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RESEARCH REPORT

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Housing Affordability In Howard County and Central Maryland

Introduction

Over the past decade and a half, housing prices have been quite volatile in Howard County and other jurisdictions across the Baltimore region. This began with the rapid run-up of home prices beginning in the early 2000s, followed by a sharp decline in the latter half of the decade resulting from the mortgage default crises that sparked the severe recession that began in December, 2007. In the years after the recession ended in June 2009, housing prices have more or less stabilized, and in some markets have slowly began to increase once again. Fluctuations in home values are not unique to this area alone. Prices in most all metropolitan areas across the country have been impacted by these macro-economic forces.

As home values rise and fall, housing affordability also rises and fall. Other factors that impact affordability include mortgage interest rates and household income. Mortgage rates began to drop in the early 2000s and continue to remain near historic lows, a clear benefit for home buyers. However, incomes have stagnated since the recession, dampening affordability as home prices once again begin to rise. This report takes a look at housing affordability over the last 20 years, from 1995 through 2014. The focus is on comparing Howard County to other counties in central Maryland to gauge relative impacts over time.

Methodology Used

The methodology used in this report to gauge affordability is not new. It is the same general methodology used by the Maryland Department of Housing and Community Development (DHCD), which reports housing affordability across the State in its quarterly *Maryland Housing Beat* publication.[1] The methodology is also commonly used by both the Maryland Association of Realtors and the National Association of Realtors. The purpose of this report is to use this same general methodology to present results comparing Howard County and other central Maryland counties.

[1] DHCD's reports can be accessed from their web site at: dhcd.maryland.gov/Pages/Publications.aspx.

The methodology generates a Housing Affordability Index (HAI), a single value that can be compared across jurisdictions and over time. The HAI is the ratio of the median household income to the qualifying income necessary to by a median priced home. Qualifying income is the necessary income required to make the monthly payments (principle, interest, taxes, and insurance) for a median priced home based on mortgage interest rates and typical borrowing standards. The HAI has a value of 100 when the median-income household has a sufficient income to purchase a median-priced home. When the ratio is above 100 the typical household has more income than necessary to purchase a typical house. When the ratio falls below 100 the typical household has less income than necessary to purchase a typical house.

When studying this issue there are generally two indices, one for repeat homebuyers and one for first time homebuyers. It is assumed for first time homebuyers that both their household income and their home purchase price is less. Based on data from the Maryland Association of Realtors, the household income for first time homebuyers is 57% of the median, and the first time home price is 85% of the median home price. Furthermore, it is assumed that first time homebuyers only place a 5% down payment on the home as opposed to a 20% down payment for repeat homebuyers. By placing only 5% down, the mortgage rate is increased by a half a percentage point to pay for private mortgage insurance.[2] Because of these factors, homes are less affordable for first time homebuyers. All these assumptions are used in the current analysis.

Annual median household income data come from the Maryland Department of Planning for the years through 2005. For the years after 2005, 1-year American Community Survey data from the Census Bureau are used. Median home prices are from the Metropolitan Regional Information Systems (MRIS), a multiple listing service for Maryland, Washington DC and Virginia.

Average annual mortgage interest rates are from the Federal Housing Finance Agency's (FHFA) Monthly Interest Rate Survey using their composite rate for conventional loans. Annual data specifically compiled for Maryland is used and is calculated as an effective interest rate, which includes contract interest rate plus all fees and points amortized over a 10-year period. Ten years is an estimate of the average life of conventional mortgages. However, this data is only available through 2012. After 2012, the U.S. average annual 30 year fixed rate mortgage as reported by the Federal Home Loan Mortgage Corporation (Freddie Mac) is used.

Qualifying income is based on the Federal National Mortgage Association (Fannie Mae) qualifying ratio of 25%. This means that the monthly principle and interest payment cannot exceed 25% of the median household income.[3]

[2] Private mortgage insurance or PMI is generally required for homebuyers who make less than a 20% down payment. This can be paid as a separate monthly fee or rolled into a higher interest rate with the same net effect. The general standard used by the mortgage industry is an extra half percentage point increase in the mortgage rate with a 5% down payment.

[3] This ratio does not include taxes and insurance. When these are included the ratio is generally between 28% and 36% depending on other outstanding debt owed by the homebuyer as well as their credit score. By using Fannie Mae's ratio, the analysis is simplified and is consistent with what is used by Maryland DHCD as well as the Maryland and National Association of Realtors.

What The Results Mean

With any statistical analysis, the outcome has to be put within context of both the data used and exactly what is being analyzed. For example, what does it mean to say that a typical household with a median income can afford a median priced home? The use of medians attempts to answer the question of what the average household can afford. But what is the average household? It only applies to a small segment of the population. Those with higher incomes can afford to buy more than the average house compared to those with lower incomes who can't, and maybe they end up as renters or buy the supply of below average cost homes. There is a common phrase that says, "everything is affordable to someone," and reducing people to statistics is always difficult.

Furthermore, the market is dynamic and variable. When conducting statistical analysis, variables need to be fixed in order to make comparisons. Reality is much more complex than these fixed values. For example, interest rates can vary widely depending on credit, so someone with excellent credit may be able to afford larger mortgage due to securing a lower interest rate. Also, in many instances, people choose to pay a higher percentage of their monthly income, often in excess of 50%, in order to live in a larger, more expensive home. Some residents are able to make larger down payments than others, perhaps garnered from years of saving, or perhaps from an inheritance. The transfer of wealth from one generation to the next is enormous and is expected to grow in the future as baby boomers continue to retire, with a large portion of the wealth derived from housing equity.

