

Dallas-Fort Worth-Arlington Housing Affordability Outlook



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TECHNICAL REPORT

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3RD QUARTER 2022

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3Q2022

About this Report

Texas Real Estate Research Center economists continuously monitor many facets of both state and local housing markets. *Dallas-Fort Worth-Arlington Housing Affordability Outlook* summarizes significant housing activity and trends as related to affordability in the Dallas-Fort-Worth-Arlington 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 Dallas-Fort Worth-Arlington 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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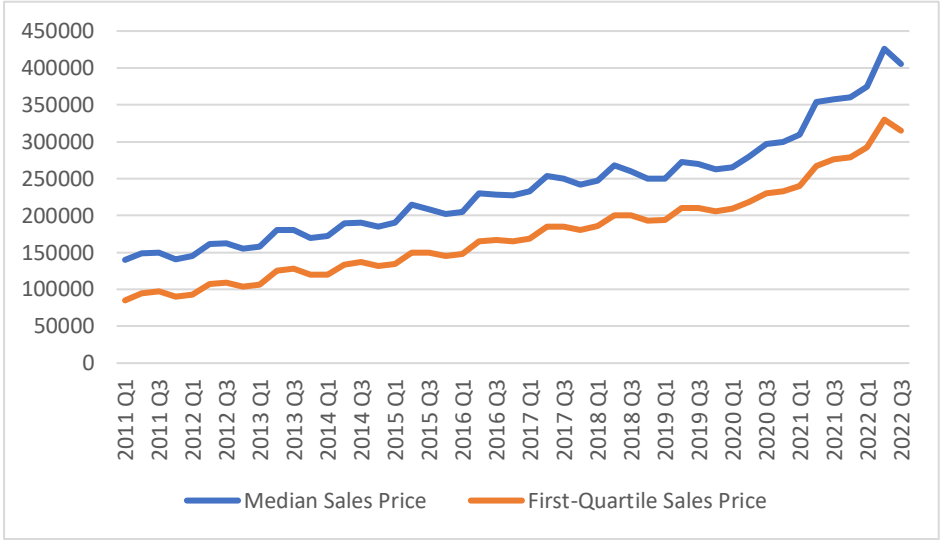


Purchase Affordability

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 13.3 percent and 14.2 percent, respectively (Figure 1 and Table 1).¹ The significant YOY increase in family income followed years of modest rises (Table 2). The rise in family income (9.4 percent) was outpaced by the growth in median home price; combined with a substantial uptick in mortgage rates, affordability declined.

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 Dallas-Fort Worth-Arlington 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, 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	\$150,000		\$97,000	
3Q2012	\$162,500	8.3%	\$109,000	12.4%
3Q2013	\$180,000	10.8%	\$127,694	17.2%
3Q2014	\$190,000	5.6%	\$136,670	7.0%
3Q2015	\$208,000	9.5%	\$150,000	9.8%
3Q2016	\$228,500	9.9%	\$166,900	11.3%
3Q2017	\$249,900	9.4%	\$185,000	10.8%
3Q2018	\$260,000	4.0%	\$200,000	8.1%
3Q2019	\$269,900	3.8%	\$210,000	5.0%
3Q2020	\$297,000	10.0%	\$230,000	9.5%
3Q2021	\$357,500	20.4%	\$275,731	19.9%
3Q2022	\$405,000	13.3%	\$315,000	14.2%

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	\$55,300		\$69,100	
2012	\$56,100	1.4%	\$70,100	1.4%
2013	\$54,000	-3.7%	\$67,500	-3.7%
2014	\$54,300	0.6%	\$67,900	0.6%
2015	\$56,300	3.7%	\$70,400	3.7%
2016	\$57,350	1.9%	\$71,700	1.8%
2017	\$58,700	2.4%	\$73,400	2.4%
2018	\$61,750	5.2%	\$77,200	5.2%
2019	\$66,500	7.7%	\$83,100	7.6%
2020	\$68,950	3.7%	\$86,200	3.7%
2021	\$71,200	3.3%	\$89,000	3.15%
2022	\$77,900	9.4%	\$97,400	9.4%

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

Source: United States Department of Housing and Urban Development



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



Sources: Federal Reserve Economic Data and Freddie Mac

Repeat Homebuyer

Purchase affordability continued to decline in 3Q2022 as the gap between median sales price and family income continued to rise. For households earning the median family income for DFW in 2022 (\$97,400), the median sales price for 3Q2022 (\$405,000) was not affordable unless the home price-to-income multiplier exceeded 4 (Table 3). Only 19.3 percent of homes sold in 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 \$135,000 annually to be able to afford the median sales price with a home price-to-income multiplier of 3.

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

		Home Price-to-Income Multiplier							
	Family Income	2	2.5	3	3.5	4	4.5	5	5.5
	\$85,000	\$170,000	\$212,500	\$255,000	\$297,500	\$340,000	\$382,500	\$425,000	\$467,500
	\$90,000	\$180,000	\$225,000	\$270,000	\$315,000	\$360,000	\$405,000	\$450,000	\$495,000
	\$95,000	\$190,000	\$237,500	\$285,000	\$332,500	\$380,000	\$427,500	\$475,000	\$522,500
Median Family Income	\$97,400	\$194,800	\$243,500	\$292,200	\$340,900	\$389,600	\$438,300	\$487,000	\$535,700
	\$100,000	\$200,000	\$250,000	\$300,000	\$350,000	\$400,000	\$450,000	\$500,000	\$550,000
	\$105,000	\$210,000	\$262,500	\$315,000	\$367,500	\$420,000	\$472,500	\$525,000	\$577,500
	\$110,000	\$220,000	\$275,000	\$330,000	\$385,000	\$440,000	\$495,000	\$550,000	\$605,000
	\$115,000	\$230,000	\$287,500	\$345,000	\$402,500	\$460,000	\$517,500	\$575,000	\$632,500
Workforce Households (120%)	\$116,900	\$233,800	\$292,250	\$350,700	\$409,150	\$467,600	\$526,050	\$584,500	\$642,950
	\$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

