How Higher Interest Rates Affect Homebuying

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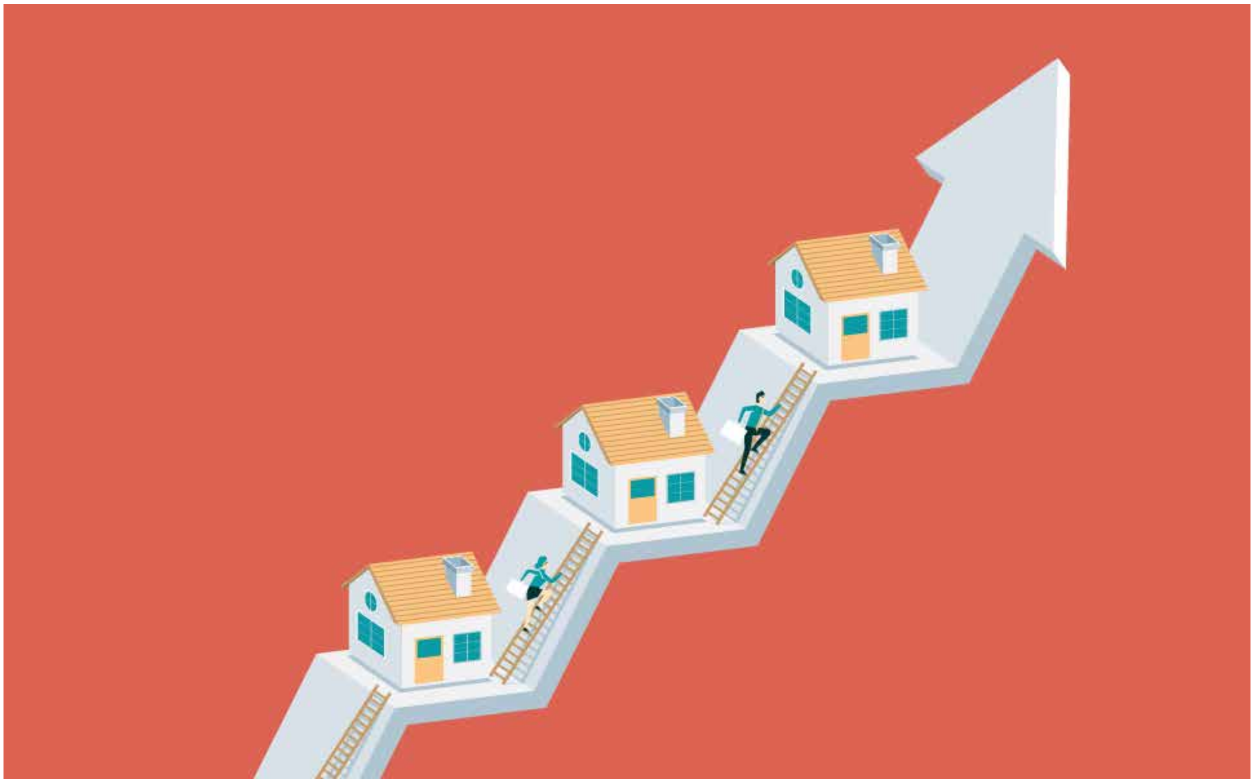
February 24, 2022

Publication 2339



Mortgage interest rates play an integral role in one's ability to buy a home. While home-price appreciation averaged nearly 20 percent nationally in 2021, diminishing many households' ability to purchase a home, mortgage interest rates reached a record low 2.65 percent. This helped mitigate the impact of high appreciation rates.

In response to rising inflation, the Federal Reserve could raise the federal funds rate as many as seven times in 2022. One potential by-product of this is higher mortgage interest rates.

At the beginning of the year, economists projected mortgage interest rates would be between 3.5 and 4 percent by the end of 2022 (after hovering around 3 percent at the beginning of 2022). However, forecasts will likely be revised upward in response to the news of seven potential rate hikes. Such an increase will diminish purchase affordability, making it even more difficult for lower-income and first-time buyers to purchase a home.

