The Virginia Tech–USDA Forest Service Housing Commentary: Section I November 2023

VIRGINIA TECH

Delton Alderman

Acting Program Manager Forest Products Business Unit Forest Products Laboratory



USDA Forest Service Madison, WI 608.259.6076



delton.r.alderman@usda.gov

Virginia Cooperative Extension

Virginia Tech • Virginia State University

Urs Buehlmann

Department of Sustainable Biomaterials College of Natural Resources & Environment Virginia Tech Blacksburg, VA 540.231.9759 buehlmann@gmail.com

2023 Virginia Polytechnic Institute and State University

VCE-ANR

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; Jewel E. Hairston, Administrator, 1890 Extension Program, Virginia State, Petersburg.

Table of Contents

- Slide 3: Opening Remarks
- Slide 4: Housing Scorecard
- Slide 5: <u>New Housing Starts</u>
- Slide 12: <u>Regional Housing Starts</u>
- Slide 18: <u>New Housing Permits</u>
- Slide 20: <u>Regional New Housing Permits</u>
- Slide 25: <u>Housing Under Construction</u>
- Slide 27: <u>Regional Under Construction</u>
- Slide 32: Housing Completions
- Slide 34: <u>Regional Housing Completions</u>
- Slide 38: <u>New Housing Sales</u>
- Slide 42: <u>New Single-Family House Sales</u>

Slide 45: <u>Region SF House Sales & Price</u>

Slide 49: <u>New SF House Sales x Category</u>
Slide 51: <u>New SF Sales-Population Ratio</u>
Slide 63: Construction Spending
Slide 66: Construction Spending Shares
Slide 69: <u>Remodeling</u>
Slide 71: Existing House Sales
Slide 74: U.S. Housing Prices & Finance
Slide 90: 2024 Housing Forecasts
Slide 94: Mortgage Finance & Outlook
Slide 100: <u>Summary</u>
Slide 101: Virginia Tech Disclaimer
Slide 102: USDA Disclaimer

This report is a free monthly service of Virginia Tech. Past issues are available at: http://woodproducts.sbio.vt.edu/housing-report.

To request the commentary, please email: buehlmann@gmail.com or delton.r.alderman@usda.gov

Opening Remarks

Housing data, year-over-year, were mixed. Month-over-month data, in aggregate, were mostly positive. Total, single- and multi-family starts, single-family permits, total and single-family housing under construction, total housing completions, and total private residential and single-family construction spending, and existing house sales also indicated improvement. The influence of increasing mortgage rates is evident, as aggregate costs have decreased affordability; thus, a reduction, to date, in total new and existing house sales for the 2023 calendar year.

The January 17th Atlanta Fed GDPNow[™] total residential investment spending forecast is a negative 0.2% for January 2024. Quarterly log change for new private permanent site expenditures were projected at 8.7%; the improvement spending forecast was 1.4%; and the manufactured/mobile home expenditures projection was 9.6% (all: quarterly log change and at a seasonally adjusted annual rate).¹

"Demographics suggest that housing is not likely to become a key driver of economic growth in the foreseeable future. Population growth has slowed to less than 0.5% per year (compared to over 1% during the housing boom in the 2000s). The baseline forecast assumes that, after the recovery from the current housing downturn, housing starts will start to rise slowly. Over the five-year forecast horizon, however, housing starts never reach 1.5 million per year." – Daniel Bachman, Senior Manager, Deloitte Services LP

This month's commentary contains 2024 housing forecasts, applicable housing data, remodeling commentary, and United States housing market observations. Section I contains relevant data, remodeling, and housing finance commentary. Section II includes regional Federal Reserve analysis, private firm indicators, and demographic/economic information.

November 2023 Housing Scorecard

	-	M/M		Y/Y
Housing Starts		14.8%		9.3%
Single-Family (SF) Starts		18.0%		42.2%
Multi-Family (MF) Starts*		6.9%	▼	33.1%
Housing Permits	▼	2.1%		4.6%
SF Permits		0.8%		22.9%
MF Permits*		7.4%	▼	19.3%
Housing Under Construction		0.7%	▼	0.6%
SF Under Construction		1.9%	▼	10.8%
Housing Completions		5.0%	▼	6.2%
SF Completions		3.2%	▼	12.9%
New SF House Sales	▼	12.2%		1.4%
Private Residential Construction Spending		1.1%		3.7%
SF Construction Spending		2.9%		5.5%
Existing House Sales ¹		0.8%	▼	7.3%
	.1	.1 ** /~~		

* All multi-family (2 to $4 + \ge 5$ -units)

M/M = month-over-month; Y/Y = year-over-year; NC = No change

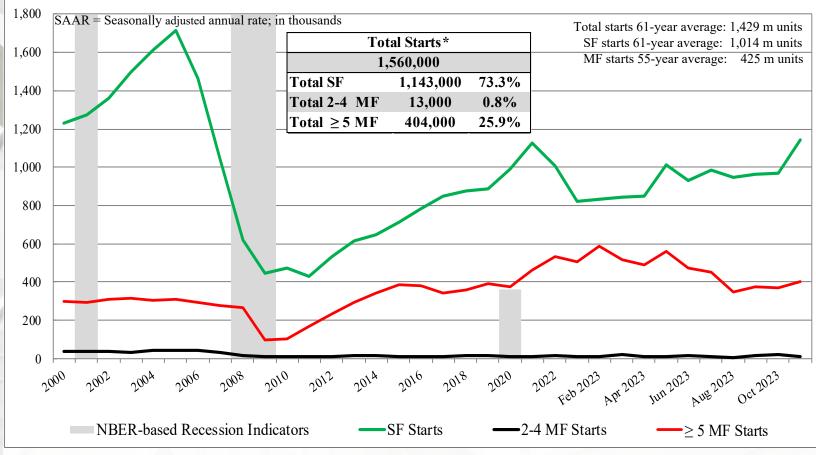
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
November	1,560,000	1,143,000	13,000	404,000
October	1,359,000	969,000	19,000	371,000
2022	1,427,000	804,000	14,000	609,000
M/M change	14.8%	18.0%	-31.6%	8.9%
Y/Y change	9.3%	42.2%	-7.1%	-33.7%

* All start data are presented at a seasonally adjusted annual rate (SAAR).

** US DOC does not report 2 to 4 multi-family starts directly; this is an estimation ((Total starts – (SF + 5-unit MF)).

Total Housing Starts



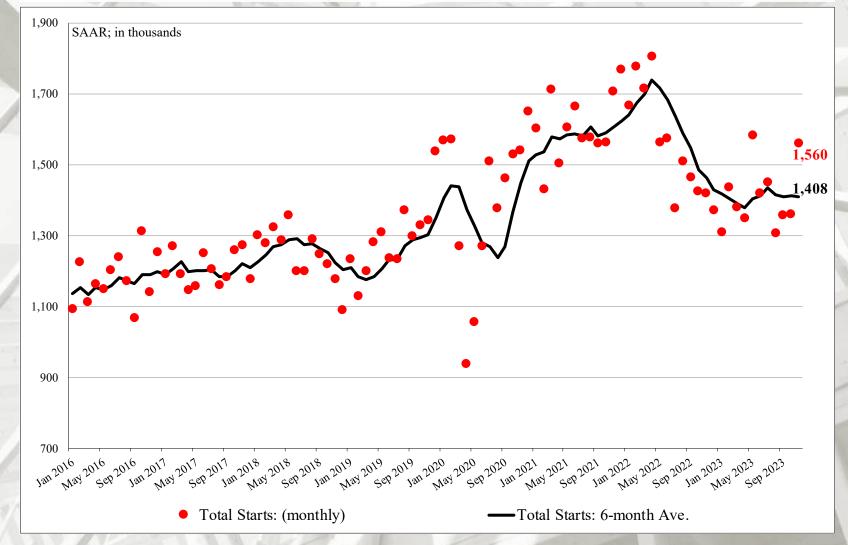
The US DOC does not report 2 to 4 multi-family starts directly; this is an estimation: (Total starts – (SF + 5-unit MF).

* Percentage of total starts.

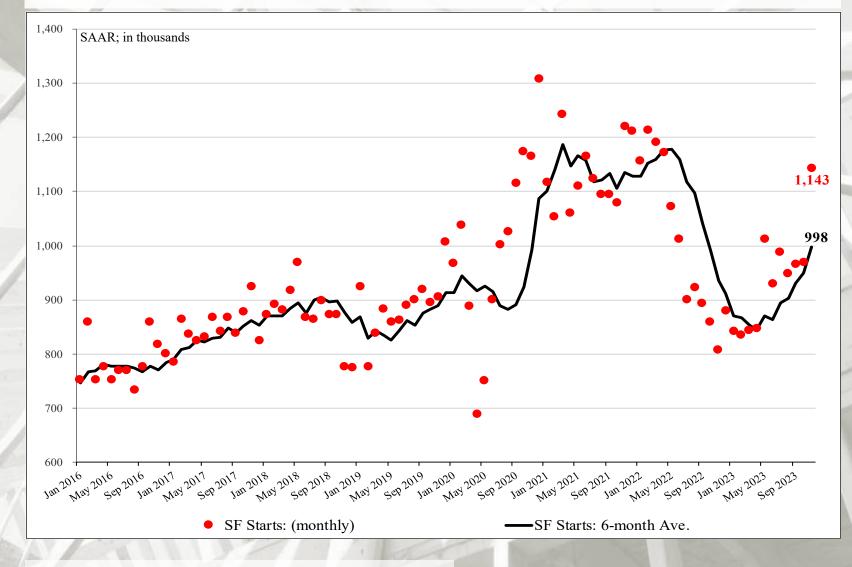
NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 12/19/23

Total Housing Starts: Six-Month Moving Average

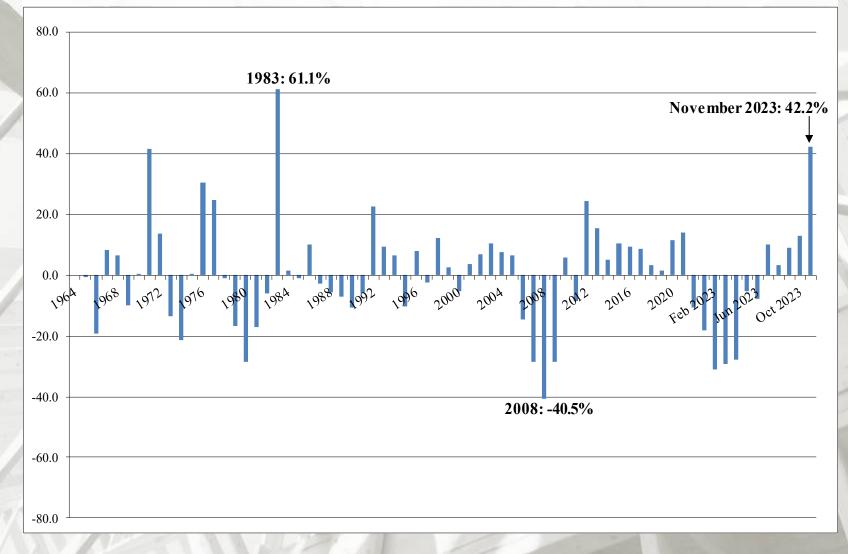


SF Housing Starts: Six-Month Moving Average

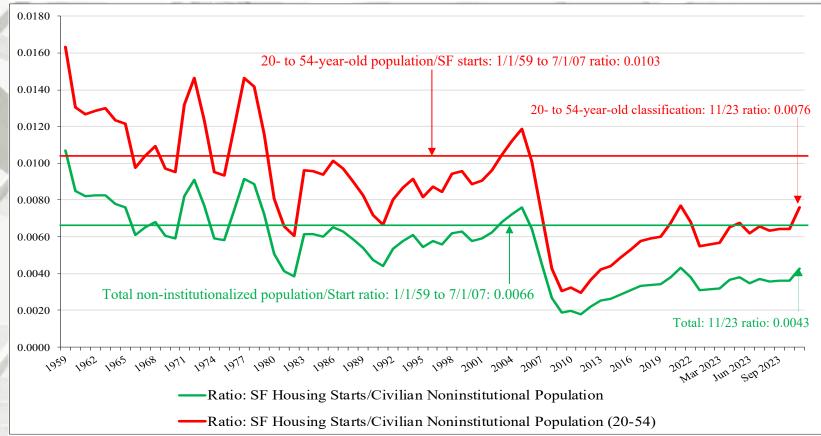


Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 12/19/23

SF Housing Starts: Year-over-Year Change (%)



New SF Starts

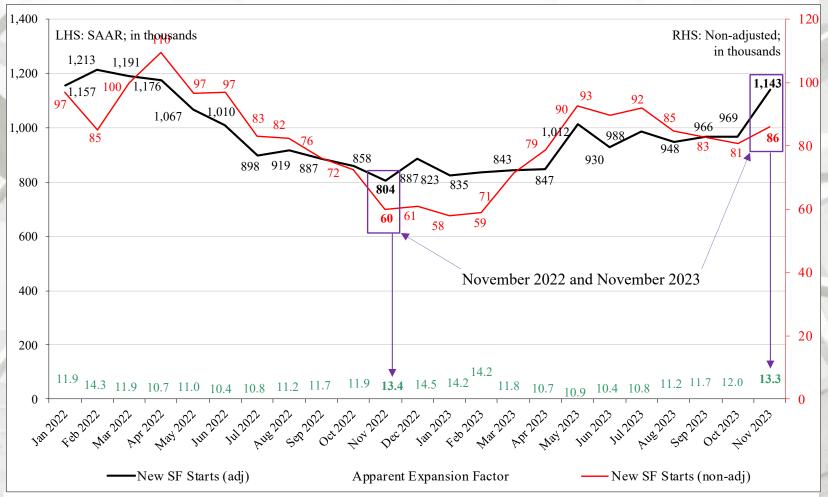


New SF starts adjusted for the US population

From January 1959 to November 2007, the long-term ratio of new SF starts to the total US noninstitutionalized population is 0.0066. In November 2023 it was 0.0043 – increasing from October (0.0036). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in November 2023 it was 0.0076 –also an improvement from October (0.0064). New SF construction in both age categories is less than what is necessary for changes in the population (i.e., under-building).

Note some studies report normalized long-term demand at 900,000 to 1,000,000 new SF house starts per year – beginning in 2025 through 2050.

Nominal & SAAR SF Starts



Nominal and Adjusted New SF Monthly Starts

Presented above is nominal (non-adjusted) new SF start data contrasted against SAAR data.

The apparent expansion factor "... is the ratio of the unadjusted number of houses started in the US to the seasonally adjusted number of houses started in the US (i.e., to the sum of the seasonally adjusted values for the four regions)." – U.S. DOC-Construction

New Housing Starts by Region

	NE Total	NE SF	NE MF**
November	144,000	83,000	61,000
October	72,000	58,000	14,000
2022	2022 86,000	62,000	24,000
M/M change	100.0%	43.1%	335.7%
Y/Y change	67.4%	33.9%	154.2%
	MW Total	MW SF	MW MF
November	MW Total 220,000	MW SF 174,000	MW MF 46,000
November October			
	220,000	174,000	46,000
October	220,000 217,000	174,000 116,000	46,000 101,000

All data are SAAR; NE = Northeast and MW = Midwest.

** US DOC does not report multi-family starts directly; this is an estimation (Total starts - SF starts).

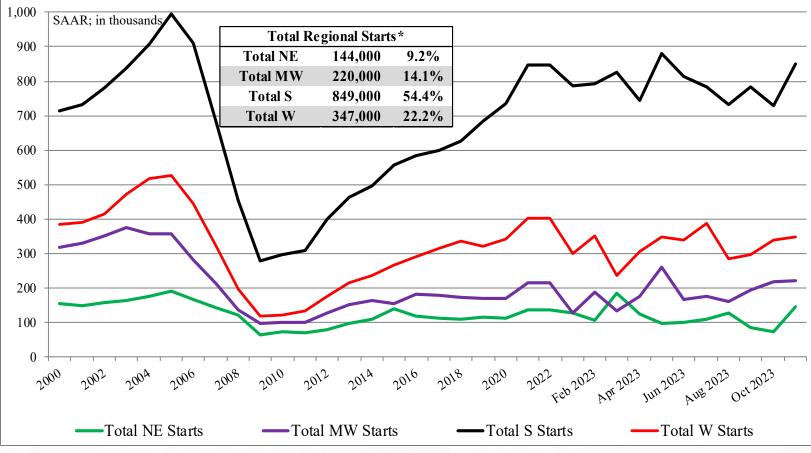
New Housing Starts by Region

	S Total	S SF	S MF **
November	849,000	643,000	206,000
October	730,000	550,000	180,000
2022	749,000	474,000	275,000
M/M change	16.3%	16.9%	14.4%
Y/Y change	13.4%	35.7%	-25.1%
	_		_
	W Total	W SF	WMF
November	W Total 347,000	W SF 243,000	W MF 104,000
November October			
	347,000	243,000	104,000
October	347,000 340,000	243,000 245,000	104,000 95,000

All data are SAAR; S = South and W = West.