Something else to consider when observing the results of this analysis is that the median income for each jurisdiction is used to analyze the affordability of that jurisdiction. For example, Howard County has the highest median income in the State and this is what is used to gauge affordability in Howard County. But what about someone who wants to move from another County into Howard? It may be wise, and beyond the scope of this report, to base an analysis on the median income of the region for all counties.

These issues and questions are meant to be rhetorical. They are raised to express that the subject of affordable housing is a complex issue and cannot necessarily be defined by the set of numbers presented in this report. That said, however, the results discussed below are a good gauge of what has happened over time across jurisdictions using standard and consistent factors. They can help frame and provide a context for these philosophical points and nuances, but should not be used to define them.

It is interesting to note that this issue is not new. A report prepared for the Howard County Office of Planning and Zoning in 1980 states:

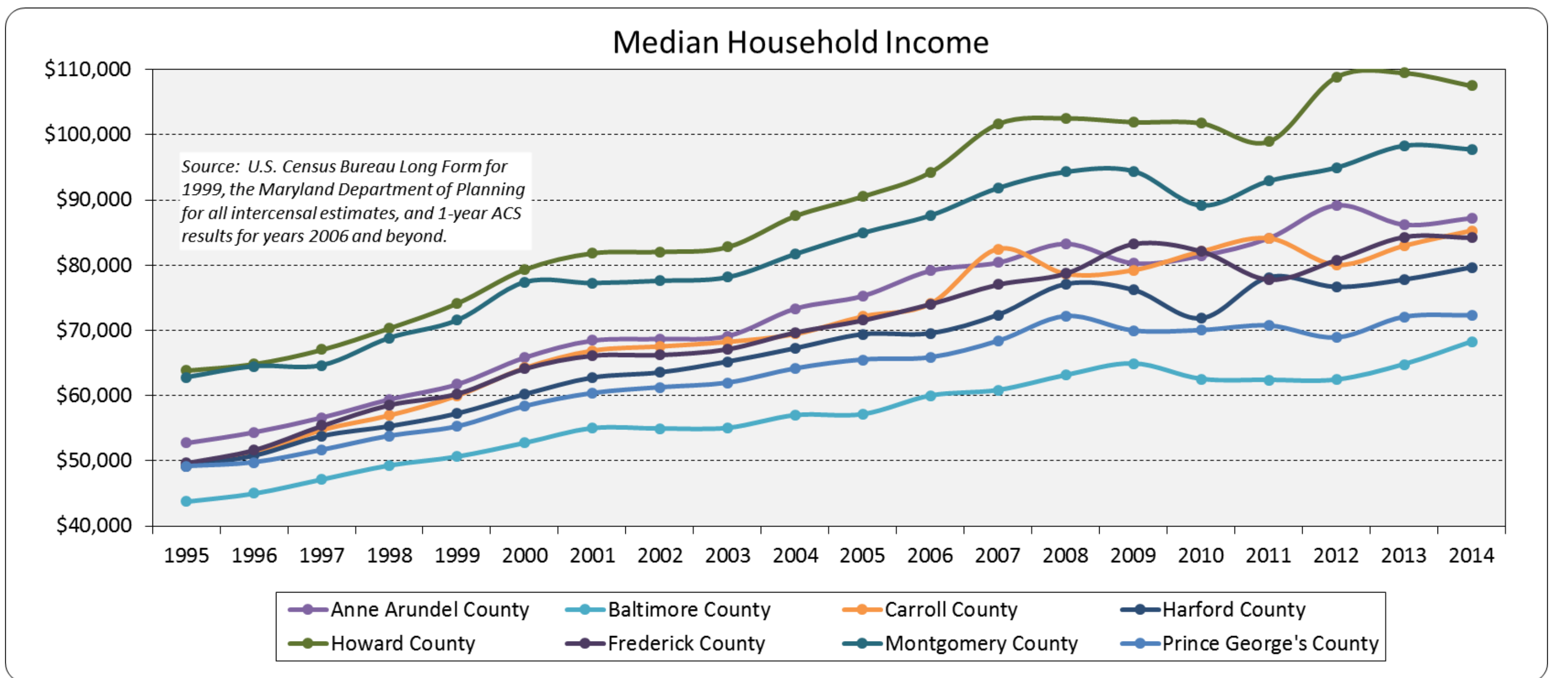
> The median income of county households is $28,171. Applying the rule-of-thumb of housing affordability of twice the annual income yields a housing unit value of $56,342 in 1978 dollars. This is over $6,600 less than the median value of houses sold in the county in 1978. This shortfall indicates that many county residents cannot afford to buy a home. A 1979 survey showed that most public employees in Howard County could not purchase a home in the county with the income from their public job. Excepting teachers, 64 percent of all county employees made less than $14,600. Participation in the U.S. Department of Housing and Urban Development Section 8 program permits household income up to $31,296 for a three-bedroom house in the housing

market area which includes Howard County. This level of prospective disparity leads to families having to pay a disproportionate share of their incomes for housing or not to be able to afford standard units. [4]

That report was written in a period of high inflation and rapidly rising interest rates (national mortgage rates averaged close to 12.5% in 1980). It has been much different in more recent times with record low mortgage interest rates and volatile housing price fluctuations. Every period has its challenges. This report looks at affordability since 1995, and doesn't make comparisons back to 1980. The reference above, however, indicates that the affordable housing discussion in Howard County has been an ongoing debate for quite some time.

