Home Prices, Incomes Create Affordability Gap

James P. Gaines
June 8, 2015

Publication 2102

Housing affordability refers to the relationship between housing costs and household income. A household, whether an individual or a family, is the basic demand unit for a housing unit. The dollar amount a household can afford to purchase or rent a home is a direct function of its income.

The Takeaway

Housing affordability rests on the relationship between home prices and household incomes, both of which have risen over the past two decades. Since the Great Recession, however, home prices have increased but incomes have not kept pace, casting uncertainty on future Texas home affordability.

The principal measures of housing affordability are the homebuying (purchasing) power of a dollar of income and the ratio of monthly housing costs (payments or rent) to monthly income. Texas housing affordability therefore requires analysis of the relationship between Texas house prices and household income levels and the changes in each relative to changes in the other.

The rapid increase in home prices in most Texas markets since 2011 has caused concern regarding housing affordability in the future. The statewide median home price set a record high each of the past five years and increased a total of 24 percent from 2012–14 (Figure 1). The median price for a home increased even more in many communities. But the increases in the past three years are somewhat misleading. During the ten-year period since 2004, the Texas median home price increased an average of 3.6 percent per year, which is only one-half a percentage point less than the 4.1 percent long-term average rate of increase.

However, the "Texas Price Gap," the competitively advantageous difference between the Texas median home price and the national median, has narrowed substantially. Historically, the Texas median-priced home equaled about 25 to 30 percent less than the national median price. In 2006, when the national median price ballooned to its peak, the

Texas median-priced home was 36 percent lower than the national median price. By 2014, the difference declined to slightly less than 12 percent (Figure 2).

Home-Price-to-Income Ratio

The relationship between home prices and household incomes is a major key to a competitive future housing outlook. Because of lower overall home prices, Texas households have been able to keep the home-price-to-income ratio within a healthier financial range than in many other states and the nation.

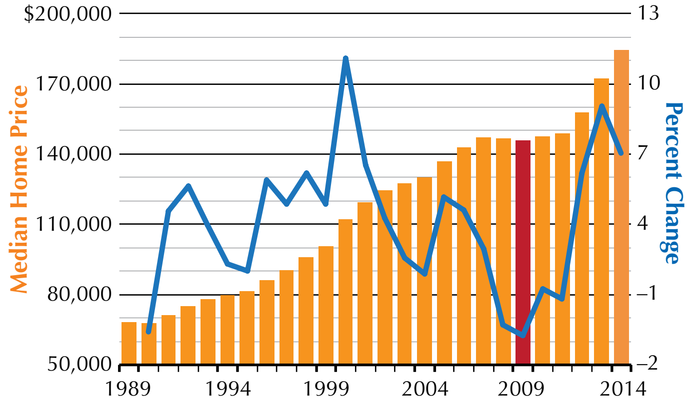
Sound mortgage underwriting guidelines suggest that the typical household can generally afford to buy a home priced between 3 and 3.5 times its annual income with a 20 percent down payment and a 30-year, fixed-rate mortgage. If market conditions force buyers to pay substantially more than this, buyers may make lower percentage down payments. The resulting mortgage payments become a higher percentage of monthly income, causing potential delinquency problems. During the 2003–06 housing boom, lower interest rates and easy credit terms caused the national price-to-income ratio for existing homes to exceed 4.0, peaking at more than 4.7, and new home buyers paid more than five times their annual income (Figure 3).

The national home price bubble is apparent in Figure 3 as the price-to-income ratio for existing homes went from a reasonable 3.53 in 2000 to 4.73 in 2005 and 4.6 in 2006 and then reverted to 3.5 by 2009. The price bubble for new homes was even more pronounced as the ratio increased from 4.0 in 2000 to 5.2 in 2005. Exuberant home demand fueled by subprime mortgages led to aggressive bidding for a limited supply of new and existing homes during those years.

Recent figures may cause concern of a return to an overpriced housing market nationally as the new home-price-to-income ratio is estimated to have reached 5.3 and the existing home ratio to be greater than 3.9 in 2014. By themselves, these levels are not alarming, but if the upward trend continues, it could signal a more significant problem.

