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Declines in Low-Cost Rented Housing Units in Eight Large Southeastern Cities

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Abstract: From the last quarter of 2012 to the last quarter of 2015, median rents rose 23.4 percent in the South, according to the Census Bureau. Accordingly, an increasing number of households in the South are cost-burdened, which is defined as a household spending more than 30 percent of its income on housing. A growing number of households spend over 50 percent of their income on rent, making them severely cost-burdened. The percentage of such severely cost-burdened households with incomes below $35,000 reached 80 percent in 2014 in eight central cities in the Southeast (Atlanta, Birmingham, Jacksonville, Memphis, Miami, Nashville, Orlando, and Tampa). Cost-burdened households have significant challenges, including forced trade-offs among housing, transportation, child care, health care, and other necessities.

The increase in cost-burdened households is due in part to the decrease in affordable rented units in urban areas. This paper examines the landscape of low-cost rented housing units in these eight southeastern cities. We find that low-cost rented units (defined as those with gross rents of less than $750 per month) decreased in all eight cities between the American Community Survey periods of 2006–10 and 2010–14. Based on these data, each of these eight cities is losing hundreds, and sometimes thousands, of low-cost rented units annually.

Housing trends affecting the rental housing market include the conversion of formerly owner-occupied homes into rental units, the aging and abandonment of low-cost rented units, and competition in the market with high-cost or luxury rented housing, including conversion of formerly low-cost units into more luxurious units, and the increased competition with luxury developers and therefore higher land prices. Based on our analysis, greater levels of loss of low-cost rented units are disproportionately concentrated in certain types of neighborhoods, including those with higher shares of young adults, a larger portion of newer housing units, and lower poverty rates. These factors are generally consistent with areas experiencing rising rents and the conversion of lower-cost units into higher-cost ones in areas perceived to be attractive to higher-end rental housing.

JEL Classification: H20, H70, R210, R310

Key words: affordable housing, rented housing, cost-burdened households, housing policy

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Renters in many large cities, especially those with modest incomes, are increasingly struggling to find affordable housing. From the last quarter of 2012 to the last quarter of 2015, median rents rose 17.4 percent nationally, and 23.4 percent in the South,[1] according to the Census Bureau's Current Population Survey/Housing Vacancy Survey. In real, inflation-adjusted dollars, the national median rent increased 14.1 percent nationally and 19.9 percent in the South over this three-year period.[2]

Rising rents, together with weak income growth, have resulted in large increases in rent-burdened households. The number of rent-burdened households in the United States, those paying more than 30 percent of their incomes for rent, increased from 14.8 million to 21.3 million from 2001 to 2014 (Joint Center for Housing Studies, 2015a). Of these 21.3 million, 11.4 million paid more than 50 percent of their income for rent, an increase of 37 percent over the 2001 level. Cost-burdened households have significant challenges, including forced trade-offs among housing, transportation, child care, health care, and other necessities (ibid).

There is a common misperception that high rent burdens are only a real problem in very high-cost housing markets such as New York City, San Francisco, or Boston. Census data show, however, that for low- and moderate-income families, high and rising rent burdens are widespread and acute in the Southeast. As shown in table 1, in all eight cities studied in this paper, over 50 percent of renters pay more than 30 percent of their income for rent for the five-year period ending in 2014, and for households with incomes below $35,000, the share is over 80 percent in all eight cities. Moreover, these percentages are rising since the five-year period ending in 2010. In all but one of the eight cities, Miami, the total rent-burdened share rose from 2010 to 2014, and the share of lower-income renters with rent burdens rose in all eight cities. The greatest increases were in Memphis (4.9 percent), Jacksonville (4.2 percent), Atlanta (3.6 percent), and Nashville (3.5 percent).

[1] The Census's South region includes Alabama, Arkansas, Delaware, the District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

[2] It is important to note that these medians are not constant-quality figures. That is, some of the change in median rent is due to the change in the housing stock that is being rented. Constant-quality indices show smaller rent increases, about 3 percent annually. But changes in medians are important because they indicate what the median renter is actually paying for rent. One of the reasons the median is rising substantially is because lower-cost stock is essentially exiting the market, while newer stock is generally quite expensive.

Table 1. Housing Cost Burden: The Percent of Renter Households Spending More than 30 Percent of Their Income on Rent, 2010 and 2014

	All Renter Households			Renter Households with Incomes Below $35,000		
City	Percent 2010	Percent 2014	Change in Percent	Percent 2010	Percent 2014	Change in Percent
Atlanta	52.4%	53.4%	1.0%	79.9%	83.5%	3.6%
Birmingham	55.9%	58.5%	2.7%	77.4%	80.3%	2.9%
Jacksonville	52.8%	56.6%	3.8%	83.1%	87.3%	4.2%
Memphis	56.9%	59.6%	2.7%	81.2%	86.1%	4.9%
Miami	67.4%	66.8%	-0.7%	85.4%	87.9%	2.5%
Nashville	50.4%	51.4%	1.0%	79.1%	82.6%	3.5%
Orlando	57.3%	58.6%	1.3%	90.7%	92.7%	2.0%
Tampa	56.0%	56.4%	0.3%	83.4%	85.6%	2.1%

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

This paper examines one phenomenon that is contributing to the affordability crisis facing many lower-income renters: the widespread losses in the supply of affordable rental units. In particular, we examine, using American Community Survey (ACS) data, the loss of low-cost rented housing units—defined here as units with gross rents of less than $750 per month—in eight large southeastern central cities from 2010 to 2014. The paper was spurred by an analysis of the decline of such units in the City of Atlanta (Immergluck, 2015a). We find that the loss of low-cost units identified in Atlanta is common across these cities, although, as expected, the level of loss varies somewhat. We also delve further into the characteristics of the neighborhoods where these losses occurred. While the losses are somewhat concentrated, especially in tracts with initially high levels of such units, GIS maps show that losses occur in many parts of these cities. There are, however, some neighborhood characteristics associated with greater levels of loss of such units, including higher shares of young adults, a larger portion of newer housing units, and lower poverty rates. These factors are generally consistent with rising rents and the conversion of lower-cost units into higher-cost ones in areas perceived to be attractive to higher-end rental housing.

After providing some background on the factors driving the worsening rental affordability problems of the last several years, we then examine changes in the numbers of low-cost rented units in the eight cities. We also compare these changes to the substantial growth in higher-cost rented units, those with gross rents over $1,500 per month. Then, we examine patterns at the neighborhood level within each of the eight cities. Finally, we estimate a multivariate regression that identifies several neighborhood characteristics associated with changes in low-cost units at the census tract level. We close with a discussion of lessons from these analyses, including some implications for affordable housing policy.

The Rental Affordability Crisis Coming out of the Great Recession

The problem of rental housing affordability and availability has been worsened by both supply- and demand-side factors. On the demand side, the mortgage crisis and the growth of low-income households have pushed many more households into the rental market, with many of these having

modest incomes. From 2005 to 2015, the number of families in rental housing in the United States increased from 34 million to 43 million, and the share of households that rent increased from 31 percent to 37 percent, a rate not seen since the mid-1980s (Joint Center for Housing Studies, 2015a). Some of these households were former homeowners, but others are new households, many more of which would likely be homeowners if not for recent trends toward tight mortgage credit and weaker incomes (Goodman, Zhu, and George, 2015).

On the supply side, a few factors have been driving the nature of rental market supply. One of the largest is the conversion of formerly owner-occupied homes—especially single-family homes—into rental units. A substantial part of this shift was spurred by investors purchasing foreclosed homes and converting them to rentals. The single-family portion of the rental stock has grown from 34 percent in 2005 to 40 percent in 2015 (Joint Center for Housing Studies, 2015a). However, many of these homes are relatively large compared to other rental units, and so are often priced at levels well above what many lower-income households can afford. Moreover, many single-family homes with low rents are likely to be in quite poor condition.

This brings up another factor driving housing supply, especially at the lower end of the market. Filtering is a process in which, as housing ages, it becomes somewhat less expensive and therefore may provide for increased supply of less expensive stock. However, the stock at the lowest end of the market also depreciates over time and essentially falls out of the market altogether, as it becomes not worth maintaining and essentially uninhabitable and unable to meet basic housing code requirements. At some point, in a given market, there is a minimum rent at which landlord owners are not able to make a reasonable rate of return, especially if turnover rates are high, which becomes more likely as quality declines (Herbert, Lew, and Sanchez-Moyano, 2013; Immergluck and Law, 2014). From 2003 to 2013, 11 percent of units with rents under $400 per month were permanently lost from the nation's housing stock (Joint Center for Housing Studies, 2015a). In higher-cost areas, including cities, the rent threshold at which this abandonment process occurs is likely higher.

While some modest-income renters are able to find subsidized units (either through supply- or demand-side subsidies), the vast majority do not. Even among those very-low-income households that qualify for housing choice vouchers, Section 8 place-based subsidies, or public housing, only about one in four actually receives such subsidies (Joint Center for Housing Studies, 2015b). For those earning between 30 and 80 percent of the metropolitan median income, still considered low or moderate income, the share of households receiving subsidies is much lower. Most lower-income households, if they are able to find affordable housing at all, rely on what is often called "naturally occurring affordable housing." These are typically older apartments or homes with low rents. As rental housing demand has picked up in the aftermath of the mortgage crisis and the economic recovery, competition for rental units has increased, pushing up rents and new construction of generally high-cost, luxury units.

At the same time, low-cost rental units have felt either disinvestment or upgrading pressures. In some distressed neighborhoods, the number of homes and apartments left vacant for substantial periods of time—many of which are likely abandoned and dilapidated—grew during the mortgage crisis, and many of these neighborhoods have not seen these properties returned to the market (Immergluck, 2015b). In stronger neighborhoods, rising demand will encourage owners or investors to redevelop low-cost units into higher-cost ones. The economics of rental property investment include substantial fixed costs that make renting at very low rents unattractive, even in areas where land values are low

(Immergluck and Law, 2014). Thus, filtering is unlikely to produce sufficient affordable housing—especially for lower-income families and in neighborhoods where housing demand is either very strong or very weak. Moreover, to the extent that filtering may provide moderately lower housing costs at a citywide or metropolitan scale, it can take decades for high rents to decline appreciably (Rosenthal, 2014).