Repeat Homebuyers Affordability – 1995 to 2014

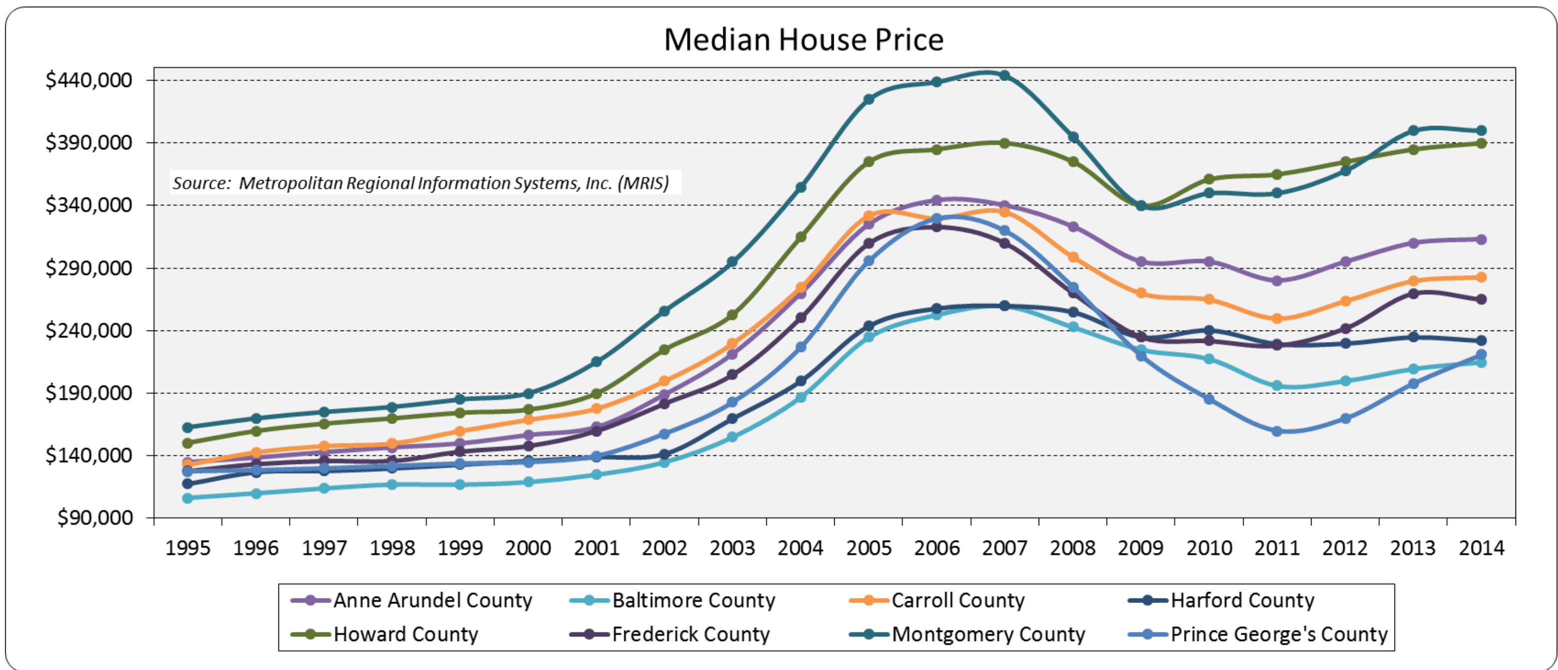
The series of charts below show the main components that make up the HAI. The first chart shows the median income for the central Maryland counties from 1995 to 2014. Howard County has had the highest median income, followed by Montgomery County. This is followed by Anne Arundel, Carroll and Frederick counties. Next comes Harford and then Prince George's followed by Baltimore County. In all cases, incomes have risen gradually over time.



The chart below shows the increase in median house prices for the same counties. Home prices rose gradually from 1995 to 2000. After 2000, prices increased sharply through 2007 and then dropped fairly rapidly due to the recession beginning in late 2007 caused by the mortgage default crisis. Prices bottomed out around 2011 and have gradually risen since then. For most years,

[4] Housing Policies and Implementation Strategies, prepared by Hammer, Siler, George Associates, August 22, 1980.

Montgomery County has the highest median, followed by Howard, Anne Arundel, Carroll, Frederick, Harford, Prince George's, and Baltimore County, respectively.