	Family Income	Home Price-to-Income Multiplier							
		2	2.5	3	3.5	4	4.5	5	5.5
	\$85,000	0.3%	5.5%	11.9%	20.5%	33.3%	44.6%	55.2%	62.7%
	\$90,000	3.1%	7.2%	14.6%	25.8%	39.1%	50.5%	60.2%	67.1%
	\$95,000	3.7%	8.7%	17.8%	30.6%	44.3%	55.4%	64.3%	70.5%
Median Family Income	\$97,400	3.8%	9.6%	19.3%	33.3%	45.9%	57.4%	65.8%	72.2%
	\$100,000	4.5%	11.2%	22.0%	36.5%	49.7%	60.2%	68.2%	74.0%
	\$105,000	5.4%	13.0%	25.8%	40.6%	53.9%	63.5%	71.2%	76.6%
	\$110,000	6.6%	15.6%	30.4%	45.5%	58.1%	67.1%	74.0%	79.4%
	\$115,000	7.9%	18.1%	34.5%	49.9%	61.8%	70.0%	76.5%	81.6%
Workforce Households (120%)	\$116,900	8.1%	19.3%	36.6%	50.9%	62.7%	71.2%	77.1%	82.2%
	\$120,000	9.4%	22.0%	39.1%	53.9%	65.1%	72.7%	79.1%	83.8%
	\$125,000	11.2%	24.7%	43.0%	57.3%	68.2%	75.1%	81.1%	85.4%
	\$130,000	12.8%	28.8%	46.7%	60.9%	70.4%	77.4%	83.2%	87.0%
	\$135,000	14.6%	32.0%	50.5%	63.5%	72.7%	79.5%	84.8%	88.3%
	\$140,000	16.8%	36.5%	53.9%	66.5%	75.0%	81.5%	86.4%	89.5%
	\$145,000	19.1%	39.4%	57.2%	68.7%	76.9%	83.2%	87.5%	90.4%
	\$150,000	22.0%	43.0%	60.2%	71.2%	79.1%	84.8%	88.9%	91.4%
	\$155,000	24.4%	45.7%	62.6%	72.8%	80.6%	85.8%	89.8%	92.2%
	\$160,000	27.3%	49.7%	65.1%	75.0%	82.1%	87.3%	90.8%	92.9%

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

Mortgage Interest Rate

Holding home price constant, the total monthly mortgage payment increases as the mortgage interest rate increases (Table 5). At a 5.62 percent rate, this payment was \$3,214 for the median-priced home in 3Q2022, nearly three times 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 3.15², 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.

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.

The income required to qualify for a loan with a 5.62 percent mortgage interest rate was \$128,564 for the median sales price in 3Q2022 (Table 7). An estimated 39.3 percent of homeowners in DFW could afford the median sales price in 3Q2022 with a 5.62 percent interest rate (Table 8), a decline of over 33 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	\$150,000	\$1,006	\$1,073	\$1,144	\$1,190	\$1,219	\$1,258	\$1,298
3Q2012	\$162,500	\$1,090	\$1,162	\$1,240	\$1,290	\$1,321	\$1,363	\$1,407
3Q2013	\$180,000	\$1,207	\$1,287	\$1,373	\$1,428	\$1,463	\$1,510	\$1,558
3Q2014	\$190,000	\$1,274	\$1,359	\$1,449	\$1,508	\$1,545	\$1,594	\$1,645
3Q2015	\$208,000	\$1,395	\$1,488	\$1,587	\$1,651	\$1,691	\$1,745	\$1,800
3Q2016	\$228,500	\$1,532	\$1,634	\$1,743	\$1,813	\$1,858	\$1,917	\$1,978
3Q2017	\$249,900	\$1,676	\$1,787	\$1,906	\$1,983	\$2,032	\$2,097	\$2,163
3Q2018	\$260,000	\$1,744	\$1,860	\$1,983	\$2,063	\$2,114	\$2,181	\$2,250
3Q2019	\$269,900	\$1,810	\$1,931	\$2,059	\$2,142	\$2,194	\$2,264	\$2,336
3Q2020	\$297,000	\$1,992	\$2,124	\$2,265	\$2,357	\$2,415	\$2,492	\$2,571
3Q2021	\$357,500	\$2,397	\$2,557	\$2,727	\$2,837	\$2,906	\$2,999	\$3,094
3Q2022	\$405,000	\$2,716	\$2,897	\$3,089	\$3,214	\$3,293	\$3,398	\$3,506

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

Mortgage Interest Rate	Home Price-to-Income Multiplier
3%	3.73
4%	3.50
5%	3.28
5.62%	3.15
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%	5.62%	6%	6.5%	7%
3Q2011	\$150,000	\$40,237	\$42,916	\$45,767	\$47,616	\$48,778	\$50,339	\$51,935
3Q2012	\$162,500	\$43,590	\$46,492	\$49,581	\$51,584	\$52,843	\$54,534	\$56,262
3Q2013	\$180,000	\$48,284	\$51,499	\$54,921	\$57,140	\$58,534	\$60,407	\$62,321
3Q2014	\$190,000	\$50,967	\$54,360	\$57,972	\$60,314	\$61,786	\$63,763	\$65,784
3Q2015	\$208,000	\$55,795	\$59,510	\$63,464	\$66,028	\$67,639	\$69,804	\$72,016
3Q2016	\$228,500	\$61,294	\$65,375	\$69,719	\$72,536	\$74,306	\$76,683	\$79,114
3Q2017	\$249,900	\$67,035	\$71,498	\$76,249	\$79,329	\$81,265	\$83,865	\$86,523
3Q2018	\$260,000	\$69,744	\$74,388	\$79,330	\$82,535	\$84,549	\$87,255	\$90,020
3Q2019	\$269,900	\$72,400	\$77,220	\$82,351	\$85,678	\$87,769	\$90,577	\$93,448
3Q2020	\$297,000	\$79,669	\$84,974	\$90,620	\$94,280	\$96,581	\$99,672	\$102,830
3Q2021	\$357,500	\$95,898	\$102,283	\$109,079	\$113,486	\$116,255	\$119,975	\$123,777
3Q2022	\$405,000	\$108,640	\$115,873	\$123,572	\$128,564	\$131,702	\$135,916	\$140,223