A third factor is the pressure to upgrade lower-cost units. As rental demand increases overall, land values and property taxes increase, and landlords will seek to earn higher margins by charging higher rents. Alternatively, they may be approached by new buyers who will seek to upgrade the property and draw higher rents.

A fourth factor—related to the previous two—that is driving the cost of rental housing is the highly uneven nature of the construction of new units. Multifamily rental construction has surged in recent years in many large cities, including larger cities in the South. However, the nature of these new units is heavily tilted toward high-cost, luxury units. Multifamily housing starts reached an annualized rate of over 500,000 units in the summer of 2015, a level not seen since 1986 (Federal Reserve Bank of St. Louis, 2016). The bulk of these were for rental housing, especially luxury units. In 2014, the median asking rent for new market-rate apartments reached $1,372 nationally, a 26 percent increase just from 2012 (Joint Center for Housing Studies, 2015a). Only 10 percent of newly constructed units had asking rents under $850. In large cities, the proportion of newly constructed units that were luxury units was often very high. The CoStar Group estimated that, from 2012 to 2014, 82 percent of new rental units in 54 large metropolitan areas were luxury units; in Atlanta the figure was 95 percent (Kusisto, 2015). As developers look for land for developing new housing, they are competing with developers of luxury buildings. The bidding up of land prices makes it all but impossible for developers interested in serving lower-cost segments of the market to obtain the property they need to deliver units at more affordable rents. And as luxury developers crowd one another out in the already established neighborhoods, they are likely to start bidding up values in nearby, formerly lower-cost areas.

All of these forces are pushing up rents and shrinking the supply of lower-cost units. We next identify the scale of the problem in eight large central cities in the Southeast.

Changes in Low-Cost Rented Housing Units 2010–14 at the City Level

This section of the paper examines changes in low-cost rental housing units, defined as those with gross rents under $750 per month, in eight large cities in the Southeast from 2010 to 2014. These include Atlanta, Birmingham, Jacksonville, Memphis, Miami, Nashville, Orlando, and Tampa. Central cities were chosen as the unit of analysis over metropolitan areas, as development and rents are affected by the supply-side factors mentioned in the previous section and most local housing policy decisions are made at the municipal level. Of these cities, Jacksonville and Nashville have consolidated city-county governments. Our analysis shows that all eight of these cities experienced a decline in low-cost rented units during this period.[3]

[3] We initially considered including New Orleans, but subsequently omitted it because of its unique housing market history since Hurricane Katrina. Over the period focused on here, 2010 to 2014, New Orleans actually saw an increase in low-cost rented units. However, the number of such units in 2014 was still very low compared to

While good data on affordable rental units are scarce, we can look at the Census Bureau's American Community Survey to examine some information on occupied, low-cost units to get at least a partial picture of changes in this part of the rental market. We can measure the number of units in a neighborhood that are rented for less than $750 per month (gross rent).[4] These units are what we call "low-cost" rented units. Examining changes in the number of occupied units that are rented for less than $750 per month gives us a good sense of the rate of loss of at least one important segment of the affordable housing stock. Using the standard 30-percent-of-income threshold for affordability means that a rent of $750 per month is affordable to households making $30,000 or more per year.[5] By "affordable" here, we do not intend to connote subsidized stock only. Rather, these data include all rented units, subsidized or unsubsidized, that have low rents. Given the limits of rental market subsidies, the majority of such units are expected to be unsubsidized.

Table 2 gives changes in the numbers of units rented for less than $500, $500 to $750, and over $1,500 per month (gross rent) across two waves of the American Community Survey, 2006–10 and 2010–14. The ACS is conducted annually, but for small areas like census tracts, the Census Bureau pools five years of data together before releasing the data, otherwise, the sample sizes would be so small as to make the data unusable. Therefore, we compare the five-year ACS sample data including the years 2006 to 2010 (called the 2010 data) to the five-year ACS sample including the years 2010 to 2014 (called the 2014 data). The data, then, measure change over a four-year span—the period ending in 2010 to the period ending in 2014.

Table 2 shows that the number of low-cost rented units declined in all of these cities, while units priced above $1,500 increased markedly. In most of these cities, the sharpest declines were among units with rents under $500 per month, although there was a small increase in Tampa, a change that is not statistically significant at any reasonable confidence requirement.

pre-Katrina levels. In 2010, the number of rented units with gross rents under $750 per month was only just over 17,000, down from over 82,000 in 2000. While there was an increase in such units from 2000 to 2014, the number only grew to 23,000, still more than 70 percent below the 2000 level. Including New Orleans in the analyses in this paper would confound the identification of patterns present across the eight other, more similar cities.

[4] We do not control for the number of bedrooms of the housing unit. For metropolitan areas or states, this could be done using the ACS Public Use Microsample (PUMS) data. However, the smallest geographic units in the PUMS data are quite large with an average population of approximately 100,000, and they are not aligned with city boundaries so that city-level estimates are not available. PUMS data also do not allow for the sort of neighborhood-level analysis done here. Because larger units at rents above $750 may frequently be considered "affordable," our analysis here almost certainly understates the losses of "affordable" units on a per-bedroom basis.

[5] Rather than adjusting the rent level defined here as "low cost" for differences in median incomes across the eight cities, we used a constant $750 threshold for three reasons: 1) simplicity; 2) because the ACS data do not allow for highly specific thresholds, and 3) because we employ a tract level regression across all eight cities, which accounts for differences in variables closely related to housing costs (such as median home value and poverty rate). HUD's estimated area median incomes (AMI) for 2010 ranged from just over $40,000 in Memphis to just over $50,000 in Atlanta for a one-person household. A $750 per month gross rent is significantly higher relative to area median income in Memphis than in Atlanta. The average AMI for the eight cities was approximately $45,000 for one-person households and $64,200 for four-person households. At these average levels, a $750 per month rent is affordable at 47 percent of the four-person AMI and 67 percent of the one-person AMI.

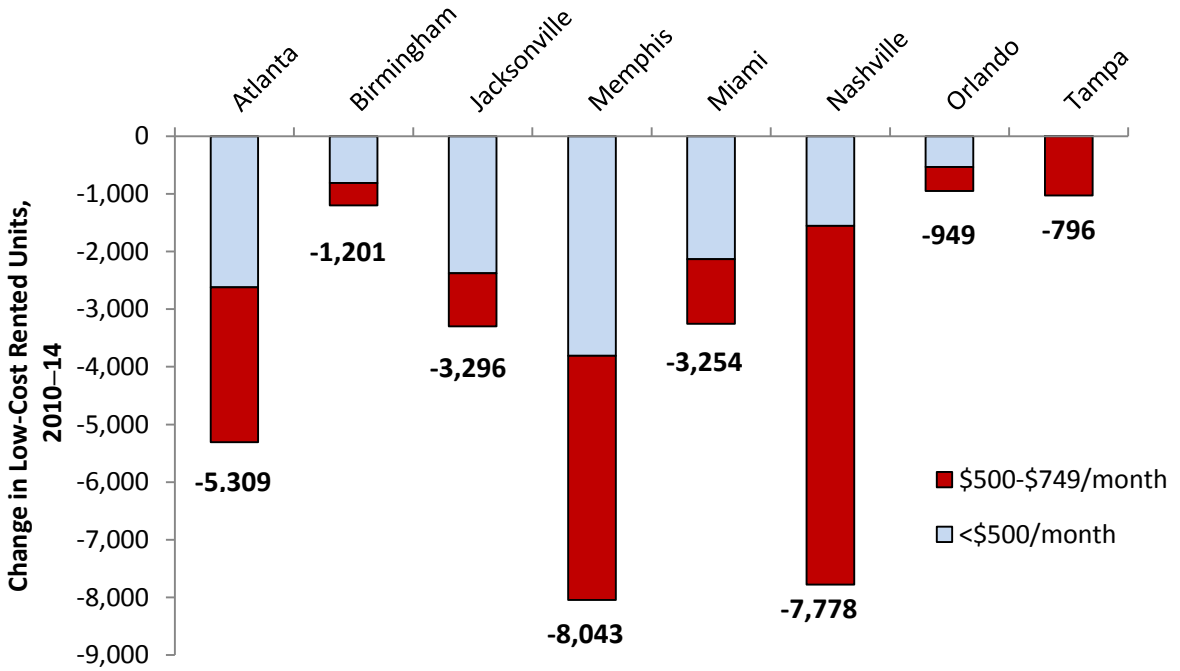
Figure 1 shows that the largest declines in low-cost units (all units under $750 per month) were in Memphis, Nashville, and Atlanta, followed by Jacksonville and Miami.

Table 2. Changes in Rented Housing Units 2010–14

	Gross Rent <$500			Gross Rent $500–$750			Gross Rent $1,500+		
	2010	Change 2010 to 2014	% Change 2010 to 2014	2010	Change 2010 to 2014	% Change 2010 to 2014	2010	Change 2010 to 2014	% Change 2010 to 2014
Atlanta	15,362	-2,619	-17.0%	17,128	-2,690	-15.7%	8,498	4,793	56.4%
Birmingham	9,196	-813	-8.8%	15,152	-389	-2.6%	621	649	104.5%
Jacksonville	12,064	-2,378	-19.7%	24,538	-918	-3.7%	5,702	4,304	75.5%
Memphis	15,529	-3,811	-24.5%	38,031	-4,232	-11.1%	3,045	2,073	68.1%
Miami	14,875	-2,133	-14.3%	18,266	-1,121	-6.1%	10,670	8,404	78.8%
Nashville	13,053	-1,558	-11.9%	33,573	-6,220	-18.5%	4,114	3,925	95.4%
Orlando	3,507	-532	-15.2%	8,135	-417	-5.1%	4,593	3,055	66.5%
Tampa	6,945	231	3.3%	12,734	-1,027	-8.1%	4,831	4,516	93.5%

Note: Rent levels are not adjusted for inflation. (The nature of the ACS data categories does not allow for this.) Cumulative inflation from 2010–14 was approximately 3 percent.
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 1. Loss of Low-Cost Rented Units, 2010–14, by Rent Level



Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Examining Census Tract-Level Changes in Low-Cost Rented Housing Units

The previous section documented the substantial loss in low-cost rented housing units across the eight southeastern cities. We now examine patterns at the neighborhood—or census tract—level. We first identified neighborhoods that experienced different levels of gain or loss in these units. Table 3 provides counts of tracts by the level of gain or loss in low-cost rented units for all tracts whose centroids lie within each city.[6] They also provide the number of low-cost units and the change in such units in these different categories. (Tables A-1 through A-8 in the Appendix provide tract-level changes at a finer level of detail and provide some demographics on the tracts experiencing losses or gains in low-cost tracts.)

