

She Sells Resales by the Seashore

Analyzing Corpus Christi Housing Affordability

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Cities across Texas consistently name housing affordability as the predominant issue facing housing planners and policymakers. Over the past several years, the Texas Real Estate Research Center has partnered with a number of these cities and provided them a series of housing affordability analyses. Corpus Christi is one of those cities.

Modeling Housing Affordability in Corpus Christi

The Center collaborated with the City of Corpus Christi Planning Department in 2018 to quantify both owner- and renter-occupied housing affordability in the city and Nueces County. This article focuses solely on the results for owner-occupied housing affordability. Results for renter-occupied housing affordability are at the City of Corpus Christi's website (use the QR code to access).



The Takeaway

The Texas Real Estate Research Center has conducted housing affordability analyses for housing planners and policymakers in several cities. An analysis of Corpus Christi, for example, found a shortage of homes for those in the lowest and highest income cohorts.

This project used 2017 data to compute housing affordability. Assumptions for the home price-to-income multiplier included an interest rate of 4.28 percent, a loan-to-value (LTV) ratio of 89.5 percent, a debt-to-income (DTI) ratio of 39.75 percent, and the additional expenses of homeownership at 6 percent of property value. With a resultant value of 3.52, the price-income multiplier indicates that a household earning \$50,000 could afford a home priced at \$175,893.

Findings indicate that in both Nueces County and the City of Corpus Christi the lowest and highest income

cohorts faced a supply shortage of owner-occupied units. For instance, in Nueces County extremely low-income households comprised 16.3 percent of the total population, but only 9.6 percent of homes in the county were affordable to these households (Table 1). Meanwhile, market-rate households represented nearly half (46.1 percent) of households in Nueces County, but only one-quarter (24.4 percent) of homes were affordable to them.

The City of Corpus Christi showed similar proportions for demand and supply (Table 2). The lowest-income households had to spend more than what was reasonably affordable to them to purchase a home, while the highest-income households were “buying down” (spending less than is reasonably affordable to them and purchasing lower-priced homes).

As anticipated, findings indicated housing affordability varies spatially across Nueces County. Map 1 shows median family income (MFI) by U.S. Census tract in Nueces County, while Map 2 displays the distribution of homes by sales price in the county. Higher-income households live in the suburbs, while lower-income

households live in and around downtown. Meanwhile, the vast majority of homes for sale in Nueces County were priced from \$100,000 to \$300,000 and are in the suburbs and along the county’s periphery.

The dearth of homes for sale downtown, coupled with the considerable proportion of lower-income households in that area, indicates such households would generally have to relocate to the suburbs to purchase a home. Such a phenomenon could leave downtown deserted, potentially posing significant issues for the vitality of the area. As such, the City of Corpus Christi is using the results from this study to inform and shape revitalization efforts in the greater downtown area neighborhoods.

A Future Role for the Center

Quantifying housing affordability proves an especially important, albeit complicated, task.

Cities and communities generally face a two-faceted challenge. Meaningful data and quality analyses are necessary to assess housing affordability and, therefore, to resolve the issues. However, those data are often elusive

Table 1. Results for Nueces County Using MLS Data (2017)

Income Cohort	Range in Family Income	Range in Maximum Home Price Affordable	Percent of Owner-Occupied Households	Percent of Owner-Occupied Units	Over or (Under) Supply
Extremely Low Income	\$0–\$24,600	\$0–\$86,539	16.3%	9.6%	(6,951)
Very Low Income	\$24,601–\$31,050	\$86,540–\$109,229	4.9%	6.4%	1,648
Low Income	\$31,051–\$49,700	\$109,230–\$174,837	13.7%	27.0%	13,836
Workforce	\$49,701–\$75,720	\$174,838–\$266,372	19.1%	32.6%	14,076
Market-rate	\$75,721+	\$266,373+	46.1%	24.4%	(22,608)

Sources: U.S. Department of Housing and Urban Development, CoreLogic, Nueces County Appraisal District, and Texas Real Estate Research Center at Texas A&M University

Table 2. Results for the City of Corpus Christi Using MLS Data (2017)

Income Cohort	Range in Family Income	Range in Maximum Home Price Affordable	Percent of Owner-Occupied Households	Percent of Owner-Occupied Units	Over or (Under) Supply
Extremely Low Income	\$0–\$24,600	\$0–\$86,539	15.7%	9.8%	(5,335)
Very Low Income	\$24,601–\$31,050	\$86,540–\$109,229	4.7%	6.7%	1,782
Low Income	\$31,051–\$49,700	\$109,230–\$174,837	13.4%	28.6%	13,624
Workforce	\$49,701–\$75,720	\$174,838–\$266,372	19.4%	34.7%	13,744
Market-rate	\$75,721+	\$266,373+	46.8%	20.2%	(23,815)

Sources: U.S. Department of Housing and Urban Development, CoreLogic, Nueces County Appraisal District, and Texas Real Estate Research Center at Texas A&M University