** US DOC does not report multi-family starts directly; this is an estimation (Total starts - SF starts).

New Housing Starts by Region

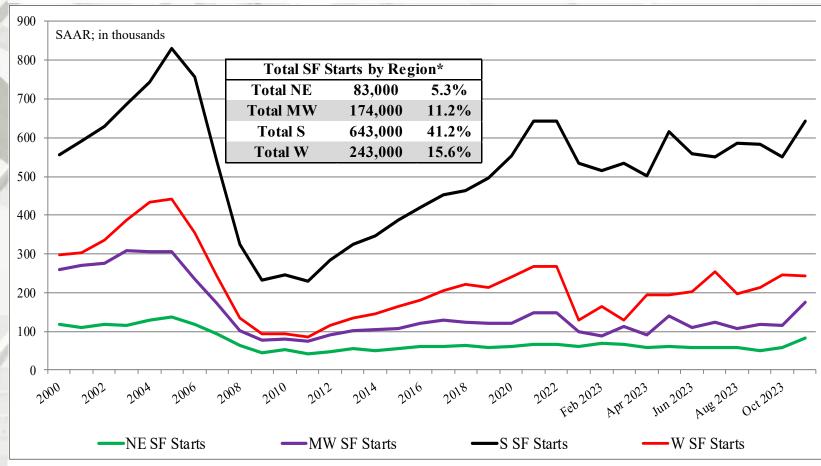


NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF $+ \ge 5$ MF starts).

* Percentage of total starts.

Total SF Housing Starts by Region

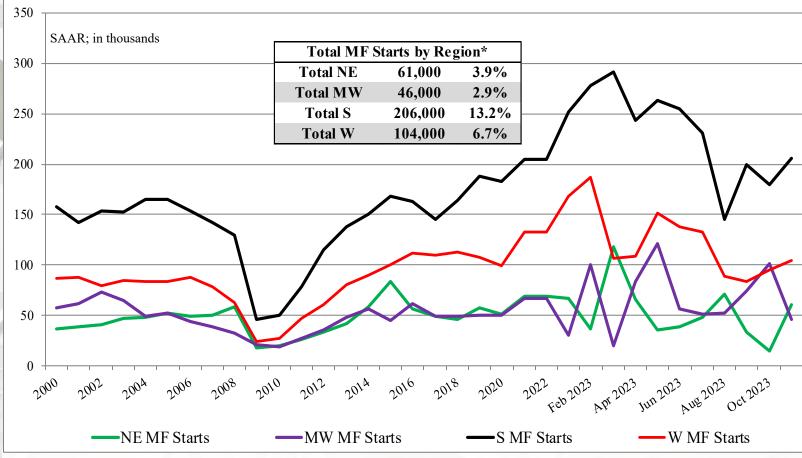


NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF $+ \ge 5$ MF starts).

* Percentage of total starts.

MF Housing Starts by Region

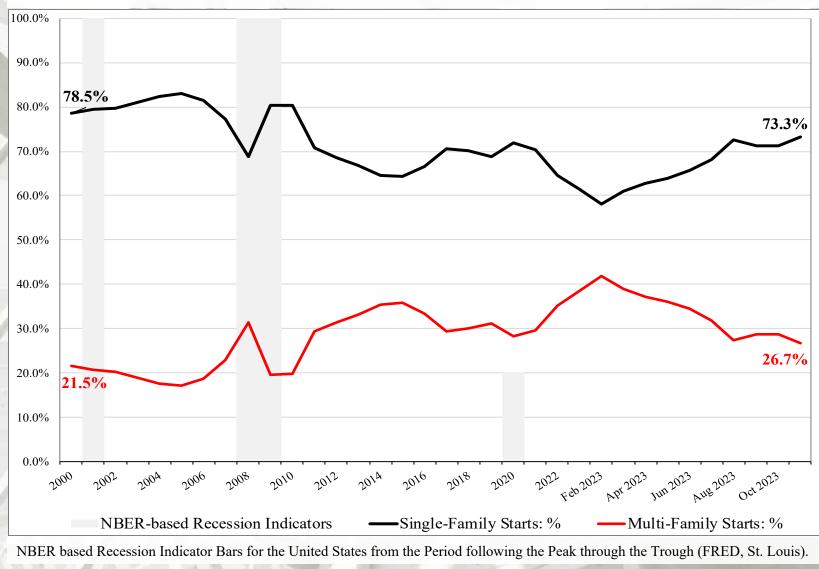


NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF $+ \ge 5$ MF starts).

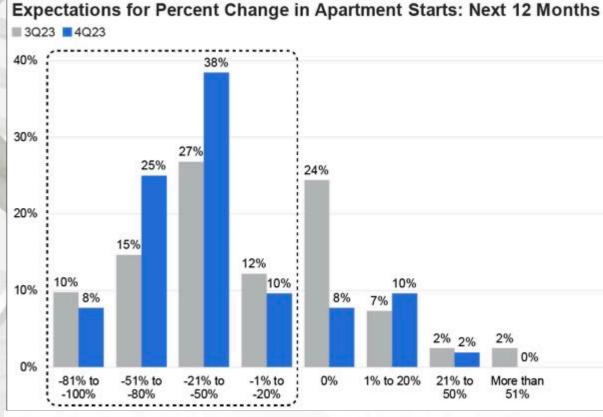
* Percentage of total starts.

SF vs. MF Housing Starts (%)



Return TOC

MF Housing Starts Projection



Source: John Burns Research & Consulting LLC (Data: 4Q23, Pub: Dec-23

John Burns Research & Consulting LLC U.S. Multi-Family Starts

"Continued support for big drop in 2024 apartment construction. One-third of apartment developers we surveyed in December expect starts to fall by more than 50% over the next 12 months, up from 25% when we asked last quarter." – Rick Palacios Jr., Director of Research, John Burns Research & Consulting LLC

MF Housing Starts

Multifamily Executive Surviving the Supply Surplus and Preparing for the Year Ahead What to Expect in 2024

"... We have yet to see a bottom for occupancy at this point, due to the supply in the pipeline yet to be delivered. Occupancy rates will likely continue falling through the winter. The spring leasing season may provide a bit of a respite, but ultimately the reprieve will come once we absorb the delivered units and push past the current supply wave. The supply surge will last throughout 2024 and at least midway through 2025, at which point the affected markets will bounce back quickly if demand remains elevated.

The good news is the industry has already recognized its supply surplus. Recent data shows approximately 1,200 units of new supply being canceled per week over the past six months. The cancellations are taking place in the planning phases, meaning projects that might have broken ground this year or next are being rescinded or postponed. A rate of 1,200 cancellations per week translates to almost 70,000 units over the course of a year. However, with more than 800,000 units currently under construction nationwide, the math is still sobering.

While these cancellations won't move the needle tremendously, interest rates and construction costs contribute to an environment that isn't conducive to building. The industry could see a sharp pause in development by mid-2025, and a dramatic drop-off in delivered units should lead to a rapid rebound in rent, occupancy, and property performance. ...

Moving Forward

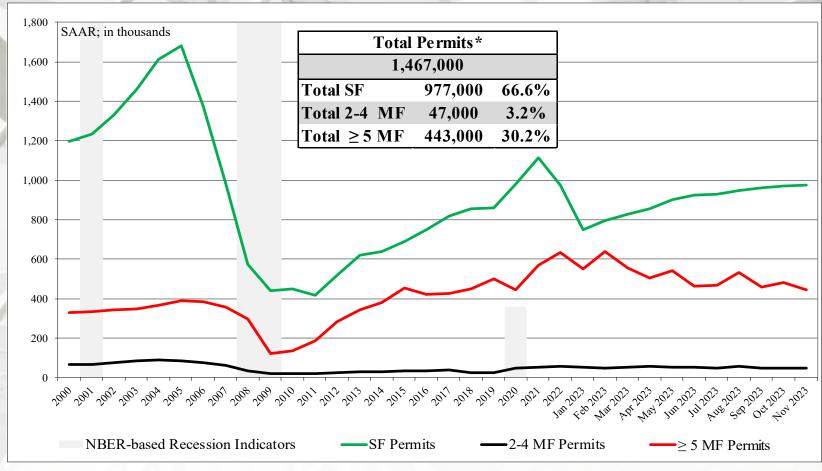
Multifamily is still well positioned for the long term. A study released by the National Multifamily Housing Council said the industry needs 4-million homes by 2035. If the industry delivers a million units in 2023-2025, we're already a quarter of the way there. Even though it feels like the sky is falling from a supply perspective, we still need to build more in the long term. It will require patience and perseverance to get out of this current rut, but the industry has been through this before and will emerge strong when the supply wave passes." – Chris Nebenzahl, Vice President of Research and Analytics, Radix

New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
November	1,467,000	977,000	47,000	443,000
October	1,498,000	969,000	48,000	481,000
2022	1,402,000	795,000	54,000	553,000
M/M change	-2.1%	0.8%	-2.1%	-7.9%
Y/Y change	4.6%	22.9%	-13.0%	-19.9%

* All permit data are presented at a seasonally adjusted annual rate (SAAR).

Total New Housing Permits



* Percentage of total permits.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
November	84,000	57,000	27,000
October	128,000	58,000	70,000
2022	2022 119,000		64,000
M/M change -34.49	-34.4%	-1.7%	-61.4%
Y/Y change	-29.4%	3.6%	-57.8%
	MW Total*	MW SF	MW MF**
November	MW Total* 190,000	MW SF 117,000	MW MF** 73,000
November October			
	190,000	117,000	73,000
October	190,000 170,000	117,000 114,000	73,000 56,000

NE = Northeast; MW = Midwest

* All data are SAAR

** US DOC does not report multi-family permits directly; this is an estimation (Total permits – SF permits).

New Housing Permits by Region

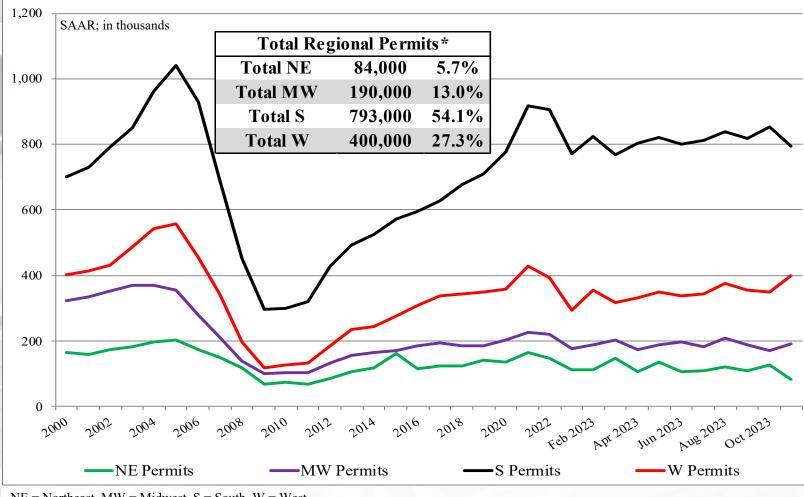
	S Total*	S SF	S MF**
November	793,000	581,000	212,000
October	852,000	592,000	260,000
2022	785,000	479,000	306,000
M/M change	-6.9%	-1.9%	-18.5%
Y/Y change	1.0%	21.3%	-30.7%
	W Total*	W SF	W MF**
November	W Total* 400,000	W SF 222,000	W MF** 178,000
November October			
	400,000	222,000	178,000
October	400,000 348,000	222,000 205,000	178,000 143,000

S = South; W = West

* All data are SAAR

** US DOC does not report multi-family permits directly; this is an estimation (Total permits – SF permits).

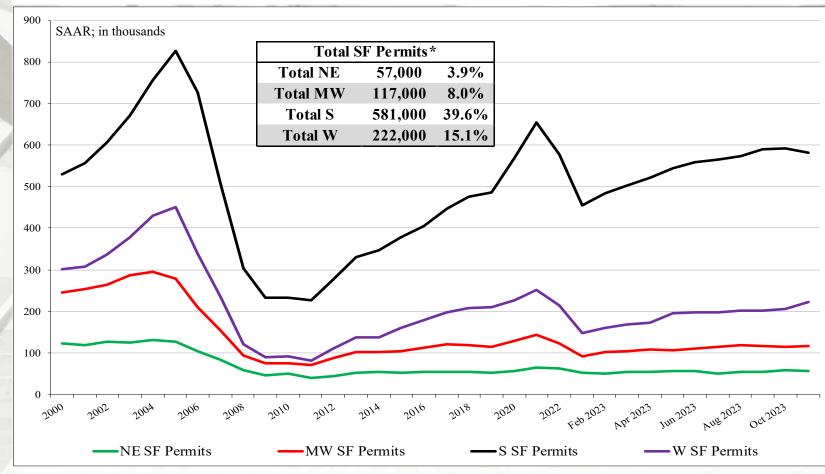
Total Housing Permits by Region



NE = Northeast, MW = Midwest, S = South, W = West

* Percentage of total permits.

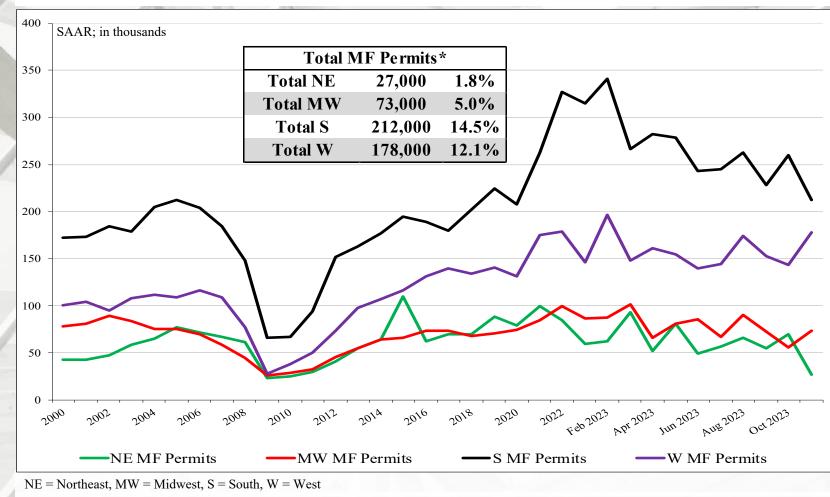
SF Housing Permits by Region



NE = Northeast, MW = Midwest, S = South, W = West

* Percentage of total permits.

MF Housing Permits by Region



* Percentage of total permits.

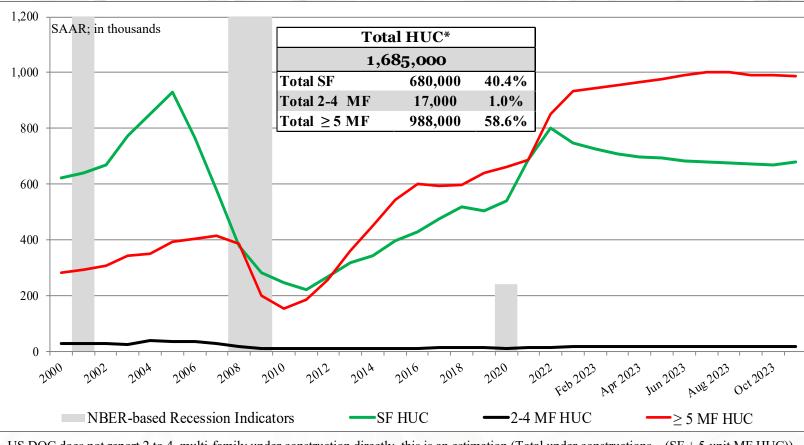
New Housing Under Construction (HUC)

	Total HUC	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
November	1,685,000	680,000	17,000	988,000
October	1,674,000	667,000	18,000	989,000
2022	1,695,000	762,000	17,000	916,000
M/M change	0.7%	1.9%	-5.6%	-0.1%
Y/Y change	-0.6%	-10.8%	0.0%	7.9%

All housing under construction (HUC) data are presented at a seasonally adjusted annual rate (SAAR).