Table 3 shows a general pattern in which more neighborhoods lost low-cost units than gained them. It also suggests that, in many of the cities, the losses are disproportionately concentrated in a small number of tracts. Table 4 shows that, in six of the eight cities, tracts that lost at least 150 units accounted for over 40 percent of the total losses in "losing tracts", that is, those tracts experiencing declines in low-cost units. In Nashville and Miami, this share exceeded 50 percent. In these six cities, the tracts losing more than 150 low-cost units represented between 9 and 15 percent of all city tracts. Two cities, Orlando and Tampa, had only three and two tracts, respectively, that lost 150 or more units, and their share of the net decline in losing tracts was only 35.6 percent (Orlando) and 15.4 percent (Tampa).[7]

In Orlando and Tampa, the losses of low-cost rented units were relatively less geographically concentrated in high-loss tracts, compared to the other cities. Moreover, in Nashville and, especially, Miami, they were somewhat more concentrated compared to the other cities.

Figures 2-A through 2-H map the census tracts within each city, indicating levels of loss or gain from 2010–14. In general, these maps indicate that losses of low-cost units tend to be located in different parts of the cities. They do not point to obvious geographic trends within the cities, but when the losses and gains of low-cost rented housing are compared with the poverty rate, median home value, and initial number of low-cost rented units, shown in smaller maps to the right of each figure, some relationships appear possible. The following section describes regression models that further explore the neighborhood characteristics associated with losses (or gains) in low-cost rented units.

[6] Tracts do not align perfectly with city boundaries in most cities. Therefore, only tracts whose centroids lie within the cities are included in tables 2-A through 2-G. This means that the total rows in these tables will not match the citywide totals in table 2.

[7] These ratios are not closely related to the magnitude of total low-cost unit losses in the city.

Table 3. Census-Tract-Level Changes in Low-Cost Rented Units by Level of Change, 2010–14

Tract Groups by Change in Low-Cost Rented Units	Number of Tracts	Number of Low-Cost Units for Less than $750/Month		Change in Low-Cost Units 2010–14	
		2006–10	2010–14	Number	Percent
Atlanta					
Increase of 150+ units	4	1,470	2,427	957	65.1%
Increase of 21–149 units	27	5,757	7,661	1,904	33.1%
No Substantial Change +/-20	27	2,741	2,680	-61	-2.2%
Decline of 21–149 units	54	15,171	10,747	-4,424	-29.2%
Decline of 150+ units	14	6,968	3,766	-3,202	-46.0%
Birmingham					
Increase of 150+ units	3	222	763	541	243.7%
Increase of 21–149 units	23	7,349	8,802	1,453	19.8%
No Substantial Change +/-20	8	1,690	1,730	40	2.4%
Decline of 21–149 units	24	8,315	6,689	-1,626	-19.6%
Decline of 150+ units	6	5,578	4,106	-1,472	-26.4%
Jacksonville					
Increase of 150+ units	4	1,173	1,932	759	64.7%
Increase of 21–149 units	37	6,526	9,330	2,804	43.0%
No Substantial Change +/-20	52	7,253	7,280	27	0.4%
Decline of 21–149 units	55	13,901	10,335	-3,566	-25.7%
Decline of 150+ units	15	7,928	4,549	-3,379	-42.6%
Memphis					
Increase of 150+ units	6	2,007	3,245	1,238	61.7%
Increase of 21–149 units	43	9,255	11,717	2,462	26.6%
No Substantial Change +/-20	26	3,145	3,115	-30	-1.0%
Decline of 21–149 units	76	24,899	19,088	-5,811	-23.3%
Decline of 150+ units	22	13,112	7,703	-5,409	-41.3%
Miami					
Increase of 150+ units	4	1,529	2,219	690	45.1%
Increase of 21–149 units	20	3,945	5,100	1,155	29.3%
No Substantial Change +/-20	35	7,757	7,765	8	0.1%
Decline of 21–149 units	24	9,208	7,297	-1,911	-20.8%
Decline of 150+ units	14	10,529	7,342	-3,187	-30.3%
Nashville					
Increase of 150+ units	2	1,016	1,391	375	36.9%
Increase of 21–149 units	25	6,807	8,304	1,497	22.0%
No Substantial Change +/-20	34	4,183	4,228	45	1.1%
Decline of 21–149 units	67	22,032	17,301	-4,731	-21.5%
Decline of 150+ units	22	12,538	7,362	-5,176	-41.3%
Orlando					
Increase of 150+ units	2	614	1,004	390	63.5%
Increase of 21–149 units	13	1,599	2,430	831	52.0%
No Substantial Change +/-20	12	1,539	1,466	-73	-4.7%
Decline of 21–149 units	20	4,534	3,182	-1,352	-29.8%
Decline of 150+ units	3	2,553	1,804	-749	-29.3%
Tampa					
Increase of 150+ units	3	1,801	2,299	498	27.7%
Increase of 21–149 units	25	5,235	6,768	1,533	29.3%
No Substantial Change +/-20	31	2,826	2,834	8	0.3%
Decline of 21–149 units	35	8,472	5,986	-2,486	-29.3%
Decline of 150+ units	2	1,101	650	-451	-41.0%

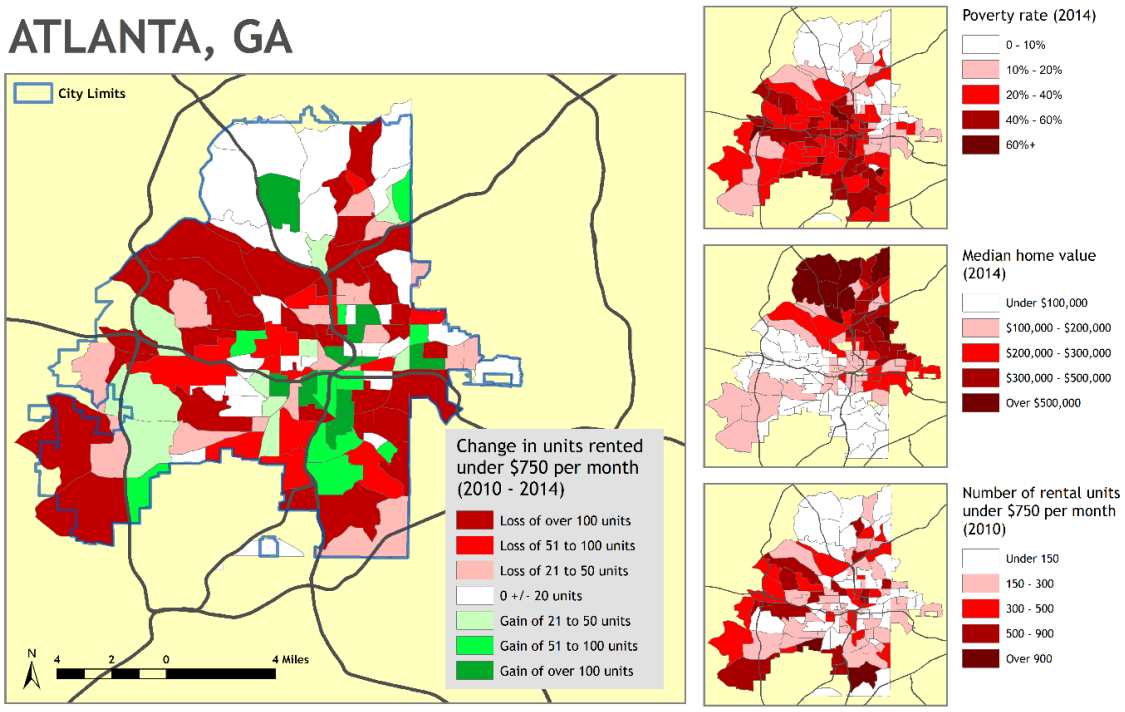
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table 4. Concentration of Low-Cost Rented Housing Units

City	Number of Tracts Losing 150+ Low-Cost Units	Percent of City Tracts	Percent of Lost Units in Losing Tracts
Atlanta	14	11.1%	42.0%
Birmingham	6	9.4%	47.5%
Jacksonville	15	9.2%	48.7%
Memphis	22	12.7%	48.2%
Miami	14	14.4%	62.5%
Nashville	22	14.7%	52.2%
Orlando	3	6.0%	35.6%
Tampa	2	2.1%	15.4%

