

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

July 2023



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<http://woodproducts.sbio.vt.edu/housing-report>.

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

Opening Remarks

Housing data, year-over-year and month-over-month, were mixed and improvement was noted in certain categories on a monthly basis. Total starts; total permits; total housing construction, and new housing sales, and total construction spending improved month-over-month. Year-over-year, total housing and single-family starts; single-family permits, multi-family under construction; single-family completions, new house sales; and total residential spending increased. The influence of the mortgage rates increasing is evident, as aggregate costs have decreased affordability.

The September 14th Atlanta Fed GDPNow™ total residential investment spending forecast is a positive 6.6% for September 2023. Quarterly log change for new private permanent site expenditures were projected at 18.9%; the improvement spending forecast was -2.6%; and the manufactured/mobile home expenditures projection was 6.7% (all: quarterly log change and at a seasonally adjusted annual rate).¹

“Mortgage rates once again breached the 7-percent mark in August, hitting a 22-year high and doing no favors for consumer sentiment. Consumers remain pessimistic toward the housing market in general and homebuying conditions in particular. The overall Home Purchase Sentiment Index is maintaining the low-level plateau set a few months back, and we don’t see much upside to the index in the near future, barring significant improvements to home affordability, which we also don’t expect. Considering that existing home sales have traditionally represented approximately 85-90% of total home sales, even substantial quantities of new home production are unlikely to produce the inventory needed to meaningfully improve affordability.” – Doug Duncan, Senior Vice President and Chief Economist, Fannie Mae

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 (of note is the Federal Reserve Bank of San Francisco’s projection for future shelter inflation), private firm indicators, and demographic/economic information.

Sources: ¹ www.frbatlanta.org/cqer/research/gdpnow.aspx; 9/14/23

² <https://www.fanniemae.com/newsroom/fannie-mae-news/unusual-housing-market-dynamics-contributing-stall-consumer-sentiment>; 9/7/23

July 2023

Housing Scorecard

	M/M	Y/Y
Housing Starts	▲ 3.9%	▲ 5.9%
Single-Family (SF) Starts	▲ 6.7%	▲ 9.5%
Multi-Family (MF) Starts*	▼ 1.7%	▼ 0.8%
Housing Permits	▲ 0.1%	▼ 13.0%
SF Permits	▲ 0.6%	▲ 1.3%
MF Permits*	▼ 0.8%	▼ 30.7%
Housing Under Construction	▲ 0.4%	▼ 0.1%
SF Under Construction	▼ 0.7%	▼ 16.9%
Housing Completions	▼ 11.8%	▼ 5.4%
SF Completions	▲ 1.3%	▲ 1.4%
New SF House Sales	▲ 4.4%	▲ 31.5%
Private Residential Construction Spending	▲ 1.4%	▼ 5.5%
SF Construction Spending	▼ 2.8%	▼ 15.2%
Existing House Sales ¹	▼ 2.2%	▼ 16.6%

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

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

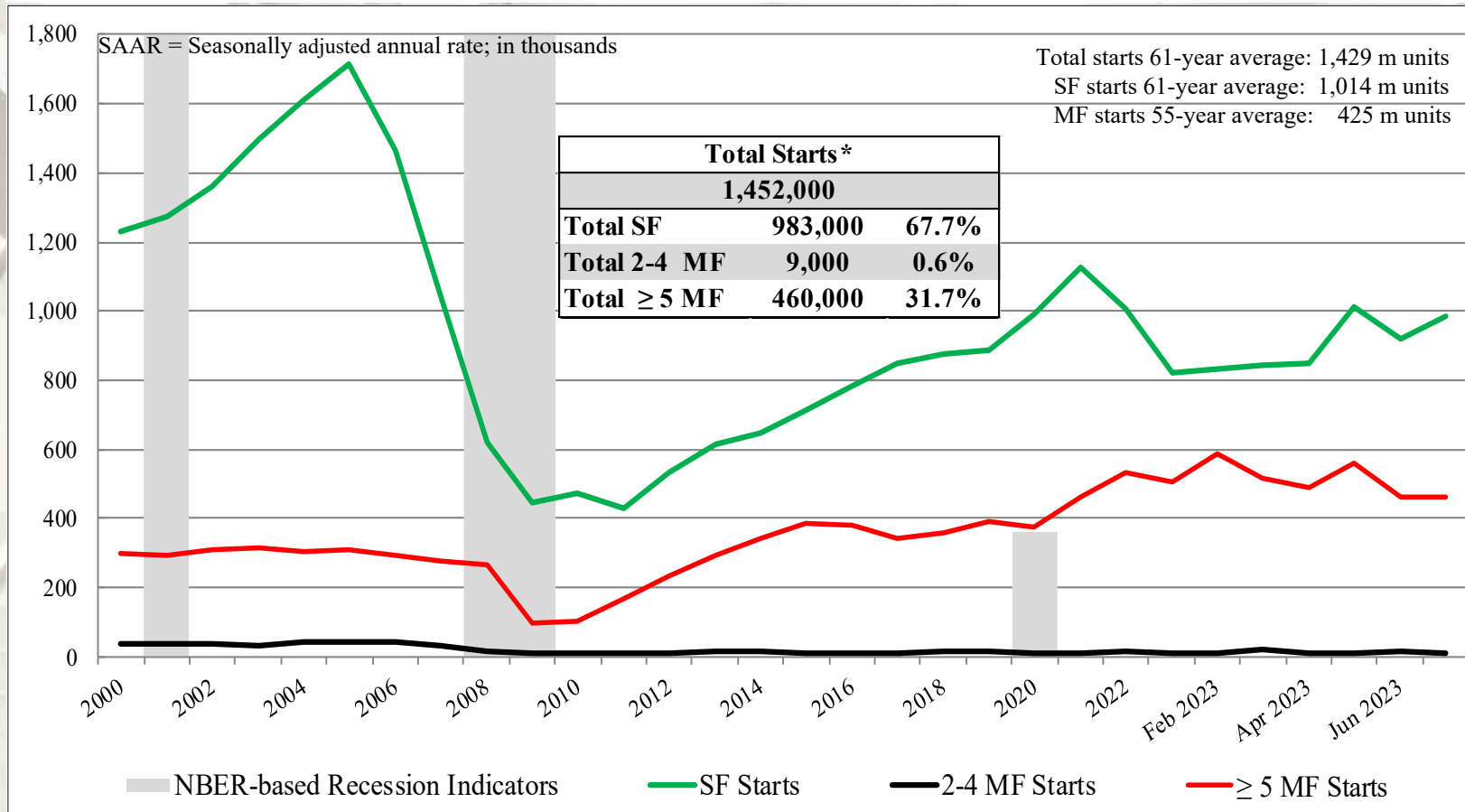
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
July	1,452,000	983,000	9,000	460,000
June	1,398,000	921,000	17,000	460,000
2022	1,371,000	898,000	15,000	458,000
M/M change	3.9%	6.7%	-47.1%	0.0%
Y/Y change	5.9%	9.5%	-40.0%	0.4%

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

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

Total Housing Starts

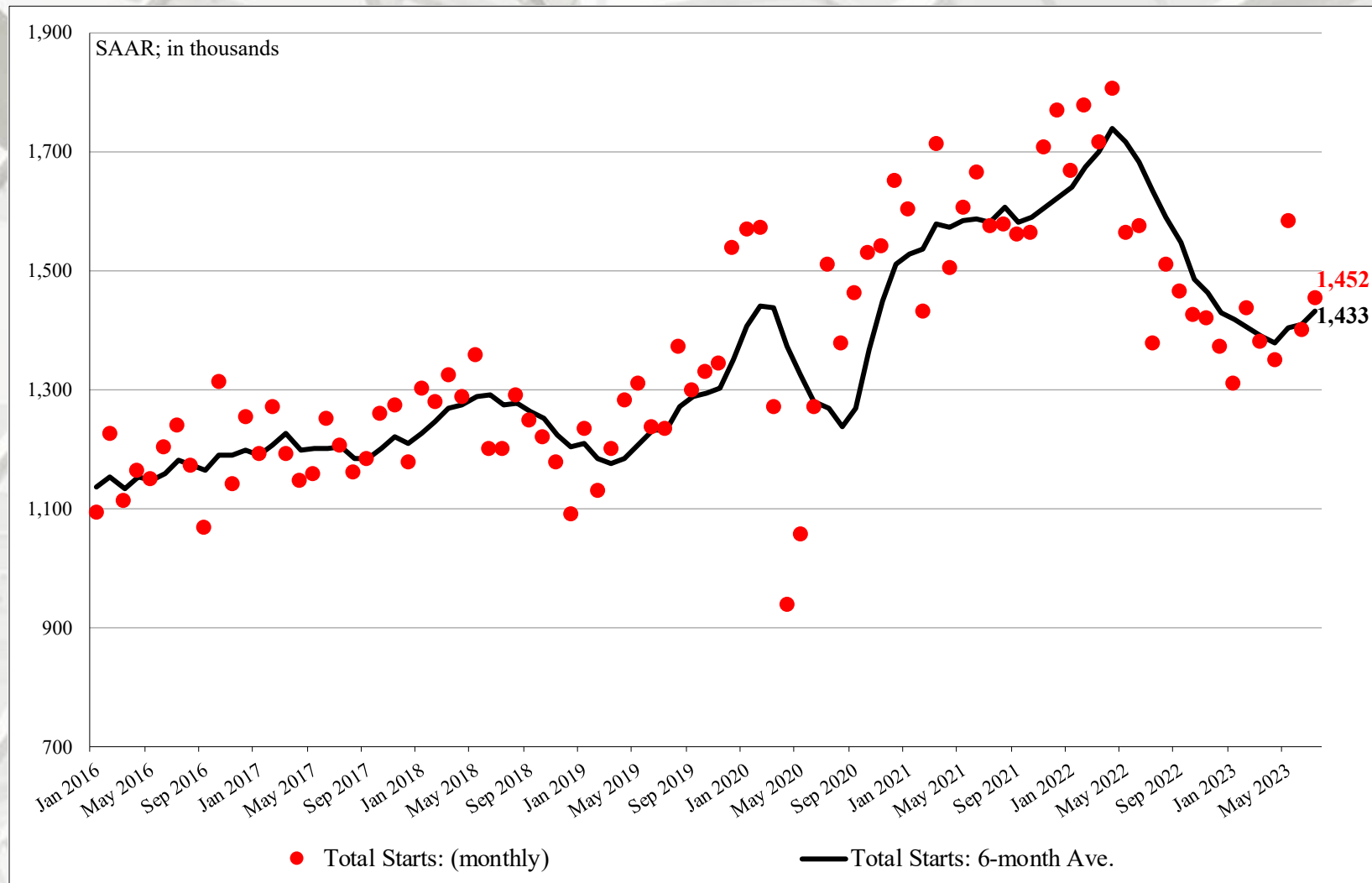


The US DOC does not report 2 to 4 multi-family starts directly; this is an estimation: (Total starts – (SF + 5-unit MF)).

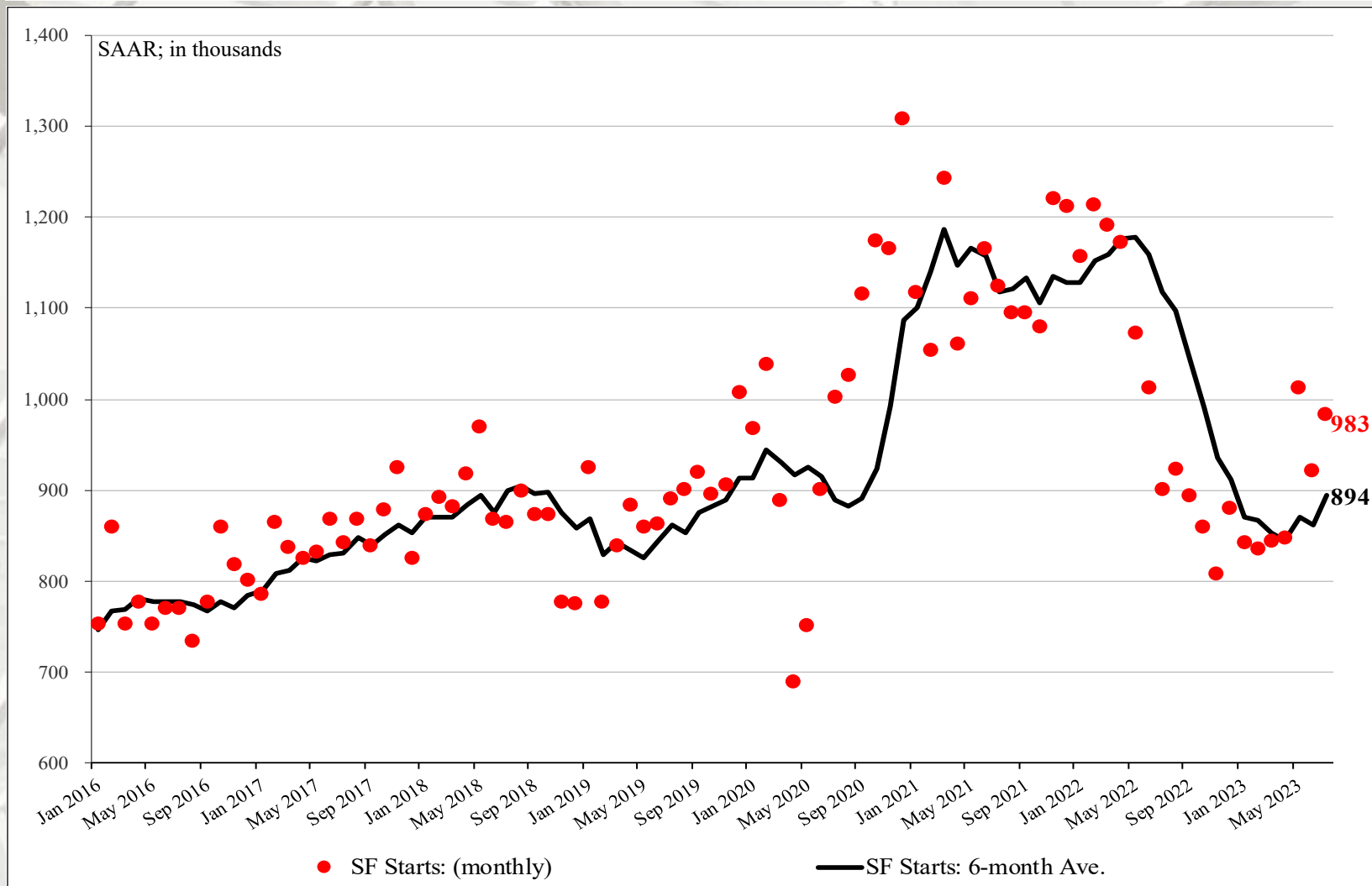
* Percentage of total starts.

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

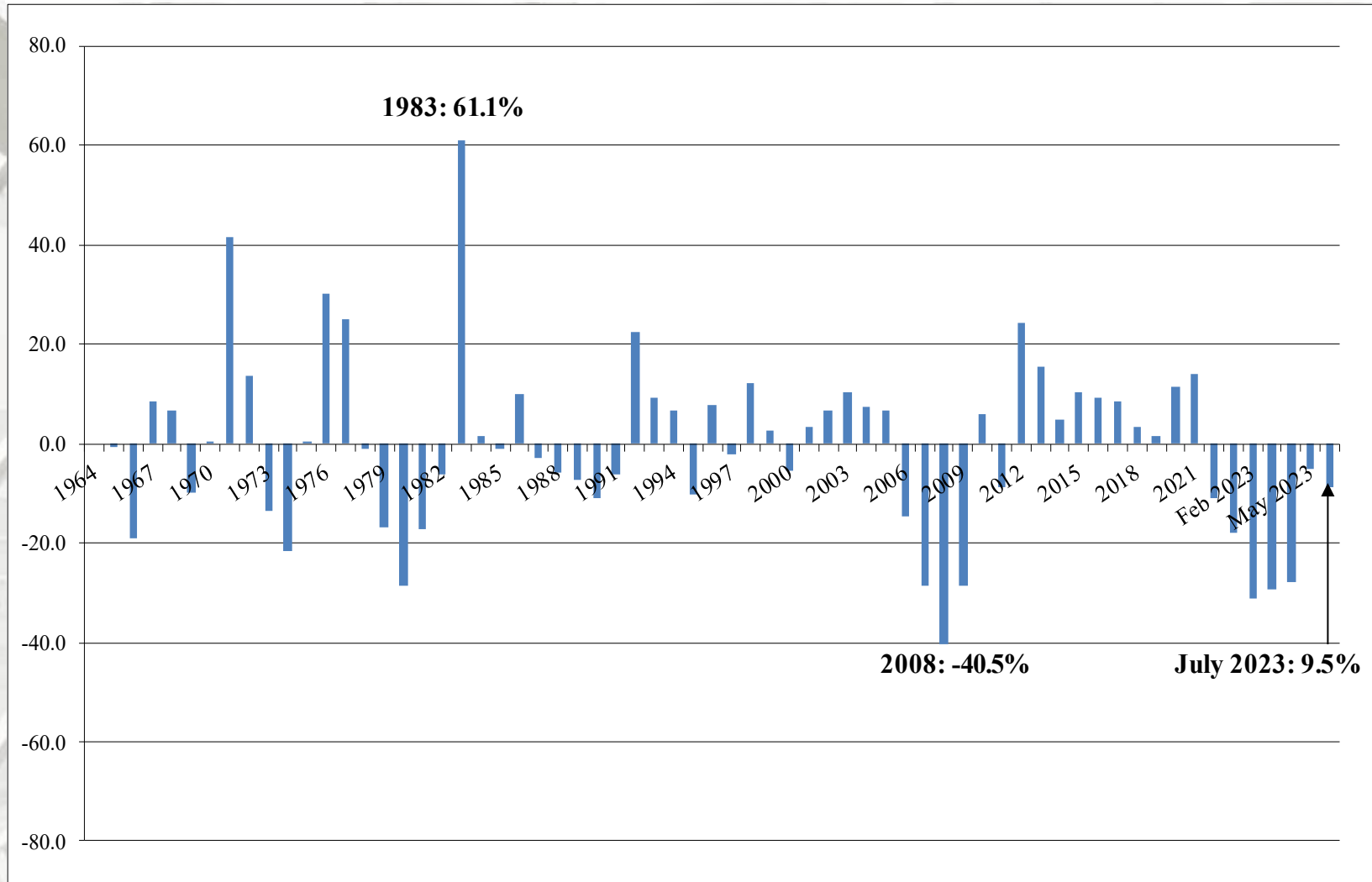
Total Housing Starts: Six-Month Moving Average



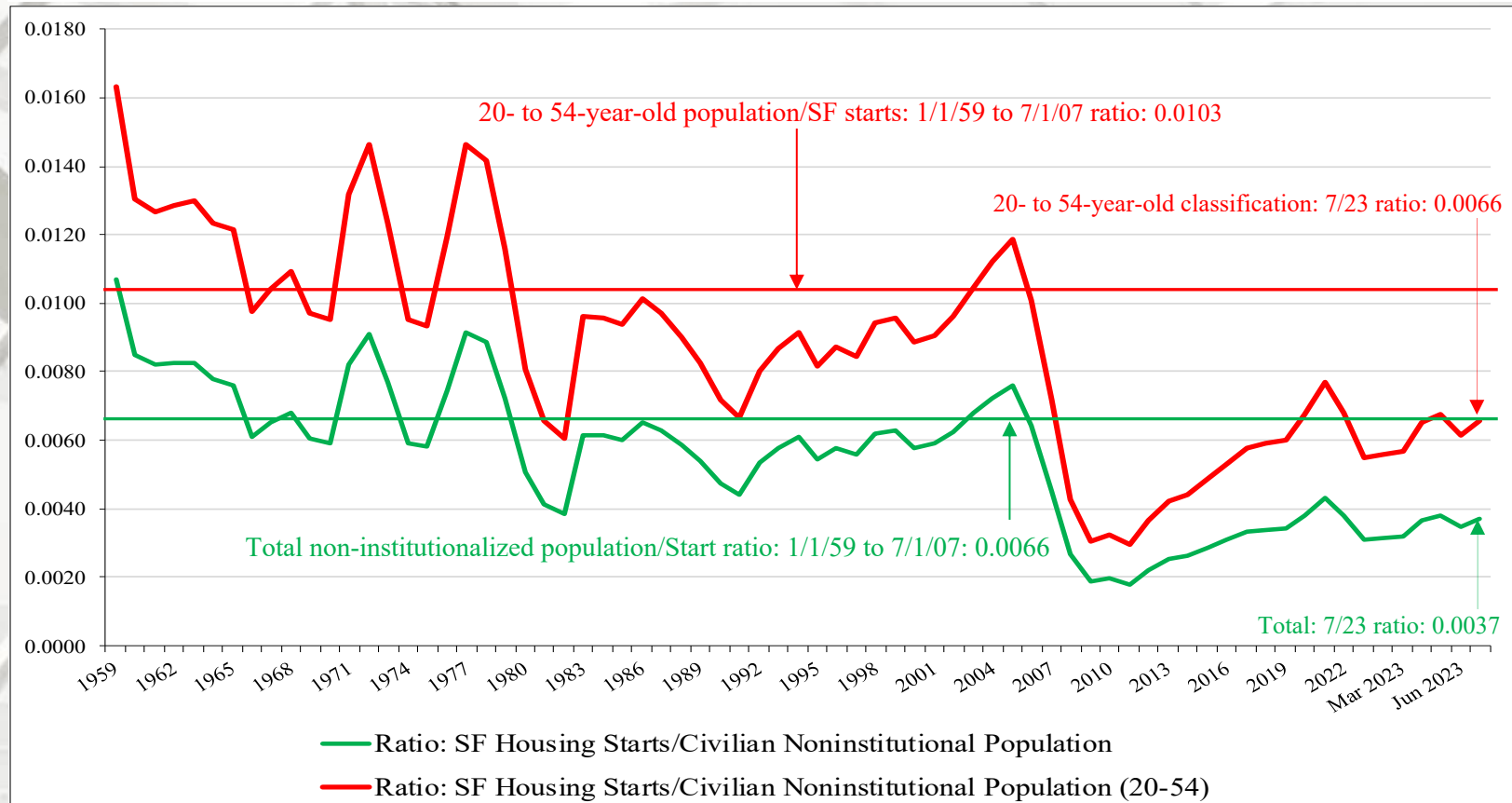
SF Housing Starts: Six-Month Moving Average



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



New SF Starts

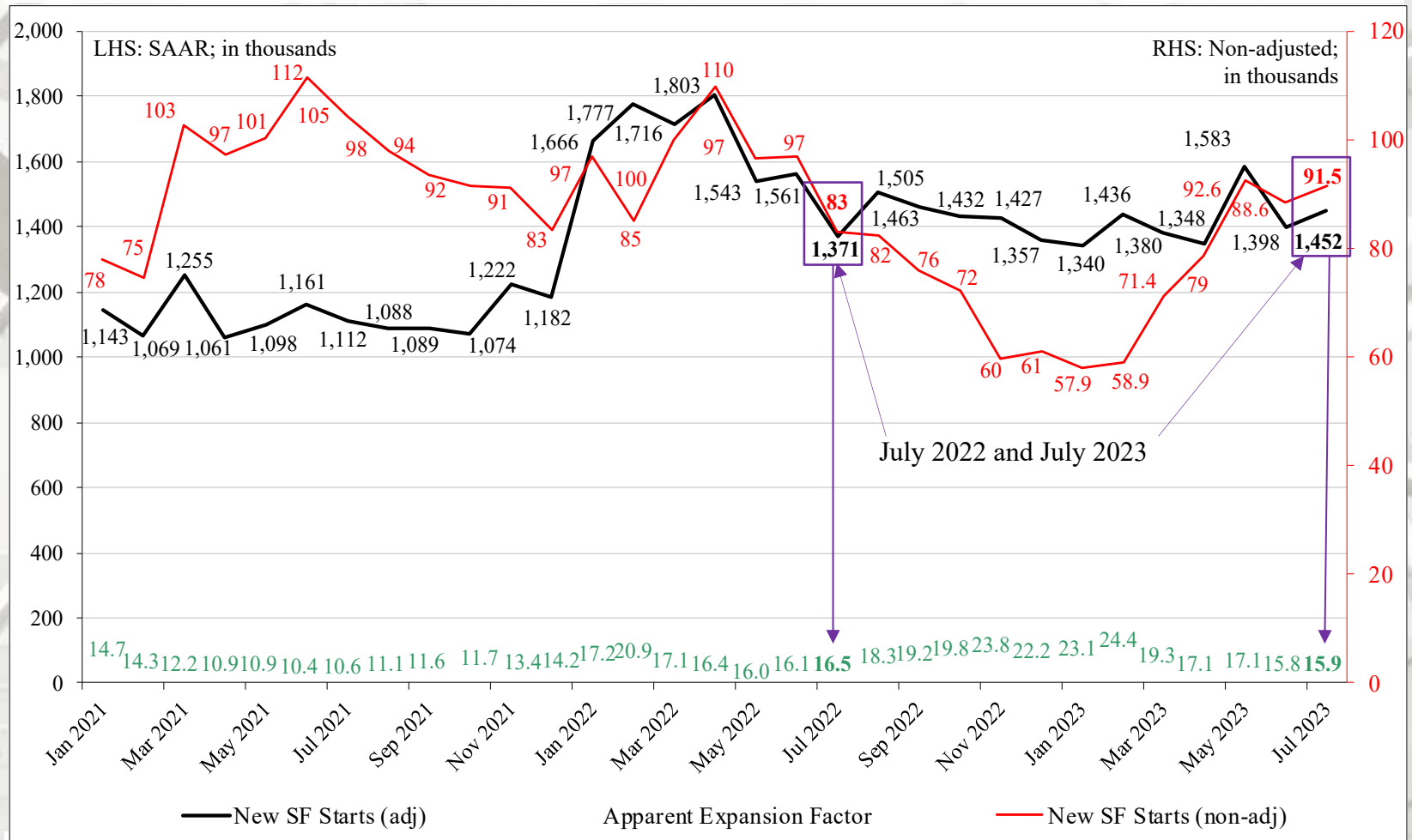


New SF starts adjusted for the US population

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 July 2023 it was 0.0037 – a slight increase from June (0.0035). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in July 2023 it was 0.0066 – also an improvement from June (0.0061). New SF construction in both age categories is less than what is necessary for changes in the population (i.e., under-building).

