Whereas exhibit 8 showed distributions of the difference between FMR levels and rent levels by opportunity category, exhibit 9 shows the number of listings by opportunity category as percentages above or below FMR levels. The top panel accounts for just the 24 Rule Areas, whereas the bottom panel shows the full national sample. As before, there is a clear progression from low to high opportunity categories, with relatively fewer units available, and, within each opportunity quartile, relatively more listings are available in the SAFMR classification. The 24 Rule Areas differ mainly from the national sample in availability per FMR; overall, SAFMR availability shows a remarkable constancy even as we move up opportunity categories. While this may seem a remarkable shift, it just reflects that the payment standard goes up, following higher cost areas more closely.

The last way we explore listings by opportunity areas allows us to track explicitly the number of units changing "state," from above FMR, or unattainable, to below SAFMR, by showing flows as ribbons from one distribution to the next.

Exhibit 10

Listings, by Change of Status, to Above / Below FMR Level, by Opportunity Category
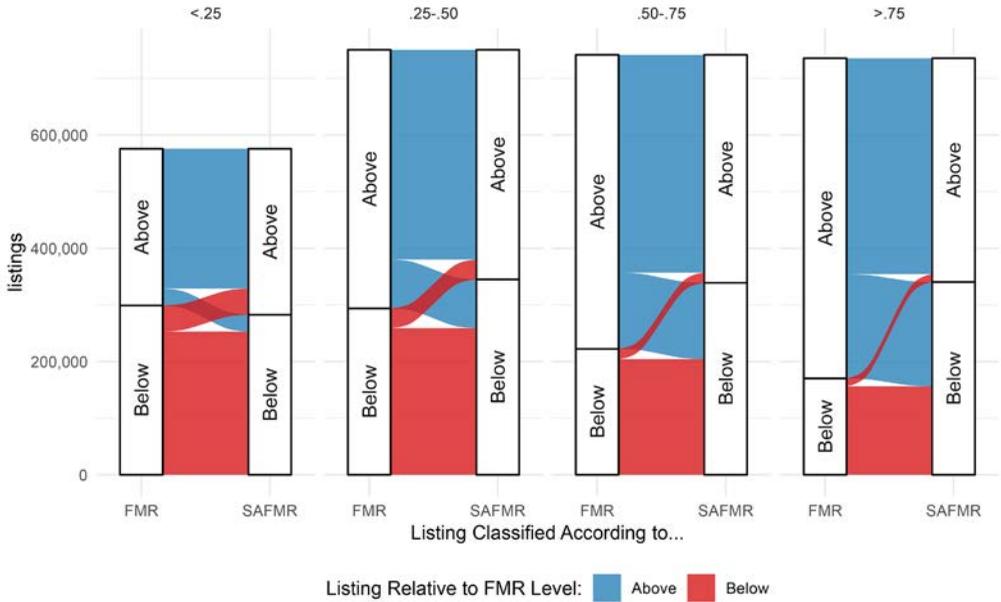
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

The ribbons show the scale of that transition, with the width of the ribbon proportional to the number of units being reclassified from above FMR to below FMR levels (exhibit 10). Notably, the middle categories covering the 25th to 75th percentile opportunity area bands show that a lot of units are above the FMR, meaning many units are off-limits. At the same time, the ribbon shows a considerable transition of listings into the *below* SAFMR bucket: Nationally, about 14 percent of listings switch from being unavailable to available in mid- and high-opportunity areas. The bands of key interest are those that originate in "above" but transition to "below," and the biggest switch appears in the higher opportunity areas on the right, with a substantial number of units that transition from above to below FMR levels with SAFMRs.

Exhibit 11

Listings, by Change of Status, to Above / Below FMR Level, by Rent Quartile Category
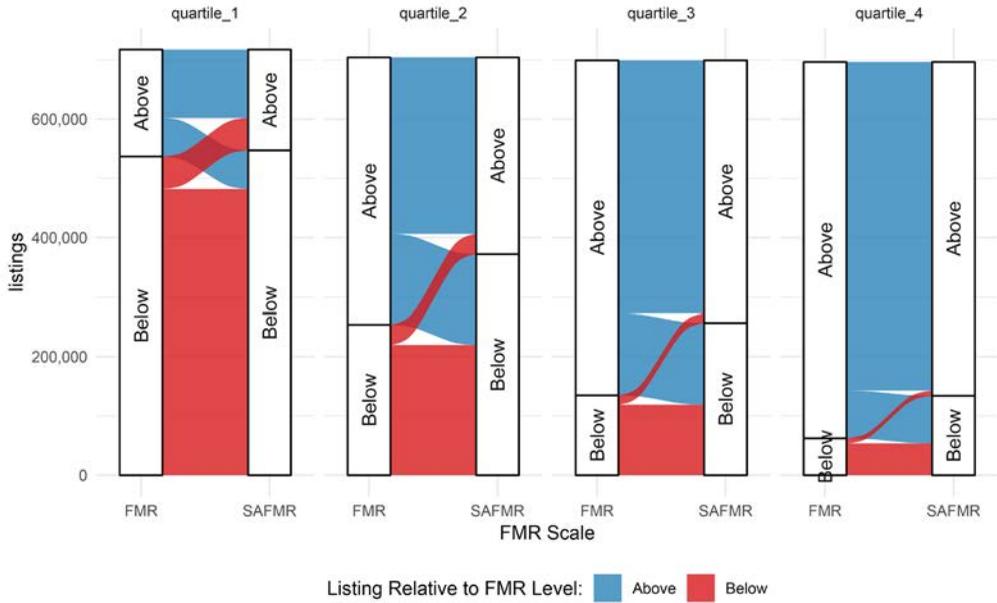
FMR = Fair Market Rent. SAFMR = Small Area Fair Market Rent.
Sources: Rental listings from Craigslist; FMR/SAFMR data from HUD

Exhibit 11 is analogous to exhibit 10 but instead of segmenting by opportunity category, we show the rental price quartile calculated within each metropolitan area. Overall, the progression from quartile one through four is fairly marked: There are progressively fewer units below FMR levels as we move up the rental cost distribution. Note the transition from above to below FMRs is about equivalent to the transition in the reverse direction for the first quartile. In the second quartile, this is no longer true, and a substantial number of units becomes available below SAFMRs. Similar to what we saw with higher opportunity areas, higher listing price areas, by definition, will have fewer units below the FMR, although SAFMRs still offer more units than would be the case with the areawide FMR system.

While SAFMRs have been applied to a limited number of areas, in part due to concerns related to negative consequences in areas where the payment standard would be lowered, it is nonetheless instructive to briefly explore non-rule areas where considerable counts of listings would switch to being below FMR levels per the new SAFMR system. To do this, we examined non-rule areas with respect to the transition. Of the top 50 FMR non-rule areas by population, we show the top 25 non-rule FMR areas sorted by the percentage point of listings moving to below FMR levels subtracting any units that fell *above* the threshold.

Exhibit 12

Biggest Net Increase of Listings Below FMR, Non-Rule FMR Areas

FMR = Fair Market Rent. MSA = Metropolitan Statistical Area.
Notes: Net increase compares listings that move "ABOVE FMR" levels and listings that move "BELOW FMR" levels, assuming SAFMRs were applied. The areas with the largest net gains in listing counts are shown.

The Santa Ana-Anaheim-Irvine, California FMR Area tops the list, with more than one-fourth of its listings crossing the threshold to be reachable below the FMR level. The Seattle-Bellevue, Washington and Oakland-Fremont, California FMR areas are in the top five, as is Houston-The Woodlands-Sugarland, Texas, and Birmingham-Hoover, Alabama. The lowest increase on this top 25 list is Riverside-San Bernardino-Ontario, California, with about 12 percent of units transitioning. Overall, the list contains a diverse array of areas and economies, spanning the country, but with the strongest gains seen in some of the more dynamic regional economies. We found a small but positive association between areas with higher personal incomes per capita and the share of listings transitioning to falling below FMRs. Future work should explore which particular characteristics account for this finding.

Discussion

This research uses listing data from Craigslist to offer insights into the transition to SAFMRs for both the 24 Rule Areas and FMR areas more generally. While the data come with a range of limitations due to their nature as a VGI dataset subject to a number of quality control issues, the data have the advantage of currency and granularity and they also represent what a would-be tenant could actually see when searching for an apartment.

We found that a switch to SAFMRs, consistent with earlier studies and objectives of the program, increases the count of units available in higher cost and higher opportunity areas. While further investigation is needed to better understand the downsides and risks, let alone the considerable variation in benefits associated with transitioning to finer scaled geographies for different types of areas, these findings suggest the switch to SAFMRs could generally prove beneficial not just for the 24 Rule Areas required to use SAFMR as the basis for setting payment standards, but indeed for a larger swath of FMR areas where high costs have persistently been an issue.

The switch to SAFMRs led to a boost of listings available in generally higher opportunity areas with only a relatively minor loss of availability in low opportunity areas. On its face, the upside was considerable, with the highest opportunity area category seeing more than 45 percent of listings falling below SAFMR levels. While this boost was largest for the 24 Rule Areas, it was nonetheless significant for non-rule areas as well, with solid boosts in availability for a range of generally higher cost areas; those areas included the tech hotspots of Seattle, Denver, and the San Francisco Bay Area. Before a wider rollout, it goes without saying that careful safeguards should be included to avoid disruption of *existing* households in areas where payment standards would drop, causing risk to renewals. If the voucher opportunity map changes as implied, and lease-ups in these wider areas prove successful in the coming years, local PHAs may find budgets even more strained, barring more resources to the program overall.

Longer Term Challenges

In many ways, the HCV program shows the limits both of a housing policy heavily focused on demand-side solutions and of how variable the outcomes of the program are. That is not because the program treats FMR areas differently but because FMR areas have substantially different housing markets. The hot coastal markets are much more difficult to fix with demand-side measures when the challenge is a complex mix of low incomes, low supply, and spillover effects from well-to-do tenants. The most critical need is in the areas with the most constrained rental markets where rents are high and availability accordingly low. This is the typical situation in the hot coastal markets, such as Los Angeles and the San Francisco Bay area, where vacancies are low and talk of housing crises perennial. In those cases, the bottom of the housing market cannot be easily remedied with an administrative fix and realignment like SAFMRs. As one PHA official put it, landlords have a choice of tenants, and with rental vacancies hovering around perhaps 2 percent, landlords will have many options to rapidly fill their units without having to face the extra risk, perceived or real, of subsidized tenants. In HUD's phrasing,

> [a] major question regarding the Small Area FMR approach is the willingness of owners with rental units in the higher cost areas to participate in the program. If owners in higher-cost areas have enough demand for their units from higher income unassisted families, they may have little interest or incentive to participate in the HCV program (HUD, 2017b).

It was for this reason that some areas that would otherwise seem great candidates for inclusion in the SAFMR version of the program balked—low vacancies would effectively preclude success and could end up wasting money at the top of the rental distribution while causing disruption for lower-income tenants. Ultimately, in those types of areas where the need may be the greatest, the

restrictive supply regime of the expensive coastal areas will remain an impediment to a successful housing policy framework across levels of government—although SAFMRs appear to be a great methodological realignment to allocate scarce resources to higher opportunity areas while limiting landlord subsidies in lower cost submarkets. Whether the program adjustment will be successful and actually translate the increased availability listings reachable by the program into higher lease-up success rates in high-opportunity areas remains to be seen in the coming years. The 24 Rule Areas may in effect help us understand more about the extent to which difficulties leasing up in higher opportunity neighborhoods were of the financial sort, or instead related to a wider set of issues, such as search costs, transportation challenges, or landlord behavior.

Acknowledgments

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Data Appendix

The data appendix provides key summaries by FMR area of the filtered listings data, including the number of listings, mean or median bedroom counts, asking rent, and rent per square foot. The tables also show the difference between listing rent and MAFMR and SAFMR, respectively. A positive number means the listing rent is above the FMR; a negative means below. The median of this difference is provided. The last four columns show the effect of the transition; the four columns sum to 100 percent and show the four possible states: A listing could be, for MAFMRs and SAMFRs in turn, available or not available at that price point. Some listings would be available or not under both systems, while others would transition to becoming either available or not available.

The two tables differ only in terms of areas covered: exhibit A1 shows the 24 Rule Areas, whereas exhibit A2 presents data for the top 50 (by population) non-rule FMR areas.

Appendix A: Additional Exhibits

Exhibit A.1

Summary Statistics and Transitions for 24 Rule Areas (1 of 2)

FMR Area	Listings (Count)	Sq Ft (Median)	Bedrooms (Mean)	Rent (Median)	Rent/Sq Ft (Mean)	Rent Less FMR (Median)	Rent Less SAFMR (Median)	Out of Reach in Both Systems	Became Within Reach	Became Out of Reach	Within Reach in Both Systems
									Listing Transitions		
Atlanta-Sandy Springs-Roswell, GA HUD Metro FMR Area	47,066	1,100	1.9	$1,239	$1.1	$128	$3	48%	15%	4%	34%
Bergen-Passaic, NJ HUD Metro FMR Area	3,096	1,003	1.8	$2,095	$1.9	$513	$267	62%	11%	3%	24%
Charlotte-Concord-Gastonia, NC-SC HUD Metro FMR Area	21,640	1,034	1.8	$1,195	$1.1	$148	$45	54%	16%	4%	26%
Chicago-Joliet-Naperville, IL HUD Metro FMR Area	78,567	900	1.6	$1,700	$1.9	$553	$225	67%	16%	2%	15%
Colorado Springs, CO HUD Metro FMR Area	13,724	936	1.8	$1,192	$1.2	$136	$55	51%	14%	10%	24%
Dallas, TX HUD Metro FMR Area	61,128	925	1.6	$1,270	$1.3	$154	-$52	41%	25%	3%	31%
Fort Lauderdale, FL HUD Metro FMR Area	24,366	1,151	2.1	$1,800	$1.5	$265	$105	59%	14%	2%	25%
Fort Worth-Arlington, TX HUD Metro FMR Area	18,485	920	1.8	$1,037	$1.1	$27	-$25	39%	16%	7%	39%
Gary, IN HUD Metro FMR Area	2,243	996	2.1	$905	$0.9	$9	-$30	40%	11%	4%	45%
Hartford-West Hartford-East Hartford, CT HUD Metro FMR Area	5,486	1,000	1.9	$1,200	$1.1	$40	-$12	46%	10%	3%	40%
Jackson, MS HUD Metro FMR Area	2,260	1,130	2.2	$900	$0.8	$10	-$90	32%	21%	4%	44%
Jacksonville, FL HUD Metro FMR Area	17,069	1,081	1.9	$1,050	$1.0	$96	$30	51%	9%	5%	35%

Exhibit A.1

Summary Statistics and Transitions for 24 Rule Areas (2 of 2)

FMR Area	Listings (Count)	Sq Ft (Median)	Bedrooms (Mean)	Rent (Median)	Rent/Sq Ft (Mean)	Rent Less FMR (Median)	Rent Less SAFMR (Median)	Listing Transitions			
								Out of Reach in Both Systems	Became Within Reach	Became Out of Reach	Within Reach in Both Systems
Monmouth-Ocean, NJ HUD Metro FMR Area	2,062	1,055	2.1	$1,500	$1.3	$71	$10	49%	7%	2%	42%
North Port-Sarasota-Bradenton, FL MSA	6,822	1,103	2.0	$1,299	$1.2	$115	$40	52%	15%	5%	28%
Palm Bay-Melbourne-Titusville, FL MSA	3,251	1,104	2.1	$1,275	$1.1	$208	$155	62%	6%	4%	27%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	38,379	975	1.8	$1,472	$1.5	$325	$160	63%	11%	4%	21%
Pittsburgh, PA HUD Metro FMR Area	11,148	950	1.8	$1,015	$1.1	$175	$70	57%	12%	3%	28%
Sacramento-Roseville-Arden-Arcade, CA HUD Metro FMR Area	30,720	975	1.9	$1,550	$1.5	$327	$185	71%	12%	2%	15%
San Antonio-New Braunfels, TX HUD Metro FMR Area	28,097	908	1.7	$989	$1.1	$2	–$102	30%	21%	2%	47%
San Diego-Carlsbad, CA MSA	77,357	910	1.8	$2,050	$2.2	$105	–$70	34%	25%	10%	31%
Tampa-St. Petersburg-Clearwater, FL MSA	32,110	1,028	1.9	$1,205	$1.2	$84	$24	50%	11%	4%	35%
Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area	103,205	882	1.5	$1,853	$2.1	$276	–$13	46%	26%	3%	25%
West Palm Beach-Boca Raton, FL HUD Metro FMR Area	17,416	1,224	2.2	$1,725	$1.4	$200	$20	50%	19%	3%	28%

FMR = Fair Market rent. MSA = Metropolitan Statistical Area. SAFMR = Small Area Fair Market Rent.

Exhibit A.2

Summary Statistics and Transitions for Top 50 (by Population) Non-Rule FMR Areas (1 of 4)

FMR Area	Listings (Count)	Sq Ft (Median)	Bedrooms (Mean)	Rent (Median)	Rent/Sq Ft (Mean)	Rent Less FMR (Median)	Rent Less SAFMR (Median)	Out of Reach in Both Systems	Listing Transitions		Within Reach in Both Systems
									Became Within Reach	Became Out of Reach	
Albuquerque, NM MSA	14,288	855	1.7	$810	$1.0	–$13	–$64	32%	15%	3%	50%
Austin-Round Rock, TX MSA	62,621	900	1.7	$1,291	$1.4	$35	–$30	42%	13%	5%	41%
Bakersfield, CA MSA	3,178	1,000	2.1	$950	$0.9	–$31	–$120	30%	17%	4%	49%
Baltimore-Columbia-Towson, MD MSA	25,421	1,000	1.8	$1,475	$1.4	$176	–$11	48%	18%	2%	33%
Birmingham-Hoover, AL HUD Metro FMR Area	4,005	1,075	2.0	$925	$0.9	$40	–$128	31%	29%	3%	38%
Boston-Cambridge-Quincy, MA-NH HUD Metro FMR Area	63,525	950	1.9	$2,540	$2.7	$403	$145	55%	17%	5%	23%
Brockton, MA HUD Metro FMR Area	528	1,000	2.1	$1,599	$1.4	$154	$129	60%	7%	3%	30%
Buffalo-Cheektowaga-Niagara Falls, NY MSA	7,250	1,040	2.1	$950	$0.9	$87	$60	57%	8%	4%	31%
Cincinnati, OH-KY-IN HUD Metro FMR Area	12,048	1,000	2.0	$927	$0.9	$50	–$30	43%	16%	3%	39%
Cleveland-Elyria, OH MSA	10,115	1,050	2.1	$900	$0.9	$31	$0	46%	9%	5%	40%
Columbus, OH HUD Metro FMR Area	16,254	1,000	1.9	$1,000	$1.0	$107	$30	51%	14%	4%	31%
Danbury, CT HUD Metro FMR Area	710	1,000	1.7	$1,650	$1.5	$317	$270	66%	5%	1%	28%
Denver-Aurora-Lakewood, CO MSA	97,588	900	1.6	$1,562	$1.7	$167	–$20	45%	24%	3%	28%
Detroit-Warren-Livonia, MI HUD Metro FMR Area	19,891	1,030	2.1	$1,002	$1.0	$73	$19	49%	9%	4%	38%
Fresno, CA MSA	8,864	1,026	2.1	$1,225	$1.1	$144	$15	52%	18%	1%	29%

Exhibit A.2

Summary Statistics and Transitions for Top 50 (by Population) Non-Rule FMR Areas (2 of 4)

FMR Area	Listings (Count)	Sq Ft (Median)	Bedrooms (Mean)	Rent (Median)	Rent/Sq Ft (Mean)	Rent Less FMR (Median)	Rent Less SAFMR (Median)	Listing Transitions			
								Out of Reach in Both Systems	Became Within Reach	Became Out of Reach	Within Reach in Both Systems
Houston-The Woodlands-Sugar Land, TX HUD Metro FMR Area	49,073	933	1.7	$1,110	$1.2	$53	–$110	32%	24%	3%	40%
Indianapolis-Carmel-Anderson, IN HUD Metro FMR Area	12,853	997	1.8	$860	$0.9	–$28	–$86	27%	17%	3%	53%
Kansas City, MO-KS HUD Metro FMR Area	15,546	954	1.8	$900	$1.0	–$13	–$45	39%	10%	4%	47%
Las Vegas-Henderson-Paradise, NV MSA	46,922	1,000	1.8	$1,129	$1.1	$134	$70	57%	8%	4%	31%
Los Angeles-Long Beach-Glendale, CA HUD Metro FMR Area	129,255	910	1.6	$2,299	$2.6	$704	$390	76%	12%	2%	11%
Louisville, KY-IN HUD Metro FMR Area	10,163	950	1.9	$865	$0.9	$31	–$5	47%	10%	2%	40%
Memphis, TN-MS-AR HUD Metro FMR Area	7,502	1,034	2.1	$840	$0.8	–$143	–$195	25%	15%	1%	59%
Miami-Miami Beach-Kendall, FL HUD Metro FMR Area	47,317	1,030	1.8	$1,950	$2.0	$548	$240	66%	18%	2%	13%
Middlesex-Somerset-Hunterdon, NJ HUD Metro FMR Area	4,370	1,088	1.8	$1,800	$1.6	$149	$25	49%	20%	4%	28%
Milwaukee-Waukesha-West Allis, WI MSA	12,691	1,000	1.9	$1,095	$1.1	$152	$55	56%	14%	2%	28%
Minneapolis-St. Paul-Bloomington, MN-WI HUD Metro FMR Area	37,323	970	1.8	$1,420	$1.4	$314	$195	69%	9%	2%	19%
Nashville-Davidson-Murfreesboro-Franklin, TN HUD Metro FMR Area	21,831	1,050	1.9	$1,273	$1.2	$147	$58	56%	11%	2%	31%
Nassau-Suffolk, NY HUD Metro FMR Area	3,846	1,043	1.8	$2,250	$2.0	$410	$265	64%	6%	2%	27%
New Orleans-Metairie, LA HUD Metro FMR Area	10,239	1,000	1.9	$1,100	$1.2	$92	$10	51%	11%	2%	36%

Exhibit A.2

Summary Statistics and Transitions for Top 50 (by Population) Non-Rule FMR Areas (3 of 4)

FMR Area	Listings (Count)	Sq Ft (Median)	Bedrooms (Mean)	Rent (Median)	Rent/Sq Ft (Mean)	Rent Less FMR (Median)	Rent Less SAFMR (Median)	Out of Reach in Both Systems	Listing Transitions		
									Became Within Reach	Became Out of Reach	Within Reach in Both Systems
New York, NY HUD Metro FMR Area	28,919	850	1.7	$2,550	$3.1	$675	$450	74%	9%	3%	14%
Newark, NJ HUD Metro FMR Area	4,356	1,000	1.9	$1,775	$1.6	$387	$130	60%	12%	3%	26%
Oakland-Fremont, CA HUD Metro FMR Area	50,763	898	1.8	$2,500	$2.6	$422	$100	58%	24%	1%	18%
Oklahoma City, OK HUD Metro FMR Area	14,851	960	1.9	$775	$0.8	–$111	–$140	21%	11%	2%	66%
Orlando-Kissimmee-Sanford, FL MSA	27,223	1,079	2.0	$1,319	$1.2	$125	$47	54%	12%	3%	31%
Phoenix-Mesa-Scottsdale, AZ MSA	60,433	952	1.8	$1,129	$1.1	$87	$10	48%	15%	6%	32%
Portland-Vancouver-Hillsboro, OR-WA MSA	81,347	915	1.8	$1,445	$1.6	$0	–$115	33%	18%	2%	48%
Providence-Fall River, RI-MA HUD Metro FMR Area	9,001	1,000	2.0	$1,400	$1.3	$340	$235	70%	7%	3%	20%
Raleigh, NC MSA	15,441	1,070	1.9	$1,129	$1.1	$46	–$26	45%	14%	2%	40%
Richmond, VA MSA	13,859	940	1.9	$1,125	$1.2	$63	–$61	37%	22%	3%	38%
Riverside-San Bernardino-Ontario, CA MSA	33,854	1,000	2.1	$1,670	$1.5	$438	$150	66%	15%	3%	17%
Rochester, NY HUD Metro FMR Area	8,403	1,090	2.0	$1,100	$1.1	$145	$55	57%	9%	3%	31%

Exhibit A.2

Summary Statistics and Transitions for Top 50 (by Population) Non-Rule FMR Areas (4 of 4)

FMR Area	Listings (Count)	Sq Ft (Median)	Bedrooms (Mean)	Rent (Median)	Rent/Sq Ft (Mean)	Rent Less FMR (Median)	Rent Less SAFMR (Median)	Out of Reach in Both Systems	Became Within Reach	Became Out of Reach	Within Reach in Both Systems
									Listing Transitions		
Salt Lake City, UT HUD Metro FMR Area	14,247	899	1.7	$1,159	$1.3	$132	$45	56%	20%	2%	23%
San Francisco, CA HUD Metro FMR Area	47,456	870	1.6	$3,450	$3.8	$530	$143	55%	19%	2%	24%
San Jose-Sunnyvale-Santa Clara, CA HUD Metro FMR Area	46,972	935	1.8	$2,899	$3.0	$157	– $76	41%	20%	5%	35%
Santa Ana-Anaheim-Irvine, CA HUD Metro FMR Area	57,545	950	1.7	$2,087	$2.2	$188	– $35	41%	34%	6%	19%
Seattle-Bellevue, WA HUD Metro FMR Area	130,398	820	1.5	$1,850	$2.2	$112	– $165	32%	26%	2%	39%
St. Louis, MO-IL HUD Metro FMR Area	19,106	935	1.8	$900	$1.0	$26	– $50	40%	15%	1%	44%
Tucson, AZ MSA	21,892	810	1.7	$795	$1.0	– $28	– $55	33%	12%	3%	52%
Virginia Beach-Norfolk-Newport News, VA-NC HUD Metro FMR Area	15,806	1,000	1.9	$1,123	$1.1	– $14	– $96	37%	11%	2%	50%
Westchester County, NY Statutory Exception Area	2,907	942	1.7	$2,197	$2.2	$422	$265	70%	12%	4%	14%

FMR = Fair Market Rent. MSA = Metropolitan Statistical Area. SAFMR = Small Area Fair Market Rent.

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A Tweak to Housing Assistance Allows Low-Income Renters Access to High-Income Neighborhoods

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Abstract

In this article, I use Zillow Group's proprietary rental listing data to measure the proportion of rental units advertised at prices at or below both the units' corresponding metro-wide Fair Market Rent (FMR) and Small Area Fair Market Rent (SAFMR). I find that, within the 24 metropolitan areas affected by recent SAFMR litigation, calculating voucher payments based on SAFMRs will increase the proportion of units listed at prices affordable to voucher holders in low-poverty neighborhoods. In most areas, SAFMRs also decrease the proportion of affordable listings in high-poverty neighborhoods. Findings from pilot programs suggest that, although more options became available in high-rental cost ZIP Codes, decreased options in low-rent ZIP Codes could lead to an overall decline in the number of affordable rental units for voucher holders within a metropolitan area. This analysis shows that, according to Zillow's online listings, that is not the case. In all 24 areas analyzed, the overall share of listings suitable for voucher recipients increased under the new SAFMR rule relative to the share suitable under metro-wide Fair Market Rent calculations.

Introduction

Where you grow up can be a strong predictor of your future opportunities and outcomes (Chetty, Hendren, and Katz, 2016).

For low-income households, expensive rents often prohibit access to the opportunities that are afforded residents of high-cost neighborhoods, including better schools, less crime, better job prospects, and lower poverty rates. Even the housing assistance offered to a lucky few (Casey, 2018a) is often only enough to afford rent in a few deeply segregated, high-poverty areas.

A new policy tweak might help fix that, however.

Using Zillow Group data, I analyzed a recently adopted federal housing assistance rule crafted by the Obama Administration to combat residential segregation. I found the new Small Area Fair Market Rent (SAFMR; HUD, 2018) policy, which alters the maximum value of some Housing Choice Vouchers (HCVs), could significantly increase the number of rental units listed at affordable prices for voucher recipients in areas with relatively lower poverty. That increase would provide a wider array of housing choices in places affected by the policy change—metropolitan areas with a high concentration (Center on Budget and Policy Priorities, 2018) of voucher recipients who rent in high-poverty areas and have limited options to move elsewhere with their housing voucher.

Switching from Metros to ZIPs

Recipients of HCVs, vouchers from the nation's largest rental assistance program, typically pay 30 percent of their income for housing and the voucher pays the remainder up to a certain cap. That cap is typically within 10 percent of what the U.S. Department of Housing and Urban Development (HUD) determines is a Fair Market Rent (FMR) for each metropolitan area. Typically, the FMR equals the 40th percentile of rents among recent movers. For the purpose of this analysis, a home is considered affordable to a voucher holder if the landlord advertises rent prices that are below the FMR or SAFMR. Cases in which the gross rent is above the payment standard and the tenant pays beyond 30 percent of their income are excluded from this analysis.

The new SAFMR rule (HUD, 2016) recalculates that maximum cap, basing that maximum on the rental prices in a ZIP Code rather than across the entire metropolitan area. The policy was formally issued (HUD, 2017) near the end of the Obama Administration in 2016 and rolled out in 2019 after the Trump Administration delayed implementation; that spurred a lawsuit[1] against HUD. Ultimately, the Washington, DC Circuit Court ordered HUD to begin implementing (Jan, 2017) SAFMR in two dozen metropolitan areas.[2]

In addition to enabling more rental options in less-impoverished ZIP Codes, the SAFMR calculation also appears to increase the total share of rental options affordable to voucher holders in all metropolitan areas except one, relative to the previous metro-wide FMR limits.

Results

Using metro-relative definitions for high- and low-poverty ZIP Codes, across the 24 metropolitan areas analyzed and under the previous metro-wide FMRs, 7 percent of the rental listings affordable to voucher recipients were in low-poverty areas. Under the SAFMR rule, that share rose to 19 percent of affordable listings. Under previous metro-wide FMRs, 33 percent of affordable listings across the metropolitan areas analyzed were in high-poverty ZIP Codes, but with SAFMR limits, that share drops to 20 percent.

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[1] *Open Communities Alliance, Carter, & Moore v. Carson & U.S. Department of Housing and Urban Development.* 2017. United States District Court District of The District of Columbia, October 23.

[2] U.S. Department of Housing and Urban Development, The Secretary. n.d. "Suspension of Small Area Fair Market Rent (FMR) Designations." Small Area FMR Final Rule and 24 CFR 888.113(c)(4). https://www.huduser.gov/portal/portal/sites/default/files/pdf/SecretarysDetermination.pdf.

All metropolitan areas saw an increase in the share of eligible rental listings in low-poverty areas under the SAFMR rule (exhibit 1). Jackson, Mississippi, and North Port-Sarasota-Bradenton, Florida, demonstrate the largest percentage point increase: the share of each metropolitan area's affordable listings in low-poverty ZIP Codes rose by roughly 30 percentage points. In Jackson, the previous voucher payment structure meant that only 18 percent of the area's affordable rentals were in low-poverty ZIP Codes. With SAFMR limits, that share rose to 52 percent.

Despite the overall trend, not all neighborhoods experienced significant changes. Even under the SAFMR rule, in Hartford-West Hartford-East Hartford, Connecticut, and Bergen-Passaic, New Jersey, less than 4 percent of the voucher-suitable units in the area are in low-poverty neighborhoods, fairly similar to the share available under the metro-wide FMR calculation.

Exhibit 1

Percent of Each Metropolitan Area's Voucher Suitable Listings in Low-Poverty ZIP Codes
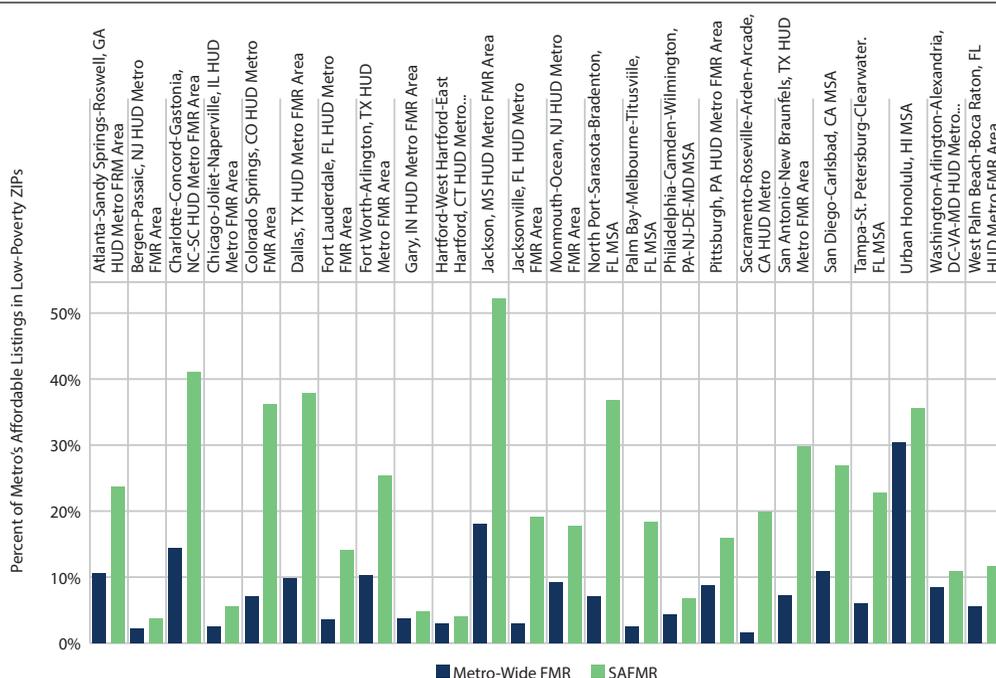
Source: Zillow Analysis of Zillow Rental Listings, HUD Fair Market Rents and Small Area Fair Market Rents and U.S. Census Bureau, American Community Survey, 2013-2017

Except for Pittsburgh, all metropolitan areas will have fewer voucher-suitable homes in high-poverty areas (exhibit 2), and the Sacramento-Roseville-Arden-Arcade, Colorado Springs, and Chicago-Joliet-Naperville metropolitan areas lead the pack. In Sacramento, the metropolitan area with the largest percentage point shift, the proportion of voucher-suitable listings in high-poverty areas dropped from 45 percent to 17 percent with SAFMR calculations.

Exhibit 2

Percent of Each Metropolitan Area's Voucher Suitable Listings in High-Poverty ZIP Codes
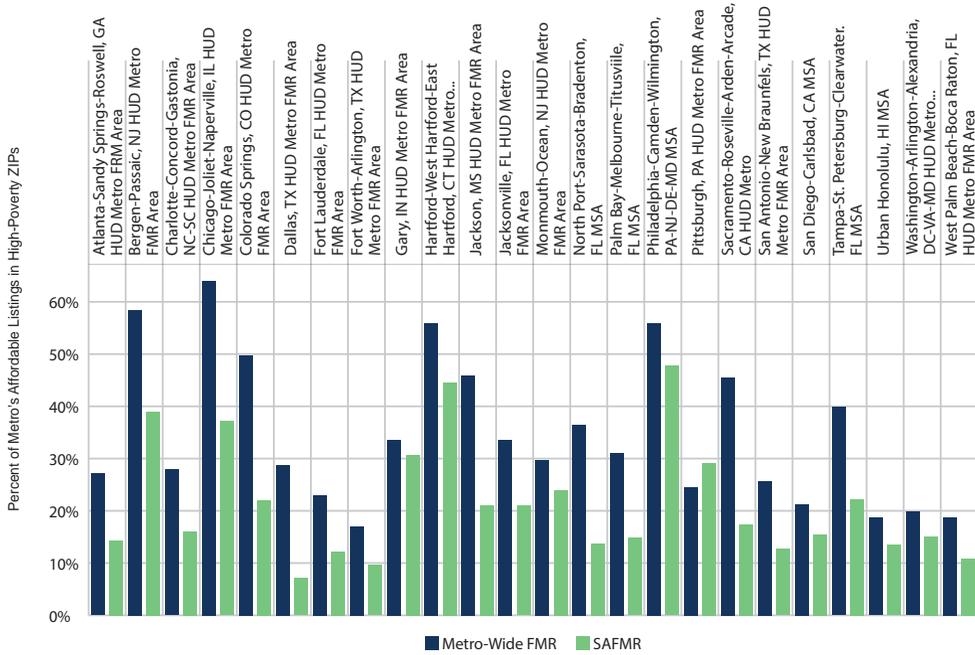
Source: Zillow Analysis of Zillow Rental Listings, HUD Fair Market Rents and Small Area Fair Market Rents and U.S. Census Bureau, American Community Survey, 2013-2017

This shift in the location of the greatest share of voucher-suitable units is most evident upon examining ZIP Code maps of the affected metropolitan areas. For example, in the Chicago metropolitan area (exhibit 3) under the SAFMR rule, the ZIP Codes north of downtown along Lake Michigan see a significantly larger share of their rental listing suitable for voucher holders, and ZIP Codes directly southwest of downtown see their share decrease.

Exhibit 3

Share of Listings Below Fair Market Rent: HUD Region Chicago-Joliet-Naperville, IL HUD Metro
FMR Area

Small area fair market rents allow more rental options in low-poverty areas.

Metro-Wide Fair Market Rent

Small Area Fair Market Rent

Pct Listings   0%   100%

Source: Zillow Analysis of Zillow Rental Listings, HUD Fair Market Rents and Small Area Fair Market Rents

The map of the Atlanta metropolitan area ZIP Codes (exhibit 4) also demonstrates a significant
geographic shift in the location of voucher-suitable listings. Most notably, ZIP Codes north and
northeast of downtown Atlanta significantly increase the share of voucher-suitable listings when
using the SAFMR rule.

Exhibit 4

Share of Listings Below Fair Market Rent: HUD Region Atlanta-Sandy Springs-Roswell, GA HUD Metro FMR Area

Small area fair market rents allow more rental options in low-poverty areas.

Source: Zillow Analysis of Zillow Rental Listings, HUD Fair Market Rents and Small Area Fair Market Rents

I analyzed all impacted ZIP Codes for the purpose of metro-wide calculations but did not map individual ZIP Codes with fewer than 50 unique rental listings in 2018.

Although the new rule appears to offer more affordable options in high-opportunity areas, policymakers grapple with potential drawbacks. Findings from pilot programs suggest (NLIHC, 2017) that although more options became available in high-rent ZIP Codes, even fewer rentals (Finkel et al., 2017) in low-rent ZIP Codes were eligible for vouchers under the new rule, leading to an overall decline in the number of options for voucher holders. Zillow's analysis shows that is not necessarily the case. In all 24 areas I analyzed, the overall share of listings suitable for voucher recipients increased under the new SAFMR rule (exhibit 5). Bergen-Passaic, New Jersey, had the smallest increase and would see voucher-suitable listings remain roughly constant, rising only slightly from 23.7 percent of rental listings to 24 percent. The share of listings under the FMR and SAFMR also remained similar in the Philadelphia-Camden-Wilmington metropolitan area, where proportions rose from 32.6 percent to 34.3 percent using SAFMRs limits.

Exhibit 5

Share of Listings Below FMR, by HUD Metropolitan Area
Small Area Fair Market Rents Allow More Rental Options Within Metropolitan Area

HUD Area Name	Share of Listings Below Metro-Wide FMR (%)	Share of Listings Below SAFMR (%)
Atlanta-Sandy Springs-Roswell, GA HUD Metro FMR Area	17.0	29.5
Bergen-Passaic, NJ HUD Metro FMR Area	23.7	24.0
Charlotte-Concord-Gastonia, NC-SC HUD Metro FMR Area	14.5	30.4
Chicago-Joliet-Naperville, IL HUD Metro FMR Area	13.4	27.5
Colorado Springs, CO HUD Metro FMR Area	27.3	43.3
Dallas, TX HUD Metro FMR Area	11.0	33.5
Fort Lauderdale, FL HUD Metro FMR Area	19.6	30.0
Fort Worth-Arlington, TX HUD Metro FMR Area	27.8	41.8
Gary, IN HUD Metro FMR Area	48.6	56.1
Hartford-West Hartford-East Hartford, CT HUD Metro FMR Area	35.6	42.2
Jackson, MS HUD Metro FMR Area	28.0	50.7
Jacksonville, FL HUD Metro FMR Area	24.3	37.4
Monmouth-Ocean, NJ HUD Metro FMR Area	16.3	22.2
North Port-Sarasota-Bradenton, FL MSA	8.0	16.0
Palm Bay-Melbourne-Titusville, FL MSA	32.2	44.2
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	32.6	34.3
Pittsburgh, PA HUD Metro FMR Area	31.2	41.6
Sacramento-Roseville-Arden-Arcade, CA HUD Metro FMR Area	9.5	20.8
San Antonio-New Braunfels, TX HUD Metro FMR Area	26.3	45.7
San Diego-Carlsbad, CA MSA	21.9	26.6
Tampa-St. Petersburg-Clearwater, FL MSA	15.1	27.9
Urban Honolulu, HI MSA	52.9	62.1
Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area	37.6	51.8
West Palm Beach-Boca Raton, FL HUD Metro FMR Area	22.6	27.0

FMR = Fair Market Rent. MSA = Metropolitan Statistical Area. SAFMR = Small Area Fair Market Rent.

The Jackson, Dallas, and San Antonio metropolitan areas saw the largest percentage point bump in the share of units eligible for voucher use across the region. In Dallas, under previous metro-wide FMRs, only 11 percent of rental listings could be afforded with a voucher, but under the SAFMR rule, 23 percent of rental listings are affordable with a voucher. In Jackson, the share rose from 28 percent to 51 percent when comparing list prices to the SAFMR.

Implications and Recommendations

Because of the limited rollout of the SAFMR, an obvious implication from findings that suggest the policy is meeting its stated goals is the expansion of the policy to more metropolitan areas. However, expansion of the SAFMR rule should also be coupled with additional reforms to federal and local housing policy alike.

Potential for Expansion

In addition to the 24 metros included in the SAFMR litigation, other HUD metropolitan areas could see substantial shifts in the share of voucher-suitable rental listings advertised in low-poverty areas if voucher payment standards were calculated at the SAFMRs.

Across the entire country, under the metro-wide FMRs calculations, 9 percent of rental listings affordable to voucher recipients are within low-poverty ZIP Codes. Under the SAFMR rule, that share rises to 18 percent of affordable listings. Under previous voucher rules, 34 percent affordable listings across the metros analyzed are in high-poverty ZIP Codes, but with SAFMR, that share drops to 26 percent.

Policymakers likely look to other factors, including, but not limited to, the concentration of voucher holders in certain neighborhoods, when determining suitable metropolitan areas for further SAFMR implementation. Thus, these data do not necessarily pinpoint the best metropolitan areas to expand the SAFMR policy. Information on the geography of advertised market-rate rental properties, however, can provide a useful signal of the relative impact adjustments to FMR formulas can have on the availability of advertised listings meeting the SAFMR rule's criteria.

