

Texas Housing Affordability Outlook



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Texas Real Estate Research Center

TECHNICAL REPORT

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Texas Housing Affordability Outlook 4Q2021

About this Report

Texas Real Estate Research Center economists continuously monitor many facets of both state and local housing markets. *Texas Housing Affordability Outlook* summarizes significant state housing activity and trends as related to affordability. Home prices reflect single-family existing homes unless otherwise stated. This report does not seasonally adjust home prices.

This publication is designed to be a one-stop resource for information on housing affordability for potential homebuyers in Texas. We hope you find them as useful as we do. Your feedback is always appreciated. Send comments and suggestions to info@recenter.tamu.edu.

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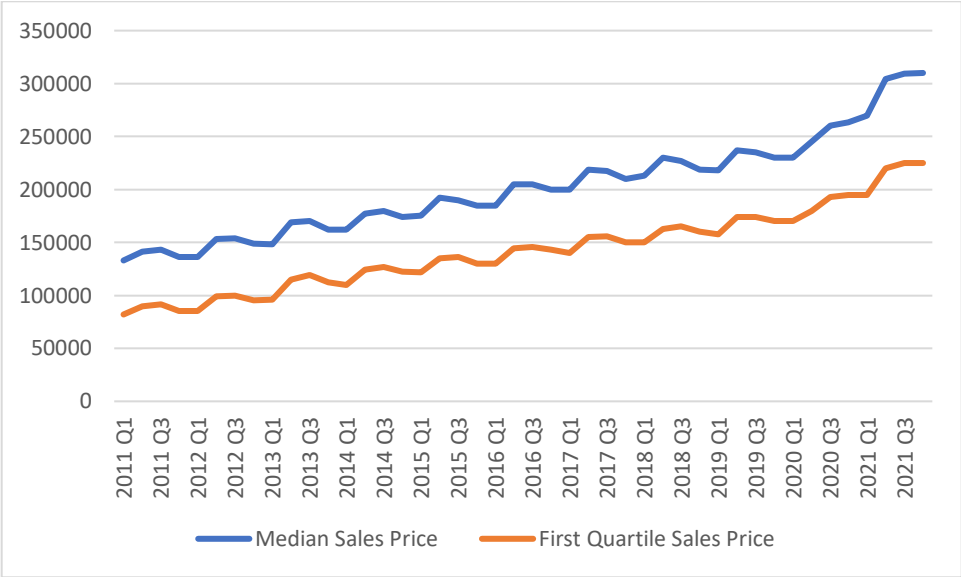


Purchase Affordability

The fourth quarter saw a continued uptick in both the median sales price and first-quartile sales price for Texas (Figure 1).¹ The year-over-year (YOY) growth in median sales price and first-quartile home price in Texas measured 17.6 percent and 15.4 percent, respectively, significantly higher than average YOY growth for the fourth quarter (Table 1). The median sales price exceeded \$300,000, while the first-quartile sales price exceeded \$200,000. Meanwhile, median family income grew a mere 0.8 percent from 2020 to 2021 (Table 2). Without comparable growth in incomes, the rapid rise in home prices will continue to squeeze purchase affordability, or the ability of a household to buy a home.

Meanwhile, mortgage interest rates remained low, averaging 3.08 percent in 4Q2021 (Figure 2). All other things being equal, lower mortgage interest rates translate into lower monthly mortgage payments and ease purchase affordability. The Federal Reserve is widely anticipated to raise interest rates over the near-term to reduce inflationary pressures, which will likely prompt a slight rise in mortgage interest rates.

Figure 1. Texas’ Median and First-Quartile Sales Prices



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

¹ The first quartile reflects the lowest-priced 25 percent of homes sold in a particular geography. The first-quartile sales price represents the highest home price among those lowest-priced 25 percent of homes sold. If the price of the lowest 25 percent of homes sold ranges from \$100,000 to \$150,000, then the first-quartile sales price would be \$150,000.

Table 1. Median Sales Price and First-Quartile Sales Price by Quarter

Year	Median Home Price	YOY Change	First-Quartile Home Price	YOY Change
4Q2011	\$136,000		\$85,450	
4Q2012	\$149,000	9.6%	\$95,500	11.8%
4Q2013	\$162,000	8.7%	\$112,200	17.5%
4Q2014	\$173,900	7.3%	\$122,500	9.2%
4Q2015	\$184,900	6.3%	\$130,000	6.1%
4Q2016	\$200,000	8.2%	\$143,000	10.0%
4Q2017	\$210,000	5.0%	\$150,000	4.9%
4Q2018	\$218,556	4.1%	\$159,900	6.6%
4Q2019	\$230,000	5.2%	\$170,000	6.3%
4Q2020	\$263,500	14.6%	\$195,000	14.7%
4Q2021	\$310,000	17.6%	\$225,000	15.4%

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

Table 2. Median Family Income by Year

Year	Income for First-Time Homebuyers	YOY Change	Median Family Income	YOY Change
2011	\$47,600		\$59,500	
2012	\$48,250	1.4%	\$60,300	1.3%
2013	\$48,100	-0.3%	\$60,100	-0.3%
2014	\$48,250	0.3%	\$60,300	0.3%
2015	\$50,300	4.2%	\$62,900	4.3%
2016	\$50,250	-0.1%	\$62,800	-0.2%
2017	\$51,850	3.2%	\$64,800	3.2%
2018	\$55,050	6.2%	\$68,800	6.2%
2019	\$56,950	3.5%	\$71,200	3.5%
2020	\$59,600	4.7%	\$74,500	4.6%
2021	\$60,100	0.8%	\$75,100	0.8%

Note: The income for first-time homebuyers reflects the income limit for low-income families, who earn no more than 80 percent of the median family income. This table reflects income figures for a four-person family.

Source: United States Department of Housing and Urban Development

Figure 2. 30-Year Fixed Rate Mortgage Average in the United States



Sources: Federal Reserve Economic Data and Freddie Mac

Repeat Homebuyer

Purchase affordability continued to decline in 4Q2021 as the gap between median sales price and family income continued to rise. For households earning the median family income for Texas in 2021 (\$75,100), the median sales price for 4Q2021 was not affordable to them unless the home price-to-income multiplier exceeded 4 (Table 3). Only 25.4 percent of homes sold in 4Q2021 were affordable to households earning the median family income with a home price-to-income multiplier of 3 (Table 4). Households would have to earn upward of \$100,000 annually to be able to afford the median sales price with a home price-to-income multiplier of 3.

**Table 3. Maximum Home Price Affordable by Family Income
and Home Price-to-Income Multiplier**

	Family Income	Home-Purchasing Power							
		2	2.5	3	3.5	4	4.5	5	5.5
Median Family Income	\$75,100	\$150,200	\$187,750	\$225,300	\$262,850	\$300,400	\$337,950	\$375,500	\$413,050
	\$80,000	\$160,000	\$200,000	\$240,000	\$280,000	\$320,000	\$360,000	\$400,000	\$440,000
	\$85,000	\$170,000	\$212,500	\$255,000	\$297,500	\$340,000	\$382,500	\$425,000	\$467,500
	\$90,000	\$180,000	\$225,000	\$270,000	\$315,000	\$360,000	\$405,000	\$450,000	\$495,000
Workforce Households (120%)	\$90,120	\$180,240	\$225,300	\$270,360	\$315,420	\$360,480	\$405,540	\$450,600	\$495,660
	\$95,000	\$190,000	\$237,500	\$285,000	\$332,500	\$380,000	\$427,500	\$475,000	\$522,500
	\$100,000	\$200,000	\$250,000	\$300,000	\$350,000	\$400,000	\$450,000	\$500,000	\$550,000
	\$105,000	\$210,000	\$262,500	\$315,000	\$367,500	\$420,000	\$472,500	\$525,000	\$577,500
	\$110,000	\$220,000	\$275,000	\$330,000	\$385,000	\$440,000	\$495,000	\$550,000	\$605,000
	\$115,000	\$230,000	\$287,500	\$345,000	\$402,500	\$460,000	\$517,500	\$575,000	\$632,500
	\$120,000	\$240,000	\$300,000	\$360,000	\$420,000	\$480,000	\$540,000	\$600,000	\$660,000
	\$125,000	\$250,000	\$312,500	\$375,000	\$437,500	\$500,000	\$562,500	\$625,000	\$687,500
	\$130,000	\$260,000	\$325,000	\$390,000	\$455,000	\$520,000	\$585,000	\$650,000	\$715,000
	\$135,000	\$270,000	\$337,500	\$405,000	\$472,500	\$540,000	\$607,500	\$675,000	\$742,500
	\$140,000	\$280,000	\$350,000	\$420,000	\$490,000	\$560,000	\$630,000	\$700,000	\$770,000
	\$145,000	\$290,000	\$362,500	\$435,000	\$507,500	\$580,000	\$652,500	\$725,000	\$797,500
	\$150,000	\$300,000	\$375,000	\$450,000	\$525,000	\$600,000	\$675,000	\$750,000	\$825,000

Note: Figures in red indicate the maximum affordable home price meets or exceeds the current median sales price.

