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

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2023 Virginia Polytechnic Institute and State University VCE-ANR

Return TOC

Table of Contents

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

Return TOC

Opening Remarks

In a pleasant surprise, the vast majority of month-over-month data indicated positive improvement (the exception: single-family housing under construction). Year-over-year data were mixed, with only one-third being positive.

The July 18th Atlanta Fed GDPNow™ total residential investment spending forecast is a negative 0.8% for June 2023. Quarterly log change for new private permanent site expenditures were projected at 0.0% (no change); the improvement spending forecast was -3.2%; and the manufactured/mobile home expenditures projection was -2.2% (all: quarterly log change and at a seasonally adjusted annual rate).[1]

"… In prioritizing their education, Millennials have delayed marriage and family formation relative to previous generations and the delay of these key lifestyle decisions, which are correlated with the transition to home ownership, has translated into a delay in the home ownership rate for Millennials compared with their generational predecessors. Probably another reason why people assumed Millennials would remain forever renters. At the same age of 30, 42% of Millennials owned homes, compared with 48% of Gen Xers at the same age. Over the past decade, however, Millennials have significantly narrowed this gap. At the age of 41, the millennial home ownership rate is 62%, while Gen X stood at 64%. …" – Odeta Kushi, Deputy Chief Economist, First American

This month's commentary contains 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.

Sources: [1] www.frbatlanta.org/cqer/research/gdpnow.aspx; 7/18/23
[2] https://blog.firstam.com/economics/the-reconomy-podcast-why-it-matters-that-millennials-have-closed-the-homeownership-gap; 6/29/23

Return TOC

May 2023
Housing Scorecard

	M/M	Y/Y
Housing Starts	▲ 21.7%	▲ 5.7%
Single-Family (SF) Starts	▲ 18.5%	▼ 6.6%
Multi-Family (MF) Starts*	▲ 27.1%	▲ 33.2%
Housing Permits	▲ 5.6%	▼ 12.4%
SF Permits	▲ 5.4%	▼ 12.7%
MF Permits*	▲ 5.9%	▼ 12.0%
Housing Under Construction	▲ 0.7%	▲ 0.5%
SF Under Construction	▼ 0.6%	▼ 16.4%
Housing Completions	▲ 9.5%	▲ 5.0%
SF Completions	▲ 3.9%	▼ 3.3%
New SF House Sales	▲ 12.2%	▲ 20.0%
Private Residential Construction Spending	▲ 2.2%	▼ 11.6%
SF Construction Spending	▲ 1.7%	▼ 25.0%
Existing House Sales[1]	▲ 0.2%	▼ 20.4%

* All multi-family (2 to 4 + ≥ 5-units)

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

Sources: U.S. Department of Commerce-Construction; [1] FRED: Federal Reserve Bank of St. Louis

Return TOC

New Housing Starts

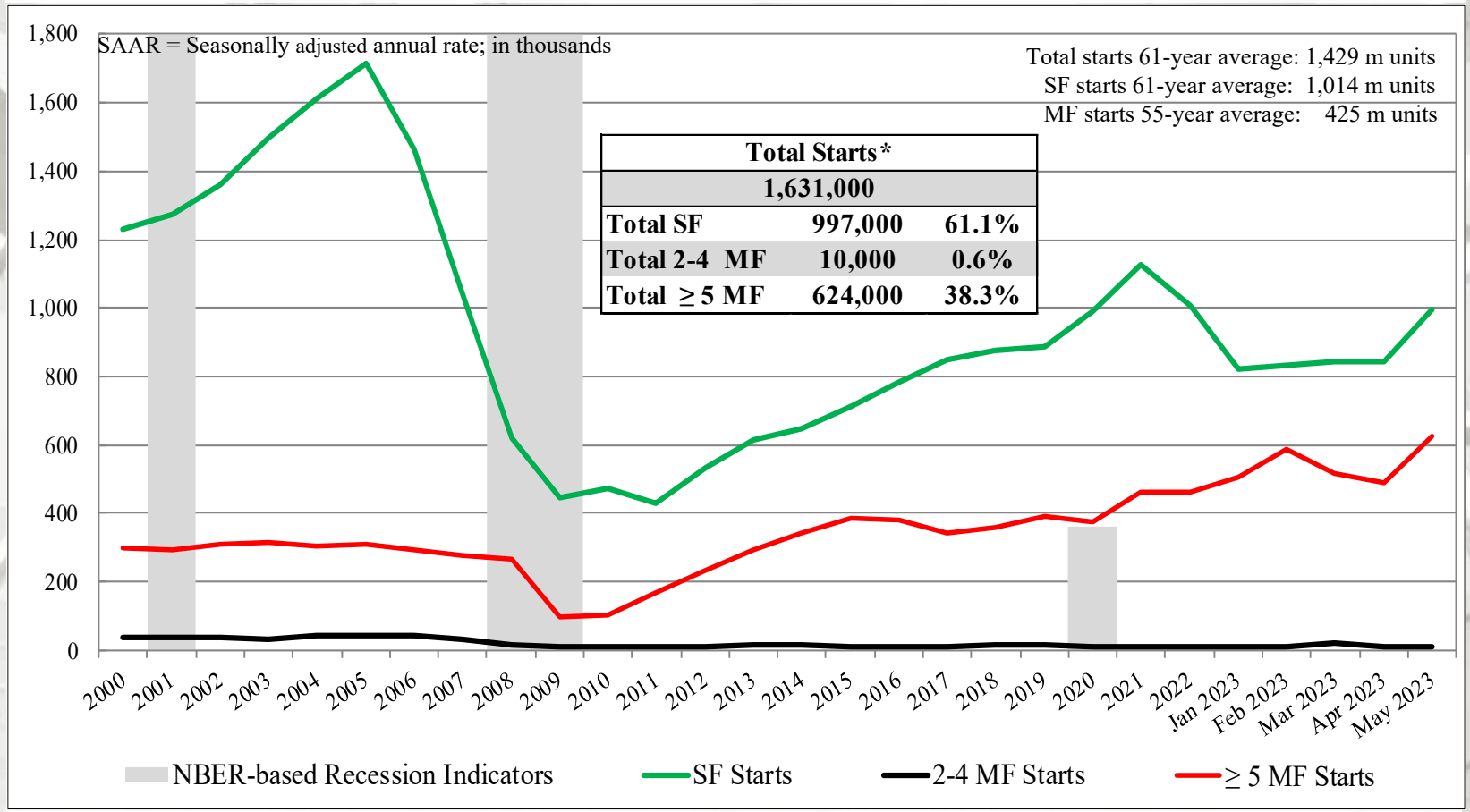
	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
May	1,631,000	997,000	10,000	624,000
April	1,340,000	841,000	12,000	487,000
2022	1,543,000	1,067,000	29,000	447,000
M/M change	21.7%	18.5%	-16.7%	28.1%
Y/Y change	5.7%	-6.6%	-65.5%	39.6%

* 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)).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

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).

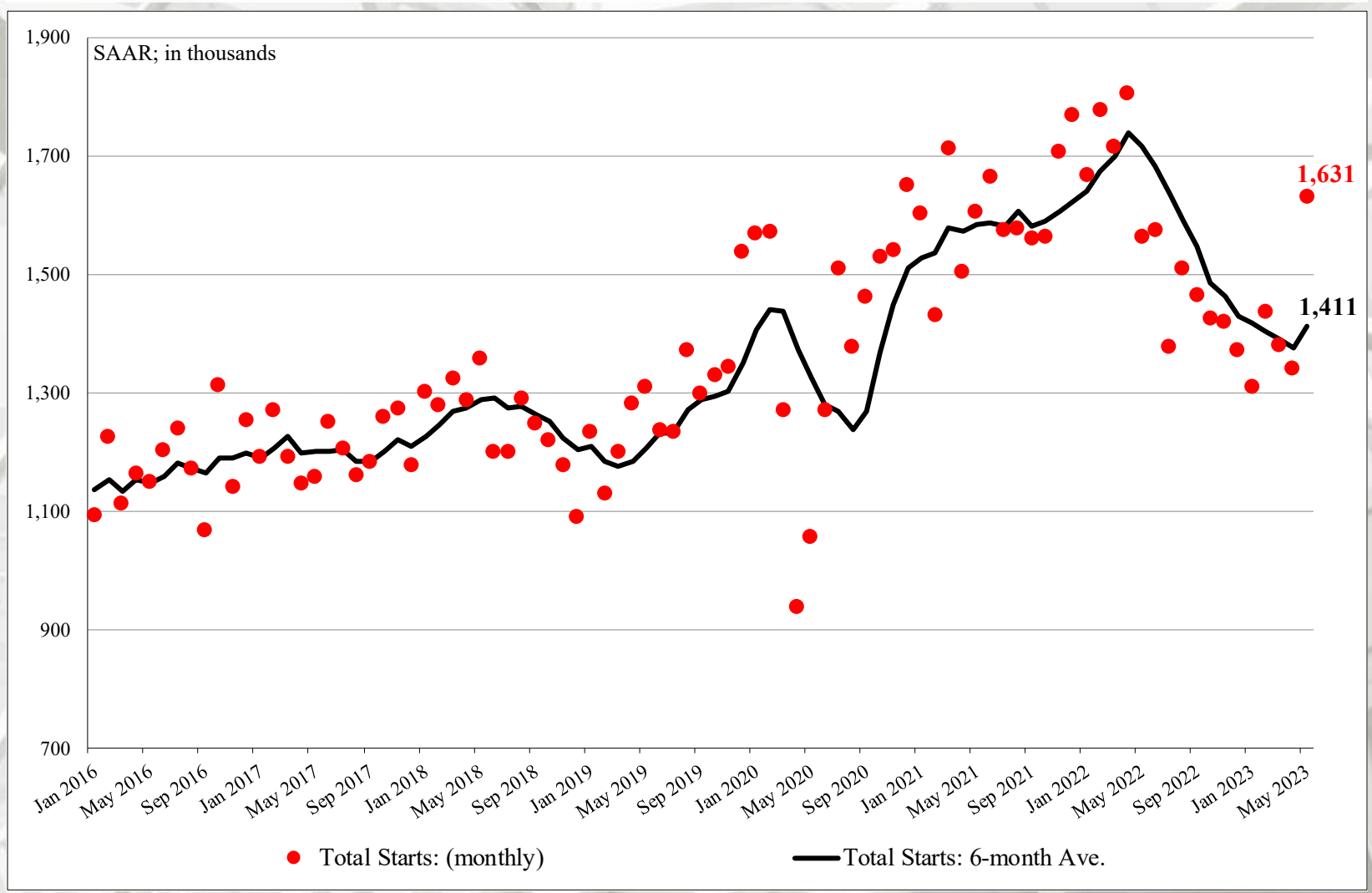
* Percentage of total starts.

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; 6/20/23

Return TOC

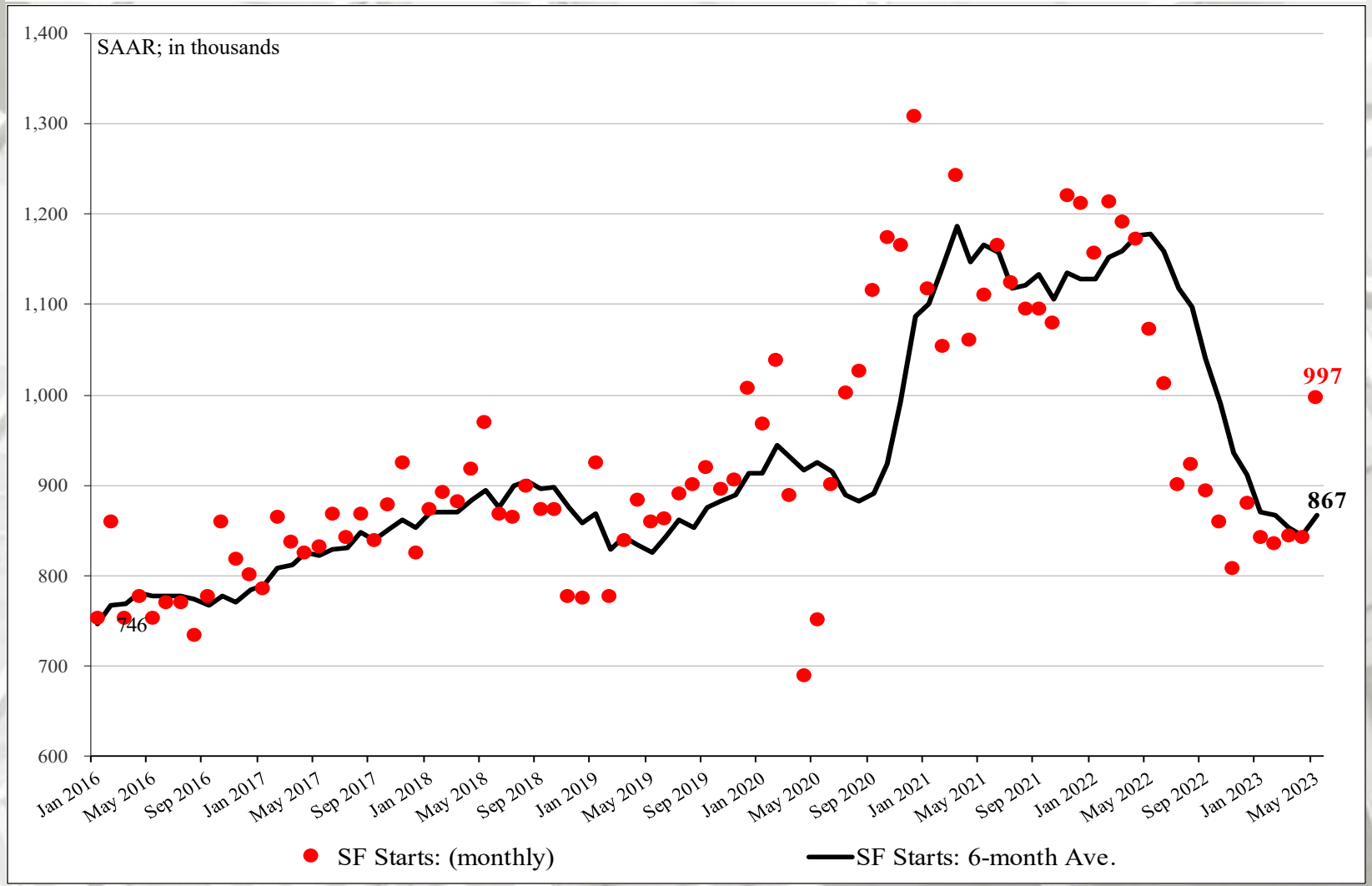
Total Housing Starts: Six-Month Moving Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

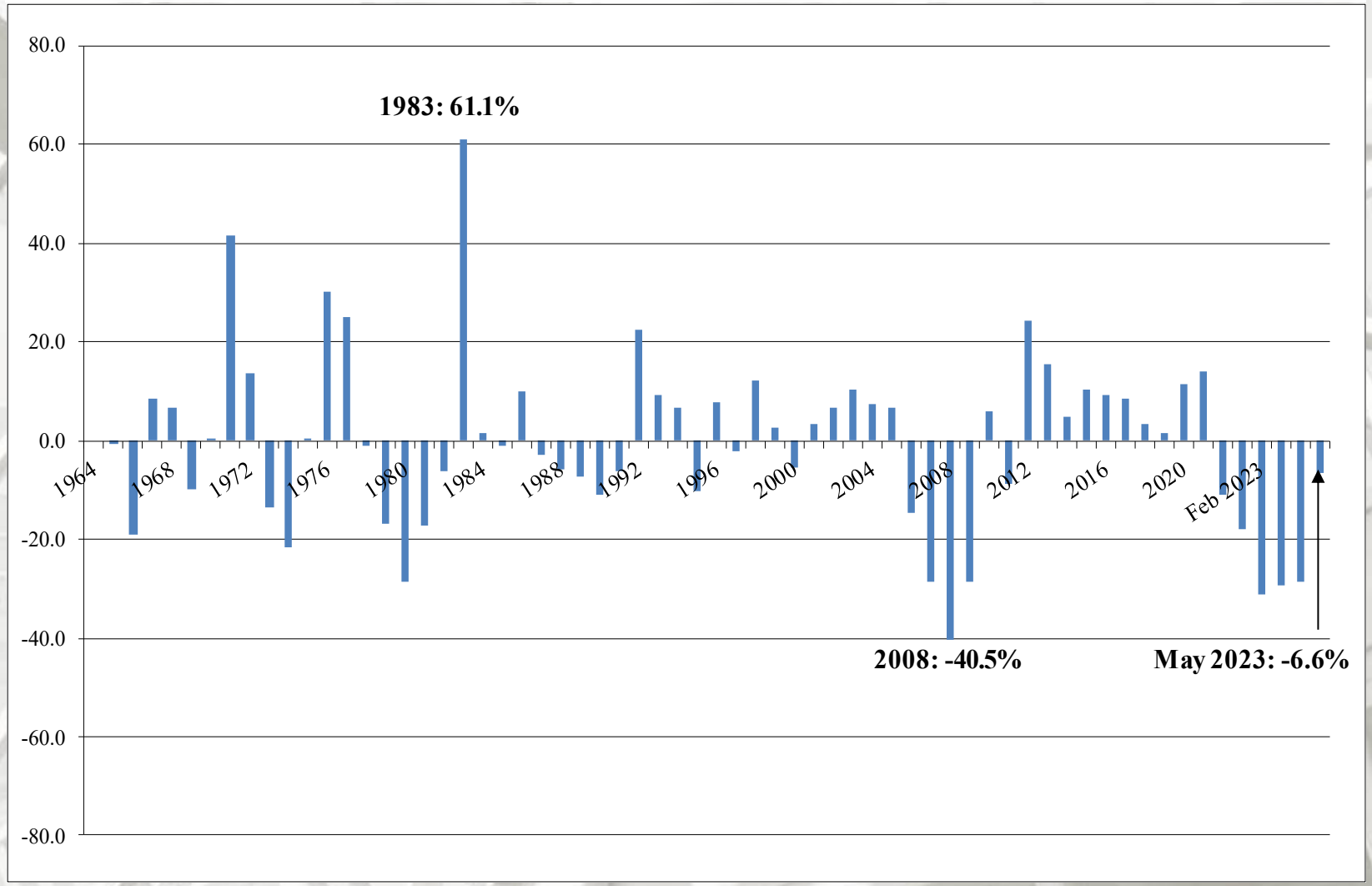
SF Housing Starts: Six-Month Moving Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

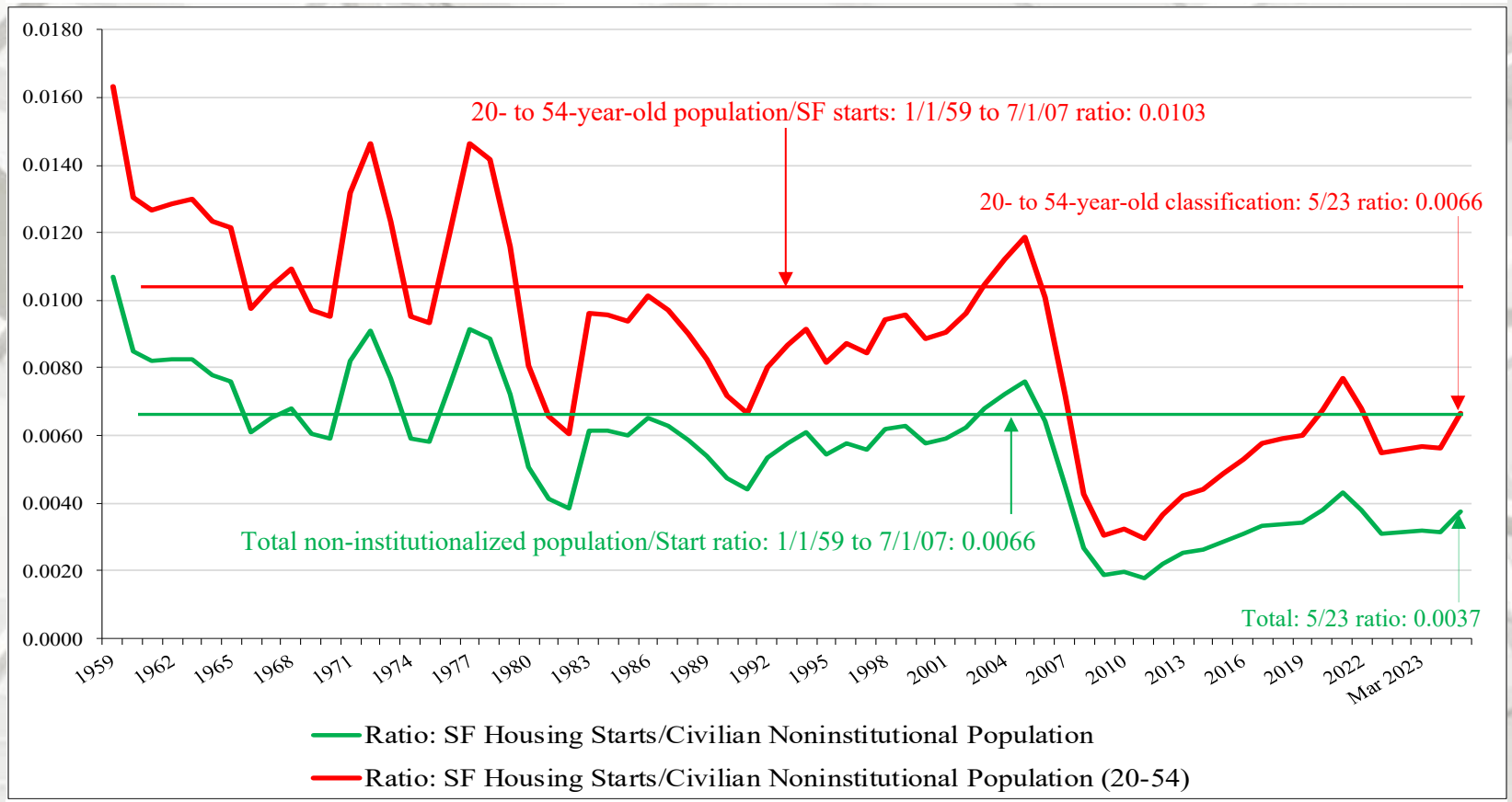
SF Housing Starts: Year-over-Year Change (%)



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New SF Starts



New SF starts adjusted for the US population

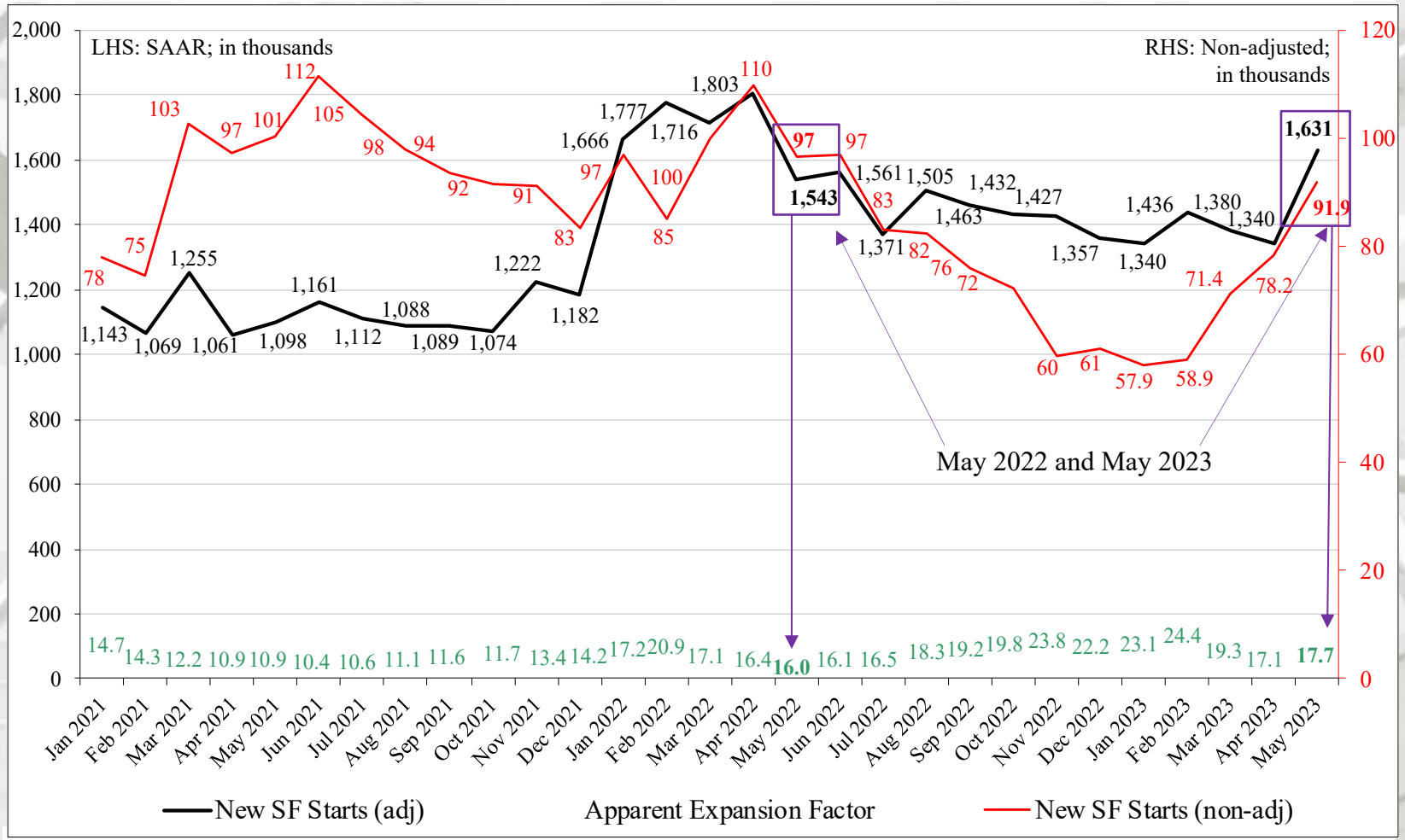
From January 1959 to July 2007, the long-term ratio of new SF starts to the total US non-institutionalized population is 0.0066. In May 2023 it was 0.0037 – an increase from April (0.0032). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in May 2023 it was 0.0066 – also an increase from April (0.0056). 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.

Sources: http://www.census.gov/construction/nrc/pdf/newresconst.pdff and The Federal Reserve Bank of St. Louis; 6/20/23

Return TOC

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Starts by Region

	NE Total	NE SF	NE MF**
May	100,000	62,000	38,000
April	123,000	57,000	66,000
2022	128,000	55,000	73,000
M/M change	-18.7%	8.8%	-42.4%
Y/Y change	-21.9%	12.7%	-47.9%

	MW Total	MW SF	MW MF
May	282,000	148,000	134,000
April	169,000	93,000	76,000
2022	227,000	140,000	87,000
M/M change	66.9%	59.1%	76.3%
Y/Y change	24.2%	5.7%	54.0%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Starts by Region

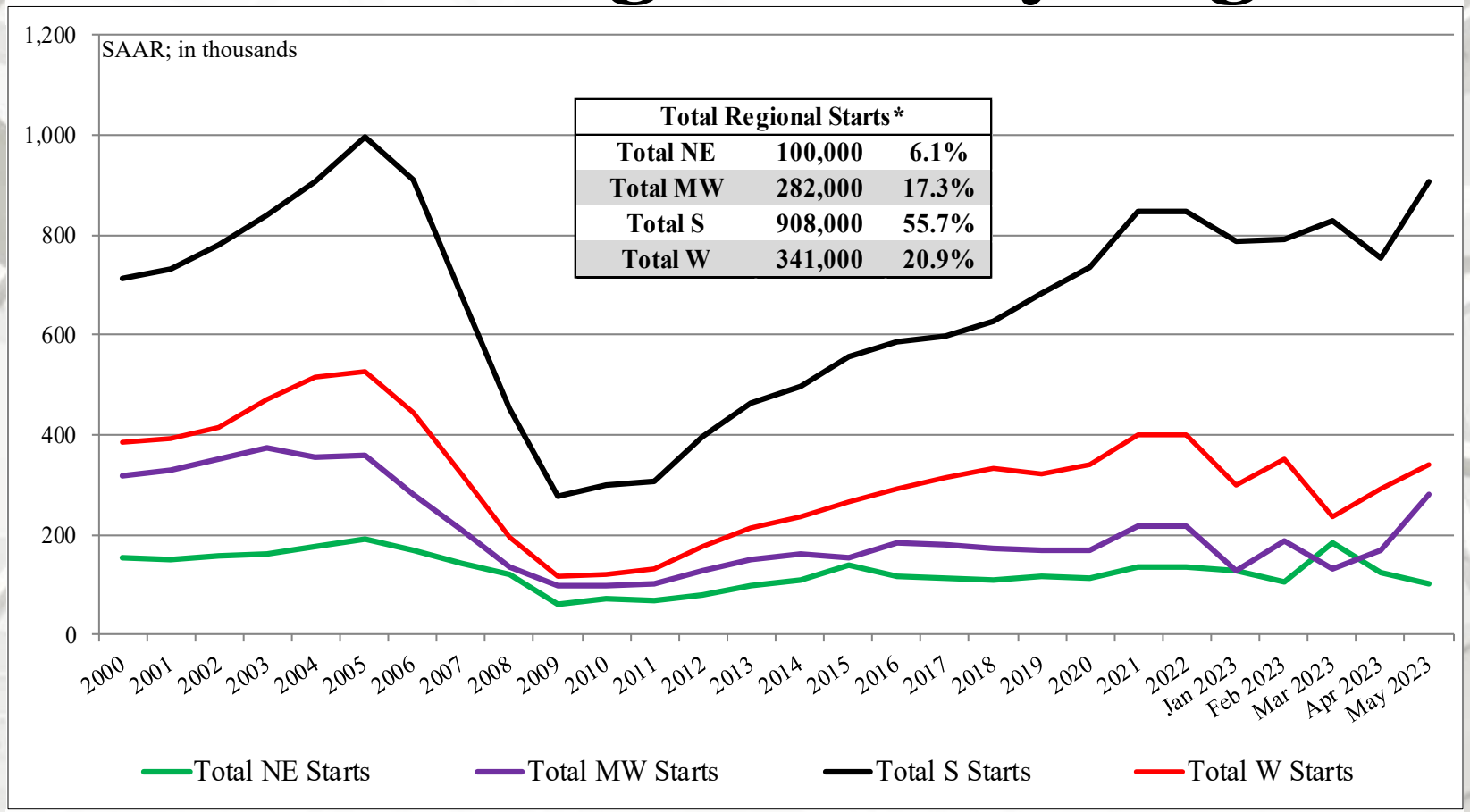
	S Total	S SF	S MF**
May	908,000	599,000	309,000
April	755,000	495,000	260,000
2022	851,000	623,000	228,000
M/M change	20.3%	21.0%	18.8%
Y/Y change	6.7%	-3.9%	35.5%
	W Total	**W SF**	**W MF**
May	341,000	188,000	153,000
April	293,000	196,000	97,000
2022	337,000	249,000	88,000
M/M change	16.4%	-4.1%	57.7%
Y/Y change	1.2%	-24.5%	73.9%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Starts by Region



Total Regional Starts*		
Total NE	100,000	6.1%
Total MW	282,000	17.3%
Total S	908,000	55.7%
Total W	341,000	20.9%

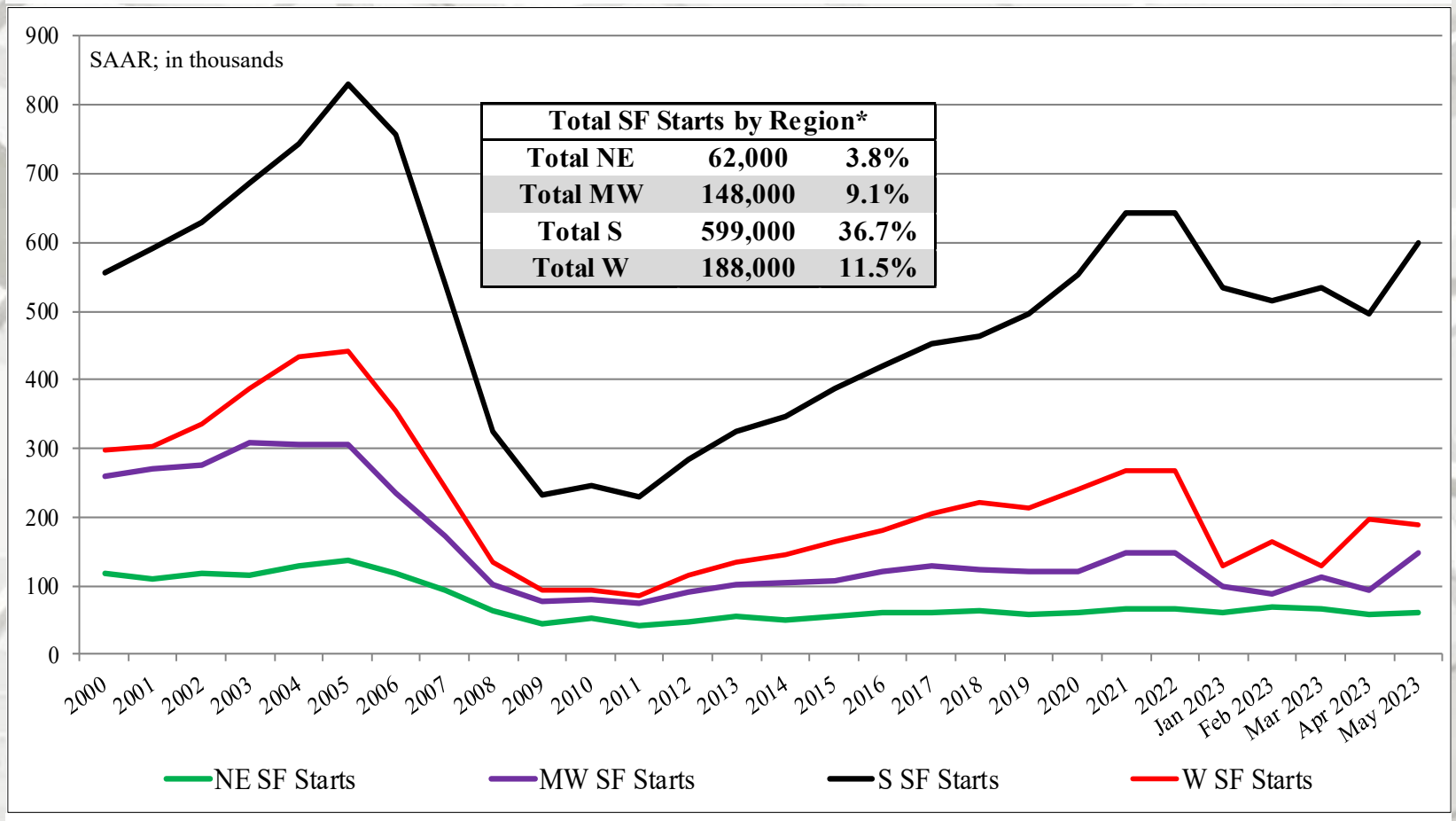
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

Total SF Housing Starts by Region



Total SF Starts by Region*		
Total NE	62,000	3.8%
Total MW	148,000	9.1%
Total S	599,000	36.7%
Total W	188,000	11.5%

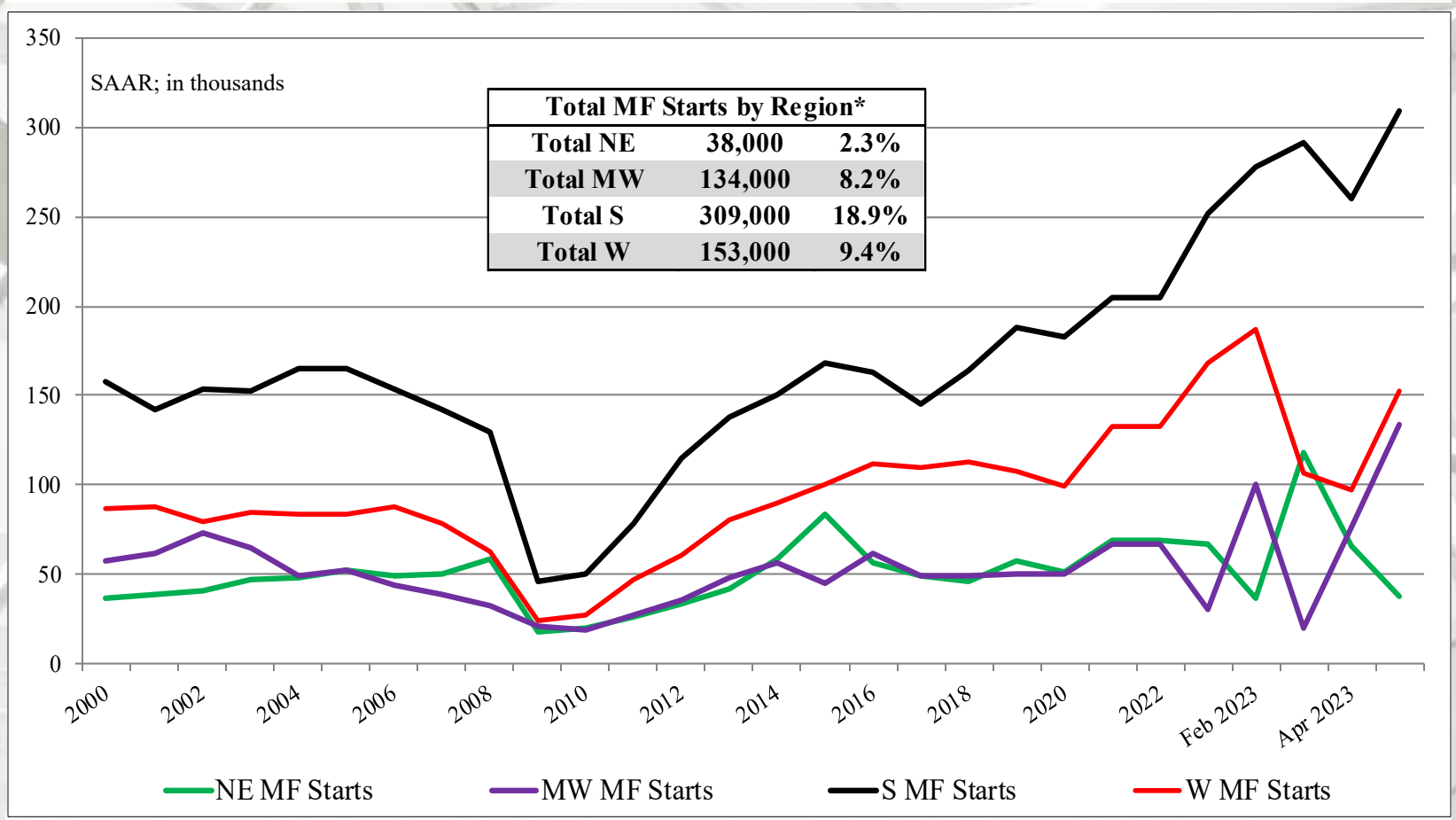
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

MF Housing Starts by Region



Total MF Starts by Region*		
Total NE	38,000	2.3%
Total MW	134,000	8.2%
Total S	309,000	18.9%
Total W	153,000	9.4%

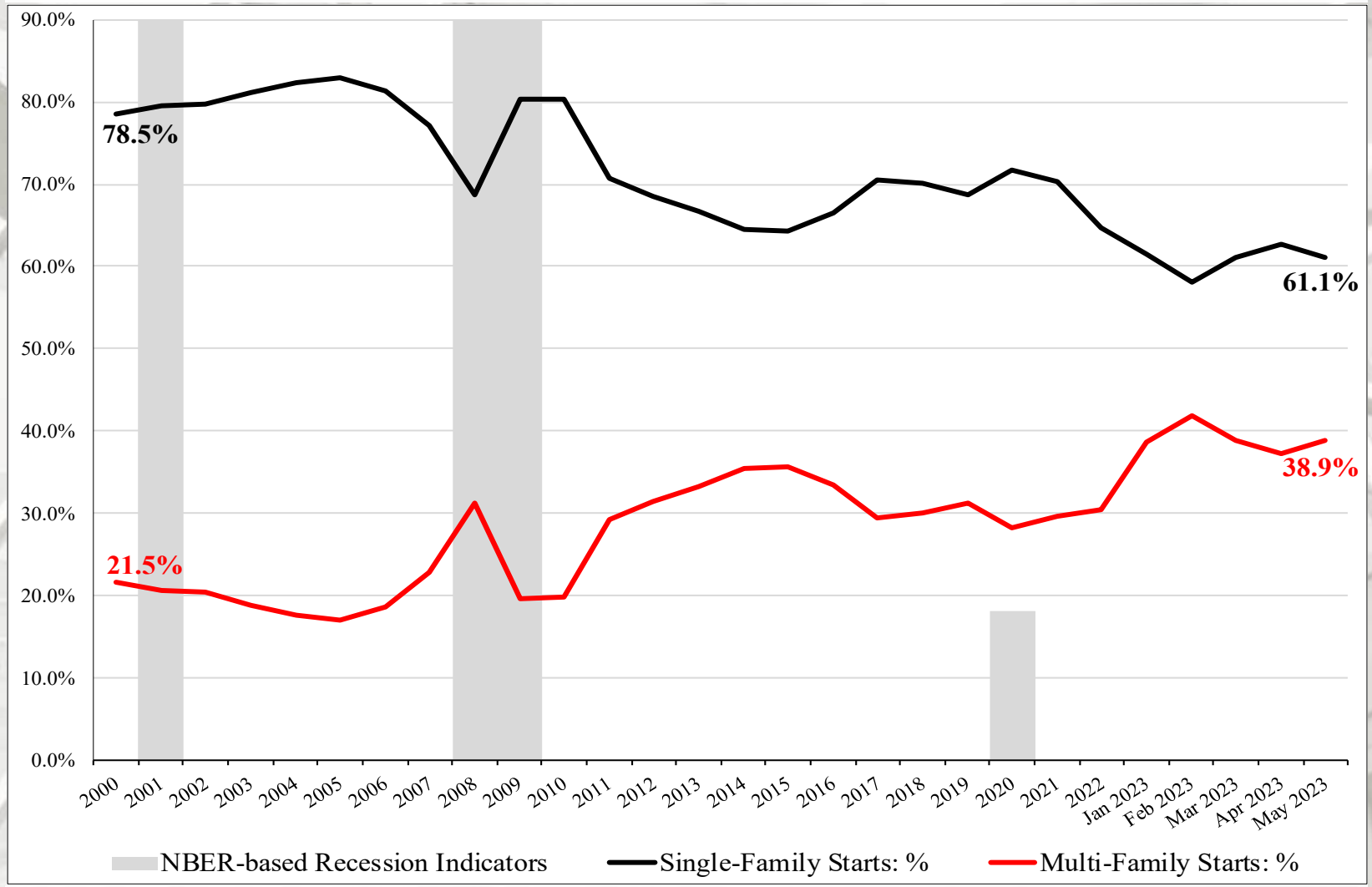
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

