Colorado Housing Affordability

Market Adjustments Won't 'Take Care' of the Challenge Without Unprecedented Value Declines

COLORADO FUTURES CENTER

2022

A Note from the Colorado Futures Center

The Colorado Futures Center is pleased to release this research brief exploring the potential for market adjustment to substantially address the state's housing affordability challenges. This work was inspired by a recently released collaboration with the Keystone Policy Center assessing housing affordability for teachers in Colorado's public school system and is the first in a series of planned research briefs designed to update our 2018 Factors Impacting Housing Affordability study. We are grateful for the generous support of the Colorado Health Foundation that is making this housing series possible.

In its time, the Factors study was the most comprehensive exploration of the complex set of drivers affecting housing affordability in Colorado. In the four years that have passed since the publication of the 2018 study, the relative impact of each of these factors has evolved in their importance while new factors have emerged. What hasn't changed is that affordability continues to be a challenge for many Coloradans. This research series will update the 2018 Factors study and update it for current circumstances by exploring topics such as:

- *A detailed update to the original factors and their current impact on affordability, with a specific focus on the changing nature of supply and demand in the housing market*
- *Housing affordability by major occupational groups*
- *The role of household socio demographics in determining housing affordability*
- *The role of investors in the exacerbating the affordability challenges*
- *The impact of foregone wealth accumulation, largely due to the foreclosure patterns statewide, from prior to the Great Recession to the present*
- *The role of housing in supporting health in Colorado, and*
- *Updated insights into the profile of evictions in the state*

Throughout the remainder of 2022 and into early 2023, we plan regular releases of these research updates with the hope that updated series better informs housing policy throughout Colorado. Beyond this series, the Colorado Futures Center looks forward to continued opportunities to provide research in support of meaningful housing policy reform in the state.

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The Colorado Futures Center is a 501c3 organization dedicated to informing about economic, fiscal and public policy issues impacting community economic health and quality of life.

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EXECUTIVE SUMMARY

Colorado's housing affordability challenge has been well documented, particularly as it became more acute in the second half of the last decade. The state's strong recovery from the Great Recession and the pandemic, coupled with strong housing demand and limited supply on the market resulted in price pressures greater than any the state had seen in decades. However, the past few months have foretold changing economic conditions. While recession is not yet in the forecast, the state's economy is showing vulnerabilities to broader macroeconomic conditions and is exhibiting signs of slowing.

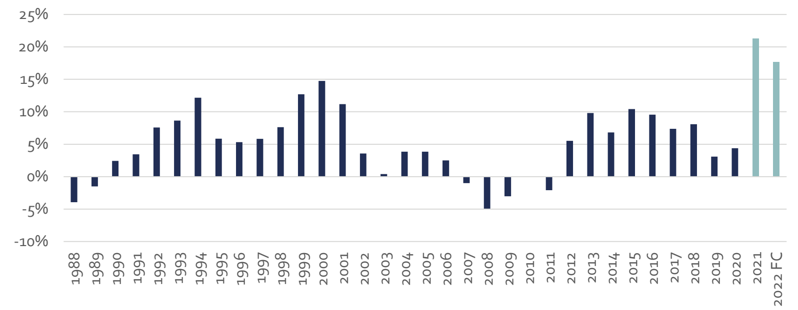
It is reasonable to consider the cautionary economic news of the last months, specifically those related to the increase in interest rates and their impact on housing, and wonder if, under emerging economic conditions, the changing market will take care of Colorado's housing affordability challenges. In fact, the "will the market correct itself" question is posed increasingly as the economic conditions evolve. This research brief explores the concept of the housing market "correcting" itself by assessing the extent of the decline in home values required, by county, in order for the same share of owner occupiable housing stock to be affordable to the median income in 2021 as was affordable to the median income in 2015.

While markets do "correct," achieving 2015 levels of affordability through a correction would require a significant decline in housing values. Specifically, a correction to 2015 levels of affordability would require a statewide 32 percent decline in housing values, with county level declines ranging from a high of 59 percent to a more modest 15 percent. Market correction alone will not restore relative affordability without considerable market pain.

