



UNC CHARLOTTE
Childress Klein Center for Real Estate

THE STATE OF HOUSING IN CHARLOTTE REPORT

The Belk College of Business and Childress Klein Center for Real Estate would like to gratefully acknowledge our resource and data partners, whose generous support has allowed us to bring this crucial research to the Charlotte community.



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Executive Summary

The faculty and staff of the Childress Klein Center for Real Estate (CKCRE) are pleased to release this *State of Housing in Charlotte* report. Our goal with this report is to provide a comprehensive, data-driven analysis of the current state of the housing markets in the Charlotte region, as well as an overview of the trends that have taken place in that market in the recent past. This is not a housing policy document; our goal is to document what is happening in the marketplace. We leave it to others to determine if these outcomes are desirable or whether public policy should be adjusted to affect these outcomes. Our hope is that the data and analysis we present herein will allow policymakers, market participants, and the citizens of the region to make more informed decisions.

When we decided to undertake this project we felt it was important that it have a regional focus. The Charlotte region is growing fast, and there is increasing integration in the housing markets of Mecklenburg County and the surrounding suburban counties. No analysis of the Charlotte housing market can be complete without understanding the dynamics of those suburban markets and the interplay between them and the Mecklenburg market. For this reason this report examines the housing markets in Cabarrus, Gaston, Iredell, Lincoln, Mecklenburg, and Union counties in North Carolina, and Lancaster and York counties in South Carolina. Based on the results of our analysis, we are more convinced than ever that it is important to view the housing markets here as a single regional market as opposed a series of discrete county markets.

In the most general sense the Charlotte region does a very good job of housing its residents. People living in this region have access to a deep supply of both owner-occupied and rental housing. That said, there are a number of housing challenges and issues that the report discusses. Some of the challenges are listed below.

- **Land prices are rising rapidly, especially in Mecklenburg County.** Increasing land prices drive the market toward higher density housing, and reduce the relative costs of commuting. As land prices increase, developers will seek to build higher density housing, and consumers will be willing to drive further to find housing at a price point with which they are comfortable.
- **The population of the Charlotte region is growing faster than the number of housing units.** The Charlotte region's population has grown at a rate of about 2.03% per year since 2007. The aggregate number of housing units has grown at a rate of about 1.34%. This has led to a sharp reduction in the number of vacant housing units in the area. In fact, the Charlotte region has one of the lowest vacancy rates (for all housing units) of any of its regional or national competitor cities.
- **Prices of owner-occupied housing have risen in both nominal and real terms.** Both the median and average home price in the Charlotte market are higher than they were at the height of the housing boom.
- **The lowest-priced segment of the owner-occupied market has seen the sharpest price increases.** The 10th percentile home price in the region has increased at an annual rate of growth of just over 16% in Mecklenburg County over the 2011-2018 time period. The median

home price, in contrast, has risen at an annual rate of about 7%, and the 90th percentile home at an annual rate of about 4%.

- **The owner-occupied market has become much more supply-constrained than it has been historically.** Since 2009 there has been a steady downward trend in the inventory of homes listed for sale on the MLS even though the number of homes sold has increased. Homes are simply staying on the market for less time before they are sold.
- **The supply of lower-priced homes is severely constrained.** Since 2011 the number of homes available at the lower end of the price distribution has become very tight. To see one example, until 2014 homes priced at \$150,000 or less had always comprised at least 35% or more of the total home sales, with that percentage frequently in the upper 40% range in the 2005-2011 era. That percentage has steadily declined to the point that in 2018 they comprised less than 15% of homes sold in the region.
- **Middle-income housing affordability is becoming a significant challenge for the region.** We demonstrate that only about 15% of homes available for sale meet the definition of “affordable” for households earning under \$50,000/year. Even a household earning \$65,000/year can only comfortably afford to purchase about 40% of the homes available for sale.
- **Rental rates have increased for all types of rental housing including apartments and single family rentals.** Since 2010, rents in the region have increased significantly. Consider that in 2010 less than 10% of rental households reported paying rents of between \$1,000 and \$1,250 per month. In 2017 that percentage was almost 25%.
- **There has been strong growth in the apartment market.** Since 2010 the region has added a little over 42,000 apartment units, an increase of approximately 34%. Without this additional inventory, prices would be much higher than they currently are for both rental and owner-occupied housing.
- **Cost-burdened renters make up a high percentage of all renters in the region.** Approximately 45% of renter households in the region meet the definition of being “cost-burdened.”
- **There is an ongoing need for additional low-income housing.** There are nearly 80,000 households in the region that have annual household income of \$15,000 or less. They cannot afford to rent even “C” quality apartments and must rely on subsidized and public housing. To meet this need, there are approximately 15,500 LIHTC units available. There are additional programs like the federally-funded Housing Choice Voucher program, of course, but the reality is that there are not enough subsidized or public housing units in the region to meet the needs of the low-income population.

These are real challenges for the region, and certainly should not be minimized. We also want to place them into a broader context, however. To do this we compare the Charlotte market along several key dimensions against sets of regional and national competitor cities. Because this analysis relies heavily on

census data, we elect to work mostly at the Metropolitan Statistical Area (MSA) level as opposed to the county level. From this we can draw a series of important conclusions.

- **The Charlotte MSA has had rapid population growth compared to its regional and national competitors.** When compared to both regional and national competitor cities, Charlotte's percentage population growth was the fourth highest of eleven national competitor cities, and was the third highest of eight regional competitor cities.
- **Residential land prices have risen in Charlotte, but they have risen much faster in many regional and national competitor cities.** Among the regional competitors, Charleston has residential land prices, roughly double that of Charlotte, and a residential land growth rate that is also double that of Charlotte. Raleigh and Wilmington both have higher residential land prices, but are much closer to those of Charlotte. On the national stage, however, Charlotte has some of the lowest residential land prices. In contrast, cities such as Austin, Denver, Portland, and Sacramento have residential land prices that are many multiples of prices in the Charlotte region. Further they have residential land price growth rates that are in the double-digits.
- **Home prices in Charlotte are moderate compared to regional and national competitors.** The median home price in Charlotte is roughly in the middle of both the regional and national competitor set. Median home price growth has been at the lower end of rates in the national competitor city set.
- **The median rent in the Charlotte area is among the highest of the regional competitor cities, but is roughly average in the national competitor set.** Charlotte's median rent was higher than all others in the region except for Charleston, Raleigh, and Richmond, although none of the differences were particularly large. Among the national competitors, Atlanta, Austin, Denver, Portland, and Sacramento all had significantly higher median rents than Charlotte.
- **A large percentage of renters in the Charlotte region are cost-burdened, but that percentage is low relative to many of the regional and national competitor cities.** Roughly 45% of renters in the Charlotte region meet the definition of being cost-burdened. Among regional competitors, Asheville, Charleston and Columbia each have rates of 50% or higher. Among the national competitor set, only Cincinnati and Nashville had lower percentages of cost-burdened renters.

When placed into the context of our regional and national competitor cities, it is clear that although the Charlotte region faces very real and substantial housing challenges, it is still doing well in comparison. This is not to mean that the region can be complacent in addressing the challenges around housing that we have identified. Rather, it means that as a region we still have time to address these challenges.

I. Introduction

A. Goal of the Report

The goal of this report, written by the UNC Charlotte Childress Klein Center for Real Estate, is to provide a comprehensive overview of the state of housing in Charlotte and the surrounding area. In general, the state of the housing market in this region is good. Residents, especially those in the middle- and upper-income ranges, have many choices as to the type and tenure of housing they choose to occupy. There are challenges, however, and this report will document those challenges.

First and foremost, this report seeks to be a data-driven endeavor. We utilize a wide variety of data sources, both public and proprietary, to show the state of the markets. Throughout the report we present data first and then, where appropriate, use that data to draw conclusions as to what is happening in the marketplace.

Our hope is that this report will serve as a common data starting point for the discussion of housing policy in the Charlotte region. Our goal is not, however, to propose or analyze specific housing policy in this report, but rather to lay out what the current state of the housing market is and to discuss both the trends that have happened in the recent past and those that are currently emerging.

B. Geographic Scope

The scope of this report is broad. Geographically, the report focuses on Mecklenburg County and the seven counties that are physically adjacent to it. Specifically, this means Cabarrus, Gaston, Iredell, Lincoln, and Union counties in North Carolina and Lancaster and York counties in South Carolina. Throughout the report, when we refer to the “Charlotte region” this is the set of counties to which we are referring.

These eight counties are a subset of the United States Census Bureau’s Charlotte-Gastonia-Concord Metropolitan Statistical Area (henceforth the “Charlotte MSA”.) We elected to focus on the eight counties in the Charlotte region primarily because of data availability. These counties have the richest sets of data associated with them. Further, these counties represent the vast majority of the population and housing in the Charlotte MSA.

Although the focus of the report is on those eight counties, there are times when we do use data for the entire MSA. Specifically we use MSA-level data when comparing Charlotte’s housing market again those of regional and national competitor cities. In all cases we have tried to be clear as to the exact geographic area that we are discussing.

C. Data Sources

This report uses six primary data sources. These are as follows:

1. The Charlotte Regional Realtors® Association (CRRA) Carolinas Multiple Listing Service (MLS). The CRRA has provided the Childress Klein Center for Real Estate (CKCRE) with their database of MLS listings and sales from 2001 through the present. These data are proprietary to the CRRA, and the CKCRE is only able to provide the summary information included in this report. The CKCRE cannot provide the underlying data to the public.

2. CoStar. The CKCRE uses data obtained under license from CoStar to examine the apartment market. This data is proprietary and the CKCRE cannot provide the underlying data to the public.
3. County GIS systems. Each county in this report provides some form of publicly accessible Geographic Information Systems (GIS) data. We use this data for mapping and hedonic regression purposes. These data are freely available from the relevant counties.
4. U.S. Census Bureau. The U.S. Census Bureau provides a wide variety publicly available data related to the population and housing across the entire county. We use data from the American Community Survey (ACS) and from the American Housing Survey, as well as data from the 2010 Census in this report. Unless otherwise noted, data from the ACS come from the 1-year estimates. In some cases we use data tabulated by the Census Bureau and which are available through the American Fact Finder web-site (<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>). In other cases we have used data from the Public Use Micro Sample (PUMS) data: <https://www.census.gov/programs-surveys/acs/data/pums.html>. All of these data are freely available from the various U.S. Census Bureau data portals.
5. U.S. Department of Housing and Urban Development. We use two sets of data from this source that are available from the HUD web site: <https://huduser.gov>. The first is a set of income limits for HUD uses when determining eligibility for certain housing subsidies. The second is a database of Low Income Housing Tax Credit projects in the region. These data are feely available to the public from the HUD portal.
6. Federal Reserve Data. We use data on inflation and mortgage interest rates obtained from the Federal Reserve Economic Data (FRED) portal maintained by the St. Louis FED: <https://fred.stlouisfed.org/>. These data are freely available to the public from the FRED portal.

D. Organization of the Report

This rest of this report falls into four sections. Section II presents a macroscopic view of the housing market in the Charlotte region. It begins by presenting some basic facts relating to the size of the housing market, and the split between owner-occupied housing and rental housing. It also presents information on the population and population growth rate of the Charlotte region and discusses how this growth affects and can be affected by housing.

Section III presents a detailed micro-view of the housing markets. In this section, we look at specific trends and especially the affordability of owner-occupied and rental housing. In Section IV, the report compares Charlotte housing markets to those of eight regional and eleven national competitor cities. Finally, Section V summarizes the report and presents CKCRE plans for future reports.

E. Acknowledgements

This report has been made possible because of the financial support of a wide variety of interested housing participants. Those organizations providing financial support include:

- The Charlotte Housing Authority
- The Charlotte Regional Realtor® Association
- City Center Partners
- Crosland Southeast
- Evergreen Strategies
- Foundation for the Carolinas – Robinson Center for Civic Leadership
- The National Association of Realtors
- Moore & Van Allen
- Piedmont Public Policy Institute
- True Homes Inc.

In addition, we wish to thank the Charlotte Regional Realtors® Association for their substantial data contribution. Without their donation of data from the Carolina Multiple Listing Service, this project could not have been done. Additionally, we want to thank Metrostudy for providing land price data, and the Charlotte Housing Authority for providing data on Housing Choice Voucher program and public housing in Charlotte.

Finally, the Childress Klein Center for Real Estate thanks a number of key experts who have generously given their time and energy to discuss this report and our analysis. This includes Mark Boyce with True Homes Inc., Mark Cramer with the Piedmont Public Policy Institute, Brenda Hayden with Keller Williams Realty, Fulton Meachem with the Charlotte Housing Authority, Joe Padilla with the Real Estate Building and Industry Coalition, Tim Sittema with Crosland Southeast, and Landon Wyatt with Childress Klein Properties. The suggestions, counsel, and advice we have received from this group has been invaluable. Any errors or omissions, of course, are purely those of the authors.

II. General Macroeconomic Overview

We begin the analysis of the Charlotte region's housing market by first examining some broad macroeconomic trends that affect the housing market. We do this because the housing market does not exist in a vacuum, but rather is part of the larger economy. Specifically, we analyze three major ideas: the growth in population, income growth, and housing unit growth. We show in Sections III and IV that these broad macroeconomic trends directly lead to some of the micro trends, especially with respect to housing prices and availability, that we observe. Before diving into the analysis, we feel that it is important to discuss the data used in this section of the report.

A. Data Sources

Because the focus of this section is on the major population and housing trends in the region, we rely heavily upon data published by the United States Census Bureau. Specifically, we rely upon data collected and published as part of the American Community Survey (ACS). This data set contains a very wide array of data on households, housing, and housing characteristics. It is a data set that is widely used in academic and scientific studies.

The Census Bureau conducts the ACS on an annual basis. They then publish various statistics using data they have collected during one of three different time periods. The so-called "1-year" estimates are based solely on data collected within a single calendar year. So, the 2017 1-year estimates are based solely on data collected by the Census Bureau between January 1, 2017 and December 31, 2017. They also publish a "3-year" estimate and a "5-year" estimate. These estimates are based on data collected over 36 and 60 month periods, respectively. So a 2017 5-year estimate will be based on data collected from January 1, 2013 through December 31, 2017.¹

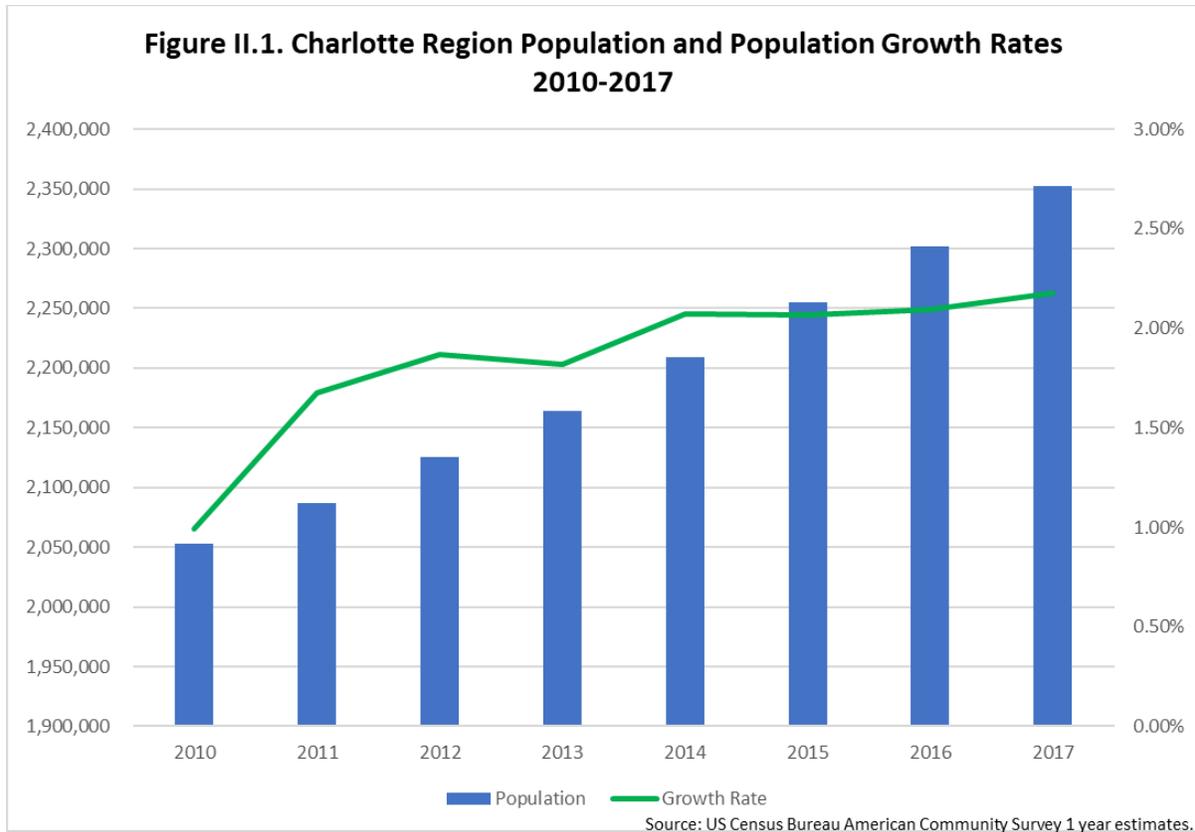
In selecting between these three data sets there are tradeoffs. The 5-year estimates are based on the largest sample size. This means that they are least affected by random variation in the sample, and have the smallest "standard error" of the estimates. For many projects, these would be the most appropriate to use. The drawback to the 5-year estimates, however, is that it mixes data across years. The 1-year estimates are based on a smaller sample size, and so are subject to more random variation, but have the advantage of being comprised solely of data from a given year.² Since the main goal of this study is to examine the evolution of the Charlotte housing environment over time, we have elected to use the ACS 1-year estimates in the analysis, unless otherwise noted.

B. Population

As illustrated in Figure II.1, the population of the Charlotte region has grown significantly since 2010. Indeed, as the region emerged from the recession, the growth rate of the region accelerated. In 2017, the total population in the region was 2,352,360. Mecklenburg County comprises 46% of this total and the suburban counties accounted for 54% of the total.

¹ The Census Bureau has an in-depth discussion of these issues in *Understanding and Using American Community Survey Data: What All Data Users Need to Know*. (2018).

² We note that the 1-year and 5-year estimates are both statistically unbiased estimates – meaning that "on average" they will yield the same result. The smaller sample size of the 1-year estimates just means that they are more likely to be affected by random variation than the 5-year estimates.



The population statistic presents the first example of a consistent theme that we will see throughout the report: The suburban counties are, collectively, approximately the same size as Mecklenburg. This is true for a variety of measures including population, housing units, and migration. This presents a challenge to the region; the fact that half of the area’s population is diffused across seven counties while the other half is concentrated in a single county means that what should be thought of as regional issues can at times be seen as solely a Mecklenburg County issue, or solely as a suburban issue. Almost all of the challenges discussed in this report are most accurately viewed as regional issues that will take regional coordination across the eight counties to address.

Returning to the population statistics, as shown in Figure II.1, the region has seen a population increase of 299,845 people since 2010. This translates into a cumulative growth of 14.6% from 2010 to 2017 and an average annualized growth rate of 2.03%. The annual growth rate has steadily increased from 1% in 2010 to 2.2% in 2017. Although Mecklenburg County accounted for 51% of the overall population growth, all counties in the Charlotte region are experiencing growth. In particular, four of the counties in the region have grown at an average of greater than 2% per year since 2010. In descending order, these counties are Lancaster, York, Mecklenburg, and Cabarrus. Figure II.2 shows the cumulative population growth for each county in the region.

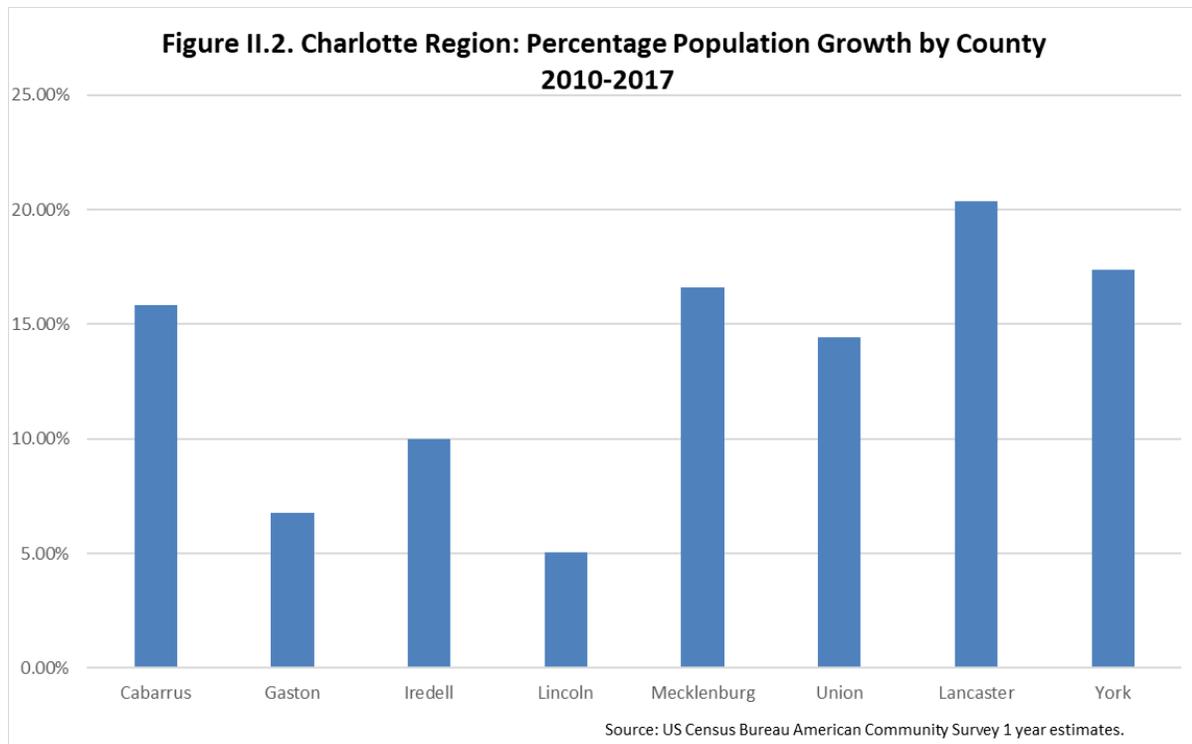


Figure II.3 show the distribution of sources of this population growth. There are three sources of this growth. The first is the “natural increase” in population. This is simply the number of live births in the region less the number of deaths. The second source is international migration. This includes both documented and undocumented immigrants. Finally, the third source of population increase is domestic migration. This is defined to be migration from any place within the United States. Note that this includes migration from one county in the region to another. Note, however, that such intra-region migration does not cause any problems with our analysis because the exit of a resident from one county is offset by their entry into the other county.

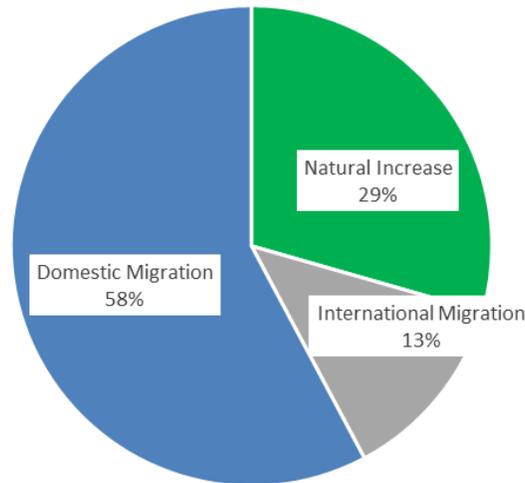
The major sources of population growth in the region are: domestic migration (58%), natural increases (29%), and international migration (13%). Figure II.4 breaks this down into Mecklenburg and the suburban counties. As Figure II.4 makes clear, there are stark contrasts in their respective sources of growth. The overwhelming majority of growth in the suburban counties (77%) comes from domestic migration.³ They have relatively little international migration, and a moderate natural growth push. Mecklenburg County, in contrast, has a relatively balanced mix with natural growth and domestic migration at 39% and 40%, respectively. Mecklenburg also has a significant international migration component at 19%.

The growth in the population of the Charlotte region is robust, and this clearly also leads to robust household formation. When discussing housing it is frequently the increase in households that is more relevant than the increase in population *per se*, since what matters for housing growth is how many households there are not just individuals. If the size of households is, on average, changing, then this

³ We note that this would include migration from Mecklenburg County into one of the surrounding counties. Similarly, the domestic migration component of Mecklenburg County would include people moving there from the suburban counties.

means a region might need to adjust its housing stock at a rate greater or less than the pure growth in population.

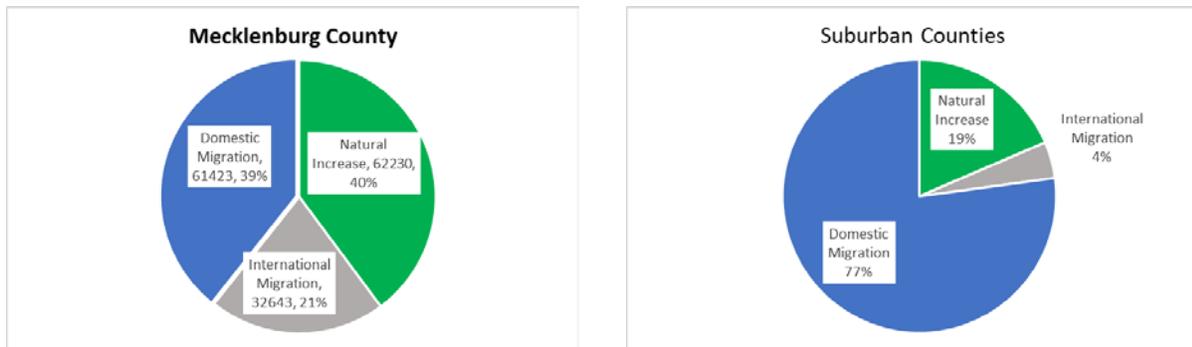
Figure II.3. Charlotte Region: Sources of Population Growth 2010-2017



Source: US Census Bureau American Community Survey 1 year estimates.

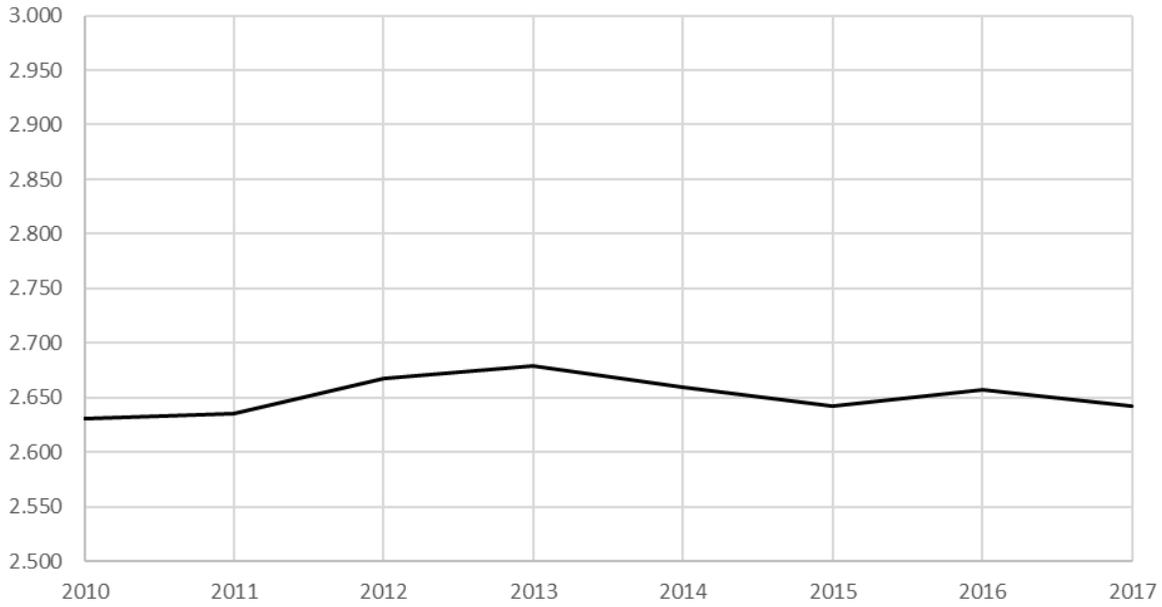
Figure II.5 shows that the average size of households in the region has not changed significantly over time. While there are some year to year fluctuations, the average household size has remained at roughly 2.65 people per household over the entire 2010-2017 period. Figure II.6 demonstrates the growth in total households in the region over the 2010-2017 period. Households grew at a rate of 1.98%, essentially the same as the growth in the total population.

Figure II.4. Composition of Mecklenburg and Suburban Counties Population Growth 2010-2017



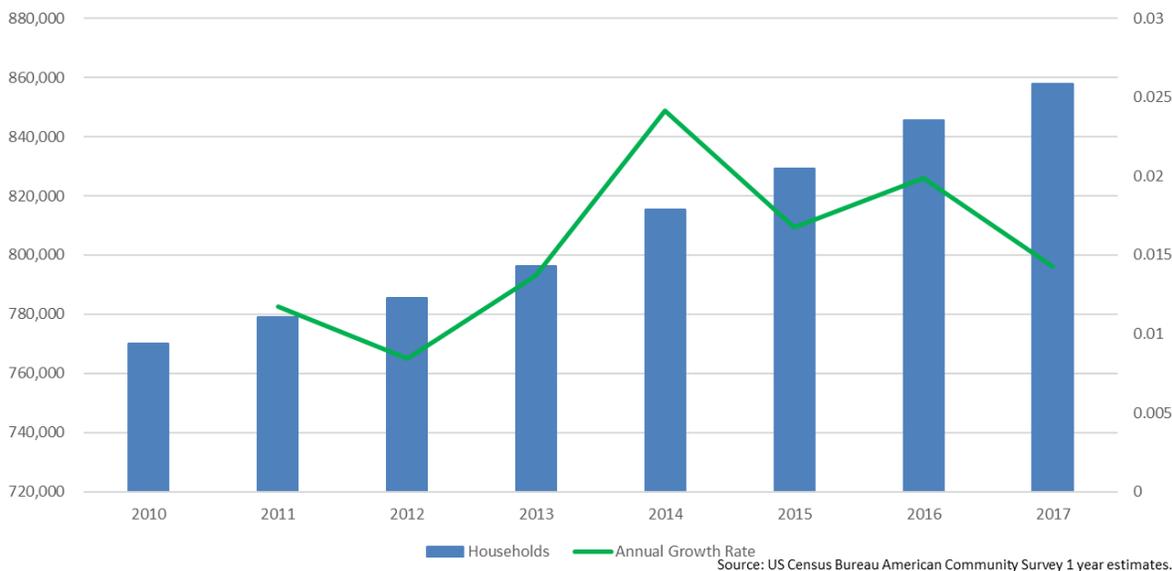
Source: U.S. Census Bureau American Community Survey 1-year projections.

**Figure II.5. Charlotte Region: Average Household Size
2010-2017**



Source: CKCRE Tabulations of US Census Bureau American Community Survey 1 year estimates.

**Figure II.6. Charlotte Region Total Households and Annualized Household Growth Rate
2010-2017**

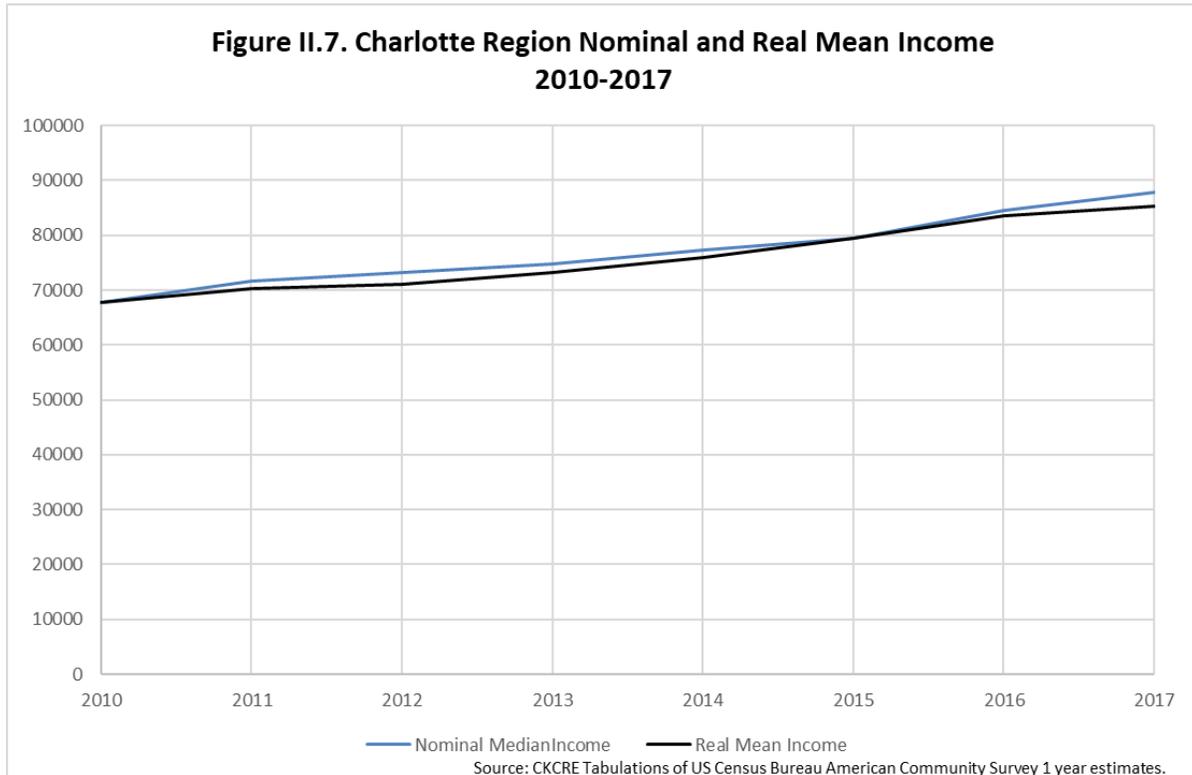


Source: US Census Bureau American Community Survey 1 year estimates.

