

# Houston-The Woodlands- Sugar Land

## Housing Affordability Outlook



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TEXAS A&M UNIVERSITY

Texas Real Estate Research Center

TECHNICAL REPORT

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# Houston-The Woodlands-Sugar Land Housing Affordability Outlook 3Q2022

## 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 Metropolitan Statistical Area (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](mailto:info@recenter.tamu.edu).

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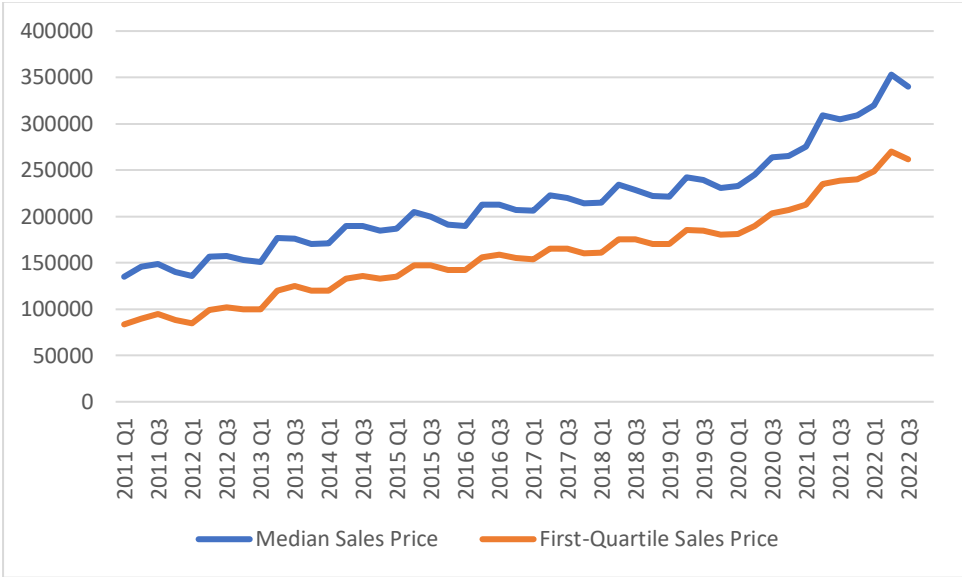


### Purchase Affordability

Affordability continued to decline in 3Q2022 amid higher mortgage interest rates and still-elevated home prices. Although home price appreciation declined from record highs observed in 2021, year-over-year (YOY) growth in both the median and first-quartile sales price remained higher than average, at 11.5 percent and 9.6 percent, respectively (Figure 1 and Table 1).<sup>1</sup> The significant YOY increase in family income followed years of modest rises (Table 2). While the rise in median family income (13.8 percent) outpaced the growth in median home price, the substantial uptick in mortgage rates essentially offset the effect of higher median family income.

The rapid rise in mortgage interest rates continued to diminish home purchasing-potential. Rates averaged 5.62 percent in 3Q2022, up considerably from 1Q2022 and slightly from 2Q2022, which averaged 3.82 and 5.27 percent, respectively (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. For more information on the effect of mortgage interest rates on purchase affordability, read “How Higher Interest Rates Affect Homebuying” (<https://www.recenter.tamu.edu/articles/tierra-grande/How-Higher-Interest-Rates-Affect-Homebuying-2339>).

**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

<sup>1</sup> 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	YOY Change
3Q2011	\$148,500		\$95,000	
3Q2012	\$157,000	4.7%	\$102,000	5.2%
3Q2013	\$176,000	12.1%	\$125,000	22.5%
3Q2014	\$190,000	8.0%	\$136,000	8.8%
3Q2015	\$200,000	5.3%	\$147,500	8.5%
3Q2016	\$212,500	6.3%	\$159,000	7.8%
3Q2017	\$220,000	3.5%	\$165,000	3.8%
3Q2018	\$228,800	4.0%	\$175,000	6.1%
3Q2019	\$239,000	4.5%	\$184,900	5.7%
3Q2020	\$264,000	10.5%	\$203,000	9.8%
3Q2021	\$305,000	15.5%	\$238,450	17.5%
<b>3Q2022</b>	<b>\$340,000</b>	<b>11.5%</b>	<b>\$261,400</b>	<b>9.6%</b>

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%
<b>2022</b>	<b>\$70,850</b>	<b>11.8%</b>	<b>\$90,100</b>	<b>13.8%</b>

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

Despite moderating home price growth, the gap between home price and family income remained wide. For households earning the median family income for the Houston-The Woodlands-Sugar Land MSA in 2022 (\$90,100), the median sales price for 3Q2022 was not affordable to them unless the home price-to-income multiplier exceeded 3.5 (Table 3). Only 28.4 percent of homes sold in 3Q2022 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 nearly \$115,000 annually to be able to afford the median sales price (\$340,000) with a home price-to-income multiplier of 3.

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

	Family Income	Home Price-to-Income Multiplier							
		2	2.5	3	3.5	4	4.5	5	5.5
	<b>\$80,000</b>	\$160,000	\$200,000	\$240,000	\$280,000	\$320,000	<b>\$360,000</b>	<b>\$400,000</b>	<b>\$440,000</b>
	<b>\$85,000</b>	\$170,000	\$212,500	\$255,000	\$297,500	<b>\$340,000</b>	<b>\$382,500</b>	<b>\$425,000</b>	<b>\$467,500</b>
<b>Median Family Income</b>	<b>\$90,100</b>	\$180,200	\$225,250	\$270,300	\$315,350	<b>\$360,400</b>	<b>\$405,450</b>	<b>\$450,500</b>	<b>\$495,550</b>
	<b>\$95,000</b>	\$190,000	\$237,500	\$285,000	\$332,500	<b>\$380,000</b>	<b>\$427,500</b>	<b>\$475,000</b>	<b>\$522,500</b>
	<b>\$100,000</b>	\$200,000	\$250,000	\$300,000	<b>\$350,000</b>	<b>\$400,000</b>	<b>\$450,000</b>	<b>\$500,000</b>	<b>\$550,000</b>
	<b>\$105,000</b>	\$210,000	\$262,500	\$315,000	<b>\$367,500</b>	<b>\$420,000</b>	<b>\$472,500</b>	<b>\$525,000</b>	<b>\$577,500</b>
<b>Workforce Households</b>	<b>\$108,100</b>	\$216,200	\$270,250	\$324,300	<b>\$378,350</b>	<b>\$432,400</b>	<b>\$486,450</b>	<b>\$540,500</b>	<b>\$594,550</b>
	<b>\$110,000</b>	\$220,000	\$275,000	\$330,000	<b>\$385,000</b>	<b>\$440,000</b>	<b>\$495,000</b>	<b>\$550,000</b>	<b>\$605,000</b>
	<b>\$115,000</b>	\$230,000	\$287,500	<b>\$345,000</b>	<b>\$402,500</b>	<b>\$460,000</b>	<b>\$517,500</b>	<b>\$575,000</b>	<b>\$632,500</b>
	<b>\$120,000</b>	\$240,000	\$300,000	<b>\$360,000</b>	<b>\$420,000</b>	<b>\$480,000</b>	<b>\$540,000</b>	<b>\$600,000</b>	<b>\$660,000</b>
	<b>\$125,000</b>	\$250,000	\$312,500	<b>\$375,000</b>	<b>\$437,500</b>	<b>\$500,000</b>	<b>\$562,500</b>	<b>\$625,000</b>	<b>\$687,500</b>
	<b>\$130,000</b>	\$260,000	\$325,000	<b>\$390,000</b>	<b>\$455,000</b>	<b>\$520,000</b>	<b>\$585,000</b>	<b>\$650,000</b>	<b>\$715,000</b>
	<b>\$135,000</b>	\$270,000	\$337,500	<b>\$405,000</b>	<b>\$472,500</b>	<b>\$540,000</b>	<b>\$607,500</b>	<b>\$675,000</b>	<b>\$742,500</b>
	<b>\$140,000</b>	\$280,000	<b>\$350,000</b>	<b>\$420,000</b>	<b>\$490,000</b>	<b>\$560,000</b>	<b>\$630,000</b>	<b>\$700,000</b>	<b>\$770,000</b>
	<b>\$145,000</b>	\$290,000	<b>\$362,500</b>	<b>\$435,000</b>	<b>\$507,500</b>	<b>\$580,000</b>	<b>\$652,500</b>	<b>\$725,000</b>	<b>\$797,500</b>
	<b>\$150,000</b>	\$300,000	<b>\$375,000</b>	<b>\$450,000</b>	<b>\$525,000</b>	<b>\$600,000</b>	<b>\$675,000</b>	<b>\$750,000</b>	<b>\$825,000</b>
	<b>\$155,000</b>	\$310,000	<b>\$387,500</b>	<b>\$465,000</b>	<b>\$542,500</b>	<b>\$620,000</b>	<b>\$697,500</b>	<b>\$775,000</b>	<b>\$852,500</b>
	<b>\$160,000</b>	\$320,000	<b>\$400,000</b>	<b>\$480,000</b>	<b>\$560,000</b>	<b>\$640,000</b>	<b>\$720,000</b>	<b>\$800,000</b>	<b>\$880,000</b>