Among the larger metropolitan areas with at least 5,000 rental listings on Zillow during 2018, some very large communities could see substantial increases in the share of affordable listings in low-poverty ZIP Codes. To cherry-pick a few populous metros purely for illustrative purposes, this analysis shows that the Nashville-Davidson-Murfreesboro-Franklin metropolitan area would see an increase in the share of affordable listings in low-poverty ZIPs from 8 percent to 36 percent; Los Angeles-Long Beach-Glendale would increase from 10 percent to 34 percent; and the Houston-The Woodlands-Sugar Land metropolitan area would increase from 14 percent to 36 percent.

Conversely, unlike the 24 metropolitan areas included in the initial analysis, a few of these larger metropolitan areas would be expected to experience a small decrease in the share of the region's affordable listings in the low-poverty ZIPs under the SAFMR. Examples include Boulder, Colorado; Madison, Wisconsin; and Stockton-Lodi, California. Examples of this are relatively uncommon (32 of the 211 metropolitan areas analyzed here) and counterintuitive, so further investigation into the characteristics of the low-poverty ZIPs in these areas is required before concluding any negative impacts of SAFMR in these metropolitan areas. For example, many of the metropolitan areas, such as Iowa City, Iowa; Champaign-Urbana, Illinois; Ann Arbor, Michigan; and College Station-Bryan, Texas, are home to large universities where it is possible that ZIP Code poverty rates and rent prices may not be as closely correlated.

Further Policy Recommendations

Further data aggregation and research are needed to fully quantify the universe of rental listings affordable at prices at or below the Fair Market Rent standards, beyond what appears on online real estate platforms like Zillow. Data from platforms like Zillow will not capture the entire universe of rental advertisements, as many landlords still advertise offline or via word-of-mouth. Even if the entire universe of affordably priced rentals is known, however, there is a large operational gap between a unit meeting the price limitations of a voucher holder and a landlord ultimately signing a lease with a voucher holder. Increased access to rentals in higher-income areas will do little to improve mobility if landlords do not accept vouchers (Cunningham et al., 2018), which means there needs to be better laws or better enforcement of existing laws to protect voucher holders from discrimination based on their use of housing assistance.

An analysis by the Center of Budget and Policy Priorities (CBPP, 2018) and the Poverty and Race Research Action Council (PRRAC) explains how SAFMR also made voucher programs more cost-effective for public housing agencies involved in a SAFMR pilot program. Cost-efficiency is vital, but so is adequate investment in the program given the significant underfunding (Rice, 2018) of HCVs relative to the need; that has prompted years-long waiting lists (Smith, 2017) or dead ends for people seeking help.

Some local officials have expressed concern (Belanger and City Bureau, 2018) that households that currently rent in low-cost areas could see their voucher ceiling fall below their current rents, potentially prompting displacement. The Center on Budget and Policy Priorities (2018), Poverty & Race Research Action Council guide outlines several policies that would protect families in low-rent ZIP Codes, including methods for phasing in the new payment standards.

The switch to SAFMR could allow greater access to opportunities that have been found to improve (Chetty, Hendren, and Katz, 2016) outcomes for children. By opening more units across each metropolitan area to voucher eligibility, the new rule could ease the increasing strain and competition voucher holders face that is caused by tight markets with limited rental supply. At some point in certain metropolitan areas, however, new funding formulas and rent subsidies will go only so far if prices continue to balloon and the dwindling supply of rental housing is not addressed.

To keep rents from skyrocketing in the long term, pro-growth land-use decisions at the neighborhood and municipal levels—and challenges to exclusionary zoning policies—are necessary to create rental housing that meets the robust demand. Without a sufficient supply of rentals, the federal government will continually spend rapidly increasing amounts of money to house the same number of low-income families with housing vouchers.

Finally, broad public policies must address persistent poverty to make a difference in affordable housing. That means investments in policies that grow the economy and combat recessions and unemployment, alongside a revamped commitment to safety-net social and economic policies that supplement incomes.

Methodology and Limitations

This analysis focuses on the advertised monthly price of rental listings advertised on Zillow Group platforms from January 1, 2018, to December 31, 2018, in the 23 metros immediately affected by the rule change, plus Dallas, where the SAFMR policy has been in place for years. I analyzed the advertised lease price of nearly 12 million listings posted to Zillow Group's platforms during that time period, for one- to four-bedroom units and compared each list price with its corresponding FMR and SAFMR published by HUD.

In general, local housing authorities can adjust the actual value of an HCV, called the payment standard, within 10 percent of the FMR value. Public housing agencies can set a voucher payment standard above 110 percent of the FMR with certain permission from HUD. For this analysis, I assume the payment standard is set at 100 percent of the FMR and SAFMR for any given area. A different payment standard would yield different results.

One method of measuring the share of affordable listings in high-poverty or low poverty areas is to use a standard national measure that aligns with the HUD definition of high-poverty areas. In a previous version of this analysis posted on Zillow's Economic Research blog (Casey, 2018b), I used that approach. HUD defined high-poverty ZIP Codes for SAFMR as ZIP Codes with a poverty rate above 25 percent. For that previously published analysis, I chose to define low-poverty ZIPs as those with a poverty rate below 5 percent. Those two poverty rates represent the 15th percentile and the 85th percentile of the national ZIP Code poverty rate distribution. Poverty rates were assessed using the *U.S. Census Bureau 2013–2017 American Community Survey* (ACS) *5-Year Estimates Poverty Status in the Past 12 Months, percent below poverty level*.

Using those definitions across the 24 metros analyzed under the metro-wide FMRs calculation, 8 percent of the rental listings affordable to voucher recipients were in low-poverty ZIP Codes. Under the SAFMR calculation, that share rose to 15 percent of affordable listings. Under previous voucher rules, 18 percent of affordable listings across the metropolitan areas analyzed were in high-poverty ZIP Codes, but with SAFMR limits, that share dropped to 10 percent. Another discrepancy from the previous analysis posted is that this analysis uses all rental listings for 2018, the previous analysis posted on the Zillow Research blog was posted in October 2018 and used rental listings from between January 1, 2018, and August 13, 2018.

Because a goal of the SAFMR program may be to allow rental access in the lowest-poverty areas of a community, rather than the lowest-poverty areas across the entire country, a more useful definition involves relative measures of high- and low-poverty ZIP Codes unique to each metropolitan area. Therefore, for this analysis, I characterize high-poverty areas as the top quintile of HUD's FMR area ZIP Codes when ranked by the share of the population below the poverty level—as designated by 2013–2017 5-year ACS estimates. Low-poverty ZIPs are defined as an area's ZIP Codes in the bottom quintile when ranked by the share of the population in poverty. Thus, all HUD metropolitan areas have an approximately equal number of ZIP Codes designated as high poverty and low poverty.

Poverty rate data from the 5-year ACS estimates at the ZIP Code level are somewhat crude instruments for measuring the impact of a policy designed to increase rental access to high opportunity areas. For one, the 2013–2017 5-year estimates can be significantly lagged and may not reflect the economic characteristics of a region that has undergone rapid change. Second, ZIP Codes can be rather large areas with relatively diverse economic and housing market characteristics. HUD metropolitan areas also can be quite large, so it is possible that some of the ZIP Codes comprising the bottom quintile of poverty rates in a metropolitan area represent some far-flung regions away from job centers, transportation access, or other amenities—which may be antithetical to some of the policy goals. Third, a ZIP Code's poverty rate is a crude, incomplete measure of an area's relative access to institutions, forms of capital, or other mechanisms that can provide for increased chances of economic mobility. In other words, attaining rental housing in the ZIP Code with the lowest possible poverty rate should not be the only goal or benchmark for the success of a program designed to increase access to opportunity.

While it is possible that online real estate listings may miss some less-expensive rental properties that are instead advertised in online classifieds, offline, or by word-of-mouth, to my knowledge there is no comprehensive national database of rental listings, online or otherwise, and Zillow Group Rentals is the nation's largest online rental network. Additionally, unlike some other online propriety rental data sources, Zillow Group Rentals includes listings from both multifamily buildings and single-family home rentals, whereas other data sources of rental list prices may only capture listings from multifamily buildings.

It is possible that I may undercount some affordable and unaffordable listings available on Zillow. While not typical, it is possible for landlords in multi-unit buildings to post only one listing for multiple units available at the same time matching the characteristics and price. Finally, listing prices do not always reflect the final contract rent, as landlords may ultimately make concessions or otherwise change the final monthly price agreed upon before a lease is signed.

While the exact share of units available to voucher holders may be somewhat different when considering listings not on Zillow, I find that voucher holders can expect more affordable rental options under the SAFMR rule. These data cannot be used to evaluate the SAFMR program as either an unalloyed success or failure, but they do provide a useful benchmark. The findings demonstrate that the ideals devised in the policy laboratory for creating access to particular types of neighborhoods are indeed reflected in the reality of the market-rate rental trends.

Acknowledgments

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Sexual Harassment of Low-Income Women by Landlords

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Abstract

This article examines the results of a qualitative study of low-income women who have been sexually harassed by their landlords. The study involved detailed interviews of 100 low-income women who were clients of the Columbia (Missouri) Housing Authority. These interviews revealed a picture of the tenants who experienced sexual harassment in housing and how they responded; the characteristics of landlords who engage in such harassment; the forms the harassment is likely to take; and the effects the harassment had on the tenants' housing situation. The results suggest the need for more targeted outreach to low-income women who may be victimized and more oversight of landlords who may operate with little accountability. More research is needed to determine how prevalent this problem is and what risk factors contribute to it.

Introduction

In recent years, high-profile and influential figures in media, government, and entertainment have faced very public allegations of sexual misconduct, creating a watershed moment for public awareness of sexual harassment. These revelations have sparked an important national discussion about the prevalence of sexual harassment in American society and the systems that enable powerful people both to exploit their vulnerable targets and to escape the consequences of their actions.

This article focuses on the sexual harassment and exploitation of low-income women by their landlords—a problem of which both advocates and academics are aware. A number of published legal cases have dealt with the issue, and the U.S. Department of Justice (DOJ) has filed numerous complaints against alleged harassers. Multiple informative academic articles in legal and social science literature have discussed the subject from a largely theoretical perspective. Unfortunately, there have been no reliable empirical studies about the nature and prevalence of sexual harassment in housing. As a result, policymakers and legislators have difficulty addressing sexual harassment in housing because they do not know the basic facts, such as how common it is, who is likely to experience or perpetrate it, and what forms it takes.

This article, and the underlying study (which was recently published in the Missouri Law Review [Oliveri, 2018]), represent a first attempt at supplementing the available information by revealing empirical data that challenge and improve on the assumptions in theoretical scholarship.

The Legal Background of Sexual Harassment in Housing section provides a brief introduction to the law. The What We "Know" About Sexual Harassment in Housing section canvasses the state of our knowledge of sexual harassment in housing, including the gaps in that knowledge that require further research and the problems created by those gaps.

The Study section presents the methodology and results, which both add to and challenge some of the prevailing assumptions about sexual harassment in housing. A significant number of study participants—10 percent of the sample—had experienced actionable sexual harassment by their landlords. All these women were living in private rental housing at the time they were harassed; none lived in public housing, shelters, or other institutional facilities. Whether or not they were receiving a housing subsidy did not appear to increase the likelihood of harassment, although it did correlate to whether they remained in the housing after experiencing harassment. The landlords who perpetrated the harassment were all owner-operators of their rental properties; they did not work for or employ a rental management company. The harassment took two forms: (1) nearly all the women described being explicitly asked to provide sex in lieu of rent, and (2) one-half of the women also reported experiencing serious (likely criminal) conduct such as home invasion, indecent exposure, and unwanted touching.

The Analysis and Implications section analyzes the results of the study and draws implications for policy and further research. From a policy perspective, the study results reveal the consequences of the lack of regulation of the landlord-tenant relationship, which has led to a regime allowing private landlords to harass their tenants with virtual impunity. The study determined that greater oversight of landlords and more targeted resources for the most vulnerable group of female renters is necessary to address this problem. Ultimately, policymakers must address the root cause of this problem, which is the serious lack of affordable housing and housing support programs in this country.

Legal Background of Sexual Harassment in Housing

This section provides a brief introduction to the law. To begin, it is important to recognize that sexual harassment law was first developed in the context of the workplace. Courts later applied similar doctrines and definitions to sexual harassment in the housing context.

Employment Law Roots

The legal doctrine of sexual harassment originated in the employment context. Title VII of the Civil Rights Act of 1964 (hereafter known as Title VII) prohibits employment discrimination based on protected characteristics, including sex. Cases recognizing that racial and ethnic harassment in the employment setting can violate Title VII date as far back as 1971. In 1982, the Eleventh Circuit issued an influential sexual harassment opinion in favor of the plaintiff in *Henson v. City of Dundee*.[1]

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[1] *Henson v. City of Dundee*, 682 F.2d 897 (11th Cir. 1982).

Henson set forth a binary classification of sexual harassment claims: (1) "quid pro quo" claims, where a defendant has based the provision of job benefits on the plaintiff's compliance with sexual demands or causes the plaintiff tangible harm if he or she refuses to comply with such demands, and (2) "hostile environment" claims, where unwelcome sexual advances occurred but did not lead to loss of employment or other economic injuries.

In 1986, the United States Supreme Court adopted the Henson framework when it addressed workplace harassment for the first time in *Meritor Savings Bank v. Vinson*.[2] A bank employee brought a Title VII claim against her employer, alleging that her branch manager made unwelcome sexual advances toward her. The bank argued that sexual harassment was only actionable if it affected tangible, economic aspects of the employment relationship and harassment that "only" affected the work environment could not support a claim. The court disagreed, concluding that "a plaintiff may establish a violation of Title VII by proving that discrimination based on sex has created a hostile or abusive work environment."

The hostile environment theory is rooted in the Title VII provision that bans discrimination in the "terms, conditions, or privileges of employment." The court held that harassment violates this provision when it is shown to be "sufficiently severe or pervasive 'to alter the conditions of [the victim's] employment and create an abusive working environment.'" Subsequent U.S. Supreme Court guidance instructed courts to determine whether an environment is sufficiently hostile or abusive by "looking at all the circumstances ... includ[ing] the frequency of the discriminatory conduct; its severity; whether it is physically threatening or humiliating, or a mere offensive utterance; and whether it unreasonably interferes with an employee's work performance."[3]

Sexual Harassment and the Fair Housing Act

The law of sexual harassment in housing developed later and was predominantly in step with Title VII. The first reported decision involving sexual harassment in housing was *Shellhammer v. Llewellyn* in 1985.[4] The plaintiffs in Shellhammer were a married couple who were evicted from their apartment allegedly because Mrs. Shellhammer refused her landlord's requests to pose for nude photographs and to have sex with him. The magistrate judge who heard the case noted the lack of any housing precedents for sexual harassment claims and the similarity between the Title VII ban on discrimination in the "terms, conditions, or privileges of employment" and the Fair Housing Act's (FHA) prohibition on discrimination in the "terms, conditions, or privileges of sale or rental of a dwelling." Therefore, the judge turned to employment decisions under Title VII for guidance and ruled that both quid pro quo and hostile environment claims were also actionable under the FHA.

Subsequent courts followed Shellhammer's approach. They found it appropriate to rely on Title VII precedents to establish the contours of sexual harassment law under the FHA. Additionally, all the presiding courts agreed that if the plaintiff's complaint involved only a hostile environment claim (and

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[2] *Meritor Savings Bank v. Vinson*, 477 U.S. 57 (1986).

[3] *Harris v. Forklift Systems*, 510 U.S. 17, 23 (1993).

[4] *Shellhammer v. Llewellyn*, 770 F.2d 167 (6th Cir. 1985); Prentice Hall, Inc. et al., 1 Fair Housing—Fair Lending 15, 472 (1994).

not the loss of a tangible housing benefit), then the defendant would only be liable if his behavior was "severe or pervasive" enough to alter the terms and conditions of the plaintiff's residency.

In 2016, the U.S. Department of Housing and Urban Development (HUD) issued a final rule formalizing the definitions of and standards for quid pro quo and hostile environment sexual harassment in housing.[5] The definitions and standards largely conform to existing court precedent. The purpose of the rule was to provide consistency and clarity to investigators, housing providers, and victims.

What We 'Know' About Sexual Harassment in Housing

Little reliable data is available about the incidence of sexual harassment in housing, although there is plenty of anecdotal evidence from cases, and scholars have written theoretical articles about the problem based largely on assumptions from the cases. This section summarizes the small amount of research that exists on the topic of sexual harassment in housing.

Official Statistics and Early Studies

The National Fair Housing Alliance (NFHA) provides the most comprehensive statistical picture of fair housing complaints in the United States. Its annual report contains data on housing discrimination complaints filed with government agencies such as HUD, Fair Housing Assistance Program agencies, DOJ, as well as private fair housing organizations that process the vast majority of housing discrimination complaints.[6] Even so, NFHA's report has limitations. NFHA recognizes that due to the extremely high rate of underreporting, their figures represent only a small fraction of the actual discrimination that occurs in the housing market. In 2017, NFHA reports there were 1,017 complaints in which "sex" was listed as a possible basis for discrimination (NFHA, 2018). These complaints, however, are not broken down by the type of discrimination—for example, sex-based differential treatment (such as when a landlord refuses to rent to someone because of sex) versus sexual harassment. The report separately identifies 747 harassment complaints, which can be based on any protected characteristic. Of these complaints, only 200 are identified as being based on sex. It is unclear whether these allegations are in addition to, or overlap with, the sex discrimination complaints. What is clear, given the small numbers, is that this statistic is an undercount.

There is a similar shortage of academic studies on the topic, with only four scholarly articles that analyze the problem of sexual harassment in housing in an empirical manner. Only two of the articles attempt to discern prevalence data; both rely on returned surveys, and each is more than 20 years old.

The only known attempt to assess the frequency of sexual harassment in housing in the United States was conducted nearly 30 years ago. In 1987, Regina Cahan surveyed 150 public and private fair housing organizations across the country to see whether they had received complaints of sexual

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[5] 24 Code of Federal Regulations (CFR) § 100.600 (2017).

[6] NFHA does not track housing discrimination lawsuits filed by private lawyers who do not work for fair housing organizations.

harassment (Cahan, 1987).[7] Of the 87 centers that provided useable responses, 57 centers (65 percent) reported receiving a collective total of 288 complaints of sexual harassment, whereas 30 centers (35 percent) reported never having received such a complaint. Citing a recent survey which found that fewer than 3 percent of victims of workplace sexual harassment sought help through formal institutional processes, Cahan estimated that between 6,818 and 15,000 cases of sexual harassment in housing may have occurred between 1981 and 1985 (the period of time that the survey results covered).

A smaller number of centers provided Cahan with specific information about the income of the victims and the nature of the harassing conduct. The victims were overwhelmingly poor, with 75 percent earning less than $10,000 per year and 23 percent earning between $10,000 and $20,000 per year. More than two-thirds (67.7 percent) of the complaints involved a landlord requesting some form of sexual activity, nearly 39 percent involved abusive remarks, and 34 percent involved unwanted touching. Cahan did not elicit additional information about the women, such as race or age, nor did she elicit any information about the perpetrators. Cahan asked about the size (number of units) and type of housing in which the women lived, but her questions were limited.

Although her article was groundbreaking, Cahan's study is of limited use in determining true prevalence due to her reliance on reported complaints to fair housing centers and, even then, only the centers that responded to her survey rather than a population sample. Sexual harassment is notoriously underreported in other settings such as the workplace (Johnson, 2016; Welsh and Gruber, 1999), the military (Chema, 1993), and academia (National Academies, 2018).

The only other prevalence study of sexual harassment in housing was conducted more than 20 years ago in Canada. In 1991, a doctoral student in sociology, Sylvia I. Novac, mailed surveys to 1000 rental households in Ontario (Novac, 1994). She received 352 useable surveys from the responses, and of these surveys, 25 percent of the respondents reported experiencing sexual harassment in housing.

Again, this methodology which relied on returned surveys, failed to measure true prevalence. Moreover, the survey questions were based on workplace sexual harassment and may not have adequately sampled the type of sexually harassing behaviors experienced by tenants. For example, in an open-ended portion of the survey, 29 percent of respondents reported that their landlord had entered their home without notice. Although unauthorized entry into the home is not necessarily indicative of harassment, it may constitute part of a pattern of harassment and intimidation. Similarly, behaviors such as refusing to allow women to have male visitors, looking through windows, or being abusive toward household members are types of harassment unique to the housing context that will not be captured in a typology based on employment harassment.

Recent Studies

Two more recent studies did not seek prevalence data but instead examined existing cases and complaints to determine common characteristics of harassment, victims, and perpetrators. In 2005,

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[7] Thus, the survey answers were not provided by the victims but by the organization based on the material contained in their files.

Drs. Maggie Reed, Louise Fitzgerald, and Linda Collinsworth reviewed deposition testimony given by 39 victim-witnesses in three cases prosecuted by DOJ (Reed, Fitzgerald, and Collinsworth, 2005). The authors then analyzed all published federal sexual harassment in housing cases that contained details about the sexually harassing conduct (a total of 18 cases). They compared the conduct described in those cases with the conduct found in their deposition sample and noted a significant overlap.

Between the reported cases and the depositions, the researchers identified 389 separate instances of misconduct. These instances were then grouped generally into three categories: (1) gender harassment (sexist hostility), (2) unwanted sexual attention (sexual behavior and imposition/ assault), and (3) sexual coercion (sexual threats and bribery). The authors found that the majority of the instances were classified as unwanted sexual attention (60 percent), followed by sexual coercion (18 percent), and gender hostility (13.9 percent). These findings were in dramatic contrast with similar research done in the employment context where most harassing behavior (59.5 percent) fell into the gender hostility category. Unwanted sexual attention (36.9 percent) was the second most frequent type of conduct in the workplace sample, whereas sexual coercion (3.6 percent) barely registered. The researchers concluded that sexual harassment in housing was much more likely to consist of unwanted sexual attention and sexual coercion when compared with sexual harassment in the workplace, which was much more likely to consist of gender hostility with very little sexual coercion. This study did not focus on victim or perpetrator characteristics and did not analyze the type of housing the victims were living in at the time.

In 2008, Dr. Griff Tester analyzed 137 housing sexual harassment complaints made to the Ohio Civil Rights Commission (OCRC) between 1990 and 2003 (Tester, 2008). He was the first to obtain data on the race of the victims and perpetrators and found that 68 percent of the reported victims were Black or "other women of color" whereas virtually all the perpetrators were White men. The type of housing in which most of the harassment occurred were private rentals as opposed to public housing, although OCRC files were not clear whether the victims were using Housing Choice (Section 8) Vouchers at the time. The landlords tended to represent small, privately owned housing as opposed to large rental companies with structured management and procedures. OCRC did not collect specific data about the complainants' socioeconomic status, although information in the files indicated that many of the women were poor and in need of housing assistance.

Both studies contributed valuable insights into the nature of sexual harassment in housing claims.[8] The 2005 study was significant because it was the first to rigorously analyze the harassing behavior and to compare sexual harassment in housing claims with sexual harassment in employment claims. The 2008 study was valuable because it was the first to analyze the perpetrators, the type

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[8] A third, relatively recent, study also addressed a subset of housing harassment: sexual assault and rape. In 2006, Theresa Keeley, an attorney at the National Law Center on Homelessness and Poverty, sent a survey to rape crisis centers and sexual assault advocates asking if they had ever received complaints from tenants alleging rape or sexual assault by a landlord. Recipients of the survey were encouraged to share it with others and it was widely circulated. Of the 112 surveys that were returned, 58 percent described at least one tenant report of sexual assault or rape by a landlord in the previous year. The returned surveys contained 161 tenant complaints as some surveys described more than one report of harassment (Keeley, 2006). Because the survey was not distributed in a controlled way and participation was voluntary, assessing the statistical significance of these numbers is difficult. Nonetheless, they are disturbing.

of housing, and the victim's characteristics, such as intersectional factors like race. Both studies, however, had methodological limitations because they relied on reported and/or litigated claims.

In sum, solid information about sexual harassment in housing, particularly prevalence data, remains elusive. Given the methodological limitations of the early studies, which relied on reported claims, filed cases, and survey returns, the basis for a reliable estimate of how often harassment in housing occurs in the population of low-income women is still lacking. Although an analysis of a small set of reported or prosecuted claims gives a sense of what sexual harassment in housing can look like, it is not known how representative these claims are of the "typical" victim's experiences. Significantly, no information is available on the population of women who experience sexual harassment by a housing provider but do not report it. What form does their harassment take? What effect does it have on their lives? Why do they not report it? The answer to this latter question, in particular, is crucial to developing reforms and interventions.

The Study

This study attempts to fill this research gap and its results are intended to support more wide-ranging research on this topic in the future.

Purpose, Design, and Methodology

The purposes of the study were: (1) to gain an appreciation of the rough magnitude of sexual harassment in housing that low-income women experience; (2) to observe the form(s) that the harassment takes; (3) to get a sense of the characteristics of the women who experience the harassment, the housing providers who perpetuate it, and the housing in which it occurs; and (4) to understand women's responses to the harassment, including why they may not report it and the effect it has on their housing.

A survey instrument in the form of an interview script was devised with these objectives in mind.[9] One hundred women were individually interviewed during a period of 3 months in Columbia, Missouri. The interviews were conducted by a law professor (a former fair housing lawyer with extensive experience interviewing victims of housing sexual harassment) and a law student with a bachelor of science in social work.[10]

Interview subjects were solicited in the office of the Columbia Housing Authority (CHA); they were all either clients of the CHA or applying to be a client. Thus, this study was a convenience sample of women who were low-income and in need of housing assistance at the time of the interview.[11] The subjects were selected as follows: every woman who came to the CHA reception desk, for any

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[9] The completed surveys are on file with the author.

[10] Both interviewers were White women under the age of 40.

[11] A decision was made to focus specifically on low-income women rather than the population of female tenants, and only women were interviewed. This decision was primarily because, as described in the text, both logic and the existing evidence indicate that sexual harassment in housing is primarily experienced by low-income women whose housing options are limited. Determining the prevalence of housing harassment among the population of all female renters, or all people, might be the subject of future research.

reason, was asked if she wished to participate in a survey about her "experiences with housing"[12] and would receive a small cash payment ($20) for participation. Interested subjects were then referred to the interviewer.[13]

Of the 100 survey participants, 84 percent identified as Black or multiracial, 15 percent as non-Hispanic White, and none as any other racial or ethnic group. This representation is not consistent with the racial make-up of CHA clients and applicants, who are more evenly distributed between Black and White. CHA records indicate that 56.8 percent of the residents are Black, whereas 41.8 percent are White.[14] Similarly, CHA reports that Blacks constitute 70 percent of applicants for vouchers and 51 percent for public housing, whereas Whites constitute 24 percent and 45 percent, respectively. According to HUD data, in Missouri, Blacks constitute 41 percent of public housing residents and 59 percent of voucher-holders; in the United States as a whole, Blacks constitute 41 percent of public housing residents and 47 percent of voucher-holders.[15] Although nothing was done to consciously bias the interview pool, this method was a sample of convenience and a statistically representative sample was beyond the scope of the project.

The interviews were conducted in a private conference room in the CHA office. The only people present were the interviewer and the subject. At the beginning of each interview, the subject was informed that the interviewer worked at the University of Missouri and was not affiliated with the CHA in any way. Subjects were further informed that their answers would be confidential and their surveys kept anonymous.

After a number of background questions, the interview subjects were asked if they had ever[16] experienced "sexually inappropriate" behavior from a landlord, including specific conduct that would likely constitute sexual harassment such as inappropriate touching, sexual comments, and requests for sexual activity. An additional category for "other inappropriate behavior" was included that allowed the subjects to describe other behaviors that made them uncomfortable but were not included in the list.[17] The interview subjects were also asked if they had ever experienced "annoying or disturbing" behavior from a landlord, including specific conduct that might be part of a pattern of sexual harassment such as the landlord prohibiting male visitors, looking through the windows,

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[12] The reasons that the women were in the CHA office varied. Most were there to fill out paperwork or to meet with caseworkers.

[13] It is not known what percentage of women who were given the opportunity to participate in the interview actually chose to do so. On most days, however, a long line of subjects were waiting to participate. Every interview subject completed the interview, which is to say that no one dropped out or reached a point where she refused to continue.

[14] The data are provided as part of the City of Columbia's Consolidated Plan provided to HUD as part of the Community Development Block Grants and HOME Investment Partnership Program. See http://www.columbiaha. com/wp-content/uploads/2018/10/CHA-FYE2019-PHA-Plan-HP-Final-2018-10-16.pdf.

[15] The data can be found in HUD's Resident Characteristics Report at https://pic.hud.gov/pic/RCRPublic/rcrmain.asp.

[16] It is important to underscore the fact that survey participants were asked about their lifetime experiences. This term is significant because, although virtually all the women interviewed were clients of the Columbia Housing Authority at the time of the interview, all those who reported harassing conduct experienced it prior to becoming clients of the Columbia Housing Authority.

[17] The specific behaviors were identified as behaviors which were likely to constitute sexual harassment based on the research described in the previous section and a review of published cases. The survey question avoided using the legal term "sexual harassment" and instead used the term "sexually inappropriate behavior," in order to allow the respondents to identify conduct that they personally found to be offensive or problematic, even if it might not reach the legal definition of sexual harassment.

or entering the unit unannounced. Any woman who answered affirmatively was then asked whether she believed these behaviors were "sexual in nature" and/or done "because [she is] a woman."[18]

Women who responded affirmatively to any of the questions indicating sexual harassment were then asked several followup questions in which they were prompted to describe:

- the conduct in detail, including frequency;

- their own characteristics, including how old they were, other occupants in the household, and their source of income at the time the conduct occurred;

- the type of housing they were living in at the time the conduct occurred, whether it was public housing, private rental housing, or some other type of housing (such as project-based Section 8 housing, a homeless or domestic violence shelter, or another institutional setting); if the woman was living in private rental housing, she was asked whether she received a Section 8 Voucher;

- the characteristics of the perpetrator, including estimated race, age, and role in the housing (that is, whether he was the owner, a manager, or a maintenance worker) at the time the conduct occurred;[19]

- their responses to the conduct, including whether and to whom they reported it, results or outcomes of reporting, reasons for not reporting it, and any lasting emotional or psychological effects the experience had on them.

Results

The study's results were at times consistent with prevailing assumptions about sexual harassment in housing. In other ways, the results challenged the accepted knowledge and provide insight into the way harassment in housing "typically" manifests, who it involves, and what happens as a result.

Frequency, Severity, and Type of Conduct

Of the 100 women interviewed, 16 gave responses indicating that they had experienced some type of sexually harassing or otherwise problematic conduct. These surveys were then sorted according to whether the conduct described would likely constitute actionable sexual harassment under current federal caselaw. Actionable claims were those likely to survive a motion to dismiss for failure to state a claim.[20]

Ten women described conduct serious enough to meet the legal standard for sexual harassment or at least support a legally actionable claim. The other six women described conduct that they

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[18] These questions were asked in order to distinguish ordinary disputes between landlords and tenants from situations that potentially involved sexual harassment.

[19] Race and age had to be approximated by the respondents based on their observations of the perpetrator.

[20] This determination was complicated by the fact that, for hostile environment sexual harassment, there is no bright-line rule but rather a standard—"severe or pervasive"—which may be applied differently by different courts. Although a few cases classified as "actionable" were borderline—that is, the women could have stated claims but might not have prevailed on the merits—most were quite clearly violations of the Fair Housing Act.

believed was sex-based and that annoyed or upset them but would likely not meet the current legal standard for sexual harassment.[21]

This article will focus on the 10 subjects with actionable claims.[22] The following are brief summaries of the conduct they described:

#20: The woman was 48 years old and caring for her granddaughter. Her sole source of income was Social Security Disability Insurance (SSDI). Her landlord said that her rental situation could be "cheaper and easier" if she would give him sexual favors. The landlord watched her home and told her that she could not have male visitors. She did not comply with his requests. She eventually "snuck out" of the house in the middle of the night. She moved in with friends, although this meant she was unable to care for her granddaughter. At the time of the interview, she was applying for public housing.

#21: The woman was 18 years old and in college. She did not have any children, and she lived with a roommate. The landlord asked for sexual acts in lieu of rent and as a way to expedite repairs. He made comments about the woman's body and kept track of her comings and goings. The woman eventually told him to stop, and nothing else happened.

#29: The woman was 21 years old and unemployed, although occasionally she worked as an exotic dancer. She did not have any children and lived with a boyfriend. Her landlord made multiple demands that she have "oral and regular sex" with him, because she was behind on her rent and threatened her with eviction if she did not comply. He would use his key to enter her apartment, without warning, while she was home, including multiple times while she was in the shower. He touched her in ways she thought were inappropriate. She never acquiesced to his demands and ultimately moved out before he could evict her.

#37: The woman was 21 years old and a single mother of two. She was employed as an aide in a facility for the disabled. She was attempting to rent an apartment. After showing her the unit, the landlord locked the door and asked for oral sex, saying that she could do that instead of paying the security deposit. The woman refused and chose not to rent from the landlord.

#39: The woman was 27 years old and a divorced mother of six. She was paying for part of her rent using a Section 8 Voucher. The landlord told the woman she could avoid paying her portion of the rent if she had sex with him. She refused and continued to rent the apartment.

#41: The woman was 27 years old and worked part-time as a housekeeper. She moved into an apartment with her fiancé after spending 3 months in a domestic violence shelter. The woman's landlord requested that she have sex with him and watch him masturbate to

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[21] For example, one woman described being "creeped out" by her landlord, because the way he looked at her "was just plain wrong," but did not provide any specific behaviors that would support a legal claim.

[22] A chart with demographic characteristics, claims, and outcomes for each of these 10 women is attached at appendix A.

help pay the rent. He threatened to evict her if she refused. She never complied with his demands, however, on more than one occasion she woke up at night to find him in her house (sometimes her bedroom) masturbating. The woman eventually moved out and went to live with her sister.

#75: The woman was 23 years old and employed part-time as a hotel housekeeper. Her landlord would ask her and her roommate for sex in lieu of rent. He would come into their house uninvited, and he prohibited them from having male visitors. She called the police to make a report about the landlord's repeated unauthorized entry into her apartment. An officer came by to take her statement but did nothing further. The woman eventually moved out and went to live with her mother. Her roommate continued living in the apartment and, according to the interviewee, her former roommate "did what he wanted so she could afford the rent."

#93: The woman was 24 years old, married with three children, and she worked as a hotel housekeeper until she lost her job. Her husband also lost his job, and both were struggling with drug addiction. The landlord said he would reduce the rent if the woman had sex with him. She believed that he was having sex with other women in the complex. The landlord watched her unit, made unannounced visits, and came into her apartment when she was not home and removed items from her underwear drawer. The woman refused the offers of sex for rent and, eventually, she and her family moved out and into a hotel.

#95: The woman was 35 years old, unemployed, and receiving SSDI. She also had a Section 8 Voucher. She was looking at an apartment with her 10-year-old daughter when the landlord made sexual comments and talked about how "sexy" he thought both of them were. He tried to grope the daughter and make the woman sit on his lap, but the woman pushed him away, and she and her daughter ran out of the apartment. She did not rent the apartment.

#99: The woman was 30 years old and a single mother of four who worked as a school bus driver. She had been living in a homeless shelter until she received a Section 8 Voucher. Her new landlord frequently directed sexual comments toward her and asked to watch her engage in "girl on girl" sexual activity with another tenant. She said no, the landlord eventually stopped making advances, and she continued living in the apartment.

Victim Characteristics

The women who reported experiencing harassment by their landlords were likely to be racial minorities. Nine of the ten women who reported experiencing sexual harassment by their landlords identified as Black or multiracial, and one identified as White; thus, 90 percent of the women with positive responses were members of a minority group. This finding is consistent with the population of the survey participants (85 percent Black, 15 percent White). It is important, however, to note that the group of survey participants contained a disproportionate number of Black subjects when compared with the total CHA population as previously described, for reasons that are not clear. Although Blacks are disproportionately likely to be poor, Whites make up a majority of the low-

income people in the United States in absolute numbers. (DeNavas-Walt and Proctor, 2015). Similar trends are evident in rates of housing assistance. (Irving and Loveless, 2015).

The study identified another factor that was not addressed by any of the previous studies—the age of the women at the time they experienced the harassment. Most of the women were young. The median age at the time of the harassment was 25.5. Three of the women were 21 or younger when they experienced the harassment.

Five of the women were caring for children and were the only adults in the household at the time they were harassed. Four of the women did not have children and were living with roommates or boyfriends. Only one household contained both children and another adult (#93 reported living with her husband and three children, but she also reported that she and her husband were dealing with drug addiction at the time).

All the women were low-income, or had no source of income at all, at the time they experienced the harassment. One was unemployed, one was in college and living on student loans and help from her family, two received SSDI payments, and the remaining six were employed in low-wage jobs (three worked as hotel housekeepers, two worked as nurse's aides, and one was a school bus driver). Despite this level of income insecurity, only three of the ten were receiving rental assistance in the form of Section 8 Vouchers—an SSDI recipient, a nurse's aide, and the bus driver. Of the seven who did not receive Section 8 Vouchers, three relied on their wage earnings, one relied on monthly SSDI payments, and three (who were unemployed) relied on assistance from family and friends to pay rent.

The fact only three of the ten were receiving Section 8 Vouchers at the time of their harassment might seem surprising considering that all ten were receiving housing assistance at the time of the interview—either using Section 8 Vouchers or living in public housing. (Indeed, one of the concerns about the project design was that it was likely to oversample women in public or Section 8 housing because the interview subjects were recruited from the CHA office and the vast majority were current CHA clients.) The fact that so few were receiving assistance at the time of their harassment, however, is consistent with the rates at which low-income women, in general, receive housing assistance. Due to resource limitations, only one in four low-income people who qualify for rental assistance in the form of Section 8 Vouchers or public housing actually receives it (Fischer and Sard, 2017). These study findings run contrary to assumptions made by other commentators about the population of women at risk for sexual harassment in housing. Some scholars assert—without evidence—that women are more likely to be harassed if they use vouchers or live in public housing (George, 2016; Maxwell, 2006; Reed, Fitzgerald, and Collinsworth 2005). Although the numbers involved in this study are too low to draw any assumptions, they suggest that receiving housing subsidies does not make low-income women more likely to be harassed than other women. On the contrary, it appeared that receiving a housing subsidy or other financial support actually made it easier for some of the women in the study to reject their landlord's advances and remain in their housing.

Perpetrator and Housing Characteristics

The perpetrators of the harassment were much different, demographically, than the women who were targeted. They were more evenly distributed by race with five who appeared White and five who appeared Black.[23] Perhaps the most dramatic difference was age. Although their exact ages were not known, the women estimated the ages of the perpetrators in each case, and all were estimated to be between the ages of 40 and 70, with an average estimated age of 50. In all but one case, there was at least a 10-year estimated age difference between the woman and perpetrator.

As noted previously, all the cases involved private rental housing; none of the women were living in public housing, project-based Section 8 housing, or group setting housing, such as a shelter, at the time they experienced the harassment. These findings are also consistent with the results of Dr. Tester's study; most of the reported complaints he found were in private rentals, although he could not determine whether the rentals were participating in the Section 8 Voucher Program (Tester, 2008).

All the women believed that the person who harassed them was the owner of the property and also served as its manager. This status meant that the landlord did not employ a property manager or management company and was the sole point of contact for the women with respect to their housing.

Responses and Consequences

Only one woman (#75) attempted to report her situation to someone in a position of authority. After her landlord repeatedly asked her for sex in lieu of rent and came into her apartment uninvited, she called the police. The police came to her apartment and interviewed her. She was not aware of the police taking any further action. The remaining women did not report the inappropriate behavior to anyone. This response is consistent with research findings of sexual harassment in other contexts, such as the workplace and academia. In the study, the most common reasons given for failure to report were that the woman did not know where, or to whom, to make a report (five women); did not want to jeopardize her housing situation (four women); or did not want to involve others in the situation (three women).

The emotional and, in some cases, physiological consequences for the women could be quite serious. All reported feeling negative emotions at the time of the harassment, ranging from anger, shock, depression, shame, and disgust. Five women also experienced physical symptoms such as sleeplessness, stomach upset, headaches, and anxiety.

Four women reported experiencing serious and ongoing emotional problems. For example, #93 described how the harassment brought up issues related to molestation she had experienced as a child. The harassment also exacerbated her drug use, about which she was deeply ashamed. Moving her family into a hotel was extremely stressful, and her relationships suffered. She became seriously depressed and attempted suicide. Ten years later she still struggles with depression and trust issues. One participant, #41, reported that the harassment caused her relationship with her fiancé to fall apart. Even 15 years later she still feels intense anger and disgust about what

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[23] These observations were based on the characterization of the landlord's race by the women, who were asked to state what race the person appeared to be.

happened. One woman, #75, experienced extreme anxiety, sleeplessness, and stress, particularly due to the fact that her landlord repeatedly entered her apartment without authorization. She felt helpless when the police apparently took little action after her report. Twenty years later she still feels paranoid in her apartment and mistrustful of landlords. Another woman, #20, reported that 2 years later she still "prays every day, just trying to forget" her landlord.

Analysis and Implications

The findings, although based on a small number, reveal some important insights about sexual harassment in housing. In particular, virtually all the women reported being asked by their landlords to exchange rent for sex. This harassment took place against a backdrop in which several of the women were having difficulty paying their rent; thus, an eviction for cause was a credible threat. Whether or not a woman was able to rebuff the landlord's advances and also remain in her housing appeared to come down to whether she had assistance, usually through a HUD voucher, to pay her rent.

In addition, all the landlord-perpetrators appeared to own and operate their properties themselves, without the sort of oversight one might find in a large rental management company or more institutionalized setting.

Analysis of the Findings

The Conduct

Eight of the ten cases involved explicit requests or demands by their landlords to trade sex for rent (#20, #21, #29, #37, #39, #41, #75, and #93). A ninth woman (#99) described being subjected to repeated sexual comments and requests by her landlord, although she was never specifically propositioned to trade sex for rent. Five women described landlord behaviors that also fall into the hostile environment category and are likely criminal in nature, including: home invasion (#29, #41, #75, and #93), indecent exposure (#41), and sexual battery of a child (#95).

Sexual Requests: The Reality of Low-Income Housing

All 10 women identified in the study were subjected to sexual overtures by their landlords. Most landlords were explicit about trading rent for sex, and some made aggressive or repeated advances. All the women rejected these overtures. None of the women reported any direct, tangible, negative actions taken by the landlords because of their refusals. In other words, none of the landlords evicted or failed to rent to a woman because she refused his advances.

This finding is not to say that the sexual harassment had no effect on their housing situations. On the contrary, two women (#39 and #95) refused to rent the apartments they had been considering after their prospective landlords crudely propositioned or groped them, and five women (#20, #29, #41, #75, and #93) ultimately moved out of their housing after their landlords propositioned them.

The fact that the landlords never took negative action is important for several reasons. Because the landlords took no tangible, negative action against the women, under existing Supreme Court

caselaw, their cases would be classified as alleging hostile environment harassment.[24] In order for conduct to constitute a hostile environment, it must be considered severe or pervasive. Thus, the legal question for a court analyzing the issue would be whether the described behavior rises to the level of "severe or pervasive" conduct. This showing should easily be met by the women who also alleged serious and/or criminal behavior such as indecent exposure, home invasion, and sexual battery. For one-half of the women, however, the sexual requests were the only form of harassment they experienced.