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%	5.62%	6%	6.5%	7%
3Q2011	\$150,000	78.1%	76.0%	73.9%	72.5%	71.6%	70.4%	69.2%
3Q2012	\$162,500	75.5%	73.3%	71.0%	69.5%	68.6%	67.3%	66.0%
3Q2013	\$180,000	71.9%	69.5%	67.0%	65.4%	64.3%	62.9%	61.5%
3Q2014	\$190,000	70.3%	67.8%	65.2%	63.5%	62.4%	60.9%	59.4%
3Q2015	\$208,000	67.1%	64.4%	61.5%	59.7%	58.5%	56.9%	55.3%
3Q2016	\$228,500	64.1%	61.2%	58.1%	56.1%	54.8%	53.4%	52.0%
3Q2017	\$249,900	61.8%	58.7%	55.5%	53.8%	52.7%	51.2%	49.7%
3Q2018	\$260,000	61.9%	58.8%	56.0%	54.2%	53.1%	51.6%	50.0%
3Q2019	\$269,900	62.2%	59.3%	56.4%	54.6%	53.4%	51.8%	50.2%
3Q2020	\$297,000	59.5%	56.5%	53.4%	51.3%	50.1%	48.4%	47.0%
3Q2021	\$357,500	52.3%	49.0%	46.1%	44.2%	43.0%	41.4%	39.8%
3Q2022	\$405,000	48.0%	44.9%	41.5%	39.3%	38.0%	36.1%	34.3%

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 \$3,214 for the median sales price in 3Q2022, nearly three times 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 3.15³, 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 \$128,564 for the median sales price in 3Q2022 (Table 11). An estimated 39.3 percent of homeowners in Dallas-Fort Worth-Arlington could afford the median sales price in 3Q2022 with an 80 percent LTV ratio (Table 12), a decline of over 33 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	\$150,000	\$1,190	\$1,234	\$1,277	\$1,320	\$1,363
3Q2012	\$162,500	\$1,290	\$1,336	\$1,383	\$1,430	\$1,477
3Q2013	\$180,000	\$1,428	\$1,480	\$1,532	\$1,584	\$1,636
3Q2014	\$190,000	\$1,508	\$1,563	\$1,617	\$1,672	\$1,726
3Q2015	\$208,000	\$1,651	\$1,711	\$1,770	\$1,830	\$1,890
3Q2016	\$228,500	\$1,813	\$1,879	\$1,945	\$2,011	\$2,076
3Q2017	\$249,900	\$1,983	\$2,055	\$2,127	\$2,199	\$2,271
3Q2018	\$260,000	\$2,063	\$2,138	\$2,213	\$2,288	\$2,363
3Q2019	\$269,900	\$2,142	\$2,220	\$2,297	\$2,375	\$2,453
3Q2020	\$297,000	\$2,357	\$2,442	\$2,528	\$2,613	\$2,699
3Q2021	\$357,500	\$2,837	\$2,940	\$3,043	\$3,146	\$3,249
3Q2022	\$405,000	\$3,214	\$3,331	\$3,447	\$3,564	\$3,680

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

³ 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.



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

LTV Ratio	Home Price-to-Income Multiplier
80%	3.15
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	\$150,000	\$47,616	\$49,342	\$51,068	\$52,794	\$54,520
3Q2012	\$162,500	\$51,584	\$53,454	\$55,324	\$57,194	\$59,064
3Q2013	\$180,000	\$57,140	\$59,211	\$61,282	\$63,353	\$65,425
3Q2014	\$190,000	\$60,314	\$62,500	\$64,687	\$66,873	\$69,059
3Q2015	\$208,000	\$66,028	\$68,421	\$70,815	\$73,208	\$75,602
3Q2016	\$228,500	\$72,536	\$75,165	\$77,794	\$80,424	\$83,053
3Q2017	\$249,900	\$79,329	\$82,204	\$85,080	\$87,956	\$90,831
3Q2018	\$260,000	\$82,535	\$85,527	\$88,519	\$91,510	\$94,502
3Q2019	\$269,900	\$85,678	\$88,783	\$91,889	\$94,995	\$98,100
3Q2020	\$297,000	\$94,280	\$97,698	\$101,115	\$104,533	\$107,950
3Q2021	\$357,500	\$113,486	\$117,599	\$121,713	\$125,827	\$129,940
3Q2022	\$405,000	\$128,564	\$133,224	\$137,885	\$142,545	\$147,205

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	\$150,000	72.5%	71.2%	69.9%	68.6%	67.3%
3Q2012	\$162,500	69.5%	68.1%	66.8%	65.4%	64.0%
3Q2013	\$180,000	65.4%	63.8%	62.3%	60.8%	59.2%
3Q2014	\$190,000	63.5%	61.8%	60.2%	58.6%	57.0%
3Q2015	\$208,000	59.7%	57.9%	56.2%	54.5%	52.8%
3Q2016	\$228,500	56.1%	54.3%	52.8%	51.3%	49.8%
3Q2017	\$249,900	53.8%	52.2%	50.5%	48.9%	47.3%
3Q2018	\$260,000	54.2%	52.5%	50.9%	49.2%	47.5%
3Q2019	\$269,900	54.6%	52.8%	51.1%	49.3%	47.6%
3Q2020	\$297,000	51.3%	49.5%	47.7%	46.2%	44.8%
3Q2021	\$357,500	44.2%	42.4%	40.6%	38.9%	37.1%
3Q2022	\$405,000	39.3%	37.3%	35.3%	33.2%	31.2%

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.