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
	<b>\$80,000</b>	3.9%	8.9%	18.2%	32.2%	44.8%	55.6%	64.3%	70.9%
	<b>\$85,000</b>	4.8%	10.8%	23.1%	37.3%	50.3%	60.1%	68.4%	74.3%
<b>Median Family Income</b>	<b>\$90,100</b>	5.8%	13.8%	28.4%	43.3%	55.6%	64.9%	72.4%	77.6%
	<b>\$95,000</b>	7.1%	17.0%	33.8%	47.9%	60.0%	68.6%	75.4%	80.1%
	<b>\$100,000</b>	8.9%	21.6%	39.1%	53.3%	64.3%	72.4%	78.4%	82.7%
	<b>\$105,000</b>	10.6%	25.2%	43.3%	56.8%	67.5%	74.9%	80.5%	84.3%
<b>Workforce Households</b>	<b>\$108,100</b>	11.6%	28.4%	45.2%	59.0%	69.4%	76.6%	81.7%	85.2%
	<b>\$110,000</b>	12.6%	30.3%	47.7%	60.9%	70.9%	77.6%	82.7%	86.0%
	<b>\$115,000</b>	15.2%	34.2%	51.5%	64.4%	73.6%	79.7%	84.2%	87.4%
	<b>\$120,000</b>	18.2%	39.1%	55.6%	67.5%	76.0%	81.7%	85.8%	88.8%
	<b>\$125,000</b>	21.6%	42.2%	58.8%	70.2%	78.4%	83.3%	87.1%	89.8%
	<b>\$130,000</b>	24.9%	46.2%	62.0%	73.0%	80.0%	84.8%	88.4%	90.7%
	<b>\$135,000</b>	28.4%	49.2%	64.9%	74.9%	81.7%	86.0%	89.4%	91.5%
	<b>\$140,000</b>	32.2%	53.3%	67.5%	77.1%	83.3%	87.4%	90.4%	92.2%
	<b>\$145,000</b>	35.6%	55.7%	70.1%	78.8%	84.5%	88.5%	91.1%	92.7%
	<b>\$150,000</b>	39.1%	58.8%	72.4%	80.5%	85.8%	89.4%	91.9%	92.7%
	<b>\$155,000</b>	41.9%	61.1%	74.2%	81.7%	86.8%	90.1%	92.4%	94.0%
	<b>\$160,000</b>	44.8%	64.3%	76.0%	83.3%	87.8%	90.9%	93.0%	94.5%

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 5.62 percent rate, this payment was \$2,698 for the median-priced home in 3Q2022, over twice the total monthly mortgage payment for the median-priced home in 3Q2011.

Table 6 shows the home price-to-income multiplier by mortgage interest rate. A 5.62 percent interest rate translates into a home price-to-income multiplier of 3.15<sup>2</sup>, meaning a household could afford a maximum home price of 3.15 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 5.62 percent mortgage interest rate was \$107,930 for the median sales price in 3Q2022 (Table 7). An estimated 45.7 percent of homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 3Q2022 with a 5.62 percent interest rate (Table 8), a decline of over 25 percentage points from 3Q2011.

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

Year	Home Price	Mortgage Interest Rate						
		3%	4%	5%	5.62%	6%	6.5%	7%
3Q2011	\$148,500	\$996	\$1,062	\$1,133	<b>\$1,179</b>	\$1,207	\$1,246	\$1,285
3Q2012	\$157,000	\$1,053	\$1,123	\$1,198	<b>\$1,246</b>	\$1,276	\$1,317	\$1,359
3Q2013	\$176,000	\$1,180	\$1,259	\$1,343	<b>\$1,397</b>	\$1,431	\$1,477	\$1,523
3Q2014	\$190,000	\$1,274	\$1,359	\$1,449	<b>\$1,508</b>	\$1,545	\$1,594	\$1,645
3Q2015	\$200,000	\$1,341	\$1,431	\$1,526	<b>\$1,587</b>	\$1,626	\$1,678	\$1,731
3Q2016	\$212,500	\$1,425	\$1,520	\$1,621	<b>\$1,686</b>	\$1,728	\$1,783	\$1,839
3Q2017	\$220,000	\$1,475	\$1,574	\$1,678	<b>\$1,746</b>	\$1,789	\$1,846	\$1,904
3Q2018	\$228,800	\$1,534	\$1,637	\$1,745	<b>\$1,816</b>	\$1,860	\$1,920	\$1,980
3Q2019	\$239,000	\$1,603	\$1,709	\$1,823	<b>\$1,897</b>	\$1,943	\$2,005	\$2,069
3Q2020	\$264,000	\$1,770	\$1,888	\$2,014	<b>\$2,095</b>	\$2,146	\$2,215	\$2,285
3Q2021	\$305,000	\$2,045	\$2,182	\$2,327	<b>\$2,420</b>	\$2,480	\$2,559	\$2,640
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$2,280</b>	<b>\$2,432</b>	<b>\$2,593</b>	<b>\$2,698</b>	<b>\$2,764</b>	<b>\$2,853</b>	<b>\$2,943</b>

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

<sup>2</sup> 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**

<b>Mortgage Interest Rate</b>	<b>Home Price-to-Income Multiplier</b>
3%	3.73
4%	3.50
5%	3.28
<b>5.62%</b>	<b>3.15</b>
6%	3.08
6.5%	2.98
7%	2.89