Housing Affordability in Colorado: A Recent Retrospective

In the wake of the Great Recession, housing affordability in Colorado has been a well-documented challenge. Since mid-2015, the S&P/Case Shiller CO-Denver Home Price Index, one of the standard measures of housing values, has increased at a compound annual rate of 10 percent. More pointedly, the year over year (YOY, July) growth rates in the Case Shiller index for 2021 and 2022 forecast are the two highest rates of growth since the development of the index in 1987.

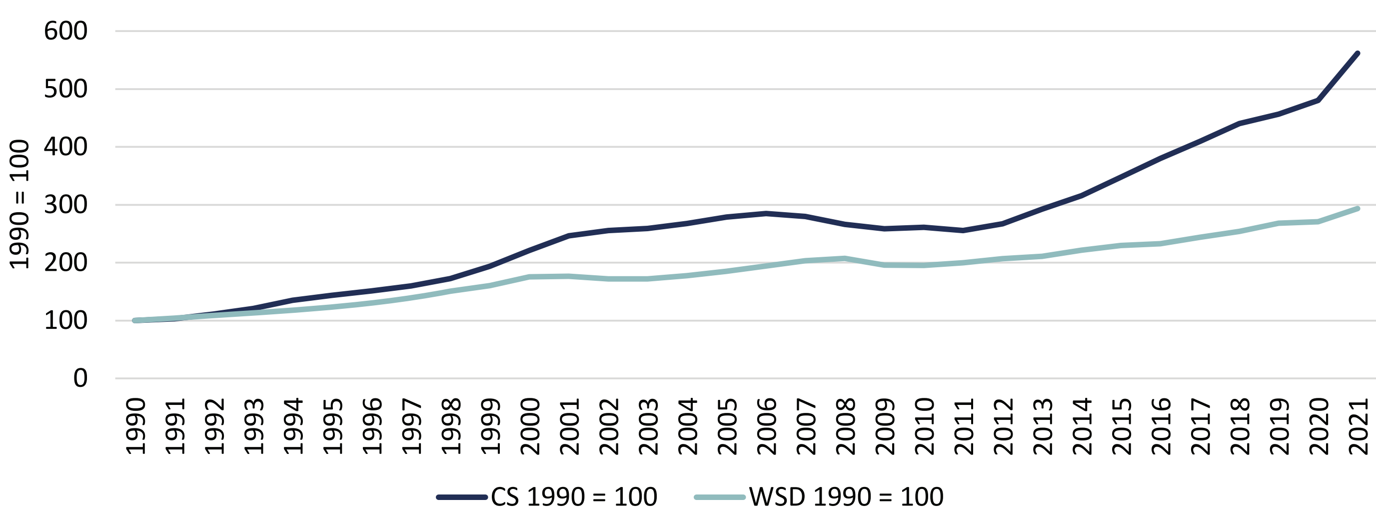
YOY July Growth in S&P/Case Shiller CO-Denver Index



Source: S&P Dow Jones Indices LLC, S&P/Case-Shiller CO-Denver Home Price Index [DNXRSA], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DNXRSA, September 12, 2022.

Adding to the stress of accelerating housing cost pressures, wages failed to keep pace with the increases. Since 1990, housing prices, as measured by the Case Shiller index, grew at a compound annual rate of 5.7 percent while per capita wage and salary disbursements grew at a 3.5 percent compound rate. In the three decades since 1990, this has led to an increasing gap between housing prices and wages, with the largest acceleration in that gap occurring in the past two years.

Per Capita Wage and Salary Disbursements v. Case Shiller Index, 1990=100



Source: S&P Dow Jones Indices LLC, S&P/Case-Shiller CO-Denver Home Price Index [DNXRSA], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DNXRSA, September 12, 2022; BEA.

As a result of this dynamic, in 2021 fewer than one in three homes in 72 of Colorado's 178 school districts were affordable to a teacher earning at the district average. Yet, the challenge was not always this acute.