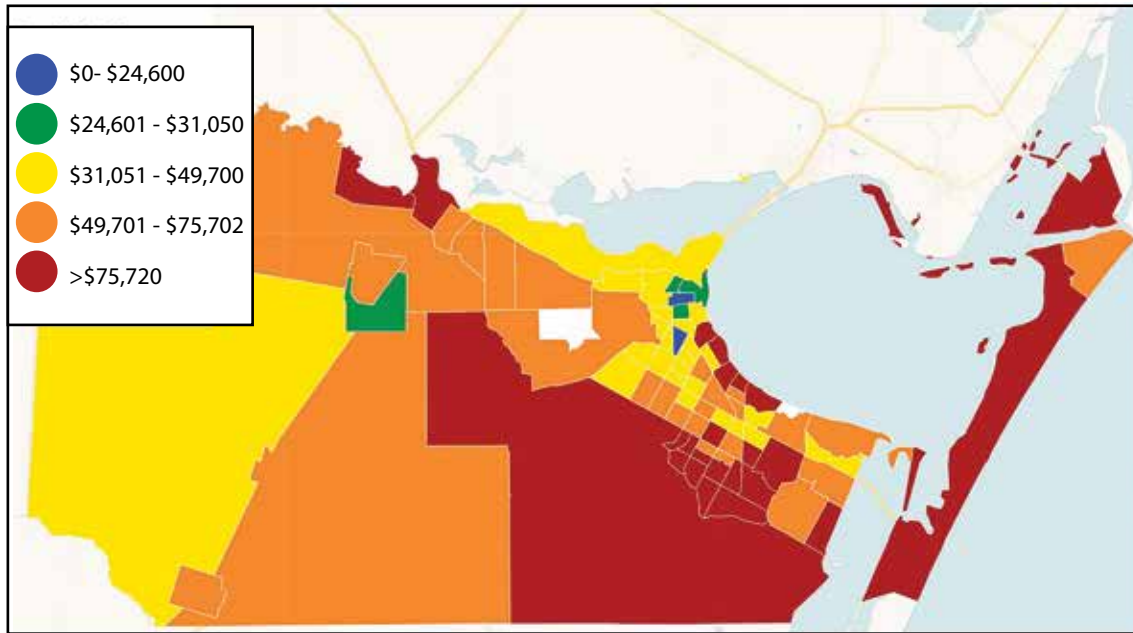
or proprietary, and common measures of affordability largely oversimplify the problem, failing to frame the issue fully.

and communities across the state to address their housing challenges. 📍

Equipped with a considerable warehouse of data and a nuanced approach to modeling housing affordability, the Center remains committed to collaborating with cities

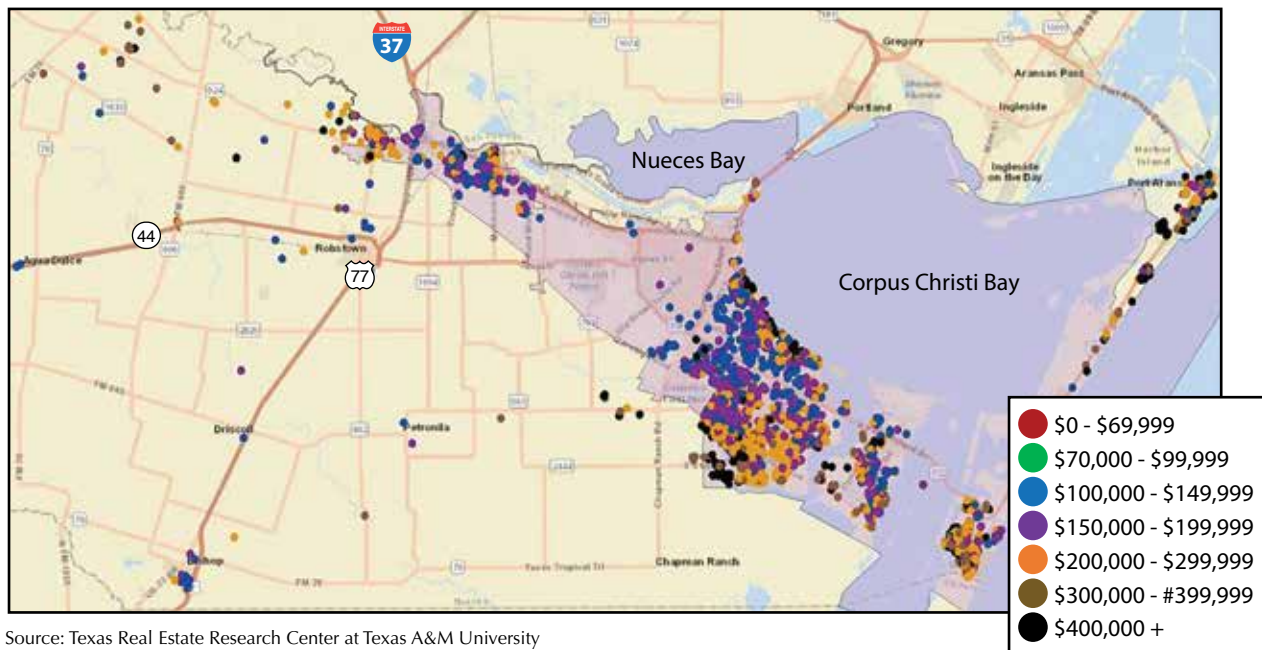
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Map 1. Median Family Income in Nueces County by Census Tract, 2016