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%	4%	5%	<b>5.62%</b>	6%	6.5%	7%
3Q2011	\$148,500	\$39,835	\$42,487	\$45,310	<b>\$47,140</b>	\$48,291	\$49,836	\$51,415
3Q2012	\$157,000	\$42,115	\$44,919	\$47,903	<b>\$49,838</b>	\$51,055	\$52,688	\$54,358
3Q2013	\$176,000	\$47,211	\$50,355	\$53,700	<b>\$55,870</b>	\$57,233	\$59,065	\$60,937
3Q2014	\$190,000	\$50,967	\$54,360	\$57,972	<b>\$60,314</b>	\$61,786	\$63,763	\$65,784
3Q2015	\$200,000	\$53,649	\$57,221	\$61,023	<b>\$63,488</b>	\$65,038	\$67,119	\$69,246
3Q2016	\$212,500	\$57,002	\$60,798	\$64,837	<b>\$67,457</b>	\$69,103	\$71,314	\$73,574
3Q2017	\$220,000	\$59,014	\$62,943	\$67,126	<b>\$69,837</b>	\$71,542	\$73,831	\$76,171
3Q2018	\$228,800	\$61,375	\$65,461	\$69,811	<b>\$72,631</b>	\$74,403	\$76,784	\$79,217
3Q2019	\$239,000	\$64,111	\$68,379	\$72,923	<b>\$75,869</b>	\$77,720	\$80,207	\$82,749
3Q2020	\$264,000	\$70,817	\$75,532	\$80,551	<b>\$83,805</b>	\$85,850	\$88,597	\$91,405
3Q2021	\$305,000	\$81,815	\$87,262	\$93,060	<b>\$96,820</b>	\$99,183	\$102,357	\$105,600
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$91,204</b>	<b>\$97,276</b>	<b>\$103,740</b>	<b>\$107,930</b>	<b>\$110,564</b>	<b>\$114,102</b>	<b>\$117,718</b>

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%	4%	5%	<b>5.62%</b>	6%	6.5%	7%
3Q2011	\$148,500	76.5%	74.5%	72.3%	<b>70.9%</b>	70.0%	68.8%	67.7%
3Q2012	\$157,000	75.0%	72.9%	70.6%	<b>69.2%</b>	68.3%	67.1%	65.9%
3Q2013	\$176,000	71.2%	69.0%	66.6%	<b>65.1%</b>	64.1%	62.9%	61.5%
3Q2014	\$190,000	69.1%	66.8%	64.3%	<b>62.7%</b>	61.6%	60.3%	58.9%
3Q2015	\$200,000	68.1%	65.6%	63.0%	<b>61.3%</b>	60.3%	58.8%	57.4%
3Q2016	\$212,500	66.7%	64.1%	61.4%	<b>59.6%</b>	58.5%	57.0%	55.5%
3Q2017	\$220,000	66.6%	63.9%	61.1%	<b>59.3%</b>	58.2%	56.6%	55.2%
3Q2018	\$228,800	66.4%	63.8%	60.9%	<b>59.1%</b>	58.0%	56.6%	55.3%
3Q2019	\$239,000	66.1%	63.4%	60.5%	<b>58.8%</b>	57.7%	56.4%	55.0%
3Q2020	\$264,000	62.6%	59.8%	57.0%	<b>55.3%</b>	54.2%	52.7%	51.2%
3Q2021*	\$305,000	57.8%	54.8%	51.6%	<b>49.6%</b>	48.3%	46.9%	45.5%
<b>3Q2022*</b>	<b>\$340,000</b>	<b>53.8%</b>	<b>50.5%</b>	<b>47.4%</b>	<b>45.7%</b>	<b>44.6%</b>	<b>43.1%</b>	<b>41.6%</b>

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 \$2,698 for the median sales price in 3Q2022, over twice the total monthly mortgage payment for the median-priced home in 3Q2011.

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 3.15<sup>3</sup>, meaning a household could afford a maximum home price of 3.15 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 \$107,930 for the median sales price in 3Q2022 (Table 11). An estimated 45.7 percent of homeowners in the

<sup>3</sup> The home price-to-income multiplier is based on a 30-year loan term, 5.62 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.

Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 3Q2022 with an 80 percent LTV ratio (Table 12), a decline of over 25 percentage points from 3Q2011.

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

Year	Home Price	LTV Ratio				
		80%	85%	90%	95%	100%
3Q2011	\$148,500	<b>\$1,179</b>	\$1,221	\$1,264	\$1,307	\$1,349
3Q2012	\$157,000	<b>\$1,246</b>	\$1,291	\$1,336	\$1,381	\$1,427
3Q2013	\$176,000	<b>\$1,397</b>	\$1,447	\$1,498	\$1,549	\$1,599
3Q2014	\$190,000	<b>\$1,508</b>	\$1,563	\$1,617	\$1,672	\$1,726
3Q2015	\$200,000	<b>\$1,587</b>	\$1,645	\$1,702	\$1,760	\$1,817
3Q2016	\$212,500	<b>\$1,686</b>	\$1,748	\$1,809	\$1,870	\$1,931
3Q2017	\$220,000	<b>\$1,746</b>	\$1,809	\$1,873	\$1,936	\$1,999
3Q2018	\$228,800	<b>\$1,816</b>	\$1,882	\$1,947	\$2,013	\$2,079
3Q2019	\$239,000	<b>\$1,897</b>	\$1,965	\$2,034	\$2,103	\$2,172
3Q2020	\$264,000	<b>\$2,095</b>	\$2,171	\$2,247	\$2,323	\$2,399
3Q2021	\$305,000	<b>\$2,420</b>	\$2,508	\$2,596	\$2,684	\$2,771
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$2,698</b>	<b>\$2,796</b>	<b>\$2,894</b>	<b>\$2,992</b>	<b>\$3,089</b>

Note: Assumes a 30-year loan term, 5.62 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
<b>80%</b>	<b>3.15</b>
85%	3.04
90%	2.94
95%	2.84
100%	2.75

Note: Assumes a 30-year loan term, 5.62 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%
3Q2011	\$148,500	<b>\$47,140</b>	\$48,849	\$50,558	\$52,266	\$53,975
3Q2012	\$157,000	<b>\$49,838</b>	\$51,645	\$53,452	\$55,258	\$57,065
3Q2013	\$176,000	<b>\$55,870</b>	\$57,895	\$59,920	\$61,945	\$63,971
3Q2014	\$190,000	<b>\$60,314</b>	\$62,500	\$64,687	\$66,873	\$69,059
3Q2015	\$200,000	<b>\$63,488</b>	\$65,790	\$68,091	\$70,393	\$72,694
3Q2016	\$212,500	<b>\$67,457</b>	\$69,902	\$72,347	\$74,792	\$77,237
3Q2017	\$220,000	<b>\$69,837</b>	\$72,369	\$74,900	\$77,432	\$79,963
3Q2018	\$228,800	<b>\$72,631</b>	\$75,264	\$77,896	\$80,529	\$83,162
3Q2019	\$239,000	<b>\$75,869</b>	\$78,619	\$81,369	\$84,119	\$86,869
3Q2020	\$264,000	<b>\$83,805</b>	\$86,843	\$89,880	\$92,918	\$95,956
3Q2021	\$305,000	<b>\$96,820</b>	\$100,330	\$103,839	\$107,349	\$110,858
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$107,930</b>	<b>\$111,843</b>	<b>\$115,755</b>	<b>\$119,667</b>	<b>\$123,580</b>

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, 5.62 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	LTV Ratio				
		80%	85%	90%	95%	100%
3Q2011	\$148,500	<b>70.9%</b>	69.6%	68.3%	67.1%	65.8%
3Q2012	\$157,000	<b>69.2%</b>	67.9%	66.6%	65.3%	64.0%
3Q2013	\$176,000	<b>65.1%</b>	63.7%	62.3%	60.8%	59.4%
3Q2014	\$190,000	<b>62.7%</b>	61.1%	59.6%	58.1%	56.6%
3Q2015	\$200,000	<b>61.3%</b>	59.7%	58.2%	56.6%	55.0%
3Q2016	\$212,500	<b>59.6%</b>	58.0%	56.3%	54.6%	53.3%
3Q2017	\$220,000	<b>59.3%</b>	57.6%	55.9%	54.5%	53.2%
3Q2018	\$228,800	<b>59.1%</b>	57.4%	56.0%	54.6%	53.1%
3Q2019	\$239,000	<b>58.8%</b>	57.3%	55.8%	54.3%	52.8%
3Q2020	\$264,000	<b>55.3%</b>	53.6%	52.0%	50.3%	48.7%
3Q2021*	\$305,000	<b>49.6%</b>	47.7%	46.3%	44.8%	43.4%
<b>3Q2022*</b>	<b>\$340,000</b>	<b>45.7%</b>	<b>44.0%</b>	<b>42.4%</b>	<b>40.7%</b>	<b>39.1%</b>

Note: Assumes a 30-year loan term, 5.62 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 3.15<sup>4</sup> (Table 13), meaning a household could afford a maximum home price of 3.15 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 \$107,930 for the median sales price in 3Q2022 (Table 14). An estimated 45.7 percent of homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 3Q2022 with a 30 percent DTI ratio (Table 15), a decline of over 25 percentage points from 3Q2011.