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

Nominal & SAAR SF Starts



Nominal and Adjusted New SF Monthly Starts

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

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

New Housing Starts by Region

	NE Total	NE SF	NE MF**
July	102,000	57,000	45,000
June	101,000	59,000	42,000
2022	167,000	73,000	94,000
M/M change	1.0%	-3.4%	7.1%
Y/Y change	-38.9%	-21.9%	-52.1%
	MW Total	MW SF	MW MF
July	178,000	126,000	52,000
June	162,000	112,000	50,000
2022	161,000	105,000	56,000
M/M change	9.9%	12.5%	4.0%
Y/Y change	10.6%	20.0%	-7.1%

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

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

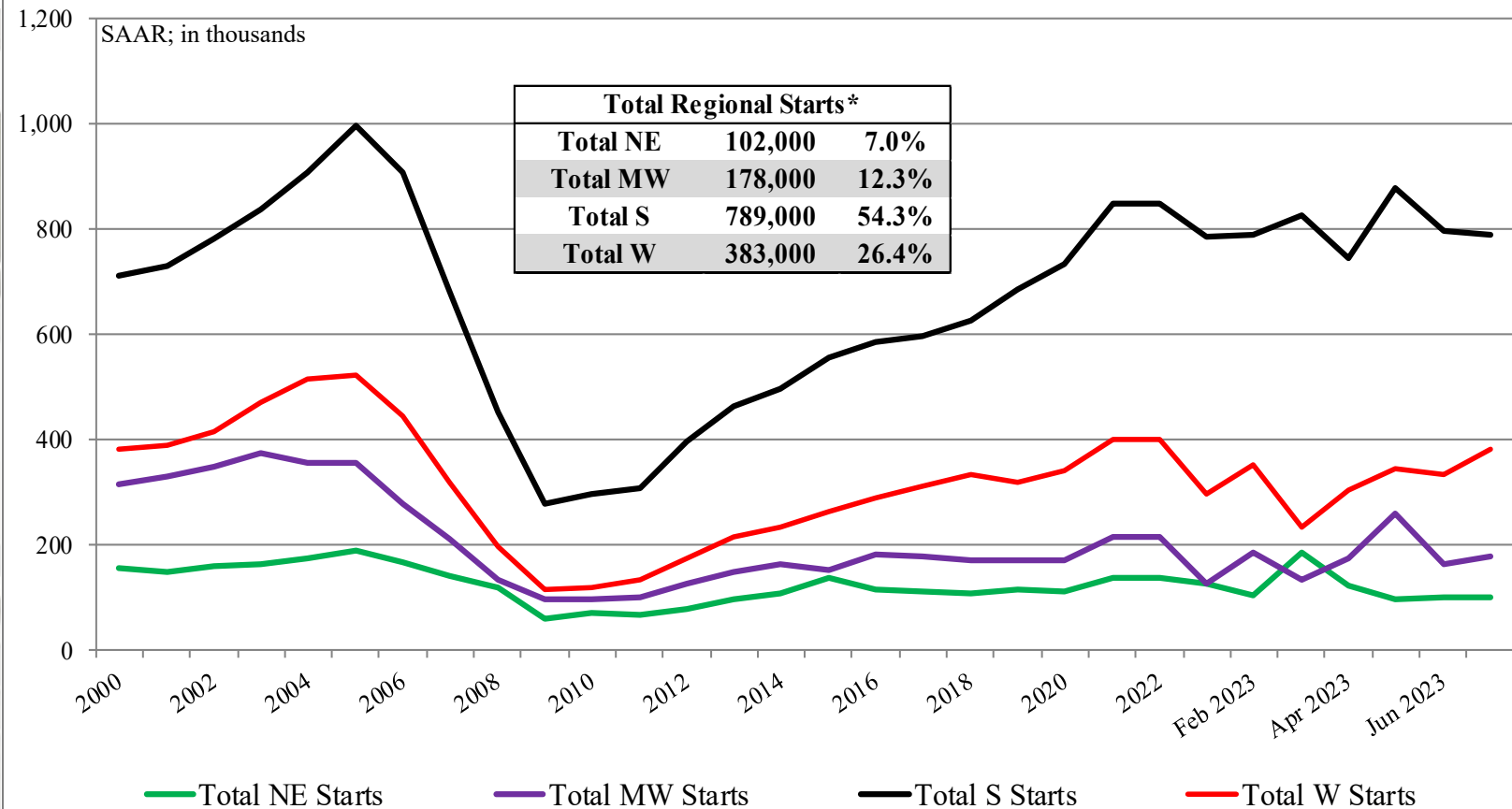
New Housing Starts by Region

	S Total	S SF	S MF**
July	789,000	543,000	246,000
June	799,000	550,000	249,000
2022	705,000	512,000	193,000
M/M change	-1.3%	-1.3%	-1.2%
Y/Y change	11.9%	6.1%	27.5%
	W Total	W SF	W MF
July	383,000	257,000	126,000
June	336,000	200,000	136,000
2022	338,000	208,000	130,000
M/M change	14.0%	28.5%	-7.4%
Y/Y change	13.3%	23.6%	-3.1%

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

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

New Housing Starts by Region

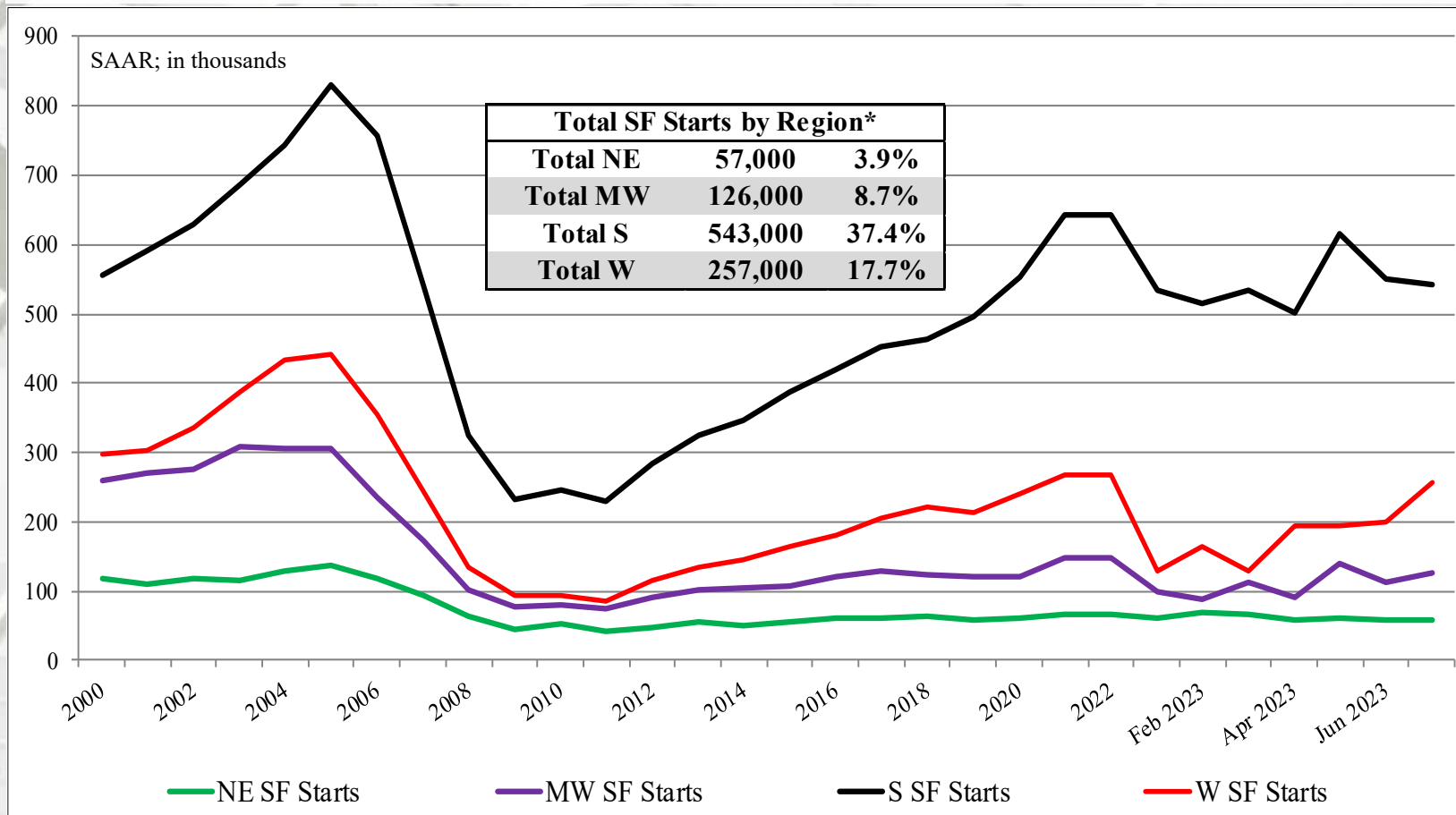


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

Total SF Housing Starts by Region

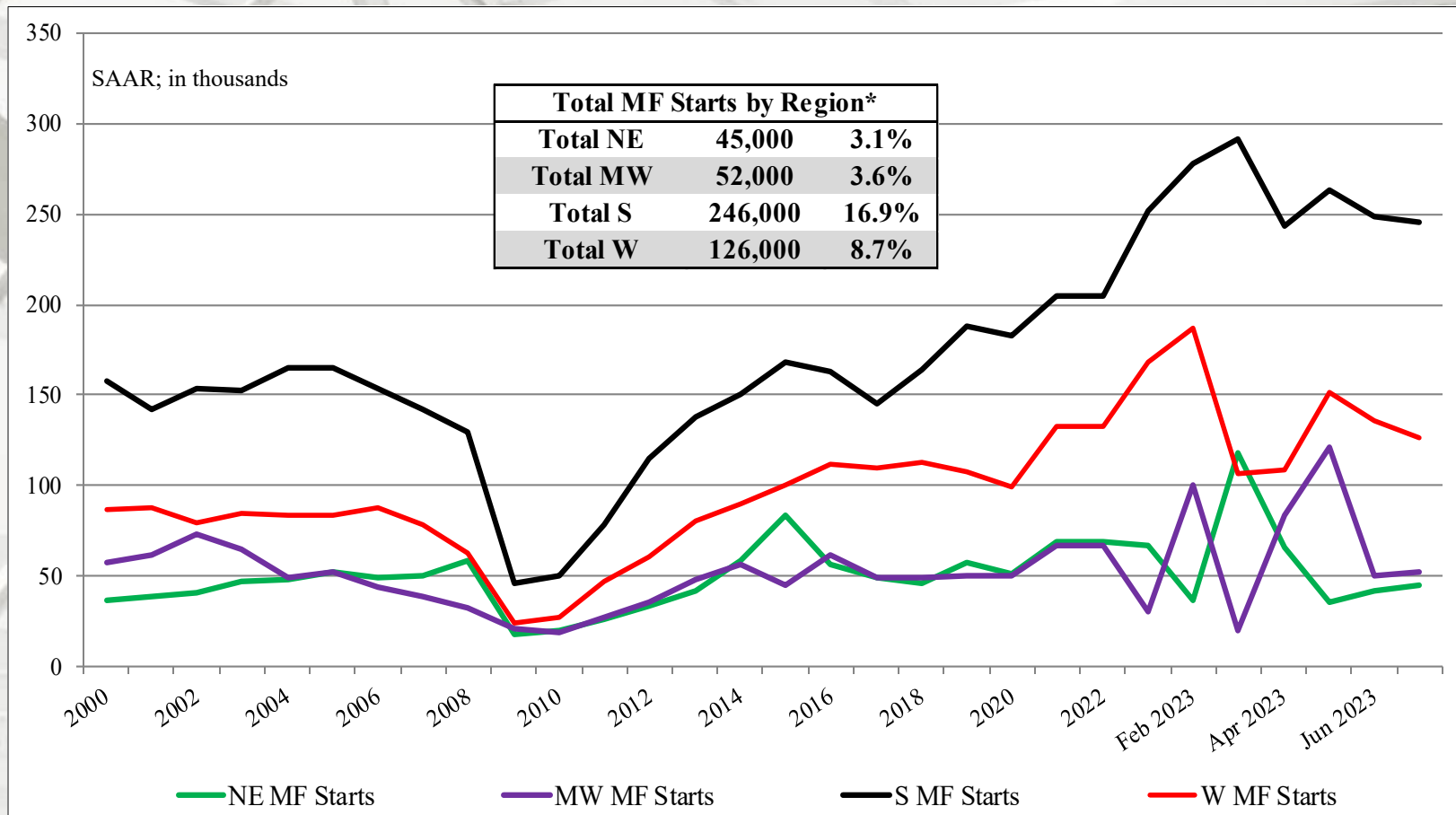


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

MF Housing Starts by Region

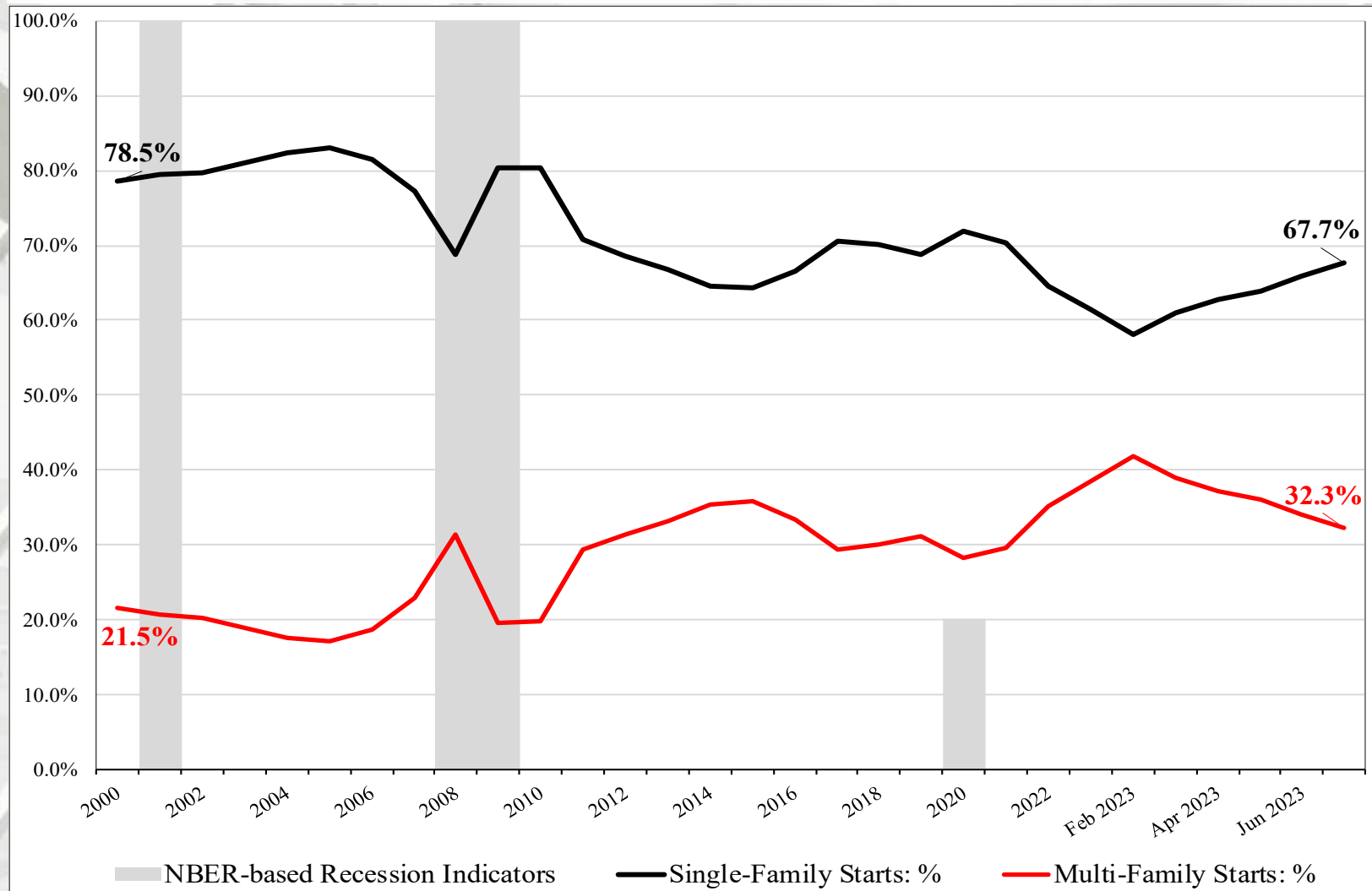


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

SF vs. MF Housing Starts (%)



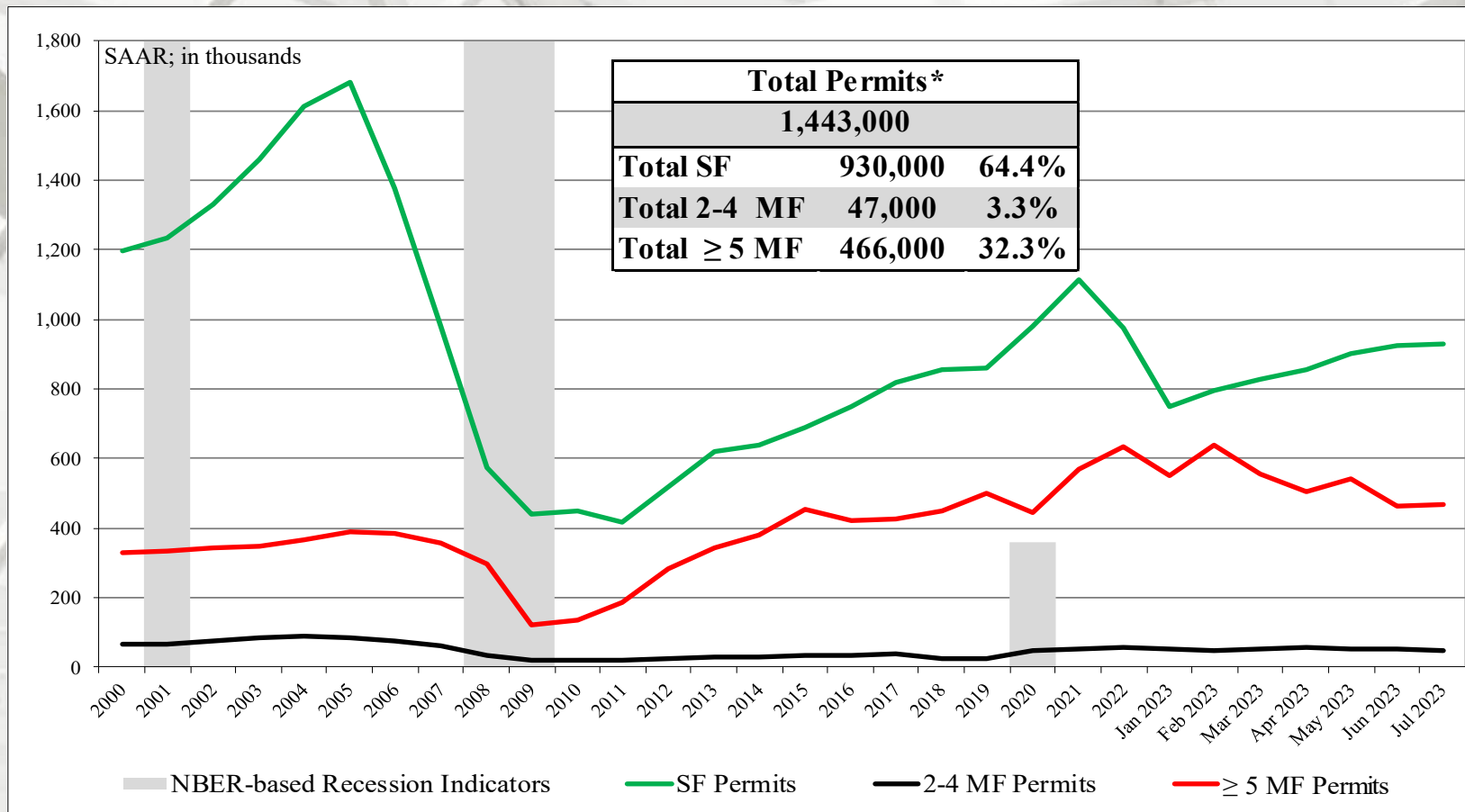
NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
July	1,443,000	930,000	47,000	466,000
June	1,441,000	924,000	52,000	465,000
2022	1,658,000	918,000	56,000	684,000
M/M change	0.1%	0.6%	-9.6%	0.2%
Y/Y change	-13.0%	1.3%	-16.1%	-31.9%

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

Total New Housing Permits



* Percentage of total permits.

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

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
July	108,000	51,000	57,000
June	106,000	57,000	49,000
2022	159,000	63,000	96,000
M/M change	1.9%	-10.5%	16.3%
Y/Y change	-32.1%	-19.0%	-40.6%

	MW Total*	MW SF	MW MF**
July	182,000	115,000	67,000
June	196,000	111,000	85,000
2022	213,000	122,000	91,000
M/M change	-7.1%	3.6%	-21.2%
Y/Y change	-14.6%	-5.7%	-26.4%

NE = Northeast; MW = Midwest

* All data are SAAR

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

New Housing Permits by Region

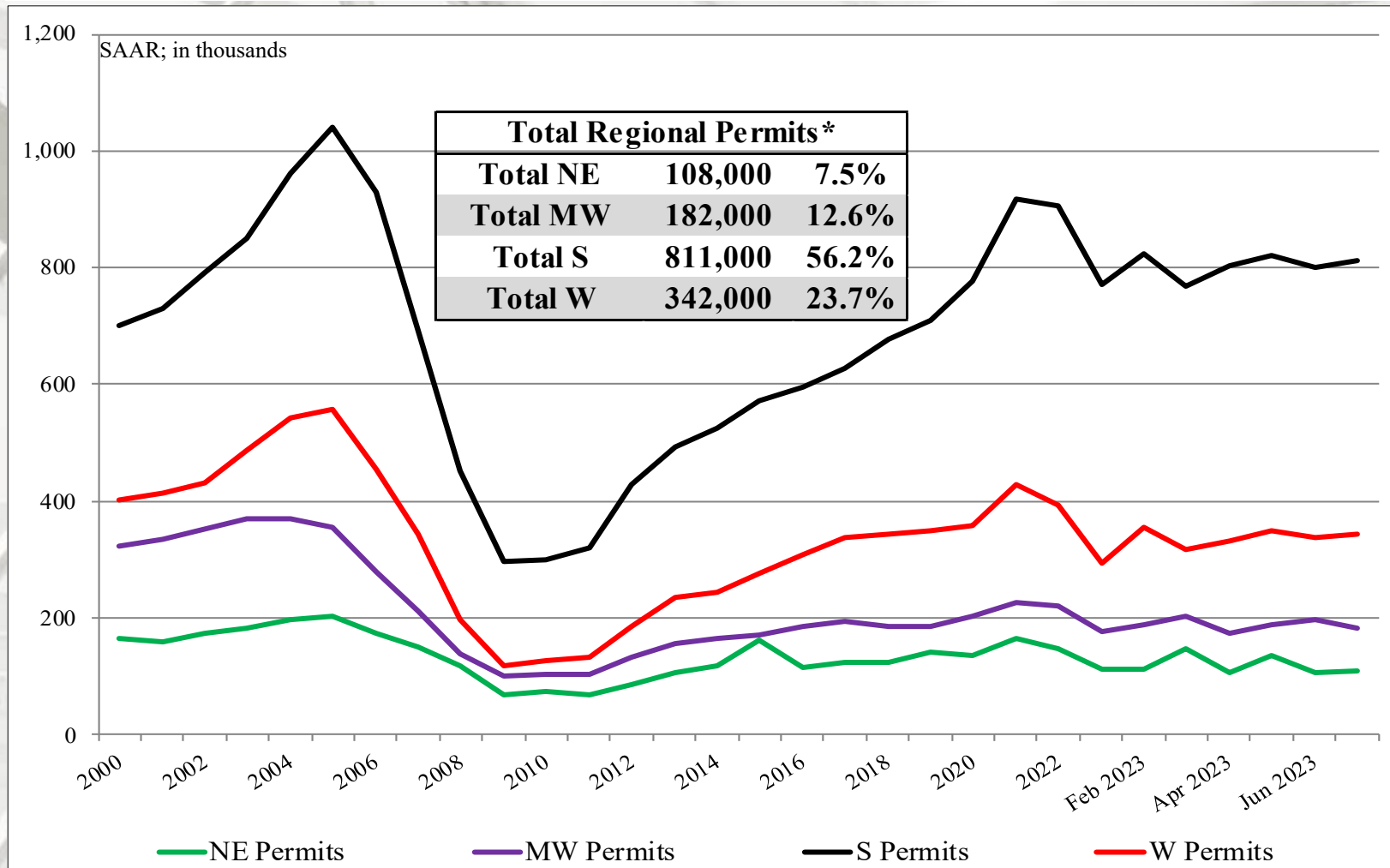
	S Total*	S SF	S MF**
July	811,000	566,000	245,000
June	801,000	558,000	243,000
2022	912,000	542,000	370,000
M/M change	1.2%	1.4%	0.8%
Y/Y change	-11.1%	4.4%	-33.8%
	W Total*	W SF	W MF**
July	342,000	198,000	144,000
June	338,000	198,000	140,000
2022	374,000	191,000	183,000
M/M change	1.2%	0.0%	2.9%
Y/Y change	-8.6%	3.7%	-21.3%

S = South; W = West

* All data are SAAR

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

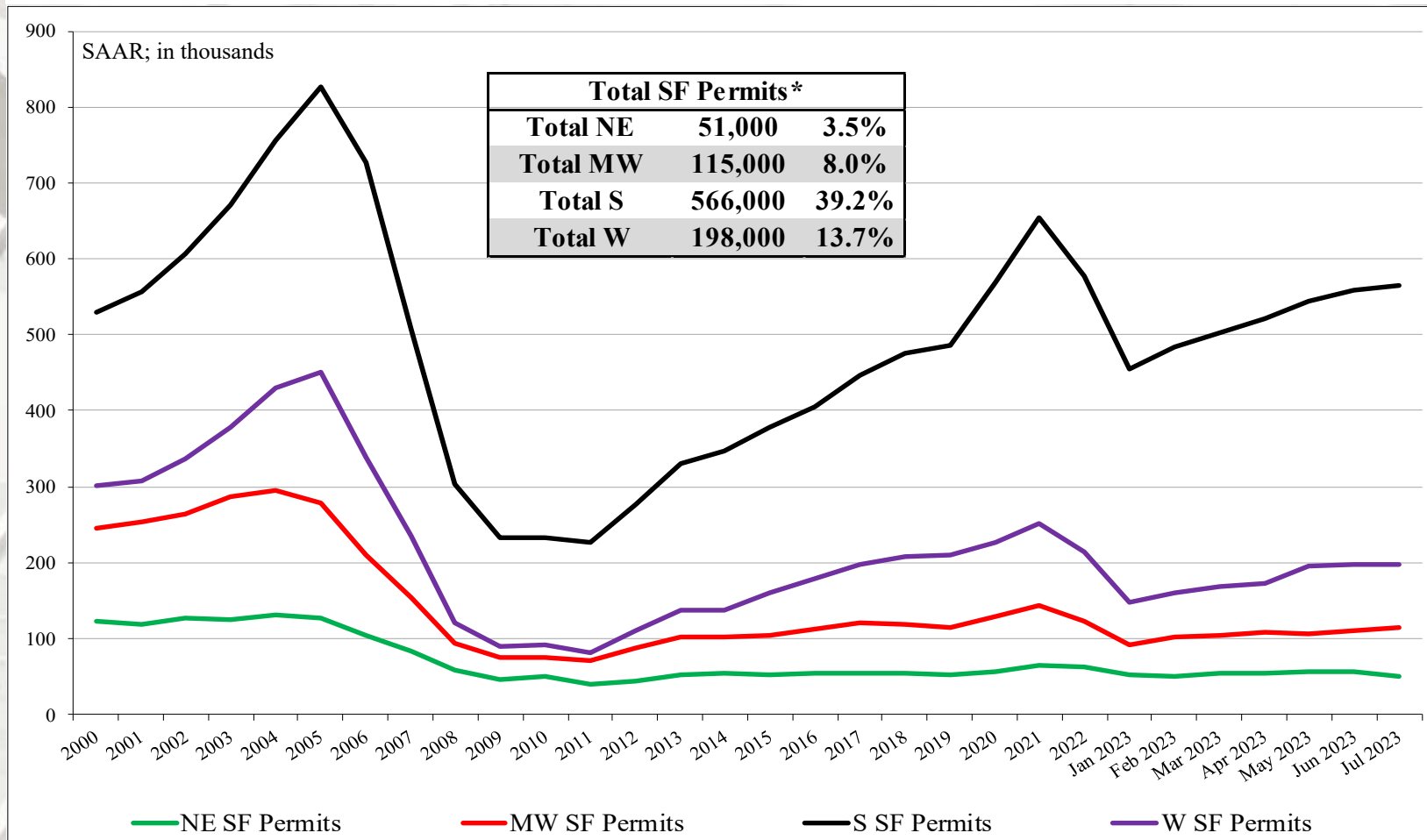
Total Housing Permits by Region



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

* Percentage of total permits.