** US DOC does not report 2-4 multi-family units under construction directly; this is an estimation: ((Total under construction – (SF + 5-unit MF)).

Total Housing Under Construction



US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + 5-unit MF HUC)). * Percentage of total housing under construction units.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
November	211,000	68,000	143,000
October	209,000	64,000	145,000
2022	211,000	62,000	149,000
M/M change	1.0%	6.3%	-1.4%
Y/Y change	0.0%	9.7%	-4.0%
	MW Total	MW SF	MW MF
November	MW Total 216,000	MW SF 92,000	MW MF 124,000
November October			
	216,000	92,000	124,000
October	216,000 209,000	92,000 88,000	124,000 121,000

All data are SAAR; NE = Northeast and MW = Midwest.

** US DOC does not report multi-family units under construction directly; this is an estimation

(Total under construction – SF under construction).

New Housing Under Construction by Region

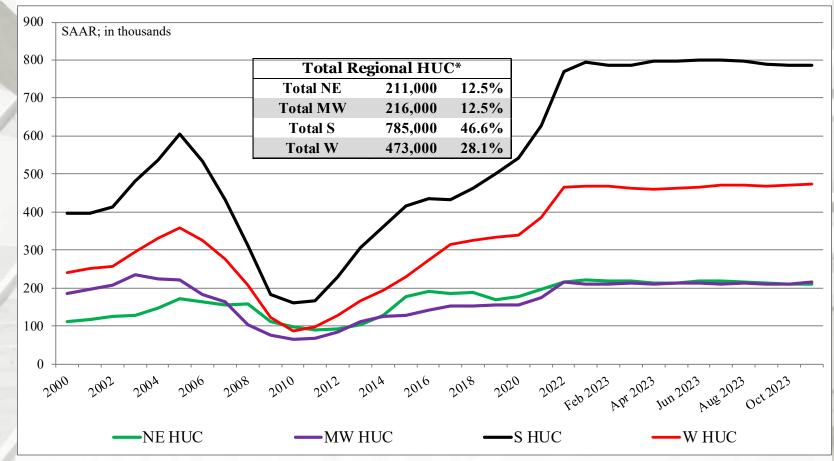
	S Total	S SF	S MF **
November	785,000	351,000	434,000
October	785,000	347,000	438,000
2022	792,000	405,000	387,000
M/M change	0.0%	1.2%	-0.9%
Y/Y change	-0.9%	-13.3%	12.1%
	W Total	W SF	W MF
November	473,000	169,000	304,000
October	471,000	168,000	303,000
2022	471,000	192,000	279,000
M/M change	0.4%	0.6%	0.3%
Y/Y change	0.4%	-12.0%	9.0%

All data are SAAR; S = South and W = West.

** US DOC does not report multi-family units under construction directly; this is an estimation

(Total under construction - SF under construction).

Total Housing Under Construction by Region

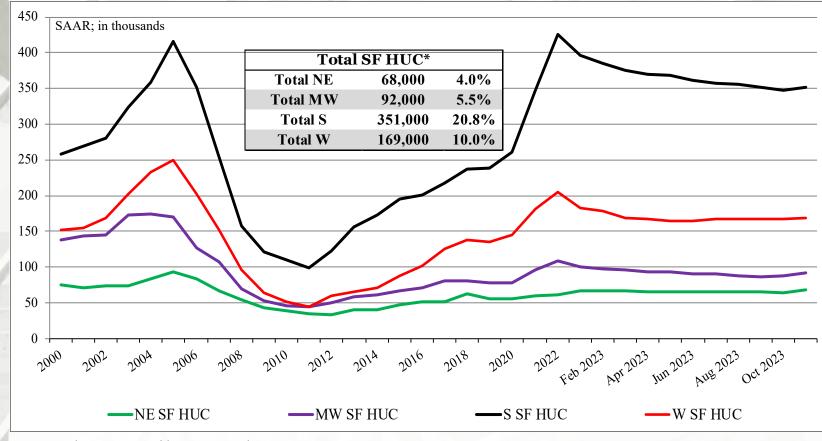


NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family under construction directly; this is an estimation (Total under construction – (SF + 5-unit MF under construction).

* Percentage of total housing under construction units.

SF Housing Under Construction by Region

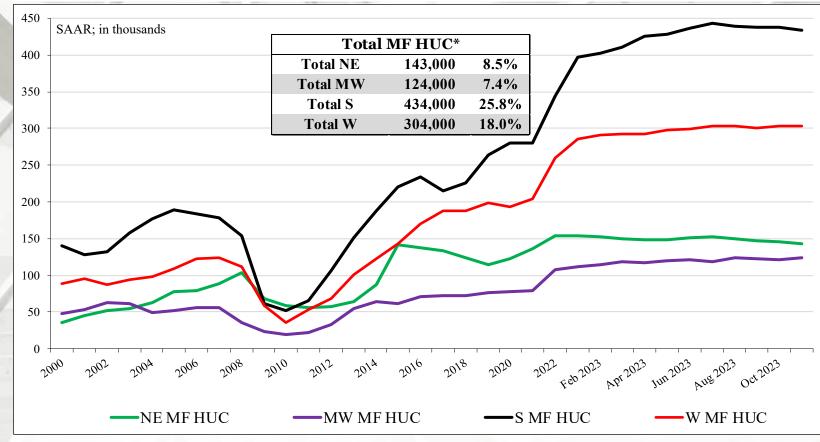


NE = Northeast, MW = Midwest, S = South, W = West.

US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under construction – (SF + 5-unit MF under construction).

* Percentage of total housing under construction units.

MF Housing Under Construction by Region



NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family under construction directly; this is an estimation (Total under construction – (SF + 5-unit MF under construction).

* Percentage of total housing under construction units.

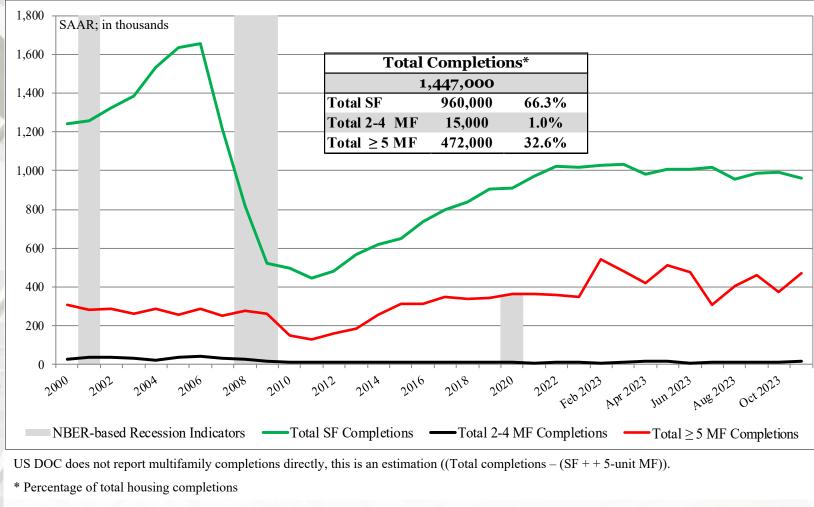
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
November	1,447,000	960,000	15,000	472,000
October	1,378,000	992,000	13,000	373,000
2022	1,543,000	1,102,000	10,000	431,000
M/M change	5.0%	-3.2%	15.4%	26.5%
Y/Y change	-6.2%	-12.9%	50.0%	9.5%

* All completion data are presented at a seasonally adjusted annual rate (SAAR).

** US DOC does not report multi-family completions directly; this is an estimation ((Total completions – (SF $+ \ge 5$ -unit MF)).

Total Housing Completions



NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 12/19/23

New Housing Completions by Region

	NE Total	NE SF	NE MF**
November	103,000	49,000	54,000
October	103,000	75,000	28,000
2022	218,000	56,000	162,000
M/M change	0.0%	-34.7%	92.9%
Y/Y change	-52.8%	-12.5%	-66.7%
	MW Total	MW SF	MW MF
October	178,000	111,000	67,000
September	170,000	100,000	70,000
2022	197,000	131,000	66,000
M/M change	4.7%	11.0%	-4.3%
Y/Y change	-9.6%	-15.3%	1.5%

NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

New Housing Completions by Region

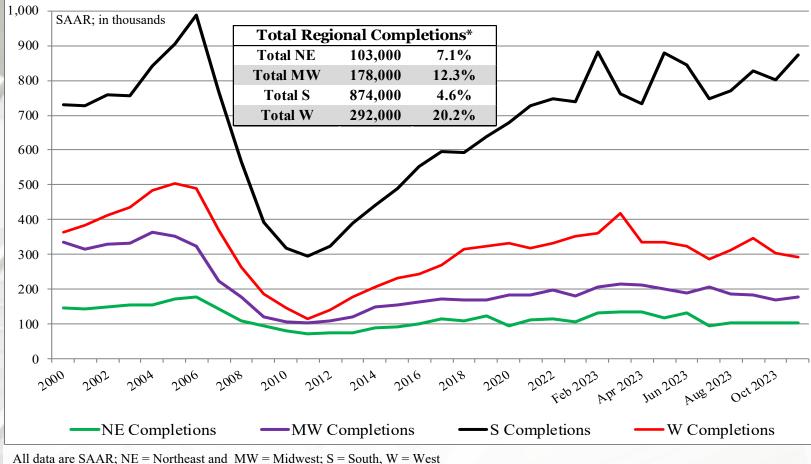
	S Total	S SF	S MF **
October	874,000	593,000	281,000
September	801,000	608,000	193,000
2022	819,000	685,000	134,000
M/M change	9.1%	-2.5%	45.6%
Y/Y change	6.7%	-13.4%	109.7%
	W Total	W SF	W MF
November	292,000	207,000	85,000
October	304,000	209,000	95,000
2022	309,000	230,000	79,000
M/M change	-3.9%	-1.0%	-10.5%
Y/Y change	-5.5%	-10.0%	7.6%

NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

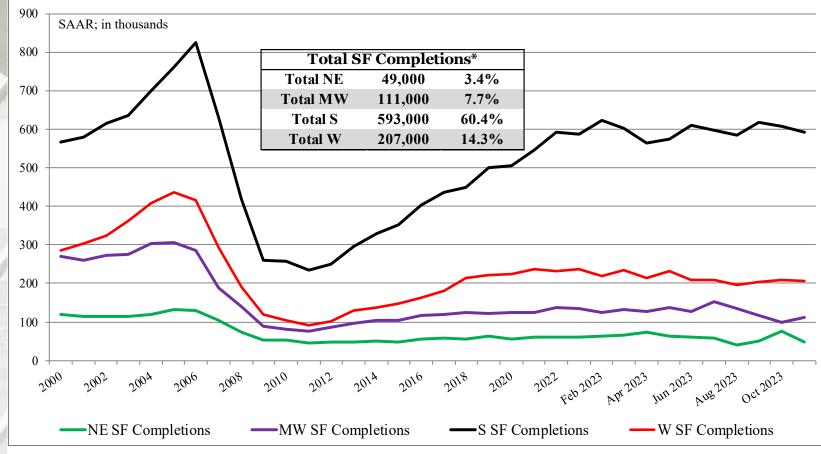
* Percentage of total housing completions

Total Housing Completions by Region



** US DOC does not report multi-family unit completions directly; this is an estimation (Total completions – SF completions).

SF Housing Completions by Region

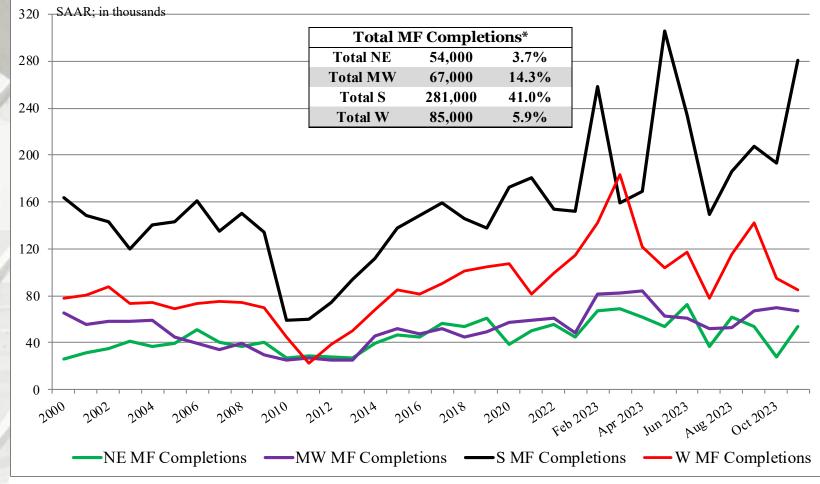


NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

MF Housing Completions by Region

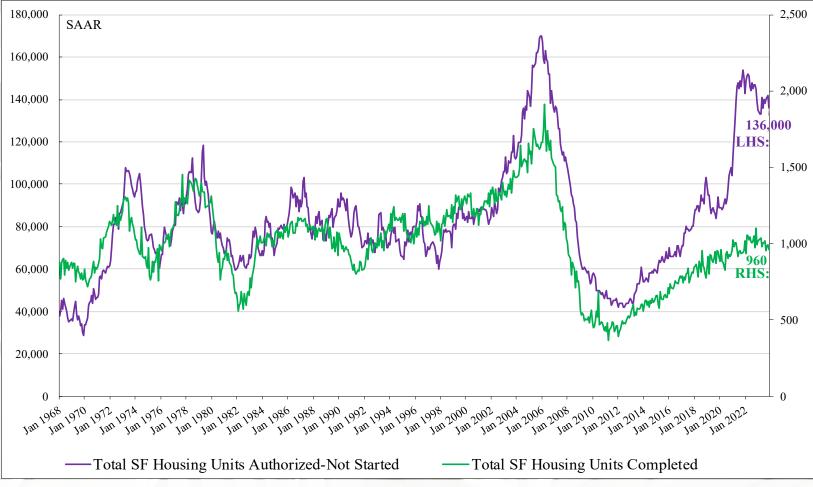


NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Comparison of SF Units Authorized & Not Started to SF Housing Units Completed



Authorized, Not Started vs. Housing Completions

Total authorized units "not" started was 276,000 in November, a decrease from October (283,000), and SF authorized units "not" started were 136,000 units in November, also a decrease from October (142,000). Total completions increased and SF unit completions decreased M/M.

The primary reason currently is reduced demand, and in combination with lingering manufacturing supply chain disruptions –ranging from appliances to windows; labor, logistics, and local building regulations.

New Single-Family House Sales

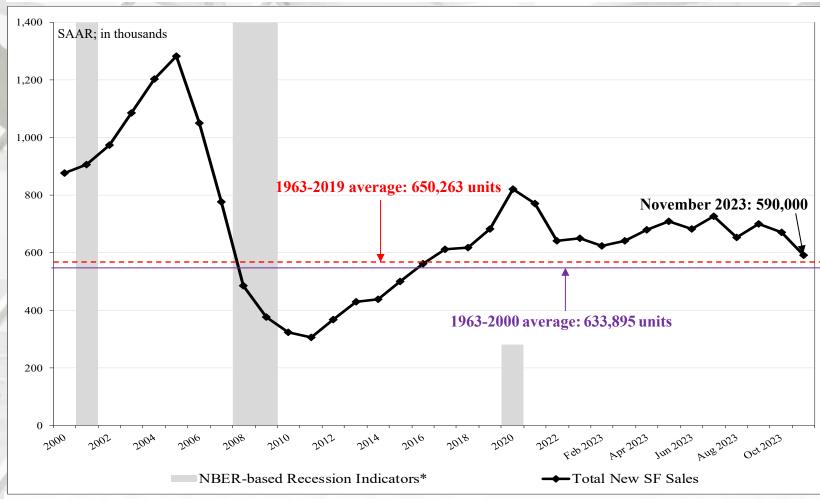
	New SF Sales*	Median Price	Mean Price	Month's Supply
November	590,000	\$434,700	\$488,900	9.2
October	672,000	\$414,900	\$498,500	7.9
2022	582,000	\$462,300	\$527,400	9.4
M/M change	-12.2%	4.8%	-1.9%	16.5%
Y/Y change	1.4%	-6.0%	-7.3%	-2.1%

* All new sales data are presented at a seasonally adjusted annual rate (SAAR)¹ and housing prices are adjusted at irregular intervals².