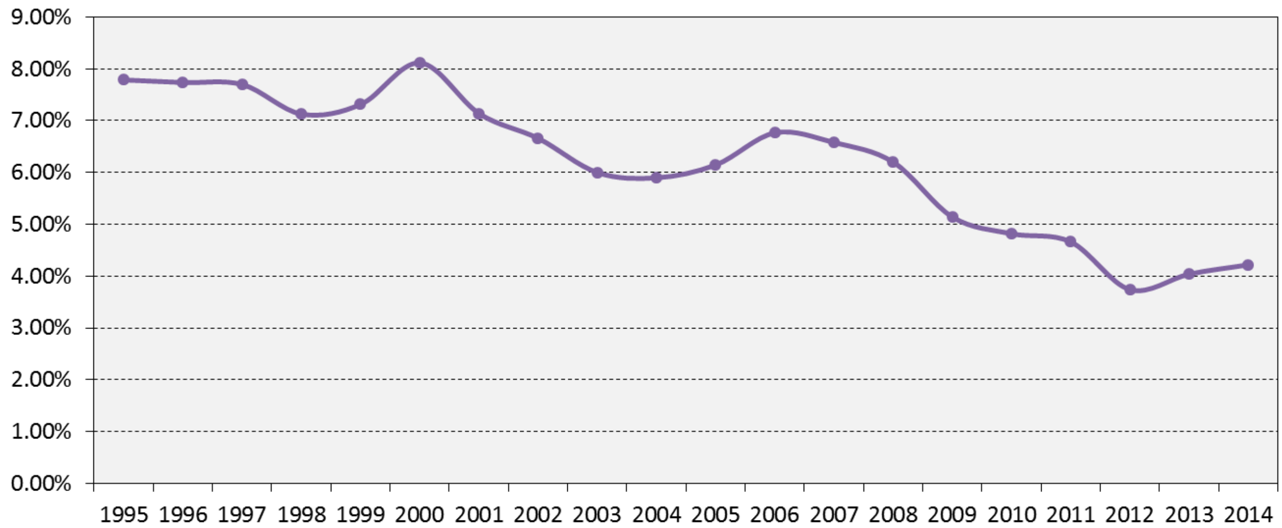


The top chart on the next page shows mortgage interest rates during this period. In 1995, interest rates averaged 7.79%. In 2000, they rose to a peak of 8.12%. Since 2000, rates have dropped considerably to less than 6% in 2004. The last time rates were this low was in the early 1960's. After 2004, rates rose again to a high of 6.77% in 2006 but continued to drop thereafter to a low 3.74% in 2012. Since 2012 rates have risen slightly, but remain very low by historical standards.

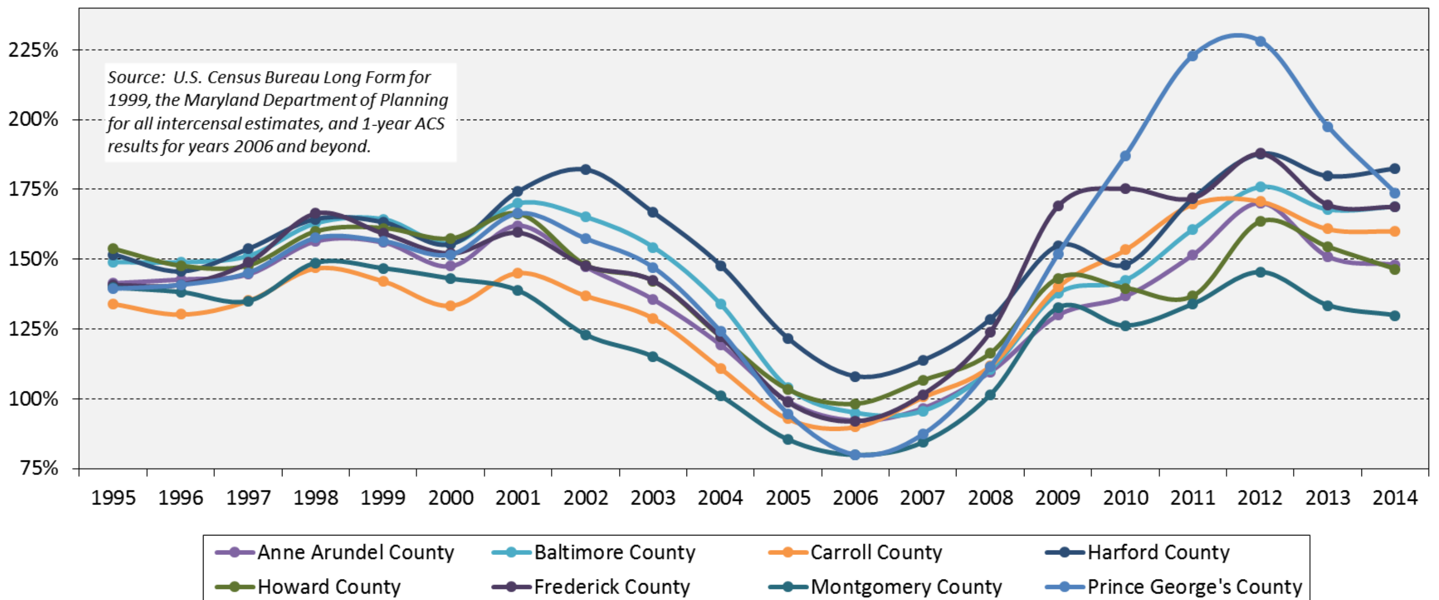
Economists have argued that housing prices increased sharply after 2000 in part because interest rates dropped considerably during this time period. As interest rates decline housing payments are less and thus buyers can afford more expensive homes. The bottom chart on the next page, which shows the HAI for repeat homebuyers, indicates however that housing has become *less affordable* during this period through 2006 before the recession. The combination of rising incomes and declining interest rates (at least through 2004) was not enough to offset the sharp increase in home prices. Reduced affordability was the result.

1995 to 2000 affordability remained about the same or rose slightly. From 2000 to 2001, the HAI increased for most jurisdictions, and then dropped relatively quickly thereafter. By 2006, the repeat homebuyers HAI was less than 100 for all jurisdictions except Harford County. As indicated earlier, the HAI has a value of 100 when the median-income household has a sufficient income to purchase a median-priced home. When the ratio is above 100 the typical household has more income than necessary to purchase a typical house. When the ratio falls below 100 the typical household has less income than necessary to purchase a typical house. So by 2006 housing was not affordable for repeat homebuyers in all jurisdictions except Harford County. This was due to