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 3.15⁴ (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 \$128,564 for the median sales price in 3Q2022 (Table 14). An estimated 39.3 percent of homeowners in the Dallas-Fort Worth-Arlington MSA could afford the median sales price in 3Q2022 with a 30 percent DTI ratio (Table 15), a decline of over 33 percentage points from 3Q2011.

⁴ 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 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
30%	3.15
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

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

Year	Home Price	DTI Ratio						
		20%	25%	30%	35%	40%	45%	50%
3Q2011	\$150,000	\$71,425	\$57,140	\$47,616	\$40,814	\$35,712	\$31,744	\$28,570
3Q2012	\$162,500	\$77,377	\$61,901	\$51,584	\$44,215	\$38,688	\$34,390	\$30,951
3Q2013	\$180,000	\$85,709	\$68,568	\$57,140	\$48,977	\$42,855	\$38,093	\$34,284
3Q2014	\$190,000	\$90,471	\$72,377	\$60,314	\$51,698	\$45,236	\$40,209	\$36,188
3Q2015	\$208,000	\$99,042	\$79,234	\$66,028	\$56,595	\$49,521	\$44,019	\$39,617
3Q2016	\$228,500	\$108,803	\$87,043	\$72,536	\$62,173	\$54,402	\$48,357	\$43,521
3Q2017	\$249,900	\$118,993	\$95,195	\$79,329	\$67,996	\$59,497	\$52,886	\$47,597
3Q2018	\$260,000	\$123,803	\$99,042	\$82,535	\$70,744	\$61,901	\$55,023	\$49,521
3Q2019	\$269,900	\$128,517	\$102,813	\$85,678	\$73,438	\$64,258	\$57,118	\$51,407
3Q2020	\$297,000	\$141,421	\$113,136	\$94,280	\$80,812	\$70,710	\$62,854	\$56,568
3Q2021	\$357,500	\$170,228	\$136,183	\$113,486	\$97,273	\$85,114	\$75,657	\$68,091
3Q2022	\$405,000	\$192,846	\$154,277	\$128,564	\$110,198	\$96,423	\$85,709	\$77,138

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	\$150,000	54.4%	65.3%	72.5%	77.6%	81.5%	84.3%	86.6%
3Q2012	\$162,500	50.6%	61.8%	69.5%	75.0%	79.1%	82.3%	84.7%
3Q2013	\$180,000	45.8%	56.9%	65.4%	71.4%	76.0%	79.5%	82.3%
3Q2014	\$190,000	43.7%	54.6%	63.5%	69.8%	74.5%	78.1%	81.0%
3Q2015	\$208,000	39.3%	50.7%	59.7%	66.5%	71.6%	75.6%	78.8%
3Q2016	\$228,500	36.6%	47.5%	56.1%	63.5%	69.0%	73.3%	76.8%
3Q2017	\$249,900	34.3%	44.8%	53.8%	61.1%	67.0%	71.5%	75.2%
3Q2018	\$260,000	34.5%	45.0%	54.2%	61.3%	67.1%	71.7%	75.4%
3Q2019	\$269,900	34.4%	45.3%	54.6%	61.6%	67.5%	72.0%	75.7%
3Q2020	\$297,000	30.4%	42.5%	51.3%	58.8%	64.7%	69.6%	73.5%
3Q2021	\$357,500	27.8%	34.4%	44.2%	51.5%	58.2%	63.5%	68.0%
3Q2022	\$405,000	28.5%	29.9%	39.3%	47.3%	53.7%	59.6%	64.3%

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.

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

Property Taxes and Insurance

Holding home price constant, the total monthly mortgage payment increases as the annual costs of property taxes and insurance increase (Table 16). Assuming the cost of property taxes and insurance is 4 percent of the home price, a monthly mortgage payment was \$3,214 for the median sales price in 3Q2022, nearly three times 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 3.15⁵, 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 \$128,564 for the median sales price in 3Q2022 (Table 18). An estimated 39.3 percent of homeowners in DFW could afford the median sales price in 3Q2022 with property

⁵ 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.

taxes and insurance at percent of home price (Table 19), a decline of over 33 percentage points from 3Q2011

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

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
3Q2011	\$150,000	\$940	\$1,065	\$1,190	\$1,315	\$1,440
3Q2012	\$162,500	\$1,019	\$1,154	\$1,290	\$1,425	\$1,560
3Q2013	\$180,000	\$1,128	\$1,278	\$1,428	\$1,578	\$1,728
3Q2014	\$190,000	\$1,191	\$1,350	\$1,508	\$1,666	\$1,825
3Q2015	\$208,000	\$1,304	\$1,477	\$1,651	\$1,824	\$1,997
3Q2016	\$228,500	\$1,433	\$1,623	\$1,813	\$2,004	\$2,194
3Q2017	\$249,900	\$1,567	\$1,775	\$1,983	\$2,191	\$2,400
3Q2018	\$260,000	\$1,630	\$1,847	\$2,063	\$2,280	\$2,497
3Q2019	\$269,900	\$1,692	\$1,917	\$2,142	\$2,367	\$2,592
3Q2020	\$297,000	\$1,862	\$2,110	\$2,357	\$2,605	\$2,852
3Q2021	\$357,500	\$2,241	\$2,539	\$2,837	\$3,135	\$3,433
3Q2022	\$405,000	\$2,539	\$2,877	\$3,214	\$3,552	\$3,889