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

DTI Ratio	Home Price-to-Income Multiplier
20%	2.10
25%	2.63
<b>30%</b>	<b>3.15</b>
35%	3.68
40%	4.20
45%	4.73
50%	5.25

Note: Assumes a 30-year loan term, 5.62 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

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<sup>4</sup> The home price-to-income multiplier is based on a 30-year loan term, 5.62 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**

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
3Q2011	\$148,500	\$70,710	\$56,568	<b>\$47,140</b>	\$40,406	\$35,355	\$31,427	\$28,284
3Q2012	\$157,000	\$74,758	\$59,806	<b>\$49,838</b>	\$42,719	\$37,379	\$33,226	\$29,903
3Q2013	\$176,000	\$83,805	\$67,044	<b>\$55,870</b>	\$47,888	\$41,902	\$37,247	\$33,522
3Q2014	\$190,000	\$90,471	\$72,377	<b>\$60,314</b>	\$51,698	\$45,236	\$40,209	\$36,188
3Q2015	\$200,000	\$95,233	\$76,186	<b>\$63,488</b>	\$54,419	\$47,616	\$42,326	\$38,093
3Q2016	\$212,500	\$101,185	\$80,948	<b>\$67,457</b>	\$57,820	\$50,592	\$44,971	\$40,474
3Q2017	\$220,000	\$104,756	\$83,805	<b>\$69,837</b>	\$59,861	\$52,378	\$46,558	\$41,902
3Q2018	\$228,800	\$108,946	\$87,157	<b>\$72,631</b>	\$62,255	\$54,473	\$48,421	\$43,578
3Q2019	\$239,000	\$113,803	\$91,042	<b>\$75,869</b>	\$65,030	\$56,902	\$50,579	\$45,521
3Q2020	\$264,000	\$125,707	\$100,566	<b>\$83,805</b>	\$71,833	\$62,854	\$55,870	\$50,283
3Q2021	\$305,000	\$145,230	\$116,184	<b>\$96,820</b>	\$82,989	\$72,615	\$64,547	\$58,092
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$161,896</b>	<b>\$129,516</b>	<b>\$107,930</b>	<b>\$92,512</b>	<b>\$80,948</b>	<b>\$71,954</b>	<b>\$64,758</b>

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, 5.62 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%
3Q2011	\$148,500	53.7%	63.9%	<b>70.9%</b>	76.1%	79.9%	82.8%	85.2%
3Q2012	\$157,000	51.3%	62.0%	<b>69.2%</b>	74.5%	78.5%	81.6%	84.1%
3Q2013	\$176,000	46.6%	57.3%	<b>65.1%</b>	70.7%	75.1%	78.6%	81.3%
3Q2014	\$190,000	43.7%	54.3%	<b>62.7%</b>	68.6%	73.2%	76.8%	79.7%
3Q2015	\$200,000	42.1%	52.7%	<b>61.3%</b>	67.6%	72.3%	76.0%	79.0%
3Q2016	\$212,500	40.3%	51.2%	<b>59.6%</b>	66.2%	71.1%	74.9%	78.0%
3Q2017	\$220,000	40.5%	51.1%	<b>59.3%</b>	66.0%	71.0%	74.9%	77.9%
3Q2018	\$228,800	40.5%	51.0%	<b>59.1%</b>	65.9%	70.9%	74.8%	77.9%
3Q2019	\$239,000	40.1%	50.5%	<b>58.8%</b>	65.5%	70.6%	74.6%	77.7%
3Q2020	\$264,000	36.0%	46.3%	<b>55.3%</b>	62.0%	67.5%	71.8%	75.2%
3Q2021*	\$305,000	29.1%	41.1%	<b>49.6%</b>	57.1%	62.9%	67.7%	71.6%
<b>3Q2022*</b>	<b>\$340,000</b>	<b>27.6%</b>	<b>36.6%</b>	<b>45.7%</b>	<b>53.1%</b>	<b>59.4%</b>	<b>64.5%</b>	<b>68.7%</b>

Note: Assumes a 30-year loan term, 5.62 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, the monthly mortgage payment was \$2,698 for the median sales price in 3Q2022, over twice the total monthly mortgage payment for the median-priced home in 3Q2011.

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 3.15<sup>5</sup>, meaning a household could afford a maximum home price of 3.15 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 \$107,930 for the median sales price in 3Q2022 (Table 18). An estimated 45.7 percent of homeowners in the Houston-The Woodlands-Sugar Land MSA could afford the median sales price in 3Q2022 with property taxes and insurance at 4 percent of home price (Table 19), a decline of over 25 percentage points from 3Q2011.

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

Year	Home Price	Additional Costs of Homeownership				
		2%	3%	4%	5%	6%
3Q2011	\$148,500	\$931	\$1,055	<b>\$1,179</b>	\$1,302	\$1,426
3Q2012	\$157,000	\$984	\$1,115	<b>\$1,246</b>	\$1,377	\$1,508
3Q2013	\$176,000	\$1,103	\$1,250	<b>\$1,397</b>	\$1,543	\$1,690
3Q2014	\$190,000	\$1,191	\$1,350	<b>\$1,508</b>	\$1,666	\$1,825
3Q2015	\$200,000	\$1,254	\$1,421	<b>\$1,587</b>	\$1,754	\$1,921
3Q2016	\$212,500	\$1,332	\$1,509	<b>\$1,686</b>	\$1,863	\$2,041
3Q2017	\$220,000	\$1,379	\$1,563	<b>\$1,746</b>	\$1,929	\$2,113
3Q2018	\$228,800	\$1,434	\$1,625	<b>\$1,816</b>	\$2,006	\$2,197
3Q2019	\$239,000	\$1,498	\$1,698	<b>\$1,897</b>	\$2,096	\$2,295
3Q2020	\$264,000	\$1,655	\$1,875	<b>\$2,095</b>	\$2,315	\$2,535
3Q2021	\$305,000	\$1,912	\$2,166	<b>\$2,420</b>	\$2,675	\$2,929
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$2,132</b>	<b>\$2,415</b>	<b>\$2,698</b>	<b>\$2,982</b>	<b>\$3,265</b>

Note: Assumes a 30-year loan term, 5.62 percent mortgage interest rate, 80 percent LTV ratio, and 30 percent DTI ratio.