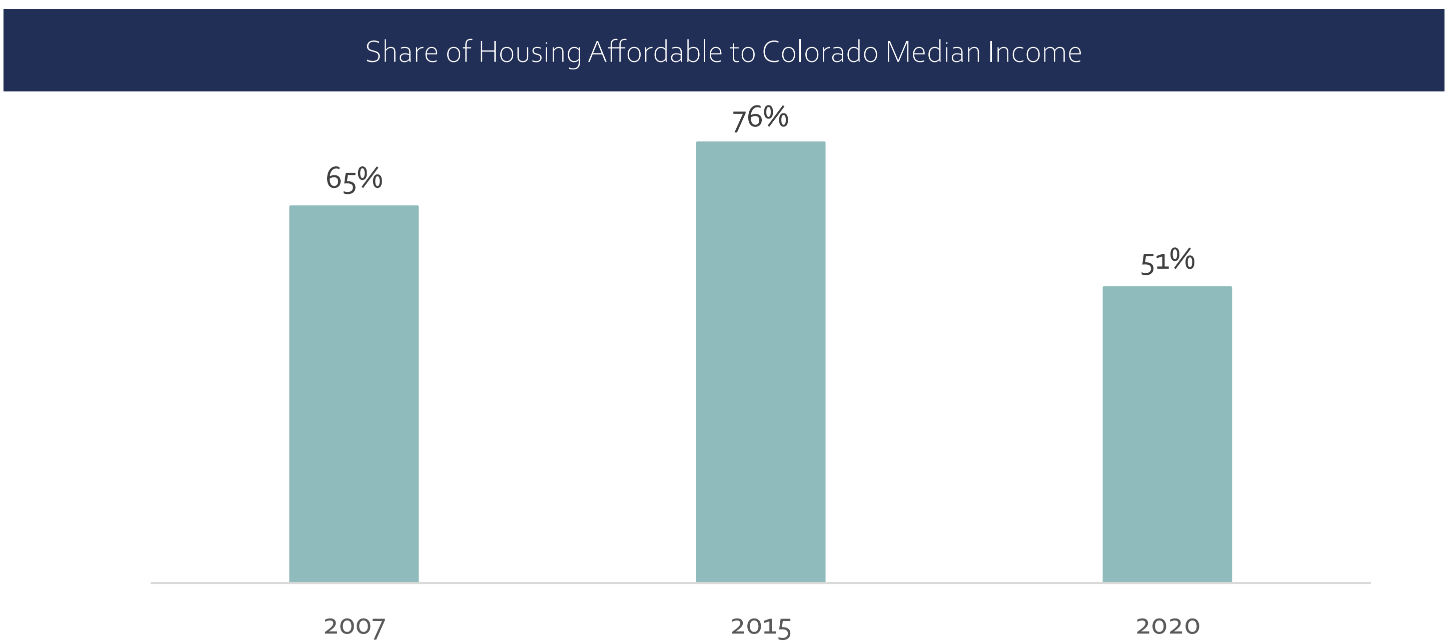
2015 as a Period of Relative Housing Affordability in Colorado

Most Coloradans likely did not identify the middle of the 2010s decade as a period of relative housing affordability. However, a retrospective assessment of housing affordability from the period just before the Great Recession to the current year demonstrates the relative affordability of the middle 2010s.

In that mid-decade period, the confluence of near historic low mortgage interest rates coupled with valuations that had not yet fully accelerated (as they were about to experience in the early part of the 2020s) resulted in a dynamic that rendered a larger share of owner occupiable housing units[1] affordable to the median income household in 2015 than in either 2006 or 2021. This is predominately because the interest payment is the largest component of the monthly payment for most homeowners and the low mortgage interest rate environment significantly reduced that component of the carrying cost of a home.

Because of the convergence of the financing and housing valuation environment, the house value affordable[2] to the median Colorado income increased by 36.6 percent in the eight years between 2007 and 2015.[3] In the following five years, the value affordable to the median increased by only 7.6 percent. The following graphic shows the change in the share of housing statewide affordable to the median income household and demonstrates the relative affordability of the period in the middle of the last decade.

Can market adjustments alone restore 2015 levels of affordability?



Source: CFC calculation, see Metadata and Methodology for further detail.

1 Mobile homes are excluded from the calculations of share affordable. Each of these classes of housing is excluded because there are not consistent data to complete the calculations. The remainder of the stock is characterized as owner occupiable because it is likely to be available for sale to an owner occupier. This does not mean that each of these units is available on the market at the time of this writing.

2 The affordability calculation includes the following components of carrying cost of a home: principal and interest on a conforming loan with a 20 percent down payment, property taxes at the statewide average mill, insurance and utilities. The home is considered affordable if the monthly payment does not exceed 30 percent of monthly income. See the Methodology and Metadata section for more detail on the calculation. Data on HOA fees are not available and are therefore excluded from this analysis.