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 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
4%	3.15
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	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
3Q2011	\$150,000	\$37,616	\$42,616	\$47,616	\$52,616	\$57,616
3Q2012	\$162,500	\$40,751	\$46,168	\$51,584	\$57,001	\$62,418
3Q2013	\$180,000	\$45,140	\$51,140	\$57,140	\$63,140	\$69,140
3Q2014	\$190,000	\$47,647	\$53,981	\$60,314	\$66,647	\$72,981
3Q2015	\$208,000	\$52,161	\$59,095	\$66,028	\$72,961	\$79,895
3Q2016	\$228,500	\$57,302	\$64,919	\$72,536	\$80,152	\$87,769
3Q2017	\$249,900	\$62,669	\$70,999	\$79,329	\$87,659	\$95,989
3Q2018	\$260,000	\$65,202	\$73,868	\$82,535	\$91,202	\$99,868
3Q2019	\$269,900	\$67,684	\$76,681	\$85,678	\$94,674	\$103,671
3Q2020	\$297,000	\$74,480	\$84,380	\$94,280	\$104,180	\$114,080
3Q2021	\$357,500	\$89,652	\$101,569	\$113,486	\$125,402	\$137,319
3Q2022	\$405,000	\$101,564	\$115,064	\$128,564	\$142,064	\$155,564

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	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
3Q2011	\$150,000	80.0%	76.3%	72.5%	68.7%	64.9%
3Q2012	\$162,500	77.6%	73.6%	69.5%	65.5%	61.5%
3Q2013	\$180,000	74.3%	69.8%	65.4%	60.9%	56.5%
3Q2014	\$190,000	72.7%	68.1%	63.5%	58.8%	54.2%
3Q2015	\$208,000	69.7%	64.7%	59.7%	54.6%	50.3%
3Q2016	\$228,500	67.0%	61.5%	56.1%	51.4%	47.1%
3Q2017	\$249,900	64.8%	59.0%	53.8%	49.1%	44.3%
3Q2018	\$260,000	65.0%	59.2%	54.2%	49.4%	44.5%
3Q2019	\$269,900	65.3%	59.6%	54.6%	49.5%	44.9%
3Q2020	\$297,000	62.4%	56.8%	51.3%	46.4%	42.1%
3Q2021	\$357,500	55.7%	49.3%	44.2%	39.1%	33.9%
3Q2022	\$405,000	51.1%	45.2%	39.3%	33.5%	29.8%

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.

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 diminished purchase affordability for DFW'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 \$29,200 and \$48,700 annually (i.e., between 31 and 50 percent of median family income) could afford a maximum home price between \$87,600 and \$146,100 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 \$116,800 and \$194,800 should the home price-to-income multiplier measure 4.

Depending on the home price-to-income multiplier, only households earning approximately \$60,000 annually could afford the first-quartile sales price in 3Q2022 (\$315,000). Homeownership is largely not feasible to households earning no more than 50 percent of Texas' median family income. In fact, homeownership really only becomes viable for households earning at least 80 percent of area median income. Even at that point it largely depends on whether mortgage lenders are willing to accept loans with high home price-to-income multipliers. Moreover, few homes are available for sale at these income thresholds. For instance, with a home price-to-income multiplier of 3, only 8.1 percent of homes for sale 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

		Home Price-to-Income Multiplier							
	Family Income	2	2.5	3	3.5	4	4.5	5	5.5
	\$15,000	\$30,000	\$37,500	\$45,000	\$52,500	\$60,000	\$67,500	\$75,000	\$82,500
	\$20,000	\$40,000	\$50,000	\$60,000	\$70,000	\$80,000	\$90,000	\$100,000	\$110,000
	\$25,000	\$50,000	\$62,500	\$75,000	\$87,500	\$100,000	\$112,500	\$125,000	\$137,500
Extremely Low-Income (30%)	\$29,200	\$58,400	\$73,000	\$87,600	\$102,200	\$116,800	\$131,400	\$146,000	\$160,600
	\$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
	\$45,000	\$90,000	\$112,500	\$135,000	\$157,500	\$180,000	\$202,500	\$225,000	\$247,500
Very Low-Income (50%)	\$48,700	\$97,400	\$121,750	\$146,100	\$170,450	\$194,800	\$219,150	\$243,500	\$267,850
	\$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
	\$75,000	\$150,000	\$187,500	\$225,000	\$262,500	\$300,000	\$337,500	\$375,000	\$412,500
Low-Income (80%)	\$77,900	\$155,800	\$194,750	\$233,700	\$272,650	\$311,600	\$350,550	\$389,500	\$428,450
	\$80,000	\$160,000	\$200,000	\$240,000	\$280,000	\$320,000	\$360,000	\$400,000	\$440,000

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

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

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

	Family Income	Home Price-to-Income Multiplier							
		2	2.5	3	3.5	4	4.5	5	5.5
	\$15,000	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
	\$20,000	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.4%	0.6%
	\$25,000	0.1%	0.2%	0.2%	0.3%	0.4%	0.6%	0.9%	1.2%
Extremely Low-Income (30%)	\$29,200	0.2%	0.2%	0.3%	0.4%	0.7%	1.0%	1.4%	2.0%
	\$30,000	0.2%	0.2%	0.3%	0.5%	0.8%	1.1%	1.6%	2.2%
	\$35,000	0.2%	0.3%	0.5%	0.8%	1.3%	1.9%	2.8%	3.8%
	\$40,000	0.2%	0.4%	0.8%	1.3%	2.0%	3.1%	4.5%	6.6%
	\$45,000	0.3%	0.6%	1.1%	1.9%	3.1%	4.6%	7.2%	10.2%
Very Low-Income (50%)	\$48,700	0.4%	0.8%	1.4%	2.5%	3.8%	6.1%	9.6%	13.9%
	\$50,000	0.4%	0.9%	1.6%	2.8%	4.5%	7.2%	11.2%	15.6%
	\$55,000	0.6%	1.2%	2.2%	3.8%	6.6%	10.2%	15.6%	22.2%
	\$60,000	0.8%	1.6%	3.1%	5.4%	9.4%	14.6%	22.0%	30.4%
	\$65,000	1.0%	2.1%	4.0%	7.4%	12.8%	19.3%	28.8%	38.0%
	\$70,000	1.3%	2.8%	5.4%	10.1%	16.8%	25.8%	36.5%	45.5%
	\$75,000	1.6%	3.4%	7.2%	13.0%	22.0%	32.0%	43.0%	51.9%
Low-Income (80%)	\$77,900	1.8%	3.8%	8.1%	14.8%	24.5%	36.6%	45.9%	55.4%
	\$80,000	2.0%	4.5%	9.4%	16.8%	27.3%	39.1%	49.7%	58.1%