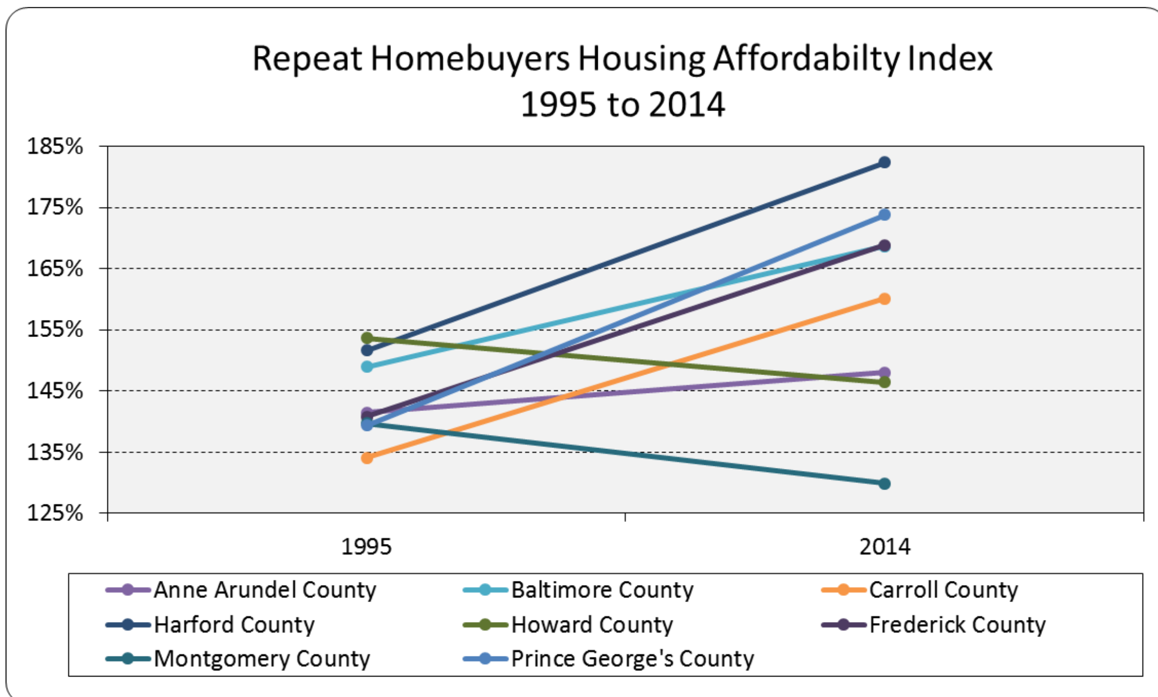
the steep increase in housing prices during that time period. After 2006, however, housing has become more affordable once again as home prices sharply declined and interest rates began to fall once again, and by the early part of this decade were at affordability levels similar to and even slightly higher than those that had existing at the beginning of the last decade.



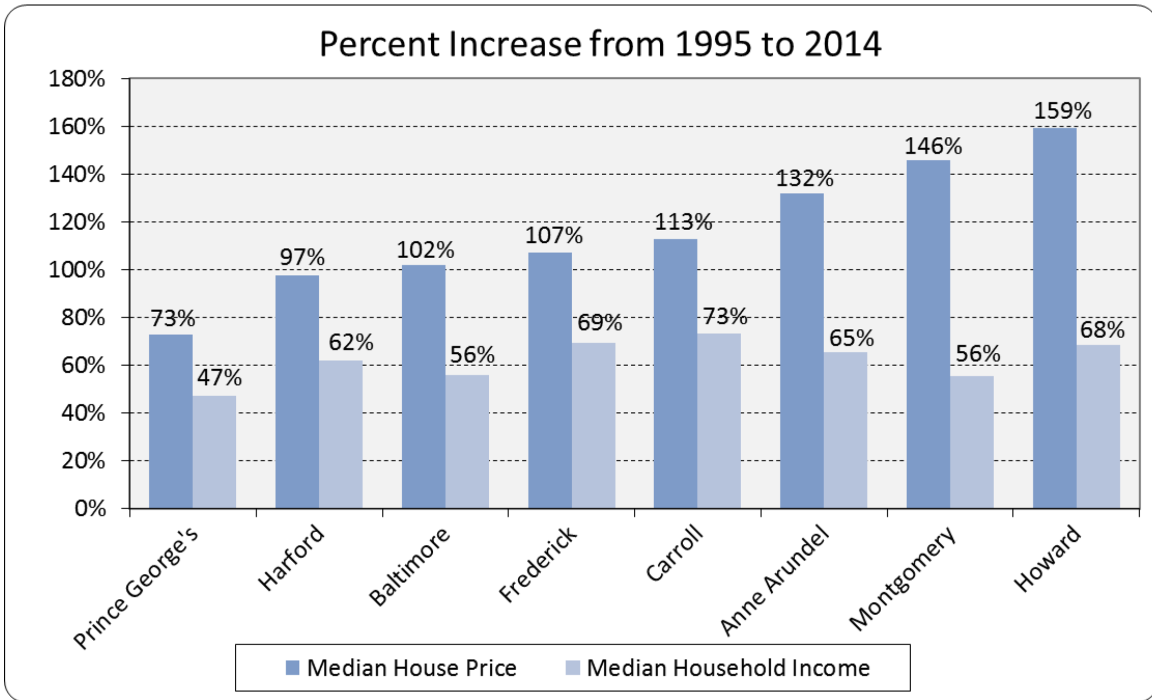
Source: Average Annual Rates from the Federal Housing Finance Board's Monthly Interest Rate Survey - composite rate for conventional loans. Annual data compiled for Maryland is used. Effective interest rates used, which includes contract interest rate plus all fees and points amortized over a 10-year period. Ten years is an estimate of the average life of conventional mortgages. After 2012, data is average annual 30 year fixed rate mortgage as reported by Freddie Mac.