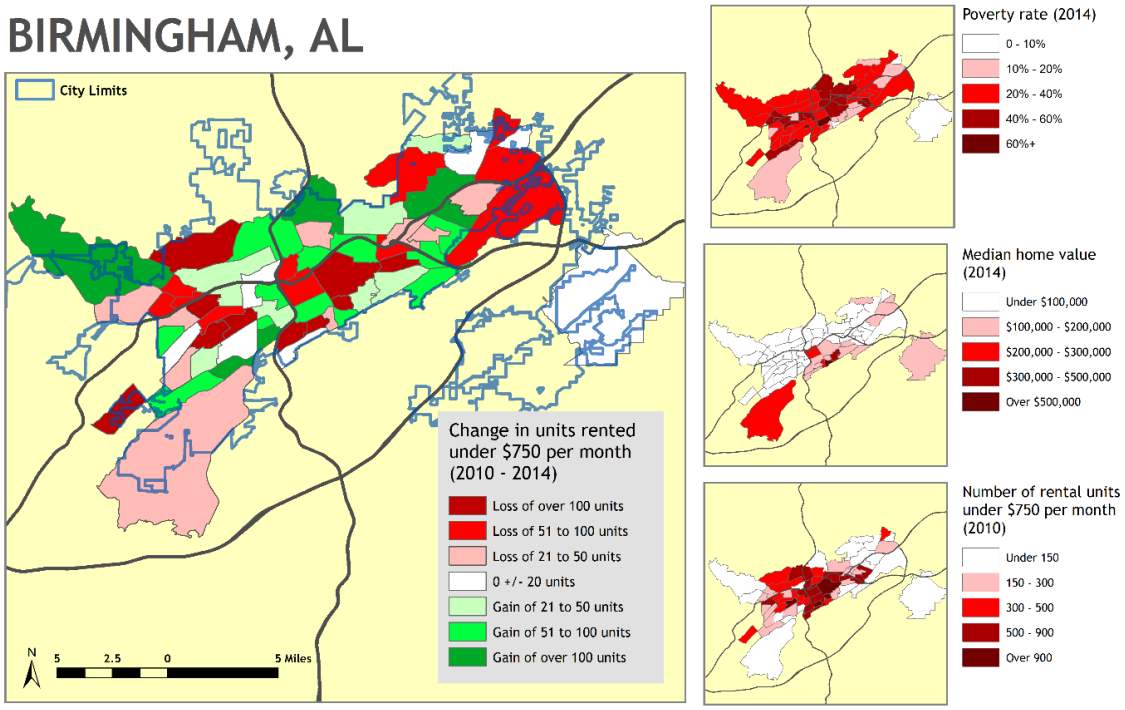
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-A. Changes in Low-Cost Rented Units in Atlanta by Census Tract, 2010–14



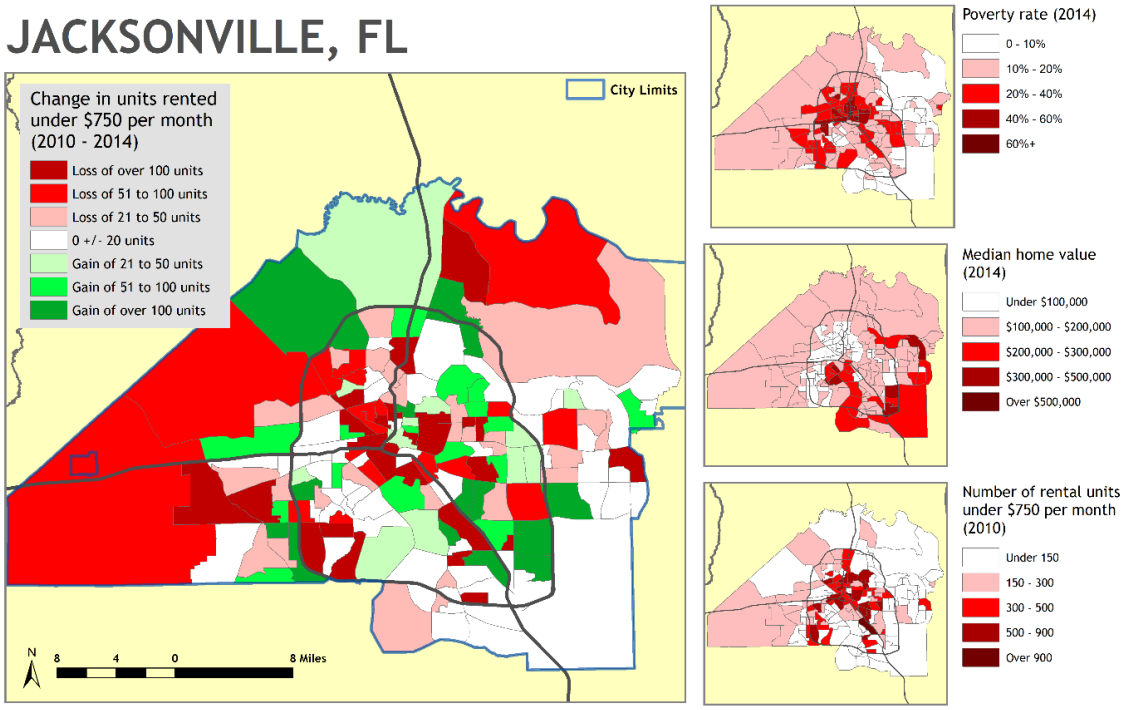
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-B. Changes in Low-Cost Rented Units in Birmingham by Census Tract, 2010–14



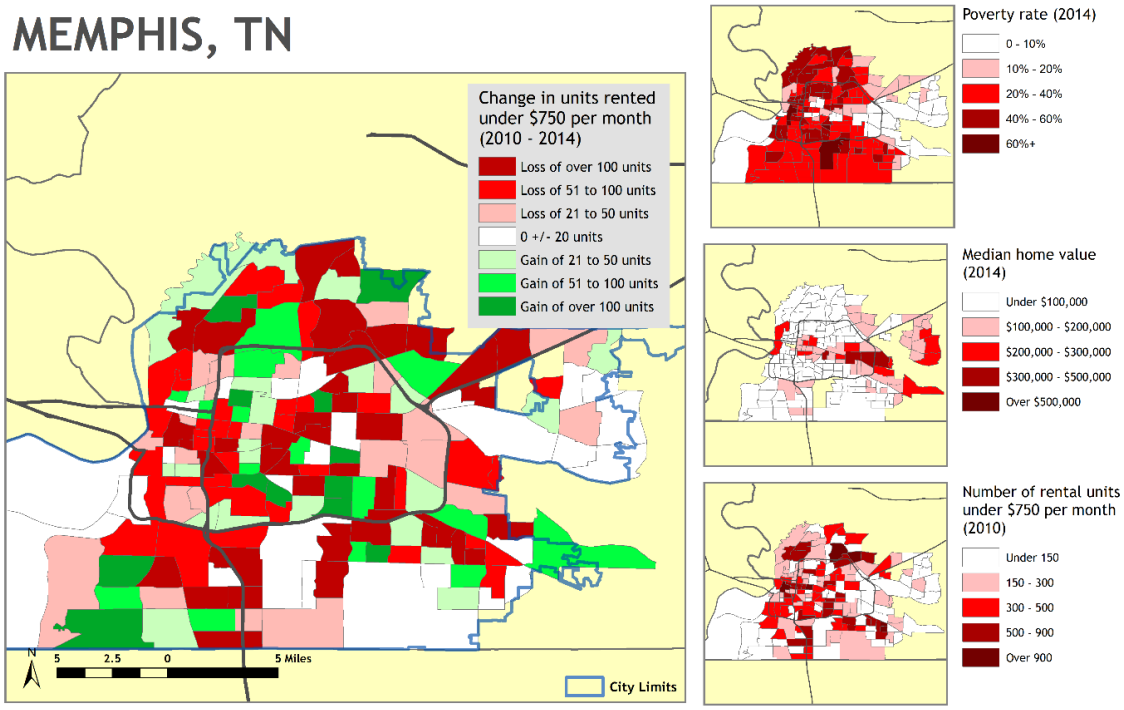
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-C. Changes in Low-Cost Rented Units in Jacksonville by Census Tract, 2010–14



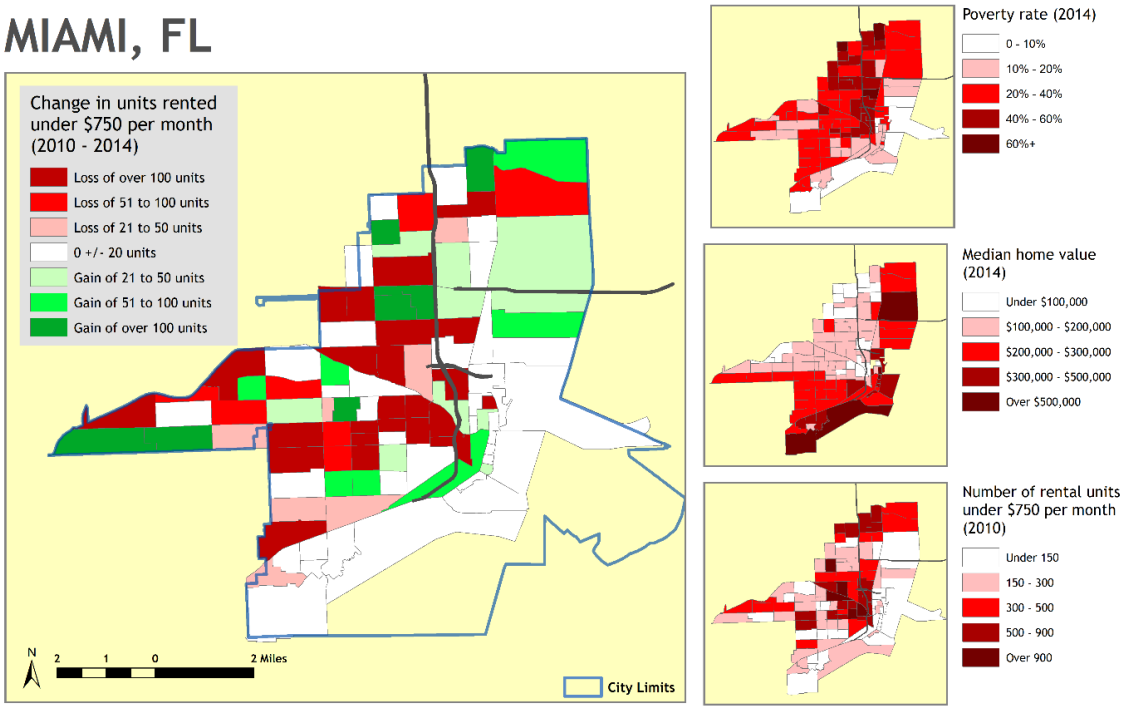
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-D. Changes in Low-Cost Rented Units in Memphis by Census Tract, 2010–14