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 \$2,867 for the first-quartile sales price in 3Q2022, over three 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 3.2⁶, meaning a

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

household could afford a maximum home price of 3.2 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 a 5.62 percent mortgage interest rate was \$98,308 for the first-quartile sales price in 3Q2022 (Table 24). An estimated 20.4 percent of renters in the Dallas-Fort Worth-Arlington MSA could afford the first-quartile sales price in 3Q2022 with a 5.62 percent interest rate (Table 25), a decline of nearly 40 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	\$97,000	\$737	\$790	\$847	\$883	\$906	\$936	\$968
3Q2012	\$109,000	\$828	\$888	\$951	\$992	\$1,018	\$1,052	\$1,087
3Q2013	\$127,694	\$970	\$1,040	\$1,114	\$1,162	\$1,192	\$1,233	\$1,274
3Q2014	\$136,670	\$1,039	\$1,113	\$1,193	\$1,244	\$1,276	\$1,319	\$1,363
3Q2015	\$150,000	\$1,140	\$1,222	\$1,309	\$1,365	\$1,401	\$1,448	\$1,496
3Q2016	\$166,900	\$1,268	\$1,360	\$1,457	\$1,519	\$1,559	\$1,611	\$1,665
3Q2017	\$185,000	\$1,406	\$1,507	\$1,615	\$1,684	\$1,728	\$1,786	\$1,846
3Q2018	\$200,000	\$1,520	\$1,629	\$1,745	\$1,821	\$1,868	\$1,931	\$1,995
3Q2019	\$210,000	\$1,596	\$1,711	\$1,833	\$1,912	\$1,961	\$2,027	\$2,095
3Q2020	\$230,000	\$1,748	\$1,874	\$2,007	\$2,094	\$2,148	\$2,220	\$2,294
3Q2021	\$275,731	\$2,095	\$2,246	\$2,406	\$2,510	\$2,575	\$2,662	\$2,751
3Q2022	\$315,000	\$2,394	\$2,566	\$2,749	\$2,867	\$2,941	\$3,041	\$3,142

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
5.62%	3.20
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%	5.62%	6%	6.5%	7%
3Q2011	\$97,000	\$25,273	\$27,094	\$29,025	\$30,273	\$31,055	\$32,105	\$33,177
3Q2012	\$109,000	\$28,400	\$30,446	\$32,615	\$34,018	\$34,897	\$36,077	\$37,281
3Q2013	\$127,694	\$33,270	\$35,668	\$38,209	\$39,852	\$40,882	\$42,265	\$43,675
3Q2014	\$136,670	\$35,609	\$38,175	\$40,895	\$42,653	\$43,756	\$45,236	\$46,745
3Q2015	\$150,000	\$39,082	\$41,898	\$44,883	\$46,813	\$48,024	\$49,648	\$51,304
3Q2016	\$166,900	\$43,485	\$46,619	\$49,940	\$52,087	\$53,435	\$55,241	\$57,085
3Q2017	\$185,000	\$48,201	\$51,674	\$55,356	\$57,736	\$59,229	\$61,232	\$63,276
3Q2018	\$200,000	\$52,109	\$55,864	\$59,845	\$62,418	\$64,032	\$66,197	\$68,406
3Q2019	\$210,000	\$54,715	\$58,657	\$62,837	\$65,538	\$67,233	\$69,507	\$71,826
3Q2020	\$230,000	\$59,926	\$64,244	\$68,821	\$71,780	\$73,637	\$76,126	\$78,667
3Q2021	\$275,731	\$71,841	\$77,017	\$82,505	\$86,052	\$88,278	\$91,263	\$94,308
3Q2022	\$315,000	\$82,072	\$87,986	\$94,255	\$98,308	\$100,850	\$104,260	\$107,739

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%	5.62%	6%	6.5%	7%
3Q2011	\$97,000	66.0%	63.2%	60.3%	58.4%	57.2%	55.6%	53.9%
3Q2012	\$109,000	61.6%	58.5%	55.3%	53.2%	51.9%	50.5%	49.1%
3Q2013	\$127,694	55.0%	51.7%	48.9%	47.0%	45.8%	44.3%	42.7%
3Q2014	\$136,670	52.9%	50.0%	46.9%	44.9%	43.7%	42.0%	40.3%
3Q2015	\$150,000	50.1%	46.9%	43.6%	41.4%	40.1%	38.2%	36.9%
3Q2016	\$166,900	47.0%	43.5%	39.9%	38.2%	37.2%	35.9%	34.5%
3Q2017	\$185,000	44.3%	41.0%	38.2%	36.3%	35.1%	33.6%	32.0%
3Q2018	\$200,000	43.4%	40.3%	37.1%	35.1%	33.8%	32.0%	30.3%
3Q2019	\$210,000	43.8%	40.6%	37.2%	35.0%	33.6%	31.8%	29.9%
3Q2020	\$230,000	41.7%	38.1%	34.3%	31.8%	30.3%	28.6%	27.3%
3Q2021	\$275,731	33.7%	30.0%	27.2%	25.4%	24.2%	22.7%	21.1%
3Q2022	\$315,000	29.1%	25.9%	22.6%	20.4%	19.3%	18.4%	17.5%