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

<sup>5</sup> The home price-to-income multiplier is based on a 30-year loan term, 5.62 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%	3.99
3%	3.52
<b>4%</b>	<b>3.15</b>
5%	2.85
6%	2.60

Note: Assumes a 30-year loan term, 5.62 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	Additional Costs of Homeownership				
		2%	3%	4%	5%	6%
3Q2011	\$148,500	\$37,240	\$42,190	<b>\$47,140</b>	\$52,090	\$57,040
3Q2012	\$157,000	\$39,372	\$44,605	<b>\$49,838</b>	\$55,072	\$60,305
3Q2013	\$176,000	\$44,137	\$50,003	<b>\$55,870</b>	\$61,737	\$67,603
3Q2014	\$190,000	\$47,647	\$53,981	<b>\$60,314</b>	\$66,647	\$72,981
3Q2015	\$200,000	\$50,155	\$56,822	<b>\$63,488</b>	\$70,155	\$76,822
3Q2016	\$212,500	\$53,290	\$60,373	<b>\$67,457</b>	\$74,540	\$81,623
3Q2017	\$220,000	\$55,171	\$62,504	<b>\$69,837</b>	\$77,171	\$84,504
3Q2018	\$228,800	\$57,377	\$65,004	<b>\$72,631</b>	\$80,257	\$87,884
3Q2019	\$239,000	\$59,935	\$67,902	<b>\$75,869</b>	\$83,835	\$91,802
3Q2020	\$264,000	\$66,205	\$75,005	<b>\$83,805</b>	\$92,605	\$101,405
3Q2021	\$305,000	\$76,487	\$86,653	<b>\$96,820</b>	\$106,987	\$117,153
<b>3Q2022</b>	<b>\$340,000</b>	<b>\$85,264</b>	<b>\$96,597</b>	<b>\$107,930</b>	<b>\$119,264</b>	<b>\$130,597</b>

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, 5.62 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	Additional Costs of Homeownership				
		2%	3%	4%	5%	6%
3Q2011	\$148,500	78.5%	74.7%	<b>70.9%</b>	67.2%	63.6%
3Q2012	\$157,000	77.0%	73.1%	<b>69.2%</b>	65.4%	61.7%
3Q2013	\$176,000	73.5%	69.2%	<b>65.1%</b>	61.0%	56.9%
3Q2014	\$190,000	71.5%	67.0%	<b>62.7%</b>	58.3%	53.9%
3Q2015	\$200,000	70.5%	65.9%	<b>61.3%</b>	56.7%	52.4%
3Q2016	\$212,500	69.2%	64.4%	<b>59.6%</b>	54.8%	50.8%
3Q2017	\$220,000	69.1%	64.2%	<b>59.3%</b>	54.7%	50.7%
3Q2018	\$228,800	69.0%	64.1%	<b>59.1%</b>	54.7%	50.6%
3Q2019	\$239,000	68.7%	63.7%	<b>58.8%</b>	54.4%	50.1%
3Q2020	\$264,000	65.4%	60.0%	<b>55.3%</b>	50.5%	45.9%
3Q2021*	\$305,000	60.7%	55.1%	<b>49.6%</b>	45.0%	40.7%
<b>3Q2022*</b>	<b>\$340,000</b>	<b>57.1%</b>	<b>50.9%</b>	<b>45.7%</b>	<b>40.9%</b>	<b>36.1%</b>

Note: Assumes a 30-year loan term, 5.62 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

Higher mortgage interest rates and a sustained high first-quartile sales price constrained purchase affordability for Houston-The Woodlands-Sugarland’s first-time buyers in 3Q2022. 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 3Q2022 (\$261,400). Homeownership is largely not feasible to households earning less 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 10.8 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 3Q2022 (Table 21).

**Table 20. Maximum Home Price 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
	<b>\$25,000</b>	\$50,000	\$62,500	\$75,000	\$87,500	\$100,000	\$112,500	\$125,000	\$137,500
<b>Extremely Low-Income (30%)</b>	<b>\$27,750</b>	\$55,500	\$69,375	\$83,250	\$97,125	\$111,000	\$124,875	\$138,750	\$152,625
	<b>\$30,000</b>	\$60,000	\$75,000	\$90,000	\$105,000	\$120,000	\$135,000	\$150,000	\$165,000
	<b>\$35,000</b>	\$70,000	\$87,500	\$105,000	\$122,500	\$140,000	\$157,500	\$175,000	\$192,500
	<b>\$40,000</b>	\$80,000	\$100,000	\$120,000	\$140,000	\$160,000	\$180,000	\$200,000	\$220,000
<b>Very Low-Income Households (50%)</b>	<b>\$44,300</b>	\$88,600	\$110,750	\$132,900	\$155,050	\$177,200	\$199,350	\$221,500	\$243,650
	<b>\$45,000</b>	\$90,000	\$112,500	\$135,000	\$157,500	\$180,000	\$202,500	\$225,000	\$247,500
	<b>\$50,000</b>	\$100,000	\$125,000	\$150,000	\$175,000	\$200,000	\$225,000	\$250,000	<b>\$275,000</b>
	<b>\$55,000</b>	\$110,000	\$137,500	\$165,000	\$192,500	\$220,000	\$247,500	<b>\$275,000</b>	<b>\$302,500</b>
	<b>\$60,000</b>	\$120,000	\$150,000	\$180,000	\$210,000	\$240,000	<b>\$270,000</b>	<b>\$300,000</b>	<b>\$330,000</b>
	<b>\$65,000</b>	\$130,000	\$162,500	\$195,000	\$227,500	\$260,000	<b>\$292,500</b>	<b>\$325,000</b>	<b>\$357,500</b>
	<b>\$70,000</b>	\$140,000	\$175,000	\$210,000	\$245,000	<b>\$280,000</b>	<b>\$315,000</b>	<b>\$350,000</b>	<b>\$385,000</b>
<b>Low-Income Households (80%)</b>	<b>\$70,850</b>	\$141,700	\$177,125	\$212,550	\$247,975	<b>\$283,400</b>	<b>\$318,825</b>	<b>\$354,250</b>	<b>\$389,675</b>
	<b>\$75,000</b>	\$150,000	\$187,500	\$225,000	<b>\$262,500</b>	<b>\$300,000</b>	<b>\$337,500</b>	<b>\$375,000</b>	<b>\$412,500</b>
	<b>\$80,000</b>	\$160,000	\$200,000	\$240,000	<b>\$280,000</b>	<b>\$320,000</b>	<b>\$360,000</b>	<b>\$400,000</b>	<b>\$440,000</b>
	<b>\$85,000</b>	\$170,000	\$212,500	\$255,000	<b>\$297,500</b>	<b>\$340,000</b>	<b>\$382,500</b>	<b>\$425,000</b>	<b>\$467,500</b>

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
	\$25,000	0.2%	0.3%	0.4%	0.5%	0.9%	1.2%	1.7%	2.2%
<b>Extremely Low-Income (30%)</b>	\$27,750	0.2%	0.3%	0.5%	0.7%	1.1%	1.6%	2.2%	3.3%
	\$30,000	0.2%	0.4%	0.6%	1.0%	1.5%	2.2%	3.2%	4.3%
	\$35,000	0.3%	0.5%	1.0%	1.6%	2.4%	3.6%	5.3%	7.3%
	\$40,000	0.5%	0.9%	1.5%	2.4%	3.9%	5.8%	8.9%	12.6%
<b>Very Low-Income Households (50%)</b>	\$44,300	0.5%	1.1%	2.0%	3.5%	5.4%	8.1%	12.7%	18.7%
	\$45,000	0.6%	1.2%	2.2%	3.6%	5.8%	9.0%	13.8%	20.0%
	\$50,000	0.9%	1.7%	3.2%	5.3%	8.9%	13.8%	21.6%	30.3%
	\$55,000	1.1%	2.2%	4.3%	7.3%	12.6%	20.0%	30.3%	39.4%
	\$60,000	1.5%	3.2%	5.8%	10.6%	18.2%	28.4%	39.1%	47.7%
	\$65,000	1.9%	4.0%	7.8%	14.1%	24.9%	35.8%	46.2%	54.6%
	\$70,000	2.4%	5.3%	10.6%	19.7%	32.2%	43.3%	53.3%	60.9%
<b>Low-Income Households (80%)</b>	\$70,850	2.5%	5.4%	10.8%	20.0%	32.7%	43.7%	53.6%	61.3%
	\$75,000	3.2%	6.6%	13.8%	25.2%	39.1%	49.2%	58.8%	66.0%
	\$80,000	3.9%	8.9%	18.2%	32.2%	44.8%	55.6%	64.3%	70.9%
	\$85,000	4.8%	10.8%	23.1%	37.3%	50.3%	60.1%	68.4%	74.3%

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 5.62 percent rate brought the mortgage payment to \$2,379 for the first-quartile sales price in 3Q2022, nearly 3 times the total monthly mortgage payment for the same home in 3Q2011.

