

Houston-The Woodlands- Sugar Land

Housing Affordability Outlook



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Texas Real Estate Research Center

TECHNICAL REPORT

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About this Report

Texas Real Estate Research Center economists continuously monitor many facets of both state and local housing markets. *Houston-The Woodlands-Sugar Land Housing Affordability Outlook* summarizes significant housing activity and trends as related to affordability in the Houston-The Woodlands-Sugar Land MSA. 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 the Houston-The Woodlands-Sugar Land MSA. We hope you find them as useful as we do. Your feedback is always appreciated. Send comments and suggestions to info@recenter.tamu.edu.

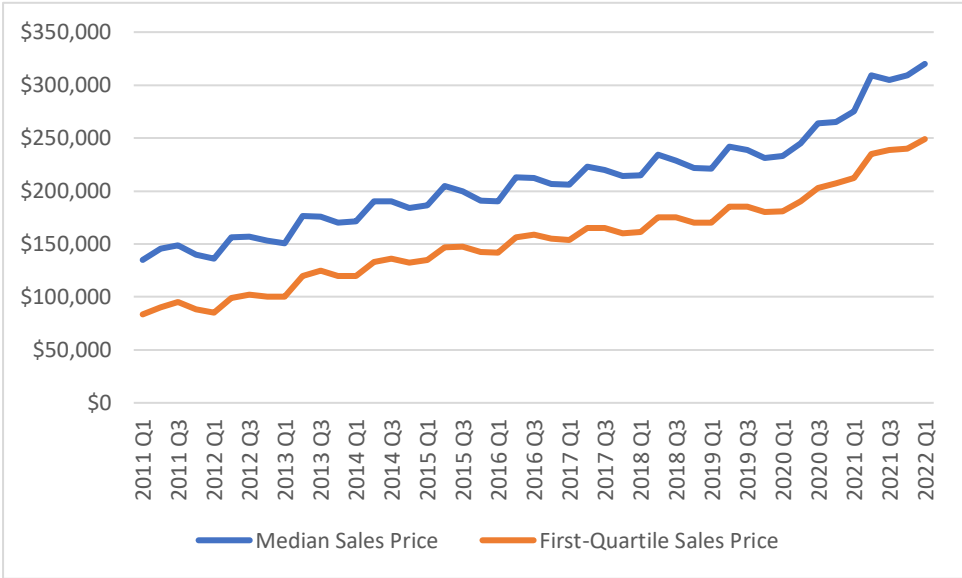
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Purchase Affordability

The first quarter saw an uptick in both the median sales price and first-quartile sales price for the Houston-The Woodlands-Sugar Land MSA (Figure 1).¹ The year-over-year (YOY) growth in median sales price and first-quartile home price in the Houston-The Woodlands-Sugar Land MSA measured 16.4 percent and 17.2 percent, respectively, significantly higher than average YOY growth for the first quarter (Table 1). The median sales price measured \$320,000; the first-quartile sales price, \$249,000. Meanwhile, following years of generally sluggish growth, family income increased considerably. From 2021 to 2022, median family income in the Houston-The Woodlands-Sugar Land MSA increased 13.8 percent (Table 2). However, as long as the rise in home prices continues to outpace the increase in income, purchase affordability, or the ability of a household to buy a home, will continue to diminish.

Meanwhile, mortgage interest rates remained low by historical standards, averaging 3.82 percent in 1Q2022 (Figure 2). All other things being equal, lower (higher) mortgage interest rates translate into lower (higher) monthly mortgage payments and ease (diminish) purchase affordability. The Federal Reserve is widely anticipated to continue to raise interest rates over the near-term to reduce inflationary pressures, which will likely prompt additional increases in mortgage interest rates. The average rate on the 30-year fixed-rate mortgage increased nearly one percentage point in March, rising from 3.76 percent to 4.67 percent. For more information on the effect of mortgage interest rates on purchase affordability, please see “How Higher Interest Rates Affect Homebuying” at <https://assets.recenter.tamu.edu/Documents/Articles/2339.pdf>.

Figure 1. Median and First-Quartile Sales Prices in the Houston-The Woodlands-Sugar Land MSA



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
1Q2011	\$134,900		\$83,500	
1Q2012	\$135,850	0.7%	\$85,000	1.8%
1Q2013	\$150,600	10.9%	\$100,000	17.6%
1Q2014	\$171,250	13.7%	\$120,000	20.0%
1Q2015	\$186,500	8.9%	\$135,000	12.5%
1Q2016	\$190,000	1.9%	\$142,000	5.2%
1Q2017	\$206,000	8.4%	\$154,000	8.5%
1Q2018	\$215,000	4.4%	\$161,000	4.5%
1Q2019	\$221,000	2.8%	\$170,000	5.6%
1Q2020	\$233,000	5.4%	\$181,000	6.5%
1Q2021	\$275,000	18.0%	\$212,500	17.4%
1Q2022	\$320,000	16.4%	\$249,000	17.2%

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	\$52,800		\$66,000	
2012	\$53,500	1.3%	\$66,900	1.4%
2013	\$52,950	-1.0%	\$66,200	-1.0%
2014	\$53,300	0.7%	\$66,600	0.6%
2015	\$55,450	4.0%	\$69,300	4.1%
2016	\$55,350	-0.2%	\$69,200	-0.1%
2017	\$57,200	3.3%	\$71,500	3.3%
2018	\$59,900	4.7%	\$74,900	4.8%
2019	\$61,050	1.9%	\$76,300	1.9%
2020	\$63,050	3.3%	\$78,800	3.3%
2021	\$63,350	0.5%	\$79,200	0.5%
2022	\$70,850	11.8%	\$90,100	13.8%

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 declined YOY as the gap between median sales price and family income continued to rise. For households earning the median family income for the Houston-The Woodlands-Sugar Land MSA in 2022 (\$90,100), the median sales price for 1Q2022 was not affordable to them unless the home price-to-income multiplier exceeded 3.5 (Table 3). Only 33.8 percent of homes sold in 1Q2022 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 \$107,000 annually to be able to afford the median sales price (\$320,000) with a home price-to-income multiplier of 3.