New SF sales were considerably less than the consensus forecast³ of 690 m; range 685 m to 710 m. The past three month's new SF sales data also were revised:

August initial: 675 m, revised to 654 m. September initial: 759 m, revised to 700 m. October initial: 679 m, revised to 672 m.

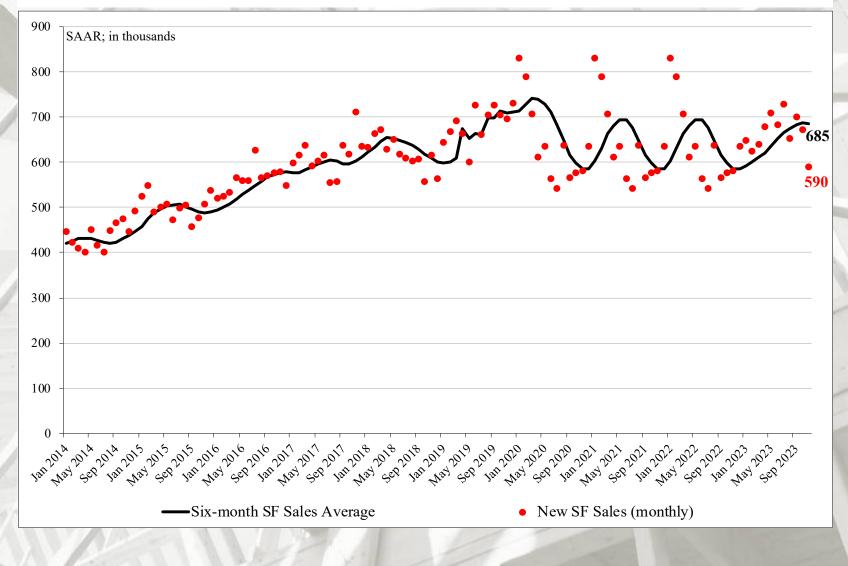
Sources: ¹ https://www.census.gov/construction/nrs/index.html; 6/24/21; ² https://www.census.gov/construction/nrs/pdf/newressales.pdf; 12/22/23 ³ http://us.econoday.com; 12/22/23



* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 12/22/23

New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 12/22/23.

New SF House Sales by Region and Price Category

	NE		MW		S	•	W
November	33,000		70,00	0	337,000	15	0,000
October	32,000		56,00	0	426,000	15	8,000
2022	29,000		46,00	0	368,000	139	9,000
M/M change	3.1%		25.0%	/ 0	-20.9%	-5	5.1%
Y/Y change	13.8%		52.2%	0	-8.4%	7	.9%
	≤ \$150m ≥	\$150 - \$199.9m	\$200 - 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥\$750m
November ^{1,2,3,4}	0	0	6,000	9,000	10,000	11,000	3,000
October	0	0	7,000	17,000	9,000	12,000	5,000
2022	0	0	2,000	13,000	10,000	10,000	6,000
M/M change	0.0%	0.0%	-14.3%	-47.1%	11.1%	-8.3%	-40.0%
Y/Y change	0.0%	0.0%	200.0%	-30.8%	0.0%	10.0%	-50.0%
% of New SF sales	0.0%	0.0%	13.3%	31.7%	20.0%	21.7%	13.3%

NE = Northeast; MW = Midwest; S = South; W = West

¹ All data are SAAR

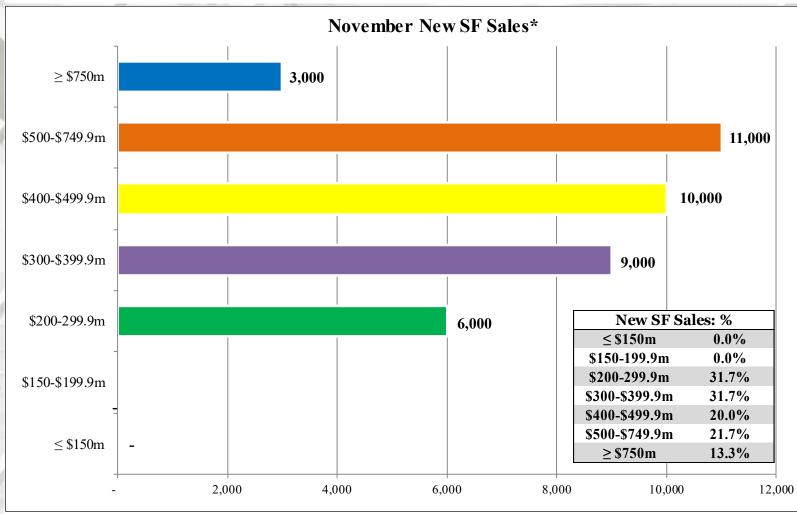
² Houses for which sales price were not reported have been distributed proportionally to those for which sales price was reported;

³ Detail November not add to total because of rounding.

⁴ Housing prices are adjusted at irregular intervals.

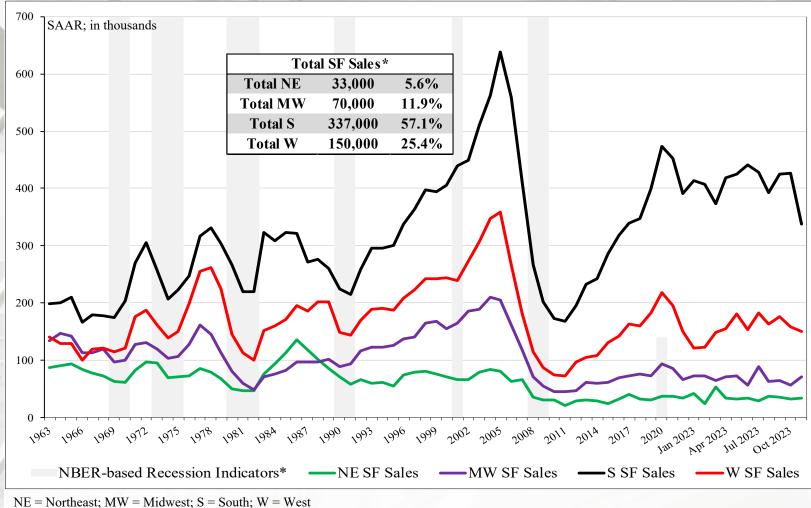
 5 Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} https://www.census.gov/construction/nrs/index.html; 12/22/23; ⁴https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf



* Total new sales by price category and percent.

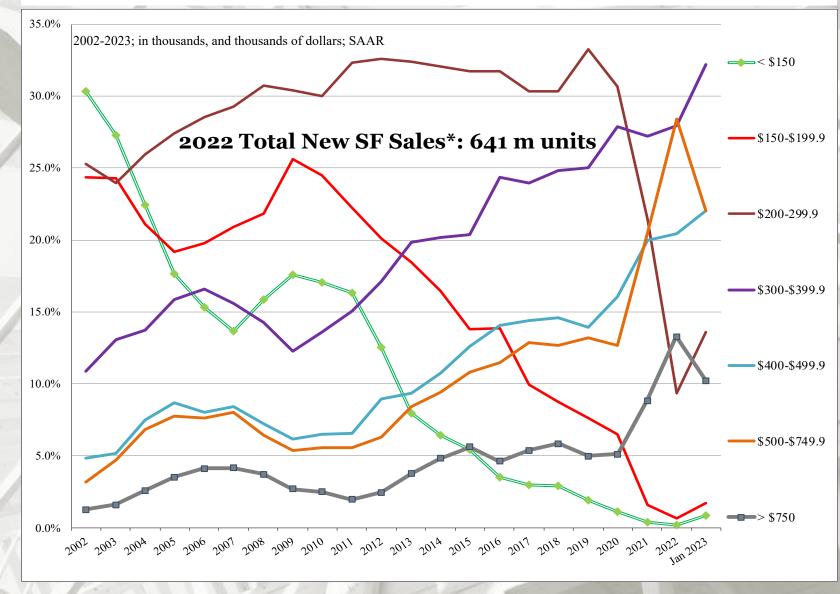
New SF House Sales by Region

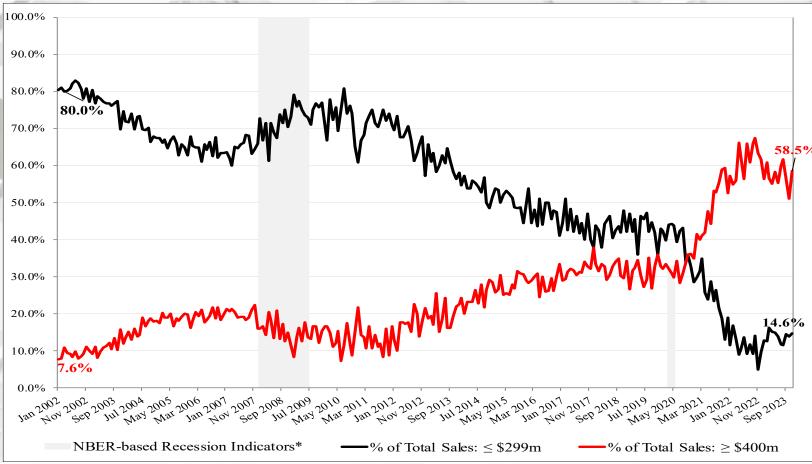


* Percentage of total new sales.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF House Sales by Price Category





* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Sales: ≤ \$299m and ≥ \$400m: 2002 – November 2023

The sales share of \$400 thousand plus SF houses is presented above^{1, 2}. Since the beginning of 2012, the upper priced houses have and are garnering a greater percentage of sales. A decreasing spread indicates that more high-end luxury homes are being sold. Several reasons are offered by industry analysts; 1) builders can realize a profit on higher priced houses; 2) historically low interest rates have indirectly resulted in increasing house prices; and 3) purchasers of upper end houses fared better financially coming out of the Great Recession.

Source: 1 https://www.census.gov/construction/nrs/index.html; 2 https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 12/22/23

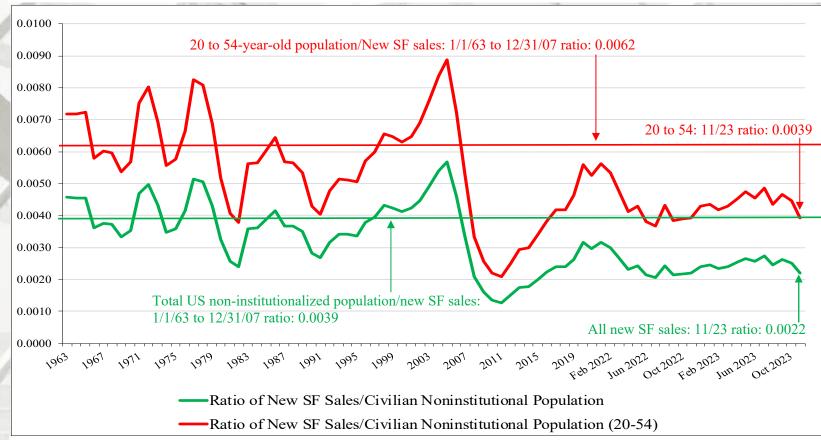


New SF Sales: ≤ \$ 200m and ≥ \$500m: 2002 to November 2022

The number of \leq \$200 thousand SF houses has declined dramatically since 2002^{1, 2}. Subsequently, from 2012 onward, the \geq \$500 thousand class has soared (on a percentage basis) in contrast to the \leq \$200 thousand class. Oft mentioned reasons for this occurrence is builder net margins, affordability, and purchase of new houses for rent – single-family rentals.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: ¹ https://www.census.gov/construction/nrs/index.html; ² https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 12/22/23

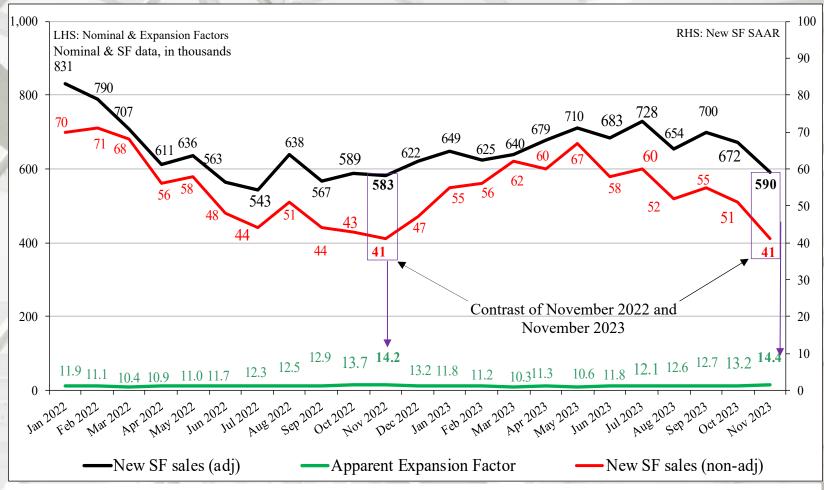


New SF sales adjusted for the US population

From January 1963 to December 2007, the long-term ratio of new house sales to the total US noninstitutionalized population was 0.0039; in November 2023 it was 0.0022 – a decrease from October (0.0025). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in November 2023 it was 0.0039 – also a decline from October (0.0045). All are non-adjusted data. From a non-institutionalized population world view, new sales remain less than the long-term average.

On a long-term basis, some studies peg normalized long-term demand at 900,000 to 1,000,000 new SF house sales per year beginning in 2025 through 2050.

Nominal vs. SAAR New SF House Sales



Nominal and Adjusted New SF Monthly Sales

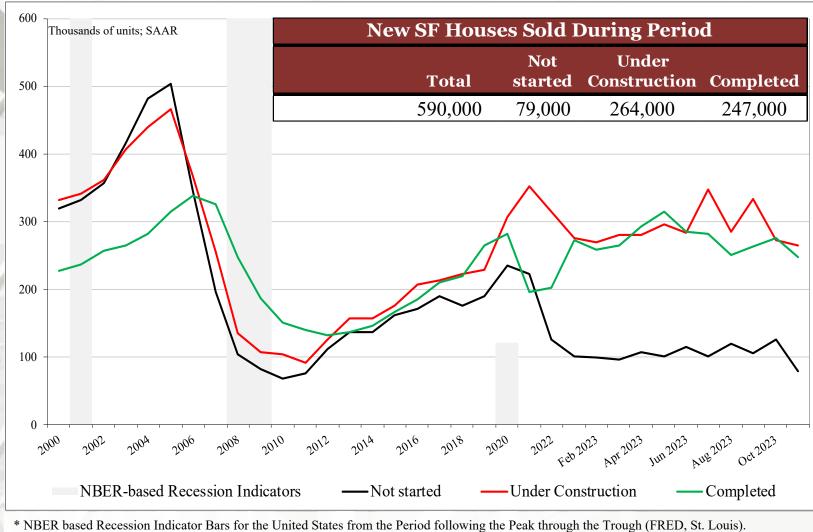
Presented above is nominal (non-adjusted) new SF sales data contrasted against SAAR data. The apparent expansion factor "…is the ratio of the unadjusted number of houses sold in the US to the seasonally adjusted number of houses sold in the US (i.e., to the sum of the seasonally adjusted values for the four regions)." – U.S. DOC-Construction