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

Table 4. Percentage of Homes Sold in 4Q2021 Affordable by Family Income and Home Price-to-Income Multiplier

	Family Income	Home Price-to-Income Multiplier							
		2	2.5	3	3.5	4	4.5	5	5.5
Median Family Income	\$75,100	8.7%	15.7%	25.4%	36.5%	47.8%	56.5%	65.0%	71.3%
	\$80,000	10.3%	19.0%	29.8%	42.0%	52.8%	61.9%	70.0%	75.4%
	\$85,000	12.2%	21.5%	34.5%	46.4%	57.5%	66.1%	73.4%	78.3%
	\$90,000	14.3%	25.4%	39.0%	51.5%	61.9%	70.3%	76.7%	80.9%
Workforce Households (120%)	\$90,120	14.3%	25.4%	39.0%	51.5%	61.9%	70.4%	76.8%	80.9%
	\$95,000	16.6%	28.6%	43.4%	55.6%	65.9%	73.6%	79.2%	83.0%
	\$100,000	19.0%	33.1%	47.5%	59.9%	69.7%	76.7%	81.5%	85.1%
	\$105,000	21.2%	36.5%	51.5%	63.1%	72.6%	78.7%	83.3%	86.7%
	\$110,000	23.9%	40.6%	55.3%	66.8%	75.4%	80.9%	85.1%	88.2%
	\$115,000	26.9%	43.8%	58.4%	69.9%	77.7%	82.6%	86.6%	89.5%
	\$120,000	29.8%	47.8%	61.9%	72.6%	79.7%	84.3%	88.0%	90.7%
	\$125,000	33.1%	50.6%	65.0%	74.8%	81.5%	85.8%	89.2%	91.6%
	\$130,000	36.1%	54.1%	67.7%	77.2%	82.9%	87.1%	90.3%	92.5%
	\$135,000	39.0%	56.6%	70.3%	78.7%	84.3%	88.3%	91.2%	93.1%
	\$140,000	42.0%	59.9%	72.6%	80.6%	85.7%	89.4%	92.1%	93.8%
	\$145,000	44.9%	62.1%	74.7%	81.9%	86.9%	90.4%	92.8%	94.3%
	\$150,000	47.8%	65.0%	76.7%	83.3%	88.0%	91.2%	93.4%	94.9%

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

Mortgage Interest Rate

Holding home price constant, the total monthly mortgage payment increases as the mortgage interest rate increases (Table 5). At a 3.125 percent rate, this payment was \$2,096 for the median sales price in 4Q2021, more than twice the total monthly mortgage payment for the median-priced home in 4Q2011.

Table 6 shows the home price-to-income multiplier by mortgage interest rate. A 3.125 percent interest rate translates into a home price-to-income multiplier of 3.7², meaning a household could afford a maximum home price of 3.7 times its annual income. The home price-to-income multiplier declines as the additional costs of homeownership increase.

The income required to qualify for a loan with a 3.125 percent mortgage interest rate was \$83,828 for the median sales price in 4Q2021 (Table 7). An estimated 41 percent of households in Texas could afford the median sales price in 4Q2021 with property taxes and insurance at 4 percent of home price (Table 8), a decline of 33 percentage points from 4Q2011.

Table 5. Total Monthly Mortgage Payment for Repeat Buyers by Mortgage Interest Rate

Year	Home Price	Mortgage Interest Rate						
		2.5%	3%	3.125%	3.5%	4%	4.5%	5%
4Q2011	\$136,000	\$883	\$912	\$919	\$942	\$973	\$1,005	\$1,037
4Q2012	\$149,000	\$968	\$999	\$1,007	\$1,032	\$1,066	\$1,101	\$1,137
4Q2013	\$162,000	\$1,052	\$1,086	\$1,095	\$1,122	\$1,159	\$1,197	\$1,236
4Q2014	\$173,900	\$1,129	\$1,166	\$1,176	\$1,204	\$1,244	\$1,285	\$1,326
4Q2015	\$184,900	\$1,201	\$1,240	\$1,250	\$1,281	\$1,323	\$1,366	\$1,410
4Q2016	\$200,000	\$1,299	\$1,341	\$1,352	\$1,385	\$1,431	\$1,477	\$1,526
4Q2017	\$210,000	\$1,364	\$1,408	\$1,420	\$1,454	\$1,502	\$1,551	\$1,602
4Q2018	\$218,556	\$1,419	\$1,466	\$1,478	\$1,514	\$1,563	\$1,614	\$1,667
4Q2019	\$230,000	\$1,494	\$1,542	\$1,555	\$1,593	\$1,645	\$1,699	\$1,754
4Q2020	\$263,500	\$1,711	\$1,767	\$1,781	\$1,825	\$1,885	\$1,946	\$2,010
4Q2021	\$310,000	\$2,013	\$2,079	\$2,096	\$2,147	\$2,217	\$2,290	\$2,365

Note: Assumes a 30-year loan term, 80 percent LTV ratio, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

² The home price-to-income multiplier assumes a 30-year loan term, 80 percent loan-to-value ratio, 30 percent DTI ratio, and property taxes and insurance of 4 percent.



Table 6. Home Price-to-Income Multiplier for Repeat Buyers by Mortgage Interest Rate

Mortgage Interest Rate	Home Price-to-Income Multiplier
2.5%	3.85
3%	3.73
3.125%	3.70
3.5%	3.61
4%	3.50
4.5%	3.38
5%	3.28

Note: Assumes a 30-year loan term, 80 percent LTV ratio, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 7. Required Qualifying Income for Repeat Buyers by Mortgage Interest Rate

Year	Home Price	Mortgage Interest Rate						
		2.5%	3%	3.125%	3.5%	4%	4.5%	5%
4Q2011	\$136,000	\$35,329	\$36,482	\$36,776	\$37,676	\$38,910	\$40,184	\$41,496
4Q2012	\$149,000	\$38,706	\$39,969	\$40,292	\$41,277	\$42,630	\$44,025	\$45,462
4Q2013	\$162,000	\$42,083	\$43,456	\$43,807	\$44,878	\$46,349	\$47,867	\$49,429
4Q2014	\$173,900	\$45,174	\$46,648	\$47,025	\$48,175	\$49,754	\$51,383	\$53,060
4Q2015	\$184,900	\$48,032	\$49,599	\$49,999	\$51,222	\$52,901	\$54,633	\$56,416
4Q2016	\$200,000	\$51,954	\$53,649	\$54,083	\$55,406	\$57,221	\$59,095	\$61,023
4Q2017	\$210,000	\$54,552	\$56,332	\$56,787	\$58,176	\$60,082	\$62,049	\$64,074
4Q2018	\$218,556	\$56,775	\$58,627	\$59,100	\$60,546	\$62,530	\$64,577	\$66,685
4Q2019	\$230,000	\$59,748	\$61,697	\$62,195	\$63,716	\$65,804	\$67,959	\$70,177
4Q2020	\$263,500	\$68,450	\$70,683	\$71,254	\$72,997	\$75,389	\$77,857	\$80,398
4Q2021	\$310,000	\$80,529	\$83,156	\$83,828	\$85,879	\$88,693	\$91,597	\$94,586