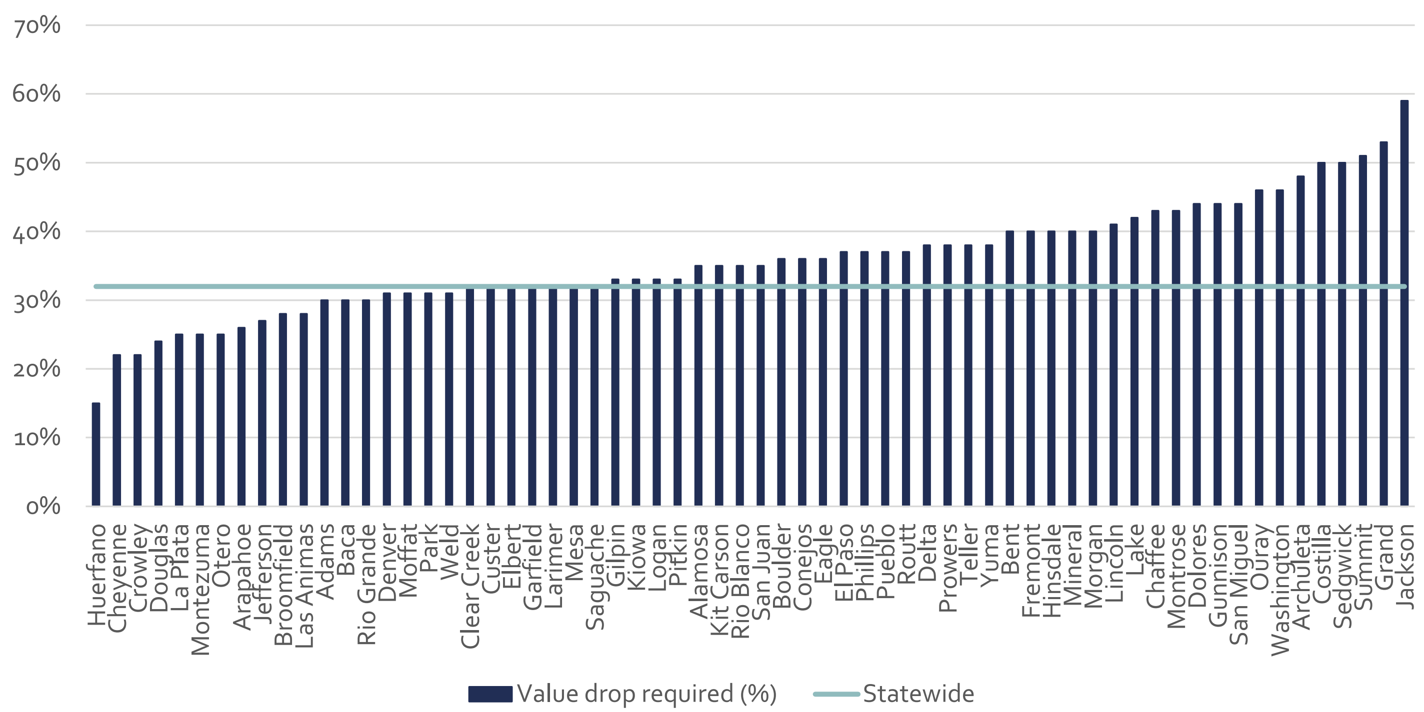
3 All affordability calculations are performed on the assessor's valuation of the property. In Colorado, properties are reassessed to market every other year. Nevertheless, our research demonstrates that the assessor value underestimated market value in Colorado's rapidly increasing housing markets.

Achieving 2015 Affordability: House Value Adjustment Necessary

There are three primary components to housing affordability: the value of the home, the household income available to support the carrying cost of the home and the mortgage interest rate. These variables, and others, interact to determine the level of housing markets. For example, as incomes rise (all else equal) that increasing purchasing power could place upward pressure on housing values. Conversely, rising interest rates, which increase the cost of borrowing and thus the monthly house payment, can place downward pressure on home prices by reducing buyers' ability to maintain the monthly carrying costs. This analysis explores the combination of these phenomena by modeling median family incomes as of 2021 and mortgage interest rates of 6 percent. The analysis assesses the potential for a "market correction" to restore housing affordability by estimating the home value decline required in the current market in order for the same share of housing to be affordable to the 2021 median family income as was affordable in 2015. The analysis was conducted by county with a summary finding for Colorado overall.