SF vs. MF Housing Starts (%)

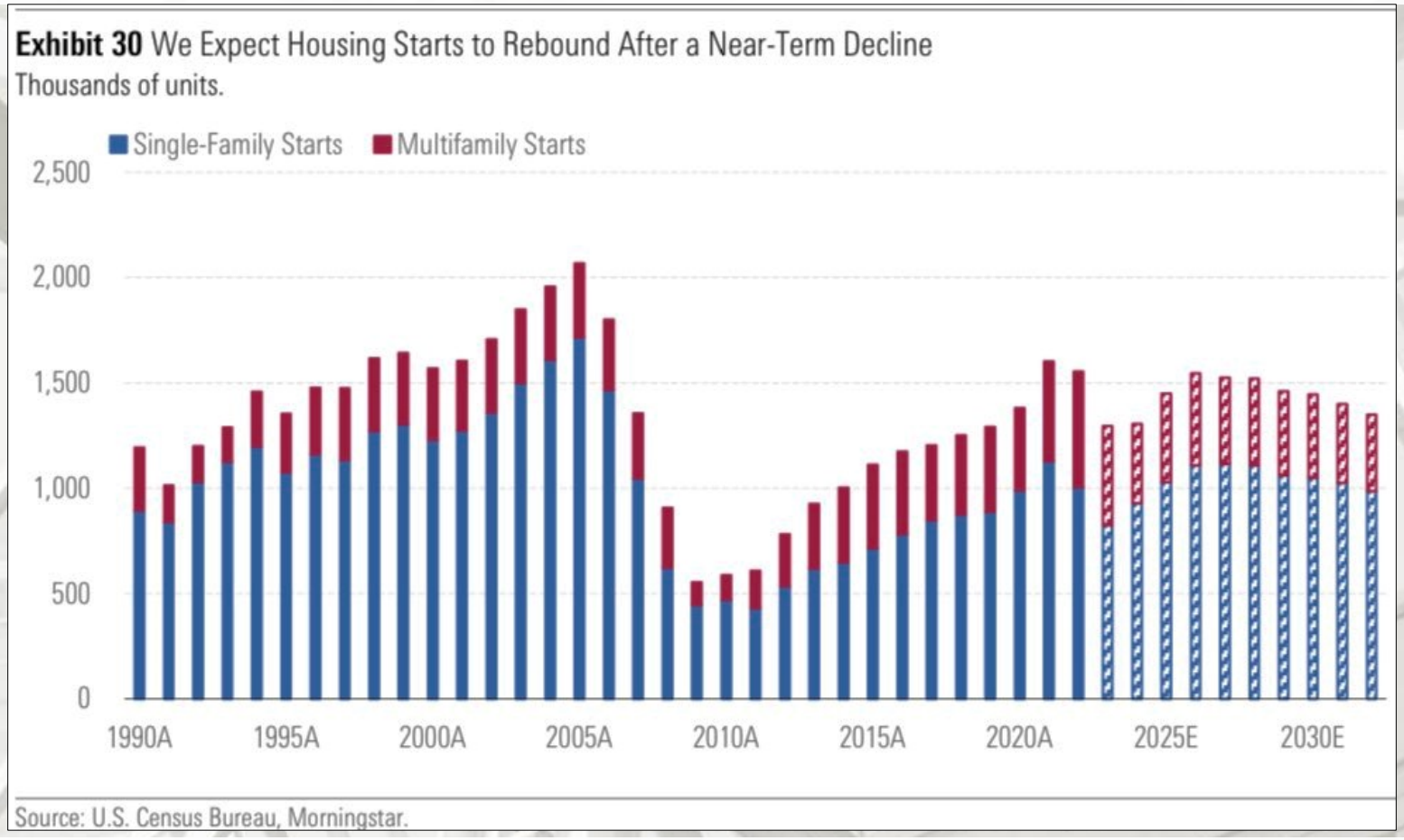


NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

Future SF/MF Housing Starts to 2030 Morningstar



"Morningstar's housing starts outlook through 2030. "Our thesis remains that household formations among the largest millennial cohort will provide a long- term growth runway, despite more challenging near-term affordability conditions. … it's unlikely that these [housing starts] rates will exceed the historical average due to several factors, including personal finance challenges (for example, student debt)… ."" – Lance Lambert, Real Estate Editor, Fortune Magazine

Sources: https://twitter.com/NewsLambert/status/1680608451595042816; 7/16/23

Return TOC

New Housing Permits

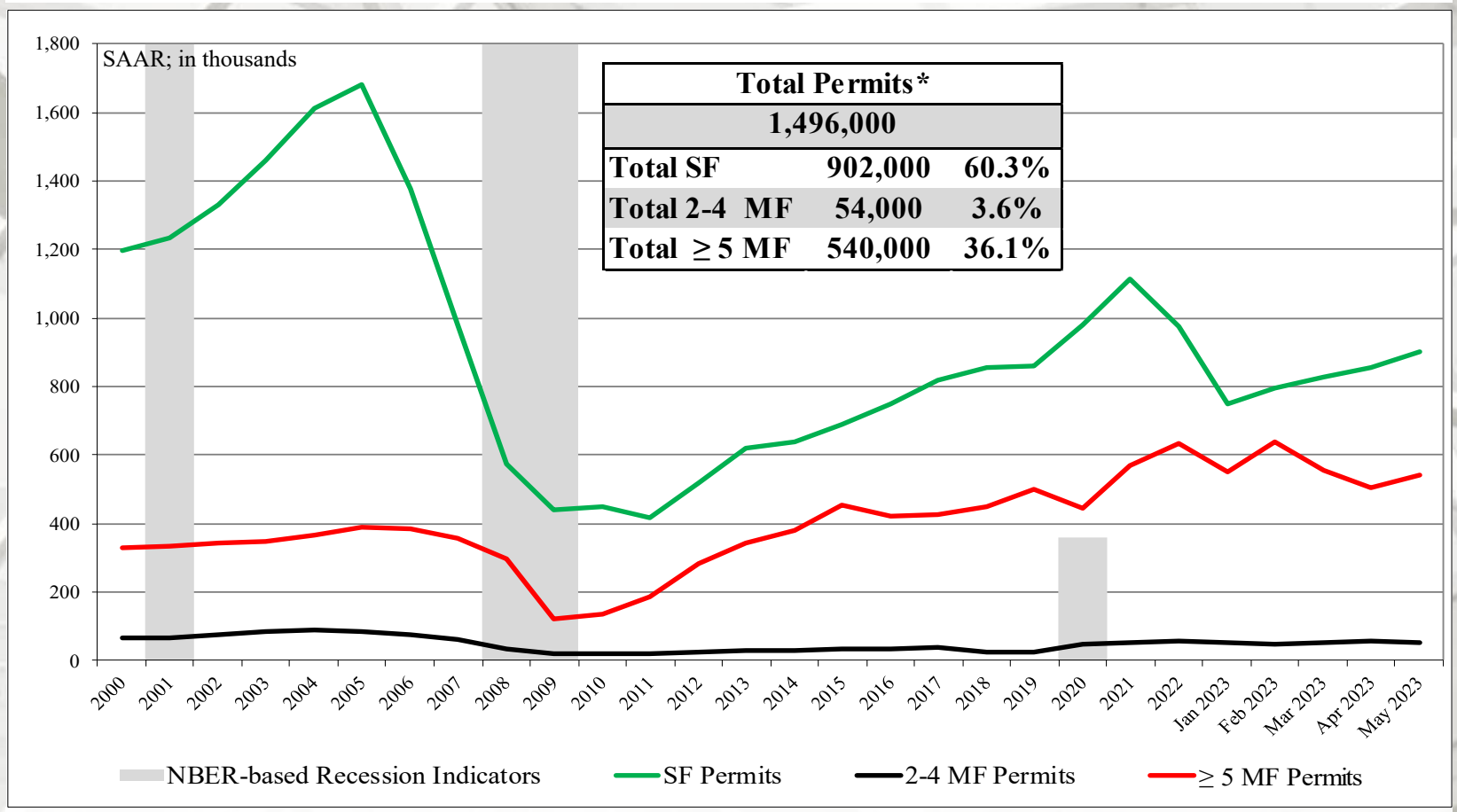
	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
May	1,496,000	902,000	54,000	540,000
April	1,417,000	856,000	58,000	503,000
2022	1,708,000	1,033,000	60,000	615,000
M/M change	5.6%	5.4%	-6.9%	7.4%
Y/Y change	-12.4%	-12.7%	-10.0%	-12.2%

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

Source: https://www.census.gov/construction/bps/; 6/27/23

Return TOC

Total New Housing Permits



Total Permits*		
1,496,000		
Total SF	902,000	60.3%
Total 2-4 MF	54,000	3.6%
Total ≥ 5 MF	540,000	36.1%

* 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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; https://www.census.gov/construction/bps/; 6/27/23

Return TOC

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
May	137,000	56,000	81,000
April	107,000	55,000	52,000
2022	133,000	63,000	70,000
M/M change	28.0%	1.8%	55.8%
Y/Y change	3.0%	-11.1%	15.7%

	MW Total*	MW SF	MW MF**
May	187,000	106,000	81,000
April	174,000	108,000	66,000
2022	233,000	132,000	101,000
M/M change	7.5%	-1.9%	22.7%
Y/Y change	-19.7%	-19.7%	-19.8%

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).

Source: https://www.census.gov/construction/bps/; 6/27/23

Return TOC

New Housing Permits by Region

	S Total*	S SF	S MF**
May	822,000	544,000	278,000
April	803,000	521,000	282,000
2022	947,000	607,000	340,000
M/M change	2.4%	4.4%	-1.4%
Y/Y change	-13.2%	-10.4%	-18.2%

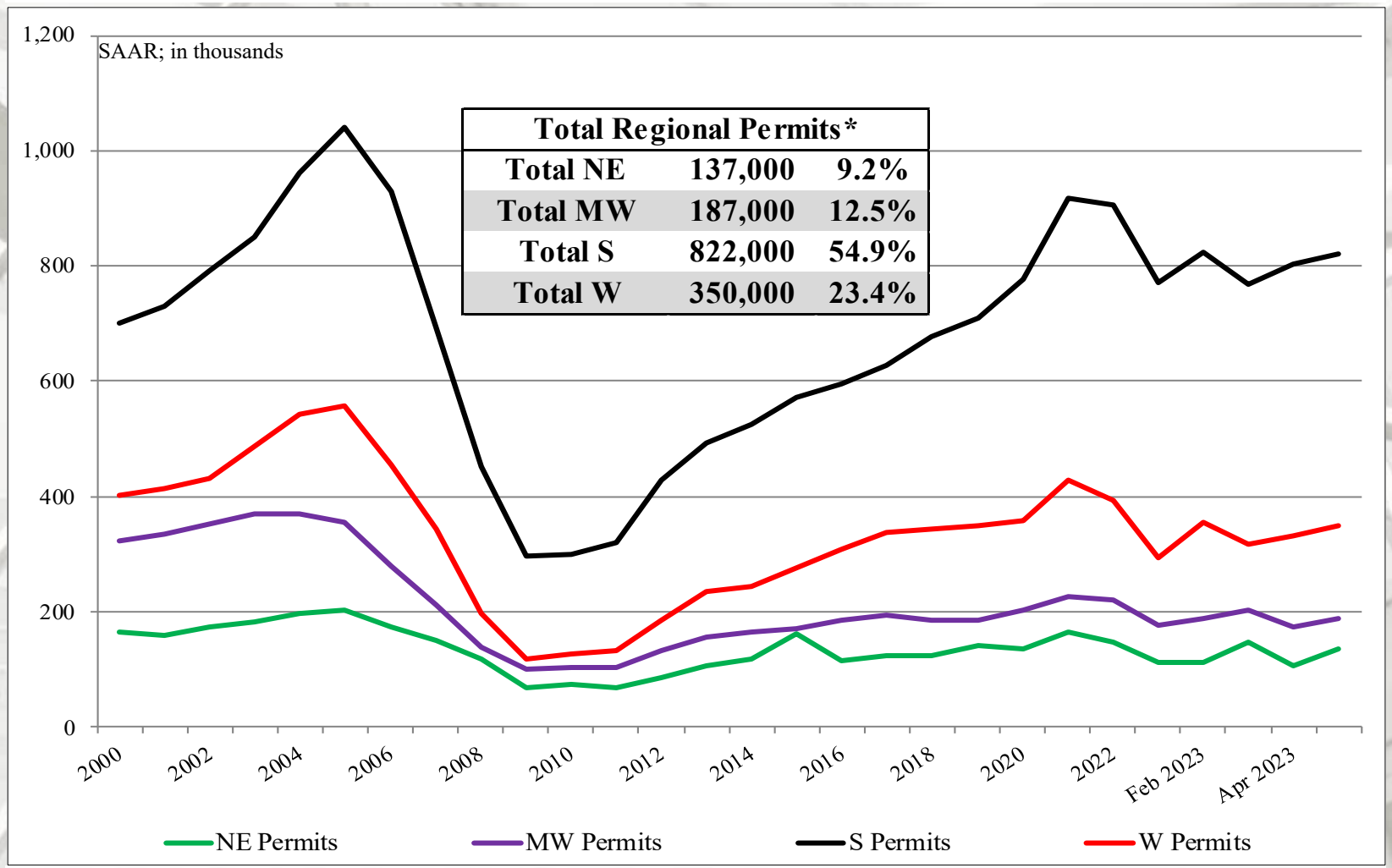
	W Total*	W SF	W MF**
May	350,000	196,000	154,000
April	333,000	172,000	161,000
2022	395,000	231,000	164,000
M/M change	5.1%	14.0%	-4.3%
Y/Y change	-11.4%	-15.2%	-6.1%

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).

Source: https://www.census.gov/construction/bps/; 6/27/23

Return TOC

Total Housing Permits by Region



Total Regional Permits*		
Total NE	137,000	9.2%
Total MW	187,000	12.5%
Total S	822,000	54.9%
Total W	350,000	23.4%

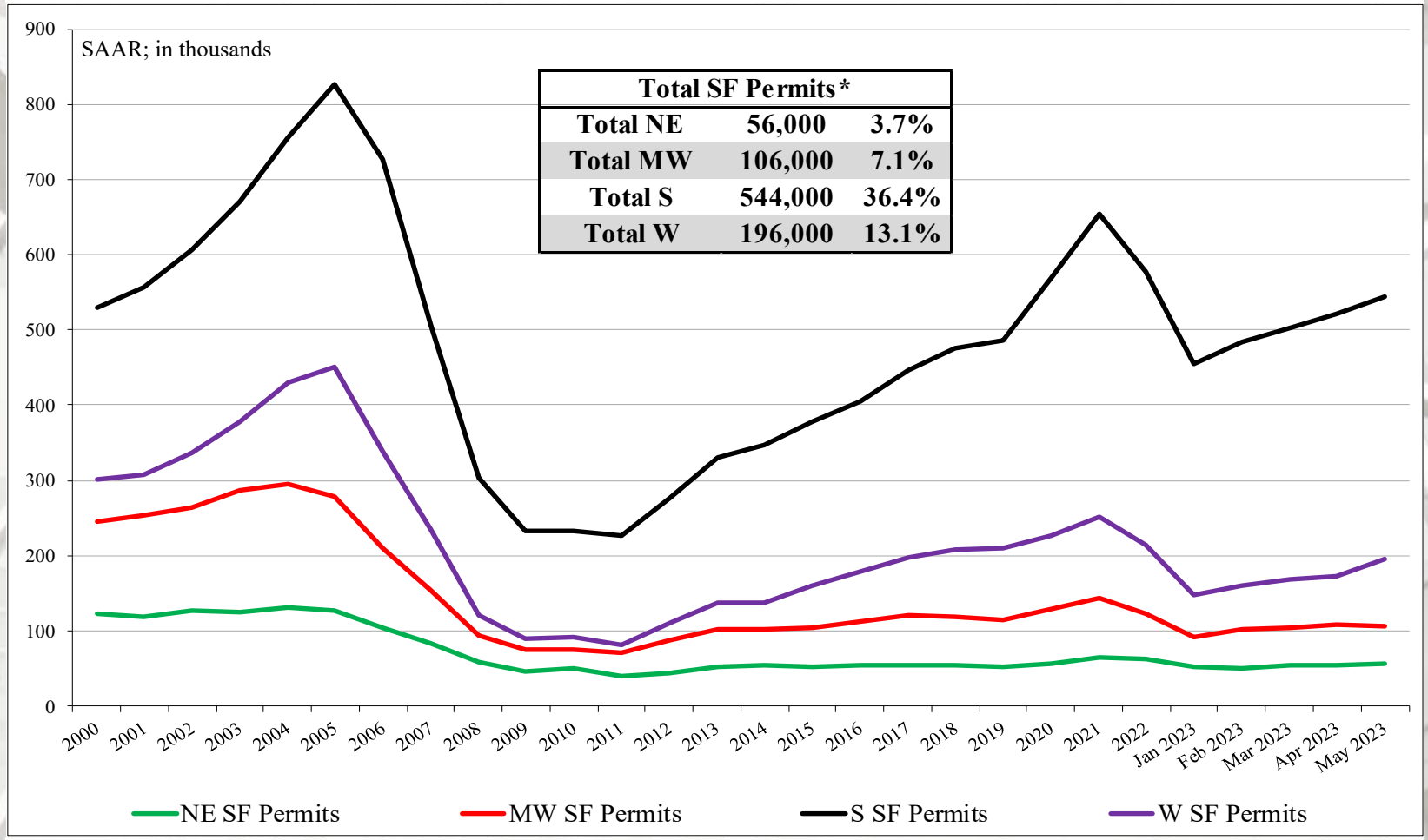
NE = Northeast, MW = Midwest, S = South, W = West

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 6/27/23

Return TOC

SF Housing Permits by Region



Total SF Permits*		
Total NE	56,000	3.7%
Total MW	106,000	7.1%
Total S	544,000	36.4%
Total W	196,000	13.1%

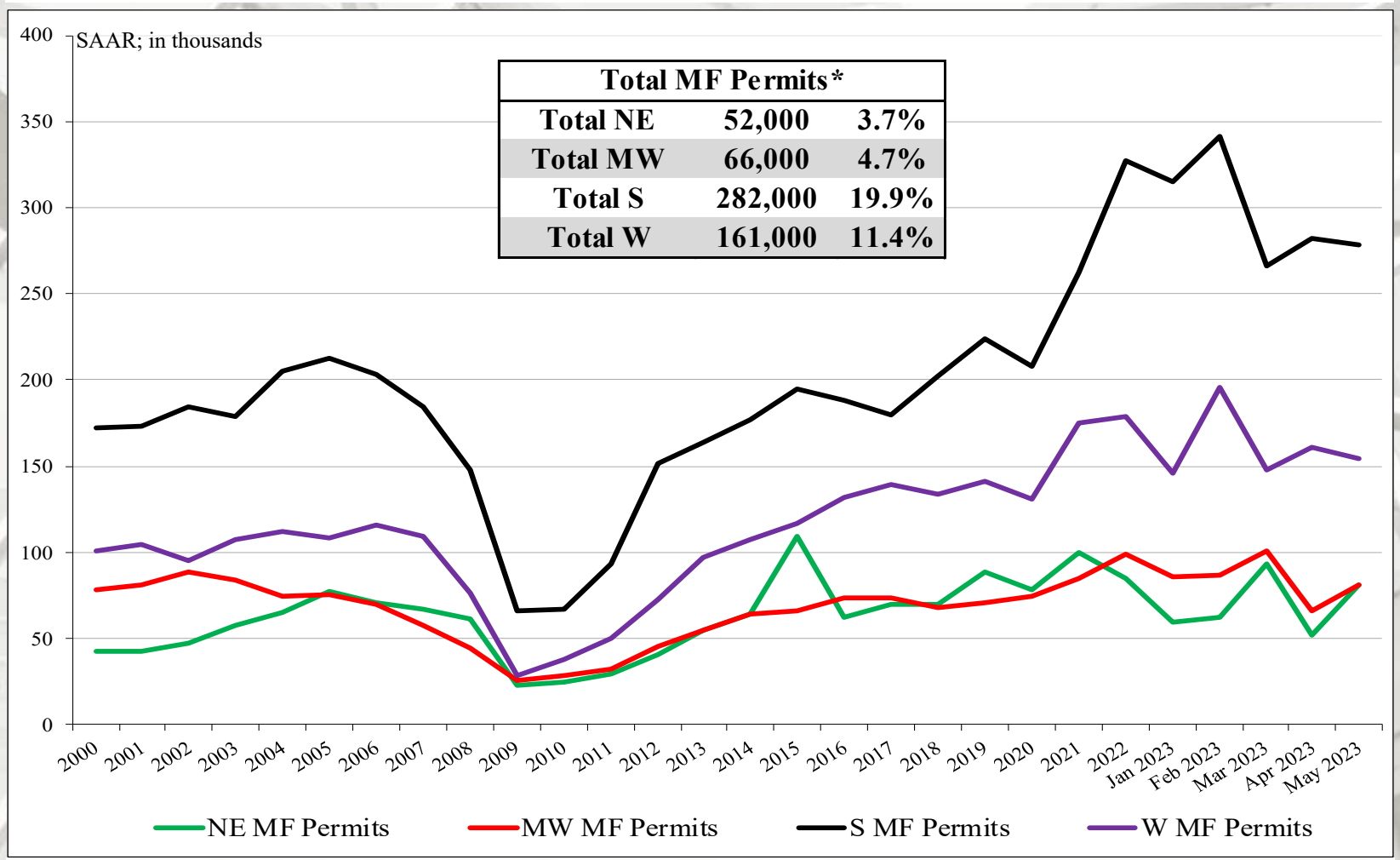
NE = Northeast, MW = Midwest, S = South, W = West

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 6/27/23

Return TOC

MF Housing Permits by Region



Total MF Permits*		
Total NE	52,000	3.7%
Total MW	66,000	4.7%
Total S	282,000	19.9%
Total W	161,000	11.4%

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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 6/27/23

Return TOC

New Housing Under Construction (HUC)

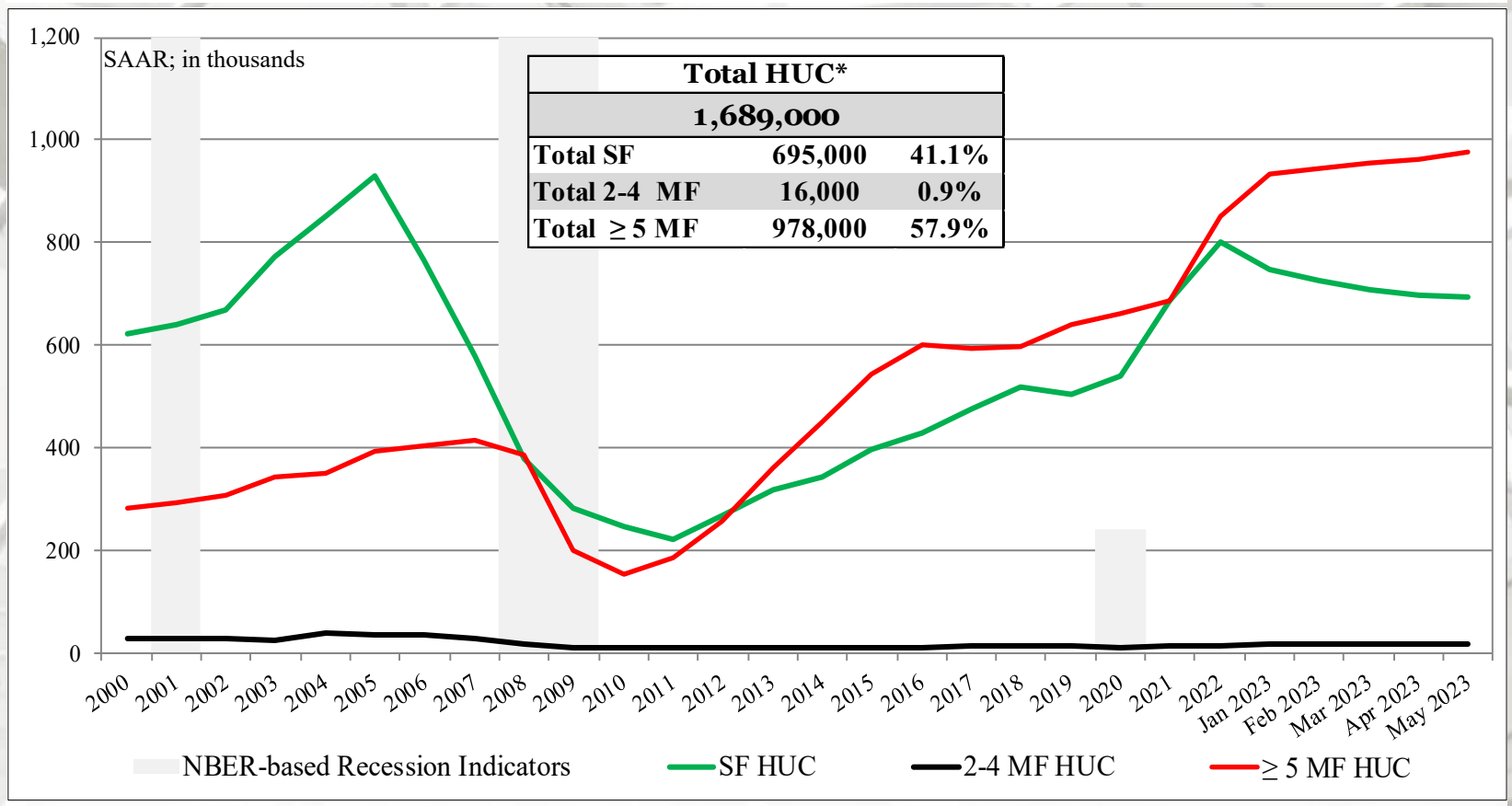
	Total HUC*	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
May	1,689,000	695,000	16,000	978,000
April	1,677,000	699,000	17,000	961,000
2022	1,680,000	831,000	15,000	834,000
M/M change	0.7%	-0.6%	-5.9%	1.8%
Y/Y change	0.5%	-16.4%	6.7%	17.3%

All housing under construction 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)).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
May	217,000	67,000	150,000
April	217,000	67,000	150,000
2022	217,000	62,000	155,000
M/M change	0.0%	0.0%	0.0%
Y/Y change	0.0%	8.1%	-3.2%
	MW Total	**MW SF**	**MW MF**
May	211,000	93,000	118,000
April	206,000	93,000	113,000
2022	223,000	113,000	110,000
M/M change	2.4%	0.0%	4.4%
Y/Y change	-5.4%	-17.7%	7.3%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Under Construction by Region

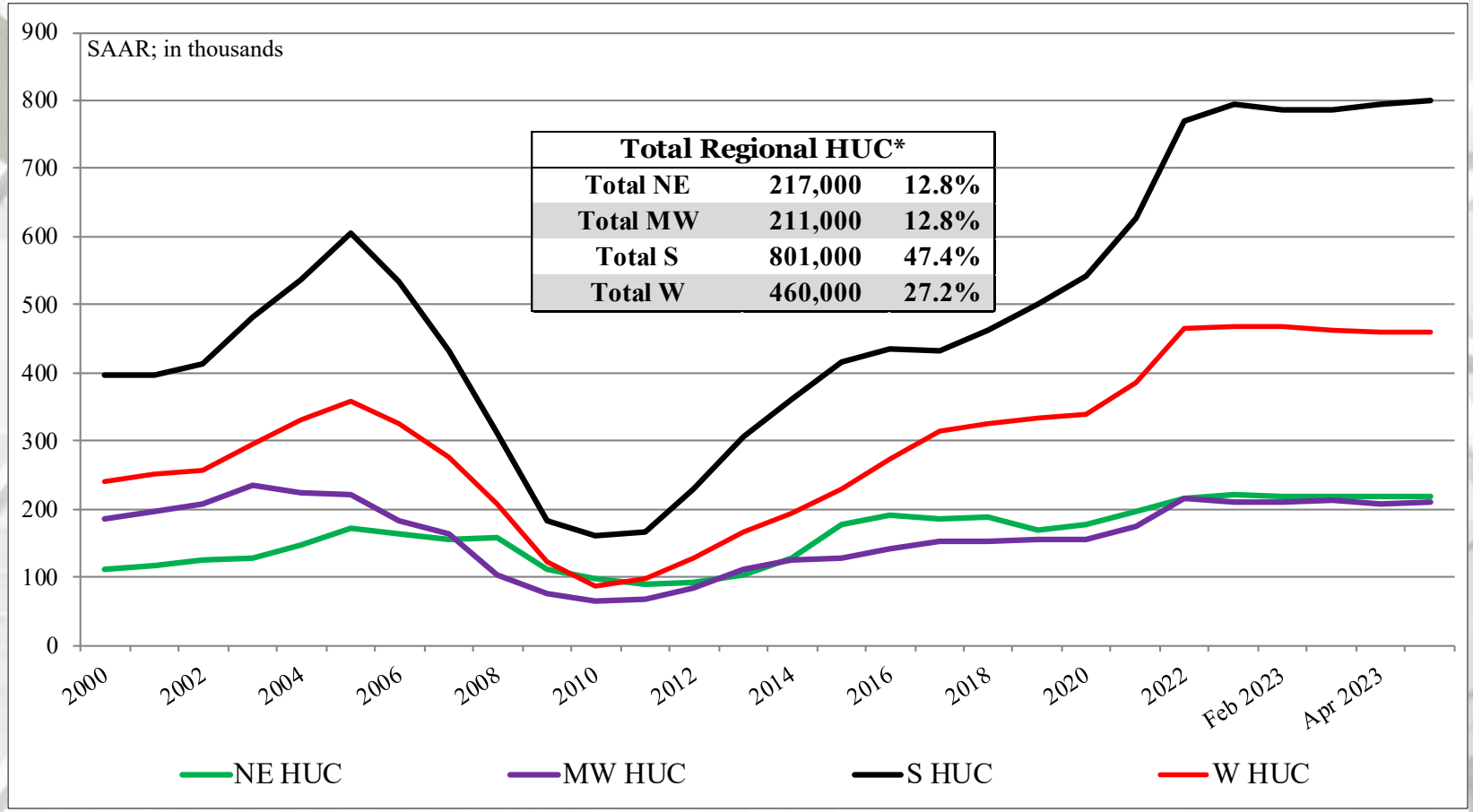
	S Total	S SF	S MF**
May	801,000	369,000	432,000
April	795,000	370,000	425,000
2022	772,000	441,000	331,000
M/M change	0.8%	-0.3%	1.6%
Y/Y change	3.8%	-16.3%	30.5%
	W Total	**W SF**	**W MF**
May	460,000	166,000	294,000
April	459,000	169,000	290,000
2022	468,000	215,000	253,000
M/M change	0.2%	-1.8%	1.4%
Y/Y change	-1.7%	-22.8%	16.2%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

Total Housing Under Construction by Region



Total Regional HUC*		
Total NE	217,000	12.8%
Total MW	211,000	12.8%
Total S	801,000	47.4%
Total W	460,000	27.2%

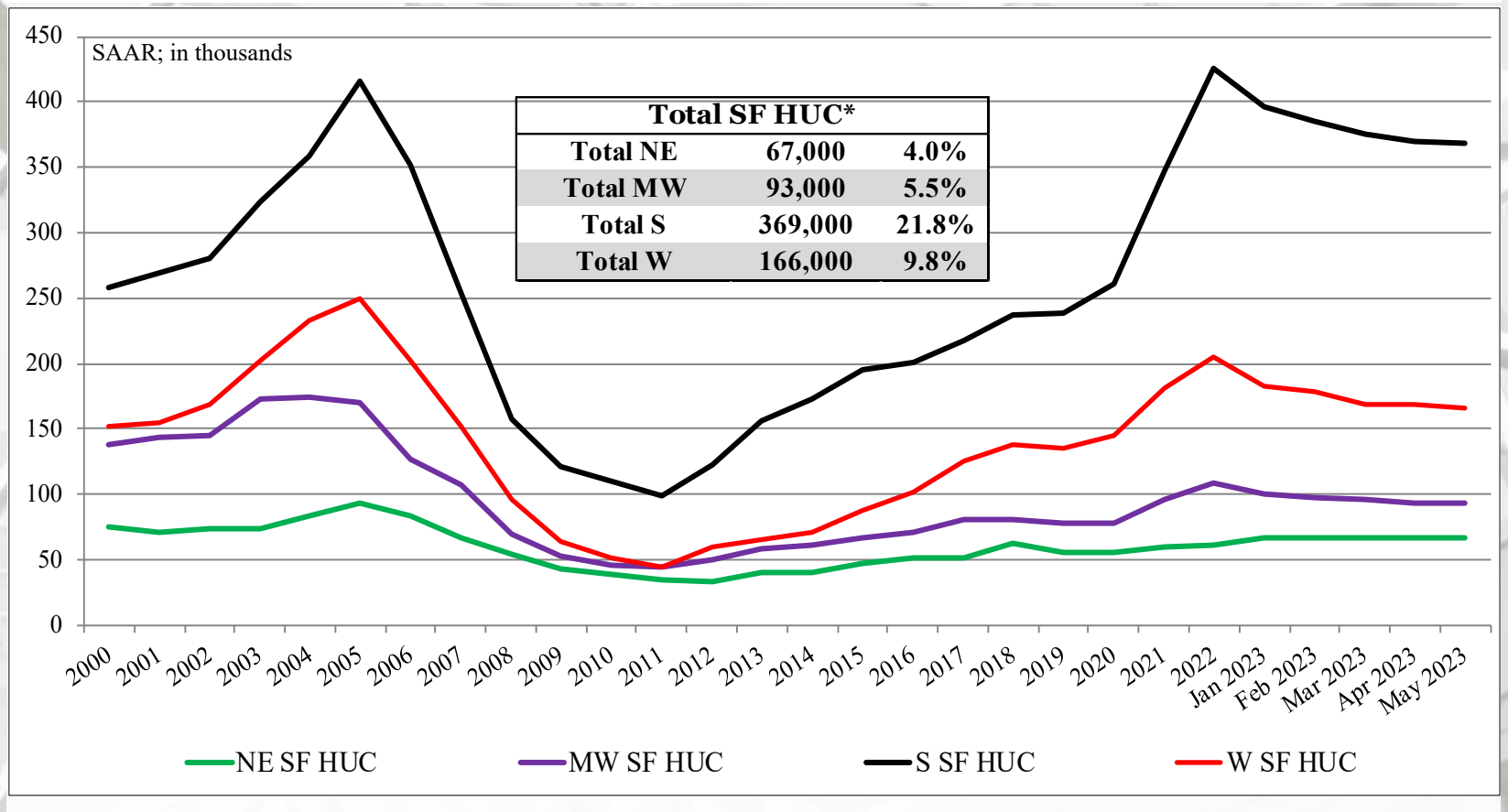
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family under construction directly; this is an estimation (Total under construction – (SF + 5-unit MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

SF Housing Under Construction by Region



Total SF HUC*		
Total NE	67,000	4.0%
Total MW	93,000	5.5%
Total S	369,000	21.8%
Total W	166,000	9.8%

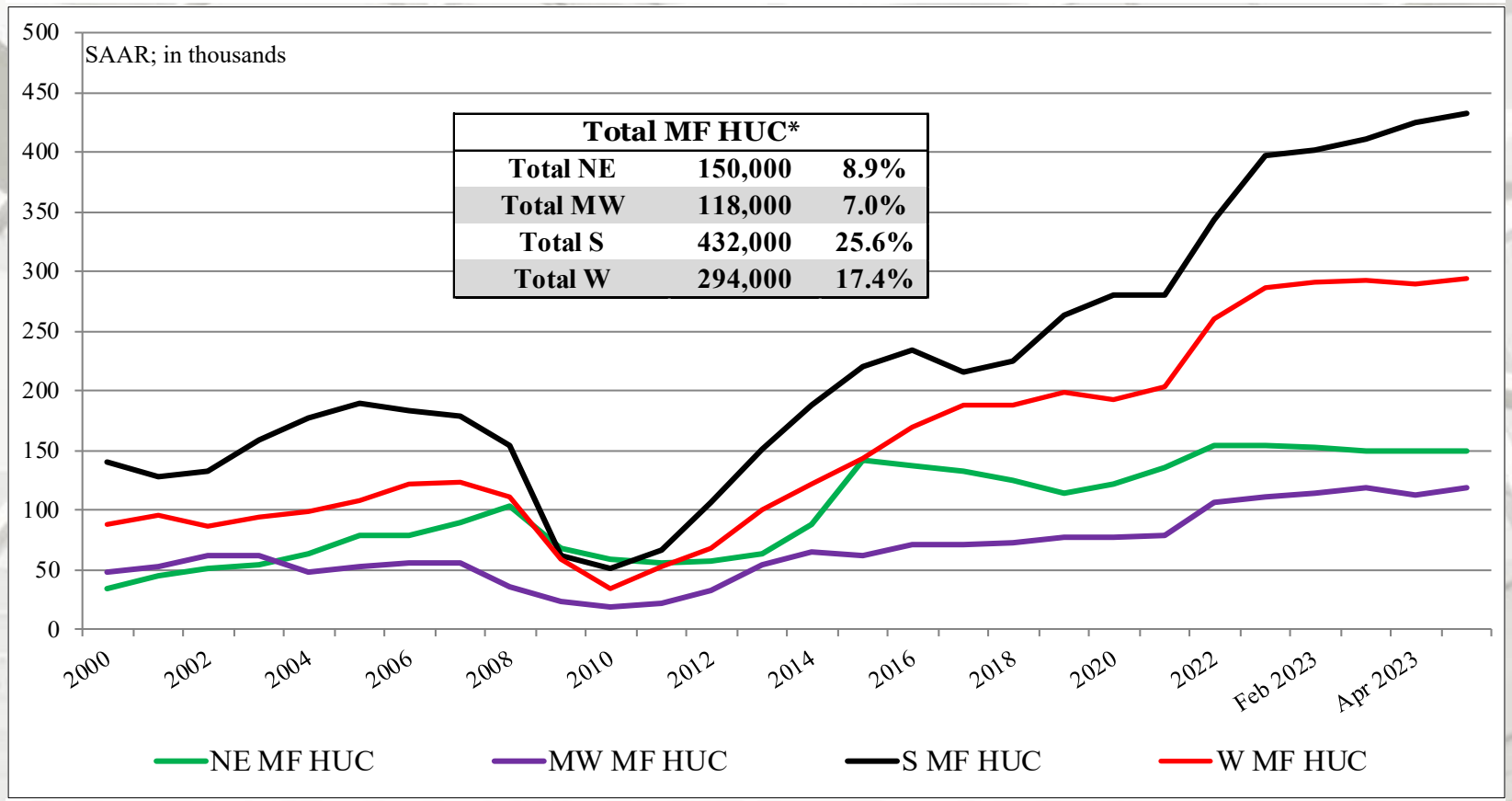
NE = Northeast, MW = Midwest, S = South, W = West.
US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under construction – (SF + 5-unit MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

MF Housing Under Construction by Region



Total MF HUC*		
Total NE	150,000	8.9%
Total MW	118,000	7.0%
Total S	432,000	25.6%
Total W	294,000	17.4%

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.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
May	1,518,000	1,009,000	16,000	493,000
April	1,386,000	971,000	18,000	397,000
2022	1,446,000	1,043,000	5,000	398,000
M/M change	9.5%	3.9%	-11.1%	24.2%
Y/Y change	5.0%	-3.3%	220.0%	23.9%

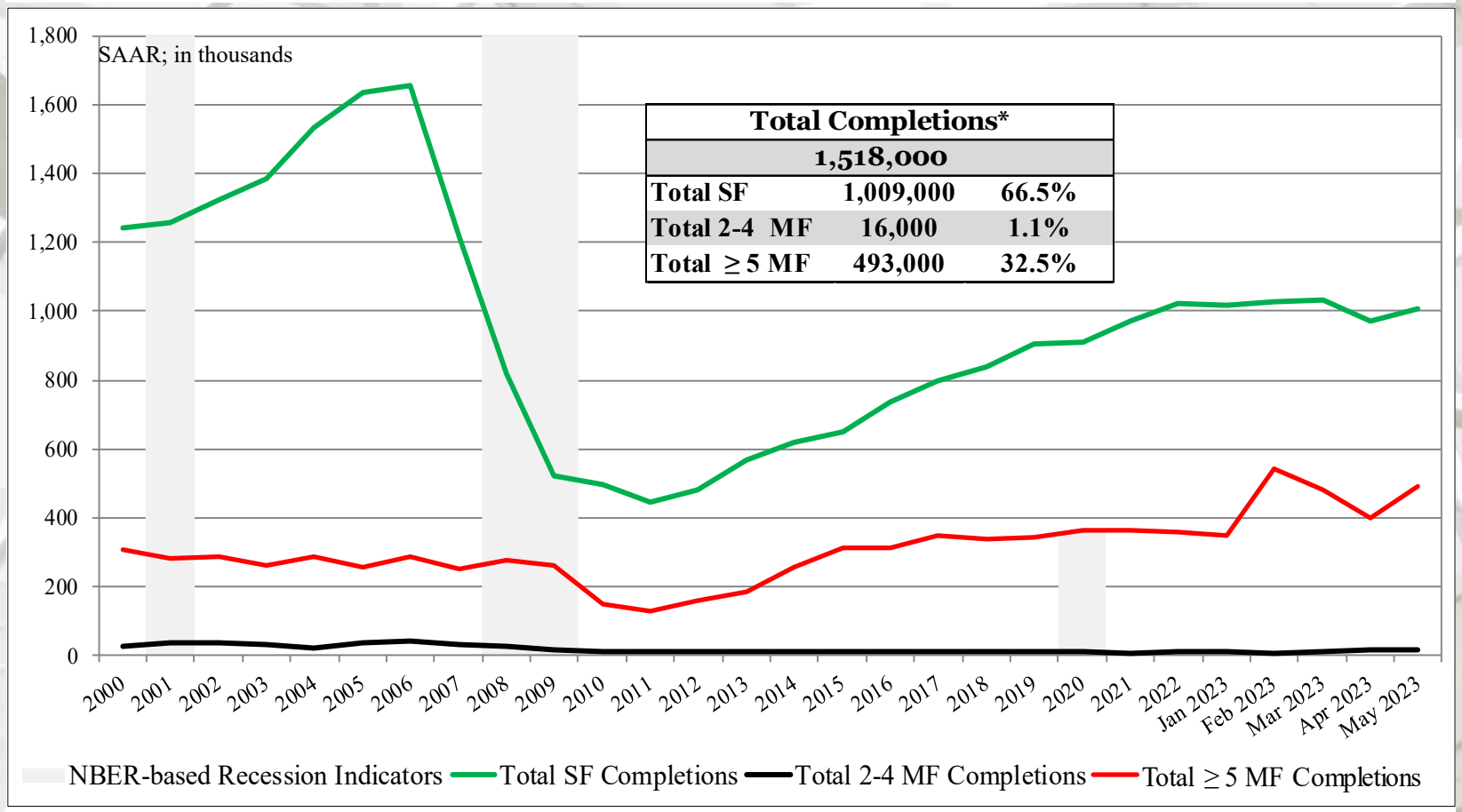
* All completion data are presented at a seasonally adjusted annual rate (SAAR).