Table 23 shows the home price-to-income multiplier by mortgage interest rate. A 5.62 percent interest rate translates into a home price-to-income multiplier of 3.20<sup>6</sup>, meaning a

<sup>6</sup> 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 3.20 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 5.62 percent mortgage interest rate was \$81,580 for the first-quartile sales price in 3Q2022 (Table 24). An estimated 24.8 percent of renters in the Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 3Q2022 with a 5.62 percent interest rate (Table 25), a decline of over 30 percentage points from 3Q2011.

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

Year	Home Price	Mortgage Interest Rate						
		3%	4%	5%	5.62%	6%	6.5%	7%
3Q2011	\$95,000	\$722	\$774	\$829	<b>\$865</b>	\$887	\$917	\$948
3Q2012	\$102,000	\$775	\$831	\$890	<b>\$928</b>	\$952	\$985	\$1,018
3Q2013	\$125,000	\$950	\$1,018	\$1,091	<b>\$1,138</b>	\$1,167	\$1,207	\$1,247
3Q2014	\$136,000	\$1,033	\$1,108	\$1,187	<b>\$1,238</b>	\$1,270	\$1,313	\$1,357
3Q2015	\$147,500	\$1,121	\$1,202	\$1,287	<b>\$1,343</b>	\$1,377	\$1,424	\$1,471
3Q2016	\$159,000	\$1,208	\$1,295	\$1,388	<b>\$1,447</b>	\$1,485	\$1,535	\$1,586
3Q2017	\$165,000	\$1,254	\$1,344	\$1,440	<b>\$1,502</b>	\$1,541	\$1,593	\$1,646
3Q2018	\$175,000	\$1,330	\$1,426	\$1,527	<b>\$1,593</b>	\$1,634	\$1,689	\$1,746
3Q2019	\$184,900	\$1,405	\$1,506	\$1,614	<b>\$1,683</b>	\$1,727	\$1,785	\$1,845
3Q2020	\$203,000	\$1,543	\$1,654	\$1,772	<b>\$1,848</b>	\$1,896	\$1,960	\$2,025
3Q2021	\$238,450	\$1,812	\$1,943	\$2,081	<b>\$2,171</b>	\$2,227	\$2,302	\$2,379
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$1,986</b>	<b>\$2,130</b>	<b>\$2,281</b>	<b>\$2,379</b>	<b>\$2,441</b>	<b>\$2,523</b>	<b>\$2,608</b>

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
4%	3.58
5%	3.34
<b>5.62%</b>	<b>3.20</b>
6%	3.12
6.5%	3.02
7%	2.92

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%	4%	5.0%	<b>5.62%</b>	6%	6.5%	7%
3Q2011	\$95,000	\$24,752	\$26,535	\$28,426	<b>\$29,648</b>	\$30,415	\$31,444	\$32,493
3Q2012	\$102,000	\$26,576	\$28,491	\$30,521	<b>\$31,833</b>	\$32,656	\$33,760	\$34,887
3Q2013	\$125,000	\$32,568	\$34,915	\$37,403	<b>\$39,011</b>	\$40,020	\$41,373	\$42,754
3Q2014	\$136,000	\$35,434	\$37,988	\$40,694	<b>\$42,444</b>	\$43,542	\$45,014	\$46,516
3Q2015	\$147,500	\$38,431	\$41,200	\$44,135	<b>\$46,033</b>	\$47,223	\$48,820	\$50,449
3Q2016	\$159,000	\$41,427	\$44,412	\$47,576	<b>\$49,622</b>	\$50,905	\$52,626	\$54,383
3Q2017	\$165,000	\$42,990	\$46,088	\$49,372	<b>\$51,494</b>	\$52,826	\$54,612	\$56,435
3Q2018	\$175,000	\$45,596	\$48,881	\$52,364	<b>\$54,615</b>	\$56,028	\$57,922	\$59,855
3Q2019	\$184,900	\$48,175	\$51,646	\$55,326	<b>\$57,705</b>	\$59,197	\$61,199	\$63,241
3Q2020	\$203,000	\$52,891	\$56,702	\$60,742	<b>\$63,354</b>	\$64,992	\$67,190	\$69,432
3Q2021	\$238,450	\$62,127	\$66,604	\$71,350	<b>\$74,417</b>	\$76,342	\$78,923	\$81,557
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$68,107</b>	<b>\$73,014</b>	<b>\$78,217</b>	<b>\$81,580</b>	<b>\$83,690</b>	<b>\$86,519</b>	<b>\$89,407</b>

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%	4%	5.00%	5.62%	6%	6.5%	7%
3Q2011	\$95,000	64.8%	62.1%	59.3%	<b>57.5%</b>	56.3%	54.8%	53.2%
3Q2012	\$102,000	62.6%	59.8%	56.8%	<b>54.9%</b>	53.7%	52.1%	50.5%
3Q2013	\$125,000	54.4%	51.1%	48.4%	<b>46.6%</b>	45.6%	44.1%	42.6%
3Q2014	\$136,000	51.7%	49.0%	46.1%	<b>44.3%</b>	43.1%	41.5%	39.9%
3Q2015	\$147,500	49.3%	46.3%	43.2%	<b>41.2%</b>	39.9%	38.3%	36.7%
3Q2016	\$159,000	47.5%	44.3%	40.9%	<b>38.8%</b>	37.7%	36.5%	35.3%
3Q2017	\$165,000	47.8%	44.5%	41.0%	<b>39.3%</b>	38.3%	37.1%	35.8%
3Q2018	\$175,000	47.0%	43.6%	40.7%	<b>39.0%</b>	38.0%	36.6%	35.2%
3Q2019	\$184,900	45.6%	42.5%	39.8%	<b>38.0%</b>	36.9%	35.4%	33.9%
3Q2020	\$203,000	42.8%	39.9%	36.8%	<b>34.7%</b>	33.5%	31.8%	30.0%
3Q2021*	\$238,450	36.9%	33.4%	29.7%	<b>27.3%</b>	26.2%	25.1%	24.0%
<b>3Q2022*</b>	<b>\$261,400</b>	<b>33.2%</b>	<b>29.3%</b>	<b>26.3%</b>	<b>24.8%</b>	<b>23.9%</b>	<b>22.7%</b>	<b>21.4%</b>

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 \$2,379 for the first-quartile sales price in 3Q2022, nearly three times the total monthly mortgage payment for the same home in 3Q2011.

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 3.2<sup>7</sup>, meaning a household could afford a maximum home price of 3.2 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 \$81,580 for the first-quartile sales price in 3Q2022 (Table 28). An estimated 24.8 percent of renters in the

<sup>7</sup> The home price-to-income multiplier is based on a 30-year loan term, 5.62 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 35 percent DTI ratio, and property taxes and insurance of 4 percent.

Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 3Q2022 with a 95 percent LTV ratio (Table 29), a decline of over 30 percentage points from 3Q2011.