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

		Home Purchasing Power							
	Family Income	2	2.5	3	3.5	4	4.5	5	5.5
	\$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
Median Family Income	\$90,100	\$180,200	\$225,250	\$270,300	\$315,350	\$360,400	\$405,450	\$450,500	\$495,550
	\$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
Workforce Households	\$108,100	\$216,200	\$270,250	\$324,300	\$378,350	\$432,400	\$486,450	\$540,500	\$594,550
	\$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
	\$155,000	\$310,000	\$387,500	\$465,000	\$542,500	\$620,000	\$697,500	\$775,000	\$852,500
	\$160,000	\$320,000	\$400,000	\$480,000	\$560,000	\$640,000	\$720,000	\$800,000	\$880,000

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**

		Home Purchasing Power							
	Family Income	2	2.5	3	3.5	4	4.5	5	5.5
	\$80,000	5.0%	11.1%	22.6%	37.5%	50.4%	60.6%	68.7%	74.8%
	\$85,000	6.0%	13.4%	28.3%	42.9%	55.6%	64.9%	72.5%	78.2%
Median Family Income	\$90,100	7.3%	17.2%	33.8%	48.8%	60.6%	69.3%	76.2%	80.9%
	\$95,000	9.1%	21.1%	39.3%	53.5%	64.8%	72.7%	79.2%	82.9%
	\$100,000	11.1%	26.5%	44.4%	58.4%	68.7%	76.2%	81.5%	84.8%
	\$105,000	13.2%	30.7%	48.7%	61.8%	71.7%	78.7%	83.3%	86.3%
Workforce Households	\$108,100	14.5%	33.8%	50.9%	64.0%	73.5%	80.1%	84.2%	86.9%
	\$110,000	15.8%	35.6%	53.2%	65.7%	74.8%	80.9%	84.8%	87.6%
	\$115,000	18.9%	39.7%	56.7%	68.8%	77.5%	82.6%	86.2%	89.0%
	\$120,000	22.6%	44.4%	60.6%	71.7%	79.7%	84.2%	87.5%	90.1%
	\$125,000	26.5%	47.8%	63.7%	74.3%	81.5%	85.4%	88.7%	91.0%
	\$130,000	30.3%	51.9%	66.7%	76.8%	82.8%	86.6%	89.8%	91.8%
	\$135,000	33.8%	54.5%	69.3%	78.7%	84.2%	87.7%	90.7%	92.6%
	\$140,000	37.5%	58.4%	71.7%	80.5%	85.3%	88.9%	91.5%	93.2%
	\$145,000	41.1%	60.8%	74.1%	81.9%	86.4%	89.8%	92.2%	93.7%
	\$150,000	44.4%	63.7%	76.2%	83.3%	87.5%	90.7%	92.9%	94.2%
	\$155,000	47.4%	65.9%	78.0%	84.2%	88.4%	91.3%	93.3%	94.8%
	\$160,000	50.4%	68.7%	79.7%	85.3%	89.3%	92.0%	93.9%	95.3%

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 5). At a 3.29 percent rate, this payment was \$2,187 for the median-priced home in 1Q2022, more than twice the total monthly mortgage payment for the median-priced home in 1Q2011.

Table 6 shows the home price-to-income multiplier by mortgage interest rate. A 3.29 percent interest rate translates into a home price-to-income multiplier of 3.66², meaning a household could afford a maximum home price of 3.66 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 3.29 percent mortgage interest rate was \$87,478 for the median sales price in 1Q2022 (Table 7). An estimated 56.4 percent of current homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 1Q2022 with a 3.29 percent interest rate (Table 8), a decline of more than 22 percentage points from 1Q2011.

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

Year	Home Price	Mortgage Interest Rate						
		3%	3.29%	3.5%	4%	4.5%	5%	5.5%
1Q2011	\$134,900	\$905	\$922	\$934	\$965	\$996	\$1,029	\$1,062
1Q2012	\$135,850	\$911	\$928	\$941	\$972	\$1,003	\$1,036	\$1,070
1Q2013	\$150,600	\$1,010	\$1,029	\$1,043	\$1,077	\$1,112	\$1,149	\$1,186
1Q2014	\$171,250	\$1,148	\$1,170	\$1,186	\$1,225	\$1,265	\$1,306	\$1,349
1Q2015	\$186,500	\$1,251	\$1,275	\$1,292	\$1,334	\$1,378	\$1,423	\$1,469
1Q2016	\$190,000	\$1,274	\$1,298	\$1,316	\$1,359	\$1,403	\$1,449	\$1,496
1Q2017	\$206,000	\$1,381	\$1,408	\$1,427	\$1,473	\$1,522	\$1,571	\$1,622
1Q2018	\$215,000	\$1,442	\$1,469	\$1,489	\$1,538	\$1,588	\$1,640	\$1,693
1Q2019	\$221,000	\$1,482	\$1,510	\$1,531	\$1,581	\$1,632	\$1,686	\$1,741
1Q2020	\$233,000	\$1,563	\$1,592	\$1,614	\$1,667	\$1,721	\$1,777	\$1,835
1Q2021	\$275,000	\$1,844	\$1,879	\$1,905	\$1,967	\$2,031	\$2,098	\$2,166
1Q2022	\$320,000	\$2,146	\$2,187	\$2,216	\$2,289	\$2,364	\$2,441	\$2,520

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
3%	3.73
3.29%	3.66
3.5%	3.61
4%	3.50
4.5%	3.38
5%	3.28
5.5%	3.17

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						
		3%	3.29%	3.5%	4%	4.5%	5%	5.5%
1Q2011	\$134,900	\$36,186	\$36,877	\$37,371	\$38,596	\$39,859	\$41,160	\$42,497
1Q2012	\$135,850	\$36,441	\$37,137	\$37,634	\$38,868	\$40,140	\$41,450	\$42,796
1Q2013	\$150,600	\$40,398	\$41,169	\$41,720	\$43,088	\$44,498	\$45,951	\$47,443
1Q2014	\$171,250	\$45,937	\$46,814	\$47,441	\$48,996	\$50,600	\$52,251	\$53,948
1Q2015	\$186,500	\$50,028	\$50,983	\$51,666	\$53,359	\$55,106	\$56,904	\$58,752
1Q2016	\$190,000	\$50,967	\$51,940	\$52,635	\$54,360	\$56,140	\$57,972	\$59,855
1Q2017	\$206,000	\$55,259	\$56,314	\$57,068	\$58,938	\$60,867	\$62,854	\$64,895
1Q2018	\$215,000	\$57,673	\$58,774	\$59,561	\$61,513	\$63,527	\$65,600	\$67,731
1Q2019	\$221,000	\$59,283	\$60,414	\$61,223	\$63,229	\$65,299	\$67,431	\$69,621
1Q2020	\$233,000	\$62,501	\$63,695	\$64,547	\$66,663	\$68,845	\$71,092	\$73,401
1Q2021	\$275,000	\$73,768	\$75,176	\$76,183	\$78,679	\$81,255	\$83,907	\$86,632
1Q2022	\$320,000	\$85,839	\$87,478	\$88,649	\$91,554	\$94,551	\$97,637	\$100,808