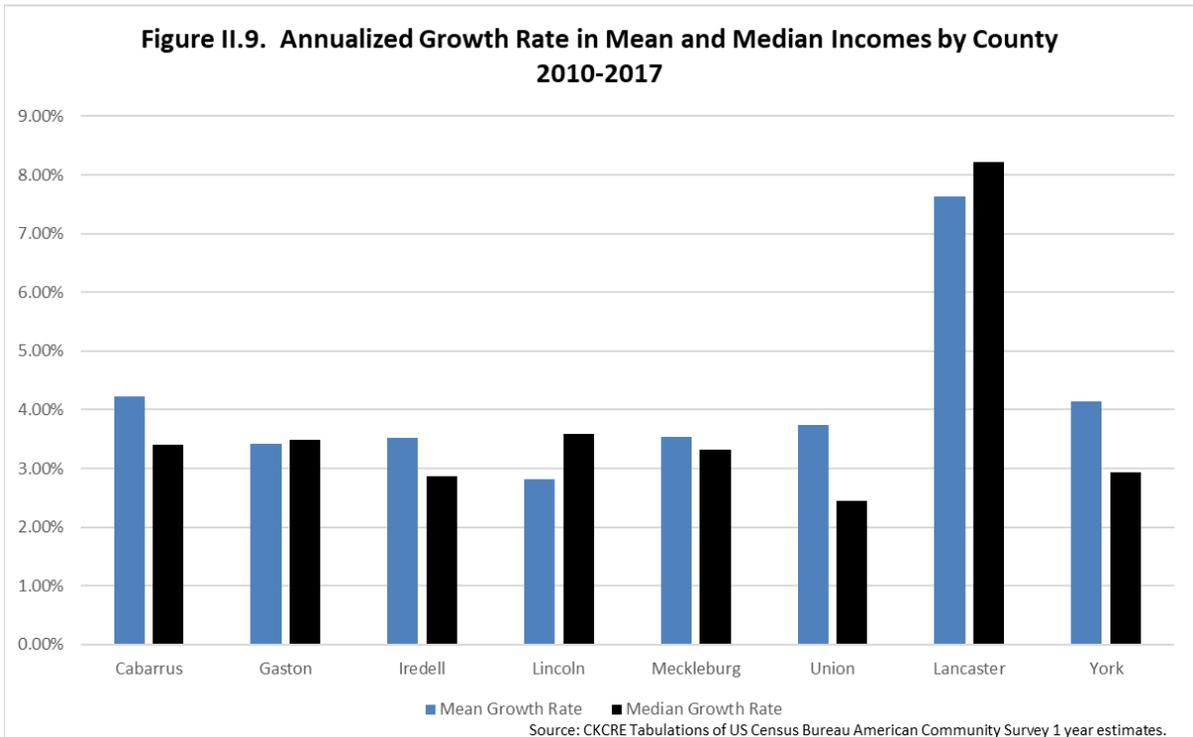
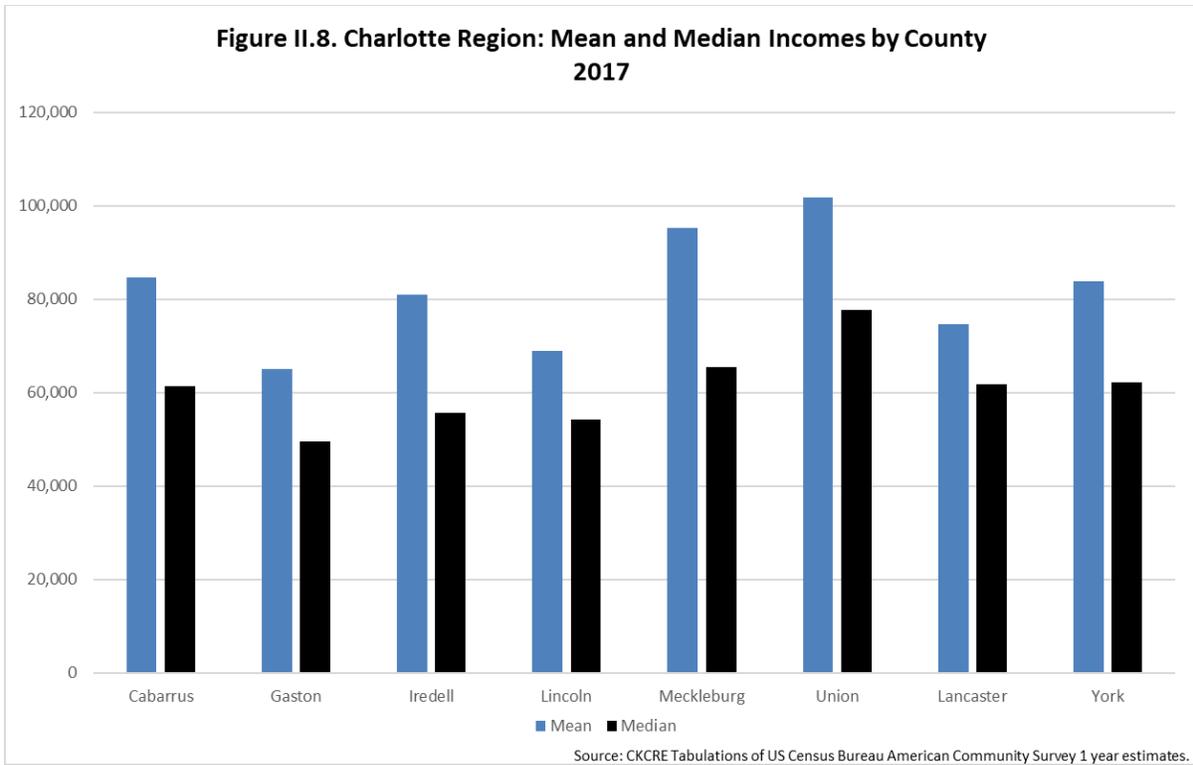
C. Income

Incomes in the Charlotte region have increased faster than inflation since 2010. As illustrated in Figure II.7, average household income in 2017 was \$87,850, which is a 29.6% increase from 2010. This translates into an average annual growth rate of 3.8%. Inflation during this time averaged 1.7% per year,

so incomes grew faster than inflation. More specifically, real household income grew at an average rate of 2.1%.

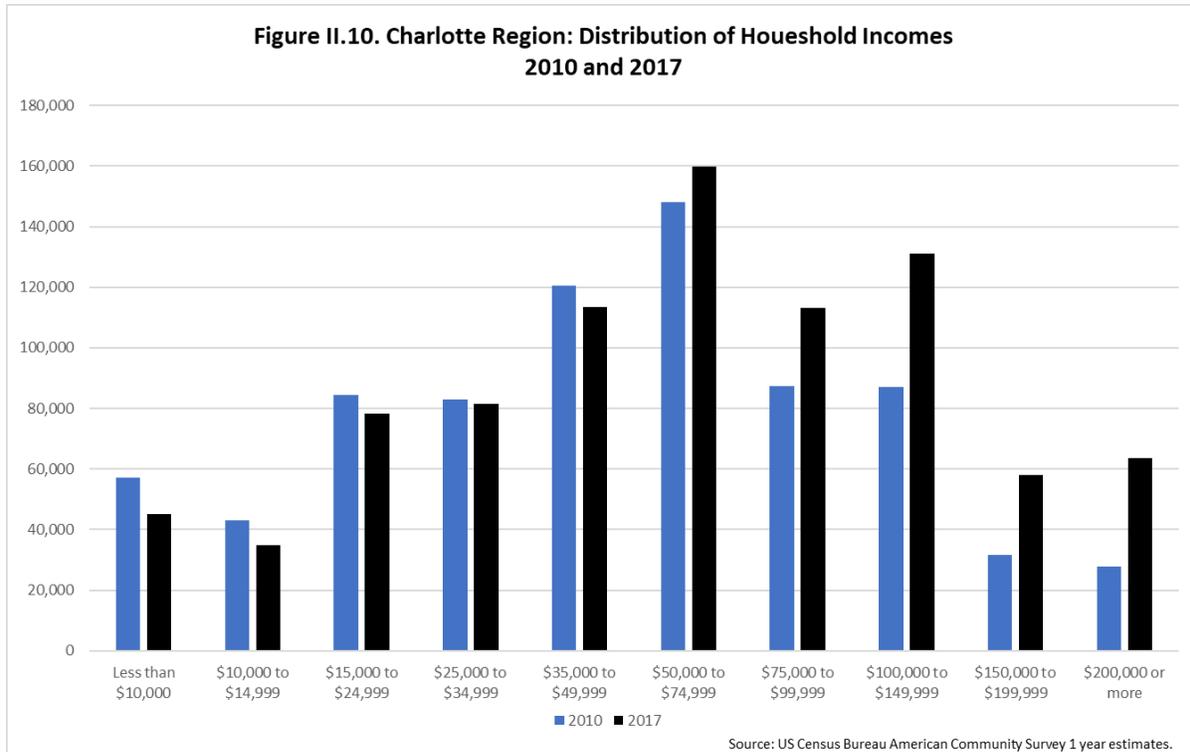


There is variation in incomes and income growth rates across the region. As illustrated in Figure II.8, the top three counties with the highest 2017 household incomes, measured either in mean or median incomes, are (descending order) Union, Mecklenburg, and Cabarrus counties. Growth in incomes has been strong, and also varied. As shown in Figure II.9 the growth rate has been varied across the region, with Lancaster County having the highest growth rate, although still one of the lower overall incomes. York and Cabarrus counties have also had high growth rates in mean income, but somewhat lower in median income. Gaston County and Lincoln Counties have both shown significant growth in both mean and median income levels.



The distribution of household income has changed over time. This is apparent when comparing the change in the percentage of households that fall into various income brackets from 2010 to 2017 in Figure II.10. For all income brackets less than \$50,000, there are 34,756 fewer households in those

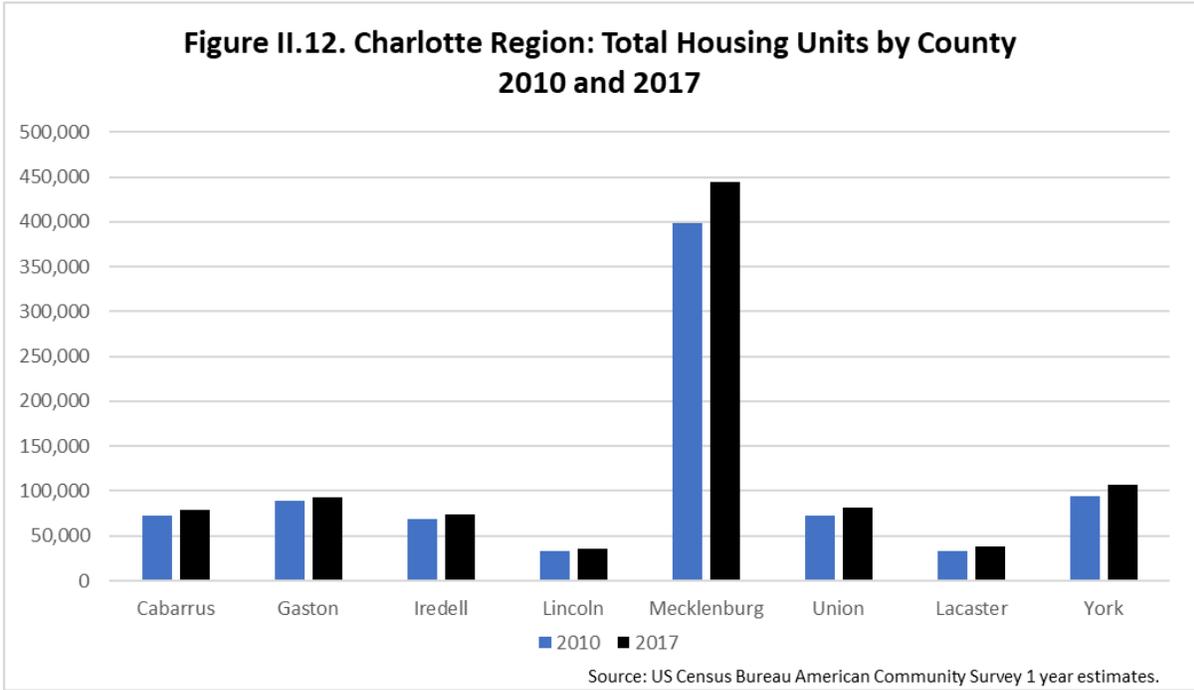
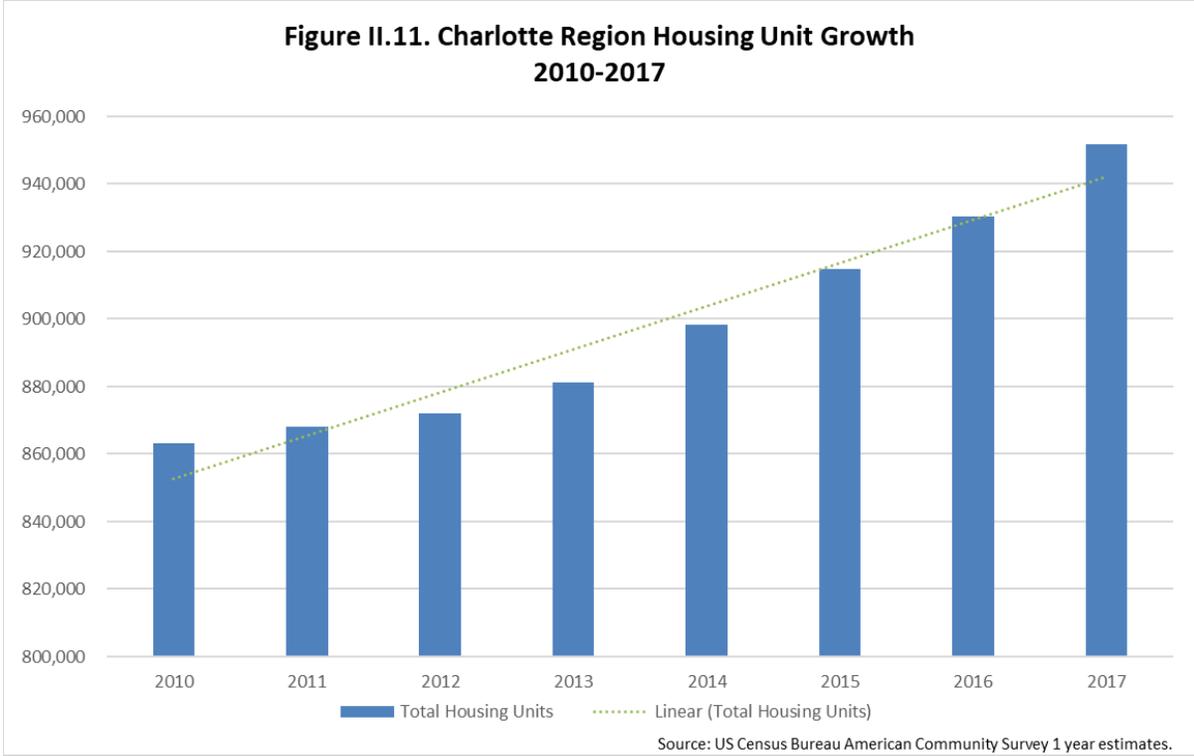
ranges in 2017 than in 2010, with the largest decrease occurring in the less than \$10,000 bracket. For all income brackets that exceed \$50,000, there are 143,969 more households in those ranges in 2017 than in 2010, with the largest increase occurring in the \$100,000 to \$149,999 bracket. These changes have been slightly more pronounced in the suburban counties than in Mecklenburg County.



D. Housing Units

As illustrated in Figure II.11, in 2017 the total number of housing units in the region was 951,661. This includes all forms of housing, including single-family detached houses, condominiums, townhomes, duplexes, apartments, and mobile homes. Slightly less than half of all housing in the region, 47%, is in Mecklenburg County. While none of the suburban counties are even remotely close to the scale of the Mecklenburg housing market, collectively there is more housing in the suburban areas than in Mecklenburg County. Figure 11.12 shows the distribution of housing units by county in 2010 and 2017.

From 2010 to 2017, the total number of housing units in the region grew by 88,494 units, or by a total of 10.3%. This growth has resulted in an annual growth rate of a little more than 1.3%, which is lower than the population and household growth rates, which were closer to 2%. Although Mecklenburg County accounted for 50% of the overall growth in housing units, as indicated in Figure II.12, all counties in the Charlotte region have added new housing.



The fact that population growth exceeds housing growth is fundamental to understanding most of the trends presented in the rest of this report. If population grows faster than the area’s housing supply, this will necessarily cause housing to become more scarce, and this will drive up the price of housing. It also contributes to other challenges, such as the gentrification of traditionally lower-income neighborhoods. This happens because when housing prices rise, wealthier households that cannot find housing at a price point appropriate for their income level can “buy down” into less expensive housing and renovate.

Lower income households do not have an equivalent option. This also means that, ironically, when communities build higher cost housing, it can potentially relieve gentrification pressure in lower cost areas.

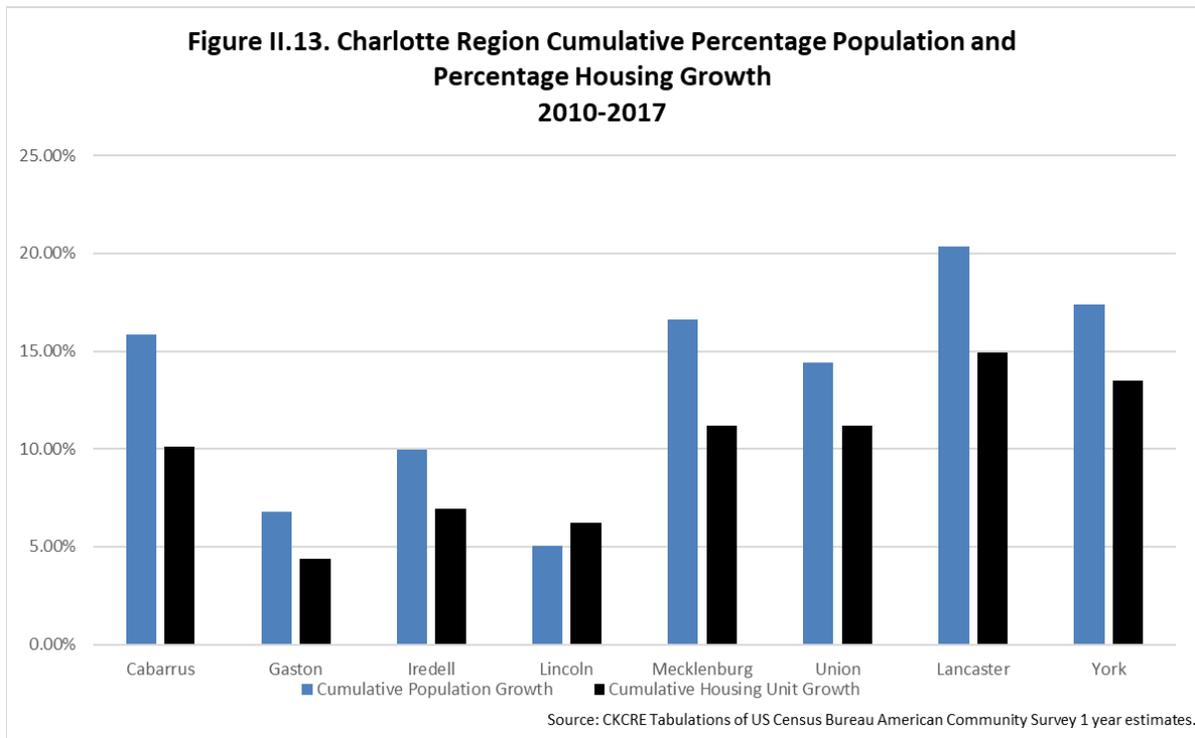
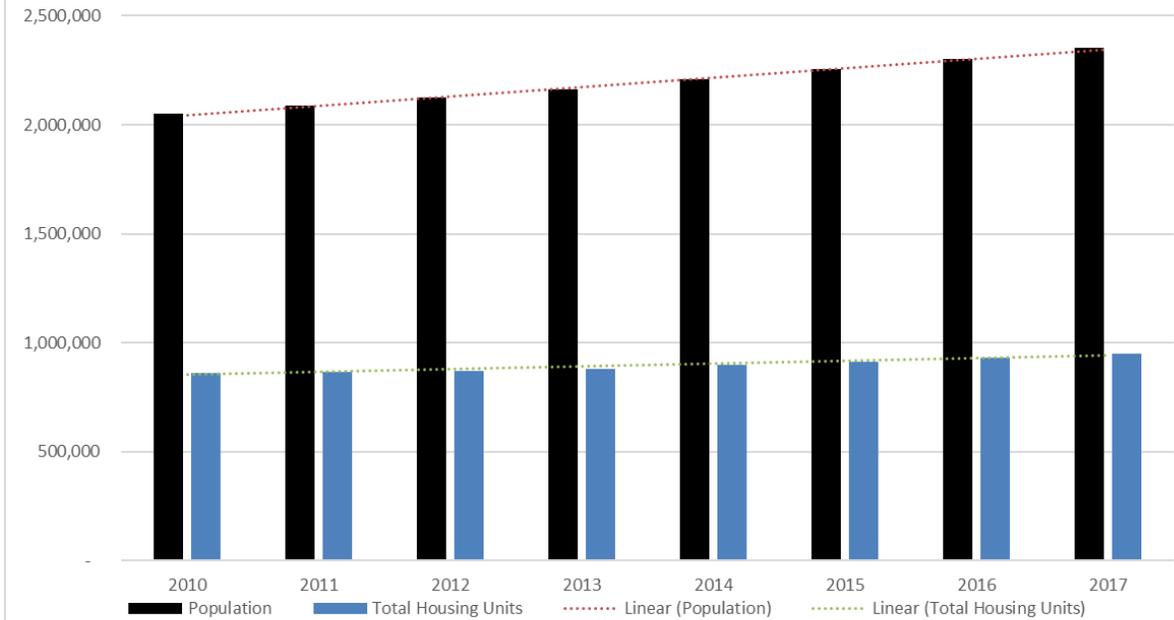


Figure II.14 illustrates the change in population and housing units by year. The average annual growth rate in the population (households) was 2.03% (1.98%) and the housing unit grow rate was 1.35%.

This, of course, begs the question as to how the additional population was housed. The answer is that there was vacant housing in the region that has now been taken up. As shown in Figure II.15, in 2010 there were approximately 93,170 vacant housing units in the Charlotte region, with a bit more than 50,000 of those vacant units in Mecklenburg County. Since then, the number of vacant units has dropped by more than 22,000 units – a cumulative 22.5% decline.

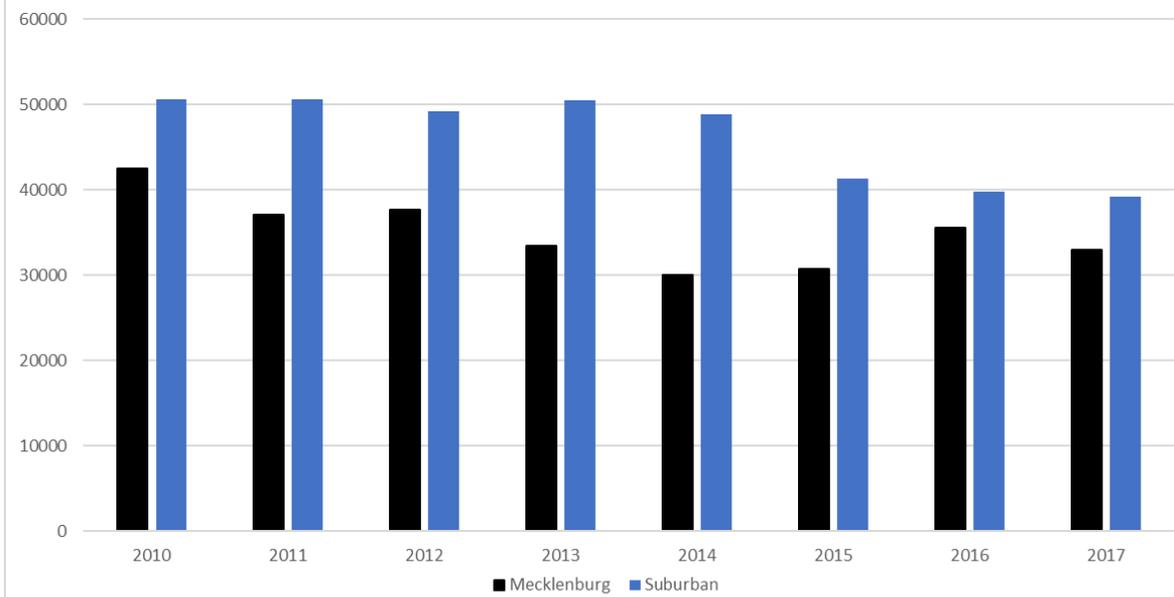
In 2010, of course, the region and country were still in the Great Recession, so it is not surprising that vacancies were relatively high. Still, the absorption of vacant units has been significant. The approximately 72,000 vacant units in the region at the end of 2017 results in a vacancy rate of just over 7.6%. This is a comparatively low vacancy rate. It is important to recognize that a region must have some “frictional” vacancies for at least two reasons. One, the region needs some vacant properties to be able to accommodate new households. This is especially important in a region that is growing rapidly like Charlotte. A second reason is because there needs to be some vacancies so that people can more easily transition across housing units without having somebody else move first.

Figure II.14. Charlotte Region Population and Housing Unit Growth 2010-2017



Source: CKCRE Tabulations of US Census Bureau American Community Survey 1 year estimates.

Figure II.15. Mecklenburg vs Suburban County Vacant Housing Units 2010-2017



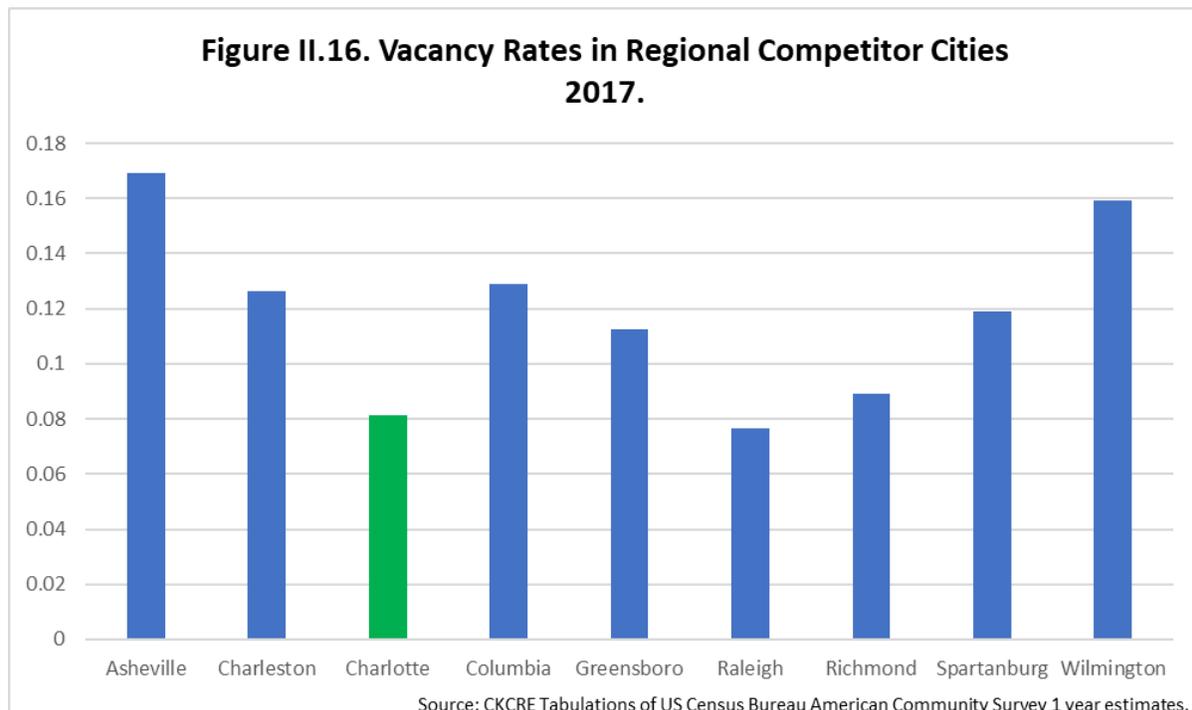
Source: CKCRE Tabulations of US Census Bureau American Community Survey 1 year estimates.

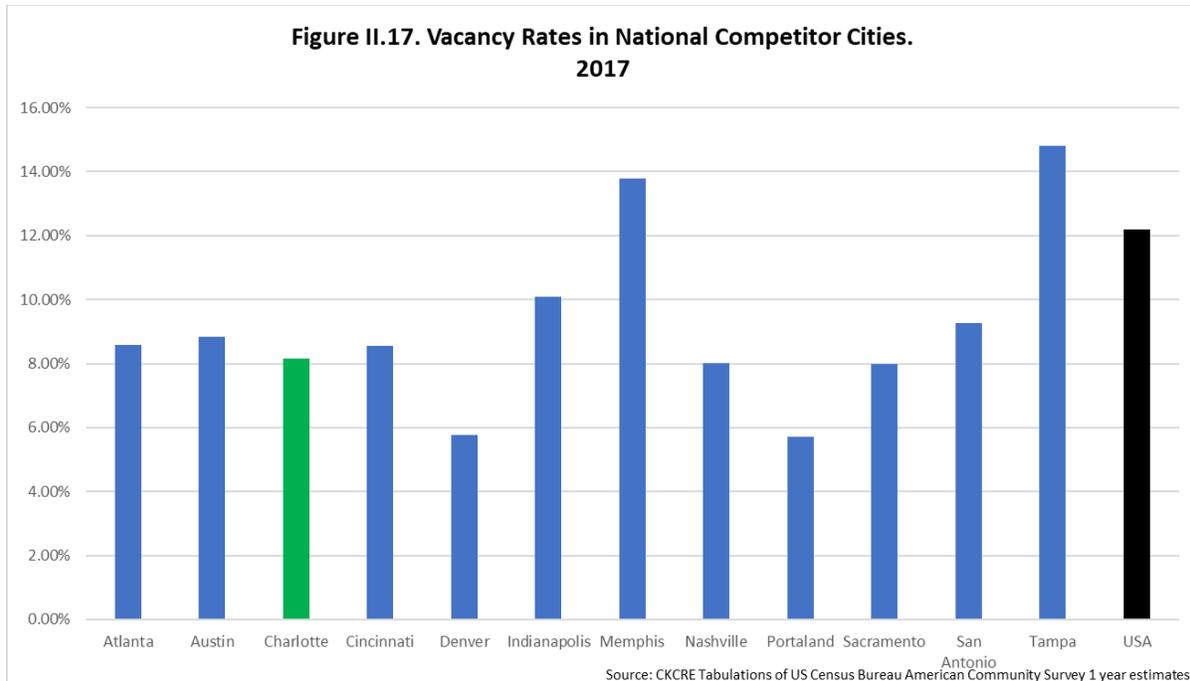
The decrease in vacant units in the region has led to a substantial decrease in the housing unit vacancy rate, from approximately 10.8% in 2010 to 7.58% in 2017. To put this into context we compare the vacancy rate against other regional and national competitor cities.

From the Census we can get vacancy rate data at the Metropolitan Statistical Area (MSA) level. For consistency we will use the Charlotte MSA vacancy rate when doing this analysis. This incorporates an additional four counties into the analysis and results in a slightly higher vacancy rate at just over 8%.

We compare the Charlotte MSA vacancy rate against 8 regional and 11 national competitor MSAs. For the regional competitors we selected the largest MSAs in North and South Carolina, as well as Richmond, VA. These national competitor MSAs were chosen either because they are similarly sized to Charlotte, routinely compete with Charlotte for economic development, or are geographically close. We also sought to select cities to provide some insight into all regions of the country.

Figure II.16 shows the vacancy rate for the Charlotte MSA and the regional competitor MSAs. The Charlotte MSA has a lower vacancy rate than every competitor city, except for the Raleigh MSA. Figure II.17 shows the vacancy rate for the Charlotte MSA and the national competitor MSAs, as well as the national average vacancy rate. The national average vacancy rate was 12.20%. Of these national competitor MSAs, all have higher vacancy rates except for Denver, Nashville, and Portland. As we will show in section IV, Denver and Portland have had significantly higher housing price increases than the Charlotte region. That said, we do note that many of the national competitor cities are in the 8-9% vacancy range.





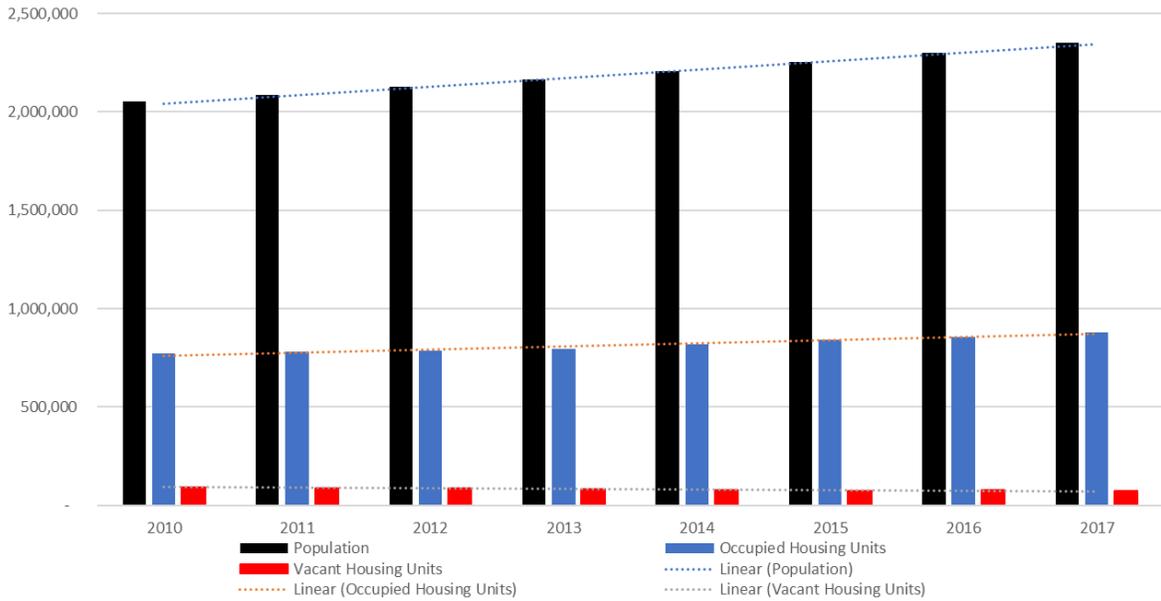
E. Summary

In Table II.1 we combine previously reported statistics from the key measurements discussed above. Then in Figures II.18 and II.19, we illustrate the comparative dynamics in these measures over time. Overall, we conclude that population growth has exceeded housing unit growth. In economic terms, demand has exceeded supply, which ultimately translates into higher home prices and higher rents. Further, we find evidence that the imbalance is growing over time, as the population growth rate has grown at a faster rate than housing unit growth rate. This imbalance is apparent in the significant reduction in vacant units over time. Ultimately, for home prices and rents to moderate, the region will have to produce more housing units.

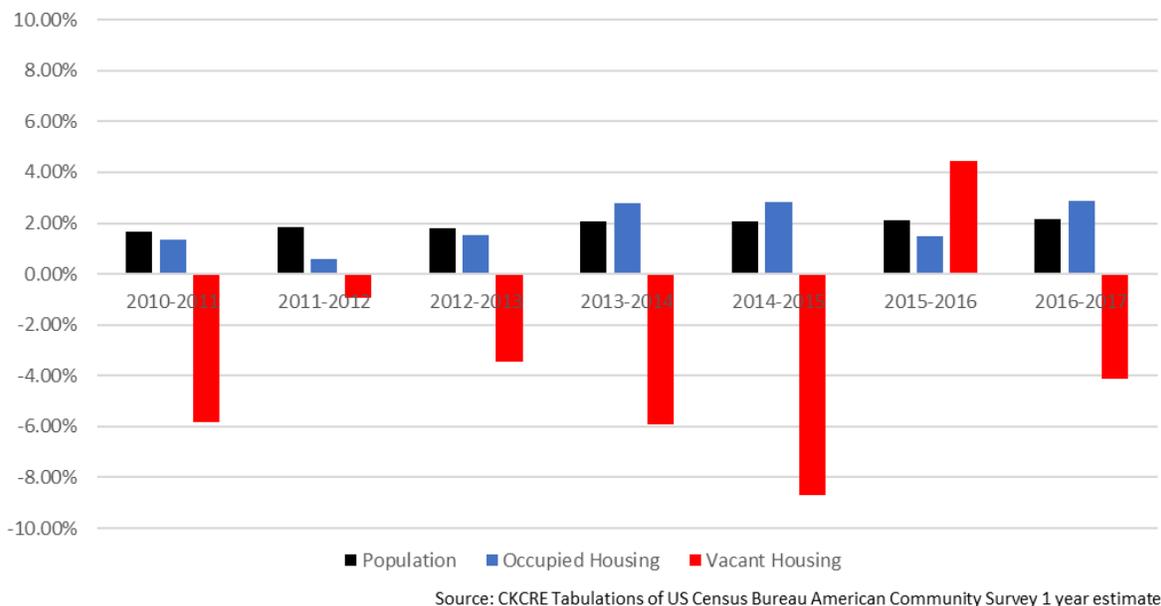
Table II.1. Summary of Key Measures for the Charlotte Region (2010-2017)

Measure	2010	2017	Change	% Change	Annual % Change
Total population	2,052,515	2,352,360	299,845	14.6%	2.0%
Total housing units	863,167	951,661	88,494	10.3%	1.4%
Vacant housing units	93,179	72,178	-22,001	-22.5%	-3.6%
Household income	\$67,768	\$87,850	\$20,082	29.6%	3.8%

**Figure II.18. Charlotte Region: Population, Occupied and Vacant Housing Units
2010-2017**



**Figure II.19. Charlotte Region Annual Percentage Change in
Population, Occupied Housing Units, and Vacant Housing Units
2010-2017**



III. Housing Microeconomics

As shown in the previous section, the Charlotte region has had significant population and income growth since 2010. The region has not added as much in terms of new housing units. In short, demand has risen, and supply has not risen as much. Under basic economic theory one would expect prices to rise as the marketplace attempts to allocate the scarce resource (housing) among market participants.

Indeed, this section will demonstrate that housing prices in the Charlotte and the region have increased at a rate greater than inflation since 2010. This section will show that this extends not only to owner-occupied prices, but also to rental housing.

The previous section primarily relied heavily upon macro-scale data such as the Census Bureau's American Community Survey data, for its analysis. This section still utilizes some ACS data, but in general uses a more granular approach, relying where possible on transaction data or on micro-level survey data from other sources which will be noted throughout the report. This section is comprised of three subsections. Section A examines land prices in the region. Section B examines the owner-occupied market. Section C examines the rental market and includes some discussion on public and subsidized housing markets.

A. The Price of Land

Land is a fundamental input in the production and pricing of all housing, whether owner-occupied or rental. Rising land prices have several effects on the entire housing market. First, they tend to push the market toward higher density usage. That is, areas with higher land prices will tend to have people living more closely together. For traditional houses, this will mean subdivisions with smaller parcels. For apartments and condominiums this will typically mean taller buildings with more floors. Second, higher land prices will tend to raise the price of housing by more than just the cost of the land itself. Typically, as the price of land increases, the value of the house that is built on that land also rises. Thus, a \$1 increase in the price of land will raise the price of the finished lot/land by *more than* \$1. Third, rising land values will tend to decrease the *relative* cost of commuting for consumers. That is, a consumer will trade off land (and housing) affordability against the cost of having a longer commute. Ultimately, rising land prices incentivize consumers to move further away from the region's urban hub, increasing road congestion and development on the urban fringe.

Given all of this, it is instructive to observe what has happened to the price of land. For this analysis we rely on two sources of data. In both cases, they are sources of data on land prices for single-family detached homes. The first of these sources is a recent working paper by Davis, Larson, Oliner, and Shui (2019) that estimates the price of residential lots in more than 900 counties and 11,000 zip codes across the United States. The second source is data on residential lot prices provided by Metrostudy.