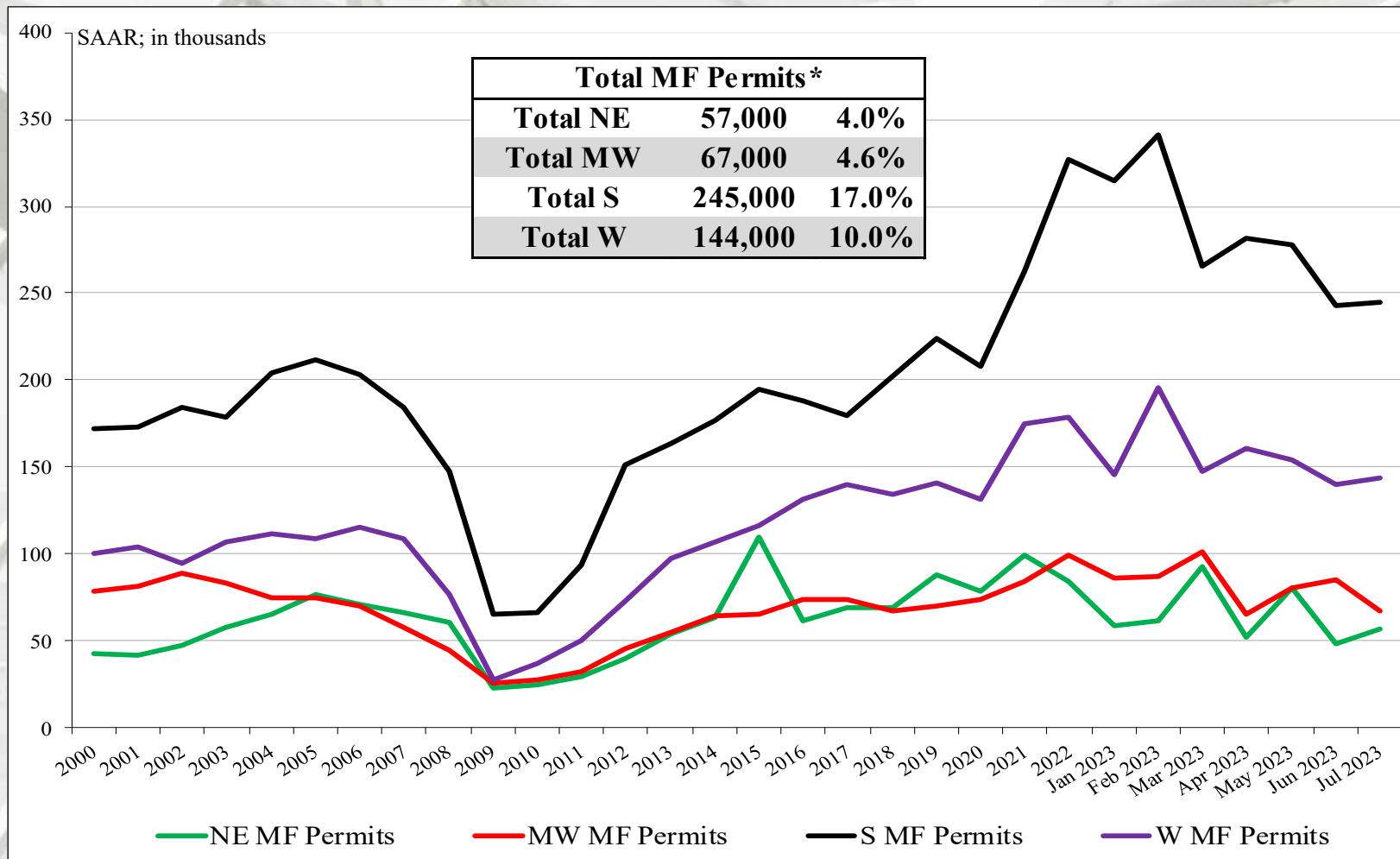
SF Housing Permits by Region



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

* Percentage of total permits.

MF Housing Permits by Region



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

* Percentage of total permits.

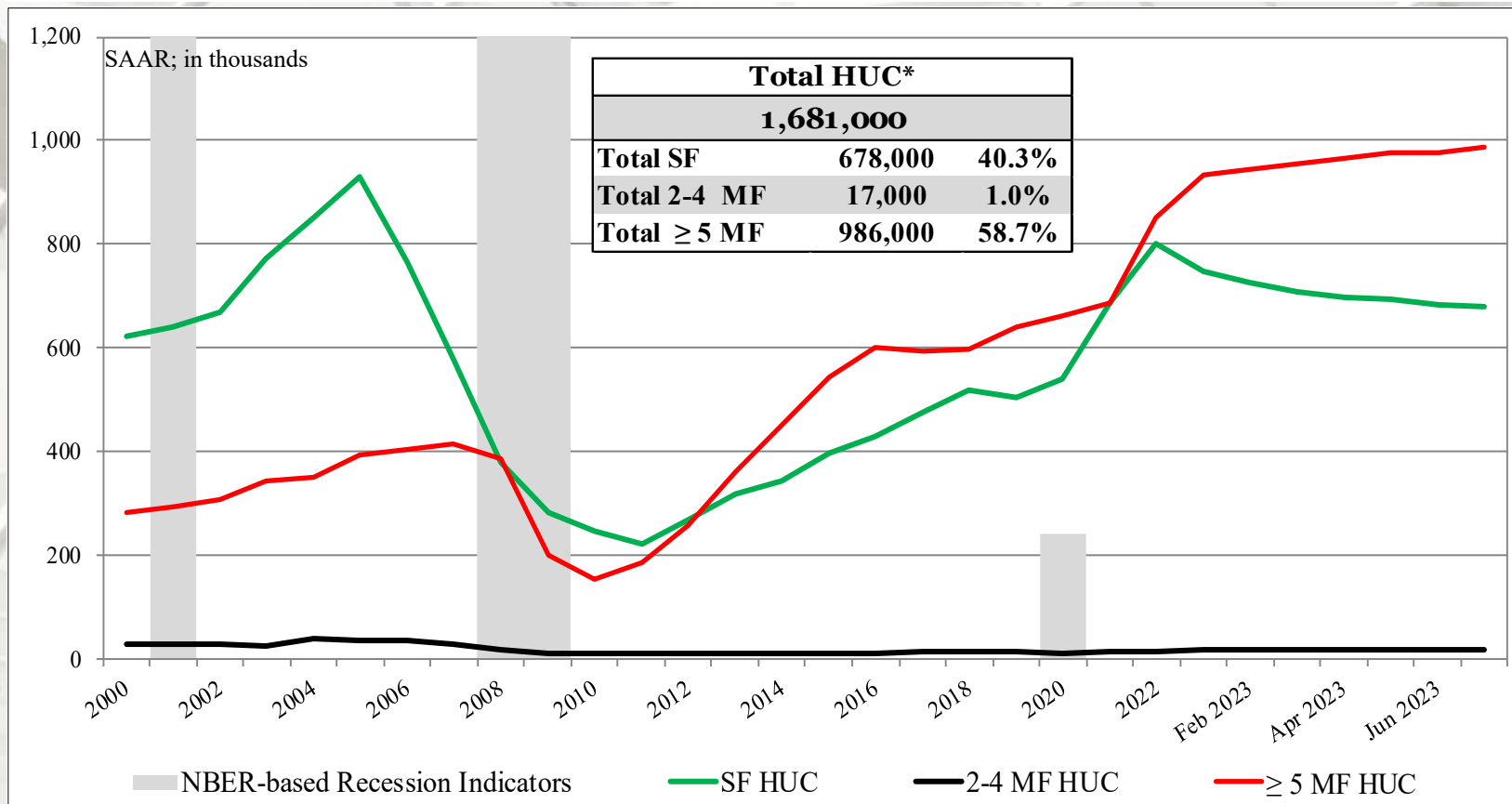
New Housing Under Construction (HUC)

	Total HUC*	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
July	1,681,000	678,000	17,000	986,000
June	1,675,000	683,000	17,000	975,000
2022	1,683,000	816,000	16,000	851,000
M/M change	0.4%	-0.7%	0.0%	1.1%
Y/Y change	-0.1%	-16.9%	6.3%	15.9%

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)).

Total Housing Under Construction



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

* Percentage of total housing under construction units.

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

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
July	220,000	66,000	154,000
June	219,000	66,000	153,000
2022	222,000	61,000	161,000
M/M change	0.5%	0.0%	0.7%
Y/Y change	-0.9%	8.2%	-4.3%
	MW Total	MW SF	MW MF
July	206,000	89,000	117,000
June	208,000	91,000	117,000
2022	215,000	109,000	106,000
M/M change	-1.0%	-2.2%	0.0%
Y/Y change	-4.2%	-18.3%	10.4%

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

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

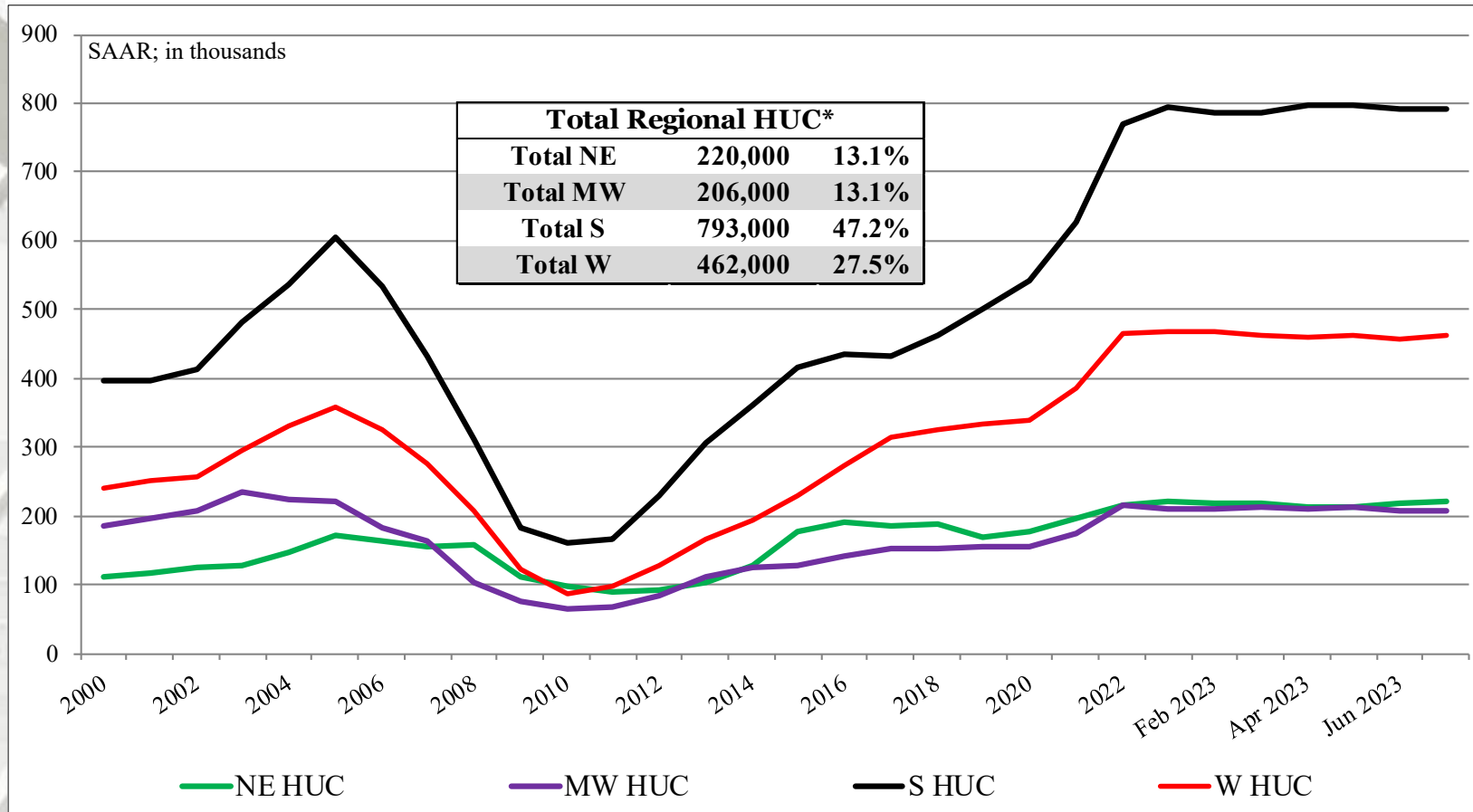
New Housing Under Construction by Region

	S Total	S SF	S MF**
July	793,000	357,000	436,000
June	791,000	362,000	429,000
2022	776,000	438,000	338,000
M/M change	0.3%	-1.4%	1.6%
Y/Y change	2.2%	-18.5%	29.0%
	W Total	W SF	W MF
July	462,000	166,000	296,000
June	457,000	164,000	293,000
2022	470,000	208,000	262,000
M/M change	1.1%	1.2%	1.0%
Y/Y change	-1.7%	-20.2%	13.0%

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

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

Total Housing Under Construction by Region

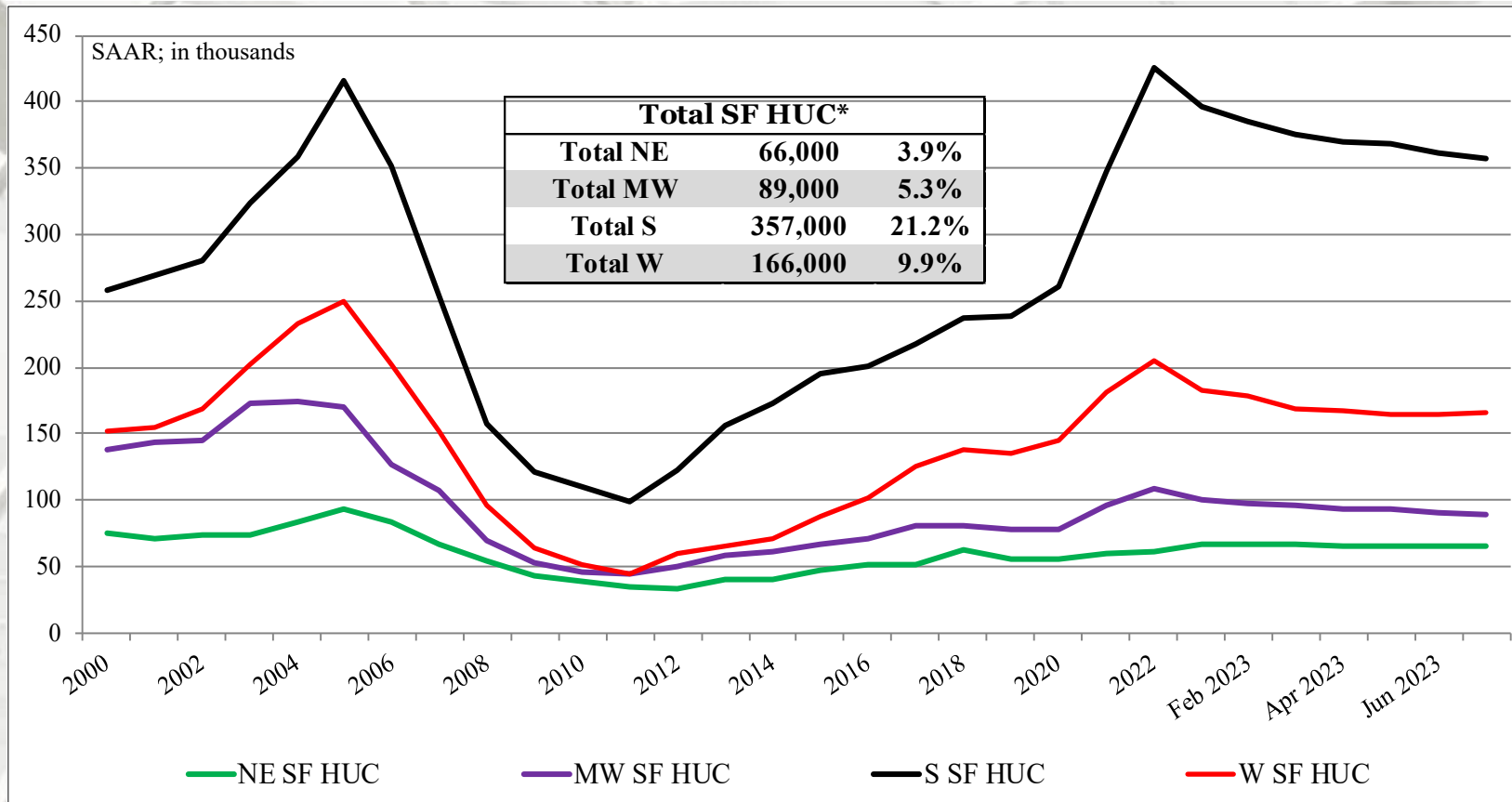


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing under construction units.

SF Housing Under Construction by Region

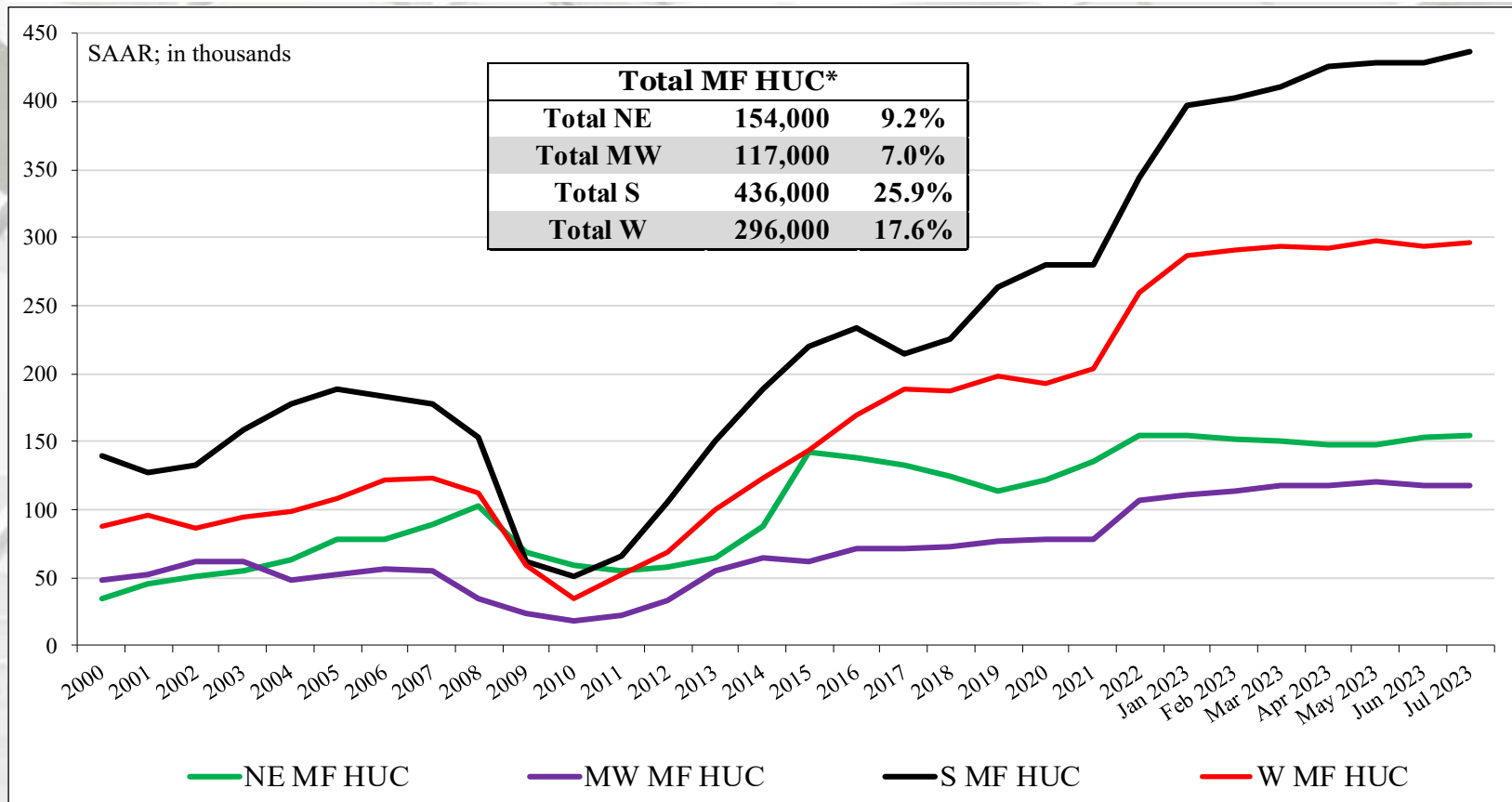


NE = Northeast, MW = Midwest, S = South, W = West.

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

* Percentage of total housing under construction units.

MF Housing Under Construction by Region



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

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

* Percentage of total housing under construction units.

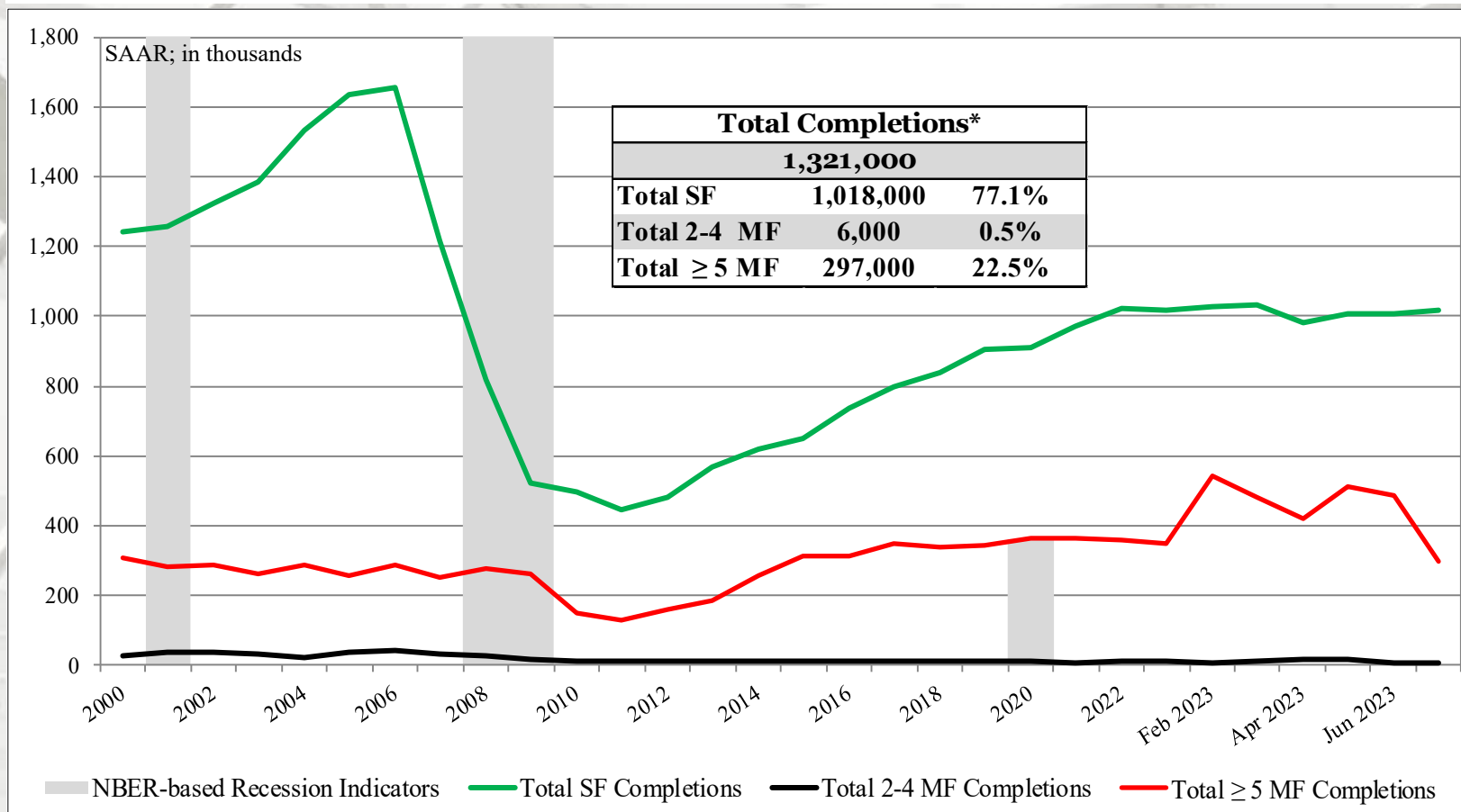
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
July	1,321,000	1,018,000	6,000	297,000
June	1,498,000	1,005,000	8,000	485,000
2022	1,396,000	1,004,000	5,000	387,000
M/M change	-11.8%	1.3%	-25.0%	-38.8%
Y/Y change	-5.4%	1.4%	20.0%	-23.3%

* 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)).

Total Housing Completions



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).