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 80 percent LTV ratio, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

**Table 8. Percentage of Repeat Buyers Who Earned Required Qualifying Income
by Mortgage Interest Rate**

Year	Home Price	Mortgage Interest Rate						
		2.5%	3%	3.125%	3.5%	4%	4.5%	5%
4Q2011	\$136,000	75.2%	74.2%	74.0%	73.2%	72.2%	71.1%	70.0%
4Q2012	\$149,000	72.6%	71.5%	71.2%	70.4%	69.3%	68.1%	66.9%
4Q2013	\$162,000	70.1%	68.9%	68.6%	67.7%	66.5%	65.2%	63.9%
4Q2014	\$173,900	67.9%	66.7%	66.4%	65.4%	64.1%	62.9%	61.7%
4Q2015	\$184,900	65.9%	64.7%	64.3%	63.4%	62.2%	60.9%	59.6%
4Q2016	\$200,000	64.1%	62.9%	62.6%	61.6%	60.3%	58.9%	57.5%
4Q2017	\$210,000	63.7%	62.5%	62.1%	61.1%	59.8%	58.4%	56.9%
4Q2018	\$218,556	63.7%	62.4%	62.1%	61.1%	59.7%	58.3%	56.8%
4Q2019	\$230,000	63.2%	61.9%	61.6%	60.5%	59.1%	57.6%	56.1%
4Q2020*	\$263,500	49.7%	48.5%	48.2%	47.2%	45.8%	44.4%	43.0%
4Q2021*	\$310,000	42.9%	41.4%	41.0%	39.8%	38.2%	36.6%	34.9%

Note: Assumes a 30-year loan term, 80 percent LTV ratio, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. As repeat homebuyers constitute owner-occupied households, this table reflects income data solely for owner-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center at Texas A&M University

LTV Ratio

Holding home price constant, the total monthly mortgage payment increases as the LTV ratio increases (Table 9). For an 80 percent LTV ratio, the mortgage payment was \$2,096 for the median sales price in 4Q2021, more than twice the total monthly mortgage payment for the median-priced home in 4Q2011.

Table 10 shows the home price-to-income multiplier by LTV ratio. An 80 percent LTV ratio translates into a home price-to-income multiplier of 3.7³, meaning a household could afford a maximum home price of 3.7 times its annual income. The home price-to-income multiplier declines as the LTV ratio increases.

The income required to qualify for a loan with an 80 percent LTV ratio was \$83,828 for the median sales price in 4Q2021 (Table 11). An estimated 41 percent of Texas households could

³ The home price-to-income multiplier is based on a 30-year loan term, 3.125 percent mortgage interest rate, 30 percent DTI ratio, and property taxes and insurance of 4 percent. A 0.5 percent mortgage insurance premium is added to loans with a 90 percent or more LTV ratio.

afford the median sales price in 4Q2021 with an 80 percent LTV ratio (Table 12), a decline of 33 percentage points from 4Q2011.

Table 9. Total Monthly Mortgage Payment for Repeat Buyers by LTV Ratio

Year	Home Price	LTV Ratio				
		80%	85%	90%	95%	100%
4Q2011	\$136,000	\$919	\$949	\$978	\$1,007	\$1,036
4Q2012	\$149,000	\$1,007	\$1,039	\$1,071	\$1,103	\$1,135
4Q2013	\$162,000	\$1,095	\$1,130	\$1,165	\$1,199	\$1,234
4Q2014	\$173,900	\$1,176	\$1,213	\$1,250	\$1,287	\$1,325
4Q2015	\$184,900	\$1,250	\$1,290	\$1,329	\$1,369	\$1,408
4Q2016	\$200,000	\$1,352	\$1,395	\$1,438	\$1,481	\$1,523
4Q2017	\$210,000	\$1,420	\$1,465	\$1,510	\$1,555	\$1,600
4Q2018	\$218,556	\$1,478	\$1,524	\$1,571	\$1,618	\$1,665
4Q2019	\$230,000	\$1,555	\$1,604	\$1,653	\$1,703	\$1,752
4Q2020	\$263,500	\$1,781	\$1,838	\$1,894	\$1,951	\$2,007
4Q2021	\$310,000	\$2,096	\$2,162	\$2,229	\$2,295	\$2,361

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. A mortgage insurance premium of 0.5 percent is added to loans with an LTV ratio of 90 percent or more.

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

Table 10. Home Price-to-Income Multiplier for Repeat Buyers by LTV Ratio

LTV Ratio	Home Price-to-Income Multiplier
80%	3.70
85%	3.58
90%	3.48
95%	3.38
100%	3.28

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. A mortgage insurance premium of 0.5 percent is added to loans with an LTV ratio of 90 percent or more.

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

Table 11. Required Qualifying Income for Repeat Buyers by LTV Ratio

Year	Home Price	LTV Ratio				
		80%	85%	90%	95%	100%
4Q2011	\$136,000	\$36,776	\$37,941	\$39,107	\$40,272	\$41,437
4Q2012	\$149,000	\$40,292	\$41,568	\$42,845	\$44,121	\$45,398
4Q2013	\$162,000	\$43,807	\$45,195	\$46,583	\$47,971	\$49,359
4Q2014	\$173,900	\$47,025	\$48,515	\$50,005	\$51,495	\$52,984
4Q2015	\$184,900	\$49,999	\$51,584	\$53,168	\$54,752	\$56,336
4Q2016	\$200,000	\$54,083	\$55,796	\$57,510	\$59,223	\$60,937
4Q2017	\$210,000	\$56,787	\$58,586	\$60,385	\$62,184	\$63,984
4Q2018	\$218,556	\$59,100	\$60,973	\$62,845	\$64,718	\$66,590
4Q2019	\$230,000	\$62,195	\$64,166	\$66,136	\$68,107	\$70,077
4Q2020	\$263,500	\$71,254	\$73,511	\$75,769	\$78,027	\$80,284
4Q2021	\$310,000	\$83,828	\$86,484	\$89,140	\$91,796	\$94,452

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. A mortgage insurance premium of 0.5 percent is added to loans with an LTV ratio of 90 percent or more.

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

Table 12. Percentage of Repeat Buyers Who Earned Required Qualifying Income by LTV Ratio

Year	Home Price	Loan-to-Value Ratio				
		80%	85%	90%	95%	100%
4Q2011	\$136,000	74.0%	73.0%	72.0%	71.0%	70.0%
4Q2012	\$149,000	71.2%	70.2%	69.1%	68.0%	66.9%
4Q2013	\$162,000	68.6%	67.5%	66.3%	65.2%	64.0%
4Q2014	\$173,900	66.4%	65.2%	63.9%	62.8%	61.7%
4Q2015	\$184,900	64.3%	63.2%	62.0%	60.8%	59.7%
4Q2016	\$200,000	62.6%	61.3%	60.1%	58.8%	57.6%
4Q2017	\$210,000	62.1%	60.9%	59.6%	58.3%	57.0%
4Q2018	\$218,556	62.1%	60.8%	59.5%	58.2%	56.9%
4Q2019	\$230,000	61.6%	60.2%	58.9%	57.5%	56.2%
4Q2020*	\$263,500	48.2%	46.9%	45.6%	44.3%	43.0%
4Q2021*	\$310,000	41.0%	39.5%	38.0%	36.5%	35.0%

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 30 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. A mortgage insurance premium of 0.5 percent is added to loans with an LTV ratio of 90 percent or more. As repeat homebuyers constitute owner-occupied households, this table reflects income data solely for owner-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, Texas Real Estate Research Center at Texas A&M University

DTI Ratio

A 30 percent DTI ratio translates into a home price-to-income multiplier of 3.7⁴ (Table 13), meaning a household could afford a maximum home price of 3.7 times its annual income at that interest rate. The home price-to-income multiplier increases as the DTI ratio increases.

The income required to qualify for a loan with a 30 percent DTI ratio was \$83,828 for the median sales price in 4Q2021 (Table 14). An estimated 41 percent of households in Texas could afford the median sales price in 4Q2021 with a 30 percent DTI ratio (Table 15), a decline of 33 percentage points from 4Q2011.