New SF Houses Sold During Period

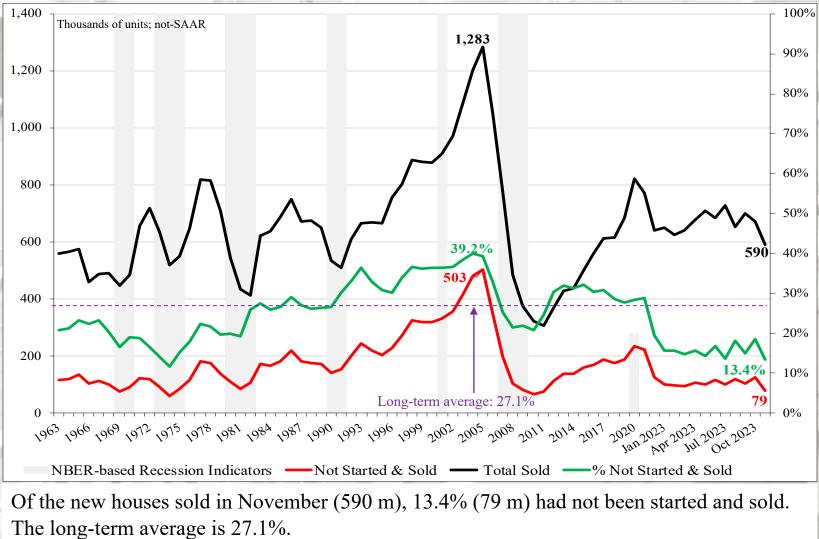
	Total	Not started	Under Construction	Completed
November	590,000	79,000	264,000	247,000
October	672,000	125,000	272,000	275,000
2022	455,000	97,000	296,000	62,000
M/M change	-12.2%	-36.8%	-2.9%	-10.2%
Y/Y change	29.7%	-18.6%	-10.8%	298.4%
Total percentage		13.4%	44.7%	41.9%

All data is SAAR

New SF House Sales: Sold During Period



New SF House Sales: Percentage Not Started & Sold During Period



* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Houses for Sale

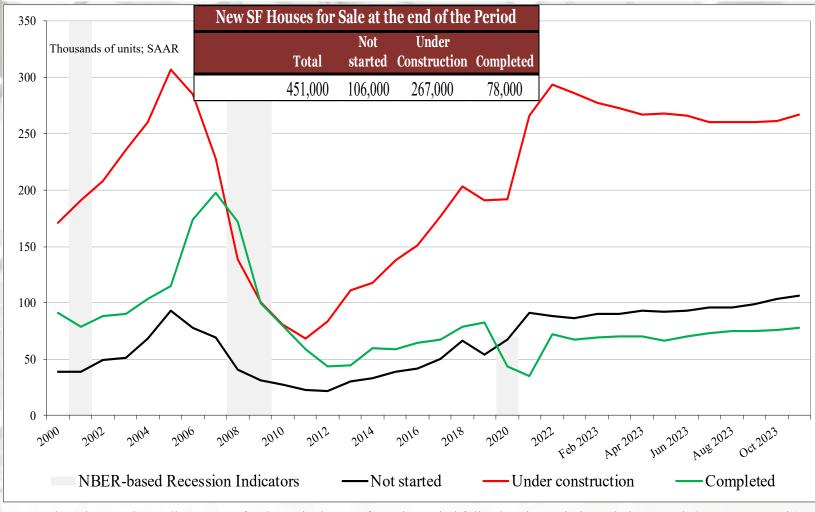
New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
November	451,000	106,000	267,000	78,000
October	440,000	103,000	261,000	76,000
2022	455,000	97,000	296,000	62,000
M/M change	2.5%	2.9%	2.3%	2.6%
Y/Y change	-0.9%	9.3%	-9.8%	25.8%
Total percentage		23.5%	59.2%	17.3%

Not SAAR

Of houses listed for sale (451 m) in November, 17.3% (78 m) have been built. In the 'ground had not been broken for construction' or 'not started' category, 106 m (23.5%) were sold.

New SF House Sales: For Sale at End of Period



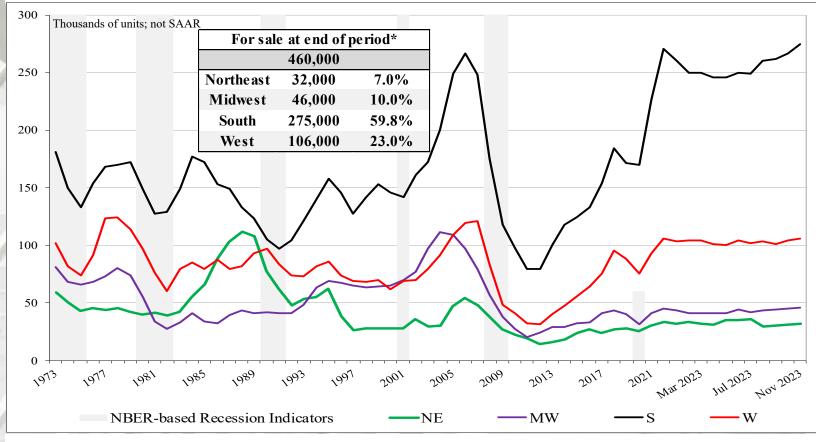
NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Houses for Sale at the end of the Period by Region*

	Total	NE	MW	S	W
November	460,000	32,000	46,000	275,000	106,000
October	447,000	31,000	45,000	267,000	104,000
2022	463,000	29,000	47,000	279,000	108,000
M/M change	2.9%	3.2%	2.2%	3.0%	1.9%
Y/Y change	-0.6%	10.3%	-2.1%	-1.4%	-1.9%

* Not SAAR

New SF Houses for Sale at End of Period by Region

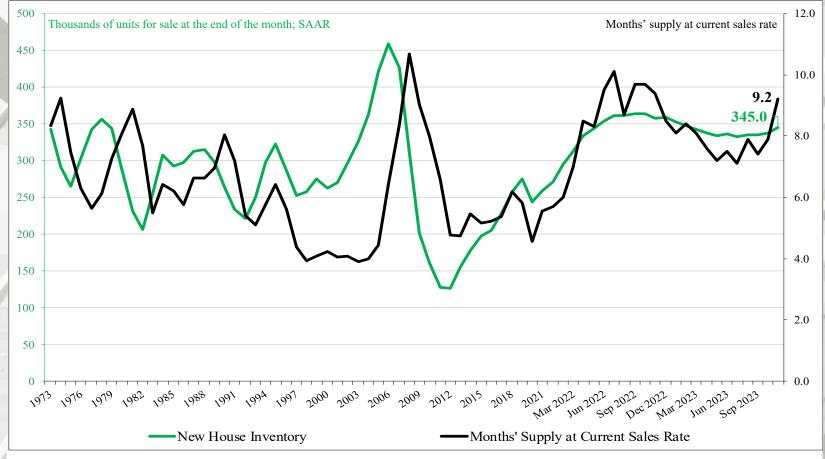


NE = Northeast; MW = Midwest; S = South; W = West

* Percentage of new SF sales.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

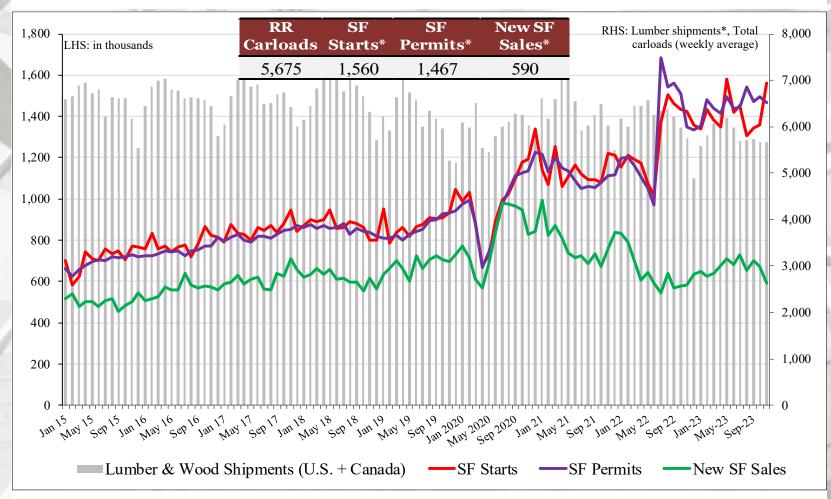
Months' Supply and New House Inventory^a



^a New HUC + New House Completions (sales data only)

The months' supply of new houses for sale at the end of November was 9.2, greater than the historically preferred number of five- to six-months (SAAR).

U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales

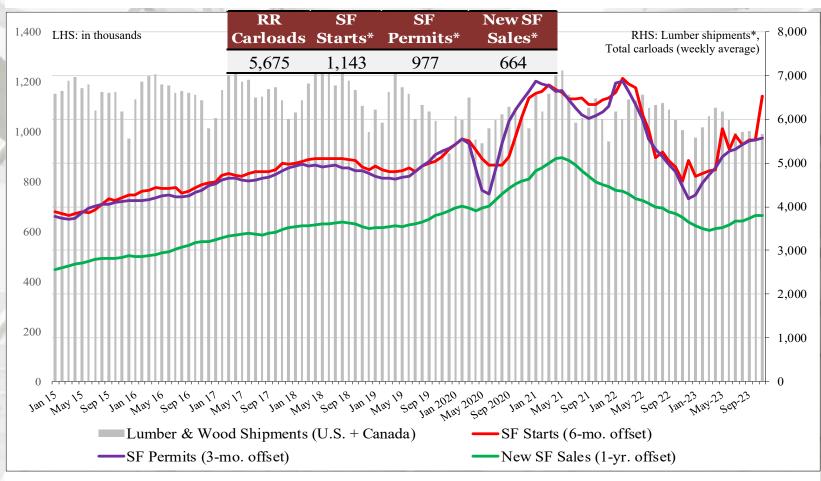


Carloads of Canadian + U.S. lumber and wood shipments to the U.S. are contrasted above to U.S. housing metrics. Annual SF starts, SF Permits, and New sales are compared to total carload lumber and wood shipments. The intent is to discern if lumber shipments relate to future SF starts, SF permits, and new SF sales. It is realized that lumber and wood products are trucked; however, to our knowledge comprehensive and timely trucking data is not available.

* In thousands

Sources: *Association of American Railroads, Rail Time Indicators report-November 2022; http://www.census.gov/construction/; 12/19/23 & 12/22/23

U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



Carloads of Canadian + US lumber and wood shipments to the US are contrasted above to U.S. housing metrics. SF starts are off-set 6-months (a typical time-frame from permit issuance to actual start); Permits are off-set 3-months; and New sales are off-set 1-year. The intent is to discern if lumber shipments relate to future SF starts, SF permits, and New sales. It is realized that lumber and wood products are trucked; however, to our knowledge comprehensive and timely trucking data is not available.

* In thousands.

Sources: *Association of American Railroads, Rail Time Indicators report-November 2022; http://www.census.gov/construction/; 12/19/23; & 12/22/23

November 2023 Construction Spending

	Total Private Residential*	SF	MF	Improvement**
November	\$896,758	\$422,579	\$135,630	\$338,549
October	\$887,278	\$410,546	\$135,544	\$341,188
2022	\$865,170	\$400,397	\$119,431	\$345,342
M/M change	1.1%	2.9%	0.1%	-0.8%
Y/Y change	3.7%	5.5%	13.6%	-2.0%

* millions.

** The US DOC does not report improvement spending directly, this is a monthly estimation: ((Total Private Spending – (SF spending + MF spending)). All data are SAARs and reported in nominal US\$.

Total private residential construction spending includes new single-family, new multi-family, and improvement (AKA repair and remodeling) expenditures.

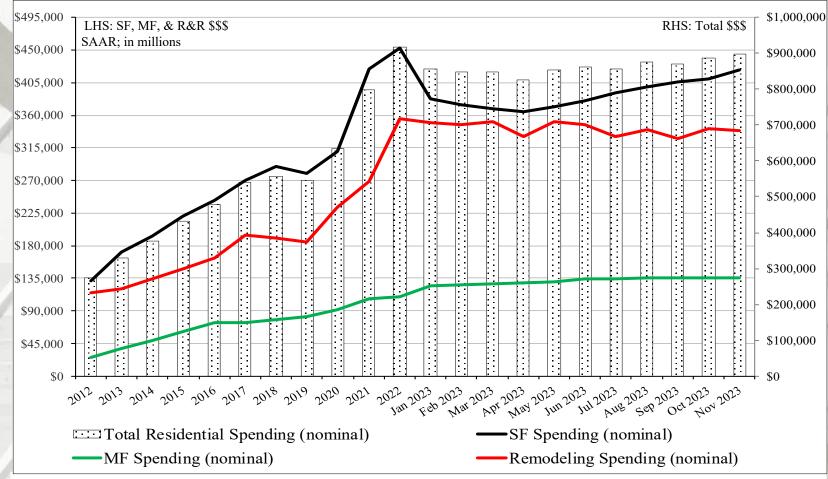
New single-family: new houses and town houses built to be sold or rented and units built by the owner or for the owner on contract. The classification excludes residential units in buildings that are primarily nonresidential. It also excludes manufactured housing and houseboats.

New multi-family includes new apartments and condominiums. The classification excludes residential units in buildings that are primarily nonresidential.

Improvements: Includes remodeling, additions, and major replacements to owner occupied properties subsequent to completion of original building. It includes construction of additional housing units in existing residential structures, finishing of basements and attics, modernization of kitchens, bathrooms, etc. Also included are improvements outside of residential structures, such as the addition of swimming pools and garages, and replacement of major equipment items such as water heaters, furnaces and central air-conditioners. Maintenance and repair work is not included.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 1/2/24

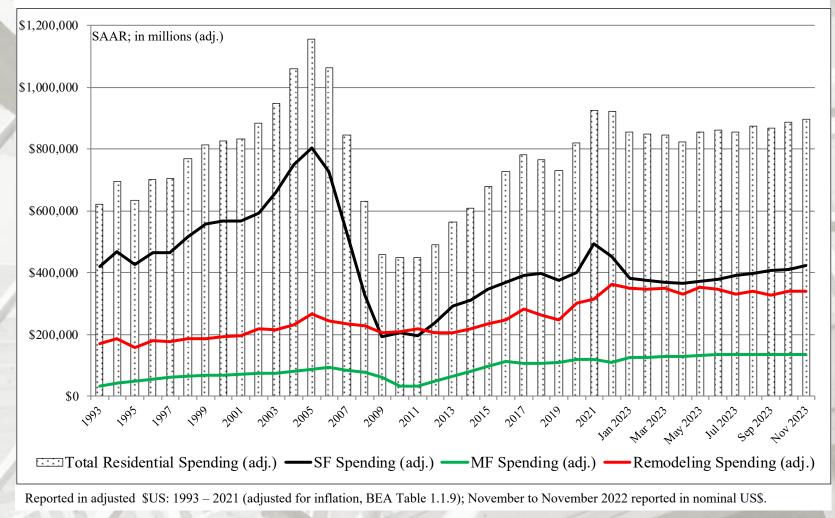
Total Construction Spending (nominal): 2000 – November 2023



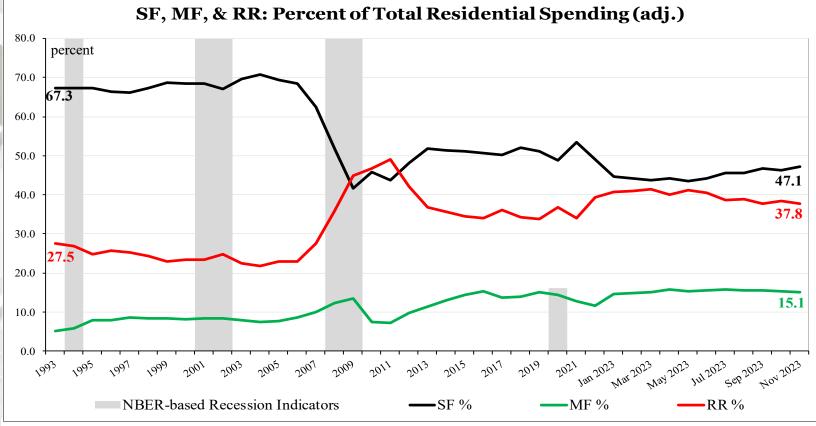
Reported in nominal US\$.

The US DOC does not report improvement spending directly, this is a monthly estimation for 2022.

