

NAHB Priced-Out Estimates for 2019

January 2, 2019

Special Study for HousignEconomics.com

By Na Zhao, Ph.D.

This article announces NAHB's "priced out estimates" for 2019, showing how higher home prices and interest rates affect housing affordability. The 2019 US estimates indicate that a \$1,000 increase in the median new home price would price 127,560 U.S. households out of the market. In other words, 127,560 households would qualify for the new home mortgage before the change, but not afterwards. Similarly, 25 basis points added to the current mortgage rate would price out around 1 million households. The article also includes priced out estimates for individual states and more than 300 metropolitan areas.

The Priced Out Methodology and Data

NAHB Priced Out model uses the ability to qualify a mortgage to measure housing affordability, because most home buyers finance their new home purchase with conventional loans, and because convenient underwriting standards for these loans exist. The standard NAHB adopts for its priced-out estimates is that the sum of the mortgage payment (including the principal amount, loan interest, property tax, homeowners' property and private mortgage insurance premiums (PITI), is no more than 28 percent of monthly gross household income.

As a result the number of households that qualify for mortgages for a certain priced home depends on the household income distribution in an area and the mortgage interest rate at that time. The most recent detailed household income distributions for all states and metro areas is from the 2017 American Community Survey (ACS). NAHB adjusts the income distributions to reflect the income and population changes that may happen from 2017 to 2019. The income distribution is adjusted for inflation using the 2018 median family income published by the Department of Housing and Urban Development (HUD) for all states and metro areas, and then extrapolated it into 2019. The number of households in 2019 is projected by the growth rate of households from 2016 to 2017.

Other assumptions of the Priced Out calculation is a 10% s down payment, and a30-year fixed rate mortgage, at an interest rate of 4.85%. For a loan with this down payment, private mortgage insurance is required by lenders and also included as part of PITI. The typical private mortgage insurance annual premium is 73 basis points¹, based on the standard assumption of national median credit score of 738² and 10% down payment and 30-year fixed mortgage rate. Effective local property tax rates are calculated using data from the 2017 American Community Survey (ACS) summary files. Homeowner’s insurance rates are constructed from the 2016 ACS Public Use Microdata Sample (PUMS)³. For the US as a whole, the property tax is \$12 per \$1,000 of property value and the homeowner insurance is \$4 per \$1,000 property value.

Under these assumptions, 32.7 million of the 122.5 million US households could afford to buy a new median priced home at \$355,183 in 2019. A \$1,000 home price increase thus will price 127,560 households out of the market for this home. These are the households that can qualify for a mortgage before a \$1,000 increase but not afterwards, as shown in Table 1 below.

¹ Private mortgage insurance premium (PMI) is obtained from the PMI Cost Calculator(<https://www.hsh.com/calcmionly.html>)

² Median credit score information is shown in the article “Four ways today’s high home prices affect the larger economy” October 2018 Urban Institute <https://www.urban.org/urban-wire/four-ways-todays-high-home-prices-affect-larger-economy>

³ Producing metro level estimates from the ACS PUMS involves aggregating Public Use Microdata Area (PUMA) level data according to the latest definitions of metropolitan areas. Due to complexity of these procedures and since metro level insurance rates tend to remain stable over time, NAHB revises these estimates only periodically.

Table 1. US Households Priced Out of the Market by Increases in House Prices, 2019

Area	Mortgage Rate	House Price	Monthly Mortgage Payment	Taxes and Insurance	Minimum Income Needed	Households That Can Afford House
United States	4.85%	\$355,183	\$1,831	\$447	\$97,640	32,679,580
United States	4.85%	\$356,183	\$1,836	\$448	\$97,915	32,552,020
Difference		\$1,000	\$5	\$1	\$275	-127,560

Calculations assume a 10% down payment and a 73 basis point fee for private mortgage insurance.
 A Household Qualifies for a Mortgage if Mortgage Payments, Taxes, and Insurance are 28% of Income

US Household Income Distribution for 2019			Households	Cumulative
Income Range:				
\$0	to	\$9,467	7,955,220	7,955,220
\$9,468	to	\$14,202	5,532,864	13,488,083
\$14,203	to	\$18,936	5,489,920	18,978,003
\$18,937	to	\$23,670	5,918,061	24,896,064
\$23,671	to	\$28,404	5,410,078	30,306,142
\$28,405	to	\$33,138	5,740,337	36,046,479
\$33,139	to	\$37,872	5,312,359	41,358,838
\$37,873	to	\$42,607	5,399,931	46,758,769
\$42,608	to	\$47,341	4,800,124	51,558,893
\$47,342	to	\$56,809	9,329,130	60,888,022
\$56,810	to	\$71,012	12,228,533	73,116,556
\$71,013	to	\$94,683	15,336,884	88,453,440
\$94,684	to	\$118,353	10,983,833	99,437,273
\$118,354	to	\$142,024	6,900,185	106,337,459
\$142,025	to	\$189,366	7,673,283	114,010,742
\$189,367	to	More	8,494,218	122,504,959

State and Local Estimates

The number of priced out households varies across both states and metropolitan areas, largely affected by the sizes of local population and the affordability of new homes. The 2019 priced-out estimates for all states and the District of Columbia are shown in Table 2 (available in the Additional Resources box), which presents the projected 2019 median new home price and the amount of income needed to qualify the mortgage, and the number of households could be priced out if price goes up by \$1,000. Among all the states, Texas registered the largest number of households priced out of the market by a \$1,000 increase in the median-priced home in the state (11,152), followed by California (9,897), and Ohio (7,341).