The Davis, Larson, Oliner and Shui (2019) paper estimates the price of residential land using appraisal data from loans purchased by Fannie Mae and Freddie Mac. From these appraisal data, they are able to impute the price paid by the homeowner for the underlying land. They then use those imputed sales prices to build a statistical model of land values in the country, and ultimately can estimate the value of

one acre of residential land across the country. They provide estimates of land values for each county and zip code in their study at the FHFA website.⁴

Their study provides the estimated value of a hypothetical one-acre residential lot in the region of interest. Note that this is the estimated value of a “ready to build” lot – i.e. one that has received “entitlement”, i.e. has all of the legal and zoning requirements needed to build. In Table III.1 below, we present their estimated values for 2012 and for 2017.

Table III.1. Estimated Values of One Acre Residential Lot In Each County of Charlotte Region in 2012 and 2017.

Estimated price of a one-acre residential lot in 2012 and 2017. Data are provided by Davis, Larson, Olinder, and Shui (2019). Data are used with their permission and are available at: <https://www.fhfa.gov/PolicyProgramsResearch/Research/Pages/wp1901.aspx>

County	2012	2017	Percentage Change
Cabarrus	\$ 77,900	\$ 88,400	11.88%
Gaston	\$ 54,400	\$ 60,800	10.53%
Iredell	\$ 57,400	\$ 69,700	17.65%
Lincoln	\$ 61,500	\$ 50,300	-22.27%
Lancaster	\$ 45,000	\$ 71,200	36.80%
Mecklenburg	\$ 156,600	\$ 198,400	21.07%
Union	\$ 78,800	\$ 97,000	18.76%
York	\$ 47,400	\$ 59,000	19.66%

We also map their annual estimates in Figures III.1 through III.6 below.

From Table III.1 and Figures III.1-III.6, it is clear that generally land prices have increased dramatically across the region, and that these land prices are typically rising at a rate greater than inflation.⁵ There is significant variation in land prices changes across the region, ranging from a drop in land values in Lincoln County, to large percentage increases in Mecklenburg, Lancaster, Union, and York counties.

The notion that land prices have increased is supported by data on residential lot sales graciously provided by Metrostudy, a commercial data provider. They collect transaction data from deed recordings and other sources to calculate estimated prices over time. In addition they conduct physical counts of available developed lots in the region.

Table III.2 provides Metrostudy’s average lot price in the Charlotte MSA from 2005 through 2018. One difficulty in discussing residential lot prices is that the size of lots changes over time. As previously mentioned, increasing land values drive the market toward higher density land usage. As a result, as land prices rise, residential lots tend to get smaller. To adjust for this, Metrostudy reports both the actual average lot price in the region, and imputes the average price per acre. They report this data at the MSA level.

⁴ A link to the data and the paper is available here.

<https://www.fhfa.gov/PolicyProgramsResearch/Research/Pages/wp1901.aspx>. We note that even though the data are hosted on a website of the Federal Housing Finance Agency, and even though three of the authors work for FHFA, these are still not considered “official” FHFA estimates. The work, and any errors in it, are attributed solely to the authors. We used the data they provided with the permission of the authors

⁵ The Bureau of Labor Statistics (BLS) reports that the cumulative inflation factor from January 1, 2012 until December 31, 2017 was 1.09, meaning a cumulative increase in prices of 9%.

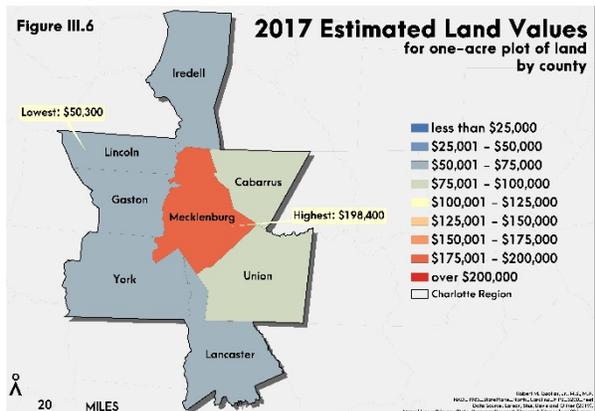
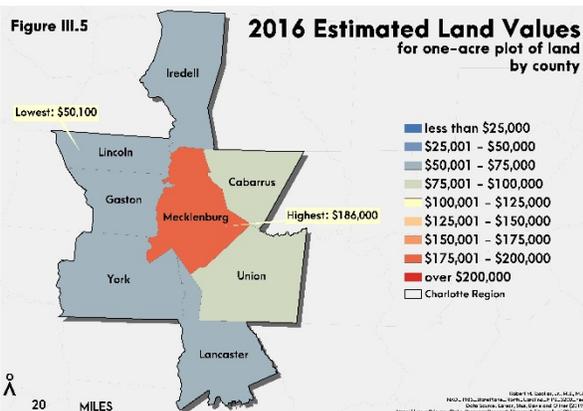
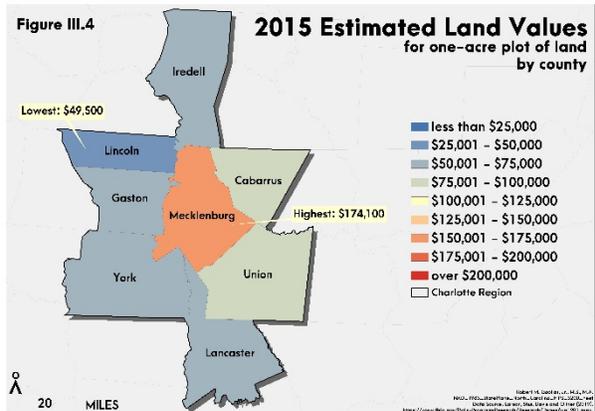
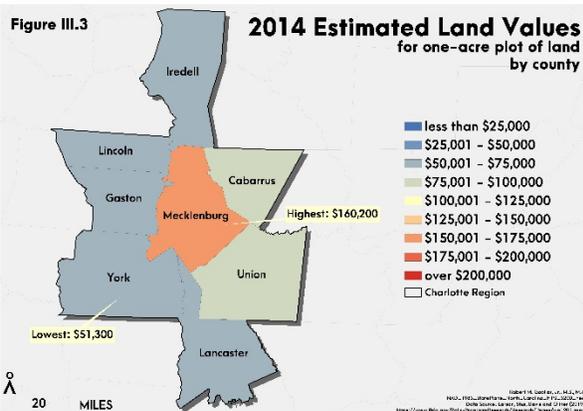
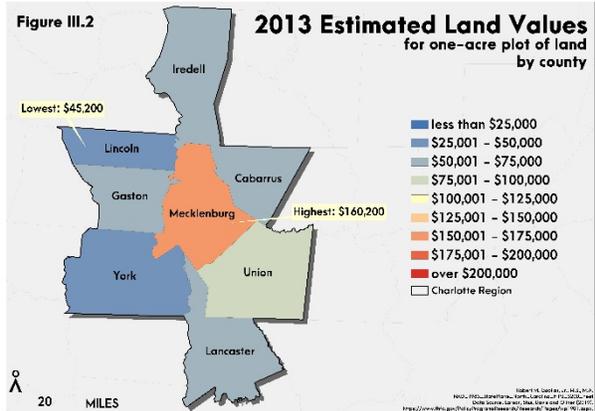
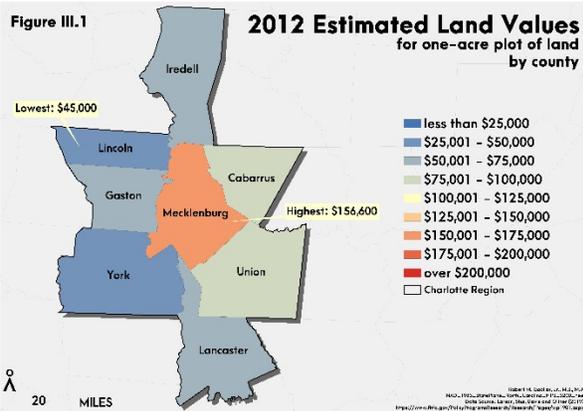


Table III.2. Average Lot Price and Average Price per Acre for Residential Lots in the Charlotte MSA.

Data are provided by Metrostudy and are used with permission. For more information refer to Metrostudy.com

Year	Average Lot Price	Average Price/Acre	Annual Price/Acre Percentage Change
2005	\$42,146	\$189,914	
2006	\$48,476	\$222,177	17.0%
2007	\$57,472	\$281,745	26.8%
2008	\$49,399	\$239,875	-14.9%
2009	\$41,750	\$203,286	-15.3%
2010	\$38,801	\$215,331	5.9%
2011	\$40,141	\$190,389	-11.6%
2012	\$41,930	\$194,314	2.1%
2013	\$44,905	\$191,726	-1.3%
2014	\$45,480	\$194,883	1.6%
2015	\$56,167	\$280,051	43.7%
2016	\$65,190	\$324,349	15.8%
2017	\$68,557	\$339,451	4.7%
2018	\$68,969	\$328,517	-3.2%

The Metrostudy data demonstrate two key facts about land values in the region. First, they are volatile – land prices can rise or fall in any given year – but on average they are rising. From 2005 to 2018 the data indicate a cumulative growth rate of 73% and an annual average growth rate of 4.3% per year. Second, looking at the same 2012-2017 time period that Davis, Larson, Olinde, and Shui (2019) use, we see similar percentage increases in reported land price changes. For example, the price of an average lot increased from increased from \$41,905 to \$68,557 – an increase of 63.50%. Using their average price per acre measure, the price per acre increased from \$194,314 to \$339,451, a 74.69% increase.

There are differences in the absolute price levels estimated by Davis, Larson, Olinde, and Shui (2019) and by Metrostudy. This is not surprising given differences in data methodologies and collection methods. We do note, however, that Davis, Larson, Olinde, and Shui (2019) also provide estimated prices for many, but not all, zip codes in the Charlotte region. We note that in many of the zip codes, especially those in Mecklenburg County, have estimated land prices in excess of \$250,000 which is more consistent with the Metrostudy data.

From these two data sources, it is very clear that land prices in the region are increasing rapidly. As noted above, this will have several effects on the market. First, it will drive up the price of housing. Although the most direct effect is on the single-family home market since the lots discussed above are for single-family detached homes, it also will have an effect on the rental markets. This is because the rental markets are a substitute for the single-family detached home market, and so when the prices rise in the single-family detached home market, more people will be willing to move the rental market, increasing demand. The increase in demand, holding everything else constant, will result in rental prices increasing as well. Second, it will drive the market toward higher density usage of land. Developers will attempt to mitigate the price effects on the final home price by reducing the size of the lots on which they build.

Finally, increasing land prices, and the resultant increasing home prices, reduce the *relative* cost of commuting for consumers. When selecting places to live, consumers make a tradeoff between the dollar cost they must pay to get a given level of quality home and the (partially) non-dollar tradeoff they make in terms of how long their commute is. If home prices rise, especially more in the central urban core, more consumers will be willing to bear greater commuting times in order to find less expensive housing. Ultimately, increasing land prices tend to push people toward living on the suburban fringe of the region. This, of course, increases traffic congestion and the demand for additional road development.

B. The Owner-Occupied Market

We now turn our attention to the owner-occupied market. This market consists primarily of single-family detached homes, but also includes attached units such as townhomes or condominiums. Figure III.7 shows the homeownership rate in the Charlotte MSA as well as the overall homeownership rate in North Carolina, South Carolina, and the United States.

There are a number of important trends that can be seen in this graph. First, it is easy to see that homeownership rates dipped everywhere during the Great Recession. Since 2015, however, homeownership rates everywhere have started to recover, although are still below the highest levels reached at the height of the housing boom. The Charlotte MSA's homeownership rate has rebounded so that it is now above the U.S. and North Carolina rate, but is below the South Carolina rate.^{6,7}

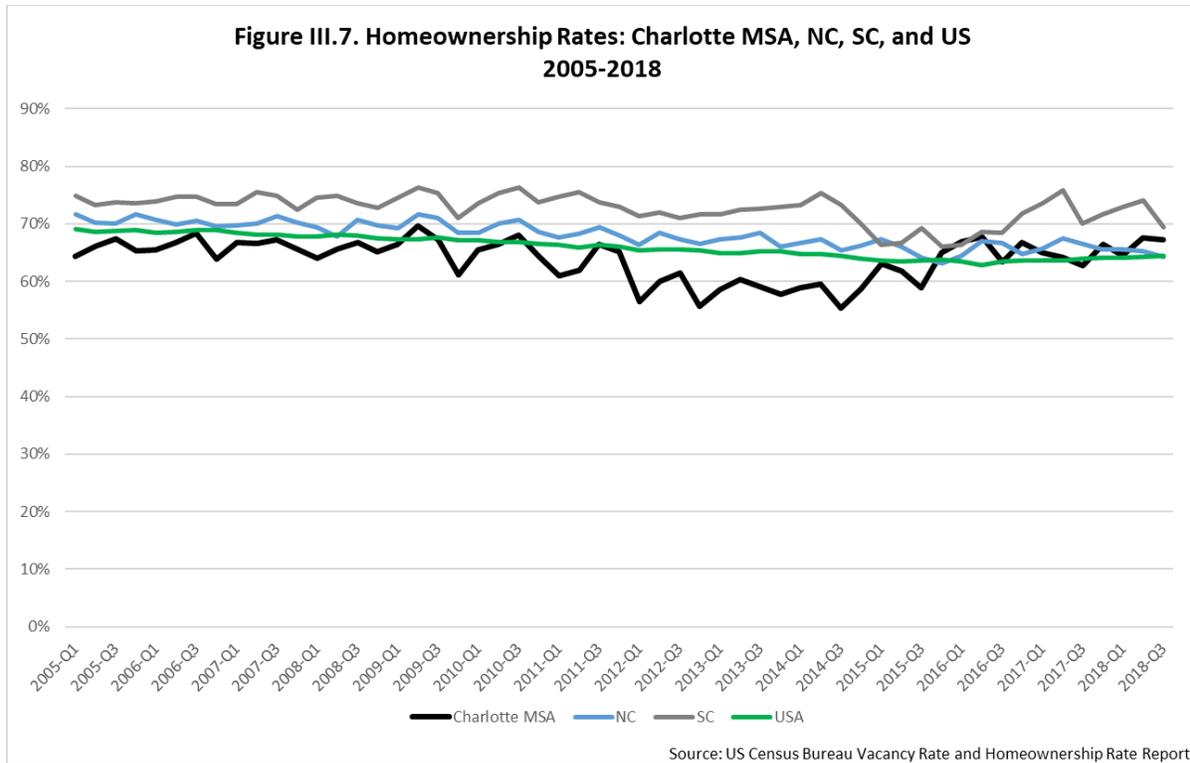
While it is interesting to examine the overall homeownership rate, much more information can be gleaned from looking at transactional data. To this end we will use transaction data provided to us by the CRRA. This transaction data comes from properties that were listed through the MLS. We will use data from 2005 through 2018. We elected to begin in 2005 because this allows us to capture the biggest portion of the housing boom, the collapse of the market during the recession, and the recovery from the recession. This data set contains 454,050 home sales. In addition to home sale transactions, the data includes homes that were listed but did not ultimately sell. This helps us understand more about the dynamics of the market.

As shown in Figure III.8, the market for home sales in the region is robust⁸. This graph shows that the number of home sales declined dramatically from the peak of the housing boom to the trough during the recession. This has been followed, however, by a steady rise in home sales from 2011 until 2017. In both 2017 and 2018, the number of total home sales have exceeded the level of home sales during the housing boom.

⁶ We note that generally rural areas tend to have higher homeownership rates than urban areas. This is due to the fact that rural areas typically do not have the population to support apartments and other rental options. This partially explains why South Carolina has markedly higher homeownership rate than North Carolina or the U.S. in general.

⁷ We note that the data in Figure III.11 come from the U.S. Census Bureau Vacancy Rate and Homeownership Rate Report. This gives slightly different values than if calculated directly from the American Community Survey one-year estimates. We have elected to report the Vacancy Rate and Homeownership Rate Report values because that is the normal source for reporting these values, but we acknowledge that this can lead to slightly different values for the homeownership rate.

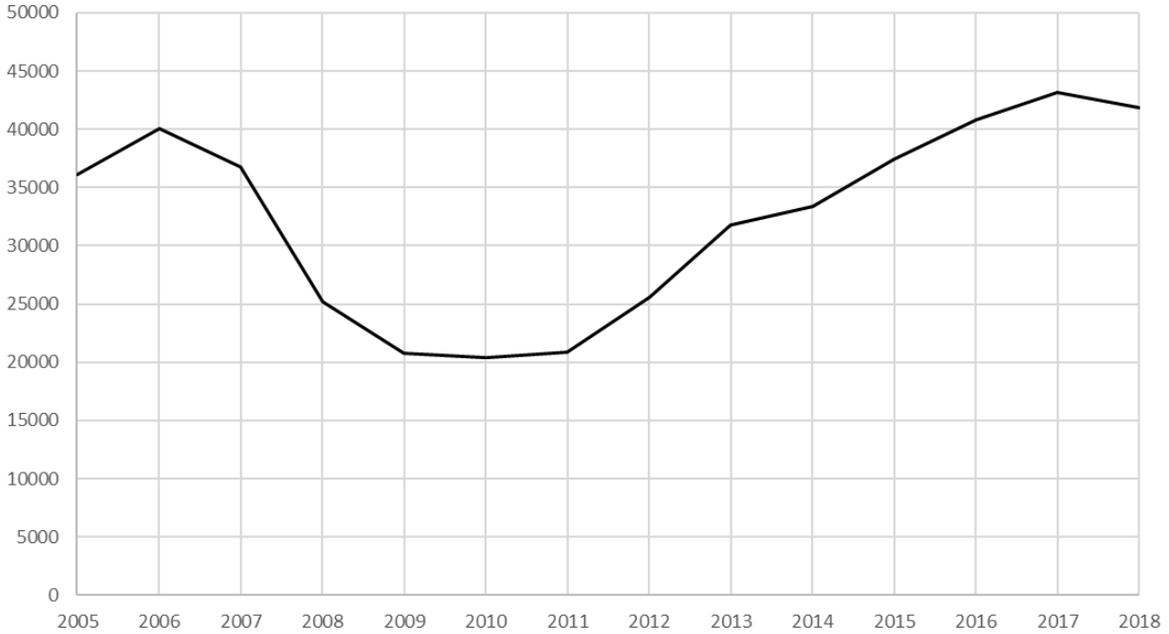
⁸ We will use the generic term "home sales" when referring to owner-occupied housing. Please note that this includes both detached single-family homes as well as attached single-family homes and condo and co-op sales.



In addition to home sales volume, we are also very interested in what has happened to the price of homes in the region. In Figure III.9 we graph the monthly average and median home price from the CRRR MLS from 2005 through 2018. We note that the house price pattern does exhibit seasonality, which is a well-known phenomenon in home prices. We also note that for this graph we have left the prices in terms of nominal dollars. That is, we have made no adjustment for inflation over the time period.

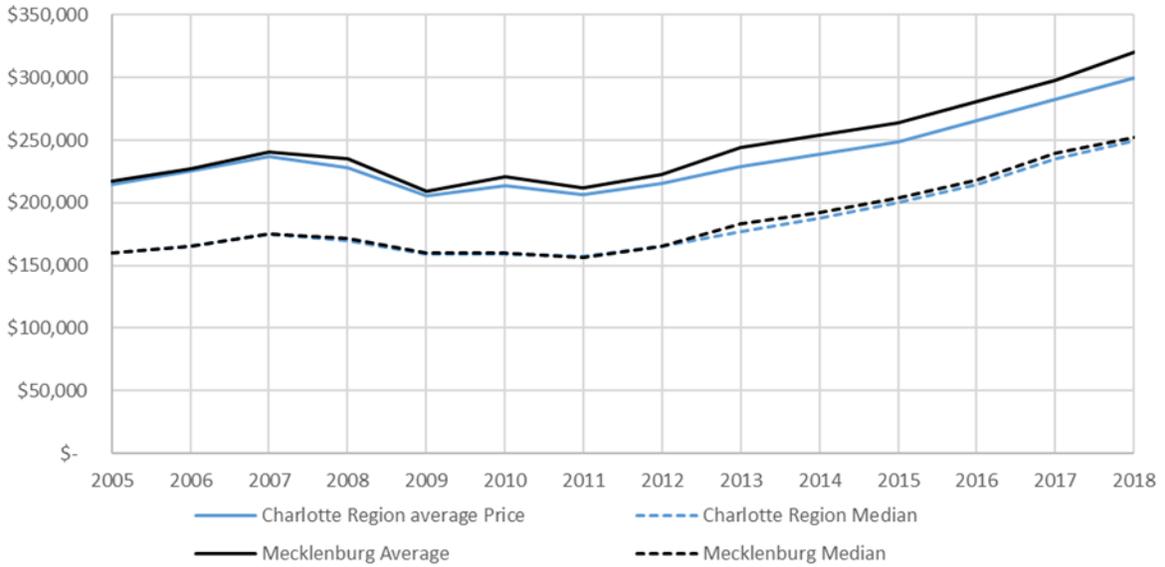
Not only has the volume of home sales increased since the great recession, home prices have increased as well. Table III.3 shows the annual mean and median home price for the eight-county region for 2005-2018. This figure clearly shows that both the average and median home prices have risen dramatically since 2011, the trough of the housing bust. We also present these data in Table III.3.

**Figure III.8. Number of Homes Sales Reported in CRRA MLS
2005-2018**



Source: CKCRE Tabulations of CRRA MLS Data.

**Figure III.9. Charlotte Region and Mecklenburg County
Annual Average and Median Home Price - Nominal Dollars
2005-2018**



Source: CKCRE Tabulations of CRRA MLS data.

Table III.3. Nominal Average and Median Home Prices for Charlotte Region and Mecklenburg County. 2005-2018. Data are from transactions recorded in CRRA MLS.

Year	Mecklenburg Average	Mecklenburg Median	Charlotte Region Average	Charlotte Region Median
2005	\$217,602	\$160,000	\$214,652	\$160,000
2006	\$227,521	\$165,000	\$225,330	\$165,615
2007	\$240,361	\$175,000	\$237,495	\$175,500
2008	\$235,354	\$171,955	\$227,715	\$170,000
2009	\$209,457	\$159,900	\$205,875	\$159,000
2010	\$220,698	\$160,000	\$213,436	\$159,000
2011	\$211,802	\$156,000	\$206,299	\$157,500
2012	\$222,485	\$165,000	\$215,154	\$165,000
2013	\$244,454	\$183,503	\$228,622	\$177,107
2014	\$253,992	\$192,000	\$238,883	\$187,900
2015	\$264,081	\$204,000	\$249,054	\$200,000
2016	\$280,727	\$218,500	\$265,680	\$215,000
2017	\$298,139	\$239,900	\$282,998	\$235,000
2018	\$320,060	\$252,000	\$299,680	\$249,858

Since the “trough” of the housing bust in 2011, the average home price in Mecklenburg County has risen by approximately 51%, from \$211,802 in 2011 to \$320,060 in 2018. This is an annual growth rate of 6.08%. Similarly, for the region the average home price has grown by approximately 45.26%, or an annual growth rate of 5.48%. Median home prices have risen faster with annual growth rates of 7.09% in Mecklenburg County and 6.81% across the entire region.

Even if we recalculate these growth rates from the “peak” of the housing boom in 2007, we see that the Mecklenburg average price is 33.16% higher today than in 2007, corresponding to an annual growth rate of 2.64% and the Charlotte region’s average price is 26.18% higher, corresponding to a 2.14% annual growth rate. The Mecklenburg County median price is 44% higher today than in 2007, corresponding to a 3.09% annual growth rate, and the Charlotte region’s median house price is 42.37% higher, corresponding to a 2.99% growth rate.

As is typical in distributions of housing prices, the average home price is higher than the median home price.⁹ Based on the data presented in Figures III.9 and in Table III.3, it is clear that the median home price has been growing at a faster rate than the average home price. This is a theme we will see throughout the data: lower-priced homes are increasing in price faster than middle- and upper-priced homes.

Of course, the data in Figure III.9 and Table III.3 are in nominal dollars. Figures III.10 and Table III.4 present that data in terms of constant 2005 dollars. Although the rates are lower, the trend is still clear – owner-occupied home prices are rising, and they are rising faster than inflation. From the 2011 trough the average home has had real price increase of 34.10%, or an annual real rate of growth of 4.28%. For the entire Charlotte region, the average home price has increased by 28.91%, or an annual real rate of growth of 3.69%. As was the case with the nominal dollar values, the median home price has had higher real growth. In Mecklenburg County the median home price has increased by 43.35%, or at an annual

⁹ This is because large outliers will influence the mean, but not the median.

rate of 5.28%. For the Charlotte region, the median home price has risen in real terms by 40.78%, or at an annual real rate of 5.01%.

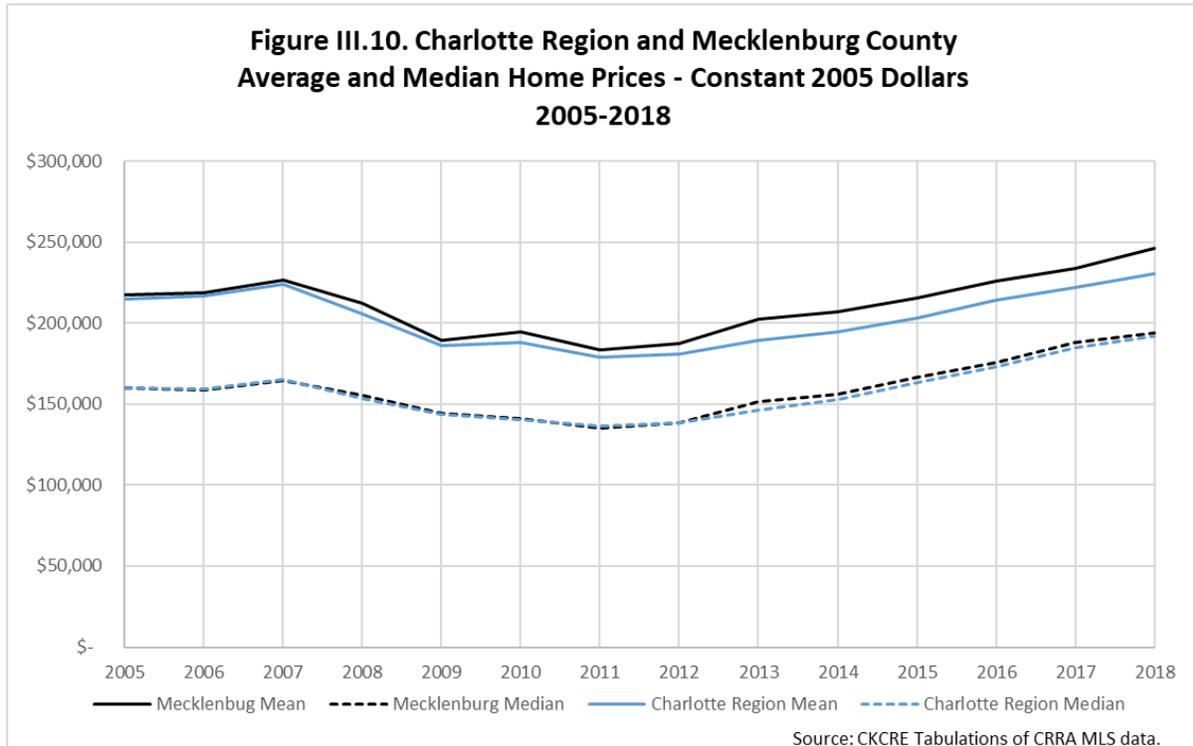


Table III.4. Real Average and Median Home Prices for Charlotte Region and Mecklenburg County. Prices expressed in 2005 Dollars. 2005-2018. Data are from transactions recorded in Carolina Regional Realtor © Association MLS.

Year	Mecklenburg Average	Mecklenburg Median	Charlotte Region Average	Charlotte Region Median
2005	\$217,602	\$160,000	\$214,652	\$160,000
2006	\$218,730	\$158,625	\$216,624	\$159,216
2007	\$226,376	\$164,818	\$223,676	\$165,289
2008	\$212,533	\$155,281	\$205,634	\$153,516
2009	\$189,362	\$144,559	\$186,123	\$143,745
2010	\$194,428	\$140,955	\$188,030	\$140,074
2011	\$183,471	\$135,133	\$178,704	\$136,432
2012	\$187,095	\$138,754	\$180,930	\$138,754
2013	\$202,165	\$151,758	\$189,072	\$146,468
2014	\$206,779	\$156,310	\$194,479	\$152,973
2015	\$215,460	\$166,441	\$203,200	\$163,178
2016	\$226,006	\$175,909	\$213,892	\$173,091
2017	\$234,085	\$188,359	\$222,198	\$184,512
2018	\$246,037	\$193,718	\$230,370	\$192,071

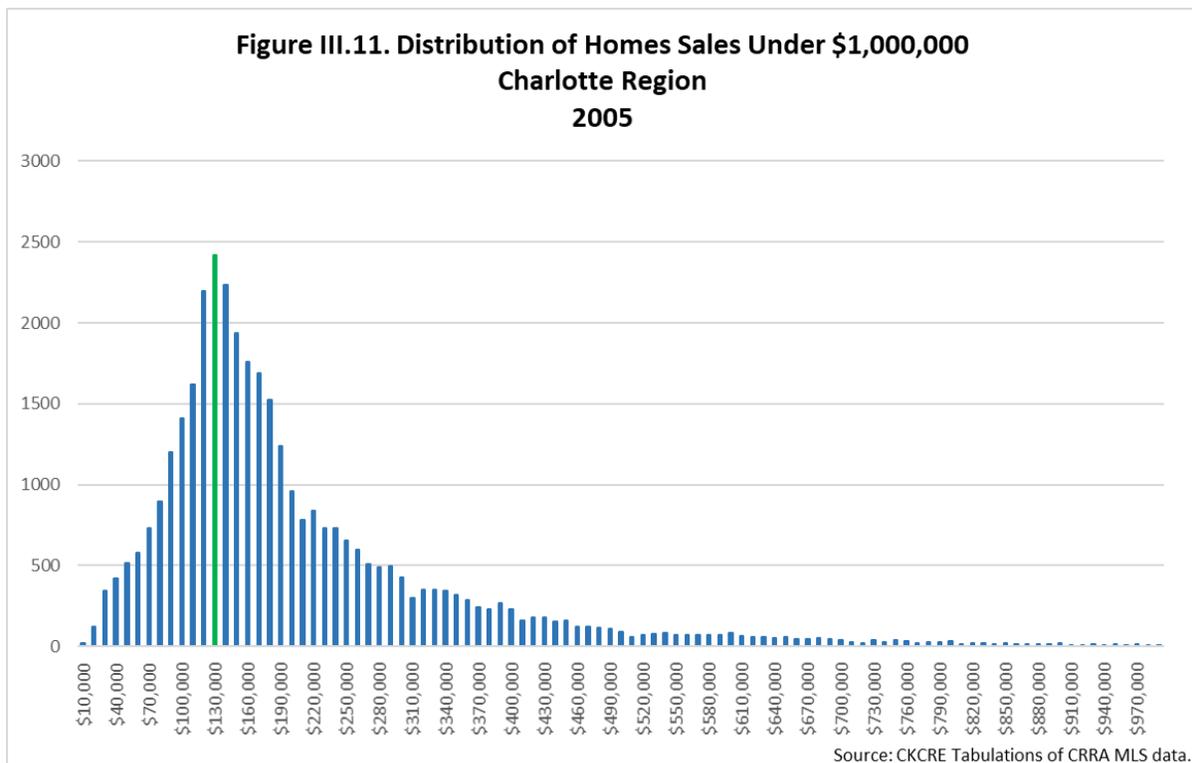
If we take a longer view back to the peak of the housing boom, the real growth rates are more modest. The average price in Mecklenburg County in 2018 was 8.69% higher in real terms that it was in 2007, for

an annual real rate of growth of 0.76%. For the Charlotte region the average house price is just 2.99% higher than the 2007 peak in real terms, for a 0.27% real growth rate. Once again, the median house prices have grown faster, however, with a cumulative real price increase in Mecklenburg County of 17.53% and for the Charlotte region of 16.20%. This translates into annualized real growth rates of 1.48% and 1.37%, respectively.

Examining the mean and median is a useful endeavor, but one can develop a fuller appreciation of the way in which the owner-occupied house prices have changed by examining the entire distribution of home prices. To do this we have created a series of histograms of home prices. Specifically, Figures III.11 through III.14 show the distribution of home prices for homes under \$1,000,000 in four years: 2005, 2011, 2014, and 2018.¹⁰ The homes prices are broken down into \$10,000 buckets and the number of sales in that “bucket” are reflected in the height of the column at that point.¹¹

In 2005, the price bucket with the most sales is \$130,000.¹² For visual ease we have marked this bucket in green. As noted above, the home price distribution is asymmetric – both the mean and median are to the right of the \$130,000 “peak” of the distribution.

As shown in Figure III.12, by 2011 it was easy to see the effects of the housing bust on home prices. The total number of sales sharply decreased. Further there were more homes selling in the left (lower priced) side of the distribution. We note that the “peak” price bucket, however, was still \$130,000.

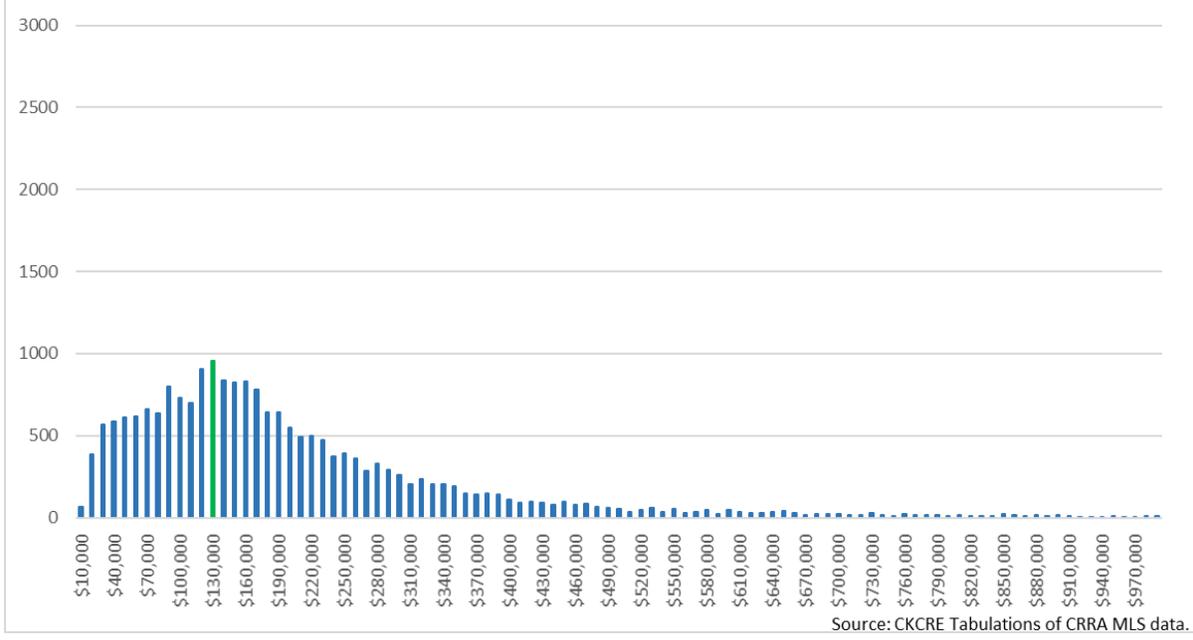


¹⁰ Histograms for every year 2005-2018 are available on request from the authors.

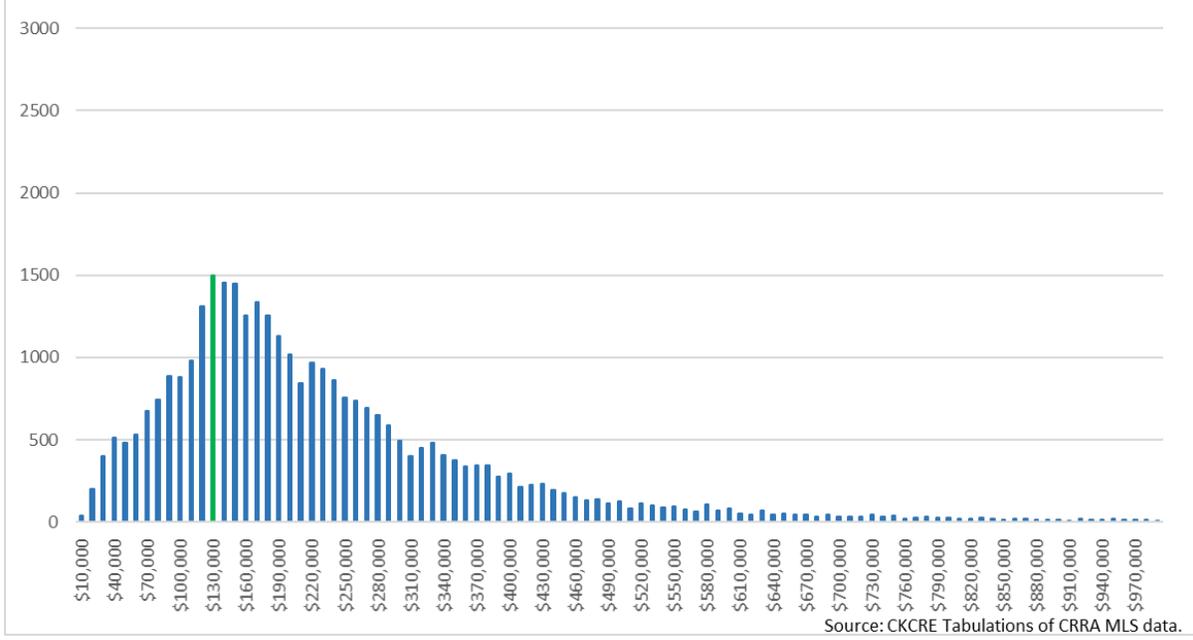
¹¹ We elected to not plot homes over \$1,000,000 because they are a very small proportion of all sales, typically under 300 sales per year, and because they make viewing the chart more difficult because they extend the right hand “tail” of the distribution.