Such requests are undoubtedly offensive, as any random request for sex from a relative stranger would be. They take a much more sinister character, however, in light of the vulnerable position the women were in at the time their landlords propositioned them.

Indeed, all the women in the study were in tenuous financial positions at the time they were harassed. Although they were all low-income, only one of the ten was receiving Food Stamps or Supplemental Nutrition Assistance Program (SNAP) benefits and none was receiving Temporary Aid for Needy Families benefits. Four women had help paying their rent. Three had a portion of their rent paid through the Section 8 Voucher Program. Two of those three were also working, and the third received SSDI. The fourth was a college student who was receiving student loans and help from family. The remaining six women had no rental assistance, from neither government nor family, at the time they were harassed. Two were unemployed and had no source of income, one received SSDI, and three were working.

All the women who worked had low-wage and/or part-time jobs that were almost certainly insufficient to pay for market-rate housing on the private rental market. For example, in Columbia, Missouri, a person earning minimum wage would have to work 76 hours per week, 52 weeks per year, to afford the rent on a two-bedroom apartment. In fact, as the National Low-Income Housing Coalition (NLIHC) has exhaustively documented, there is no state in the United States where a low-wage employee, working full-time, can rent a two-bedroom apartment at the 40th percentile of area rents without spending more than 30 percent of her income on rent (NLIHC, 2017).

Consequently, the six women in the study who were not receiving Section 8 Vouchers or other rental assistance had difficulty consistently paying the rent for their apartments—a fact their landlords should have known at the time of the lease. This information is significant because a woman who received rental assistance appears to be more likely to remain in her housing after the harassment occurred.

Five of the six women who had no assistance (#20, #29, #41, #75, and #93) moved out of their apartments after the harassment. The sixth (#39) never rented the apartment because the harassment occurred while she was viewing the unit. The circumstances described in the interviews make clear that all were having difficulty making their rent payments. After declining the "option" of sex in lieu of rent, all five moved out, most to a less desirable housing situation. Although it is accurate to say that the landlords did not directly evict these women for their refusals, it is also misleading to conclude that their refusals had no effect on their housing status. Although the landlords would have had legitimate grounds for eviction due to failure to pay rent, if

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[24] *Burlington Industries v. Ellerth*. 524 U.S. 742, 753-54 (1998)

the women had acceded to the landlord's requests, then they presumably would have been able to remain in their homes.

Three of the women were receiving vouchers or other assistance when they were propositioned. The two women who were renting with Section 8 Vouchers[25] (#39 and #99) and the woman who was renting with student loans and family support (#21) also declined sexual requests from their landlords but did not move out of their housing. None of them indicated having difficulty paying the rent. If the women were not in arrears on their rent, then their landlords lacked legitimate grounds to evict them.

Thus, it appears that the women who had resources to help them pay rent were able to turn down their landlords' requests without jeopardizing their housing situations. The women who did not have such resources faced a much harder choice because, for them, saying "no" meant having to move or be evicted.

Other Conduct

Five of the women described additional harassing conduct, including unauthorized entry and/or home invasion (#29, #41, #75, and #93), indecent exposure (#41), and unwanted touching (#29 and #95, the latter involving the woman's 10-year-old daughter). Much of this behavior is likely criminal in nature. The home invasions are particularly disturbing. One woman (#29) came out of the shower to find the landlord inside her apartment multiple times. Another (#41) woke up at night to find her landlord in her apartment masturbating. Even apart from these dramatic episodes, simply having a landlord who would let himself into their apartments without warning was extremely unsettling to these women. This behavior was particularly disturbing because these women had been sexually propositioned by these same landlords. This combination—unauthorized entry coupled with sexual propositions—was terrifying to all the women who experienced it.

Lack of Oversight

All the harassment took place within private rentals, not in public housing, homeless shelters, or other institutionalized settings. Three of the ten women were using Section 8 Vouchers to help pay for rent at the time they were harassed, so there was at least a Housing Authority involved in overseeing the rental. In the remaining seven cases there was no governmental, administrative, or charitable entity involved in the rental relationship.

It appears that the perpetrators are likely to be independent owner-operators–that is, landlords who both own and manage the properties without using a rental manager or management company. All 10 of the women reported that this situation was the case. This finding is also consistent with Dr. Tester's study, which observed that most of the offenders were landlords who both owned and managed their properties (Tester, 2008).

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[25] A third woman, #95, also had a voucher, but she and her young daughter were harassed while looking at the apartment and, as a result, she never actually rented from the landlord. She was also not explicitly propositioned by the landlord.

This conclusion makes sense if it is assumed that a larger, more formal management apparatus—of the sort that one would find either with public housing or with a private rental management company—is more likely to contain some oversight and accountability mechanisms. The tenants might have multiple points of contact with different employees, the employees would have supervisors, and decisionmaking power about various aspects of the tenancy (rent payments, repairs, lease status, and so on) would be less likely to rest with a single person. In the owner-operator scenario, particularly where the tenant is not using a Section 8 Voucher, no mechanisms are in place.

This conclusion is not to suggest that harassment does not occur in public housing or other institutional settings—anecdotal evidence and caselaw shows that it does.[26] The same goes for harassment committed by employees of rental management companies.[27] On the whole, however, it seems that sexual harassment in housing is most likely to occur in a specific setting—private rentals—and that it is carried out by a specific type of perpetrator–a man who both owns and manages his properties and who is operating without oversight or accountability.

Lack of Response

It is striking that essentially nothing happened to the landlords who committed the harassment. The only woman to make any sort of complaint called the police who apparently took little action. This result is not surprising. Police are trained to investigate criminal activity. They may well view a complaint from a woman about her landlord as a landlord-tenant dispute and not a law-enforcement matter. Police officers may view the property as belonging to the landlord and therefore may be less willing to take complaints of home invasion by landlords seriously. Much of the law review literature about police involvement with landlords and tenants involves the situation in which police are summoned to help evict a tenant. This effect may be magnified by the fact that the complainants are likely to be young, low-income women of color. Unless the police are specifically trained on this issue, they may not be equipped to take appropriate action.

Fair housing organizations and lawyers who specialize in fair housing have the expertise to handle complaints of this nature. HUD also processes sexual harassment in housing complaints, as do state civil rights agencies.[28] None of the women interviewed were aware of these resources.

Even if they had been aware of available complaint mechanisms, it is unlikely that the women in the study would have used them. Of the nine women who made no formal complaint, all stated that one reason was their reluctance to jeopardize their housing situation. This rationale was likely a valid concern. As discussed previously, the women who were not receiving rental assistance were having difficulty paying their rent. Their landlords may have had legitimate reasons to evict them but may have held off to extort sex. A complaint from a fair housing center or a HUD investigation could have potentially triggered an eviction. Women with Section 8 Vouchers might not have felt the same danger of eviction but were still likely to be concerned about jeopardizing their vouchers.

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[26] See, for example, *Banks v. Housing Authority of Bossier City*, No. 11–0551, 2011 WL 4591899, at *1 (W.D. La. Sept. 30, 2011) (female public housing tenant alleged sexual harassment by maintenance technician); *Woods v. Foster*, 884 F. Supp. 1169, 1171 (N.D. Ill. 1995) (female residents of homeless shelter sexually harassed by shelter directors).

[27] See, for example, *West v. DJ Mortgage, LLC*, 164 F. Supp. 3d 1393, 1395–96 (N.D. Ga. 2016) (female tenant alleged harassment by landlord's property manager).

[28] 42 United States Code (U.S.C.) § 3604 (2012); MO. REV. STAT. § 213.040.1(2) (2016).

If a landlord evicts a woman because she filed a fair housing complaint against him, it can constitute a separate violation of the Fair Housing Act's (FHA) anti-retaliation provision.[29] If the record contains legitimate reasons for an eviction, it creates a question of causation for the fact-finder, who will decide the true reason for the eviction. Unfortunately, this aid may come too late for the woman if she has already been evicted.

A private lawyer might file for a temporary restraining order to prevent a complainant from being evicted while her claim is pending. Similarly, it is possible for HUD to authorize the attorney general to go to court to seek temporary or preliminary relief, which is referred to in FHA's regulations as "prompt judicial action."[30] If the complainant is in arrears, however, the court may be unwilling to grant such a remedy. Moreover, a woman's difficulty paying rent may provide fodder for a landlord to argue that she is fabricating her complaints to avoid paying.

Ramifications for Policy

These findings suggest a number of policy improvements for targeted outreach and intervention. Ultimately, increasing the amount of affordable housing and housing assistance for low-income families would go a long way toward alleviating this problem.

The Need for More Targeted Outreach and Intervention

FHA and its state law equivalents prohibit discrimination in housing, including harassment in housing,[31] but HUD and the state civil rights agencies that enforce these laws operate on a complaint-driven model and do not affirmatively regulate private rental housing (Johnson, 2011). In many jurisdictions, there is little oversight of the landlord-tenant relationship. Regulation of rental housing is conducted by local zoning authorities and typically focuses on the physical condition of the properties. Landlord-tenant laws vary from state to state. They usually focus heavily on the particulars of rent and security deposit collection, duties to repair, and eviction procedures.[32] They are almost always enforced through litigation (which is typically initiated by landlords against tenants).

Individual owner-operators of private rental housing, who are the likely perpetrators of sexual harassment in housing, therefore exist in a regulatory gray zone. Unfortunately, the women most vulnerable to housing harassment—young, low-income, minority women who are not receiving housing subsidies—are also among the hardest individuals to reach. These women are among the most marginalized in society and have few social, economic, or institutional supports. Serving this population remains one of the biggest challenges for social service providers.

For women who are receiving housing assistance, there are obvious agencies that could provide oversight of landlords and offer resources to tenants who are harassed, specifically the housing

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[29] 42 U.S.C. § 3617 (2012) ("It shall be unlawful to coerce, intimidate, threaten, or interfere with any person in the exercise or enjoyment of, or on account of his having exercised or enjoyed, or on account of his having aided or encouraged any other person in the exercise or enjoyment of, any right granted or protected.")

[30] 24 C.F.R. § 103.500(a) (2016).

[31] For example, 42 U.S.C. § 3604(b) (2012); MISSOURI REVISED STATUTE (MO. REV. STAT.), § 213.040.1(2) (2016).

[32] For example, MO. REV. STAT. Chapter 535 (2016).

authorities that implement the Section 8 Voucher Program. The ability and willingness of housing authorities to respond effectively to complaints may vary, however. Although some housing authorities may have effective methods for receiving and acting on complaints, others may be unresponsive to, or even perpetrators of, such harassment (Lussenhop, 2018). As one commentator argues, housing authorities should develop standard procedures for training landlords about their obligations under FHA; educating tenants about sexual harassment; and providing effective methods to receive, investigate, and act on tenants' complaints of harassment. HUD can and should monitor how the housing authorities perform on this basis through its Section 8 Management Assessment Program (SEMAP; Maxwell, 2006).

These sensible measures, however, will only reach the 25 percent of low-income women who receive housing assistance. For the other 75 percent, avenues must be considered for tenant education, regulation, and oversight of the landlord-tenant relationship, and complaint mechanisms that can be made available at a variety of points—particularly at the local level. As a starting point, states could require landlords to make mandatory disclosures to their tenants that clearly spell out the right to be free from sexual overtures by landlords. Local governments could initiate public awareness campaigns designed to reach the low-income population. In addition, local code enforcement authorities could create and operate a hotline to receive complaints from women who have experienced harassment. Hotline information should be available to the women through mandatory disclosures and public education. The hotline would refer the women to appropriate resources and lead to investigations of the landlords who are the subjects of the complaints. Problem landlords could be identified and penalized just as they would for repeated citations about maintenance or habitability.

Similarly, police departments should be trained on how to deal with tenants who allege criminal harassment by their landlords. Specifically, they should be trained to not automatically view such disputes as landlord-tenant problems and to take seriously allegations that the landlord is invading the woman's home.

In April 2018, the DOJ announced a nationwide initiative to combat sexual harassment in housing (DOJ, 2018). The initiative contains three components: (1) a joint task force between DOJ and HUD to coordinate and improve training, data-sharing, and outreach, (2) a toolkit for U.S. Attorney's Offices to use for enforcement, and (3) a public awareness campaign. This project is a welcome move, but DOJ engages in only a fraction of fair housing enforcement. Most enforcement comes from private non-profit housing agencies or state and local government agencies that rely heavily on funding from HUD's Fair Housing Initiatives Program (Schrupp and Olshan, 2005). These agencies provide a crucial service, and their funding must be stronger and more consistent.

The Need for More Affordable Housing and Housing Assistance

Even the most robust interventions are unlikely to bring about significant change without addressing its root cause: the fact that so many low-income women are left to their own devices to find housing in a private rental market that is ill-suited for meeting the existing need.

Experts, advocates, and commentators have long agreed that the United States is in desperate need of more affordable housing and housing assistance for low-income people (Cummins, 2001).

As discussed previously, 75 percent of people who qualify for housing assistance do not receive it because of resource constraints. Waiting lists for public housing and Section 8 Vouchers are frequently closed to new applicants, so new families may have to wait for years to sign up.

Although the numbers are small, the study results suggest that the women who were receiving vouchers when they were harassed had better outcomes, in that they were able to remain in their housing. Women with vouchers may have more resources which enables them to move away from a harassing landlord, as well as clearer avenues for reporting the behavior. They may also be less likely to fall into arrears on rent, making them less vulnerable to sexual coercion. Without a subsidy, low-income women who have difficulty paying rent are easy prey for landlords who recognize their vulnerability.

Study Limitations

This project was a small and localized study; its size and scope are not large enough to allow for broad generalization, particularly across different populations and geographic areas. Indeed, the study does not even give a snapshot of harassment in Columbia, Missouri. Although all the interviews were conducted in Columbia, some of the interview subjects stated they had been living elsewhere when they were harassed—usually Chicago or St. Louis—and that they had later moved to Columbia. It seems likely that areas with a shortage of rental housing, particularly affordable housing, would have higher rates of sexual harassment. In order for this theory to be tested, future studies will need to isolate *where* the harassment occurred.

In addition, study participants were not reflective of low-income women as a whole because the study contained a much higher percentage of Black women than the general population in Missouri or in the United States, but no Hispanics or members of other racial minorities were interviewed.

Conclusion

This study allowed for an analysis of sexual harassment in housing through interviews with women who have experienced it, but who never pursued legal action. The women were all low-income at the time they were harassed, and most were quite young. Nearly all reported that they were explicitly asked to trade sex for rent. Five of the women also experienced behavior that would likely be criminal, including home invasion, indecent exposure, and groping. All the offending landlords appeared to be sole owner-operators of their properties and most were significantly older than their targets.

The only woman to report her experience to authorities did so to the police, who appeared not to take any action. The remaining women did not report the harassment because they did not know who to report it to, and/or because they did not want to jeopardize their housing situation. Although none of the women were evicted for refusing to acquiesce to the landlord's requests, five of the women moved out, usually to less desirable living situations. It appears that all five of these women were having difficulty paying their rent, and they moved out before they could be evicted. In contrast, women who were receiving housing assistance did not move out of their housing. Two

women were propositioned when they were looking at apartments to rent, and the experience caused them not to go forward with the lease.

All the women reported feeling negative emotions at the time of the harassment, ranging from anger, shock, depression, shame, and disgust. Five women also experienced physical symptoms such as sleeplessness, stomach upset, headaches, and anxiety, and four women reported experiencing serious and ongoing emotional problems.

These results suggest that sexual harassment in housing exacts a toll on the women who experience it, both in terms of their emotional well-being and in limiting their housing opportunities. They suggest the need for more targeted outreach to low-income women who may be victimized and more oversight of landlords who may operate with little accountability. Greater access to affordable housing and housing assistance would almost certainly provide women like those in the study with an improved ability to avoid and escape harassment without placing their housing situation at risk.

Many research questions on this subject still need to be answered. In particular, a large-scale study is needed to determine how prevalent this problem is for low-income women as a whole and within different subgroups. Future research should also focus on a variety of different geographic locations with different vacancy rates, housing costs, and affordable housing options in order to determine whether these factors play a role. A larger study could also seek to identify risk factors among the women who experience sexual harassment in housing, for example, whether having a background of evictions, domestic violence, substance abuse, disability, or criminal convictions is associated with a greater likelihood of harassment.

Finally, future research might explore the prevalence of sexual harassment in housing for all female renters, not only those who are low-income. Other groups may be vulnerable to sexual harassment in housing for reasons other than income (for example, students, military spouses, or non-citizens).

Acknowledgments

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Appendix A

Exhibit A.1

Demographic Characteristics, Claims, and Outcomes of Subjects with Actionable Claims

	Race of Subject	Age	Household Composition	Source of Income	Housing Type/ Assistance	Claim	Outcome
#20	Black	48	Single, caring for granddaughter	SSDI	Private/No Voucher	Sexual requests in lieu of rent	Moved out (stayed with friends, could not care for granddaughter)
#21	Black	18	Lived with roommate	Family, educational stipends (college student)	Private/No Voucher	Sexual requests in lieu of rent, sexual comments	Remained in housing, conduct stopped
#29	White	21	Lived with boyfriend	Unemployed	Private/No Voucher	Sexual requests in lieu of rent, threatened eviction, home invasion, unwanted touching	Moved out (found another apartment)
#37	Black	21	Single, two children	Full-time employment (aide in residential care facility)	Private/No Voucher	Sexual requests in lieu of security deposit	Did not rent unit
#39	Black	27	Single, six children	Full-time employment (aide in residential care facility)	Private/Section 8 Voucher	Sexual requests in lieu of rent	Remained in housing
#41	Black	27	Lived with boyfriend	Full-time employment (housekeeper)	Private/No Voucher	Sexual requests in lieu of rent, threatened eviction, home invasion, indecent exposure (masturbation)	Moved out (stayed with sister)
#75	Black	23	Lived with roommate	Part-time employment (hotel housekeeper)	Private/No Voucher	Sexual requests in lieu of rent, unauthorized entry	Contacted police. Moved out (stayed with mother)
#93	Black	24	Lived with husband and three children	Part-time employment (hotel housekeeper), lost job due to drug addiction	Private/No Voucher	Sexual requests in lieu of rent, unauthorized entry (taking underwear)	Moved out (stayed in a hotel)
#95	Black	35	Single, two children	SSDI	Private/Section 8 Voucher	Sexual comments to mother and 10-year-old daughter, attempted groping of both	Did not rent unit
#99	Black	30	Single, four children	Part-time employment (school bus driver), SNAP benefits	Private/Section 8 Voucher	Sexual requests, sexual comments	Remained in housing, conduct stopped

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Departments

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Affordable Design

The U.S. Department of Housing and Urban Development sponsors or cosponsors three annual competitions for innovation in affordable design: The Innovation in Affordable Housing Student Design and Planning Competition; the American Institute of Architects – HUD Secretary's Housing Community Design Awards; and the HUD Secretary's Opportunity & Empowerment Award, co-sponsored with the American Planning Association. This Cityscape department reports on the competitions and their winners. Each competition seeks to identify and develop new, forward-looking planning and design solutions for expanding or preserving affordable housing. Professional jurors determine the outcome of these competitions.

2019 American Institute of Architects (AIA)—HUD Secretary's Housing & Community Design Awards

Regina C. Gray
U.S. Department of Housing and Urban Development

The Jury:

Simon Ha, AIA (Chair)
Principal, Steinberg Hart, Los Angeles, CA

Kai-Uwe Bergmann, FAIA
Partner, Bjarke Ingels Group (BIG)

Hans Butzer, AIA
Director, Butzer Architects and Urbanism

Mary Cerrone, AIA
Mary Cerrone Architects

Regina Gray, Ph.D.
Office of Policy Development & Research, U.S. Department of Housing and Urban Development

Rachelle Levitt, Retired
Office of Policy Development & Research, U.S. Department of Housing and Urban Development

The views expressed in this article are those of the author and do not represent the official positions or policies of the Office of Policy Development and Research, the U.S. Department of Housing and Urban Development, or the U.S. Government.

In this edition, we feature the winners of the 2019 American Institute of Architects—HUD Secretary's Housing & Community Design Awards. Recipients were recently honored at the annual meeting of the American Institute of Architects in Las Vegas, Nevada.

Introduction

For nearly two decades, the Office of the Secretary of Housing and Urban Development has collaborated with the American Institute of Architect's (AIA) Housing Knowledge Community to sponsor four prestigious housing design awards. During that time, the housing industry, in general, and the architectural community, in particular, faced challenges during a period of economic decline but has recently witnessed a resurgence of activity in response to the demand for affordable, quality housing. The four awards represent HUD and AIA's commitment to seeking feasible solutions to the affordable housing challenges that many low-income communities confront.

This is not just an awards competition that rewards excellent design. For each of the four award categories, applicants must also address how their submission responds effectively to the following AIA-HUD established goals: (1) implementing sustainable development practices; (2) ensuring that low- and moderate-income families have access to quality affordable housing; (3) promoting innovative design; (4) integrating social and cultural norms into the built environment; and (5) responding to client or resident needs. This Departmental piece will highlight the winners of this competition. The following four recipients demonstrate how affordable housing does not have to be limited to a certain building type or design format. Rather, innovation can occur through thoughtful design that is also reflective of the goals of a community, while at the same time providing a model for how other communities can expand affordable housing without sacrificing aesthetics or ingenuity.

Excellence in Affordable Housing Design Award
Winner: Williams Terrace, Charleston, South Carolina (David Baker Architects)

The *Excellence in Affordable Housing Design Award* recognizes projects that demonstrate how affordable housing design promotes equitable development and proves that good design is not exclusive to higher-income community projects. Williams Terrace is an adaptive reuse project that replaces an older development that sustained damage from Hurricane Hugo. This project was specifically planned as housing for low-income seniors. Although located in a high-velocity flood zone, the builders incorporated environmentally sustainable elements into the building itself and the surrounding natural environment that protects the conditions of the property and residents in the event of a disaster.

Sustainability. In light of the potential for the recurring natural disasters and extreme temperatures that often characterize Charleston, the judges thought that the effort to incorporate sustainability elements throughout the development was particularly noteworthy. All the newly built homes are oriented to the northwest to avoid heat loads from eastern and western exposure. The housing units incorporate glazing (a wall or window made of glass) at north and south to optimize daylight and enable solar control. At the east and west, glazing was minimized. The south-facing windows have box frames with calibrated overhangs and sides to shield from high-angle sunlight and are

shaded 100 percent of cooling hours. West-facing windows are shaded approximately 65 percent of cooling hours.

Both historic and contemporary building design common to Charleston's cultural traditions were interwoven into the development. For example, all the homes have high ceilings and are shaded by the deep piazzas and double overhangs on south-facing window boxes and cooled with cross-ventilation and ceiling fans. Outdoor circulation and inviting open-air stairs minimize elevator use and reduce the amount of conditioned space. Local and durable materials were used, which reduced shipping costs and minimized maintenance needs.

Recycled building materials are interwoven in the physical structure of the Williams Terrace homes.

Innovation. This is an interesting approach to addressing the needs of a senior community. Every amenity of the development incorporates some aspect of traditional design. One innovative feature, however, is the sliding shutters that cover all the windows. The sliding feature allows the resident some flexibility to either dim or open the shades to sunrays, but the feature itself also provides for multi-level circulation on the porches and through every floor. The 41 one-bedroom apartments are a version of the southern "shotgun" typology, with bedrooms toward the rear for privacy and social living areas connected to the shared porches, extending the living space outward and allowing for through-ventilation in every unit. The careful attention to the character of the community and the history of Charleston is to be lauded.

Affordability and Social Impact: Williams Terrace Senior Housing is the first dedicated housing for low-income seniors in the city of Charleston. The demand for senior housing is particularly high in the city, as Charleston is a popular retirement community. For even the residents who have lived in the city all their lives and picked up the pieces after the Hurricane Hugo disaster, however, aging in place is the ultimate goal. For these seniors, in particular, living in the city is their choice.

Creating Community Connection Award
Winner: Anchor Place, Long Beach, California (The Architects Collective)

The second award category, called the *Creating Community Connection Award*, acknowledges projects that use housing as a platform to transform a community, either through large-scale redevelopment or by creating an entirely new community with new housing options that connect housing to the larger community. In either case, winning submissions are recognized for demonstrating how important place-based planning is for communities affected by major challenges. Anchor Place was selected in this category for addressing the homelessness crisis in the Long Beach neighborhood. Essential features of the planned community are a recently renovated naval housing development used by homeless vets, a new community center, a much-needed upgrade to the existing greenspace, and improvements made to the street landscape to enhance connectivity. This holistic approach to community planning serves as a model for communities similarly situated.

Sustainability. Anchor Place design architects and partner owner, Century Villages at Cabrillo (CVC), became one of the first projects in Southern California to receive a Platinum certification from the USGBC LEED for Homes Multifamily Midrise rating system. The rating reflects the partners' commitment to creating communities that connect people to place, with supportive services located conveniently close or within the development. Addressing sustainability, there are four strategies that the team implemented to improve building performance throughout the development: (1) integrating building systems, (2) increasing the efficiency of the building envelope, (3) reducing energy loads through the use of on-site renewable energy systems, and (4) incorporating carbon-neutral fuel sources.

Anchor Place is a fairly large multifamily housing complex that has been recognized for its high energy performance.

The pursuit of high-performance, integrated building systems approaches included strategic solar orientation, window performance, window shading, natural lighting, ventilation, water

heating, and mechanical system efficiency. As a result of these efforts, Anchor Place was identified for having exceeded the 2008 California Energy Code (Title 24) by 15.8 percent. The building insulation, glazing U-value, and solar heat gain coefficient exceeded the 2013 Title 24 minimum standards. Energy loads were reduced for plugs, heating, cooling, lighting, and water heating. In addition, plug load was reduced through a vacancy sensor. High-efficiency HVAC units (SEER 15.5 or better) and filters (MERV 13) were used to improve indoor air quality. All buildings incorporate LED lighting, and the Energy Star lighting system includes a cut-off optic for lighting spillage reduction. The result is that the lighting control system reduces energy usage to 50 percent through the vacancy sensor. To reduce gas usage, in particular, a solar hot water pre-heating system was installed with a 44 percent solar fraction, thereby reducing the amount of gas needed.

Anchor Place boasts high-resolution, high-performing windows and low volatile organic compounds, or VOC, flooring.

Innovation. It is not surprising that the most innovative aspects of Anchor Place involve the additional sustainability features that not only aim to improve building performance but also to enhance healthy living. For example, building materials, such as linoleum tile with low-to-no VOCs, were installed throughout the building, while durable polished concrete flooring with no VOCs was used in the common areas. The use of these healthier materials ensures better indoor air quality. Nearly 90 percent of the construction waste was diverted from landfills, thus protecting residents from potential health hazards. Low flow plumbing fixtures were used throughout the building. The project provides a 64-percent reduction in estimated irrigation water demand.

The Anchor Place project demonstrates how balancing goals of affordability and environmental sustainability can be achieved.

Affordability and Social Impact. The owner's primary need was to deliver a multi-unit housing project that helps break the cycle of homelessness, works synergistically within the existing campus context and encourages residents to take part in the services and activities provided, thereby strengthening individual life outcomes and community cohesion. Arbor Place boasts 120 units of affordable housing, which includes 95 one-bedroom, 20 two-bedroom, and 5 three-bedroom units. All units are restricted between 30 percent and 60 percent AMI; those include one-bedroom units with rents ranging from $507 to $845; two-bedroom units ranging from $608 to $1,216; and three-bedroom units ranging between $703 and $1,406. In response to the need for more affordable housing units, about 45 percent of all the units are priced at 30 percent of the AMI.

In this Long Beach, California neighborhood, multimodal transportation options are a must for most residents in the development. For this community, aside from health and housing challenges, transportation has been a major barrier. To address this challenge, Anchor Place partners expanded bus routes that connect the residents to the central business district. The residents also noted that bus stops should be located within the development itself so that those with mobility concerns can also use the service. Moving about the development is made easier through the use of an open-air grand staircase that connects to a network of auxiliary staircases, enabling residents to travel from the ground level to any floor in the building. Disabled residents can use any number of connecting elevators, widened sidewalks, and ample open space for pedestrians to move about the development. With four wings, the building design creates three courtyard gathering spaces that connect to community-centered amenities located prominently on the ground floor. The landscape design, including circulation and courtyards, reinforces the strategy of prominently locating support services and amenities by leading residents directly to them.

Community-Informed Design Award
Winner: 8869 Avis, Detroit, Michigan (Detroit Collaborative Design Center)

The *Community-Informed Design Award* recognizes design that supports physical communities as they rebuild social structures and relationships that may have been weakened by outmigration, disinvestment, and the isolation of inner-city areas. Applicants for the award are asked to address how they address disinvestment in their communities by incorporating creative ideas from those in the community who are most marginalized or disadvantaged. This project—8869 Avis—was selected as one of the jury's favorite entries.

Sustainability: A centerpiece of the 8869 Avis project is the use of existing building materials, uniquely incorporated through the use of graffiti art. For this model, the porch is enclosed by geometric-patterned ornamental ironwork screens that reference the wide fencing structures prevalent in the neighborhood; they enhance open community while also protecting the residents. This feature was identified by the community of residents, some of whom contributed art to the structure or building materials laying around from vacant properties. Local metalworkers fabricated the screens. The mural that wraps throughout the building was designed by a late street artist and completed in tribute by an Inside Southwest Detroit program alumnus.

The objective of the Avis center is to provide a place where youth may illustrate cultural heritage through artistic expression.

The renovated project is beautified by new, colorful but high-performing insulated glass windows to maximize natural daylight and reduce the need to use artificial lights. LED lights were integrated throughout the building to increase efficiency in the main interior spaces and on the exterior. Bathroom and exterior lights were installed with sensors and timers to minimize overuse. Finally, an energy-efficient water heater rooftop unit cut utility usage by half in 2018.

Innovation: One of their flagship initiatives, "The Alley Project," transformed a neighborhood alley and surrounding vacant lots into an inspirational graffiti art gallery that connects neighbors and youth to each other as well as to community assets. The 8869 Avis development provides an anchor to The Alley Project through the renovation of an existing 2,400-square-foot building into a community center, the Inside Southwest Detroit headquarters, and a leasable tenant area. Rather than tear down the old building, the new 8869 Avis development not only rids the community of a former eyesore, the center aids in offering at-risk youth a variety of social activities, job training and education-based services, and programs to prevent homelessness or displacement. The art is not only provided by area artists—Avis extends opportunities to the area youth who contribute their artistic talents to the project.

Affordability and Social Impact: The project began with a participatory process that engaged representative stakeholders—graffiti artists, skateboarders, kids, grandparents, and other neighbors of all ages—in project planning and design decisionmaking, resulting in a community space that responds to local culture, needs, and opportunities. A series of community workshops, focus groups, and neighborhood celebrations gave people the agency and opportunity to guide the design of the building. The participatory process included activities that facilitated collaborative visioning and programming, informed site design including key contextual relationships linking to The Alley Project, and envisioned material and facade choices that support both security and transparency. This collaborative design process resulted in spaces and design elements that reflect the neighborhood's identity and vibrancy, embodied in a well-used community hub for creative programming and ongoing collaboration.

The Alley Project, ultimately, provides a safe haven for artists to express themselves and gives them additional occasions to engage with the community and potentially expand their artistic endeavors to other opportunities.

Housing Accessibility: The Alan J. Rothman Award
Winner: IFF Access Housing, Chicago, Illinois (Landon Bone Baker Architects)

Named in remembrance of a HUD engineer who championed affordable housing for the disabled, the *Alan J. Rothman Award* is given to exemplary projects that demonstrate excellence in improving housing accessibility for people with disabilities. The IFF Access Housing project allows people with disabilities to live in environments that resemble conventional or traditional single-family neighborhoods. This is a different approach to the multifamily projects that we often see in the accessible housing space. The jury focused on the universal design features of the project, as well as visit able features that the disabled can use that are modern and contemporary.

Sustainability: The IFF Access Housing project was recognized, in part, for both rehab and new construction that meet Energy Star testing requirements and surpass minimum requirements for insulation and sealing for rehabs, resulting in low-cost energy bills for residents. Choosing to rehab existing buildings saves countless pounds of material from the landfill and reduces the amount of embodied energy required to manufacture and transport new materials to the site as a replacement. Salvageable materials were reused and incorporated throughout the project where possible during construction.

IFF Access Housing emphasizes the importance of accessible design features that do not resemble traditional housing for persons with disabilities.

Innovation: Recognizing that disabilities take many forms, each apartment features both universal and accessible design features. Ground-floor units are all fully accessible with zero-step thresholds and low peepholes; wheelchair-friendly kitchens with roll-under sinks and pull-downs in upper cabinets; front-loading washers and dryers in the units; and thoughtfully designed bathrooms with roll-in showers. Every unit in the project features design elements that serve all, including attractive contrast flooring borders for people with low vision; visual doorbells and strobe alarms for the deaf, and soothing color palettes for those with sensory difficulties.
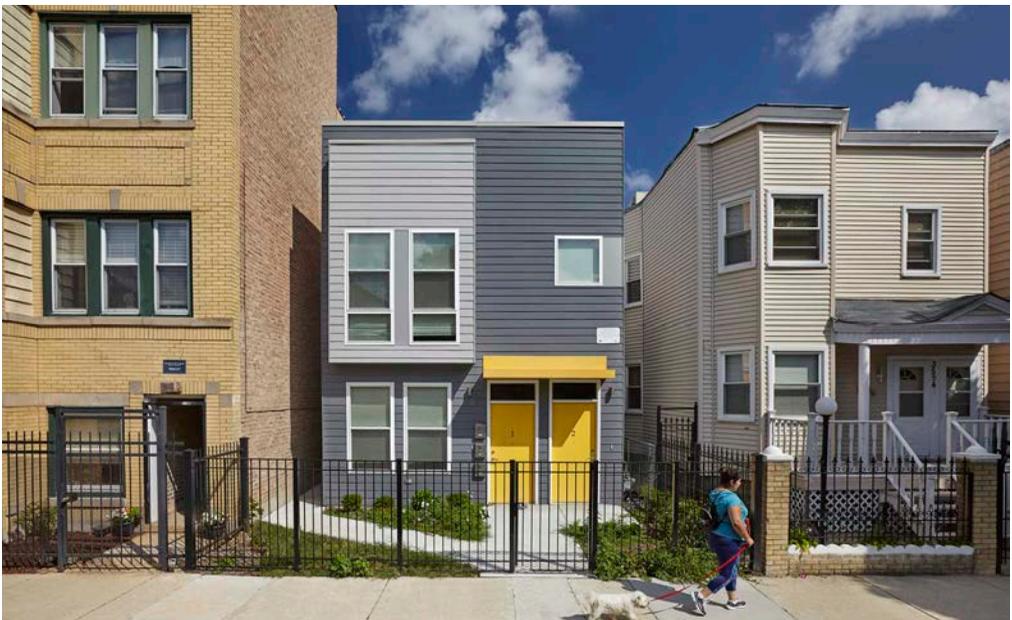
The physical design of IFF Access Housing fits with the character of other houses in the neighborhood.

Affordability and Social Impact: The IFF Access Housing project's goal is to preserve affordable housing while creating accessible options for people with disabilities. In Illinois, a disproportionate number of low-income disabled persons live in institutions because they lack community-based accessible housing alternatives.

At IFF, the focus is on creating a community where persons living with various disabilities are not isolated from other residents in the community; rather, they live, work and enjoy social spaces as a community.

The IFF Access Housing project provides housing alternatives for individuals with disabilities to live independently. What sets this project apart is its human focus and scale. Rather than concentrating people with disabilities in a single site, Access Housing gives people the opportunity to thrive in charming and attractive homes that blend into communities of their choosing.

The AIA/HUD Secretary's Housing Community Design Awards program is one of several award programs that the Office of Policy Development and Research launched with national organizations where the mission aligns with Departmental policy priorities. This year's winning projects were screened through the Department's internal vetting process which consisted of the Departments of Community Planning & Development in Charleston, South Carolina; Long

Beach, California; Chicago, Illinois; and Detroit, Michigan; and the Office of Fair Housing and Equal Opportunity in San Francisco, California; the Office of Assessment Management and Portfolio Oversight in Washington, D.C.; and, the Inspector General's Office, Washington, D.C. as appropriate. No adverse findings were reported. The awards were announced on June 7, 2019, in a special ceremony and reception during the *A'19*, or the 2019 American Institute of Architects Conference in Las Vegas, Nevada.

Postscript

The competition is thoroughly documented online.

To learn more about the award:
https://www.huduser.gov/portal/about/housingCommDesign-2019.html

To read about the AIA/HUD award guidelines:
https://www.huduser.gov/portal/sites/default/files/pdf/AIASecretaryAwardsBrochure2020.pdf

To learn more detail about this year's winning submissions, as well as prior years' winners:
https://www.huduser.gov/portal/about/housingCommDesign-2019.html

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Data Shop

Data Shop, a department of Cityscape, presents short articles or notes on the uses of data in housing and urban research. Through this department, the Office of Policy Development and Research introduces readers to new and overlooked data sources and to improved techniques in using well-known data. The emphasis is on sources and methods that analysts can use in their own work. Researchers often run into knotty data problems involving data interpretation or manipulation that must be solved before a project can proceed, but they seldom get to focus in detail on the solutions to such problems. If you have an idea for an applied, data-centric note of no more than 3,000 words, please send a one-paragraph abstract to david.a.vandenbroucke@ hud.gov for consideration.

A New Cost-Based Index of Housing Quality and Repair Needs

Eliza Wallace
PolicyMap

Eileen Divringi
Keith Wardrip
Federal Reserve Bank of Philadelphia

Abstract

The American Housing Survey (AHS) has long been a powerful tool for understanding housing problems in the United States. Traditionally, researchers have relied on subjective measures of housing adequacy or other abstract indices for quantitative analyses of housing quality. In addition to the characteristics of households or units with repair needs, when crafting policy solutions or guiding resources, decision makers need to know how much investment might be needed to bring the housing stock up to standard. PolicyMap and the Federal Reserve Bank of Philadelphia have addressed this need by developing a novel method to assign estimated repair costs to housing problems reported in the AHS. In this article, we describe how we merged a proprietary repair cost dataset with microdata from the AHS public use file (PUF) to estimate the total cost of repairs that would be needed for each surveyed housing unit, using survey weights to aggregate estimates at various geographic levels. We briefly present key national findings on repair needs. Summary tables of these findings and more are available to the public for download.

Introduction

Building on recent efforts to quantify housing quality issues, researchers and data analysts at the Federal Reserve Bank of Philadelphia and PolicyMap have developed a cost-based index of repair needs that combines detailed data on housing conditions from the American Housing Survey (AHS) with estimates of the costs of needed repairs. This article, adapted from a technical appendix (Wallace et al., 2019) to a Federal Reserve Bank of Philadelphia Special Report (Divringi et al., 2019), provides an in-depth overview of the development of this index, detailing the motivation for the approach, the methodology for creating the index, and the basic summary statistics.

Background

Despite the widespread finding that severe housing problems have declined in the United States over the past half-century, adequate quality housing is still inequitably distributed across socioeconomic lines (Kutty, 1999; Holupka and Newman, 2011; Mundra and Sharma, 2015; Boehm and Schlottmann, 2008; Jacobs et al., 2009). The primary dataset used to track both housing quality trends and socioeconomic disparities in housing is the AHS, administered by the U.S. Department of Housing and Urban Development (HUD) and the U.S. Census Bureau. Since 1984, the AHS has published ZADEQ, a composite measure of housing quality—since renamed ADEQUACY.[1] This measure classifies housing units as adequate, inadequate, or severely inadequate. Housing units flagged as inadequate have one or more severe problems in the unit's plumbing, electrical, or heating systems, or have a number of maintenance problems such as water leaks, holes in the floor, or rats.[2] This measure is widely cited and is included in HUD's biennial *Worst Case Housing Needs* report to Congress (Watson et al., 2017). Recent research suggests, however, that this measure understates the extent of problems in the U.S. housing stock (Emrath and Taylor, 2012; Eggers and Moumen, 2013b), and some have questioned whether its criteria meaningfully reflect an underlying housing quality construct (Newman and Garboden, 2013; Eggers and Moumen, 2013a).

Considering these limitations, there have been several recent attempts to create more nuanced measures of housing quality. Three recent papers have informed our approach to the cost-based index. Emrath and Taylor (2012) applied a hedonic model to AHS data to create a measure based on the degree to which reported problems reduced expected home values and rents. Their approach indicated that housing inadequacy was likely more common than the ADEQUACY measure suggested, particularly among single-family homes and units where children are present. Eggers and Moumen (2013b) proposed the Poor Quality Index (PQI), which assigned weights based on subjective criteria to unit-level housing problems reported in AHS. Their results revealed a heavily right-skewed distribution in which most units reported no housing deficiencies, a significant portion were assigned low PQI values, and a small segment was found to have high PQI values indicative of severe disrepair. Lastly, Newman and Holupka (2017) developed and tested several potential quality indices, finding a strong correlation between Eggers and Moumen's PQI and more empirically-derived weighting schemes.

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[1] Email correspondence with HUD staff confirm that both variable names pertain to the same measure. For details, see the AHS online codebook, available at https://www.census.gov/data-tools/demo/codebook/ahs/ahsdict.html.

[2] The specific criteria for determining whether a unit is inadequate or severely inadequate have changed slightly over time. See appendix E, page 73 of Watson et al. (2017) for the full, current definition.

As one of few papers to integrate repair cost information with AHS data, Listokin and Listokin (2001) similarly informed the development of our index. They categorized each housing unit included in AHS into one of four repair intervention levels based on the intensity of its rehab needs—none, minor, moderate, or substantial. They then applied flat repair cost estimates provided by housing industry experts to units in each category, aggregating to estimate regional and national summary figures. The cost-based index outlined in this article adapts Listokin and Listokin's practical emphasis on estimating repair costs with the recent efforts to develop more meaningful summary measures of housing disrepair. The resulting index provides an intuitive and policy-relevant indicator of repair needs.

Data Sources

To develop our cost-based index, we combined two data sources: (1) the AHS PUF, and (2) a custom RSMeans dataset from Gordian that estimates the costs of repairs for each type of housing problem reported in the AHS PUF.

American Housing Survey

The AHS, established in 1973, is conducted every other year through personal interviews either of the householder or, in the case of vacant units, a landlord or other person with detailed knowledge of the property. The AHS includes information on a range of housing-related topics, including housing characteristics, housing costs, home improvements, demographics of heads of household and tenants, reasons for recent moves, and housing problems. It is currently the only publicly available, nationally representative source of data with highly detailed information on these characteristics of housing units.

The cost-based index outlined in this article was developed based on the 2015 AHS PUF, which includes anonymized survey responses, and applied to the subsequently released 2017 PUF, for which the microdata codebook is identical for the variables used to calculate the index. For the purposes of this analysis, we considered only housing units that were occupied as a primary residence and for which an interview was conducted. Out of a total of 66,752 housing units surveyed, 57,984 were occupied housing units where an interview was conducted (INTSTATUS = 1), 1,054 were occupied and interviewed but categorized as "usual residence elsewhere," and 7,714 were vacant.