⁴ The home price-to-income multiplier is based on a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and property taxes and insurance of 4 percent.

**Table 13. Home Price-to-Income Multiplier
for Repeat Buyers by DTI Ratio**

DTI Ratio	Home Price-to-Income Multiplier
20%	2.47
25%	3.08
30%	3.70
35%	4.31
40%	4.93
45%	5.55
50%	6.16

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 14. Required Qualifying Income for Repeat Buyers by DTI Ratio

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
4Q2011	\$136,000	\$55,164	\$44,131	\$36,776	\$31,522	\$27,582	\$24,517	\$22,066
4Q2012	\$149,000	\$60,437	\$48,350	\$40,292	\$34,536	\$30,219	\$26,861	\$24,175
4Q2013	\$162,000	\$65,710	\$52,568	\$43,807	\$37,549	\$32,855	\$29,205	\$26,284
4Q2014	\$173,900	\$70,537	\$56,430	\$47,025	\$40,307	\$35,269	\$31,350	\$28,215
4Q2015	\$184,900	\$74,999	\$59,999	\$49,999	\$42,857	\$37,500	\$33,333	\$30,000
4Q2016	\$200,000	\$81,124	\$64,899	\$54,083	\$46,357	\$40,562	\$36,055	\$32,450
4Q2017	\$210,000	\$85,180	\$68,144	\$56,787	\$48,674	\$42,590	\$37,858	\$34,072
4Q2018	\$218,556	\$88,651	\$70,921	\$59,100	\$50,658	\$44,325	\$39,400	\$35,460
4Q2019	\$230,000	\$93,293	\$74,634	\$62,195	\$53,310	\$46,646	\$41,463	\$37,317
4Q2020	\$263,500	\$106,881	\$85,505	\$71,254	\$61,075	\$53,440	\$47,503	\$42,752
4Q2021	\$310,000	\$125,742	\$100,594	\$83,828	\$71,853	\$62,871	\$55,885	\$50,297

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 15. Percentage of Repeat Buyers Who Earned Required Qualifying Income by DTI Ratio

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
4Q2011	\$136,000	58.7%	67.7%	74.0%	78.6%	82.0%	84.7%	86.8%
4Q2012	\$149,000	55.1%	64.5%	71.2%	76.1%	79.8%	82.8%	85.1%
4Q2013	\$162,000	51.6%	61.5%	68.6%	73.8%	77.8%	81.0%	83.5%
4Q2014	\$173,900	48.7%	59.2%	66.4%	71.9%	76.0%	79.3%	82.0%
4Q2015	\$184,900	46.0%	57.0%	64.3%	70.1%	74.5%	77.9%	80.7%
4Q2016	\$200,000	43.9%	54.7%	62.6%	68.5%	73.1%	76.6%	79.5%
4Q2017	\$210,000	43.5%	54.0%	62.1%	68.0%	72.7%	76.3%	79.2%
4Q2018	\$218,556	43.5%	53.9%	62.1%	68.0%	72.6%	76.2%	79.1%
4Q2019	\$230,000	42.7%	53.1%	61.6%	67.6%	72.2%	75.8%	78.7%
4Q2020*	\$263,500	29.7%	40.1%	48.2%	53.9%	59.6%	64.2%	67.9%
4Q2021*	\$310,000	23.7%	31.6%	41.0%	47.8%	52.9%	57.7%	62.0%

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and additional costs of homeownership at 4 percent of home price. As repeat homebuyers constitute owner-occupied households, this table reflects income data solely for owner-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center at Texas A&M University

Property Taxes and Insurance

Holding home price constant, the total monthly mortgage payment increases as the annual costs of property taxes and insurance increase (Table 16). Assuming the cost of property taxes and insurance is 4 percent of the home price, a monthly mortgage payment was \$2,096 for the median sales price in 4Q2021, more than twice the total monthly mortgage payment for the median-priced home in 4Q2011.

Table 17 shows the home price-to-income multiplier by the costs of property taxes and insurance. A 4 percent property tax and insurance rate translates into a home price-to-income multiplier of 3.7⁵, meaning a household could afford a maximum home price of 3.7 times its annual income. The home price-to-income multiplier declines as the additional costs of homeownership increase.

The income required to qualify for a loan with property taxes and insurance at 4 percent of home price was \$83,828 for the median sales price in 4Q2021 (Table 18). An estimated 41 percent of Texas households could afford the median sales price in 4Q2021 with property taxes

⁵ The home price-to-income multiplier is based on a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

and insurance at 4 percent of home price (Table 19), a decline of 33 percentage points from 4Q2011.

Table 16. Total Monthly Mortgage Payment for Repeat Buyers by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
4Q2011	\$136,000	\$693	\$806	\$919	\$1,033	\$1,146
3Q2012	\$149,000	\$759	\$883	\$1,007	\$1,131	\$1,256
3Q2013	\$162,000	\$825	\$960	\$1,095	\$1,230	\$1,365
3Q2014	\$173,900	\$886	\$1,031	\$1,176	\$1,321	\$1,465
3Q2015	\$184,900	\$942	\$1,096	\$1,250	\$1,404	\$1,558
3Q2016	\$200,000	\$1,019	\$1,185	\$1,352	\$1,519	\$1,685
3Q2017	\$210,000	\$1,070	\$1,245	\$1,420	\$1,595	\$1,770
3Q2018	\$218,556	\$1,113	\$1,295	\$1,478	\$1,660	\$1,842
3Q2019	\$230,000	\$1,172	\$1,363	\$1,555	\$1,747	\$1,938
3Q2020	\$263,500	\$1,342	\$1,562	\$1,781	\$2,001	\$2,221
4Q2021	\$310,000	\$1,579	\$1,837	\$2,096	\$2,354	\$2,612

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

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

Table 17. Home Price-to-Income Multiplier for Repeat Buyers by Additional Homeownership Costs

Property Taxes and Insurance	Home Price-to-Income Multiplier
2%	4.91
3%	4.22
4%	3.70
5%	3.29
6%	2.97

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

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

Table 18. Required Qualifying Income for Repeat Homebuyers by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
4Q2011	\$136,000	\$27,710	\$32,243	\$36,776	\$41,310	\$45,843
4Q2012	\$149,000	\$30,358	\$35,325	\$40,292	\$45,258	\$50,225
4Q2013	\$162,000	\$33,007	\$38,407	\$43,807	\$49,207	\$54,607
4Q2014	\$173,900	\$35,432	\$41,228	\$47,025	\$52,822	\$58,618
4Q2015	\$184,900	\$37,673	\$43,836	\$49,999	\$56,163	\$62,326
4Q2016	\$200,000	\$40,749	\$47,416	\$54,083	\$60,749	\$67,416
4Q2017	\$210,000	\$42,787	\$49,787	\$56,787	\$63,787	\$70,787
4Q2018	\$218,556	\$44,530	\$51,815	\$59,100	\$66,386	\$73,671
4Q2019	\$230,000	\$46,862	\$54,528	\$62,195	\$69,862	\$77,528
4Q2020	\$263,500	\$53,687	\$62,471	\$71,254	\$80,037	\$88,821
4Q2021	\$310,000	\$63,162	\$73,495	\$83,828	\$94,162	\$104,495

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

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

Table 19. Percentage of Repeat Homeowners Who Earned Required Qualifying Income by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
4Q2011	\$136,000	81.9%	77.9%	74.0%	70.1%	66.2%
4Q2012	\$149,000	79.7%	75.4%	71.2%	67.1%	62.9%
4Q2013	\$162,000	77.7%	73.1%	68.6%	64.1%	60.0%
4Q2014	\$173,900	75.9%	71.1%	66.4%	61.8%	57.5%
4Q2015	\$184,900	74.4%	69.3%	64.3%	59.8%	55.3%
4Q2016	\$200,000	72.9%	67.6%	62.6%	57.7%	52.9%
4Q2017	\$210,000	72.5%	67.2%	62.1%	57.1%	52.1%
4Q2018	\$218,556	72.4%	67.2%	62.1%	57.0%	51.9%
4Q2019	\$230,000	72.1%	66.8%	61.6%	56.4%	51.4%
4Q2020*	\$263,500	59.4%	53.1%	48.2%	43.2%	38.2%
4Q2021*	\$310,000	52.7%	46.9%	41.0%	35.1%	30.4%

Note: Assumes a 30-year loan term, 3.125 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio. As repeat homebuyers constitute owner-occupied households, this table reflects income data solely for owner-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center

First-Time Homebuyer

Purchase affordability continued to decline in 4Q2021 for Texas' first-time homebuyers, particularly among the lowest-income cohorts. Despite sustained low mortgage interest rates, the uptick in the first-quartile sales price left homeownership increasingly unaffordable for lower-income households.