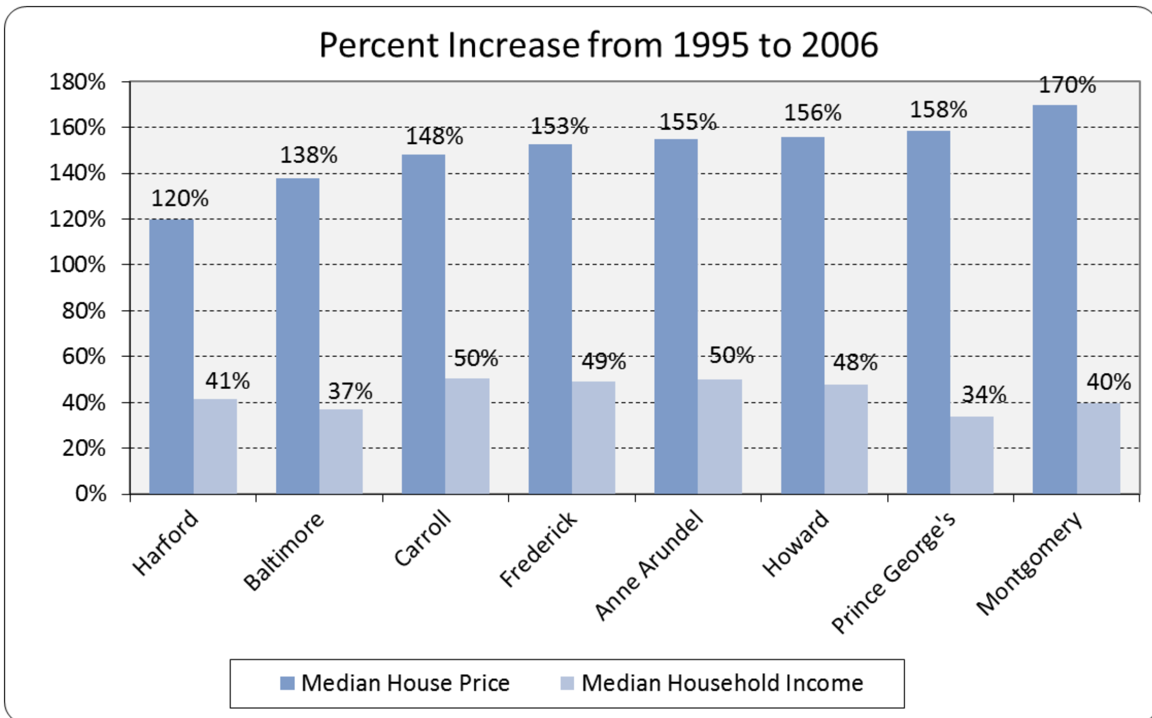
The chart below shows the straight line change over the 20-year end points from 1995 to 2014, ignoring the annual variations in between. Howard and Montgomery are the only two counties that had declines in their HAI when comparing these two years—1995 and 2014. For all the other counties housing became more affordable. The decline in the HAI for Howard and Montgomery is a result of the relatively greater increase in home prices compared to the other jurisdictions. Of all the jurisdictions, Howard County was the most affordable in 1995, but dropped to the second least affordable by 2014, following Montgomery County which was the least affordable. Note again that these ratios are based on the County median household incomes, and Howard County had the highest in the region in 2014. So despite the high incomes in Howard County, affordability has suffered due to the relatively large increase in home prices.