Takeaway

Mortgage interest rates are expected to rise in 2022, making it harder for households—especially first-time homebuyers and low-income households—to purchase a home.

Rising Interest Rates and Repeat Buyers

Table 1 shows how much the total monthly mortgage payment for a conventional loan increases as the mortgage interest rate increases. For example, a $200,000 home has a total monthly mortgage payment of $1,299 with a 2.5 percent interest rate. A 4 percent interest rate increases that amount by more than $100 to $1,431.

Table 1. Monthly Mortgage Payment for Conventional Loan by Home Price, Mortgage Interest Rate

	Mortgage Interest Rate							
Home Price	2.5%	2.75%	3%	3.25%	3.5%	3.75%	4%	4.25%
$100,000	$649	$660	$671	$681	$693	$704	$715	$727
$125,000	$812	$825	$838	$852	$866	$880	$894	$909
$150,000	$974	$990	$1,006	$1,022	$1,039	$1,056	$1,073	$1,090
$175,000	$1,137	$1,155	$1,174	$1,193	$1,212	$1,232	$1,252	$1,272
$200,000	$1,299	$1,320	$1,341	$1,363	$1,385	$1,408	$1,431	$1,454
$225,000	$1,461	$1,485	$1,509	$1,533	$1,558	$1,584	$1,609	$1,635
$250,000	$1,624	$1,650	$1,677	$1,704	$1,731	$1,760	$1,788	$1,817
$300,000	$1,948	$1,980	$2,012	$2,044	$2,078	$2,111	$2,146	$2,181
$400,000	$2,598	$2,640	$2,682	$2,726	$2,770	$2,815	$2,861	$2,908
$500,000	$3,247	$3,300	$3,353	$3,407	$3,463	$3,519	$3,576	$3,634
$750,000	$4,871	$4,949	$5,030	$5,111	$5,194	$5,279	$5,364	$5,452

Note: Assumes a 30-year loan term, 80 percent loan-to-value ratio, and property taxes and insurance collectively amounting to 4 percent of home price.
Source: Texas Real Estate Research Center at Texas A&M University

Table 2. Income Required for Conventional Loan by Home Price, Mortgage Interest Rate

	Mortgage Interest Rate							
Home Price	2.5%	2.75%	3%	3.25%	3.5%	3.75%	4%	4.25%
$100,000	$25,977	$26,397	$26,825	$27,260	$27,703	$28,153	$28,611	$29,075
$125,000	$32,472	$32,996	$33,531	$34,075	$34,628	$35,191	$35,763	$36,344
$150,000	$38,966	$39,596	$40,237	$40,890	$41,554	$42,230	$42,916	$43,613
$175,000	$45,460	$46,195	$46,943	$47,705	$48,480	$49,268	$50,069	$50,882
$200,000	$51,954	$52,794	$53,649	$54,520	$55,406	$56,306	$57,221	$58,151
$225,000	$58,449	$59,393	$60,355	$61,335	$62,331	$63,344	$64,374	$65,420
$250,000	$64,943	$65,993	$67,062	$68,150	$69,257	$70,383	$71,527	$72,689
$300,000	$77,932	$79,191	$80,474	$81,780	$83,108	$84,459	$85,832	$87,226
$400,000	$103,909	$105,588	$107,299	$109,040	$110,811	$112,612	$114,442	$116,302
$500,000	$129,886	$131,985	$134,123	$136,300	$138,514	$140,765	$143,053	$145,377
$750,000	$194,829	$197,978	$201,185	$204,450	$207,771	$211,148	$214,580	$218,066

Note: Assumes a 30-year loan term, 80 percent loan-to-value ratio, 30 percent debt-to-income ratio, and property taxes and insurance collectively amounting to 4 percent of home price.
Source: Texas Real Estate Research Center at Texas A&M University

Changes in that rate can significantly change the amount of income required to qualify for a loan. For a conventional loan on a $200,000 home with a 2.5 percent interest rate, a household would need to earn $51,954 annually with a 30 percent debt-to-income ratio (Table 2). A 4 percent interest rate would increase that amount to $57,221. As the income required to qualify for a loan increases, the maximum home price affordable to that household decreases.