Table 20 shows the maximum home price affordable by family income and home-purchasing power. For example, households earning between \$22,550 and \$37,550 annually (i.e., between 31 and 50 percent of median family income) could afford a maximum home price between \$67,650 and \$112,650 with a home price-to-income multiplier of 3. Meanwhile, the range in the maximum home price affordable to that range in household income rises to between \$90,200 and \$150,200 should the home price-to-income multiplier measure 4.

Depending on the home price-to-income multiplier, only households earning at least \$40,000 annually could afford the median first-quartile sales price in 4Q2021. Homeownership is largely not feasible to households earning no more than 50 percent of Texas' median family income. In fact, homeownership really only becomes viable for households earning at least 80 percent of area median income. Even at that point it largely depends on whether mortgage lenders are willing to accept loans with high home price-to-income multipliers. Moreover, few homes are available for sale at these income thresholds. For instance, with a home price-to-income multiplier of 3, only 14.3 percent of homes for sale were affordable to households earning no more than 80 percent of area median income in 4Q2021 (Table 21).



Table 20. Maximum Home Price Affordable by Family Income and Home Price-to-Income Multiplier

		Home Price-to-Income Multiplier							
	Family Income	2	2.5	3	3.5	4	4.5	5	5.5
	\$15,000	\$30,000	\$37,500	\$45,000	\$52,500	\$60,000	\$67,500	\$75,000	\$82,500
	\$20,000	\$40,000	\$50,000	\$60,000	\$70,000	\$80,000	\$90,000	\$100,000	\$110,000
Extremely Low-Income (30%)	\$22,550	\$45,100	\$56,375	\$67,650	\$78,925	\$90,200	\$101,475	\$112,750	\$124,025
	\$25,000	\$50,000	\$62,500	\$75,000	\$87,500	\$100,000	\$112,500	\$125,000	\$137,500
	\$30,000	\$60,000	\$75,000	\$90,000	\$105,000	\$120,000	\$135,000	\$150,000	\$165,000
	\$35,000	\$70,000	\$87,500	\$105,000	\$122,500	\$140,000	\$157,500	\$175,000	\$192,500
Very Low-Income (50%)	\$37,550	\$75,100	\$93,875	\$112,650	\$131,425	\$150,200	\$168,975	\$187,750	\$206,525
	\$40,000	\$80,000	\$100,000	\$120,000	\$140,000	\$160,000	\$180,000	\$200,000	\$220,000
	\$45,000	\$90,000	\$112,500	\$135,000	\$157,500	\$180,000	\$202,500	\$225,000	\$247,500
	\$50,000	\$100,000	\$125,000	\$150,000	\$175,000	\$200,000	\$225,000	\$250,000	\$275,000
	\$55,000	\$110,000	\$137,500	\$165,000	\$192,500	\$220,000	\$247,500	\$275,000	\$302,500
	\$60,000	\$120,000	\$150,000	\$180,000	\$210,000	\$240,000	\$270,000	\$300,000	\$330,000
Low-Income (80%)	\$60,100	\$120,200	\$150,250	\$180,300	\$210,350	\$240,400	\$270,450	\$300,500	\$330,550
	\$65,000	\$130,000	\$162,500	\$195,000	\$227,500	\$260,000	\$292,500	\$325,000	\$357,500
	\$70,000	\$140,000	\$175,000	\$210,000	\$245,000	\$280,000	\$315,000	\$350,000	\$385,000
	\$75,000	\$150,000	\$187,500	\$225,000	\$262,500	\$300,000	\$337,500	\$375,000	\$412,500
Median Family Income	\$75,100	\$150,200	\$187,750	\$225,300	\$262,850	\$300,400	\$337,950	\$375,500	\$413,050

Note: Figures in red indicate the maximum affordable home price meets or exceeds the first-quartile home sales price.

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

Table 21. Percentage of Homes Sold in 4Q2021 Affordable by Family Income and Home Price-to-Income Multiplier

	Family Income	Home Price-to-Income Multiplier							
		2	2.5	3	3.5	4	4.5	5	5.5
	\$15,000	0.3%	0.4%	0.6%	0.7%	1.0%	1.3%	1.7%	2.1%
	\$20,000	0.4%	0.7%	1.0%	1.5%	2.0%	2.7%	3.3%	4.0%
Extremely Low-Income (30%)	\$22,550	0.6%	0.9%	1.3%	1.9%	2.7%	3.4%	4.1%	5.1%
	\$25,000	0.7%	1.1%	1.7%	2.4%	3.3%	4.1%	5.5%	6.8%
	\$30,000	1.0%	1.7%	2.7%	3.6%	4.9%	6.6%	8.7%	11.2%
	\$35,000	1.5%	2.4%	3.6%	5.0%	7.3%	9.7%	13.2%	16.9%
Very Low-Income (50%)	\$37,550	1.7%	2.8%	4.1%	6.1%	8.4%	11.6%	15.7%	20.1%
	\$40,000	2.0%	3.3%	4.9%	7.3%	10.3%	14.3%	19.0%	23.9%
	\$45,000	2.7%	4.1%	6.6%	9.7%	14.3%	19.2%	25.4%	31.5%
	\$50,000	3.3%	5.5%	8.7%	13.2%	19.0%	25.4%	33.1%	40.6%
	\$55,000	4.0%	6.8%	11.2%	16.9%	23.9%	31.5%	40.6%	48.1%
	\$60,000	4.9%	8.7%	14.3%	21.2%	29.8%	39.0%	47.8%	55.3%
Low-Income (80%)	\$60,100	4.9%	8.7%	14.3%	21.2%	29.9%	39.1%	47.8%	55.3%
	\$65,000	6.1%	10.5%	17.6%	25.8%	36.1%	45.2%	54.1%	61.0%
	\$70,000	7.3%	13.2%	21.2%	31.2%	42.0%	51.5%	59.9%	66.8%
	\$75,000	8.7%	15.7%	25.4%	36.5%	47.8%	56.6%	65.0%	71.3%
Median Family Income	\$75,100	8.7%	15.7%	25.4%	36.5%	47.8%	56.6%	65.0%	71.3%

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

Mortgage Interest Rate

Holding home price constant, the total monthly mortgage payment increases as the mortgage interest rate increases (Table 22). A 3.155 percent rate brought the mortgage payment to \$1,728 for the first-quartile sales price in 4Q2021, more than twice the total monthly mortgage payment for the same home in 4Q2011.

Table 23 shows the home price-to-income multiplier by mortgage interest rate. A 3.155 percent interest rate translates into a home price-to-income multiplier of 3.8⁶, meaning a

⁶ The home price-to-income multiplier is based on a 30-year loan term, 95 percent LTV ratio, 35 percent DTI ratio, and property taxes and insurance of 4 percent.

household could afford a maximum home price of 3.8 times its annual income. The home price-to-income multiplier declines as the mortgage interest rate increases.

The income required to qualify for a loan with a 3.155 percent mortgage interest rate was \$59,260 for the first-quartile sales price in 4Q2021 (Table 24). An estimated 55.1 percent of Texas households could afford the first-quartile sales price in 4Q2021 with a 3.155 percent interest rate (Table 25), a decline of nearly 10 percentage points from 4Q2011.