New Housing Completions by Region

	NE Total	NE SF	NE MF**
July	83,000	60,000	23,000
June	135,000	62,000	73,000
2022	92,000	61,000	31,000
M/M change	-38.5%	-3.2%	-68.5%
Y/Y change	-9.8%	-1.6%	-25.8%
	MW Total	MW SF	MW MF
July	196,000	157,000	39,000
June	192,000	128,000	64,000
2022	282,000	153,000	129,000
M/M change	2.1%	22.7%	-39.1%
Y/Y change	-30.5%	2.6%	-69.8%

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

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

* Percentage of total housing completions

New Housing Completions by Region

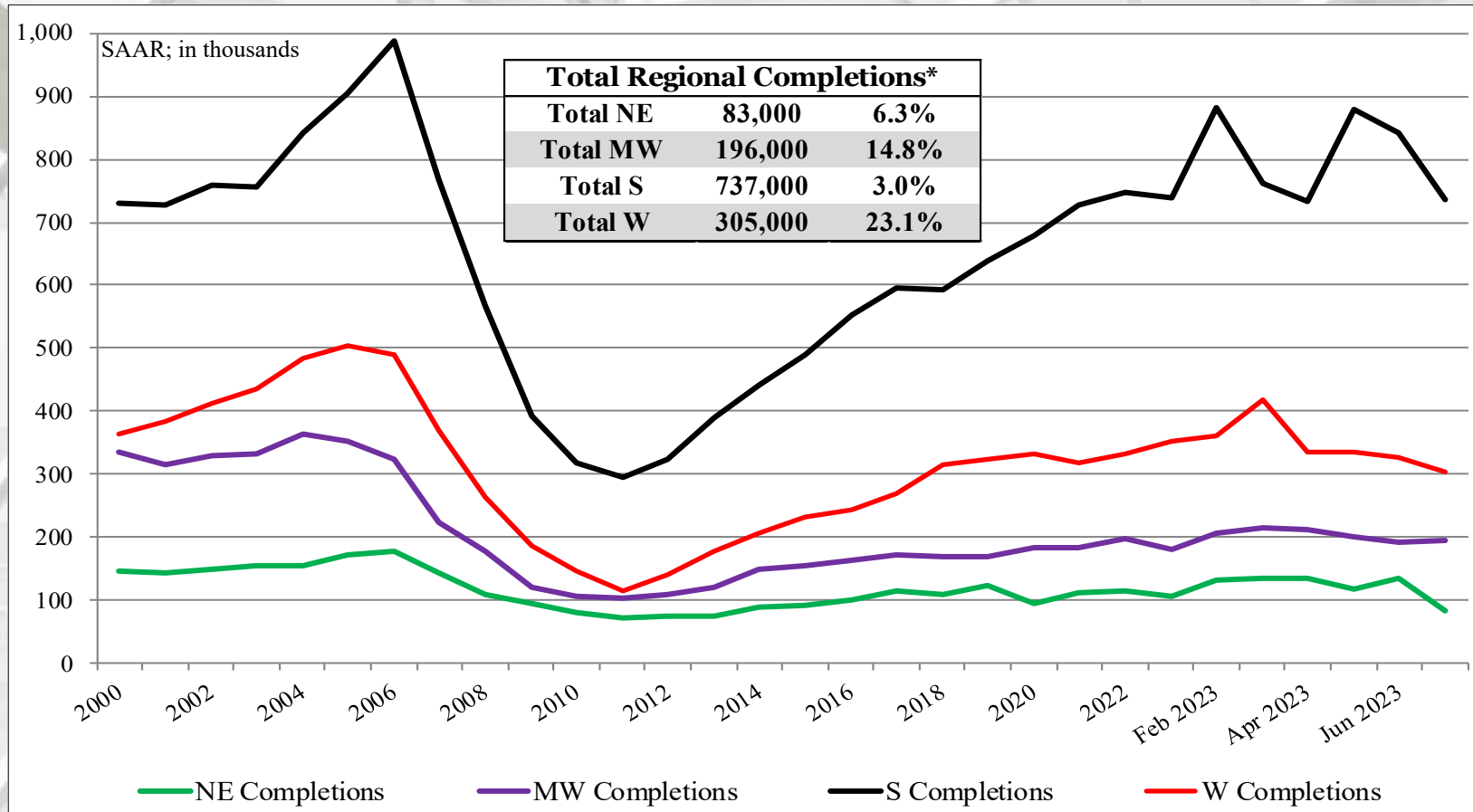
	S Total	S SF	S MF**
July	737,000	586,000	151,000
June	843,000	607,000	236,000
2022	713,000	556,000	157,000
M/M change	-12.6%	-3.5%	-36.0%
Y/Y change	3.4%	5.4%	-3.8%
	W Total	W SF	W MF
July	305,000	215,000	90,000
June	328,000	208,000	120,000
2022	309,000	234,000	75,000
M/M change	-7.0%	3.4%	-25.0%
Y/Y change	-1.3%	-8.1%	20.0%

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

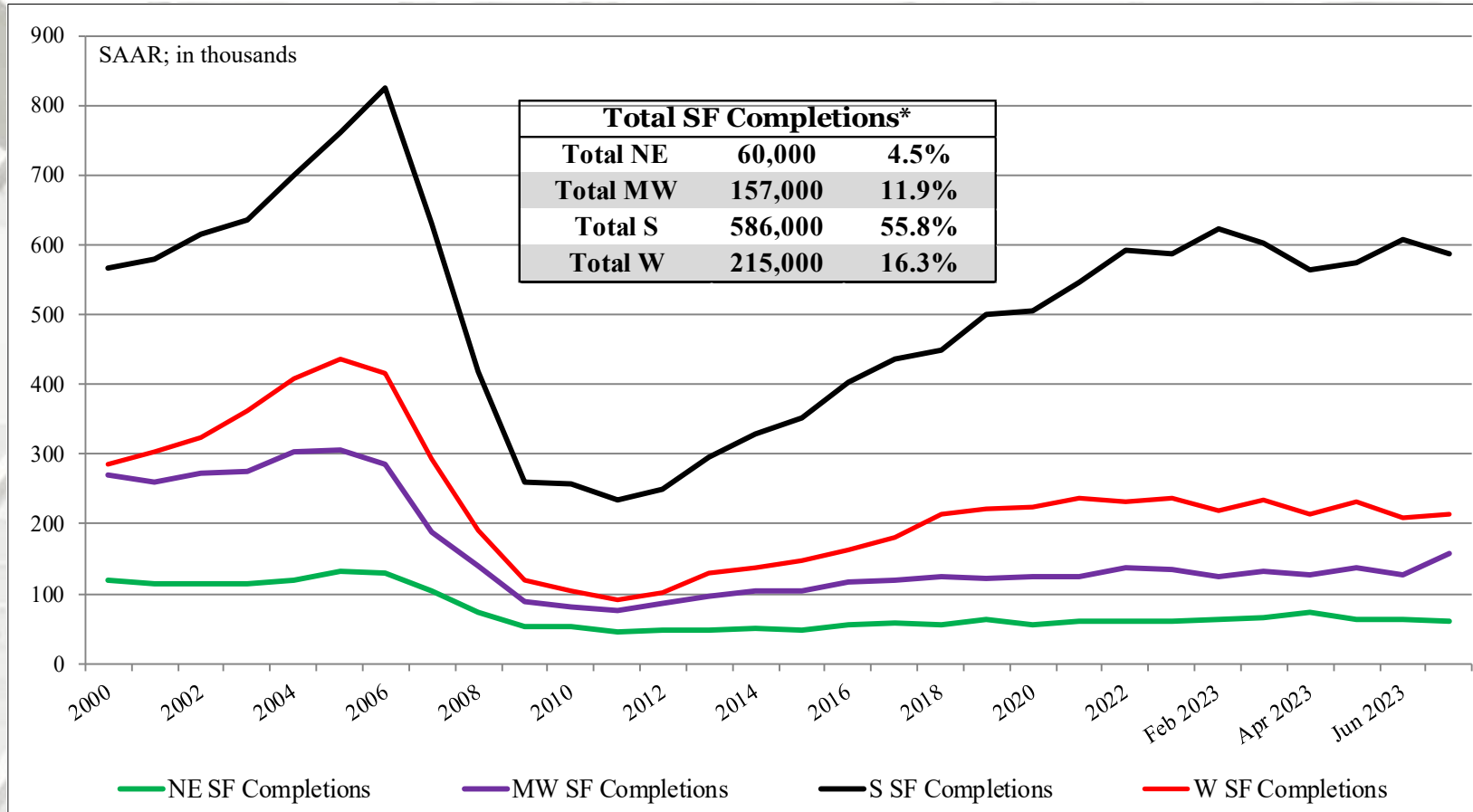
Total Housing Completions by Region



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).

SF Housing Completions by Region

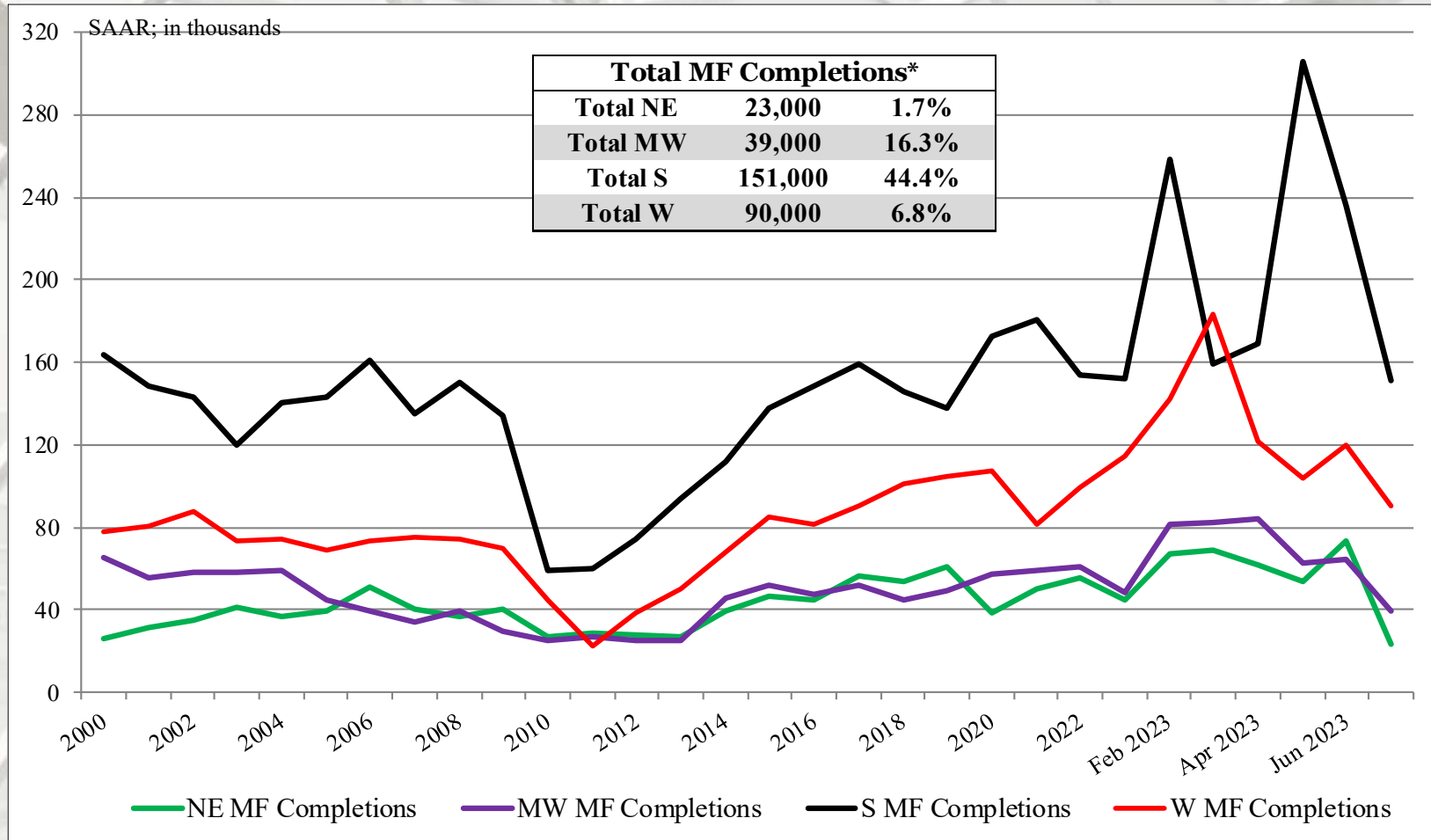


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing completions

MF Housing Completions by Region



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

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

* Percentage of total housing completions

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



Authorized, Not Started vs. Housing Completions

Total authorized units “not” started was 277,000 in July, a minimal decrease from June, and SF authorized units “not” started decreased slightly to 140,000 units in July. Total completions decreased and SF unit completions increased M/M.

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

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
July	714,000	\$436,700	\$513,000	7.3
June	684,000	\$416,700	\$507,300	7.5
2022	543,000	\$478,200	\$564,900	10.1
M/M change	4.4%	4.8%	1.1%	-2.7%
Y/Y change	31.5%	-8.7%	-9.2%	-27.7%

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

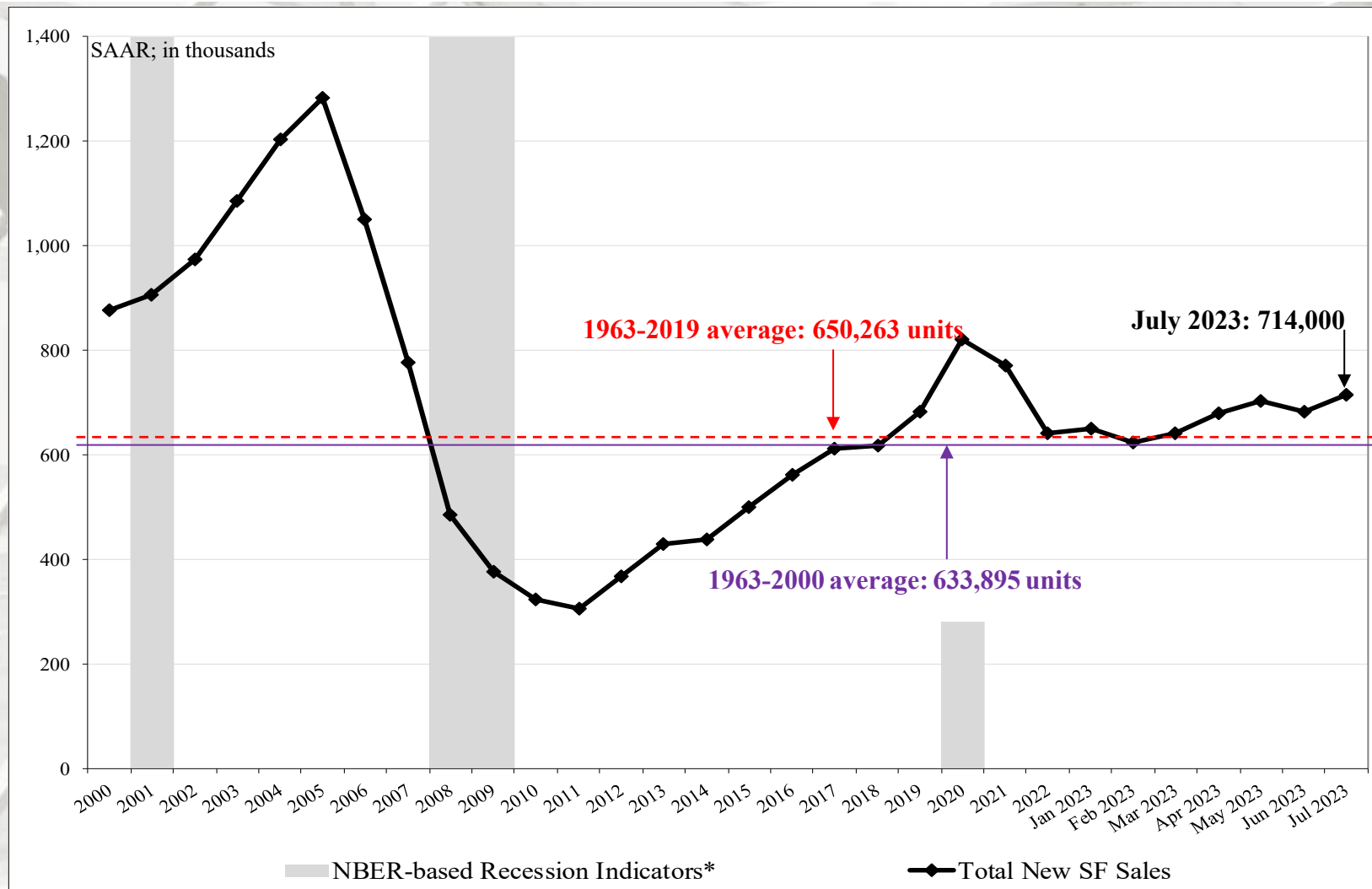
New SF sales were more than the consensus forecast³ of 705 m; range 686 m to 730 m. The past three month's new SF sales data also were revised:

April initial: 683 m, revised to 679 m.

May initial: 763 m, revised to 704 m.

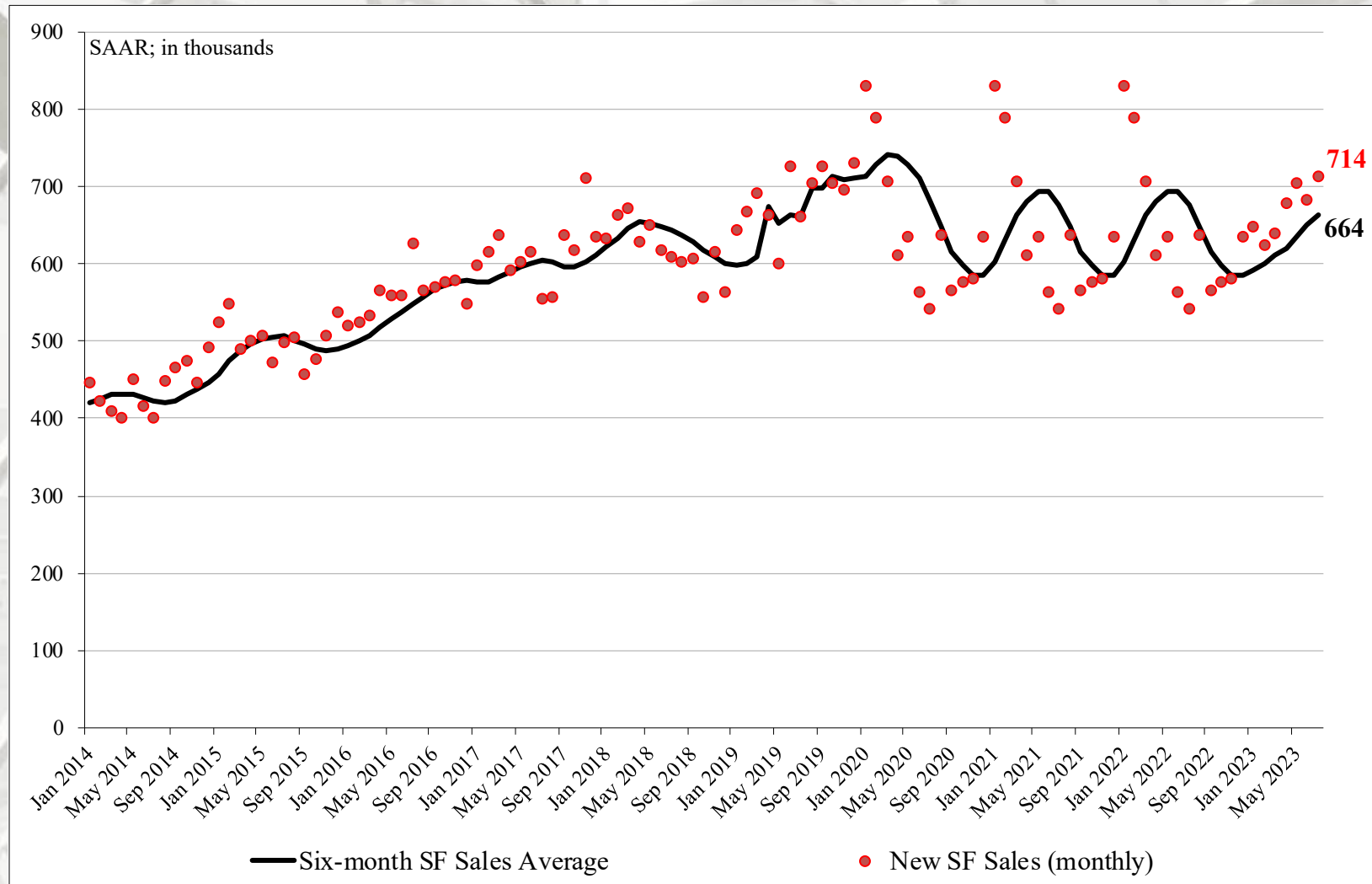
June initial: 697 m, revised to 684 m.

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 Housing Sales: Six-month average & monthly



New SF House Sales by Region and Price Category

	NE	MW	S	W
July	33,000	84,000	416,000	181,000
June	34,000	57,000	444,000	149,000
2022	23,000	53,000	354,000	113,000
M/M change	-2.9%	47.4%	-6.3%	21.5%
Y/Y change	43.5%	58.5%	17.5%	60.2%

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 July not add to total because of rounding.

⁴ Housing prices are adjusted at irregular intervals.

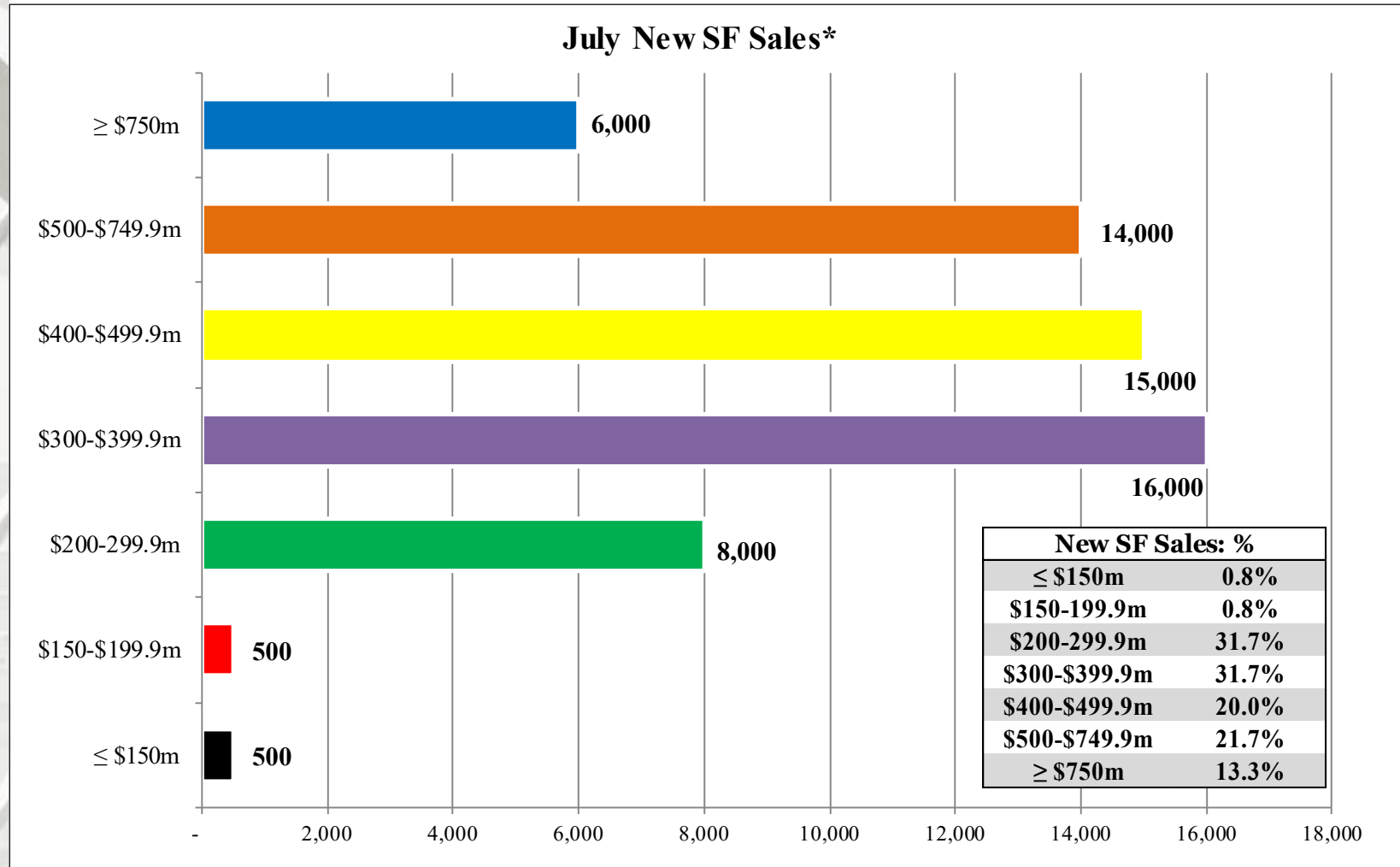
⁵ Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} <https://www.census.gov/construction/nrs/index.html>; 8/23/23;

⁴ https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

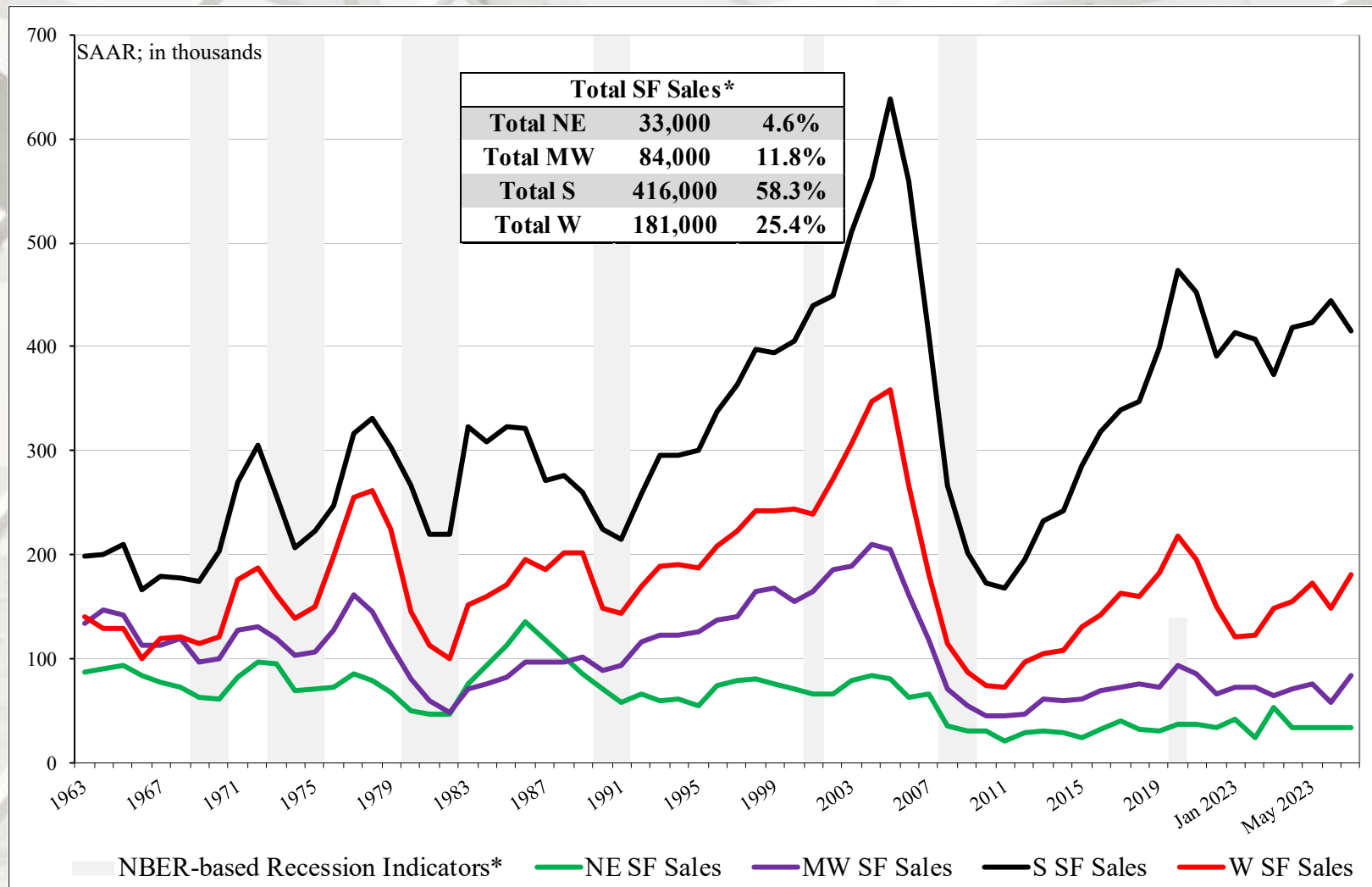
[Return TOC](#)

New SF House Sales



* Total new sales by price category and percent.