An increase in the interest rate also causes a household's maximum affordable home price to drop. The home price-to-income multiplier by mortgage interest rate is shown in Table 3. This multiplier reflects how much home a particular household can afford. For a

Table 3. Home Price-to-Income Multiplier by Mortgage Interest Rate (Repeat Buyers)

Mortgage Interest Rate	Home Price-to-Income Multiplier
2.5%	3.85
2.75%	3.79
3%	3.73
3.25%	3.67
3.5%	3.61
3.75%	3.55
4%	3.50
4.25%	3.44

Note: Assumes a 30-year loan term, 80 percent loan-to-value ratio, 30 percent debt-to-income ratio, and property taxes and insurance collectively amounting to 4 percent of home price.
Source: Texas Real Estate Research Center at Texas A&M University

Table 4. Percentage of Buyers Who Earned Required Income for Conventional Loan by Home Price, Mortgage Interest Rate

	Mortgage Interest Rate							
Home Price	2.5%	2.75%	3%	3.25%	3.5%	3.75%	4%	4.25%
$100,000	81.6%	81.3%	80.9%	80.6%	80.2%	79.8%	79.5%	79.1%
$125,000	76.3%	75.8%	75.4%	74.9%	74.5%	74.0%	73.5%	73.0%
$150,000	70.9%	70.3%	69.8%	69.3%	68.8%	68.3%	67.7%	67.2%
$175,000	65.8%	65.2%	64.6%	64.0%	63.4%	62.8%	62.2%	61.6%
$200,000	60.8%	60.1%	59.5%	58.8%	58.1%	57.4%	56.7%	56.0%
$225,000	55.7%	55.0%	54.3%	53.8%	53.2%	52.6%	52.1%	51.5%
$250,000	51.7%	51.1%	50.5%	49.9%	49.3%	48.6%	48.0%	47.3%
$300,000	44.4%	43.6%	42.9%	42.2%	41.4%	40.6%	39.9%	39.1%
$400,000	30.6%	30.1%	29.5%	29.0%	28.4%	27.9%	27.3%	26.7%
$500,000	22.4%	21.8%	21.1%	20.4%	19.7%	19.0%	18.3%	17.6%
$750,000	9.4%	8.9%	0%	0%	0%	0%	0%	0%

Note: Assumes a 30-year loan term, 80 percent loan-to-value ratio, 30 percent debt-to-income ratio, and property taxes and insurance collectively amounting to 4 percent of home price.

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

Table 5. Monthly Mortgage Payment for Federally Backed Loan by Home Price, Mortgage Interest Rate

	Mortgage Interest Rate							
Home Price	2.5%	2.75%	3%	3.25%	3.5%	3.75%	4%	4.25%
$100,000	$713	$725	$737	$750	$763	$776	$789	$803
$125,000	$891	$906	$922	$938	$954	$970	$987	$1,004
$150,000	$1,069	$1,088	$1,106	$1,125	$1,145	$1,164	$1,184	$1,204
$175,000	$1,247	$1,269	$1,291	$1,313	$1,335	$1,358	$1,381	$1,405
$200,000	$1,426	$1,450	$1,475	$1,500	$1,526	$1,552	$1,579	$1,606
$225,000	$1,604	$1,631	$1,659	$1,688	$1,717	$1,746	$1,776	$1,806
$250,000	$1,782	$1,813	$1,844	$1,875	$1,908	$1,940	$1,973	$2,007
$300,000	$2,138	$2,175	$2,212	$2,250	$2,289	$2,328	$2,368	$2,408
$400,000	$2,851	$2,900	$2,950	$3,001	$3,052	$3,104	$3,157	$3,211
$500,000	$3,564	$3,625	$3,687	$3,751	$3,815	$3,880	$3,947	$4,014
$750,000	$5,346	$5,438	$5,531	$5,626	$5,723	$5,821	$5,920	$6,021

Note: Assumes a 90 percent loan-to-value ratio, 0.5 percent mortgage insurance premium, and property taxes and insurance collectively amounting to 4 percent of home price.