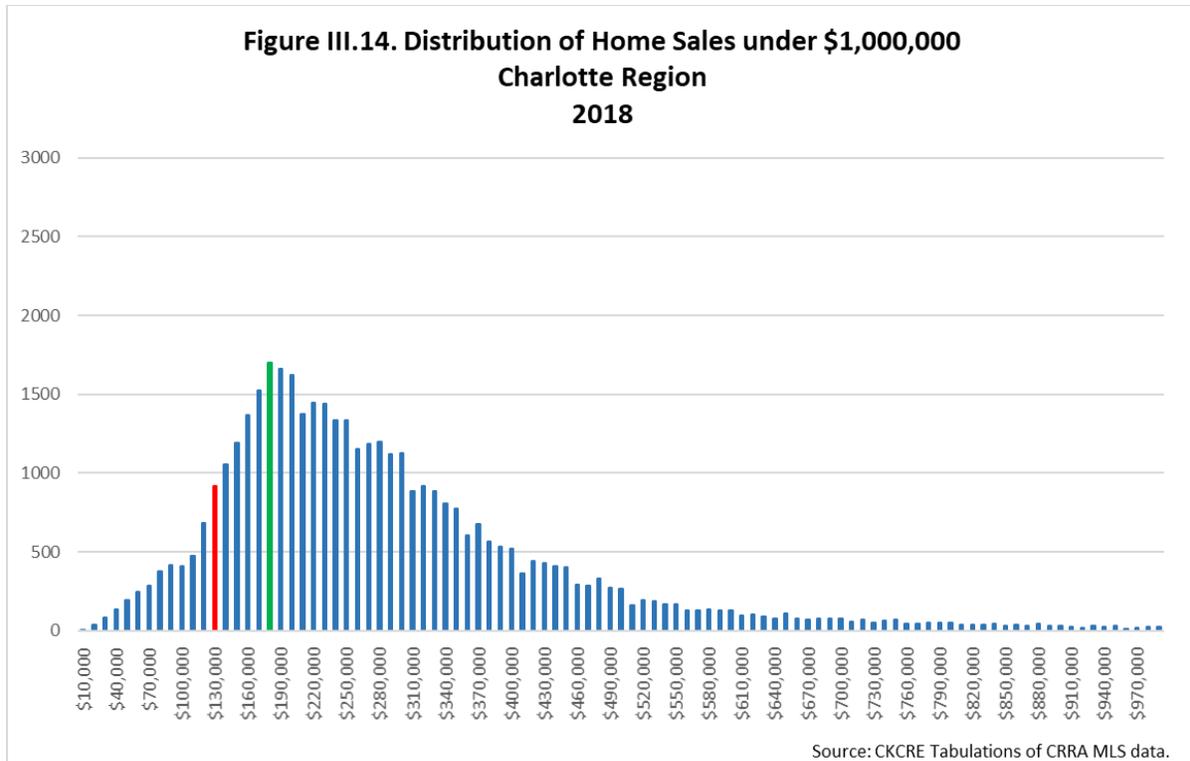
¹² This is the “mode” of the distribution. That is, the value that occurs most frequently.

**Figure III.12. Distribution of Home Sales Under \$1,000,000
Charlotte Region
2011**



**Figure III.13. Distribution of Home Sales Under \$1,000,000
Charlotte Region
2014**





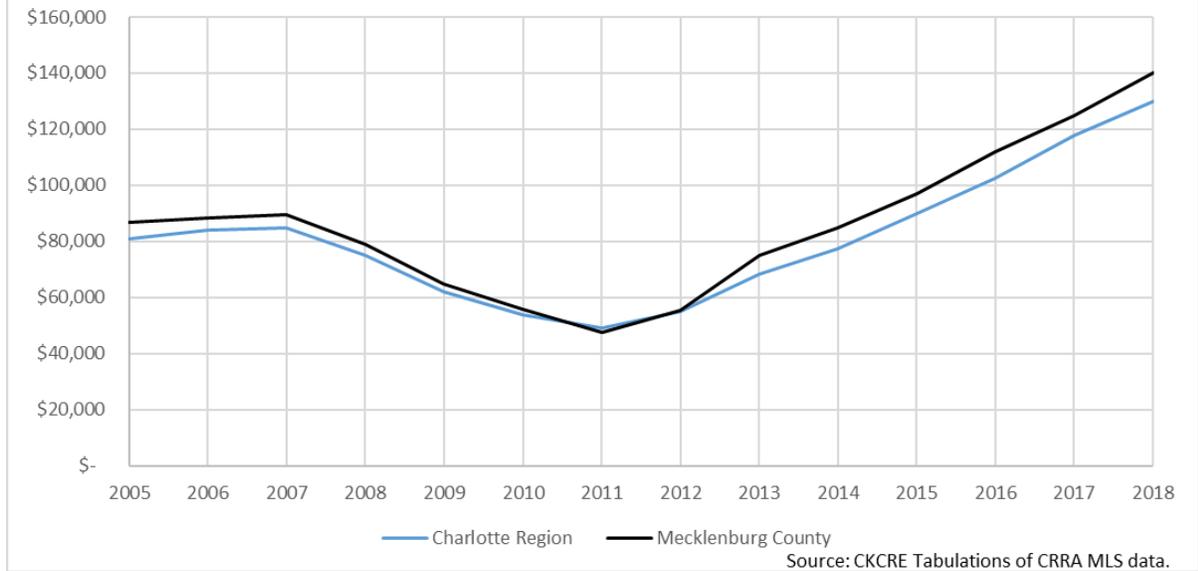
In 2014 the market had begun to rebound, with a smaller percentage of sales occurring on the left side of the distribution. It is still the case, however, that the “peak” of the distribution – i.e. the bucket into which a random home was most likely to be in – was still the \$130,000 bucket.

Beginning in 2015, the distribution begins to sharpen again, and prices generally move to the right. Indeed, the “peak” moves to the right every year after 2014. Figure III.14 shows the distribution for 2018. In this year, the “peak” has reached \$180,000. In Figure III.14 we have highlighted in red the \$130,000 bucket. One can easily see that there are far fewer homes being sold in this bucket – and to the left of it – than in any of the previous years.

These four histograms illustrate just how radically the Charlotte housing market has changed since 2005, and how much home prices have increased over the past four years – especially among lower priced homes. Home prices in general are rising, but they are rising fastest at the lower end of the price spectrum. We are going to illustrate this with several graphs.

In Figure III.15 we plot the value of the 10th percentile home from the market in each year from 2005 through 2018. That is, each year we line up all homes from the lowest priced sale through the highest price sale, and then find the home that was at the 10th percentile point – meaning that 90% of homes in the region sold for more than that home did. This chart shows that there has been truly dramatic escalation in the prices in this lower portion of the housing distribution.

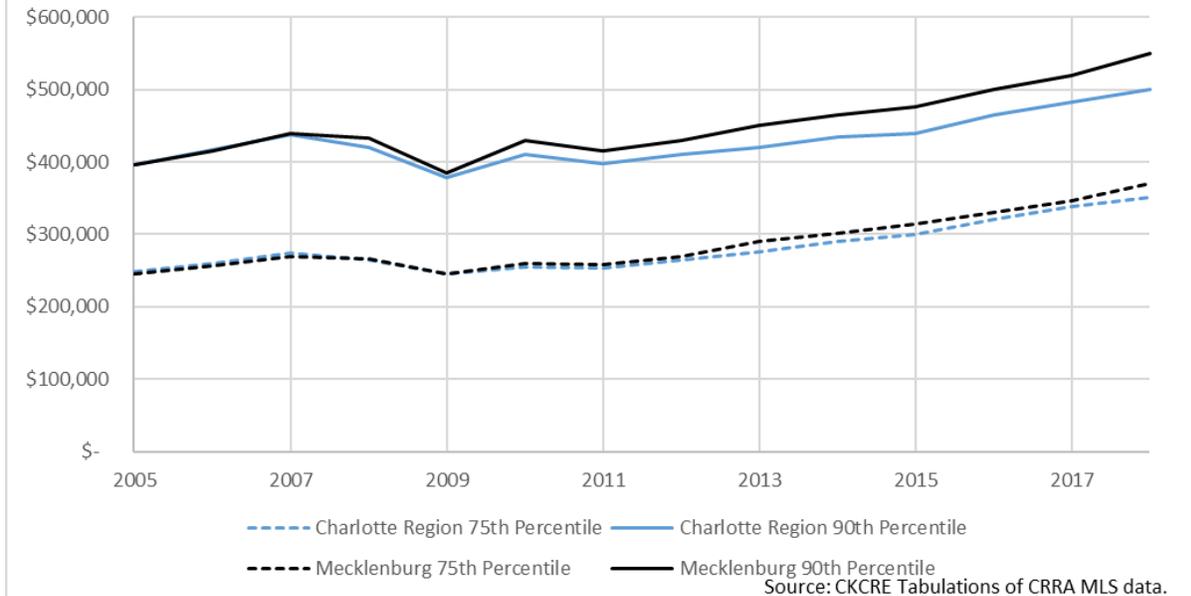
**Figure III.15. Charlotte Region and Mecklenburg County
10th Percentile of Price Distribution
2005-2018**



From the 2011 post-crash trough, the 10th percentile home price in Mecklenburg County increased from \$47,540 to \$140,000 – a cumulative increase of 194%, or an annual increase of 16.68%. The results in the Charlotte region as a whole have been similarly dramatic, with the 10th percentile home price rising from \$48,990 to \$130,000, a 165% increase, or an annual increase of 14.96%.

Even if one considered that perhaps the 2011 trough prices reflected short sales, foreclosures, and other distressed sales, looking at the change since 2005 is also dramatic. The 10th percentile prices have grown cumulatively by 60.9% in Mecklenburg County and 60.49% in the region. This works out to annualized growth rates of 3.71% and 3.72%, respectively.

**Figure III.16. Charlotte Region and Mecklenburg County
75th and 90th Percentiles of House Prices
2005-2018**

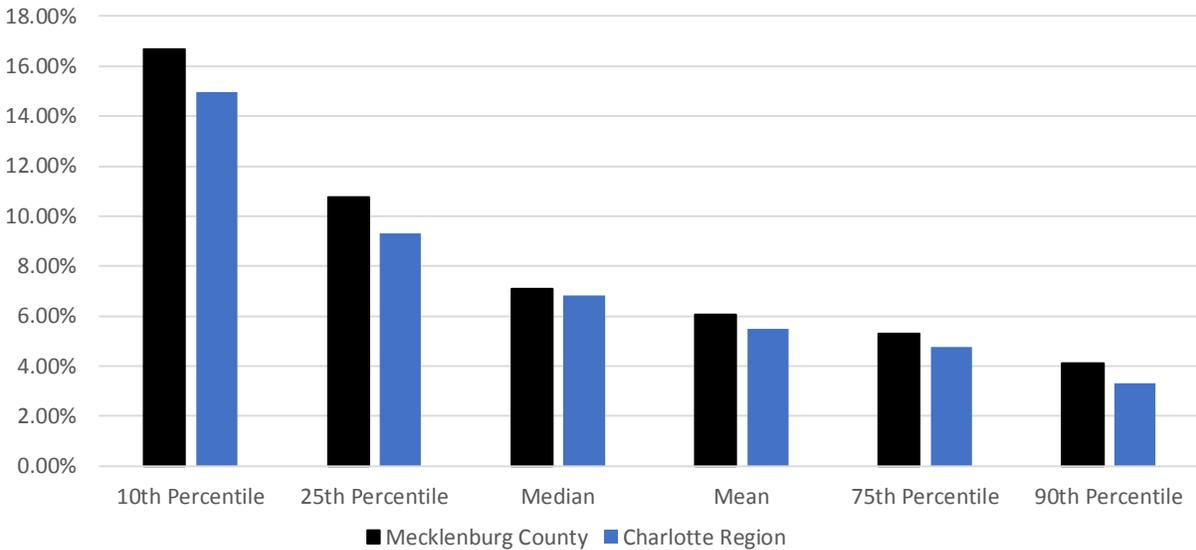


Higher priced homes have not seen similar growth. In Figure III.16 we present the 75th and 90th percentile home prices. For the Charlotte region, the 75th percentile home price increased by 38.64%, for an average growth rate of 4.78%. For Mecklenburg County the 75th percentile house price has increased by 43.41%, for an annualized growth rate of 5.29%. For the 90th percentile home price, the cumulative growth has been 25.63% in the region and 32.53% in Mecklenburg County. This is equivalent to annual growth rates of 3.31% and 4.11%, respectively.

If we examine these percentiles over the period from 2005 through 2018, the cumulative growth has been 41.37% for the 75th percentile home in the Charlotte region and 51.08% for the 75th percentile home in Mecklenburg County. These correspond to annual rates of growth of 2.7% and 3.23%. For the 90th percentile home the growth has been less. Cumulatively, the Charlotte region's 90th percentile home price has grown 26.26%, and Mecklenburg Counties has grown 38.89%. This works out to annual growth rates of 1.81% and 2.56%.

To put this fully into context, Figure III.17 plots the annual growth rate since 2011 of the 10th, 25th, 50th (median), 75th, and 90th percentiles of the distribution. It also plots the annual growth rate of the average home price over that time period.

Figure III.17 Charlotte Region and Mecklenburg County Trough to Peak Annualized Growth in Various Percentiles of the House Price Distribution. 2011-2018

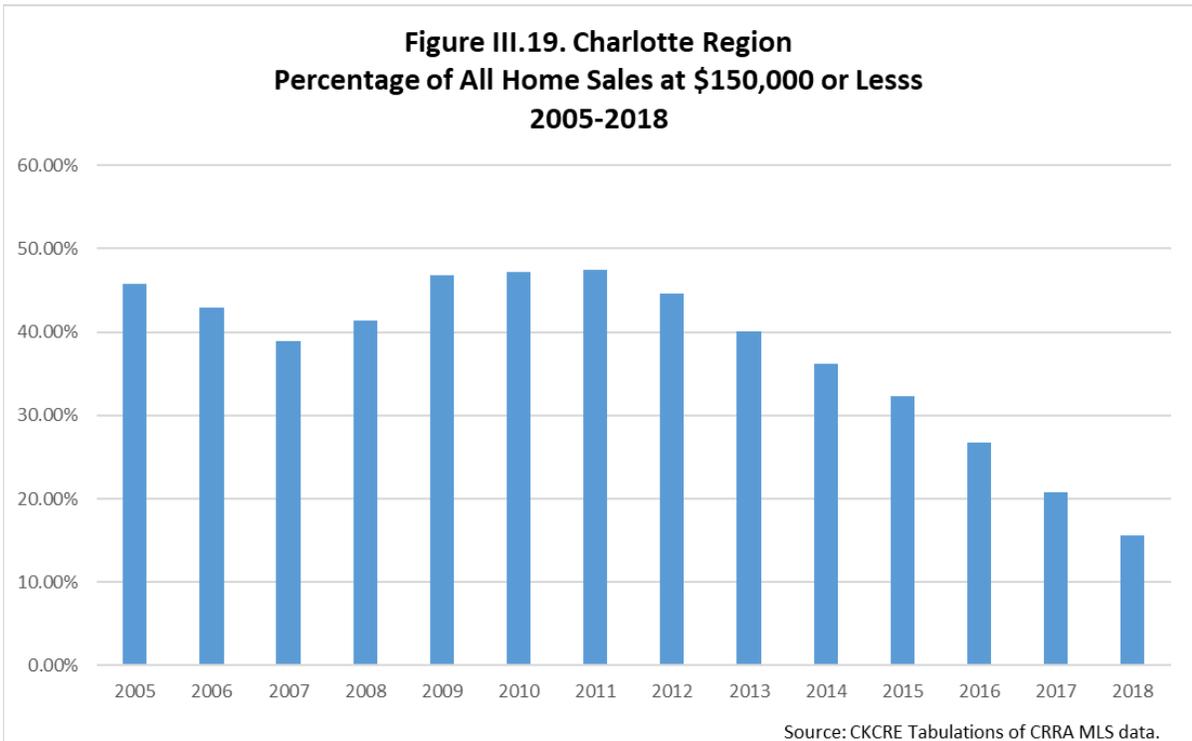
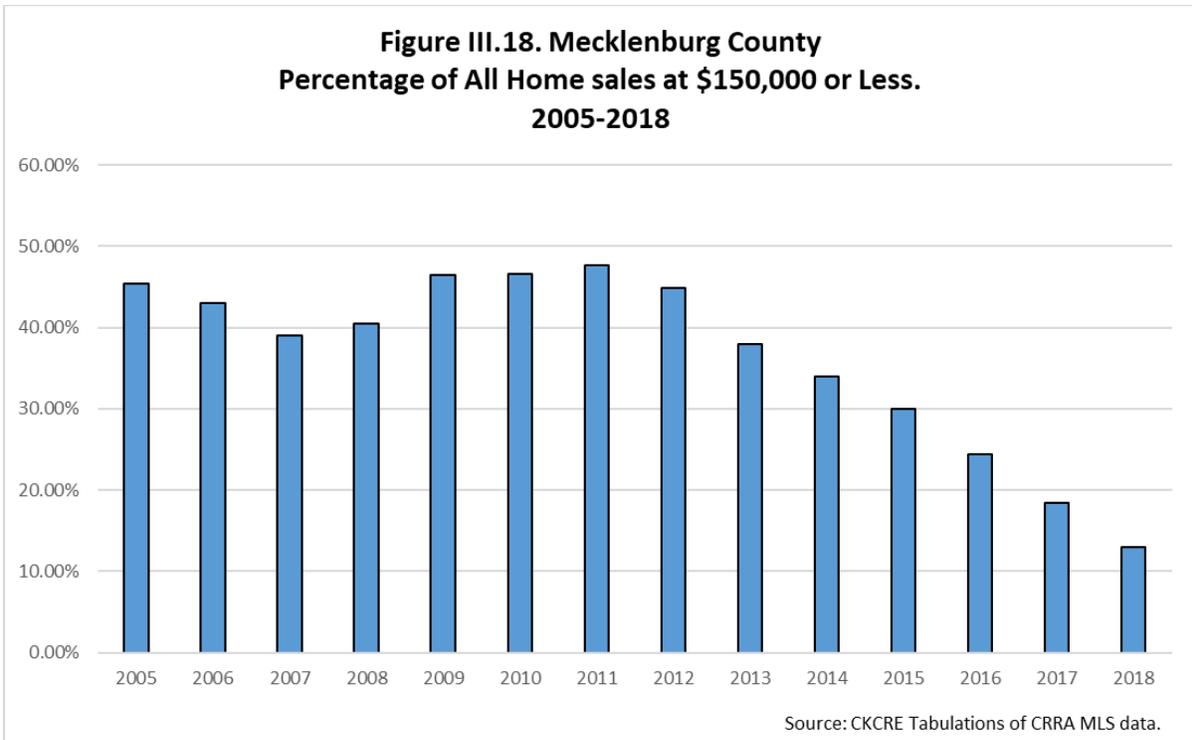


Source: CKCRE Tabulations of CRRA MLS data

Figure III.17 clearly shows that the lowest prices homes have had the highest percentage price increases since the recovery from the recession started. Clearly, this is having a profound effect on not only low-income affordability, but on middle-class affordability.

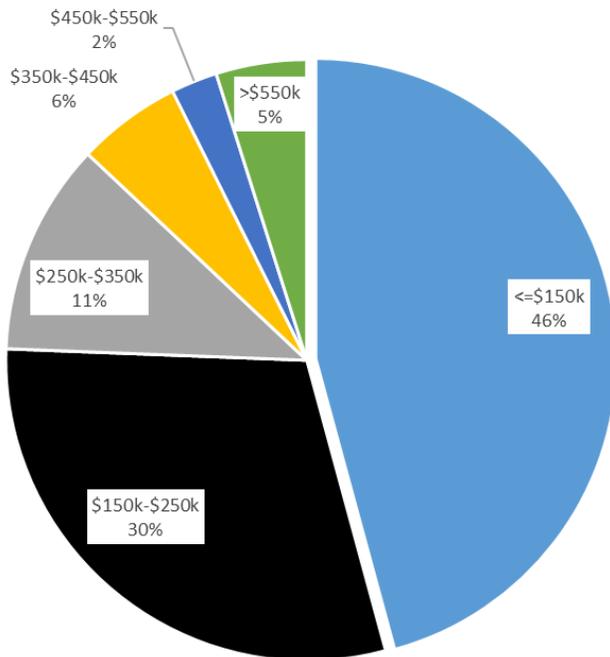
Recall that as the histograms in Figures III.11 through III.14 show, from 2005 through 2014, in every year the “peak” of the distribution was the \$130,000 bucket. If we look at the median home price in 2005, for the region and Mecklenburg County it was a little more than \$150,000. That is, a potential homebuyer in the market could reasonably expect to find a robust market for homes at price points of \$150,000 or less. Indeed, this price point was frequently thought of as the “starter” home price point.

Figure III.18 plots the percentage of homes each year in Mecklenburg County that sold for \$150,000 or less. Prior to 2011, the percentage of homes selling for \$150,000 or less varied between 45% and about 38%, with higher rates during the years of the recession. Since 2012, however, there has been a sharp and steady decline in homes selling in the \$150,000 range. In 2018, only 13% of homes sold for \$150,000 or less in Mecklenburg County. Figure III.19 does the same plot for the larger Charlotte region and finds essentially the same results – the number of homes for sale at \$150,000 or less has declined dramatically. It is clear from these two graphs that it is very difficult for a potential homebuyer to purchase a home for less than \$150,000 in the current market.

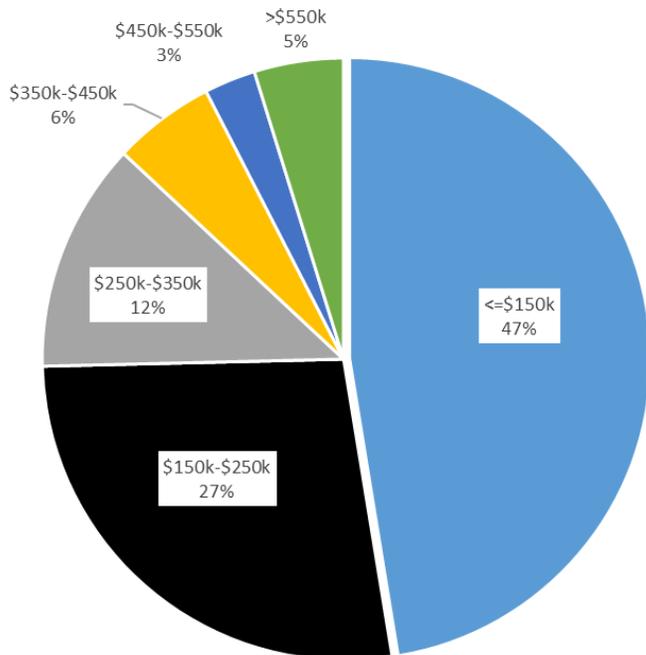


While Figures III.18 and III.19 demonstrate the declining number of home sales in the \$150,000 or less range, it does not give a complete view of the marketplace. We can get a more complete view of the market by examining the pie charts in Figures III.20, III.21, and III.22, presented below.

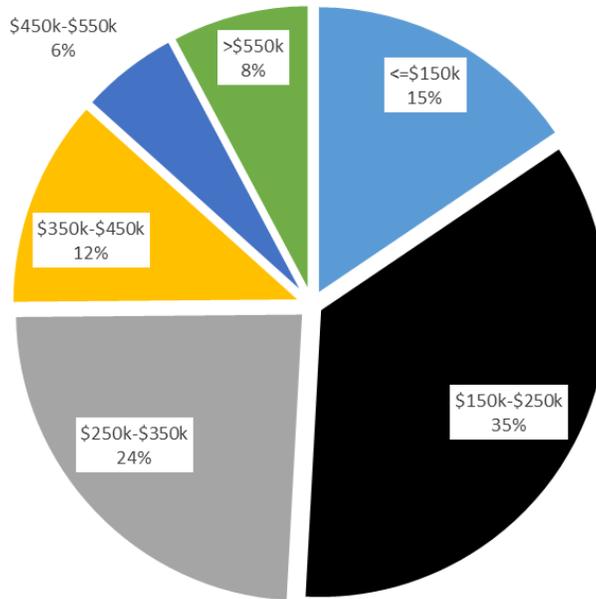
**Figure III.20. Charlotte Region: Composition of Sales by Price Levels
2005**



**Figure III.21. Charlotte Region: Composition of Sales by Price Levels
2011**



**Figure III.22. Charlotte Region: Composition of Sales by Price Levels
2018**



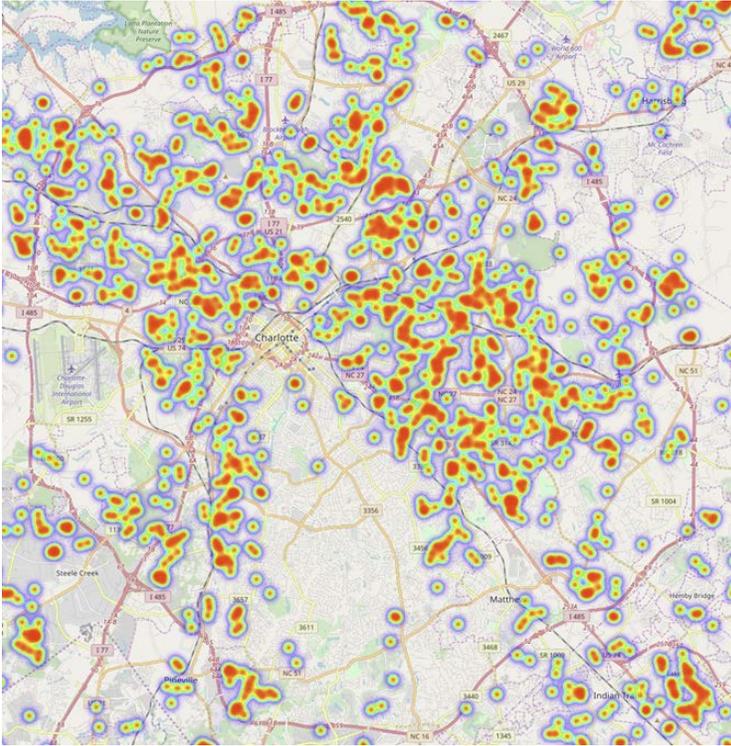
What these charts show is that prior to 2011, homes with prices of less than \$150,000 constituted a substantial portion of the overall market place. In 2011, this segment constituted 47% of the housing market. By 2018 it has shrunk to around 15%, and the \$150,000-\$250,000 segment had grown from about 27% of the market to 35%. In addition the \$250,000-\$350,000 segment has grown from 11% in 2005 to 24% in 2018.

These are profound changes in the pricing of the Charlotte region's home market and have significant implications for the ability of first time homebuyers to enter the market. Prior to 2011, it was reasonable for a household transitioning into first-time homeownership to assume they would be able to find a home priced under \$150,000, the typical "starter home" market. By 2018, however, that same household would realistically need to assume that starter homes are those with prices of \$250,000 or less. As we will show later in this section, this directly affects the affordability of housing and the ability of people to transition to housing.

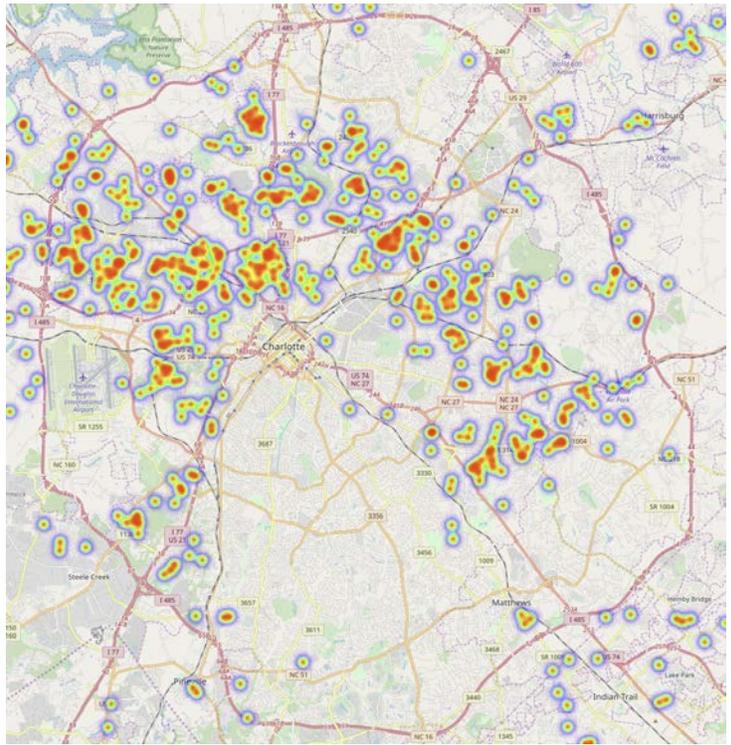
As a final example of how profound this change has been, we present two heat maps. The first, Figure III.23, shows the geographic distribution in Mecklenburg County of home sales at \$150,000 or less in 2005. The second, Figure III.24, shows the distribution over the same area in 2018.¹³ These maps illustrate just how dramatically the availability of these homes changed between 2005 and 2018.

¹³ Maps covering additional areas are available on the project web-site at realestate.uncc.edu/housing.

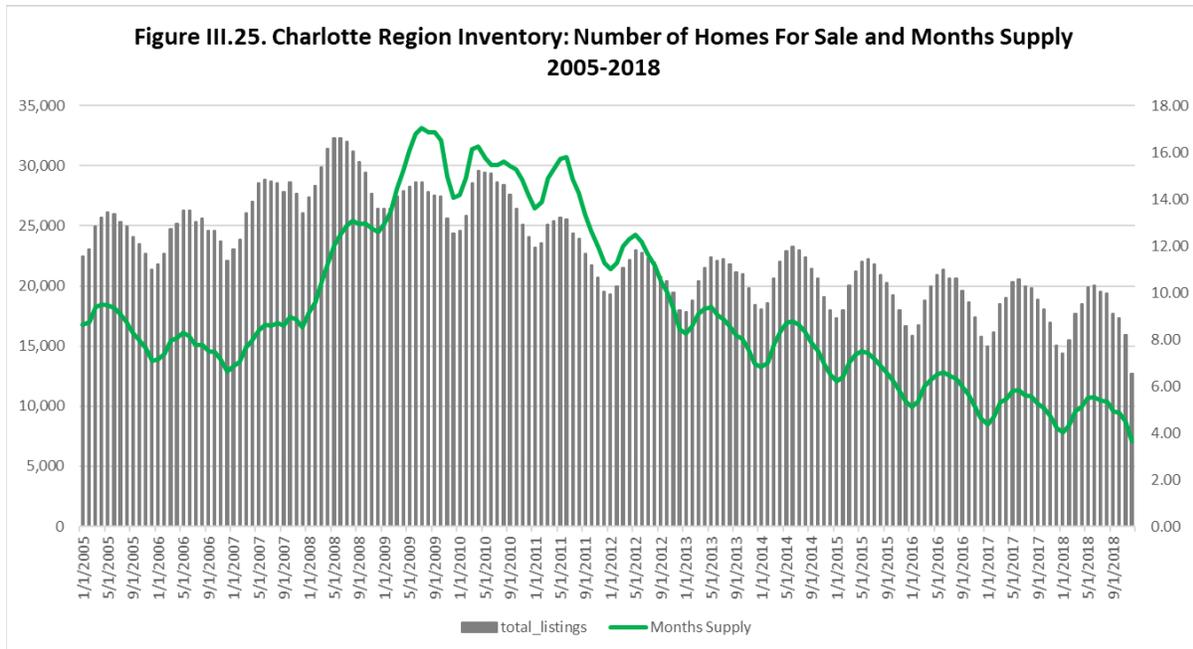
**Figure III.23. Heat Map of Home Sales of $\leq \\$150,000$
2005**



**Figure III.24. Heat Map of Home Sales of $\leq \\$150,000$
2018**



The changes in the pricing of homes in the last several years have been profound. Another major change is a dramatic decrease in the inventory of available homes. Figure III.25 shows the monthly inventory levels on the CRRA MLS. The dark gray bars express this average in terms of number of units listed. The green line presents the inventory as a function of the number of months' inventory that is available. That is, it is the number of homes listed for sale divided by a one-year rolling average of monthly home sales. This gives an indication of how quickly the current inventory would be sold if no new homes were listed. Note that the scale for this metric is on the right side y-axis.



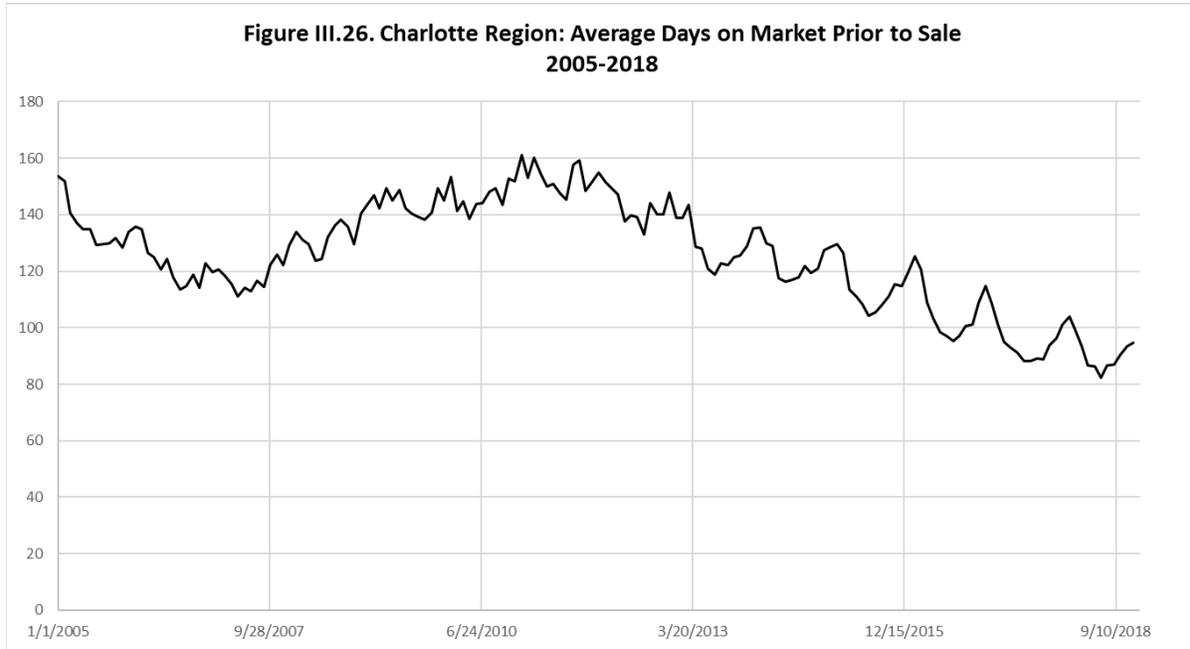
The inventory of homes on the MLS has steadily declined. Recall that Figure III.8 demonstrated that the number of sales has steadily increased. Thus, the issue is not that fewer homes are being listed, rather it is that homes are not staying on the market as long as they previously did prior to being sold. This can easily be seen in Figure III.26, which plots the average days on the market for homes that sold from 2005 through 2018.

Taken together Figures III.25 and III.26 show a profound tightening of the market. During the peak of the housing boom, there were typically between eight and ten months supply of housing on the MLS. In 2018 that figure fell to under a four-month supply. The average days on the market recently fell to below 90 days.

What all of this data is showing is a market that is becoming much more competitive over time. This is consistent with the notion that we raised in Section II, that with population growing at a rate faster than the growth in the housing supply, prices will rise and the market will be much more competitive. Of course, the increased cost of housing creates some significant affordability issues, not just for lower-income residents but, increasingly, for middle-income residents.