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						
		3%	3.29%	3.5%	4%	4.5%	5%	5.5%
1Q2011	\$134,900	79.3%	78.8%	78.4%	77.4%	76.5%	75.5%	74.5%
1Q2012	\$135,850	79.2%	78.7%	78.3%	77.4%	76.4%	75.5%	74.5%
1Q2013	\$150,600	76.2%	75.7%	75.3%	74.3%	73.2%	72.2%	71.1%
1Q2014	\$171,250	72.7%	72.1%	71.6%	70.5%	69.4%	68.2%	67.1%
1Q2015	\$186,500	70.6%	69.9%	69.5%	68.3%	67.1%	65.8%	64.6%
1Q2016	\$190,000	70.8%	70.1%	69.7%	68.5%	67.3%	66.0%	64.8%
1Q2017	\$206,000	69.1%	68.4%	67.9%	66.6%	65.3%	64.0%	62.6%
1Q2018	\$215,000	68.8%	68.1%	67.6%	66.3%	65.0%	63.7%	62.3%
1Q2019	\$221,000	69.1%	68.4%	67.9%	66.6%	65.3%	64.0%	62.6%
1Q2020	\$233,000	67.7%	67.0%	66.4%	65.1%	63.8%	62.4%	61.0%
1Q2021	\$275,000	62.5%	61.7%	61.2%	59.8%	58.4%	57.0%	55.5%
1Q2022	\$320,000	57.3%	56.4%	55.8%	54.3%	52.6%	51.0%	49.4%

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.

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 \$2,187 for the median sales price in 1Q2022, more than twice the total monthly mortgage payment for the median-priced home in 1Q2011.

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 3.66³, meaning a household could afford a maximum home price of 3.66 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 \$87,478 for the median sales price in 1Q2022 (Table 11). An estimated 56.4 percent of current homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 1Q2022 with an 80 percent LTV ratio (Table 12), a decline of more than 22 percentage points from 1Q2011.

³ The home price-to-income multiplier is based on a 30-year loan term, 3.04 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.

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

		LTV Ratio				
Year	Home Price	80%	85%	90%	95%	100%
1Q2011	\$134,900	\$922	\$951	\$1,015	\$1,046	\$1,078
1Q2012	\$135,850	\$928	\$958	\$1,022	\$1,054	\$1,085
1Q2013	\$150,600	\$1,029	\$1,062	\$1,133	\$1,168	\$1,203
1Q2014	\$171,250	\$1,170	\$1,208	\$1,288	\$1,328	\$1,368
1Q2015	\$186,500	\$1,275	\$1,315	\$1,403	\$1,447	\$1,490
1Q2016	\$190,000	\$1,298	\$1,340	\$1,430	\$1,474	\$1,518
1Q2017	\$206,000	\$1,408	\$1,453	\$1,550	\$1,598	\$1,646
1Q2018	\$215,000	\$1,469	\$1,516	\$1,618	\$1,668	\$1,718
1Q2019	\$221,000	\$1,510	\$1,559	\$1,663	\$1,714	\$1,766
1Q2020	\$233,000	\$1,592	\$1,643	\$1,753	\$1,807	\$1,862
1Q2021	\$275,000	\$1,879	\$1,940	\$2,069	\$2,133	\$2,197
1Q2022	\$320,000	\$2,187	\$2,257	\$2,408	\$2,482	\$2,557

Note: Assumes a 30-year loan term, 3.29 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%	3.66
85%	3.54
90%	3.32
95%	3.22
100%	3.13

Note: Assumes a 30-year loan term, 3.29 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%
1Q2011	\$134,900	\$36,877	\$38,058	\$40,598	\$41,854	\$43,110
1Q2012	\$135,850	\$37,137	\$38,326	\$40,884	\$42,149	\$43,414
1Q2013	\$150,600	\$41,169	\$42,487	\$45,323	\$46,725	\$48,128
1Q2014	\$171,250	\$46,814	\$48,313	\$51,537	\$53,132	\$54,727
1Q2015	\$186,500	\$50,983	\$52,615	\$56,127	\$57,864	\$59,600
1Q2016	\$190,000	\$51,940	\$53,603	\$57,180	\$58,950	\$60,719
1Q2017	\$206,000	\$56,314	\$58,117	\$61,995	\$63,914	\$65,832
1Q2018	\$215,000	\$58,774	\$60,656	\$64,704	\$66,706	\$68,708
1Q2019	\$221,000	\$60,414	\$62,349	\$66,510	\$68,568	\$70,626
1Q2020	\$233,000	\$63,695	\$65,734	\$70,121	\$72,291	\$74,460
1Q2021	\$275,000	\$75,176	\$77,583	\$82,761	\$85,322	\$87,882
1Q2022	\$320,000	\$87,478	\$90,278	\$96,304	\$99,283	\$102,263

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, 3.29 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%
1Q2011	\$134,900	78.8%	77.9%	75.9%	74.9%	74.0%
1Q2012	\$135,850	78.7%	77.8%	75.9%	74.9%	74.0%
1Q2013	\$150,600	75.7%	74.7%	72.6%	71.6%	70.6%
1Q2014	\$171,250	72.1%	71.0%	68.7%	67.6%	66.5%
1Q2015	\$186,500	69.9%	68.8%	66.4%	65.2%	64.0%
1Q2016	\$190,000	70.1%	69.0%	66.6%	65.4%	64.2%
1Q2017	\$206,000	68.4%	67.2%	64.6%	63.3%	62.0%
1Q2018	\$215,000	68.1%	66.9%	64.3%	63.0%	61.7%
1Q2019	\$221,000	68.4%	67.2%	64.6%	63.3%	62.0%
1Q2020	\$233,000	67.0%	65.7%	63.0%	61.7%	60.4%
1Q2021	\$275,000	61.7%	60.4%	57.6%	56.2%	54.8%
1Q2022	\$320,000	56.4%	54.9%	51.7%	50.1%	48.8%

Note: Assumes a 30-year loan term, 3.29 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.