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

conventional loan, the multiplier is 3.85 for a 2.5 percent interest rate. That means a household can afford a home priced at 3.85 times the household's income. The multiplier drops to 3.5 for a 4 percent interest rate, a 10 percent decline in home-buying potential.

The percentage of households that earn the required income to qualify for a conventional loan for the same priced home declines as the mortgage interest rate increases. In 2020, over 60 percent of Texas households earned the required income to qualify for a conventional loan for a $200,000 house at a 2.5 percent interest rate, but that dropped to 56.7 percent when the interest rate increased to 4 percent (Table 4).

Rising Interest Rates and First-Time Buyers

Mortgage payments for federally backed loans are no different than payments for conventional loans when it comes to rising mortgage interest rates. For example, a $200,000 home has a total monthly mortgage payment of $1,426 with a 2.5 percent mortgage interest rate, but a 4 percent interest rate increases that amount by more than $100 to $1,579 (Table 5).

Again, as with conventional loans, the income required to qualify for a federally backed loan changes along with the mortgage interest rate. To qualify for a federally backed loan for a $200,000 home with a 2.5 percent interest rate, a household would need an annual income

Table 6. Income Required for Federally Backed Loan by Home Price, Mortgage Interest Rate

	Mortgage Interest Rate							
Home Price	**2.5%**	**2.75%**	**3%**	**3.25%**	**3.5%**	**3.75%**	**4%**	**4.25%**
$100,000	$35,867	$36,286	$36,713	$37,148	$37,589	$38,037	$38,492	$38,954
$125,000	$44,833	$45,358	$45,892	$46,434	$46,986	$47,546	$48,115	$48,692
$150,000	$53,800	$54,430	$55,070	$55,721	$56,383	$57,056	$57,738	$58,431
$175,000	$62,767	$63,501	$64,248	$65,008	$65,780	$66,565	$67,361	$68,169
$200,000	$71,733	$72,573	$73,427	$74,295	$75,178	$76,074	$76,984	$77,907
$225,000	$80,700	$81,644	$82,605	$83,582	$84,575	$85,583	$86,607	$87,646
$250,000	$89,667	$90,716	$91,783	$92,869	$93,972	$95,093	$96,230	$97,384
$300,000	$107,600	$108,859	$110,140	$111,443	$112,766	$114,111	$115,476	$116,861
$400,000	$143,467	$145,145	$146,854	$148,590	$150,355	$152,148	$153,968	$155,815
$500,000	$179,333	$181,432	$183,567	$185,738	$187,944	$190,185	$192,460	$194,768
$750,000	$269,000	$272,148	$275,350	$278,607	$281,916	$285,278	$288,690	$292,153

Note: Assumes a 90 percent loan-to-value ratio, 0.5 percent mortgage insurance premium, 35 percent debt-to-income ratio, and property taxes and insurance collectively amounting to 4 percent of home price.

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

Fed Funds Rate Explained

As defined by Federal Reserve Economic Data (FRED), the fed funds rate is "the interest rate at which depository institutions trade federal funds (balances held at Federal Reserve banks) with each other overnight." The Fed bears a dual mandate: maximize employment and adjust the fed funds rate to stabilize prices.

When the Fed raises the fed funds rate, the cost of borrowing capital also increases. In other words, interest rates for credit card loans, car loans, student debt loans, and mortgage loans gradually increase. This reduces household demand for big-ticket items typically financed by debt, such as cars, homes, and college educations. The Fed often implements rate hikes during inflationary periods or when the prices of consumer goods and services consistently rise at a faster-than-average rate.

In 2021, the fed funds rate averaged 0.08 percent. In March 2022, the Fed announced seven interest rate hikes over 2022, each forecasted to be one quarter percentage point. In other words, the fed funds rate is poised to increase a total of 1.75 to 2 percentage points this year.