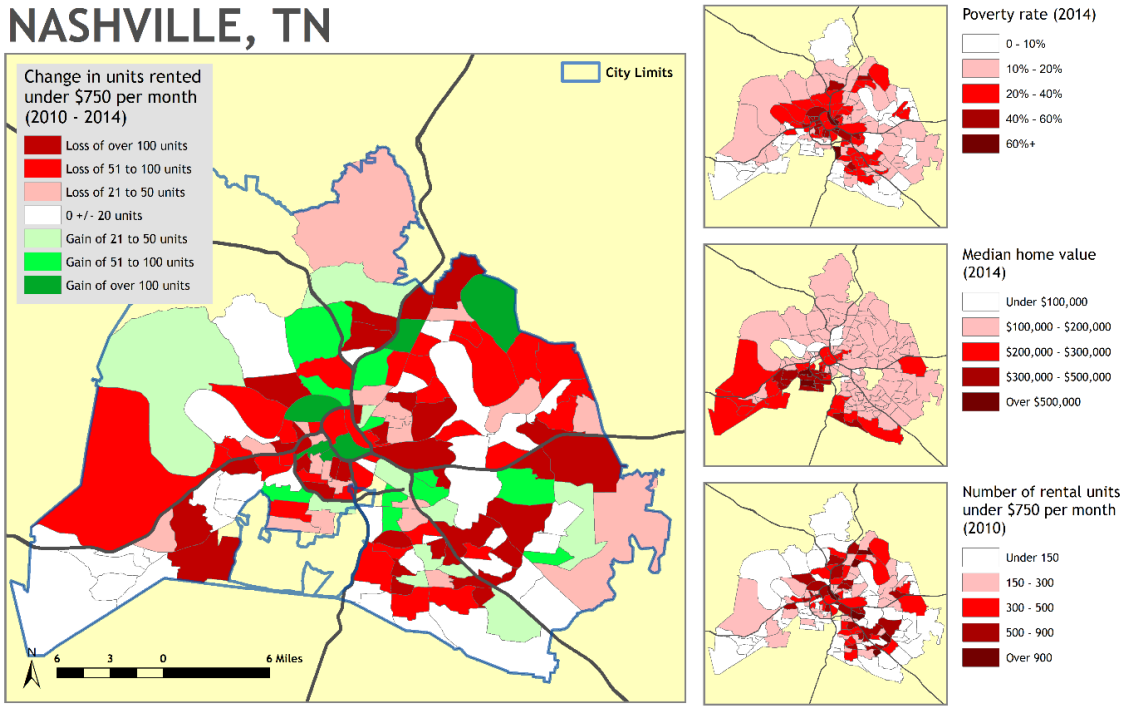
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-E. Changes in Low-Cost Rented Units in Miami by Census Tract, 2010–14



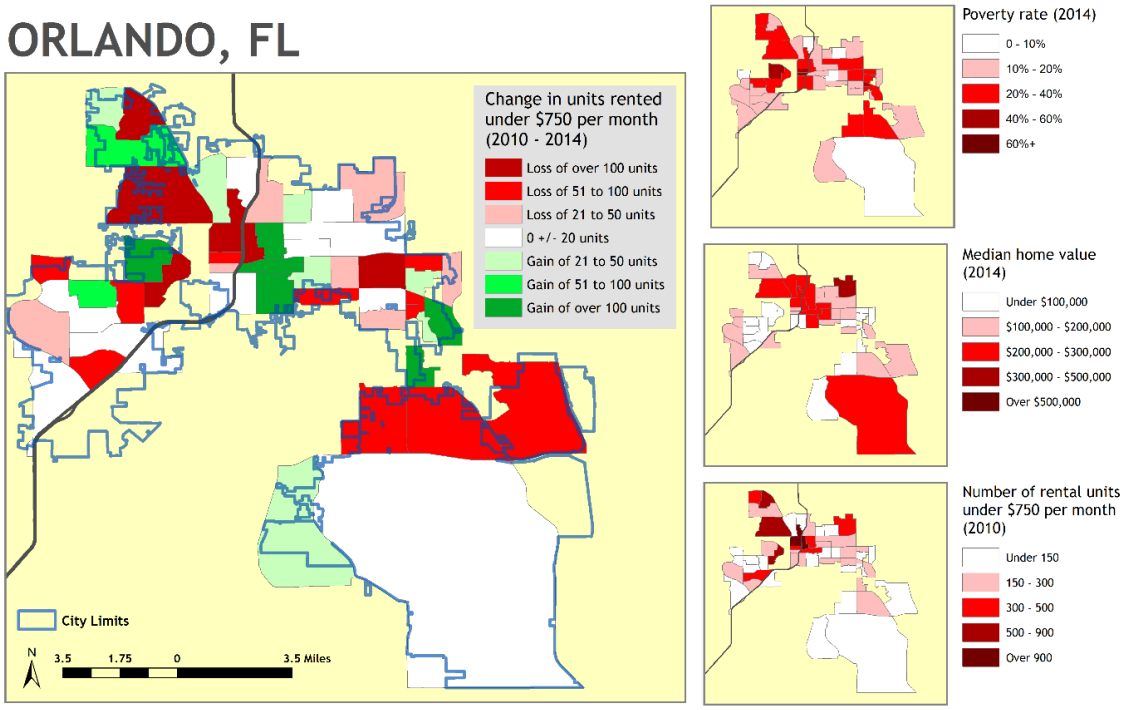
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-F. Changes in Low-Cost Rented Units in Nashville by Census Tract, 2010–14



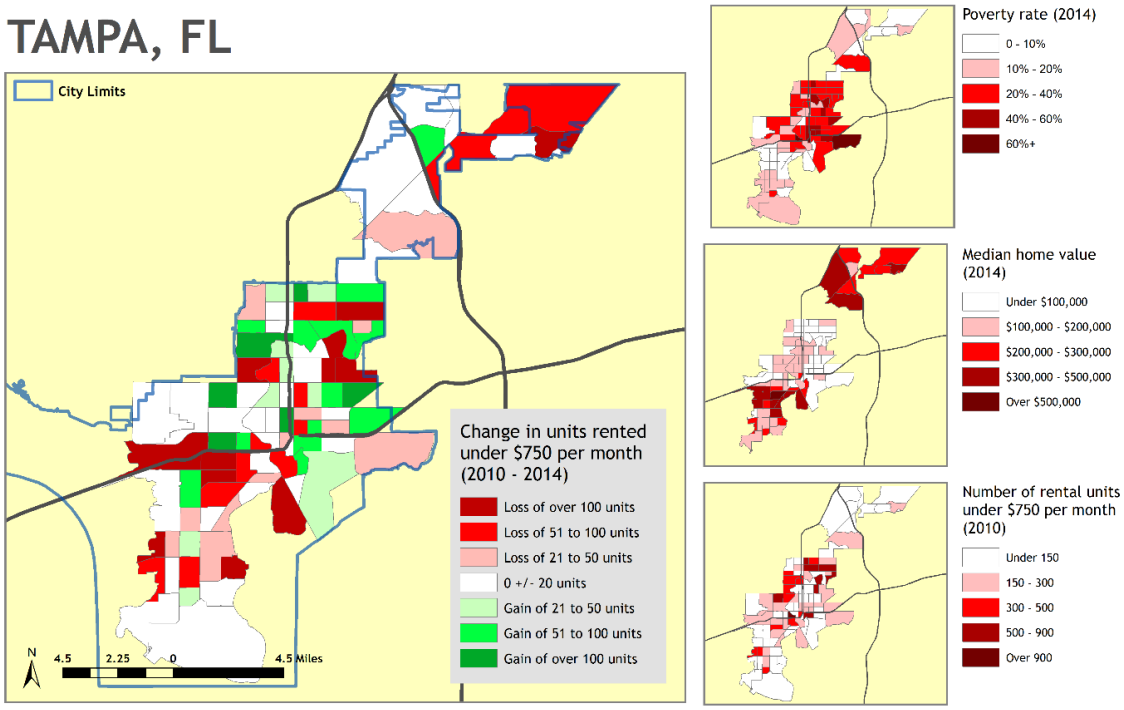
Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-G. Changes in Low-Cost Rented Units in Orlando by Census Tract, 2010–14



Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Figure 2-H. Changes in Low-Cost Rented Units in Tampa by Census Tract, 2010–14



Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

A Multivariate Analysis of the Neighborhood Characteristics Associated with the Loss of Low-Cost Rented Units from 2010–14

In order to identify whether certain initial neighborhood characteristics were associated with the change in low-cost rented housing units from 2010–14, we performed a series of regressions at the level of the census tract, using different specifications and models. The details of these regressions are presented in more detail in the Appendix. We settled on a generalized linear mixed model (sometimes referred to as a multilevel model) in large part because the 888 census tracts used in the regressions are located in eight different cities, thus suggesting a two-level structure to the model (city and tract).[8]

Because the change in low-cost rented units is expected to be related to the change in the number of total renters in a neighborhood (the renter population), we first controlled for change in total rented units from 2010–14. We then controlled for the initial level (2010) of low-cost rented units, because tracts with smaller initial levels of such units, other things equal, should be expected to experience smaller declines over the four-year period. There is less "room" for such decline.

The change in low-cost rented units may also be related to the initial mix of low- versus higher-cost units. Neighborhoods that have high percentages of low-cost units might be more likely to see disinvestment and a loss of units, for example. Thus, the percent of units in 2010 that are low cost is included as an independent variable. The remaining variables characterize the initial demographics and housing stock of the area. These include the percent of residents in poverty (poverty rate), the percent who are African-American or Latino, the median owner-occupied home value, the median age of housing units, and three variables that characterize the age of adult residents: the percent 18–24, the percent 25–34, and the percent 35–64 (the omitted range being the percent who are 65 and older).[9] These variables are all measured at the beginning of the period, 2010. Some of these variables may be associated with either potential disinvestment or gentrification. For example, if developers bid up land values and develop higher-cost housing in neighborhoods attractive to millennials, then neighborhoods with high proportions of young adults might be expected to see a loss in lower-cost units. The detailed summary statistics for variables included in the model are provided in the Appendix in table A-9. The full results for all three models estimated are provided in table A-10. The results discussed here are for the multilevel model detailed in the right-hand-most columns in table A-10.