We illustrate the affordability challenges in two ways. First, we will examine how much income it would take afford different percentiles of the housing sales distribution using a mortgage. That is, for each year

we will show the minimum amount of income that one would need to purchase, without being cost-burdened, the 10th percentile home, the 25th percentile home, the home with the median price, and the average priced home. We will be able to do this for each year of our study from 2005 until 2018. Second, we will flip this around and demonstrate how much home various professions would be able to purchase at their respective 2018 median incomes.



We begin by showing the 10th, 25th, median and average home price for the Charlotte region each year from 2005 through 2018. This is in Table III.5 below.

**Table III.5. Prices of Various Percentiles of the Charlotte Regional Housing Distribution
2005-2018.** Source: CKCRE tabulations of CRRA MLS data.

year	10th Percentile	25th Percentile	Median Price	Average Price
2005	\$81,000	\$117,000	\$160,000	\$214,652
2006	\$83,900	\$119,900	\$165,615	\$225,330
2007	\$84,990	\$124,000	\$175,500	\$237,495
2008	\$75,000	\$118,000	\$170,000	\$227,715
2009	\$62,000	\$109,000	\$159,000	\$205,875
2010	\$54,000	\$101,050	\$159,000	\$213,436
2011	\$48,990	\$95,000	\$157,500	\$206,299
2012	\$55,000	\$102,000	\$165,000	\$215,154
2013	\$68,500	\$118,000	\$177,107	\$228,622
2014	\$77,500	\$125,000	\$187,900	\$238,883
2015	\$89,900	\$134,900	\$200,000	\$249,054
2016	\$102,500	\$147,000	\$215,000	\$265,680
2017	\$118,000	\$162,000	\$235,000	\$282,998
2018	\$130,000	\$177,000	\$249,858	\$299,680

Given the income levels, we calculated how much income it would take for that level home to be considered “affordable.” In doing this we used the typical definition of housing affordability: the amount a homeowner could spend on housing and utilities without exceeding 30% of their gross income. In this analysis we assumed that the homeowner used a 30-year, 95% loan-to-value mortgage at prevailing interest rates, and include in their monthly mortgage payment escrow amounts for property taxes, homeowners insurance, and private mortgage insurance (PMI).¹⁴

Table III.6 shows this analysis. For each year the table provides the prevailing mortgage rate, the inflated/deflated median utilities for the year, and then the total monthly housing cost and required minimum income for that cost to be affordable, for the 10th, 25th, median, and average priced home the region. Note that the total monthly housing cost includes the mortgage payment on a 30-year, 95% LTV loan, utilities, property insurance, private mortgage insurance, and property taxes.

Table III.6 encapsulates several facts about affordability in the Charlotte region’s owner-occupied housing market. First, it shows that although the income required to buy housing has increased at all points along the housing distribution, the lowest end of the distribution has been affected the most. In 2005 the minimum income to affordably buy the 10th percentile house price was \$31,539. In 2018, the income required to buy the 10th percentile house was \$43,935, a 39.3% increase. Even if we were to inflate the 2005 income into 2018 dollars, the 2005 income was equivalent to \$41,550. This means the 10th percentile price has risen at a rate greater than inflation. It is even more daunting if one looks at the prices available at the height of the recession. In 2011 the 10th percentile home could have been purchased with an income of \$22,565. In the seven years since 2011, the cost has nearly doubled. In nominal terms the income required to buy the 10th percentile home has risen by 95%, and in real terms it has increased by 71%.

As one moves to higher priced homes these effects become less pronounced. For example, the income required to purchase the 25th percentile home was \$41,454 in 2005, \$33,708 in 2011, and \$55,421 in 2018. These are increases in nominal required-income of 33.69% and 64%, respectively, in inflation-adjusted real terms they represent cumulative increases in required income of only about 1.48% since 2005, and 44.12% since the 2011 trough. For the median-price home the required income has changed from 53,297 in 2005, to 48,845 in 2011, to \$73,226 in 2018.¹⁵ In nominal terms this is an increase of 37.39% since 2005 and 49.92% since 2011. In real terms, it is a 4.29% increase since 2005, and a 31.41% increase since 2011.

For the average-priced home, however, the tale is slightly different. The 2005 average-home required income was \$68,349, and the 2011 required income to buy the average-priced home was \$60,664. In nominal terms, this represents required increases in the required income of 24.95% and 40.78%, respectively. In real terms, however, note that the 2005 required income to buy the average-priced

¹⁴ We obtained the annual average mortgage rate for each year as reported by the Federal Reserve at: <https://fred.stlouisfed.org/series/MORTGAGE30US>. We used the median gas, electric, and water bills for the southern United States as reported as reported by the US Census Bureau American Fact Finder web-site: <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. The Census Bureau only reports this for 2013. We deflated or inflated the value based on the Bureau of Labor Statistics inflation calculator (<https://www.bls.gov/bls/inflation.htm>.) For property taxes we assumed a rate of 1.05% of market value. We assumed a 0.5% monthly charge for PMI.

¹⁵ For both the median-priced home and the average priced home, the year with the smallest minimum required income was 2012. We are using 2011 here for consistency with the 10th and 25th percentile-home analysis.

home of \$68,349 is in 2018 dollars equal to \$90,045 – which is higher than the income that was required to purchase the average priced home in 2018 of \$85,402. In real terms, the income required to purchase the average priced home fell from 2005 to 2018 by about 5.16%. The required income did increase in real terms from 2011 to 2018, but by only 23.40%.

From this analysis one can see that the largest increases in required-income to obtain a home, whether one uses 2005 or 2011 as the base year, occurred in the lowest portion of the housing distribution. The price increases were more moderate in the middle (and upper) portions of the housing price distributions. The reduction in mortgage interest rates from 2005 to 2018 also had an effect in moderating all required-incomes, but because the balances (and hence interest payments) on higher cost homes tend to be higher, the lower interest rates had more of an ameliorating effect on the incomes required at the higher ends of the price spectrum.

Tables III.5 and III.6 are instructive because they allow us to directly see how the combination of changing house prices, changing interest rates, and inflation have affected housing affordability. Most people, of course, do not really ask the question “if I want to buy house X, what is the minimum income I have to have?” Most of us tend to think of this the other way around, “If I have income of Y, what is the upper price limit of house that I can afford?” We address the question this way in Table III.7.

In Table III.7 we look at the 2018 median income in North Carolina for a variety of jobs and answer the question “given this level of income, how expensive a home could this person have bought and still not have spent more than 30% of their income on housing?” The median income data are from the North Carolina Star Jobs database.¹⁶ The median incomes reported are for the entire state, not just the Charlotte region.

Table III.7 illustrates that until one’s income reaches between \$50,000 and \$60,000 per year, it is very difficult to find significant numbers of homes that can be affordably purchased. As the Table shows, there are many occupations that are generally considered to be permanent, career-professions, such as Fire Fighters, Police Officers, and Elementary School Teachers that do not have median incomes at these levels.¹⁷

The owner-occupied housing market is by far the largest component of our overall housing market. Typically, 65% or more of households in the region live in a housing unit that they own. Because of its scale, it is the owner-occupied market that most effects the housing options available to all people in the region.

When prices in this market increase faster than wages and inflation, as has been happening in the Charlotte region since 2011, several things happen. First, gentrification tends to occur. When it becomes difficult for wealthier people to find the housing they want, they can always “buy down”, and either renovate or even tear down and build new housing. Although a perfectly natural reaction by homeowners, it has the effect of reducing the supply of lower-cost owner-occupied housing. Certainly as the data in the preceding tables show, the Charlotte region has seen a marked increase in the cost of lower-priced owner-occupied housing – this is consistent with what one would expect to happen if gentrification were happening in traditionally lower-cost neighborhoods.

¹⁶ Available at https://www.nccareers.org/starjobs/star_jobs.html.

¹⁷ Again, we emphasize that these median wage levels are at the state level. Actual wages in a metropolitan area such as Charlotte may be higher.

Table III.6. Income Required to Afford Values Percentiles of the Housing Distribution by Year. Home prices for various percentiles are presented in Table III.5. Mortgage rates are from the St. Louis Federal Reserve site: <https://fred.stlouisfed.org/series/MORTGAGE30US>. Median utilities and property insurance are as reported by the US Census Bureau (<https://factfinder.census.gov>) for the southern United States in 2013, inflated or deflated by inflation as reported by the US Bureau of Labor Statistics <https://www.bls.gov/bls/inflation.htm>. Homeowners are assumed to use a 30 year, 95% mortgage. Property taxes are assumed to be 1.05% annual, and PMI is assumed to be 0.5% of the initial mortgage balance.

Year	Mortgage Rate	Utilities and Property Insurance	10 th Percentile Home		25 th Percentile Home		Median Priced Home		Average Priced Home	
			Monthly Housing Cost	Required Annual Income	Monthly Housing Cost	Required Annual Income	Monthly Housing Cost	Required Annual Income	Monthly Housing Cost	Required Annual Income
2005	5.87%	\$231	\$788	\$31,539	\$1,036	\$41,454	\$1,332	\$53,297	\$1,709	\$68,349
2006	6.41%	\$240	\$846	\$33,835	\$1,106	\$44,234	\$1,436	\$57,439	\$1,867	\$74,688
2007	6.34%	\$245	\$855	\$34,181	\$1,134	\$45,376	\$1,504	\$60,155	\$1,949	\$77,945
2008	6.03%	\$255	\$778	\$31,133	\$1,079	\$43,144	\$1,442	\$57,669	\$1,845	\$73,790
2009	5.04%	\$255	\$651	\$26,035	\$951	\$38,052	\$1,271	\$50,836	\$1,571	\$62,820
2010	4.69%	\$262	\$597	\$23,864	\$888	\$35,517	\$1,247	\$49,870	\$1,584	\$63,353
2011	4.45%	\$267	\$564	\$22,564	\$843	\$33,708	\$1,221	\$48,845	\$1,517	\$60,664
2012	3.66%	\$275	\$585	\$23,385	\$849	\$33,952	\$1,203	\$48,116	\$1,485	\$59,392
2013	3.98%	\$281	\$678	\$27,113	\$965	\$38,583	\$1,307	\$52,278	\$1,605	\$64,215
2014	4.17%	\$287	\$744	\$29,752	\$1,024	\$40,961	\$1,395	\$55,804	\$1,696	\$67,834
2015	3.85%	\$292	\$807	\$32,281	\$1,065	\$42,585	\$1,437	\$57,493	\$1,718	\$68,726
2016	3.65%	\$292	\$868	\$34,731	\$1,118	\$44,733	\$1,500	\$60,016	\$1,785	\$71,407
2017	3.99%	\$295	\$980	\$39,190	\$1,235	\$49,400	\$1,658	\$66,338	\$1,937	\$77,474
2018	4.54%	\$304	\$1,098	\$43,935	\$1,386	\$55,421	\$1,831	\$73,226	\$2,135	\$85,402

Table III.7. 2018 Median Wages for Various Professions, House Prices They Can Afford, and the Percentage of Houses Selling At or Below That Price. The affordable house price is defined as the maximum home price that the homeowner could buy such that their total housing expense did not exceed 30% of their gross income. Total housing cost includes the monthly payment on a 30-year, 95% LTV mortgage at an interest rate of 4.54%, monthly utilities and property insurance costs of \$304, property taxes of 1.05%, and private mortgage insurance of 0.5% of the original loan amount. Utility and property insurance comes from the US Census Bureau American Fact Finder web site <https://factfinder.census.gov>, and is inflated from their 2013 estimate. Inflation information from the US Bureau of Labor Statistics, <https://www.bls.gov/bls/inflation.htm>. Mortgage rate data is from the St. Louis Federal Reserve (<https://fred.stlouisfed.org/series/MORTGAGE30US>.)

Profession	Median Wage	Affordable House Price	Percentage of Units Sold in Charlotte Region	Percentage of Units Sold in Mecklenburg County
Hotel Desk Clerks, bartenders, maids	\$19,390	\$29,563	0.2%	0.0%
Hairdressers, Hairstylists, and Cosmetologists	\$22,910	\$43,966	0.7%	0.1%
Ophthalmic Laboratory Technicians	\$23,020	\$44,417	0.7%	0.1%
Tellers	\$28,090	\$65,163	2.0%	0.7%
Meter Readers, Utilities	\$30,000	\$72,978	2.5%	1.0%
Fire Fighter	\$31,390	\$78,666	3.0%	1.4%
Police Officer	\$41,260	\$119,049	8.2%	5.9%
Elementary School Teachers	\$42,170	\$122,773	8.2%	5.9%
Graphic Designer	\$42,950	\$125,969	9.0%	6.6%
Healthcare Social Workers	\$49,410	\$152,403	15.9%	13.4%
Librarian	\$50,340	\$156,209	17.2%	14.8%
Genetic Counselors	\$58,100	\$187,962	29.1%	26.7%
Registered Nurses	\$58,950	\$191,440	30.7%	28.2%
Web Developers	\$61,700	\$202,693	34.8%	32.4%
Accountants	\$64,720	\$215,051	39.2%	37.3%
Civil Engineers	\$72,920	\$248,605	49.8%	48.6%
Architects, Except Landscape and Naval	\$76,730	\$264,195	54.3%	53.1%
Veterinarians	\$83,740	\$292,880	62.4%	60.8%
Construction Managers	\$87,730	\$309,206	66.2%	64.5%
Air Traffic Controllers	\$89,490	\$316,408	68.0%	66.1%
Sales Engineers	\$96,940	\$346,881	74.0%	71.6%
Purchasing Managers	\$104,830	\$379,165	79.0%	76.3%
Training and Development managers	\$115,100	\$421,188	83.7%	81.2%
Pharmacists	\$124,600	\$460,077	87.4%	84.7%

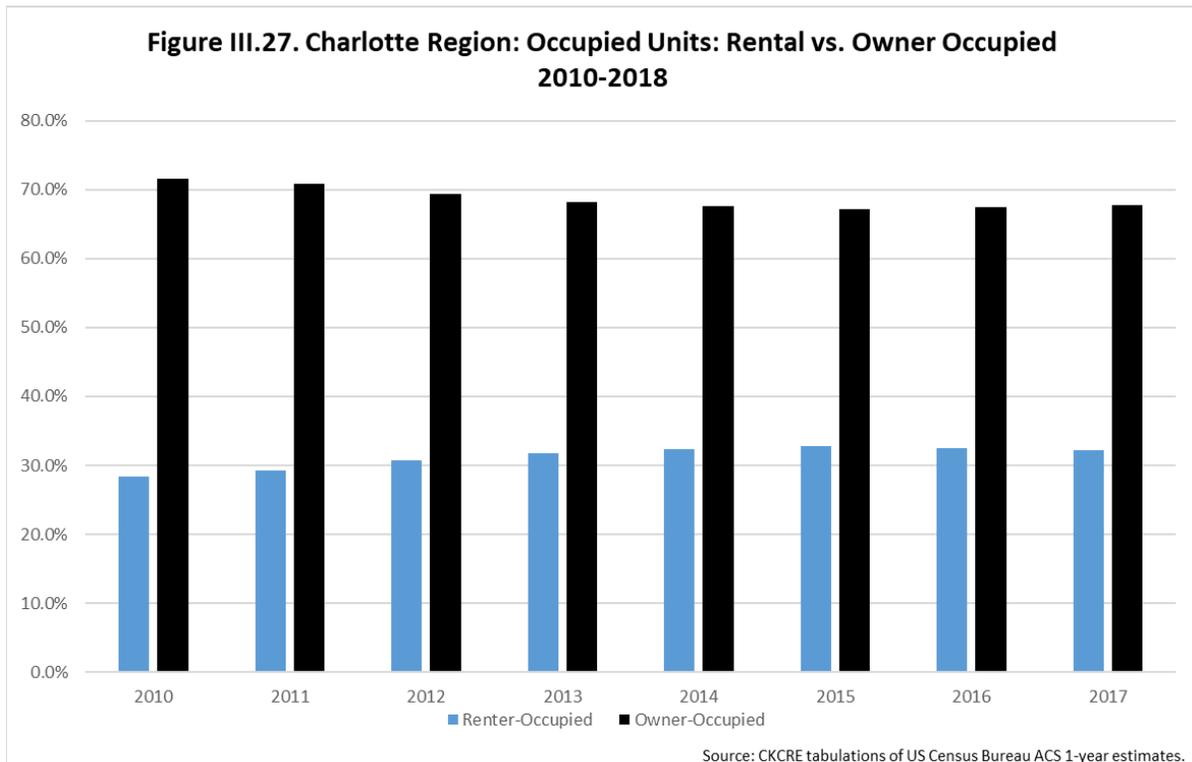
The second thing that tends to happen is consumers will trade off commuting costs for housing costs. That is, as the dollar costs of housing go up, it essentially becomes “cheaper” for consumers to bear the cost of commuting in return for finding less expensive housing. This increases the cost of commuting for everybody, of course, and puts increased pressure on local governments to build new roads and widen existing roads.

Finally, as the owner-occupied market becomes more expensive, more people will be willing to exit that market and move into rental housing. This ultimately helps determine the cost of renting in the region, which also has effects on lower-income rental affordability. In the following section we will look in detail at the rental markets, including the public and subsidized markets, in the Charlotte region.

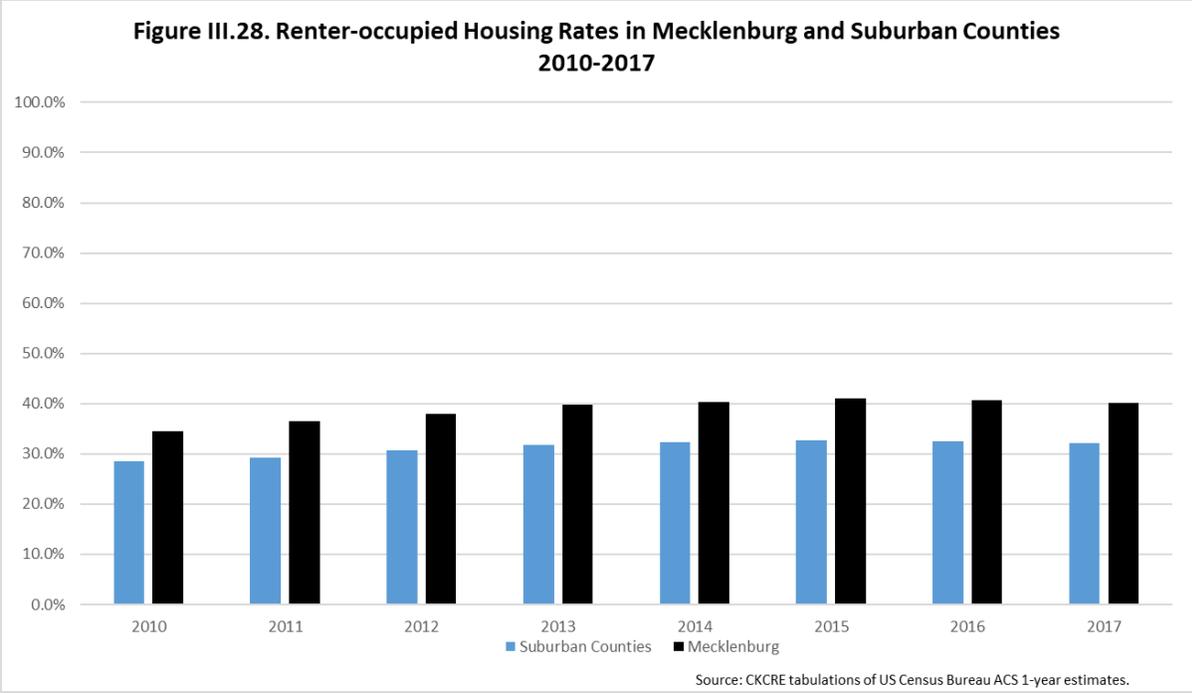
C. The Private Rental Markets

We begin our analysis of the rental market by first defining what we mean by that term, especially the phrase “market.” Essentially we are using the term “rental market” to mean units which the occupying household does not own. This includes apartments and rental houses, of course, but also public housing and subsidized private rental housing.

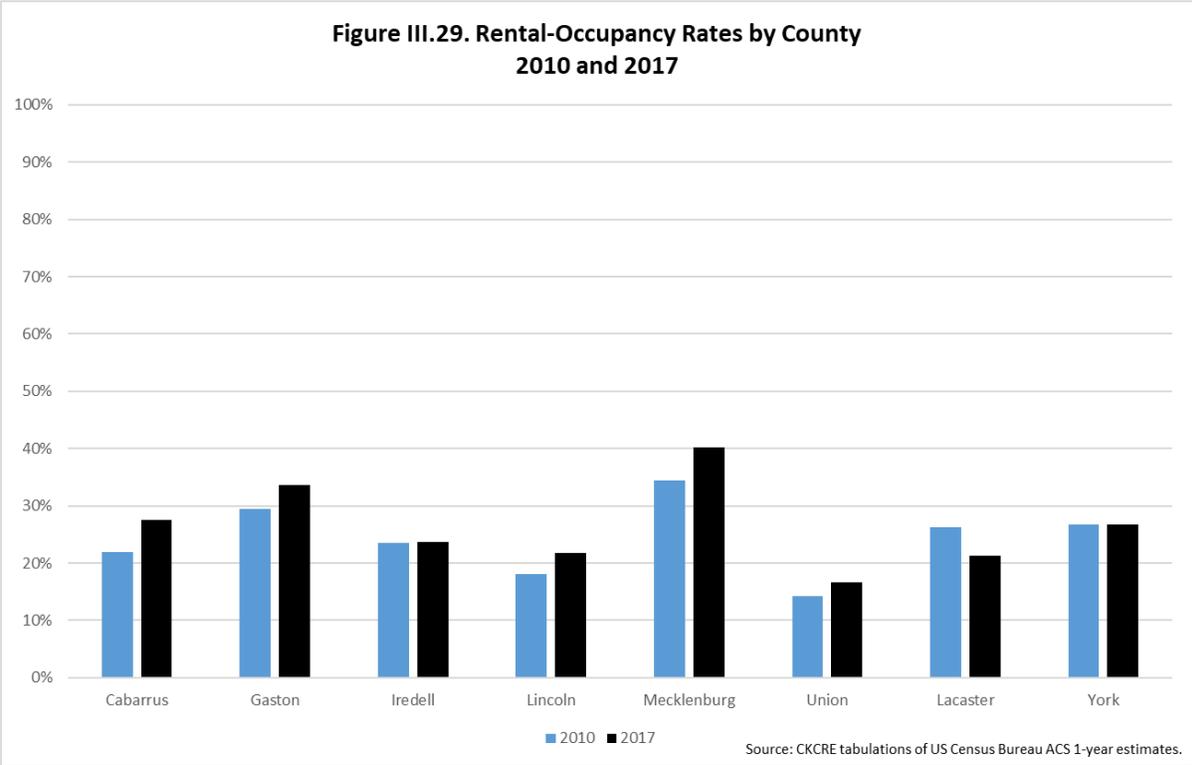
For the region, the aggregate rental market is large, but only about one-half the size of the owner-occupied market. As shown in Figure III.27, the breakdown between the rental markets and the owner-occupied markets for the region has varied a little over time, with rentals at slightly less than 30% in 2010, rising as high as almost 33% in 2014, and drifting back to about 32% in 2017.



The suburban counties have smaller rental markets than Mecklenburg County. In fact, the Mecklenburg County rental market has seen significant growth, to the point where by 2016 it was slightly over 40% of the housing in the county. This is a typical pattern in any metropolitan area – the urban core generally has higher density housing, and so rentals and apartments become more common. In Figure III.28 we plot the renter-occupied rates over time in Mecklenburg County and in the suburban counties.



If we examine the renter-occupied housing rates on a county by county basis, however, we do see some differences in their patterns. We plot these data in Figure III.29 below.

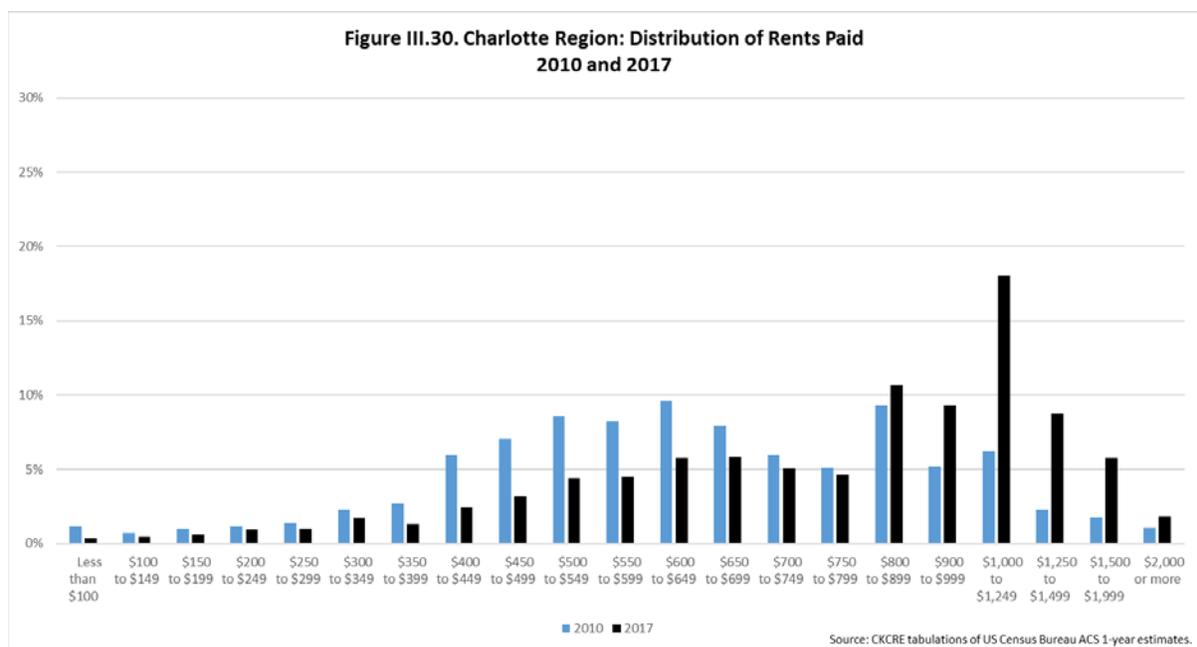


Clearly Mecklenburg, Cabarrus, and Gaston counties have had the largest increase in renter-occupied housing. These are also the counties that have the largest concentrations of large apartment complexes, and where most of the new large apartment complexes have been built. Other counties, such as Union

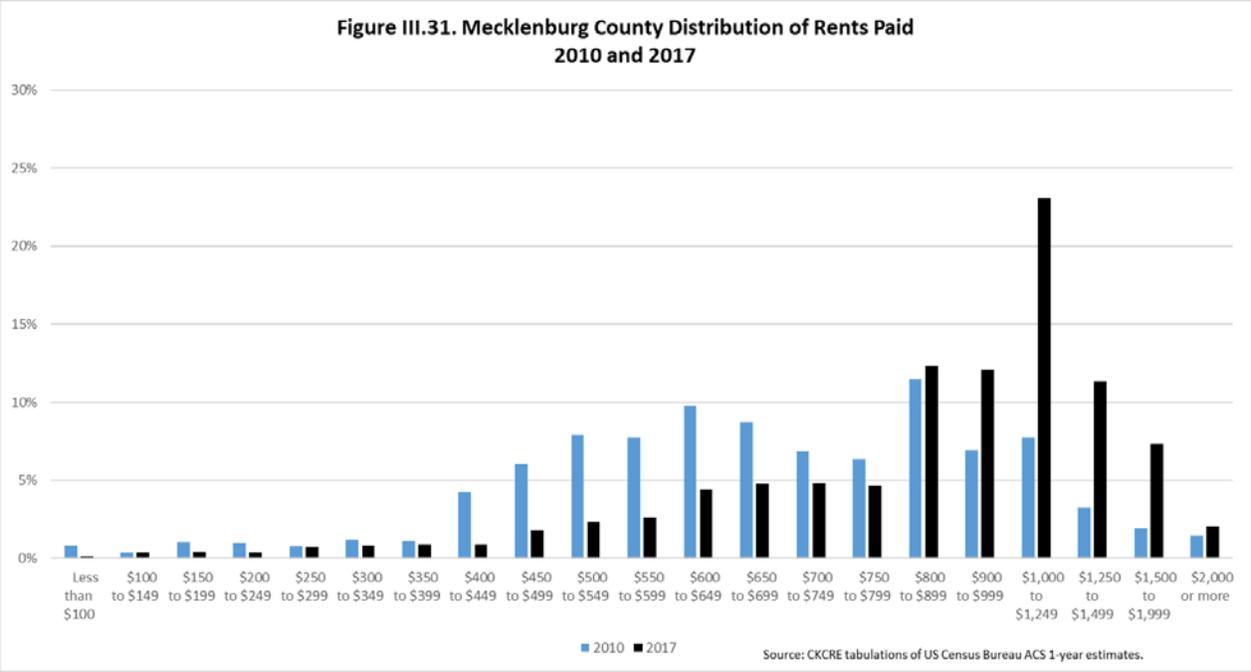
and Lincoln have had rental-growth, but still have overall renter-occupancy rates in the low-20 percent range or lower. York and Iredell have essentially been flat, and Lancaster has had a drop in its renter-occupied rate.

As alluded to in previous sections, rental unit prices are subject to the same pressures to which the owner-occupied markets are subject. That is, with the population of the region growing and the number of housing units growing at a lower rate, the market for all housing, including rental housing, is becoming more competitive and prices are rising in response. The rental markets, however, do not have a single source of price data as the MLS in the owner-occupied market. Commercial data providers such as CoStar provide rent data on larger apartment complexes, but they do not cover other important rental sectors such as the single-family detached home market.

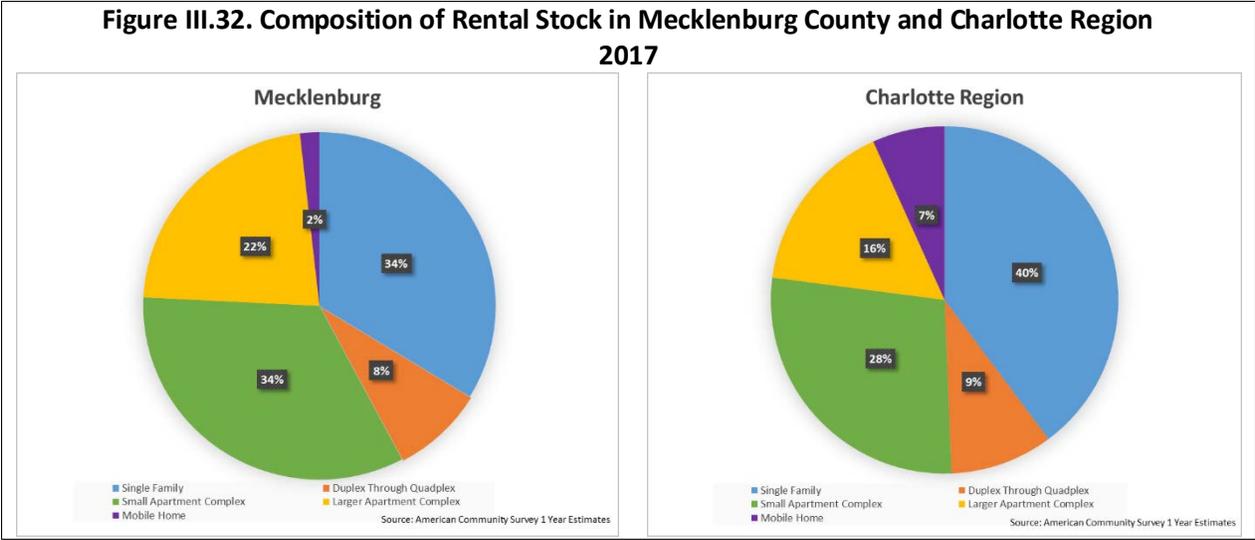
The best source of rent-level data for the entire rental market is the American Community Survey 1-year Estimates. While they do not break out the rent by the type of unit, when taken in context of apartment rent data presented later, it does provide a general sense of the overall market. The ACS sorts the responses into various rent groupings. These groupings are rather tight at the low end of the distribution and become wider as income goes up. Figure III.30 presents the distribution of rental rates paid for the Charlotte region in 2010 and 2017.



From Figure III.30, it is clear that there has been a sharp increase in rents paid in the 2017 relative to 2010. This rent jump is consistent with the notion that all housing prices have increased. If we isolate only on Mecklenburg County, the rental rate increase is even more pronounced, as shown in Figure III.31.



The rental markets consist of a wide variety of housing types, from single-family detached homes, to duplexes and triplexes, all the way to large apartment complexes with hundreds of units. Figure III.32 shows the distribution of rental housing units by type.

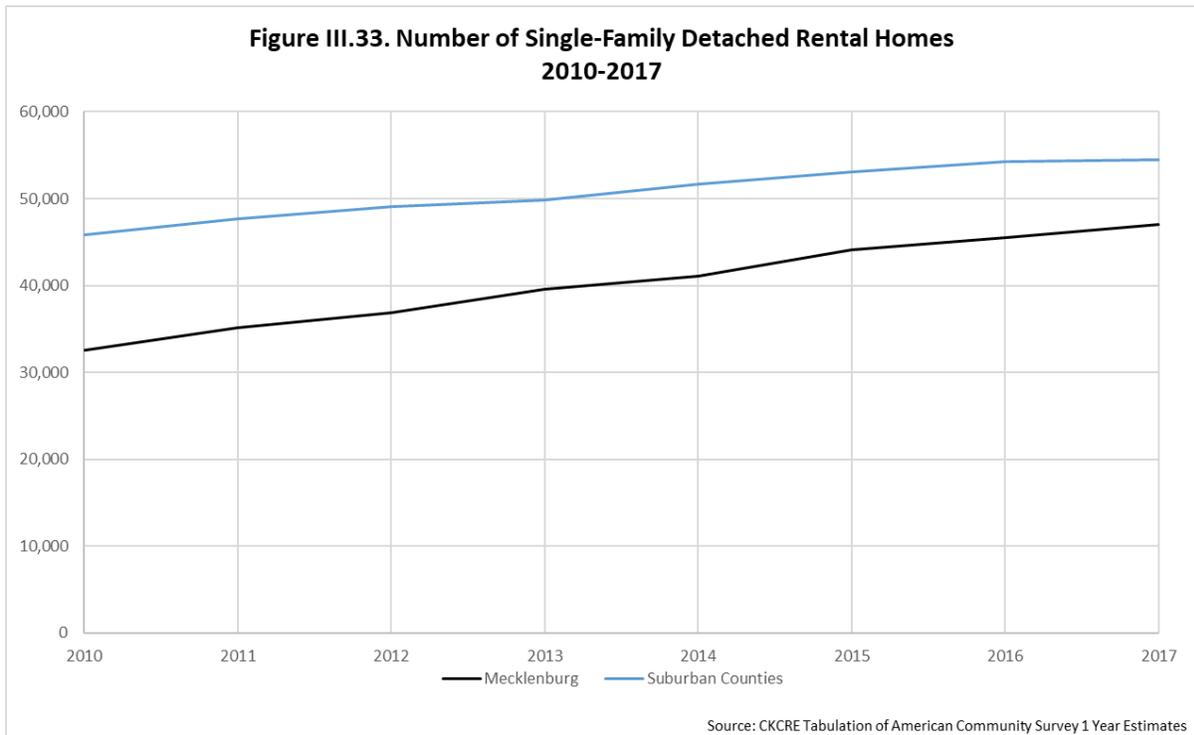


These data show that the rentals of single-family detached homes are the largest component of rental housing in the region, and within Mecklenburg County is tied with smaller apartment complexes at 34% of the overall market share.¹⁸ Single-family rental housing, both detached and attached, has long been a

¹⁸ These data are from the American Community Survey “Selected Housing Characteristics” table. This portion of the survey asks respondents to classify whether they live in single-family attached/detached homes,

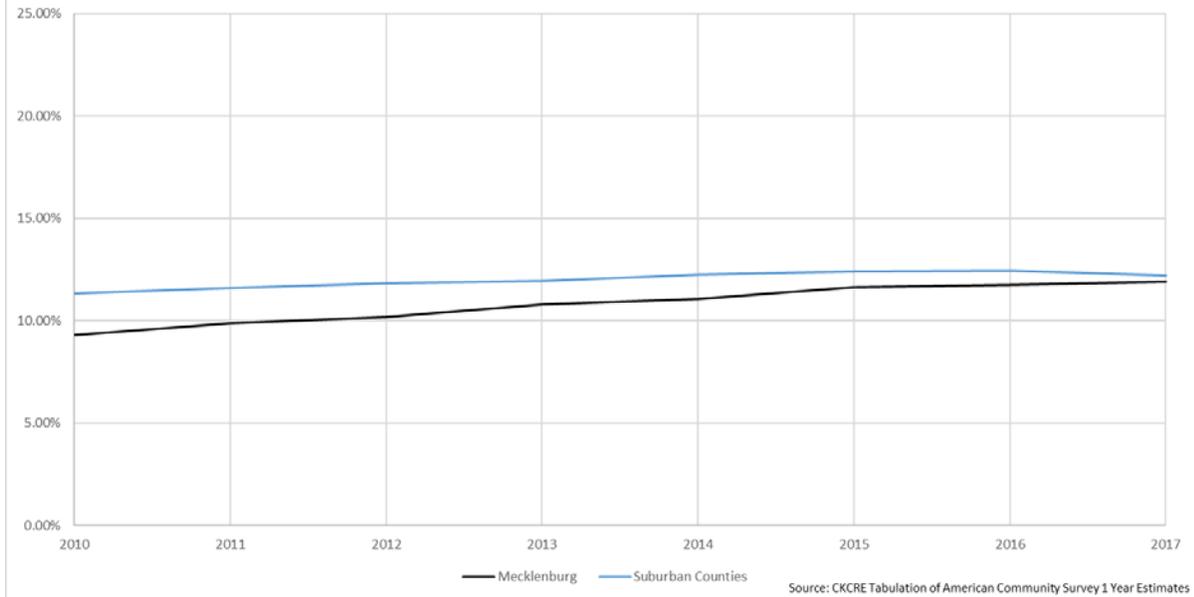
primary housing source in the region. In Figure III.33 we show the number of single-family detached home rentals in Mecklenburg and the suburban counties. Clearly the number of single-family rentals has increased, with Mecklenburg County having growth of nearly 44% from 32,597 to 47,028 units over the seven year horizon. This equates to an annualized growth rate of 5.38%. The suburban counties have also had growth in single-family detached rentals, albeit at a slower pace. From 2010 to 2017 the aggregate single-family detached home rentals increased from 45,814 in 2010 to 54,508 in 2017. This is an aggregate increase of 18.97%, or an annualized growth rate of 2.51%.