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 3.66⁴ (Table 13), meaning a household could afford a maximum home price of 3.66 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 \$87,478 for the median sales price in 1Q2022 (Table 14). An estimated 56.4 percent of current homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 1Q2022 with a 30 percent DTI ratio (Table 15), a decline of more than 22 percentage points from 1Q2011.

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

DTI Ratio	Home Price-to-Income Multiplier
20%	2.44
25%	3.05
30%	3.66
35%	4.27
40%	4.88
45%	5.49
50%	6.10

Note: Assumes a 30-year loan term, 3.29 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

⁴ The home price-to-income multiplier is based on a 30-year loan term, 3.29 percent mortgage interest rate, 80 percent LTV ratio, and property taxes and insurance of 4 percent.

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

		DTI Ratio						
Year	Home Price	20%	25%	30%	35%	40%	45%	50%
1Q2011	\$134,900	\$55,316	\$44,253	\$36,877	\$31,609	\$27,658	\$24,585	\$22,126
1Q2012	\$135,850	\$55,706	\$44,564	\$37,137	\$31,832	\$27,853	\$24,758	\$22,282
1Q2013	\$150,600	\$61,754	\$49,403	\$41,169	\$35,288	\$30,877	\$27,446	\$24,702
1Q2014	\$171,250	\$70,221	\$56,177	\$46,814	\$40,126	\$35,111	\$31,209	\$28,089
1Q2015	\$186,500	\$76,475	\$61,180	\$50,983	\$43,700	\$38,237	\$33,989	\$30,590
1Q2016	\$190,000	\$77,910	\$62,328	\$51,940	\$44,520	\$38,955	\$34,627	\$31,164
1Q2017	\$206,000	\$84,471	\$67,577	\$56,314	\$48,269	\$42,235	\$37,543	\$33,788
1Q2018	\$215,000	\$88,161	\$70,529	\$58,774	\$50,378	\$44,081	\$39,183	\$35,264
1Q2019	\$221,000	\$90,621	\$72,497	\$60,414	\$51,784	\$45,311	\$40,276	\$36,249
1Q2020	\$233,000	\$95,542	\$76,434	\$63,695	\$54,595	\$47,771	\$42,463	\$38,217
1Q2021	\$275,000	\$112,764	\$90,211	\$75,176	\$64,437	\$56,382	\$50,117	\$45,106
1Q2022	\$320,000	\$131,217	\$104,973	\$87,478	\$74,981	\$65,608	\$58,318	\$52,487

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, 3.29 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

		DTI Ratio						
Year	Home Price	20%	25%	30%	35%	40%	45%	50%
1Q2011	\$134,900	64.9%	73.1%	78.8%	82.7%	85.6%	87.9%	89.6%
1Q2012	\$135,850	65.0%	73.1%	78.7%	82.6%	85.6%	87.9%	89.5%
1Q2013	\$150,600	61.0%	69.6%	75.7%	80.0%	83.2%	85.7%	87.7%
1Q2014	\$171,250	55.8%	65.5%	72.1%	76.9%	80.5%	83.3%	85.6%
1Q2015	\$186,500	52.6%	62.9%	69.9%	75.1%	78.9%	81.9%	84.2%
1Q2016	\$190,000	52.9%	63.1%	70.1%	75.2%	79.0%	82.0%	84.4%
1Q2017	\$206,000	50.7%	60.8%	68.4%	73.7%	77.7%	80.8%	83.3%
1Q2018	\$215,000	50.4%	60.5%	68.1%	73.6%	77.6%	80.7%	83.1%
1Q2019	\$221,000	50.7%	60.8%	68.4%	73.8%	77.8%	80.8%	83.3%
1Q2020	\$233,000	48.9%	59.3%	67.0%	72.5%	76.7%	79.9%	82.4%
1Q2021	\$275,000	43.0%	53.6%	61.7%	68.1%	72.9%	76.6%	79.4%
1Q2022	\$320,000	36.7%	47.6%	56.4%	63.2%	68.6%	72.8%	76.2%

Note: Assumes a 30-year loan term, 3.29 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.

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, the monthly mortgage payment was \$2,187 for the median sales price in 1Q2022, more than twice the total monthly mortgage payment for the median-priced home in 1Q2011.

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 3.66⁵, meaning a household could afford a maximum home price of 3.66 times its annual income. The home price-to-income multiplier declines as the costs of property taxes and insurance increase.

The income required to qualify for a loan with property taxes and insurance at 4 percent of home price was \$87,478 for the median sales price in 1Q2022 (Table 18). An estimated 56.4 percent of current homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 1Q2022 with property taxes and insurance at 4 percent of home price (Table 19), a decline of more than 22 percentage points from 1Q2011.

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

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
1Q2011	\$134,900	\$697	\$810	\$922	\$1,034	\$1,147
1Q2012	\$135,850	\$702	\$815	\$928	\$1,042	\$1,155
1Q2013	\$150,600	\$778	\$904	\$1,029	\$1,155	\$1,280
1Q2014	\$171,250	\$885	\$1,028	\$1,170	\$1,313	\$1,456
1Q2015	\$186,500	\$964	\$1,119	\$1,275	\$1,430	\$1,585
1Q2016	\$190,000	\$982	\$1,140	\$1,298	\$1,457	\$1,615
1Q2017	\$206,000	\$1,065	\$1,236	\$1,408	\$1,580	\$1,751
1Q2018	\$215,000	\$1,111	\$1,290	\$1,469	\$1,649	\$1,828
1Q2019	\$221,000	\$1,142	\$1,326	\$1,510	\$1,695	\$1,879
1Q2020	\$233,000	\$1,204	\$1,398	\$1,592	\$1,787	\$1,981
1Q2021	\$275,000	\$1,421	\$1,650	\$1,879	\$2,109	\$2,338
1Q2022	\$320,000	\$1,654	\$1,920	\$2,187	\$2,454	\$2,720