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

Total Housing Completions



Total Completions*		
1,518,000		
Total SF	1,009,000	66.5%
Total 2-4 MF	16,000	1.1%
Total ≥ 5 MF	493,000	32.5%

US DOC does not report multifamily completions directly, this is an estimation ((Total completions – (SF + + 5-unit MF)).

* Percentage of 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; 6/20/23

Return TOC

New Housing Completions by Region

	NE Total	NE SF	NE MF**
May	115,000	57,000	58,000
April	123,000	74,000	49,000
2022	103,000	65,000	38,000
M/M change	-6.5%	-23.0%	18.4%
Y/Y change	11.7%	-12.3%	52.6%
	MW Total	**MW SF**	**MW MF**
May	215,000	148,000	67,000
April	216,000	128,000	88,000
2022	175,000	146,000	29,000
M/M change	-0.5%	15.6%	-23.9%
Y/Y change	22.9%	1.4%	131.0%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Housing Completions by Region

	S Total	S SF	S MF**
May	852,000	569,000	283,000
April	736,000	564,000	172,000
2022	791,000	585,000	206,000
M/M change	15.8%	0.9%	64.5%
Y/Y change	7.7%	-2.7%	37.4%
	W Total	**W SF**	**W MF**
May	336,000	235,000	101,000
April	311,000	205,000	106,000
2022	377,000	247,000	130,000
M/M change	8.0%	14.6%	-4.7%
Y/Y change	-10.9%	-4.9%	-22.3%

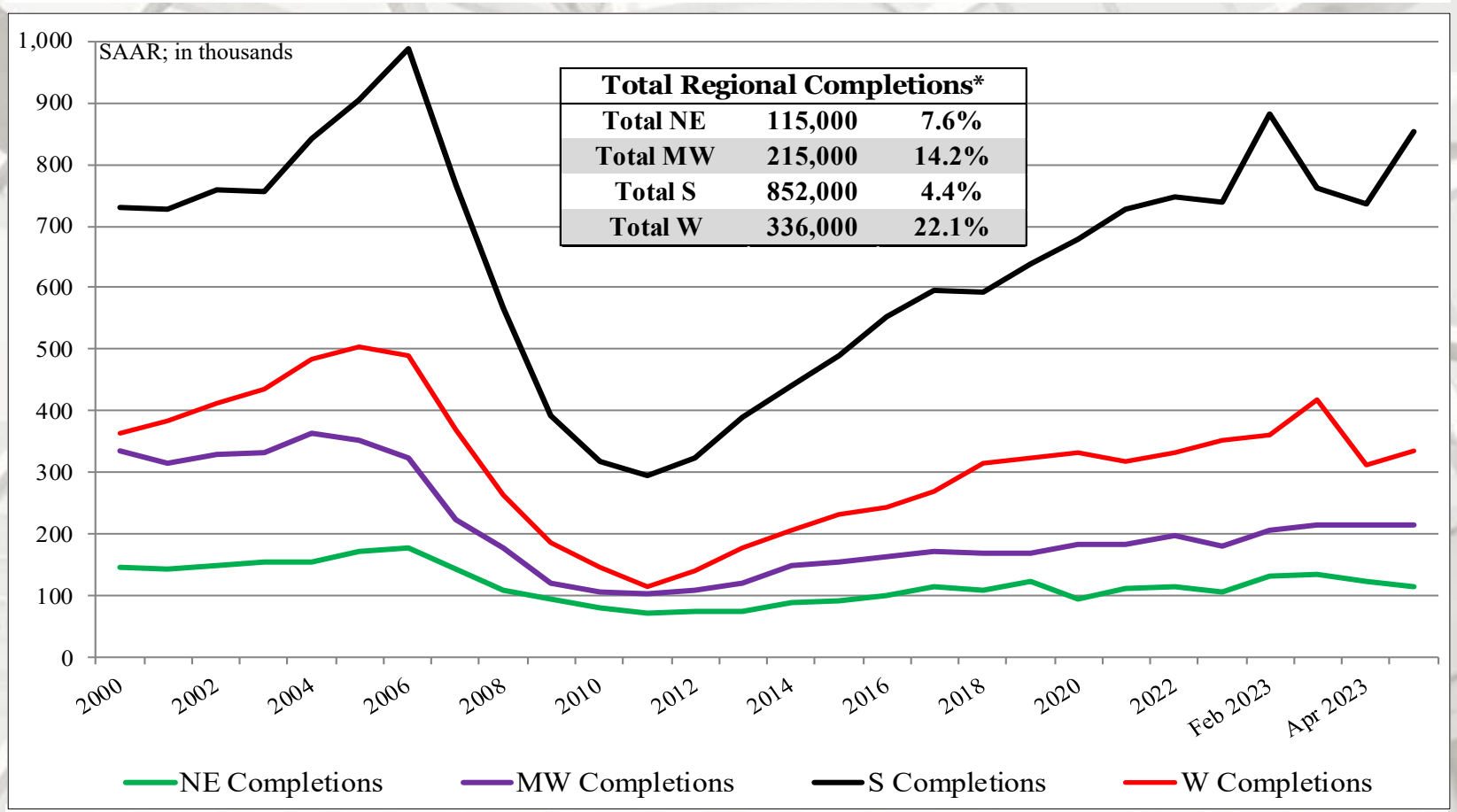
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

Total Housing Completions by Region



Total Regional Completions*		
Total NE	115,000	7.6%
Total MW	215,000	14.2%
Total S	852,000	4.4%
Total W	336,000	22.1%

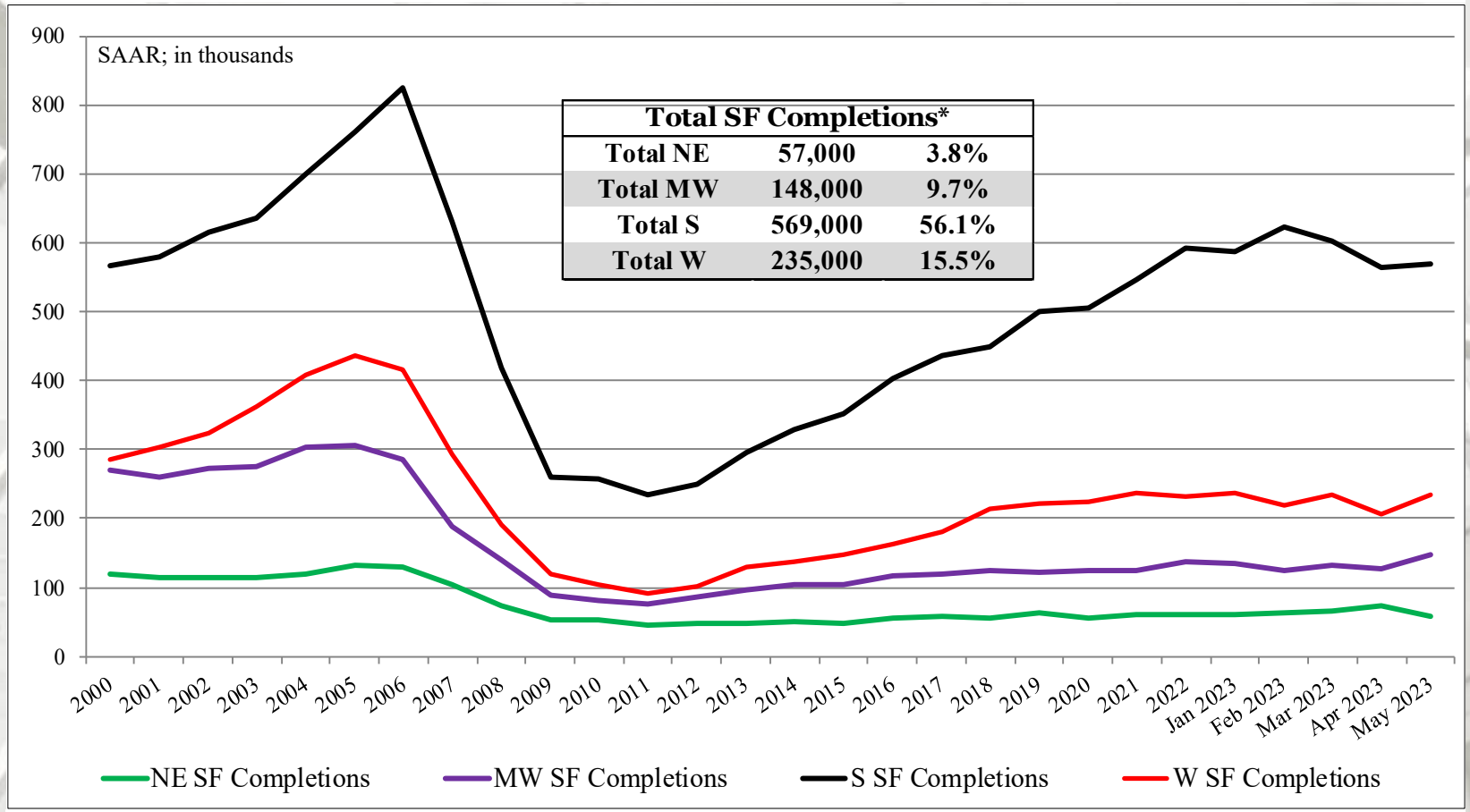
All data are SAAR; NE = Northeast and MW = Midwest; S = South, W = West

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

SF Housing Completions by Region



Total SF Completions*		
Total NE	57,000	3.8%
Total MW	148,000	9.7%
Total S	569,000	56.1%
Total W	235,000	15.5%

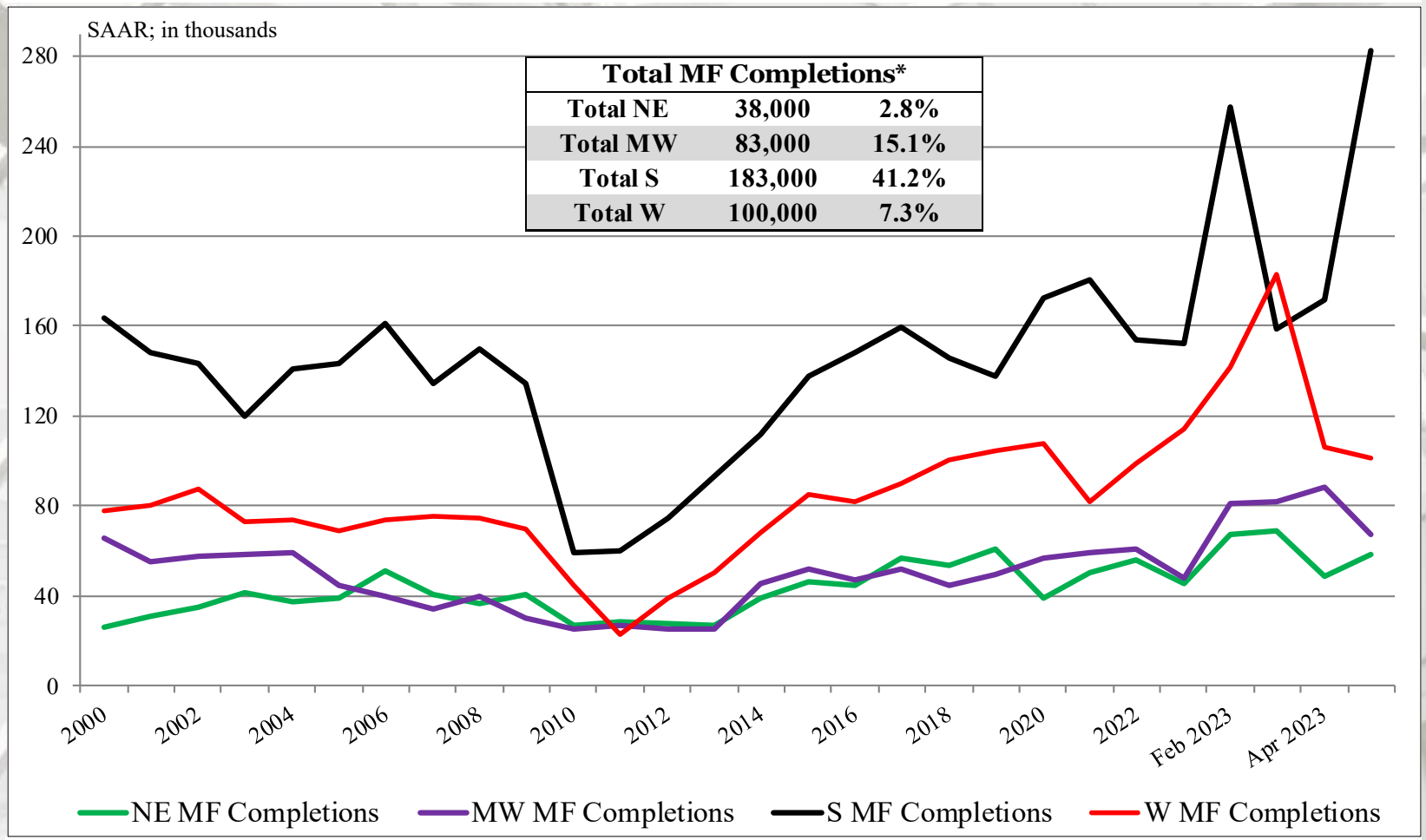
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

MF Housing Completions by Region



Total MF Completions*		
Total NE	38,000	2.8%
Total MW	83,000	15.1%
Total S	183,000	41.2%
Total W	100,000	7.3%

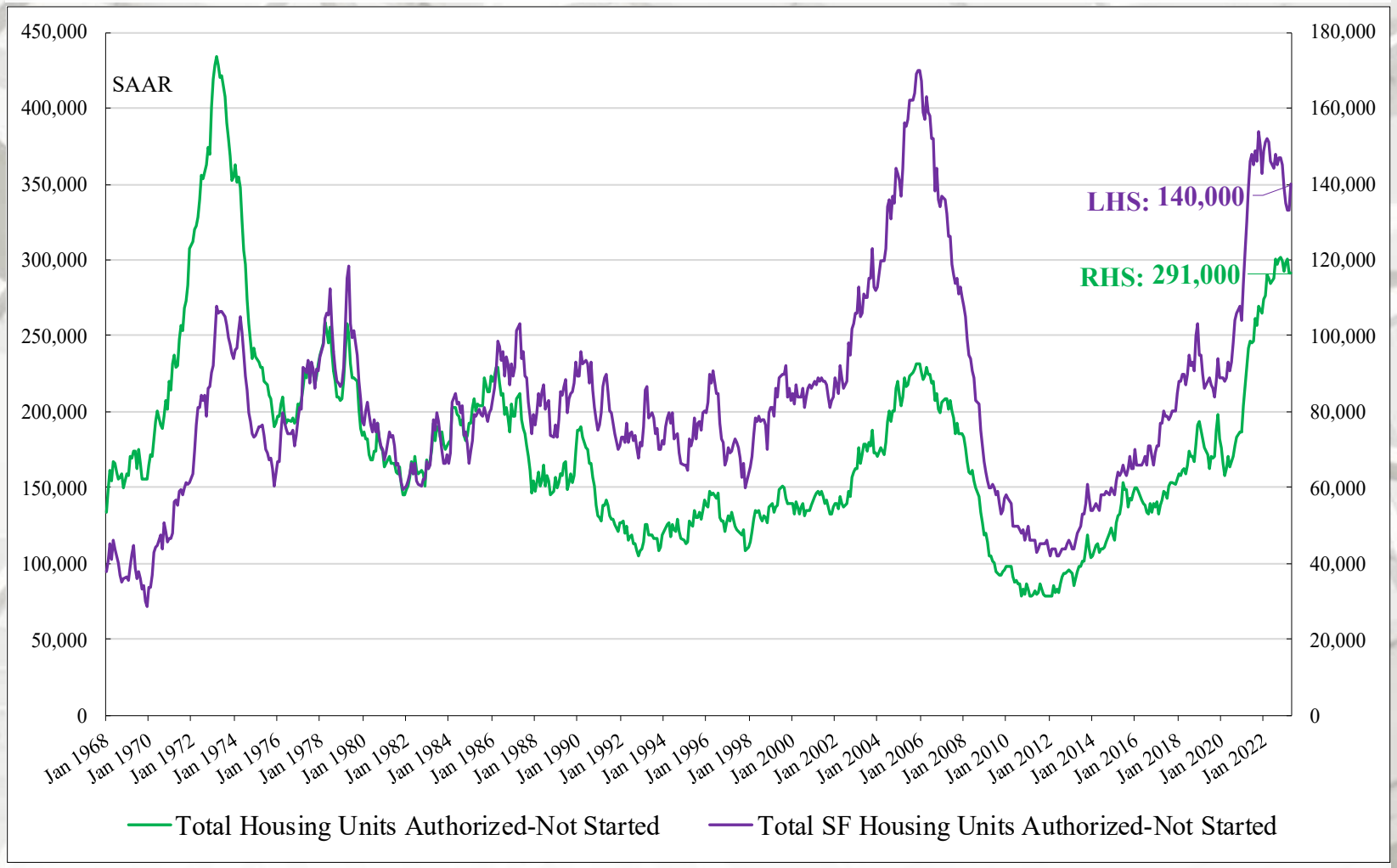
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

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



Authorized, Not Started vs. Housing Completions

Total authorized units "not" started was 282,000 in May, a decline from April, and SF authorized units "not" started decreased to 138,000 in May.

The primary reason is manufacturing supply chain disruptions – ranging from appliances to windows; labor, logistics, and local building regulations.

Sources: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/20/23

Return TOC

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
May	763,000	$416,300	$487,300	6.7
April	680,000	$402,400	$495,600	7.6
2022	636,000	$450,700	$521,500	8.3
M/M change	12.2%	3.5%	-1.7%	-11.8%
Y/Y change	20.0%	-7.6%	-6.6%	-19.3%

* All new sales data are presented at a seasonally adjusted annual rate (SAAR)[1] and housing prices are adjusted at irregular intervals[2].

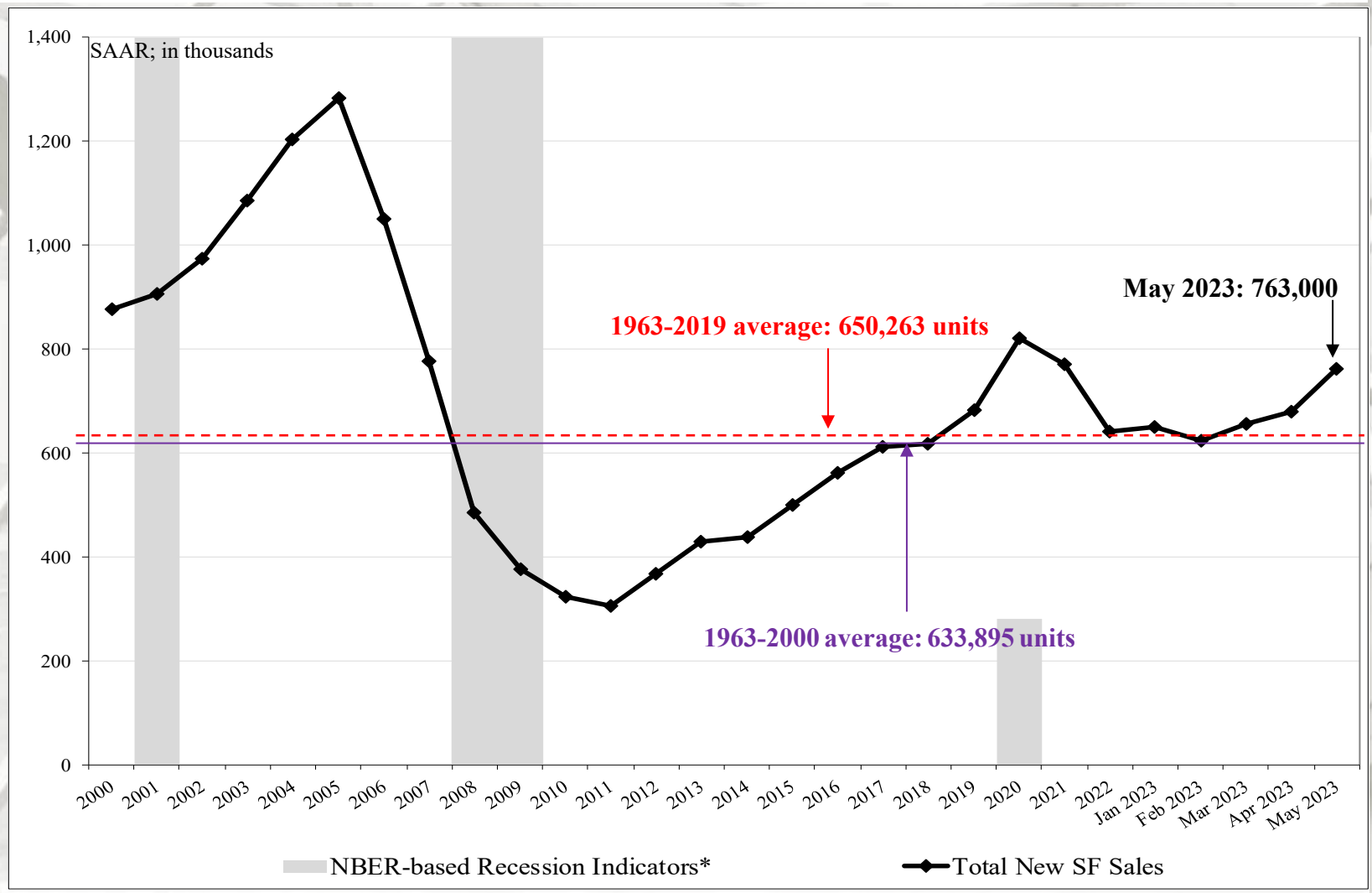
New SF sales were much greater than the consensus forecast[3] of 667 m; range 650 m to 702 m. The past three month's new SF sales data also were revised:

February initial: 640 m, revised to 625 m.
March initial: 683 m, revised to 657 m.
April initial: 670 m, revised to 680 m.

Sources: [1] https://www.census.gov/construction/nrs/index.html; 6/24/21; [2] https://www.census.gov/construction/nrs/pdf/newressales.pdf; 6/27/23
[3] http://us.econoday.com; 6/27/23

Return TOC

New SF House Sales

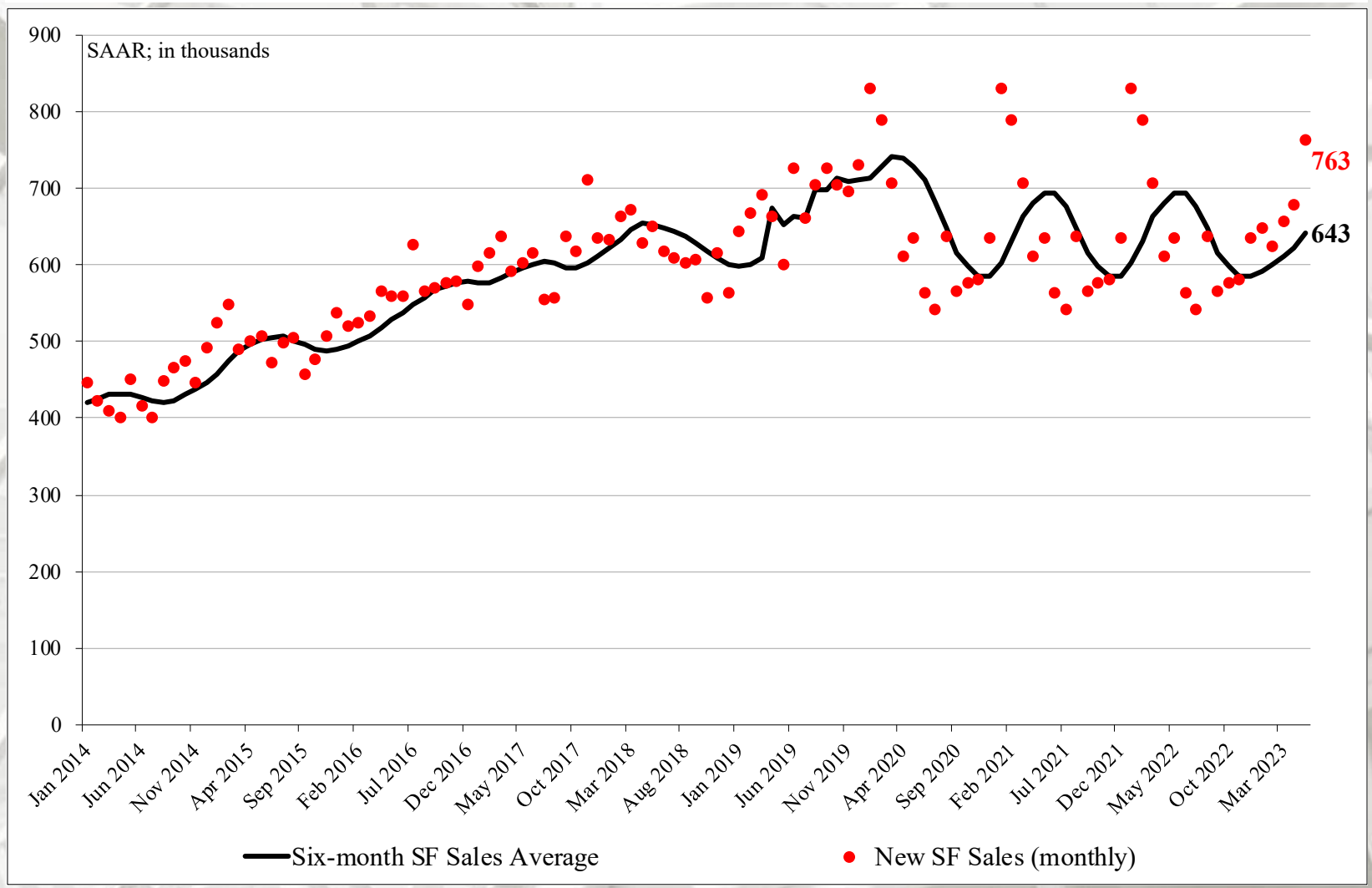


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23.

Return TOC

New SF House Sales by Region and Price Category

	NE	MW	S	W
May	40,000	77,000	471,000	175,000
April	34,000	74,000	423,000	149,000
2022	19,000	55,000	386,000	176,000
M/M change	17.6%	4.1%	11.3%	17.4%
Y/Y change	110.5%	40.0%	22.0%	-0.6%

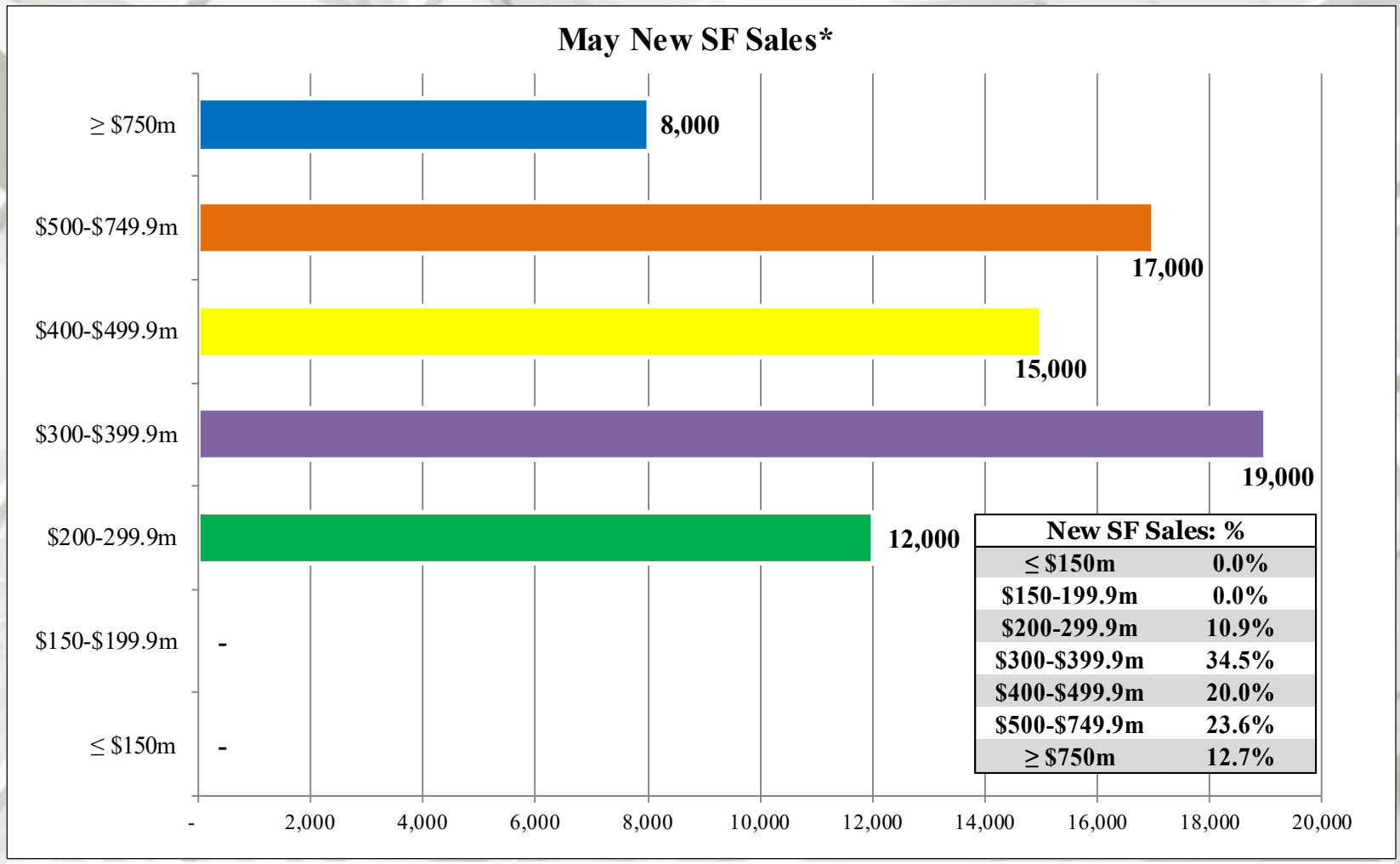
	≤ $150m	$150 - $199.9m	$200 - 299.9m	$300 - $399.9m	$400 - $499.9m	$500 - $749.9m	≥ $750m
March[1,2,3,4]	500	1,000	12,000	19,000	15,000	17,000	8,000
February	500	500	9,000	20,000	12,000	11,000	8,000
2022	500	500	5,000	17,000	13,000	14,000	9,000
M/M change	0.0%	100.0%	33.3%	-5.0%	25.0%	54.5%	0.0%
Y/Y change	0.0%	100.0%	140.0%	11.8%	15.4%	21.4%	-11.1%
% of New SF sales	0.8%	0.8%	15.0%	33.3%	20.0%	18.3%	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 May 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; 6/27/23;
[4]https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

Return TOC

New SF House Sales

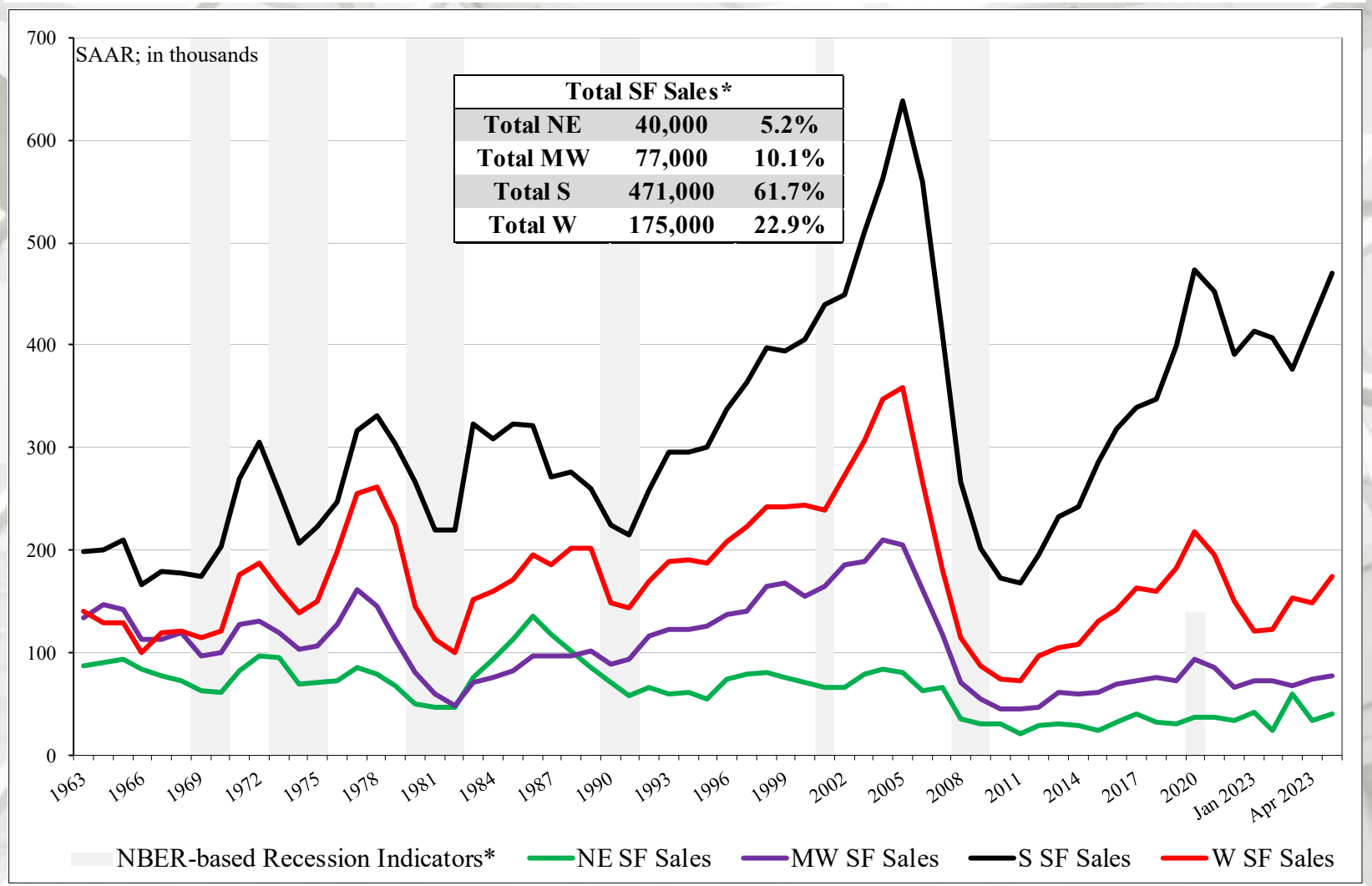


* Total new sales by price category and percent.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF House Sales by Region



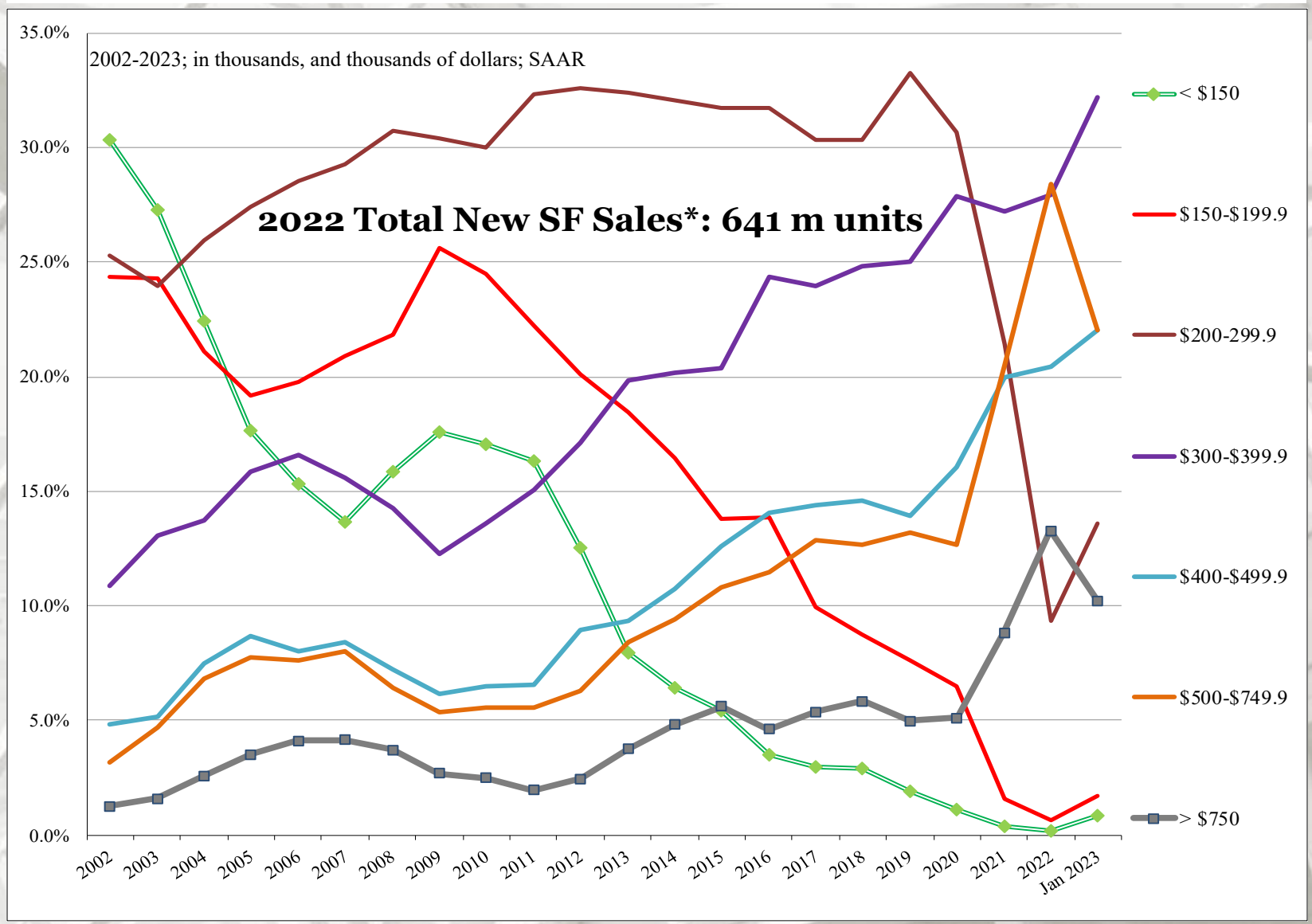
NE = Northeast; MW = Midwest; S = South; W = West
* Percentage of total new sales.