New SF House Sales by Region

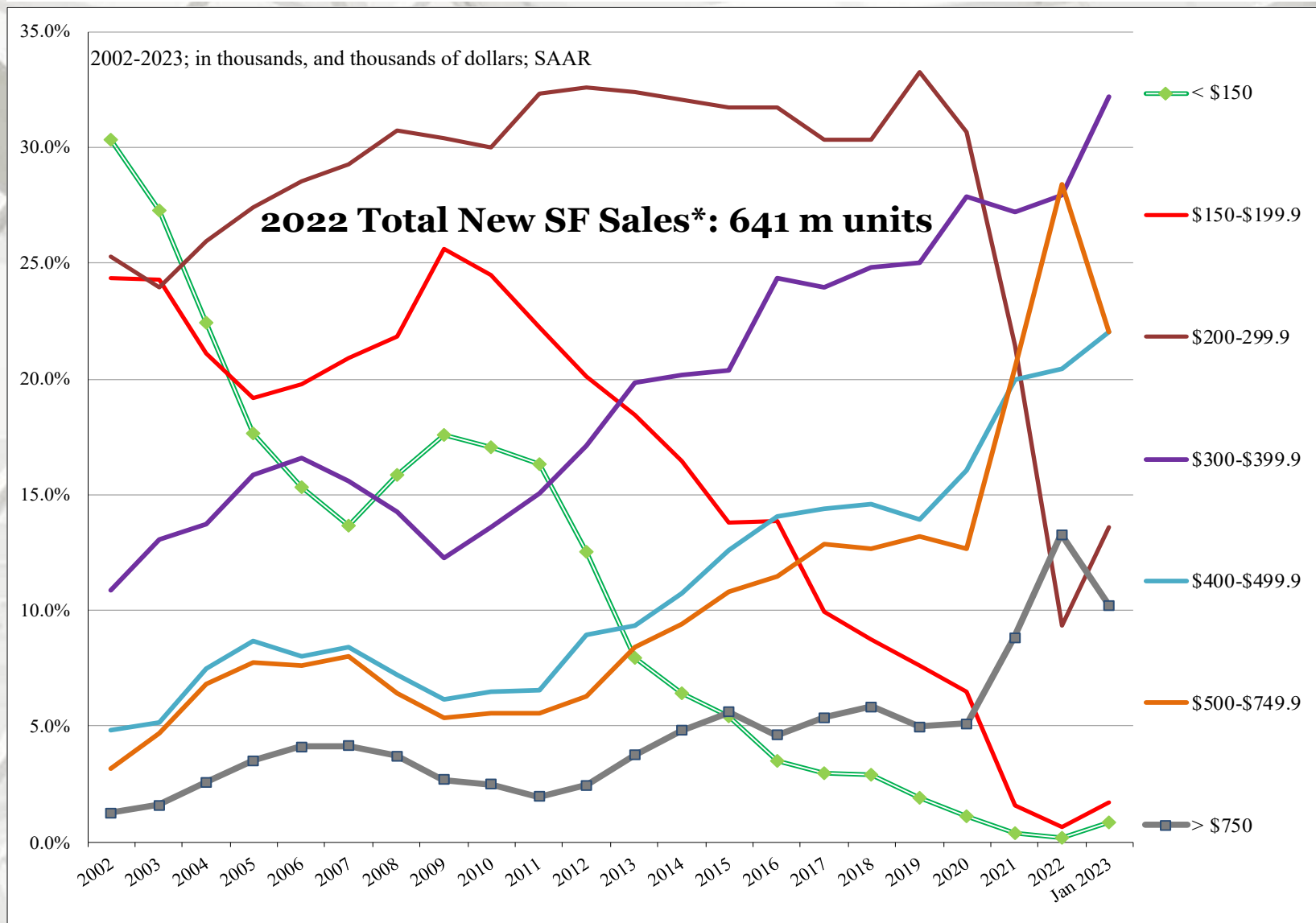


NE = Northeast; MW = Midwest; S = South; W = West

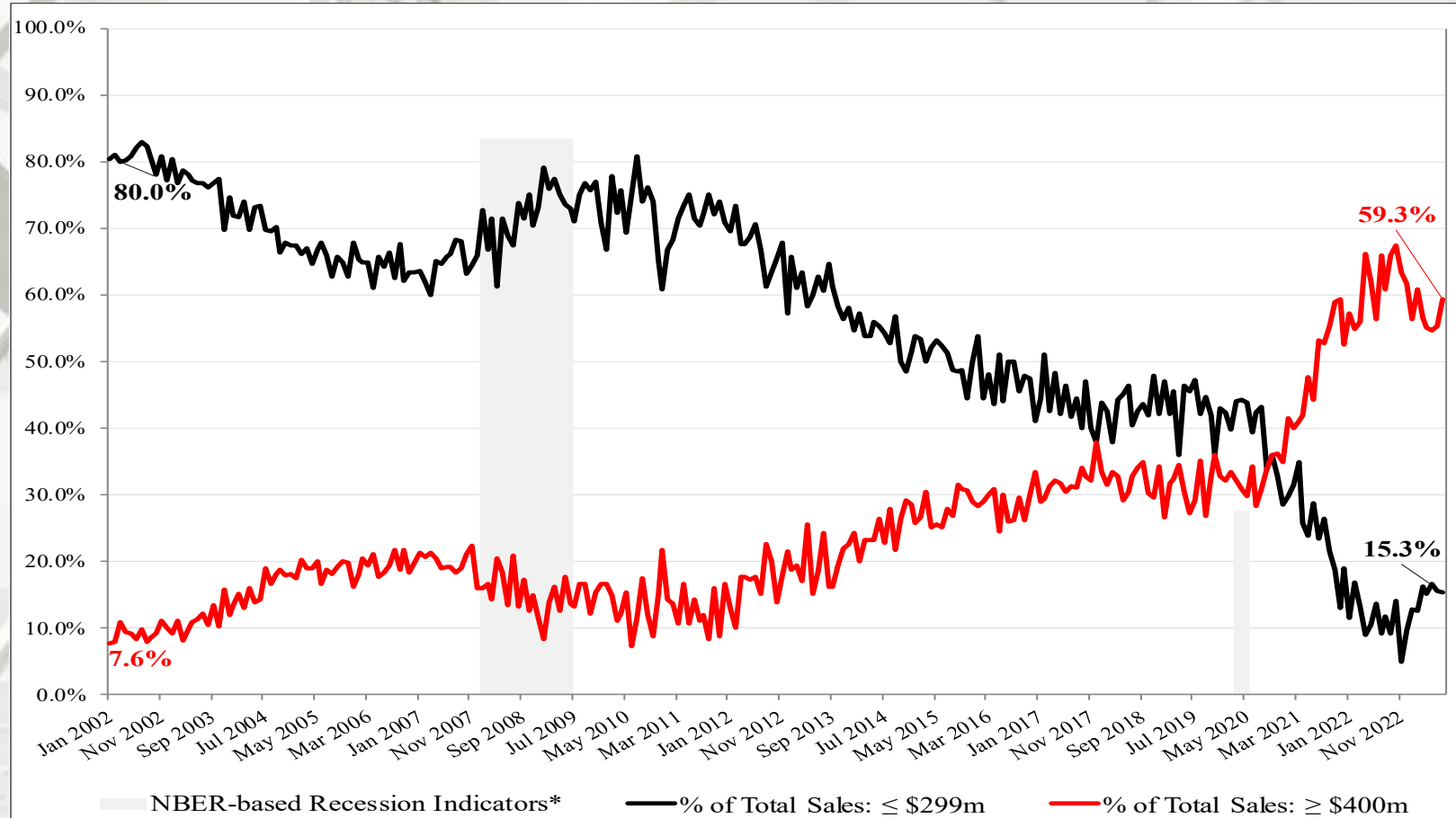
* Percentage of total new sales.

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

New SF House Sales by Price Category



New SF House Sales

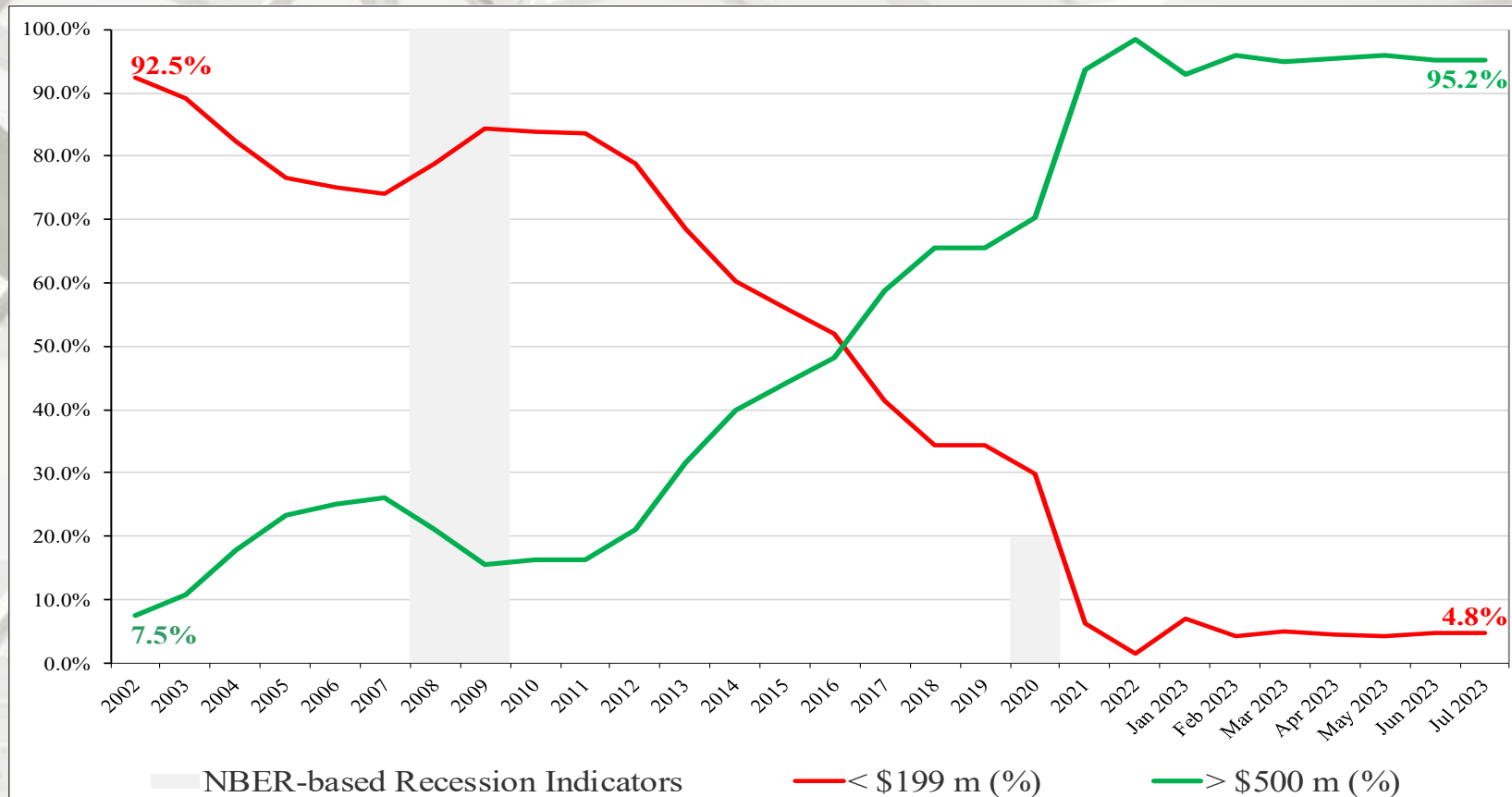


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Sales: ≤ \$299m and ≥ \$400m: 2002 – July 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.

New SF House Sales

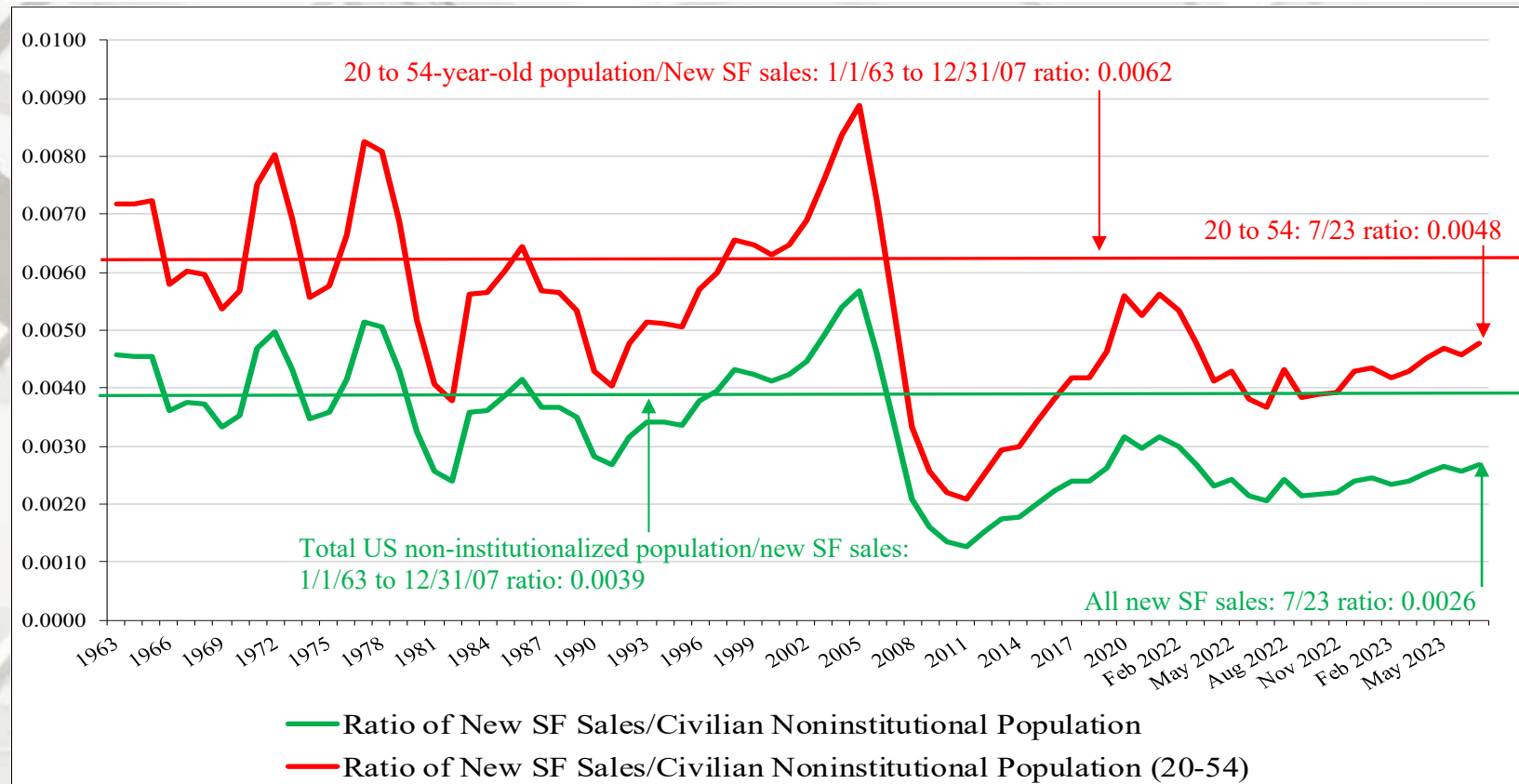


New SF Sales: ≤ \$ 200m and ≥ \$500m: 2002 to July 2022

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).

New SF House Sales

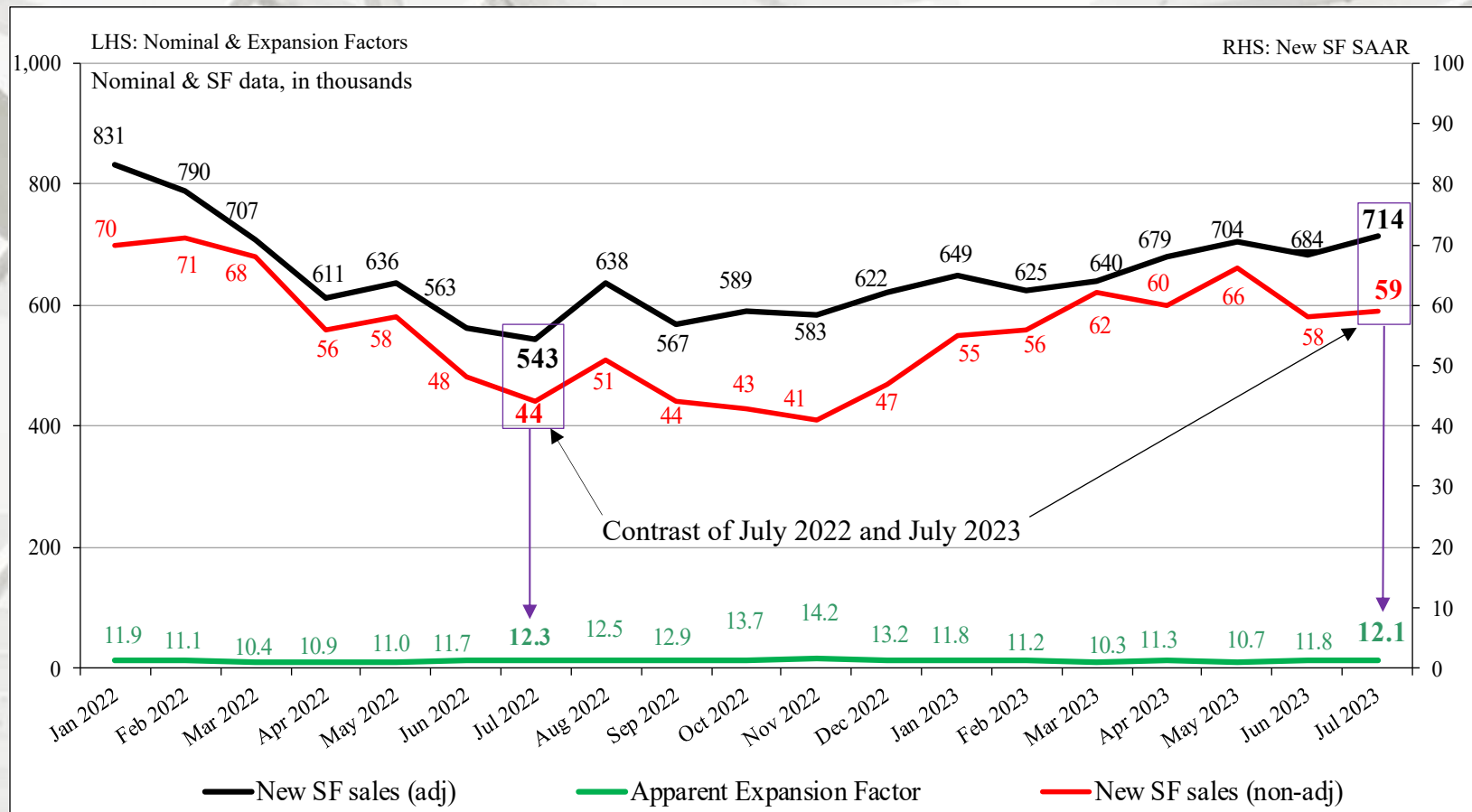


New SF sales adjusted for the US population

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 July 2023 it was 0.0027 – an increase from June (0.0026). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in July 2023 it was 0.0048 – also an improvement from June (0.0046). All are non-adjusted data. From a non-institutionalized population world view, new sales remain less than the long-term average.

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

Nominal vs. SAAR New SF House Sales



Nominal and Adjusted New SF Monthly Sales

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

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

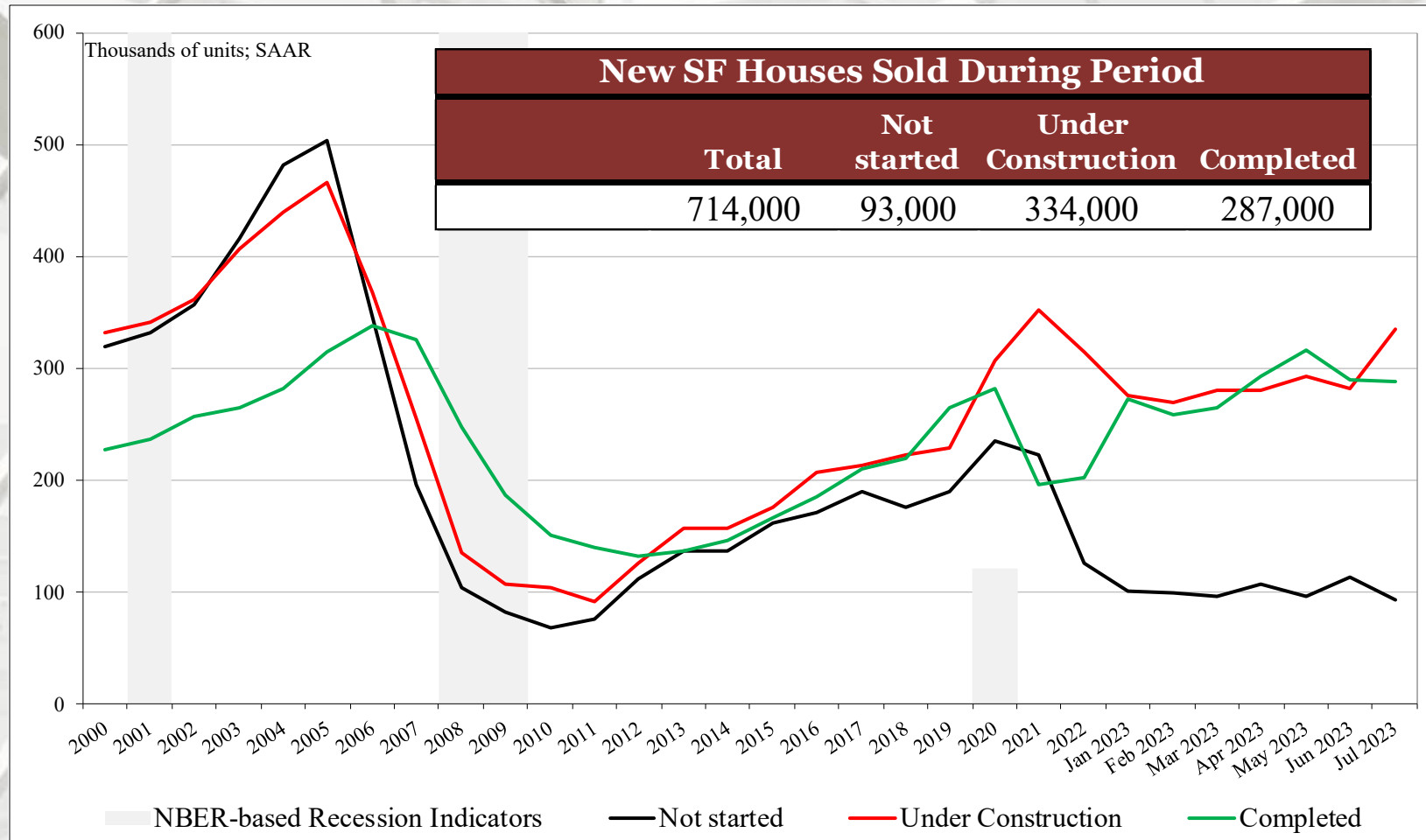
New SF House Sales

New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
July	714,000	93,000	334,000	287,000
June	684,000	113,000	282,000	289,000
2022	459,000	98,000	318,000	43,000
M/M change	4.4%	-17.7%	18.4%	-0.7%
Y/Y change	55.6%	-5.1%	5.0%	567.4%
Total percentage		13.0%	46.8%	40.2%

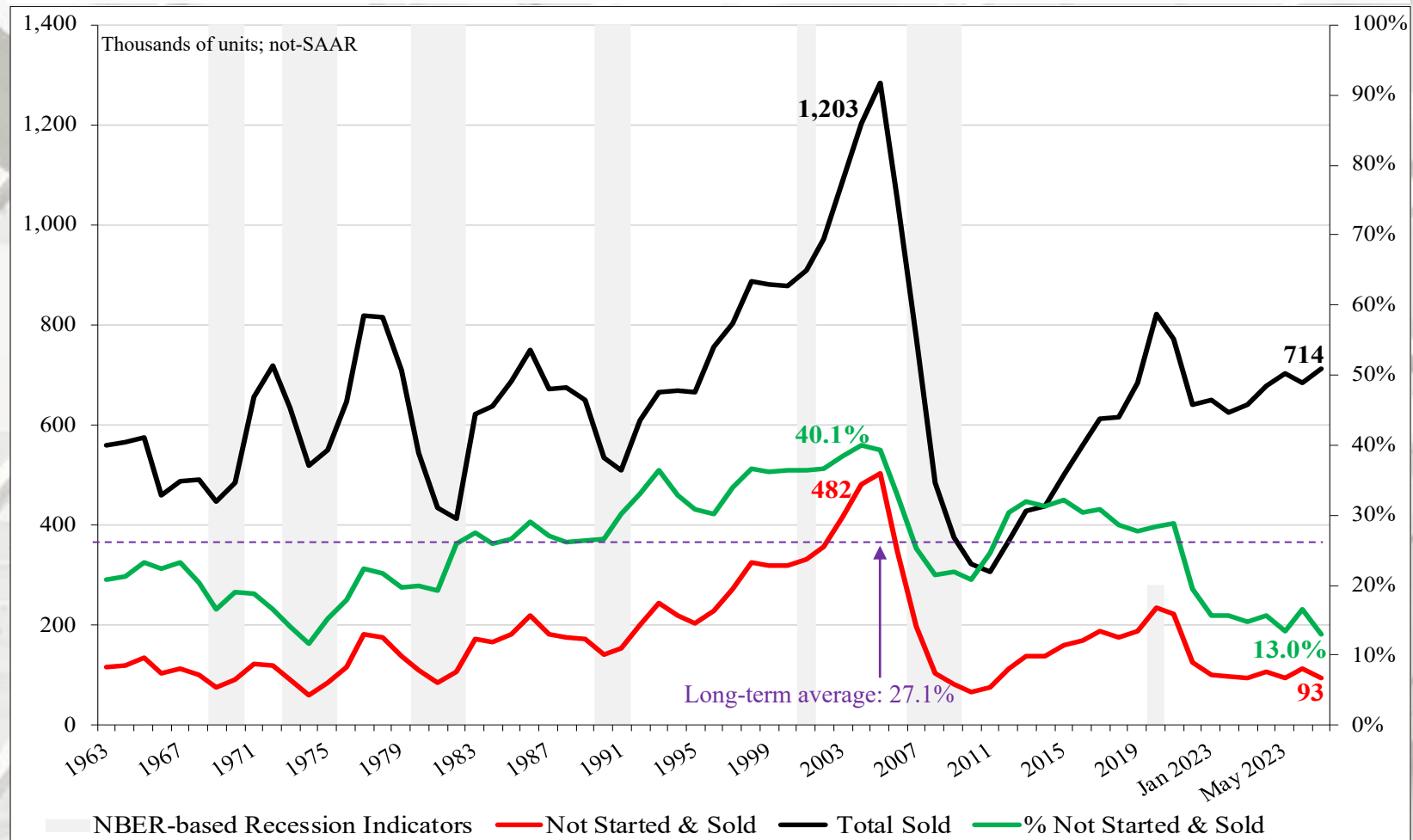
All data is SAAR

New SF House Sales: Sold During Period



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

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



Of the new houses sold in July (714 m), 13.0% (93 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).