Table 22. Total Monthly Mortgage Payment for First-Time Buyers by Mortgage Interest Rate

Year	Home Price	Mortgage Interest Rate					
		2.5%	3%	3.155%	3.5%	4%	4.5%
4Q2011	\$85,450	\$627	\$649	\$656	\$672	\$696	\$721
4Q2012	\$95,500	\$701	\$726	\$734	\$751	\$778	\$805
4Q2013	\$112,200	\$823	\$853	\$862	\$883	\$914	\$946
4Q2014	\$122,500	\$899	\$931	\$941	\$964	\$998	\$1,033
4Q2015	\$130,000	\$954	\$988	\$999	\$1,023	\$1,059	\$1,096
4Q2016	\$143,000	\$1,049	\$1,087	\$1,099	\$1,125	\$1,165	\$1,206
4Q2017	\$150,000	\$1,101	\$1,140	\$1,152	\$1,180	\$1,222	\$1,265
4Q2018	\$159,900	\$1,173	\$1,215	\$1,228	\$1,258	\$1,303	\$1,348
4Q2019	\$170,000	\$1,248	\$1,292	\$1,306	\$1,338	\$1,385	\$1,434
4Q2020	\$195,000	\$1,431	\$1,482	\$1,498	\$1,534	\$1,589	\$1,644
4Q2021	\$225,000	\$1,651	\$1,710	\$1,728	\$1,770	\$1,833	\$1,897

Note: Assumes a 30-year loan term, 95 percent LTV ratio, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 23. Home Price-to-Income Multiplier for First-Time Buyers by Mortgage Interest Rate

Mortgage Interest Rate	Home Price-to-Income Multiplier
2.5%	3.97
3%	3.84
3.16%	3.80
3.5%	3.71
4%	3.58
4.5%	3.46

Note: Assumes a 30-year loan term, 95 percent LTV ratio, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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



Table 24. Required Qualifying Income by Mortgage Interest Rate

Year	Home Price	Mortgage Interest Rate					
		2.5%	3%	3.155%	3.5%	4%	4.5%
4Q2011	\$85,450	\$21,500	\$22,264	\$22,506	\$23,053	\$23,868	\$24,707
4Q2012	\$95,500	\$24,029	\$24,882	\$25,153	\$25,765	\$26,675	\$27,613
4Q2013	\$112,200	\$28,230	\$29,233	\$29,551	\$30,270	\$31,340	\$32,441
4Q2014	\$122,500	\$30,822	\$31,917	\$32,264	\$33,049	\$34,217	\$35,419
4Q2015	\$130,000	\$32,709	\$33,871	\$34,239	\$35,072	\$36,312	\$37,588
4Q2016	\$143,000	\$35,980	\$37,258	\$37,663	\$38,579	\$39,943	\$41,346
4Q2017	\$150,000	\$37,741	\$39,082	\$39,507	\$40,468	\$41,898	\$43,370
4Q2018	\$159,900	\$40,232	\$41,661	\$42,114	\$43,139	\$44,663	\$46,233
4Q2019	\$170,000	\$42,773	\$44,293	\$44,774	\$45,864	\$47,484	\$49,153
4Q2020	\$195,000	\$49,064	\$50,806	\$51,359	\$52,608	\$54,467	\$56,382
4Q2021	\$225,000	\$56,612	\$58,623	\$59,260	\$60,702	\$62,847	\$65,056

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 95 percent LTV ratio, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 25. Percentage of Renter-Occupied Households That Earned Required Qualifying Income by Mortgage Interest Rate

Year	Home Price	Mortgage Interest Rate					
		2.5%	3.0%	3.155%	3.5%	4.0%	4.5%
4Q2011	\$85,450	66.4%	65.1%	64.7%	63.9%	62.5%	61.2%
4Q2012	\$95,500	62.9%	61.5%	61.1%	60.2%	58.9%	57.5%
4Q2013	\$112,200	57.4%	56.0%	55.5%	54.5%	53.0%	51.4%
4Q2014	\$122,500	54.7%	53.2%	52.7%	51.6%	49.9%	48.4%
4Q2015	\$130,000	53.3%	51.7%	51.1%	50.0%	48.7%	47.3%
4Q2016	\$143,000	50.7%	49.3%	48.9%	47.9%	46.5%	45.0%
4Q2017	\$150,000	50.9%	49.5%	49.0%	48.0%	46.5%	44.9%
4Q2018	\$159,900	50.2%	48.7%	48.2%	47.2%	45.5%	43.9%
4Q2019	\$170,000	49.5%	47.9%	47.4%	46.2%	44.5%	42.8%
4Q2020*	\$195,000	63.0%	61.6%	61.2%	60.3%	58.8%	57.3%
4Q2021*	\$225,000	57.2%	55.6%	55.1%	54.1%	52.9%	51.7%

Note: Assumes a 30-year loan term, 95 percent LTV ratio, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. As first-time homebuyers constitute renter-occupied households, this table reflects income data solely for renter-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center at Texas A&M University

LTV Ratio

Holding home price constant, the total monthly mortgage payment increases as the LTV ratio increases (Table 26). For a 95 percent LTV ratio, this payment amounted to \$1,728 for the first-quartile sales price in 4Q2021, nearly three times the total monthly mortgage payment for the same home in 4Q2011.

Table 27 shows the home price-to-income multiplier by LTV ratio. A 95 percent LTV ratio translates into a home price-to-income multiplier of 3.8⁷, meaning a household could afford a maximum home price of 3.8 times its annual income. The home price-to-income multiplier declines as the LTV ratio increases.

The income required to qualify for a loan with a 95 percent LTV ratio was \$59,260 for the first-quartile sales price in 4Q2021 (Table 28). An estimated 55.1 percent of Texas households could afford the first-quartile sales price in 4Q2021 with a 95 percent LTV ratio (Table 29), a decline of nearly 10 percentage points from 4Q2011.

Table 26. Total Monthly Mortgage Payment by LTV Ratio

Year	Home Price	LTV Ratio				
		95%	96.5%	97%	98%	100%
4Q2011	\$85,450	\$656	\$662	\$664	\$668	\$676
4Q2012	\$95,500	\$734	\$740	\$742	\$747	\$755
4Q2013	\$112,200	\$862	\$870	\$872	\$877	\$888
4Q2014	\$122,500	\$941	\$949	\$952	\$958	\$969
4Q2015	\$130,000	\$999	\$1,008	\$1,011	\$1,016	\$1,028
4Q2016	\$143,000	\$1,099	\$1,108	\$1,112	\$1,118	\$1,131
4Q2017	\$150,000	\$1,152	\$1,163	\$1,166	\$1,173	\$1,187
4Q2018	\$159,900	\$1,228	\$1,239	\$1,243	\$1,250	\$1,265
4Q2019	\$170,000	\$1,306	\$1,318	\$1,321	\$1,329	\$1,345
4Q2020	\$195,000	\$1,498	\$1,511	\$1,516	\$1,525	\$1,543
4Q2021	\$225,000	\$1,728	\$1,744	\$1,749	\$1,759	\$1,780

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

⁷ The home price-to-income multiplier is based on a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 35 percent DTI ratio, and property taxes and insurance of 4 percent.

**Table 27. Home Price-to-Income Multiplier
for First-Time Buyers by LTV Ratio**

LTV Ratio	Home-Purchasing Power
95%	3.80
96.5%	3.76
97%	3.75
98%	3.73
100%	3.69
95%	3.80

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 28. Required Qualifying Income by LTV Ratio

Year	Home Price	LTV Ratio				
		95%	96.5%	97%	98%	100%
4Q2011	\$85,450	\$22,506	\$22,707	\$22,774	\$22,908	\$23,176
4Q2012	\$95,500	\$25,153	\$25,377	\$25,452	\$25,602	\$25,902
4Q2013	\$112,200	\$29,551	\$29,815	\$29,903	\$30,079	\$30,432
4Q2014	\$122,500	\$32,264	\$32,552	\$32,648	\$32,841	\$33,225
4Q2015	\$130,000	\$34,239	\$34,545	\$34,647	\$34,851	\$35,259
4Q2016	\$143,000	\$37,663	\$38,000	\$38,112	\$38,336	\$38,785
4Q2017	\$150,000	\$39,507	\$39,860	\$39,978	\$40,213	\$40,684
4Q2018	\$159,900	\$42,114	\$42,491	\$42,616	\$42,867	\$43,369
4Q2019	\$170,000	\$44,774	\$45,175	\$45,308	\$45,575	\$46,108
4Q2020	\$195,000	\$51,359	\$51,818	\$51,971	\$52,277	\$52,889
4Q2021	\$225,000	\$59,260	\$59,790	\$59,966	\$60,320	\$61,026

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price.