Note: Assumes a 30-year loan term, 3.29 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

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

⁵ The home price-to-income multiplier is based on a 30-year loan term, 3.29 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

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

Property Taxes and Insurance	Home Price-to-Income Multiplier
2%	4.84
3%	4.17
4%	3.66
5%	3.26
6%	2.94

Note: Assumes a 30-year loan term, 3.29 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%
1Q2011	\$134,900	\$27,884	\$32,381	\$36,877	\$41,374	\$45,871
1Q2012	\$135,850	\$28,080	\$32,609	\$37,137	\$41,665	\$46,194
1Q2013	\$150,600	\$31,129	\$36,149	\$41,169	\$46,189	\$51,209
1Q2014	\$171,250	\$35,398	\$41,106	\$46,814	\$52,523	\$58,231
1Q2015	\$186,500	\$38,550	\$44,766	\$50,983	\$57,200	\$63,416
1Q2016	\$190,000	\$39,273	\$45,607	\$51,940	\$58,273	\$64,607
1Q2017	\$206,000	\$42,580	\$49,447	\$56,314	\$63,180	\$70,047
1Q2018	\$215,000	\$44,441	\$51,607	\$58,774	\$65,941	\$73,107
1Q2019	\$221,000	\$45,681	\$53,048	\$60,414	\$67,781	\$75,148
1Q2020	\$233,000	\$48,161	\$55,928	\$63,695	\$71,461	\$79,228
1Q2021	\$275,000	\$56,843	\$66,010	\$75,176	\$84,343	\$93,510
1Q2022	\$320,000	\$66,144	\$76,811	\$87,478	\$98,144	\$108,811

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, 3.29 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%
1Q2011	\$134,900	85.5%	82.1%	78.8%	75.3%	71.9%
1Q2012	\$135,850	85.4%	82.1%	78.7%	75.3%	71.9%
1Q2013	\$150,600	83.0%	79.4%	75.7%	72.0%	68.4%
1Q2014	\$171,250	80.3%	76.2%	72.1%	68.1%	64.1%
1Q2015	\$186,500	78.7%	74.3%	69.9%	65.6%	61.4%
1Q2016	\$190,000	78.8%	74.5%	70.1%	65.8%	61.5%
1Q2017	\$206,000	77.5%	73.0%	68.4%	63.8%	59.2%
1Q2018	\$215,000	77.3%	72.8%	68.1%	63.5%	58.8%
1Q2019	\$221,000	77.6%	73.0%	68.4%	63.8%	59.1%
1Q2020	\$233,000	76.5%	71.7%	67.0%	62.2%	57.7%
1Q2021	\$275,000	72.6%	67.1%	61.7%	56.8%	51.8%
1Q2022	\$320,000	68.3%	62.2%	56.4%	50.7%	46.0%

Note: Assumes a 30-year loan term, 3.29 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.

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

First-Time Homebuyer

Purchase affordability continued to decline in 1Q2022 for first-time homebuyers in the Houston-The Woodlands-Sugar Land MSA, particularly among the lowest-income cohorts. Despite sustained low mortgage interest rates, the YOY 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 \$27,750 and \$44,300 annually (i.e., between 31 and 50 percent of median family income) could afford a maximum home price between \$83,250 and \$132,900 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 \$111,000 and \$177,200 should the home price-to-income multiplier measure 4.

Depending on the home price-to-income multiplier, only households earning at least \$50,000 annually could afford the first-quartile sales price in 1Q2022. Homeownership is largely not feasible to households earning no more than 50 percent of 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

13.4 percent of homes for sale in the Houston-The Woodlands-Sugar Land MSA were affordable to households earning no more than 80 percent of area median income in 1Q2022 (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
	\$25,000	\$50,000	\$62,500	\$75,000	\$87,500	\$100,000	\$112,500	\$125,000	\$137,500
Extremely Low-Income (30%)	\$27,750	\$55,500	\$69,375	\$83,250	\$97,125	\$111,000	\$124,875	\$138,750	\$152,625
	\$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
	\$40,000	\$80,000	\$100,000	\$120,000	\$140,000	\$160,000	\$180,000	\$200,000	\$220,000
Very Low-Income Households (50%)	\$44,300	\$88,600	\$110,750	\$132,900	\$155,050	\$177,200	\$199,350	\$221,500	\$243,650
	\$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
	\$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
Low-Income Households (80%)	\$70,850	\$141,700	\$177,125	\$212,550	\$247,975	\$283,400	\$318,825	\$354,250	\$389,675
	\$75,000	\$150,000	\$187,500	\$225,000	\$262,500	\$300,000	\$337,500	\$375,000	\$412,500
	\$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

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

		Home Price-to-Income Multiplier							
	Family Income	2	2.5	3	3.5	4	4.5	5	5.5
	\$25,000	0.2%	0.2%	0.4%	0.7%	1.0%	1.4%	2.0%	2.7%
Extremely Low-Income (30%)	\$27,750	0.2%	0.3%	0.5%	0.9%	1.4%	1.9%	2.7%	4.0%
	\$30,000	0.2%	0.4%	0.8%	1.2%	1.8%	2.6%	3.9%	5.5%
	\$35,000	0.3%	0.7%	1.2%	1.8%	3.0%	4.5%	6.6%	9.2%
	\$40,000	0.5%	1.0%	1.8%	3.0%	5.0%	7.3%	11.1%	15.8%
Very Low-Income Households (50%)	\$44,300	0.7%	1.4%	2.4%	4.3%	6.8%	10.3%	15.9%	23.3%
	\$45,000	0.8%	1.4%	2.6%	4.5%	7.3%	11.3%	17.2%	24.7%
	\$50,000	1.0%	2.0%	3.9%	6.6%	11.1%	17.2%	26.5%	35.6%
	\$55,000	1.4%	2.7%	5.5%	9.2%	15.8%	24.7%	35.6%	44.8%
	\$60,000	1.8%	3.9%	7.3%	13.2%	22.6%	33.8%	44.4%	53.2%
	\$65,000	2.3%	5.2%	9.9%	17.6%	30.3%	41.5%	51.9%	59.7%
	\$70,000	3.0%	6.6%	13.2%	24.3%	37.5%	48.7%	58.4%	65.7%
Low-Income Households (80%)	\$70,850	3.1%	6.8%	13.4%	24.7%	38.0%	49.3%	58.8%	66.1%
	\$75,000	3.9%	8.3%	17.2%	30.7%	44.4%	54.5%	63.7%	70.3%
	\$80,000	5.0%	11.1%	22.6%	37.5%	50.4%	60.6%	68.7%	74.8%
	\$85,000	6.0%	13.4%	28.3%	42.9%	55.6%	64.9%	72.5%	78.2%

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 3.48 percent rate brought the mortgage payment to \$1,957 for the first-quartile sales price in 1Q2022, nearly three times the total monthly mortgage payment for the same home in 1Q2011.