New SF Houses for Sale

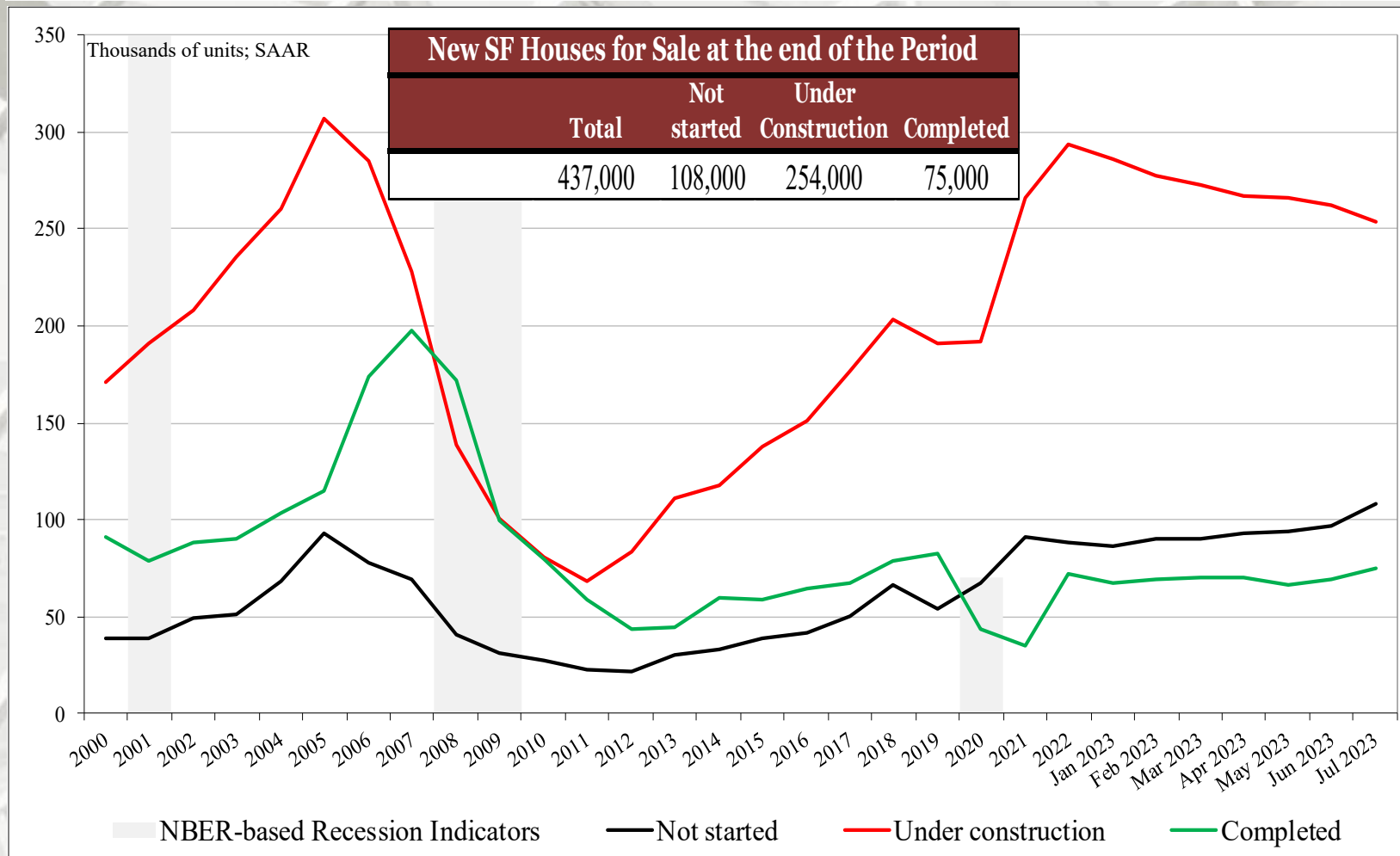
New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
July	437,000	108,000	254,000	75,000
June	428,000	97,000	262,000	69,000
2022	459,000	98,000	318,000	43,000
M/M change	2.1%	11.3%	-3.1%	8.7%
Y/Y change	-4.8%	10.2%	-20.1%	74.4%
Total percentage		24.7%	58.1%	17.2%

Not SAAR

Of houses listed for sale (437 m) in July, 17.2% (75 m) have been built. In the 'ground had not been broken for construction' or 'not started' category, 108 m (24.7%) were sold.

New SF House Sales: For Sale at End of Period



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

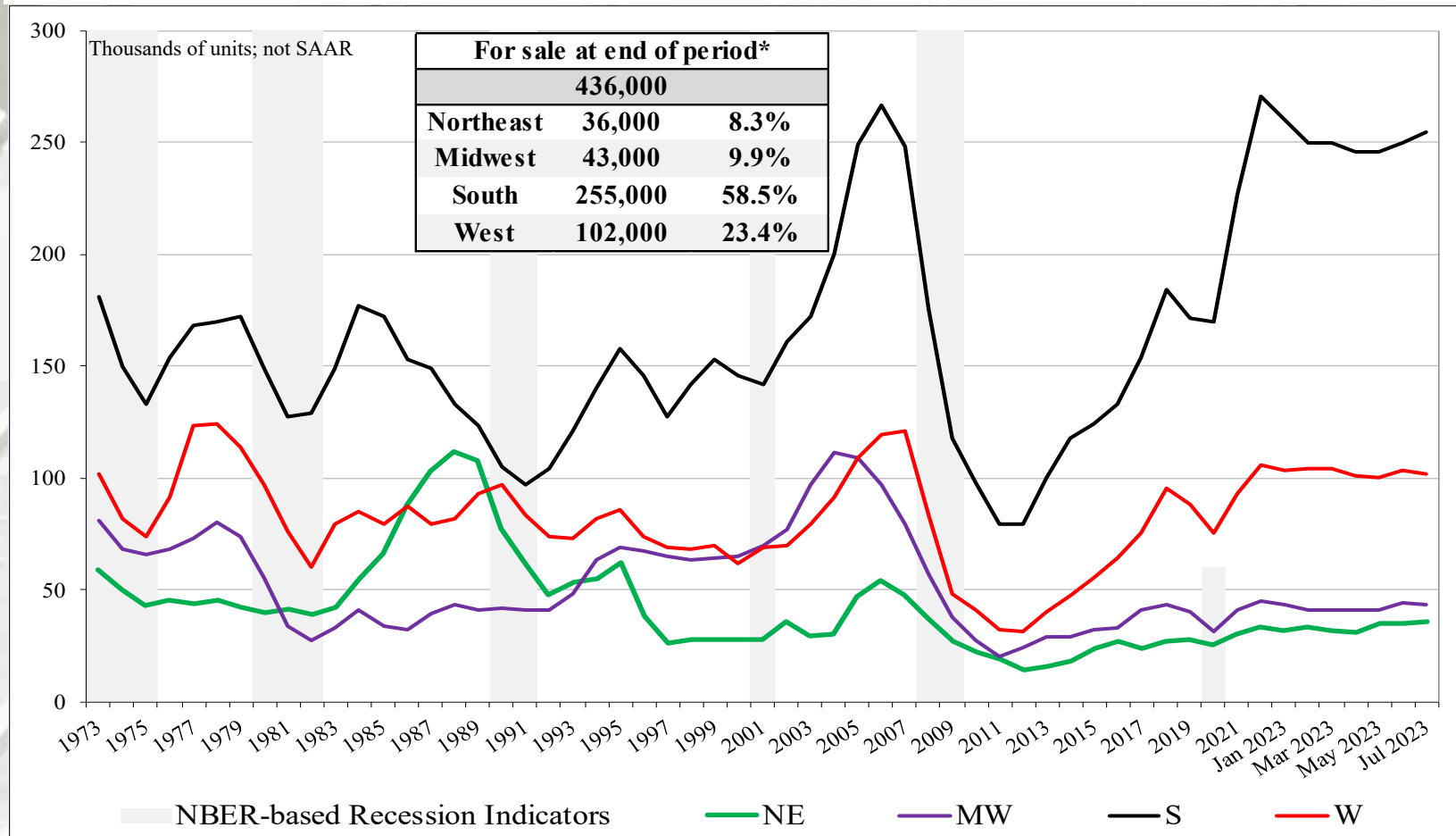
New SF House Sales

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

	Total	NE	MW	S	W
July	436,000	36,000	43,000	255,000	102,000
June	432,000	35,000	44,000	250,000	103,000
2022	461,000	26,000	48,000	276,000	112,000
M/M change	0.9%	2.9%	-2.3%	2.0%	-1.0%
Y/Y change	-5.4%	38.5%	-10.4%	-7.6%	-8.9%

* Not SAAR

New SF Houses for Sale at End of Period by Region

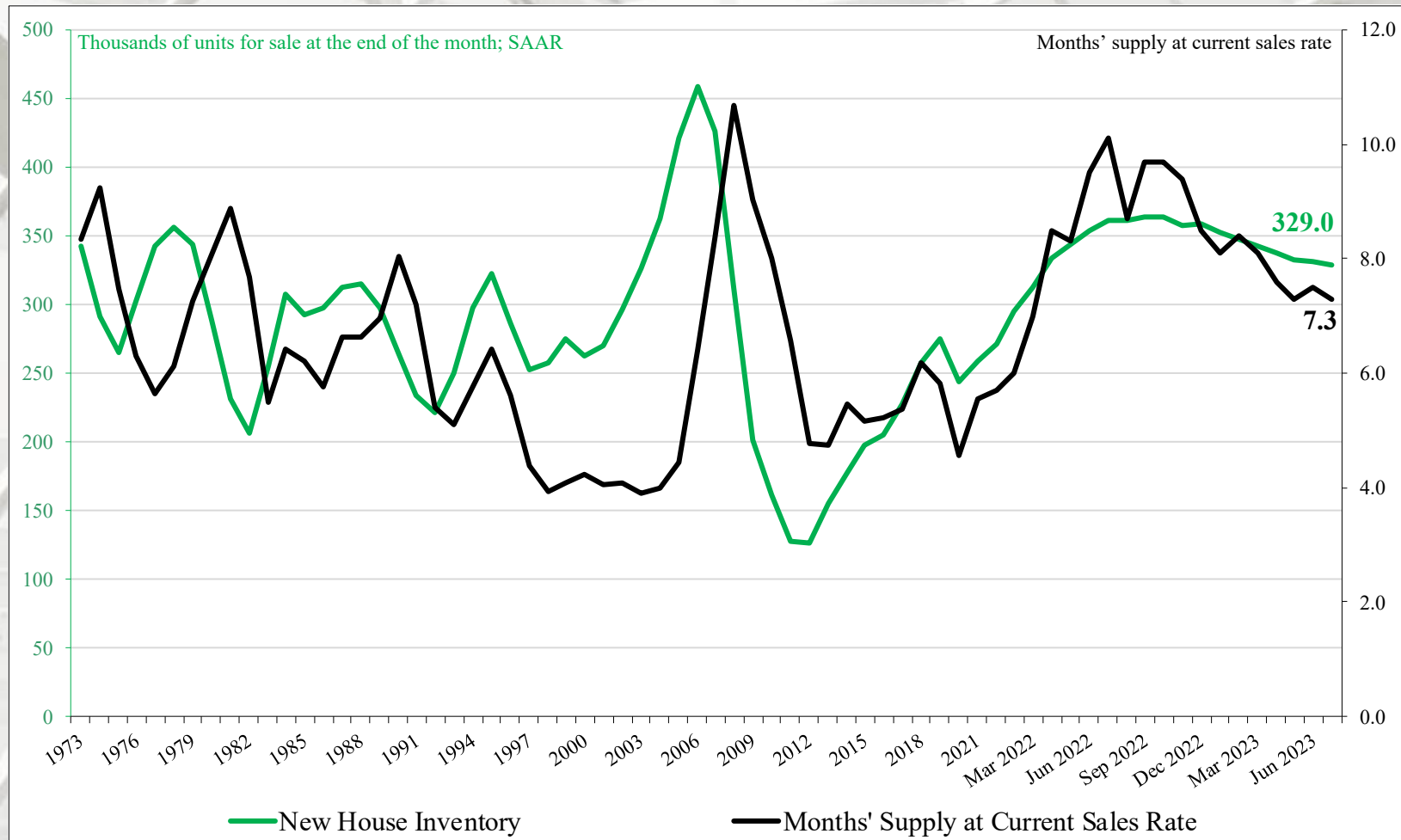


NE = Northeast; MW = Midwest; S = South; W = West

* Percentage of new SF sales.

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

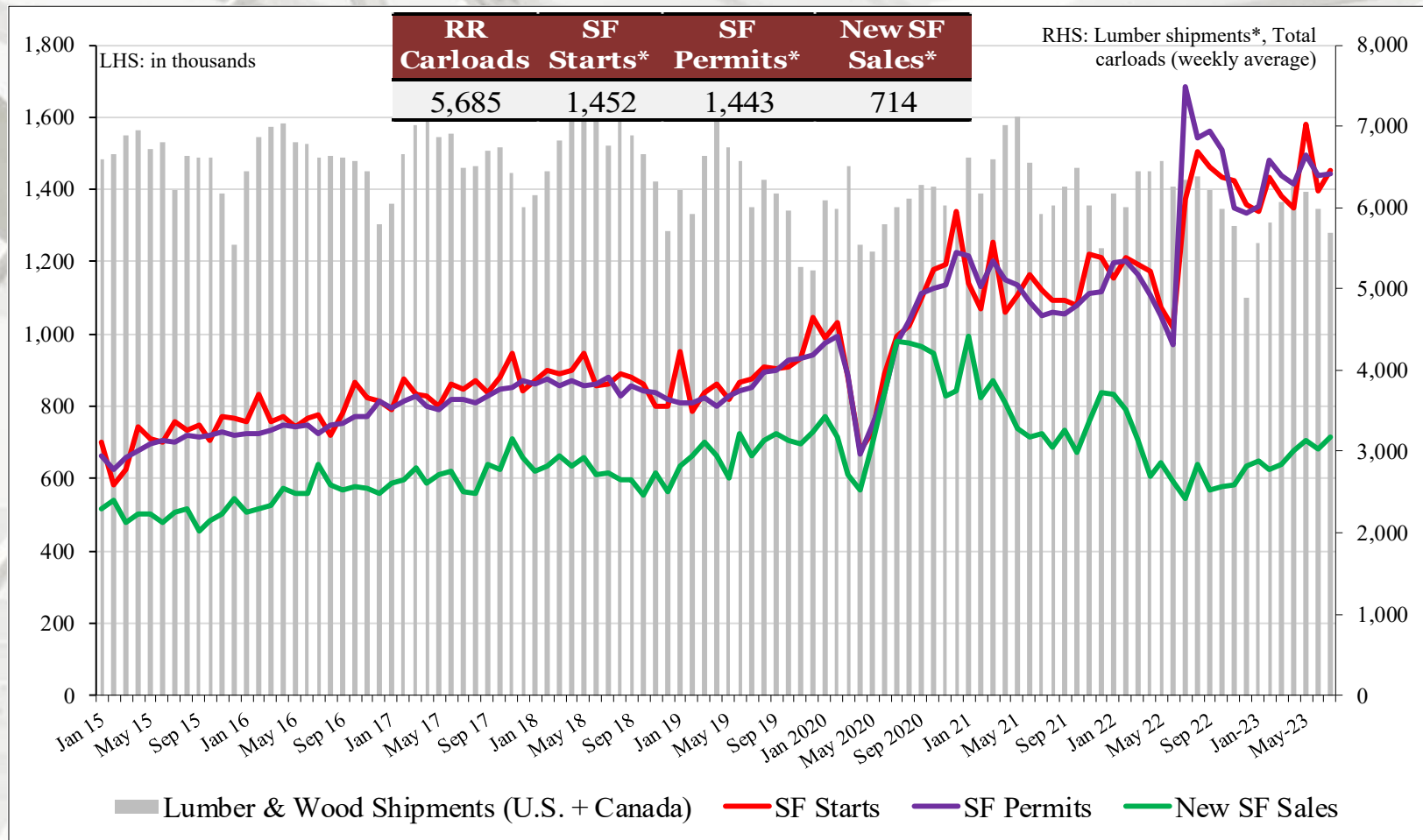
Months' Supply and New House Inventory^a



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

The months' supply of new houses for sale at the end of July was 7.3, greater than the historically preferred number of five- to six-months (SAAR).

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



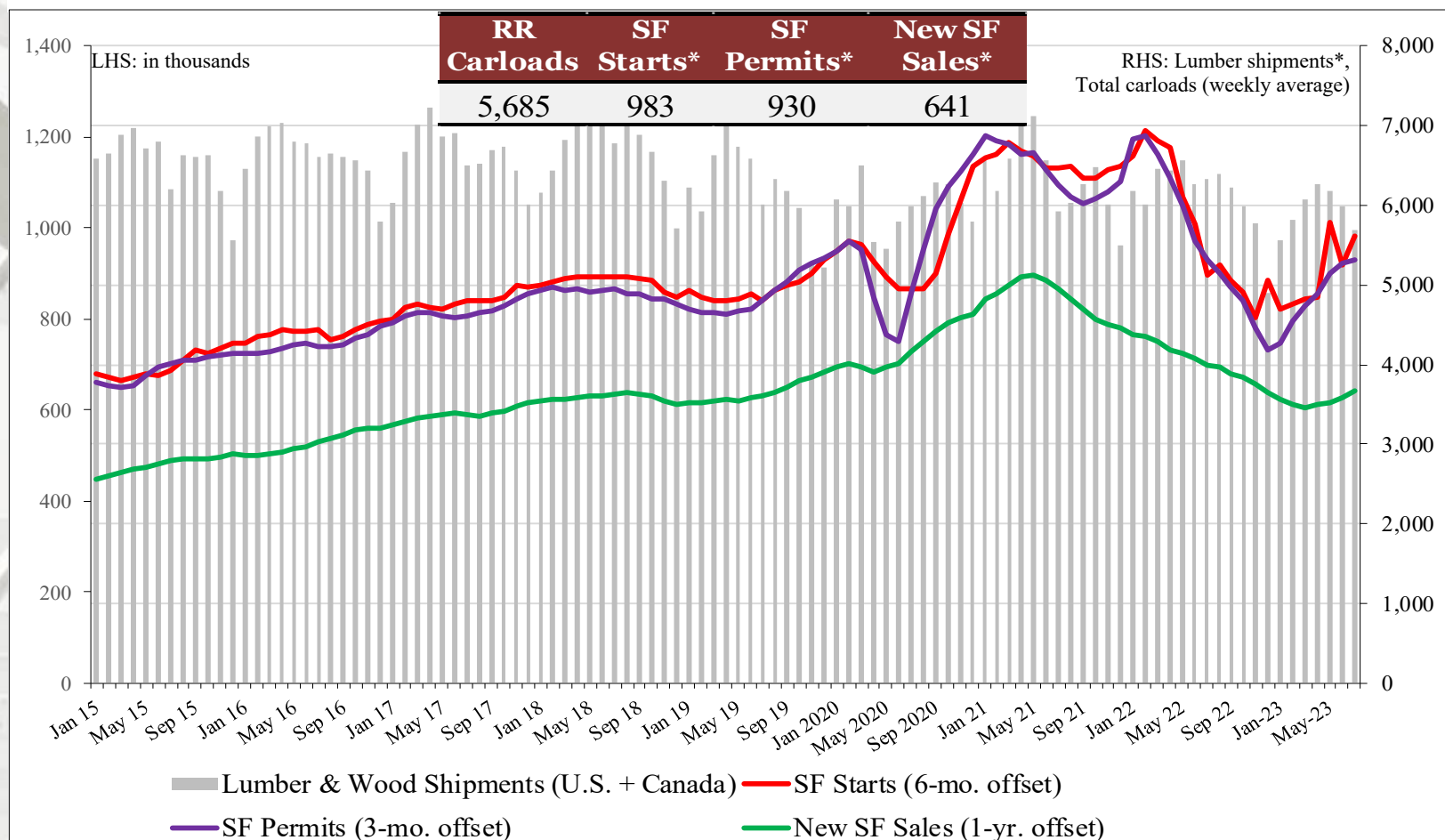
Carloads of Canadian + U.S. lumber and wood shipments to the U.S. are contrasted above to U.S. housing metrics. Annual SF starts, SF Permits, and New sales are compared to total carload lumber and wood shipments. The intent is to discern if lumber shipments relate to future SF starts, SF permits, and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

* In thousands

Sources: *Association of American Railroads, *Rail Time Indicators* report-July 2022; <http://www.census.gov/construction/>; 8/16/23 & 8/23/23

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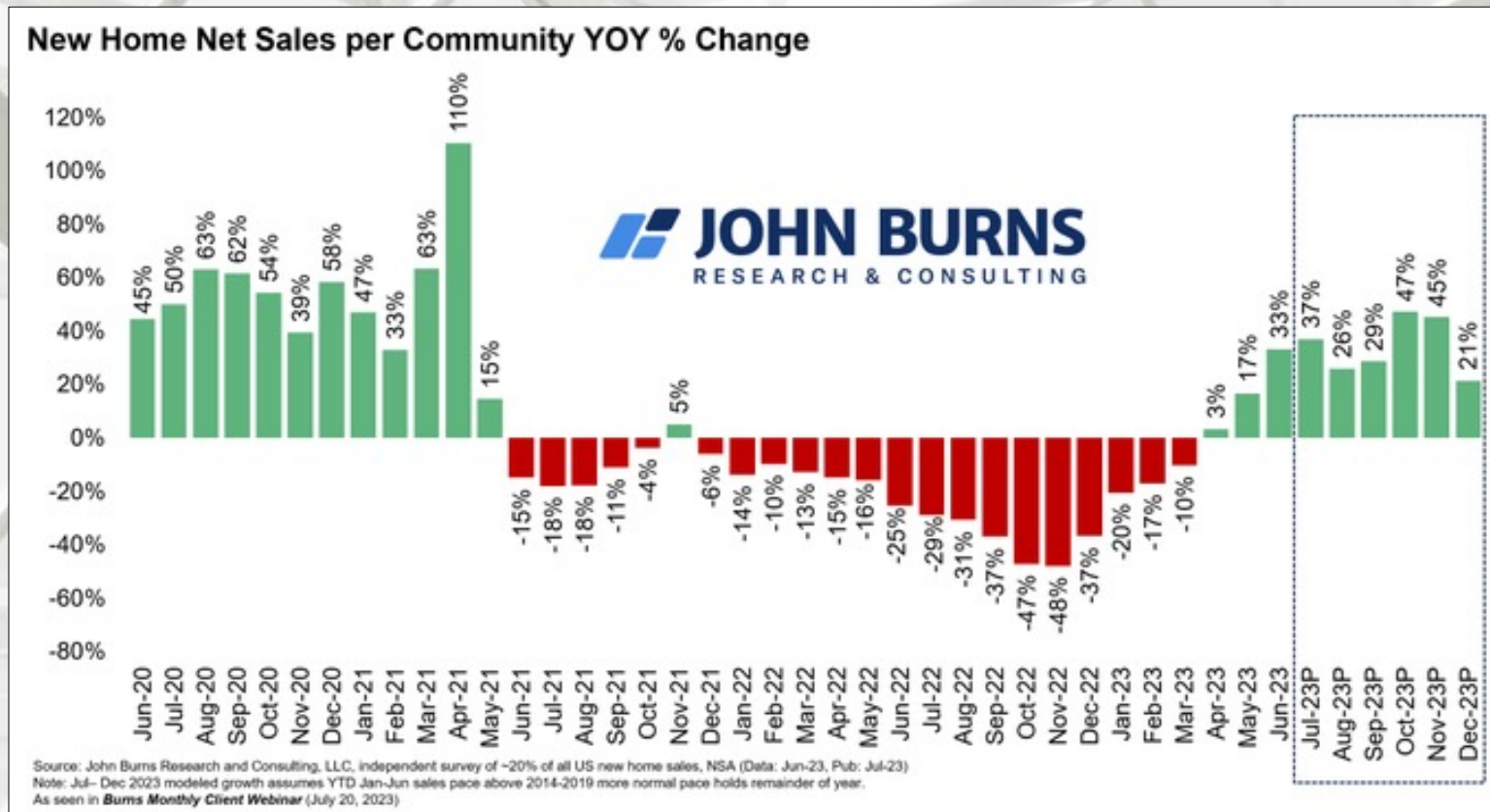
U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



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.

US house Builders: New Sales



John Burns Research & Consulting

“For home builder sales, here’s how the second half of 2023 could look using some realistic assumptions from our survey's 10+ years of history along with YTD trends. It’ll be interesting to hear how builders are thinking about the rest of 2023 as many start reporting in coming weeks.” – Rick Palacios Jr., Director of Research, John Burns Research and Consulting

July 2022

Construction Spending

	Total Private Residential*	SF	MF	Improvement**
July	\$878,979	\$389,862	\$133,378	\$355,739
June	\$866,805	\$379,119	\$133,080	\$354,606
2022	\$929,672	\$459,836	\$107,018	\$362,818
M/M change	1.4%	2.8%	0.2%	0.3%
Y/Y change	-5.5%	-15.2%	24.6%	-2.0%

* millions.

** The US DOC does not report improvement spending directly, this is a monthly estimation: ((Total Private Spending – (SF spending + MF spending)).

All data are SAARs and reported in nominal US\$.

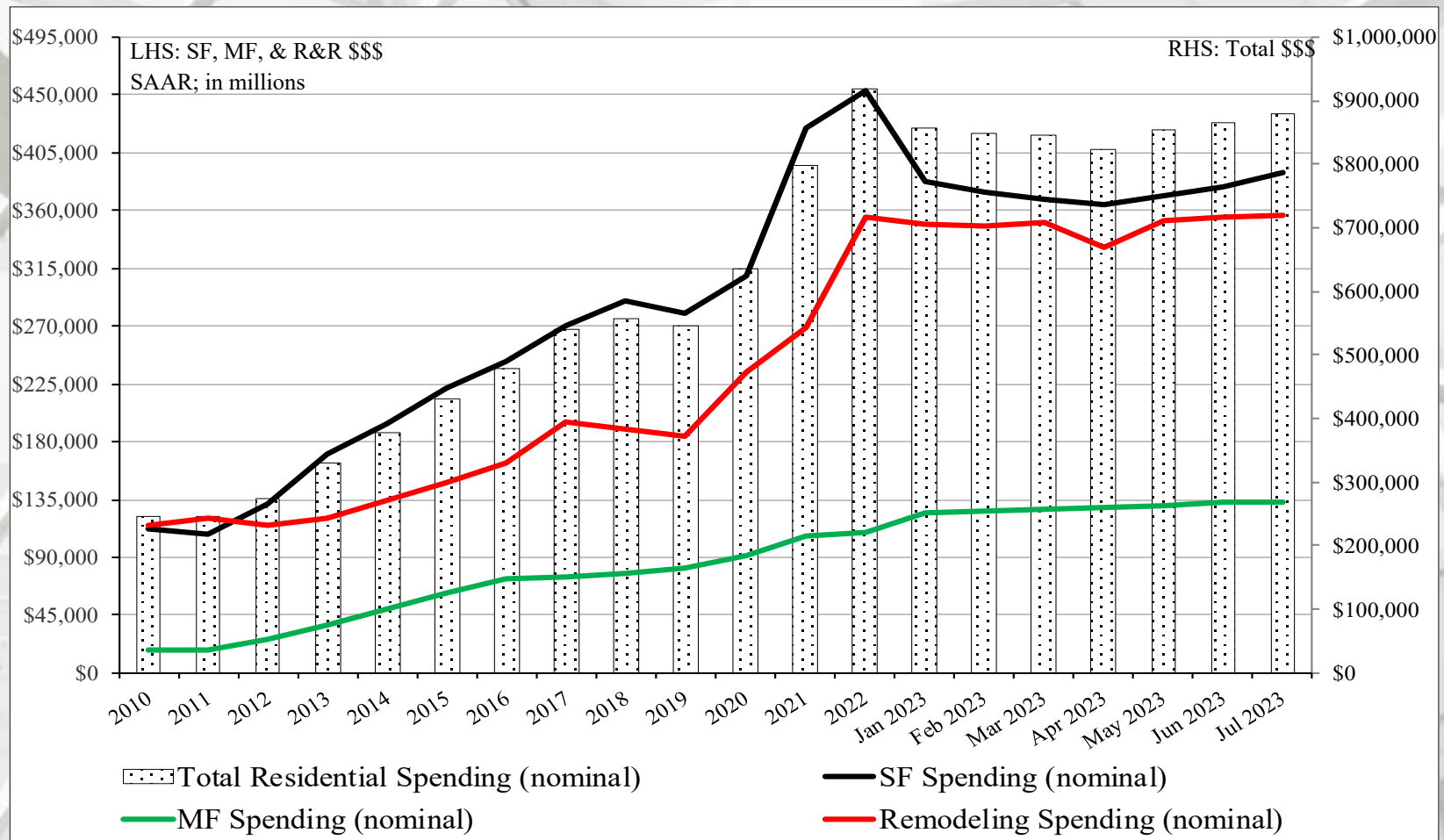
Total private residential construction spending includes new single-family, new multi-family, and improvement (AKA repair and remodeling) expenditures.