Table 3, which is available in the Additional Resources box, shows the 2019 priced-out estimates for 382 metropolitan statistical areas. The metropolitan area with the largest priced out effect, in terms of absolute numbers, is Chicago-Naperville-Elgin, IL-IN-WI, where 4,598 households are

squeezed out of the market for a new median-priced home if price increases by \$1,000. This is largely because Chicago is a populous metropolitan area with a large number of households; and, compared to the largest metropolitan areas on the East and West coasts, the median priced home is more affordable to begin with. Around 26% of households there are capable of buying new median-priced homes. For similar reasons, Houston-The Woodlands-Sugar Land, TX metro area, where nearly 32% of households can afford median-priced new homes to begin with, registered the second largest number of priced out households (3,622). In New York-Newark-Jersey City, NY-NJ-PA, 3,613 households are squeezed out of the housing market for a new median-priced home if price increases by \$1,000. Compared to Chicago or Houston, the median-priced new home is affordable to a smaller share of the households in New York, but New York is the largest metro area by population size with over 7 million households.

Interest Rates

NAHB 2019 priced-out estimates also present how interest rates affect the number of households would be priced out of the new home market. If mortgage interest rate goes up, the monthly mortgage payments will increase as well and therefore higher household income thresholds to qualify a mortgage loan. Table 4 shows the number of households priced out of the market for a new median priced home at \$355,183 by each 25 basis-point increase in interest rate from 2.85% to 10.85%. When interest rates goes up from 2.85% to 3.10%, around 1.26 million households could no longer afford buying median-priced new homes. An increase from 4.85% to 5.10% could price approximately 1 million households out of the market. However, about 423,000 households would be squeezed out of the market if interest rate goes up to 10.85% from 10.6%. This diminishing effects happen because only a few households at the thinner end of household income distribution will be affected. On the contrary, when interest rates are relatively low, 25 basis-point increase would affect a larger number of households at the thicker part of income distribution.

Table 4. U.S. Households Priced Out of the Market by an Increase in Interest Rates, 2019

Mortgage Rate	Median New House Price	Monthly Mortgage Payment	Taxes and Insurance	Minimum Income Needed	Households That Can Afford House	Change in Households	Cumulative Change
2.85%	\$355,183	\$1,450	\$447	\$81,297	42,725,140		
3.10%	\$355,183	\$1,495	\$447	\$83,235	41,469,606	-1,255,534	-1,255,534
3.35%	\$355,183	\$1,541	\$447	\$85,203	40,193,873	-1,275,733	-2,531,267
3.60%	\$355,183	\$1,588	\$447	\$87,203	38,898,290	-1,295,583	-3,826,850
3.85%	\$355,183	\$1,635	\$447	\$89,233	37,583,225	-1,315,065	-5,141,915
4.10%	\$355,183	\$1,683	\$447	\$91,292	36,249,055	-1,334,170	-6,476,085
4.35%	\$355,183	\$1,732	\$447	\$93,380	34,896,170	-1,352,885	-7,828,970
4.60%	\$355,183	\$1,781	\$447	\$95,496	33,674,419	-1,221,751	-9,050,721
4.85%	\$355,183	\$1,831	\$447	\$97,640	32,679,580	-994,839	-10,045,560
5.10%	\$355,183	\$1,882	\$447	\$99,811	31,672,215	-1,007,365	-11,052,925
5.35%	\$355,183	\$1,933	\$447	\$102,008	30,652,626	-1,019,589	-12,072,514
5.60%	\$355,183	\$1,985	\$447	\$104,231	29,621,120	-1,031,506	-13,104,020
5.85%	\$355,183	\$2,037	\$447	\$106,479	28,578,008	-1,043,112	-14,147,132
6.10%	\$355,183	\$2,090	\$447	\$108,752	27,523,600	-1,054,408	-15,201,540
6.35%	\$355,183	\$2,144	\$447	\$111,048	26,458,211	-1,065,389	-16,266,929
6.60%	\$355,183	\$2,198	\$447	\$113,367	25,382,154	-1,076,057	-17,342,986
6.85%	\$355,183	\$2,253	\$447	\$115,708	24,295,744	-1,086,410	-18,429,396
7.10%	\$355,183	\$2,308	\$447	\$118,071	23,199,295	-1,096,449	-19,525,845
7.35%	\$355,183	\$2,363	\$447	\$120,455	22,455,449	-743,846	-20,269,691
7.60%	\$355,183	\$2,420	\$447	\$122,859	21,754,618	-700,831	-20,970,522
7.85%	\$355,183	\$2,476	\$447	\$125,283	21,048,064	-706,554	-21,677,076
8.10%	\$355,183	\$2,533	\$447	\$127,726	20,335,978	-712,086	-22,389,162
8.35%	\$355,183	\$2,591	\$447	\$130,187	19,618,549	-717,429	-23,106,591
8.60%	\$355,183	\$2,648	\$447	\$132,665	18,895,964	-722,585	-23,829,176
8.85%	\$355,183	\$2,707	\$447	\$135,161	18,168,407	-727,557	-24,556,733
9.10%	\$355,183	\$2,765	\$447	\$137,674	17,436,058	-732,349	-25,289,082
9.35%	\$355,183	\$2,824	\$447	\$140,202	16,699,095	-736,963	-26,026,045
9.60%	\$355,183	\$2,884	\$447	\$142,745	16,050,843	-648,252	-26,674,297
9.85%	\$355,183	\$2,943	\$447	\$145,303	15,636,233	-414,610	-27,088,907
10.10%	\$355,183	\$3,003	\$447	\$147,875	15,219,343	-416,890	-27,505,797
10.35%	\$355,183	\$3,064	\$447	\$150,461	14,800,261	-419,082	-27,924,879
10.60%	\$355,183	\$3,124	\$447	\$153,059	14,379,076	-421,185	-28,346,064
10.85%	\$355,183	\$3,185	\$447	\$155,670	13,955,875	-423,201	-28,769,265