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 \$2,867 for the first-quartile sales price in 3Q2022, over 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 3.2⁷, 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 \$98,308 for the first-quartile sales price in 3Q2022 (Table 28). An estimated 20.4 percent of renters in the Dallas-Fort Worth-Arlington MSA could afford the first-quartile sales price in 3Q2022 with a 95 percent LTV ratio (Table 29), a decline of nearly 40 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	\$97,000	\$883	\$892	\$895	\$901	\$912
3Q2012	\$109,000	\$992	\$1,002	\$1,005	\$1,012	\$1,025
3Q2013	\$127,694	\$1,162	\$1,174	\$1,178	\$1,186	\$1,201
3Q2014	\$136,670	\$1,244	\$1,256	\$1,261	\$1,269	\$1,286
3Q2015	\$150,000	\$1,365	\$1,379	\$1,384	\$1,393	\$1,411
3Q2016	\$166,900	\$1,519	\$1,534	\$1,539	\$1,550	\$1,570
3Q2017	\$185,000	\$1,684	\$1,701	\$1,706	\$1,718	\$1,740
3Q2018	\$200,000	\$1,821	\$1,839	\$1,845	\$1,857	\$1,881
3Q2019	\$210,000	\$1,912	\$1,931	\$1,937	\$1,950	\$1,975
3Q2020	\$230,000	\$2,094	\$2,115	\$2,122	\$2,135	\$2,163
3Q2021	\$275,731	\$2,510	\$2,535	\$2,543	\$2,560	\$2,594
3Q2022	\$315,000	\$2,867	\$2,896	\$2,906	\$2,925	\$2,963

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

⁷ 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.

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

LTV Ratio	Home-Purchasing Power
95%	3.20
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	\$97,000	\$30,273	\$30,575	\$30,676	\$30,878	\$31,282
3Q2012	\$109,000	\$34,018	\$34,358	\$34,471	\$34,698	\$35,152
3Q2013	\$127,694	\$39,852	\$40,251	\$40,383	\$40,649	\$41,181
3Q2014	\$136,670	\$42,653	\$43,080	\$43,222	\$43,507	\$44,076
3Q2015	\$150,000	\$46,813	\$47,282	\$47,438	\$47,750	\$48,375
3Q2016	\$166,900	\$52,087	\$52,609	\$52,782	\$53,130	\$53,825
3Q2017	\$185,000	\$57,736	\$58,314	\$58,507	\$58,892	\$59,662
3Q2018	\$200,000	\$62,418	\$63,042	\$63,250	\$63,667	\$64,500
3Q2019	\$210,000	\$65,538	\$66,194	\$66,413	\$66,850	\$67,725
3Q2020	\$230,000	\$71,780	\$72,499	\$72,738	\$73,217	\$74,175
3Q2021	\$275,731	\$86,052	\$86,913	\$87,201	\$87,775	\$88,923
3Q2022	\$315,000	\$98,308	\$99,291	\$99,619	\$100,275	\$101,587

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	\$97,000	58.4%	57.9%	57.8%	57.4%	56.8%
3Q2012	\$109,000	53.2%	52.7%	52.5%	52.2%	51.5%
3Q2013	\$127,694	47.0%	46.5%	46.4%	46.1%	45.5%
3Q2014	\$136,670	44.9%	44.4%	44.3%	44.0%	43.3%
3Q2015	\$150,000	41.4%	40.9%	40.7%	40.4%	39.7%
3Q2016	\$166,900	38.2%	37.8%	37.7%	37.4%	36.9%
3Q2017	\$185,000	36.3%	35.8%	35.7%	35.4%	34.8%
3Q2018	\$200,000	35.1%	34.6%	34.4%	34.1%	33.4%
3Q2019	\$210,000	35.0%	34.5%	34.3%	34.0%	33.2%
3Q2020	\$230,000	31.8%	31.2%	31.0%	30.6%	29.8%
3Q2021	\$275,731	25.4%	24.9%	24.8%	24.5%	23.9%
3Q2022	\$315,000	20.4%	19.9%	19.7%	19.4%	19.1%

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.

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 3.2⁸ (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 \$98,308 for the first-quartile sales price in 3Q2022 (Table 31). An estimated 20.4 percent of renters in the Dallas-Fort Worth-Arlington MSA could afford the first-quartile sales price in 3Q2022 with a 35 percent DTI ratio (Table 32), a decline of nearly 40 percentage points from 3Q2011.

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

DTI Ratio	Home Price-to-Income Multiplier
20%	1.83
25%	2.29
30%	2.75
35%	3.20
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

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	\$97,000	\$52,977	\$42,382	\$35,318	\$30,273	\$26,488	\$23,545	\$21,191
3Q2012	\$109,000	\$59,531	\$47,625	\$39,687	\$34,018	\$29,765	\$26,458	\$23,812
3Q2013	\$127,694	\$69,741	\$55,792	\$46,494	\$39,852	\$34,870	\$30,996	\$27,896
3Q2014	\$136,670	\$74,643	\$59,714	\$49,762	\$42,653	\$37,321	\$33,175	\$29,857
3Q2015	\$150,000	\$81,923	\$65,538	\$54,615	\$46,813	\$40,962	\$36,410	\$32,769
3Q2016	\$166,900	\$91,153	\$72,922	\$60,769	\$52,087	\$45,577	\$40,512	\$36,461
3Q2017	\$185,000	\$101,038	\$80,831	\$67,359	\$57,736	\$50,519	\$44,906	\$40,415
3Q2018	\$200,000	\$109,231	\$87,385	\$72,820	\$62,418	\$54,615	\$48,547	\$43,692
3Q2019	\$210,000	\$114,692	\$91,754	\$76,462	\$65,538	\$57,346	\$50,974	\$45,877
3Q2020	\$230,000	\$125,615	\$100,492	\$83,744	\$71,780	\$62,808	\$55,829	\$50,246
3Q2021	\$275,731	\$150,592	\$120,473	\$100,394	\$86,052	\$75,296	\$66,930	\$60,237
3Q2022	\$315,000	\$172,038	\$137,631	\$114,692	\$98,308	\$86,019	\$76,462	\$68,815