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

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

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

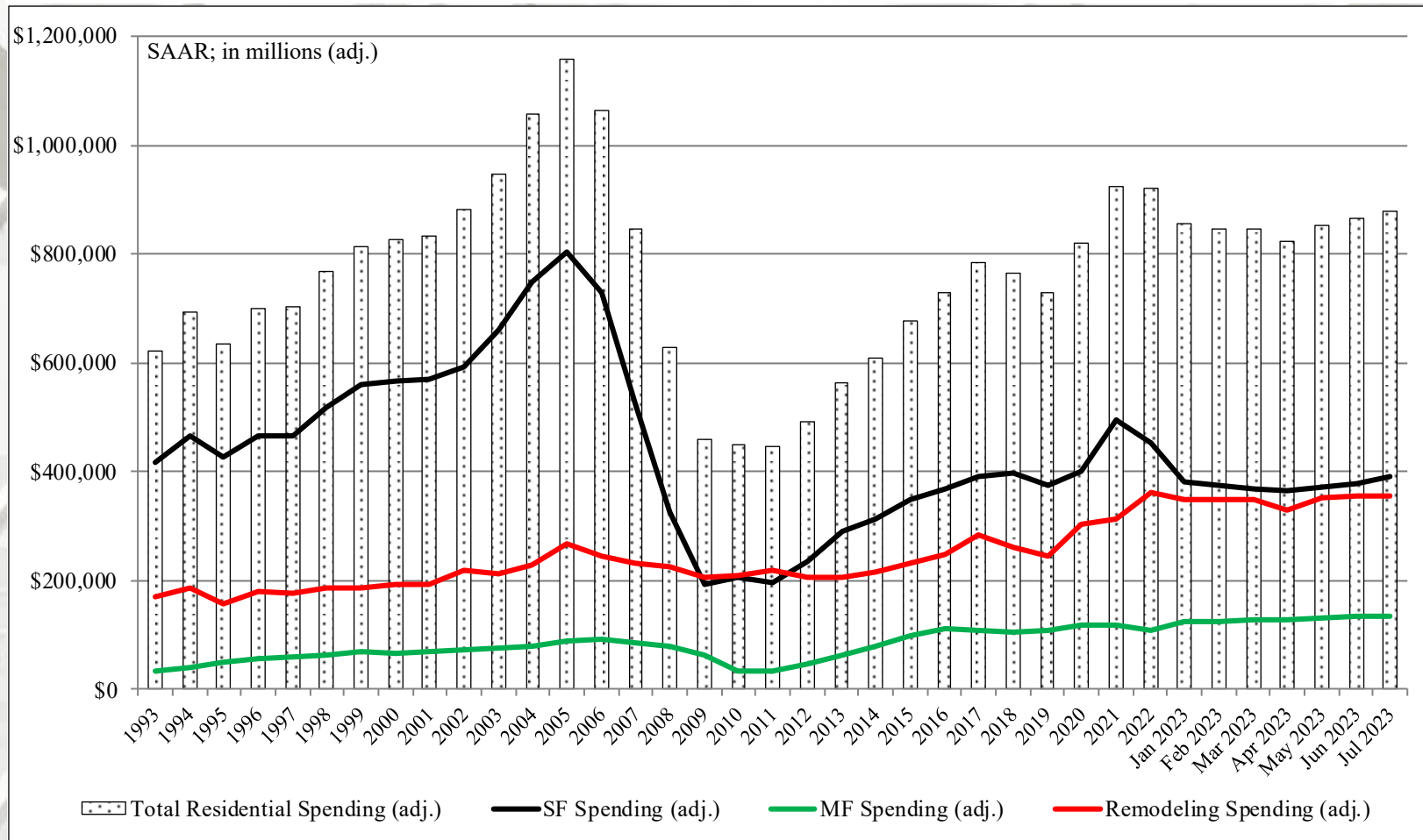
Total Construction Spending (nominal): 2000 – July 2023



Reported in nominal US\$.

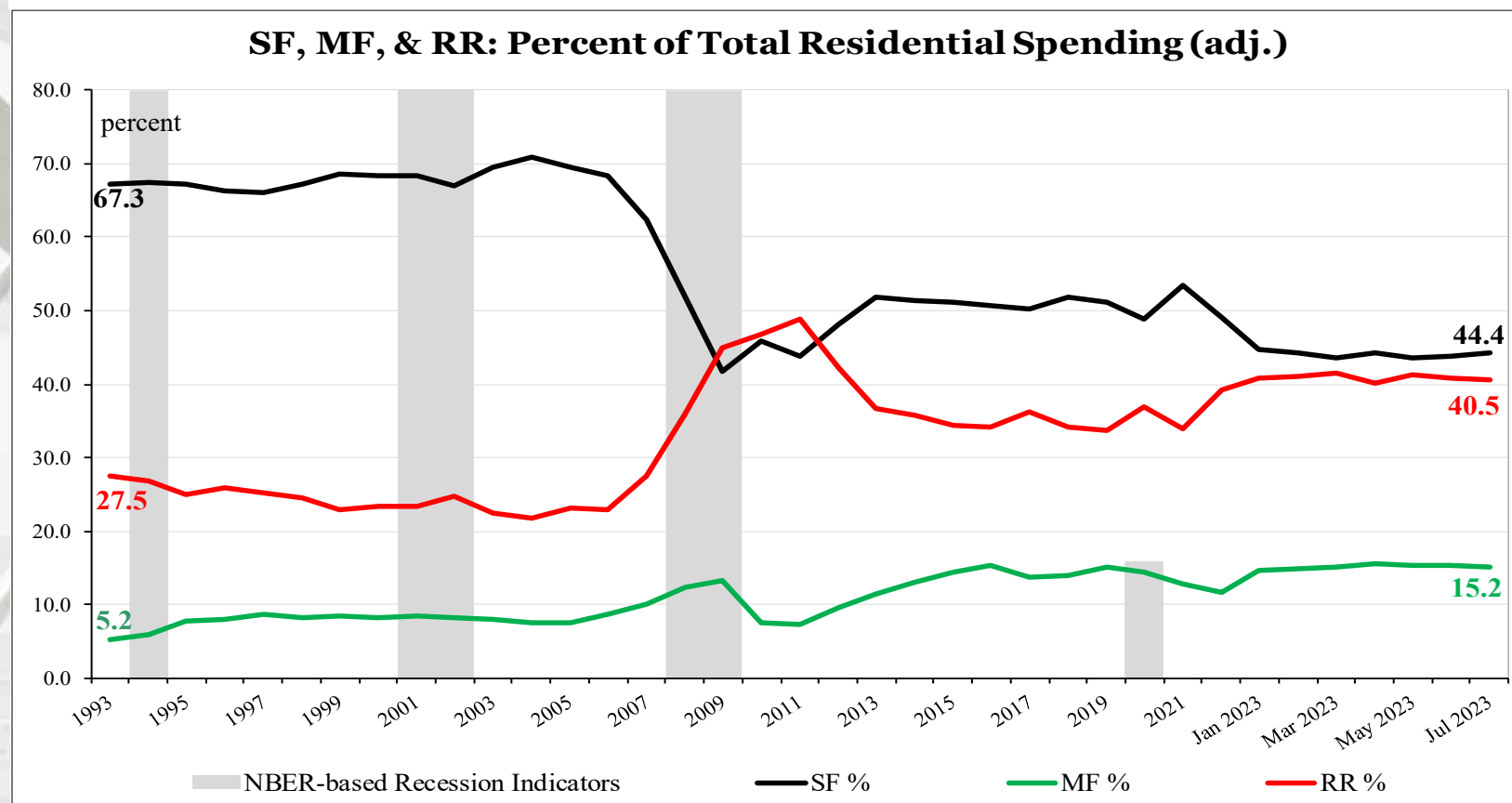
The US DOC does not report improvement spending directly, this is a monthly estimation for 2022.

Total Construction Spending (adjusted): 1993 – July 2023



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

Construction Spending Shares: 1993 – July 2023



Total Residential Spending: 1993 through 2006

SF spending average: 69.2%

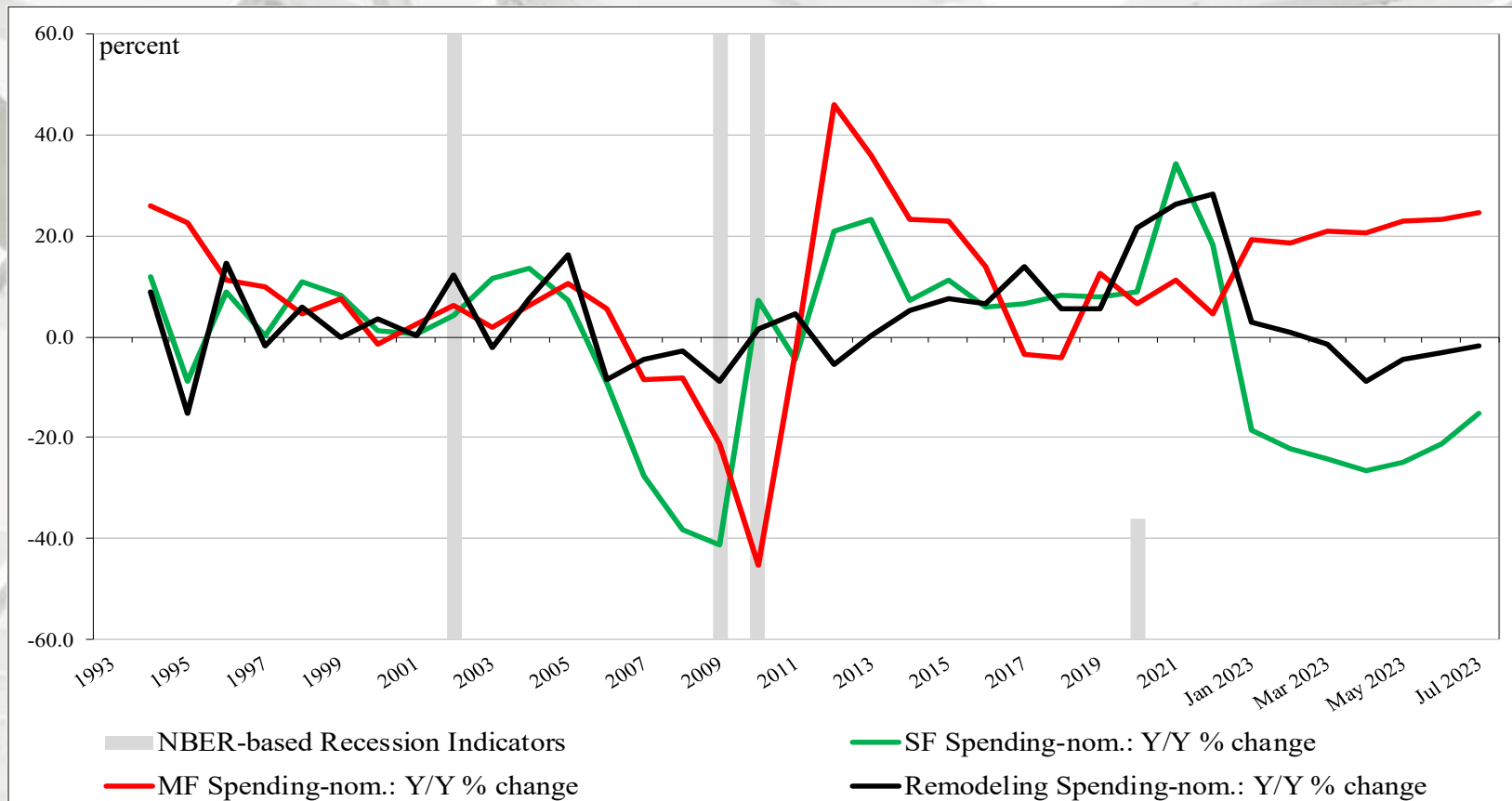
MF spending average: 7.5%

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

Note: 1993 to 2021 (adjusted for inflation, BEA Table 1.1.9); July 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).

Construction Spending: Y/Y Percentage Change

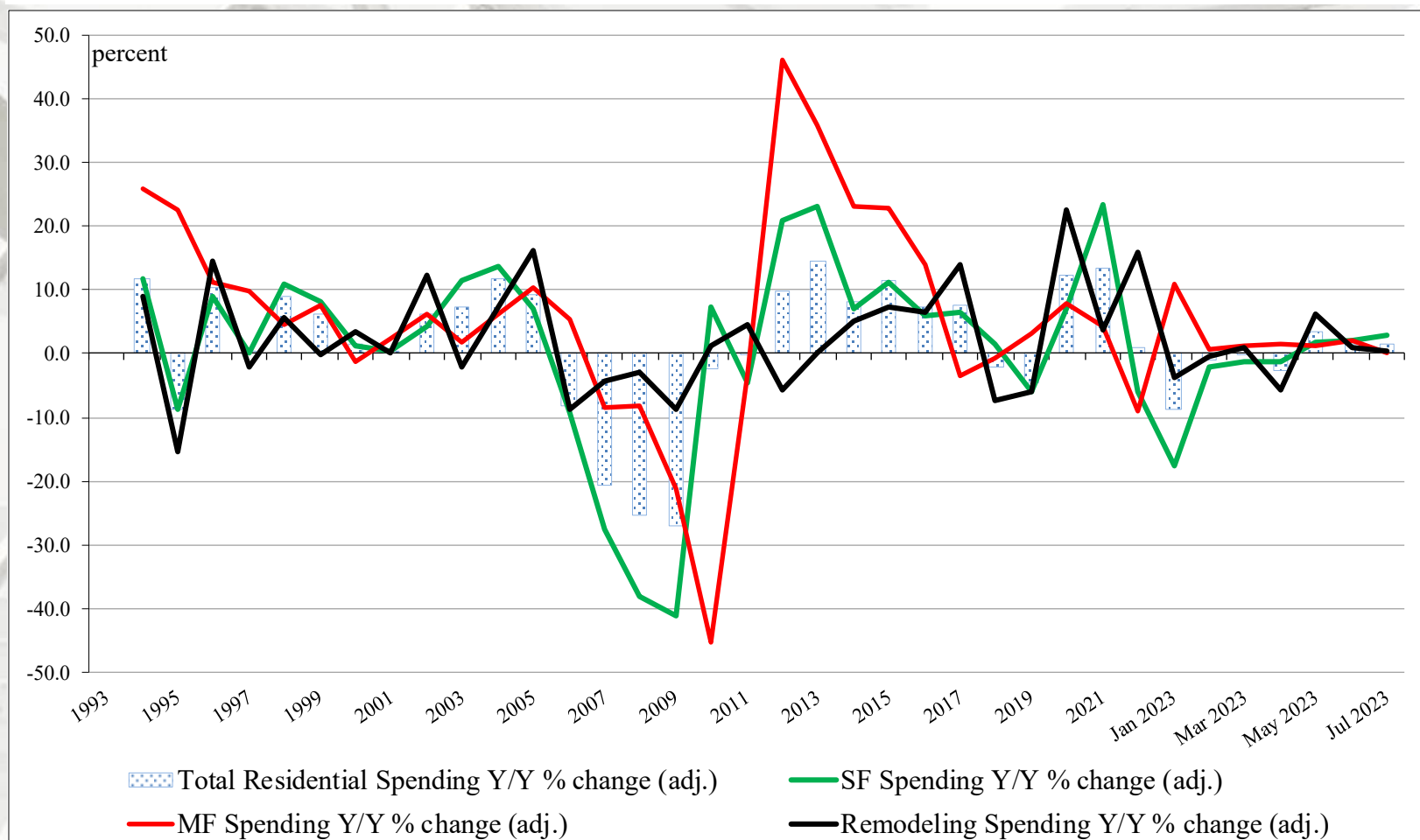


Nominal Residential Construction Spending: Y/Y percentage change, 1993 to July 2023

Presented above is the percentage change of Y/Y construction spending. MF expenditures were positive on a percentage basis, year-over-year (July 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).

Adjusted Construction Spending: Y/Y Percentage Change

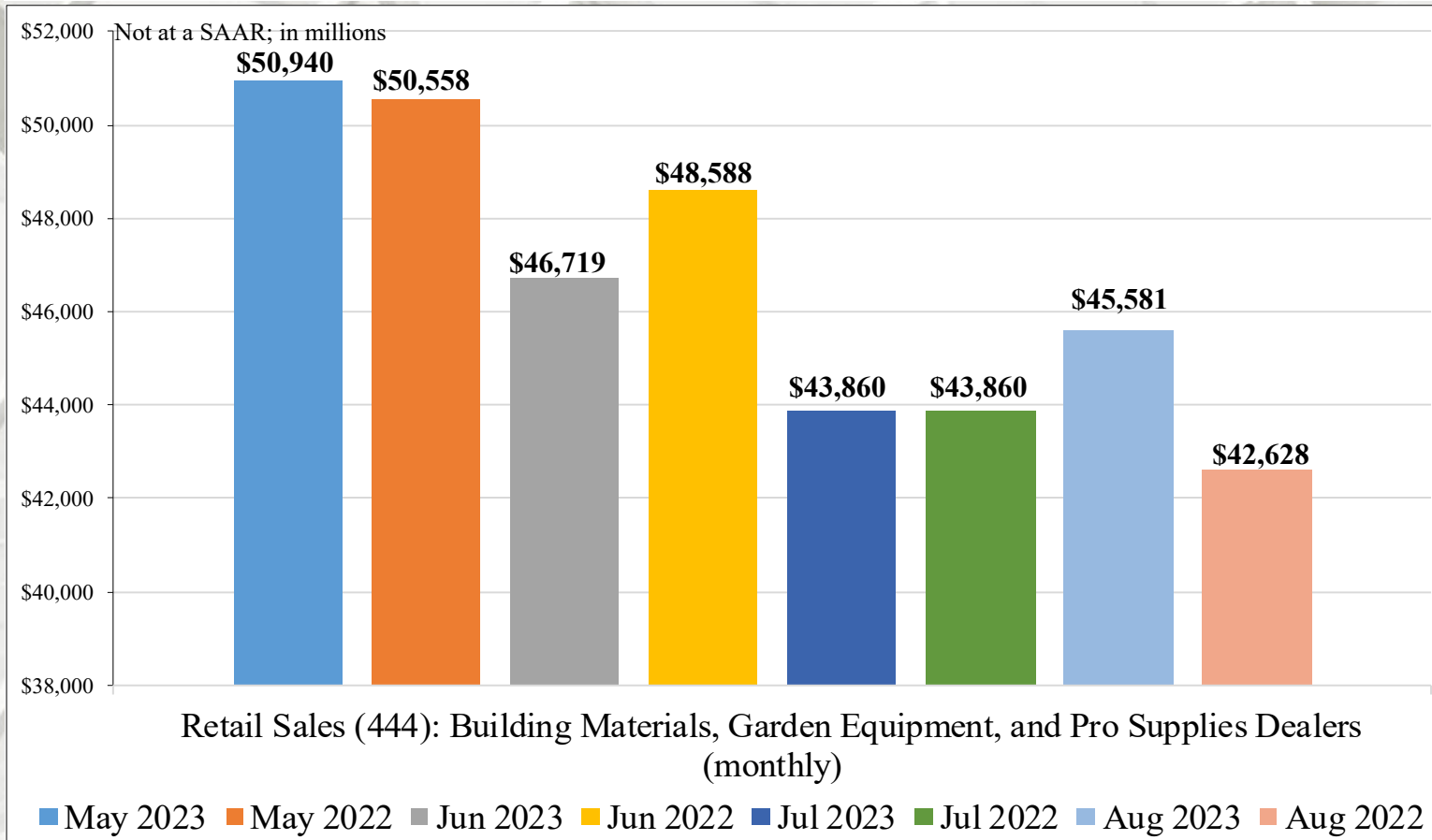


Adjusted Residential Construction Spending: Y/Y percentage change, 1993 to July 2023

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

Remodeling

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

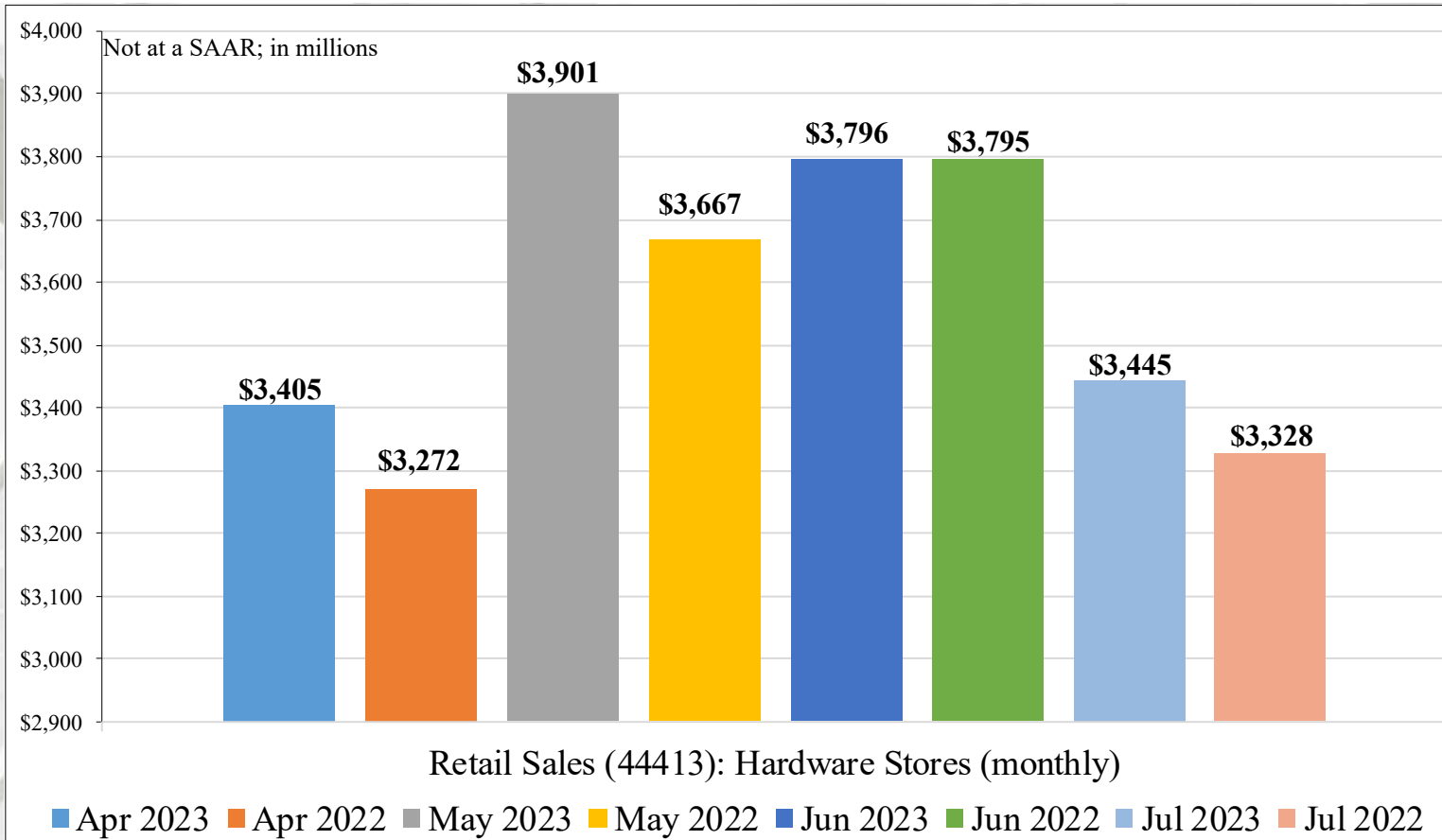


Building materials, Garden Equipment, & PRO Supply Dealers: NAICS 444

NAICS 444 sales decreased 4.0% in August 2023 from August 2023 and decreased 3.8% Y/Y (on a non-adjusted basis).

Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales decreased 9.2% in July 2023 from June 2023 and improved 3.5% in Y/Y. (on a non-adjusted basis).

Remodeling

Remodeling

Remodeling Activity Moderates as Cyclical Downturn Continues

Despite less pessimism and a more hopeful outlook for the economy, remodeling activity is still projected to decline on an annual basis beginning in the fourth quarter of 2023, according to Zonda.

“Zonda’s national Residential Remodeling Index (RRI) posted a reading of 167.4 in the second quarter, a 2.4% year-over-year increase but a 0.2% sequential decrease from the first quarter. Zonda projects that quarter-to-quarter decreases will continue moving forward with year-over-year decreases expected to begin by the fourth quarter of 2023.

When averaged on an annual basis, the RRI is projected to increase 1.7% for 2023, followed by decreases of 2.2% in 2024 and 1.1% in 2025, before increasing again by 1.5% in 2026. The reading of 167.4 indicates the current level of overall pro-worthy remodeling activity in the United States is 67.4% higher than the baseline year of 2007.

The second quarter forecast for the RRI is an improvement from the previous release in May, when Zonda projected activity would decrease by 1.1% for the full year 2023. Zonda says the improved forecast is due to less pessimism and “a more hopeful outlook” for the U.S. economy as inflation recedes.