What is perhaps most interesting, however, is the degree to which the growth in single-family detached rental housing is converging as a percentage of total housing in Mecklenburg and the suburban counties. As shown in Figure III.34 below, in the suburban counties, single-family detached rentals have typically been between 11% and 12% of the total occupied housing stock. In Mecklenburg County that value was below 10% in 2010, but has now risen to be almost 12%, although that growth appears to have tapered in 2016 and 2017. It appears that in both the suburban counties and in Mecklenburg single-family detached housing is converging on an equilibrium of about 12%.



duplexes/triplexes/quad-plexes, or in larger complexes of 5-9 units, 10-19 units, 20-49 or more than 50. We are treating the 5-9 unit and 10-19 unit responses as “small apartment complex” responses. We note that in other sections of this report other data providers use 40 units as the cutoff of “large” complexes.

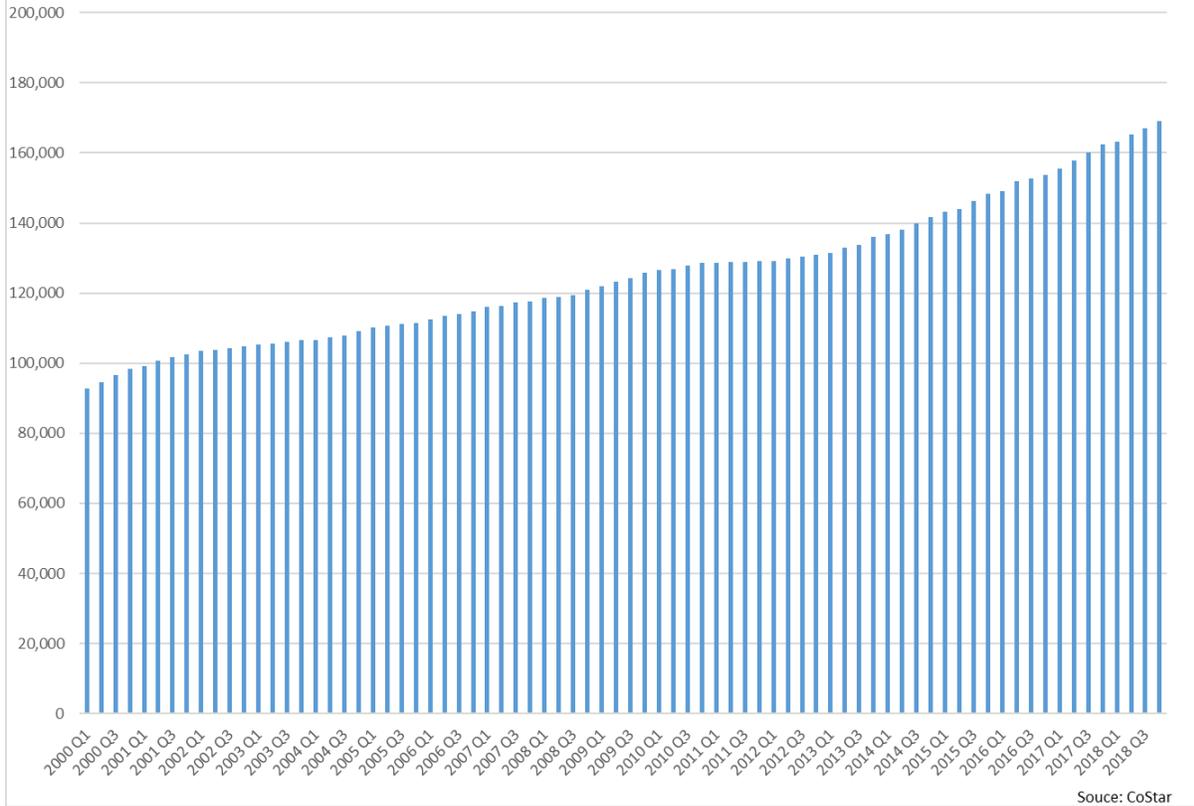
**Figure III.34. Single-Family Detached Rentals as Percentage of Total Occupied Housing
2010-2017**



While single-family homes are a large proportion of the rental market, apartments are another major source, and so we now turn our attention to that market. Before we do, however, we feel it important to address data and data limitations. Commercial data suppliers such as CoStar provide significant data on rents, occupancies, and other characteristics, and for the analysis below we rely primarily on Costar data. CoStar collects data on virtually the entire universe of large-scale complexes, typically those with 40 or more units. They also provide data on some smaller-scale complexes, but do not have the same universality of coverage. Therefore the smaller complexes are underrepresented in this data.

The apartment market has grown dramatically in the Charlotte region. Figure III.35 shows the number of units tracked by CoStar each quarter since from 2000-2018. Over this entire time frame the region has added 76,385 units, or an increase of 82.29%. The growth rate since 2010 has been particularly noticeable, with 42,715 units added. This is an increase of 33.76%, or an annualized growth rate of 4.24%.

Figure III.35. Number of Apartment Units in the Charlotte Region
 Coverage is of the North Carolina Counties
2000-2018



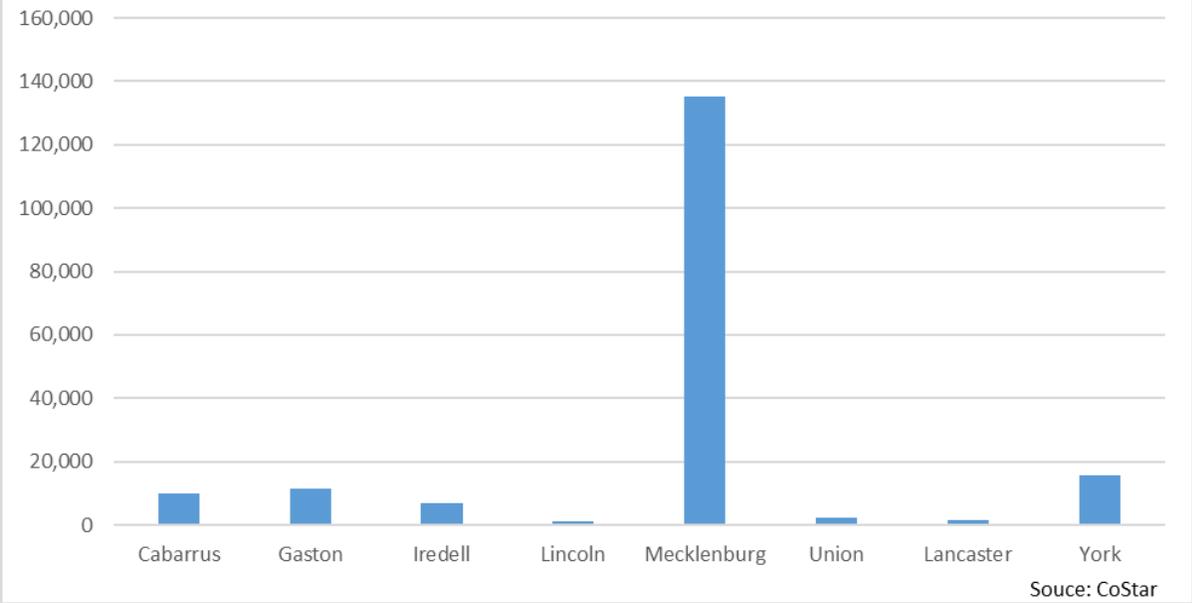
The majority of apartment units in the region are located in Mecklenburg County. Figure III.36 shows the distributions of apartment units by county. While there are significant numbers of apartment units in Cabarrus, Gaston, and Iredell counties, more than 70% of all apartment units in the region are in Mecklenburg County.

It is also useful to understand how the apartment market is divided along different dimensions. In Figure III.37 we present the breakdown of units by the number of bedrooms in the unit. We categorize them as being Studio, 1 bedroom, 2 bedroom, 3 bedroom, and more than 3 bedroom. By far the 1 and 2 bedroom units are the most common, constituting 85% of the entire apartment stock.

It is also helpful to understand the relative quality of the region’s apartment stock. Figure III.38 presents the distribution of apartments by CoStar’s quality rankings. Each apartment complex is rated as being “A”, “B”, “C” or other quality.¹⁹ The “A” quality apartments are typically new construction with high amenity levels and prime locations, while the “B” and “C” units tend to be older, have fewer amenities, and be in less desirable locations.

¹⁹ CoStar uses D and F rankings which we combined into the single category of “other.”

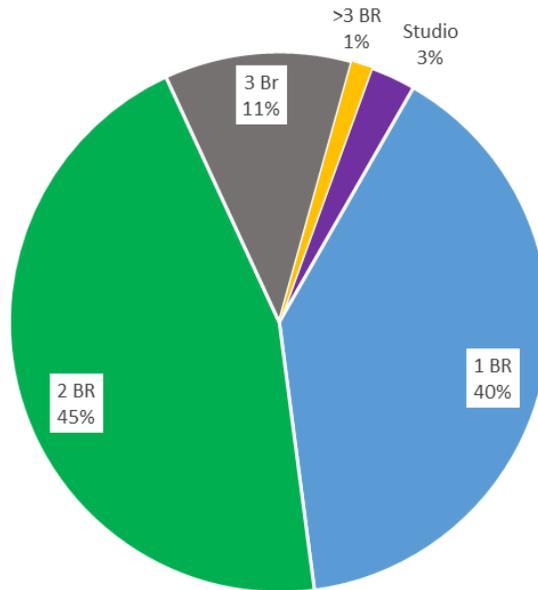
**Figure III.36. Distribution of Apartment Units by County
2018**



Looking at the rental rates for apartments over time is also instructive. Again we use data provided by CoStar. In Figure III.37 we plot the average effective rent per unit over time. The effective rent is the net rent paid by the tenant once any concessions, such as a month’s free rent, are taken into account. Figure III.37 presents the data in two formats. The bars represent the average effective rent per unit, and the scale is on the left vertical axis. The line represents the average rent per square foot and is tied to the right vertical axis. While these show the same basic trend, the per square foot measure does provide the clearest measure since it does take into account difference in unit size.

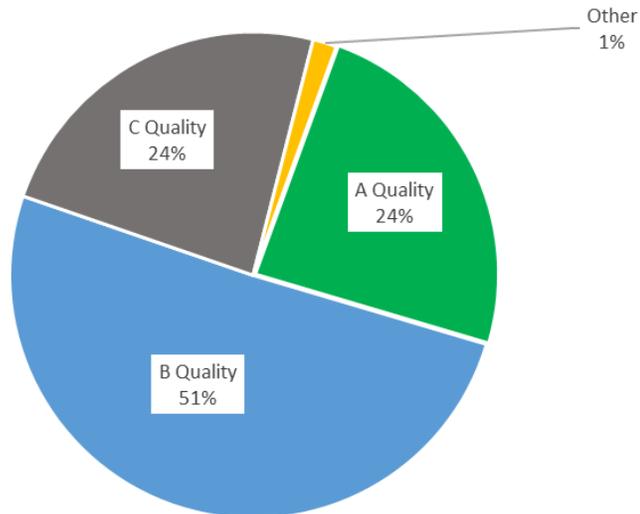
The data in Figure III.37 show that rents have increased in the region over time, with the sharpest rent increases coming since 2010. In that time, the average rent has increased, on a per-unit basis, from \$749 to \$1,084, a 45% increase. This is an annualized rate of growth of 5.42%. On a square foot basis, the average rent has increased from \$0.88 per square foot to \$1.15 per square foot, a 44% increase or a 5.32% growth rate.

**Figure III.37. Charlotte Region Distribution of Apartments by Size
2018**

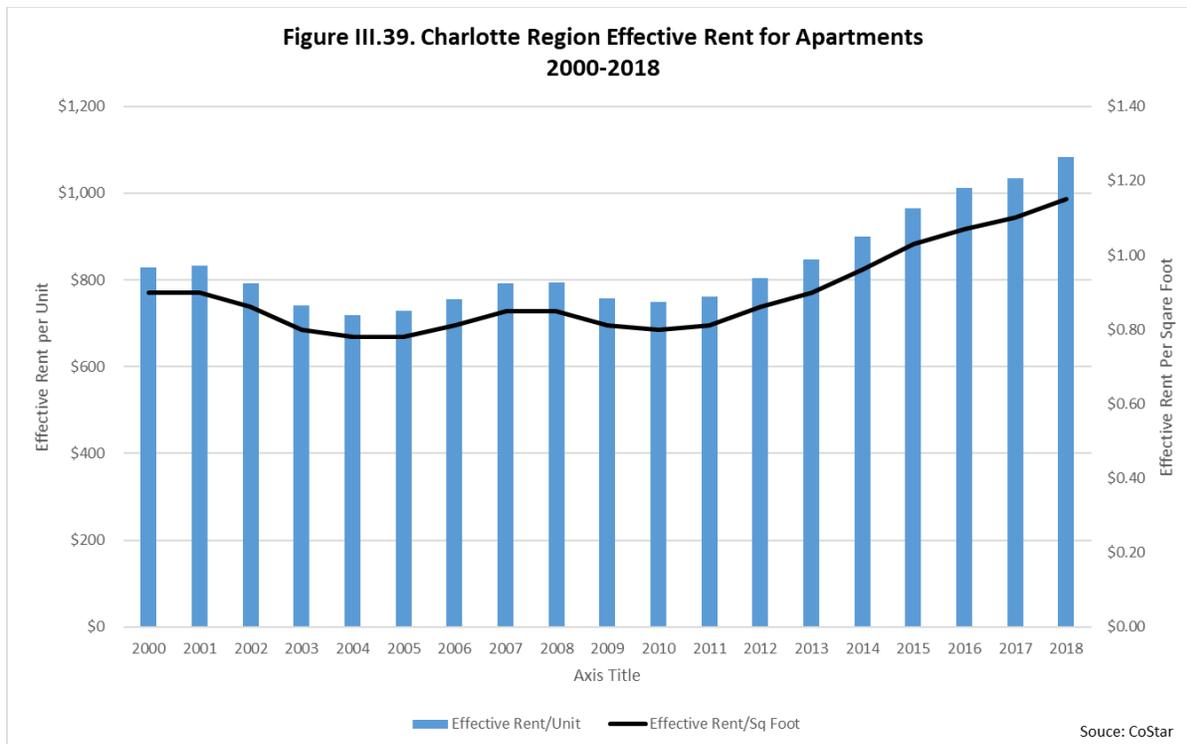


Source: CoStar

**Figure III.38. Charlotte Region Distribution of Apartments By Quality
2018**



Source: CoStar



It is worth noting that the increase in rental rates is broadly consistent with changes in single-family homes in the owner-occupied market, in that the largest increases have happened in the lower-priced segments of the market. To see this consider Table III.8, presented below. In this table, we compare changes in the asking rents of both “A”, “B”, and “C” apartments in the region since 2010 along with the change in the average home price in the region. During this time period, the average “A” rent has increased by 28.57%, or at an annual rate of 3.66%. The average “B” rent has increased by 37.10%, or 4.61% per year. Finally, the average “C” rent has increased by 31.77%, or 4.02% per year.²⁰

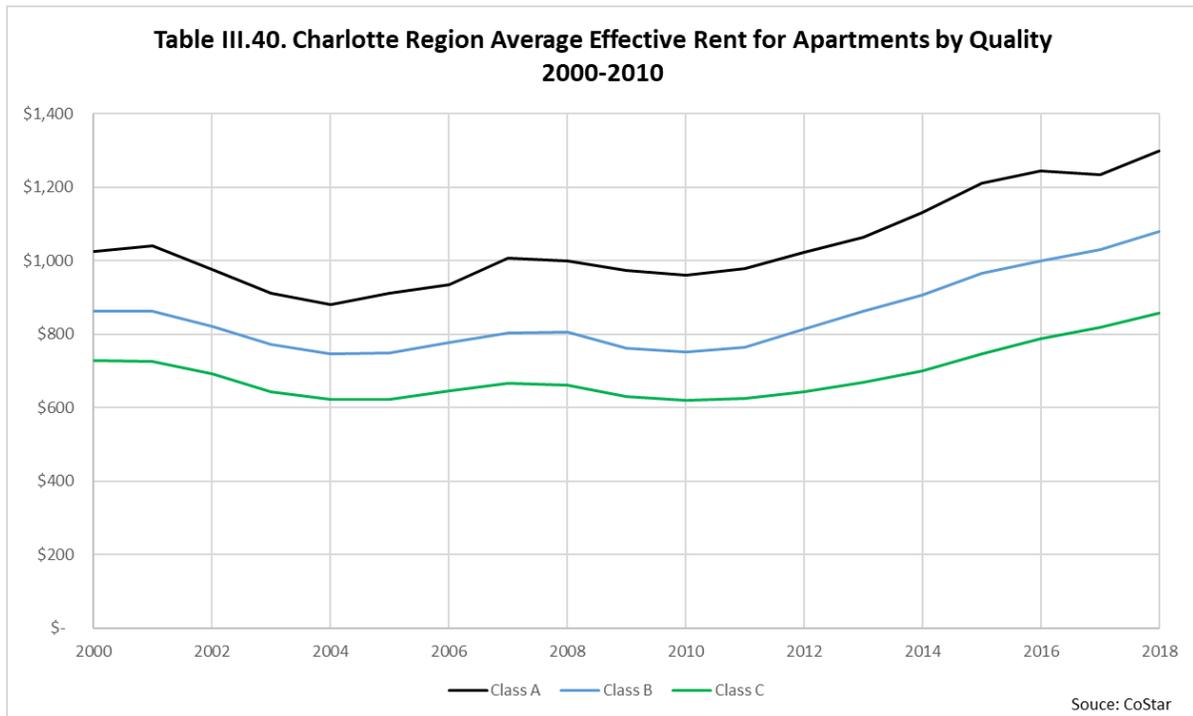
Those rental rates are presented in nominal dollars, of course. Since 2010 inflation has been relatively low by historical standards, but from 2010 to 2017 the cumulative inflation rate was 13.77%, meaning that from 2010 to 2017 the “A”, “B”, and “C” apartment rents, as well as the average home price, have all grown at a rate faster than inflation.²¹ In fact, since 2010 the real growth rate (i.e. inflation-adjusted growth rate) for “A”, “B”, and “C” apartment rents has been 1.76%, 2.70% and 2.12%, respectively. The growth rate in the average owner-occupied home in the region over that same time period was 4.86%.

It is worth noting, however, that over a longer time frame the price of apartments in the Charlotte region have actually become less expensive in real terms. To see this, consider Figure III.40. Figure III.40 plots the average rent for an “A”, “B”, and “C” apartment units since 2000. In 2000, the average “A” unit effective rent was \$1025. In 2018 dollars, this would be \$1,526, and compared with the actual average “A” unit rent in 2018 of \$1,297 means that the real rent *decreased* by 14.98% since 2000. Similar results

²⁰ We note that the average rent growth in the entire market (Figure III.39) was higher than the average rent growth for the “A”, “B”, and “C” quality apartments individually. This is a result of more “A” units being built and occupied relative to “B” and “C” units.

²¹ From the Bureau of Labor Statistics web site: <https://data.bls.gov>.

hold for both “B” and “C” quality units. From the graph it is clear, of course, that by 2002 nominal rents had fallen, and a similar analysis would show a small net positive real increase in rents since 2002.

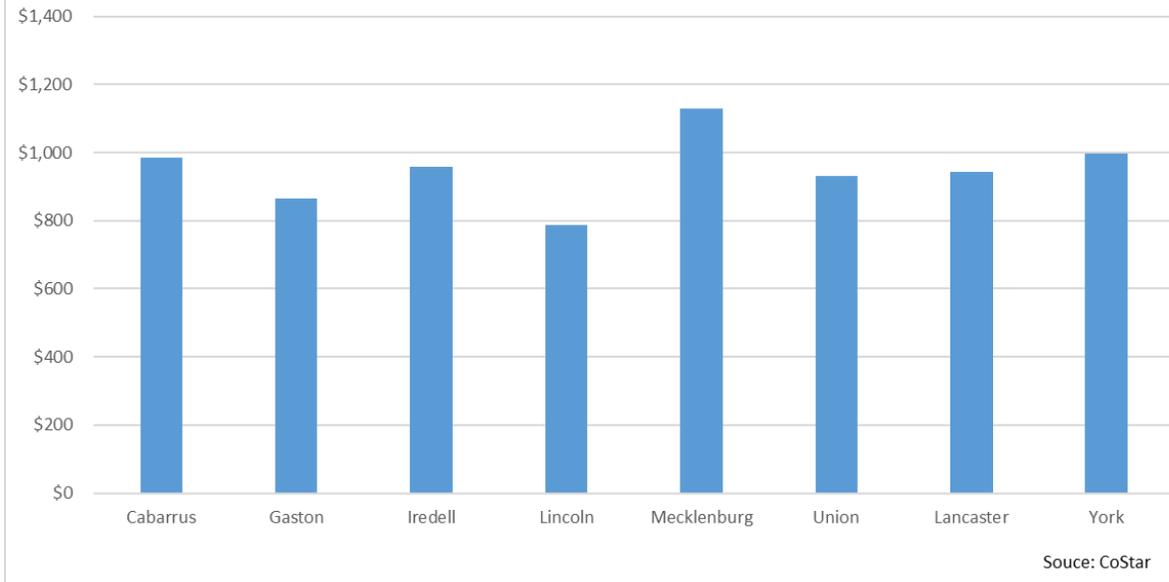


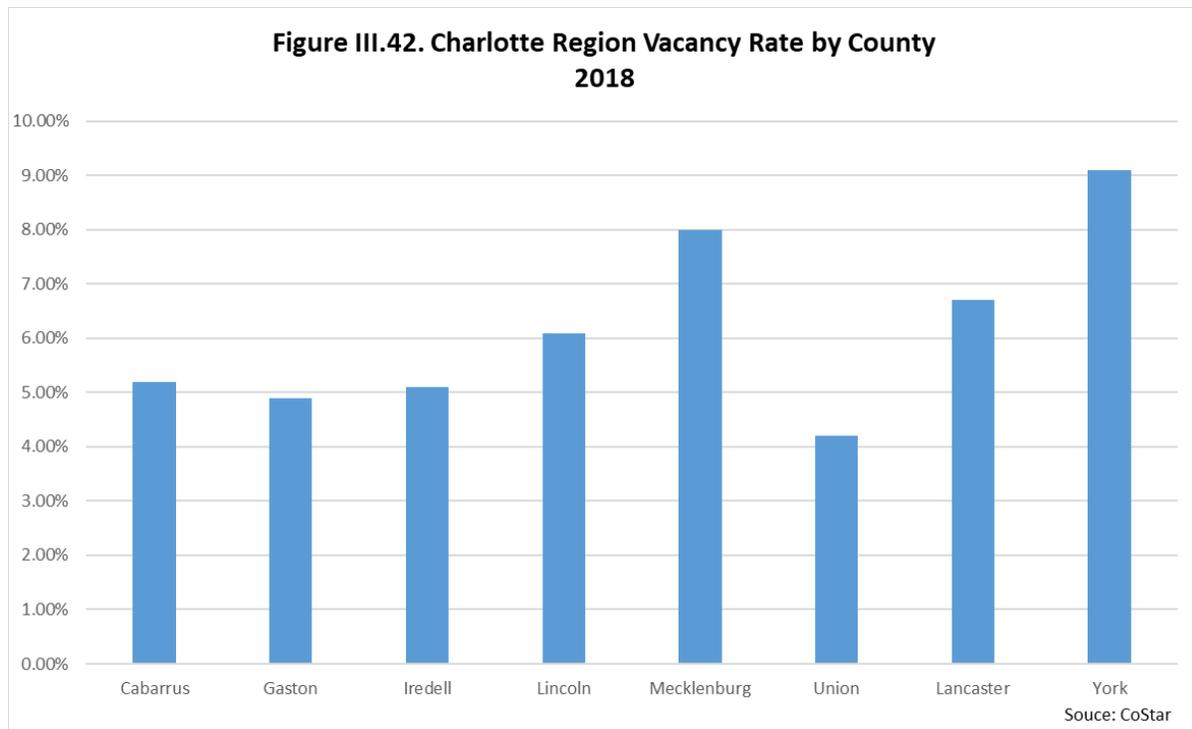
We are also interested in understanding how apartment rental rates vary across the region. Figure III.41 shows that Mecklenburg has the highest average effective rent. Cabarrus and Iredell counties both have relatively high rents, while Lincoln County had the lowest effective rent in the region. Figure III.41 shows that Mecklenburg and York counties have the highest vacancy rates, but in both cases they have a significant number of newly open complexes that are still in an initial “lease up” phase.

Table III.8. Asking Rents for “A”, “B”, and “C” Apartments and Average Home Price for the Charlotte Region by Year, and Annualized Rent/Price Growth. Rental data come from CoStar. Average home price is from CKCRE tabulations of Carolina Regional Realtor © Association Multiple Listing Service data.

	"A" Effective Rents	Annual Percentage Change	"B" Effective Rents	Annual Percentage Change	"C" Effective Rents	Annual Percentage Change	Average Home Price	Annual Percentage Change
2010	\$959		\$752		\$620		\$157,500	
2011	\$978	1.98%	\$764	1.60%	\$625	0.81%	\$165,000	4.76%
2012	\$1,023	4.60%	\$813	6.41%	\$644	3.04%	\$177,107	7.34%
2013	\$1,064	4.01%	\$861	5.90%	\$668	3.73%	\$187,900	6.09%
2014	\$1,131	6.30%	\$905	5.11%	\$699	4.64%	\$200,000	6.44%
2015	\$1,211	7.07%	\$965	6.63%	\$746	6.72%	\$215,000	7.50%
2016	\$1,245	2.81%	\$998	3.42%	\$788	5.63%	\$235,000	9.30%
2017	\$1,233	-0.96%	\$1,031	3.31%	\$817	3.68%	\$249,858	6.32%

**Figure III.41. Effective Rent Per Unit by County
2018**





D. The Subsidized and Public Rental Markets

Table III.8 shows that as of 2017, the average “C” grade apartment in the Charlotte area rented for \$817/month. The US Census Bureau reported average household utilities in the region in 2013 as being \$241, which inflated to 2017 dollars would be \$255.²² This means the total housing cost for the household renting the average “C” unit would be \$1,072/month. To meet the normal definition of being affordable, the homeowner must be able to pay their rent and utilities with no more than 30% of their gross income. This implies a monthly household income of \$3,513.33/month, or \$42,880 annually for the average “C” level apartment to be considered affordable.

There are large segments of the regional population who cannot meet this financial hurdle. Recall that Table II.10 shows that for the entire eight county Charlotte region in 2017, there were approximately 240,000 households that had household incomes of \$35,000 or less. Every one of those households would be considered cost-burdened renting the average “C” level apartment. Consider that Table II.10 also shows that nearly 80,000 households in the region have annual household income of less than \$15,000. Renting a “C” grade apartment would, essentially, use their entire income.

This demonstrates that there is a segment of the population without the income to purchase or rent housing at current market prices. This segment of the population relies upon either subsidized private housing or public housing to have a place to live. The need for subsidized or public housing is frequently thought of as an “urban” problem, but the need is throughout the entire region as we will show shortly.

²² Utilities rates are from the US Census Bureau American Fact Finder <https://factfinder.census.gov> for the southern United States in 2013, inflated or deflated by inflation as reported by the US Bureau of Labor Statistics <https://www.bls.gov/bls/inflation.htm>.

Before beginning any discussion of subsidized or public housing, it is worth clarifying a few terms. Every year the U.S. Department of Housing and Urban Development (HUD) works in conjunction with the U.S. Census Bureau to determine the area median income (AMI) for a family of four in the region. When a household applies for housing assistance, the level of assistance for which they are eligible is a function of the number of people in the household and the household income relative to the AMI. Typically families become eligible for some assistance at the 80% of AMI level, but the largest levels of assistance occur at the low-income (50% of AMI) and very low-income (30% of AMI) levels. Table III.9 shows the Charlotte region AMI and the 50% and 30% AMI levels for 2005 through 2017.

Table III.9. Annual Incomes and Maximum Amount Household Can Devote to Housing Without Being Cost-Burdened for Various Percentages of the Charlotte AMI by Year 2005-2018. Data are from US Department of Housing and Urban Development website, <http://huduser.gov>.

	100% of Charlotte Region AMI		50% of Charlotte Region AMI		30% of Charlotte Region AMI	
	Annual Income	Monthly Housing	Annual Income	Monthly Housing	Annual Income	Monthly Housing
2005	\$61,800	\$1,545	\$30,900	\$773	\$18,540	\$464
2006	\$64,400	\$1,610	\$32,200	\$805	\$19,320	\$483
2007	\$60,200	\$1,505	\$30,100	\$753	\$18,060	\$452
2008	\$64,300	\$1,608	\$32,150	\$804	\$19,290	\$482
2009	\$66,500	\$1,663	\$33,250	\$831	\$19,950	\$499
2010	\$67,200	\$1,680	\$33,600	\$840	\$20,160	\$504
2011	\$67,500	\$1,688	\$33,750	\$844	\$20,250	\$506
2012	\$68,500	\$1,713	\$34,250	\$856	\$20,550	\$514
2013	\$64,100	\$1,603	\$32,050	\$801	\$19,230	\$481
2014	\$64,200	\$1,605	\$32,100	\$803	\$19,260	\$482
2015	\$67,200	\$1,680	\$33,600	\$840	\$20,160	\$504
2016	\$67,000	\$1,675	\$33,500	\$838	\$20,100	\$503
2017	\$70,700	\$1,768	\$35,350	\$884	\$21,210	\$530
2018	\$74,100	\$1,853	\$37,050	\$926	\$22,230	\$556

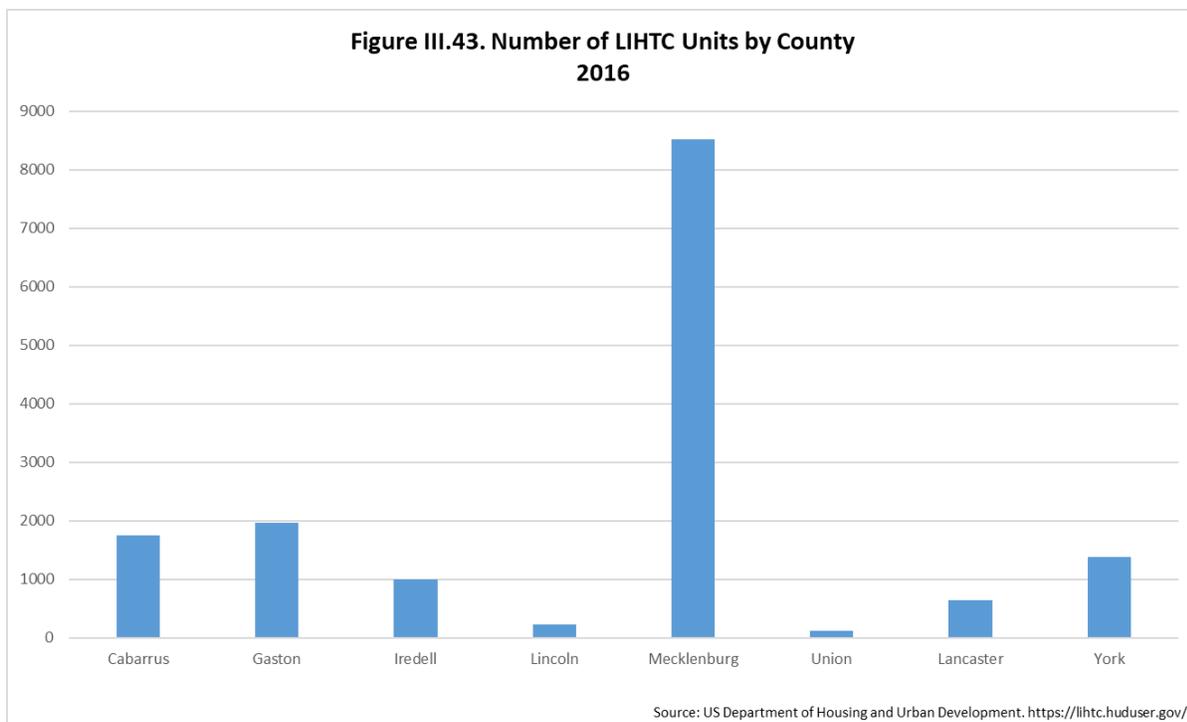
Recall that the amounts in the “Monthly Housing” column includes both their literal housing payment *and* utilities. So, for somebody at 100% of AMI for the Charlotte region in 2018, they could afford to pay \$1853 to rent and utilities. Again assuming an average utility burden in 2018 of \$263²³, this means they could pay rent as high as \$1590. This places them well into the private rental market. Unfortunately, utilities do not scale with rent or income, so a person at 50% of AMI would still spend around \$263 or utilities. This leaves them with \$663 with which to pay rent. This places them approximately 20% below the average rent for a “C” class apartment in the region. This will make it very difficult for them to find private apartments in the Charlotte region. For people at 30% of AMI, their \$556/month they can devote toward all housing costs would be split \$263 toward utilities and \$293/month toward rent. There are virtually no units available in the private marketplace at that price level. Households at the 50% and 30% levels will have to rely upon either subsidies to find private apartments or public housing.

Within the subsidized and public housing markets there are three main programs: the Low Income Housing Tax Credit program, the Housing Choice Voucher program, and then publicly owned housing

²³ The original US Census Bureau estimate of \$241/month in 2013 inflated to 2018 using the Bureau of Labor Statistics Inflation calculator: <https://data.bls.gov>.

units. The following sections briefly discuss each of these and then provide a summary of their use in the Charlotte region or in Mecklenburg County.

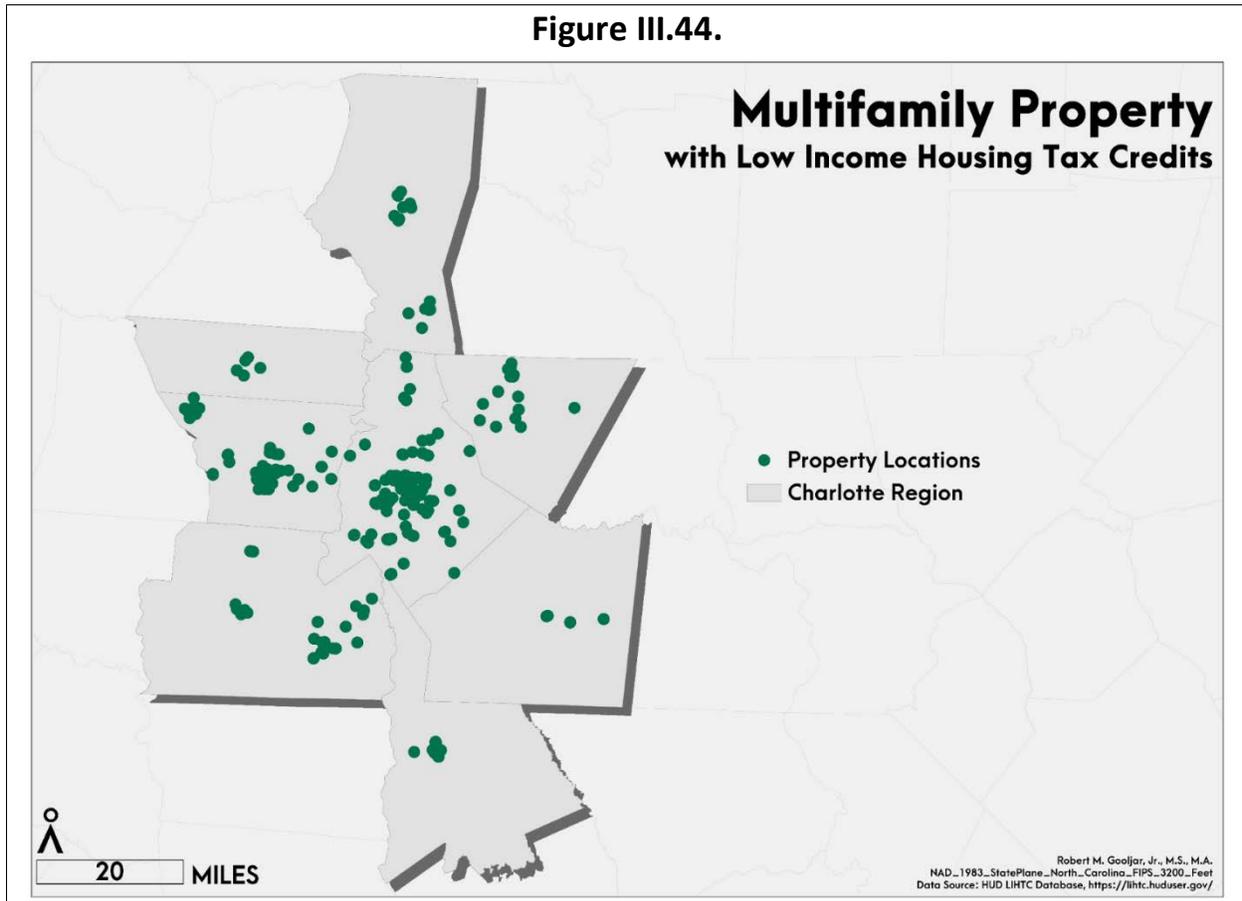
The Low-Income Housing Tax Credit is a Federal program designed to encourage private investment in affordable rental housing for low-income households. The tax credits are created through the IRS and allocated to state housing credit agencies based on the population of the state. Project sponsors (i.e. developers) are given a tax credit in exchange for making a certain percentage of the units in the development available to low income renters.²⁴ These tax credits can be transferred to investors and are typically used to attract equity financing for the deal. These affordable units are rent-restricted in that the maximum amount of rent that can be charged is equal to 30% of the relevant AMI, less utilities. The rent restrictions are required to be kept in place for thirty years, but the tax credits are only recoverable if the restrictions are not honored for the first fifteen years. The U.S. Department of Housing and Urban Development is involved in determining the AMI and for adjusting it based on the number of people in each household.