Custom RSMeans Database from Gordian

The research team worked with Gordian, a company that provides residential and facilities maintenance, construction, and repair cost data for real estate professionals, to assign specific repair interventions to each housing problem identified in AHS and to estimate the associated costs. The majority of these estimates were based on the RSMeans 2018 Contractor's Pricing Guide database of Residential Repair & Remodeling Costs (Gordian, 2017). A subset of repair interventions was not available in the Contractor's Pricing Guide data. The missing interventions largely pertained to major structural and plumbing repairs and were omitted either because the scale or type of repair required the use of a contractor accustomed to working on larger commercial projects or because RSMeans could not produce reliable estimates for smaller contractors. For

these, RSMeans substituted estimates from the 2018 Facilities Maintenance & Repair Costs database. Estimates based on the Facilities Maintenance & Repair Costs database assume the use of open shop labor, which is associated with lower hourly wages than union labor but still higher than the wage rates used in the Contractor's Pricing Guide estimates. Both sources of estimates reflect national average costs inclusive of materials, labor, contractor overhead, and contractor profit. For estimates aggregated at the metropolitan statistical area (MSA)-level, dollar values are adjusted using regional multipliers derived from Gordian (2017).

Methodology

The following sections describe the development and validation of the repair cost index. In most cases, mapping repair cost estimates to reported housing quality issues was a simple one-to-one merge with adjustments for unit or household size, depending on the intervention. In some housing units, however, one repair might obviate the need for another repair. In these instances, a hierarchy of repairs was established to avoid redundancies. Finally, using survey weights provided in AHS, unit-level repair estimates were aggregated to produce national-, regional-, and MSA-level estimates of repair costs according to various demographic, economic, housing unit, and other characteristics.

Identifying Housing Deficiencies in AHS

The research team began by identifying the AHS variables associated with physical deficiencies in the housing unit, primarily from the "Housing Problems" module.[3] Several additional variables provided context that further specified the types of repairs needed in each surveyed housing unit. For example, repairs to a cracked or crumbling foundation would vary based on whether the unit has a full basement, crawlspace, or some other foundation type. Similarly, the cost of repairs for broken heating equipment would be determined by the type of heating system. For certain housing problems, developing estimates required assumptions about the size and occupancy of the housing unit. Accordingly, we used AHS variables describing the size of the unit, number of floors, and number of residents to scale the repair estimates, as described in the table accompanying the full technical appendix table.[4]

The initial combination of housing problems and context variables resulted in 99 repair scenarios. The research team dropped those with frequencies below 0.05 percent in the unweighted data, resulting in the 66 combinations of reported problems and repairs presented in the technical appendix table.

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[3] There are 48 variables categorized under the "Housing Problems" topic in the AHS code book. Of these, several are excluded from this analysis because they represent a more generalized version of related variables (for example, "Flag indicating unit was uncomfortably cold for 24 hours or more last winter") or are not clearly related to structural deficiencies. Although not listed under the "Housing Problems" topic, the variables HEATTYPE and HOTWATER were included, since they capture responses that have historically been considered housing quality issues (such as lack of heating equipment).

[4] Appendix table available at https://philadelphiafed.org/-/media/community-development/publications/special-reports/home-repair-costs-technical-appendix-table.xlsx?la=en (Note: this URL will initiate a download of an Excel workbook.)

Repair Cost Assumptions

Once the repair scenarios were established, experts at Gordian outlined the details of the materials and labor hours required for each repair. The AHS provides limited information about building materials (for example, it does not specify the type of roofing materials). Accordingly, Gordian staff assumed the use of common, cost-effective building materials and used their experience to supply information on any secondary tasks such as demolitions or excavations associated with these repairs.

Certain repairs also required assumptions about the proportion of the area affected or the number of items in need of repair. For certain roofing repairs, for instance, we assumed that 5 percent of the roof would need repair. For units reporting broken or boarded windows, the AHS does not specify how many are damaged, so we assumed an average of 1.5 would need repair. Similarly, when a unit reports a lack of functioning electrical outlets in each room, we assumed an average of 1.5 plugs would need to be installed. Such assumptions were arrived at in conversation with industry experts at Gordian and are detailed for each applicable intervention in the technical appendix table.

For the small number of repair scenarios that were not priced out by Gordian, we substituted the costs of comparable repairs. For example, the AHS reports on mold problems in bathrooms, kitchens, living rooms, basements, and bedrooms. For these repairs, we asked Gordian to estimate the cost of remediating mold in a fixed square foot area of a bathroom, and we applied that cost to any room type.

Adjustments for Unit and Household Size

In the AHS PUF, the variable for unit total square footage is provided as a binned categorical variable. To scale repair costs that were provided on a per square foot basis, we assumed the midpoint of each category. For units for which the size variable was missing or not reported, we imputed 1,500 square feet based on the overall median unit size reported in the AHS Table Creator.[5] For repairs pertaining to the dimensions of the unit, we assumed that the footprint of the housing unit would be equal to the total area of the unit divided by the number of reported floors and conservatively estimated that the length of an outside wall of the housing unit would be equal to the square root of that footprint size.

For replacements of heating systems or water heaters, the number of potential interventions was limited by the range of equipment size options available in the RSMeans dataset. Accordingly, for heating equipment replacements, unit size categories were collapsed into two-to-five groups depending on the type of system, and those groups were assigned a corresponding equipment size. For water heater replacement, we used the number of residents reported in the AHS to inform the size of water heater required for each unit. Equipment specifications are detailed in the technical appendix table.

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[5] See https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00000&s_year=2017&s_tablename=TABLE2&s_bygroup1=1&s_bygroup2=1&s_filtergroup1=1&s_filtergroup2=1.

Assigning Repair Interventions

For several equipment-related repairs, variables recording the frequency or severity of the problem indicated whether a repair or replacement would be most appropriate. For example, when a house on well water has one or two interruptions in water service (NOWATFREQ), the well piping may need to be replaced. Another house experiencing more breakdowns may need a much more expensive well pump replacement. Similarly, for units reporting one or two heating system breakdowns that resulted in uncomfortably cold temperatures, we applied a low-cost maintenance intervention. For more frequent breakdowns, we assumed the equipment needed to be replaced.

Repair Hierarchy

Housing units may have more than one problem that could be solved by a single repair. To avoid overestimating repair costs, we developed decision rules on which repairs supersede others. For example, four different AHS variables denote roofing problems (ROOFSAG, ROOFSHIN, ROOFHOLE, and LEAKOROOF) and needed repairs would overlap. Repairing a sagging roof requires costly structural work that likely offsets other roof repair needs. For a detailed description of which repairs superseded others, see the technical appendix table.

National, Regional, and Metropolitan Estimates

After summing the total repair costs for each surveyed unit, we used the full sample weighting variable (WEIGHT) to calculate weighted summary statistics and aggregate repair costs tabulated by a number of demographic, geographic, and housing type variables. The National PUF includes variables that specify the Census Division[6] and, for units in the 15 largest metropolitan areas, MSAs, which can be used to tabulate estimates at these geographies.

All tabulations at the national and Census Region levels use the weighted national average costs provided by Gordian. To account for regional variations in construction costs, dollar-value estimates for the 15 largest MSAs are adjusted using location factors for the largest principal city. These location factors were drawn from Gordian (2017), which provides cost multipliers at the three-digit ZIP Code-level for most major cities.

Validation

To assess the internal validity of our repair cost index, we evaluated its relationship to other AHS variables that can be reasonably expected to correlate with housing quality. First, as anticipated, we found that each level of the categorical HUD housing quality indicator (ADEQUACY) is associated with a progressively higher median and average repair cost estimate (exhibit 1).

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[6] Census Divisions are collections of states and the District of Columbia grouped by proximity. For more information, see https://www2.census.gov/geo/maps/general_ref/pgsz_ref/CensusRegDiv.pdf.

Exhibit 1

Comparison of Repair Cost Index to HUD ADEQUACY Composite Variable

ADEQUACY Value	Mean Repair Cost	Median Repair Cost
Adequate	$847	$0
Moderately Inadequate	$4,361	$2,440
Severely Inadequate	$6,487	$3,346

Notes: Means and medians include both units with and without repair needs.
Sources: Authors' analysis of 2017 AHS PUF; 2018 RSMeans Data from Gordian

The research team also examined the respondent's rating of the unit as a place to live (RATINGHS). This is an ordinal variable ranging from one (worst) to ten (best). As expected, the repair cost index has a highly statistically significant (p<0.0001) negative correlation with this measure (-0.21).[7] While this association is moderate in strength, a large portion of units have an estimated repair cost of $0. For these units and those with modest repair needs, resident ratings are likely to be heavily influenced by other location and neighborhood factors.

Lastly, assuming that older units are more likely to experience housing quality issues, we examined the association between the repair cost index and the binned ordinal variable that denotes the decade the structure was built.[8] Again, we found the expected, highly significant (p<0.0001) negative association (-0.13),[9] indicating that newer units are associated with less costly repair needs.

Limitations

In addition to the lack of contextual information on the building materials and magnitude of certain reported issues as described earlier, there are housing deficiencies that may present threats to the safety and well-being of residents that are not reported in the standard AHS modules. These include missing or broken stairs and banisters, which present major injury risks.[10] Furthermore, PUF does not capture the need for adaptive modifications that may be critical to a resident's ability to safely navigate their unit and perform everyday tasks. Housing deficiencies that are unlikely to be observed in residents' everyday lives, such as lead exposure, water contaminants, and indoor air quality issues, are similarly unavailable. Additionally, our cost estimates do not include local and national regulatory factors that may significantly affect the cost of repairs, such as lead removal requirements or environmental performance standards, though some of these variations may be reflected in regional cost adjustments. Lastly, our inability to develop estimates for vacant units likely understates the total magnitude of disrepair in the national housing stock (Emrath and Taylor, 2012).

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[7] Pearson correlation coefficient based on weighted data.

[8] The precise year the structure was built is not available in the PUF.

[9] Pearson correlation coefficient based on weighted data.

[10] Questions regarding these and other household health and safety issues have been included in supplementary modules in prior surveys, but are not part of the standard battery of survey questions.

Due to data constraints, our repair cost index likely understates the magnitude of repair needs for the multifamily housing stock. Many of the repair cost estimates supplied by Gordian assume the intervention applies to a single-family home unless otherwise specified (for example, certain manufactured housing-specific repairs). For many interventions, repair costs are likely to be comparable in different unit contexts (such as repairing a crack in an interior wall), though for others there may be substantial differences (such as repairing a 10th story window). Furthermore, AHS respondents in multifamily housing are not asked most questions pertaining to structural housing issues (for example, issues related to roofs, foundations, exterior walls, and building systems). As a result, we are unable to capture the need for more extensive repairs to larger residential buildings.

Given these limitations, our cost-based index should be understood as an approximate measure of the costs to mitigate the substandard conditions reported in AHS.

Selected Findings

The following section provides tabulations of our repair cost index. More extensive results are also available in Divringi et al. (2019) and Wallace et al. (2019). Many of our results align with those of other studies on who is disproportionately living in lower quality housing (Holupka and Newman, 2011; Mundra and Sharma, 2015; Jacobs et al., 2009; Watson et al., 2017). Our results add nuance by revealing which groups are more likely to need the most expensive repairs. The following results are uncontrolled, weighted tabulations.

Despite the decline over the last several decades in inadequate housing, our analysis indicates that approximately 35.8 percent of housing units needed repair in 2017, though many of these repair needs were modest (exhibit 2). Our analysis reveals that the plurality of housing units that needed repairs had repair needs between $1,000 and $5,000 (15.7 percent of housing units), and the median cost of repairs was $1,449. The distribution of repair costs has a long tail to the right. Only 0.2 percent of housing units needed repairs totaling more than $20,000 per unit. Based on housing quality problems reported in the 2017 AHS, we estimate that repair needs for the occupied housing stock totaled $126.9 billion.[11]

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[11] Cost estimates are reported in 2018 dollars.

Exhibit 2

Percent of Housing Units by Repair Cost Category
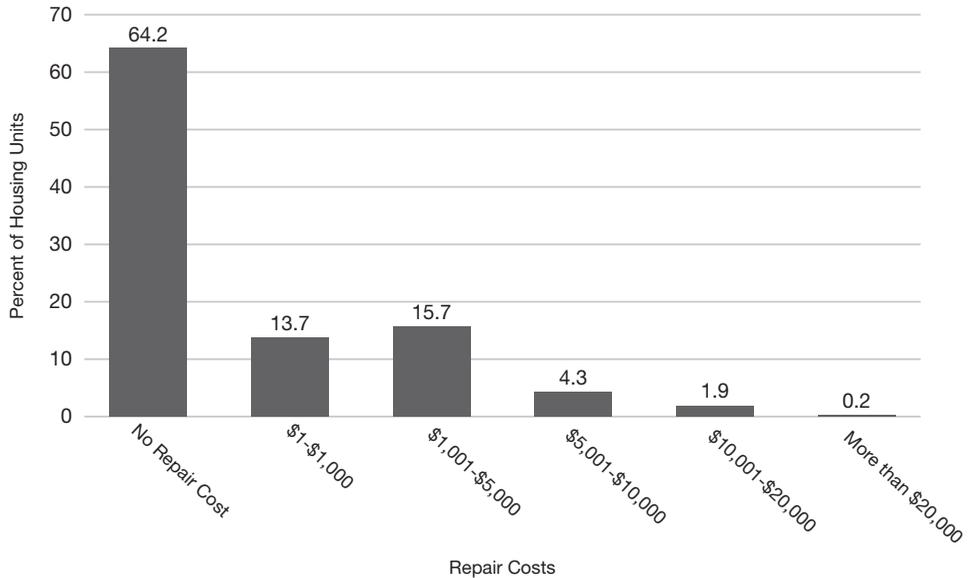
Sources: Authors' analysis of 2017 AHS PUF; 2018 RSMeans Data from Gordian

Frequency and cost of repair needs vary greatly by type or by affected system. Structural repairs were the second most common repair need but made up more than half of the national aggregate repair costs. Leaks, in contrast, were the most commonly required repair but constituted only one-fourth of aggregate costs. The least expensive repair type was pest remediation which was reportedly needed by nearly 5 percent of housing units but only made up approximately 2.2 percent of repair costs (exhibit 3).

Exhibit 3

Repair Costs by Category

Repair Category	Number of Units (Millions)	Percent of Units	Aggregate Repair Cost (Billions)	Percent of Aggregate Repair Cost
Electrical	6.7	5.5	$8.9	7.0
Heating	6.1	5.0	$5.4	4.3
Leak	20.3	16.7	$31.7	25.0
Pests	6.0	4.9	$2.8	2.2
Plumbing	4.7	3.9	$5.9	4.7
Structural	19.1	15.7	$72.1	56.8

Sources: Authors' analysis of 2017 AHS PUF; 2018 RSMeans Data from Gordian

Next Steps

To help inform the development and targeting of strategies for improving the quality of the U.S. housing stock, we have developed national typologies of housing units with repair needs in a companion report (Divringi et al., 2019). Building on this work, members of the research team from the Federal Reserve Bank of Philadelphia are working with the AHS Internal Use File (IUF), which provides detailed unit-level geographic identifiers, to conduct a multivariate analysis of housing quality using the new repair cost estimates in combination with neighborhood characteristics. This analysis will enable us to understand and describe the relationship between neighborhood characteristics and housing repair needs. Ultimately, the objective of this analysis will be to statistically model small area estimates of housing repair costs. These geographically granular estimates will enable community development-oriented investors, developers, and government officials to target the neighborhoods with the greatest need for housing improvements.

Acknowledgments

Authors

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Foreign Exchange

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Observing New Zealand's Housing Crisis: Efforts to Produce and Finance Affordable Housing and its Implications for U.S. Policies

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Introduction

Homelessness, overcrowding, and cost burden are common crises facing people with no or low incomes. The number of families who are homeless or struggling to reliably afford a place to live remain at crisis levels across the United States. Replace the reference to the housing crisis in the United States with New Zealand, but picture it to a greater degree. For decades, the United States has maintained public and, increasingly, private investment through a generally consistent housing finance regulatory framework, particularly the Community Reinvestment Act and investment tools like the Low-Income Housing Tax Credit Program. Not-for-profit housing developers have been mainstays in the ownership, development, and sponsorship of affordable housing across the United States and have benefited from public-private capacity-building investments. New Zealand has no such housing finance regulatory framework and has an inconsistent history of supporting not-for-profit housing providers' capacity to develop real estate. The net result is a chronically underfunded public-private investment across the affordable housing continuum. This article provides a cautionary tale to U.S. housing policymakers and stakeholders from another western, albeit smaller, nation facing its own housing crisis and the level to which it is willing to commit development capital resources to meet the needs of those most vulnerable.

This article summarizes a larger report from 2018, "Priming the Pump: Access to Capital and Capacity to House New Zealanders," identifying factors necessary for New Zealand to enable sustained private capital to support affordable housing development. The country's government alone does not invest enough capital to meet society's growing public and affordable housing needs and has not developed a regulatory framework to strategically secure private sector investments. The article also explores not-for-profit housing developer performance and capacity development needs. Readers will learn the implications of not having the necessary policy settings to secure private sector investments and understand capacity requirements for mission-based developers who endeavor to address the crisis.[1] The particular role and capacity needs of community-based organizations provide a clear picture of the community development ecosystem and its needs (Department of Internal Affairs, 2019). This research sought to refine considerations for investing in communities that have exhibited challenges accessing capital and building local capacity.

New Zealand has long shown great pride in its egalitarian spirit, Māori culture, and sporting-outdoor heritage. As a society that promotes its outdoor wilderness and pioneering spirit, the country, in fact, is a fast-growing, urbanized nation struggling to meet the needs of longtime residents and new arrivals. Despite its egalitarian ethos—the idea of "Kiwis helping Kiwis," a spirit that to some extent remains—large shares of society, particularly Māori and Pacific peoples, live in entrenched poverty and experience greater social deficits in housing, health care, education, and other areas of life. New Zealand, in fact, has greater income inequality and a higher proportion of residents—especially Māori and Pacific peoples, who are homeless or living in insecure housing tenures (defined by cost burden) when compared with the United States. Families across the country[2] face housing challenges, including lack of affordable stock, poor quality and/or unsafe conditions (referred to as old, cold, and with mold), excessive cost burdens, and the need for financial literacy education and housing counseling.

Efforts to address the New Zealand housing crisis have stalled. Government-led efforts, like KiwiBuild—a 10-year government-led plan to deliver 100,000 new homes across New Zealand in 2017—have been slow to market, build, and sell. High land prices have made KiwiBuild unaffordable to first-time homebuyers; a reset was announced for July 2019, less than 2 years after it launched. The government also struggles to meet the growing demand for social "public" housing for those families who need it. Housing officials and industry stakeholders cite a lack of development capital as a key constraint to resolving the undersupply. Access to affordable, buildable land and a skilled construction labor force are also key development challenges. Smart urban planning and local zoning codes are also key policy matters that the government is reviewing.

Understanding the capacity of mission-based housing developers was a principal element of the author's research. The community housing provider (CHP) sector serves a variety of roles in providing affordable secure tenure housing: developer, builder, sponsor, and varying forms of tenancy, property, and asset manager. New Zealand has 46 registered CHPs, including Māori housing providers, operating across the country, most of which are primarily supportive service

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[1] The author's 2018 report also looks at government's history of operating social/public housing and the impact of varying leadership on the current state of the portfolio (Mosley, 2018).

[2] Aotearoa is the Māori name for New Zealand. The author uses New Zealand throughout this article but notes the cultural significance of the indigenous people and their language.

providers (CHRA, n.d.). Approximately 10 CHPs have the capacity to develop at scale, from 5–10 units to up to about 200–300 units of mixed-income, mixed-tenure residential units every 1 to 2 years depending on their access to public and private financing and land. The capacity of local organizations to secure land and capital is a key component to further local development and community progress. Not-for-profit developer capacity, in particular, has been identified as a crucial element to meeting local need in New Zealand (Housing Shareholders Advisory Group, 2010). Officials see CHPs as a small but influential part of the development sector; however, in the overall demand for housing supply, CHPs struggle for recognition as a valued partner. In fact, most of the recent housing policy innovations, such as inclusionary zoning, shared equity, lease-purchase, and other initiatives, have come from forward-thinking CHPs that have learned lessons from overseas.

Setting the Stage

Demographics and Housing in New Zealand and the United States

Key differences separate New Zealand and the United States. The United States has a landmass almost 37 times larger and has 67 times more people (see exhibit 1); however, the countries have a similar share of those living in cities and suburbs versus rural areas (86 percent urban in New Zealand and 81 percent urban in the United States). The author chose to compare New Zealand and its largest city, Auckland, with California's Los Angeles and San Francisco because the city represents New Zealand's most populous jurisdiction and provides similar comparisons at the state and local levels.

Exhibit 1

General Demographic Snapshot: New Zealand and the United States

	New Zealand	Auckland	United States	California	Los Angeles	San Francisco
Landmass (km²)	268,021	1,102	9,857,348	423,972	1,213.86	121.4
Population	4,844,400	1,657,200	325,719,178	39,536,653	3,949,776	884,363
Urban (%)	86.3	92.6	80.7	87	100	100
Rural (%)	13.7	7.4	19.3	13	**	**
Māori (%)	15	10.7	**	**	**	**
Pacific (%)	7.4	14.6	7.4	0.4	0.2	0.4
Asian (%)	11.8	23.1	5.2	13.9	11.7	34.2
Native American (%)	**	**	1.0	1.1	0.7	0.4
African-American/ MELAA (%)	1.2	1.9	12.6	5.5	8.9	5.3
Hispanic/ Latino (%)	**	**	17.3	38.9	48.7	15.3

*** Mainly Samoan, other Pacific Islanders—including Māori—and Native Hawaiian.*
Notes: Landmass information sourced from Wikipedia. MELAA describes the population that is Middle Eastern, Latin American, and African. For New Zealand, the population share of Hispanic/Latino individuals is included within MELAA.
Sources: United Nations, 2015; Landmass information from Wikipedia and CityMayors.com; Urban population data from World Population Review, Auckland and U.S. Census Bureau; New Zealand population from Stats New Zealand of December 2017; L.A. County 2017 population—U.S. Census American Factfinder

The U.S. population grew 16,973,640 (5.5 percent) from 2013 through 2017; New Zealand's population grew by 351,600 (7.5 percent) during the same period, essentially adding the population of a new Christchurch to the country in a 5-year span. Auckland absorbed 47 percent of this increase (Johnson, 2018). The strong population growth comes mainly from in-migration, with almost 248,000 net new arrivals recorded during this 5-year period, or about a 2.5-percent increase annually (Johnson, 2018).[3] States in the United States that recorded the fastest growth in 2018 were Nevada (2.1-percent annual increase) and Idaho and Utah (both at 1.9-percent increase); none of these states is nearly as populous as California (U.S. News and World Report 2018 rankings).

Some of New Zealand's housing characteristics and challenges are similar to those in the United States (see exhibit 2). For example, homeownership, a long-sought goal of families in both countries, has declined in both nations mainly because of substantially increased house values in major urban markets and the inability of household income to keep pace (exhibit 2). In addition to rising house values, population growth and the lack of housing construction have further constrained access to affordable housing for those at the lower income rungs. The shortage of quality affordable homes for those with lower incomes has resulted in overcrowding and higher cost burden. The rate of those experiencing homelessness has been an increasingly visible sign that access to affordable housing is failing. Los Angeles, San Francisco, and Auckland reported percentages of homeless populations that exceed the national averages. The share of homeless people in the United States was 0.2 percent, compared with almost 1.0 percent in New Zealand. Of Auckland's residents, 1.4 percent were visibly homeless compared with 0.9 percent each for

Exhibit 2

General Snapshot: 2017 Housing in New Zealand and the United States

	New Zealand	Auckland	United States	California	Los Angeles	San Francisco
Homeownership Rate	63.2	61.5	64.2	55.2	36.8	43.4
Median Household Income (New Zealand $)	54,558	61,452	78,668	67,169	54,501	86,265
Median House Value (New Zealand $)	323,169	700,400	262,643	443,400	549,800	927,400
Median Monthly Rent (New Zealand $)	1,130	1,421	1,350	1,358	1,302	1,709
Number of Homeless (% of Population)	41,207 (0.9)	23,409 (1.4)	553,742 (0.2)	134,278 (0.3)	34,189 (0.9)	7,499 (0.85)

Notes: United States: 64.2 percent, Fourth Quarter 2017 (U.S. Census); highest was 69.2 percent, Second Quarter 2004; California: 55.2 percent, First Quarter 2018; highest was 60.2 percent in 2006.; there were 28,649 homeless in 2001 and 34,000 in 2006. The estimated ratio of homeless in the United States in 2017 was 17 out of every 10,000 (PIT Estimate of People Experiencing Homelessness by Sheltered Status).
Sources: LA (2018) —So. CA Assn. of Governments. S.F. rate from FRED Economic Data (Fed. Reserve Bank of St. Louis). Number of homeless for New Zealand comes from OECD, Homeless estimate 2015: Number of homeless for Auckland comes from Auckland Council (2017). HUD—The Annual Homeless Assessment Report to Congress: Part 1, p. 8, Exhibit 1.1. Estimate of Homeless Californians (PIT Estimate, p. 12).2017 Greater LA Homeless Count Results—LA County homeless estimate for L.A—LA Homeless Services Authority; 2017 San Francisco homeless count—S.F. 2017 Homeless Count and Survey Comp. Report—Applied Survey Research

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[3] For 2017, the largest sources of in-migration for New Zealand were returning New Zealanders, China, India, the U.K., Australia, and various African countries.

the cities of Los Angeles and San Francisco. The combined number of people who are homeless in these U.S. cities—41,688—exceeds the 41,207 reported across New Zealand.

In an international comparison of housing affordability (the comparison looked at 91 cities with populations of 1 million or more), New Zealand is rated the second least affordable country—measured "severely unaffordable" at 9.0.[4] Hong Kong is the least affordable jurisdiction at 20.9; the United States overall is measured as moderately unaffordable at 3.9 (Demographia, 2019: 2). Unaffordability, as measured by the ratio of house price to income, jumped in New Zealand from the late 1980s or early 1990s to 2018—from about 2.8 to 6.5—because of rising migration, low housing production, rising home prices, and New Zealand's prior adoption of urban containment policies. By comparison, unaffordability in the United States rose from 2.6 to 3.5 percent (Demographia, 2019).

According to the Organization for Economic Co-operation and Development's (OECD) Better Life Index, the United States and New Zealand present similar general housing profiles and pressures. For example,

- Rooms per person: 2.4 rooms: The United States ranked 2/38; New Zealand ranked 3/38;

- Dwellings with basic facilities: The United States at 99.9 percent (ranked 7/38); New Zealand at 99.7 percent (ranked 12/38);

This is juxtaposed to the following example:

- Housing expenditure (ratio of housing cost to household's gross adjusted disposable income, latest available year): The United States at 18 percent (ranked 7/38); New Zealand at 26 percent (ranked 38/38).

Looking internationally at income inequality, measuring the ratio of income to housing costs, New Zealand generally is among the most unequal of the developed countries. The country's Ministry of Social Development (MSD, 2016) found that, in 2012, New Zealand ranked in the top third of the most unequal countries at 33—the same as Australia, less unequal than the United States and United Kingdom (ranked 40 and 35, respectively), but more unequal than Canada (32). The income inequality and associated housing affordability crisis are linked mainly to the lack of supply for those at all income ranges, resulting in escalating values. Housing affordability across New Zealand, according to public opinion, was the top public policy priority for New Zealanders. (Dodd and Griffiths, 2018). Most Democratic candidates in the 2020 U.S. presidential race have raised housing as a key issue (NLIHC, 2019; CityLab, 2019). President Trump, citing the systemic lack of affordable housing across the United States signed an Executive Order on June 25, 2019, to create a council to eliminate regulatory barriers to affordable housing.[5] Political attention and efforts to address the dearth of affordable housing in both countries must support strategies that recognize the role of effective policies and regulations that promote production and preservation and reduce income inequality.

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[4] Demographia rating uses the "median multiple"—median house price divided by median household income.

[5] https://www.whitehouse.gov/presidential-actions/executive-order-establishing-white-house-council-eliminating-regulatory-barriers-affordable-housing/.

The United Nations Sustainable Development Goals

The United Nations (UN) developed a set of Sustainable Development Goals (SDGs) to address global challenges, particularly those related to poverty and inequality, adopted by world leaders in 2015. The UN developed the 17 goals to create a pathway enabling a better and more sustainable future, with the goals to be met by 2030.[6] Sustainable Development Goal 11 focuses on Sustainable Cities and Communities; Target 11.1 of this Goal is to ensure access for all to adequate, safe, and affordable housing and basic services, and to upgrade slums. In July 2019, New Zealand committed to the following indicators to meet SDG 11 and ensure it is responding to its current housing crisis:

- Homelessness—This indicator will show the stability and security of New Zealanders' accommodation. It will measure the number of people without safe and secure accommodation. The specific indicator is being formulated.

- Housing affordability—This indicator will measure the proportion of households spending more of their gross income on housing costs; 22 percent of households in 2018 reported spending over 30 percent gross income on housing costs.

- Housing quality—This indicator will measure the physical condition of accommodations. The specific indicator is being formulated.

- Overcrowding—This indicator measures households living in overcrowded conditions using the Canadian National Occupancy Standard (CNOS), where a household is considered crowded if it needs one or more extra bedrooms to sufficiently accommodate all household members. Data to be available in 2020 (StatsNZ, 2016; NZ-HUD, 2019).

The United States' official SDG 11 goal is to reduce the percentage of occupied housing units in urban areas that are inadequate, measured by a lack of access to improved sanitation facilities. From 2001 through 2015, this percentage decreased from 6.05 to 5.48.[7] This comparison presents an opportunity for the United States to consider expanding its set of indicators to increase its measure of accountability in addressing its housing crisis; many of these indicators are currently measured. SDG USA and Sustainable Development Solutions Network (SDSN), a global initiative for the United Nations, conduct their independent analysis and track additional housing measures, providing state-level metrics:

- SDG1—End Poverty—Affordable Housing (per 100 extremely low-income renter households)

- SDG 11—Sustainable Cities and Communities—Overcrowded Housing (percent of occupied housing) and Rent Burdened Population (percent).[8]

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[6] For more information on the SDGs, see https://sustainabledevelopment.un.org/?menu=1300.

[7] https://sdg.data.gov/sustainable-cities-communities/; American Housing Survey.

[8] Sustainable Development Report of the United States 2018; SDG USA and Sustainable Development Solutions Network; September 2018.

Accessing Capital for Affordable Housing

Accessing Development Capital in New Zealand

Communities across the United States and New Zealand struggle to provide affordable housing that is safe and secure in tenure. The lack of sufficient public housing and the strain on families and other households living with limited resources to secure private market rentals and homeownership calls for continued and increased investment for affordable housing options. In New Zealand, government and councils have created joint venture development partnerships, such as Tamaki Regeneration Corporation, through which they launched a community regeneration program in South Auckland. HLC (Homes. Land. Community.), a wholly owned subsidiary of Housing New Zealand Corporation (HNZC), continues to pursue large-scale community redevelopment projects designed to include market rate and affordable rental and homeownership opportunities and to redevelop existing public housing. These government, quasi-public, and private sector entities are interested in developing more affordable and mixed-income housing.

The author's previous report, "Priming the Pump" (Mosley, 2018), explored the settings to enable systematic engagement from private capital sectors. Unlike the United States, New Zealand does not have a regulatory framework encouraging strategic investment supporting affordable housing development. In the New Zealand study, it was important to understand what factors are needed to incentivize lenders and investors to participate at a greater level. The author interviewed representatives from banks, private equity firms, foundations, and public pension annuity funds to understand their interest in investing in projects that include public and affordable housing. Banks, some foundations, and limited equity funds currently lend and, to a smaller extent, invest equity, in projects; however, based on the need for added capital, substantially larger and strategic infusion is necessary to address New Zealand's housing pressures. Financiers interviewed (Mosley, 2018) cited several factors that could encourage them to play a larger role, including the following:

- Rate of return—Traditionally all actors say they require a market rate of return on their investments as their responsibility to shareholders or board members, but several suggested they'd consider at least no economic loss level as long as there is a social return.

- Product design—Lenders stated that the design of a new financial loan or equity product must not be complex or "boutique"; it must be easy for institutions to consider it alongside existing products and tools without requiring substantive changes in business practices and risk measures.

- Scale—Lenders, investors, and funders seek, or prefer, large projects (hundreds of units compared with 10–50).

- Risk—Parties need a clear understanding and expectation of risk-sharing.

- Developer/Team—The developer must have a proven track record.

- Government—Each sector expected that government would participate in these projects as a condition but questioned how reliable a partner government would be over the long term.

New Zealand is home to private capital sources, in addition to public pension annuity funds, but the country has seen limited appetite, enticements, or mandates for greater investment to help meet its affordable housing need. Accessing conventional debt capital was not reported to be an issue; however, the uncertainty of government shifts in ideology and priorities brings development pipeline uncertainty for CHPs. Lenders have also expressed concern about serving a greater role given the lack of certainty of long-term government engagement. Two key elements cited as possible reasons for the limited appetite are, first, that most of the main banks are Australian-owned and, although chartered with local governance, are still seen to have a business focused more on Australian priorities. Second, investors and lenders see New Zealand's relatively small population (nearing 5 million) and economic scale as a factor motivating them to invest in other ventures that would provide a reliable and greater rate of return than affordable housing development. To help address the concerns raised by capital providers, the author identified examples of successful financing models used in Australia, the United Kingdom, and the United States, including:[9]

- Housing loan/bond aggregators,

- Infrastructure bonds,

- Social impact bonds,

- The Low-Income Housing Tax Credit program,

- Tax Increment Financing,

- Housing Trust Funds,

- Uplift America Fund,

- Rural Home Loan Partnership/Leveraged Loan, and

- California's Cap and Trade Program.

Specific Capital Development Efforts in New Zealand

On October 1, 2018, the government formed NZ-Housing and Urban Development (NZ-HUD). This new ministry, which consolidated several housing programs from other ministries, focuses on three areas: ending homelessness, creating growth opportunities in urban areas, and creating thriving communities (NZ-HUD, n.d.). One of these key efforts is NZ-HUD's creation of a Housing and Urban Development Authority (HUDA), or Kainga Ora. Through HUDA, the government is creating the pathway to transform cities through streamlined consenting processes, funding infrastructure and development and land assembly (NZ-HUD, n.d.). HUDA is expected to be operational by late 2019 or early 2020.

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[9] The author's full report, "Priming the Pump: Access to Capital and Capacity to House New Zealanders," describes each of these housing financing tools.

New Zealand's structural response to its housing supply and affordability response is generally framed around quickly infusing new housing supply into cities and creating the mechanism to more quickly redevelop land and communities. Soon after the current government assumed leadership in October 2017, it took several steps to increase and incentivize housing production. First, before it created NZ-HUD, and soon after it came into leadership, the current government launched KiwiBuild in 2017 as an initiative to build 100,000 homes for first-time homebuyers over 10 years. Through this initiative, the government is investing $2 billion to help catalyze the development of these homes across the country. As of June 2019, Prime Minister Jacinda Ardern's Administration reported 10,497 (10.5 percent of the program goal) homes completed, sold, under construction, or contracted/committed to build; 141 of these homes were actually built.[10] The pace of completion was deemed a failure and key Ministry leadership was changed in early July 2019 to jumpstart KiwiBuild and addresses the backlog of social/public housing construction. In fact, Prime Minister Ardern expanded the number of Ministers with oversight of housing and urban planning from two to five, acknowledging the failures and complexity of housing challenges. The change in Ministerial leadership, however, has not yet created the settings to effectively increase housing delivery, such as the use of public and privately owned land, increasing public financing and incentivizing private sector debt and equity investment, and providing reliable development pathways for developers/builders, including not-for-profit housing providers. Central government, though, is working with local jurisdictions to enable more effective urban planning processes.

Community Housing Providers are advocating for new efforts to bring affordable ownership opportunities to New Zealanders unable to afford a conventional mortgage. Four organizations created KiwiBuy in 2018, a partnership initiative to help create pathways to affordable homeownership and encourage government to do more to enable affordable ownership. KiwiBuy promotes two forms of alternative ownership strategies, shared ownership and progressive homeownership.[11] These models, similar to U.S. shared equity and lease-purchase, are seen as a way to leverage KiwiBuild, but also incentivize public and private sector participation; several community housing providers currently offer these types of products. KiwiBuy is an example of the energy and innovation from affordable housing stakeholders to encourage government to help deliver affordable housing on a greater scale.

Separate from this housing reset, New Zealand government had already started a review of its tax code in 2017, in particular exploring the implementation of a capital gains tax (CGT) as a means to temper spiraling house prices. As part of the government's tax working group review of its overall tax policies and structure, the group analyzed and considered ways to address house prices. Specifically, the tax working group recommended taxing vacant residential land and levying the tax locally rather than on a national level (Tax Working Group, 2019). Early analysis suggests that, while the tax may have minimal effect on overall housing affordability, house prices may soften as investors sell properties to avoid paying the CGT, which may open opportunities in the short term for first-time homebuyers. Reports also suggest, however, that rents may increase as investor properties come off the market, further limiting supply (The Spinoff, 2019). The government ultimately decided not to implement the CGT, citing no consensus for it.

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[10] For more information, see hud.govt.nz/news-and-resources/news/first-kiwibuild-homes-in-the-bay-of-plenty/.

[11] For more information, see https://kiwibuy.kiwi/.

New Zealand investors see residential real estate ownership as an attractive, stable investment opportunity, producing a reliable stream of rental income. An increasing number of investors have purchased residential properties as a long-term investment strategy and a "negative gearing" vehicle to offset gains, prompting the government to enact new tax legislation to help balance housing opportunities between these stakeholders and owner-occupiers, particularly those seeking to become first-time homebuyers.[12] Negative gearing in this context is a practice in which investors purchase rental investment properties with borrowed funds even when the net rental income, minus operating expenses, is less than the interest on the borrowed funds; the shortfall from the rental income earned and interest due can be deducted from income taxes (Australian Taxation Office, 2015). The expectation is that the expected reliable long-term capital gains compensates for the short-term losses; Canada and Australia also allowed for this tax deduction (Kenton, 2018). It is recognized as a factor in escalating house prices than would otherwise occur (Equality Rights Alliance, 2011). The country passed loss ring-fencing legislation to mitigate the practice of negative gearing to better control investor-owned property ownership and create conditions enabling first-time homebuyers to purchase (Jolliff, 2018). Loss ring fencing restricts investors to offset rental tax gains only from losses from another rental property rather than from other business activities; residual losses can, however, be carried forward to offset future gains or applied to taxable gains on future sales (Cantin, 2019).

Other legislative changes facing the housing market include a plan to limit or exclude foreign buyers (who have been seen as being responsible for driving up house prices) and a ban on letting fees. Following up on the recommendation to tax vacant, or otherwise unused, land, the Productivity Commission has been tasked to explore options for this effort to encourage infrastructure projects (Vaughan, 2019). The government has also implemented its Healthy Homes Standards requiring landlords to improve the quality of rental housing across the country, focusing on heating, insulation, ventilation, moisture, and drainage and eliminating drafts in their properties.

New Zealand's willingness to explore, even if it ultimately rejects, changes to its tax code to address its housing challenges is a testament to how far it is prepared to go to make significant steps to face this crisis. While the government did not move forward on the CGT, it will still explore other tax options, particularly those that could incentivize putting vacant land to productive use, such as infrastructure and housing. Policymakers, however, see tax credits or other incentives employed in the United States and other countries as overly complicating New Zealand's tax system. Several stakeholders interviewed said that tax credits are seen as burdensome, and with the relatively small population, that such a financing tool is more appropriate in more populous countries. The reluctance of successive governments to address increasing residential property investment continues to affect housing supply and affordability. For example, politicians have long debated implementing a CGT on rental investment properties but have repeatedly delayed acting on this and other possible measures that may ultimately ease pressures on housing supply and affordability. Its enactment of loss ring fencing is a step, in lieu of the CGT, that should create balanced access to housing between investors and those seeking to buy their first homes.

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[12] New Zealanders generally view owning and managing rental housing as a secure investment strategy due to perceived volatility and risk in traditional stock and bond investments.

Other key elements resulting in New Zealand's housing market shortfalls include inconsistent urban planning, land banking, infrastructure funding, and building sector reliability. Central government and local councils look to updated urban planning to increase density to meet the housing demand, but the lack of resources and pressures on the local consent process, along with land-banking practices by both government and other sectors, have significantly constrained development activity. The building industry is seen as very volatile, small-scale, and subject to upturns and downturns in the economy, with inconsistencies in project funding and land-banking practices. In 2012, The New Zealand Salvation Army's Alan Johnson cited low productivity of the construction sector and lack of competition as also contributing to fast-rising building costs and sales prices between 2002 and 2007, and to some extent in 2008 (Johnson, 2012). During boom times, there are not enough workers, driving up prices to attract skilled labor, and during downtimes, workers are known to leave for opportunities in Australia or leave the industry altogether (Johnson, Howden-Chapman, and Eaqub, 2018). Those who own, or hold, land—including the government—report that it can only be sold at market value based on New Zealand accounting standards and government rules, which in light of other development costs, including infrastructure, makes building affordably require greater amounts of subsidies, and at greater density.

Accessing Capital in the U.S. Affordable Housing Sector

In the United States, current federal housing policies and regulations continue to drive the major response to address the needs of those who are housing insecure, but since the 1980s, public funding levels have not kept pace with those in need (Kingsley, 2017). The Joint Center on Housing Studies' (JCHS) 2018 State of the Nation's Housing Report cites land prices, increasing construction costs, and regulatory barriers as challenges to developing new affordable housing. For example, regarding affordability, the JCHS concluded in April 2019 that the supply of rental dwellings affordable to low-income families remains insufficient across metropolitan areas and that, without sufficient options, higher-income renters occupy units that could be within reach of households with low incomes (Airgood-Obrycki and Molinsky, 2018).[13]

U.S. Department of Housing and Urban Development's (HUD's) priorities and resources, dating back to the 1970s, have generally shifted from a focus on the production of new public and affordable housing stock toward a portable voucher-oriented approach to housing households earning below 30 percent of area median income (AMI). This shift has helped put emphasis on private and not-for-profit sector development and the housing finance regulatory framework, particularly on the Community Reinvestment Act (CRA) of 1977, government-sponsored enterprises (GSEs), the HOME Investment Partnerships block grant, Housing Trust Fund, and tax-credit incentives such as the Low-Income Housing Tax Credit (LIHTC). In addition to the federal focus on updating and strengthening current regulations, states have created and bolstered their housing financing programs and local jurisdictions are increasing adoption of inclusionary zoning and providing density bonuses to developers building affordable housing.