Table 5 provides interpretations of the statistically significant coefficients for the regression model selected as most appropriate.[10] (However, the results vary little across the three models in table A-10.) It also lists the independent variables that were not found to have a statistically significant relationship with the change in low-cost units. The second column in table 5 describes the predicted value of a change in the independent variable of 10 on the dependent variable. In other words, if the independent variable of a tract is 10 (in the units of the variable, units, percentage points, years, and so

[8] As explained in the Appendix, the results of the three models (a simple OLS model, an OLS model with city-level fixed effects, and the multilevel model) did not vary substantially.

[9] All percentages are specified in a form from 0 to 100. Some additional housing stock variables (that is, percent of units that are in multifamily buildings) were also entered in various permutations of the models, but these variables had little effect on the results and were not statistically significant. To conserve statistical power and prevent problems of severe multicollinearity, these variables were not retained in the model.

[10] All significant coefficients were significant at less than p=0.05.

on) higher than an otherwise comparable tract (meaning the values of the other independent variables are the same for both tracts), then this column gives the difference in the expected change in low-cost rented units from 2010–14.

The third column provides a similar interpretation but this time it does so for a standard deviation increase in the independent variable. This column helps us understand which independent variables account for most of the variation in the change in low-cost rented units. This is because the column considers the effect of a standardized (or standard-size) change in each independent variable—one standard deviation—on the predicted change in low-cost units.

As might be expected, the first two independent variables in table 5 account for the largest amount of variation in the change in low-cost housing units. They are, by this common measure, the most influential predictors of the loss (or gain) in low-cost units. The first variable, the change in total rented units, simply measures the change in the renter population of the neighborhood. Other things being equal, if this population increases, we would expect the percentage of low-cost rented units to increase. The results here indicate, however, that for every increase of 10 rented units, only two will be low-cost units, if other neighborhood characteristics are held constant. We would expect a positive relationship here because if the total number of renters declines in an area, there are likely to be fewer renters of all income and rent levels.

The initial number of low-cost rented units, controlling for other variables, has an inverse relationship to the expected change in low-cost units. This is expected. Neighborhoods with few rented units in 2014 have less room to decline, and so are, other things equal, more likely to see smaller declines in the number of rented units. The right-hand column shows that variation in this variable accounts for a large amount of the difference among tracts in the change in low-cost units. Moreover, the second column shows that a tract with 10 more low-cost rented units in 2010 is expected to lose 1.6 more low-cost units over the 2010–14 period than an otherwise similar tract.

Table 5. Interpretations of Regression Results Predicting the Change in Low-Cost (<$750/Month) Rented Units from 2010–14[11]

Statistically significant independent variable	The change in low-cost rented units associated with an increase of 10 in the independent variable	The change in low-cost rented units associated with an increase of one standard deviation in the independent variable
Change in all rented units, 2010–14	A tract seeing an increase of 10 more housing units from 2010–14, compared to an otherwise similar tract, is expected to see **2 more** low-cost units in 2014.	A tract seeing a standard deviation increase in housing units from 2010–14, compared to an otherwise similar tract, is expected to see **39.5 more** low-cost units in 2014.
Number of rented units <$750/mo, 2010	A tract with 10 more low-cost units in 2010, compared to an otherwise similar tract, is expected to see **1.6 fewer** low-cost units in 2014.	A tract with a standard deviation higher number of low-cost units in 2010, compared to an otherwise similar tract, is expected to see **40 fewer** low-cost units in 2014.
Percent of rented units <$750/mo, 2010	A tract with a 10 percentage-point higher share of low-cost units in 2010, compared to an otherwise similar tract, is expected to see **5 fewer** low-cost units in 2014.	A tract with a standard deviation higher percentage of low-cost units in 2010, compared to an otherwise similar tract, is expected to see **11.5 fewer** low-cost units in 2014.
Percent in poverty, 2010	A tract with a 10 percentage-point higher poverty rate in 2010, compared to an otherwise similar tract, is expected to see **5.9 more** low-cost units in 2014.	A tract with a standard deviation higher poverty rate in 2010, compared to an otherwise similar tract, is expected to see **8.9 more** low-cost units in 2014.
Median age of housing unit, 2010	A tract with a median age of housing units that is 10 years older in 2010, compared to an otherwise similar tract, is expected to see **7.5 more** low-cost units in 2014.	A tract with a median age of housing units that is one standard deviation higher (older) in 2010, compared to an otherwise similar tract, is expected to see **12 more** low-cost units in 2014.
Percent of adults, 25–34, 2010	A tract with a 10 percentage-point higher percentage of adults who are 25–34 years old in 2010, compared to an otherwise similar tract, is expected to see **18.6 fewer** low-cost units in 2014.	A tract with a standard deviation higher percentage of adults who are 25–34 years old in 2010, compared to an otherwise similar tract, is expected to see **13.1 fewer** low-cost units in 2014.

Variables that are not statistically significant: percent African-American, 2010; percent Latino, 2010; median home value, 2010; percent of adults, 18–24, 2010; percent of adults, 35–64, 2010

[11] This table provides interpretations of the regression in Appendix table A-10, detailed in the third set of columns.

The third significant variable is the percent of the initial rented units in a tract that were low-cost units (under $750/month). Unlike the previous variable, this variable is not measuring the raw level of low-cost units, but the share of all units that are low cost. A tract with a 10 percentage-point higher share of low-cost units, other things equal, is expected to lose 5 more low-cost units by 2014, compared to an otherwise similar tract. The mechanism at play here is unclear. One possible explanation is that these neighborhoods are riper for redevelopment because rents (and therefore land values) are low. This may lead to a gentrification or redevelopment process where low-cost units are redeveloped into higher-cost ones. An alternative explanation is that these neighborhoods are experiencing a higher level of property abandonment, where low-cost units are leaving the rented stock altogether.

The initial poverty rate of a census tract is positively associated with the change in low-cost units. Therefore, a tract with a 10 percentage-point lower poverty rate, compared to an otherwise similar tract, is expected to see 5.9 fewer low-cost units by 2014. This suggests that, other things equal, less poor tracts are more associated with the loss of low-cost units. Similarly, the age of the housing stock is also positively related to the change in low-cost units. This means that a tract whose stock is 10 years newer than another, otherwise similar tract, is expected to lose 7.5 more low-cost units than an otherwise similar tract. Together, these two findings are consistent with a notion that low-cost housing is most at risk in lower-poverty tracts and in tracts where there has been substantial development in recent years.

The last significant variable has to do with the age of neighborhood residents. The percent of adults who were ages 25–34 in 2010 has a strong relationship with the loss of low-cost units. Census tracts with higher percentages of these young adults were likely to lose higher numbers of low-cost units than otherwise comparable tracts. A 10 percentage-point increase in the proportion of adults in this age category in 2010 is associated with a loss of 18.6 low-cost units from 2010–14, other variables held equal. This is consistent with a notion that areas attractive to younger adults are ripe for rent increases, the development of luxury rentals, and the loss of low-cost units.

The remaining variables in the model (percent African-American, percent Latino, median home value, and the proportions of adults ages 18–24 and 35–64) did not have a significant effect on the change in low-cost units.

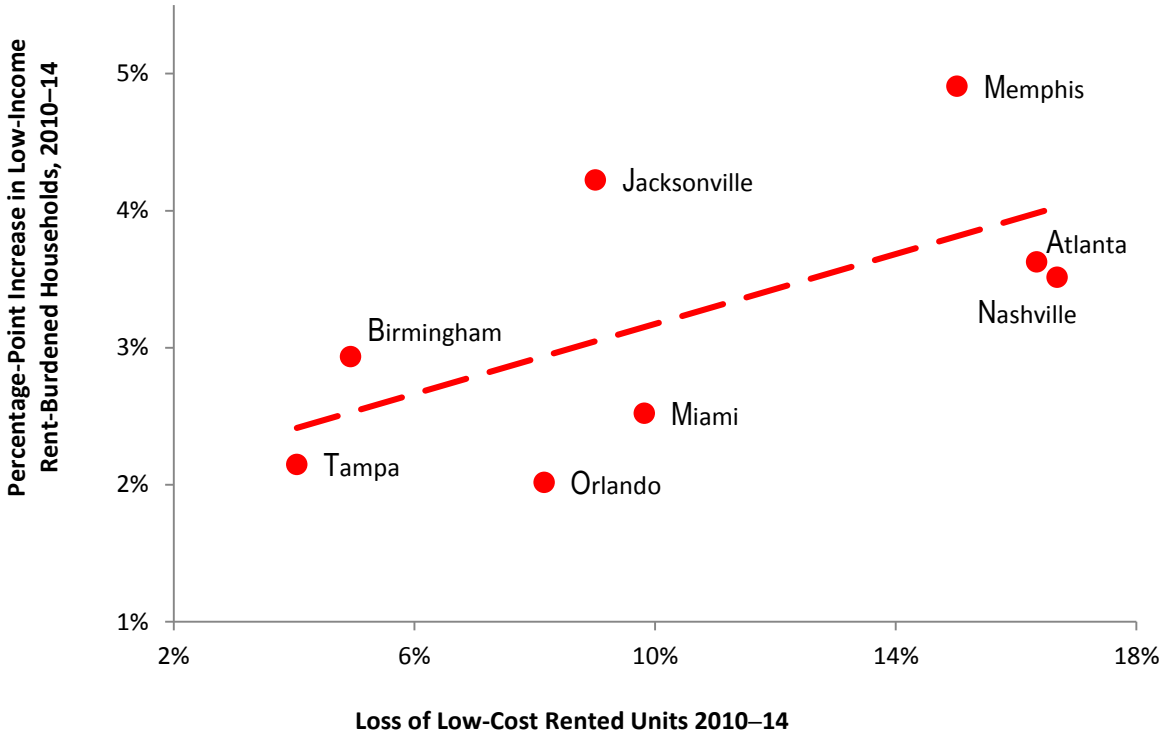
Overall, the directions of the relationships (signs of the coefficients) are generally consistent with expectations, and point to the sorts of neighborhoods where the loss of low-cost rental units are most likely. Lower-poverty tracts, tracts with higher percentages of newer housing, and tracts with younger residents—other variables held constant—are the sorts of neighborhoods most likely to incur losses in low-cost rental housing. This does not mean that neighborhoods with higher poverty rates, older housing, and fewer young adults are not losing low-cost stock. Rather, it means that, other variables equal, the amount of loss tends to be greater, *on average*, in lower poverty tracts, tracts with more 25–34 year olds, and tracts with newer housing.