**Table 26. Total Monthly Mortgage Payment by LTV Ratio**

Year	Home Price	LTV Ratio				
		95%	96.5%	97%	98%	100%
3Q2011	\$95,000	<b>\$865</b>	\$873	\$876	\$882	\$894
3Q2012	\$102,000	<b>\$928</b>	\$938	\$941	\$947	\$959
3Q2013	\$125,000	<b>\$1,138</b>	\$1,149	\$1,153	\$1,161	\$1,176
3Q2014	\$136,000	<b>\$1,238</b>	\$1,250	\$1,254	\$1,263	\$1,279
3Q2015	\$147,500	<b>\$1,343</b>	\$1,356	\$1,361	\$1,370	\$1,387
3Q2016	\$159,000	<b>\$1,447</b>	\$1,462	\$1,467	\$1,476	\$1,496
3Q2017	\$165,000	<b>\$1,502</b>	\$1,517	\$1,522	\$1,532	\$1,552
3Q2018	\$175,000	<b>\$1,593</b>	\$1,609	\$1,614	\$1,625	\$1,646
3Q2019	\$184,900	<b>\$1,683</b>	\$1,700	\$1,706	\$1,717	\$1,739
3Q2020	\$203,000	<b>\$1,848</b>	\$1,866	\$1,872	\$1,885	\$1,909
3Q2021	\$238,450	<b>\$2,171</b>	\$2,192	\$2,199	\$2,214	\$2,243
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$2,379</b>	<b>\$2,403</b>	<b>\$2,411</b>	<b>\$2,427</b>	<b>\$2,459</b>

Note: Assumes a 30-year loan term, 5.62 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 27. Home Price-to-Income Multiplier for First-Time Buyers by LTV Ratio**

LTV Ratio	Home-Purchasing Power
<b>95%</b>	<b>3.20</b>
96.5%	3.17
97%	3.16
98%	3.14
100%	3.10

Note: Assumes a 30-year loan term, 5.62 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%
3Q2011	\$95,000	<b>\$29,648</b>	\$29,945	\$30,044	\$30,242	\$30,637
3Q2012	\$102,000	<b>\$31,833</b>	\$32,152	\$32,258	\$32,470	\$32,895
3Q2013	\$125,000	<b>\$39,011</b>	\$39,401	\$39,532	\$39,792	\$40,312
3Q2014	\$136,000	<b>\$42,444</b>	\$42,869	\$43,010	\$43,293	\$43,860
3Q2015	\$147,500	<b>\$46,033</b>	\$46,494	\$46,647	\$46,954	\$47,569
3Q2016	\$159,000	<b>\$49,622</b>	\$50,119	\$50,284	\$50,615	\$51,277
3Q2017	\$165,000	<b>\$51,494</b>	\$52,010	\$52,182	\$52,525	\$53,212
3Q2018	\$175,000	<b>\$54,615</b>	\$55,162	\$55,344	\$55,708	\$56,437
3Q2019	\$184,900	<b>\$57,705</b>	\$58,283	\$58,475	\$58,860	\$59,630
3Q2020	\$203,000	<b>\$63,354</b>	\$63,988	\$64,199	\$64,622	\$65,467
3Q2021	\$238,450	<b>\$74,417</b>	\$75,162	\$75,410	\$75,907	\$76,900
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$81,580</b>	<b>\$82,396</b>	<b>\$82,668</b>	<b>\$83,213</b>	<b>\$84,301</b>

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, 5.62 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%
3Q2011	\$95,000	<b>57.5%</b>	57.0%	56.9%	56.6%	56.0%
3Q2012	\$102,000	<b>54.9%</b>	54.5%	54.3%	54.0%	53.4%
3Q2013	\$125,000	<b>46.6%</b>	46.2%	46.1%	45.8%	45.3%
3Q2014	\$136,000	<b>44.3%</b>	43.8%	43.7%	43.4%	42.7%
3Q2015	\$147,500	<b>41.2%</b>	40.7%	40.6%	40.2%	39.6%
3Q2016	\$159,000	<b>38.8%</b>	38.3%	38.2%	37.9%	37.5%
3Q2017	\$165,000	<b>39.3%</b>	38.9%	38.8%	38.6%	38.1%
3Q2018	\$175,000	<b>39.0%</b>	38.6%	38.5%	38.2%	37.7%
3Q2019	\$184,900	<b>38.0%</b>	37.6%	37.5%	37.2%	36.6%
3Q2020	\$203,000	<b>34.7%</b>	34.3%	34.1%	33.8%	33.1%
3Q2021*	\$238,450	<b>27.3%</b>	26.7%	26.6%	26.4%	26.0%
<b>3Q2022*</b>	<b>\$261,400</b>	<b>24.8%</b>	<b>24.5%</b>	<b>24.4%</b>	<b>24.1%</b>	<b>23.7%</b>

Note: Assumes a 30-year loan term, 5.62 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 3.2<sup>8</sup> (Table 30), meaning a household could afford a maximum home price of 3.2 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 \$81,580 for the first-quartile sales price in 3Q2022 (Table 31). An estimated 24.8 percent of renters in the Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 3Q2022 with a 35 percent DTI ratio (Table 32), a decline of over 30 percentage points from 3Q2011.

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

<b>DTI Ratio</b>	<b>Home Price-to-Income Multiplier</b>
20%	1.83
25%	2.29
30%	2.75
<b>35%</b>	<b>3.20</b>
40%	3.66
45%	4.12
50%	4.58

Note: Assumes a 30-year loan term, 5.62 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

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<sup>8</sup> The home price-to-income multiplier is based on a 30-year loan term, 5.62 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and property taxes and insurance of 4 percent.

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

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
3Q2011	\$95,000	\$51,885	\$41,508	\$34,590	<b>\$29,648</b>	\$25,942	\$23,060	\$20,754
3Q2012	\$102,000	\$55,708	\$44,566	\$37,138	<b>\$31,833</b>	\$27,854	\$24,759	\$22,283
3Q2013	\$125,000	\$68,269	\$54,615	\$45,513	<b>\$39,011</b>	\$34,135	\$30,342	\$27,308
3Q2014	\$136,000	\$74,277	\$59,422	\$49,518	<b>\$42,444</b>	\$37,138	\$33,012	\$29,711
3Q2015	\$147,500	\$80,558	\$64,446	\$53,705	<b>\$46,033</b>	\$40,279	\$35,803	\$32,223
3Q2016	\$159,000	\$86,838	\$69,471	\$57,892	<b>\$49,622</b>	\$43,419	\$38,595	\$34,735
3Q2017	\$165,000	\$90,115	\$72,092	\$60,077	<b>\$51,494</b>	\$45,058	\$40,051	\$36,046
3Q2018	\$175,000	\$95,577	\$76,462	\$63,718	<b>\$54,615</b>	\$47,788	\$42,479	\$38,231
3Q2019	\$184,900	\$100,984	\$80,787	\$67,323	<b>\$57,705</b>	\$50,492	\$44,882	\$40,394
3Q2020	\$203,000	\$110,869	\$88,695	\$73,913	<b>\$63,354</b>	\$55,435	\$49,275	\$44,348
3Q2021	\$238,450	\$130,230	\$104,184	\$86,820	<b>\$74,417</b>	\$65,115	\$57,880	\$52,092
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$142,765</b>	<b>\$114,212</b>	<b>\$95,176</b>	<b>\$81,580</b>	<b>\$71,382</b>	<b>\$63,451</b>	<b>\$57,106</b>