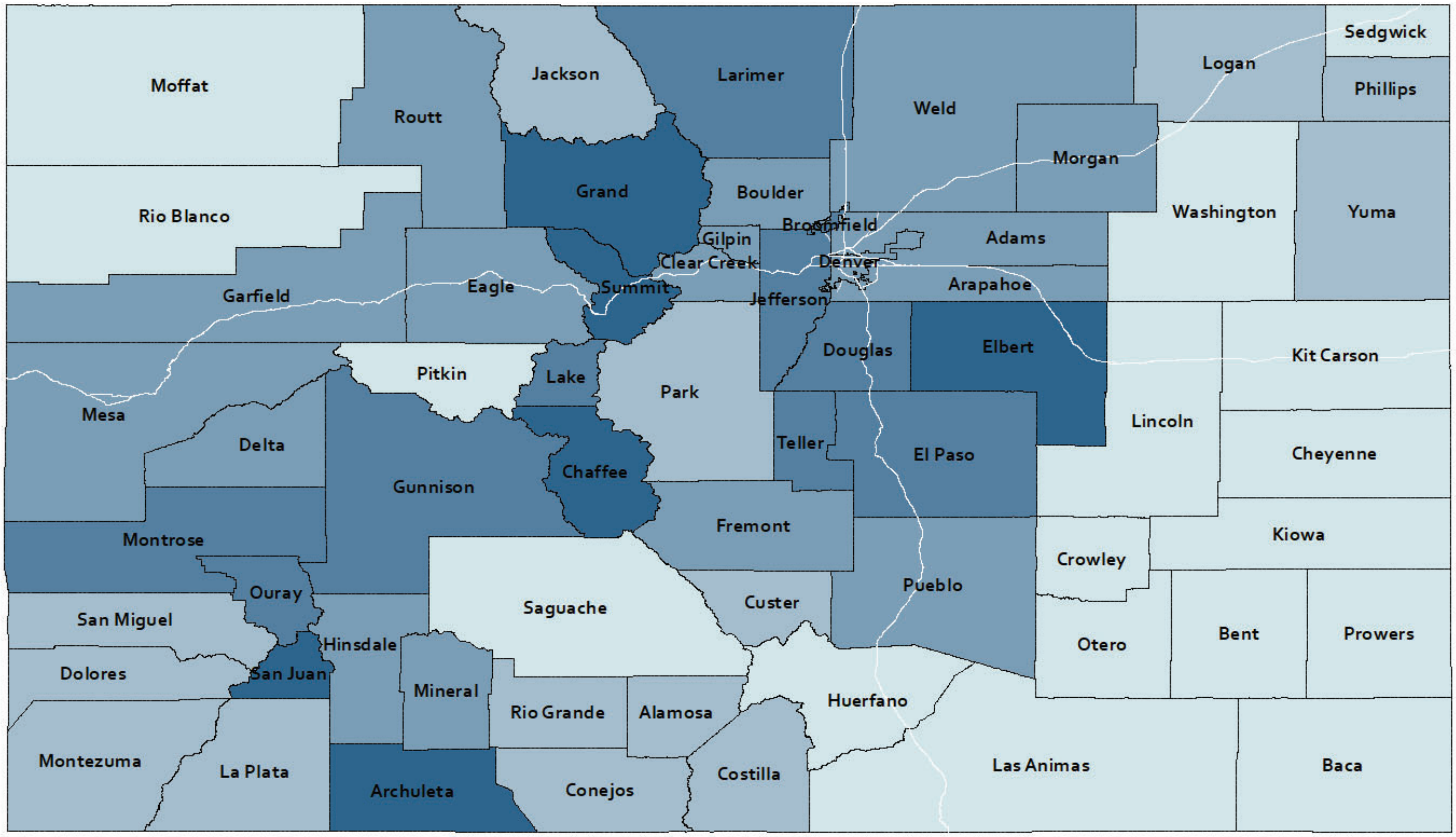
Statewide, a 32 percent housing value decline is required for the same share of the owner occupiable housing stock to be affordable to the median income family as was affordable in 2015. But statewide levels obstruct the vast differences geographically across Colorado. The majority of Colorado's counties require value declines in excess of the statewide level; county level required declines range from 15 percent to 59 percent. While the circumstances of each county vary, the core finding is that regardless of the county the required decline for the market to address the affordability problem is in excess of 15 percent. In the 35-year history of the Case Shiller index, the largest statewide decline (which occurred during the depth of the Great Recession) was 4.9 percent. Market adjustment alone cannot restore affordability without unprecedented value declines and significant market pain.