Total Construction Spending (adjusted): 1993 – November 2023



Construction Spending Shares: 1993 – November 2023



Total Residential Spending: 1993 through 2006

SF spending average: 69.2%

MF spending average: 7.5%

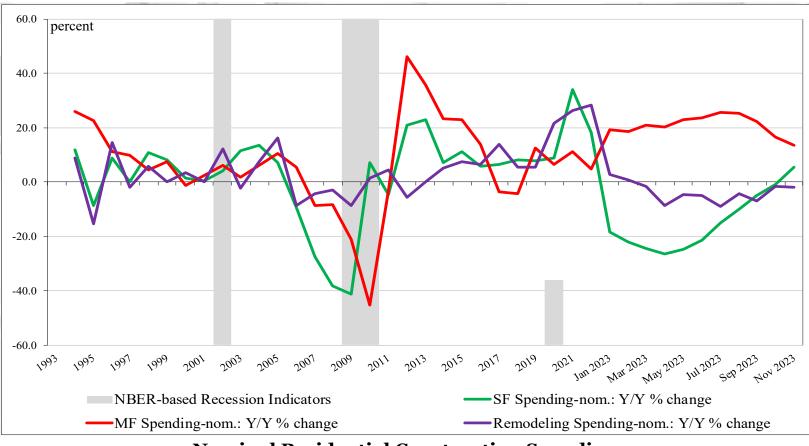
Residential remodeling (RR) spending average: 23.3% (SAAR).

Note: 1993 to 2021 (adjusted for inflation, BEA Table 1.1.9); November 2022 reported in nominal US\$.

* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: *https://fred.stlouisfed.org/series/USREC, 7/24/21; http://www.census.gov/construction/c30/pdf/privsa.pdf; 1/2/24 and http://www.bea.gov/iTable/iTable.cfm; 6/29/23

Construction Spending: Y/Y Percentage Change

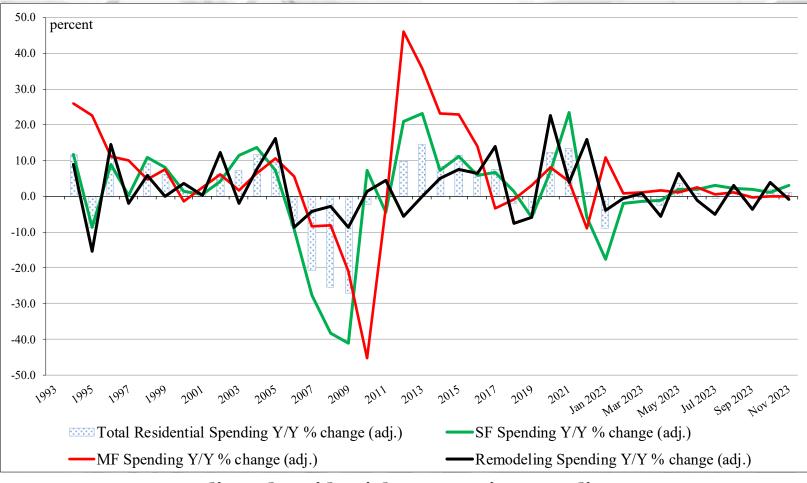


Nominal Residential Construction Spending: Y/Y percentage change, 1993 to November 2023

Presented above is the percentage change of Y/Y construction spending. MF expenditures were positive on a percentage basis, year-over-year (November 2023 data reported in nominal dollars). * NBER based Recession Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: *https://fred.stlouisfed.org/series/USREC, 6/24/21; http://www.census.gov/construction/c30/pdf/privsa.pdf; 1/2/24 and http://www.bea.gov/iTable/iTable.cfm; 6/29/23

Adjusted Construction Spending: Y/Y Percentage Change



Adjusted Residential Construction Spending: Y/Y percentage change, 1993 to November 2023

Sources: http://www.census.gov/construction/c30/pdf/privsa.pdf; 1/2/24 and http://www.bea.gov/iTable/iTable.cfm; 6/29/23

Remodeling

Retail Sales: Building materials, Garden Equipment, & PRO Supply Dealers

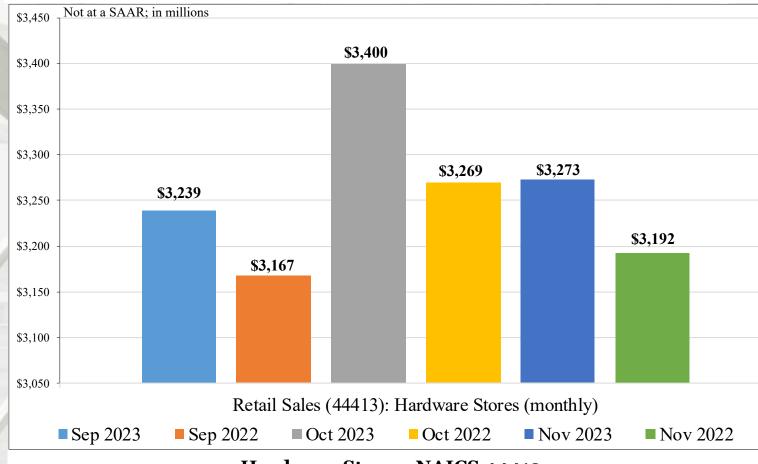


Building materials, Garden Equipment, & PRO Supply Dealers: NAICS 444

NAICS 444 sales decreased 7.3% in December 2023 from November 2023 and decreased 5.7% Y/Y (on a non-adjusted basis).

Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales decreased 3.7% in November 2023 from October 2023 and improved 2.5% Y/Y (on a non-adjusted basis).

Existing House Sales

National Association of Realtors ${}^{\mathbb{R}}$

	Existing Sales	Median Price	Month's Supply
November	3,820,000	\$387,600	3.5
October	3,790,000	\$391,600	3.6
2022	4,120,000	\$372,600	3.3
M/M change	0.8%	-1.0%	-2.8%
Y/Y change	-7.3%	4.0%	6.1%

All sales data: SAAR

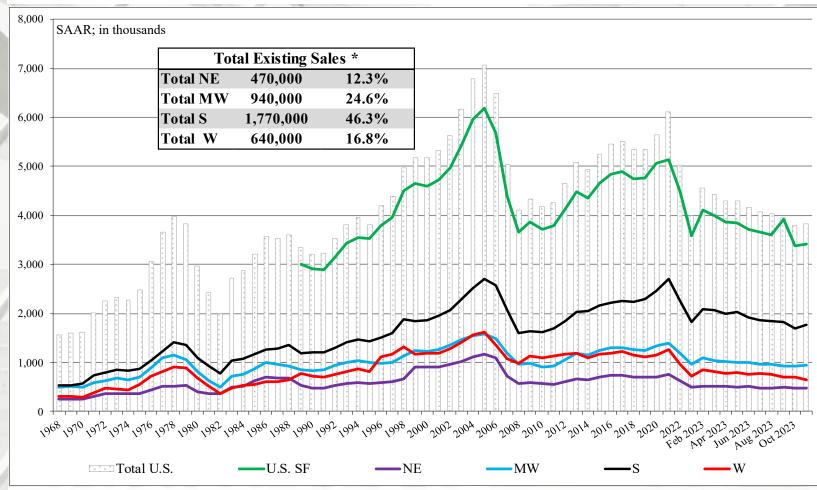
Existing House Sales

	NE	MW	S	W
Novemb	er 470,000	940,000	1,770,000	640,000
Octobe	er 480,000	930,000	1,690,000	690,000
2022	540,000	1,030,000	1,850,000	700,000
M/M char	nge -2.1%	1.1%	4.7%	-7.2%
Y/Y chan	lge -13.0%	-8.7%	-4.3%	-8.6%
_		Existing	SF Median	
		SF Sales	Price	
	November	3,410,000	\$392,100	
	October	3,380,000	\$396,000	1
1	2022	3,680,000	\$378,700	
K	M/M change	0.9%	-1.0%	1.
	Y/Y change	-7.3%	3.5%	-

All sales data: SAAR.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 12/20/23

Existing House Sales



NE = Northeast; MW = Midwest; S = South; W = West * Percentage of total existing sales.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 12/20/23

Federal Housing Finance Agency U.S. House Price Index

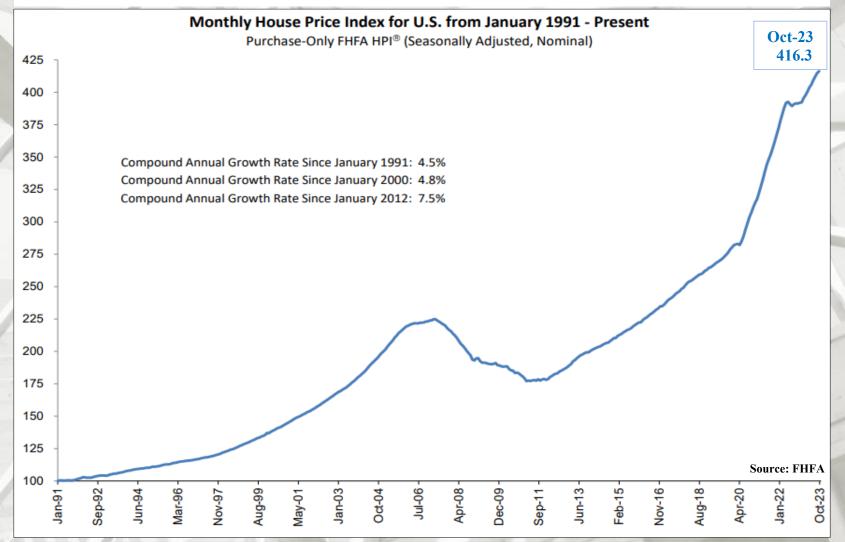
FHFA House Price Index Up 0.3 Percent in October; Up 6.3 Percent from Last Year

Significant Findings

"U.S. house prices rose in October, up **0.3 percent** from September, according to the Federal Housing Finance Agency (FHFA) seasonally adjusted monthly House Price Index (HPI®). House prices rose **6.3 percent** from October 2022 to October 2023. The previously reported **0.6 percent** price increase in September was revised to a **0.7 percent** increase.

For the nine census divisions, seasonally adjusted monthly price changes from September 2023 to October 2023 ranged from **-0.3 percent** in the New England division to **+1.1 percent** in the Middle Atlantic division. The 12-month changes ranged from **+2.6 percent** in the Mountain division to **+9.9 percent** in the Middle Atlantic division." – Adam Russell, FHFA

"U.S. house price gains remained strong over the last 12 months. On a monthly basis, price appreciation moderated in October, with four divisions exhibiting slowdowns from the previous month." – Dr. Nataliya Polkovnichenko, Supervisory Economist, Division of Research and Statistics, FHFA



Source: https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx; 12/26/23

S&P CoreLogic Case-Shiller Index Accelerates in October

"S&P Dow Jones Indices (S&P DJI) released the latest results for the S&P CoreLogic Case-Shiller Indices, the leading measure of U.S. home prices. Data released today for October 2023 show that 11of the 20 major metro markets reported month-over-month price increases. More than 27 years of history are available for the data series and can be accessed in full by going to <u>www.spglobal.com/spdji/en/index-family/indicators/sp-corelogic-case-shiller</u>.

Year-Over-Year

The S&P CoreLogic Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 4.8% annual change in October, up from a 4% change in the previous month. The 10-City Composite showed an increase of 5.7%, up from a 4.8% increase in the previous month. The 20-City Composite posted a year-over-year increase of 4.9%, up from a 3.9% increase in the previous month. Detroit reported the highest year-over-year gain among the 20 cities with an 8.1% increase in October, followed again by San Diego with a 7.2% increase. Portland fell 0.6% and remained the only city reporting lower prices in October versus a year ago.

Month-Over-Month

Before seasonal adjustment, the U.S. National Index and10-City Composite, posted 0.2% month-overmonth increases in October, while the 20-City composite posted 0.1% increase. After seasonal adjustment, the U.S. National Index, the 10-City and 20-City Composites each posted month-over-month increases of 0.6%." – Brian D. Luke, Head of Commodities, Real & Digital Assets, S&P DJI

https://www.spglobal.com/spdji/en/index-announcements/article/sp-corelogic-case-shiller-index-accelerates-in-October; 12/26/23

S&P CoreLogic Case-Shiller Index

Analysis

"U.S. home prices accelerated at their fastest annual rate of the year in October. Our National Composite rose by 0.2% in October, marking nine consecutive monthly gains and the strongest national growth rate since 2022.

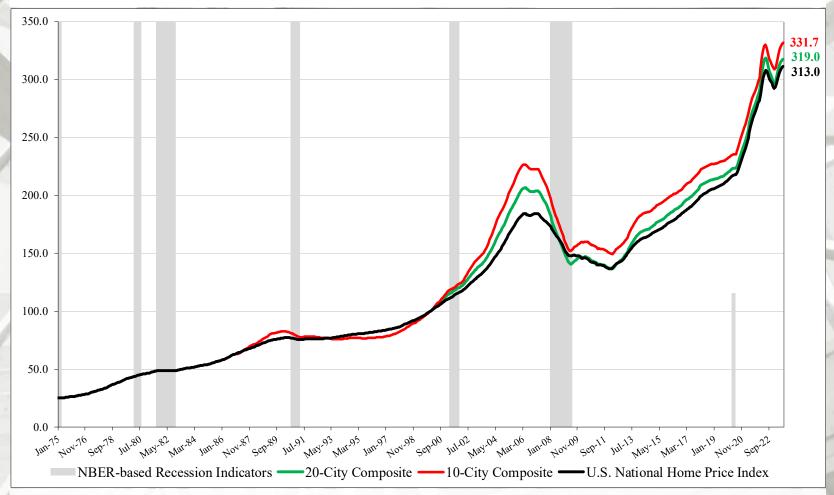
Detroit kept pace as the fastest growing market for the second month in a row, registering an 8.1% annual gain. San Diego maintained the second spot with 7.2% annual gains, following by New York with a 7.1% gain. We are experiencing broad based home price appreciation across the country, with steady gains seen in nineteen of twenty cities. This month's report reflects trendline growth compared to historical returns and little disparity among cities and regions.

Each of our 10-city, 20-city and National Index, remain at all-time highs, with 8 of 20 cities registering all-time highs (Miami, Atlanta, Chicago, Boston, Detroit, Charlotte, New York and Cleveland). While Portland remains slightly down compared to last year's gains, Phoenix and Las Vegas have flipped to year over year gains. The Midwest and the Northeast region are fastest growing markets, while the Southwest and West regions have lagged other regions for over a year. A solid, if unspectacular report, this month's index reflects a rising tide across nearly all markets.

Home prices leaned into the highest mortgage rates recorded in this market cycle and continued to push higher. With mortgage rates easing and the Federal Reserve guiding toward a slightly more accommodative stance, home owners may be poised to see more appreciation." – Brian D. Luke, Head of Commodities, Real & Digital Assets, S&P DJI

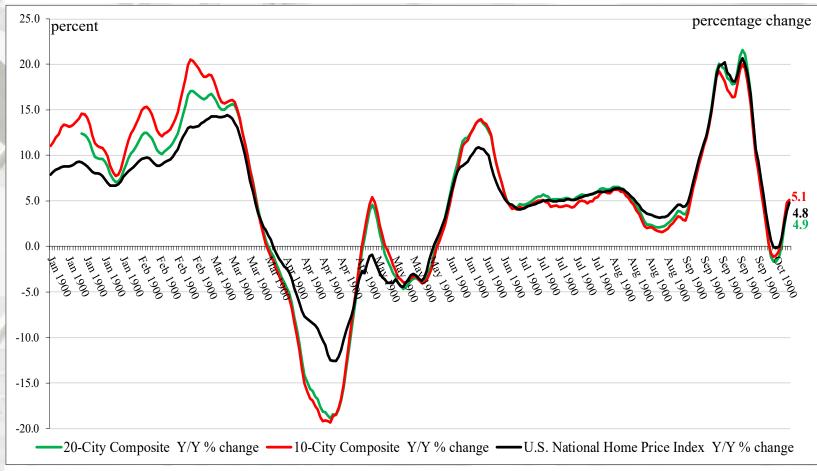
https://www.spglobal.com/spdji/en/index-announcements/article/sp-corelogic-case-shiller-index-accelerates-in-October; 12/26/23

S&P/Case-Shiller Home Price Indices



* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

S&P/Case-Shiller Home Price Indices

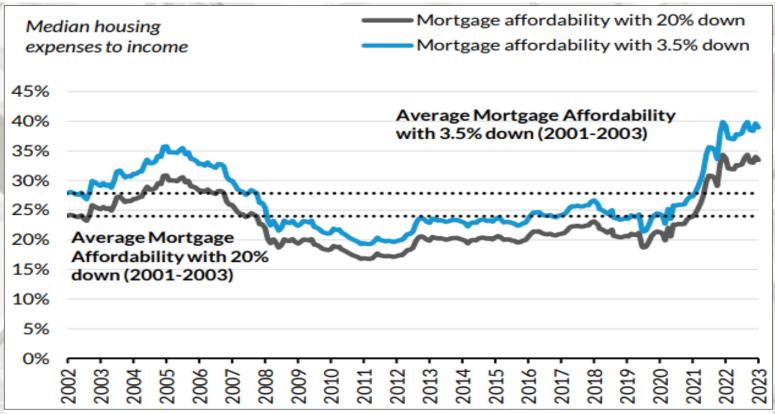


Y/Y Price Change

From October 2022 to October 2023, the National Index indicated a 5.1% increase; the Ten-City improved by 4.9%, and the Twenty-City increased by 4.8%.

https://www.spglobal.com/spdji/en/index-announcements/article/sp-corelogic-case-shiller-index-accelerates-in-October; 12/26/23

U.S. Housing Affordability



Sources: eMBS, Federal Housing Administration (FHA), and Urban Institute. Note: All series measure the first-time home buyer share of purchase loans for principal residences.