The LIHTC program has been used extensively throughout the country, including in the Charlotte region. Figure III.43 shows the distribution of LIHTC units by county. We note that while the vast majority of LIHTC units are in Mecklenburg County, some counties have a higher proportion of LIHTC units relative to Mecklenburg, than they do of general apartments. For example, Gaston County has 1970 LIHTC units, which is 23.14% of the number of LIHTC units that Mecklenburg has. As shown in Figure III.36, CoStar reports that Gaston County has 11,408 total apartment units, or only about 8% of the units that Mecklenburg has. A similar result holds in Cabarrus County. Figure III.44 provides a map of all LIHTC

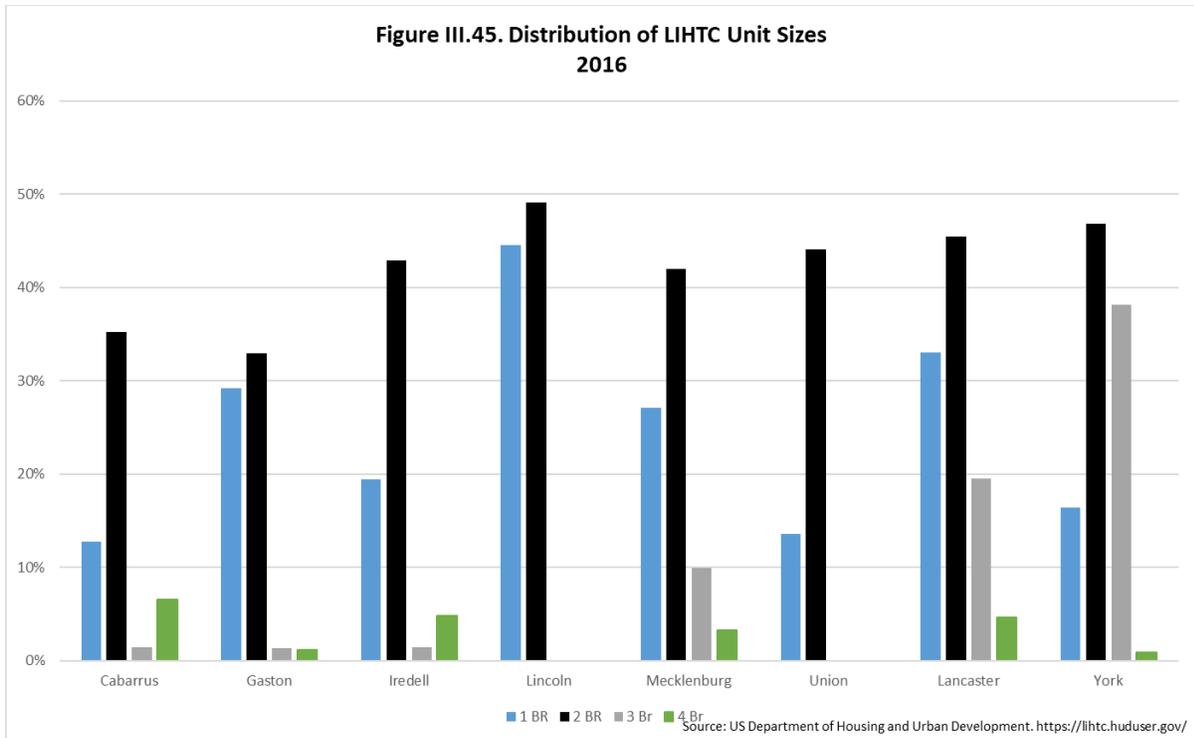
²⁴ Sponsors must agree to devote, at a minimum, at least 40% of the units to people earning 60% of AMI or less, or 20% of their units to people earning 30% of AMI or less.

units in the region. Figure III.45 shows the distribution of unit sizes across each county. This distribution is essentially the same as the distribution CoStar reports for non-subsidized units.

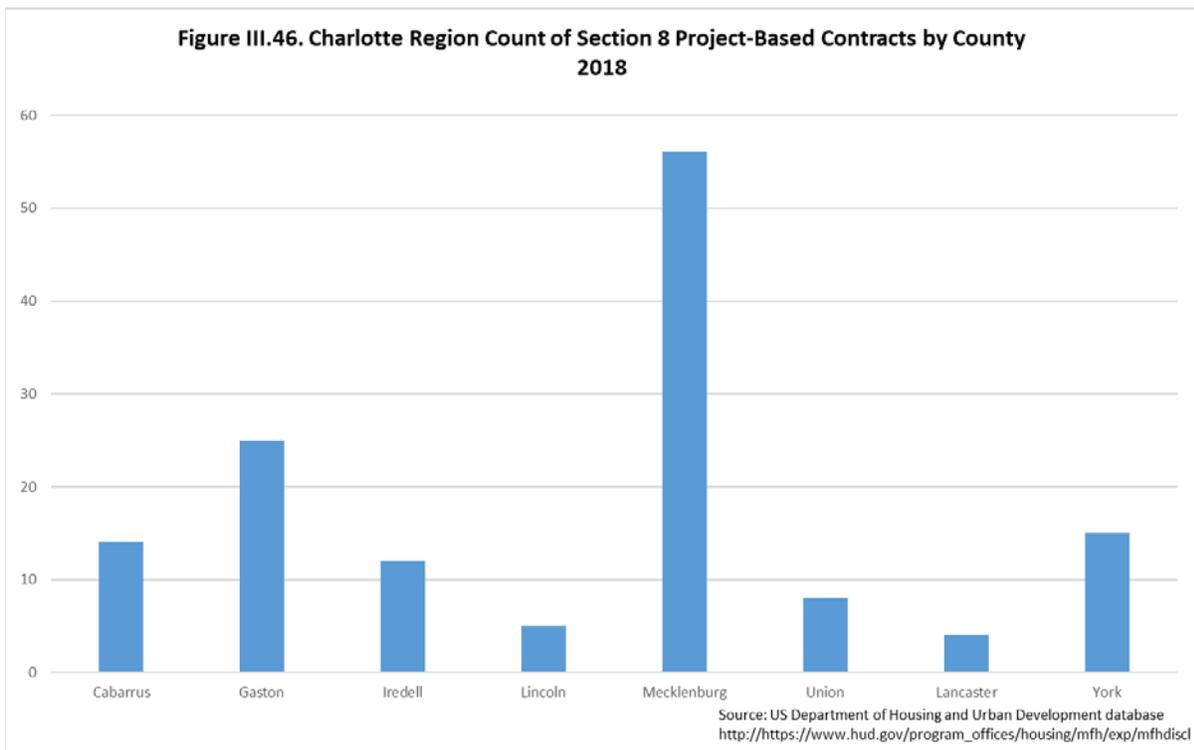


The Housing Choice Voucher program is another program which seeks to leverage the private market to provide affordable housing to low-income residents. This is a federal housing assistance program that provides direct assistance to certain low-income tenants. Although funded through by Congress though HUD, the program is administered at the local level by local housing authorities. The federal government, through HUD, determines the total number of vouchers that are available across the country and within a given city, such as Charlotte.

The aid is given to the tenant in the form of a voucher, which the landlord then redeems for cash. The amount of aid provided is enough to allow the tenant to spend no more than 30% of their income on rent plus utilities. Vouchers may be based on the individual tenant, in which case their voucher follows them should they move. These are known as tenant-based vouchers. Alternatively, vouchers may be tied to the property and not to the tenant. This essentially means the voucher does not follow the tenant should they leave. These are referred to as project-based vouchers. HUD maintains a database across the entire country of properties that have contracts with HUD or with public housing authorities for project-based vouchers. Figure III.46 shows the distribution of those projects within the Charlotte region.



This distribution shows again that the need for low income housing is spread throughout the region. Even though Mecklenburg County has the highest absolute number of these project-based voucher contracts, counties such as Cabarrus, Gaston, Iredell, and York have significant numbers as well.



In addition to subsidized programs such as the LIHTC and Housing Choice Voucher programs, local housing authorities own some housing units which they directly rent to tenants, again with rents based upon their income and household size. In some cases, local housing authorities own the structure in its entirety, while in others the local housing authority, through HUD's Rental Assistance Demonstration (RAD) program seeks private debt and equity partners and essentially converts the property into a Section 8 project-based voucher unit.

To get a deeper understanding of the financial profile of residents who are enrolled in the Section 8 program, we worked with the largest housing authority in the region, Charlotte Housing Authority (CHA). They generously provided data for this report.²⁵

In 2018 the CHA had 8,472 households affiliated with them. That is, these households were either receiving tenant-based Housing Choice Vouchers or were living in units that had project-based vouchers associated with them. These 8,472 households translate into a little more than 20,200 individuals living in these units. Of those households, the average wage income was \$9,774.^{26 27}

Figure III.47 shows the distribution of the bedrooms occupied by those 8,472 households. Compared to the general apartment market in Figure III.37, the distribution is weighted more heavily toward larger apartments, with 32% being three bedrooms compared to 11% in the general apartment market and with correspondingly smaller percentages of one- and two-bedroom units.

Figure III.48 shows the average tenant rent and average subsidy payment by bedroom size. When added together these comprise the total payment received by the landlord. For a two-bedroom apartment in 2018 the combined average subsidy and tenant rent was \$717. This is just slightly lower than the average rent for a "C" quality unit in the Charlotte region as shown in Figure III.40.

What is perhaps most striking about these data is how few households are able to be housed this way. Recall that the average household in these units has total wage income of \$9,774 and total annual income of \$15,358. The U.S. Census Bureau's American Community Survey for 2017 estimated that approximately 39,433 households in Mecklenburg County had annual incomes of less than \$15,000. While it is the case that some of these households are special circumstances (such as graduate students), clearly there are a large number of households with the same financial profiles as those living in subsidized housing who are not able to take advantage of the programs.

E. Summary

This section has presented a detailed overview of the Charlotte region's housing markets. We began by looking at the price of land and noting that land prices have risen dramatically over the past five years. Since land prices are an integral component of all housing costs, we noted that this would tend to force all housing prices to increase over that same period.

We found that owner-occupied housing prices had increased significantly over the period 2010-2018 across all price-levels, and that the most dramatic price changes had occurred at the lowest end of the

²⁵ One of our goals for the 2020 State of Housing in Charlotte report is to gather data from the other public housing authorities in the region.

²⁶ That average total household income, which includes public and private assistance, was \$15,358.

²⁷ The Public Housing and Housing Choice Voucher Programs are entirely funded by HUD. There are no city funds contributed to the operation of these programs.

price distribution. We also noted that despite large increases in the number of apartments in the region, apartment prices were also rising. Finally, we examined the low-income markets and noted that there is a continuing need for additional low-income housing.

Figure III.47. Charlotte Housing Authority Distribution of Bedroom 2018

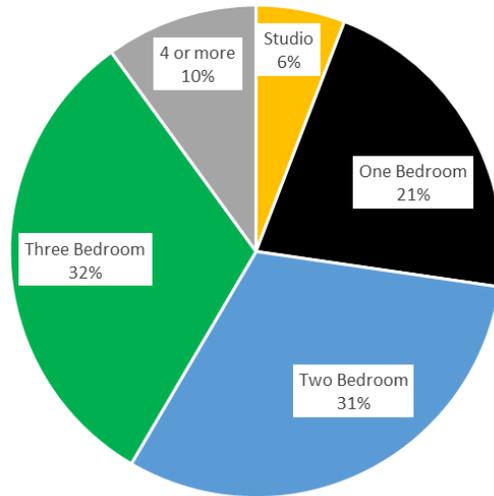
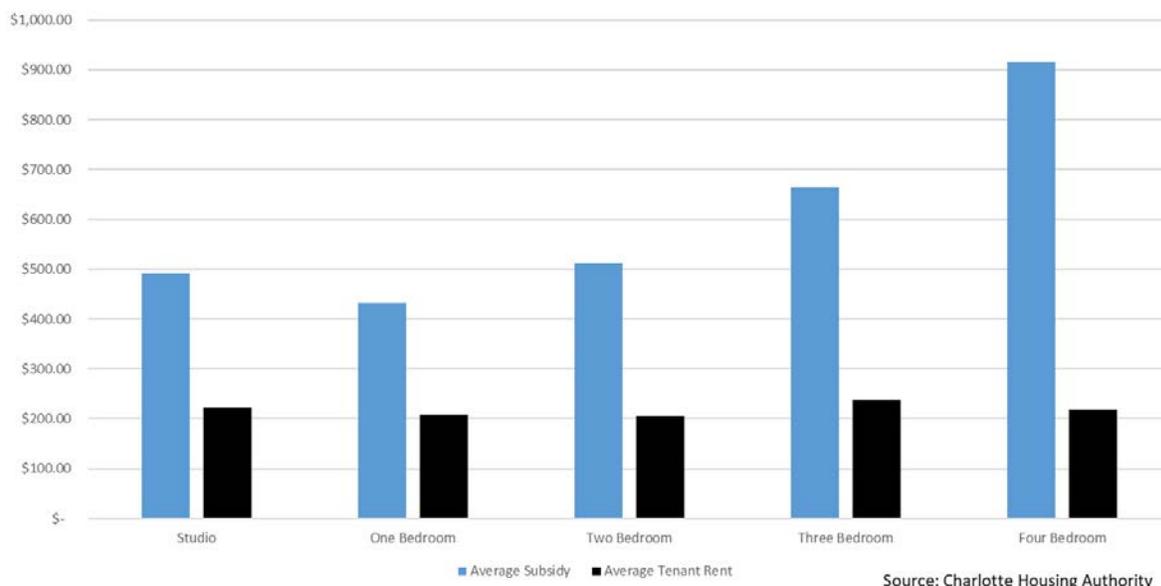


Figure III.48. Subsidy and Tenant Rent Amounts by Unit Size in CHA owned or Subsidized Units 2018



An undeniable trend across all housing in the region is that it has become more expensive, both in nominal and real terms since 2010. This is a challenge for the region’s residents and has the potential to

reduce the competitiveness of the region when it comes to attracting new economic activity to the region. Of course, that will only be the case if the Charlotte region is behaving differently than other regions of the country. In the next section we provide some context for what is happening in the Charlotte market relative to a set of regional and national competitor cities.

IV. Comparative Analysis

So far we have focused on the housing dynamics within the Charlotte region, and have particularly focused on the various challenges the region faces. Without context, it can appear that the challenges and difficulty the region faces are unique or out of proportion to what other regions are facing.

In this section we will expand our analysis and compare the Charlotte region to other regional and national competitor cities. This analysis will necessarily rely upon broad-scale data, the vast majority coming from government sources such as the U.S. Census Bureau. For consistency across metropolitan areas, we use data reported at the Metropolitan Statistical Area (MSA) level. All data shown in this section comes from the American Community Survey 1-year estimates from 2005-2017 produced by the U.S. Census Bureau unless stated otherwise.

We will compare Charlotte's performance in several key metrics with our competitor cities. These metrics include:

- Population and population growth;
- Land prices;
- Median home prices;
- Median multiple;
- Median rents;
- Median Price to Rent Ratio; and the
- Cost-burden of housing;

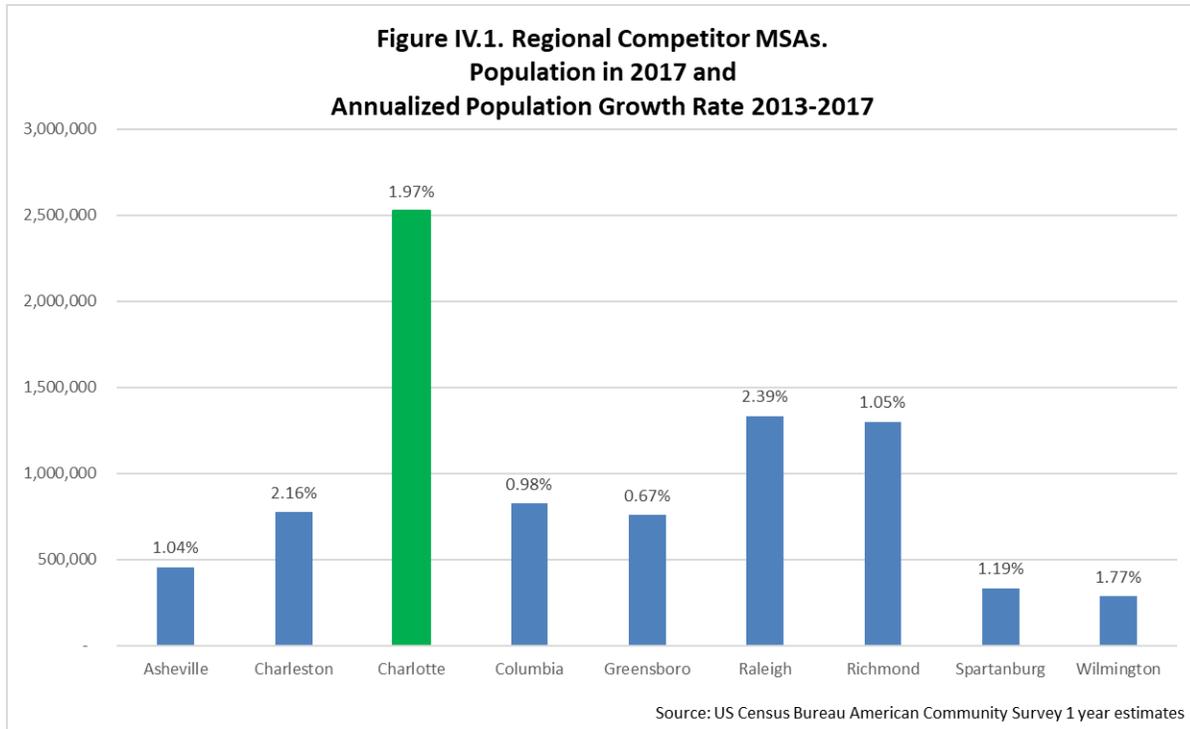
Our analysis shows that although the Charlotte region does have challenges, when it is compared to many of our regional and national competitor cities the Charlotte region is doing fairly well overall. The region has relatively low-cost housing compared to many of our peer cities in both the region and nationally. We note that when compared to many of its national peers, the Charlotte housing market exhibits traits that are common among almost all cities that are rapidly growing.

For this analysis we have selected eight regional competitor cities and eleven national competitor cities. The eight regional cities are Asheville, Greensboro, Raleigh, and Wilmington in North Carolina, Charleston, Columbia, and Spartanburg in South Carolina, and Richmond, Virginia. Our goal was examine each of the major economic centers in North Carolina and South Carolina. We included Richmond because of its proximity and that it is closer in size to these regional cities as compared to the set of national competitors.

The national city comparison set includes Atlanta, Austin, Cincinnati, Denver, Indianapolis, Memphis, Nashville, Portland, Sacramento, San Antonio, and Tampa. We generally selected the national competitor cities based on one of two criteria. First, we selected cities with populations that were generally similar to that of Charlotte and that gave us proximity across the entire country. This led us to selecting Austin, Cincinnati, Denver, Indianapolis, Portland, Sacramento, San Antonio, and Tampa. Second, we selected three cities, Atlanta, Nashville, and Memphis, primarily because of their proximity to Charlotte and because Charlotte frequently competes with them for economic development.

A. Population and Population Growth

We begin by showing the population and population growth rate of each city in our regional and national comparison set in Figure IV.1 and Figure IV.2.



From Figure IV.1 we note that the Charlotte MSA has by far the largest population in the region.²⁸ Further, as shown in Figure IV.2, the Charlotte MSA has had one of the fastest population growth rates in the region, with only Charleston and Raleigh having higher growth rates.²⁹

Figure IV.2 shows that the Charlotte MSA has a population very similar to the other comparison MSAs. The exception to this, of course, is the Atlanta MSA, which has a little more than twice the Charlotte MSA population. Again, Atlanta was included because of its geographic proximity and because it is a frequent competitor for economic development. Figure IV.2 shows that the Charlotte MSA has had one of the highest population growth rates among these national competitor cities, with only Austin, Nashville, and San Antonio growing at a faster rate.

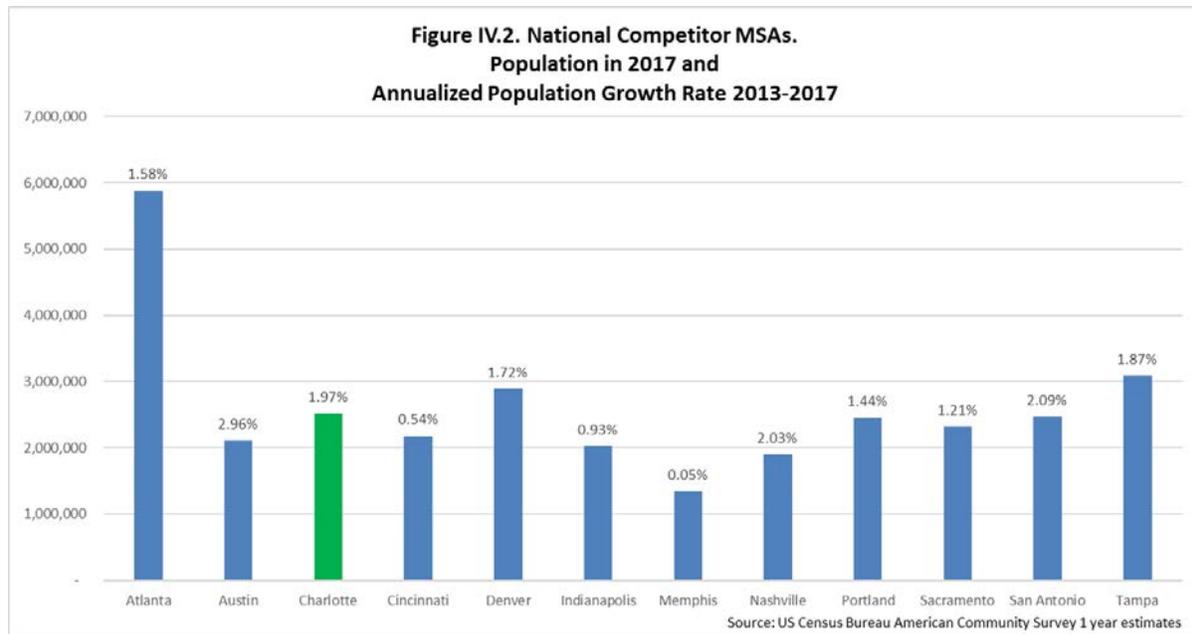
B. Land Prices

As was the case with our micro-analysis of the Charlotte housing markets, our starting point for our comparative analyses across MSAs is land prices. To do this we once again turn to the Davis, Larson, Olinder, and Shui (2019) paper. As discussed in Section III, Davis, Larson, Olinder, and Shui (2019) estimate the price of a hypothetical one acre of residential land in each county in the United States.

²⁸ Note that the Raleigh MSA does not include Durham and Chapel Hill. Those cities are included in the Raleigh Combined Statistical Area (CSA) and brings the total population to a little over 2 million. We have elected to work with the MSA for consistency throughout the report.

²⁹ We are using the 2013-2017 time period here because in 2013 the Census Bureau changed the definition of the Charlotte MSA as well as several other MSAs in the study. We therefore work with the 2013 through 2017 period to maintain geographic consistency.

Figure IV.3 charts their estimate of the price of one acre of land in the central county for each MSA. We use the central county for each MSA because Davis, Larson, Olinder, and Shui (2019) do not report data at the MSA level, but only at the county level. As a result, we use the county-level results for the economic

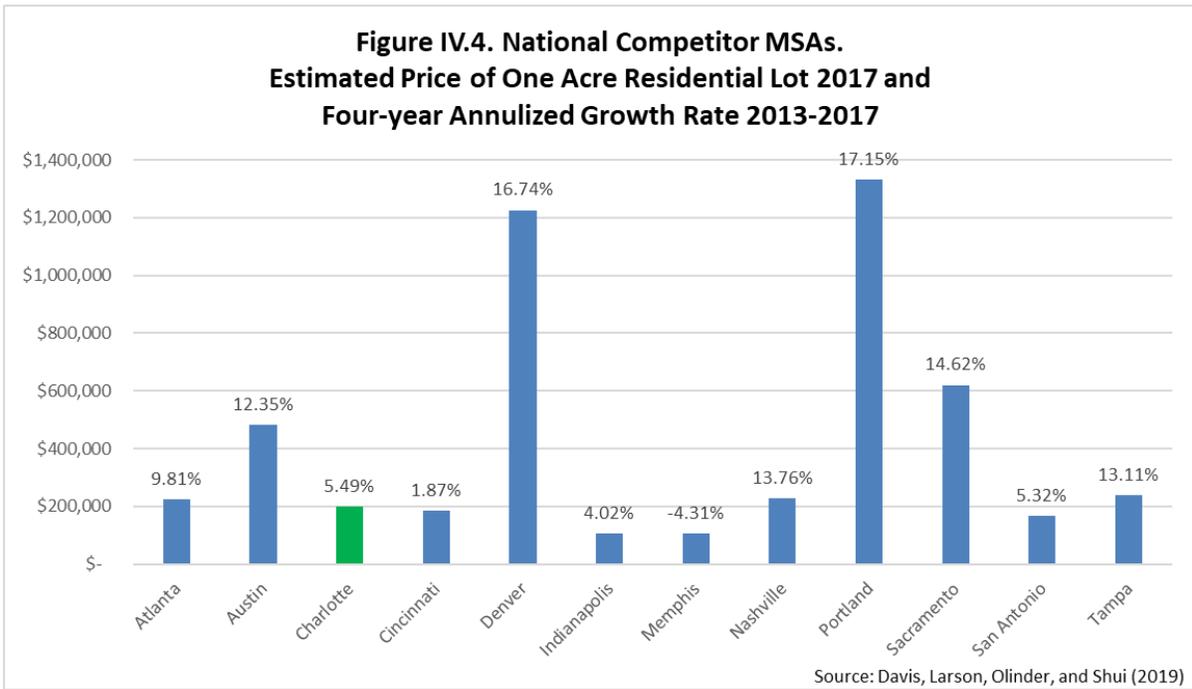
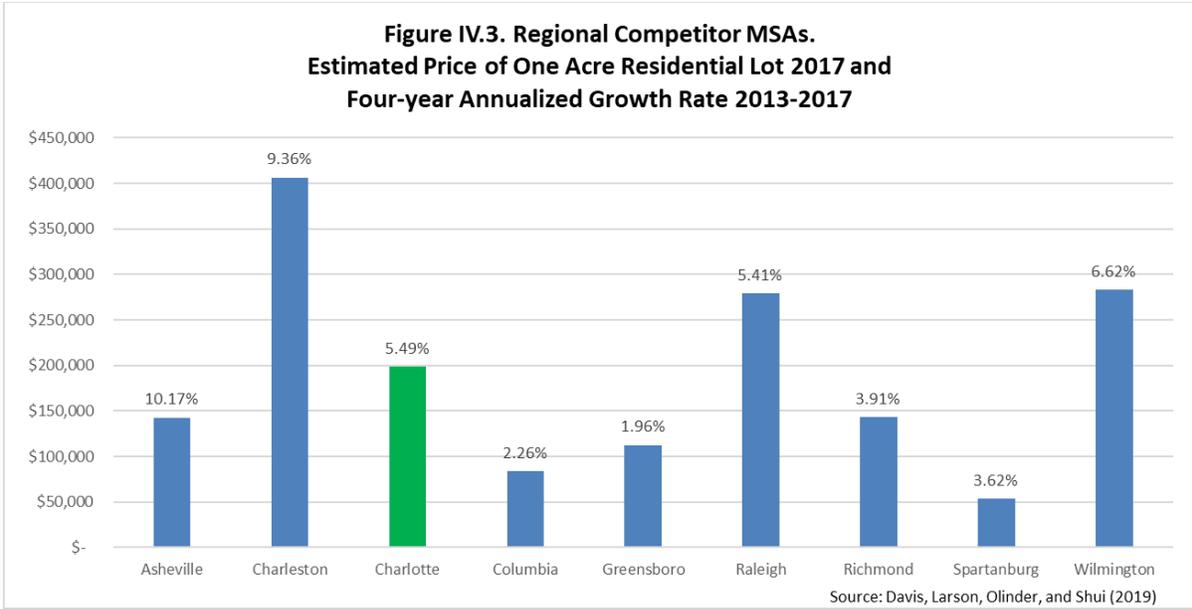


center of each MSA. For example, in the Charlotte region we use Mecklenburg County, for Asheville we used Buncombe County, and for Raleigh we used Wake County, etc.

Figure IV.3 shows that relative to regional competitors Charlotte’s land prices are in the middle. They are significantly higher than cities like Asheville, Columbia and Greensboro, but they are significantly lower than Charleston and Wilmington. Given the preponderance of coastal resort properties in those two cities it is perhaps not surprising they have higher land values. What is somewhat surprising is that Raleigh has residential land values that are nearly \$75,000 higher per acre than Charlotte.

This graph also shows that Charlotte’s land price growth rate over the period 2013-2017 was robust at 5.49%. This was approximately the same as the Raleigh land price growth rate, and significantly higher than those of Columbia, Greensboro and Spartanburg. It was significantly lower than the rate in Ashville, Charleston, and Wilmington, however.

Figure IV.4 plots the land price and land price growth estimates for each of the national competitor cities. These show dramatic differences in land prices across the country. In particular, Portland and Denver each have estimated value for one acre of residential land in excess of \$1,000,000. Further, these two cities have the highest growth rates in land values at 17.15% and 16.74%, respectively.



Taken in this context, Charlotte has relatively low land prices compared with its national competitive cities. Charlotte has lower land prices than all but four of its national competitor cities (Cincinnati, Indianapolis, Memphis, and San Antonio.) Further, the cities with land values higher than those of Charlotte also uniformly had higher land price growth rates. Should these trends continue, Charlotte’s relative advantage in land prices will accelerate.

C. Median Home Prices

Figure IV.5 presents the median home price for each of the regional competitor MSAs as well as the annualized growth rate for the period 2013-2017. The Charlotte MSA median home price is lower than many of its regional competitors, with only Columbia, Greensboro, and Spartanburg having lower median home prices. In terms of growth rates the Charlotte MSA is in a group of MSAs with growth rates around 4.8%. The other MSAs include Asheville, Raleigh, Richmond, and Wilmington. Only Charleston, at 6.94% has a substantially higher growth rate. Based on this, one would expect that the relative differentials in median home price among these cities would stay relatively constant in the near future.

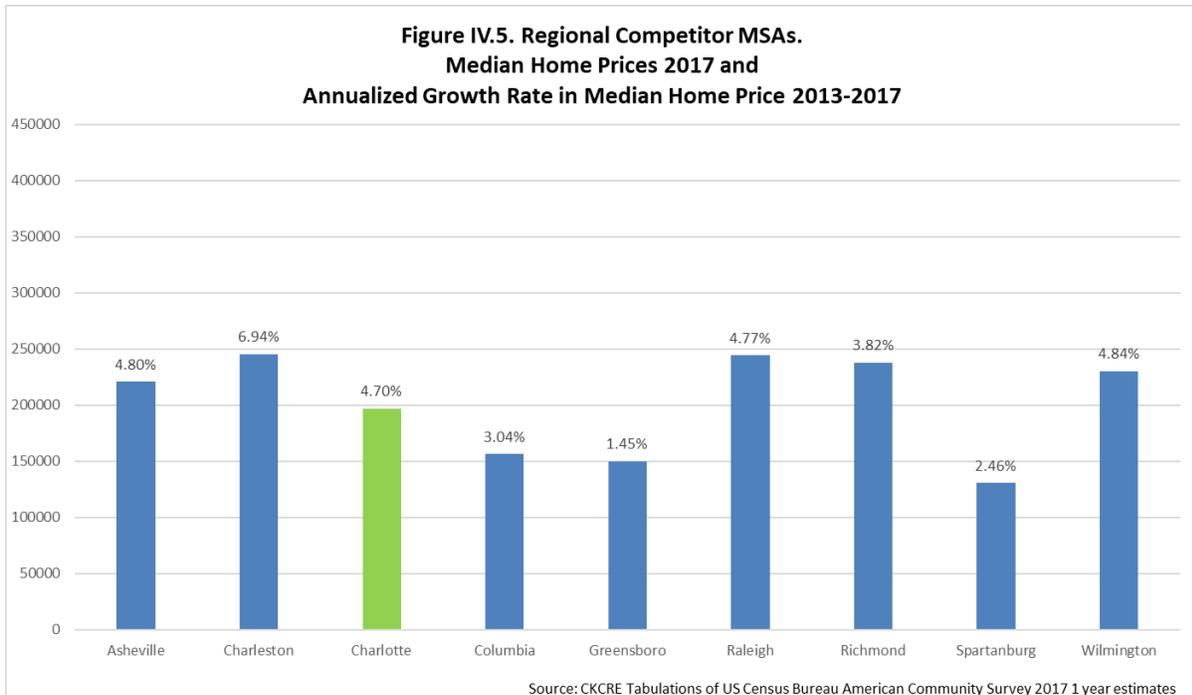
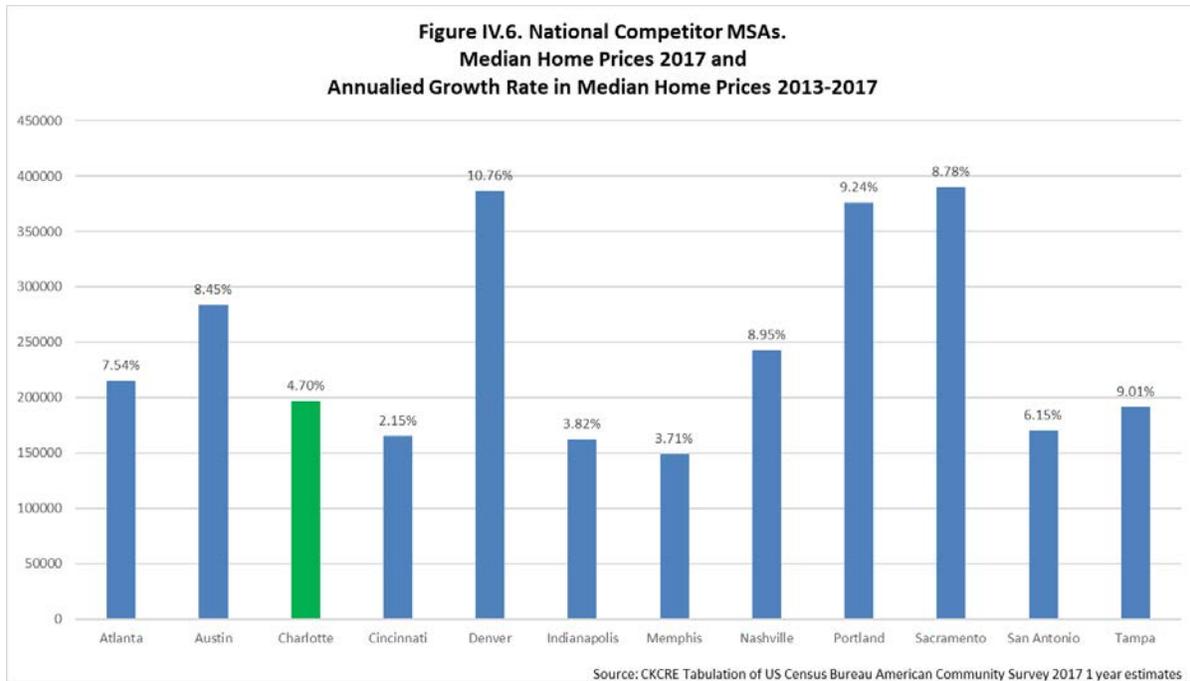


Figure IV.6 presents the median home price for each of the national competitor MSAs. As was the case with land values, there are stark differences in the median home prices across these cities. Of the twelve MSAs shown, the Charlotte MSA has the 5th lowest median home price. Sacramento, Portland, and Denver each have median home prices that are almost double the median home price in the Charlotte MSA. Further, these cities, along with Atlanta, Austin, and Tampa, have had significantly higher growth over the 4 year period. Given this, it is reasonable to expect that these cities will have median home prices that will grow even larger relative to Charlotte over time, or, in the case of Tampa to catch up and surpass the Charlotte median home price.