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



Table 29. Percentage of Renter-Occupied Households That Earned Required Qualifying Income by LTV Ratio

Year	Home Price	LTV Ratio				
		95%	96.5%	97%	98%	100%
4Q2011	\$85,450	64.7%	64.4%	64.3%	64.1%	63.7%
4Q2012	\$95,500	61.1%	60.7%	60.6%	60.4%	60.0%
4Q2013	\$112,200	55.5%	55.2%	55.0%	54.8%	54.3%
4Q2014	\$122,500	52.7%	52.3%	52.1%	51.9%	51.3%
4Q2015	\$130,000	51.1%	50.7%	50.6%	50.3%	49.8%
4Q2016	\$143,000	48.9%	48.6%	48.4%	48.2%	47.7%
4Q2017	\$150,000	49.0%	48.6%	48.5%	48.3%	47.7%
4Q2018	\$159,900	48.2%	47.8%	47.7%	47.4%	46.9%
4Q2019	\$170,000	47.4%	46.9%	46.8%	46.5%	46.0%
4Q2020*	\$195,000	61.2%	60.9%	60.7%	60.5%	60.0%
4Q2021*	\$225,000	55.1%	54.7%	54.6%	54.4%	54.0%

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 35 percent DTI ratio, and additional costs of homeownership at 4 percent of home price. As first-time homebuyers constitute renter-occupied households, this table reflects income data solely for renter-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center at Texas A&M University

DTI Ratio

A 35 percent DTI ratio translates into a home price-to-income multiplier of 3.8⁸ (Table 30), meaning a household could afford a maximum home price of 3.8 times its annual income. The home price-to-income multiplier increases as the DTI ratio increases.

The income required to qualify for a loan with a 35 percent DTI ratio was \$59,260 for the first-quartile sales price in 4Q2021 (Table 31). An estimated 55.1 percent of Texas households could afford the first-quartile sales price in 4Q2021 with a 35 percent DTI ratio (Table 32), a decline of nearly 10 percentage points from 4Q2011.

⁸ The home price-to-income multiplier is based on a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and property taxes and insurance of 4 percent.

**Table 30. Home Price-to-Income Multiplier
for First-Time Buyers by DTI Ratio**

DTI Ratio	Home Price-to-Income Multiplier
20%	2.17
25%	2.71
30%	3.25
35%	3.80
40%	4.34
45%	4.88
50%	5.42

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 31. Required Qualifying Income for First-Time Buyers by DTI Ratio

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
4Q2011	\$85,450	\$39,385	\$31,508	\$26,257	\$22,506	\$19,692	\$17,504	\$15,754
4Q2012	\$95,500	\$44,017	\$35,214	\$29,345	\$25,153	\$22,009	\$19,563	\$17,607
4Q2013	\$112,200	\$51,714	\$41,372	\$34,476	\$29,551	\$25,857	\$22,984	\$20,686
4Q2014	\$122,500	\$56,462	\$45,169	\$37,641	\$32,264	\$28,231	\$25,094	\$22,585
4Q2015	\$130,000	\$59,919	\$47,935	\$39,946	\$34,239	\$29,959	\$26,631	\$23,967
4Q2016	\$143,000	\$65,911	\$52,728	\$43,940	\$37,663	\$32,955	\$29,294	\$26,364
4Q2017	\$150,000	\$69,137	\$55,310	\$46,091	\$39,507	\$34,568	\$30,728	\$27,655
4Q2018	\$159,900	\$73,700	\$58,960	\$49,133	\$42,114	\$36,850	\$32,756	\$29,480
4Q2019	\$170,000	\$78,355	\$62,684	\$52,237	\$44,774	\$39,178	\$34,825	\$31,342
4Q2020	\$195,000	\$89,878	\$71,902	\$59,919	\$51,359	\$44,939	\$39,946	\$35,951
4Q2021	\$225,000	\$103,705	\$82,964	\$69,137	\$59,260	\$51,853	\$46,091	\$41,482

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and additional costs of homeownership at 4 percent of home price.

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

Table 32. Percentage of Households That Earned Required Qualifying Income by DTI Ratio

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
4Q2011	\$85,450	41.0%	51.0%	58.8%	64.7%	69.3%	73.0%	76.0%
4Q2012	\$95,500	37.0%	46.5%	55.0%	61.1%	66.1%	70.1%	73.4%
4Q2013	\$112,200	30.5%	40.9%	48.5%	55.5%	60.8%	65.3%	68.9%
4Q2014	\$122,500	28.6%	38.0%	46.0%	52.7%	58.3%	62.7%	66.6%
4Q2015	\$130,000	27.4%	36.3%	44.8%	51.1%	57.1%	61.6%	65.5%
4Q2016	\$143,000	24.8%	33.9%	42.2%	48.9%	54.5%	59.5%	63.5%
4Q2017	\$150,000	24.1%	34.0%	42.0%	49.0%	54.4%	59.5%	63.5%
4Q2018	\$159,900	22.6%	33.4%	40.8%	48.2%	53.8%	58.7%	63.0%
4Q2019	\$170,000	21.9%	32.4%	40.2%	47.4%	53.2%	57.9%	62.3%
4Q2020*	\$195,000	37.6%	47.8%	54.6%	61.2%	66.2%	70.0%	73.4%
4Q2021*	\$225,000	30.7%	41.5%	49.4%	55.1%	60.8%	65.3%	68.9%

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and additional costs of homeownership at 4 percent of home price. As first-time homebuyers constitute renter-occupied households, this table reflects income data solely for renter-occupied households.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center at Texas A&M University

Property Taxes and Insurance

Holding home price constant, the total monthly mortgage payment increases as additional annual homeownership costs (property taxes and insurance) increase (Table 33). With a rate of 4 percent of home price, this payment amounted to \$1,728 for the first-quartile sales price in 4Q2021, more than twice the total monthly mortgage payment for the same home in 4Q2011.

Table 34 shows the home price-to-income multiplier by the costs of property taxes and insurance. A 4 percent property tax and insurance rate translates into a home price-to-income multiplier of 3.8⁹, meaning a household could afford a maximum home price of 3.8 times its annual income. The home price-to-income multiplier declines as the additional costs of homeownership increase.

The income required to qualify for a loan with property taxes and insurance at 4 percent of home price was \$59,260 for the first-quartile sales price in 4Q2021 (Table 35). An estimated

⁹ The home price-to-income multiplier is based on a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.

55.1 percent of Texas households could afford the first-quartile sales price in 4Q2021 with property taxes and insurance at 4 percent of home price (Table 36), a decline of nearly 10 percentage points from 4Q2011.

Table 33. Total Monthly Mortgage Payment by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
4Q2011	\$85,450	\$514	\$585	\$656	\$728	\$799
4Q2012	\$95,500	\$574	\$654	\$734	\$813	\$893
4Q2013	\$112,200	\$675	\$768	\$862	\$955	\$1,049
4Q2014	\$122,500	\$737	\$839	\$941	\$1,043	\$1,145
4Q2015	\$130,000	\$782	\$890	\$999	\$1,107	\$1,215
4Q2016	\$143,000	\$860	\$979	\$1,099	\$1,218	\$1,337
4Q2017	\$150,000	\$902	\$1,027	\$1,152	\$1,277	\$1,402
4Q2018	\$159,900	\$962	\$1,095	\$1,228	\$1,362	\$1,495
4Q2019	\$170,000	\$1,023	\$1,164	\$1,306	\$1,448	\$1,589
4Q2020	\$195,000	\$1,173	\$1,335	\$1,498	\$1,660	\$1,823
4Q2021	\$225,000	\$1,353	\$1,541	\$1,728	\$1,916	\$2,103

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.