Table 23 shows the home price-to-income multiplier by mortgage interest rate. A 3.48 percent interest rate translates into a home price-to-income multiplier of 3.71⁶, meaning a household could afford a maximum home price of 3.71 times its annual income. The home price-to-income multiplier declines as the mortgage interest rate increases.

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.

The income required to qualify for a loan with a 3.48 percent mortgage interest rate was \$67,083 for the first-quartile sales price in 1Q2022 (Table 24). An estimated 32.9 percent of renters in the Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 1Q2022 with a 3.48 percent interest rate (Table 25), a decline of more than 35 percentage points from 1Q2011.

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

Year	Home Price	Mortgage Interest Rate						
		3%	3.48%	3.5%	4%	4.5%	5%	5.5%
1Q2011	\$83,500	\$635	\$656	\$657	\$680	\$704	\$729	\$754
1Q2012	\$85,000	\$646	\$668	\$669	\$692	\$717	\$742	\$767
1Q2013	\$100,000	\$760	\$786	\$787	\$815	\$843	\$873	\$903
1Q2014	\$120,000	\$912	\$943	\$944	\$978	\$1,012	\$1,047	\$1,083
1Q2015	\$135,000	\$1,026	\$1,061	\$1,062	\$1,100	\$1,138	\$1,178	\$1,219
1Q2016	\$142,000	\$1,079	\$1,116	\$1,117	\$1,157	\$1,198	\$1,239	\$1,282
1Q2017	\$154,000	\$1,170	\$1,210	\$1,212	\$1,255	\$1,299	\$1,344	\$1,390
1Q2018	\$161,000	\$1,223	\$1,265	\$1,267	\$1,312	\$1,358	\$1,405	\$1,454
1Q2019	\$170,000	\$1,292	\$1,336	\$1,338	\$1,385	\$1,434	\$1,484	\$1,535
1Q2020	\$181,000	\$1,375	\$1,422	\$1,424	\$1,475	\$1,526	\$1,580	\$1,634
1Q2021	\$212,500	\$1,615	\$1,670	\$1,672	\$1,731	\$1,792	\$1,855	\$1,919
1Q2022	\$249,000	\$1,892	\$1,957	\$1,959	\$2,029	\$2,100	\$2,173	\$2,248

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
3%	3.84
3.48%	3.71
3.5%	3.71
4%	3.58
4.5%	3.46
5%	3.34

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						
		3%	3.48%	3.5%	4%	4.5%	5%	5.5%
1Q2011	\$83,500	\$21,756	\$22,496	\$22,527	\$23,323	\$24,143	\$24,985	\$25,849
1Q2012	\$85,000	\$22,146	\$22,900	\$22,932	\$23,742	\$24,577	\$25,434	\$26,313
1Q2013	\$100,000	\$26,055	\$26,941	\$26,979	\$27,932	\$28,914	\$29,922	\$30,957
1Q2014	\$120,000	\$31,266	\$32,329	\$32,374	\$33,518	\$34,696	\$35,907	\$37,148
1Q2015	\$135,000	\$35,174	\$36,371	\$36,421	\$37,708	\$39,033	\$40,395	\$41,792
1Q2016	\$142,000	\$36,998	\$38,256	\$38,310	\$39,663	\$41,057	\$42,490	\$43,959
1Q2017	\$154,000	\$40,124	\$41,489	\$41,547	\$43,015	\$44,527	\$46,080	\$47,673
1Q2018	\$161,000	\$41,948	\$43,375	\$43,436	\$44,971	\$46,551	\$48,175	\$49,840
1Q2019	\$170,000	\$44,293	\$45,800	\$45,864	\$47,484	\$49,153	\$50,868	\$52,627
1Q2020	\$181,000	\$47,159	\$48,763	\$48,831	\$50,557	\$52,334	\$54,159	\$56,032
1Q2021	\$212,500	\$55,366	\$57,250	\$57,330	\$59,356	\$61,441	\$63,585	\$65,783
1Q2022	\$249,000	\$64,876	\$67,083	\$67,177	\$69,551	\$71,995	\$74,506	\$77,082

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						
		3%	3.48%	3.5%	4%	4.5%	5%	5.5%
1Q2011	\$83,500	69.5%	68.4%	68.3%	67.0%	65.8%	64.4%	63.1%
1Q2012	\$85,000	69.5%	68.3%	68.2%	66.9%	65.6%	64.3%	63.0%
1Q2013	\$100,000	63.6%	62.4%	62.3%	61.0%	59.6%	58.2%	56.7%
1Q2014	\$120,000	57.4%	55.9%	55.8%	54.3%	52.6%	51.2%	49.9%
1Q2015	\$135,000	52.7%	51.4%	51.4%	50.0%	48.6%	47.2%	45.7%
1Q2016	\$142,000	52.2%	50.9%	50.8%	49.4%	47.9%	46.4%	44.8%
1Q2017	\$154,000	50.8%	49.3%	49.3%	47.7%	46.1%	44.5%	42.8%
1Q2018	\$161,000	50.8%	49.3%	49.2%	47.6%	46.0%	44.3%	42.6%
1Q2019	\$170,000	49.7%	48.1%	48.1%	46.4%	44.6%	43.1%	41.8%
1Q2020	\$181,000	48.0%	46.4%	46.3%	44.6%	43.3%	41.9%	40.4%
1Q2021	\$212,500	41.6%	40.1%	40.0%	38.4%	36.8%	35.1%	33.3%
1Q2022	\$249,000	34.7%	32.9%	32.8%	30.9%	28.9%	26.9%	25.5%

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.

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 \$1,957 for the first-quartile sales price in 1Q2022, nearly three times the total monthly mortgage payment for the same home in 1Q2011.