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF House Sales by Price Category



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/21

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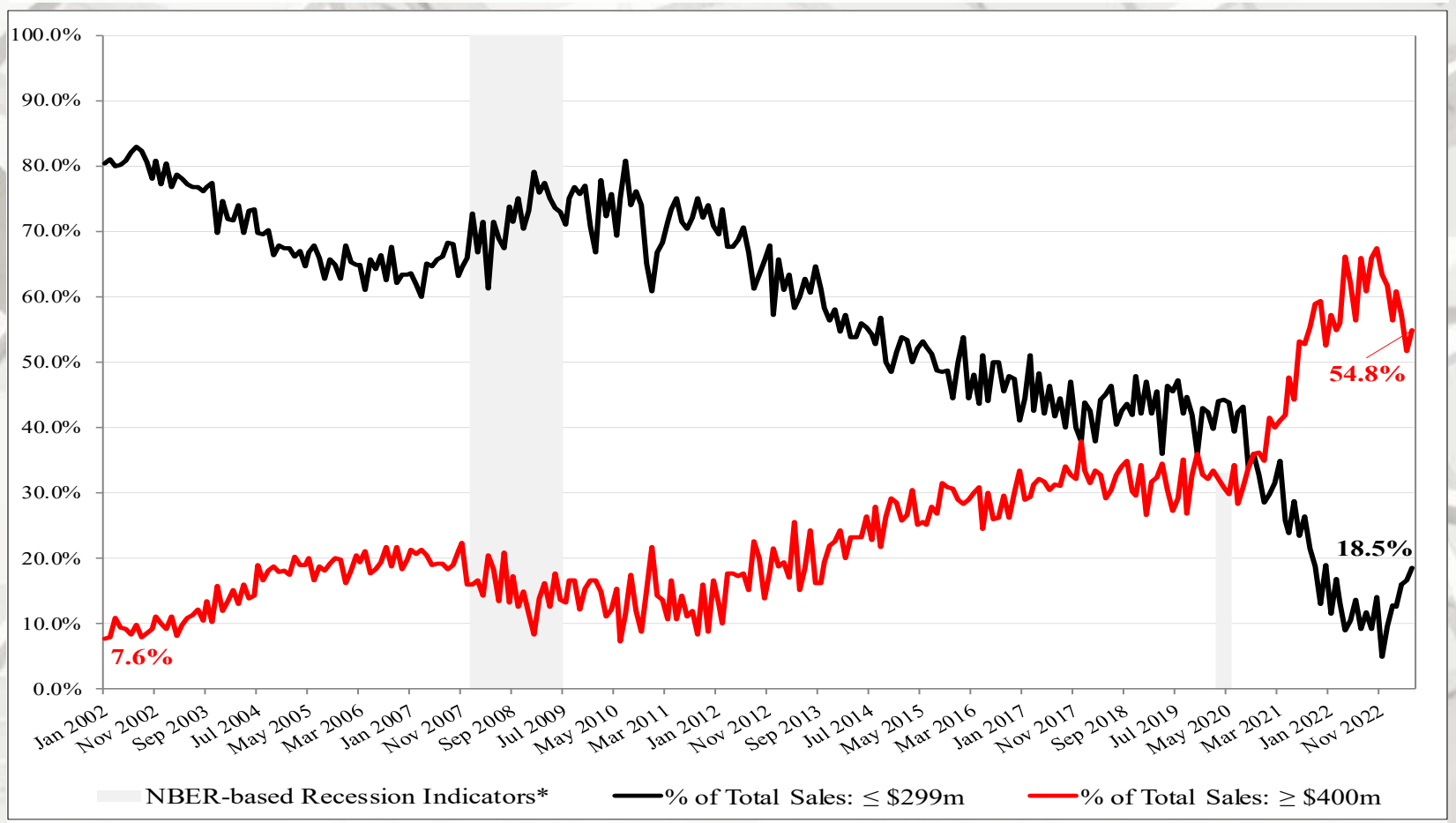
New SF House Sales



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

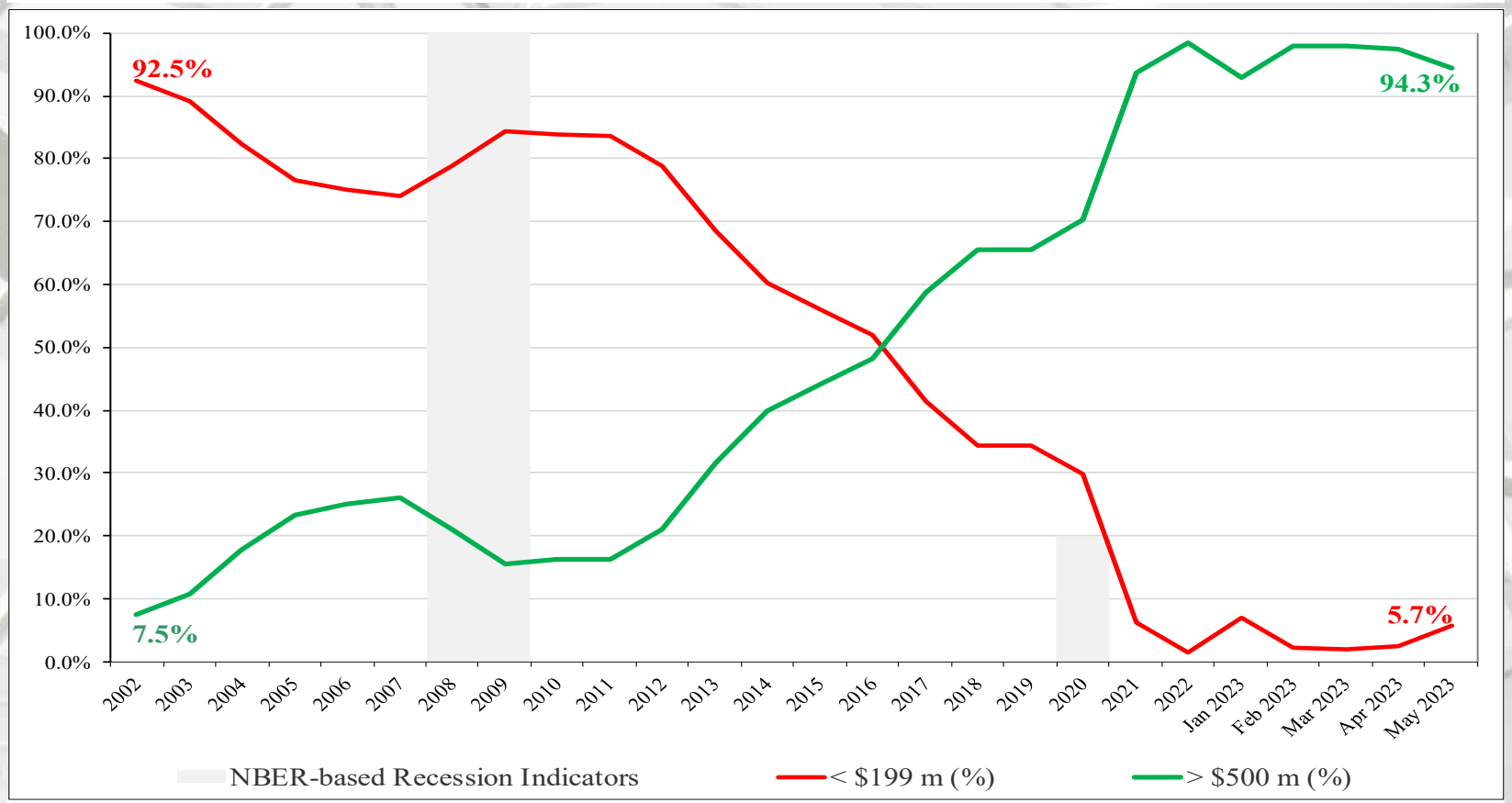
New SF Sales: ≤ $299m and ≥ $400m: 2002 – May 2023

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 6/27/23

Return TOC

New SF House Sales



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

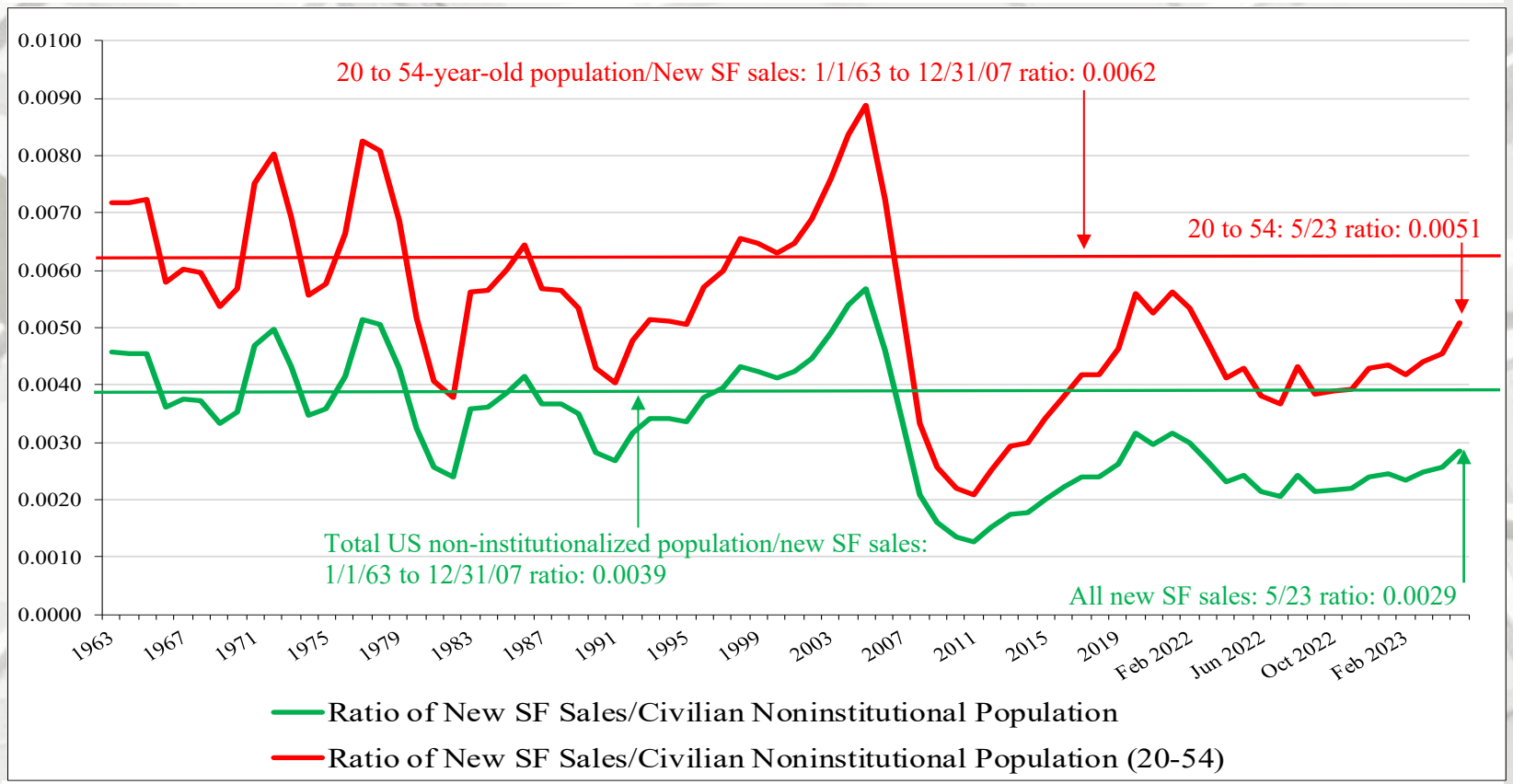
The number of ≤ $200 thousand SF houses has declined dramatically since 2002[1, 2]. Subsequently, from 2012 onward, the ≥ $500 thousand class has soared (on a percentage basis) in contrast to the ≤ $200 thousand class. Oft mentioned reasons for this occurrence is builder net margins, affordability, and 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 6/27/23

Return TOC

New SF House Sales



New SF sales adjusted for the US population

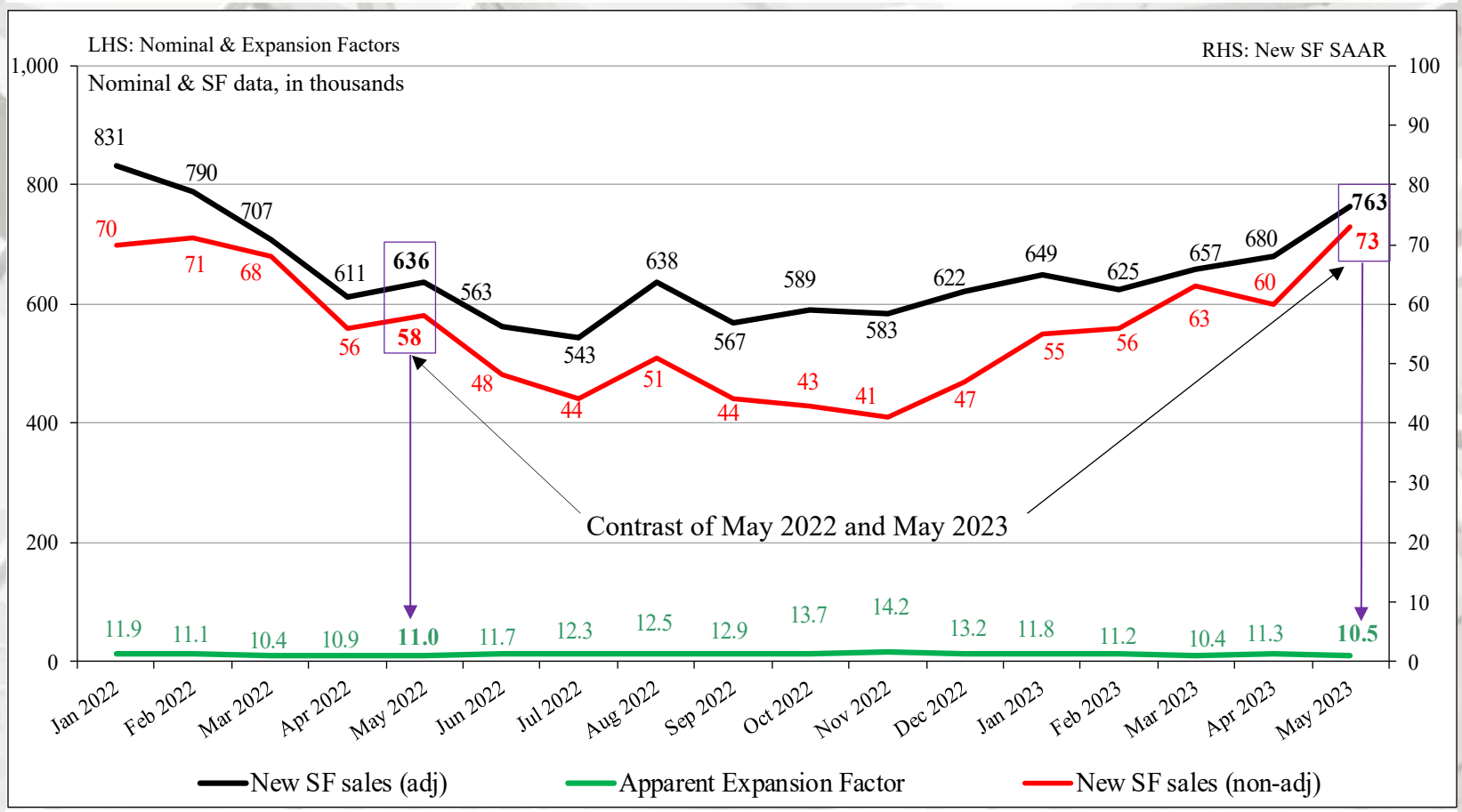
From January 1963 to December 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in May 2023 it was 0.0029 – an improvement from April (0.0026). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in May 2023 it was 0.0051 – also an improvement from April (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.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF House Sales

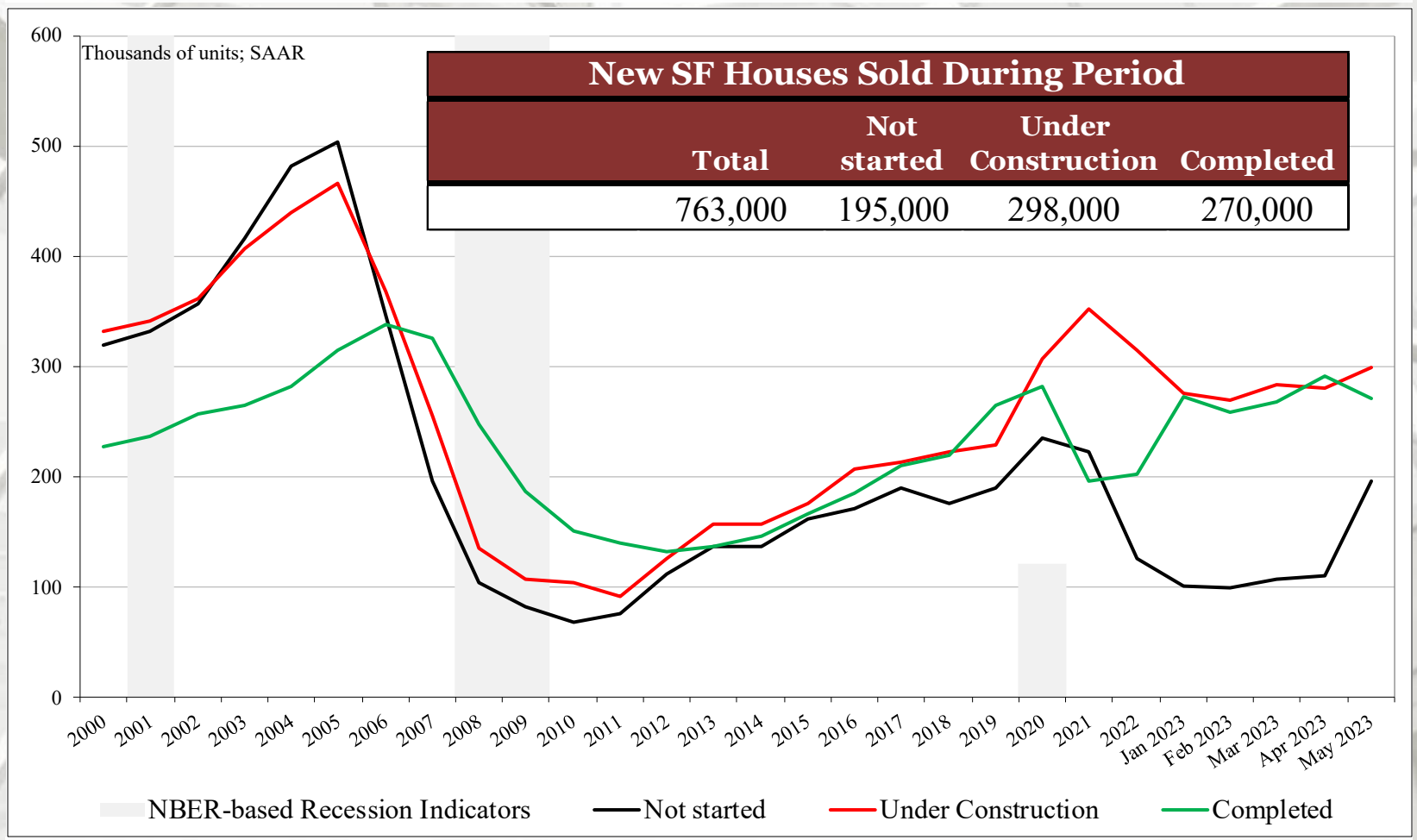
New SF Houses Sold During Period				
	Total	Not started	Under Construction	Completed
May	763,000	195,000	298,000	270,000
April	680,000	109,000	280,000	291,000
2022	441,000	97,000	308,000	36,000
M/M change	12.2%	78.9%	6.4%	-7.2%
Y/Y change	73.0%	101.0%	-3.2%	650.0%
Total percentage		25.6%	39.1%	35.4%

All data is SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF House Sales: Sold During Period



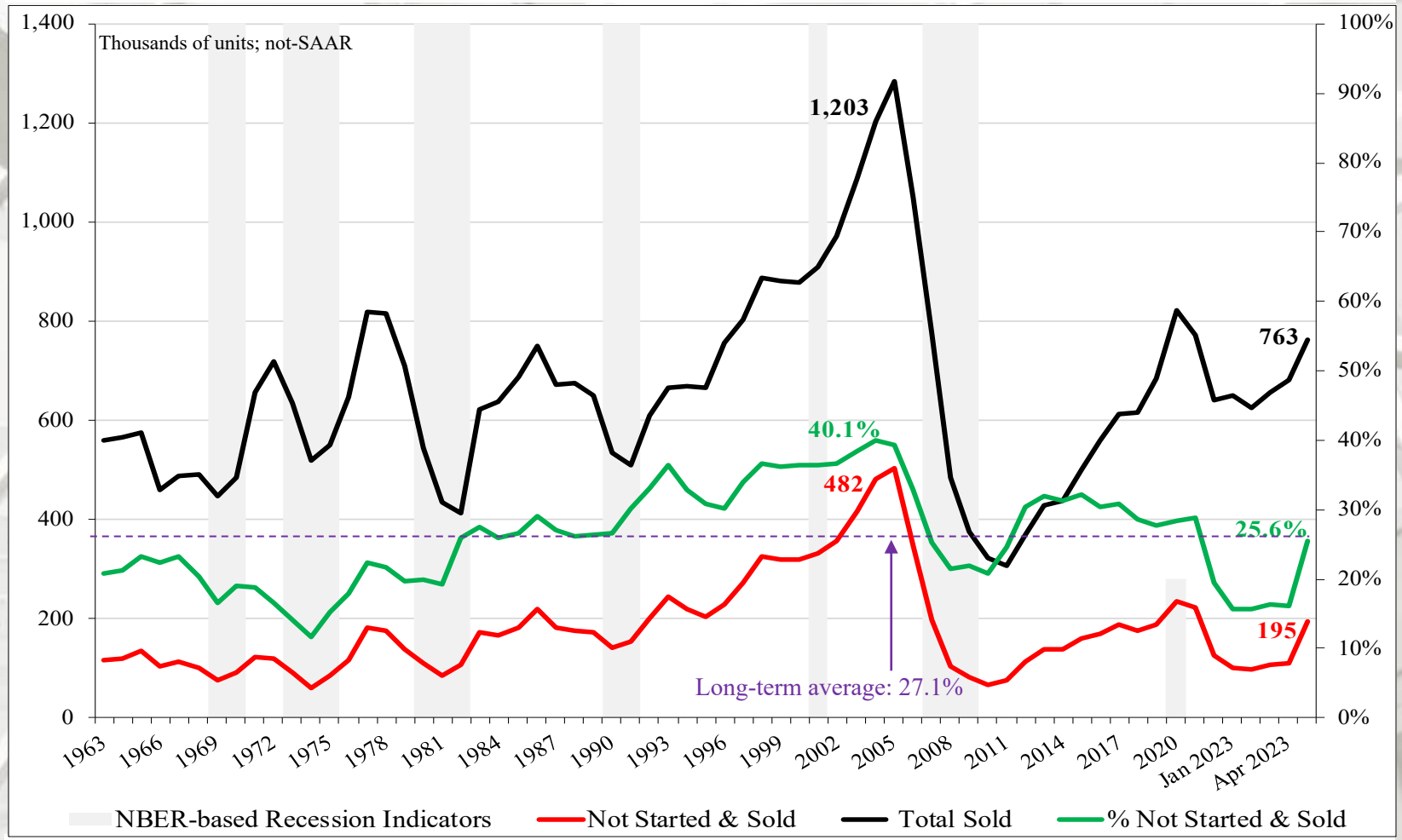
New SF Houses Sold During Period			
Total	Not started	Under Construction	Completed
763,000	195,000	298,000	270,000

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

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



Of the new houses sold in May (763 m), 25.6% (195 m) had not been started and sold. The long-term average is 27.1%.

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF Houses for Sale

New SF Houses for Sale at the end of the Period				
	Total	Not started	Under Construction	Completed
May	428,000	100,000	259,000	69,000
April	432,000	96,000	266,000	70,000
2022	441,000	97,000	308,000	36,000
M/M change	-0.9%	4.2%	-2.6%	-1.4%
Y/Y change	-2.9%	3.1%	-15.9%	91.7%
Total percentage		23.4%	60.5%	16.1%

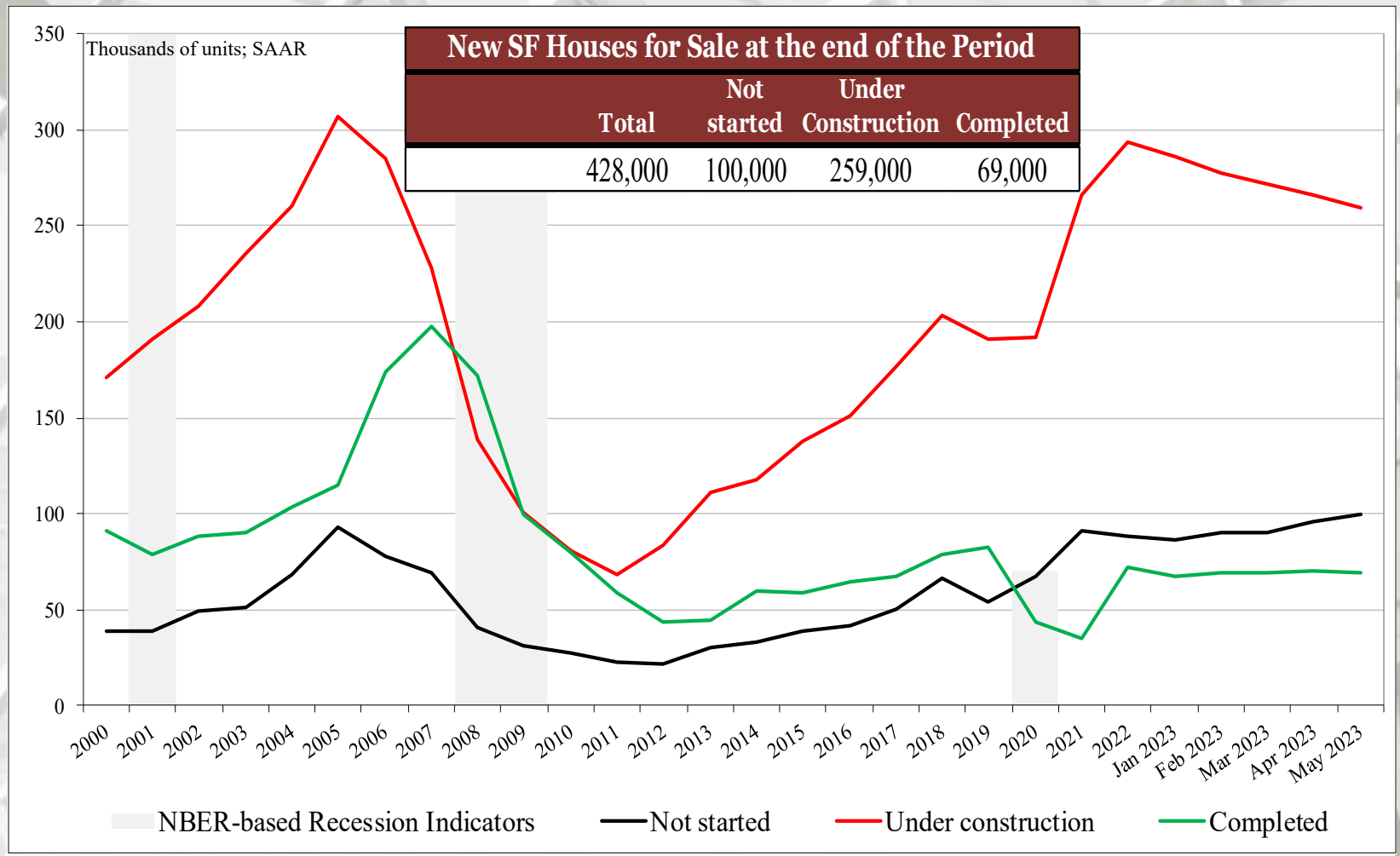
Not SAAR

Of houses listed for sale (428 m) in May, 16.1% (69 m) have been built. In the 'ground had not been broken for construction' or 'not started' category, 100 m (23.4%) were sold.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF House Sales

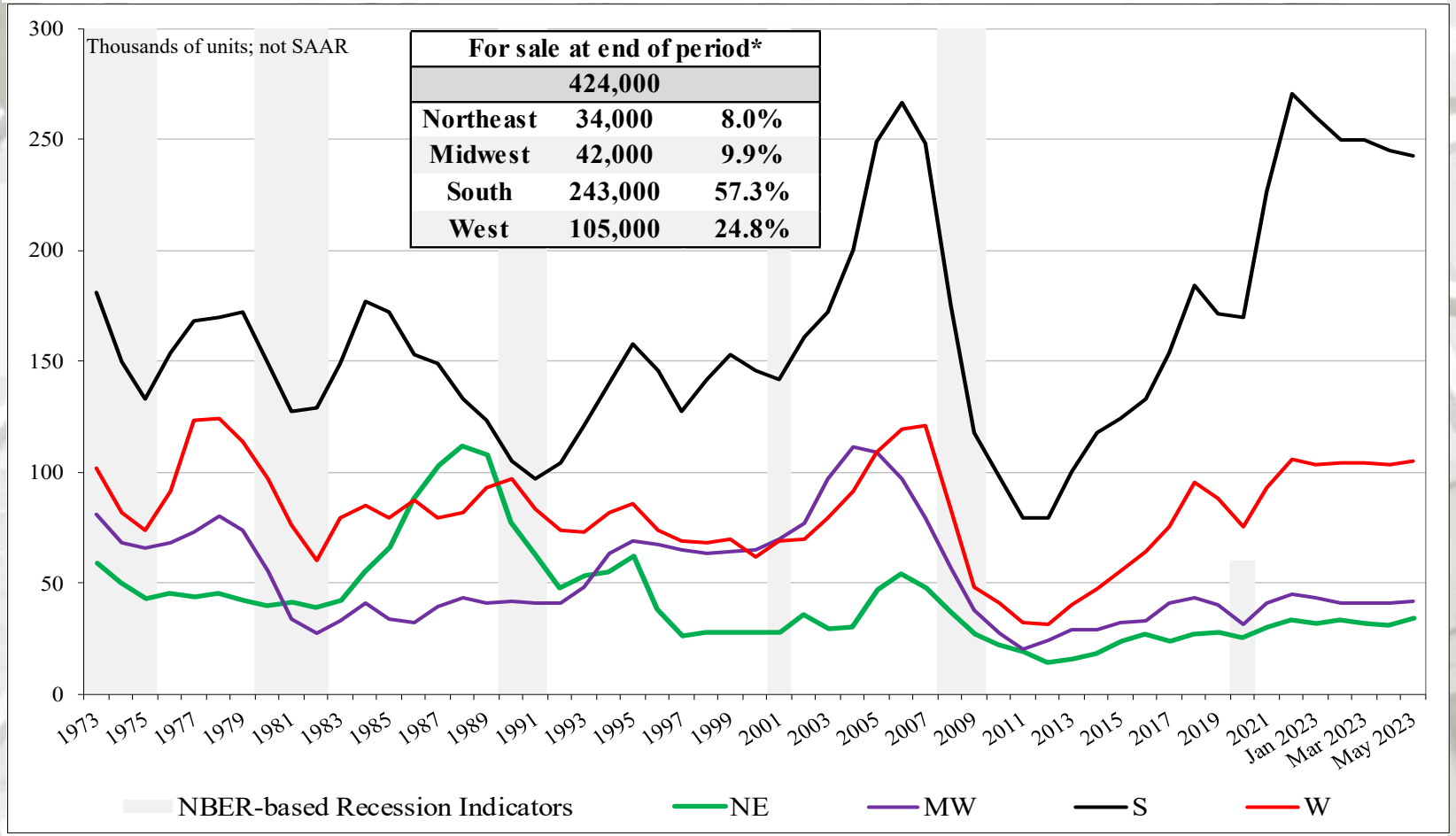
New SF Houses for Sale at the end of the Period by Region*					
	Total	NE	MW	S	W
April	424,000	34,000	42,000	243,000	105,000
March	421,000	31,000	41,000	245,000	103,000
2022	437,000	24,000	47,000	263,000	103,000
M/M change	0.7%	9.7%	2.4%	-0.8%	1.9%
Y/Y change	-3.0%	41.7%	-10.6%	-7.6%	1.9%

* Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

New SF Houses for Sale at End of Period by Region



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

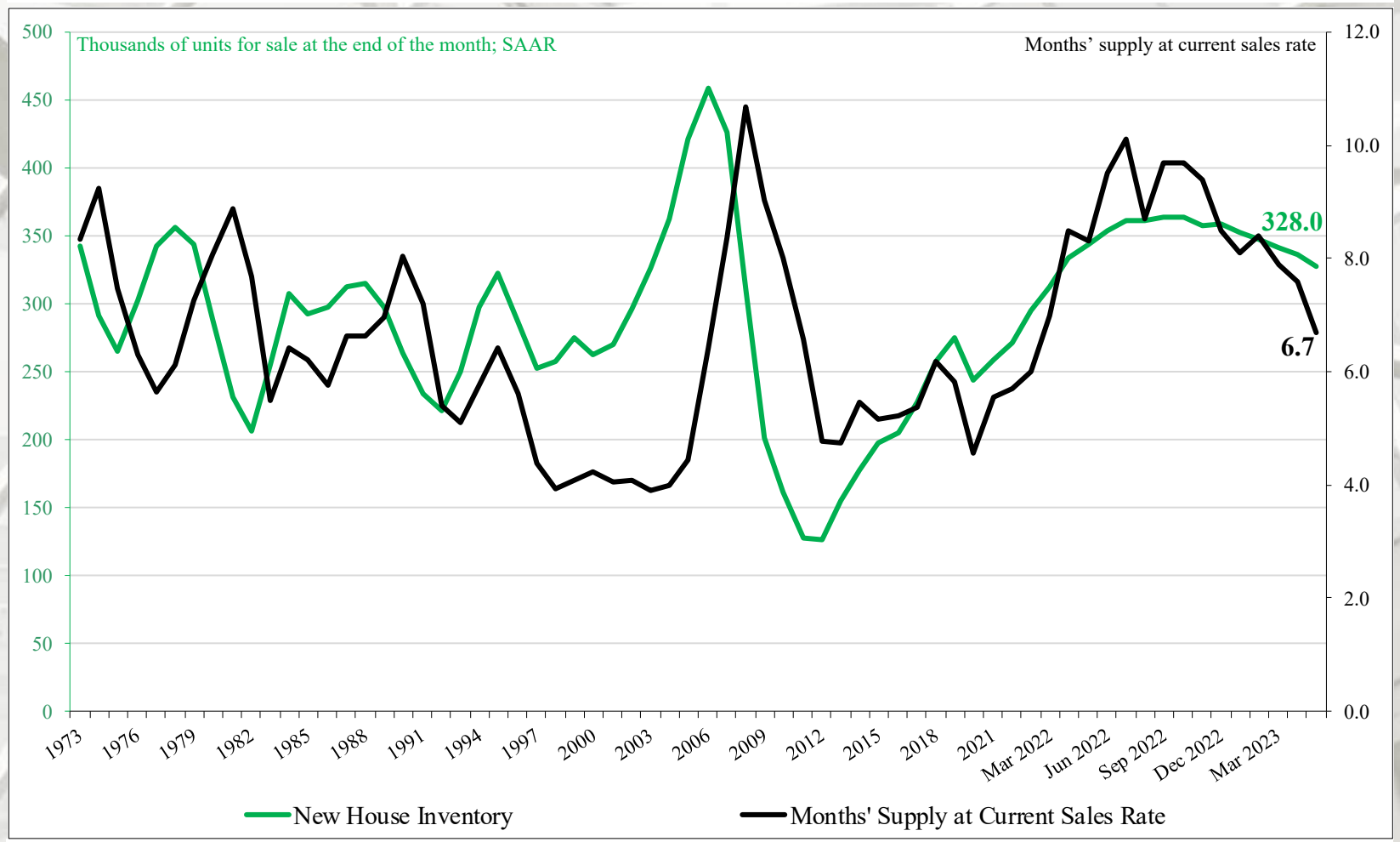
* Percentage of new SF sales.

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

Months' Supply and New House Inventory[a]



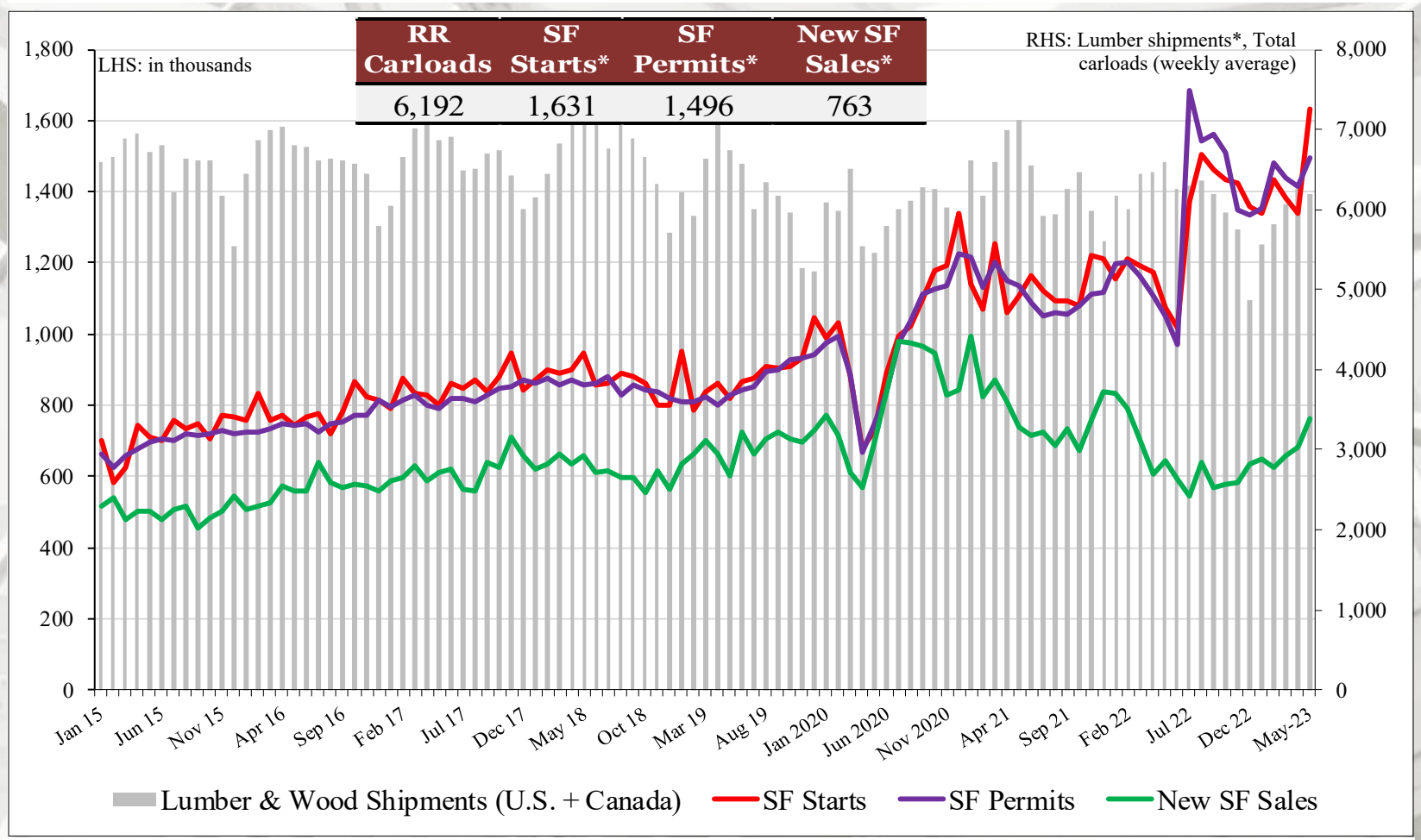
[a] New HUC + New House Completions (sales data only)

The months' supply of new houses for sale at the end of May was 6.7, greater than the historically preferred number of five- to six-months (SAAR).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/27/23

Return TOC

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



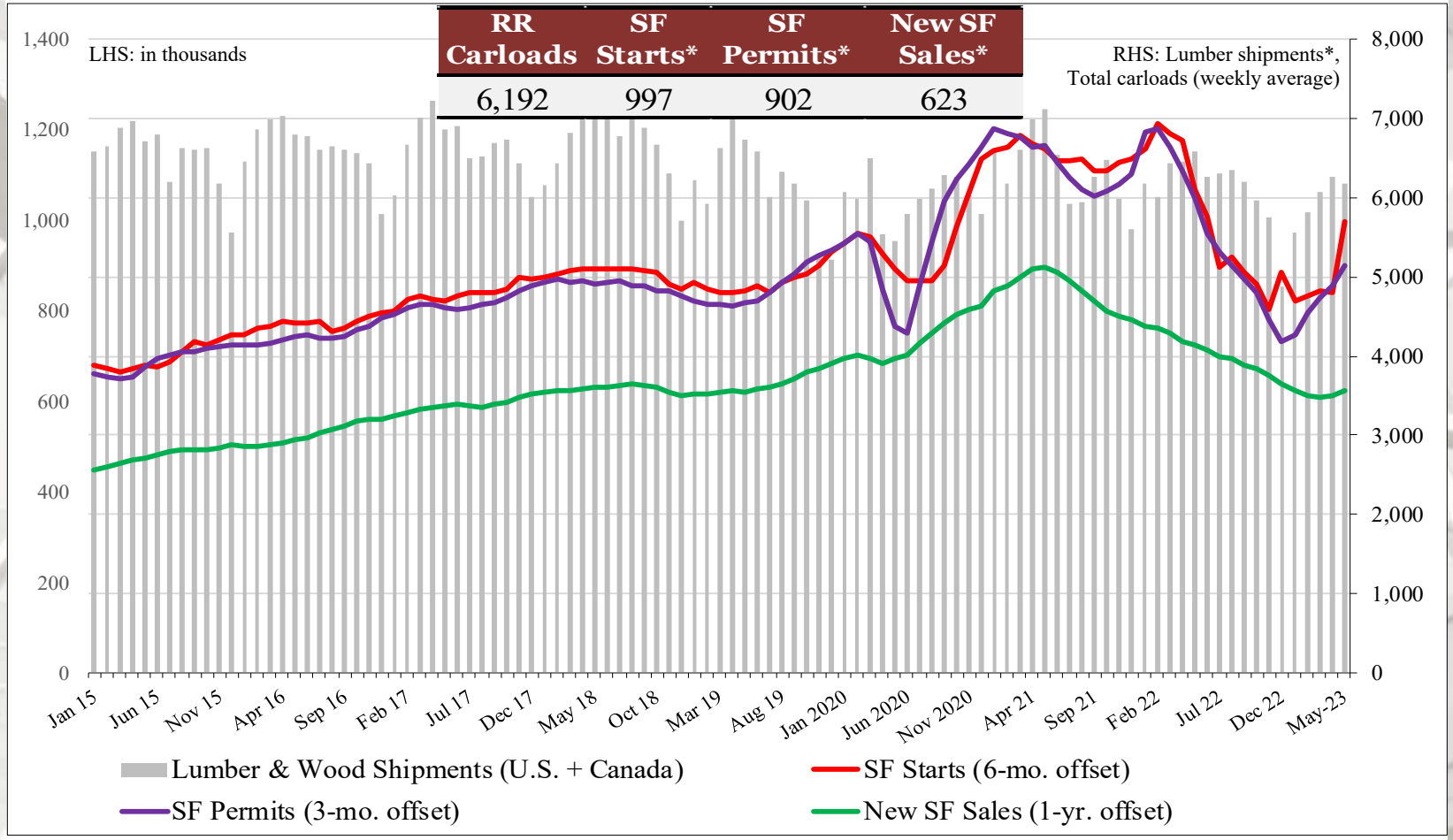
Carloads of Canadian + U.S. lumber and wood shipments to the U.S. are contrasted above to U.S. housing metrics. Annual SF starts, SF Permits, and New sales are compared to total carload lumber and wood shipments. The intent is to discern if lumber shipments relate to future SF starts, SF permits, and 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-May 2022; http://www.census.gov/construction/; 6/20/23 & 6/27/23

Return TOC

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-May 2022; http://www.census.gov/construction/; 6/20/23; & 6/27/23

Return TOC

May 2022
Construction Spending

	Total Private Residential*	SF	MF	Improvement**
May	$857,438	$371,347	$127,655	$358,436
April	$839,363	$365,127	$127,722	$346,514
2022	$969,636	$495,129	$106,054	$368,453
M/M change	2.2%	1.7%	-0.1%	3.4%
Y/Y change	-11.6%	-25.0%	20.4%	-2.7%

* 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.