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, 5.62 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%
3Q2011	\$95,000	32.1%	42.5%	50.1%	<b>57.5%</b>	63.0%	67.5%	71.1%
3Q2012	\$102,000	30.6%	40.2%	48.0%	<b>54.9%</b>	60.7%	65.3%	69.2%
3Q2013	\$125,000	22.7%	31.8%	39.7%	<b>46.6%</b>	52.2%	57.6%	61.9%
3Q2014	\$136,000	19.8%	29.8%	36.7%	<b>44.3%</b>	49.9%	55.0%	59.6%
3Q2015	\$147,500	18.1%	27.2%	34.5%	<b>41.2%</b>	47.3%	52.0%	56.7%
3Q2016	\$159,000	16.9%	24.8%	32.9%	<b>38.8%</b>	45.4%	50.5%	54.7%
3Q2017	\$165,000	16.9%	24.5%	33.1%	<b>39.3%</b>	45.6%	50.8%	55.1%
3Q2018	\$175,000	16.1%	23.6%	32.4%	<b>39.0%</b>	44.7%	50.2%	54.6%
3Q2019	\$184,900	14.8%	22.9%	30.9%	<b>38.0%</b>	43.4%	49.1%	53.8%
3Q2020	\$203,000	13.3%	20.1%	26.6%	<b>34.7%</b>	40.9%	45.8%	50.9%
3Q2021*	\$238,450	10.1%	15.3%	21.8%	<b>27.3%</b>	34.6%	40.2%	44.8%
<b>3Q2022*</b>	<b>\$261,400</b>	<b>8.0%</b>	<b>13.9%</b>	<b>18.9%</b>	<b>24.8%</b>	<b>30.6%</b>	<b>36.9%</b>	<b>42.0%</b>

Note: Assumes a 30-year loan term, 5.62 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 \$2,379 for the first-quartile sales price in 3Q2022, nearly three times the total monthly mortgage payment for the same home in 3Q2011.

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 3.2<sup>9</sup>, meaning a household could afford a maximum home price of 3.2 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 \$81,580 for the first-quartile sales price in 3Q2022 (Table 35). An estimated 24.8 percent of renters in the Houston-The Woodlands-Sugar Land MSA could afford the first-quartile sales price in 3Q2022 with property taxes and insurance at 4 percent of home price (Table 36), a decline of over 30 percentage points from 3Q2022.

**Table 33. Total Monthly Mortgage Payment by Additional Homeownership Costs**

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
3Q2011	\$95,000	\$706	\$786	<b>\$865</b>	\$944	\$1,023
3Q2012	\$102,000	\$758	\$843	<b>\$928</b>	\$1,013	\$1,098
3Q2013	\$125,000	\$929	\$1,034	<b>\$1,138</b>	\$1,242	\$1,346
3Q2014	\$136,000	\$1,011	\$1,125	<b>\$1,238</b>	\$1,351	\$1,465
3Q2015	\$147,500	\$1,097	\$1,220	<b>\$1,343</b>	\$1,466	\$1,588
3Q2016	\$159,000	\$1,182	\$1,315	<b>\$1,447</b>	\$1,580	\$1,712
3Q2017	\$165,000	\$1,227	\$1,364	<b>\$1,502</b>	\$1,639	\$1,777
3Q2018	\$175,000	\$1,301	\$1,447	<b>\$1,593</b>	\$1,739	\$1,885
3Q2019	\$184,900	\$1,375	\$1,529	<b>\$1,683</b>	\$1,837	\$1,991
3Q2020	\$203,000	\$1,509	\$1,679	<b>\$1,848</b>	\$2,017	\$2,186
3Q2021	\$238,450	\$1,773	\$1,972	<b>\$2,171</b>	\$2,369	\$2,568
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$1,944</b>	<b>\$2,162</b>	<b>\$2,379</b>	<b>\$2,597</b>	<b>\$2,815</b>

Note: Assumes a 30-year loan term, 5.62 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

<sup>9</sup> The home price-to-income multiplier is based on a 30-year loan term, 5.62 percent mortgage interest rate, 0.5 percent mortgage insurance premium, 95 percent LTV ratio, and 35 percent DTI ratio.



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

Property Taxes & Insurance	Home Price-to-Income Multiplier
2%	3.92
3%	3.53
<b>4%</b>	<b>3.20</b>
5%	2.94
6%	2.71

Note: Assumes a 30-year loan term, 5.62 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%
3Q2011	\$95,000	\$24,220	\$26,934	<b>\$29,648</b>	\$32,363	\$35,077
3Q2012	\$102,000	\$26,004	\$28,919	<b>\$31,833</b>	\$34,747	\$37,662
3Q2013	\$125,000	\$31,868	\$35,440	<b>\$39,011</b>	\$42,582	\$46,154
3Q2014	\$136,000	\$34,673	\$38,558	<b>\$42,444</b>	\$46,330	\$50,215
3Q2015	\$147,500	\$37,604	\$41,819	<b>\$46,033</b>	\$50,247	\$54,462
3Q2016	\$159,000	\$40,536	\$45,079	<b>\$49,622</b>	\$54,165	\$58,708
3Q2017	\$165,000	\$42,066	\$46,780	<b>\$51,494</b>	\$56,209	\$60,923
3Q2018	\$175,000	\$44,615	\$49,615	<b>\$54,615</b>	\$59,615	\$64,615
3Q2019	\$184,900	\$47,139	\$52,422	<b>\$57,705</b>	\$62,988	\$68,271
3Q2020	\$203,000	\$51,754	\$57,554	<b>\$63,354</b>	\$69,154	\$74,954
3Q2021	\$238,450	\$60,792	\$67,604	<b>\$74,417</b>	\$81,230	\$88,043
<b>3Q2022</b>	<b>\$261,400</b>	<b>\$66,643</b>	<b>\$74,111</b>	<b>\$81,580</b>	<b>\$89,048</b>	<b>\$96,517</b>

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, 5.62 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%
3Q2011	\$95,000	65.6%	61.5%	<b>57.5%</b>	53.4%	49.4%
3Q2012	\$102,000	63.4%	59.2%	<b>54.9%</b>	50.7%	47.5%
3Q2013	\$125,000	55.4%	50.5%	<b>46.6%</b>	42.8%	39.0%
3Q2014	\$136,000	52.7%	48.4%	<b>44.3%</b>	40.1%	36.1%
3Q2015	\$147,500	50.1%	45.7%	<b>41.2%</b>	36.8%	34.0%
3Q2016	\$159,000	48.4%	43.6%	<b>38.8%</b>	35.5%	32.3%
3Q2017	\$165,000	48.7%	43.8%	<b>39.3%</b>	35.9%	32.5%
3Q2018	\$175,000	48.0%	42.8%	<b>39.0%</b>	35.4%	31.7%
3Q2019	\$184,900	46.7%	42.0%	<b>38.0%</b>	34.1%	30.2%
3Q2020	\$203,000	43.7%	39.2%	<b>34.7%</b>	30.3%	25.8%
3Q2021*	\$238,450	37.9%	32.6%	<b>27.3%</b>	24.2%	21.3%
<b>3Q2022*</b>	<b>\$261,400</b>	<b>34.4%</b>	<b>28.4%</b>	<b>24.8%</b>	<b>21.6%</b>	<b>18.3%</b>

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, 5.62 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.<sup>10</sup> 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).

<sup>10</sup> 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.

## 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.<sup>11</sup>

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.

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<sup>11</sup> 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**

<b>Loan or Applicant Characteristics</b>	<b>Effect on Purchase Affordability</b>
Mortgage interest rate	An increase in the mortgage interest rate <b>diminishes</b> purchase affordability
Loan term	An increase in the loan term <b>increases</b> purchase affordability
LTV ratio	An increase in the loan-to-value ratio <b>diminishes</b> purchase affordability
DTI ratio	An increase in the DTI ratio <b>increases</b> purchase affordability
Additional costs of homeownership (property taxes and insurance)	An increase in the additional costs of homeownership <b>diminishes</b> purchase affordability
Additional costs of borrowing mortgage capital (such as the mortgage insurance premium)	An increase in the additional costs of borrowing mortgage capital <b>diminishes</b> 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 (5.62 percent in 3Q2022)<sup>12</sup>, 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 (5.62 percent in 3Q2022), 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.

<sup>12</sup> The source for the prevailing mortgage interest rate is FRED/Freddie Mac.



TEXAS A&M UNIVERSITY

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