Conclusion

Large southeastern cities face chronic shortages of affordable housing and are seeing substantial declines in the number of low-cost rented housing units. These declines correspond to increases in higher levels of rent-burdened households. Figure 3 shows that the cities with the highest losses of low-cost rented units tended to see larger increases in rent-burdened families over the 2010–14 period for the eight cities examined. Of course, other factors are also related to rent burden, especially changes in income and the availability of housing subsidies, but the shrinkage of low-cost rented units is associated with less housing affordability. And higher rent burdens mean less disposable income to spend on other basic goods and services, more financial and psychological stress on the household, less housing security, and a greater chance of eviction (Joint Center for Housing Studies, 2015a). While this paper focuses on the Southeast, these problems are widespread across the United States, as modest national increases in low-cost rental units have been eclipsed by surging demand for these units (ibid).

The eight cities examined in this study are losing hundreds, and sometimes thousands, of low-cost rented units annually, and these estimates do not include the loss of hundreds of thousands of larger, affordable units at higher price points than considered here (such as a two- to three-bedroom single-family house that rents for $800–$900 per month). It should also be noted that nationally, 446,000 affordable Section 8 subsidized units (33 percent of all available units in the United States) are at risk of conversion to market rate as contracts expire in the next few years (Reed and Poethig, 2015). Policymakers and the business communities in these cities—and in their corresponding states—should recognize that continuing down this path places thousands of families in more precarious housing and living situations, puts many families at greater risk of eviction, and reduces economic opportunity for these families. The effects on children are particularly devastating. Housing instability has been linked to a number of adverse impacts on children, including poor educational and health outcomes, and toxic stress (National Scientific Council on the Developing Child, 2005/2014). While detailed policy recommendations are beyond the scope of this paper, more action is needed in these cities to stem the loss of affordable housing stock, much of which is unsubsidized.

Figure 3. Larger Losses in Low-Cost Units Are Associated with Larger Increases in Low-Income, Rent-Burdened Households



Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Rental housing is disadvantaged vis-à-vis owner-occupied housing in most places in the United States. We subsidize homeownership at the national level, of course, through the mortgage interest and property tax deductions. We also subsidize owner-occupied properties through our property tax systems that typically provide partial "homestead" exemptions to owner-occupied properties.

States and cities can do something to better balance social goals. For example, local taxing bodies could provide property tax reductions to owners of rental properties who commit to long-term affordable rents for lower-income households. States could consider offering refundable income tax credits to lower-income renters, or institute state housing voucher programs to supplement the severely underfunded federal program. State and local governments can work in tandem with local banks to develop affordable financing programs for investors in small (including single-family) rental properties who need loans to purchase and repair low-cost rental properties.

States and localities can use real estate recording fees, impact fees, real estate transfer taxes, or other resources to fund housing trust funds, or to beef up existing funds. As of 2011, 42 states had some form of housing trust funds, but funding levels and allowable uses vary greatly (Center for Community Change, 2013). For example, in Florida, the Sadowski Trust Fund, which began in 1992, is designed to allocate a portion of the "stamp tax" paid on real estate taxations toward housing needs. One problem is that sometimes portions of such funds are diverted to nonhousing uses.

Mandatory inclusionary zoning can be used to create a new supply of affordable units in new luxury developments. Inclusionary zoning policies will also tend to address declines in low-cost units in the types of neighborhoods most at risk of low-cost rental losses—tracts with low poverty rates, higher percentages of newer housing, and younger residents, where luxury developments may be more likely to occur.

For tenants, additional protections would expand affordable rental options. “Source of income” discrimination, where landlords refuse to rent to holders of housing choice vouchers, should be eliminated in all jurisdictions. Public-private partnerships should also be encouraged and incentivized, as for-profit real estate developers can be significant contributors to the affordable housing supply. Public financing tools such as the Low Income Housing Tax Credit (LIHTC) and HOME programs provide critical financing, but such funds are very limited and can be seen as overly complicated by some investors. Funding agencies should closely look at their programs’ rules and regulations to ensure they do not deter leveraging with private sources of debt and equity.

The precise combination of affordable housing tools that meets a particular city’s or state’s needs best will vary. What is clear is that more attention, and more resources, are needed to combat the continuing loss of low-cost rental units. Although it is not a catchall solution, the provision of stable, affordable housing provides a platform for economic mobility; reduces burdens on the educational, health, and criminal justice systems; and promotes a productive workforce.

Appendix

Tables A-1 through A-8 provide more detailed data on changes in low-cost rented units at the tract level for each of the eight southeastern cities. They also provide some basic demographics for the different groups of tracts.

Table A-9 presents the summary statistics for variables used in a regression model that predicts the loss of low-cost rented housing units at the census tract level in the eight cities. There are 919 tracts whose centroids lie in the eight cities, but 31 of these tracts are missing key information needed to estimate the loss of low-cost units. Therefore, 888 tracts remain to utilize in the regression models. Table A-10 provides the results of three different regression models, each using a slightly different technique, in order to provide some sensitivity analysis of the robustness of the results. In the first regression, the traditional ordinary least squares (OLS) method is used, which simply treats all 888 census tracts in the same way, regardless of which city they are located within. The potential problem with this method is that the analysis ignores the fact that the neighborhoods, in fact, are located, or nested, within the eight different cities, and this fact can affect assumptions used in the OLS technique.

One approach for addressing some of these concerns is simply to control for the city location of each tract through the use of additional dummy variables indicating the city location. This is often called controlling for fixed effects. This is done in the second set of columns in table A-10. This model, which is an extension of the simple OLS model, includes seven additional dummy variables, each representing a city, with one "reference" city omitted. This method, while helpful in improving the accuracy of the estimation, still leaves potential problems in terms of OLS assumptions that are threatened.

The third set of columns in table A-10 provides the results of a multilevel, or hierarchical, linear regression model, in which the nested hierarchy evident in the data is taken into consideration. A key assumption in OLS regression is that each tract provides information that is independent of the other tracts. However, tracts in the same city may resemble one another more than tracts across cities. Therefore, tract-level data from different cities may threaten this assumption of OLS. The OLS regression is expected to produce unbiased coefficients, but unreliable standard errors, which could lead to errors in interpreting the coefficients' statistical significance. For more information, see Raudenbush and Bryk (2001). In this case, each census tract is contained within a distinct city. Thus, the city represents a higher level of data as compared to the census tract. The multilevel model incorporates the nested nature of the data when estimating coefficients and calculating significance levels. The resulting significance levels are therefore more reliable.

The results, across all three of these estimation techniques, are quite robust. Significance levels, signs of coefficients, and coefficient magnitudes all are quite consistent and vary little. The one notable change, although not a major one, is the higher level of significance (less than 0.05 versus less than 0.10) for the poverty rate variable in the last model versus the first two.

Notwithstanding the similar results across the three models, the nested nature of the data suggests the use of the third model and the fact that the AIC (Akaike information criterion) measure of fit for the model is slightly lower (which signals a better performing model) than the basic OLS model both suggest that the multilevel results should be used. However, again, all three models give similar results.

The estimation results were checked for concerns over multicollinearity, nonnormal error terms, and heteroskedasticity. Residuals in the OLS results were normally distributed. All variance inflation factors (VIFs) were under five, with most under three, so multicollinearity is not a problem. Some heteroskedasticity was evident in the OLS regression residuals, so robust standard errors were used.