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 3.71⁷, meaning a household could afford a maximum home price of 3.71 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 \$67,083 for the first-quartile sales price in 1Q2022 (Table 28). An estimated 32.9 percent of renters in the Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 1Q2022 with a 95 percent LTV ratio (Table 29), a decline of more than 35 percentage points from 1Q2011.

Table 26. Total Monthly Mortgage Payment by LTV Ratio

Year	Home Price	LTV Ratio				
		95%	96.5%	97%	98%	100%
1Q2011	\$83,500	\$656	\$662	\$664	\$668	\$676
1Q2012	\$85,000	\$668	\$674	\$676	\$680	\$688
1Q2013	\$100,000	\$786	\$793	\$795	\$800	\$810
1Q2014	\$120,000	\$943	\$952	\$954	\$960	\$972
1Q2015	\$135,000	\$1,061	\$1,070	\$1,074	\$1,080	\$1,093
1Q2016	\$142,000	\$1,116	\$1,126	\$1,129	\$1,136	\$1,150
1Q2017	\$154,000	\$1,210	\$1,221	\$1,225	\$1,232	\$1,247
1Q2018	\$161,000	\$1,265	\$1,277	\$1,280	\$1,288	\$1,303
1Q2019	\$170,000	\$1,336	\$1,348	\$1,352	\$1,360	\$1,376
1Q2020	\$181,000	\$1,422	\$1,435	\$1,440	\$1,448	\$1,465
1Q2021	\$212,500	\$1,670	\$1,685	\$1,690	\$1,700	\$1,720
1Q2022	\$249,000	\$1,957	\$1,974	\$1,980	\$1,992	\$2,016

Note: Assumes a 30-year loan term, 3.48 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, 3.48 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%	3.71
96.5%	3.68
97%	3.67
98%	3.65
100%	3.60

Note: Assumes a 30-year loan term, 3.48 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%
1Q2011	\$83,500	\$22,496	\$22,700	\$22,769	\$22,905	\$23,178
1Q2012	\$85,000	\$22,900	\$23,108	\$23,178	\$23,316	\$23,594
1Q2013	\$100,000	\$26,941	\$27,186	\$27,268	\$27,431	\$27,758
1Q2014	\$120,000	\$32,329	\$32,623	\$32,721	\$32,917	\$33,309
1Q2015	\$135,000	\$36,371	\$36,701	\$36,811	\$37,032	\$37,473
1Q2016	\$142,000	\$38,256	\$38,604	\$38,720	\$38,952	\$39,416
1Q2017	\$154,000	\$41,489	\$41,867	\$41,992	\$42,244	\$42,747
1Q2018	\$161,000	\$43,375	\$43,770	\$43,901	\$44,164	\$44,690
1Q2019	\$170,000	\$45,800	\$46,216	\$46,355	\$46,633	\$47,188
1Q2020	\$181,000	\$48,763	\$49,207	\$49,355	\$49,650	\$50,241
1Q2021	\$212,500	\$57,250	\$57,770	\$57,944	\$58,291	\$58,985
1Q2022	\$249,000	\$67,083	\$67,693	\$67,897	\$68,303	\$69,116

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, 3.48 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%
1Q2011	\$83,500	68.4%	68.0%	67.9%	67.7%	67.3%
1Q2012	\$85,000	68.3%	67.9%	67.8%	67.6%	67.1%
1Q2013	\$100,000	62.4%	62.0%	61.9%	61.7%	61.2%
1Q2014	\$120,000	55.9%	55.5%	55.4%	55.1%	54.6%
1Q2015	\$135,000	51.4%	51.1%	51.0%	50.7%	50.3%
1Q2016	\$142,000	50.9%	50.5%	50.4%	50.1%	49.6%
1Q2017	\$154,000	49.3%	48.9%	48.8%	48.5%	48.0%
1Q2018	\$161,000	49.3%	48.9%	48.7%	48.5%	47.9%
1Q2019	\$170,000	48.1%	47.7%	47.5%	47.3%	46.7%
1Q2020	\$181,000	46.4%	45.9%	45.7%	45.4%	44.9%
1Q2021	\$212,500	40.1%	39.7%	39.5%	39.3%	38.7%
1Q2022	\$249,000	32.9%	32.4%	32.2%	31.9%	31.2%

Note: Assumes a 30-year loan term, 3.48 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.

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 3.71⁸ (Table 30), meaning a household could afford a maximum home price of 3.71 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 \$67,083 for the first-quartile sales price in 1Q2022 (Table 31). An estimated 32.9 percent of renters in the Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 1Q2022 with a 35 percent DTI ratio (Table 32), a decline of more than 35 percentage points from 1Q2022.

⁸ The home price-to-income multiplier is based on a 30-year loan term, 3.48 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%	2.12
25%	2.65
30%	3.18
35%	3.71
40%	4.24
45%	4.77
50%	5.30

Note: Assumes a 30-year loan term, 3.48 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%
1Q2011	\$83,500	\$39,368	\$31,494	\$26,245	\$22,496	\$19,684	\$17,497	\$15,747
1Q2012	\$85,000	\$40,075	\$32,060	\$26,717	\$22,900	\$20,037	\$17,811	\$16,030
1Q2013	\$100,000	\$47,147	\$37,718	\$31,431	\$26,941	\$23,573	\$20,954	\$18,859
1Q2014	\$120,000	\$56,576	\$45,261	\$37,718	\$32,329	\$28,288	\$25,145	\$22,631
1Q2015	\$135,000	\$63,648	\$50,919	\$42,432	\$36,371	\$31,824	\$28,288	\$25,459
1Q2016	\$142,000	\$66,949	\$53,559	\$44,632	\$38,256	\$33,474	\$29,755	\$26,779
1Q2017	\$154,000	\$72,606	\$58,085	\$48,404	\$41,489	\$36,303	\$32,269	\$29,043
1Q2018	\$161,000	\$75,907	\$60,725	\$50,604	\$43,375	\$37,953	\$33,736	\$30,363
1Q2019	\$170,000	\$80,150	\$64,120	\$53,433	\$45,800	\$40,075	\$35,622	\$32,060
1Q2020	\$181,000	\$85,336	\$68,269	\$56,891	\$48,763	\$42,668	\$37,927	\$34,134
1Q2021	\$212,500	\$100,187	\$80,150	\$66,792	\$57,250	\$50,094	\$44,528	\$40,075
1Q2022	\$249,000	\$117,396	\$93,917	\$78,264	\$67,083	\$58,698	\$52,176	\$46,958