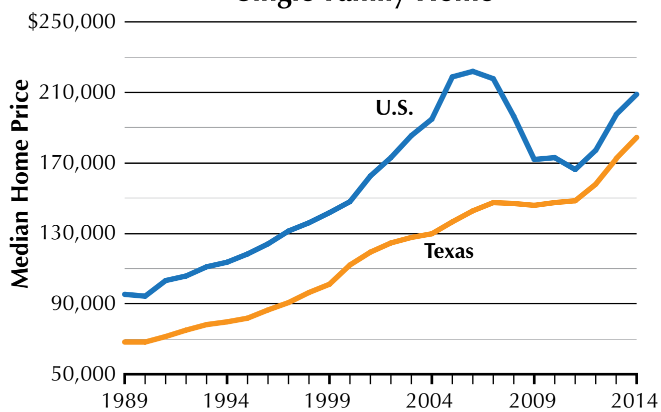
With notably lower-priced housing, Texas homebuyers have not been forced to pay such high multiples of annual income for their homes. The lower mortgage interest rate environment of the 2000s has allowed the price-to-income ratio to expand from less than 3 to roughly 3.2

Figure 1. Record Texas Median Home Price Five Years in a Row



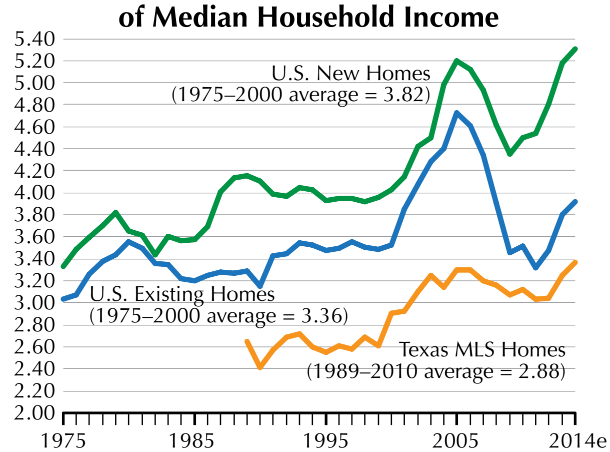
Source: Real Estate Center at Texas A&M University

Figure 2. U.S. and Texas Median Price Single-Family Home



Sources: National Association of Realtors and Real Estate Center at Texas A&M University

Figure 3. Median Home Price as a Multiple of Median Household Income



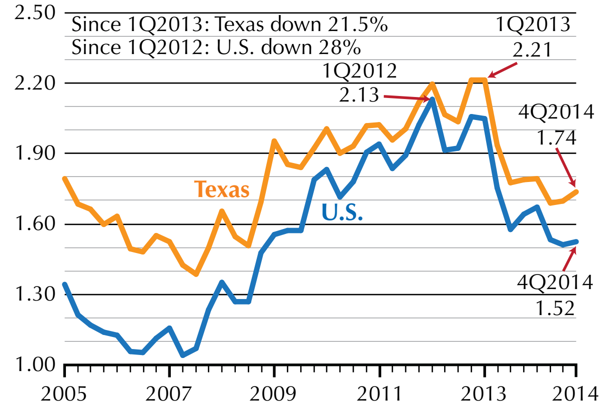
Sources: U.S. Census Bureau, National Association of Realtors and Real Estate Center at Texas A&M University to 3.3. Even during the housing boom, Texas homebuyers were paying no more than 3.3 times annual income. The steeper price increases in 2013 and 2014 caused the statewide price-to-income ratio to move to around 3.25 and 3.4, still generally within a sound range.

Texas Housing Affordability Index

In 2014, Texas continued its long-standing position as a state with affordable housing. According to the Real Estate Center's Texas Housing Affordability Index (THAI), Texas ended 4Q2014 with an index value of 1.74, just slightly less than the 1.79 value recorded in 4Q2013 and the 1.80 average index level since 2005. The 4Q2014 index of 1.74 means that the state's median income was 1.74 times (or 174 percent of) the income required to qualify to purchase the median-priced home with an 80 percent purchase mortgage at the prevailing interest rate and the lender requiring that the total mortgage payment be no greater than 25 percent of the buyer's monthly income. The higher the index value, the more affordable homeownership is in the state.