Source: U.S. Census Bureau

Map 2. Spatial Distribution of All Residential Sales in Nueces County



Source: Texas Real Estate Research Center at Texas A&M University

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Problems Measuring Affordability

There are a variety of ways to frame housing affordability, but most research compares owner- and renter-occupied housing affordability. The U.S. Department of Housing and Urban Development (HUD) guideline, which stipulates that renters who spend more than 30 percent of income on rent are cost-burdened, serves as the basic guideline for subsidized rental housing. In other words, federal housing policy dictates that recipients of subsidized rental housing spend a maximum of 30 percent of their income on rent. Because it establishes a national precedent for the acceptable ratio between housing costs and household income, the HUD guideline is the most popular indicator of renter-occupied housing affordability.

Meanwhile, there are several popular measures of owner-occupied housing affordability, including the Median Multiple (also known as the home price-to-income ratio), the HUD Measure (also known as the 30 percent of income standard), and the National Association of Realtors' (NAR) Housing Affordability Index (HAI). While the former two measures solely require either home price or housing costs and household income, the latter measure recognizes that homeownership is inherently a function of mortgage financing terms for the vast majority of Americans.

In 2020, approximately 90 percent of buyers nationwide acquired mortgage financing to purchase a home, so measures of purchase affordability should reflect the prevailing mortgage financing terms. The NAR HAI includes the mortgage interest rate, loan term, loan-to-value (LTV) ratio, debt-to-income (DTI), and, in the instance of the First-Time Homebuyers Affordability Index, private mortgage insurance.

The measures of owner-occupied housing affordability just described produce a single estimate for a large geography, whether a city, county, MSA, etc. These measures offer a rather broad perspective

of affordability but fail to capture the nuance in affordability at the household and neighborhood levels.

For instance, the HAI uses predetermined values for the LTV and DTI ratios (80 percent and 25 percent, respectively) across all geographies, as opposed to reflecting local estimates. While convenient for application and interpretation, the HAI computes affordability using the MFI and median home price, as opposed to calculating affordability for a number of values across the income and price distributions.

Furthermore, housing affordability varies considerably across neighborhoods. Higher-income households generally face fewer affordability constraints than lower-income households, while the differentiation in home prices across neighborhoods indicates affordability must be modeled spatially.

How the Texas Real Estate Research Center Model Works

Equipping public and private markets and nonprofit organizations with meaningful data and quality analyses is important, so the Center continues to prioritize the development (and refinement) of a methodology to quantify housing affordability. Four major aspects of the Center's methodology improve on existing measures of owner-occupied housing affordability:

By categorizing households into one of five income cohorts—extremely low-income (earning up to 30 percent of median family income), very low-income (31 to 50 percent), low-income (51 to 80 percent), workforce (81 to 120 percent), or market-rate earners (above 120 percent)—it computes affordability across the income distribution.

It computes affordability within individual U.S. Census tracts (virtually synonymous with “neighborhoods”).

It applies local estimates of the LTV and DTI ratios, as opposed to assuming a single estimate for all geographies.

It reflects the additional costs of homeownership beyond the direct mortgage payment (i.e., property taxes and insurance).

Based on assumptions about the mortgage interest rate, LTV ratio, DTI ratio, and annual expenses associated with homeownership, the Center computes the home price-to-income multiplier. This multiplier reflects the maximum home price affordable to a particular household. For instance, a multiplier of 3.0 indicates a household can afford a home price equivalent to three times its income. The Center uses the multiplier to compute the range in home prices that is affordable to a particular income cohort.

Using the home price ranges affordable to each income cohort, the Center then computes demand and supply for each income cohort. Household demand for homeownership is simply a function of the proportion of households in a particular geography with incomes that fall in the income range for that cohort. The Center uses income data from the U.S. Census Bureau's American Community Survey (ACS). Meanwhile, the supply of affordable homes is a function of the proportion of homes in a particular geography with estimated values that fall in the price range affordable to a specific income cohort. The Center generally uses Multiple Listing Service (MLS) data; however, in the event that the geography does not contain sufficient home sales, the Center uses data from the local appraisal district or the ACS. MLS data reflect homes that have recently sold, while the ACS obtains estimates of purported home value from the head(s) of household. MLS data provide a more accurate source of the home sales price, but they may not be available for smaller geographies. ➔