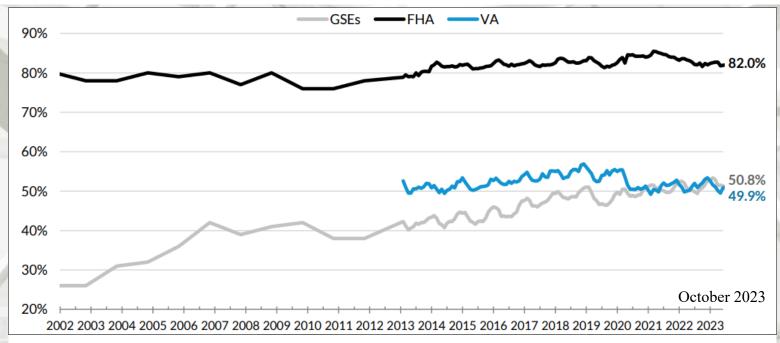
Urban Institute

National Mortgage Affordability Over Time

"Mortgage affordability, while marginally better than in October, remains close to the worst level since the inception of this series in 2002. As of November 2023, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 33.5% percent, higher than the 30.9% at the peak of the housing bubble in November 2005; and with 3.5% down the housing cost burden is 38.9%, also above the 35.8% prior peak in November 2005." – Laurie Goodman *et. al*, Vice President, Urban Institute

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-november-2023; 12/28/23

U.S. First-Time House Buyers



Sources: eMBS, Federal Housing Administration (FHA), and Urban Institute. Note: All series measure the first-time homebuyer share of purchase loans for principal residences.

Urban Institute First-time House Buyer Share

"In October 2023, the FTHB share for FHA, which has always been more focused on first-time home buyers, was 82.0%. The FTHB share of GSE lending in September was 50.8%; the VA share was 49.9%. ..." – Laurie Goodman *et. al*, Vice President, Urban Institute

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-november-2023; 12/28/23

U.S. Housing Affordability



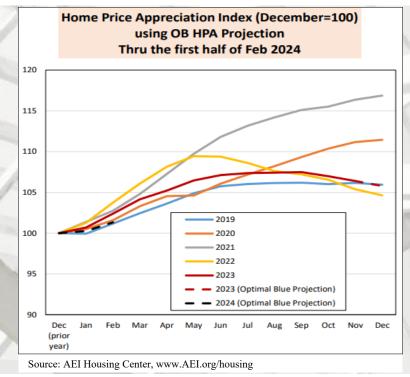
AEI Housing Center

Year-over-Year (YoY) Home Price Appreciation (HPA) Has Begun to Accelerate

"November 2023's YoY HPA was 5.6%, up from 5.1% a month ago but down from 5.8% a year ago.

- YoY HPA bottomed out in April 2023 and is expected to continue rising for the foreseeable future. As our projection on the following slide indicates, HPA is expected to be around 5% by Dec. 2024.
- This is largely due to buyers being well-qualified and highly motivated by a historically tight supply. Increasing, yet still low unemployment rates, low levels of foreclosures in most areas, work from home, and continued home price arbitrage opportunities further support HPA that outpaces inflation.
- November 2023's MoM HPA was -0.6%, continuing the downward trend as we are now beyond the spring and summer home buying season, when seasonal pricing strength is the norm.
- Constant-quality HPA controls for mix shifts in home quality, which otherwise may skew MoM or YoY changes." Edward Pinto, Senior Fellow and Director and Tobias Peter, Research Fellow and Assistant Director, AEI Housing Center

U.S. Housing Affordability

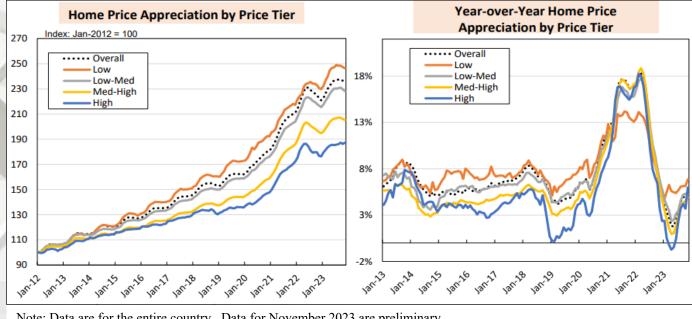


AEI Housing Center

Home Price Appreciation: December 2023 and 2024 YoY HPA for Projections

- "• Base Case HPA Projection for Dec. 2023 and Dec. 2024 of +5.5% and +5%, respectively
 - Assumes mortgage rate at 6.00%-7.5%, unemployment rate <= 5.5%, and months' supply < 5 months.
- Bullish Case Projection for Dec. 2024 of +6 to +8%
- Assumes mortgage rate at 4.50%-6.00%, unemployment rate <= 5.5%, and months' supply < 5 months.
- Bearish Case Projection for Dec. 2024 of -5 to -7%
- Assumes mortgage rate at 7.50%-9.00%, unemployment rate > 5.5% and <= 7.5%, and months' supply > 7 months.
- Note: These things might occur at different times over the projection period." Edward Pinto, Senior Fellow and Director and Tobias Peter, Research Fellow and Assistant Director, AEI Housing Center

Home Price Appreciation by Price Tier



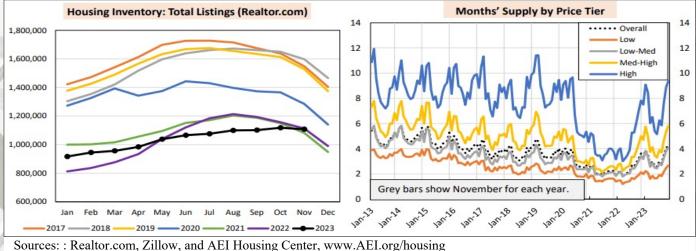
Note: Data are for the entire country. Data for November 2023 are preliminary . Source: AEI Housing Center, www.AEI.org/housing

AEI Housing Center

"Since 2012, a large and widening gap in HPA has developed between the lower and upper end of the market (left panel).

- Preliminary numbers for November 2023 indicate that the low price tier leads the YoY change in tier home prices at 6.9% due to low months' supply (2.7 months), low unemployment, and increasing demand promoted by agency credit easing (right panel).
- Being more dependent on the Fed's monetary punchbowl, the med-high and high price tiers have had the largest slowdowns in YoY HPA. However, this deceleration has ended as of May 2023.
- As of November 2023, all price tiers have shown relatively robust YoY HPA from 4.9% (med-high) to 6.9% (low)." – Edward Pinto, Senior Fellow and Director and Tobias Peter, Research Fellow and Assistant Director, AEI Housing Center

Housing Inventory and Months' Supply



AEI Housing Center

"Months' remaining supply was 4.3 months (not seasonally-adjusted) in November 2023. Housing inventory continued to run below pre-pandemic levels, which helps explain the robust YoY HPA.

- November housing inventory, down 0.9% from October 2023. Weekly inventory data as reported by CalculatedRisk Real Estate News show 2023 following a more distinct seasonal decline than the monthly data. Despite the unusual increase in total listings through the fall, it is still near a series low, signaling low inventory levels heading into the winter. Notwithstanding rates around 7%, the supplydemand imbalance evidenced by continued tight months' supply will fuel continued upward price pressures (left panel).
- Inventory today is at about 70% of 2017-2019 levels, indicating an unhealthy market (left panel).
- Months' supply stood at 4.3 months in November 2023, up from 4.0 months in both October 2023 and November 2019, the last comparable pre-pandemic month (right panel).
- Given historical data, months' supply would need to increase to >7 months to enter a buyer's market and to 8-9 months to trigger a national YoY decline in home price appreciation." – Edward Pinto, Senior Fellow and Director and Tobias Peter, Research Fellow and Assistant Director, AEI Housing Center

U.S. Housing Finance

Mortgage Bankers Association (MBA) Chart of the Week: 30-Year Fixed Rate (%)

"As we summarize the state of the mortgage market in 2023, there is one series in particular that encapsulates the situation, mortgage interest rates. After falling to record lows in late 2020 and remaining in the 3% range in 2021, rates climbed to over 7% in October 2022 and started 2023 at around 6.5%. 2023 has been rocky, with the MBA Weekly Applications Survey (WAS) 30-year fixed contract interest rate reaching 7.9% in October before retreating to the most recent reading of 6.83%.

Economic prices convey a lot of information, and mortgage rates summarize, among other factors, the Federal Reserve's actions to fight inflation, inherent uncertainty about future Treasury rates (e.g., Quantitative Tightening and large fiscal deficits), and the high value of mortgage prepayment options due to increased underlying interest rate volatility (leading to almost 300 basis point mortgage to Treasury spreads).

The effect of the 2023 rate environment has been to reduce the WAS Refinance Index by 89% compared to 2020-21 averages and shrink WAS purchase applications by 30% year to date. This year has been challenging, and MBA estimates that this year's total originations will be \$1.64 trillion. Moreover, with house price appreciation remaining positive, MBA's <u>Purchase Applications Payment Index (PAPI)</u> shows that conditions remain tough for prospective homebuyers.

With 2023 almost behind us, what can we expect for 2024 and 2025? The Federal Open Market Committee's Summary of Economic Projections moved from September's higher-for-longer fed funds rate projection to a higher-for-not-so-much-longer projection in last week's release. This is welcome news for the mortgage market. <u>MBA's forecast</u> (blue diamonds in the chart) shows a steady decline to 6.1% and 5.5% in 2024 Q4 and 2025 Q4, with originations increasing to \$2 trillion (22%) and \$2.34 trillion (17%) in 2024 and 2025, respectively." – Eddie Seiler, Associate Vice President for Housing Economics; MBA

U.S. Housing

Chart of the Week - December 22, 2023 30-Year Fixed Rate (%)



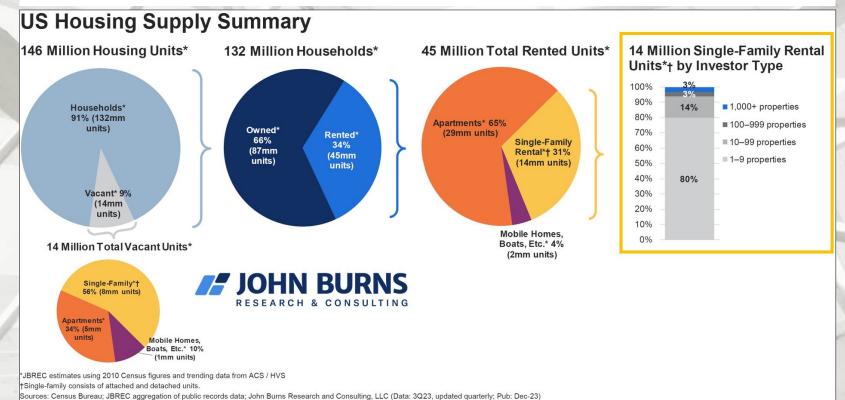
Mortgage Bankers Association (MBA)

Chart of the Week: Chart of the Week: 30-Year Fixed Rate (%)

"The MBA Research and Economics team wishes all our Chart of the Week recipients a happy and healthy holiday season and the very best for the New Year." – Eddie Seiler, Associate Vice President for Housing Economics; MBA

Source: https://s3141176.t.en25.com/e/es; 12/22/23

U.S. Housing



John Burns Research & Consulting LLC

U.S. Housing Supply

"Quick primer on US housing, with a focus on single-family rental ownership nationally and locally. To start, there are 146 million housing units in the US. Follow the charts left to right and you eventually get to 45 million rentals, 14 million of which are single-family." – Rick Palacios Jr., Director of Research, John Burns Research & Consulting LLC

2024 Housing Forecasts*

Total starts: Single-Family (SF) starts: Multi-Family (MF) starts:	Rang 1,277 to 1 750 to 1 346 to	,414 ,030	Median 1,373 927 380			
Organization		Total Starts	Single- Family Starts	Multi- Family Starts		
APA-The Engineered Wood Association ^a		1,310	930	380		
Bank of Montreal (BOM) ^b		1,380				
Deloitte Insights LLP ^c		1,382				
Fannie Mae ^d		1,277	914	346		
Goldman Sachs ^e		1,335				
Mortgage Bankers Association (MBA) ^f		1,376	1,030	488		
National Association of Homebuilders (N	NAHB) ^g	1,279	900	379		

* All in thousands of units

2024 Housing Forecasts*

Total starts: Single-Family (SF) starts: Multi-Family (MF) starts:	Range 1,277 to 1,414 750 to 1,030 346 to 488	Median 1,373 927 380					
Organization	Total Starts	Single- Family Starts	Multi- Family Starts				
National Association of Realtors (NAR)	h 1,412	923	488				
Raymond James ⁱ	1,400	1,025	375				
RISI ^j	1,417						
Royal Bank of Canada (RBC) ^k	1,390						
Scotiabank ¹	1,360						
Toronto Dominion (TD) Bank Economic	es ^m 1,350						
Wells Fargo Securities LLC ⁿ	1,370						

* All in thousands of units

References

a- APA, Housing Starts November 2023 (12/19/23). APA - The Engineered Wood Association. Tacoma, WA. 53 pps. (Subscription).

b- https://economics.bmo.com/media/filer_public/be/68/be6897f5-9a05-45b2-8152-882e7c1883f4/outlookus.pdf

c- https://www2.deloitte.com/us/en/insights/economy/us-economic-forecast/2023-q3.html

d- https://www.fanniemae.com/research-and-insights/forecast

e- https://www.resiclubanalytics.com/p/goldman-sachs-chief-economist-thinks-housing-affordability-strained-existing-home-sales-will-remain

f- https://www.mba.org/docs/default-source/research-and-forecasts/forecasts/2023/mff_dec23.pdf

g- https://www.nahb.org/-/media/NAHB/news-and-economics/docs/housing-economics-plus/builders-forecasts/free-forecast/housing-and-interest-rate-forecast-121223-free.xls

h- https://www.realtor.com/research/2024-national-housing-forecast/

i- The Raymond James Financial Center. Housing, 2024 Housing Outlook, 2024 Homebuilding Outlook: Respect & Re-Rating Long Overdue. St. Petersburg, FL. 1/8/2024. 64 pp. (Subscription).

j-Random Lengths Yardstick. The monthly measure of forest products statistics (1/16/24). Eugene, OR. 34 pps. (Subscription).

k- https://thoughtleadership.rbc.com/wp-content/uploads/economy_us.pdf

l-https://www.scotiabank.com/ca/en/about/economics/economics-publications/post.other-publications.global-outlook-and-forecast-tables.scotiabank%27s-forecast-tables.2023.december-15--2023.html

m-https://economics.td.com/ca-forecast-tables#lt-us

n-https://wellsfargo.bluematrix.com/docs/html/88d2eafa-3a64-4cca-b013-4093132d9c99.html

2023 Housing Forecasts*

	Range	Median			
Total starts:	1,100 to 1,560	1,360			
Single-Family (SF) starts:	750 to 1,000	858			
New SF house sales:	488 to 806	565			

2022 Housing Forecasts*

	Range	Median
Total starts:	1,413 to 1,785	1,618
Single-Family (SF) starts:	1,120 to 1,250	1,190
New SF house sales:	470 to 924	905

2021 Housing Forecasts*

	Range	Median
Total starts:	1,233 to 1,605	1,440
Single-Family (SF) starts:	928 to 1,308	1,055
New SF house sales:	736 to 1,259	912