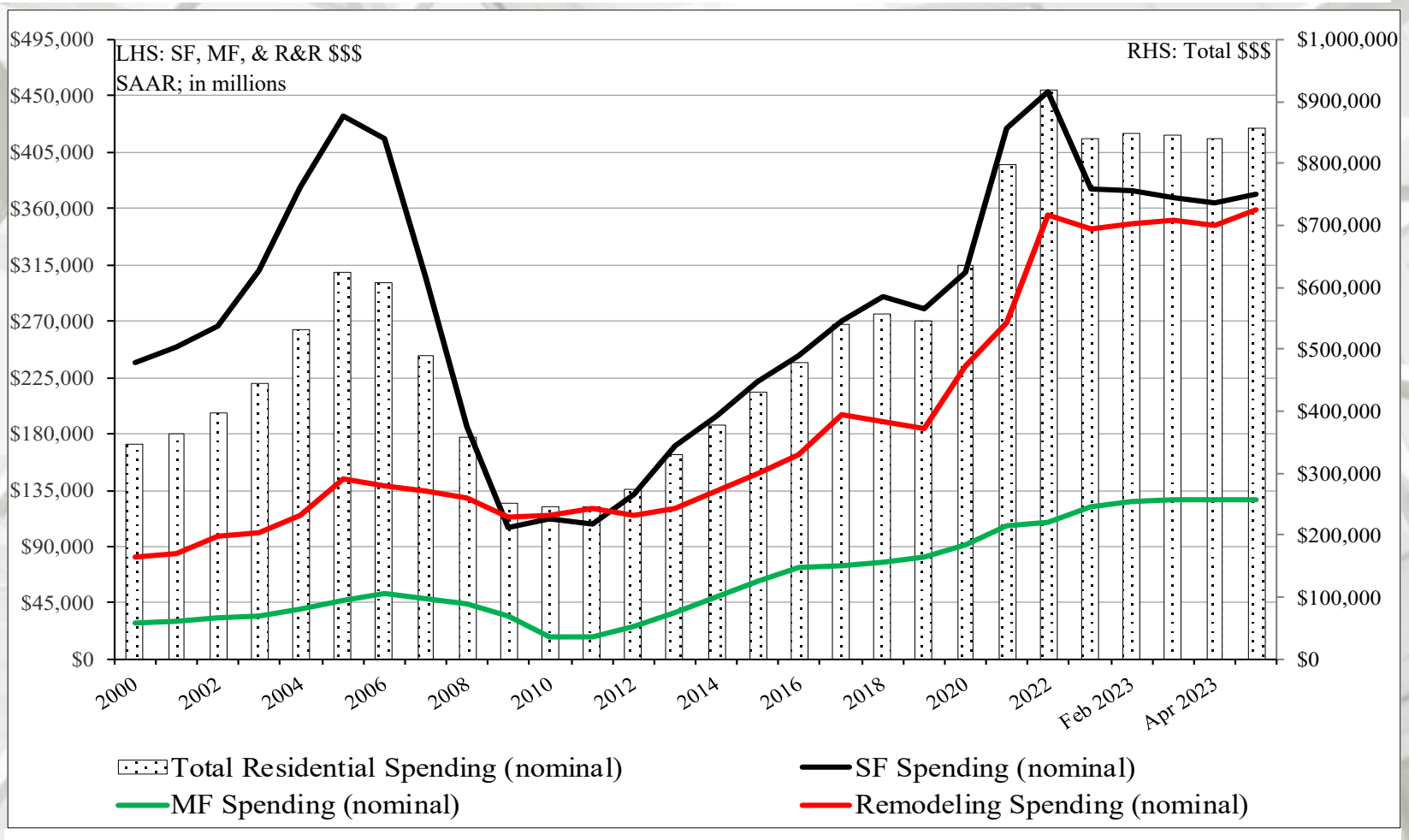
New multi-family includes new apartments and condominiums. The classification excludes residential units in buildings that are primarily nonresidential.

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; 7/3/23

Return TOC

Total Construction Spending (nominal): 2000 – May 2023



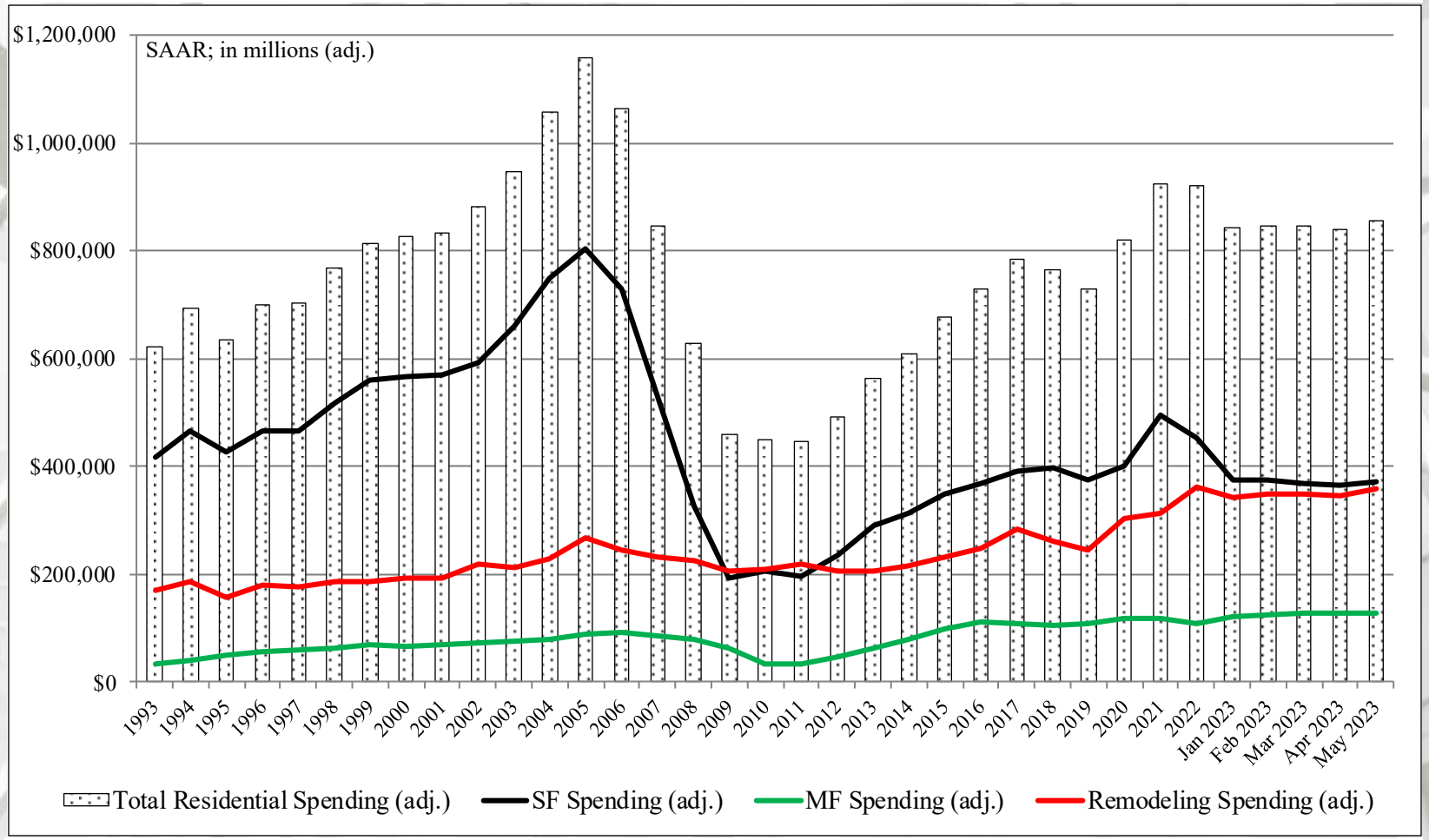
Reported in nominal US$.

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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/3/23

Return TOC

Total Construction Spending (adjusted): 1993 – May 2023

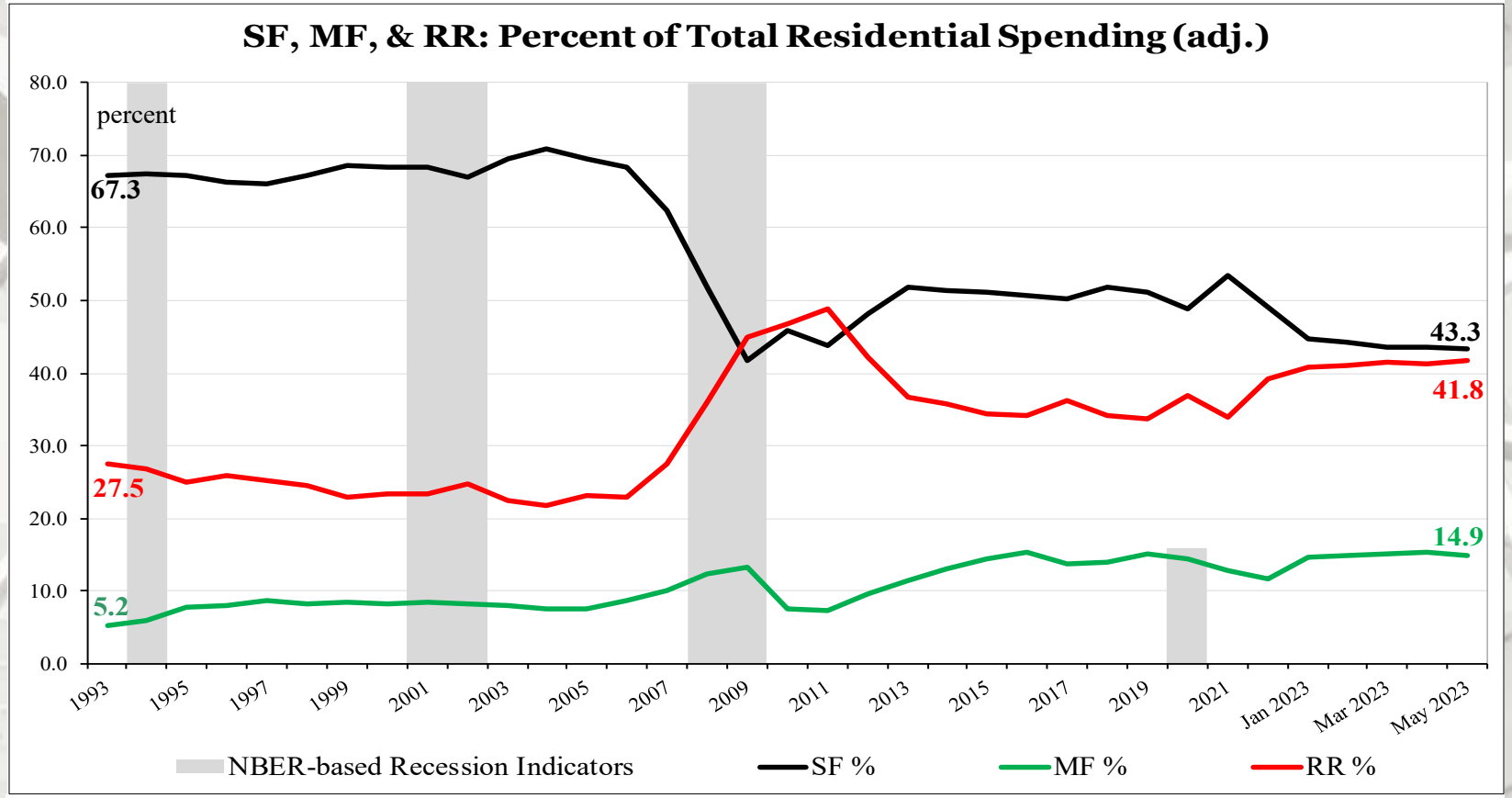


Reported in adjusted $US: 1993 – 2021 (adjusted for inflation, BEA Table 1.1.9); May to May 2022 reported in nominal US$.

Sources: * http://www.bea.gov/iTable/iTable.cfm; 6/29/23; http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/3/23

Return TOC

Construction Spending Shares: 1993 – May 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).

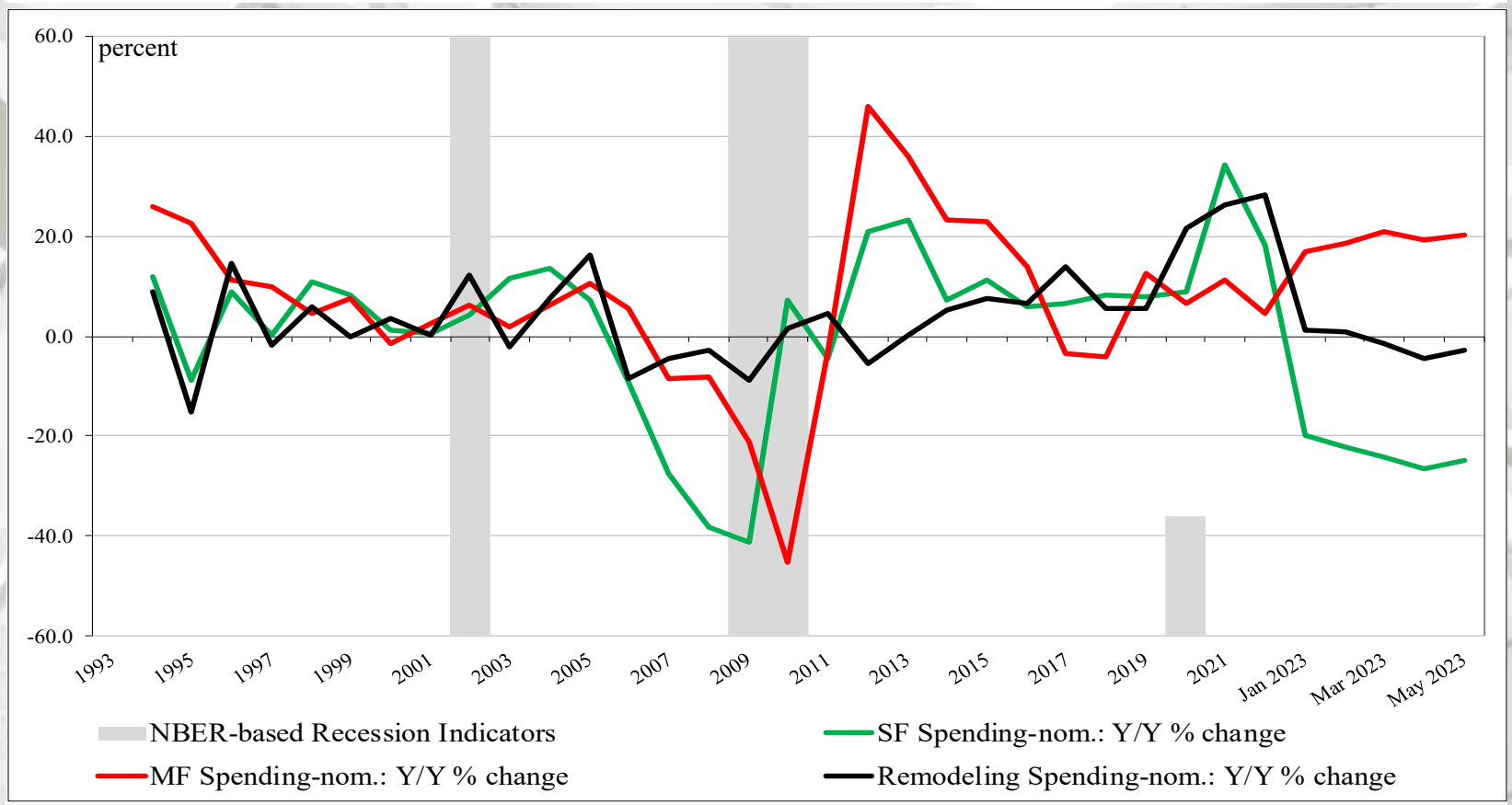
Note: 1993 to 2021 (adjusted for inflation, BEA Table 1.1.9); May 2022 reported in nominal US$.

* 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; 7/3/23 and http://www.bea.gov/iTable/iTable.cfm; 6/29/23

Return TOC

Construction Spending: Y/Y Percentage Change



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

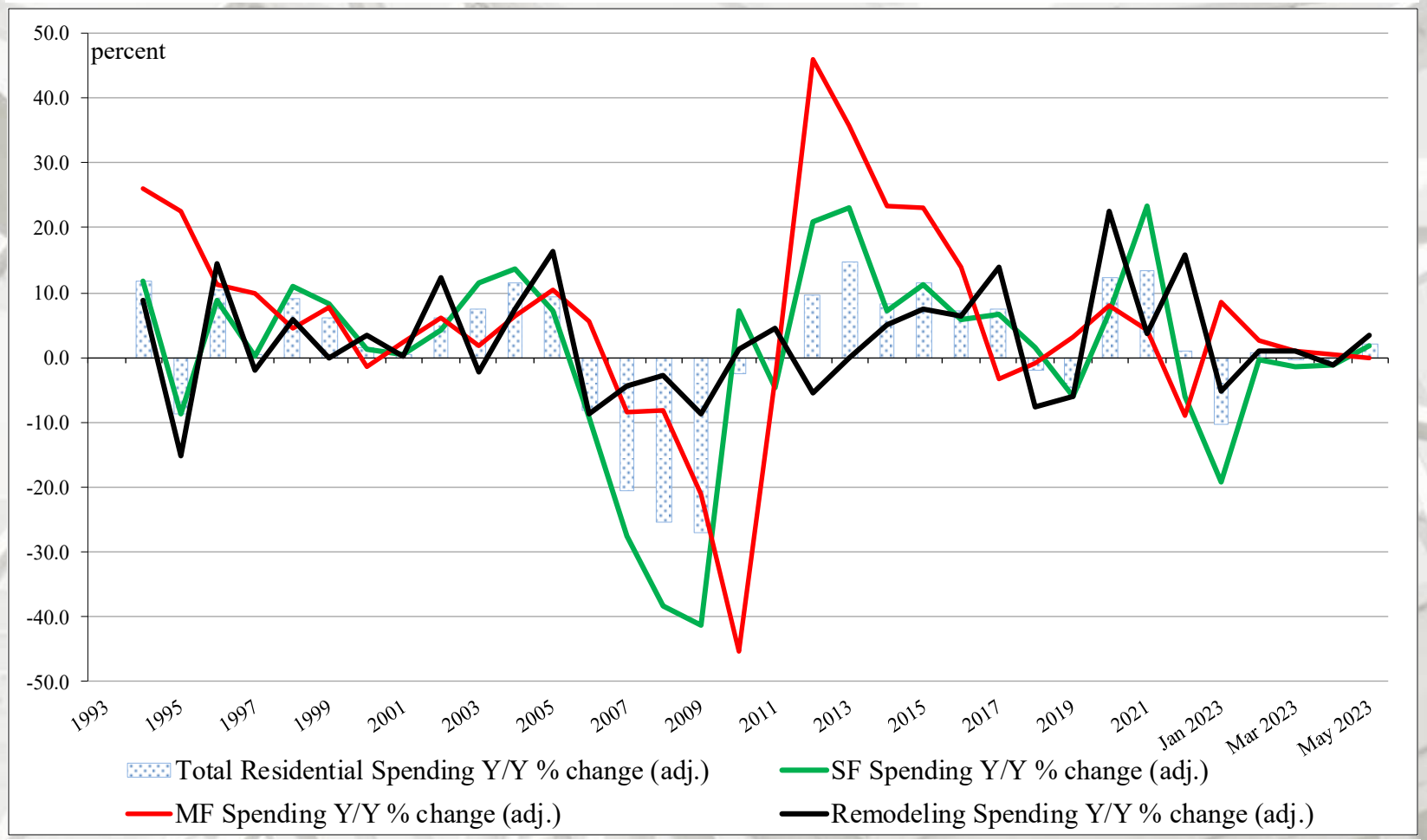
Presented above is the percentage change of Y/Y construction spending. MF expenditures were positive on a percentage basis, year-over-year (May 2023 data reported in nominal dollars).

* 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; 7/3/23 and http://www.bea.gov/iTable/iTable.cfm; 6/29/23

Return TOC

Adjusted Construction Spending: Y/Y Percentage Change



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

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

Sources: http://www.census.gov/construction/c30/pdf/privsa.pdf; 6/3/23 and http://www.bea.gov/iTable/iTable.cfm; 6/29/23

Return TOC

U.S. Construction Spending

Mortgage Bankers Association (MBA)

Chart of the Week

"This week, the U.S. Census Bureau released updated construction spending survey data (https://www.census.gov/construction/c30/current/index.html). Also referred to as the Value of Construction Put in Place (VIP), the survey covers all private residential construction and improvements, non-residential construction, and public construction.

Total construction spending in the U.S. increased by 0.9% from April to May 2023, reaching an annualized $1.926 trillion. It was 2.4% higher than in May 2022 and was driven by non-residential construction that was up by 17.3% (orange line) year over year. Indeed, non-residential VIP growth was in double digits for seven of the 16 categories reported, and manufacturing construction increased by 76.9% year over year.

Last week's Chart of the Week highlighted the reset the office market is going through and the uncertainty about office norms. This week's chart corroborates this view. Office construction spending, represented by the yellow line, hit a high of $97 billion in February 2020. It has plateaued since a period of strong growth in non-residential construction spending.

Public construction (gray line) reached $412 billion in May 2023, up from $367 billion in May 2022, with the largest two categories – Highway and Street, and Educational – increasing 14.2% and 5.9% respectively, year over year.

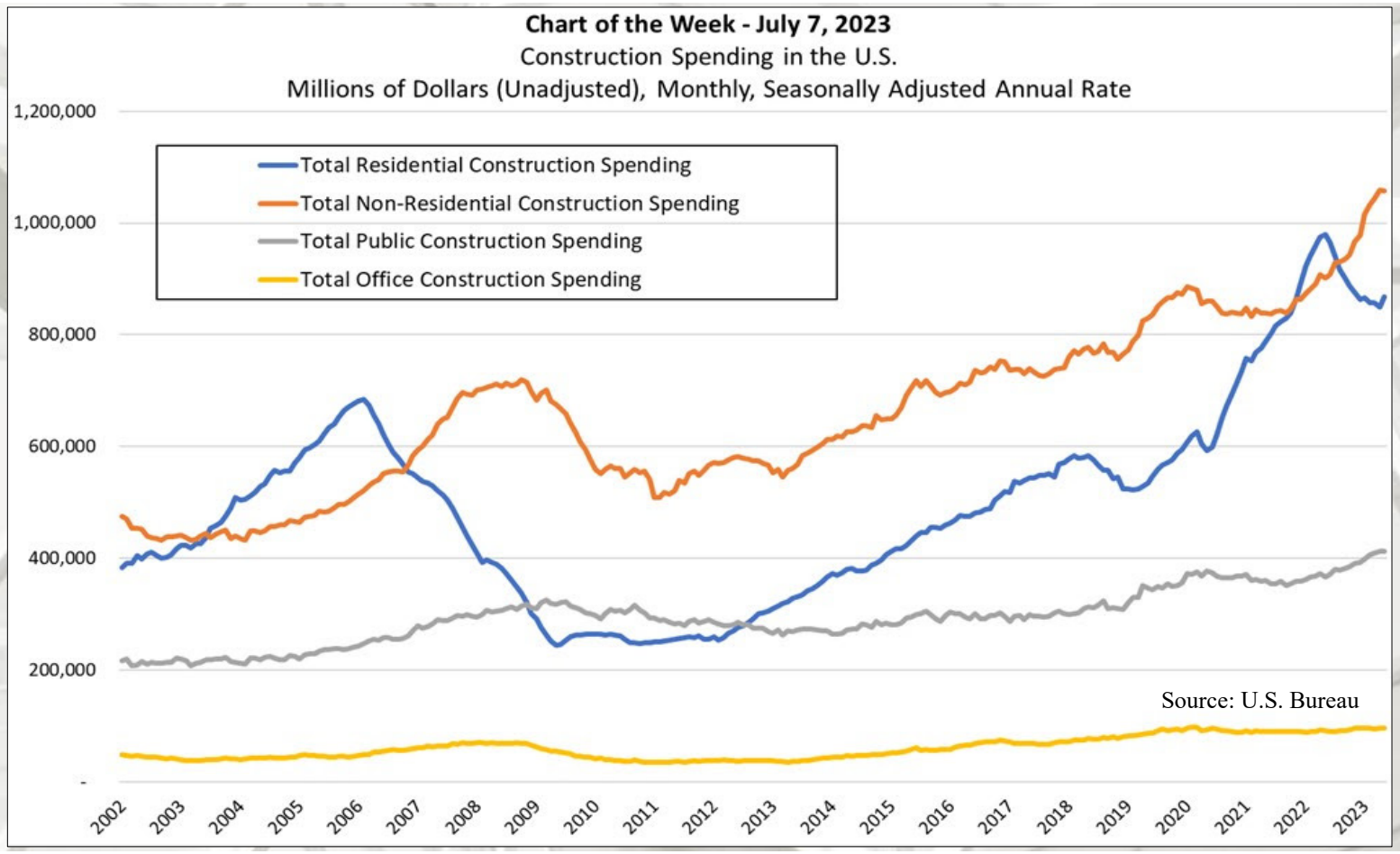
Private residential construction – which makes up 98.8% of total residential construction – gives us a view into new single-family construction, new multifamily construction, and residential improvements. In May, of the $857 billion in private residential construction, $371 billion were in single-family construction, and $128 billion in multifamily construction. This means that $358 billion was spent on residential improvements.

Residential VIP has trended upwards since its trough in the mid $200 billion range from 2010-2012, reaching a high of $979 billion in May 2022, as housing market dynamics changed due to a combination of the pandemic, rapid home price appreciation, and low mortgage rates. It fell precipitously from that high to $849 billion in April but recovered 2.1% to $868 billion in May." – Joel Kan, Associate Vice President of Economic and Industry Forecasting, and Edward Seiler, Associate Vice President for Housing Economics; MBA

Source: https://s3141176.t.en25.com/e/es; 7/7/23

Return TOC

U.S. Construction Spending



Mortgage Bankers Association (MBA)

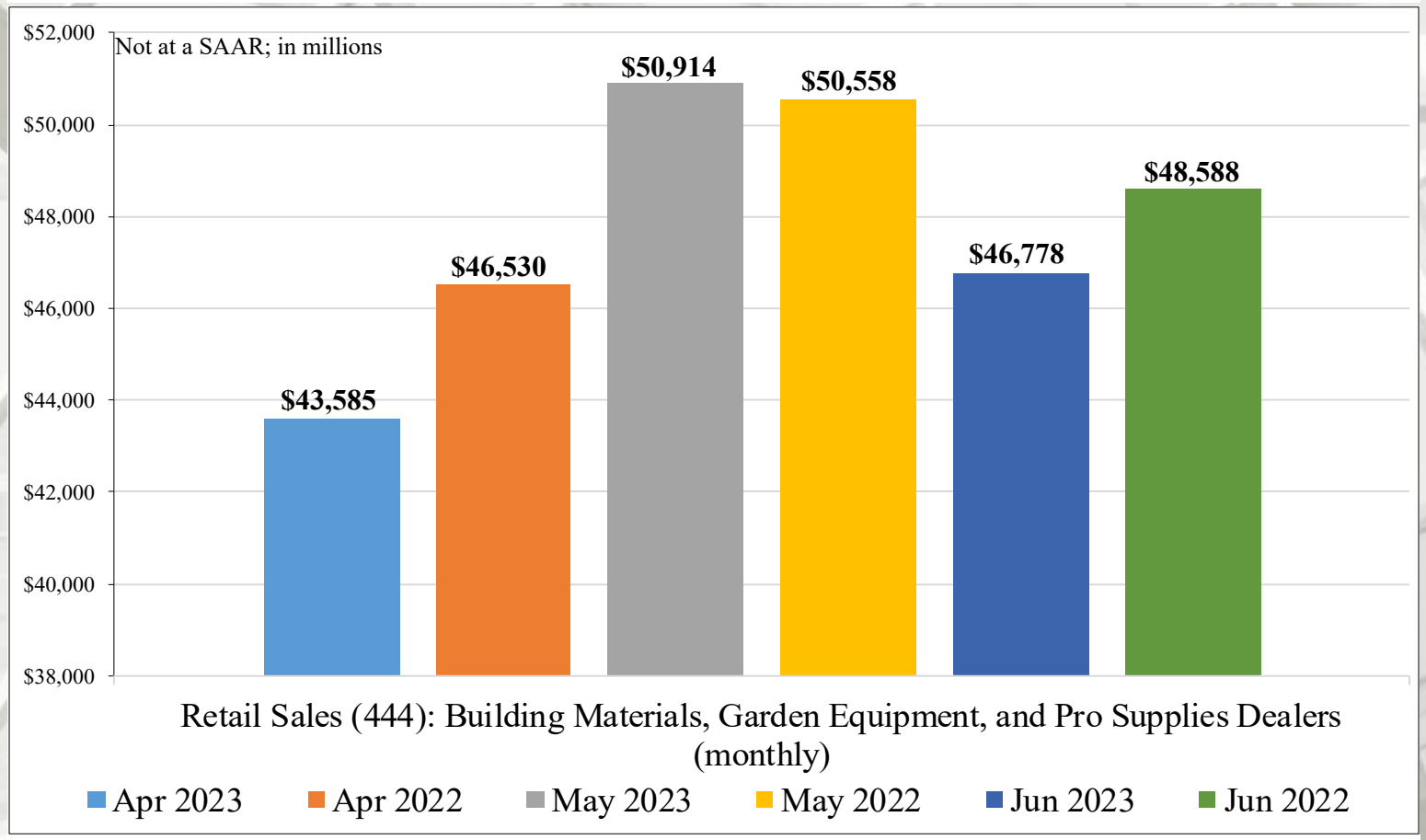
"On the residential side, we expect new construction activity to grow over the next two years, driven by resilient housing demand, a shortage of entry-level housing, and an aging housing stock in need of replenishment." – Joel Kan, Associate Vice President of Economic and Industry Forecasting, and Edward Seiler, Associate Vice President for Housing Economics; MBA

Source: https://s3141176.t.en25.com/e/es; 7/7/23

Return TOC

Remodeling

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



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

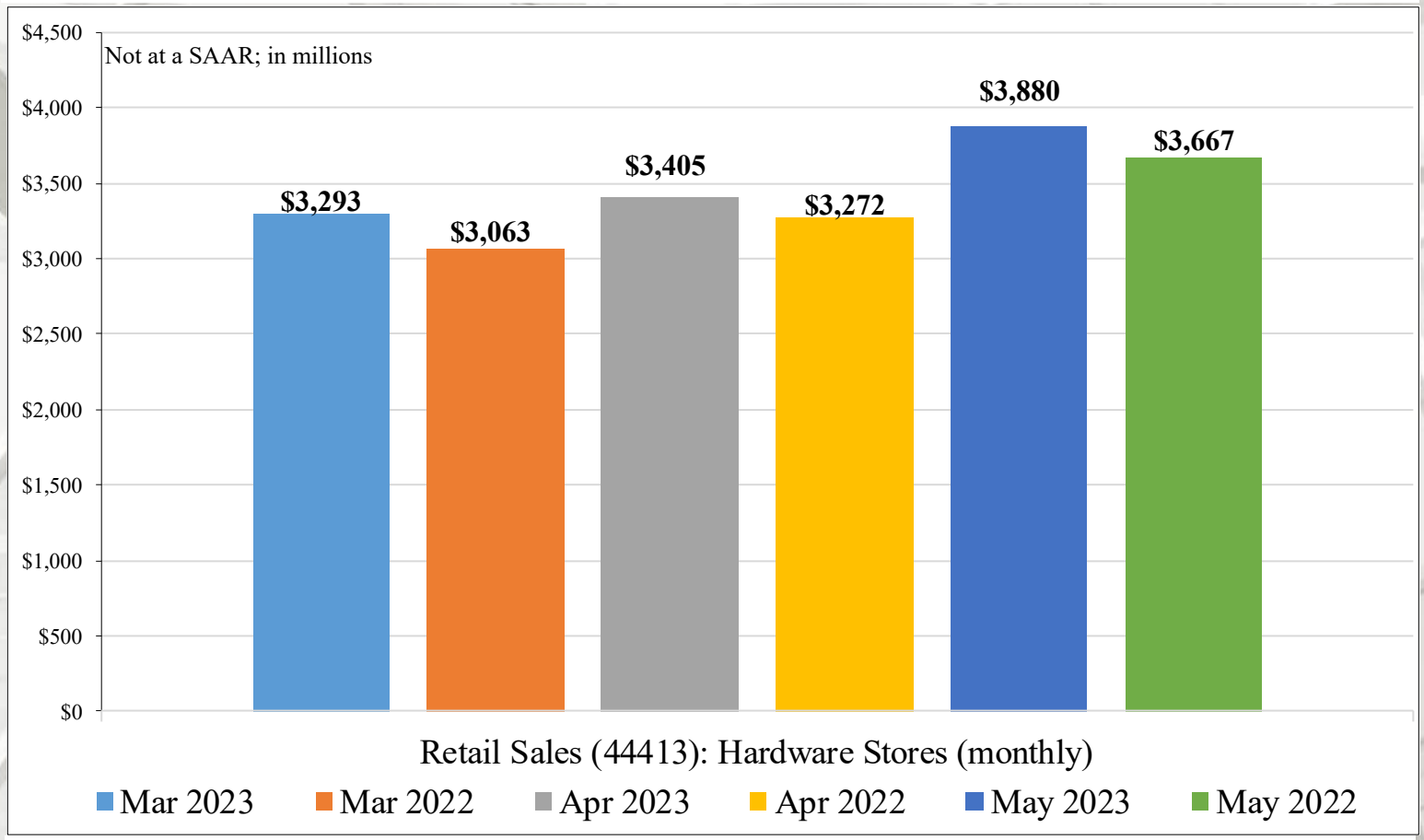
NAICS 444 sales decreased 8.1% in June 2023 from June 2023 and decreased 3.7% Y/Y (on a non-adjusted basis).

Source: https://www.census.gov/retail/index.html; 7/18/23

Return TOC

Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales increased 14.0% in May 2023 from April 2023 and improved 5.8% in May 2023 from May 2022 (on a non-adjusted basis).

Source: https://www.census.gov/retail/index.html; 7/18/23

Return TOC

Remodeling

John Burns Research and Consulting, LLC

$12 Billion Remodeling Boost

"The $490 billion repair and remodeling business (details are available in our Building Product Analysis and Forecast report) just got a 2.5% ($12 billion per year) boost thanks to The Inflation Reduction Act's Federal Tax Credits for energy-saving building products. This is the first major change to federal energy efficiency tax credits available to households in over a decade and will boost demand for remodels involving energy efficiency upgrades to the home.

Here's what has changed:

1. **Maximum tax credit substantially raised:** Cap raised to $1,200 **per year** for qualifying property on or after January 1, 2023, compared to a **lifetime** $500 cap previously.
2. **Now an annual limit, not a lifetime limit.** Energy efficiency tax credits are now available annually for up to $1,200 per year. Savvy households can spread qualifying home improvement spending over a 10-year period, receiving up to $12,000 back in taxes, compared to $500 previously.
3. These tax credits will materially **boost remodeling spending** on building product categories that **improve** the energy efficiency of the home.

Expecting a minimum $12 billion annual uplift to remodeling spending:

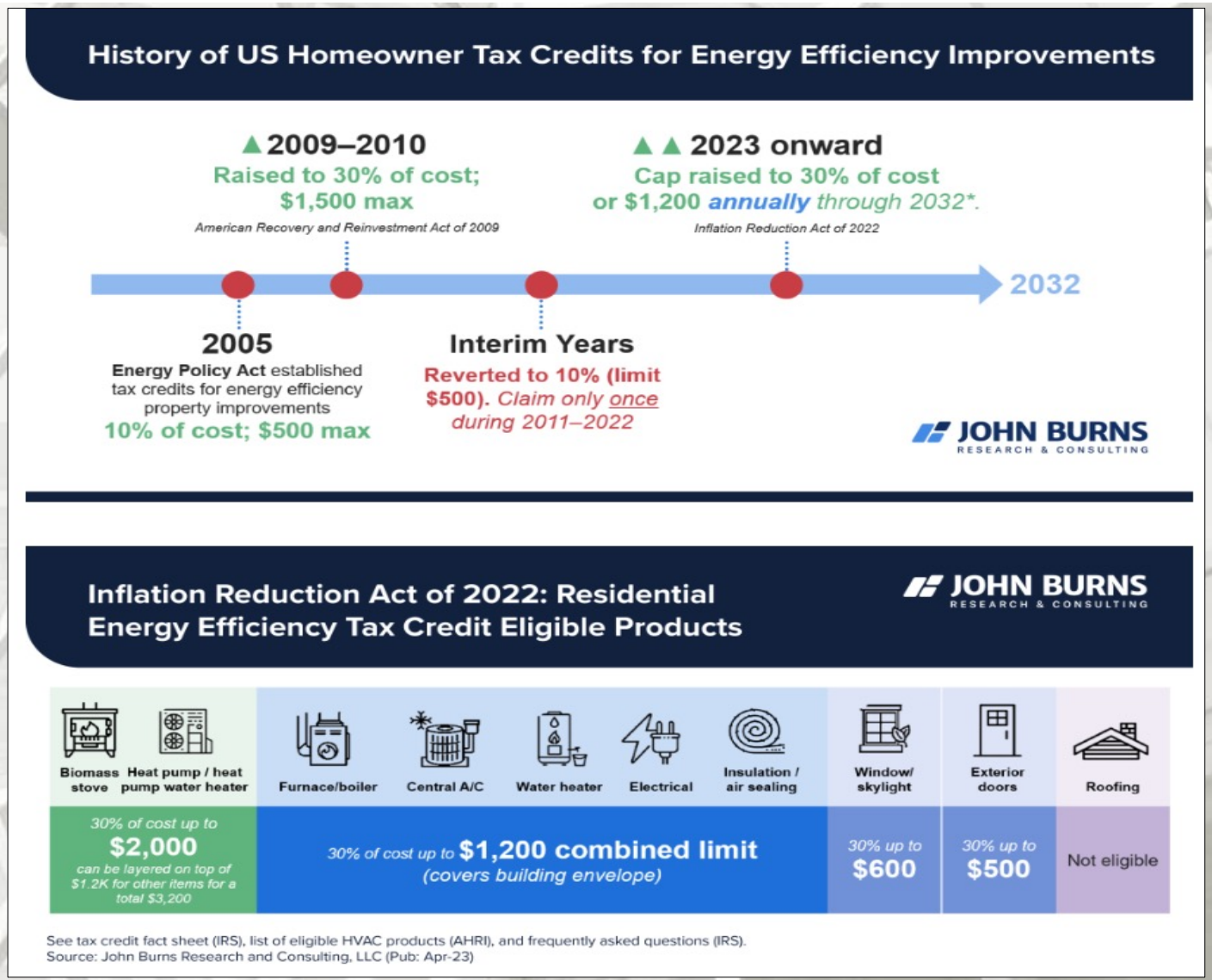
The last time a major federal tax credit was introduced for energy efficiency upgrades was in 2009 as part of the American Recovery and Reinvestment Act. We analyzed the change in the incidence of spending across eligible products before and after the act's introduction. Assuming a similar increase in remodeling activity to that which occurred following the introduction of those tax credits, we forecast a minimum $12 billion annual increase in remodeling spending." – Matt Saunders, Senior Vice President and Elizabeth LaJeunesse, Senior Manager, Research, Building Products; John Burns Research and Consulting, LLC

Source: https://jbrec.com/insights/12-billion-remodeling-boost/; 5/19/23

Return TOC

Remodeling

John Burns Research and Consulting, LLC

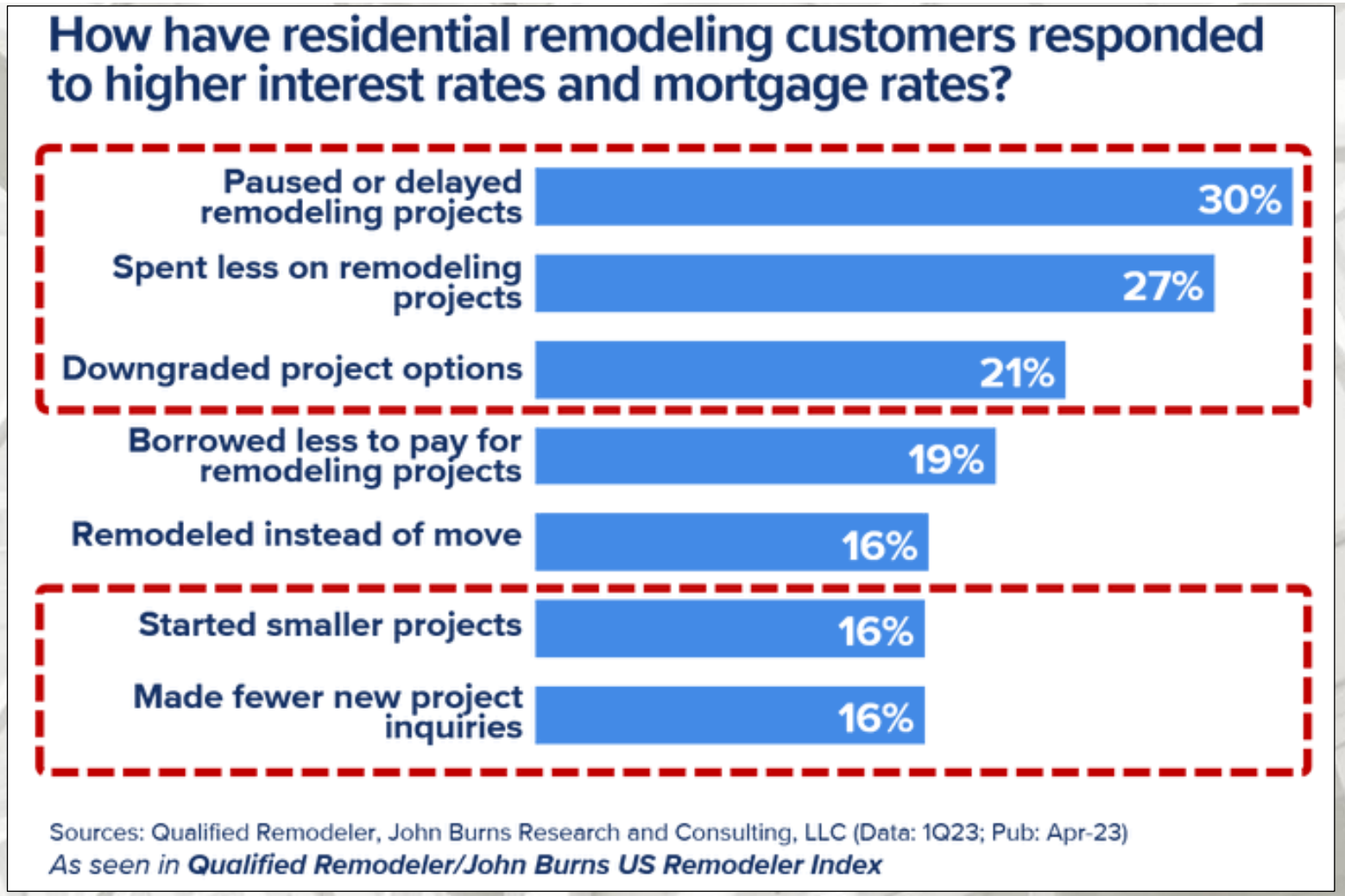


Source: https://jbrec.com/insights/12-billion-remodeling-boost/; 5/19/23

Return TOC

Remodeling

John Burns Research and Consulting, LLC



Source: https://twitter.com/JBREC/status/1674458487194001408; 6/28/23

Return TOC

Remodeling

John Burns Research and Consulting, LLC

Fewer people moving won't crash remodeling.