Table A-1. Changes in Low-Cost Rented Housing Units in Atlanta Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	4	1,470	957	65%	37%	74%
Increase of 126–150 units	2	651	278	43%	23%	73%
Increase of 101–125 units	4	801	451	56%	44%	71%
Increase of 76–100 units	5	1,584	434	27%	36%	77%
Increase of 51–75 units	6	982	358	36%	22%	35%
Increase of 21–50 units	10	1,739	383	22%	34%	81%
No Subst'l Change +/-20 units	27	2,741	-61	-2%	16%	18%
Decline of 21–50 units	17	3,549	-605	-17%	19%	47%
Decline of 51–75 units	9	2,166	-566	-26%	39%	94%
Decline of 76–100 units	7	2,694	-611	-23%	24%	68%
Decline of 101–125 units	11	3,526	-1,260	-36%	21%	73%
Decline of 126–150 units	10	3,236	-1,382	-43%	24%	41%
Decline over 150 units	14	6,968	-3,202	-46%	31%	59%
All City Tracts	**126**	**32,107**	**-4,826**	**-15%**	**28%**	**58%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-2. Changes in Low-Cost Rented Housing Units in Birmingham Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	3	222	541	244%	28%	72%
Increase of 126–150 units	0	NA	NA	NA	NA	NA
Increase of 101–125 units	3	307	339	110%	38%	78%
Increase of 76–100 units	7	2,755	585	21%	42%	81%
Increase of 51–75 units	5	2,610	292	11%	47%	96%
Increase of 21–50 units	8	1,677	237	14%	21%	87%
No Subst'l Change +/-20 units	8	1,690	40	2%	26%	83%
Decline of 21–50 units	9	2,722	-329	-12%	24%	90%
Decline of 51–75 units	8	3,123	-514	-16%	37%	79%
Decline of 76–100 units	3	1,123	-266	-24%	35%	92%
Decline of 101–125 units	2	553	-228	-41%	26%	61%
Decline of 126–150 units	2	794	-289	-36%	31%	83%
Decline over 150 units	6	5,578	-1,472	-26%	34%	42%
All City Tracts	**64**	**23,154**	**-1,064**	**-5%**	**31%**	**86%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-3. Changes in Low-Cost Rented Housing Units in Jacksonville Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	4	1,173	759	65%	22%	36%
Increase of 126–150 units	5	615	690	112%	13%	17%
Increase of 101–125 units	4	961	438	46%	20%	28%
Increase of 76–100 units	9	2,071	789	38%	17%	22%
Increase of 51–75 units	7	1,159	462	40%	16%	30%
Increase of 21–50 units	12	1,720	425	25%	27%	33%
No Subst'l Change +/-20 units	52	7,253	27	0%	11%	13%
Decline of 21–50 units	27	4,985	-873	-18%	16%	27%
Decline of 51–75 units	9	3,119	-585	-19%	28%	87%
Decline of 76–100 units	9	2,063	-820	-40%	21%	26%
Decline of 101–125 units	4	1,095	-450	-41%	21%	26%
Decline of 126–150 units	6	2,639	-838	-32%	26%	31%
Decline over 150 units	15	7,928	-3,379	-43%	21%	48%
All City Tracts	**163**	**36,781**	**-3,355**	**-9%**	**17%**	**23%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-4. Changes in Low-Cost Rented Housing Units in Memphis Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	6	2,007	1,238	62%	43%	73%
Increase of 126–150 units	2	514	270	53%	24%	79%
Increase of 101–125 units	4	1,316	446	34%	43%	91%
Increase of 76–100 units	6	1,843	525	28%	34%	61%
Increase of 51–75 units	9	1,306	554	42%	27%	87%
Increase of 21–50 units	22	4,276	667	16%	30%	77%
No Subst'l Change +/-20 units	26	3,145	-30	-1%	17%	67%
Decline of 21–50 units	23	5,364	-817	-15%	25%	81%
Decline of 51–75 units	16	4,271	-988	-23%	35%	86%
Decline of 76–100 units	18	7,162	-1,574	-22%	26%	65%
Decline of 101–125 units	8	2,985	-936	-31%	30%	44%
Decline of 126–150 units	11	5,117	-1,496	-29%	38%	80%
Decline over 150 units	22	13,112	-5,409	-41%	34%	82%
All City Tracts	**173**	**52,418**	**-7,550**	**-14%**	**31%**	**77%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-5. Changes in Low-Cost Rented Housing Units in Miami Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	4	1,529	690	45%	41%	51%
Increase of 126–150 units	1	137	147	107%	31%	0%
Increase of 101–125 units	2	413	214	52%	26%	20%
Increase of 76–100 units	3	262	261	100%	28%	0%
Increase of 51–75 units	4	869	255	29%	25%	5%
Increase of 21–50 units	10	2,264	278	12%	25%	14%
No Subst'l Change +/-20 units	35	7,757	8	0%	19%	3%
Decline of 21–50 units	7	1,707	-291	-17%	24%	1%
Decline of 51–75 units	5	1,545	-305	-20%	26%	0%
Decline of 76–100 units	2	927	-180	-19%	29%	43%
Decline of 101–125 units	8	2,707	-878	-32%	29%	3%
Decline of 126 to 150 units	2	2,322	-257	-11%	50%	43%
Decline over 150 units	14	10,529	-3,187	-30%	38%	3%
All City Tracts	**97**	**32,968**	**-3,245**	**-10%**	**28%**	**4%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-6. Changes in Low-Cost Rented Housing Units in Nashville Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	2	1,016	375	37%	48%	80%
Increase of 126–150 units	1	409	126	31%	24%	6%
Increase of 101–125 units	2	602	216	36%	17%	22%
Increase of 76–100 units	4	940	349	37%	28%	36%
Increase of 51–75 units	7	2,436	437	18%	20%	24%
Increase of 21–50 units	11	2,420	369	15%	15%	23%
No Subst'l Change +/-20 units	34	4,183	45	1%	10%	12%
Decline of 21–50 units	21	5,736	-741	-13%	20%	18%
Decline of 51–75 units	15	3,679	-947	-26%	13%	11%
Decline of 76–100 units	19	7,140	-1,599	-22%	21%	24%
Decline of 101–125 units	9	3,962	-1,028	-26%	32%	27%
Decline of 126–150 units	3	1,515	-416	-27%	28%	27%
Decline over 150 units	22	12,538	-5,176	-41%	17%	32%
All City Tracts	**150**	**46,576**	**-7,990**	**-17%**	**17%**	**22%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-7. Changes in Low-Cost Rented Housing Units in Orlando Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	2	614	390	64%	14%	6%
Increase of 126–150 units	1	156	126	81%	30%	2%
Increase of 101–125 units	3	590	337	57%	33%	14%
Increase of 76–100 units	0	NA	NA	NA	NA	NA
Increase of 51–75 units	2	175	103	59%	24%	68%
Increase of 21–50 units	7	678	265	39%	15%	6%
No Subst'l Change +/-20 units	12	1,539	-73	-5%	16%	10%
Decline of 21–50 units	7	1,403	-280	-20%	16%	10%
Decline of 51–75 units	6	1,197	-397	-33%	24%	21%
Decline of 76–100 units	5	1,005	-426	-42%	26%	12%
Decline of 101–125 units	1	298	-101	-34%	21%	6%
Decline of 126–150 units	1	631	-148	-23%	17%	47%
Decline over 150 units	3	2,553	-749	-29%	37%	71%
All City Tracts	**50**	**10,839**	**-953**	**-9%**	**19%**	**13%**

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-8. Changes in Low-Cost Rented Housing Units in Tampa Census Tracts, 2010–14

Tract Group	Tract Count	Rented Units <$750/mo 2010	Change in Rented Units <$750/mo 2010–14	Percent Change in Rented Units <$750/mo 2010–14	Median Tract Poverty Rate 2014	Median Tract Percent African-American 2014
Increase over 150 units	3	1,801	498	28%	49%	55%
Increase of 126–150 units	1	428	150	35%	23%	9%
Increase of 101–125 units	2	298	213	71%	33%	48%
Increase of 76–100 units	3	527	261	50%	49%	53%
Increase of 51–75 units	10	2,328	600	26%	31%	41%
Increase of 21–50 units	9	1,654	309	19%	26%	21%
No Subst'l Change +/-20 units	31	2,826	8	0%	16%	12%
Decline of 21–50 units	13	2,369	-402	-17%	18%	9%
Decline of 51–75 units	9	1,734	-568	-33%	18%	22%
Decline of 76–100 units	3	1,362	-241	-18%	20%	17%
Decline of 101–125 units	5	1,611	-576	-36%	17%	38%
Decline of 126–150 units	5	1,396	-699	-50%	15%	11%
Decline over 150 units	2	1,101	-451	-41%	29%	35%
All City Tracts	96	19,435	-898	-5%	20%	15%

Source: American Community Survey 5-year estimates, 2006–10 and 2010–14

Table A-9. Descriptive Statistics for Dependent and Independent Variables

Variable	Mean	Std. Deviation
Change in Rented Units <$750, 2010–14 (Dependent Variable)	-32.98	102.83
Change in All Rented Units, 2010–14	74.54	193.72
Number of Rented Units <$750/mo, 2010	282.66	253.67
Percent of Rented Units <$750/mo, 2010 (0 to 100)	38.43	23.29
Percent in Poverty, 2010 (0 to 100)	22.40	15.26
Percent African-American, 2010 (0 to 100)	41.81	35.24
Percent Latino, 2010 (0 to 100)	15.03	22.93
Median Home Value, 2010 ($10,000s)	18.62	12.44
Median Age of Housing Unit, 2010 (years)	40.87	15.99
Percent of Adults, 18–24, 2010 (0 to 100)	11.03	7.19
Percent of Adults, 25–34, 2010 (0 to 100)	16.62	7.06
Percent of Adults, 35–64, 2010 (0 to 100)	38.24	6.96

Table A-10. Regression Results, Dependent Variable = Change in Rented Housing Units with Gross Rent <$750/mo from 2010–14*

	OLS				OLS w/City Fixed Effects				Multilevel (City, Tract)			
	B	Robust SE	Beta	Sig	B	Robust SE	Beta	Sig	B	F stat (DF=1, DF2=876)	Beta	Sig
(Constant)	34.492	32.702		.292	26.801	38.275		.509	35.708			.344
Change in All Rented Units, 2010–14	**.203**	**.022**	**.382**	**.000**	**.204**	**.022**	**.384**	**.000**	**.204**	**38.187**	**.384**	**.000**
Number of Units <$750/mo, 2010	**-.157**	**.021**	**-.388**	**.000**	**-.158**	**.021**	**-.390**	**.000**	**-.158**	**174.677**	**-.390**	**.000**
Percentage of Units <$750/mo, 2010	**-.494**	**.202**	**-.112**	**.015**	**-.499**	**.206**	**-.113**	**.024**	**-.495**	**5.276**	**-.112**	**.022**
Percent in Poverty, 2010	.534	.313	.079	.088	.619	.310	.092	.053	**.585**	**4.606**	**.087**	**.032**
Percent African-American, 2010	.116	.133	.040	.385	.115	.153	.039	.485	.130	.933	.045	.334
Percent Latino, 2010	.055	.137	.012	.688	-.102	.235	-.023	.682	-.018	.023	-.004	.880
Median Home Value ($10,000s), 2010	-.206	.233	-.025	.376	-.183	.300	-.022	.604	-.178	.869	-.022	.352
Median Age of Housing Unit, 2010	**.743**	**.198**	**.116**	**.000**	**.732**	**.207**	**.114**	**.001**	**.748**	**4.662**	**.116**	**.031**
Percent of Adults, 18–24, 2010	.228	.518	.016	.660	.207	.508	.015	.665	.217	.219	.015	.640
Percent of Adults, 25–34, 2010	**-1.979**	**.447**	**-.136**	**.000**	**-1.841**	**.471**	**-.126**	**.000**	**-1.860**	**8.539**	**-.128**	**.004**
Percent of Adults, 35–64, 2010	-.860	.618	-.058	.164	-.958	.615	-.065	.106	-.915	2.034	-.062	.154
Atlanta					-15.569	12.813	-.052	.225				
Birmingham					23.428	15.086	.059	.121				
Jacksonville					2.039	12.050	.008	.866				
Memphis					-20.799	12.048	-.079	.085				
Miami					5.337	16.890	.016	.752				
Nashville					-13.649	12.177	-.049	.263				
Orlando					5.497	15.195	.012	.718				
(Tampa is omitted/reference city)												
Adjusted R-square	0.332				0.341				N/A			
Akaike information criterion (AIC)	10,334.00				N/A				10,330.708			

N =888

Bold and Underline: significance<0.01; Bold: significance <0.05; Underline: significance<0.01

*5-Year American Community Survey estimates, 2006–10 and 2010–14

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