House Value Adjustment Required, by County



Source: CFC calculation, see Metadata and Methodology for further detail.

Change in Share Affordable 2015 - 2021



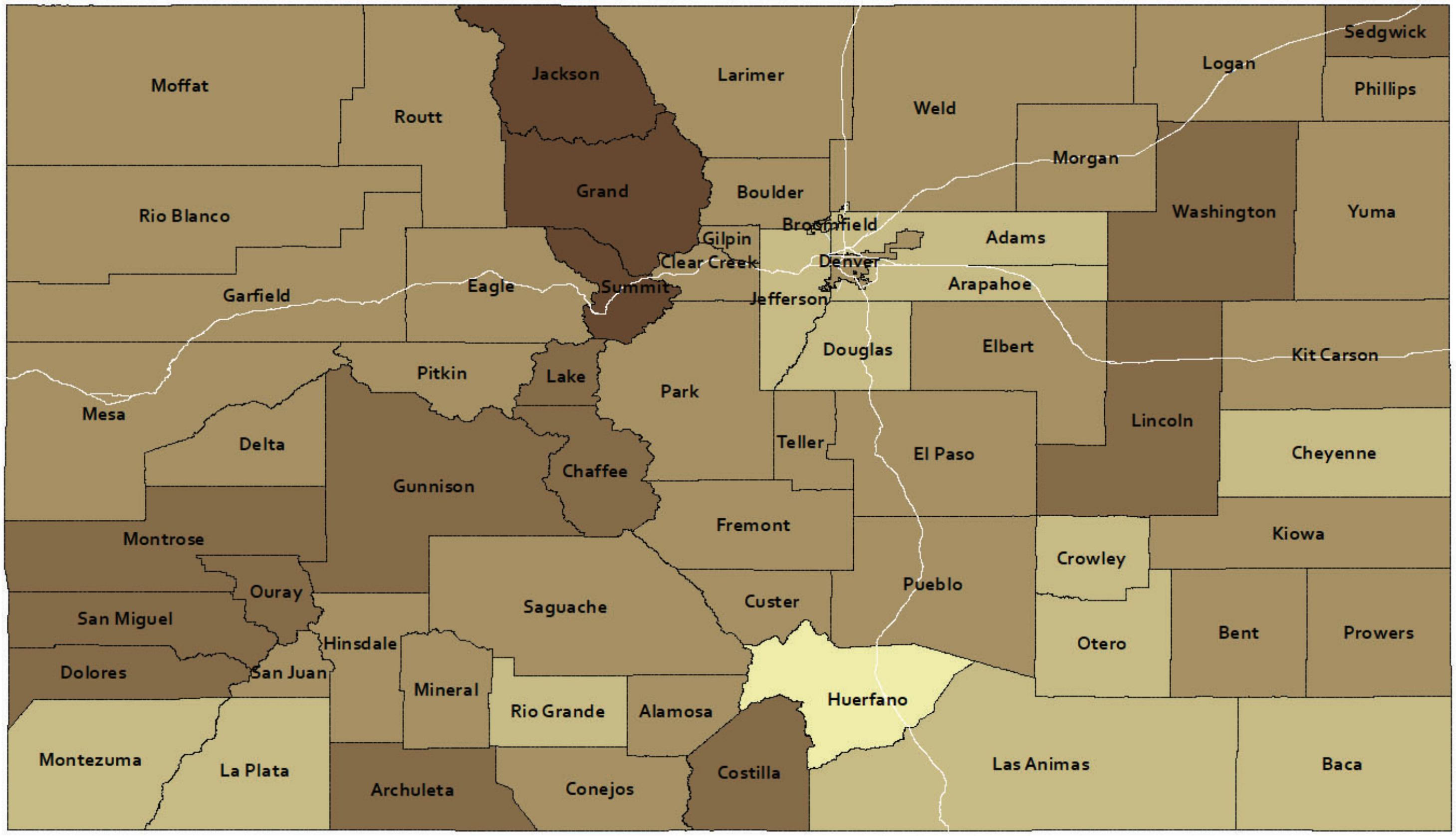
Share Affordable Change 2015-2021

- -54% - -43%
- -42% - -32%
- -31% - -22%
- -21% - -11%
- -10% - -1%

Explore the County-Level Data at:

https://bit.ly/3DvGMg5

House Value Adjustment Required to Restore 2015 Affordability

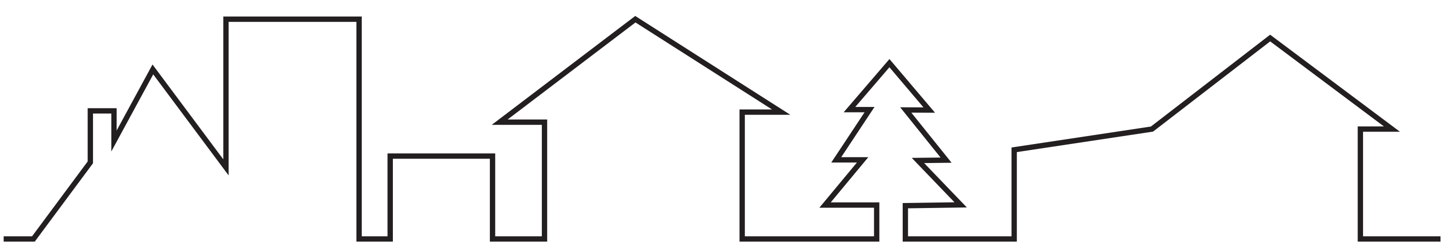


Housing Value Drop Required

- 15% - 20%
- 21% - 30%
- 31% - 40%
- 41% - 50%
- 51% - 60%

Explore the County-Level Data at:

https://bit.ly/3DvGMg5



Metadata and Methodology

Modeling assumptions:

- Median family income by county for affordability adjustment analysis from HUD at https://www.huduser.gov/portal/datasets/il.html#null
- Statewide median income for 2015 affordability comparisons from St. Louis Federal Reserve branch bank at https://fred.stlouisfed.org/series/MEHOINUSCOA646N
- Housing data from Colorado Legislative Council abstract project. Valuations are assessor valuation and not sales prices and the affordable share is of the existing housing stock available for ownership but not necessarily available for sale in the model year. For this analysis rental units and mobile homes are excluded because complete monthly cost data are not available.
- A house is considered affordable if the monthly house payment is 30% or less than monthly pre-tax income. Monthly house payment includes the following components:
    - o Principal and interest
    - o Property taxes
    - o Insurance
    - o Utilities
- Principal and interest payments calculated based on a conforming loan with 20% down at the prevailing interest rates. Interest rates from FreddieMac at http://www.freddiemac.com/pmms/pmms30.html.
- Valuation for property taxes calculated using the assessed value adjusted by the appropriate residential assessment rate. Property taxes at the county level calculated with the average county mill from the Colorado Division of Property Taxation's Annual Reports at https://cdola.colorado.gov/publications/annual-reports.
- Insurance is modeled at $3.50 per thousand dollars of value in the current year. See https://www.sapling.com/6826700/estimate-property-insurance. Previous years are adjusted by CPI (see table below for specific value assumptions).
- Utilities are modeled at 3.5% of income. See https://www.nrdc.org/experts/khalil-shahyd/study-highlights-energy-burden-households-and-how-energy-efficiency-can-help.

The following table summarizes the parameters used in the modeling of both 2015 affordability and the affordability adjustment analysis.

	2007-08	*2015-16*	*2021-22 current*	*2022 Value Adjustment Analysis*
Mortgage Interest rate	6.19%	3.75%	5.14%	6.00%
Mortgage Interest rate - monthly	0.0061182	0.00463115	0.00545411	0.005995
Insurance (per $1000 of value)	$ 2.73	$ 3.08	$ 3.50	$ 3.50
RAR	7.96%	7.96%	7.15%	7.15%
Utilities (percent of monthly income)	3.50%	3.50%	3.50%	3.50%
Average mills - Colorado	72.882	76.564	83.436	Varies by county

ACKNOWLEDGEMENTS

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