"A long-standing assumption is that housing turnover is the most important driver of remodeling spending. Industry analysts repeat this idea so frequently that it is almost taken as dogma.

Many analysts will tell you: "As existing home sales go, so goes remodeling spending."

This begs the obvious question: How do improve-in-place remodels (those done by households that stay-put) stack up in importance compared to turnover (recent mover) remodels? Is the balance of importance constant or tilting from one to the other?

Foundation for long-standing belief: Home sellers remodel before putting their home on the market to increase their sale price. And buyers remodel to fix up their newly purchased homes. How does the magnitude of remodeling spending change after this initial move-in period?

Our analysis of the American Housing Survey indicates that for every additional year a household is in the home, average spend per household that remodeled declines by around $100 – a moderate, but not pronounced, decline in remodeling spending each year. All things equal, recent movers pack a larger remodeling punch.

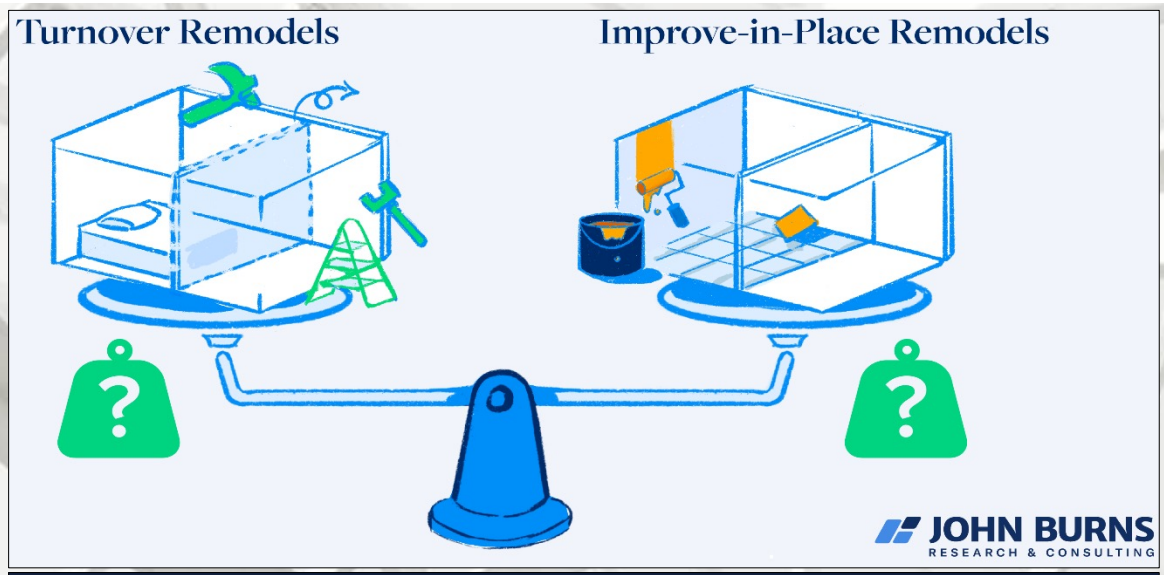
All things are rarely equal. Structural and demographic forces are tilting the balance of importance away from turnover towards improve-in-place remodels.

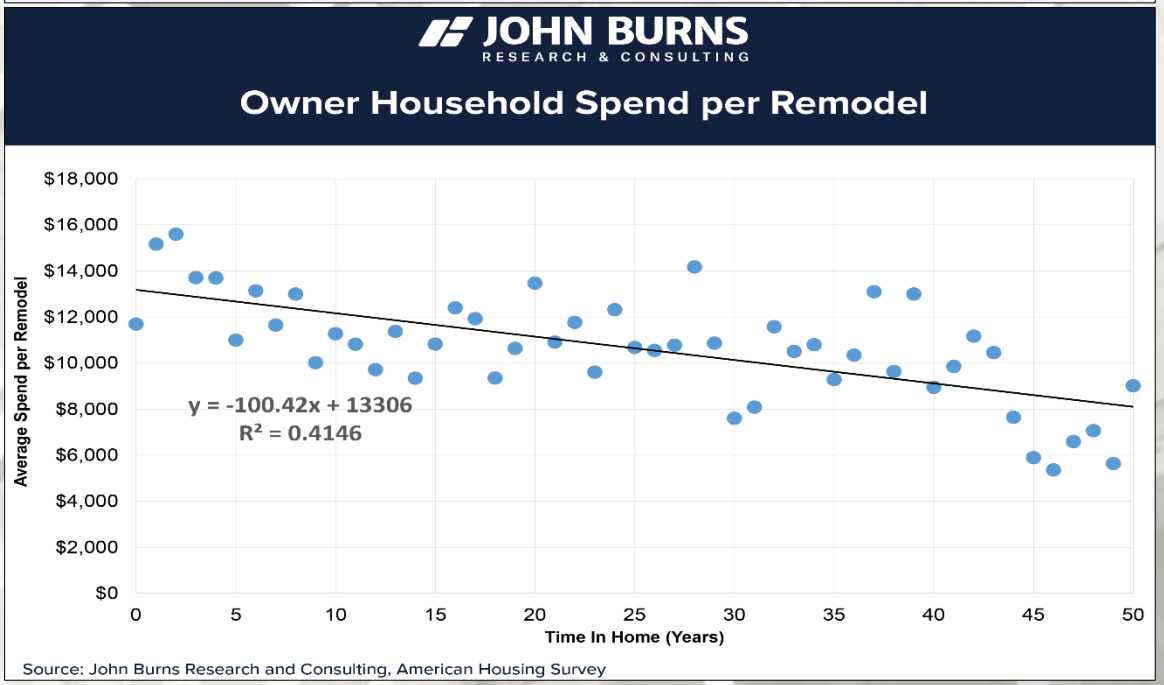
Mobility rates have been declining for decades for younger households (defined as those with a household head less than 55 years old). And older households (household heads greater than 54 years old) consistently move less compared to younger age cohorts across time." – Matt Saunders, Senior Vice President; John Burns Research and Consulting, LLC

Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Remodeling

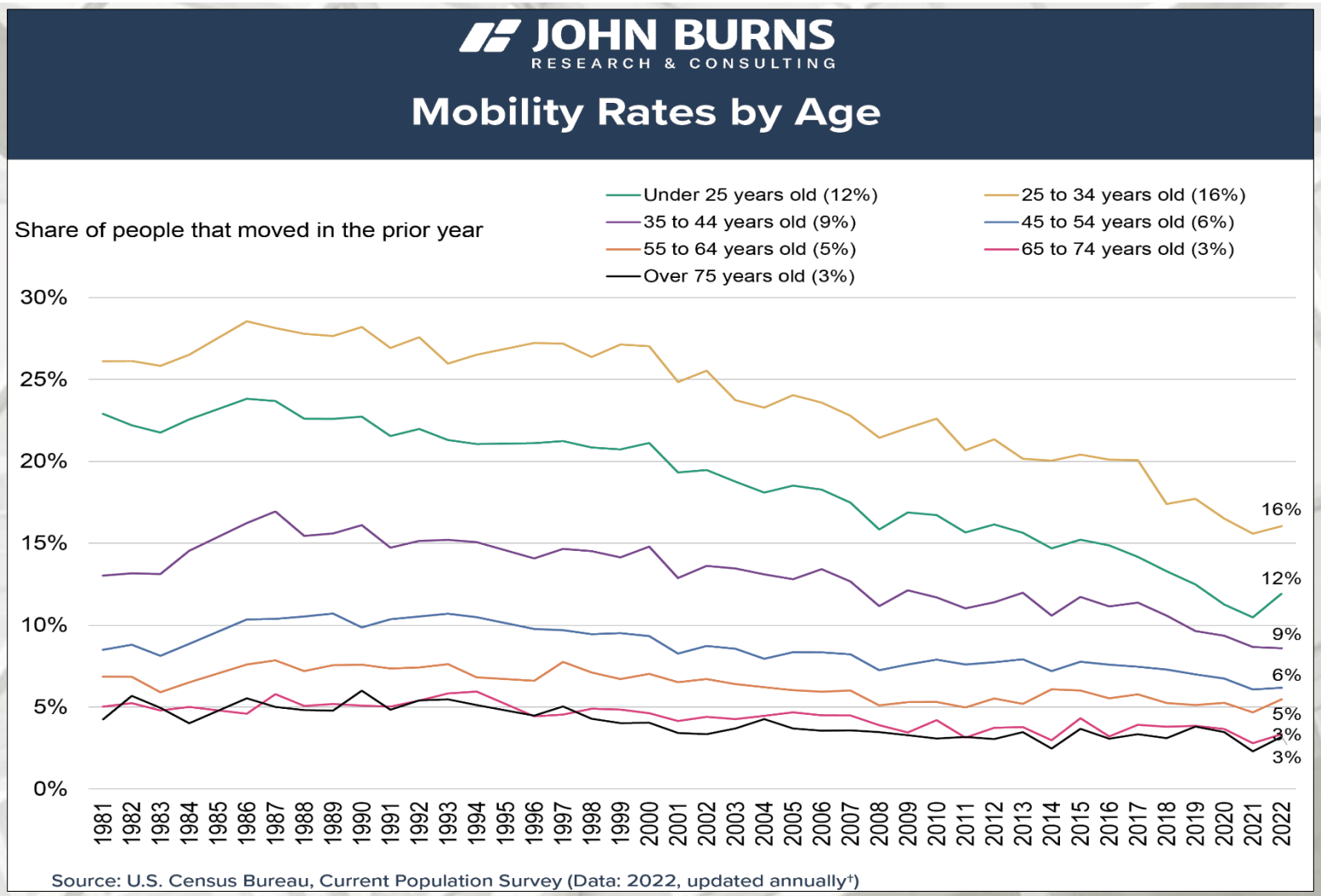




Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

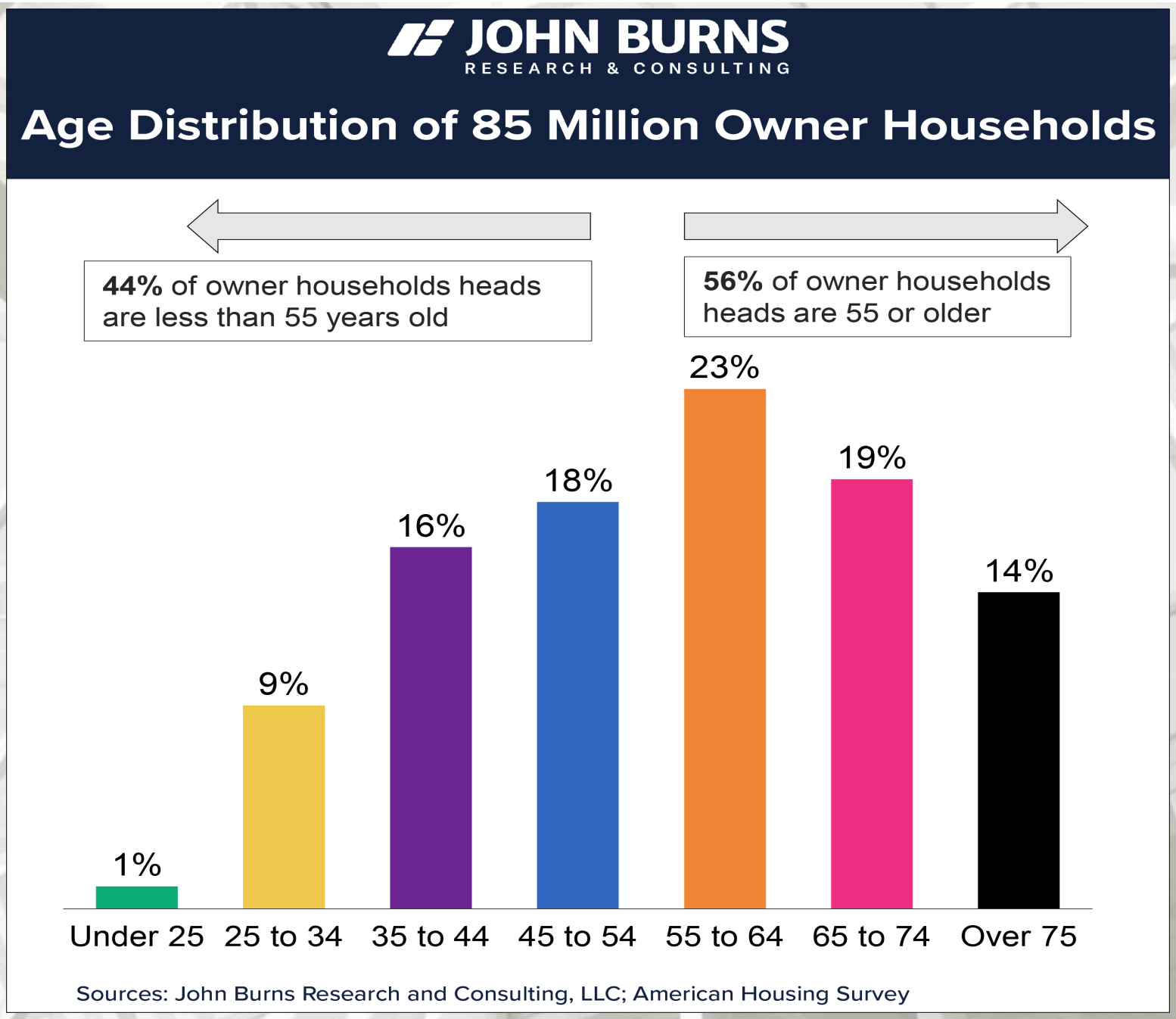
Remodeling



Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Remodeling



Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Remodeling

John Burns Research and Consulting, LLC

Fewer people moving won't crash remodeling.

"**Older households**: For the 56% of the household age distribution with consistently lower mobility rates, aging-in-place remodels drive spending. These older households have built up wealth over their lifetime (both financial and home equity), which is now being used to fund large remodeling projects. Aging-in-place remodels are not associated with turnover.

Younger households: 44% of the household age distribution move less than in prior decades. Today, we estimate that 85% of households have a mortgage rate below 5%. Many of these are younger households who do not want to give up their very low mortgage rates and are remodeling rather than moving.

These structural and demographic forces will continue to shift the balance of importance towards in-place remodels and away from turnover. These trends represent a continuation of turnover playing a lesser role in remodeling spending compared to prior periods previously characterized by higher rates of mobility." – Matt Saunders, Senior Vice President; John Burns Research and Consulting, LLC

Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

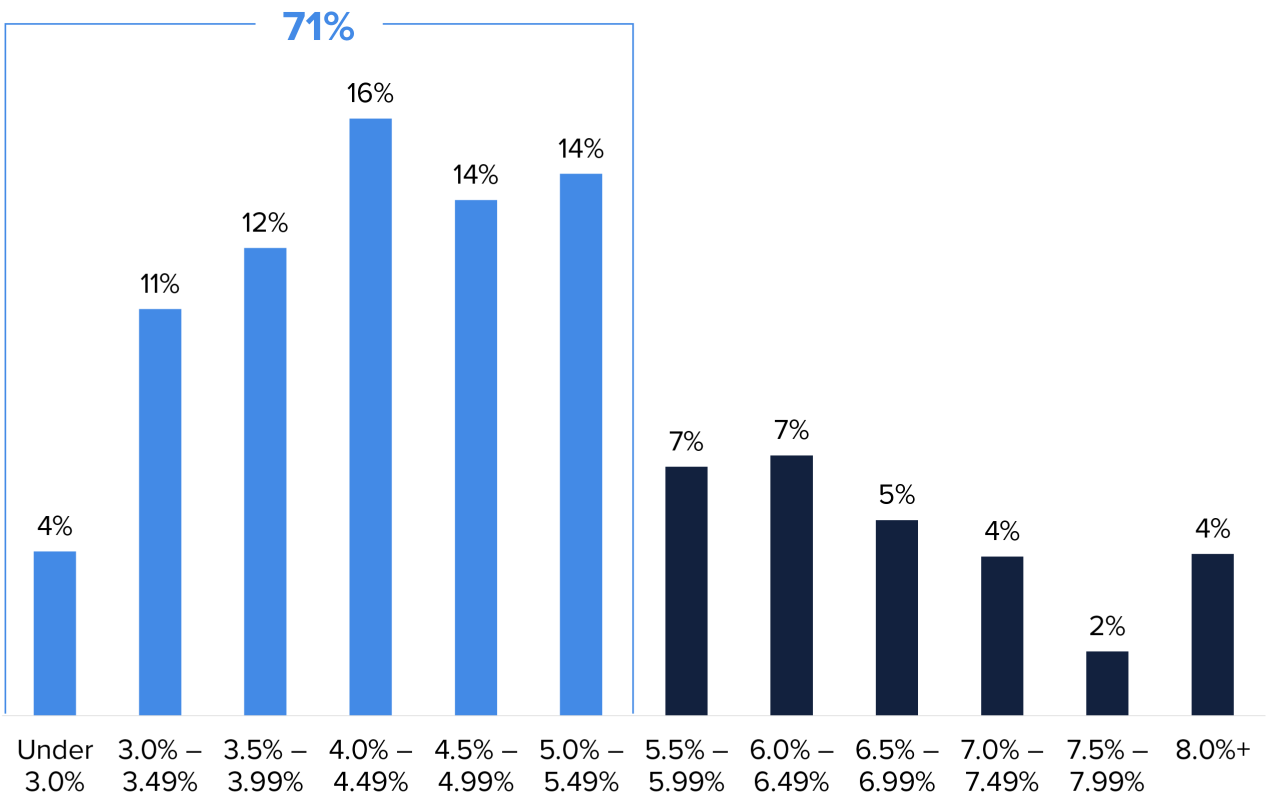
Return TOC

Remodeling

JOHN BURNS RESEARCH & CONSULTING

Highest Acceptable Mortgage Rate for a New Home Purchase

71% of home buyers are not willing to accept a mortgage rate above 5.5%



Source: New Home Trends Institute by John Burns Research & Consulting, LLC survey of 1,325 homeowners and renters age 18+ with household income of $50,000+ (approximate income prior to retirement for retirees). Survey fielded February 23–March 6, 2023.

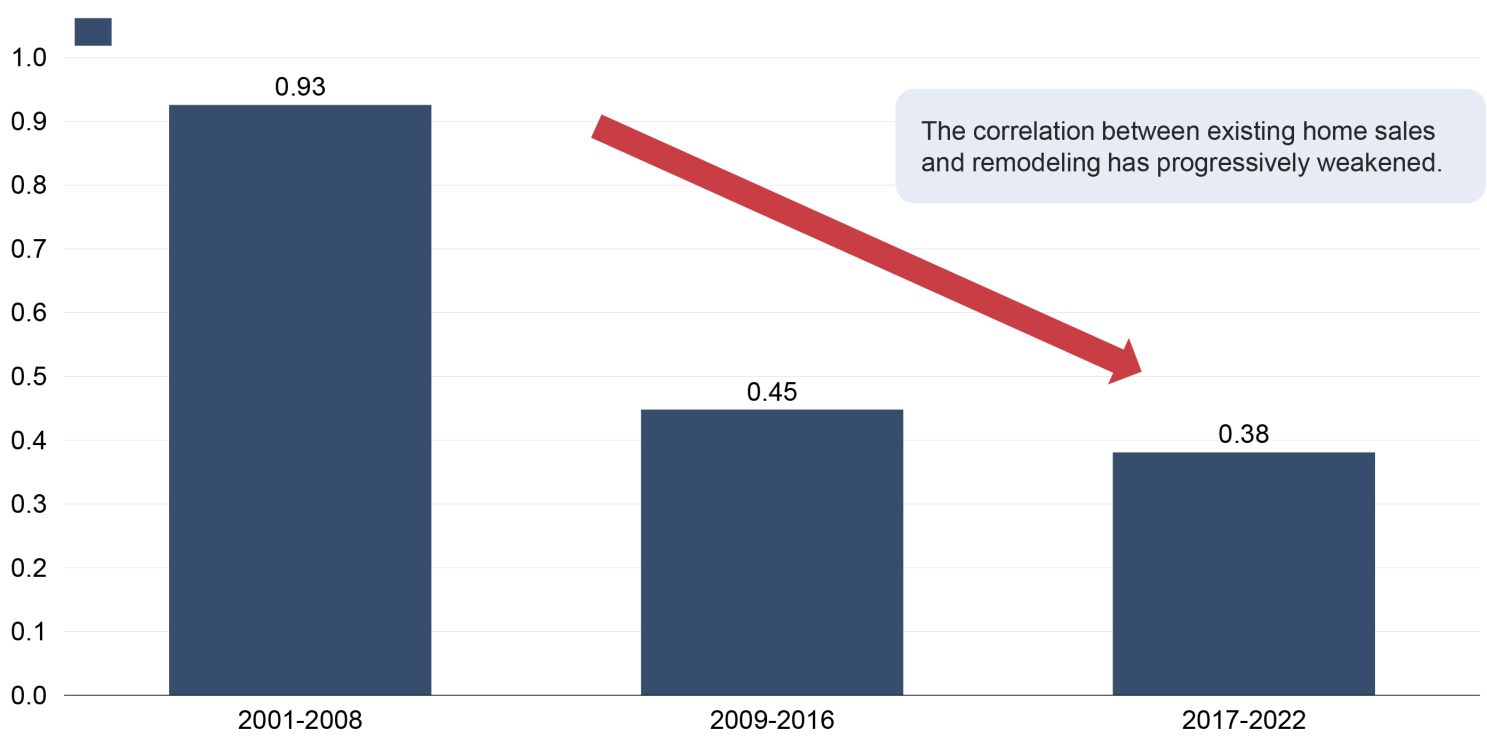
Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Remodeling

JOHN BURNS RESEARCH & CONSULTING

Correlation between Existing Home Sales and Real Remodeling Spending



Sources: John Burns Research and Consulting, LLC; U.S. Census Bureau

Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Remodeling

John Burns Research and Consulting, LLC

Fewer people moving won't crash remodeling.

What are the implications for remodeling and housing?

Building product manufacturers will benefit from steady remodeling demand. Existing home sales are likely to remain restrained by homeowners not selling. Fewer people moving won't crash remodeling. The new normal is for remodeling to grow despite constrained existing home sales.

Home builders will continue to search for elusive cost relief. The remodeling market is around 1.8 times the new construction market for building materials spending. Steady growth in remodeling demand competing for building materials will support stubbornly high building material costs. The ongoing drive to solve for affordability, and lower construction costs, will shape home-building activity for years to come.

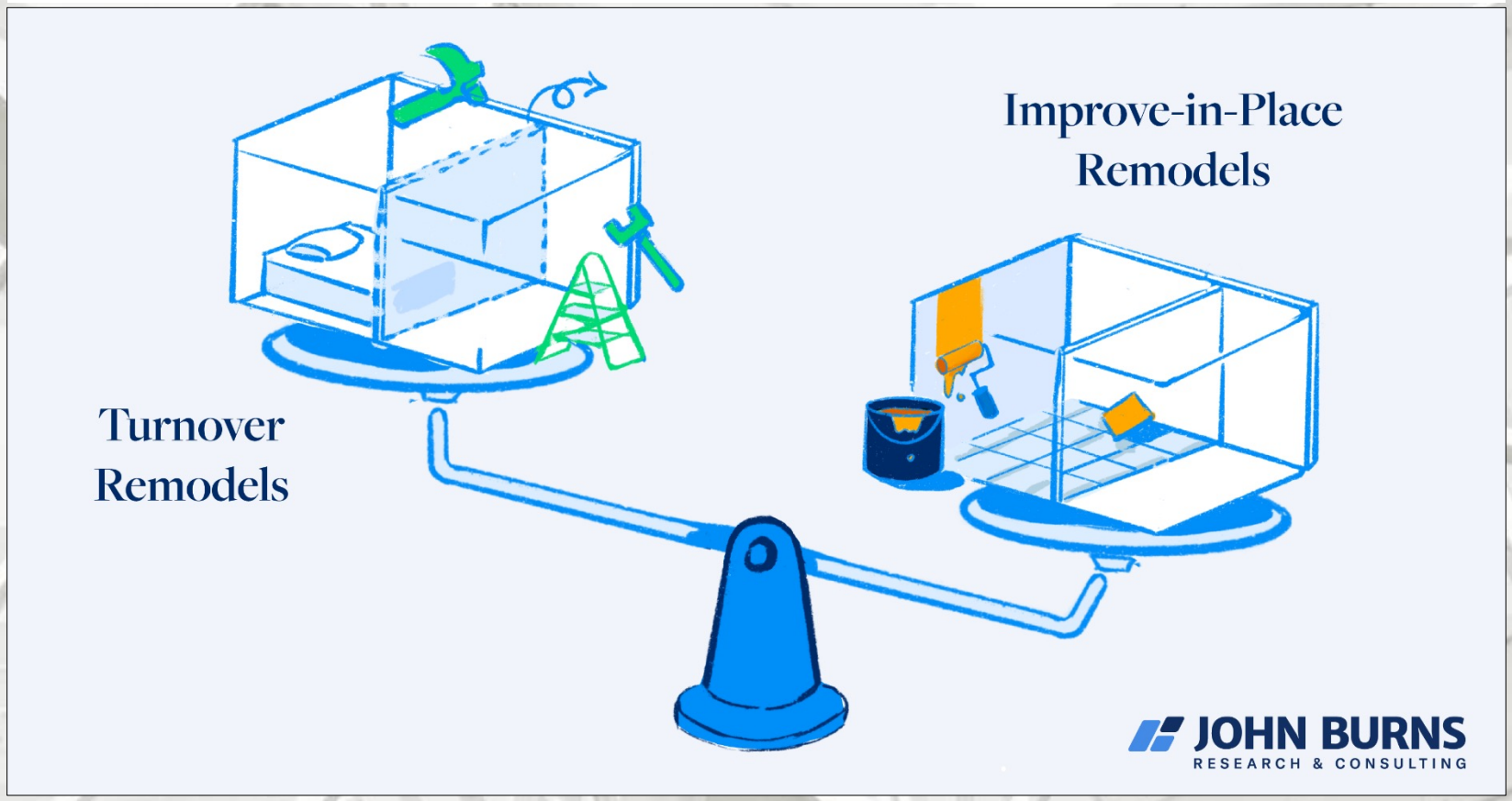
The famed economist John Maynard Keynes once famously quipped, "When the facts change, I change my mind. What do you do?"

The remodeling market has structurally changed to be driven more by improve-in-place remodels. It is time for analysts to update their models and for the building products industry to change its perspective on housing turnover's leading role in remodeling." – Matt Saunders, Senior Vice President; John Burns Research and Consulting, LLC

Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Remodeling



Source: https://jbrec.com/insights/fewer-people-moving-wont-crash-remodeling; 7/13/23

Return TOC

Existing House Sales

National Association of Realtors®

	Existing Sales	Median Price	Month's Supply
May	4,300,000	$396,100	3.0
April	4,290,000	$385,900	2.9
2022	5,400,000	$408,600	2.6
M/M change	0.2%	2.6%	3.4%
Y/Y change	-20.4%	-3.1%	15.4%

All sales data: SAAR

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 6/22/23

Return TOC

Existing House Sales

	NE	MW	S	W
May	500,000	990,000	2,020,000	790,000
April	510,000	1,020,000	1,990,000	770,000
2022	670,000	1,250,000	2,420,000	1,060,000
M/M change	-2.0%	-2.9%	1.5%	2.6%
Y/Y change	-25.4%	-20.8%	-16.5%	-25.5%

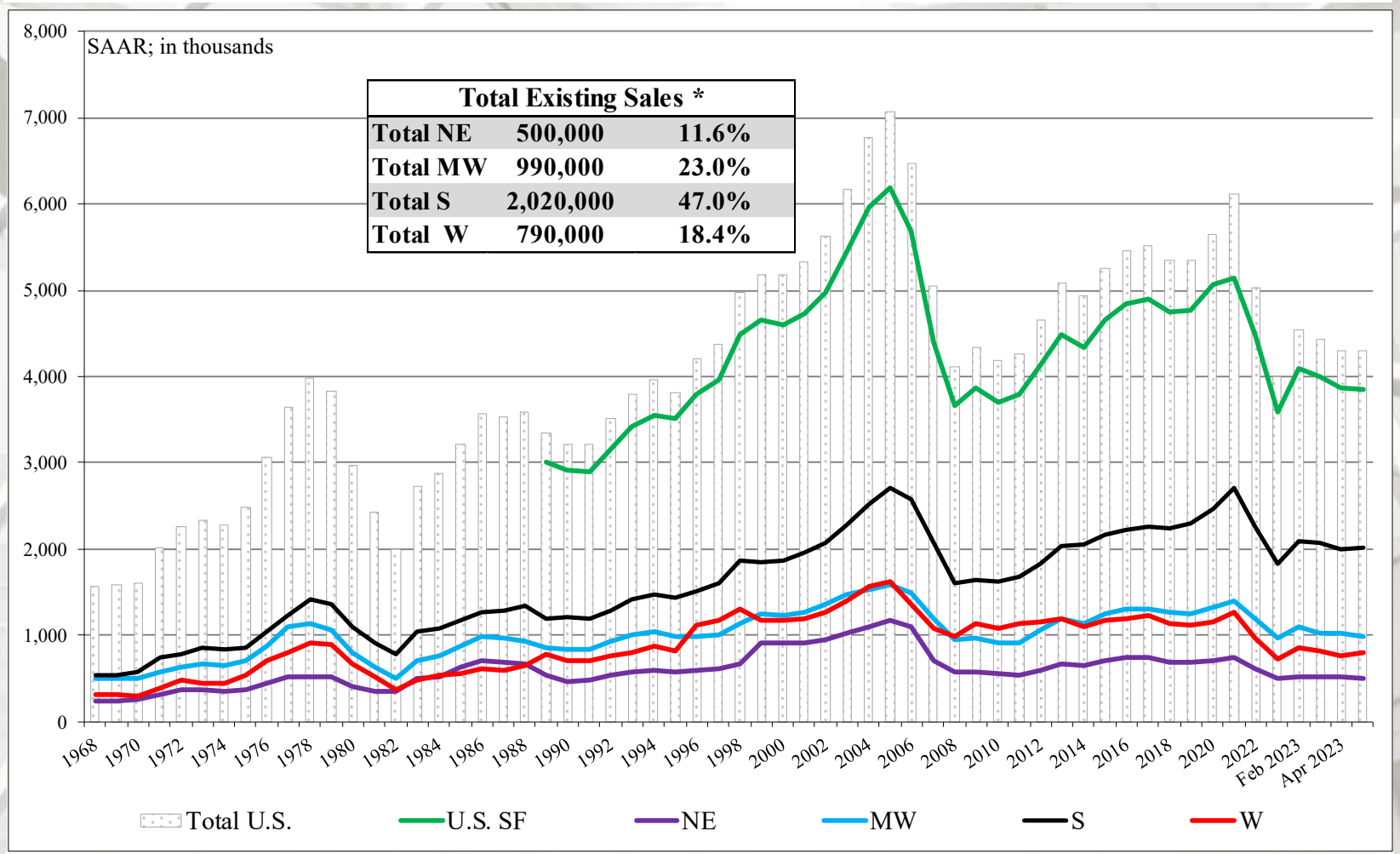
	Existing SF Sales	SF Median Price
May	3,850,000	$401,100
April	3,860,000	$390,200
2022	4,810,000	$415,400
M/M change	-0.3%	2.6%
Y/Y change	-20.0%	-3.4%

All sales data: SAAR.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 6/22/23

Return TOC

Existing House Sales



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

* Percentage of total existing sales.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 6/22/23

Return TOC

Existing House Sales

Exhibit 3: Our economists expect existing home sales will rise to 4.6 million homes on a SAAR basis by 2023Q4

New and existing home sales with GS forecasts

Source: Goldman Sachs Global Investment Research

"Goldman Sachs: Existing home sales won't return to pre-pandemic levels until closer to 2027." – Lance Lambert, Real Estate Editor, Fortune Magazine

Source: https://twitter.com/NewsLambert/status/1679218273714413569; 7/12/23

Return TOC

U.S. Housing Prices

Federal Housing Finance Agency

U.S. House Price Index

FHFA House Price Index Up 0.7 Percent in April; Up 3.1 Percent from Last Year

Significant Findings

"U.S. house prices rose in April, up **0.7 percent** from March, according to the Federal Housing Finance Agency (FHFA) seasonally adjusted monthly House Price Index (HPI®). House prices rose **3.1 percent** from April 2022 to April 2023. The previously reported **0.6 percent** increase in March was revised downward to **0.5 percent**.

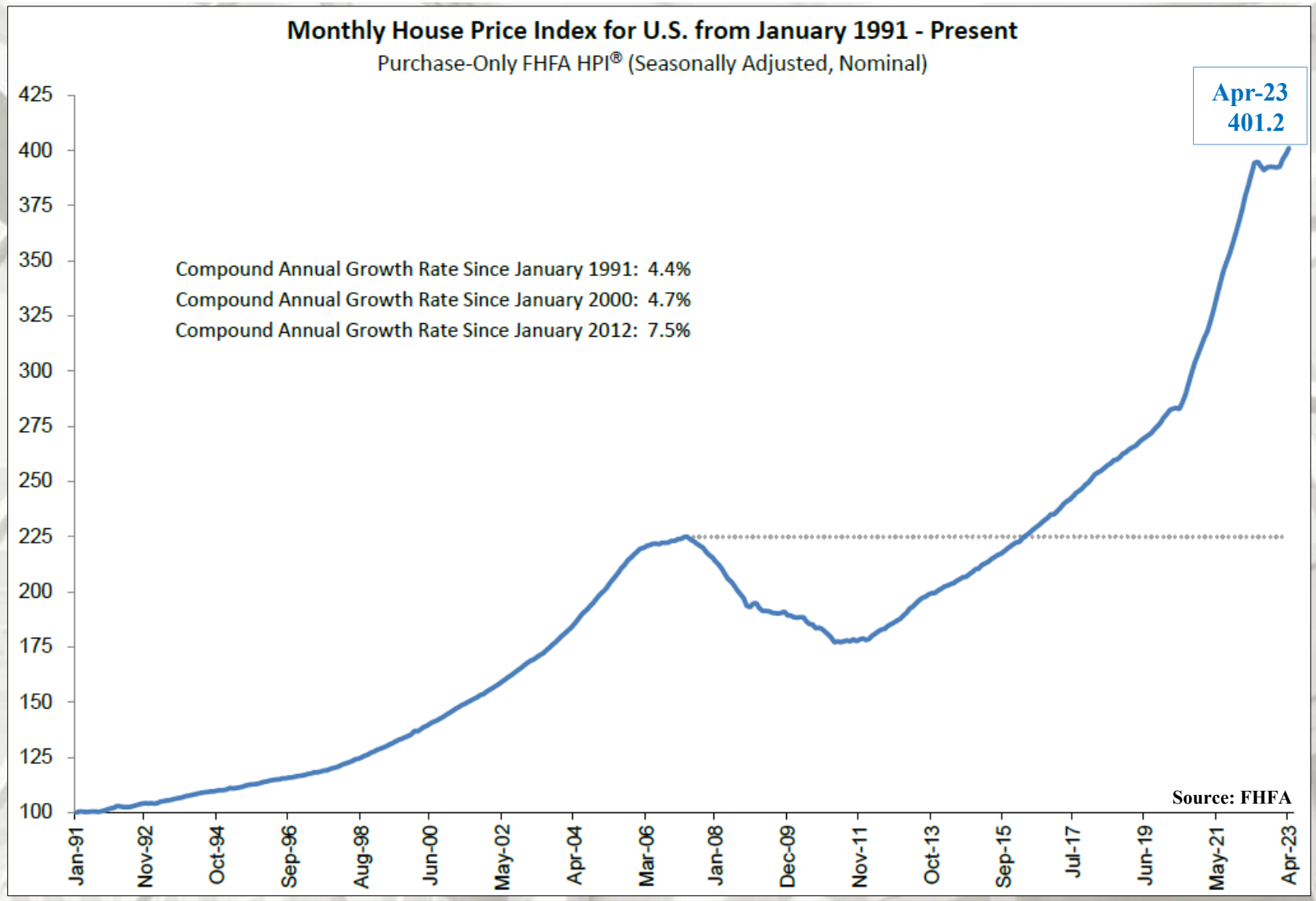
For the nine census divisions, seasonally adjusted monthly price changes from March 2023 to April 2023 ranged from **+0.1 percent** in the Pacific division to **+2.4 percent** in the New England division. The 12-month changes ranged from **-3.8 percent** in the Pacific division to **+6.1 percent** in the East South Central division." – Adam Russell, FHFA

"U.S. house prices generally increased modestly moderately in April. However, on a year-over-year basis, house prices in some regions of the country continued to decline." – Dr. Nataliya Polkovnichenko, Supervisory Economist, Division of Research and Statistics, FHFA

Source: https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-HPI-Up-0pt7-Percent-in-April-Up-3pt1-Percent-from-Last-Year.aspx; 6/27/23

Return to TOC

U.S. Housing Prices



Source: https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-HPI-Up-0pt7-Percent-in-April-Up-3pt1-Percent-from-Last-Year.aspx; 6/27/23

Return to TOC

U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Rebound Continued in April

"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 for April 2023 show all 20 major metro markets again reported month-over-month price increases with gains accelerating in 12 markets. More than 27 years of history are available for the data series and can be accessed in full by going to www.spglobal.com/spdji/en/index-family/indicators/sp-corelogic-case-shiller.

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 -0.2% annual decrease in April, down from a gain of 0.7% in the previous month. The 10-City Composite showed a decrease of -1.2%, down from the -0.7% decrease in the previous month. The 20-City Composite posted a -1.7% year-over-year loss, down from -1.1% in the previous month.

Miami, Chicago, and Atlanta reported the highest year-over-year gains among the 20 cities in April. Miami held the top spot again with a 5.2% year-over-year price increase, while Chicago broke into the top three in second with a 4.1% increase, and Atlanta reclaiming third over Charlotte with a 3.5% increase. There are 17 of 20 cities reporting lower prices in the year ending April 2023 versus the year ending March 2023, with Boston, San Francisco and Cleveland showing slight increases of 0.1%, 0.1% and 0.9%, respectively.

Month-Over-Month

Before seasonal adjustment, the U.S. National Index posted a 1.3% month-over-month increase in April, while the 10-City and 20-City Composites both posted increases of 1.7%. After seasonal adjustment, the U.S. National Index posted a month-over-month increase of 0.5%, while the 10-City Composite gained 1.0% and 20-City Composites posted an increase of 0.9%." – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

Source: https://www.spglobal.com/spdji/en/index-announcements/article/sp-corelogic-case-shiller-index-rebound-continued-in-march/; 6/27/23

Return to TOC

U.S. Housing Prices

S&P CoreLogic Case-Shiller Index

Analysis

"The U.S. housing market continued to strengthen in April 2023. Home prices peaked in June 2022, declined until January 2023, and then began to recover. The National Composite rose by 1.3% in April (repeating March's performance), and now stands only 2.4% below its June 2022 peak. Our 10- and 20-CityComposites both gained 1.7% in April.

The ongoing recovery in home prices is broadly based. Before seasonal adjustments, prices rose in all 20 cities in April (as they had also done in March). Seasonally adjusted data showed rising prices in 19 cities in April (versus 14 in March).

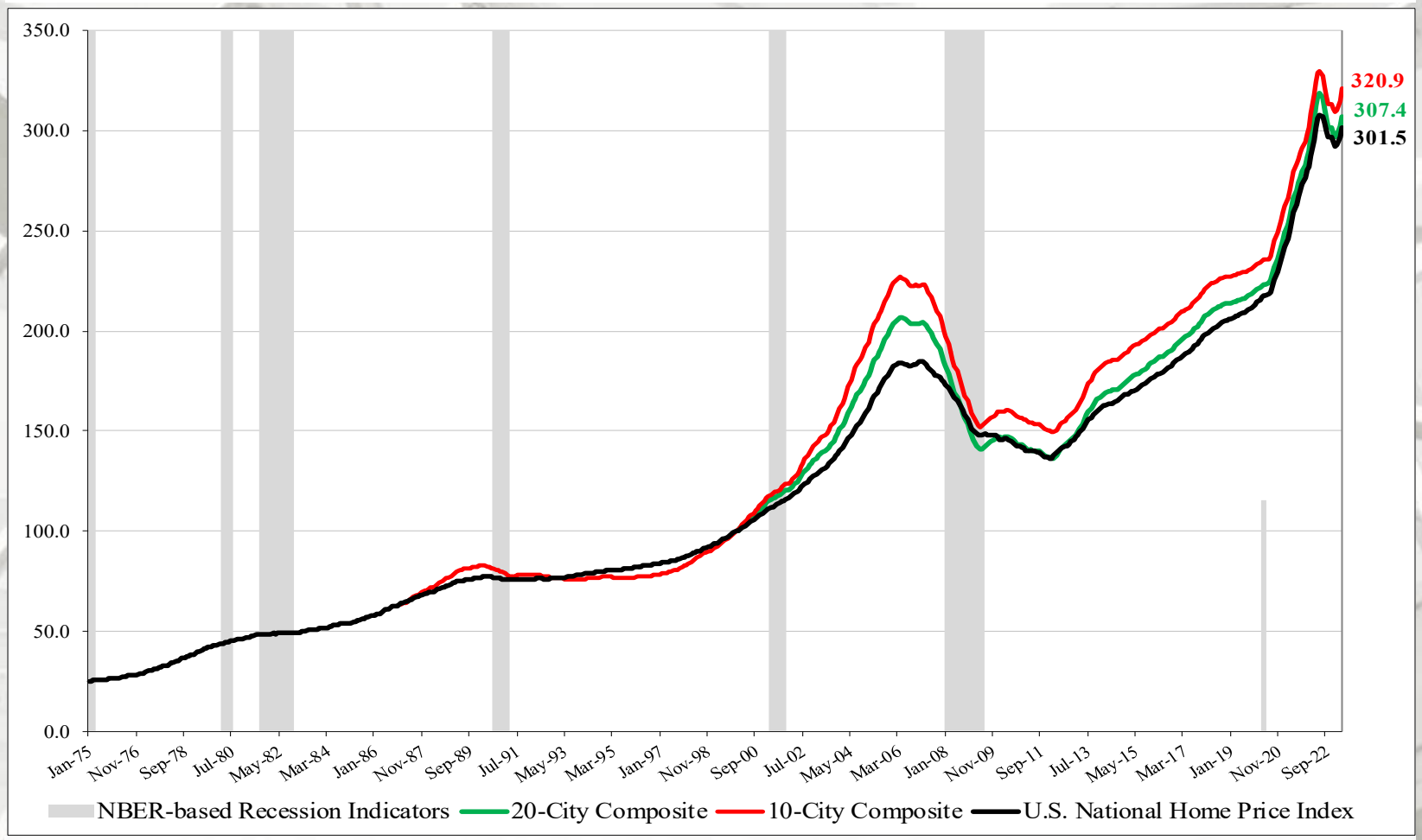
On a trailing 12-month basis, the National Composite is 0.2% below its April 2022 level, with the 10-and 20-City Composites also negative on a year-over-year basis, but regional differences continue to be striking. Miami's 5.2% gain made it the best-performing city for the ninth consecutive month, but in April Chicago toddled into second place with a 4.1% gain. Atlanta (+3.5%) and Charlotte (+3.4%) round out the top four. The next three positions are occupied by New York, Cleveland, and then perennial medalist Tampa, indicating a remarkable diversity among the top performers. At the other end of the scale, however, the worst eight performers are all in the Mountain or Pacific time zones, with Seattle (-12.4%) and San Francisco (-11.1%) at the bottom. The Southeast (+3.6%) continues as the country's strongest region, while the West (-6.9%) remains the weakest.