An increase in the fed funds rate will not necessarily result in the same increase for other interest rates. For example, a 0.75 percentage point increase in the fed funds rate does not necessarily equate to a 0.75 percentage point increase in the mortgage interest rate.

Throughout its history, the Fed's only direct impact on interest rates has been through the fed funds rate. However, quantitative easing programs have resulted in almost $2.7 trillion of mortgage-backed securities sitting on the Fed's balance sheet as of March 2022, when their monthly buying program ended. The absence of purchases—or even potential sales—going forward will have a direct but unknown impact on longer-term interest rates.

of $71,733 (Table 6). A 4 percent interest rate increases that to $76,984. As with conventional loans, the maximum home price affordable to a household decreases as the income required to qualify for a loan increases.

An increase in the interest rate also causes a household's maximum affordable home price to drop (Table 7). For a federally backed loan, the home price-to-income multiplier is 2.79 for a 2.5 percent interest rate. That means a household can afford a home priced at 2.79 times the household's income. The multiplier drops to 2.6 for a 4 percent interest rate, a nearly 7 percent decline.

The percentage of households that earn the required income to qualify for a federally backed loan for the

Table 7. Home Price-to-Income Multiplier by Mortgage Interest Rate (First-Time Buyers)

Mortgage Interest Rate	Home Price-to-Income Multiplier
2.5%	2.79
2.75%	2.76
3%	2.72
3.25%	2.69
3.5%	2.66
3.75%	2.63
4%	2.60
4.25%	2.57

Note: Assumes a 90 percent loan-to-value ratio, 0.5 percent mortgage insurance premium, 35 percent debt-to-income ratio, and property taxes and insurance collectively amounting to 4 percent of home price.

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

Table 8. Percentage of Buyers Who Earned Required Income for Federally Backed Loan by Home Price, Mortgage Interest Rate

	Mortgage Interest Rate							
Home Price	2.5%	2.75%	3%	3.25%	3.5%	3.75%	4%	4.25%
$100,000	82.9%	82.6%	82.2%	81.9%	81.5%	81.1%	80.7%	80.4%
$125,000	77.9%	77.4%	77.0%	76.5%	76.1%	75.6%	75.1%	74.6%
$150,000	72.8%	72.3%	71.7%	71.2%	70.6%	70.1%	69.5%	69.0%
$175,000	67.9%	67.3%	66.7%	66.1%	65.5%	64.9%	64.3%	63.7%
$200,000	63.1%	62.5%	61.8%	61.2%	60.5%	59.8%	59.1%	58.4%
$225,000	58.4%	57.7%	56.9%	56.2%	55.4%	54.6%	54.0%	53.4%
$250,000	53.9%	53.3%	52.7%	52.1%	51.5%	50.8%	50.2%	49.5%
$300,000	47.0%	46.3%	45.5%	44.8%	44.0%	43.3%	42.5%	41.7%
$400,000	33.1%	32.1%	31.5%	30.9%	30.4%	29.8%	29.2%	28.6%
$500,000	24.8%	24.2%	23.5%	22.8%	22.1%	21.4%	20.7%	20.0%
$750,000	11.1%	10.6%	10.1%	9.7%	9.2%	8.7%	0%	0%

Note: Assumes a 90 percent loan-to-value ratio, 0.5 percent mortgage insurance premium, 35 percent debt-to-income ratio, and property taxes and insurance collectively amounting to 4 percent of home price.

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

same priced home declines as the mortgage interest rate increases. In 2020, over 63 percent of Texas households earned the required income to qualify for a federally backed loan for a $200,000 house at a 2.5 percent interest rate, but that dropped to 59 percent when the interest rate increased to 4 percent (Table 8).

2022 Homebuyer Outlook

With mortgage interest rates expected to rise in 2022, home-purchasing affordability will diminish.

Repeat buyers could see an estimated 3.3 to 6.6 percent decline in home-purchasing potential. For first-time buyers, it could be a 2.3 to 4.6 percent decline.

The bottom line: Homeownership will become harder to attain for households across the income spectrum.

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