The United States has benefitted since the 1970s from key legislation and tax policy to promote affordable housing production. Without delving into the history of federal housing policy that

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[13] See also NHLIC's 2018 Gap Report, which reported a national deficit of almost 8 million affordable rental homes.

gave rise to federal interventions, it is important to focus on what these acts, institutions, and tools mean to have an established pathway for public, private, and not-for-profit actors to produce and finance housing and enterprises. The CRA requires federal regulators to ensure that the financial institutions they oversee meet the credit needs of the communities they serve, including low- and moderate-income neighborhoods.[14] The Act's regulations were substantially revised in 1995 to strengthen and expand its reach and effectiveness.[15] The revised regulations provided a greater statistically measured performance in banks' lending; the changes required banks to perform harder to get their grades (Erickson, 2009; Fishbein, 2003). The National Community Reinvestment Corporation (NCRC, 2018) reports that banks have invested nearly $2 trillion in small enterprise and community development loans over the past 20 years. "About 85 percent of LIHTC investments come from banks, and CRA is a primary motivator," says National Association of Affordable Housing Lenders' (NAAHL) President and CEO Benson Roberts, adding, "It's unlikely that LIHTC would have gained traction without CRA."[16]

CRA, which is under review as of this writing, is cited as a key element encouraging private investments into underserved areas. While many stakeholders agree that CRA needs to be improved, it is also important to note the impact when there is no CRA. A recent paper points to consistent research results that lenders are "responsive to the incentives that CRA provides, and that CRA designations matter in a changing financial landscape" (Ding, Lee, and Bostic, 2018: 2). In looking at small business lending for example, the study concluded that banks—from a CRA lens—are sensitive to communities deemed low- to moderate-income (LMI), and borrowers operating there may be treated more favorably (Ding, Lee, and Bostic, 2018).

The LIHTC is widely regarded as the underpinning of financing U.S. affordable rental housing. In the New Zealand report (Mosley, 2018), the author touted the LIHTC as a successful model of using a tax mechanism, and thus incentivizing private capital, to develop and preserve affordable housing. Its flexible structure ensures local priorities are addressed in a highly competitive investor-pricing, cost-efficient process. The long-term certainty of the LIHTC, leveraging of federal housing programs like the USHUD HOME Investment Partnership Program, and Housing Choice Vouchers has provided a level of funding certainty for developers, lenders, and investors, helping to ensure pipelines of affordable units in cities, rural areas, and Indian Country. Used throughout the United States, between 1987 and 2015, the LIHTC helped finance the development of 2.3 million homes in 38,000 projects (HUD, 2017). The Federal Housing Administration's (FHA) mortgage insurance program provides mortgage credit for large private multifamily rental properties, including LIHTC projects; in FY15 alone, mortgage insurance for rental and cooperative housing covered 192 projects that included 30,412 units for almost $3 billion. (HUD, n.d.) Collectively, LIHTC, CRA, HUD's HOME, FHA programs and voucher subsidies provide an affordable housing ecosystem. Banks provide equity and mortgage financing via LIHTC and CRA. Financing gaps are addressed by HOME, housing trust funds, and other sources. Vouchers help low-income families reliably afford rent. The net result is a complex, layered, public-private funding and financing

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[14] For more information, see https://www.federalreserve.gov/consumerscommunities/cra_about.htm.

[15] Darryl E. Getter, 2019, The Effectiveness of the Community Reinvestment Act: Congressional Research Service Report for Congress.

[16] Comms with Benson Roberts, 2019.

system highly reliant on private sector investment, but one that has offered a level of certainty around which developers and investors can forecast a pipeline of projects.

Community Development Financial Institutions (CDFIs) are a growing and vital segment of the capital market providing responsible, affordable lending capital to low-wealth communities and their residents.[17] Part of the U.S. community economic development industry since 1973, CDFIs help finance residential and commercial real estate projects, small businesses, microenterprises, and other not-for-profit firms. From 1985 through 2017, CDFIs have provided $5 billion in lending to low-income communities and individuals and over $65 billion overall across the United States, resulting in 2 million homes created, 1.3 million jobs created or retained, and 322,000 businesses and microenterprises developed or expanded. Targeted beneficiaries include those who are low income, people of color, women, and those in rural communities (Opportunity Finance Network, 2017).

Summary

The difference in how New Zealand and the United States approach financing affordable housing is substantial. While both countries have their respective housing challenges, the settings around accessing private sector capital serve an instructive role on the importance of maintaining a regulatory framework to have the private sector participate fairly to help develop and preserve critically needed affordable homes in both high- and low-wealth communities. Most notably, however, in New Zealand, the attention to and investment in social/public and affordable housing varies by governing party. As such, production ebbs and flows, ultimately leaving the government and CHPs struggling to keep pace with the needs of vulnerable families. There is an array of financing methods used internationally to secure private capital, but it is necessary to have "carrots and sticks" encouraging these investments. The New Zealand research clarified the effect of not having a systematic regulatory and financing approach on the country's ability to deliver sufficient housing. Cities and towns across the country are studying or working to expand inclusionary zoning, ensuring that more production results in greater income-diverse communities. The growth and success of the nascent KiwiBuy initiative will be telling to understand how the country is willing and able to increase affordable housing options.

Building Capacity for Affordable Housing Development

CHP Production and Capacity Building in New Zealand

CHPs are small but recognized agents in New Zealand's social/public affordable housing framework. Along with HNZC, the government's main public housing developer and landlord, CHPs are the main entities receiving government funding to deliver public housing.[18] The country's Ministry of Housing and Urban Development Community Housing Regulatory Authority (NZ-HUD-CHRA) registers CHPs as Class 1 Social Landlords, certifying them to develop and/or

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[17] CDFI is a designation made by the U.S. Department of the Treasury CDFI Fund.

[18] New Zealand officially referred to public housing as "social" housing until the current government came to power. Referring to the stock as "public" housing is meant to signal the government's ideology that it owns the dwellings and is responsible for meeting the needs of vulnerable New Zealanders.

manage social/public housing units. These CHPs and additional housing and service providers, including Māori Housing Trusts and supportive service providers, deliver assistance ranging from emergency shelters to affordable housing rental and ownership opportunities. The Social Housing Reform Program enacted in 2010 was designed to boost CHPs' ability to deliver more of the social/public housing alongside HNZC. This program included a plan to boost CHPs' balance sheets by transferring portions of the social/public housing stock to the not-for-profit organizations to manage. Only one transfer, however, was completed, and the program ended in December 2017 as the current coalition government sought to keep social/public housing controlled, or owned, by the government. Prior governments, mainly national, facilitated the sale of public housing directly to families seeking to own their homes and transferred management to CHPs; this was their method to increase ownership opportunities for families and CHPs' capacity, while also reducing government's liabilities. The current government stopped this practice, solidifying their "ownership" of social/public housing.

CHPs, as a sector, seek to increase their scale of development but have been hampered by their size and inability to reliably access capital, land that is developable at a below-market rate, and reliable trades. Community Housing Aotearoa (CHA), the national association for CHPs, has determined that the nation's developers must deliver 15,000 public and 85,000 affordable homes by 2030 in order to meet housing needs. Both lenders and government officials regarded most CHPs as immature and risk-averse, preferring to minimize exposure of their balance sheets to greater debt. Several CHPs are reluctant to jeopardize their core nonhousing operations. The risk tolerance of CHP boards and the basis for their positions need to be better understood to identify under what conditions these organizations may consider developing additional housing. To understand CHPs' current and future development plans, as well as identify their organizational and project-related capacity challenges to deliver this needed volume, the author surveyed CHRA-registered CHPs (see exhibit 3). Responses show that 27 CHPs, including Māori housing providers, currently have plans to deliver 5,640 public and affordable homes within 24 months and another 970 homes thereafter. One explanation for the significantly low long-term production was uncertainty about funding contracts with the government. The results suggested that those CHPs with portfolios in the hundreds of units showed the most appetite for growth. Four CHPs have portfolios of between 2,000 and 3,000 units; 14 CHPs have hundreds of units; and 26 have unit counts below 100.[19] CHPs with portfolios in the thousands planned to develop some units but indicated a future focus on strengthening their assets and property management functions.

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[19] CHA database as of May 2018.

Exhibit 3

CHP Reported Capacity-Related Challenges

Organizational Capacity	Project-Related Capacity
Lack of skilled staff and its effect on undertaking required operations, admin, and pursuing opportunities (6)	Financing projects (7)
Ability to address lack of government financial support for development projects— need effective development and financing pipeline and assurances (5)	Developing a project pipeline (6)
Creating and managing effective partnerships (4)	Government purchasing strategy—lack of commitment, continuity, and changing funding/ procurement mechanisms (5)
Improve and balance tenancy management with property and asset management functions (4)	Developing and managing effective partnerships (4)
Identifying and training board members (3)	Timing delays in funding decisions (4)
Financial management (2)	Consenting (4)
Addressing councils' capacity to engage and support CHPs in delivering affordable and social housing (1)	Negotiating contracts (3)
Maximizing best practices to ensure efficient and effective outcomes (1)	Securing land, including at competitive pricing with HNZC and HLC (3)
Increasing waiting lists (1)	Review of legislative and regulatory framework (2)
Managing volunteers (1)	Local development contribution costs and facility supply fees (2)
Succession planning (1)	Project management (2)
	Not enough rental supply (1)

Other topics and issues raised by CHPs in the survey include lack of access to affordable land, prohibitive costs and delays for projects in Auckland, delays caused by government turnover, changing government requirements, lack of capital, and the need for CHPs to be seen as well-run businesses. CHPs rely heavily on government funding for delivering public housing in a contractual framework, but the government often sees itself as a partner, which makes the relationship difficult to navigate. Government could promote CHP production by directing HNZC, and its subsidiary HLC, to engage CHPs as co-developers, but without explicit directives from ministers, these entities saw CHPs mainly as a purchaser of improved lots that they could develop themselves; this excluded CHPs from actively participating in a pipeline of large-scale mixed-income residential developments. CHPs also experienced a gap in access to capital funding when the Social Housing Fund ended in early 2014 and when the government began capital support (which existed only for Auckland developments until early 2019) in December 2015; these gaps have left CHPs wary of government reliability to fund projects (Barber, 2017). Dwell Housing Trust's Alison Cadman and staff said that the settings do not provide the ability to develop a pipeline, that the government moves from one policy change to another, and that there is no consistency or traction on policy.[20] CHPs see that the government expects them to address capacity building through their contract fee income and other sources.

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[20] Comms. with Dwell Housing Trust staff.

Other sources of funding for CHPs include government departments and not-for-profit organizations. The Department of Internal Affairs (DIA) offers organizational capacity grants and funding for secondments. Rata Foundation's Karyn McLeod reported that the Foundation's support for and investment in capacity-building efforts have increased significantly since 2017.[21] The Foundation is looking at practices that build capacity, with not-for-profit leadership development as a particular focus. Several other foundations have committed operating grants to local charitable organizations but have not invested in larger sector-wide capacity-building efforts; several foundations directly finance housing development projects.

The Institute of Directors (IOD) is a New Zealand not-for-profit that supports corporate governance capacity development. IOD provides training and coaching to board or council members to ensure they have the necessary skills to effectively guide their organizations, including understanding their strategic responsibilities, financial management, and other functions. Te Puni Kōkiri (TPK) contracts with IOD to provide board governance training to Māori housing organizations. CHA's technical support subsidiary, Community Housing Solutions (CHS), also provides board development training as part of its array of services.

Funding Capacity Building in the United States

U.S. Government, lenders, and foundations support the capacity of local mission-based community developers. HUD and the U.S. Department of Agriculture (USDA) fund capacity-building activities of community-based not-for-profit organizations through loans, grants, and other project-related financial assistance to further key development priorities. HUD works through three direct grantees, known as intermediaries, that direct support to and invest in community development corporations (CDCs) and other local organizations.[22] Several major banks and insurance companies have for decades invested in the capacity of community-based organizations to undertake affordable housing and economic development projects. Finally, several United States-based philanthropies—from those with global initiatives to community foundations—have adopted principals such as double- or triple-bottom-line investing, seeking multiple types and levels of returns and benefits, to meet their mission, diligence in investing oversight, and community impact. For example, one intermediary, the Local Initiatives Support Corporation (LISC), has alone worked with thousands of CDCs and communities since 1979, investing over $20 billion and delivering almost 400,500 affordable homes and 66.8 million square feet of commercial and community space (LISC, n.d.). CRA, LIHTC, and program-related investments were key factors in these accomplishments.

Summary

New Zealand's CHPs are flexing their muscle to develop, own, and manage housing that is affordable to New Zealanders and to influence housing policy. As New Zealand's central government housing leadership underwent significant changes in the wake of KiwiBuild's failure, community—and Māori—housing providers sought to leverage this change in leadership to come

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[21] Comms. with Karyn McLeod, 2018.

[22] For more information, see HOME Community Housing Development Organization (CHDO), HUD Exchange, and USDA.gov.

together in July 2019 to develop themselves into a sector. Through a housing conference, a CHP promotional video, and a series of planned convenings with public and private stakeholders, these providers are articulating their role, not as a vendor, but as a regulated partner with a distinct track record of delivering community-oriented delivery and housing policy. These organizations are developing a sector-wide approach to increase production, strengthen property and asset management, and deepen their capabilities. The government's new housing leadership has signaled their support to the housing providers' aspirations to be recognized as capable providers and policy shapers.

Investing in CHPs' capacity is essential if the sector is to continue to grow and reliably provide dynamic, effective community-based housing. New Zealand's central government currently provides minimal capacity-building support.[23] CHPs seeking to increase their scale of development or further hone their tenancy and property/asset management functions need access to sources of capital as well as the ability to charge all applicable development and management fees. The evidence of the not-for-profit sector's growth in the United States shows the promise and effect of a focused and well-regulated investment and supportive ecosystem that also invests in capacity building. Having consistent regulatory and funding expectations has enabled developers to envision, plan, and execute and to meet the needs of those most vulnerable.

Recommendations and Observations

The following are recommendations and brief observations that the author shared with the Minister overseeing housing policy and delivery, other key officials, and not-for-profit stakeholders in New Zealand. Although these recommendations and observations respond directly to New Zealand's situation, they can easily be adapted for other countries.

Recommendation 1: Commit to long-term engagement and consistency in housing policy settings and programming. The nature of planning and developing affordable housing requires committed and consistent long-term policy support and investment.

Recommendation 2: Create a permanent public investment fund to help finance public and affordable housing development. A fund that is "insulated" from political term lengths would help create a level of funding certainty to developers to plan a pipeline of projects designed to meet current and forecasted demand. Private, philanthropic, and faith-based investors could invest in this pool to help ensure the government's commitment to a multisector funding partnership. The government alone does not have the funding to deliver all the new supply for public and affordable housing. It must actively participate in long-term funding collaboratives to ensure multisector investment and realize the funded outcomes, meeting SDG and Treasury metrics, and create mutually agreed-upon financial and social return benchmarks for developers under a multisector investment pool.

Recommendation 3: Invest in community housing development partner capacity to ensure expected growth and housing production, outcomes, and quality. Develop and strengthen not-for-profit capacity-building infrastructure. Create pathways to ensure the participation of nonpublic

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[23] The New Zealand government has committed capacity-building funding related to Māori housing production.

partners in community revitalization projects (starting with initial planning), particularly when government wholly owned subsidiaries and public joint ventures own or manage these projects.

Recommendation 4: Promote and incentivize innovation and creative capital by replicating existing models.

Recommendation 5: Invest in housing education and transitioning households from emergency/transitional housing and public housing toward market-rate homeownership. Success would be more assured by mandating financial and housing education with benchmarks.

Conclusion

New Zealanders consider themselves to be 10 to 15 years behind the United States in addressing housing challenges, but the two countries face very similar crises of housing insecurity, across all incomes in most urban centers and particularly for those at the lowest income strata. Despite significant differences in how affordable housing is financed and who develops it, the net effect is that both societies have struggled to develop effective long-term consistent strategies to increase and preserve supply while also ensuring that households with the least means can affordably rent or own housing that meets their needs. New Zealand's efforts have gone only so far in developing housing at the needed scale. The country has researched housing programs and models, created a new ministry and consolidated related functions, and launched efforts like KiwiBuild. Prior history shows that, when the government changes party leadership and creates or recreates ministries and shifts portfolios, it has the net effect of temporarily slowing or stopping development for months. With national elections occurring every 3 years, the potential change in government results in a periodic braking of social/public—and now affordable—housing production.

This research shows that efforts to maintain and increase housing production for those who are vulnerable are highly dependent on government direction and investment and ultimately lack consistency and reliability. Citing international examples to engage private sector investment to leverage public funding and acknowledging that no regulatory framework exists to require private sector investments in projects serving vulnerable families and underserved communities, the author recommended that the government commit to long-term engagement and settings to signal its certainty in this industry. Private capital representatives suggested that they would consider investing at a higher scale, and with some added flexibility, in affordable housing, if the government would commit to long-term engagement, provide transparent intentions, and agree to risk sharing. Private sector capital providers report that, although they acknowledge the social benefit of making capital available at a discounted rate, they must deliver a market rate of return on their investments and that New Zealand has no requirements that they consider a below-market return in lieu of social benefit. The United States, in contrast, created housing policies, regulations, and financing mechanisms to produce and preserve affordable housing. While the United States generally does not keep pace with the needs of those who are housing insecure, the current housing system provides a financing framework, albeit complex, for developers to plan and execute a pipeline of projects, consistently and reliably working with public and private sector investors.

This article provides the United States with a cautionary tale of the difficulty in securing private sector investments from New Zealand, which lacks the consistent funding and regulatory framework that—like CRA—has existed for decades. This tale means that the United States should maintain (and strengthen) its existing regulatory framework after seeing what happens in a country that doesn't have one. U.S. not-for-profit housing developers, as a sector, have decades of evidence showing the effect of delivering affordable housing relying on fairly consistent settings from public sector agencies, the private sector, and foundations. Current U.S. capacity-building efforts should be continued and increased to help ensure that this sector continues to evidence the effect of its development work and effectively leverage public-private investments.

There are opportunities for future comparative research, with topics including the following—

Housing-Related:

- Economic analysis of future social benefit to family and society from households living with secure tenure in affordable, safe, and warm homes.

- Best valuing land to purpose for affordable housing.

- Evidence of construction trade labor programs that effectively recruit and retain trainees.

- Strategies to enable greater development for indigenous peoples and other cultural and racial minorities.

- Evidence of financial literacy and housing counseling programming.

- Comparative analysis of barriers to secure housing from societies with and without fair housing laws.

Capital Investment-Related:

- Further analysis of the impact of housing regulation on catalyzing affordable housing development.

- Modeling housing financing tools in a no to low regulatory environment.

- Performance of the social impact of investing in producing affordable housing.

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Misalignment Between ZIP Codes and Municipal Boundaries: A Problem for Public Health

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Abstract

While useful for mail delivery, ZIP Codes are flawed as a geographic metric for public health research. This paper quantifies the magnitude of potential error inherent in using ZIP Codes as a unit of analysis in the state of Michigan. ZIP Codes are intersected with municipality boundaries in ArcGIS to determine the degree of misclassification. Results showed that 49 percent of the population had their municipality misclassified by their ZIP Code. This creates potentially huge errors when ZIP Code is the only geographic identifier, because actual exposure may vary from the exposure to which an individual is assigned based on ZIP Code. The Flint, Michigan, Water Crisis is a prime example of this error and the need to consider finer units of analysis whenever possible. Collaboration with experts in geographic information science is therefore essential for any public health research project where location is a factor.

Background

ZIP Codes are an arbitrary geographic designation assigned by the United States Postal Service for the purpose of delivering mail (Grubesic, 2008). As such, they do not correspond to political, social, or economic divisions, and have more heterogeneity than census units or neighborhood boundaries (Grubesic and Matisziw, 2006; Krieger et al., 2002). Even so, they are frequently used

uncritically as a unit of analysis in public health studies (Beyer, Schultz, and Rushton, 2008; Drewnowski, Rehm, and Solet, 2007; Gordon-Larsen et al., 2006; Acevedo-Garcia, 2001), owing to the ease with which this data can be gleaned from surveys or medical records.

Spatial error was front and center at the outset of the 2014 and ongoing Flint water crisis (Hanna-Attisha et al., 2016), when state officials initially downplayed the significance of an uptick in elevated blood lead levels among children because they were using ZIP Codes to define the exposed area rather than a more precise geographic metric (Sadler, 2016). In that particular case, using the city of Flint as the unit of analysis was much more accurate for defining the exposed population because the water system aligned almost exactly with the municipal boundary. Because of the possibility for error in other studies, the goal of this article is to quantify the magnitude of potential error inherent in using ZIP Codes as a unit of analysis.

Methods

Shapefiles containing Michigan's ZIP Codes (n = 987) and minor civil divisions, or municipalities (n = 1,517), were intersected in ArcGIS, a geographic information system, to determine the degree of overlap (or lack thereof) between the two. This operation led to the creation of 6,051 distinct ZIP Code-municipality pairs. The area of each region was calculated, and populations were assigned by joining each census block group centroid (n = 8,104) to the overlapping ZIP Code-municipality pair. For reference, 2,045 (34 percent) ZIP Code-municipality pairs were smaller than one-tenth of a square mile and 4,101 (68 percent) contained no census block group centroids, but all were included in the analysis.

Exhibit 1 illustrates the land area and population of three different "zones" (according to the type of overlap between ZIP Code and municipality). These zones include: (1) *match*: when the ZIP Code and municipality share the same name (whether they correspond to a city or another municipality); (2) *false match*: when the ZIP Code name is the same as that of two municipalities with similar names (for example, a ZIP Code named "Flint" covering "the City of Flint" and "Flint Township"); and (3) *non-match*: when the ZIP Code and municipality do not share a name (that is, the ZIP Code corresponds to another municipality).

Exhibit 1

Breakdown of Land Area and Population by ZIP Code-Municipality Match Type

Match Type	n	Area (Square Miles)		Population	
Match	582	8,197	14%	5,071,822	51%
False Match	136	3,349	6%	679,177	7%
Non-Match	5333	45,958	80%	4,098,740	42%

Results

Exhibit 2 illustrates the match-non-match patterns spatially, with the "match" category shown in dark gray, the "non-match" category shown in light gray, and the "false match" category shown in medium gray. A quick examination reveals that most matching occurs in center cities throughout the state and townships, especially near Detroit in the southeast.

Exhibit 2

Concordance Between ZIP Code and Municipal Boundary Map Showing Michigan's ZIP Codes, Municipalities, and Overlap Type
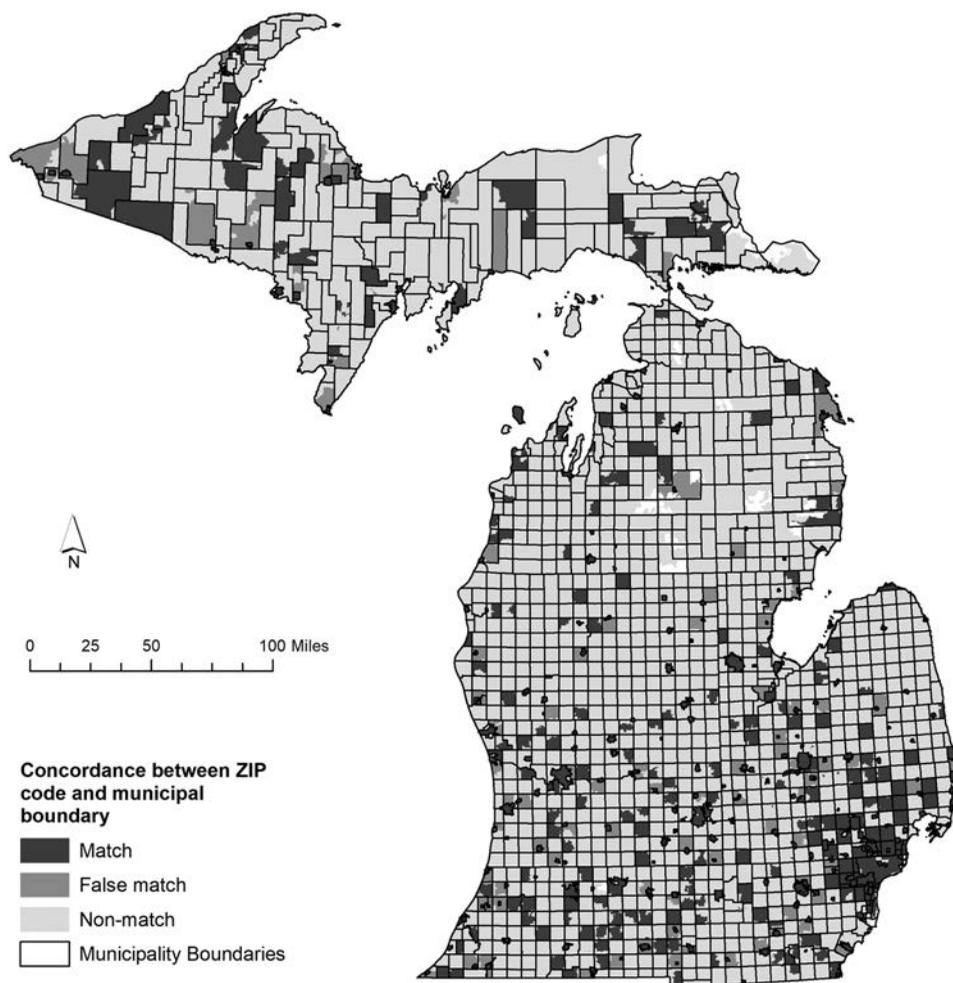
The distribution of non- and false matches varies across the state. To give a better impression of this variation, a closer look at Genesee County (where Flint is located) is shown in exhibit 3. Municipalities are labeled in regular text, and corresponding ZIP Code names are labeled in italicized text. Note that matches are found in only a small amount of land area, and many false match areas exist.

Exhibit 3

Concordance Between ZIP Code and Municipal Boundary Map Showing Higher Degree of Overlap in Genesee County
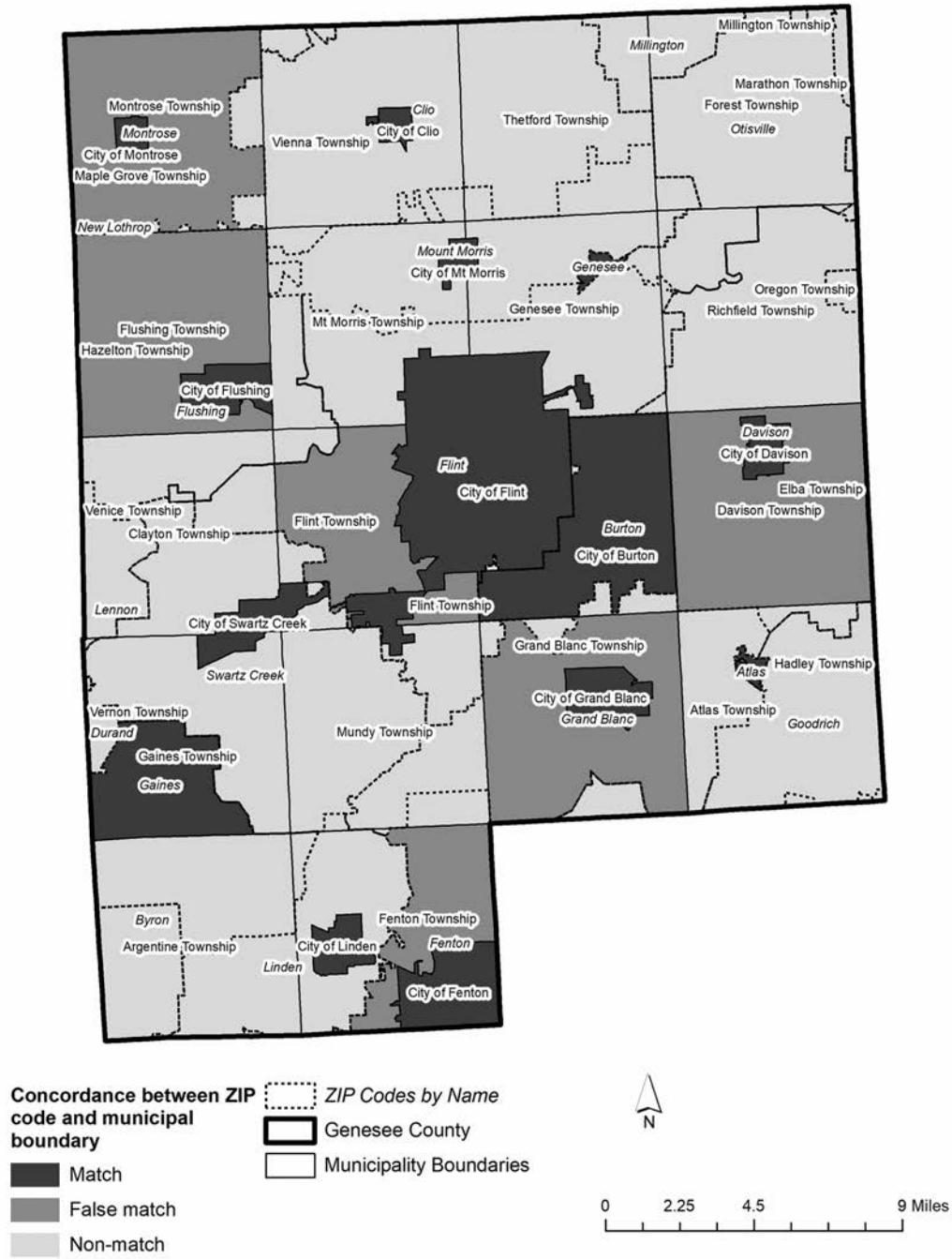
Overall, only 14 percent of Michigan's land area matches ZIP Code and municipality name. While this small area includes 51 percent of the population, it means that 49 percent of the population is misrepresented in some way by their ZIP Code.

From a public health reporting perspective, the "false" and "non-match" categories are troublesome for different reasons. The "false match" category includes people living in townships with the same name and ZIP Code as the nearby center city (for example, Flint-Flint Township), which would lead many people to assume those residents live in the city if not specified. This category includes 6 percent of the state's land area and 7 percent of its population. Referencing exhibit 3 again, these false matches tend to occur where a township has the same name as the central city.

The non-match category poses similar problems—it contains 80 percent of the state's land areas and 42 percent of the population. When a non-match includes a reference to a center city, estimates for public health problems, such as a "city's" disease prevalence, crime incidence, or another phenomenon, could be skewed by including outlying areas. Many of these non-matches include rural areas where township names do not correspond to ZIP Code names. Although these rural non-matches would pose slightly fewer problems for public health reporting, it is worth raising this issue in general, because stakeholders and policymakers need to be aware of this source of error.

Conclusions

The importance of this misclassification to public health should not be forgotten: while ZIP Codes can absolutely be useful tools for public health planning and policymaking, they can misrepresent health statistics when looking at phenomena that may not coincide well with ZIP Code boundaries (as described in Sadler and Lafreniere, 2017), including those related to municipal services.

The example of the Flint water crisis—and the results of this article showing how misaligned ZIP Codes are from municipal boundaries—suggest that geographers, epidemiologists, and others with expertise in geographic information science should be closely consulted on any public health research where the location may play an important determining factor.

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Industrial Revolution

Every home that is built is a representation of compromises made between different and often competing goals: comfort, convenience, durability, energy consumption, maintenance, construction costs, appearance, strength, community acceptance, and resale value. Consumers and developers tend to make tradeoffs among these goals with incomplete information which increases risks and slows the process of innovation in the housing industry. The slowing of innovation, in turn, negatively affects productivity, quality, performance, and value. This department piece features a few promising improvements to the U.S. housing stock, illustrating how advancements in housing technologies can play a vital role in transforming the industry in important ways. If you have an idea for a future department feature, please send your diagram or photograph, along with a few well-chosen words, to michael.j.early@hud.gov.

Trenchless Technology: A New Way to Install and Renew Utilities

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The views expressed in this article are those of the author and do not represent the official positions or policies of the Office of Policy Development and Research, the U.S. Department of Housing and Urban Development, or the U.S. Government.

Abstract

Installing effective utilities infrastructure is an essential practice that enables, sustains, and enhances the living conditions in communities. Utilities that support housing include water supply, sewers/stormwater management, electrical grids, fuel for heating and cooking, and telecommunications. Housing would not be as useful without the necessary utilities to support it. The trenchless industry offers new technologies that help mitigate the cost, enhance safety, limit effects, and speed the installation of utilities. In this article, we discuss how this invention supports the goal of promoting resiliency without sacrificing affordability.

Introduction

Innovative housing needs utilities. Identifying cost-effective strategies for installing those utilities increases affordability and value for homebuyers, as a greater portion of the construction cost can be focused on the home. Rather than attempting to "go cheap" on infrastructure, an approach that will likely prove to be a false economy, approaches that minimize the overall construction and restoration costs merit consideration. The trenchless method offers an alternative, new way to install utilities. As the name implies, a traditional trench may no longer be needed to install underground utilities. The trenchless method offers a number of advantages, possibly including reduced overall cost, improved safety, and increased speed of installation.

Trenchless methods can be applied to a wide range of utility types. Wet utilities, such as water, sanitary sewer, and storm sewer are common, as well as other underground utilities, including natural gas, electric, and telecommunications. Trenchless approaches also can be used to restore aging infrastructure, thus enhancing the vitality of the surrounding community. Trenchless methods may enable communities to reduce the effects of moving electrical utilities underground, reducing or preventing power outages in areas with trees.

The North American Society for Trenchless Technology (NASTT) defines trenchless technology as "a family of construction techniques for installing or rehabilitating underground infrastructure with minimal disruption to surface traffic, businesses, and residents. Also includes technologies for inspection, leak location, and leak detection with minimal disruption and minimal excavation from the ground surface" (NASTT, n.d.).

The most popular trenchless technologies for housing infrastructure are Horizontal Directional Drilling, Microtunneling, Horizontal Auger Boring, Pipe Ramming, and Lining. The following exhibit provides a description of these technologies.

Exhibit 1

Popular Trenchless Technologies for Housing Infrastructure

Trenchless Method	Description
Horizontal Directional Drilling	A steerable system for the installation of pipes, conduits, and cables in a shallow arc using drilling equipment from the surface. This method is typically used for large scale crossings of features, such as rivers, sensitive areas, roadways, and other critical infrastructure.
Microtunneling	A trenchless construction method for installing pipelines using a small unmanned tunnel boring machine. The piping is used to push the microtunneling boring machine to the end of the pipe run.
Horizontal Auger Boring	A method of forming a bore from a launch pit to a reception pit, by means of a rotating cutting head. While some excavation is necessary, it can be sited to avoid disruptions or excessive costs. This method may have limited steering capability but might be more economical for short and straight drives compared to other methods.
Pipe Ramming	A percussion hammer is used to force a strong (steel) pipe through the ground, essentially using the force of the hammer to drive the pipe.
Lining	A liner is installed in an existing water or sewer pipe to reduce leakage and improve flow.

Exhibit 2

Microtunneling Boring Machine

Photo courtesy the National Utility Contractors Association

Exhibit 3

Horizontal Directional Drilling Machine

Photo courtesy the National Utility Contractors Association

Exhibit 4

Liner in a Cast Iron Pipe

Photo courtesy the National Utility Contractors Association

Cost Mitigation

New infrastructure projects can often affect other community activities or installed infrastructure. Significant costs may be incurred in an effort to mitigate those impacts. Consider the traffic patterns in your community when a new building project near a major intersection needs to install a trench for a new sewer line. The costs of working at night (a typical approach to reduce traffic impacts), traffic control, worker protection (while trenching), and the necessary roadway repairs must ultimately be borne by the owner or developer. Costs such as roadway repair do not contribute directly to the actual construction project. For an owner or developer on a fixed budget, those secondary costs may necessitate cost reductions on some more tangible portion of the project.

Additionally, roadway repairs are rarely as durable as the original construction. Repairs can, hence, lead to accelerated deterioration of the roadway, which increases costs for the community. While the costs of using trenchless methods may be initially higher than other approaches, when the full cost of the project is considered, the potential for avoiding many of the trenching and related

secondary costs may tilt the decision to use trenchless technology.

Exhibit 5

The Two-stage Process in the Horizontal Directional Drilling Under a River
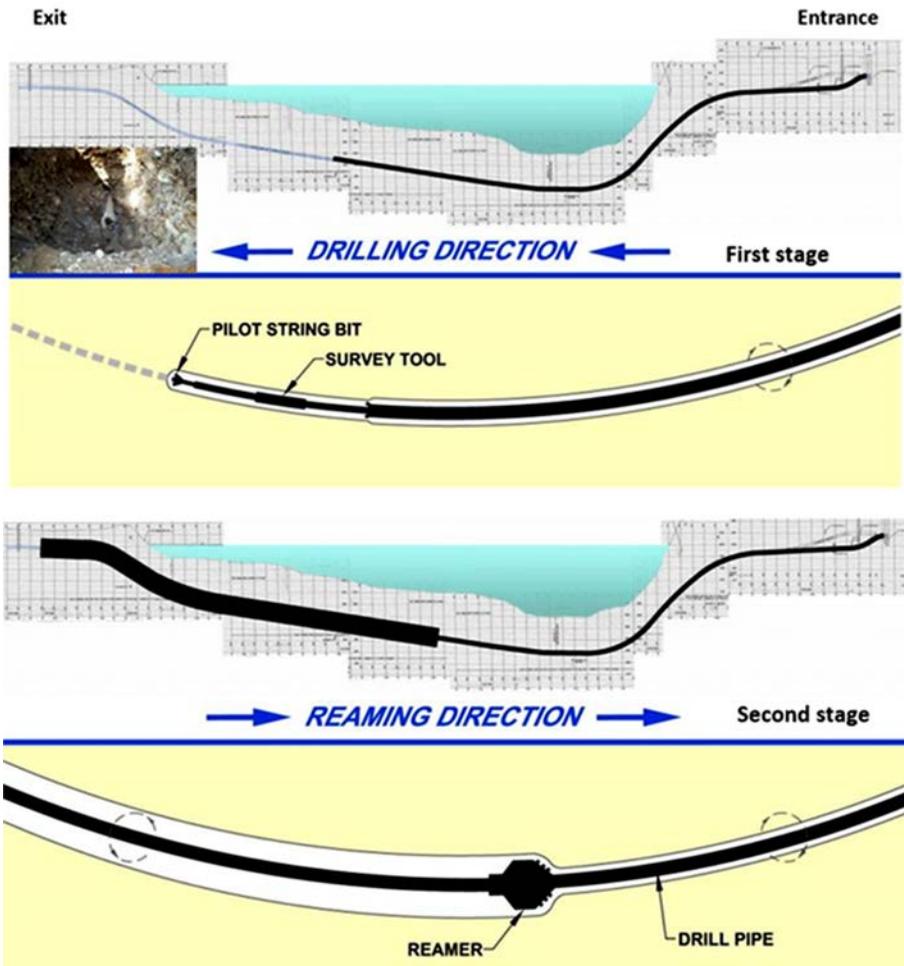
Image courtesy Brian Dorwart

Enhanced Safety

Trenching presents significant safety risks to the workers and the public. The Occupational Safety and Health Administration (OSHA) notes that "cave-ins pose the greatest risk and are much more likely than other excavation related accidents to result in worker fatalities. Other potential hazards include falls, falling loads, hazardous atmospheres, and incidents involving mobile equipment. Trench collapses cause dozens of fatalities and hundreds of injuries each year" (OSHA, n.d.). While any construction project has risks, avoiding those that are known is always a good strategy. Removing the need for a trench greatly reduces the safety hazards to the utility crew and the public.

Community Impacts

As we stated earlier, construction in a community is naturally disruptive. The disruption can complicate the process of infill development despite the many benefits of building in existing neighborhoods. The incorporation of trenchless technologies reduces the negative impacts to the neighborhood, however, while providing modern infrastructure for the new home.

In areas that are environmentally, culturally, or otherwise significant, trenchless technologies may permit construction with fewer effects to these important areas. Imagine a scenario where a homeowner desires to renovate or replace a home on a lot with mature landscaping. Trenching for the utilities might damage that landscaping, which could affect the entire neighborhood. Replacing mature landscaping after that damage is typically quite expensive.

Installation Speed

There are a number of factors that contribute to the pace of utility installation when using trenchless technologies. First, and foremost, is the type of trenchless technology being employed. The utility application also merits consideration, such as the pipe size and bore length, the site soil conditions, and the directional drilling tolerances. The speed of installation for trenchless technologies versus trenched is most notable when the project requires minimal effects to existing construction. In this case, trenchless technologies are the preferred method.

Conclusion

Trenchless technologies should be considered for utility installation because these technologies can provide cost savings, enhanced safety, reduced community impacts, and speedy installation. This is especially true for infill development, where upgrading utilities may cause significant damage to the landscaping, sidewalks, or roadways. Trenchless technologies can help to avoid the damage, minimizing the costs of installation as well as maintaining positive relationships between the developer and the neighboring community.

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Additional Resources

North American Society for Trenchless Technology (NASTT)
NASTT is an engineering society. NASTT's mission is to advance trenchless technology by technical information dissemination, research and development, education, and training.
http://www.nastt.org/

Trenchless Technology Center (TTC)
The TTC is a Center of Excellence for trenchless technology at Louisiana Tech University. TTC conducts research and development, education, and technology transfer.
https://www.latech.edu/research-enterprise/centers-of-excellence/trenchless-technology-center/

National Utility Contractors Association (NUCA)
NUCA is a trade association for utility construction and excavation industry in the United States. NUCA's membership uses both trenchless and trenched utility installation technologies.
https://www.nuca.com/

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Protecting Low-Income Housing from Climate Risks

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Abstract

Buildings are vulnerable to short term extreme weather events such as flooding, high winds, wildfires and heavy precipitation, and to longer term forces such as soil erosion and extended heat waves. A warming global climate increases the risks of these types of events, necessitating a strategy to manage them. Protocols have been developed to incorporate climate risks into risk management strategies in response to rising interest from public authorities, bond rating agencies, insurance companies and others. By incorporating climate risks into their risk management strategies and acting to mitigate such risks, public housing authorities can (1) recognize the emergence of such risks, (2) quantify them via localized climate impact projections, (3) develop plans to mitigate them, and (4) engage in strengthening or other strategies to protect buildings and their residents and to save money when severe weather events occur.

Introduction

Buildings can be severely damaged or even destroyed by severe weather events such as flooding, high winds, wildfires, and heavy precipitation. Projections of a warming climate and rising ocean levels indicate that the risks of these types of events are likely to increase over time. Those who manage buildings such as public housing authorities can deal with these risks by incorporating them into their overall risk management strategies and taking actions to address them. This article provides background regarding what others are doing to deal with climate risks and then discusses how managers of the nation's low-income housing can deal with it in their overall risk management plans and actions.

Exhibit 1

Building Damage from a Hurricane

A warming climate will increase the frequency of severe high-wind events, with potentially devastating consequences for buildings.
Photo courtesy DailyCaller.com.

Background

Increasing risks related to climate change have become ever more apparent to governments and to private sector entities as worldwide efforts to control carbon and other greenhouse gas emissions have languished. Assets vulnerable to severe weather such as buildings, factories and communication infrastructure therefore have become increasingly subject to scrutiny. Entities such as the Climate Disclosure Project and the Task Force on Climate-related Financial Disclosures (TCFD) are calling upon firms to disclose the potential impacts of climate risks on their assets.[1] Meanwhile, insurers and investors have become aware that their liabilities or holdings may be adversely affected by climate risks and are putting increased pressure on private firms to respond accordingly. Many firms now report on climate risks affecting their assets although few have publicly identified the potential impacts.