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	\$97,000	31.2%	42.4%	50.8%	58.4%	64.2%	68.7%	72.4%
3Q2012	\$109,000	27.5%	37.1%	46.3%	53.2%	59.5%	64.5%	68.5%
3Q2013	\$127,694	21.1%	31.3%	39.5%	47.0%	52.7%	58.4%	62.9%
3Q2014	\$136,670	18.8%	29.6%	36.9%	44.9%	51.0%	56.2%	60.9%
3Q2015	\$150,000	16.9%	26.4%	34.4%	41.4%	48.0%	53.1%	57.8%
3Q2016	\$166,900	14.7%	22.6%	31.7%	38.2%	44.7%	50.3%	54.8%
3Q2017	\$185,000	12.3%	20.4%	28.8%	36.3%	41.9%	48.0%	52.9%
3Q2018	\$200,000	12.2%	19.5%	26.7%	35.1%	41.3%	46.6%	52.0%
3Q2019	\$210,000	12.4%	19.3%	26.6%	35.0%	41.7%	46.9%	52.2%
3Q2020	\$230,000	11.1%	16.7%	24.8%	31.8%	39.3%	45.1%	49.8%
3Q2021	\$275,731	6.1%	13.2%	18.1%	25.4%	30.9%	37.9%	43.6%
3Q2022	\$315,000	6.4%	9.7%	15.7%	20.4%	27.0%	32.1%	38.2%

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.

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 \$2,867 for the first-quartile sales price in 3Q2022, more than 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 3.2⁹, meaning a household could afford a maximum home price 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 \$98,308 for the first-quartile sales price in 3Q2022 (Table 35). An estimated 20.4 percent of renters in the Dallas-Fort Worth-Arlington MSA could afford the first-quartile

⁹ 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.

sales price in 3Q2022 with property taxes and insurance at 4 percent of home price (Table 36), a decline of nearly 40 percentage points from 3Q2011

Table 33. Total Monthly Mortgage Payment by Additional Homeownership Costs

Year	Home Price	Property Taxes & Insurance				
		2%	3%	4%	5%	6%
3Q2011	\$97,000	\$721	\$802	\$883	\$964	\$1,045
3Q2012	\$109,000	\$811	\$901	\$992	\$1,083	\$1,174
3Q2013	\$127,694	\$950	\$1,056	\$1,162	\$1,269	\$1,375
3Q2014	\$136,670	\$1,016	\$1,130	\$1,244	\$1,358	\$1,472
3Q2015	\$150,000	\$1,115	\$1,240	\$1,365	\$1,490	\$1,615
3Q2016	\$166,900	\$1,241	\$1,380	\$1,519	\$1,658	\$1,797
3Q2017	\$185,000	\$1,376	\$1,530	\$1,684	\$1,838	\$1,992
3Q2018	\$200,000	\$1,487	\$1,654	\$1,821	\$1,987	\$2,154
3Q2019	\$210,000	\$1,562	\$1,737	\$1,912	\$2,087	\$2,262
3Q2020	\$230,000	\$1,710	\$1,902	\$2,094	\$2,285	\$2,477
3Q2021	\$275,731	\$2,050	\$2,280	\$2,510	\$2,740	\$2,969
3Q2022	\$315,000	\$2,342	\$2,605	\$2,867	\$3,130	\$3,392

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 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
4%	3.20
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	\$97,000	\$24,730	\$27,501	\$30,273	\$33,044	\$35,815
3Q2012	\$109,000	\$27,789	\$30,903	\$34,018	\$37,132	\$40,246
3Q2013	\$127,694	\$32,555	\$36,203	\$39,852	\$43,500	\$47,149
3Q2014	\$136,670	\$34,843	\$38,748	\$42,653	\$46,558	\$50,463
3Q2015	\$150,000	\$38,242	\$42,527	\$46,813	\$51,099	\$55,385
3Q2016	\$166,900	\$42,550	\$47,319	\$52,087	\$56,856	\$61,625
3Q2017	\$185,000	\$47,165	\$52,451	\$57,736	\$63,022	\$68,308
3Q2018	\$200,000	\$50,989	\$56,703	\$62,418	\$68,132	\$73,846
3Q2019	\$210,000	\$53,538	\$59,538	\$65,538	\$71,538	\$77,538
3Q2020	\$230,000	\$58,637	\$65,209	\$71,780	\$78,352	\$84,923
3Q2021	\$275,731	\$70,296	\$78,174	\$86,052	\$93,930	\$101,808
3Q2022	\$315,000	\$80,308	\$89,308	\$98,308	\$107,308	\$116,308

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	\$97,000	66.9%	62.6%	58.4%	54.1%	50.2%
3Q2012	\$109,000	62.5%	57.8%	53.2%	49.2%	45.6%
3Q2013	\$127,694	56.1%	51.1%	47.0%	42.9%	38.7%
3Q2014	\$136,670	53.8%	49.4%	44.9%	40.5%	36.3%
3Q2015	\$150,000	51.0%	46.2%	41.4%	37.0%	33.9%
3Q2016	\$166,900	48.0%	42.8%	38.2%	34.6%	31.1%
3Q2017	\$185,000	45.5%	40.4%	36.3%	32.2%	28.0%
3Q2018	\$200,000	44.3%	39.7%	35.1%	30.5%	25.9%
3Q2019	\$210,000	44.8%	39.9%	35.0%	30.1%	26.1%
3Q2020	\$230,000	42.8%	37.3%	31.8%	27.5%	24.3%
3Q2021	\$275,731	35.0%	29.4%	25.4%	21.3%	17.7%
3Q2022	\$315,000	30.0%	25.2%	20.4%	17.6%	15.3%

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.

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 price. However, an increase in the mortgage interest rate, LTV ratio, additional costs of

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.

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 (5.62 percent in 3Q2022)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 FRED/Freddie Mac.

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.



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