D. Median Multiple Analysis

In some sense the median home price in each MSA only tells half the story. It gives us relative information on the price of a home, but it does not take into account that there can be very significant income differentials across cities too. Since our concern is around the relative cost of housing and the general economic competitiveness of the region, we next use a measure of housing affordability that incorporates both prices and incomes.

One of the most commonly used measures of housing affordability is the so-called median multiple. This multiple is defined to be the ratio of the median home price to the median income that is:

$$\text{Median Multiple} = \frac{\text{Median House Price}}{\text{Median Income}}$$

Essentially this measures how many year's income the median earner in a region would have to use to buy the median house. By convention a median multiple below three is considered "affordable", a median multiple between 3 and 4 is considered "moderately unaffordable", and a median multiple above 4 is considered "unaffordable."

Figure IV.7 plots the median multiple for the regional competitor MSAs in 2013 and 2017. For each city, the first column is the 2013 value and the second column is the 2017 value. The Charlotte MSA is above the "moderately unaffordable" level of 3, denoted by the yellow horizontal line, in both 2013 and 2017. That said, of the nine cities on the chart, the Charlotte region is essentially in the middle of the pack with respect to the 2017 values. So while the median house price in the Charlotte MSA is high, the median

income is relatively high too. In contrast Asheville and Wilmington have the highest Median Multiples, both of which are well into the “unaffordable” range. Of course, both of these cities are affluent retiree destination cities. Retirees, and especially affluent retirees, have accumulated wealth that they can put into buying a home, and are less reliant upon annual income to support their housing. This may make the median multiple somewhat less meaningful in those two cities. Charleston, which also edges into the “unaffordable” range, may have a similar issue.

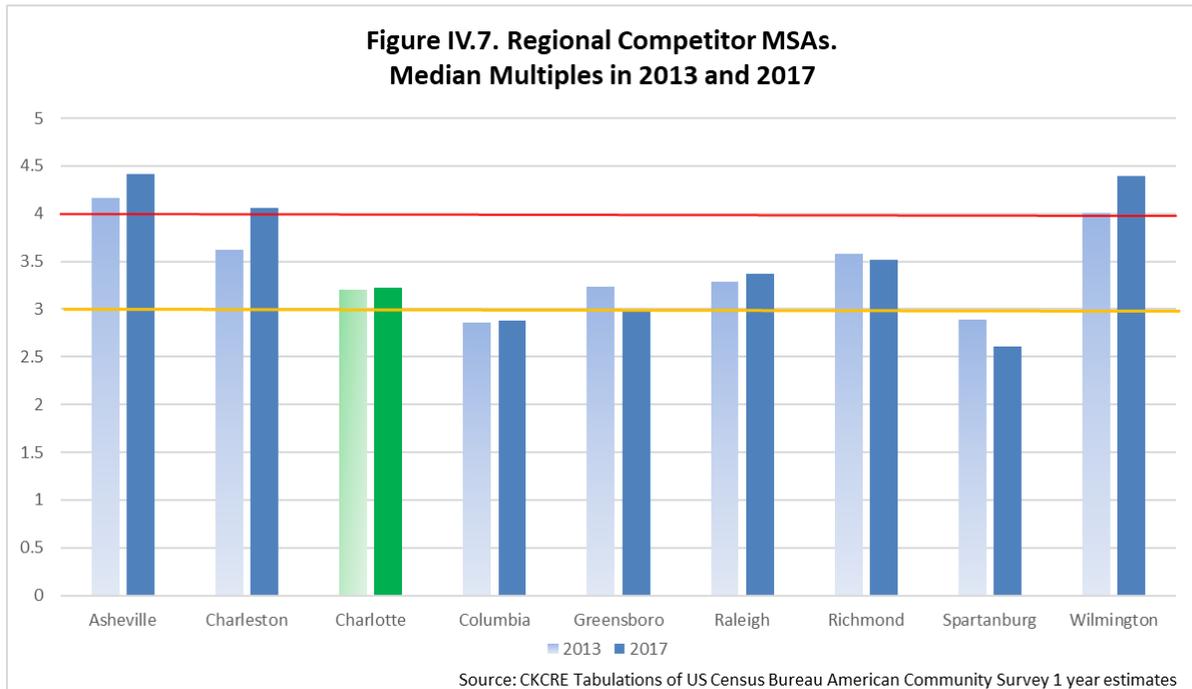
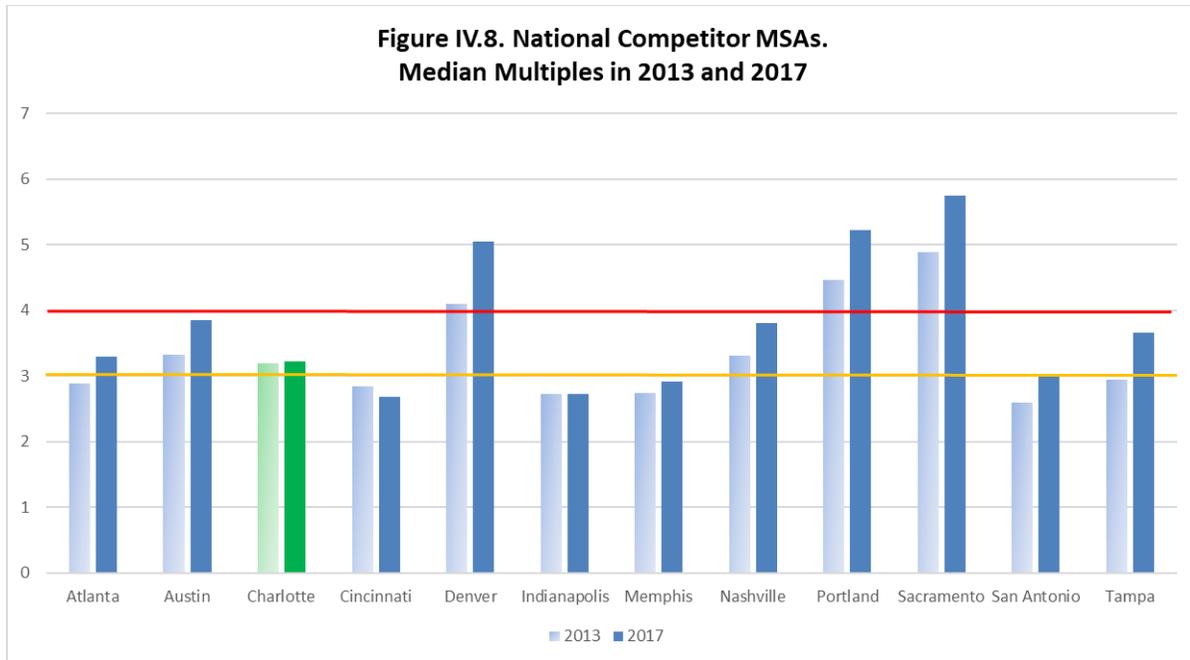


Figure IV.8 shows the median multiple for the national competitor MSAs. We note that virtually every MSA has seen an increase in the median multiple, with the exception of Cincinnati. Denver, Portland, and Sacramento have seen the biggest jumps in the multiple, and they are also the cities with the highest level of “unaffordability.” Indeed, those three cities each appear to have extreme levels of unaffordability. We also note that Austin and Tampa had large jumps in their multiples over the three year period, and are now well into the “moderately unaffordable” zone.

The median multiple is a convenient way of combining measures of both income and home price into one statistic, but it is worth remembering that it is only using data from one point (the middle) of the distributions of income and housing prices. It can miss important changes that happen at other points in the housing or income distribution. Consider that in Section III we demonstrated that it was the lowest end of the housing distribution, the 10th percentile point, that had seen the highest levels of price growth since 2010. So, while the median multiple did not change much in the Charlotte region, recognize that at the lower end of the housing distribution, prices have increased much more rapidly.



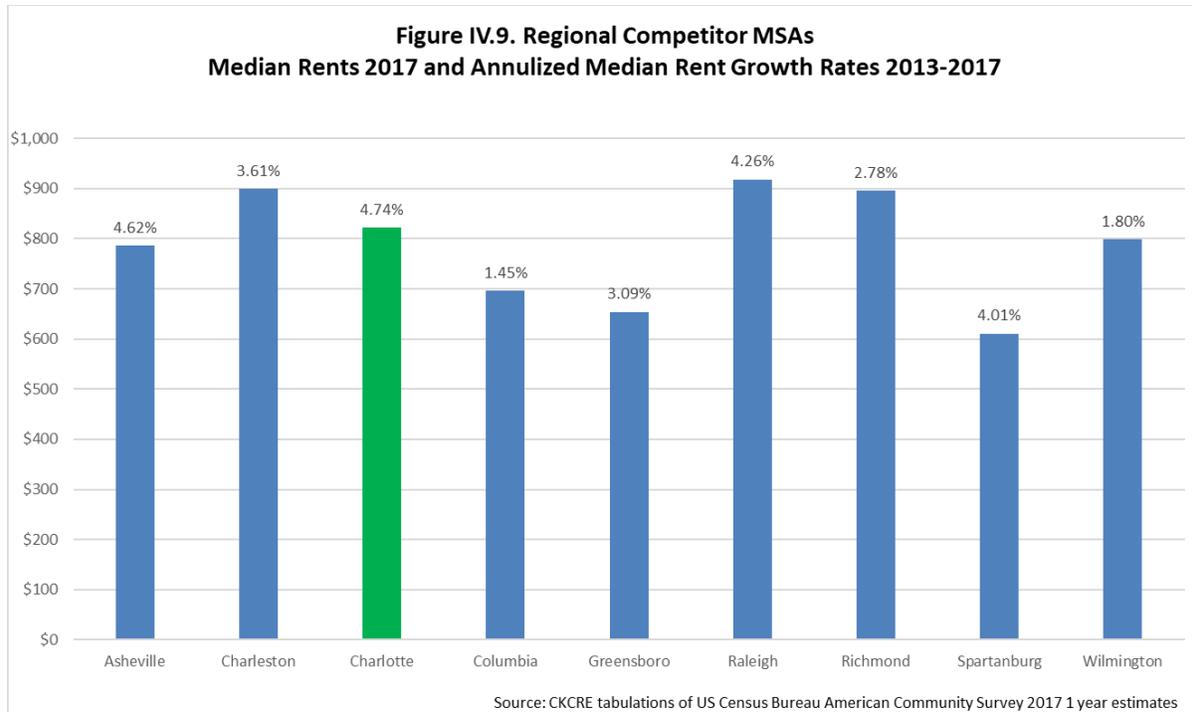
E. Median Rents

The comparisons above all focus on the owner-occupied markets. The rental markets are a major component of the housing market in every city and are another useful metric for comparing housing markets across regions. Figure IV.9 plots the median rent for each of the regional competitive MSAs as well as the annualized growth rate in rents from 2013 through 2017. Note that the Census Bureau tabulates these median rents for all renters, so this includes households renting single family homes and duplexes as well as those renting apartments.

The Charlotte MSA has the fourth-highest median of the regional competitors. Only Charleston, Raleigh, and Richmond were higher. Perhaps most importantly, Charlotte has the highest growth rate in median rent of all of the competitor cities, with a growth rate of 4.74% over the 2013-2017 time period. Note that not a single market in the region had median rents above \$1,000 per month, and only three markets were at or above \$900 per month.

Figure IV.10 plots the median rents relative to the national competitor cities. In contrast to the regional markets, at the national level there are multiple competitor cities, specifically Austin, Denver, Portland, and Sacramento, where the median monthly rent exceeds \$1,000. Indeed, the Denver median monthly rent is over \$1,200. This is nearly 50% higher than the median rent in the Charlotte MSA. Further, the growth rate in median rents in these high-rent MSAs tends to be high: Denver, Austin, and Portland each have annual growth rates above 6%.

On the national stage, the Charlotte MSA median rent is moderate. Of the twelve MSAs compared, the Charlotte MSA has the fifth lowest median rent. Its median rental growth rate of 4.74% puts it above some slower growing cities such as Cincinnati, Indianapolis, and Memphis, and on par with the growth rates in Atlanta and Sacramento.



F. Price to Rent Ratio

A common metric used to measure the *relative* value of buying versus renting a home is the Price to Rent Ratio. This ratio is simply the ratio of the median home price in a region to the median annual rent in the region. That is:

$$\text{Price to Rent Ratio} = \frac{\text{Median Home Price}}{\text{Median Annual Rent}}$$

A higher ratio means that home prices are high relative to rents, and a low ratio means home prices are inexpensive relative to rents. That is, when the ratio is high it means that a region is more favorable for renting, and when it is low the region is more favorable to home buying. When used to compare across regions it gives a relative sense of whether renting or buying is more favorable.

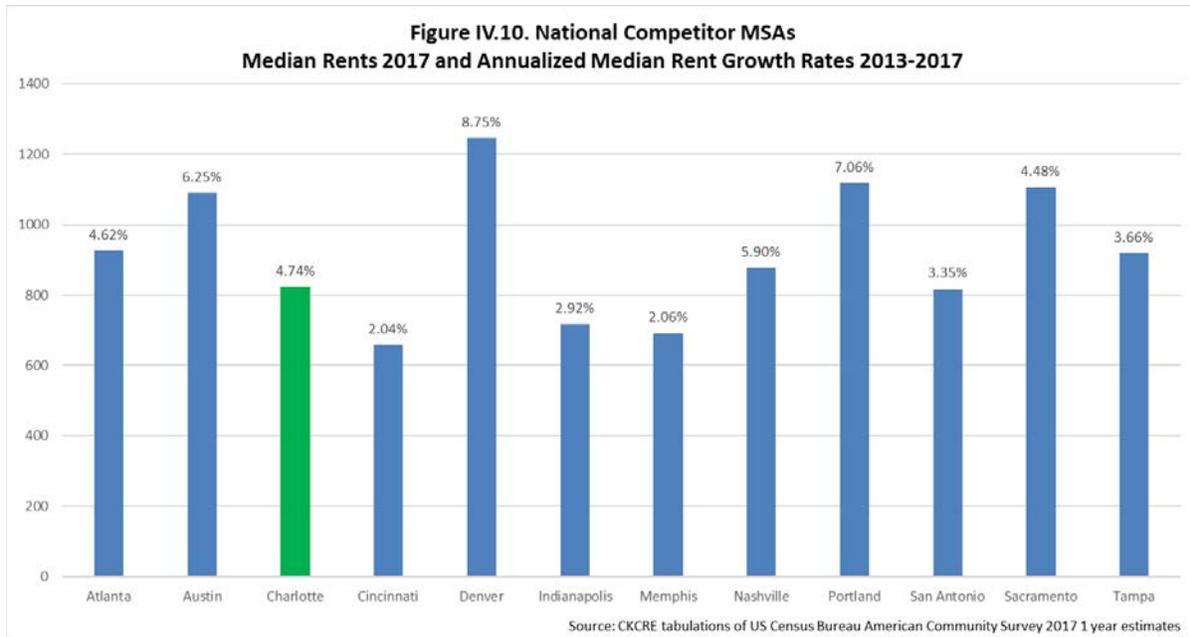
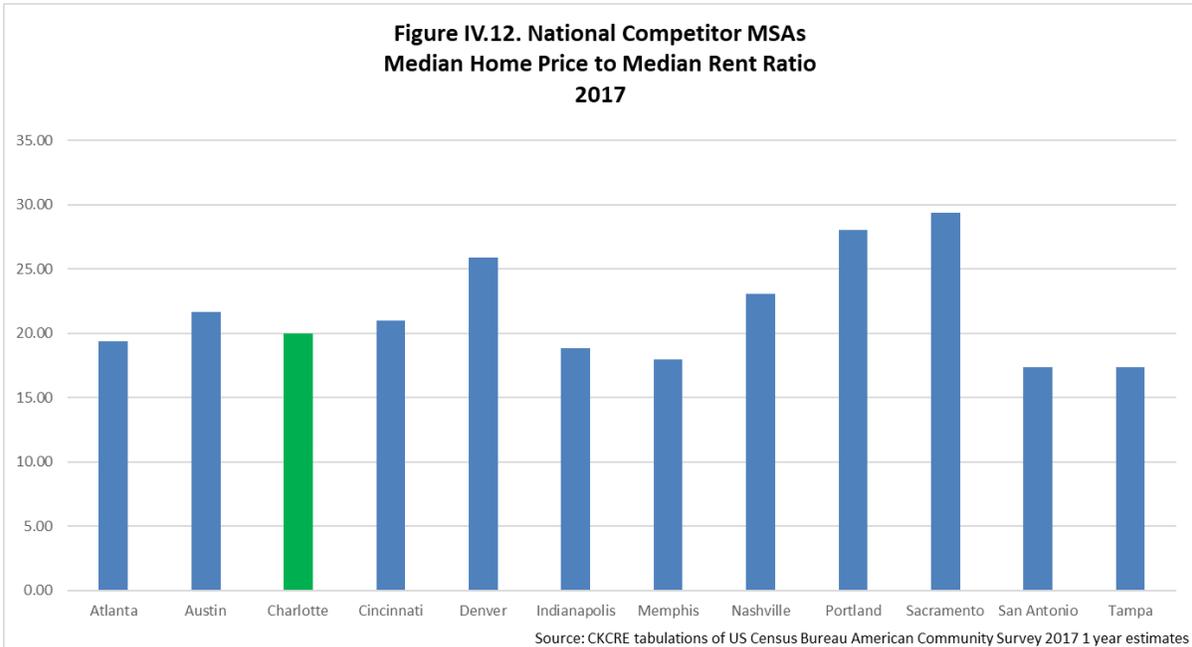
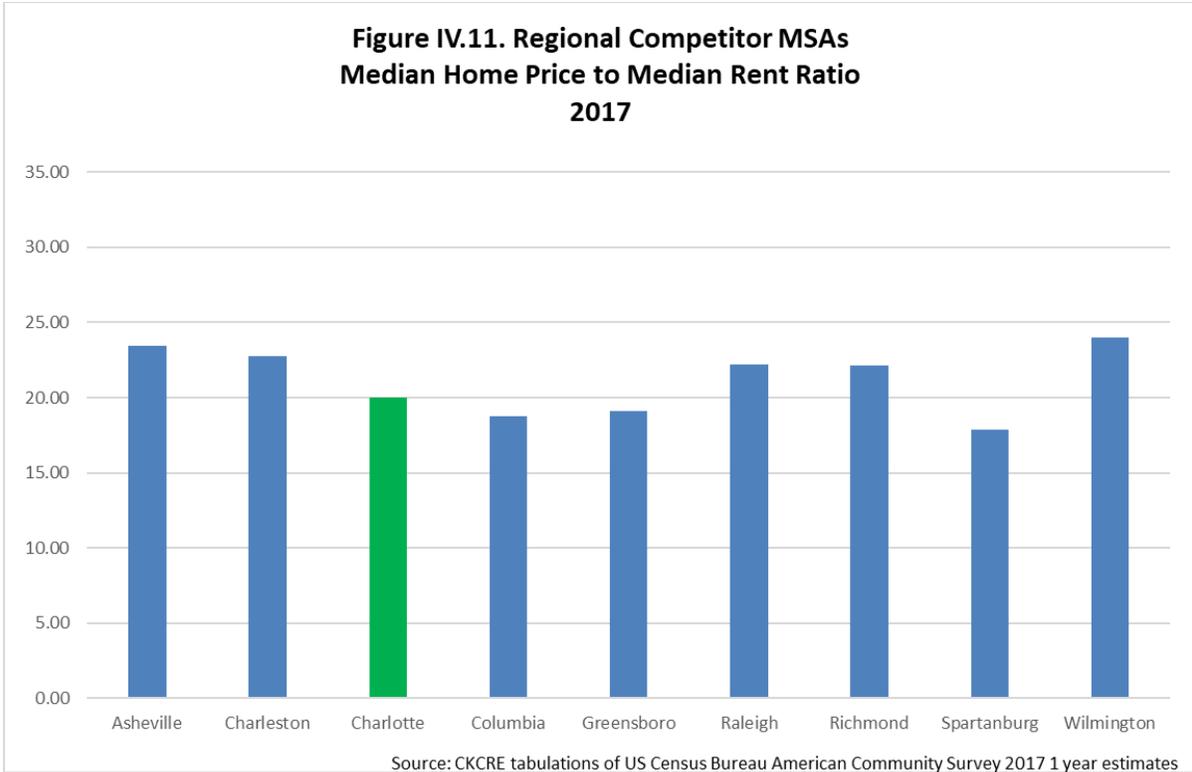


Figure IV.11 shows the Price to Rent Ratio for each of the regional competitor cities in 2017. From this chart we can see that none of the regional cities are dramatically different from the others. The ratios in Asheville, Charleston, Raleigh, Richmond and Wilmington are each a little higher than in Charlotte, indicating that renting is more favorable in those MSAs than in Charlotte. In contrast, Columbia, Greensboro, and Spartanburg all have lower Price to Rent Ratios than the Charlotte MSA, indicating that in those MSAs buying is more favorable compared to Charlotte.

At the national level the results are more dramatic. Figure IV.12 plots these ratios for each of the national competitor MSAs. The Denver, Portland, and Sacramento MSAs each have ratios that are 25% or more higher than Charlotte's indicating that renting is significantly more favorable relative to purchasing a home than it is in Charlotte. In contrast, San Antonio and Tampa both have ratios a good bit lower than Charlotte's, indicating a more favorable environment for home buying there than in Charlotte. Again, keep in mind that these are just *relative* measures. As shown in Figures IV.6 and IV.10, both median home prices and median rents are more expensive in Denver, for example, than in Charlotte. The price to rent ratio is telling us that given rents and prices in both Charlotte and Denver, the environment for renting in Denver is more favorable than in Charlotte.

G. Cost-Burdens

One of the challenges facing any region is the degree to which its residents are cost-burdened when obtaining housing. As we discussed in Section III, the normal definition of being cost-burdened is spending more than 30% of one's gross income on housing costs including utilities.



We begin by considering the proportion of renters in each region that are cost-burdened. Figure IV.13 shows the percentage for each of the regional competitor MSAs of cost-burdened renters. For the Charlotte MSA, 45% of all renters meet the definition of being cost-burdened. What is perhaps more surprising is that this is the third *best* ratio in the data set. In every MSA in the region at least 40% of the renters meet the definition of being cost-burdened.

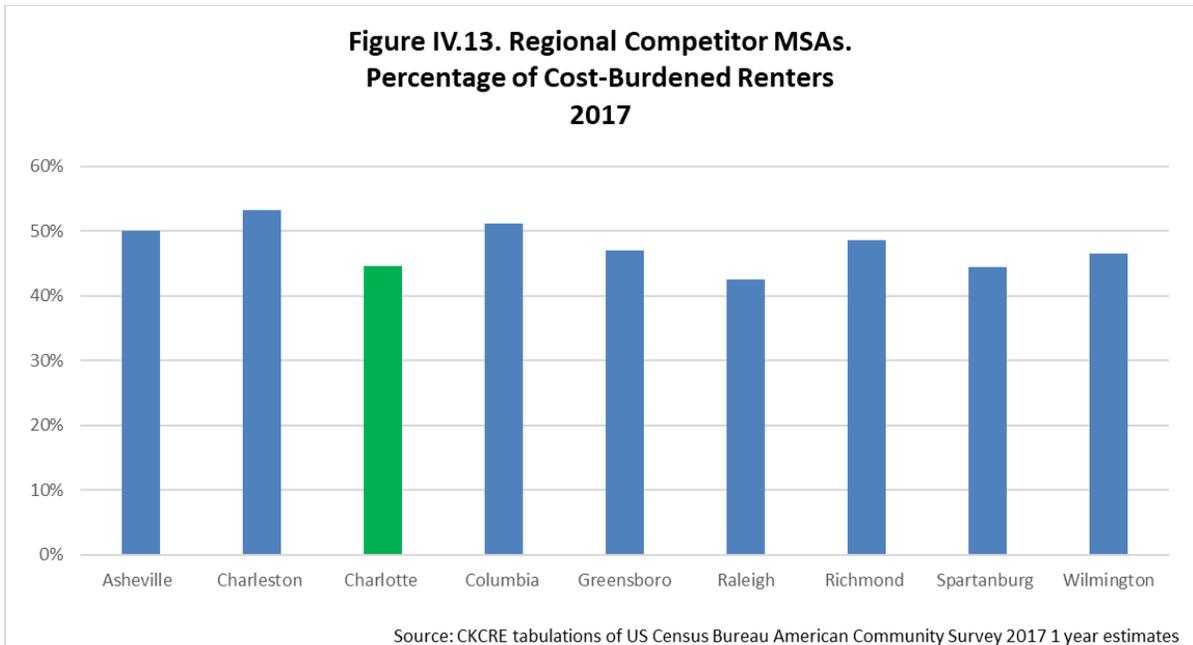
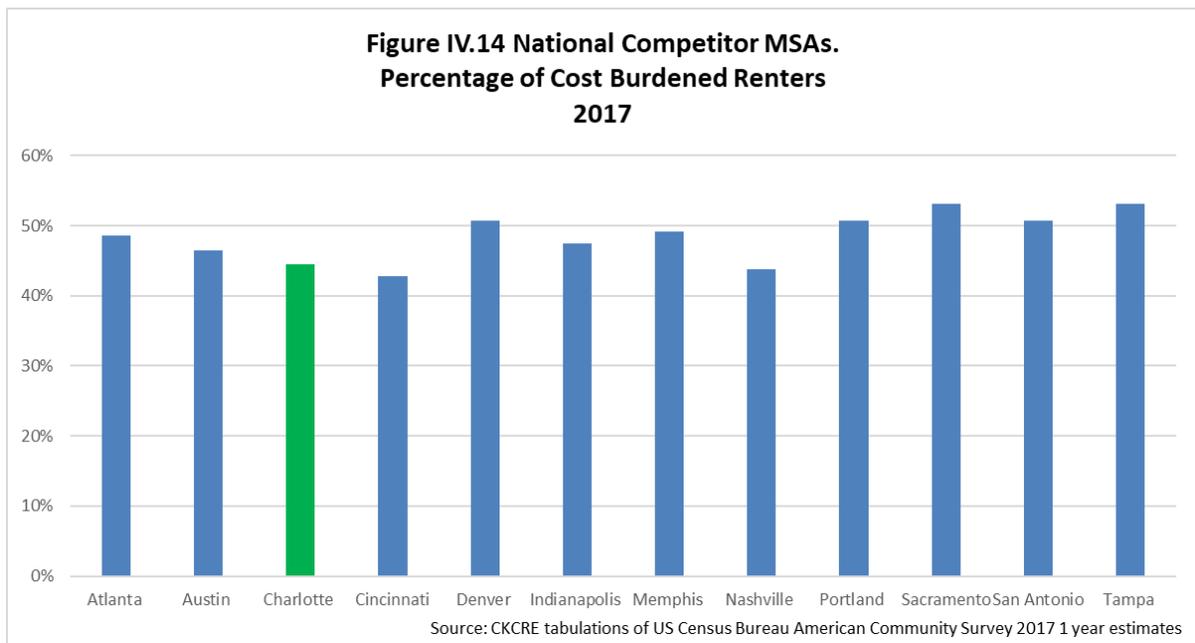


Figure IV.14 shows the same measure for the national MSA competitor set. Again, relative to most of its peer cities, the Charlotte MSA has one of the lower cost-burdened rates, although it is still high in absolute terms. Denver, Portland, Sacramento, and Tampa each have more than 50% of their renters meeting the definition of being cost-burdened. Only Cincinnati and Nashville have a lower percentage of cost-burdened renters than the Charlotte MSA.



It is also possible to construct a similar measure for homeowners, that is, to determine which percentage of homeowners pay more than 30% of the gross income toward housing expenses. One would expect this number to be relatively low because most lenders will not originate mortgages where

the monthly payment is more than 28% of the borrower’s income. Still, conditions can change over time, especially with respect to income. Additionally, a household could take on a second mortgage after origination of the first loan which could increase their total housing expense above the 30% cost-burdened level.

Figure IV.15 presents the percentage of cost-burdened homeowner households for the regional competitor MSAs. The percentages are, in fact, much lower than was the case with the renter population. The Charlotte MSA has the second-lowest percentage of cost-burdened homeowners, with only Raleigh having a lower rate.

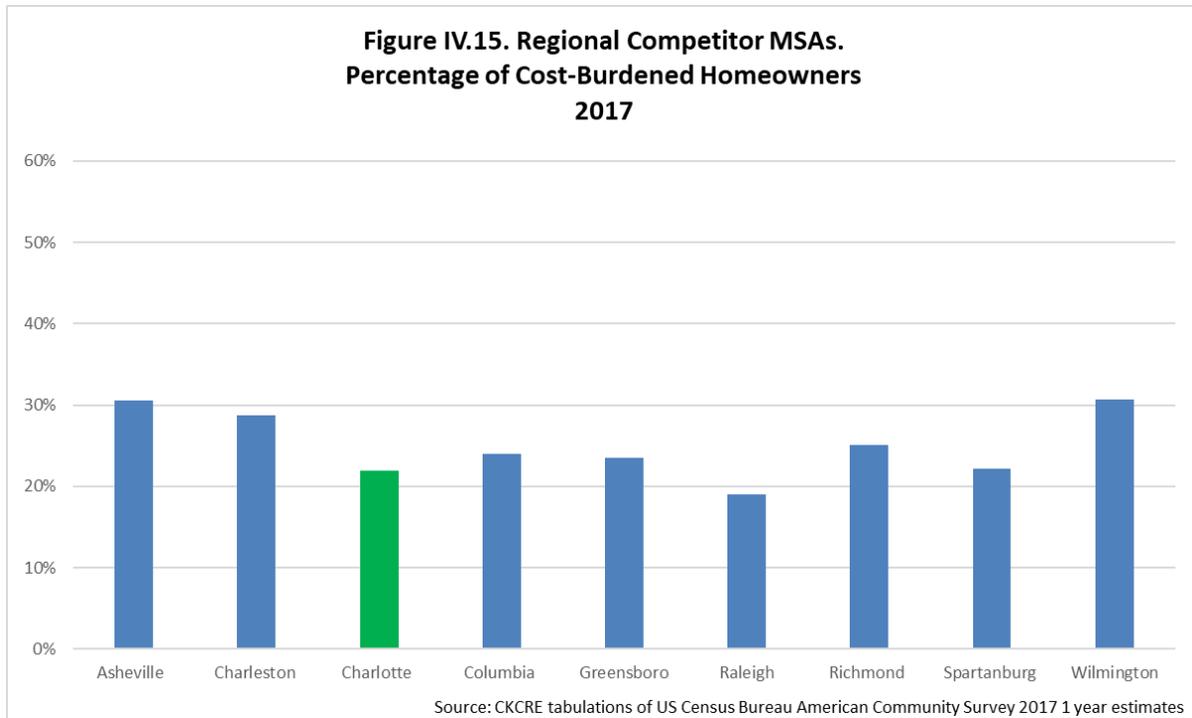
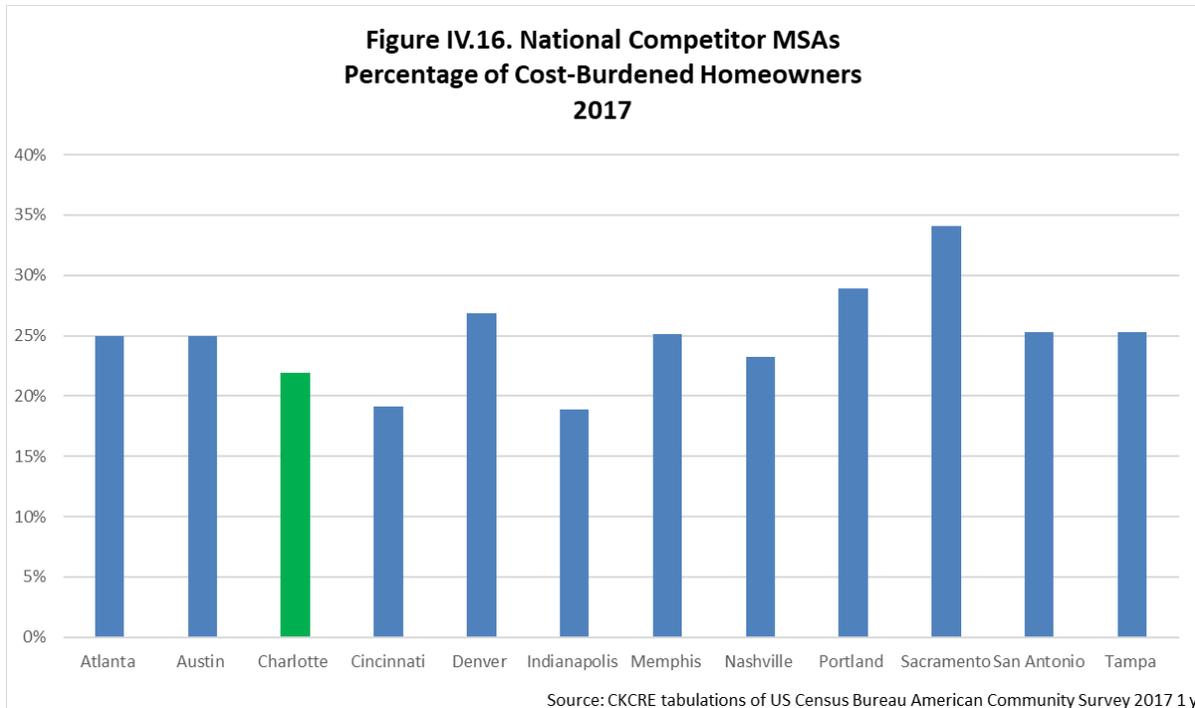


Figure IV.16 presents the same metric for the national competitor cities. As was the case with the regional competitor MSAs, the percentage of cost-burdened homeowners is lower in every MSA. Charlotte has one of the lowest percentages, with only Cincinnati and Indianapolis having lower percentages. Perhaps not surprisingly, Denver, Portland, and Sacramento have the highest percentages. Sacramento has the highest rate, with nearly one third of all homeowners meeting the criteria for being cost-burdened.



H. Summary

Comparing the performance of the Charlotte MSA against a series of competitive regional and national MSAs helps put in perspective many of the challenges that Charlotte faces. It is clear, for example, that land prices, housing prices, and rents are growing everywhere. There are simply national trends toward higher land and housing prices, and those trends will manifest in Charlotte.

The Charlotte MSA is a growing region, with one of the highest growth rates of the national and regional comparison sets. While land prices have risen sharply in the Charlotte area over the past five years, many other regions both nationally and regionally have had faster growth rates. In fact, of the national competitor set Charlotte was among the lowest of land prices, and certainly had the lowest land prices of the faster growing national cities. The same is true, albeit perhaps to a lesser degree, for median home prices. Of the national competitor cities, the Charlotte MSA had one of the lowest median home prices among any of the rapidly growing cities.

V. Conclusion and Next Steps

As we stated at the beginning of this report, our goal with the *State of Housing in Charlotte* is to provide a comprehensive, data-driven analysis of the state of housing in Charlotte and the surrounding area. Our hope is that this report will be useful to policymakers, market participants, and residents of the region as they make decisions regarding the housing markets.

The fundamental conclusion of this report is that overall, the state of housing in Charlotte is good. The region does a good job providing adequate, relatively inexpensive housing for the majority of its residents. That said, we document a number of challenges. These include:

- Land prices are rising rapidly;
- The regional population is growing faster than the number of housing units;
- Prices of owner-occupied housing have risen, and the lowest-priced segment of the owner-occupied market has had the sharpest price increase.
- The owner-occupied market is more supply-constrained than it has been historically;
- The supply of lower-priced homes is severely constrained;
- Middle-income housing affordability is becoming a significant challenge for the region;
- Rental rates have increased for all types of rental housing including apartments and single family rentals;
- The percentage of renters who are cost-burdened is high;
- There is an ongoing need for additional low-income housing.

These are real and ongoing challenges, but they are not unique to the Charlotte region. Compared to both regional and national competitor cities, the Charlotte area generally has moderate house prices and rents. We do have challenges, but they are much more manageable than some of the issues faced by our competitor cities.

Going forward, this will continue to be a major research project for the Childress Klein Center for Real Estate. We intend to update this report on an annual basis. Our expectation is that as we produce this report in subsequent years we will be able to augment the data we use to include new data sources and new metrics. Certainly, we welcome your feedback, suggestions, and comments on this report.

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