On the public-sector side, a system called the Climate Risk and Adaptation Framework and Taxonomy (CRAFT) has been developed by two nonprofit entities, C40 and Arup, to offer cities a way to report what they have done to anticipate and deal with climate risks. So far, more than 500 cities have utilized this system. They have been incentivized by Moody's Investors Service, which has warned municipalities that it will take account of their climate risk awareness and actions in rating their bond offerings (Flavelle, 2017). Standard & Poor (S&P) likewise has indicated that it will take climate risks into account in rating private and public sector bond sellers (S&P, 2019).

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[1] The TCFD was created by the Financial Stability Board, an international organization that monitors and makes recommendations about the global financial system.

Policymakers also have taken an interest. Since 2013, the Government Accountability Office (GAO) has recommended to Congress that the federal government identify significant climate risks and create appropriate responses (GAO, 2019). Office of Management and Budget (OMB) Circular A-11, a guidance document for federal agencies, at one point required climate adaptation planning and resilience analysis for construction and renovation projects, although the language was removed in a 2018 update. In addition, some in Congress have proposed a series of policies called the "Green New Deal" to confront climate change, indicating legislative interest in climate-related actions.

Managing Climate Risk

Risk management has become a standard technique to deal with the various risks faced by asset owners or those who manage the assets for them. The technique involves assessing the risks of various events and the impacts of those risks if they materialize and developing plans to deal with them. Financial accounts and planning documents are written to incorporate identified risks and monies are set aside for purposes of taking actions to ameliorate the effects of the events, should they transpire. If especially severe events occur, monies can be saved by having avoided sudden, very large losses. In addition, disruptions to ongoing activities can be reduced if not altogether avoided.

Housing authority management of climate risks in particular involves incorporating such risks into overall risk management planning by identifying the types of events that may occur because of climate change, their impacts upon local publicly subsidized housing, and steps that are being taken to reduce such potential damage. With federally subsidized housing, the welfare of residents is of particular importance because their choices can become even more limited should drastic weather events occur that suddenly damage or destroy the housing they occupy.

Exhibit 2

Public Concern over Low-Income Housing Resident Welfare

Severe weather events may impose difficult choices upon low-income residents and generate concern among their supporters.
Photo courtesy MarketMadHouse.com.

How can climate risks be dealt with? There are both general and specific steps to be taken. Among the more general steps, first, treat the issue seriously. There is plenty of evidence that the climate is changing and with it the probabilities of various weather events. Such probabilities may make little difference in some geographic areas, but have clear implications for others, particularly coastal areas subject to flooding and frequent hurricanes.

Second, identify probable local impacts from a changing climate. A number of climate models have been developed that project the local impacts of future climate change to at least the county level. They are inexact, to be sure, but are still a useful tool that is accessible for those engaged in climate risk identification. Further, their accuracy has improved with time to the point where localized quantitative risk assessment is feasible.[2]

Third, incorporate climate risks into reports and plans and set monies aside to execute such plans. This reporting, planning, and budgeting not only inform internal staff of the importance of recognizing climate risks but also lets outside parties such as policy makers, investors, and bond rating agencies know that actions to ameliorate such risks are being anticipated if not already implemented.

Fourth, communicate with local authorities to discover what plans are in place to deal with severe weather events. Depending on what form these plans take, a housing authority may be able to make use of local resources (for example, emergency housing) in its own response to such events.

A number of specific actions also can be taken to protect residents and structures from climate-related events. Among these are to:

• Site and design buildings to minimize their exposure to severe weather events.

• Use fire-resistant building materials such as concrete made with tough, flame retarding aggregate.

• Protect building points of entry from floodwaters, for example, with portable flood barriers.

• Protect glass windows or doors in areas subject to high winds with shutters, for example, accordion shutters.

• Perform electrical upgrades to ensure continued power in case of prolonged outages, for example, installation of backup generators. Also, be sure switches, sockets, circuit breakers and wiring are placed well above the expected flood levels in your area.

• Provide means for residents to communicate with the housing authority in case of severe weather damage to facilities, for example, emergency telephone lines.

• Maintain secure means of access to and egress from damaged buildings to enable emergency personnel and residents to get in or out in worst-case scenarios.

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[2] The Federal Emergency Management Agency (FEMA) offers a broad tool called RiskMAP (available at https://toolkit. climate.gov/tool/risk-mapping-assessment-and-planning-risk-map-program) while a number of firms offer models with more specific localized information (for example, The Climate Service, LLC offers a tool called Climanomics, at http://www.theclimateservice.com/).

- Conduct comprehensive maintenance on structures more frequently and completely than otherwise.

- Prepare plans to temporarily house residents while rebuilding occurs.

- Maintain a list of trusted contractors the housing authority has worked with who can assist with rebuilding damaged properties.

- Make sure key suppliers of goods or services to the housing authority's buildings (for example, trash collectors) are themselves taking measures to protect their assets against severe weather events.

Exhibit 3

Building Construction Using Concrete

Concrete construction has low thermal conductivity and protects against the spread of fire.
Photo courtesy *DesigningBuildings.co.uk*.

Exhibit 4

Removable Doorway Flood Barrier

Removable flood barriers can retard or prevent water access into buildings.
Photo courtesy DesigningBuildings.co.uk.

Exhibit 5

Accordion Shutters

Accordion or other high-quality shutters protect glass from intense winds and flying objects.
Photo courtesy SecurityRollingShutters.com.

Conclusion

Climate risks are real and public sector entities who recognize them, understand their implications, and meet them head-on will have a leg up with policy makers, investors, bond ratings agencies, and others with direct concerns. Housing authorities who assess the local consequences of such risks and take actions to manage these will better protect not only the buildings they are responsible for but the low-income residents who inhabit those buildings as well. Housing authorities also are likely to save money over the longer term. Tools exist to help manage climate risks within broader risk management strategies and can be readily accessed by the public housing authorities who wish to do so.

Acknowledgments

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New York City's Affordable Housing Plans and the Limits of Local Initiative

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Abstract

New York City invested more than $18.9 billion, after inflation, from its capital budget for the development and preservation of more than 490,000 affordable housing units from 1987 to 2018. This article assesses New York City's various affordable housing programs during this period in light of the city's longstanding affordability problems, focusing in particular on Mayor Bill de Blasio's housing plan and the results of this plan from its inception in 2014 through the first quarter of 2019. This article discusses those results while considering criticisms that the plan does not provide sufficient housing for households with the lowest incomes and that its use of inclusionary zoning may exacerbate housing affordability pressures. The article concludes that, while New York's programs have produced affordable homes for thousands of residents, the amount of expenditure that would be required to resolve New York's affordability crisis is far too large for New York to afford without federal support.

Introduction

New York City invested more than $18.9 billion, after inflation, from its capital budget for the development and preservation of more than 490,000 affordable housing units from 1987 to 2018. The city has spent billions more on housing through private activity bonds, block grants, and other sources. Despite this investment, New York City has confronted a severe housing crisis for many years. As of 2017, nearly one-third of all renters paid 50 percent of their income on rent, and more than 60,000 people were homeless. The persistence of New York's housing crisis in the face

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of its massive investments and other measures to provide affordable housing have prompted some to suggest that these efforts are not only ineffective but may exacerbate the very problem they are intended to solve.

My aim in this paper is to assess New York's various affordable housing programs in light of the city's longstanding affordability problems. I argue that, while the city's programs have provided affordable homes for thousands of residents, and in some cases revitalized entire communities, the amount of expenditure that would be required to resolve New York's affordability crisis is far too large for a city to afford without federal support. While a growing number of cities and states have recently established affordable housing programs or increased the size of existing programs, the New York City experience suggests that local initiatives are highly unlikely to be sufficient.

This article is organized as follows. First, I provide a brief overview of New York's housing market, focusing on the severity of the city's affordability problem and some of its key causes. The second section provides an overview of the city's affordable housing initiatives, starting with Mayor Ed Koch's Capital Budget Plan of 1987 and continuing through Mayor de Blasio's current Housing New York Plan. The third and longest section examines the de Blasio plan in more detail. That section describes the plan's major elements, reviews its accomplishments over its first 4 years of implementation, and discusses the primary criticisms that have been leveled against it. The concluding section discusses how the New York City experience shows both the potential for local governments to produce affordable housing and also their limited ability to fundamentally address the housing affordability crisis.

Housing Market Overview

New York City has been in a housing crisis for nearly 100 years. As documented by Jacob Riis (1997) and many others, the city has long struggled to provide decent and affordable housing for its low-income residents. The city's rent regulations, in place almost continuously since the 1940s, are premised on the existence of a housing emergency, currently defined as having a rental vacancy rate of no more than 5 percent (Collins, 2018: 32). As of 2017, the average renter[1] paid 32 percent of his or her income on rent and utilities, and more than 29 percent of all renters—totaling 511,736—confronted severe housing cost burdens, paying at least one-half of their income on housing costs. Among extremely low-income renters,[2] defined as earning no more than 30 percent

[1] All data on housing affordability (income, rents) come from the Housing Vacancy Survey (HVS), a study conducted every 2 or 3 years by the U.S. Census Bureau for New York City. It is a representative random sample of about 19,000 households. The most recent survey was conducted in 2017. The figures reported in this paragraph do not include renters receiving federal Housing Choice Vouchers and other forms of tenant-based rental assistance. The HVS does not report the rents paid directly by these households; it indicates the total rents charged to the households, most of which is covered by the subsidy. As a result, the rent burdens for these households as reported by the HVS is inaccurately high (for example, 79 percent are indicated as spending 50 percent or more of their income on rent).

[2] This definition of the Extremely Low-Income category, which New York City employs for its housing programs, differs from the official definition adopted by the federal government. The latter (amended by the 2014 appropriations act) defines an extremely low-Income family as a very low income family whose incomes do not exceed the higher of (i) the poverty guidelines or (ii) 30 percent of median family income for the area (adapted from 42 USC 1437a (b)(2)(C) - https://www.law.cornell.edu/uscode/text/42/1437a). For the New York, NY HUD Metro FMR Area, the poverty guidelines control the extremely low-income limits for larger family sizes. Thus, NYC income limits for larger households may be lower than the corresponding Federal limits.

of the area median family income (AMI), the incidence of severe housing cost burden exceeded 78 percent. As of October 2018, more than 63,000 people were part of the city's homeless shelter system, and that does not include several thousand more homeless people sleeping on the streets and in other public spaces (Coalition for the Homeless, 2019).

There are numerous reasons for New York's chronic housing affordability crisis. It reflects, among other factors, the intensity of demand for housing among households of all incomes, the high cost of land and construction, the weakening of rent regulation, the loss of lower-cost housing, the low incomes of many renters, and the paucity of federal rent subsidies. It is not the goal of this article to parse the influence of each of these elements, but it is important to frame the city's efforts to provide affordable housing within this broader context.

New York is one of the nation's most expensive housing markets. At $1,789, the federally designated fair market rent for New York City in 2018 was the 14th highest in the nation. Rents would surely be higher were it not for the fact that about 1 million of the city's 2.1 million rental units are subject to rent regulation, and more than 250,000 are subsidized by federal, state, and local programs, including 180,000 units of public housing. The average rent for a non-regulated unit in 2017 was $1,700. Rents for vacant, non-regulated units are generally much higher, with the average two-bedroom apartment costing $3,721 as of November 2018 (Rent Jungle, 2018).

Purchase prices of houses and apartments are also very high. According to the real estate service Zillow Group, Inc., in June 2019, the median list price for a co-op or condominium apartment was $850,000, and the median list price for a single-family house was $719,000 (Zillow, 2019). Almost every week, *The New York* Times reports on apartments selling for tens of millions of dollars (Marino, 2019).

Fueling the demand for housing is the city's population growth over the past several decades. As of July 2017, New York's estimated population stood at 8.6 million. This figure represented a 5.5-percent increase of more than 447,000 people since 2010 and a 22-percent increase of more than 1.5 million since 1980. Much of this growth has been driven by foreign immigration, but it also reflects the city's enduring attraction as a mecca for the arts, finance, and other fields. In addition, wealthy families frequently purchase apartments in New York for part-time residences. Hundreds, if not thousands, of apartments have been acquired by foreign investors, often using shell companies to cloak their identities and obscure the source of the funding (Story and Saul, 2015). The appetite for residential real estate investment is by no means limited to the high end of the market. Investors have acquired hundreds of rental buildings in low- and moderate-income neighborhoods, with the purchase prices frequently far higher than what the rent rolls would justify. What motivates most of these investors is the prospect of removing the property from rental regulation, enabling them to charge much higher rents (Association for Housing and Neighborhood Development, 2011; Savitch-Lew and Spittal, 2017). The entry of Airbnb, Inc., an online, short-term housing rental service, has further added to rent pressures by effectively converting thousands of units from permanent housing to temporary accommodation (Ferré-Sadurní, 2019).

The cost of producing housing in New York City is extremely high. Construction costs are among the highest in the nation, and land costs are very high as well. As a result, most new construction,

unless it is subsidized or subject to inclusionary zoning (discussed later), is only affordable to affluent households. Without subsidy, newly built housing is unaffordable to most New York City residents. Moreover, many households lack the income necessary to afford the basic costs of operating a housing unit—that is, upkeep, insurance, utilities—much less the costs associated with the acquisition or development of the housing.

For example, the New York University Furman Center estimates that the minimum monthly rent necessary to support the construction and operation of a 400-square-foot studio apartment amounts to $1,480, assuming the developer acquired the land at no cost. If the land costs $200 per square foot, the minimum rent rises to $1,820. Under the free-land scenario, the rent is affordable to a household earning at least $59,000, or 89 percent of New York's Area Median Family Income (AMI) for single-person households.[3] With land costing $200 per square foot, the same apartment becomes affordable only when incomes exceed $72,800 (110 percent of AMI). The same study estimates the minimum rents for even smaller units, including ones with shared kitchens and bathrooms: assuming no land costs, the minimum rent for a 160-square-foot "efficiency" apartment with shared kitchen and bath amounts to $841 a month, which is affordable to households earning at least $33,600 (51 percent of AMI). If the unit has its own kitchen and bath, the minimum rent rises to $1,170, affordable to households with incomes of at least $46,800 (71 percent of AMI). Rents for the same unit become more expensive when the underlying land must be purchased (exhibit 2). In other words, even the smallest newly built apartments with shared facilities are out of financial reach for hundreds of thousands of low-income New Yorkers.[4] Larger units, of course, are even more costly.

Exhibit 1

Maximum Incomes in 2016 for Each Income Category in the New York Metropolitan Area

Income Group	1-Person	2-Person	3-Person	4-Person	5-Person
Extremely Low Income (<30% of AMI)	$19,050	$21,800	$24,500	$27,200	$29,400
Very Low Income (30-50% of AMI)	$31,750	$36,250	$40,800	$45,300	$48,900
Low Income (50-80% of AMI)	$50,750	$58,000	$65,250	$72,500	$78,300

Source: HVS, 2017

[3] It is customary in the United States to classify household incomes in terms of the metropolitan area's median family income (AMI) as adjusted by the U.S. Department of Housing and Urban Development. Eligibility for housing subsidy programs is almost always defined by a maximum percentage of AMI. In exhibit 1 are the maximum incomes in 2016 for each income category in the New York metropolitan area, which, besides the five boroughs of New York City, also includes Putnam, Rockland, and Westchester counties. Note that the federal department of Housing and Urban Development (HUD) uses slightly different terminology (and acronyms) to define income categories—Area Median Family Income (Area MFI).

[4] According to the HVS, there were nearly 342,000 one-person households in 2017 with incomes below 50 percent of AMI, including more than 233,000 with incomes below 30 percent of AMI—far too low to afford even very small apartments with shared bathrooms and kitchens.

Exhibit 2

Minimum Rents, and Associated Income Requirements for Small Apartments, Alternative Scenarios

	Small Studio	Micro Unit	Efficiency Shared Kitchen	Efficiency Shared Kitchen & Bath
Square Feet	400	300	225	160
Land Costs = $0				
Min. Rent	$1,480	$1,240	$1,170	$840
Min. Income	$59,200	$49,600	$46,800	$33,600
Corresponding AMI	89%	75%	71%	51%
Land Costs = $200/sq. ft.				
Min. Rent	$1,820	$1,500	$1,410	$1,040
Min. Income	$72,800	$60,000	$56,400	$41,600
Corresponding AMI	110%	90%	85%	63%
Land Costs = $450/sq. ft.				
Min. Rent	$2,360	$1,920	$1,780	$1,340
Min. Income	$94,400	$76,800	$71,200	$53,600
Corresponding AMI	142%	115%	107%	81%

Source: Stem and Yager 2018

The supply of housing affordable to lower income households has steadily dwindled over time. In just 3 years, from 2014 to 2017, the number of units renting for less than $1,500 a month fell by nearly 166,000 (12.3 percent). The stock of units renting for less than $1,000 a month dropped by more than 87,000 (14.5 percent; exhibit 3). Not surprisingly, vacancy rates for these lower cost units are very low. As of 2017, the vacancy rate for units renting below $800 a month stood at just 1.2 percent and, for units renting between $800 and $1,100 a month, it amounted to 2.1 percent. The only rental housing with vacancy rates above 5 percent goes for $2,000 a month or more.

Exhibit 3

Change in Total Units from 2014 to 2017 by Monthly Contact Rent (Constant 2017 Dollars)

	2014	2017	2017 Percent Share	Change 2014 - 2017	
				Total	Percent
Less than $500	161,776	143,488	7%	-18,288	-11.3%
$500-799	188,006	160,238	8%	-27,768	-14.8%
$800-999	253,337	211,673	10%	-41,664	-16.4%
$1000-$1,499	740,732	662,466	31%	-78,266	-10.6%
$1,500-$1,999	351,847	401,444	19%	49,597	14.1%
$2000-$2,499	130,871	176,370	8%	45,499	34.8%
$2,500 +	228,877	282,972	13%	54,095	23.6%
No Rent	53,391	65,223	3%	11,832	22.2%
Total	2,108,837	2,103,874	100%	-4,963	-0.2%

Note: Numbers may not add to 100 percent due to rounding.
Source: Housing Vacancy Survey

One reason for the loss of lower cost rental housing is the deregulation of rent-stabilized housing. Over a quarter century, from 1994 to July 2019, New York State law allowed housing to be removed from the rent regulation if the regulated rent exceeded a specific level ($2,700 per month in 2018) after a vacancy or if the tenant's annual income exceeded $200,000 in each of the previous 2 years and the rent exceeds a specified amount ($2,734 in 2018). Under rent stabilization, the Rent Guidelines Board sets the maximum allowable rate of increase landlords may charge for lease renewals. Landlords could increase rents by up to 20 percent, however, during a turnover in occupancy, and they could increase rents to cover a portion of building-wide capital improvements (for example, a new roof) and apartment-specific investments (for example, new appliances or bathroom or kitchen renovations). As a result of these and other provisions, nearly 291,000 units were deregulated from 1994 through 2017 (New York City Rent Guidelines Board, 2018a). This loss has been counterbalanced by the addition of more than 143,000 units into the rent-stabilization program. These latter units, however, usually part of luxury buildings that received property tax abatements, charge much higher rents than that of housing lost to the rent-stabilized housing stock (the luxury decontrol provisions do not apply to this housing). As noted previously, the prospect of deregulating housing has tempted investors to acquire thousands of rent-stabilized buildings, sometimes resulting in tenant harassment and other illegal measures to increase rents and force tenants to move out of the building (Savitch-Lew and Spittal, 2017).

In June 2019, the state passed new legislation that, among other things, eliminated high-rent and high-income deregulation, and additional rental increases allowed for new tenancies (vacancy bonuses). It also reduced the rent increases allowed for major capital improvements and individual apartment improvements (Murphy, 2019; Otterman and Haag, 2019).

Another fundamental aspect of New York's housing affordability crisis is that hundreds of thousands of households have very low incomes and far fewer apartments are available at rents those households can afford. In 2017, 20 percent of all renters, 409,000 in total, earned less than $18,000 annually, sufficient to afford no more than $450 in monthly rent. Ten percent of all renters earned less than $11,000, which can support no more than $270 in rent. Another 10 percent earned between $18,000 and $27,000, sufficient for rent of up to $675. Very few units are available at these rents. Only 15 percent (300,000) of all rental units cost less than $800 a month in 2017, and only 7 percent (143,500) cost less than $500 (exhibit 3).

Finally, the supply of federal rental subsidies has increased little over the past decade. From 2010 to 2017, the number of households in New York City with federal Housing Choice Vouchers (HCV) went from about 130,000 to 136,000, an increase of less than 5 percent.

New York City's Affordable Housing Initiatives from 1986 to 2019

New York City has a long history of promoting affordable housing, advocating for federal and state support, and drawing from its own resources when necessary. The city accounts for a disproportionately large share of the nation's public housing. This is especially true today because New York is one of the very few large cities that has not demolished its public housing, but it

was also true in the heyday of the public housing program. The city successfully advocated for public housing, and it and the state financed the construction of additional public housing from the 1950s to the 1970s (Bloom, 2008). New York also secured a large amount of other federally subsidized housing under the federal Section 236 and Section 8 programs (Bach, 1999). The Mitchell-Lama Housing Program, a city-state partnership created in 1955, provided low-cost financing and tax abatements for moderate-income rental and cooperative housing. More than 105,000 units were built under the Mitchell-Lama program before the fiscal crisis of 1975 led to the program's demise (Bach, 1999).

In 1986, Mayor Ed Koch launched what was then called the Capital Budget Housing Plan or "The Ten-Year Plan." Faced with growing homelessness, widespread disinvestment and abandonment of residential buildings, and declining federal housing subsidies, Mayor Koch decided to allocate $4 billion ($8.9 billion in 2017 dollars) from the city's capital budget for the construction and preservation of housing targeted primarily to low- and moderate-income households (Schwartz, 1999). Every subsequent mayor, regardless of major party affiliation, also used the capital budget to finance affordable housing. In total, the city invested more than $18.9 billion in inflation-adjusted (2017) dollars on housing construction and preservation through 2018. These figures pertain only to the city's capital budget, expenditures funded largely through property tax, and other general revenue. They do not include the billions of dollars more in tax-exempt and taxable private activity bonds issued by New York's Housing Development Corporation to underwrite permanent mortgages and construction loans for hundreds of affordable housing developments, nor do they include federal tax expenditures through the Low-Income Housing Tax Credit (LIHTC) program.

Exhibit 4 shows the annual amount of capital-budget expenditures on housing and the city-funded housing starts from 1987 to 2018. Exhibit 5 shows average annual expenditures and housing starts under each of the five mayors over this 31-year period. The data show that the city has consistently spent hundreds of millions from its capital budget on housing. New York City spent less than $400 million (in 2017 dollars) on housing in only 5 of the years in the time period. In 8 of the years, expenditures exceeded $700 million. Exhibit 5 shows that average annual expenditures were highest under Mayor Dinkins (1991–1994) at more than $932 million, followed by $914 million under the current mayor, Bill de Blasio. Expenditures were lowest under Mayor Giuliani at $458 million, slightly less than the annual average of $459 million under Mayor Bloomberg.

Exhibit 4

Capital Budget Expenditures ($000s) and Housing Starts, 1987–2018

Exhibit 4: Capital Budget Expenditures (in $000s) and Housing Starts, 1987-2018
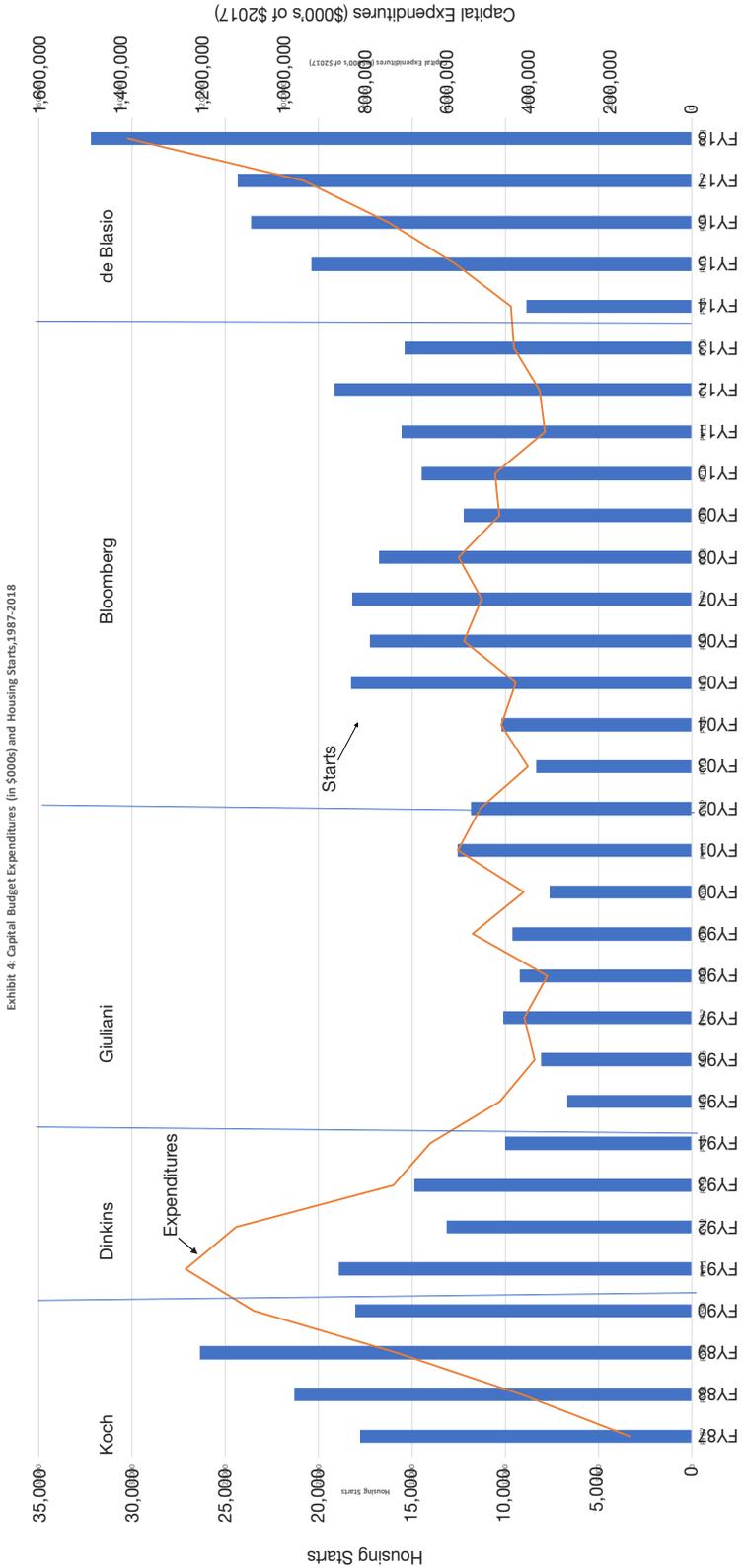
Source: Mayor's Management Report and Comptroller's Budget Report

From the perspective of total city-funded housing starts, average annual production is highest under Mayor de Blasio, at more than 25,000 units per year, followed by almost 21,000 units under Mayor Koch. Mayor de Blasio's administration has funded the most new construction, averaging more than 7,900 units per year, compared with 4,600 units under Mayor Bloomberg and about 2,500 units or less under the preceding mayors. At more than 17,000 average annual starts, Mayor de Blasio's housing preservation activity is far higher than that of Mayors Bloomberg, Giuliani, and Dinkins. It is eclipsed only by the 18,500 units preserved annually under Mayor Koch.

Exhibit 5

Average Annual Housing Starts and Capital Expenditures Under City Housing Plans

Mayor	New Construction Starts	Preservation Starts	Total Starts	Capital Expenditures (thousands of $2017)
Koch (FY 87-90)	2,337	18,531	20,869	$591,561
Dinkins (FY 91-94)	2,454	11,785	14,239	$932,059
Giuliani (FY 95-02)	2,554	6,909	9,463	$457,515
Bloomberg (FY 03-14)	4,619	9,937	14,556	$459,124
de Blasio (FY 15-18)	7,958	17,179	25,137	$914,020

Source: Mayor's Management Report and Comptroller's Budget Report

New York City classifies its affordable housing investments as either "New Construction" or "Preservation." These categories are not monolithic, however, and involve various forms of investment. New construction can refer to housing that exclusively serves low- and/or moderate-income households or to properties that combine market-rate and subsidized units. Some provide housing for families; others serve populations with special needs. New construction projects vary in terms of their size, the mix of income groups that are targeted, and the types of organizations involved in their development and management.

Preservation refers to various levels and types of physical improvement to existing housing and also to the extension or replacement of subsidies that would otherwise expire. Preservation programs provide grants and low-cost loans to private landlords to replace roofs, windows, and upgrade plumbing, electrical, and heating systems. They can involve "gut" rehabilitation of vacant, severely dilapidated buildings or, more frequently, "moderate" rehabilitation of mostly occupied buildings, in which the work is limited in scope. Preservation programs can involve for-profit landlords as well as community development corporations and other nonprofit organizations.

Over the past decade or so, New York's preservation efforts have also sought to prevent housing from losing its existing subsidies. For example, the city has provided various financial and tax incentives to encourage the owners of Mitchell-Lama developments to remain in the program and not convert them to market-rate occupancy. The city also provides incentives for owners of housing financed with federal LIHTC to keep the housing affordable to low-income households after the 30-year income-restriction period for the credits expires. In 2015, the city committed $220 million to preserve the affordability of 5,000 units in Stuyvesant Town-Peter Cooper Village, a storied development of more than 11,000 apartments that a real estate developer and a financial firm purchased in 2006 from Metropolitan Life Insurance Company, its original owner. The new entity

subsequently declared bankruptcy (the largest multifamily real estate bankruptcy in U.S. history), reflecting the owner's overly aggressive assumptions regarding its ability to take units out of rent regulation (Stefanski, 2018; Bagli, 2013).

Originally, much of the city's housing efforts centered on its extensive inventory of occupied and vacant tax-foreclosed property (Braconi, 1999; Schwartz, 1999). Starting in 1977, in an effort to discourage landlords from falling behind on their property taxes, the city decided to foreclose on properties after 12 months of arrears instead of the 36 months that were previously allowed. The policy did not succeed. Occurring at a time of population loss and disinvestment, landlords in low-income, predominantly minority neighborhoods of the Bronx, Harlem, and Central Brooklyn abandoned hundreds of apartment buildings, sometimes burning them down in the process. As a result of the city's tax-foreclosure policy change, it soon became the owner of thousands of vacant and occupied units. These tax-foreclosed ("*in rem*") properties were often in terrible physical condition, with high levels of vacancy. Tenants had very low incomes, and rents, if collected, were seldom sufficient to cover basic operating expenses.

By 1987, and the start of Mayor Koch's Capital Budget Program, the city owned 53,000 units of occupied *in rem* housing and 49,000 units in vacant buildings (Schwartz, 1999). Much of the city's investments involved this housing. It paid for the physical upgrading of *in rem* occupied buildings, often transferring them to new ownership in the process—including community development corporations, for-profit developers, and tenant cooperatives. The city funded the gut rehabilitation of vacant buildings,[5] creating new communities in the process (Lamberg, 2018). It also provided financing for one-to-three family houses built on city-owned land—much of which was targeted to moderate- and middle-income families. Not all of the city's housing expenditures involved *in rem* housing. It also spent millions of dollars each year to help private landlords improve and preserve their buildings.

The amount of *in rem* property gradually diminished as the city rehabilitated it and transferred ownership to private and nonprofit organizations. In the mid-1990s, the city changed its foreclosure policy and stopped taking possession of most properties in arrears (Schwartz, 1999). Instead, it auctioned tax liens of properties in arrears. The tax-lien buyers would then collect back taxes from the owners and take possession of the property if they failed to pay. For property in arrears that housed low-income and other "at-risk" tenants, the city created a new program, Third Party Transfer, through which it conveyed control of the property to a qualified nonprofit or for-profit entity that would rehabilitate the property if needed and provide improved management (New York City Rent Guidelines Board, 2018b).

As a result of the city's investments in the rehabilitation of *in rem* property, its cessation of most foreclosures, and perhaps most importantly, improvements in the city's economy and real estate market that greatly reduced incentives to lose property to foreclosure, the supply of *in rem* housing declined from 102,000 units in 1987, 30,000 in 1997, less than 1,000 in 2007, and only 323 in 2018 (Schwartz and Vidal, 1999; City of New York, 2007; New York City Rent Guidelines Board, 2018b).

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[5] Gut rehabilitation accounted for 29 percent of all housing units renovated or constructed with city assistance from FY1987 to FY1996 and for 61 percent of the city's capital budget expenditures (Schwartz and Vidal, 1999: 239).

Over time, reflecting the diminishment of *in rem* property, more of New York affordable housing development has taken place on privately owned land. Some new construction has taken place on land owned by various city agencies, but an increasing proportion is owned by nonprofit organizations or for-profit entities. From the second half of fiscal year (FY) 2014 through 2018, less than 10 percent of all city-funded housing starts took place on city-owned land (City of New York 2018b: 15). Developers have used city funds to build housing on sites owned by churches and other nonprofit organizations. Some buildings have been constructed on open spaces (for example, parking lots) on some of the city's public housing campuses (not without controversy). Most sites, however, have been obtained on the private market. Frequently, as will be discussed in the following paragraphs, housing developments on privately owned land is mixed-income, combining market-rate units with housing allocated for moderate- and low-income households.

Mayor Bill de Blasio's *Housing New York*

In May 2014, 4 months after his inauguration, Mayor Bill de Blasio launched "Housing New York," his plan for developing and preserving affordable housing. The plan followed that of his predecessor, Michael Bloomberg. Under Mayor Bloomberg's "New Housing Marketplace" plan, the city supported the development and preservation of 165,000 housing units (53,000 new construction, 112,00 preservation) from FY2004 through FY2013 (NYC HPD, 2013). Expanding on Mayor Bloomberg's plan, Mayor de Blasio called for the development and preservation of 200,000 units (80,000 new construction, 120,000 preservation) over 10 years (City of New York, 2014). In 2018, just after his reelection to a second term, Mayor de Blasio announced that the plan's original goals would be achieved in 2022, 2 years ahead of schedule, and added 100,000 units to the plan. In total, the revised plan aimed to build or preserve 300,000 units by 2026 (120,000 new construction, 180,000 preservation; City of New York, 2018a).

In addition to its higher numerical goals, the de Blasio plan also differed from the Bloomberg plan in giving greater priority to low-income households. Whereas 68 percent of the housing developed or preserved during the Bloomberg Administration was designated for low-income households earning up to 80 percent of AMI, the de Blasio plan designated 79.5 percent for this population. Moreover, unlike the Bloomberg plan, the de Blasio plan specifies goals for different subsets of the low-income category, distinguishing between households with "extremely low income" (0 to 30 percent of AMI), "very low income" (30 to 50 percent), and "low-income" (50 to 80 percent). The Bloomberg plan, in contrast, set goals for the overall low-income category and did not indicate the mix of incomes within this category that would be assisted. Nevertheless, as will be discussed below, a major criticism of the de Blasio plan is that it does not provide sufficient housing for households with the lowest incomes.

As with the housing plans of the previous mayors, de Blasio's Housing New York is a compendium of various programs and initiatives (Schwartz, 1999). As noted above, the de Blasio plan, like its predecessors, calls for both the construction of new affordable housing and for the preservation of existing affordable housing. To reach its goal of producing 120,000 new units by 2026, the plan relies on a combination of inclusionary zoning, tax incentives, and direct subsidy. The preservation goals are to be realized by replacing or extending subsidies that are currently in place

and by providing financial assistance to owners of affordable housing to help them pay for major renovations and replace building systems (for example, boilers, plumbing, windows, roofs).

New Construction Programs

The aspect of Housing New York that has received the most attention (and criticism) is its embrace of mandatory inclusionary zoning. Most of the new construction undertaken during the first 5 years of the plan, however, has involved direct subsidy and has not involved inclusionary zoning. New York City has had a voluntary inclusionary zoning program since the 1980s, which had yielded little new affordable housing. The program enabled developers to build at higher densities than would be otherwise allowed, provided they reserve a portion of the additional space for low-income households—and with "low income" defined at 80 percent of AMI. Few developers chose to participate in this program, in part because there were other, less costly ways by which they could build at densities greater than what would be normally allowed (Stein, 2018).

Mayor de Blasio's Housing New York plan augmented this voluntary inclusionary zoning program with a mandatory inclusionary housing (MIH) program that applied to neighborhoods that are rezoned for higher densities and for individual sites for which developers obtain zoning variances to build at higher densities. The City Planning Commission and the City Council approved the MIH program in 2016 after months of negotiation. The program offers several options for developers, all of which specify minimum percentages of units that must be provided to households earning various percentages of AMI.

One option requires developers to allocate 25 percent of total floor area to households earning an average of 60 percent of AMI, including 10 percent for households with incomes of no more than 30 percent of AMI. A second option requires developers to allocate 40 percent of all units for lower-income households, but the income limit is higher, at an average of 80 percent of AMI.[6] The program allows developers to satisfy their affordable housing requirements by providing the units off-site, but the amount of affordable housing that must be provided is increased under the two options to 30 and 35 percent, respectively. Unlike most inclusionary zoning programs in the United States (Thaden and Wang, 2017), the affordability period for New York's program is indefinite. All affordable units produced under the city's Mandatory Inclusionary Housing program must remain affordable in perpetuity. As of July 2019, six neighborhoods, starting with East New York, have been rezoned at higher densities, thereby effectuating mandatory inclusionary housing. Rezoning proposals were in process or anticipated for at least three additional neighborhoods (Ali Kully, 2019a; Ali Kully, 2019b).

In addition to mandatory inclusionary housing, the de Blasio Administration plan also calls for the city to invest directly in the development of new affordable housing. The administration launched several programs that provide funds from the capital budget and other sources for new housing.

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[6] The City Council and City Planning Commission can also decide to apply two other options. The "Deep Affordability" option requires developers to allocate 30 percent of total residential floor area for households earning an average of 40 percent of AMI. The "Workforce" option, which cannot be applied in most of Manhattan, requires 30 percent of all residential floor space to be reserved for households earning an average of 115 percent of AMI and no higher than 130 percent of AMI (New York City Department of City Planning, 2019).

These programs include mixed-income developments that accommodate households from several income groups and developments that focus on seniors and populations with special needs.

Exhibit 6 provides a summary of several of the mixed-income programs that include various kinds of subsidies. For example, the Extremely Low- and Low-Income Affordability program (ELLA) includes several income tiers. In one option, 10 percent of all units must go to formerly homeless households, 10 percent to households with incomes up to 30 percent of AMI, 10 percent to households with incomes up to 40 percent of AMI, 10 percent with incomes of up to 50 percent of AMI, and 30 percent of the households must have incomes up to 60 percent of AMI. Developers have the option of designating some or all the remaining 30 percent of the units to households earning 70 to 100 percent of AMI; otherwise, they must be slated for households earning up to 60 percent of AMI. The city provides $130,000 to $150,000 in subsidy per unit, depending on the overall income mix in the development. All units designated for households earning up to 60 percent of AMI are also eligible for federal LIHTC.

Exhibit 6

Income Mixes and Subsidies for Selected Mixed-Income Programs in New York City (1 of 2)

1. **Mandatory Inclusionary Zoning**

   Income Mix:
   Option 1: 25 percent of total floor area to households earning an average of 60 percent of Area Median Income (AMI), including 10 percent for households with incomes of no more than 30 percent of AMI.
   Option 2: 40 percent of total floor area to households earning an average of 80 percent of AMI.
   Deep Affordability Option: 20 percent of total floor area to households earning an average of 40 percent of AMI.
   Workforce Option (inapplicable in Manhattan Community Districts 1 through 8): 30 percent of total floor area to households earning an average of 115 percent of AMI, with a minimum of 5 percent at 70 AMI and 5 percent at 90 percent AMI.
   Off-Site Option: additional 5 percent of the floor area must be designated for households earning up to 60 percent to 80 percent of AMI.

   Subsidies:
   None required

2. **50/30/20 Mixed-Income Program**

   Income Mix:
   20 percent of units affordable to households earning up to 50 percent of AMI, including 15 percent that are affordable to households earning no more than 40 percent of AMI;
   Minimum of 30 percent of units affordable to households earning up to 130 percent of AMI;
   Maximum of 50 percent of units can be set at market rents without regard to income.

   Subsidies:
   Tax-Exempt bond financing for first mortgage; 4 percent Low-Income Housing Tax Credits (LIHTC); Subordinate loan of up to $65,000 to $85,000 per affordable unit, capped at $15 million per project; property-tax exemption.

3. **Mixed-Income Program: Mixed Middle (M²)**

   Income Mix:
   20 percent of the units affordable to households earning up to 50 percent AMI, or 25 percent of the units affordable to households earning up to 60 percent AMI.
   Minimum of 30 percent of the units affordable to households earning between 80 percent and 100 percent of AMI.
   Maximum of 50 percent of units affordable to households earning between 130 percent and 165 percent of AMI.

   Subsidies:
   Tax-Exempt bond financing for first mortgage; 4 percent LIHTC; Subordinate loan of up $85,000 to $95,000 per affordable unit, capped at $15 million per project; property-tax exemption.

Exhibit 6

Income Mixes and Subsidies for Selected Mixed-Income Programs in New York City (2 of 2)

    4.   **Extremely Low & Low-Income Affordability (ELLA) Program**

Income Mix:
Option 1:
10 percent of the units serving formerly homeless households,
10 percent of the units affordable to households up to 30 percent of AMI,
10 percent of the units affordable to households up to 40 percent of AMI,
10 percent of the units affordable to households up to 50 percent of AMI,
(Optional): up to 30 percent of the units with rents affordable to households earning 70–100 percent of AMI, and
Remaining units affordable to households up to 60 percent of AMI.
Option 2:
30 percent of the units serving formerly homeless households,
5 percent of the units affordable to households up to 40 percent of AMI,
5 percent of the units affordable to households up to 50 percent of AMI,
(Optional): up to 30 percent of the units affordable to households earning 70–100 percent of AMI, and
Remaining units serving households up to 60 percent of AMI.

Subsidies:
$130,000 to $150,000 in capital funds per unit, depending on option and percent of units affordable to households earning 70–100 percent of AMI; Federal LIHTC; tax-exempt financing; property-tax exemption.

    5.   **Mixed-Income Program: Mix & Match**

Income Mix:
40–60 percent of the units affordable to households earning up to 60 percent of AMI, including at least 10 percent of units serving formerly homeless households.
A minimum of 10 percent of units must be affordable to households earning 30–50 percent of AMI.
Remaining 40–60 percent of units affordable to households earning up to 130 percent of AMI.
Projects must have at least four affordability tiers.

Subsidies:
$10,000 to $225,000 in capital funds per unit depending on the income designation.
Federal LIHTC; tax-exempt financing; property-tax exemption.

In the Senior Affordable Rental Apartments (SARA) program and the Supportive Housing Loan Program (SHLP), the city provides low-interest loans as gap financing to support the development of special-needs housing. The maximum loan amounts range from $75,000 to $120,000 per unit, depending on additional subsidies (tax-exempt financing with 4-percent LIHTC or 9-percent LIHTC). Tenants in properties supported by these programs must spend no more than 30 percent of their income on rent. In most cases, they receive project- or tenant-based rent subsidies.