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, 3.48 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%
1Q2011	\$83,500	44.8%	54.7%	62.5%	68.4%	72.8%	76.4%	79.3%
1Q2012	\$85,000	44.9%	54.6%	62.4%	68.3%	72.8%	76.4%	79.2%
1Q2013	\$100,000	37.9%	48.0%	56.0%	62.4%	67.4%	71.4%	74.7%
1Q2014	\$120,000	31.8%	41.3%	49.3%	55.9%	61.5%	65.9%	69.7%
1Q2015	\$135,000	27.7%	36.4%	45.0%	51.4%	57.3%	62.1%	66.0%
1Q2016	\$142,000	26.6%	35.9%	44.1%	50.9%	56.4%	61.4%	65.4%
1Q2017	\$154,000	24.1%	34.6%	42.1%	49.3%	54.8%	59.7%	63.9%
1Q2018	\$161,000	23.8%	34.6%	42.0%	49.3%	54.9%	59.6%	63.9%
1Q2019	\$170,000	23.1%	33.3%	41.2%	48.1%	54.1%	58.7%	63.1%
1Q2020	\$181,000	21.5%	30.9%	39.7%	46.4%	52.7%	57.6%	61.7%
1Q2021	\$212,500	15.2%	23.8%	32.5%	40.1%	45.7%	51.5%	56.2%
1Q2022	\$249,000	11.7%	18.1%	25.0%	32.9%	39.7%	45.0%	49.9%

Note: Assumes a 30-year loan term, 3.48 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.

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 \$1,957 for the first-quartile sales price in 1Q2022, nearly three times the total monthly mortgage payment for the same home in 1Q2011.

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 3.71⁹, meaning a household could afford a maximum home price of 3.71 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 property taxes and insurance at 4 percent of home price was \$67,083 for the first-quartile sales price in 1Q2022 (Table 35). An estimated 32.9 percent of Texas households could afford the first-quartile sales price in 1Q2022 with

⁹ The home price-to-income multiplier is based on a 30-year loan term, 3.48 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.

property taxes and insurance at 4 percent of home price (Table 36), a decline of more than 35 percentage points from 1Q2022.

Table 33. Total Monthly Mortgage Payment by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
1Q2011	\$83,500	\$517	\$587	\$656	\$726	\$795
1Q2012	\$85,000	\$526	\$597	\$668	\$739	\$810
1Q2013	\$100,000	\$619	\$702	\$786	\$869	\$952
1Q2014	\$120,000	\$743	\$843	\$943	\$1,043	\$1,143
1Q2015	\$135,000	\$836	\$948	\$1,061	\$1,173	\$1,286
1Q2016	\$142,000	\$879	\$997	\$1,116	\$1,234	\$1,352
1Q2017	\$154,000	\$953	\$1,082	\$1,210	\$1,338	\$1,467
1Q2018	\$161,000	\$997	\$1,131	\$1,265	\$1,399	\$1,533
1Q2019	\$170,000	\$1,052	\$1,194	\$1,336	\$1,477	\$1,619
1Q2020	\$181,000	\$1,121	\$1,271	\$1,422	\$1,573	\$1,724
1Q2021	\$212,500	\$1,316	\$1,493	\$1,670	\$1,847	\$2,024
1Q2022	\$249,000	\$1,542	\$1,749	\$1,957	\$2,164	\$2,372

Note: Assumes a 30-year loan term, 3.48 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%	4.71
3%	4.15
4%	3.71
5%	3.36
6%	3.06

Note: Assumes a 30-year loan term, 3.48 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%
1Q2011	\$83,500	\$17,724	\$20,110	\$22,496	\$24,882	\$27,267
1Q2012	\$85,000	\$18,043	\$20,471	\$22,900	\$25,329	\$27,757
1Q2013	\$100,000	\$21,227	\$24,084	\$26,941	\$29,798	\$32,655
1Q2014	\$120,000	\$25,472	\$28,901	\$32,329	\$35,758	\$39,187
1Q2015	\$135,000	\$28,656	\$32,513	\$36,371	\$40,228	\$44,085
1Q2016	\$142,000	\$30,142	\$34,199	\$38,256	\$42,314	\$46,371
1Q2017	\$154,000	\$32,689	\$37,089	\$41,489	\$45,889	\$50,289
1Q2018	\$161,000	\$34,175	\$38,775	\$43,375	\$47,975	\$52,575
1Q2019	\$170,000	\$36,086	\$40,943	\$45,800	\$50,657	\$55,514
1Q2020	\$181,000	\$38,421	\$43,592	\$48,763	\$53,935	\$59,106
1Q2021	\$212,500	\$45,107	\$51,178	\$57,250	\$63,321	\$69,393
1Q2022	\$249,000	\$52,855	\$59,969	\$67,083	\$74,198	\$81,312

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, 3.48 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%
1Q2011	\$83,500	76.0%	72.1%	68.4%	64.6%	61.0%
1Q2012	\$85,000	76.0%	72.1%	68.3%	64.4%	60.9%
1Q2013	\$100,000	71.0%	66.6%	62.4%	58.3%	54.3%
1Q2014	\$120,000	65.4%	60.7%	55.9%	51.4%	47.7%
1Q2015	\$135,000	61.6%	56.3%	51.4%	47.4%	43.3%
1Q2016	\$142,000	60.9%	55.4%	50.9%	46.6%	42.2%
1Q2017	\$154,000	59.2%	54.0%	49.3%	44.7%	40.2%
1Q2018	\$161,000	59.0%	54.0%	49.3%	44.5%	40.5%
1Q2019	\$170,000	58.2%	53.2%	48.1%	43.3%	39.7%
1Q2020	\$181,000	57.1%	51.7%	46.4%	42.0%	38.0%
1Q2021	\$212,500	50.9%	44.9%	40.1%	35.3%	30.5%
1Q2022	\$249,000	44.5%	38.7%	32.9%	27.1%	23.7%

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, 3.48 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 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

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.

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.

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.

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 (3.29 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

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

for first-time homebuyers reflect the prevailing mortgage interest rate (3.48 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.



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