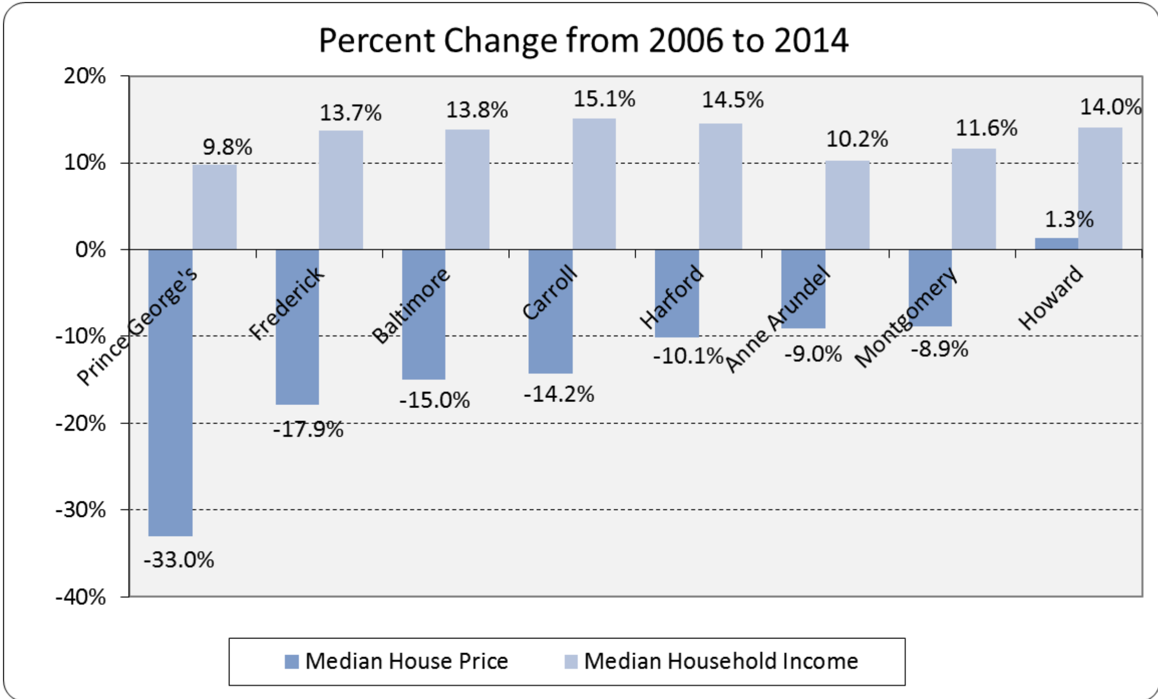


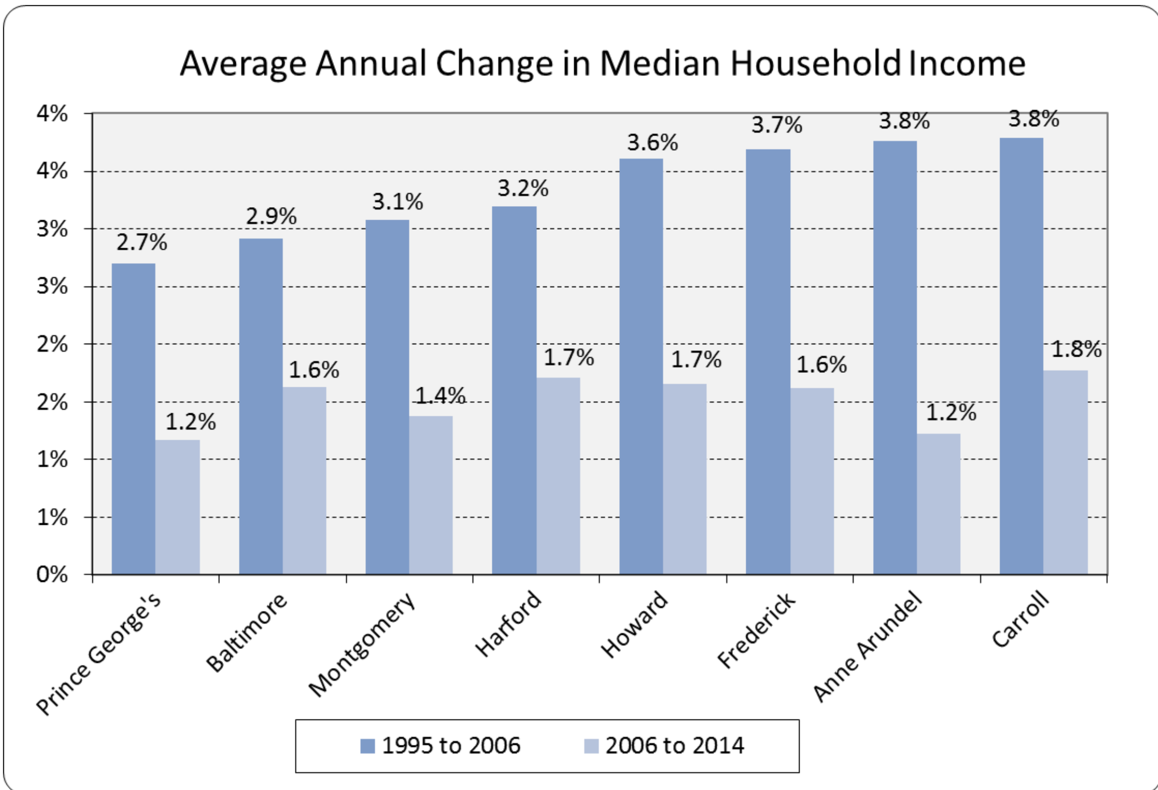
This is further illustrated in the chart below, which compares the percent increase of median household incomes to that of housing prices from 1995 to 2014. Median household income in Howard rose 68% compared to a 159% increase in the median home price. A large difference also exists for Montgomery County, with a 56% increase in the median household income compared to a 146% increase in the median home price. These differences are relatively less for the other counties in the region. For example, in Harford County, the most affordable county with the highest HAI in 2014, home prices increased by 97% from 1995 to 2014, while the median household income rose by a relatively robust 62% during the same time period.



The following three charts below show changes that occurred in two timeframes—1995 to 2006 and 2006 to 2014. As indicated previously, 2006 was the low point for affordability with all counties experiencing their lowest HAI due to a peak in home prices and an uptick in mortgage rates at that time.




Percent Change from 2006 to 2014
20%
10%
0%
-10%
-20%
-30%
-40%
9.8%
13.7%
13.8%
15.1%
14.5%
10.2%
11.6%
14.0%
1.3%
Prince George's
Frederick
Baltimore
Carroll
Harford
Anne Arundel
Montgomery
Howard
-33.0%
-17.9%
-15.0%
-14.2%
-10.1%
-9.0%
-8.9%
Median House Price
Median Household Income