A key element of Mayor de Blasio's affordable housing programs, and of those created by his predecessors, are property tax exemptions. Because property taxes for rental housing in New York City are high, especially by comparison with most owner-occupied housing (New York University Furman Center, 2016), it is very difficult for rents to be affordable to low-income households if they must cover property taxes in full. In recognition of this problem, the city has frequently provided long-term property tax exemptions for new and preserved housing for low-, moderate-, and sometimes middle-income households. In addition, the city has also provided tax exemptions

as an incentive to build market-rate housing. In the early 1970s, when the city was experiencing population loss[7] and disinvestment, the city, with state approval, created the "421-a tax exemption" for property as an incentive to build rental and condominium buildings anywhere in New York City. Over the years, the city revised the program so that properties built in the most affluent sections of the city (for example, Manhattan south of 96th street) would only be eligible for property tax exemptions if developers designated 20 percent of the units for low-, moderate-, and, in some cases, middle-income households. The program expired in 2016 and was replaced in 2017 with a similar program, Affordable Housing New York, which further limited the availability of tax exemptions for properties that do not offer affordable units (Nixon Peabody LLP, 2017).

More than 160,000 rental and condominium units received the 421-a property tax exemption in 2014, costing the city more than $1.07 billion in forgone property tax revenue (Bach and Waters, 2015). The program has been controversial, especially since many buildings that received the subsidy included no affordable housing at all, and some of the buildings that received the tax exemptions are composed of multi-million-dollar condominiums. The program took on more notoriety in 2015 when it became known that developers had structured properties that received the tax exemption so that the residents of the affordable units were required to enter through a separate door—soon coined as a "poor door"—and were prohibited from using the gym and other amenities available to the market-rate residents. The program has also been criticized because units designated as "affordable" can be keyed to incomes as high as 130 percent of AMI, or $122,000 for a family of three in 2018.

The city subsequently prohibited the use of "poor doors" in buildings that receive tax exemptions. Affordable Housing New York, the tax exemption program that replaced 421-a focuses mostly on rental buildings, nearly all of which must include some amount of affordable housing—although the targeted incomes range from 40 to 130 percent of AMI. Luxury condominiums are no longer eligible for tax exemptions. As with 421-a, the new program can be used alone or in combination with other city subsidies.

Preservation Programs

As noted earlier, preservation refers both to the renewal or replacement of existing housing subsidies and to loans, grants, and tax abatements to help owners of low-income housing rehabilitate or otherwise upgrade their property. New York currently operates 30 preservation programs (Murphy, 2017), some of which were established decades ago. Of the 300,000 units in the expanded de Blasio plan, 60 percent involve preservation. Preservation also accounted for 60 percent of the housing funded under Mayor Bloomberg's administration, as opposed to the 44 percent envisioned in the mayor's original New Housing Marketplace Plan (NYC HPD, 2013). The housing market crash and subsequent recession caused the city to pivot from an emphasis on new construction to preservation.

In addition to the $220 million subsidy (mostly in the form of property tax exemptions) to preserve the affordability of 5,000 units in Stuyvesant Town-Peter Cooper Village, the city has also provided funds and technical assistance to help preserve housing financed with federal LIHTC so

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[7] From 1970 to 1980, New York's population fell by more than 800,000, from 7.9 to 7.1 million (NYC OpenData, 2019).

that the housing can remain affordable and physically sound when it approaches the end of its initial compliance period (NYC HPD, 2016). The city also offers low-interest loans and/or property tax exemptions for private landlords to rehabilitate housing for low-income tenants. For example, the Participation Loan Program began in 1977 and has supported moderate and substantial rehabilitation of thousands of housing units. Another preservation program, Neighborhood Pillars, was initiated in 2017 to provide funds and property-tax exemptions for nonprofit organizations to acquire and rehabilitate privately owned residential buildings that house low- and moderate-income renters.

Related Housing Initiatives under Mayor de Blasio

Closely aligned with Housing New York are several related initiatives that complement the plan's goals. Of particular note is the city's decision to provide free legal assistance in housing court for low-income renters, a city-state task force to combat tenant harassment, and the expansion of two "rent-freeze" programs.

In August 2017, the city launched the Universal Access to Counsel (UAC) program to provide free legal counsel for eligible renters. It is the first program of its kind in the United States and has attracted the interest of many other cities (Been et al., 2018). As Desmond (2016) and other researchers have documented, tenants seldom can afford to hire an attorney to represent them when faced with eviction. Tenants are substantially more likely to avoid eviction when legal counsel has been provided, and, if they are evicted, are given more time to move. Legal representation is especially important when the grounds for eviction are spurious or if they constitute outright harassment. UAC began operation in 15 ZIP Codes and is being phased in over 5 years (Been et al., 2018). When fully implemented, the program will serve 400,000 tenants at an estimated annual cost of $155 million. In its first year of operation, 56 percent of tenants in the designated ZIP Codes had legal counsel in housing court compared with 1 percent of tenants citywide in 2013. During this period, evictions in New York declined by 27 percent (Fertig, 2018; New York City Human Resource Administration, Office of Civil Justice, 2018).

In addition to providing free legal counsel in housing court, the city, in collaboration with New York State, established a Tenant Harassment Prevention Task Force (THPT). Involving the New York State Attorney General; the New York State Department of Homes and Community Renewal; and the city's departments of Housing Preservation and Development, Buildings, Health and Mental Hygiene, and Law, THPT aims "to coordinate City and State agencies for joint inspections, enforcement actions, and litigation strategies to intervene in buildings where harassment may be occurring in order to prevent tenants from being forced out" (NYC HPD, 2019a).

In 2014, New York expanded two "rent freeze" programs for seniors and people with disabilities by increasing the maximum eligible income level from $29,000 to $50,000. These programs protect eligible low-income residents of rent-regulated housing who spend more than one-third of their income on rent from additional rent increases. Instead, the city reduces the landlord's property taxes by the amount of rent increase that would otherwise be allowed under the city's rent stabilization and rent control programs (City of New York, 2019).

Finally, it is important to note that New York spends billions of dollars annually on other housing-related initiatives that are separate from Housing New York. These initiatives include about $200 million on rental assistance for homeless individuals and families and funding to help pay for renovations and other capital improvements for New York's public housing. In addition, the city's Housing Development Corporation (HDC) issued more than $8 billion in bonds from 2014 through 2018 for construction and permanent financing of affordable housing. HDC has also invested millions of dollars from its corporate reserves to build and preserve affordable housing.

Housing New York's Performance through the First Quarter of 2019

From the plan's onset in 2014 through March 31, 2019, the city had started work on more than 123,000 units, surpassing the halfway point of the original plan (exhibit 7). Of the 123,456 starts, 38,793 (32 percent) involved new construction and 83,126 (68 percent) involved preservation. The city posted 34,160 starts in 2018, an increase of nearly 10,000 from the previous year and the most since 1989 (NYC HPD, 2019a).

Exhibit 7

Housing Starts by Construction Type and Income Group, 2014-2019 (Q1)

	2014	2015	2016	2017	2018	2019 (Q1)	Total	Percent of Total
Construction Type								
New Construction (NC)	2,777	8,732	6,330	7,765	9,268	5,077	39,949	32.4
Preservation (P)	6,569	11,839	17,313	16,588	22,976	8,212	83,497	67.6
Total	9,346	20,571	23,643	24,353	32,244	13,289	123,446	100.0
Income Group								
Extremely Low (<30% AMI)	922	2,869	3,835	4,014	6,126	2,713	20,479	16.6
Very Low (31-50% AMI)	1,394	2,588	3,054	6,453	12,240	4,442	30,171	24.4
Low (51-80% AMI)	5,727	12,234	9,508	9,964	11,481	4,099	53,013	42.9
Moderate (81 - 120% AMI)	352	1,394	1,890	1,533	1,552	512	7,233	5.9
Middle (121-165% AMI)	890	1,368	5,269	2,270	691	1,465	11,953	9.7
Other	61	118	87	119	154	58	597	0.5
Total	9,346	20,571	23,643	24,353	32,244	13,289	123,446	100.0

AMI - Area Median Family Income
Source: NYC Dept. of Housing Preservation and Development

The de Blasio administration has invested $5.05 billion through 2018 on affordable housing construction and preservation. This amount does not include $8.1 billion in tax-exempt and taxable bonds issued by the New York City HDC, nor does it include HDC's use of corporate reserves to support the city's housing programs. Total development costs exceed $25 billion. Much of the funding not covered by the city's capital budget and HDC derives from equity payments from LIHTC investors.

Of the new construction and preservation units started through the end of March 2019, 41 percent were designated for households earning up to 50 percent of AMI, including 17 percent for extremely low-income households with incomes up to 30 percent of AMI and 24 percent for very low-income households earning 30 to 50 percent of AMI. Of the 32,214 starts in 2018, 57 percent served these two income groups (NYC HPD, 2019a). The original plan, in contrast, designated 26 percent of all units for these two groups.

Of all the city-funded starts, 17,938 units (15 percent of the total) were constructed or preserved for formerly homeless households (9 percent) or for low-income seniors (6 percent; NYC HPD, 2019c).

Exhibit 8 organizes the total housing starts (through March 31, 2019) by basic category. The largest single category, accounting for 27 percent of total starts, involved the extension of affordability for existing housing, including properties facing the expiration of LIHTCs, Mitchell-Lama properties eligible for conversion to market-rate occupancy, as well as the previously mentioned deal to keep 5,000 units in Stuyvesant Town-Peter Cooper Village affordable to low-income households. The second largest category, accounting for more than 21 percent of all starts, involves the moderate rehabilitation of existing housing. The next three largest categories refer to new construction and together account for 34 percent of total starts. Of these, the two largest elements involve developments subsidized by the city, New Construction Finance Multifamily and Housing Development Corporation Projects. They account for more than 32,000 units, 26 percent of total starts.

Exhibit 8

Total Housing Starts by Category

Program Types	Units	Percent of Total
Extended Affordability Only (Includes HDC and State Extended Affordability Deals)	33,409	27.1
Moderate Rehab	26,402	21.4
New Construction Finance Multifamily	20,903	16.9
Housing Development Corporation Projects	11,177	9.1
Housing Incentives Programs (Inclusionary Housing, 421-a Standalones, etc.; Does Not Include IH or 421-a Units that are Part of Projects with HPD Financing)	9,714	7.9
Special Needs Housing	7,691	6.2
State Projects	5,337	4.3
Major Rehab	7,419	6.0
Homeowner Assistance Programs	1,030	0.8
New Construction Finance Small Homes	364	0.3
Grand Total	123,446	100.0

IH = Inclusionary Housing
Source: New York City Department of Housing Preservation and Development

The third new-construction category encompasses all "housing incentives programs" and constitutes less than 10,000 starts, 8 percent of the total. Housing incentives refer to affordable housing constructed through inclusionary housing and tax-exemption programs that do not receive other subsidies or financing through the city. Mandatory inclusionary zoning accounts for 1,431 of the starts in this group. Even though it comprises a relatively small share of total housing starts, inclusionary zoning has received far more attention and criticism than the larger elements of Mayor de Blasio's housing plan.

Critiques and Challenges

Mayor de Blasio's housing plan, its quantitative achievements notwithstanding, has been roundly criticized. Its critics include the City Comptroller (New York City Comptroller, 2018) and other government officials, academics (Angotti and Morse, 2017; Busa, 2017; Stein, 2018), journalists (Feuer, 2017; Greenberg, 2017; Murphy, 2017), and community-based organizations and activists (Dulchin, 2019; Real Affordability for All, 2017). They argue that while the plan claims to promote affordable housing, most of the housing produced under the plan is not affordable enough. There are two dimensions to this argument. First, many critics claim that most of the housing that is preserved and constructed under the plan is not affordable to residents with the lowest incomes who confront the most severe housing affordability problems. Secondly, critics argue that the rezonings that are integral to the city's mandatory inclusionary housing program have the perverse effect of exacerbating housing affordability problems, even if the new housing built in rezoned neighborhoods includes affordable units.

Although 17 percent of the 123,446 housing starts through the end of March 2019 (20,479 in total) were slated for Extremely Low-Income (ELI) households earning up to 30 percent of AMI, and an additional 24 percent went to Very Low-Income (VLI) households earning between 30 and 50 percent of AMI, critics argue that these income groups account for much larger shares of households with housing cost burdens. As of 2017, these two income groups accounted for 65 percent of all households spending more than 30 percent of their income on rent. Focusing just on renters with the most severe housing needs, spending 50 percent or more of their income on housing, ELI households comprise 62 percent of the total and VLI households comprise 25 percent. In contrast, households earning more than 50 percent of AMI account for 35 percent of all renters spending more than 30 percent of their income on housing, but they constitute 59 percent of the plan's beneficiaries to date.

Some critics state that the affordability gap between the rents of housing produced and preserved through the city's plan and the incomes of renters with the greatest needs is even larger than indicated by citywide statistics. The demarcations for the various income categories are based on the median income for the eight-county region of New York City and Putnam, Rockland, and Westchester counties. The average incomes in many of the neighborhoods that are seeing substantial amounts of construction under the plan, however, are much lower than the regional median. For example, the median income in East New York in 2017 was $38,620 (NYU Furman Center, 2018), compared with $66,200 for the eight-county region. What is classified as affordable for an ELI household as defined by the regional median income, is out of reach for many residents of low-income communities.

In light of these discrepancies, critics as diverse as the City Comptroller Scott Stringer and the advocacy group Real Affordability for All have argued that the plan should allocate a higher percentage of its housing for households with lower incomes. Comptroller Stringer, for example, proposed that the housing construction yet to be started under the plan (85,706 units as of June 30, 2018) mostly benefit ELI households. Whereas the plan calls for 8 percent of the remaining units to be built for ELI households, the Comptroller would allocate 77 percent to this group. The Comptroller would also increase the share going to VLI households from 16 to 21 percent. To cover the additional costs for providing more housing to lower income renters, the Comptroller would increase the city's annual capital commitments for new construction programs by about 60 percent, an annual increase of $370 million in capital funding (New York City Comptroller, 2018).

The second criticism of the plan contends that it not only fails to provide sufficient amounts of housing affordable to low-income residents, it also exacerbates the city's affordability crisis. More specifically, these critics argue that by rezoning low-income neighborhoods to promote the development of large mixed-income buildings, the plan puts increased market pressure on vulnerable communities. The influx of higher income households, combined with the tangible changes in neighborhood fabric as low-rise and vacant properties—residential and otherwise— are replaced by much larger, glitzier residential and mixed-use buildings, will tempt owners of existing residential buildings to raise their rents and, if that is not possible under the city's rent regulations, attempt to push current tenants out of the unit. While the buildings put in place under inclusionary zoning will include a number of units of affordable housing (notwithstanding

arguments about their actual affordability), the rezoning process may ultimately result in a net loss of affordable housing. Here is how journalist Abigail Savitch-Lew summarizes the argument:

> Say you live in an upzoned neighborhood . . . the 20 or 30 percent of new development that's rent-restricted might not actually be affordable to you. The other 70 or 80 percent is so expensive that it's unaffordable to everyone in the neighborhood. Wealthier newcomers move in, with the disposable income to support new expensive amenities. As the neighborhood becomes increasingly popular, landlords begin harassing rent-stabilized tenants and real-estate brokers hound longtime homeowners with all-cash offers. Soon your landlord is giving you the ultimatum: agree to a whopping rent increase, or move out (Savitch-Lew, 2017).

Mayor de Blasio and other city officials have responded to this argument in two ways. First, they point out that the city has strengthened its protections for tenants who might face illegal rent increases, harassment, and eviction. As noted previously, the city is rolling out free legal counsel in housing court for low-income renters. Secondly, the city and state created a task force to combat landlord harassment. Through these and other means, the city believes that it can shield existing residents in rezoned neighborhoods from unlawful rent hikes and various forms of harassment.

The city's second response to the claim that rezoning and inclusionary zoning aggravates rather than improves housing affordability is to point out that gentrification is occurring throughout the city, whether or not the neighborhood has been rezoned. Although there are few if any studies that show the effect of rezonings in New York City during the de Blasio era on rents and home prices,[8] it is true that rents have increased sharply in numerous neighborhoods throughout the city. Adjusting for inflation, the median rent in the city as a whole increased by 20 percent from 2006 through 2016. In Manhattan, rents rose by 29 percent; Brooklyn, 25 percent. Of the city's 55 sub-borough areas (roughly similar to its community districts), 26 saw rents rise by 20 percent or more, including 13 where they increased by at least 30 percent (exhibit 8). There seems to be ample justification for the claim that preserving the existing zoning of a neighborhood will not keep gentrification at bay.

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[8] Yonah Freemark's research (2019) on zoning changes in Chicago found that increases in density, controlling for other factors, was associated with increases in housing costs. These rezonings, however, unlike the case in New York, did not require developers to designate a portion of the new housing for lower income households. It is also uncertain if the experience in Chicago is directly applicable to New York.

Exhibit 9

Change in Median Rent 2006-2016 (2017$): Sub-Borough Areas
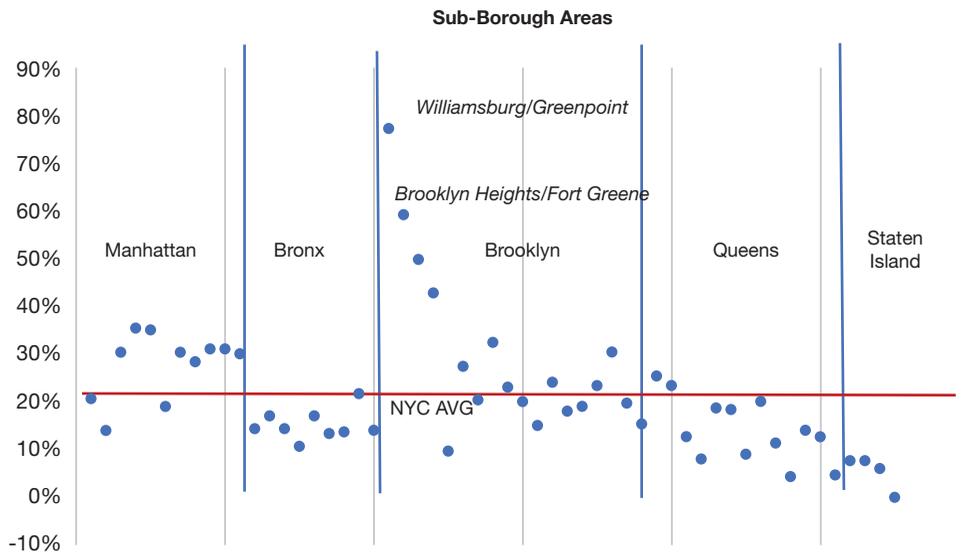
While critics of the de Blasio plan have focused mostly on neighborhood rezoning and inclusionary housing, this component accounts for a relatively small share of the affordable housing produced to date. Inclusionary housing and other incentive programs account for 8 percent of all new construction and preservation housing starts through March 2019. Mandatory Inclusionary Zoning, the subject of so much controversy and debate, accounts for only 1,431 starts as of March 31, 2019, less than 4 percent of all city-funded new construction starts. Moreover, most if not all of the new housing subject to inclusionary zoning in East New York—the first neighborhood to be rezoned—has been targeted to low- and moderate-income households. Most of the new construction started under the plan has received direct subsidies from the city and other sources.

The fact that the residents of most of the neighborhoods slated for rezoning tend to have low incomes and to be predominantly non-White has no doubt contributed to the plan's hostile reception. Some observers have suggested that the plan might have received more support if the city had also included more affluent and more White neighborhoods among those to be rezoned (Savitch-Lew, 2017).

There is no disputing that the de Blasio plan does not come close to meeting the need for affordable housing in New York City. Compared with the previous mayoral housing plans, de Blasio's initiative targets a larger number, and larger share, of its housing for extremely low-income households. As we have already discussed, however, the plan has been widely criticized for not making more housing affordable for the lowest income residents, including the homeless. Critics argue that the income eligibility standards for the affordable units are set too high, and that a larger share of the units being produced should go to households with very low incomes. In total, the

plan's goal is to construct 12,600 units affordable to ELI households and 17,400 units affordable to VLI households by 2028. This goal amounts to less than 7 percent of all ELI and VLI renters who paid 50 percent or more of their income on housing in 2017, and that does not include the more than 63,000 people who were in the city's homeless shelters. Comptroller Stringer's previously mentioned recommendation to build 66,000 units for ELI renters and 18,000 for VLI renters still pales by comparison with the 441,000 ELI and VLI renters with severe cost burdens.

The gap between the amount of housing targeted by the plan to the lowest income New Yorkers and the number of such households in need of affordable housing underscores a fundamental limitation in the ability of cities and states to adequately address their housing needs. As with nearly all other state and local housing programs, the de Blasio plan aims to expand and preserve the existing stock of affordable housing. They enable existing housing to remain affordable for years into the future and create new units of affordable housing. In other words, each year, the city's expenditures increase either the number of affordable units that are preserved or that are created. For the city to primarily assist households with the lowest incomes, it would need to provide rent subsidies to cover the difference between what these households can afford to pay and the total cost of operating the housing and covering the debt-service expenses connected to the housing's acquisition and/or development or rehabilitation. As rental subsidies are expensive, the city would need to spend hundreds of millions or billions of dollars to support the same number of renters every year. Rather than spend money to expand the stock of affordable housing, the city would need to spend even more year after year to keep the same number of units affordable.

On average, depending on unit size and other factors, it costs between $500 and $700 every month to cover the basic operations of a housing unit eligible for city subsidy—that is, upkeep (labor and supplies), insurance, utilities, and taxes (if any). It can cost several hundred dollars more to cover the debt-service expenses on the unit's pro rata share of the building's mortgage (that is, on the debt associated with the cost of acquiring, renovating, or constructing the property). For example, as shown in exhibit 2, the monthly costs of operating and paying the debt on a newly built efficiency apartment with shared bathroom and shared kitchen amounts to $840 a month, and that assumes that the development cost of the property did not include any expenses for land acquisition. Even under this bare-bones scenario, the minimum monthly rent is only affordable to households earning at least $2,800 a month ($33,600 annually), equivalent to 51 percent of New York's AMI for single-person households. All other households would require rent subsidies to afford this apartment. Excluding the portion of the rent that would cover debt service, even the unit's basic operating costs of $332 per month would be unaffordable to households earning less than $13,267 a year, or 25 percent of all single-person households. The operating costs of a 400-square-foot studio apartment with private kitchen and bath amount to $418 per month, affordable only to people earning at least $16,700 (Stern and Yager, 2018).

Inclusionary housing and other forms of mixed-income housing can enable a small percentage of ELI families and individuals to be included, with the rents paid by higher income residents "cross-subsidizing" the low-income tenants. However, only a small number of ELI and VLI tenants can be subsidized in this way; otherwise, the models are not financially viable. As discussed earlier, the city's mixed-income housing programs designate up to 20 percent of all units to households

earning up to 30 percent of AMI, and the bottom income group for some programs is set at 40 percent of AMI or higher (exhibit 6).

How much would it cost to provide rent subsidies so that all low-income New Yorkers do not confront housing cost burdens? In 2017, there were 286,000 unsubsidized ELI renters and 250,000 VLI renters. Of these renters, 87 percent spent more than 30 percent of their income on rent, and 62 percent spent more than 50 percent of their income on rent.

If New York were to subsidize all VLI households who are currently rent burdened so that they paid 30 percent of their income on rent, it would cost $5.3 billion annually. The cost would rise to $6.6 billion if the subsidy applied to all households earning up to 80 percent of AMI that spend more than 30 percent of their income on rent. Conversely, if the subsidy were limited to ELI households spending 50 percent or more of their income on housing, the annual cost would be $3.2 billion (exhibit 10).[9]

Exhibit 10

Total Annual Subsidy Needed to Ensure Affordability for Rent-Burdened Households

Income Group and Current Rent Burden	Total Subsidy ($ Billions)
ELI, VLI, LI (<80% AMI)	
Cost Burden >30%	6.6
Cost Burden >50%	5.3
ELI, VLI (<50% AMI)	
Cost Burden >30%	5.3
Cost Burden >50%	4.5
ELI (<30% AMI)	
Cost Burden >30%	3.6
Cost Burden >50%	3.2

ELI = Extremely Low Income. LI = Low Income. VLI = Very Low Income.
Source: Mayor's Management Report and Comptroller's Budget Report

To put these amounts in perspective, New York City spent $5.4 billion in FY2019 on police, $2.1 billion on fire protection, $1.7 billion on sanitation, and $461 million on parks (Citizens Budget Commission, 2019). In other words, the costs of providing rental subsidies to eliminate housing cost burdens for most low-income renters would equal or exceed the annual budget for numerous city services. Moreover, the city's public housing currently needs $31.8 billion in renovations and other essential capital improvements (New York City Housing Authority, 2018) and the subway system requires an estimated $8 billion (Metropolitan Transit Authority, 2018).

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[9] These estimates are based on the amount of money that would be required to augment the gross rent payments of rent-burdened households so that they pay 30 percent of their income on rent. The estimates do not consider any potential behavioral responses that such rent subsidies might elicit—such as renters reducing their incomes to qualify for rental assistance or moving into a more expensive home or landlords increasing their rents. Nevertheless, the estimates provide an order-of-magnitude sense of the overall cost of providing rental assistance to all eligible renters.

It is, of course, a political decision whether to use city funds to subsidize rents. Given New York City's operating budget of $90.2 billion, the $3–7 billion cost of providing rent subsidies for tens of thousands of low-income New Yorkers would be substantial but not necessarily prohibitive. In fact, the city already provides about $200 million annually in rent subsidies to help homeless families, and families at risk of becoming homeless, secure permanent housing. Given the city's many other critical needs, however, it is unlikely that rent subsidies of this magnitude would be politically palatable.

Rental cost burdens are a national problem, afflicting low-income renters throughout the country, no matter how expensive local housing markets may be (Joint Center for Housing Studies, 2018). In numerous European countries, most low-income households are automatically entitled to rent subsidies from the national government (Scanlon, Whitehead, and Arrigoitia, 2014). In the United States, federal rent subsidies are not an entitlement, and only about one in four eligible low-income households receive them, whether in the form of Housing Choice Vouchers, public housing, or project-based Section 8. New York City's housing affordability challenges, and those of all other cities and states, would be far less severe if the federal government provided rental assistance to all eligible low-income families (Desmond, 2016; Mallach, 2018). Alan Mallach (2018) estimated that the annual cost of making rental assistance an entitlement would total about $90 to $100 billion, which is in the same ballpark as the estimated $85 billion cost in 2018 of tax expenditures associated with homeownership—and this estimate is after the federal "Tax Cuts and Jobs Act" of 2017 decreased the value of these tax expenditures by 38 percent (Joint Committee on Taxation, 2018).[10] If federal housing subsidies, whether in the form of vouchers, income-tax credits, or other means, were more readily available, there would be less pressure to build housing affordable to ELI households. Instead, New York City could invest its resources in building and preserving housing that would be eligible for federal rent subsidies, as well as for households with somewhat higher incomes but who still confront severe shortages of affordable housing.

Conclusions

More than three decades have passed since Mayor Koch launched New York City's Capital Budget program in 1987. Since then, the city has invested more than $17.5 billion (adjusted for inflation) of its own capital resources on the construction and preservation of more than 490,000 housing units. No other city has drawn on its own tax base to anywhere near this extent to help finance affordable housing, and no other city has sustained an analogous level of commitment for so many years under both Democrat and Republican mayoral administrations. New York City's experience in subsidizing affordable housing shows what is possible, but it also highlights fundamental limitations in the ability of cities and other subnational jurisdictions to address their affordable housing needs.

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[10] In 2018, estimated tax expenditures for the mortgage interest deduction, property taxes, and exclusion of capital gains on sale of primary residences totaled $85.8 billion, down from $130.1 billion in 2017. The estimation of property tax deductions in 2018 was based on the property tax share of total combined tax expenditures in 2017 for property taxes, state and local income taxes, and sales taxes. The Joint Committee on Taxation stopped publishing estimates of tax expenditures for property taxes after passage of the Tax Cuts and Jobs Act of 2017, which capped total deductions in these areas at $10,000. The Joint Committee does provide estimated tax expenditures in 2018 for these three deductions combined (Joint Committee on Taxation, 2018).

Many of the city's housing investments from 1987 until the early 2000s programs involved *in rem* property—occupied and vacant buildings as well as vacant land that the city had acquired through tax foreclosure. Tapping the capital budget, the city has rehabilitated thousands of *in rem* buildings and constructed thousands of new housing units on city-owned land. In so doing, the city's housing programs were essential in restoring the urban fabric of numerous neighborhoods in the Bronx, upper Manhattan, Central Brooklyn, and elsewhere that had been devastated by disinvestment, abandonment, and arson. Today, there is barely a trace of the physical decay that was so prevalent in the 1970s, 80s, and 90s. Poverty remains high in many of these neighborhoods, especially in the Bronx, but physical conditions are vastly improved (Schwartz, 1999; Lamberg, 2018).

Over the past 15 or so years, with *in rem* property largely depleted, the city's housing investments have become less concentrated in particular neighborhoods. As before, the city continued to provide low-cost loans and tax exemptions to help preserve privately owned housing. The city also developed programs to renew or replace housing subsidies facing expiration. The city continued to invest in the development of housing for very-low-income people with special needs—usually providing HCVs and other rent subsidies to ensure the housing was deeply affordable. Most of the new housing produced with city subsidies, however, targeted people with higher incomes. These include buildings that receive federal Low-Income Housing Tax Credits, which generally accommodate households earning between 40 and 60 percent of Area Median Income, as well as various forms of mixed-income housing. While some new housing subsidized with city funds is situated on city-owned sites, it increasingly involves the acquisition of expensive privately owned land.

The administration of Mayor de Blasio has sharply increased the scale of New York's investments in affordable housing. During the Mayor's first 4 years in office, annual city-supported housing starts for new construction and preservation averaged 25,000 units—far more than what previous mayors achieved. Compared with the administration of the previous mayor, Michael Bloomberg, the de Blasio Administration has produced and preserved 72 percent more affordable housing units per year and invested nearly twice as much from the capital budget for affordable housing. In addition, the de Blasio Administration's housing programs have generated and preserved far more housing for the lowest income households. While the Bloomberg Administration grouped all housing targeted for households earning less than 80 of AMI into a single category and did not report on the housing produced or preserved for households earning less than 30 or 50 percent of AMI, the de Blasio Administration designed several of its mixed-income programs so that at least some of the units would be affordable to, and reserved for, households in these income groups. In addition, the de Blasio Administration launched the nation's first municipal initiative to provide free legal counsel to low-income renters at risk of eviction.

Despite the larger scale and deeper subsidies of the de Blasio Administration's housing programs, New York's affordable housing crisis remains as acute as ever. More than 29 percent of all renters spend at least one-half of their income on housing, including 78 percent of all renters earning less than 30 percent of AMI. More than 60,000 people sleep in the city's homeless shelters. Some critics argue that the persistence of the city's affordability problems highlights both the city's failure

to provide housing that is sufficiently affordable to low-income New Yorkers and the perverse tendency of inclusionary zoning and other mixed-income programs to exacerbate market pressures in low-income neighborhoods.

I argue that there is insufficient evidence to show that the inclusionary zoning program—which accounts for less than 1,500 of the nearly 40,000 new housing units started through March 2019—has worsened the affordability situation. Rents are rising and displacement pressures mounting throughout New York City, including in many neighborhoods that have not seen changes in zoning. I also argue that although the de Blasio Administration has done more than its predecessors and more than other U.S. cities to make units affordable to extremely low-income renters, the tens of thousands of deeply affordable units produced so far pale by comparison with the overall need. To fully address the city's affordable housing needs would cost $3–7 billion annually—a price that is politically if not fiscally prohibitive. While New York City demonstrates that it is possible for cities and other subnational units of government to produce and preserve some housing that is affordable to the lowest income residents, the New York City story also illuminates the limits of local initiative. Only the federal government commands the financial resources necessary to solve the affordable housing crisis—in New York City and in the rest of the nation.

Acknowledgments

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Extremely Low-Income: Has the New Measure Made a Difference?

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Abstract

Extremely Low-Income (ELI) Limits have been used in the Housing Choice Voucher (HCV), Public Housing, and Multifamily programs to prioritize housing assistance for the poorest households since 1998. The original measure of ELI was calculated as 30 percent of area median income. In 2014, the definition of ELI was modified to consider the official U.S. poverty measure. This policy brief discusses the goal of this definition change and how the new measure differs from the old measure. The extent to which households in these programs benefited as a result is evaluated using U.S. Department of Housing and Urban Development (HUD) administrative data. Findings shared in the brief reveal that 5 percent of new households benefit from this definition change. These households are more likely to consist of more than one person and reside in non-metropolitan portions of the country. Findings also show that while ELI targets are being met across HUD's three largest programs, many public housing agencies (PHAs) in the HCV program are unable to meet their targets.

Introduction

The Quality Housing and Work Responsibility Act of 1998 (QHWRA) was a piece of major housing reform legislation passed in 1998 that sought, among other things, to reduce the concentration of poverty in public housing while protecting access to housing assistance among the poorest households.[1] One way which QHWRA addressed this was by modifying eligibility and targeting requirements for housing programs. Prior to QHWRA, eligibility for the public housing and Section 8 programs of HUD were subject to "federal preferences" that prioritized admission to the program for certain categories of low-income persons and households. Federal preferences were sometimes blamed for increased concentration of poverty, particularly in public housing. In addition, the statutory system of federal preferences became increasingly complex over time, as

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[1] See H.R.4194 - Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1999. 105th Congress (1997–1998) https://www.congress.gov/105/plaws/publ276/PLAW-105publ276.pdf.

Congress added new categories of eligibility and added new rules that governed waiting lists used by public housing agencies (PHAs).

QHWRA replaced the previous system of federal preferences with a new system under which PHAs could set their own local admissions preferences, based on local needs and adopted though the local PHA plan requirement (Hunt, 1998). At the same time, a portion of subsidized units that became available through annual turnover would be reserved for the lowest income families—defined as "extremely low-income" (ELI) or with incomes less than 30 percent of HUD's local area median income. For the public housing and project-based Section 8 programs, not less than 40 percent of the units that became available per fiscal year (FY) should be made available for occupancy by ELI households, under QHWRA. For Section 8 tenant-based vouchers—more commonly referred to as Housing Choice Vouchers (HCV)—not less than 75 percent of new admissions should be ELI households (Sard, 2000).

HUD's area median income limits are generally recognized as having several positive advantages for establishing basic eligibility for federal housing assistance. Chief among these advantages is that the income limits are based on actual local economic conditions. Also, area median income limits have been adopted for a wide variety of programs administered by HUD as well as for Low-Income Housing Tax Credits. Policy advocates, however, did identify one way that HUD's income limits were under-inclusive of actual need for affordable housing (Olsen, 2014; Leopold, 2015).[2] In some very low-income regions of the country, the ELI threshold of 30 percent of local median income could sometimes be lower than the federal poverty rate. These areas included the Mississippi Delta, the Southwest border, and other rural areas. In the years following the implementation of QHWRA, policy advocates urged an amendment to the income targeting requirements for housing assistance to take this phenomenon into account (NLIHC, 2005).[3]

In 2014, Congress amended the definition of ELI households as households with incomes at or below the greater of either: (1) 30 percent of HUD's median family income (L30) for the local area; or (2) the federal poverty threshold.[4] The new definition was anticipated to provide households living below the federal poverty line better access to federal rental programs in very low-income regions, where HUD's previous income limits might have unintentionally excluded households.

This article examines the effects of the 2014 statutory change to HUD's income limits for ELI households, and how those changes may have affected access to HUD rental programs.

Comparing the L30 Limit to the Poverty Guidelines

HUD sets ELI limits that establish household income targeting requirements for PHAs and landlords using assisted housing programs including the Public Housing, Section 8 project-based, Section 8 HCV, Section 202 housing for the elderly, and Section 811 housing for persons with disabilities

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[2] See Poverty and the Safety Net: Hearing before the Committee on the Budget: House of Representatives, 113th Cong. (2014) (Testimony of Robert Greenstein, President of Center on Budget and Policy Priorities). pp. 22.

[3] For a related discussion on the impact of QHWRA's income targeting provisions, see Dawkins (2007).

[4] See Consolidated Appropriations Act for FY 2014 (Public Law 113-176). Division L—Transportation, HUD and Related Agencies, Section 238, amending Section 3(b) of the United States Housing Act of 1937. https://www.congress.gov/113/plaws/publ76/PLAW-113publ76.pdf.

programs. An ELI limit is calculated for each Fair Market Rent (FMR) area and helps ensure that assistance is set aside for households with the lowest incomes. Understanding the differences between how the L30 limit and poverty guidelines are derived offers important context for analyzing the extent to which the ELI limits have changed across FMR areas since 2014.

The base L30 limit for an FMR area is calculated as 30/50ths (60 percent) of its Section 8 Very Low-Income Limit (VLIL) for four-person households; the VLIL is based on 50 percent of the median household income estimated for an area (HUD, 2017). L30 limits for other household sizes are subsequently calculated by applying a percentage adjustment to the preliminary four-person ELI limit and then rounding up to the nearest $50.

In contrast, poverty guidelines are developed by the U.S. Department of Health and Human Services (HHS) from the latest published final weighted average poverty thresholds from the U.S. Census Bureau. Generally, this measure is calculated as three times the cost of a minimum food diet in 1963 in today's prices as inflated by the Consumer Price Index for All Urban Consumers (CPI-U; National Academy of Sciences, n.d.). For two-person households, the threshold is based on 3.7 times the cost of food. The poverty threshold for one-person households is set at 80 percent of the corresponding thresholds for two-person households. One-person households are the only households not directly calculated using a food cost multiplier (Fisher, 1997).

Thus, the principal difference between the two calculations is that the L30 limit is based on the area median household income while the poverty guidelines are generally based on the cost of a minimum food diet. Because of this, the L30 limit varies across approximately 2,600 FMR areas for which HUD estimates area median household income, while the poverty guidelines are the same for all FMRs areas within the contiguous United States.[5]

Exhibit 1 shows how the adjustments for various household sizes relate to a four-person base for both measures. It is apparent that the adjustment increases at a higher rate for the poverty guidelines as household size increases. It is important to note that income limits for additional household sizes for the L30 are derived from the four-person L30 income limit. The household size adjustments for the poverty guidelines shown below are simplified for easier comparison to the L30.

Exhibit 1

Household Size Limits Compared to a Four-Person Base

Measure	One-Person (%)	Two-Person (%)	Three-Person (%)	Four-Person (%)	Five-Person (%)	Six-Person (%)	Seven-Person (%)	Eight-Person (%)
L30 (Preliminary ELI)	70	80	90	Base	108	116	124	132
Poverty Guidelines	50	62	78	100	118	134	152	170

ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

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[5] Alaska and Hawaii have their own state-wide poverty guidelines. Poverty guidelines are not defined for Puerto Rico, and other island territories and are set at the discretion of the federal office which administers the federal program in question for that jurisdiction.

Determining the Basis of the ELI

Exhibit 2 illustrates how consideration of the poverty guidelines in the calculation of the ELI limit affected various FMR areas in FY2017. Cells with no shading indicate where the L30 limits are the basis for the ELI limit. This means that the poverty guidelines did not exceed the L30 limit for the household size within its FMR area.

On the other hand, household sizes in light gray shading did have poverty guidelines that exceeded the L30 limit for their respective FMR areas. In these cases, the poverty guidelines are used as the basis of the ELI limit. Exhibit 2 illustrates how household sizes using the poverty guidelines are using the same national figure as other FMR areas using the poverty guidelines for the same household size.

Lastly, exhibit 2 illustrates how the use of the poverty guidelines may require a cap at the VLIL level. Because the L30 is calculated as 30/50ths (60 percent) of its Section 8 VLIL, it does not run the risk of exceeding its VLIL level. However, because of differences in how the L30 limits and poverty guidelines are calculated, which were discussed in the prior section, the poverty guidelines may exceed the VLIL in many cases, especially for larger household sizes.

Cells with dark gray shading indicate where the ELI equals the VLIL. The Abilene, TX metropolitan statistical area (MSA) is an example of an FMR area where the poverty guidelines exceed the VLIL caps for larger household sizes. In this example, the ELI is capped at the VLIL for household sizes of six or more people. The poverty guideline for a six-person household was $34,960 dollars in 2017. However, the six-person VLIL for the Abilene, Texas MSA was $32,550.

If the poverty guidelines apply at a particular household size, poverty guidelines will be the ELI limit for larger household sizes, unless the VLIL ceiling is hit.

Exhibit 2

Extremely Low-Income Basis, Fiscal Year 2017

FMR Area	One-Person	Two-Person	Three-Person	Four-Person	Five-Person	Six-Person	Seven-Person	Eight-Person
Abilene, TX MSA	12,060	16,240	20,420	24,600	28,780	32,550	34,800	37,050
Akron, OH MSA	13,800	16,240	20,420	24,600	28,780	32,960	37,140	41,320
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	17,500	20,000	22,500	24,950	28,780	32,960	37,140	41,320
Boulder, CO MSA	20,650	23,600	26,550	29,450	31,850	34,200	37,140	41,320
Washington-Arlington-Alexandria, DC-VA-MD	23,200	26,500	29,800	33,100	35,750	38,400	41,050	43,700

FMR = Fair Market Rent. MSA = Metropolitan Statistical Area.

Insight 1: The New ELI Definition Impacts Most Income Limits

Exhibit 3 shows the distribution of the ELI limit basis across household sizes for all FMR areas in 2017. Because the 2014 Appropriations Act specified that the ELI limit could not exceed the VLIL, in some cases the ELI limit is equal to the VLIL. In general, the poverty guidelines are more likely than the L30 to be used as a basis for the ELI limit.

More frequent application of the poverty guidelines can be anticipated given that about 75 percent of FMR areas are in non-metropolitan counties versus metropolitan areas. As mentioned earlier, the poverty guidelines are based on a national measure whereas the L30 is locally based. On average, metropolitan areas have higher incomes compared to their surrounding non-metropolitan or rural areas (Weicher, 2012). As a result, one might expect that using a nationally based limit would likely raise the limit for many non-metropolitan counties, which make up a majority of FMR areas.

Exhibit 3 also shows that as household size increases, so does the use of the poverty guidelines in lieu of the L30 limit. Moreover, the use of the poverty guidelines for the ELI limit increasingly requires the use of VLIL caps as household size increases. This is due to the difference in how the L30 and the poverty guidelines are calculated for different household sizes as shown earlier.