"If I were trying to make a case that the decline in home prices that began in June 2022 had definitively ended in January 2023, April's data would bolster my argument. Whether we see further support for that view in coming months will depend on the how well the market navigates the challenges posed by current mortgage rates and the continuing possibility of economic weakness." – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

Source: https://www.spglobal.com/spdji/en/index-announcements/article/sp-corelogic-case-shiller-index-rebound-continued-in-march/; 6/27/23

Return to TOC

S&P/Case-Shiller Home Price Indices

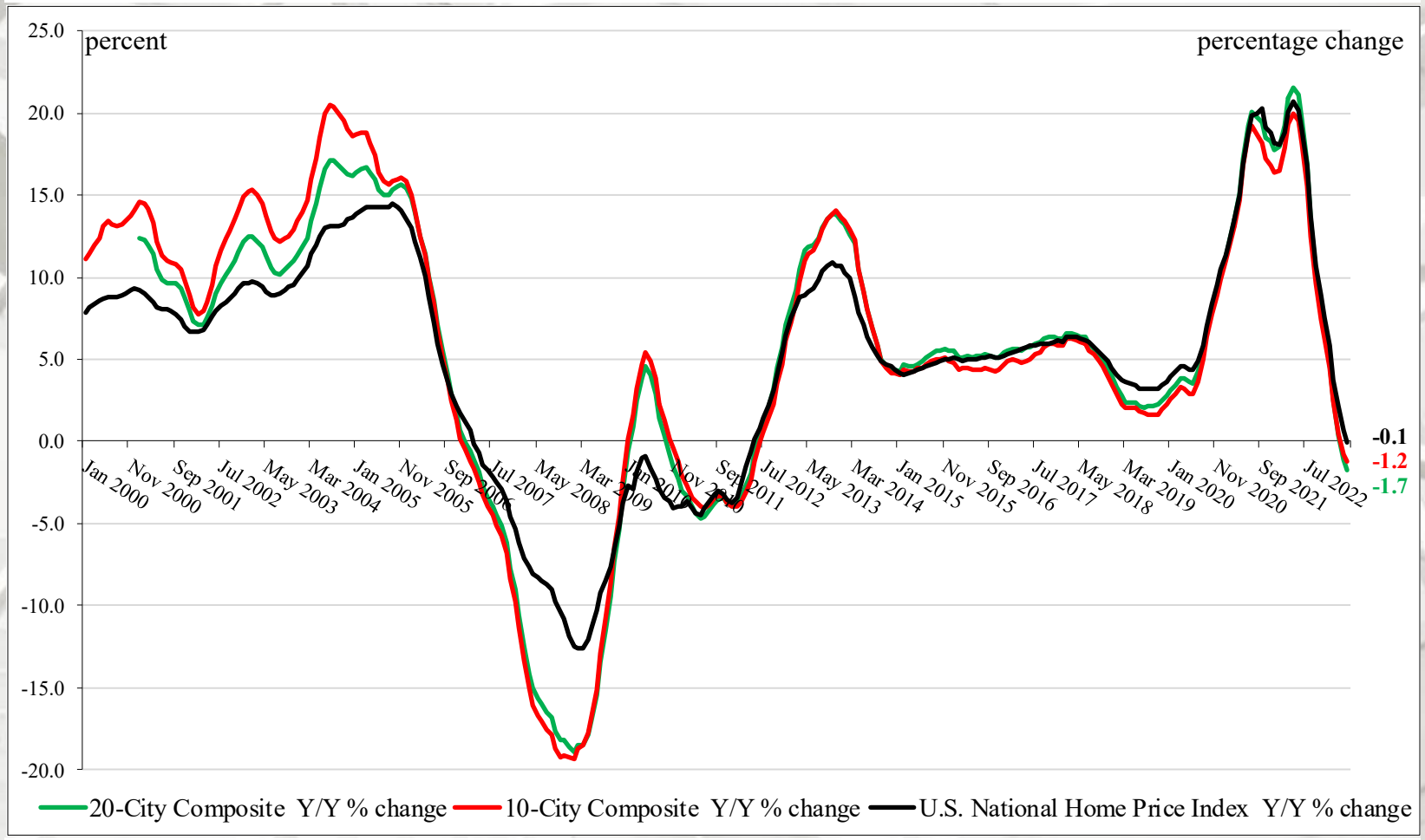


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 6/22/23

Return to TOC

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).

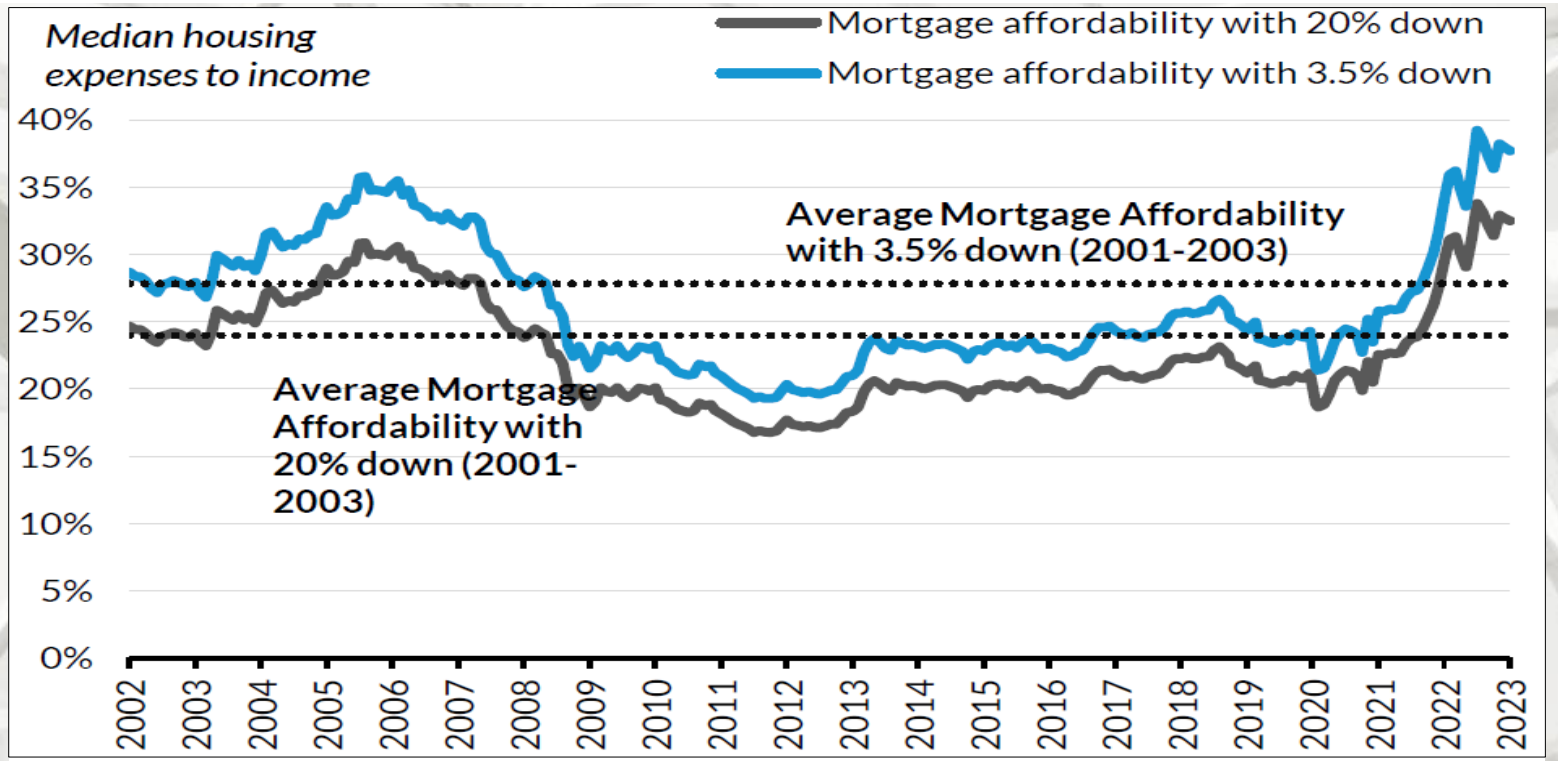
Y/Y Price Change

From April 2022 to April 2023, the National Index decreased 0.1%; the Ten-City declined by 1.2%, and the Twenty-City decreased by 1.17%.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 6/22/23

Return to TOC

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

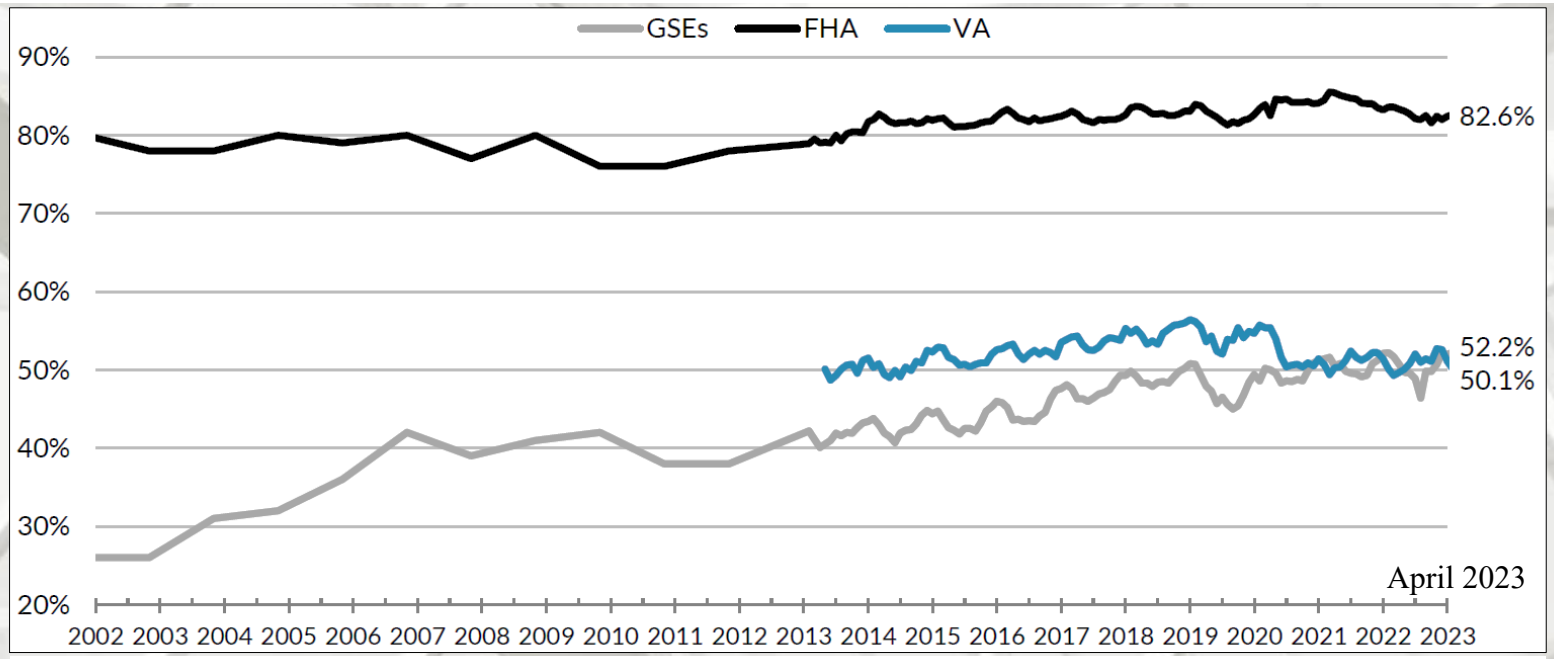
National Mortgage Affordability Over Time

"After some modest relief in December and January, mortgage affordability worsened in February, but, as rates have modestly retreated, mortgage affordability improved slightly in March and April. However, rates and house prices remain elevated. As of April 2023, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 32.5 percent, slightly higher than the 30.9 percent at the peak of the housing bubble in November 2005; and with 3.5 percent down it is 37.7 percent, also slightly above the 35.8 percent 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-june-2023; 6/28/23

Return TOC

U.S. Housing Affordability



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

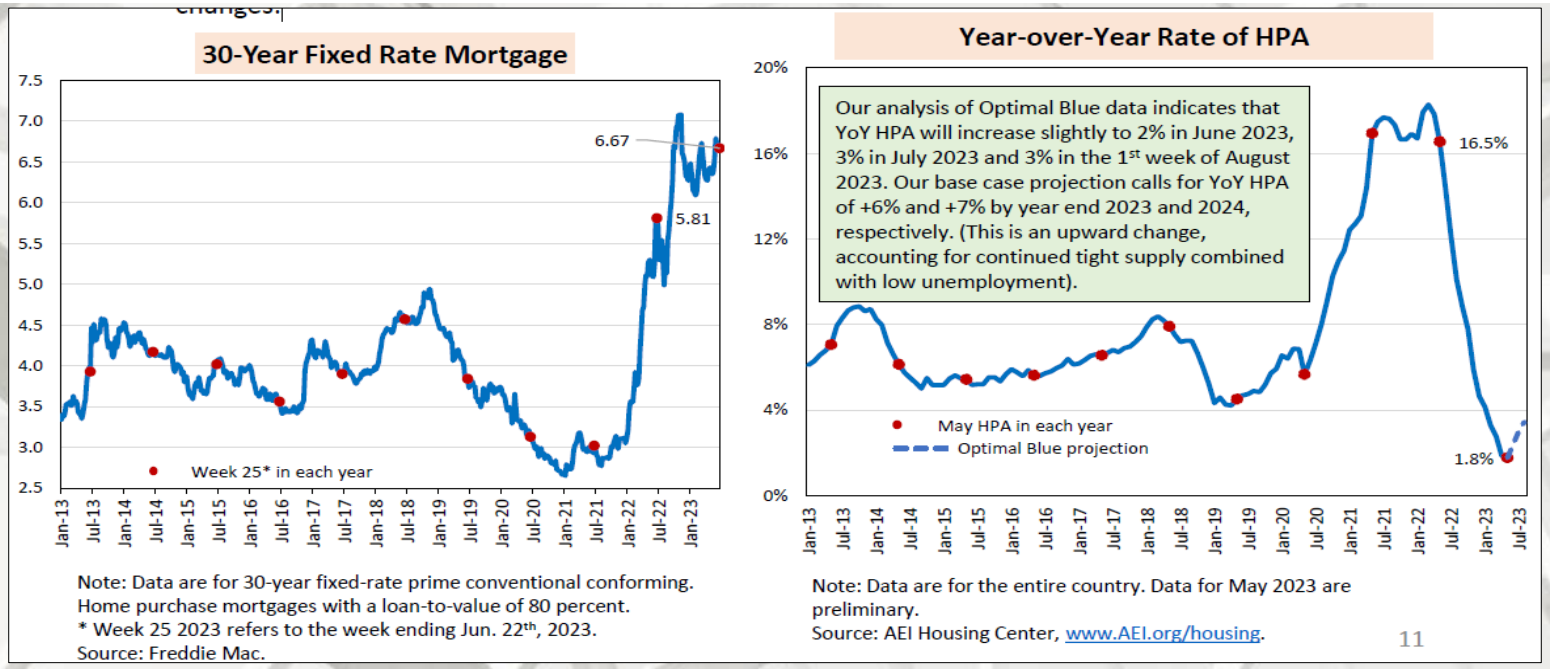
First-time Home Buyer Share

"In April 2023, the FTHB share for FHA, which has always been more focused on first time home buyers, was 82.6 percent. The FTHB share of GSE lending in April was 52.2 percent; the VA share was 50.1 percent. … based on mortgages originated in April 2023, the average FTHB was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, and have a higher LTV, thus paying a higher interest rate." – Laurie Goodman *et. al*, Vice President, Urban Institute

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-june-2023; 6/28/23

Return TOC

U.S. Housing Affordability



Note: Data are for 30-year fixed-rate prime conventional conforming. Home purchase mortgages with a loan-to-value of 80 percent.
* Week 25 2023 refers to the week ending Jun. 22th, 2023.
Source: Freddie Mac.

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

11

AEI Housing Center

Deceleration of Year over Year (YoY) Home Price Appreciation (HPA) Seems to Have Bottomed Out

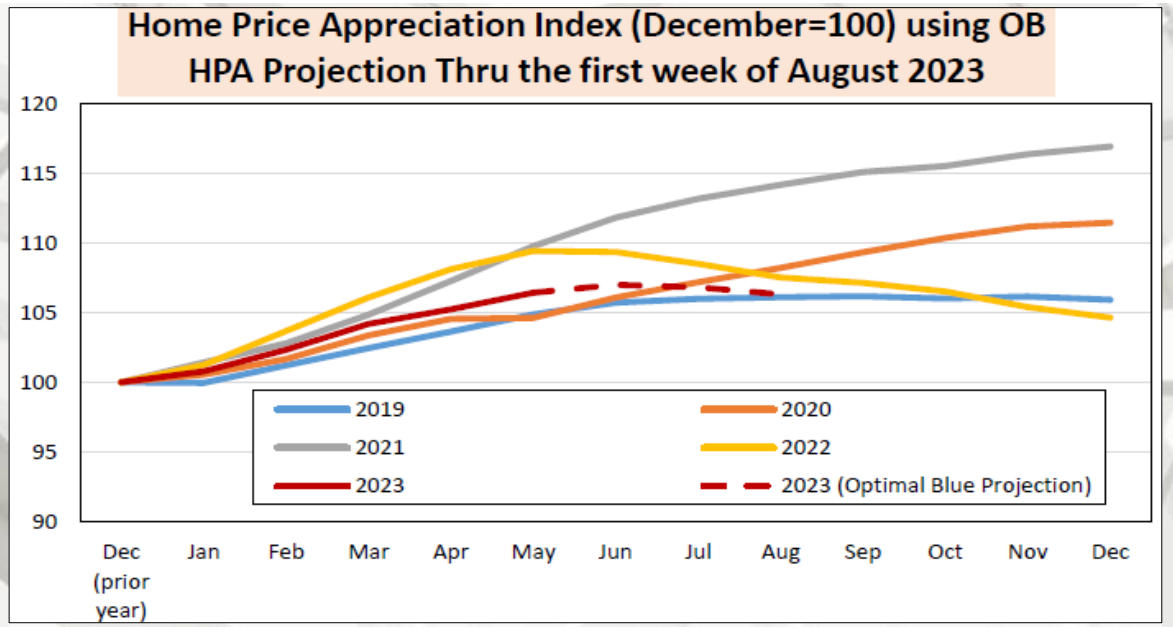
"May 2023's YoY HPA was 1.8%, slightly down from 1.9% a month ago and 16.5% a year ago.

- Based on Optimal Blue data, we expect the YoY HPA to reaccelerate in the coming months.
- Given historically low supply, cooling, yet still strong job numbers, low foreclosures, work from home, and continued home price arbitrage opportunities, we changed our YoY HPA projection to +6% for December 2023.
- May 2023's MoM HPA was 1.1%, continuing to be positive after MoM HPA had declined from July 2022 to December 2022
- 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

Source: https://www.aei.org/research-products/report/aei-housing-market-indicators-june-2023/; 6/27/23

Return TOC

U.S. Housing Affordability



Note: Note: Data are for the entire country. Data for May 2023 are preliminary. June, July and the first week of August 2023 HPA is projected based on Optimal Blue data. Source: AEI Housing Center, www.AEI.org/housing

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 +6% and +7%, respectively

- Assumes mortgage rate at 5.5% 7.0%, unemployment rate <=5.5 %, and months' remaining inventory < 4.5 months.

Bullish Case Projection for Dec. 2024 of +12%

- Assumes mortgage rate at 4% 5.5%, unemployment rate <=5.5 %, and month s' remaining inventory < 4.5 months.

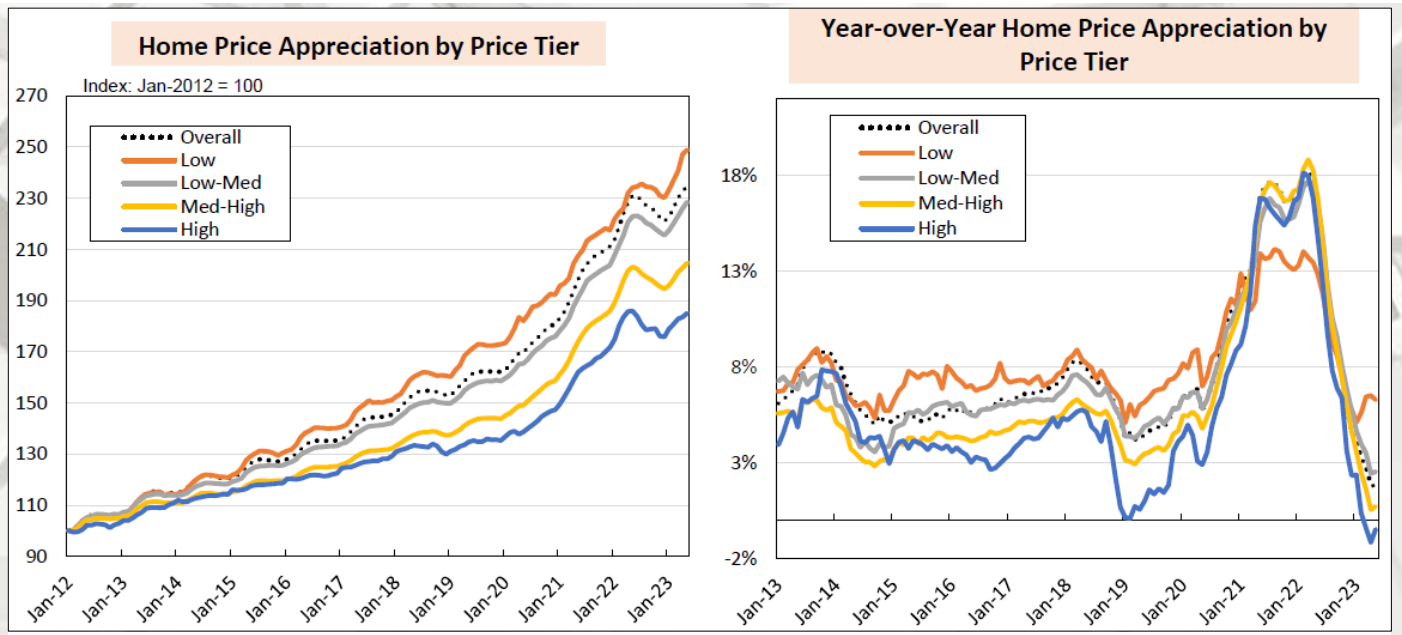
Bearish Case Projection for Dec. 2024 of 5%

- Assumes mortgage rate at 7.0% 8.5%, unemployment rate >5.5% and <=7.5 %, and month s' remaining inventory > 6 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

Source: https://www.aei.org/research-products/report/aei-housing-market-indicators-june-2023/; 6/27/23

Return TOC

Home Price Appreciation by Price Tier



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

AEI Housing Center

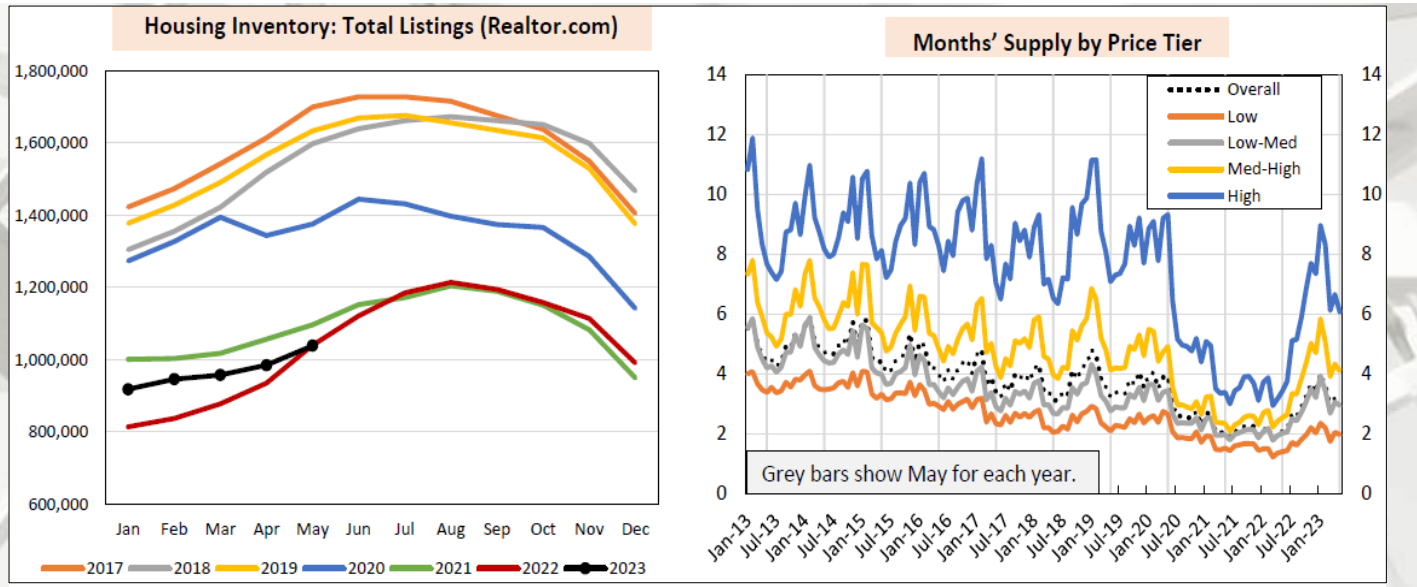
"**Since 2012**, a large and widening gap in HPA has developed between the lower and upper end of the market (left panel).

- Preliminary numbers for May 2023 indicate that the low price tier leads the YoY change in home prices at 6.3% due to low months' supply (2.0 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 declines in YoY HPA. However, this deceleration has ended as of May 2023." – Edward Pinto, Senior Fellow and Director and Tobias Peter, Research Fellow and Assistant Director, AEI Housing Center

Source: https://www.aei.org/research-products/report/aei-housing-market-indicators-june-2023/; 6/27/23

Return TOC

Home Housing Inventory and Months' Supply



Note: Realtor.com, Zillow, and AEI Housing Center, www.AEI.org/housingSource: AEI Housing Center.

AEI Housing Center

"Months' remaining supply for May (not seasonally adjusted) was at 3.1 months. **Housing inventory continued to run below pre pandemic levels and showed minimal seasonal increase, which helps explain the recent Month over Month home price appreciation increases.**

- May 2023 overall inventory was at the same level as a year ago and up 5.5% from last month. Inventory today is still at around two thirds of 2017 2019 levels (left panel).
- The YoY HPA for low and high tiers is 6.3% and 0.5%, respectively, in May 2023 .
- Months' supply stood at 3.1 months in May 2023, slightly down from 3.2 months both a month ago and in May 2019, the last comparable pre pandemic month (right panel).
- Months' inventory levels would need to increase to >6 months to indicate a buyer's market and may need to increase to 7 9 months to trigger a decline in national YoY home price appreciation." – Edward Pinto, Senior Fellow and Director and Tobias Peter, Research Fellow and Assistant Director, AEI Housing Center

Source: https://www.aei.org/research-products/report/aei-housing-market-indicators-june-2023/; 6/27/23

Return TOC

U.S. Housing

John Burns Research and Consulting LLC

Answering build-to-rent supply questions

"Did you know that 81% of completed build-to-rent (BTR) homes are attached? Or that BTR is set to almost double?

BTR is experiencing a 16% increase in homes currently under construction, and another 74% of the current supply is in some stage of planning that makes timing uncertain.

We define build-to-rent communities as:

- 25 or more contiguous and professionally managed homes built in the last 26 years
- Detached or attached single-story or two-story homes with no unit above them (unless the community includes both stacked and non-stacked units)
- Homes with either a direct-access garage or dedicated surface parking in some "horizontal apartment" and mixed communities
- Find more insights and definitions of standard nomenclature here.

Attached homes comprise a majority of BTR communities.

We know of 1,177 completed and *actively leasing* BTR communities with ~146,000 units whose mix is as follows:

- **Single-family detached homes:**
  - 251 communities totaling ~28,000 units (~112 homes per community)
  - 19% of units are single-family detached.
- **Attached homes:**
  - 926 communities totaling 118,000 units (~127 homes per community)
  - 81% of units are attached." – James McKeever, Senior Research Analyst and Danielle Nguyen, Vice President of Research, John Burns Research and Consulting LLC

Source: https://jbrec.com/insights/answering-build-to-rent-supply-questions/; 6/9/23

Return TOC

U.S. Housing

John Burns Research and Consulting LLC

Answering build-to-rent supply questions

"**Supply is planned to almost double.**

We spend a lot of time understanding future supply in submarkets thanks to our consulting team advising our clients with rent, absorption, and lease-up recommendations – along with competitive analysis. We have identified 708 ***coming-soon*** BTR communities totaling more than 131,000 homes, which would be a 90% increase in supply. This supply includes 24,000 homes under construction and 107,000 in many different planning stages, so the timing of these projects remains uncertain.

Here is a deeper dive into the ~24,000 homes currently *under construction:*

- **Single-family detached homes:**
  - 41 communities totaling ~6,000 units, or 25% of under construction supply
- **Single-family detached homes:**
  - 106 communities totaling ~18,000 units, or 75% of under-construction supply
  - Of the attached units under construction, below is the product design breakout:
    - 9K horizontal apartments
    - 5K townhomes
    - 3K rowhomes
    - 1K mixed communities

While a doubling of supply sounds significant – and in a few submarkets, we believe it is too much – remember that more than 12 million people rent single-family detached homes today. Another 11 million rent individually owned attached homes or rentals with four or fewer attached homes. As a percentage of total rental home demand in America, BTR is a small fraction that we believe will grow steadily over the coming decades." – James McKeever, Senior Research Analyst and Danielle Nguyen, Vice President of Research, John Burns Research and Consulting LLC

Source: https://jbrec.com/insights/answering-build-to-rent-supply-questions/; 6/9/23

Return TOC

U.S. Housing

John Burns Research and Consulting LLC

Homeownership is now $1,000+ per month more expensive than renting.

"One year ago, we published a piece highlighting demand shifting from owning to renting – and we'd like to give you an update. The monthly premium to own versus rent has now hit $1,030 per month, compared to $884 per month at this time last year (see note) – increasing demand for rental homes while reducing demand for homeownership.

Note: historical values do not exactly match last year's article, as we added a new data source that provides more real-time responsiveness to this metric.

Even higher mortgage rates and still elevated resale prices continue to challenge for-sale housing affordability – resulting in a higher-than-usual number of home renters staying in place and even more buyers moving to the sidelines as they can no longer afford to purchase a home.

While this metric has decelerated from a $1,188 peak in October 2022, it remains much higher than usual.

The premium varies a lot by market and is much less in the Midwest and other markets where homeownership is more attainable.

Interestingly, the monthly homeownership premium is below the national average of $1,030 in 15 of the 20 most popular markets for single-family rental investment, primarily because homes in these markets can be purchased at prices where the rents achieve a good yield for the landlord. In the most expensive markets in the country, such as San Francisco and New York, where the homeownership premium is substantial, single-family rental landlords have not been able to grow their businesses." – Danielle Nguyen, Vice President of Research, John Burns Research and Consulting LLC

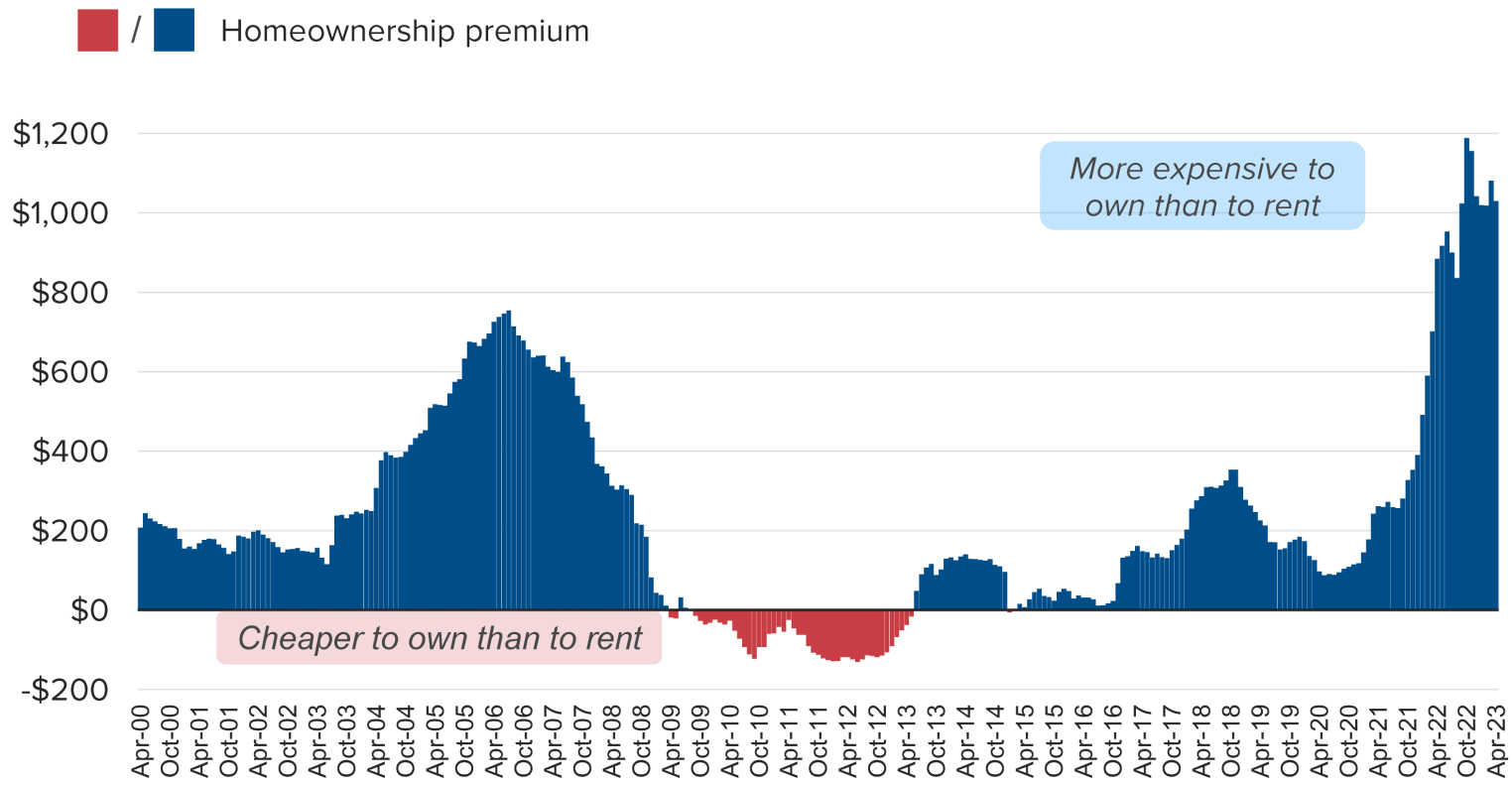
Source: https://jbrec.com/insights/homeownership-1000-dollars-more-expensive-than-renting/; 6/14/23

Return TOC

U.S. Housing

National Cost of Owning* vs. Renting Single-Family Starter Home

Monthly mortgage payment for single-family starter home vs. monthly rent



*Cost of owning (including payment + maintenance): We assume the purchase of a home at 80% of the current median-priced existing home with a 5% down payment and a 30-year, fixed-rate mortgage. We include PITI plus mortgage insurance and maintenance costs. We assume the purchase price to be for a rent-ready home and do not include renovation or acquisition costs in our calculation. Annual maintenance costs range from 0.85% to 1.25% of the home's value and vary by market. Maintenance costs cover small repairs as well as large capital expenditures, like replacing a roof.

Single-family rent: we assume a home valued at 80% of the current median-priced existing home. We look for homes at this valuation in current single-family for-rent listings and then collect the asking rents. We also add renter's insurance to the cost of renting, which is based on state level data. Note: historical values do not exactly match last year's article as we added a new data source that provides more real-time responsiveness to this metric.

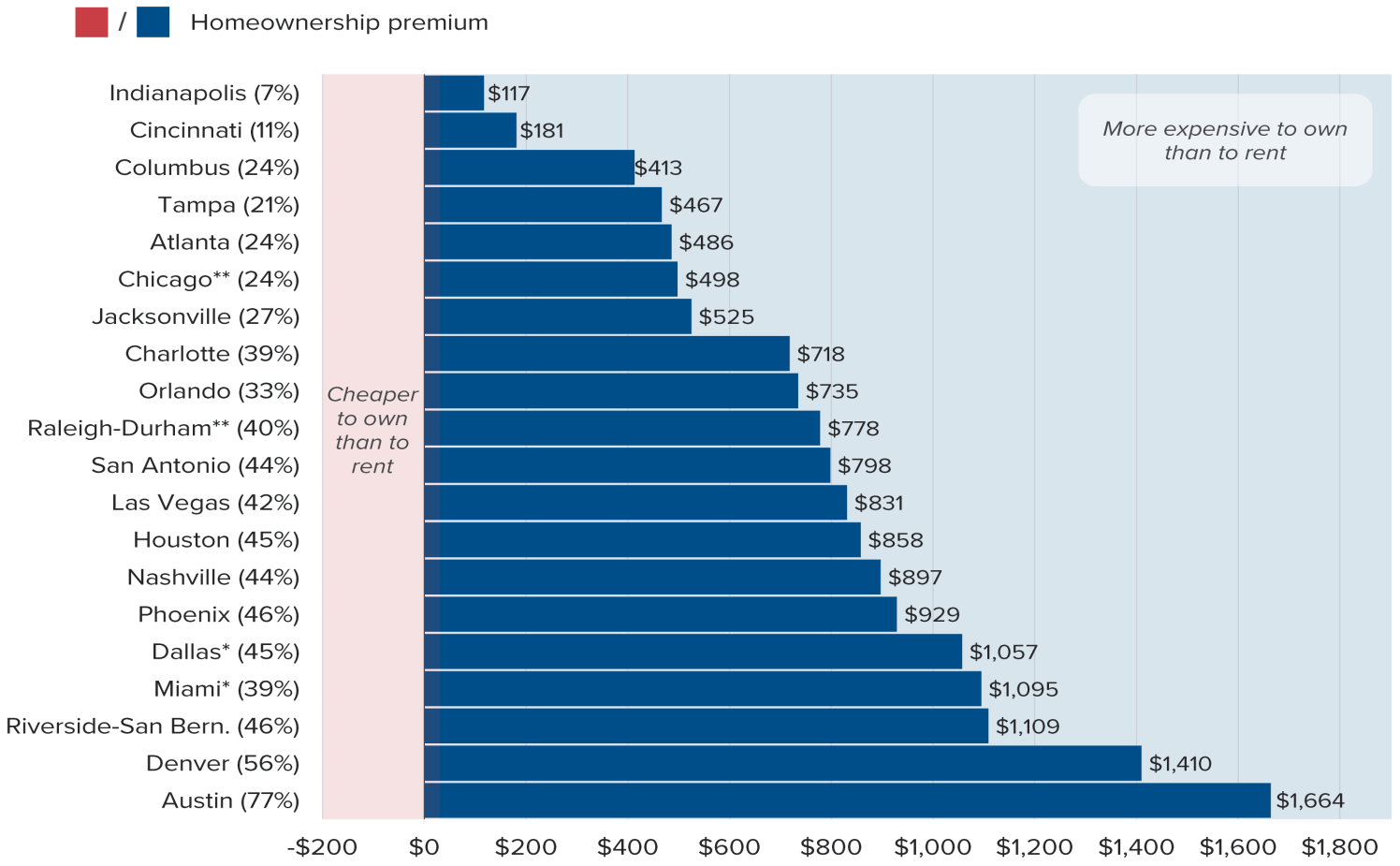
Source: John Burns Research and Consulting, LLC (Data: Apr-23, Pub: Jun-23)

Source: https://jbrec.com/insights/homeownership-1000-dollars-more-expensive-than-renting/; 6/14/23

Return TOC

U.S. Housing

Cost of Owning* vs. Renting Single-Family Starter Home



*Cost of owning (including payment + maintenance): We assume the purchase of a home at 80% of the current median-priced existing home with a 5% down payment and a 30-year, fixed-rate mortgage. We include PITI plus mortgage insurance and maintenance costs. We assume the purchase price to be for a rent-ready home and do not include renovation or acquisition costs in our calculation. Annual maintenance costs range from 0.85% to 1.25% of the home's value and vary by market. Maintenance costs cover small repairs as well as large capital expenditures, like replacing a roof.