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

Table 34. Home Price-to-Income Multiplier for First-Time Buyers by Additional Homeownership Costs

Property Taxes & Insurance	Home Price-to-Income Multiplier
2%	5.62
3%	4.93
4%	4.39
5%	3.95
6%	3.60

Note: Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.

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

Table 35. Required Qualifying Income by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
4Q2011	\$85,450	\$17,623	\$20,064	\$22,506	\$24,947	\$27,389
4Q2012	\$95,500	\$19,696	\$22,424	\$25,153	\$27,881	\$30,610
4Q2013	\$112,200	\$23,140	\$26,345	\$29,551	\$32,757	\$35,963
4Q2014	\$122,500	\$25,264	\$28,764	\$32,264	\$35,764	\$39,264
4Q2015	\$130,000	\$26,811	\$30,525	\$34,239	\$37,954	\$41,668
4Q2016	\$143,000	\$29,492	\$33,577	\$37,663	\$41,749	\$45,835
4Q2017	\$150,000	\$30,935	\$35,221	\$39,507	\$43,793	\$48,078
4Q2018	\$159,900	\$32,977	\$37,546	\$42,114	\$46,683	\$51,251
4Q2019	\$170,000	\$35,060	\$39,917	\$44,774	\$49,632	\$54,489
4Q2020	\$195,000	\$40,216	\$45,787	\$51,359	\$56,930	\$62,502
4Q2021	\$225,000	\$46,403	\$52,832	\$59,260	\$65,689	\$72,117

Note: The required qualifying income reflects the minimum income a household must earn to qualify for a mortgage loan for a particular home price. Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.

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

Table 36. Percentage of Households That Earned the Required Qualifying Income by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
4Q2011	\$85,450	72.8%	68.7%	64.7%	60.8%	57.1%
4Q2012	\$95,500	69.9%	65.5%	61.1%	57.1%	53.1%
4Q2013	\$112,200	65.0%	60.1%	55.5%	51.0%	46.7%
4Q2014	\$122,500	62.5%	57.6%	52.7%	48.0%	44.3%
4Q2015	\$130,000	61.4%	56.3%	51.1%	46.9%	43.0%
4Q2016	\$143,000	59.2%	53.7%	48.9%	44.6%	40.2%
4Q2017	\$150,000	59.2%	53.6%	49.0%	44.4%	39.9%
4Q2018	\$159,900	58.4%	53.0%	48.2%	43.4%	39.0%
4Q2019	\$170,000	57.6%	52.5%	47.4%	42.3%	38.5%
4Q2020*	\$195,000	69.8%	65.5%	61.2%	56.9%	53.1%
4Q2021*	\$225,000	65.1%	60.1%	55.1%	51.3%	47.7%

Note: Because first-time homebuyers constitute renter-occupied households, this table reflects income data solely for renter-occupied households. Assumes a 30-year loan term, 3.155 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.

*Represents estimates using 2020 ACS 1-Year Experimental Data.

Sources: American Community Survey, U.S. Census Bureau, and Texas Real Estate Research Center at Texas A&M University

Overview of Housing Affordability

Housing affordability persistently proves one of the most salient topics in housing markets across the state. Although definitions vary, housing affordability broadly denotes the relationship between home price (or rent) and household (or family) income.¹⁰ As such, housing affordability generally reflects the two housing tenures: owner- and renter-occupied housing. However, Center economists further classify owner-occupied housing affordability into two distinct categories: purchase and repayment affordability.

This report focuses only on purchase affordability. Purchase affordability measures the ability of a household to buy a home. In other words, it reflects home-purchasing potential. Repayment affordability, on the other hand, measures an existing homeowner’s ability to make timely monthly mortgage payments. While purchase affordability involves all potential

¹⁰ Household income reflects all households in the income distribution, including both family and nonfamily households, which consist of a householder living alone or a householder who shares his/her home with individual(s) of no relation to him/her. Meanwhile, family income includes only households in which the householder lives with at least one other related family member.

homebuyers, regardless of whether a household already owns a home, repayment affordability solely involves current homeowners (i.e., only owner-occupied households).

Measuring Purchase Affordability

The vast majority of homebuyers—86 percent in Texas in 2020—rely on mortgage financing to purchase a home. As such, purchase affordability largely acts as a function of income, wealth, and credit. These three factors typically constitute the primary determinants of a mortgage applicant’s creditworthiness, or the applicant’s ability to repay the mortgage loan, a factor heavily weighed by the mortgage lender in the decision to extend mortgage financing to an applicant. In mortgage financing, income, wealth, and credit materialize through the debt-to-income ratio (DTI), loan-to-value (LTV) ratio, and credit score.¹¹

Other factors that affect purchase affordability include the mortgage interest rate, any additional costs of borrowing mortgage capital (such as the mortgage insurance premium, which is generally charged if the LTV ratio is 80 percent or higher), and the additional costs of homeownership—property taxes and insurance.

Table 37 shows how characteristics of a mortgage loan or applicant affect the maximum home price affordable to a particular household. Holding all else equal, an increase in the loan term decreases the total monthly mortgage payment, which increases the maximum affordable home price. Meanwhile, an increase in the DTI ratio also raises the maximum affordable home price. However, an increase in the mortgage interest rate, LTV ratio, additional costs of homeownership, and additional costs of borrowing mortgage capital increase the total monthly mortgage payment, which decreases the maximum affordable home price and reduces home-purchasing potential.

¹¹ There are two types of DTI ratios: “front-end” and “back-end” ratios. The front-end DTI ratio measures mortgage debt as a percentage of household income, while the back-end ratio reflects total household debt—mortgage loans, car loans, credit card loans, student loans, etc.—as a percentage of household income. Should mortgage debt equal \$800 per month and the monthly household income equal \$2,400, then the front-end DTI ratio is 30 percent. Should total household debt equal \$1,200 per month, then the back-end DTI ratio is 50 percent. This report uses the front-end DTI ratio. The LTV ratio measures the household’s down payment as a percentage of the home price. A 5 percent down payment translates into a 95 percent LTV ratio.



Table 37. How Loan, Applicant Characteristics Affect Purchase Affordability

Loan or Applicant Characteristics	Effect on Purchase Affordability
Mortgage interest rate	An increase in the mortgage interest rate diminishes purchase affordability
Loan term	An increase in the loan term increases purchase affordability
LTV ratio	An increase in the loan-to-value ratio diminishes purchase affordability
DTI ratio	An increase in the DTI ratio increases purchase affordability
Additional costs of homeownership (property taxes and insurance)	An increase in the additional costs of homeownership diminishes purchase affordability
Additional costs of borrowing mortgage capital (such as the mortgage insurance premium)	An increase in the additional costs of borrowing mortgage capital diminishes purchase affordability

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

The Center uses the home price-to-income multiplier (also known as “home-purchasing power”) to find the ratio between home price and household income, or the maximum home price affordable to a household of a particular income. For example, a multiplier of 3 indicates a household could afford a home priced at three times the household’s income (so, a household earning \$50,000 annually could afford a maximum home price of \$150,000).

The multiplier generally measures lower for conventional borrowers, a function of the lower DTI ratios that such borrowers tend to present, and higher for first-time borrowers, who depict higher DTI ratios. The home price-to-income multiplier typically measures around 3 for the repeat homebuyer, and between 3 and 4 for first-time homebuyers.

This report computes purchase affordability for both repeat and first-time homebuyers. For the repeat buyer, calculations in this report assume the prevailing mortgage interest rate (3.125 percent in 4Q2021)¹², 80 percent LTV ratio, 30 percent DTI ratio, and property taxes and insurance of 4 percent of home value. First-time homebuyers, who tend to be younger and therefore have not accumulated as much wealth or achieved peak earnings, tend to have higher LTV and DTI ratios. The lower income, wealth, and credit of first-time homebuyers generally reduces the maximum home price affordable to them. The calculations of purchase affordability for first-time homebuyers reflect the prevailing mortgage interest rate (3.155 percent in 4Q2021), 0.5 percent mortgage insurance premium, 95 percent LTV ratio, 35 percent DTI ratio, and property taxes and insurance of 4 percent of home value.

¹² The source for the prevailing mortgage interest rate is CoreLogic.



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