The THAI peaked in 4Q2012 and 1Q2013 at 2.21; affordability has declined nearly 21.5 percent since then. The comparable U.S. affordability index (as computed by the Real Estate Center) declined nearly 28 percent during the same period (Figure 4).

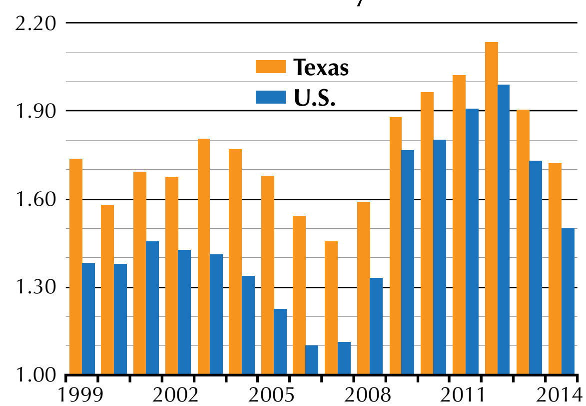
Figure 4. Texas and U.S. Housing Affordability Indexes



Source: Real Estate Center at Texas A&M University

Since 1999, home affordability has gone virtually full cycle in Texas. The composite THAI for 1999 was 1.74. After dipping to 1.58, the index reached a maximum of 1.81 in 2003 and then dropped to 1.45 by 2007. The median home price declined by 0.3 percent and 0.7 percent in 2008 and 2009, respectively, and advanced only 1.2 percent and 0.8 percent in 2010 and 2011. With median home price holding basically flat for these four years, the THAI expanded rapidly, reaching the peak of 2.14 in 2012. With the rapid increases in median home price since 2011, the index fell back to 1.72 for the full year of 2014, essentially equal to the 1999 index (Figure 5).

Figure 5. Texas Housing Affordability Index



Source: Real Estate Center at Texas A&M University Housing Affordability Index

Texas remains a relatively affordable state compared with comparable U.S. measures of affordability. During the 16 years from 1999 to 2014, Texas averaged an index value about 20 percent greater than the comparable U.S. index score. The "Texas spread," or the differential between the U.S. index value and the Texas index, narrowed to only 6 percent in 2011 as home prices nationally bottomed out but has rebounded to a nearly 15 percent spread in 2014.

Texas Household Income and House Price Changes

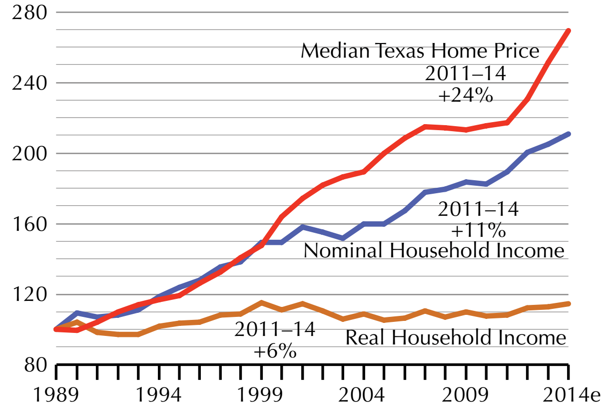
A telling measure of housing affordability stability is the rate of change in home prices over time relative to the change in household earnings. Data in Figure 1 depict the change in the Texas median home price since 1989. Texas' median home price typically increases about 4 percent per year. But it increased 24 percent between 2012 and 2014 and may easily show the same level of increase or more in 2015.

During the same period, Texas nominal household income rose just 11.2 percent, less than half the rate of increase of the median home price. Household income adjusted for inflation increased 6.1 percent during the past three years but is essentially flat relative to the 2001 level and actually less than the 1999 level (Figure 6).