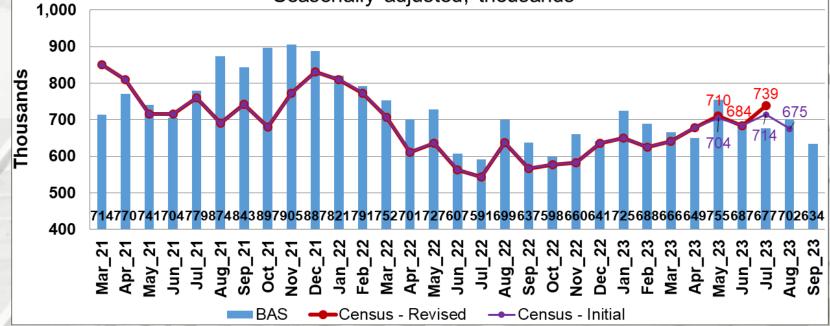
* All in thousands of units

U.S. Housing

Mortgage Bankers Association (MBA)

November New Home Purchase Mortgage Applications Increased 14.9 Percent

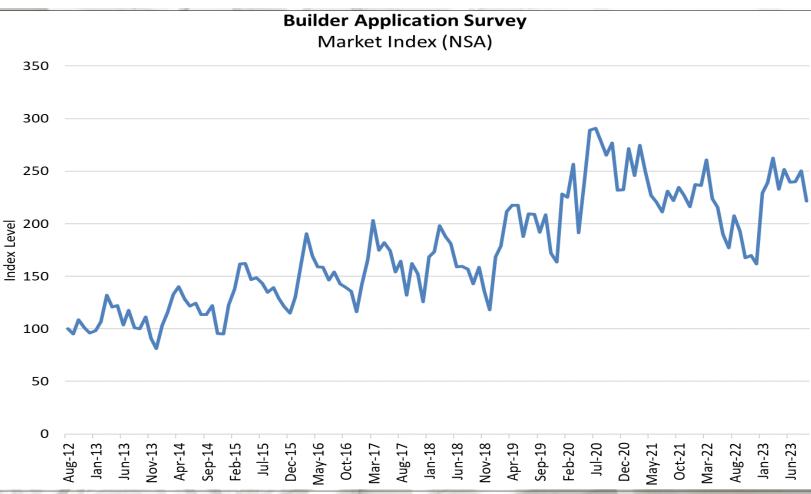
> MBA and Census Estimates of New Home Sales Seasonally adjusted, thousands



U.S. Housing Finance

Mortgage Bankers Association (MBA)

November New Home Purchase Mortgage Applications Increased 14.9 Percent



Source: https://www.mba.org/news-and-research/newsroom/news/2023/10/19/November-new-home-purchase-mortgage-applications-increased-14.9-percent; 12/19/23

U.S. Housing Finance

Mortgage Bankers Association (MBA)

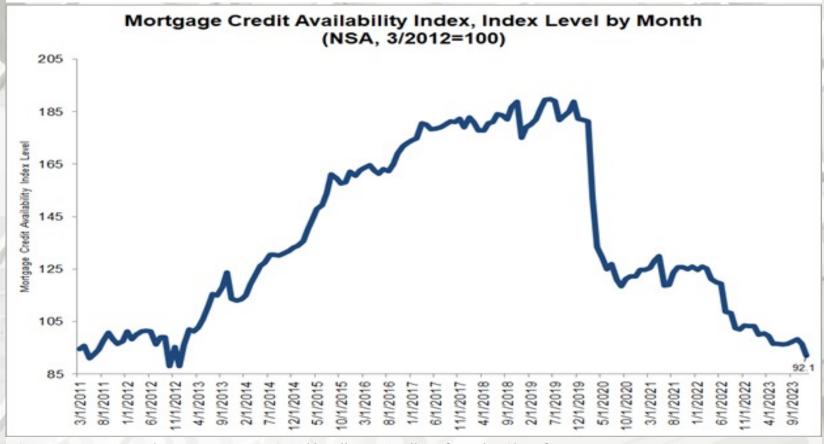
Mortgage Credit Availability Decreased in December

"Mortgage credit availability decreased in December according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) that analyzes data from ICE Mortgage Technology.

The MCAI fell by 4.6 percent to 92.1 in December. A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening credit. The index was benchmarked to 100 in March 2012. The Conventional MCAI decreased 3.2 percent, while the Government MCAI decreased by 5.9 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI decreased by 1.7 percent, and the Conforming MCAI fell by 5.9 percent.

Credit availability declined in December to the lowest level since 2012, as ongoing industry consolidation is resulting in more loan programs being removed from the marketplace. Both conventional and government indices experienced decreases. The decrease in the government index was driven by lower investor demand for renovation loans and streamline refinance loans." – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

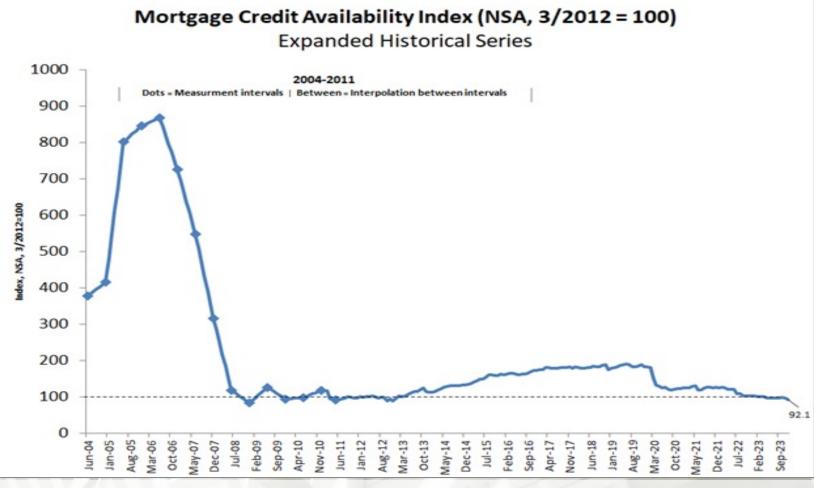
U.S. Housing Finance Mortgage Credit Availability (MBA)



Source: Mortgage Bankers Association; Powered by Ellie Mae's AllRegs® Market Clarity®

Source: https://www.mba.org/news-and-research/newsroom/news/2024/01/09/mortgage-credit-availability-decreased-in-december; 1/9/23

U.S. Housing Finance Mortgage Credit Availability (MBA)



Source: Mortgage Bankers Association; Powered by ICE Mortgage Technology

Source: https://www.mba.org/news-and-research/newsroom/news/2024/01/09/mortgage-credit-availability-decreased-in-december; 1/9/23

MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

December 12, 2023

		202	23			202	24		202	.5						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025	2026
Housing Measures																
Housing Starts (SAAR, Thous)	1,385	1,450	1,367	1,383	1,378	1,372	1,366	1,388	1,413	1,442	1,464	1,476	1,396	1,376	1,449	1,444
Single-Family	834	930	968	987	996	1,016	1,035	1,072	1,111	1,128	1,152	1,170	930	1,030	1,140	1,134
Two or More	552	520	399	396	382	356	331	316	302	314	312	306	467	346	309	310
Home Sales (SAAR, Thous)				154.79											5.6	
Total Existing Homes	4,327	4,250	4,020	3,921	4,097	4,283	4,471	4,646	4,788	4,793	4,886	4,872	4,129	4,374	4,835	4,920
New Homes	638	691	703	716	740	751	766	765	786	794	799	808	687	756	797	796
FHFA US House Price Index (YOY % Change)	4.6	3.3	5.5	5.7	5.7	5.3	4.7	4.1	3.6	3.4	3.2	3.3	5.7	4.1	3.3	3.9
Median Price of Total Existing Homes (Thous \$)	366.7	397.5	400.9	389.0	395.7	397.1	393.1	392.9	393.4	394.1	394.5	395.1	388.5	394.7	394.1	393.4
Median Price of New Homes (Thous \$)	434.8	418.7	428.9	415.4	426.2	431.7	431.2	431.6	433.7	435.7	438.2	440.5	424.4	430.2	437.0	430.4
Interest Rates												1.12		1.9		
30-Year Fixed Rate Mortgage (%)	6.4	6.5	7.0	7.4	7.0	6.6	6.3	6.1	5.9	5.8	5.6	5.5	7.4	6.1	5.5	5.4
10-Year Treasury Yield (%)	3.6	3.6	4.2	4.5	4.2	4.0	3.8	3.7	3.7	3.7	3.6	3.6	4.5	3.7	3.6	3.6
Mortgage Originations																
Total 1- to 4-Family (Bil \$)	333	463	444	399	422	517	543	519	501	619	620	598	1,639	2,001	2,339	2,436
Purchase	267	371	363	324	323	401	408	379	346	461	456	436	1,325	1,511	1,699	1,782
Refinance	66	92	81	75	99	116	135	140	155	158	164	162	314	490	639	654
Refinance Share (%)	20	20	18	19	23	22	25	27	31	26	27	27	19	24	27	27
FHA Originations (Bil \$)													197	219	233	224
Total 1- to 4-Family (000s loans)	895	1,239	1,165	1,034	1,090	1,314	1,371	1,304	1,258	1,524	1,517	1,455	4,333	5,079	5,754	5,790
Purchase	686	948	913	804	790	968	973	894	810	1,070	1,049	996	3,350	3,625	3,926	3,981
Refinance	210	291	252	230	299	345	398	410	448	454	468	459	983	1,453	1,829	1,809
Refinance Share (%)	23	23	22	22	27	26	29	31	36	30	31	32	23	29	32	31
Mortgage Debt Outstanding																
1- to 4-Family (Bil \$)	13,671	13,767	13,822	13,879	13,931	13,988	14,050	14,117	14,190	14,264	14,343	14,425	13,879	14,117	14,690	14,783

Notes:

As of the August 2023 forecast, 2022 origination volume was revised based on the 2022 Home Mortgage Disclosure Act data. Total 1-to-4-family originations and refinance share are MBA estimates. These exclude second mortgages and home equity loans. Mortgage rate forecast is based on Freddie Mac's 30-Yr fixed rate which is based on predominantly home purchase transactions. The 10-Year Treasury Yield and 30-Yr mortgage rate are the average for the quarter, but annual columns show Q4 values. The FHFA US House Price Index is the forecasted year over year percent change of the FHFA Purchase-Only House Price Index. Copyright 2023 Mortgage Bankers Association. All rights reserved.

THE HISTORICAL DATA AND PROJECTIONS ARE PROVIDED "AS IS" WITH NO WARRANTIES OF ANY KIND.



MORTGAGE BANKERS ASSOCIATION

MBA Economic Forecast

MBA Economic Forecast

December 12, 2023

	2023				2024			2025								
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025	2026
Percent Change, SAAR													C			200
Real Gross Domestic Product	2.2	2.1	5.2	0.8	-0.3	-0.5	0.7	1.5	1.7	1.6	1.5	1.7	2.6	0.4	1.6	1.7
Personal Consumption Expenditures	3.8	0.8	3.6	2.3	-0.5	0.1	1.0	1.2	1.4	1.4	1.3	1.4	2.6	0.5	1.4	1.6
Business Fixed Investment	5.7	7.4	1.3	3.1	-1.1	-1.0	0.0	1.1	1.7	1.5	1.9	2.0	4.4	-0.3	1.8	1.9
Residential Investment	-5.3	-2.2	6.2	-2.9	-2.8	1.4	2.0	4.7	6.4	6.2	5.0	7.0	-1.2	1.3	6.2	0.5
Govt. Consumption & Investment	4.8	3.3	5.5	0.3	1.0	0.6	0.5	0.4	0.3	0.3	0.4	0.4	3.5	0.6	0.3	0.3
Net Exports (Bil. Chain 2012\$)	-1048.8	-1039.0	-1047.9	-1061.9	-1091.1	-1088.5	-1068.3	-1070.0	-1081.7	-1088.7	-1090.9	-1093.6	-1049.4	-1079.5	-1088.7	-1069.2
Inventory Investment (Bil. Chain 2012\$)	24.1	13.2	74.3	30.5	54.6	23.6	-0.6	12.9	28.3	37.7	44.3	49.1	35.5	22.6	39.9	56.4
Consumer Prices (YOY)	5.8	4.1	3.6	3.1	2.7	2.7	2.5	2.3	2.1	2.0	2.0	2.1	3.1	2.3	2.1	2.2
Percent														1.010		
Unemployment Rate	3.5	3.5	3.7	3.9	4.1	4.4	4.8	5.0	4.9	4.8	4.6	4.5	3.6	4.5	4.7	4.4
Federal Funds Rate	4.875	5.125	5.375	5.375	5.375	5.125	4.875	4.625	4.375	4.125	3.875	3.625	5.375	4.625	3.625	2.625
10-Year Treasury Yield	3.6	3.6	4.2	4.5	4.2	4.0	3.8	3.7	3.7	3.7	3.6	3.6	4.5	3.7	3.6	3.6

Notes:

The Fed Funds Rate forecast is shown as the mid point of the Fed Funds range at the end of the period.

All data except interest rates are seasonally adjusted

The 10-Year Treasury Yield is the average for the quarter, while the annual value is the Q4 value

Forecast produced with the assistance of the Macroeconomic Advisers' model

Copyright 2023 Mortgage Bankers Association. All rights reserved.

THE HISTORICAL DATA AND PROJECTIONS ARE PROVIDED "AS IS" WITH NO WARRANTIES OF ANY KIND.



MORTGAGE BANKERS ASSOCIATION

Summary

In conclusion:

Housing data, year-over-year, were mixed. Month-over-month data, in aggregate, were mostly positive. Total, single- and multi-family starts, single-family permits, total and single-family housing under construction, total housing completions, and total private residential and single-family construction spending, and existing house sales also indicated improvement. The influence of increasing mortgage rates is evident, as aggregate costs have decreased affordability; thus, a reduction in total new and existing house sales for the 2023 calendar year.

Pros:

1) The desire to own a house remains strong.

Cons:

- 1) Mortgage interest rates and affordability;
- 2) US bank failures;
- 3) Inflation;
- 4) The war in Ukraine and the Israel-Palestinian conflict, and other international concerns;
- 5) Construction material, appliance constraints, and logistics/supply chains remain;
- 6) Lot availability and building regulations (according to several sources);
- 7) Labor shortages in many sectors;
- 8) Household formations still lag historical averages;
- 9) Job creation is improving and consistent, but some economists question the quantity and types of jobs being created;
- 10) Debt: Corporate, personal, government United States and globally;
- 11) Other global uncertainties.

Virginia Tech Disclaimer

Disclaimer of Non-endorsement

Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement, recommendation, or favoring by Virginia Tech. The views and opinions of authors expressed herein do not necessarily state or reflect those of Virginia Tech, and shall not be used for advertising or product endorsement purposes.

Disclaimer of Liability

With respect to documents sent out or made available from this server, neither Virginia Tech nor any of its employees, makes any warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Disclaimer for External Links

The appearance of external hyperlinks does not constitute endorsement by Virginia Tech of the linked web sites, or the information, products or services contained therein. Unless otherwise specified, Virginia Tech does not exercise any editorial control over the information you November find at these locations. All links are provided with the intent of meeting the mission of Virginia Tech's web site. Please let us know about existing external links you believe are inappropriate and about specific additional external links you believe ought to be included.

Nondiscrimination Notice

Virginia Tech prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the author. Virginia Tech is an equal opportunity provider and employer.

U.S. Department of Agriculture Disclaimer

Disclaimer of Non-endorsement

Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government, and shall not be used for advertising or product endorsement purposes.

Disclaimer of Liability

With respect to documents available from this server, neither the United States Government nor any of its employees, makes any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Disclaimer for External Links

The appearance of external hyperlinks does not constitute endorsement by the U.S. Department of Agriculture of the linked web sites, or the information, products or services contained therein. Unless otherwise specified, the Department does not exercise any editorial control over the information you November find at these locations. All links are provided with the intent of meeting the mission of the Department and the Forest Service web site. Please let us know about existing external links you believe are inappropriate and about specific additional external links you believe ought to be included.

Nondiscrimination Notice

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202.720.2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call 800.795.3272 (voice) or 202.720.6382 (TDD). The USDA is an equal opportunity provider and employer.