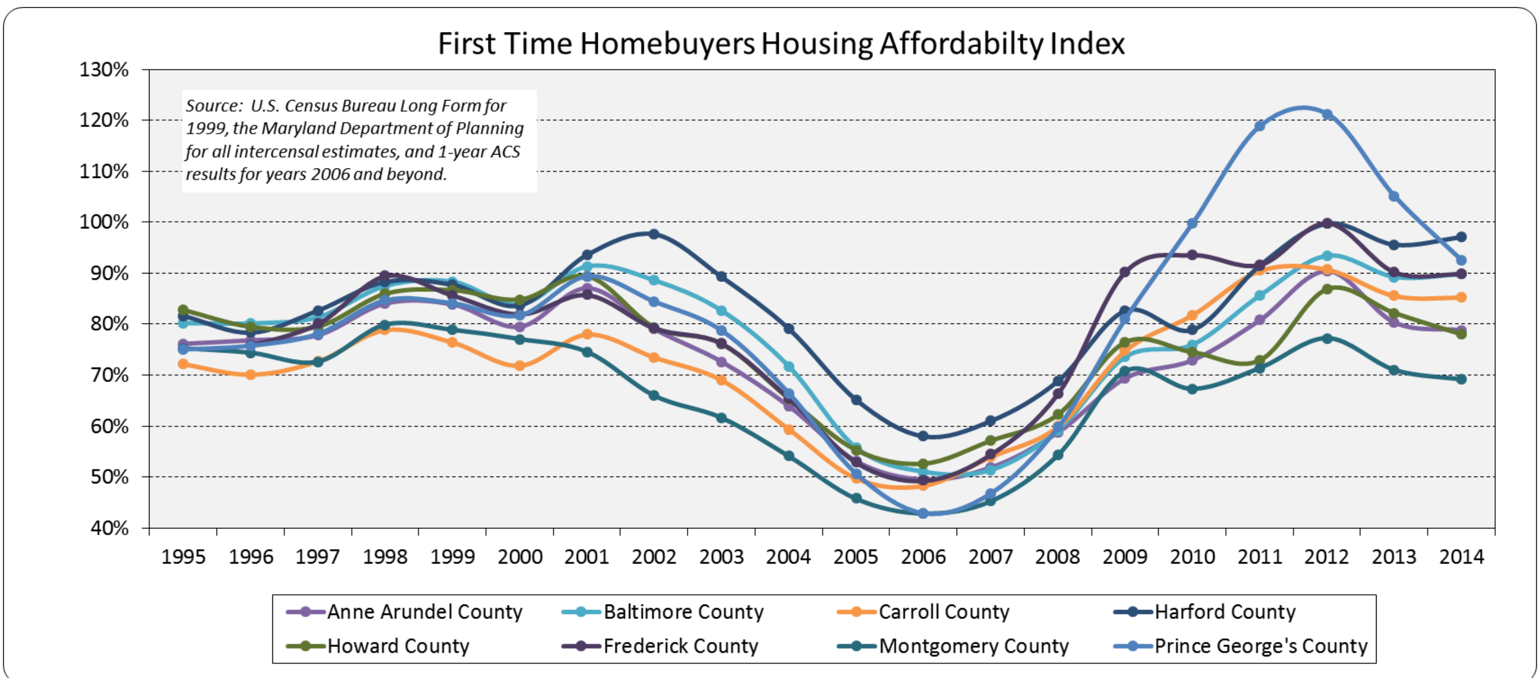

Average Annual Change in Median Household Income
4%
4%
3%
3%
2%
2%
1%
1%
0%
2.7%
2.9%
3.1%
3.2%
3.6%
3.7%
3.8%
3.8%
1.2%
1.6%
1.4%
1.7%
1.7%
1.6%
1.2%
1.8%
Prince George's
Baltimore
Montgomery
Harford
Howard
Frederick
Anne Arundel
Carroll
1995 to 2006
2006 to 2014

For the first period, from 1995 to 2006, median home prices increased two to four times the rate of median household incomes depending on the jurisdiction. For the second period, from 2006 to 2014, median home prices declined (except for Howard County which had a very slight increase) while median household incomes continued to moderately increase. As a result, housing became more affordable once again after 2006. The last chart clearly shows the slowdown in the growth of household incomes after 2006. This is largely a result of the recession and the slow recovery that followed with years of relatively stagnant wages.

First Time Homebuyers Affordability – 1995 to 2004

As indicated in the first section of this report describing the methodology, the first time homebuyers HAI adjusts the results based on two additional factors derived from the survey data: 1) the household incomes for first time homebuyers are assumed to be 57% of the median, and 2) the median home price for first time homebuyers is 85% of the median. In addition, it is assumed that first time homebuyers place a 5% down payment versus the traditional 20%. Interest rates are thus somewhat higher given private mortgage insurance is factored in. The result of this is that affordability drops for first time homebuyers as shown in the chart below. The relative differences over time and between jurisdictions remain the same, however.

For all jurisdictions the HAI drops below 100 indicating that the typical household has less income than necessary to purchase a typical house for the first time. (Only Prince George's County had an HAI over 100 and only from 2011 to 2013 due to the sharp decline in home prices then.) To provide an example, given Howard County's first time homebuyer HAI of 78% in 2014, it can be stated that the typical first time buyer can only afford a home priced 22% below the median priced there. This price is $258,600 (78% of 331,500, which is 85% of the $390,000 median in 2014).



Summary

Over the past 20 years housing affordability has fluctuated widely as home prices sharply increased, then significantly decreased during the recession, and then modestly rebounded thereafter. Over these two decades, mortgage rates have steadily declined, allowing homes to be more affordable than they otherwise would have been. Comparing 1995 to 2014, housing is more affordable in all jurisdictions in the region except Howard and Montgomery counties. For these two jurisdictions, despite being the two wealthiest counties in the region (and in the Maryland), increases in household incomes have not kept pace with increasing home prices during periods of their rise.

For repeat homebuyers the HAI has been over 100, and thus affordable for residents in all jurisdictions, except during the midpoint of the last decade when housing prices had reached their peak. For first time homebuyers, however, housing is still out of reach for many. As of 2014, the HAI for first time homebuyers remains below 100. Purchasing a first home remains a challenge across the region, highlighting the continued importance of providing low and moderate income housing units. Inclusionary housing and other policies and programs, both at the county and State level, remain an important priority to help provide affordable housing in the region.