Exhibit 3

Basis of Extremely Low-Income Limits, Fiscal Year 2017
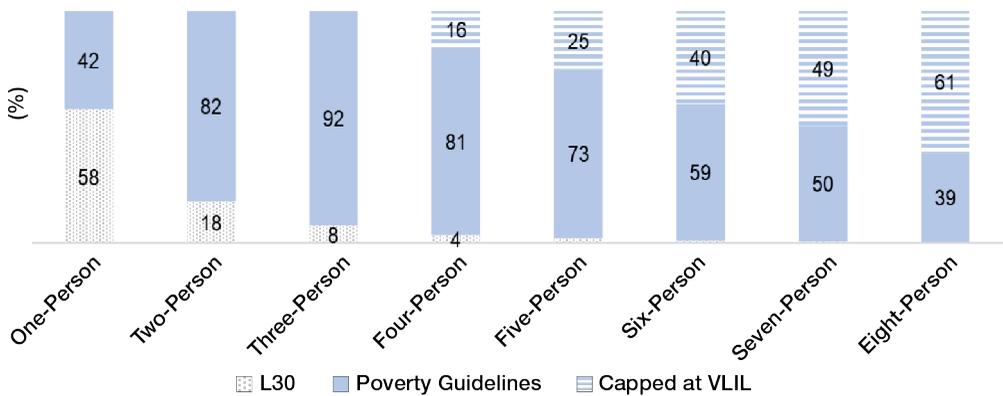
L30 = HUD's 30 Percent of Local Area Median Income Measure. VLIL =Very Low-Income Limit.

While most income limits are impacted by the use of the poverty guidelines, this does not necessarily indicate that most households currently assisted by applicable HUD programs will be impacted as well. Exhibit 4 illustrates the share of FMR areas where the ELI limit exceeds the L30 limit, weighted by their subsidized household population. The number of instances where the poverty guidelines are used in the ELI limit are fewer when weighted by number of households, especially for one- and two-person households.

Altogether, 15 percent of assisted households live in an FMR area using the poverty guidelines in lieu of the L30 in the determination of the ELI limit for their respective household size. Exhibit 5 further illustrates that the ELI limit for non-metropolitan areas has been impacted more than metro areas by incorporating the poverty guidelines into the definition of ELI.

Exhibit 4

FMR Areas Where the ELI Limit Exceeds the L30 Limit, Fiscal Year 2017

	One-Person	Two-Person	Three-Person	Four-Person	Five-Person	Six-Person	Seven-Person	Eight-Person
Count*	1,014	2,064	2,365	2,485	2,520	2,552	2,562	2,569
Share of Total FMR Areas	39.2%	79.8%	91.5%	96.1%	97.5%	98.7%	99.1%	99.4%
Household-Weighted Share	4.7%	27.9%	50.1%	59.6%	64.6%	73.3%	84.0%	94.8%

ELI = Extremely Low Income. FMR = Fair Market Rent.
*FMR areas where the ELI exceed the L30 by at least $200.[6]

Exhibit 5

FMR Areas Where the ELI Limit Exceeds the L30 Limit by Metro Status, Fiscal Year 2017

	One-Person	Two-Person	Three-Person	Four-Person	Five-Person	Six-Person	Seven-Person	Eight-Person
Metropolitan Areas								
Count*	149	379	492	541	566	592	600	605
Share of All Metropolitan Areas	24.0%	61.1%	79.4%	87.3%	91.3%	95.5%	96.8%	97.6%
Household-Weighted Share	1.5%	16.5%	38.6%	49.4%	56.0%	67.3%	79.9%	92.5%
Non-Metropolitan Counties								
Count*	865	1,685	1,873	1,944	1,954	1,960	1,962	1,964
Share of All Non-Metro Counties	44.0%	85.8%	95.3%	98.9%	99.4%	99.7%	99.8%	99.9%
Household-Weighted Share	22.5%	77.3%	92.7%	97.8%	98.8%	99.7%	99.8%	99.9%

ELI = Extremely Low Income. FMR = Fair Market Rent.
*Areas where the ELI exceed the L30 by at least $200.

Insight 2: Five Percent of Newly Admitted Households Benefit from Use of the Poverty Guidelines

For the purpose of this brief, households benefiting from the 2014 definition change will be referred to as reclassified households. These are households that would not have been defined as ELI under the old L30 definition, but following the 2014 definition change, were classified as ELI as a result of the use of the poverty guidelines.

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[6] It is important to consider whether a change in the ELI limit is meaningful in the context of tenants' income determinations. A study prepared for HUD (2014), identified rent errors by recalculating tenant rent based on verified quality-checked information and subtracting that amount from the tenant rent recorded on file. The actual monthly rent and quality-checked monthly rents were considered different if the difference between the two were greater than $5. This $5 rent error translates to $200 of annual income ($5*12 months/30 percent of income). Using this $200 criterion, the percentage of areas with an ELI limit exceeding the L30 limit declined only slightly.

Between 2007 and 2017, ELI households made up approximately 78 percent of total new admissions across programs (exhibit 6). The dotted line in the exhibit represents the share of new households that had incomes below the L30 limit for their FMR area during this time period. Because the L30 was the basis of the ELI prior to 2014, the share of new admissions that are ELI and L30 are equal prior to 2014.

Exhibit 6

Households as a Share of New Admissions
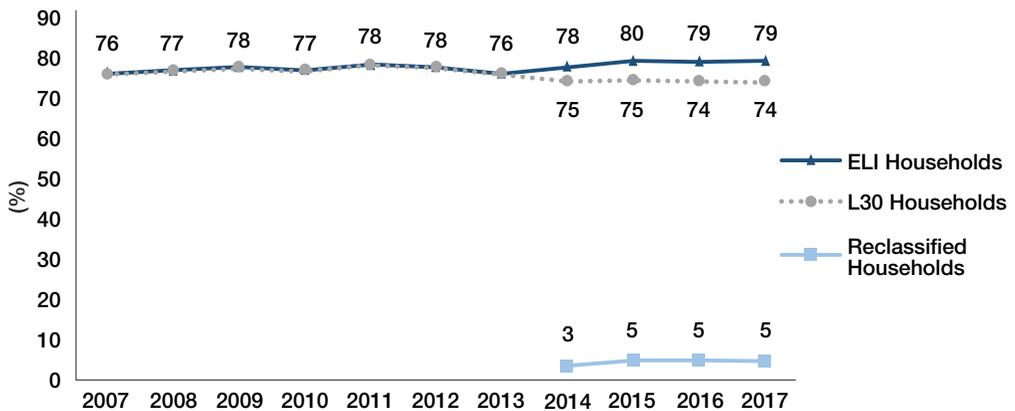
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

In 2014, the share of new households that were extremely low income began to increase slightly from its previous 7-year average of 77 percent. Since the definition change, the share of new admissions that are L30 has decreased by approximately 2 percentage points (except for in 2014, because the policy was implemented mid-year), while overall ELI new households increased about 3 percentage points.

This 5-percentage point difference between the ELI share and the L30 share in exhibit 6 signifies new households that were reclassified as ELI under the new definition. In 2017, the median amount that reclassified households' annual income exceeded the L30 by approximately $1,800.

The following section will compare characteristics of new reclassified households to new L30 households following 2014, to gain better insight about household qualifying for ELI targeting that previously would have not qualified. Trends on ELI families (also L30 prior to 2014) prior to 2014 will be provided to ensure that there were no significant changes in the L30 population following 2014 that should be noted.

Insight 3: Location and Household Size are Distinguishing Characteristics of Households Reclassified as a Result of use of Poverty Guidelines

Examining tenant characteristics offer more detail about households who are currently designated as ELI but would not have been under the L30 definition. The following highlights such characteristics.

Metropolitan Designation Where Households Live

Seventy-six percent of FMR areas are in non-metropolitan counties with most of these counties having an ELI limit that exceeds the L30 limit. Only 19 percent of ELI households live in non-metropolitan counties, however. Exhibit 7 shows that this figure more than doubles for households reclassified due to the definition change.

Exhibit 7

Share of Households in Non-Metropolitan Counties
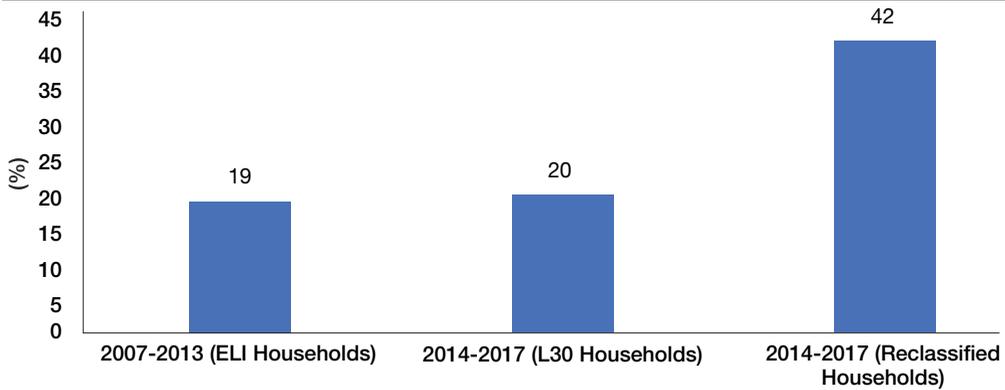
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

Census Division Designation Where Households Live

In 2017, the Northeast, Midwest, South, and West made up 7 percent, 35 percent, 42 percent, and 16 percent of FMR areas, respectively. Exhibit 8 shows that the highest proportion of new ELI households (40 percent) live in the South. A greater proportion of reclassified households live in the South as well (65 percent).

Exhibit 8

New Households by Census Division
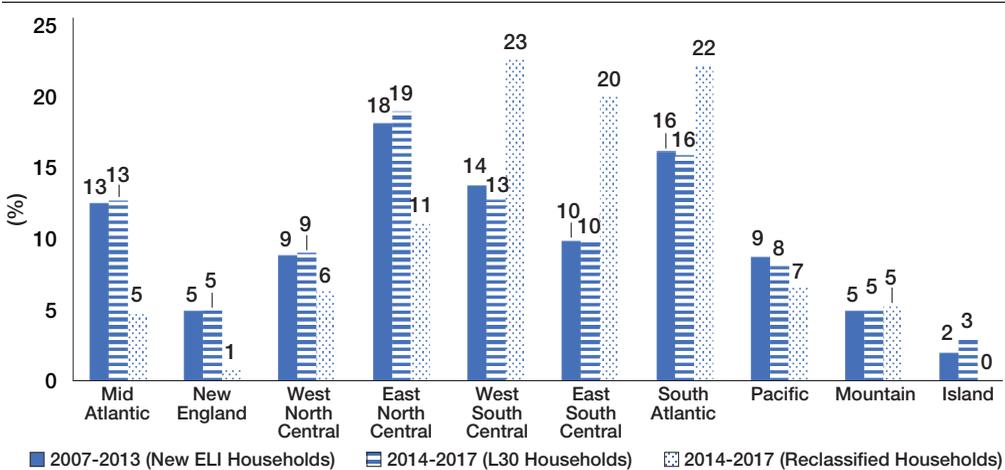
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

Concentration of Households Reclassified Due to the Definition Change by Area

Exhibit 9 shows the share of newly assisted households that were reclassified in 2017 by FMR area and quintile. Areas with the darkest shading have the highest share of new households that were reclassified. Areas with no shading did not have households reclassified by the definition change. The map below illustrates what the data in exhibit 8 showed; areas in the South have the highest concentration of reclassified households.

Exhibit 9

Reclassified Households as a Share of New Households, 2014–2017

Share of Families That are Reclassified

Q1: 0.00% to 0.98%
Q2: 0.98% to 1.91%
Q3: 1.91% to 3.09%
Q4: 3.09% to 4.77%
Q5: 4.77% to 33.33%
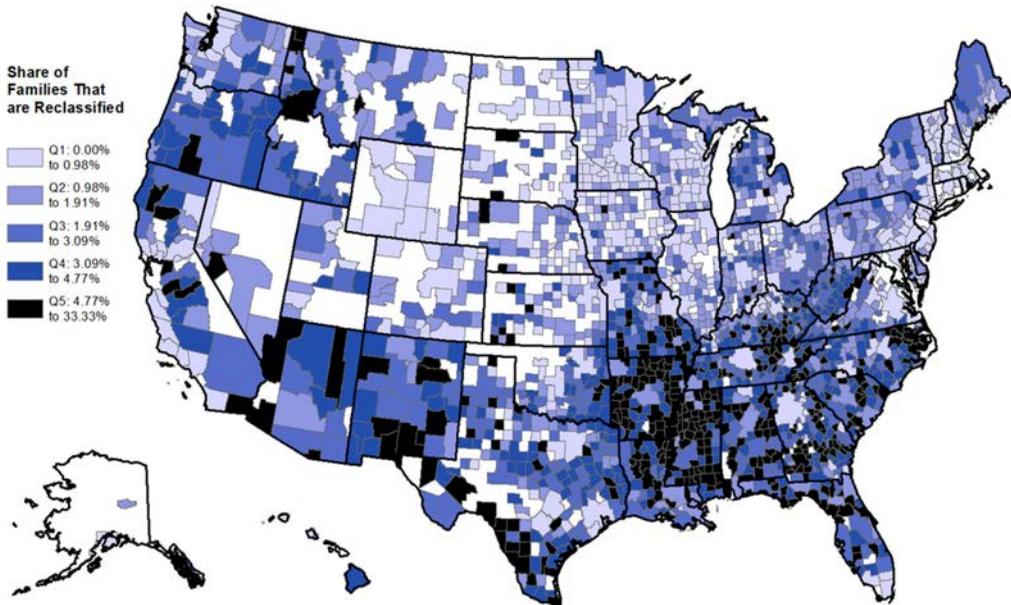
Q = Quintile.

Household Size

While 88 percent of ELI limits are set to the poverty guidelines across all FMR areas and household sizes, only 42 percent of FMR areas had one-person limits affected by the definition change. Exhibit 10 shows that 47 percent of new ELI households are in one-person households. In contrast, reclassified households are more likely to be in households of two to four persons.

Exhibit 10

Size Composition of New Households
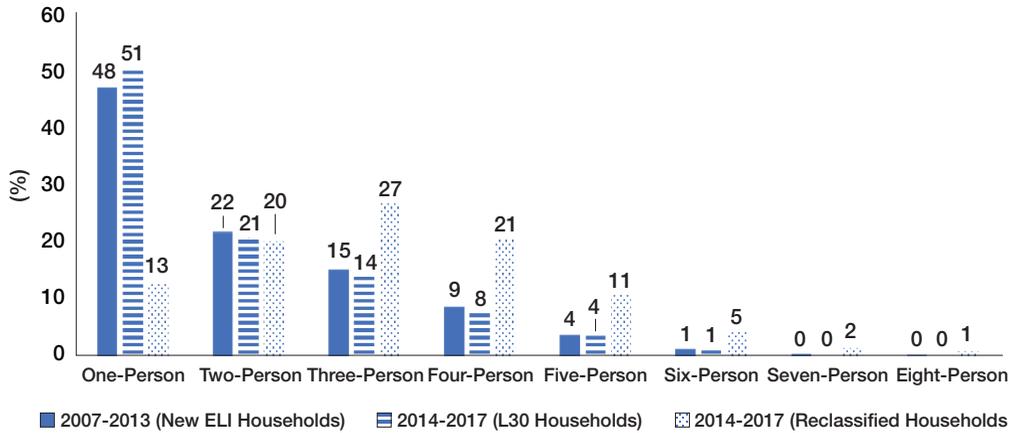
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

Income

Exhibit 11 shows that on average over 52 percent of new ELI households were in the first income quintile of their FMR area for their household size. Another third was in the second income quintile with less than 15 percent in the remaining quintiles. In contrast, only 7 percent of reclassified households were in the first income quintile. Fifty-five percent of reclassified households were in the second quintile, and 38 percent were in the remaining quintiles. Because the poverty guidelines are generally higher than the L30 limit, it would be expected that reclassified households would be in higher income quintiles compared to the rest of new participating households.

Exhibit 11

Share of New Households Within Fair Market Rent Area Income Quintile
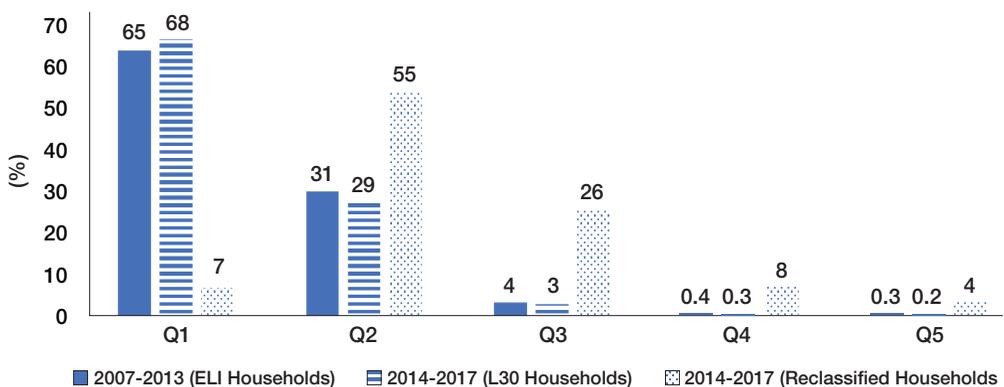
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure. Q = Quintile.

Race

Exhibit 12 shows that the racial composition of reclassified households varied little from that of new ELI households prior to the definition change. Reclassified households were slightly more likely to be Black/African-American.

Exhibit 12

Racial Composition of New Households
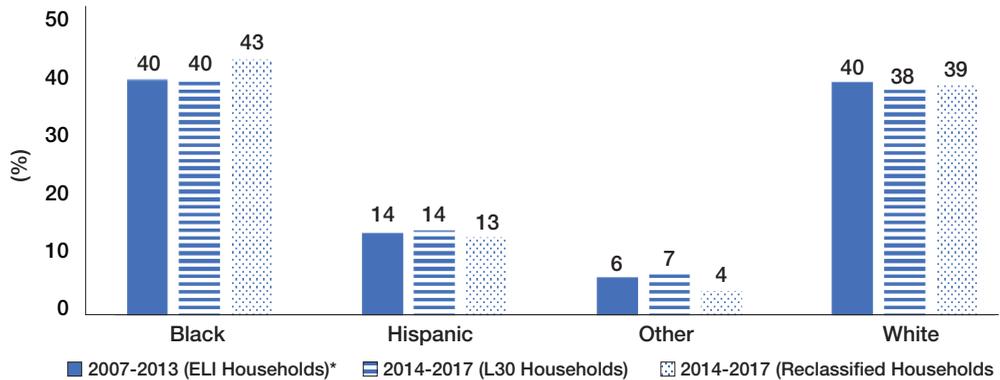
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.
*Note: Years between 2007 and 2009 were not used in this instance because of discrepancies in data categories from subsequent years.

Household Type

Exhibit 13 shows that 75 percent of new ELI households are headed by females. A slightly higher share of reclassified households (81 percent) was headed by females. While 31 percent of new ELI households had children under the age of 18, far more reclassified households included children (69 percent). This notable difference between the two populations is likely related to household size. Households with children will inherently consist of more than one person, and exhibit 10 showed that reclassified households were more concentrated in households with more than one person. Senior-headed and households headed by people with disabilities only make up about one-fifth of new ELI households. Reclassified households were less likely to be headed by a senior or to include a member with disabilities.

Exhibit 13

Composition of New Families by Household Type
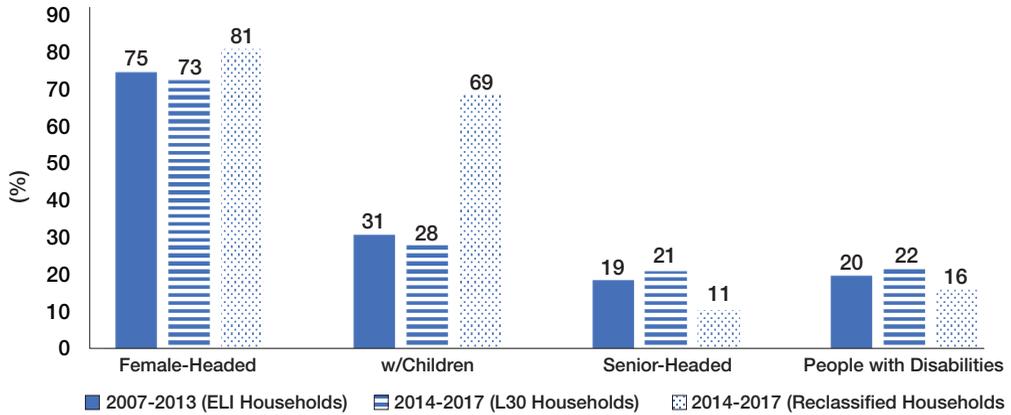
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

Total Tenant Payments

Total tenant payment (TTP) is the amount that households pay their landlord towards rent. Generally, TTP is the higher of 30 percent of the household's monthly adjusted income; or 10 percent of the household's monthly gross income; or payments specifically designated by the public welfare agency to meet the household's housing costs (also known as "welfare rent") (HUD, n.d.).

Exhibit 14 shows that the median TTP for households has been relatively flat between 2007 and 2017. During this period, all new households and new ELI households on average paid close to $220 in TTP. In contrast, tenant payments of reclassified households are twice as much, averaging around $400. This is in line with exhibit 11, which illustrates reclassified households having higher incomes than other ELI households. Because reclassified households have higher incomes, their TTP will be higher accordingly.

Exhibit 14

Median Total Tenant Payment of New Households (2017 Dollars)
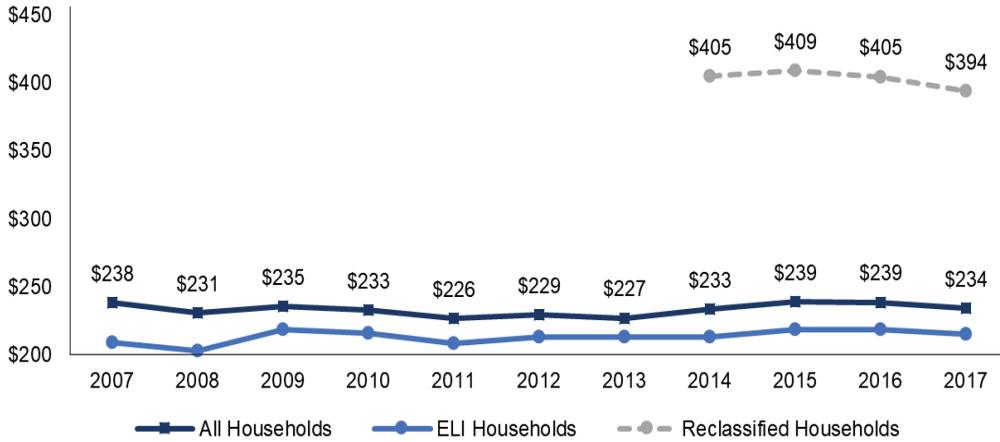
ELI = Extremely Low Income.

Housing Assistance Payment

In the HCV and Section 8 Project-Based Rental Assistance (PBRA) programs, Housing Assistance Payments (HAP) are subsidies that are paid to landlords in rent on behalf of program households. HAP is not applicable in the public housing program. In the HCV program, HAP equals the lower of (1) the payment standard[7] for the household minus the total tenant payment; or (2) the gross rent minus the total tenant payment. In PBRA programs, HAP is simply gross rent minus the TTP.

Gross rents and payment standards are driven by market conditions of the unit's location (housing value, utility costs, and so on) and the quality of the unit itself (number of bedrooms, unit size, age of unit, and so on) (Albouy and Lue, 2015). Exhibit 15 shows an inverse pattern from exhibit 14 for HAP payments made to landlords. Landlords receive less HAP for reclassified households because these households generally have higher incomes than most ELI households and therefore pay more rent themselves (exhibit 11).

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[7] In the HCV program, a PHA establishes payment standards based on the HUD-established FMRs for the area. The payment standards must be within an established range (90–110 percent) of the FMR. Payment standards are not used in PBRA Section 8 properties.

Exhibit 15

Median Total Tenant Payment of New Households (2017 Dollars)
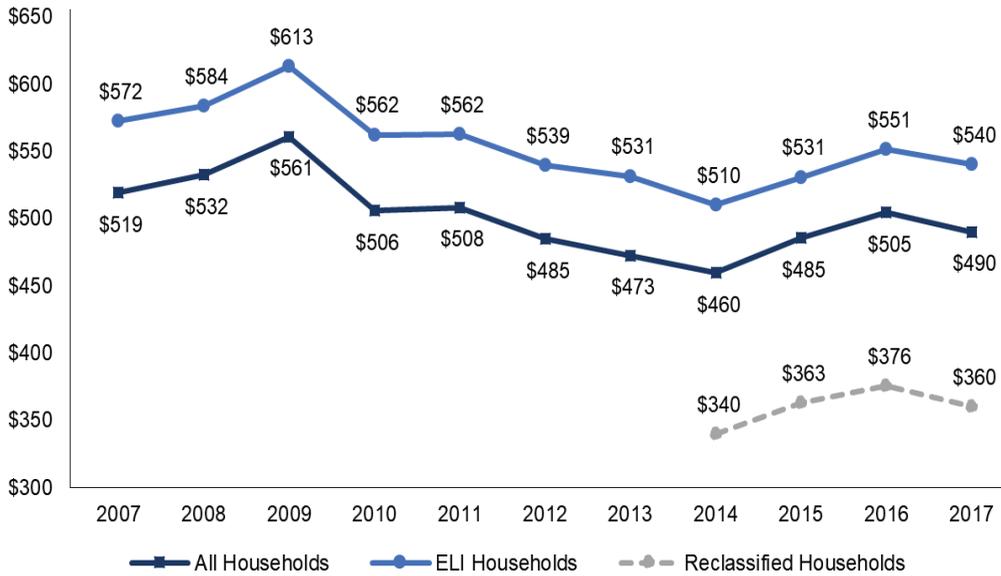
ELI = Extremely Low Income.

Insight 4: Use of Poverty Guidelines May Aid Smaller Public Housing Agencies in Meeting Extremely Low-Income Targets

Prior to the 2014 ELI limit definition change, the public housing project-based vouchers (PBV) and PBRA Section 8 programs were meeting their ELI target of 40 percent and continued to do so as of 2017 at 79 percent. ELI targets of 75 percent were also being met for HCV households. Today, the goals continue to be met. For the HCV and public housing programs, the share of new households that are ELI has slightly increased since 2014. While data shows that these targets were being met prior to the ELI definition change, since the change there has been a convergence in the share of ELI households assisted via these programs (exhibit 16). This could be tied to internal enforcement of the policy (Dawkins, 2007).

Exhibit 16

Share of New Households That are Extremely Low-Income
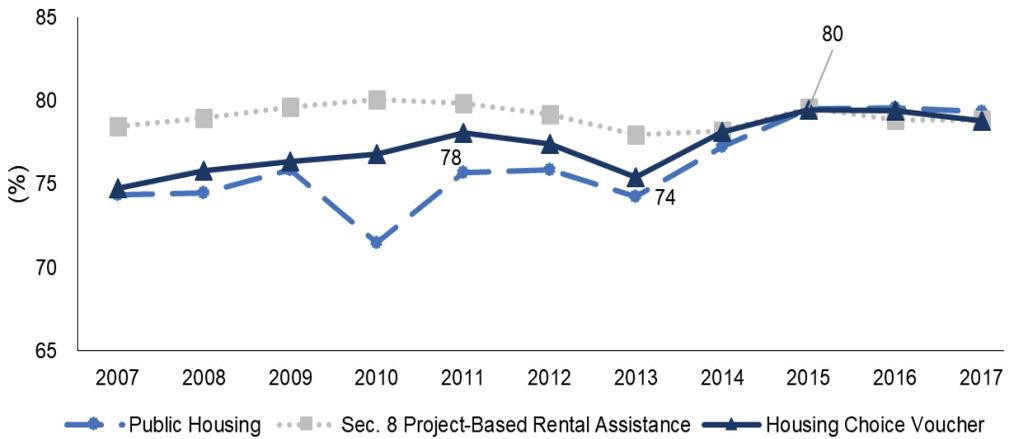
Targeting Outcomes by Public Housing Agency Size

Evaluating targeting outcomes by PHA size sheds light on the extent to which targets are being met in the HVC and public housing programs. Exhibit 17 shows that most new ELI households are serviced by large PHAs as opposed to smaller ones. Size categories represent the number of units operated under PHA and have been frequently used in prior published reports analyzing HUD administrative data on the size of PHAs.

Exhibit 17

Distribution of New Extremely Low-Income Households by Public Housing Agency Size, 2007
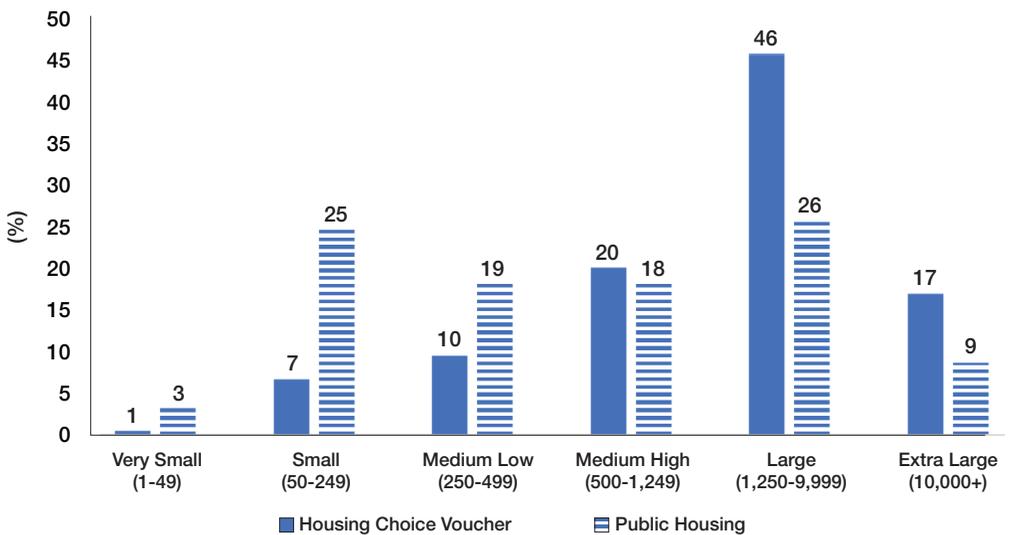
Exhibit 18 shows that, in 2017, most PHAs operating the public housing program were meeting their ELI targets. On average, more than 90 percent of PHAs operating 50 public housing units or more were meeting their targets. This figure dropped to 79 percent for PHAs overseeing less than 50 units in their public housing program. In the HCV program, individual PHAs were less successful at meeting ELI targets than in the public housing program, which is not unexpected given that the public housing program has a lower ELI target. Exhibit 18 also shows that as the program size of PHAs increases, the expected rate of success generally increases as well.

Exhibit 18

Share of Public Housing Agencies Meeting Extremely Low-Income Targets, by Public Housing Agency Size, 2017
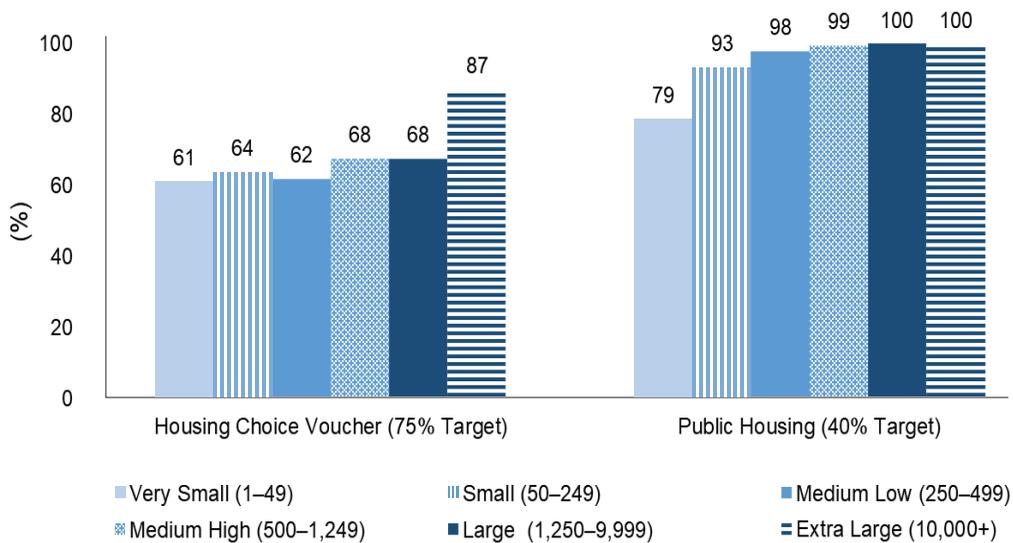
Exhibits 19 and 20 show how successful PHAs have been in meeting ELI targets for the HCV and public housing programs by PHA size. Each circle on the map represents a PHA having new admissions in 2017, and the size of the circle corresponds to the size class of the PHA for the program. PHA sizes are combined for easier interpretation of the map. The large circles represent PHAs with 1,250 units or more, and the small circles represent PHAs with less than 250 units. The color variation on the map represents the success of PHAs meeting ELI targets. Lighter dots represent areas that met ELI target goals and darker dots represent PHAs that did not meet ELI targets.

Exhibit 19 illustrates that successful targeting is not limited to a region of the country or PHAs of certain sizes for the HCV program. While the HCV program is meeting ELI targets overall, there are several PHAs needing improvement. Thirty-five percent of PHAs did not meet the ELI target during 2017, and 25 percent missed by more than 5-percentage points.

In contrast, income targets in the public housing program are largely being met across housing authorities of various sizes (exhibit 20), which could be expected since public housing has a lower target than the HCV program. Ninety-six percent of PHAs not meeting the public housing ELI target are small.

Exhibit 19

Extremely Low-Income Targeting Outcomes by Public Housing Agency Program Size (Housing Choice Voucher, 75 Percent Target), 2017
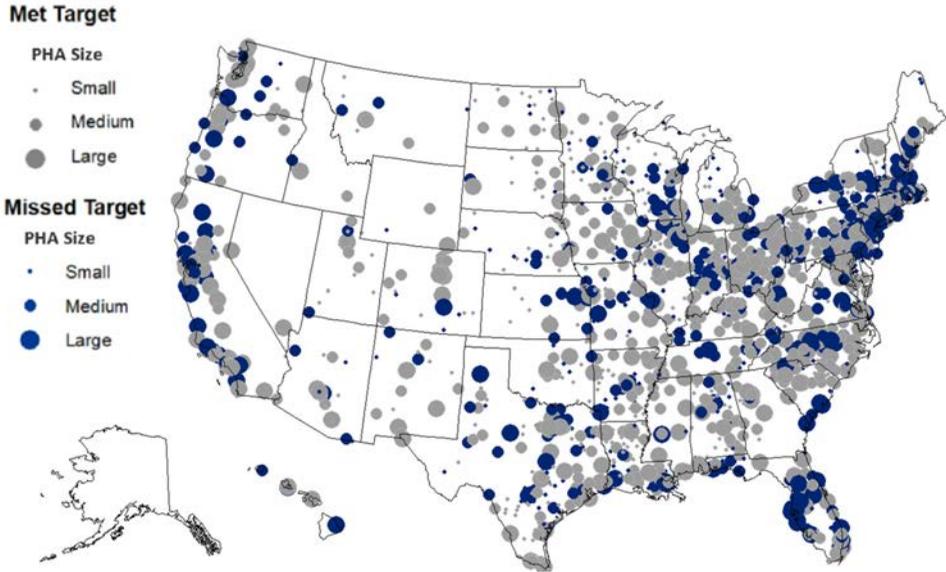
PHA = Public Housing Agency.

Exhibit 20

Extremely Low-Income Targeting Outcomes by Public Housing Agency Program Size (Public Housing, 40 Percent Target), 2017
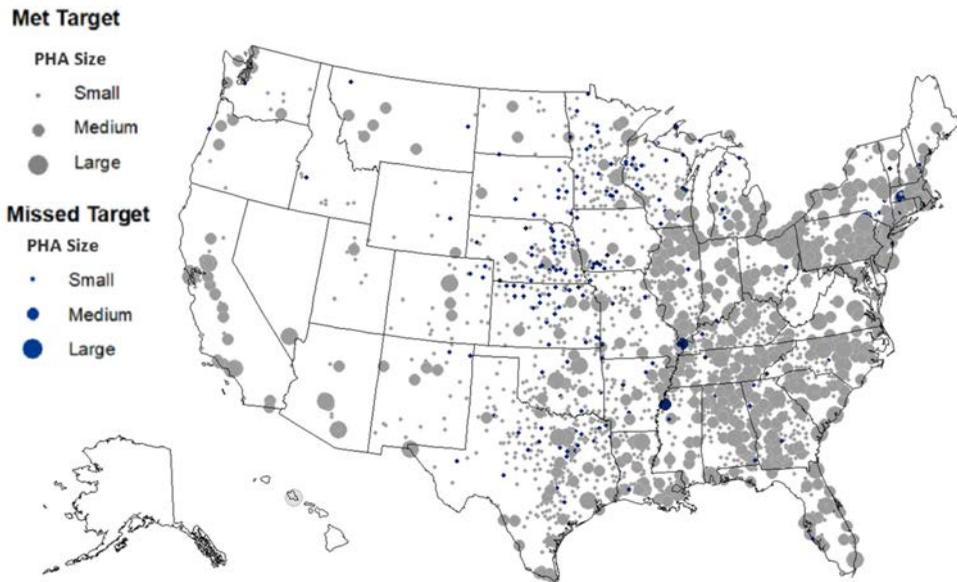
PHA = Public Housing Agency.

The magnitude of how the targets are being met differ by PHA size. Exhibit 21 shows that extra-large PHAs have the highest share of new households that are ELI. The chart also shows that as PHA size increases, so does the share of new households that are ELI. There has been a general increase in the share of new households that are ELI for small- to medium-sized PHAs between 2013 and 2017.

Exhibit 21

Share of New Households That are Extremely Low-Income by Public Housing Agency Size
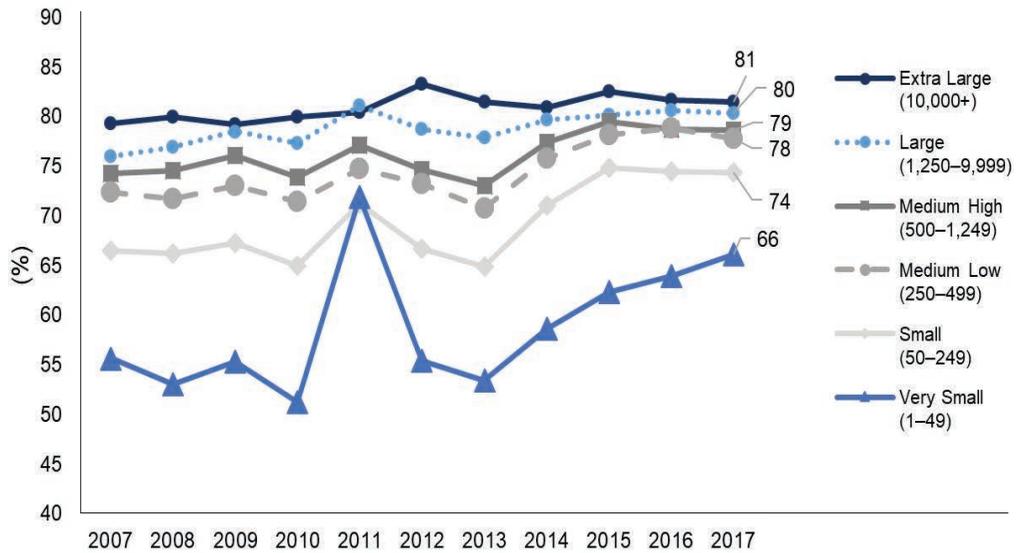
Note: Data for smaller PHAs are prone to exhibit data anomalies (GAO, 2017), represent a smaller number of observations (exhibit 17), and are sensitive to changes in data reporting. The spike for very small PHAs in 2011 may be related to administrative or reporting changes that were implemented during the year.

Exhibit 22 shows that, from 2014 to 2017, about 41 percent of reclassified households were served by large PHAs, which is comparable to the share for ELI and L30 households. Reclassified households were slightly more likely to be served by smaller PHAs in comparison to L30 households.

Exhibit 22

Size of Public Housing Agencies Serving New Households, 2017
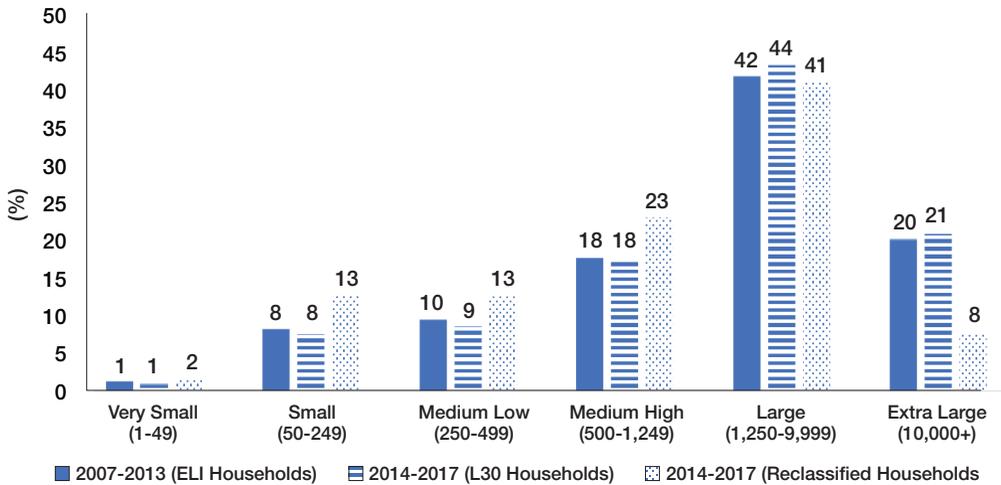
ELI = Extremely Low Income. L30 = HUD's 30 Percent of Local Area Median Income Measure.

Final Thoughts

In many FMR areas, the use of the poverty guidelines in the determination of the ELI results in an income-limit that is higher compared to the prior limit that was based on 30 percent of area median income. This occurs in most cases for households of two or more people and areas in non-metropolitan counties. Residing in an FMR area where the ELI is different due to the definition change, however, does not guarantee that a household living within that FMR area will be reclassified by the change.

Approximately 5 percent of new admissions are classified as ELI as a result of the use of the poverty guidelines. Under the old L30 definition of ELI, these households would not have been defined as ELI. These reclassified households are more likely to live in non-metropolitan areas and southern portions of the country. In addition, they are more likely to consist of households greater than one-person compared with the total new admission population that consists of mostly one-person households. For this reason, households reclassified by the change are more likely to consist of households with children. There is no substantial difference in the racial/ethnic background of households reclassified by the change, and they are slightly less likely to be male-headed, senior-headed, or include a member with disabilities.

The definition change also did not appear to have a significant impact on tenant payments made by households entering HUD programs. Payments were relatively flat between 2007 and 2017. Households reclassified by the definition change were more likely to have higher rent payments because of their higher incomes compared to other newly admitted households. PHAs are more likely to pay less HAP to landlords of reclassified households because these households typically have higher incomes than average ELI households to cover their rent.

Prior to the 2014 ELI limit definition change, the public housing and PBRA Section 8 programs were meeting their target of 40 percent and continued to do so as of 2017. ELI targets of 75 percent are being met in the HCV program, however, individual PHAs are less successful at meeting ELI targets than in the public housing program. This policy brief showed that ELI targeting improves as the size of the PHA increases, and the share of new residents that are ELI has increased, most notably for smaller PHAs, since the 2014 definition change.

Acknowledgments

Author

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