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Source: https://jbrec.com/insights/homeownership-1000-dollars-more-expensive-than-renting/; 6/14/23

Return TOC

U.S. Housing

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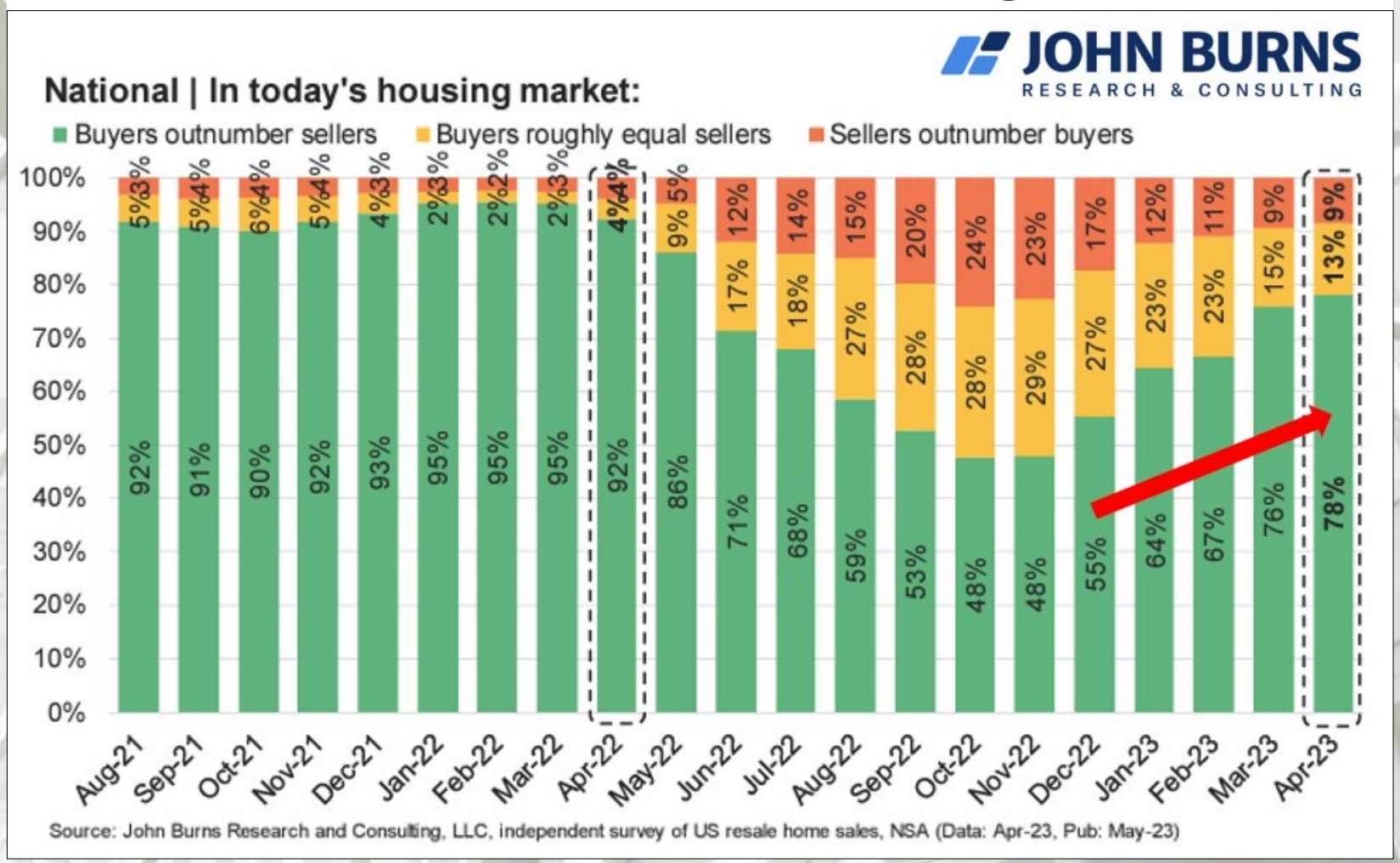

Source: https://twitter.com/housing_alex/status/1663560586259759116/photo/1; 5/31/23

Return TOC

U.S. Housing

John Burns Real Estate Consulting LLC®

"Some of my top takeaways from our @JBREC client housing Summit conference last week.

1) Supply chain across new home construction (namely land) remains structurally broken. While things have improved for sure, new normal of bottlenecks everywhere likely creates a ceiling on starts.

2) Big home builders will keep getting bigger. Plenty of talk around market share gains for many reasons (some cyclical, some structural).

3) Single-family rental (SFR) demand/supply fundamentals remain solid. Similar to for-sale housing, SFR is benefitting from limited rental supply coming into the system this cycle.

4) Build-to-rent (BTR) capital markets are in dislocation, with a ton of deals shelved over the last year.

5) Truck driver wages are up 37% over the last 3 years, and well worth it for many building product companies given drivers are a key 'face of the company' touch point in supply chain." – Rick Palacios Jr., Director of Research, John Burns Research and Consulting LLC

Source: https://twitter.com/housing_alex/status/1663560586259759116/photo/1; 5/31/23

Return TOC

U.S. Housing

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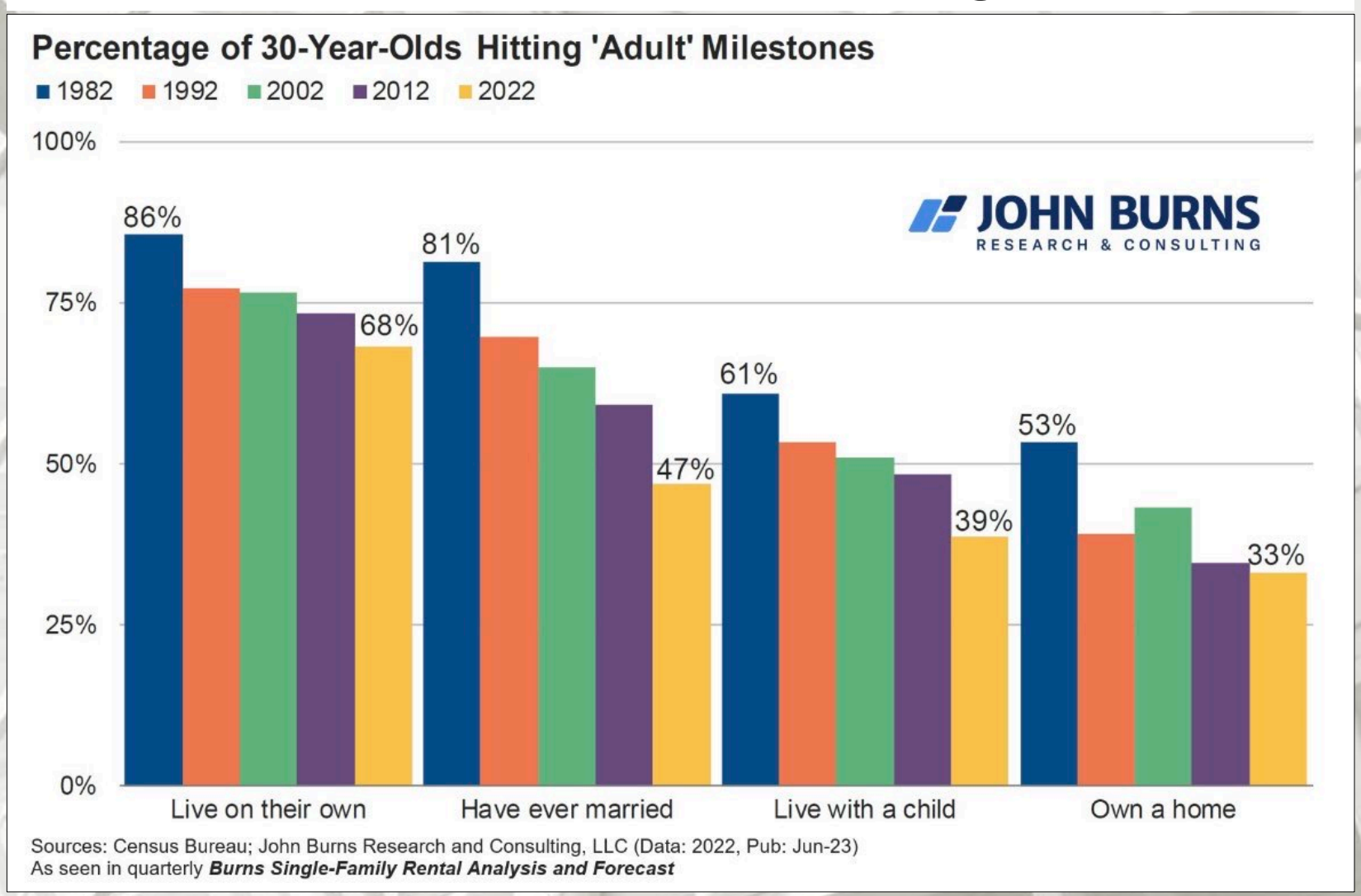


Source: https://twitter.com/texasrunnerDFW/status/1674482274450939906/photo/1; 6/29/23

Return TOC

U.S. Housing

John Burns Real Estate Consulting LLC®

"On the left, 3,070 #buildtorent homes under construction. On the right, 8,922 #buildtorent homes planned to start construction sometime soon." – John Burns, President & CEO, John Burns Research and Consulting LLC

Source: https://twitter.com/johnburnsjbrec/status/1676587735166103552; 7/5/23

Return TOC

U.S. Housing

First American Financial Corporation®

Uncertain Economic Outlook Keeps Renters Where They Are, Pushing Cap Rates Up

"In times of economic uncertainty, people tend to stay put. After all, why take on new financial obligations, like an apartment lease, when the future is less certain? Today, though unemployment remains low, inflation remains high, and the recent slew of layoffs at tech companies has many worried about their own financial position. The recent, highly publicized bank failures only further cloud the outlook for many who might otherwise explore moving into a new apartment. All of these factors lead to slower household formation, which has real implications for multifamily commercial real estate, including multifamily capitalization (cap) rates.

Should I Stay or Should I Go?

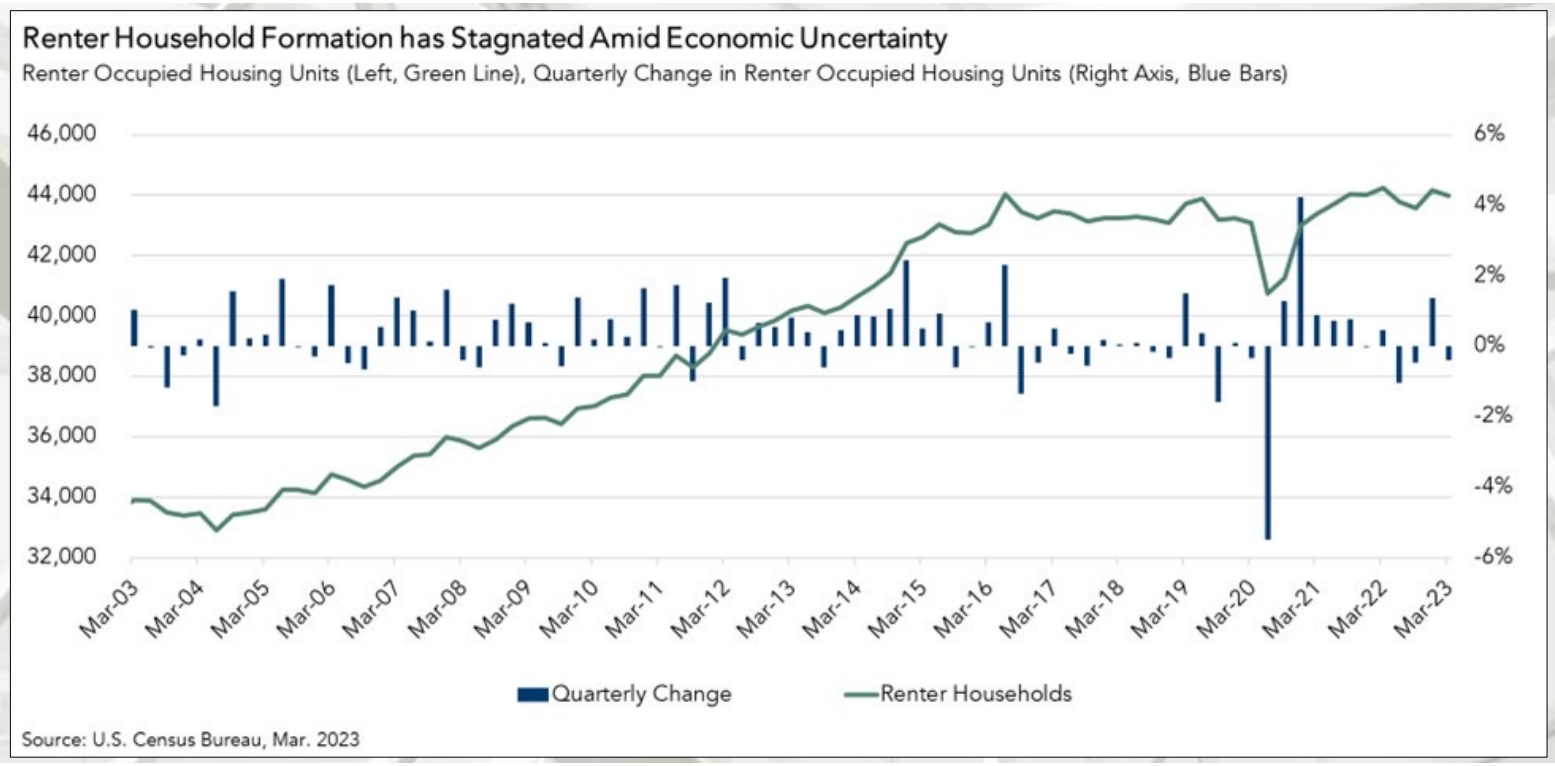
Over the last year, growing macroeconomic uncertainty has contributed to a slowdown in renter household formation, which is a primary driver of apartment leasing demand. For this reason, renter household formation is also a key component of First American's Multifamily Potential Cap Rate (PCR) Model, which estimates a national multifamily cap rate based on market fundamentals. Generally speaking, as the number of renter households grows, the demand to lease apartments increases. Higher rates of renter household formation can reduce the risk associated with a multifamily property investment, since greater apartment demand usually translates into lower vacancy rates and improved cash flow. With reduced leasing risk, multifamily buyers are generally willing to pay a higher price for an asset.

Conversely, lower rates of renter household formation tend to put upward pressure on multifamily cap rates. Fewer renter households means decreased demand to rent apartments, which increases the risk of higher vacancy rates and, therefore, impaired cash flows for owners." – Xander Snyder, Senior Commercial Real Estate Economist, First American Financial Corporation®

Source: https://blog.firstam.com/economics/uncertain-economic-outlook-keeps-renters-where-they-are-pushing-cap-rates-up; 6/27/23

Return TOC

U.S. Housing



First American Financial Corporation®

"Renter household formation cratered in the early stages of the pandemic. Unsure of how long new quarantine measures would last and with unemployment soaring, many potential renters moved in with family members. Later in 2020, as it became clear that the pandemic and, therefore, remote work would persist, people began moving back out and setting up their own households. This resurgence in renter household formation lasted for a little over a year, bringing the total number of renter-occupied households to an all-time high of 44.2 million in the first quarter of 2022, the same quarter that the multifamily PCR troughed." – Xander Snyder, Senior Commercial Real Estate Economist, First American Financial Corporation®

Source: https://blog.firstam.com/economics/uncertain-economic-outlook-keeps-renters-where-they-are-pushing-cap-rates-up; 6/27/23

Return TOC

U.S. Housing

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"Over the past year, renter household formation has stagnated amid heightened economic uncertainty, declining by 0.4 percent in the first quarter of 2023 compared with the first quarter of 2022. This decline contributed to a 0.3 percentage point annual increase in the multifamily PCR to 4.6 percent in the first quarter of 2023.

Short Run versus Long Run

Though less certain economic conditions have dampened renter household growth following the mid-pandemic surge, high mortgage rates are keeping home ownership out of reach for many. Additionally, long-term demographic trends are expected to add to the number of renter households in the coming years.

In the short run, slow renter household formation is putting upward pressure on cap rates, but in the long run this dynamic is likely to reverse. When economic uncertainty clears, fewer people will remain risk-averse with respect to their living situation. When this happens, renter household formation will likely accelerate.

First Quarter 2023 Multifamily Potential Cap Rate (PCR) Model

- The multifamily PCR was 4.6 percent, an increase of 0.1 percentage points as compared with the fourth quarter of 2022.
- The multifamily PCR increased by 3 percentage points as compared with one year ago. The first quarter of 2022 represented the multifamily PCR's 20-year low." – Xander Snyder, Senior Commercial Real Estate Economist, First American Financial Corporation®

Source: https://blog.firstam.com/economics/uncertain-economic-outlook-keeps-renters-where-they-are-pushing-cap-rates-up; 6/27/23

Return TOC

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First American Financial Corporation®

"**Multifamily Cap Rate Outlook Gap**

The gap between the actual multifamily cap rate and the multifamily PCR provides insight into the likelihood of shifts in the actual cap rate. If the multifamily PCR is below the actual multifamily cap rate, it indicates that fundamentals supported lower cap rates than were observed. If the multifamily PCR is above the actual multifamily cap rate, it indicates that fundamentals supported higher cap rates than were observed.

In the first quarter of 2023, the actual national multifamily cap rate was 4 percentage points higher than the potential cap rate, indicating that market fundamentals supported a lower cap rate than was observed in the first quarter. Both the actual and potential multifamily cap rate, however, are increasing.

First Quarter 2023 All-Asset PCR Model

First American's All-Asset PCR Model estimates a potential national cap rate for all asset classes based on several CRE market fundamentals, including rental income, prevailing occupancy rates, interest rates, the amount of commercial mortgage debt in the economy, and recent property price trends.

- The all-asset PCR was 5.5 percent in the first quarter of 2023, an increase of 0.5 percentage points as compared with the fourth quarter of 2022.
- The all-asset PCR increased by 1.3 percentage points as compared with the first quarter of 2022.
- In the first quarter of 2023, the all-asset PCR was 1.3 percentage points above its 20-year low of 4.2 percent, which occurred in the in the first quarter of 2022, and 3.4 percentage points below its third quarter 2001 peak of 8.9 percent." – Xander Snyder, Senior Commercial Real Estate Economist, First American Financial Corporation®

Source: https://blog.firstam.com/economics/uncertain-economic-outlook-keeps-renters-where-they-are-pushing-cap-rates-up; 6/27/23

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U.S. Housing

First American Financial Corporation®

"**All-Asset PCR Model Outlook Gap**

- The all-asset actual cap rate was 0.2 percentage points higher than the potential cap rate, which suggests that market fundamentals in the fourth quarter supported lower actual cap rates than were observed.
- The gap between the actual all-asset cap rate and the potential all-asset cap rate contracted in the fourth quarter to 2 percent from 0.5 percent in the third quarter of 2022. Though the PCR remains below the actual all-asset cap rate, this gap has been shrinking since the first quarter of 2022, signaling that market fundamentals are increasingly supporting higher cap rates." – Xander Snyder, Senior Commercial Real Estate Economist, First American Financial Corporation®

Source: https://blog.firstam.com/economics/uncertain-economic-outlook-keeps-renters-where-they-are-pushing-cap-rates-up; 6/27/23

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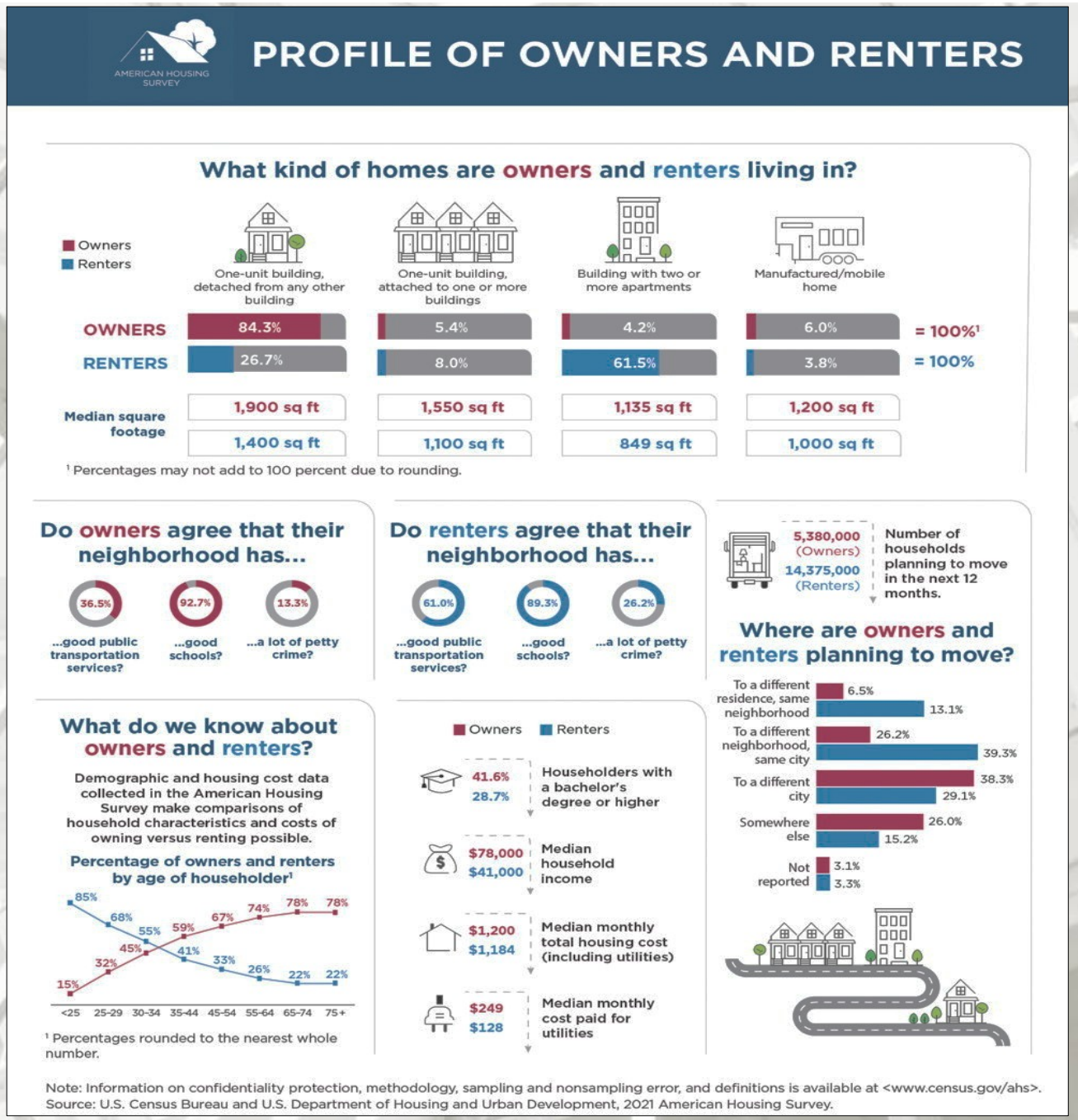
U.S. Housing: Census



Source: https://www.census.gov/library/visualizations/2022/demo/2021-profile-of-owners-and-renters.html; 7/7/23

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U.S. Housing Finance

Mortgage Bankers Association (MBA)

Mortgage Credit Availability Increased in June

"Mortgage credit availability increased in June 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 rose by 0.1 percent to 96.6 in June. 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 was unchanged, while the Government MCAI was essentially unchanged. Of the component indices of the Conventional MCAI, the Jumbo MCAI decreased by 0.2 percent, and the Conforming MCAI rose by 0.2 percent.

Mortgage credit availability was essentially unchanged in June, remaining close to the lowest level since early 2013, as the industry continues to operate at reduced capacity. Lenders are streamlining their operations by offering fewer loan programs, with some exiting certain channels. Data from our Weekly Applications Survey indicated that June mortgage applications were more than 30 percent lower than a year ago and at the slowest pace since December 2022. The Jumbo Index declined slightly by 0.2 percent – the second straight monthly decrease – as liquidity conditions have been tightening for jumbo lending."" – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

Source: https://www.mba.org/news-and-research/newsroom/news/2023/07/11/mortgage-credit-availability-increased-in-june; 7/11/23

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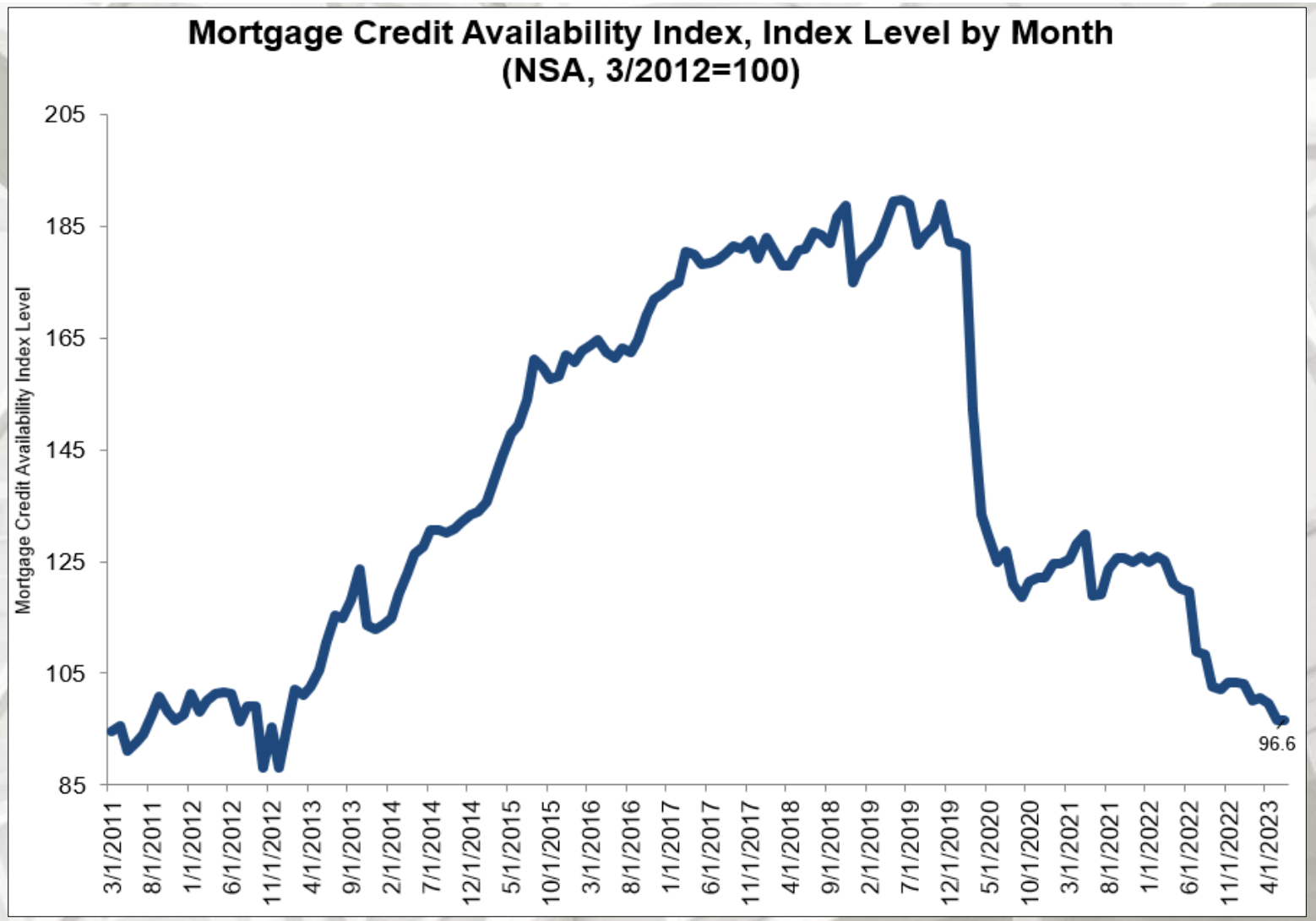
U.S. Housing Finance
Mortgage Credit Availability (MBA)



Source: https://www.mba.org/news-and-research/newsroom/news/2023/07/11/mortgage-credit-availability-increased-in-june; 7/11/23

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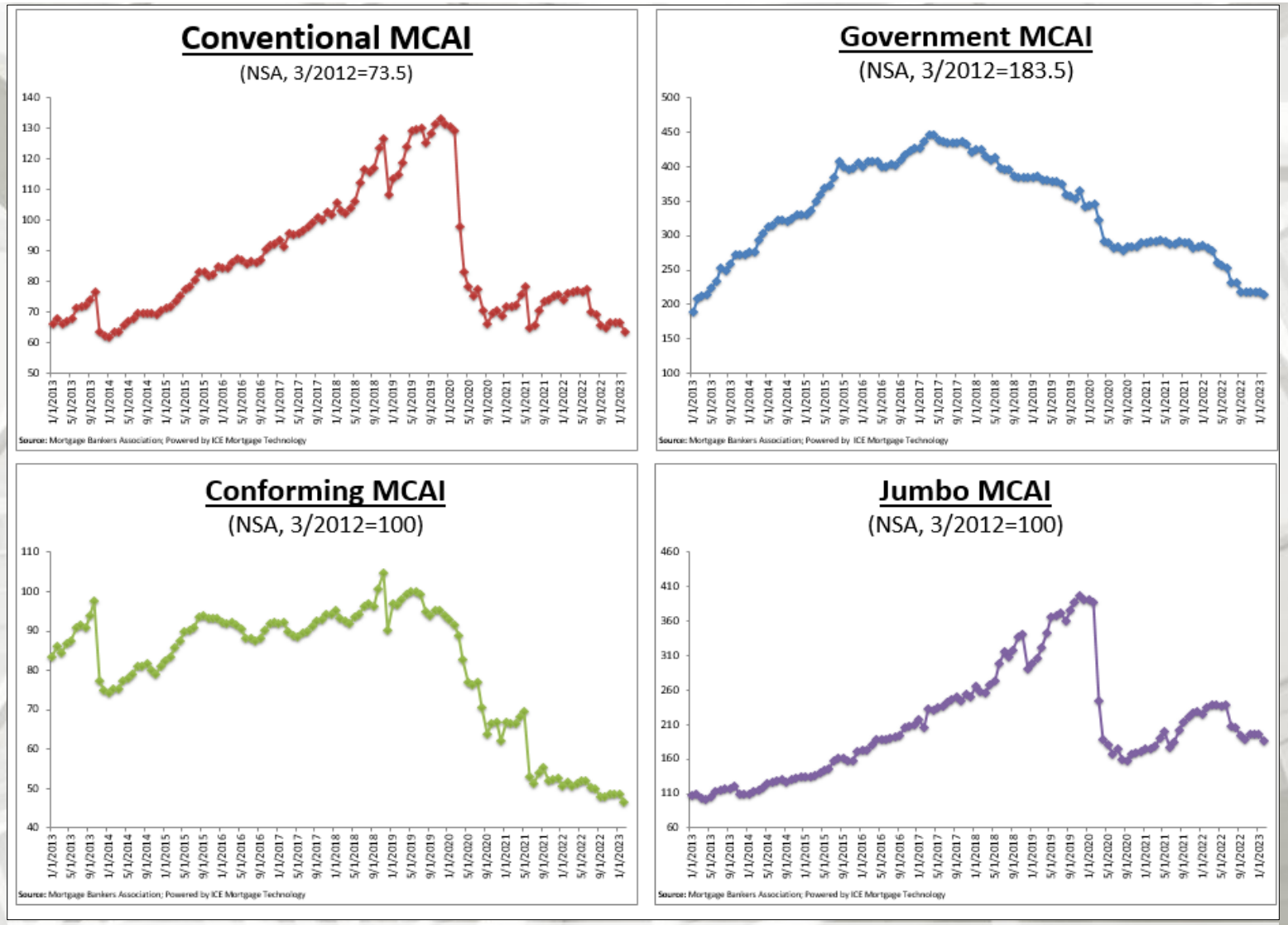
U.S. Housing Finance
Mortgage Credit Availability (MBA)



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

Source: https://www.mba.org/news-and-research/newsroom/news/2023/07/11/mortgage-credit-availability-increased-in-june; 7/11/23

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MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

June 20, 2023

	2022				2023				2024							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024	2025
Housing Measures																
Housing Starts (SAAR, Thous)	1,718	1,636	1,446	1,405	1,382	1,408	1,387	1,376	1,394	1,429	1,471	1,525	1,551	1,388	1,455	1,577
Single-Family	1,182	1,084	901	850	830	874	893	914	952	997	1,041	1,103	1,004	878	1,023	1,147
Two or More	535	551	545	556	552	534	494	462	442	432	430	422	547	511	432	430
Home Sales (SAAR, Thous)																
Total Existing Homes	6,057	5,373	4,770	4,197	4,327	4,383	4,230	4,202	4,369	4,506	4,689	4,938	5,099	4,285	4,626	5,116
New Homes	776	609	580	598	651	695	689	669	696	711	725	764	641	676	724	766
FHFA US House Price Index (YOY % Change)	18.8	17.9	14.2	8.3	4.3	2.0	0.7	0.0	-0.2	-0.1	0.3	1.0	8.3	0.0	1.0	3.9
Median Price of Total Existing Homes (Thous $)	365.8	405.9	391.5	372.8	366.7	370.8	363.6	369.2	375.8	373.9	373.6	376.3	384.0	367.6	374.9	386.4
Median Price of New Homes (Thous $)	431.3	447.0	465.4	479.5	437.2	439.2	431.4	432.3	437.2	429.3	432.7	434.9	455.8	435.0	433.5	442.5
Interest Rates																
30-Year Fixed Rate Mortgage (%)	3.9	5.3	5.7	6.6	6.4	6.5	6.2	5.8	5.6	5.4	5.2	4.9	6.6	5.8	4.9	4.6
10-Year Treasury Yield (%)	1.9	2.9	3.1	3.8	3.6	3.6	3.5	3.3	3.2	3.0	3.0	2.9	3.8	3.3	2.9	2.8
Mortgage Originations																
Total 1- to 4-Family (Bil $)	689	678	480	398	333	463	480	514	438	575	568	583	2,245	1,790	2,164	2,468
Purchase	381	477	388	332	267	371	375	386	316	434	406	418	1,578	1,399	1,574	1,783
Refinance	308	201	92	66	66	92	105	128	122	141	162	165	667	391	590	685
Refinance Share (%)	45	30	19	17	20	20	22	25	28	25	29	28	30	22	27	28
FHA Originations (Bil $)													158	122	132	139
Total 1- to 4-Family (000s loans)	1,939	1,789	1,206	973	816	1,128	1,170	1,261	1,087	1,431	1,429	1,472	5,907	4,376	5,418	6,200
Purchase	1,000	1,202	946	790	634	876	883	911	751	1,039	977	1,009	3,938	3,304	3,775	4,288
Refinance	938	588	260	182	182	252	287	351	336	392	452	462	1,969	1,072	1,643	1,912
Refinance Share (%)	48	33	22	19	22	22	25	28	31	27	32	31	33	24	30	31
Mortgage Debt Outstanding																
1- to 4-Family (Bil $)	12,695	12,971	13,195	13,325	13,439	13,570	13,664	13,720	13,755	13,806	13,850	13,876	13,325	13,720	13,876	14,093

Notes:

As of the August 2022 forecast, 2021 origination volume was revised based on the 2021 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.

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MORTGAGE BANKERS ASSOCIATION

Source: https://www.mba.org/news-and-research/forecasts-and-commentary/; 6/21/23

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MBA Economic Forecast

MBA Economic Forecast

June 20, 2023

	2022				2023				2024							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024	2025
Percent Change, SAAR																
Real Gross Domestic Product	-1.6	-0.6	3.2	2.6	1.3	0.2	-0.7	-0.5	0.6	1.4	2.1	1.9	0.9	0.1	1.5	1.8
Personal Consumption Expenditures	1.3	2.0	2.3	1.0	3.8	1.1	0.2	0.5	1.0	0.9	1.4	1.4	1.7	1.4	1.2	1.9
Business Fixed Investment	7.9	0.1	6.2	4.0	1.4	3.0	-2.3	-3.5	-2.1	-0.3	1.4	1.2	4.5	-0.4	0.1	1.5
Residential Investment	-3.1	-17.8	-27.1	-25.1	-5.4	-4.7	2.7	6.0	5.1	6.7	6.9	9.4	-18.8	-0.5	7.0	5.5
Govt. Consumption & Investment	-2.3	-1.6	3.7	3.8	5.2	1.0	2.2	0.6	0.7	0.7	0.6	0.8	0.9	2.2	0.7	0.8
Net Exports (Bil. Chain 2012$)	-1260.3	-1207.6	-1063.8	-1037.8	-1041.4	-1130.8	-1161.9	-1178.6	-1178.5	-1171.4	-1160.0	-1173.1	-1142.4	-1128.2	-1170.8	-1213.1
Inventory Investment (Bil. Chain 2012$)	182.4	93.7	32.9	116.1	5.9	36.6	12.3	-9.5	-16.5	-4.9	9.6	25.3	106.3	11.3	3.4	45.4
Consumer Prices (YOY)	8.0	8.6	8.3	7.1	5.8	4.1	3.6	3.2	2.7	2.6	2.4	2.3	7.1	3.2	2.3	2.1
Percent																
Unemployment Rate	3.8	3.6	3.5	3.6	3.5	3.7	4.1	4.7	5.0	5.0	4.7	4.6	3.6	4.0	4.8	4.4
Federal Funds Rate	0.375	1.625	3.125	4.375	4.875	5.125	5.125	5.125	4.625	4.125	3.625	3.125	4.375	5.125	3.125	2.375
10-Year Treasury Yield	1.9	2.9	3.1	3.8	3.6	3.6	3.5	3.3	3.2	3.0	3.0	2.9	3.8	3.3	2.9	2.8

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

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Source: https://www.mba.org/news-and-research/forecasts-and-commentary/; 6/21/23

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Wells Fargo Housing & Economic Forecast

National Housing Outlook

	2014	2015	2016	2017	2018	2019	2020	2021	2022	Forecast 2023	Forecast 2024
Real GDP, Percent Change	2.3	2.7	1.7	2.2	2.9	2.3	-2.8	5.9	2.1	1.6	0.1
Residential Investment, Percent Change	3.8	10.2	6.6	4.0	-0.6	-1.0	7.2	10.7	-10.7	-12.5	-0.4
Nonfarm Payroll Change (Avg. Monthly)	249.8	226.4	193.8	176.1	190.3	163.3	-774.1	606	401	220.0	-75.0
Unemployment Rate	6.2	5.3	4.9	4.4	3.9	3.7	8.1	5.4	3.6	3.7	4.5
Home Construction											
Total Housing Starts, in Thousands	1,003.3	1,111.9	1,173.7	1,202.9	1,250.0	1,289.9	1,379.6	1,601	1,555	1,300	1,320
Single-Family Starts, in Thousands	647.8	714.6	781.5	848.9	875.7	887.7	990.5	1,127	1,005	825	875
Multifamily Starts, in Thousands	355.5	397.3	392.2	354.0	374.3	402.2	389.1	474	550	475	445
Home Sales											
New & Existing Home Sales, in Thousands	5,379	5,751	6,011	6,123	5,957	6,022	6,461	6,891	5,671	5,065	5,245
New Home Sales, Single-Family, in Thousands	439	501	561	613	617	682	821	771	645	665	680
Total Existing Home Sales, in Thousands	4,940	5,250	5,450	5,510	5,340	5,340	5,640	6,120	5,026	4,400	4,565
Existing Single-Family Home Sales, in Thousands	4,344	4,646	4,838	4,892	4,742	4,765	5,066	5,413	4,480	3,950	4,100
Existing Condominium & Co-op Sales, in Thousands	591	608	614	619	601	579	578	707	546	450	465
Manufactured Homes											
Total Shipments, in Thousands	64.3	70.5	81.1	92.9	96.6	94.6	94.4	105.8	112.9	88.0	93.0
Percent Change	6.8	9.7	15.0	14.5	3.9	-2.0	-0.2	12.1	6.7	-22.0	5.7
Home Prices											
Median New Home, $ Thousands	288.5	294.2	307.8	323.1	326.4	321.5	336.9	397.1	454.9	440.0	450.0
Percent Change	7.3	2.0	4.6	5.0	1.0	-1.5	4.8	15.8	16.8	-3.3	2.3
Median Existing Single-Family Home, $ Thousands	208.9	223.9	235.5	248.8	261.6	274.6	300.2	357.1	392.8	399.0	409.0
Percent Change	5.8	7.2	5.2	5.6	5.1	5.0	9.3	19.0	10.0	1.6	2.5
S&P Case-Shiller National Home Price Index, Percent Change	6.6	4.5	5.1	5.8	5.8	3.5	6.1	17.1	15.0	2.2	2.8
Interest Rates - Annual Averages											
Federal Funds Target Rate	0.25	0.27	0.52	1.13	1.96	2.25	0.50	0.25	2.02	5.31	4.13
Prime Rate	3.25	3.26	3.51	4.10	4.90	5.28	3.54	3.25	4.86	8.31	7.13
10-Year Treasury Note	2.54	2.14	1.84	2.33	2.91	2.14	0.89	1.45	2.95	3.60	3.15
Conventional 30-Year Fixed Rate, Commitment Rate	4.29	3.98	3.76	4.09	4.64	4.08	3.18	3.03	5.38	6.57	5.81

Forecast as of: June 26, 2023

Source: U.S. Departments of Commerce and Labor, Federal Reserve Board, FHFA, FHLMC, National Association of Realtors, S&P CoreLogic and Wells Fargo Economics

Source: https://wellsfargo.bluematrix.com/links2/html/6d3e532e-7a90-479b-863b-f0a6afa65ab6; 6/26/23

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Summary

In conclusion:

In a pleasant surprise, the vast majority of month-over-month data indicated positive improvement (the exception: single-family housing under construction). Year-over-year data were mixed, with only one-third being positive. Borrowing costs and consumer sentiment, combined with elevated house prices have resulted in a major obstacle for new and existing house sales.

Pros:

1) The desire to own a house remains strong, though consumer sentiment may be waning

Cons:

1) Mortgage interest rates and affordability;
2) US bank failures;
3) Inflation;
4) The war in Ukraine 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.

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