The widening gap between home price and nominal household income that started in 2000 reflects a general decline in the affordability of Texas homes. As the gap widens, households are forced to pay a higher multiple of income for a home.

Overall affordability can be maintained if interest rates and other recurring costs stay low, allowing monthly costs to remain in a sound relationship with monthly income. When interest rates or other monthly costs of housing increase (rent or taxes or insurance costs), overall affordability is reduced. From 1989 through 1999, household income and median home prices tracked tightly with each other. Since 1999, though, the dispersion in the two indexes continues to widen, creating the potential for a greater impact on overall affordability when interest rates start to rise.

Figure 6. Texas Median Household Income and Median Home Price Indexed to 1989 = 100



Sources: U.S. Census Bureau and Real Estate Center at Texas A&M University

Because a large number of homes are purchased using long-term mortgage debt, the amount a household can afford to pay for a home is not only a function of its income but also the terms and conditions of credit available. The two elements work in opposite directions.

Recent efforts to improve national affordability have focused on lowering down payment requirements, especially for lower-income, first-time buyers. Lowering the required down payment may actually hinder overall affordability as it increases the necessary monthly mortgage payment and thereby reduces the home-purchasing power of each dollar of income.

For example, assume a potential buyer can qualify for a 30-year, fixed-rate mortgage at 4.15 percent interest, and the lender limits the total housing payment (principal and interest plus taxes, insurance and utilities, estimated at 5.5 percent of the house price) to no more than 35 percent of monthly income. The home-purchasing power of each dollar of income — the home price multiplier — varies by the percent of down payment the buyer can accommodate (see table).

The greater the down payment, the lower the monthly payment, and the higher the price one can afford to pay. In this example, a buyer with annual income of $70,000 and savings for a 15 percent down payment can afford a home priced at 3.35 times income or $234,500. Note, this is essentially equal to the estimated income multiplier currently in Texas (Figure 3) but substantially less than the indicated national multiplier estimate.

If the same buyer only has funds for a 3 percent down payment, they would be unable to qualify to buy a house priced at more than $219,800. If that same buyer could make a 30 percent down payment, they could buy a home priced at $255,500, a price 16 percent greater than what could be bought with a 3 percent down payment. A buyer that pays more than the indicated maximum home price at any down payment will be forced to spend more than 35 percent of their monthly income in total housing payments, creating greater potential of future default or severely limiting other consumer activity.

The Home-Price Multiplier at Various Down Payments*

Down Payment (Percent)	Home Price Multiplier	Maximum Home Price with $70,000 Income
3	3.14	$219,800
5	3.17	$221.900
10	3.26	$228,200
15	3.35	$234,500
20	3.44	$240,800
25	3.54	$247,800
30	3.65	$255,500

*Assuming 4.15 percent fixed mortgage interest rate; 5.5 percent taxes, insurance and utilities; and 35 percent qualifying ratio.

Applying the same loan parameters as in the example to the 9.11 million Texas households as distributed by annual income indicates that with a 3 percent down payment approximately 46 percent of Texas households could not afford to buy a home priced more than $150,000, meaning they cannot meet the 35 percent limit of total monthly housing cost to monthly income requirement. With a 10 percent down payment, approximately 45 percent of the households could not buy a home priced more than $150,000, and with a 20 percent down payment about 43 percent could not afford a home more than $150,000. Lowering the down payment from 20 percent to 3 percent means that roughly 273,300 Texas households cannot afford to purchase a $150,000 home. This impact becomes even greater at higher interest rates.

Texas and the major Texas metropolitan areas continue to enjoy a housing affordability competitive advantage over most other large population states and communities. Home price increases over the past decades have been relatively modest, without the high volatility resulting from booms and busts. At the same time, economic growth fostered income growth that until 1999 correlated closely with home price changes. Since the 2007 recession, home prices and household incomes have diverged at an accelerated pace, making Texas home affordability in the future more uncertain.

---

*Dr. Gaines (*jpgaines@tamu.edu*) is a research economist with the Real Estate Center at Texas A&M University.*