Moody’s Analytics, the economic research company that forecasts the variables that Zonda uses in its RRI model, says recent data suggests a “substantial increase” in the national unemployment rate may not be necessary to subdue inflation. According to Moody’s, the economy could still fall into a full-blown recession but, at this stage, it would mostly likely be due to a Fed policy error or an outlying event that could throw the economy’s path off script.”” – Vincent Salandro, Associate Editor, Builder

Remodeling

Remodeling

Remodeling Activity Moderates as Cyclical Downturn Continues

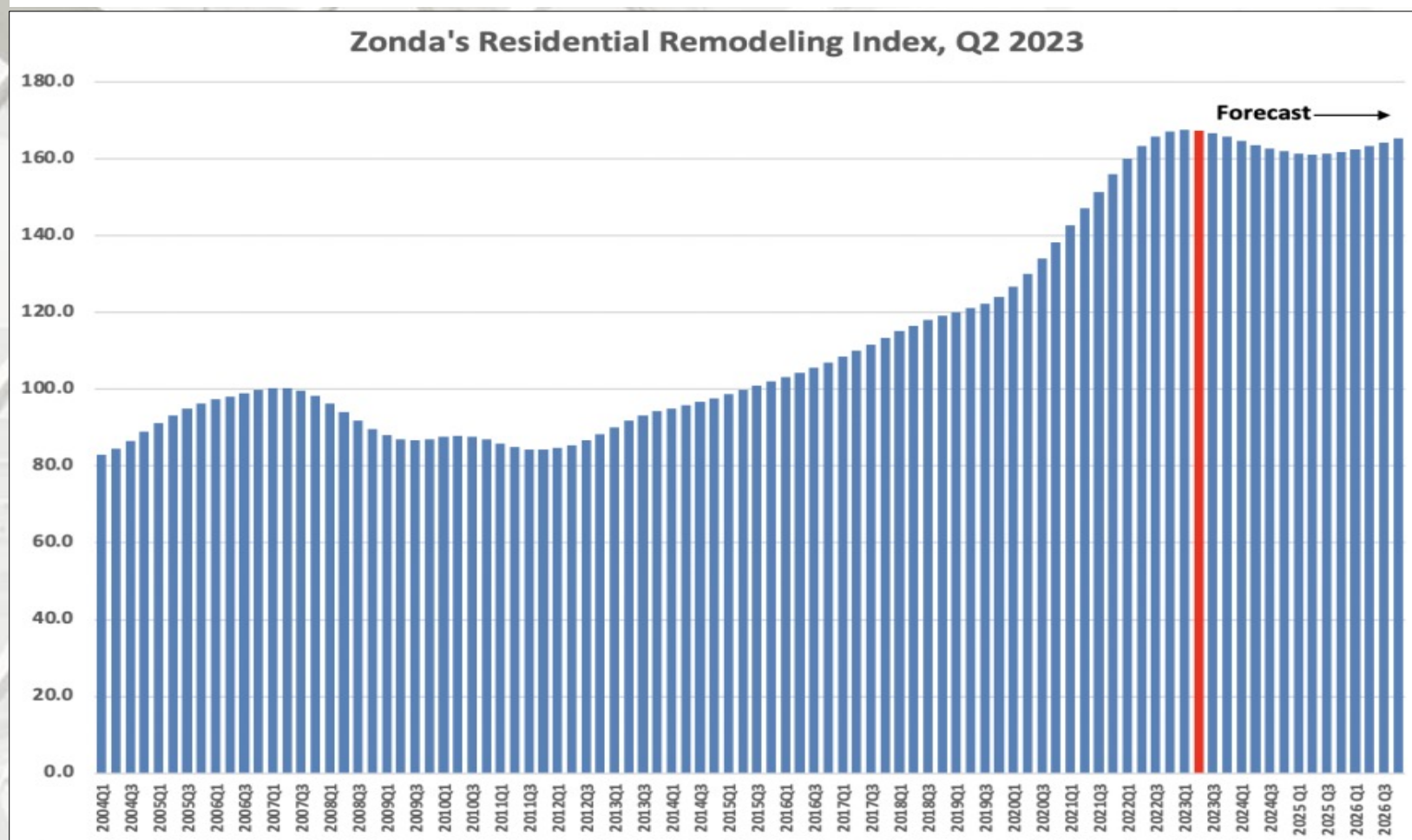
“The projected ongoing weakness in existing home sales will reduce some remodeling and replacement activity over the near-term, but Zonda says this headwind will be partially offset by the lock-in effect of higher interest rates that persuades many home owners to stay put and upgrade current homes. The largest negative headwind in the RRI outlook is the projection by Moody’s Analytics that home values will decrease in the near-term future.

As part of the RRI calculation, Zonda estimates 17.6 million pro-worthy remodeling projects will be completed in 2022. For 2023, the number is expected to increase to 17.9 million projects before decreasing in both 2024 and 2025. On a regional basis, 311 of the 384 analyzed metropolitan statistical areas are expected to see growth in annual project volume in 2023. Among these markets, the average growth rate is forecast to be 4.3%.” – Vincent Salandro, Associate Editor, Builder

Remodeling

Remodeling

Remodeling Activity Moderates as Cyclical Downturn Continues



Existing House Sales

National Association of Realtors®

	Existing Sales	Median Price	Month's Supply
July	4,070,000	\$406,700	3.3
June	4,160,000	\$410,000	3.1
2022	4,880,000	\$399,000	3.2
M/M change	-2.2%	-0.8%	6.5%
Y/Y change	-16.6%	1.9%	3.1%

All sales data: SAAR

Existing House Sales

	NE	MW	S	W
July	480,000	960,000	1,860,000	770,000
June	510,000	990,000	1,910,000	750,000
2022	630,000	1,200,000	2,170,000	880,000
M/M change	-5.9%	-3.0%	-2.6%	2.7%
Y/Y change	-23.8%	-20.0%	-14.3%	-12.5%

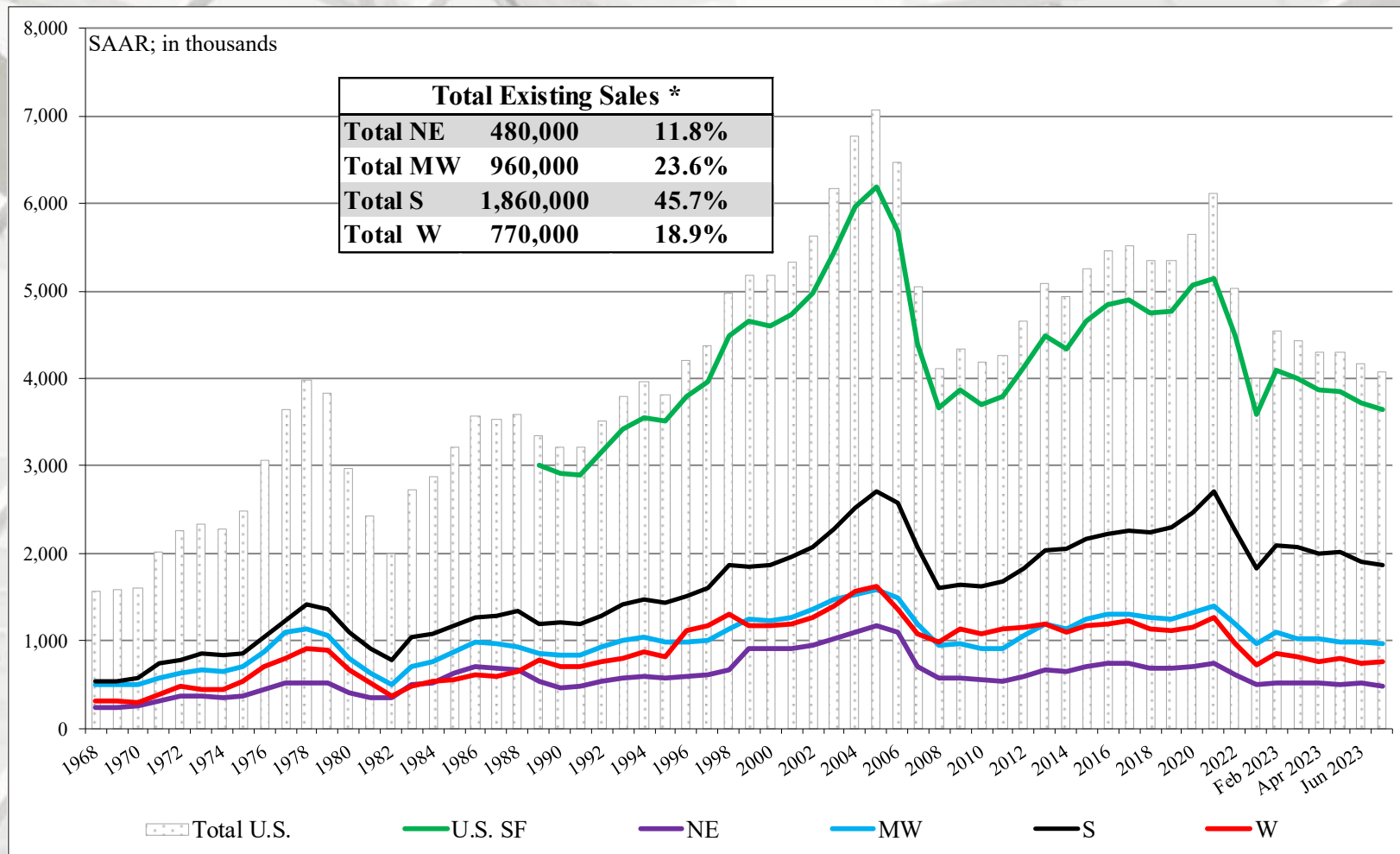
	Existing SF Sales	SF Median Price
July	3,650,000	\$412,300
June	3,720,000	\$415,700
2022	4,360,000	\$405,800
M/M change	-1.9%	-0.8%
Y/Y change	-16.3%	1.6%

All sales data: SAAR.

Source: <https://fred.stlouisfed.org/series/EXHOSLUSM495S>; 8/22/23

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Existing House Sales



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

* Percentage of total existing sales.

U.S. Housing Prices

Federal Housing Finance Agency

U.S. House Price Index

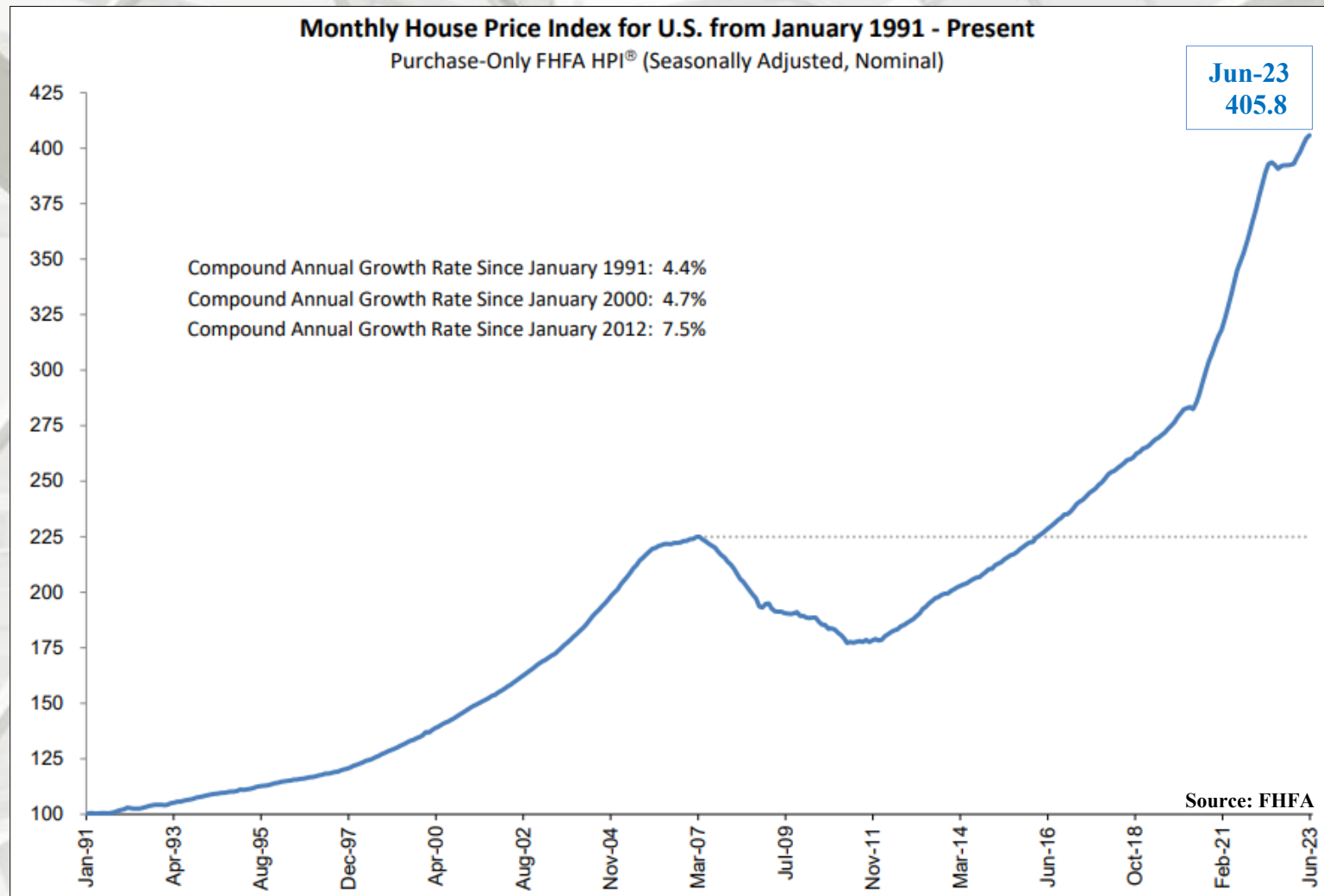
U.S. House Prices Rise 3.0 Percent over the Last Year; Up 1.7 Percent from the First Quarter

Significant Findings

“U.S. house prices rose **3.0 percent** between the second quarters of 2022 and 2023, according to the Federal Housing Finance Agency (FHFA) House Price Index (FHFA HPI®). House prices were up **1.7 percent** compared to the first quarter of 2023. FHFA’s seasonally adjusted monthly index for June was up **0.3 percent** from May.” – Adam Russell, FHFA

“U.S. house prices appreciated at a slightly higher rate in the second quarter amid low inventory. While prices in a number of western states continued to decline year-over-year, house prices rose in all states quarter-over-quarter.” – Dr. Nataliya Polkovnichenko, Supervisory Economist, Division of Research and Statistics, FHFA

U.S. Housing Prices



U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Repeats Gains in May

“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 June 2023 show all 20 major metro markets reported month-over-month price increases for the fourth straight month. 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 0.0% annual change in June, up from a loss of -0.4% in the previous month. The 10-City Composite showed a decrease of -0.5%, which is an improvement on the -1.1% decrease in the previous month. The 20-City Composite posted a year-over-year loss of -1.2%, up from -1.7% in the previous month.

Chicago, Cleveland, and New York again led the way reporting the highest year-over-year gains among the 20 cities in June. Chicago remained in the top spot with a 4.2% year-over-year price increase, with Cleveland in at number two with a 4.1% increase, and New York held down the third spot with a 3.4% increase. There again was an even split of 10 cities reporting lower prices and those reporting higher prices in the year ending June 2023 versus the year ending May 2023; 13 cities showed price acceleration relative to the previous month. ...

Month-Over-Month

Before seasonal adjustment, the U.S. National Index posted a 0.9% month-over-month increase in June, while the 10-City and 20-City Composites also posted like increases of 0.9%. After seasonal adjustment, the U.S. National Index posted a month-over-month increase of 0.7%, while the 10-City and 20-City Composites both posted increases of 0.9%.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

U.S. Housing Prices

S&P CoreLogic Case-Shiller Index

Analysis

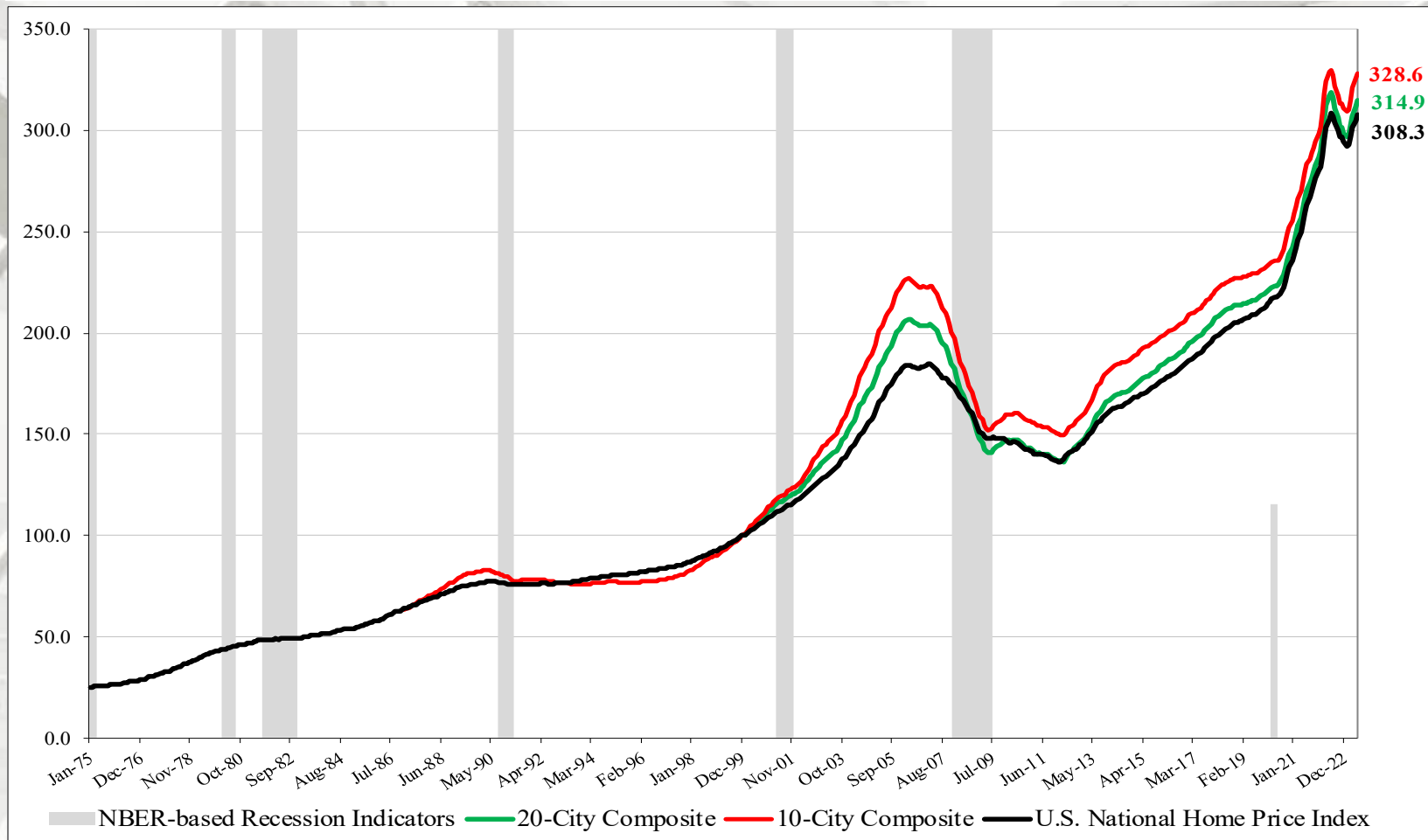
“U.S. home prices continued to increase in June 2023. Our National Composite rose by 0.9% in June, and it now stands only -0.02% below its all-time peak from exactly one year ago. Our 10- and 20-City Composites likewise each gained 0.9% in June 2023, and stand -0.5% and -1.2%, respectively, below their June 2022 peaks.

As we've noted previously, the recovery in home prices is broadly based. Prices rose in all 20 cities in June, both before and after seasonal adjustment. Over the last 12 months, 10 cities show positive returns. Otherwise said, half the cities in our sample now sit at all-time high prices.

Regional differences continue to be striking. On a year-over-year basis, June's three best-performing cities were Chicago (+4.2%), Cleveland (+4.1%), and New York (+3.4%) – the same three that had topped our May leader board. At the other end of the scale, the worst performers continue to be in the Pacific and Mountain time zones, with San Francisco (-9.7%) and Seattle (-8.8%) at the bottom. The Midwest (+2.8%) continues as the nation's strongest region, followed this month by the Northeast (+1.6%). The West (-5.9%) remains the weakest region.

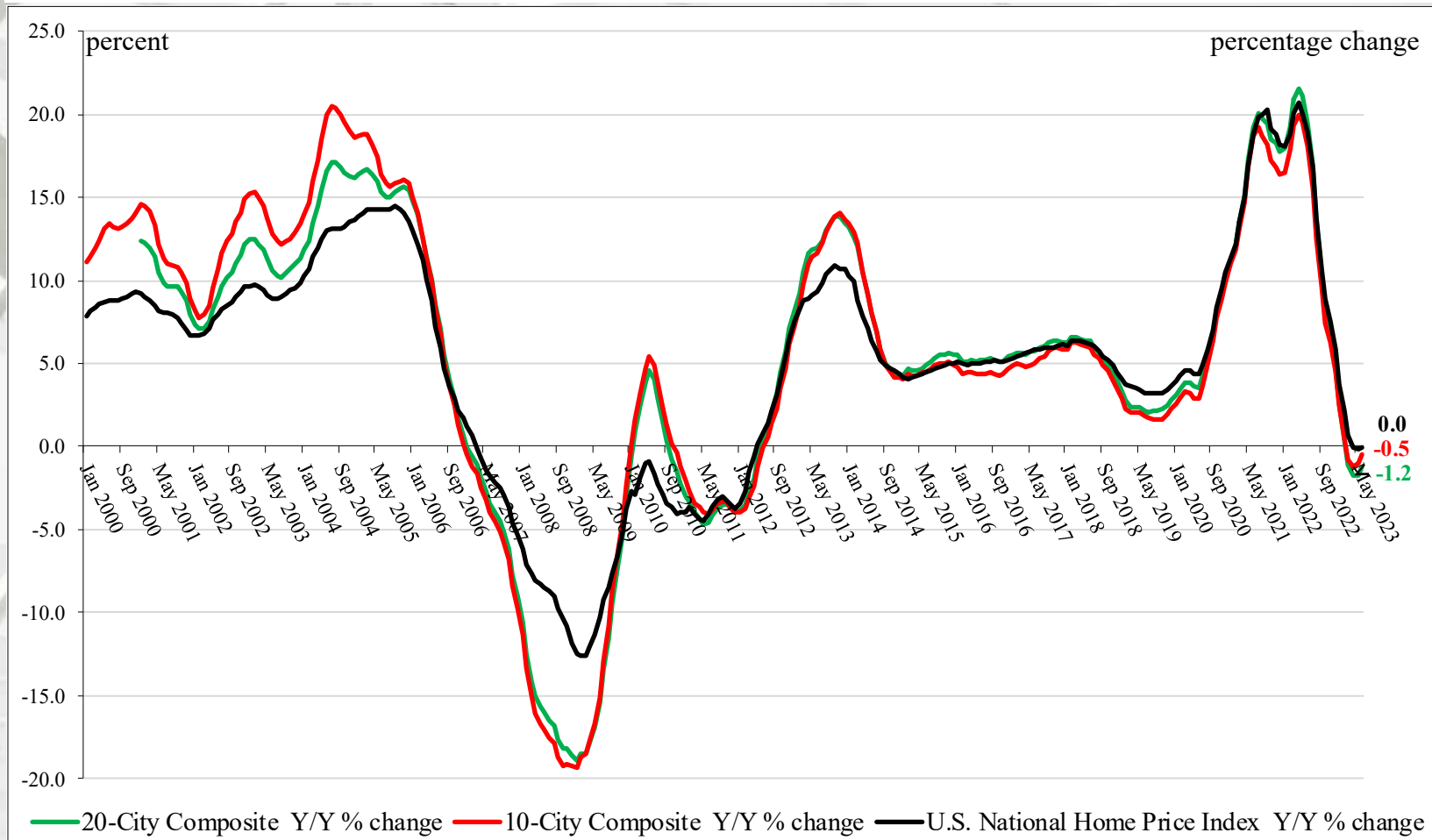
June is the fifth consecutive month in which home prices have increased across the U.S. With 2023 half over, the National Composite has risen 4.7%, which is slightly above the median full calendar year increase in more than 35 years of data. We recognize that the market's gains could be truncated by increases in mortgage rates or by general economic weakness, but the breadth and strength of this month's report are consistent with an optimistic view of future results.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

S&P/Case-Shiller Home Price Indices



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

S&P/Case-Shiller Home Price Indices

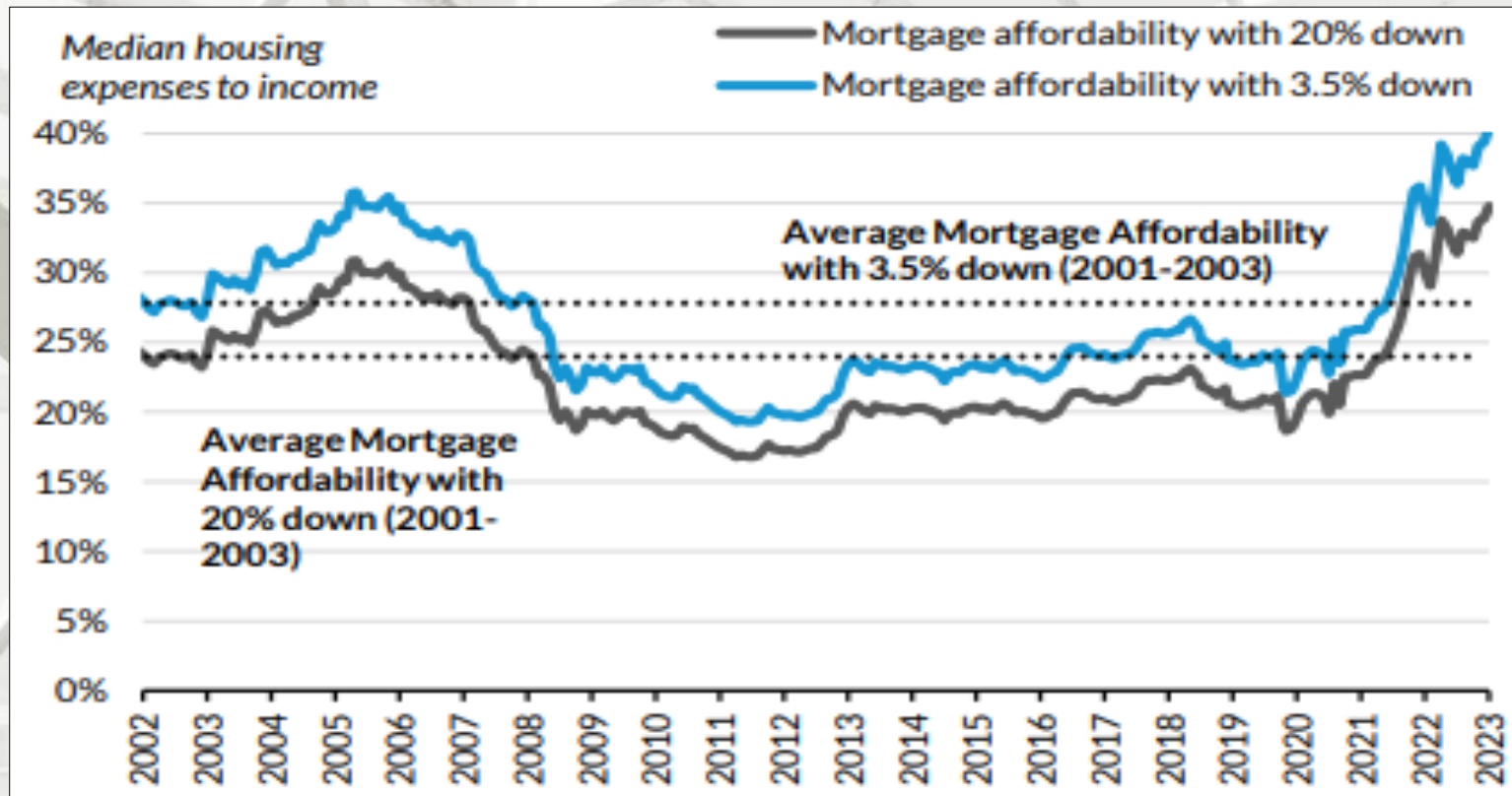


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Y/Y Price Change

From June 2022 to June 2023, the National Index indicated no change; the Ten-City declined by 0.5%, and the Twenty-City decreased by 1.2%.

U.S. Housing Affordability



Sources: eMBS, Federal Housing Administration (FHA), and Urban Institute.

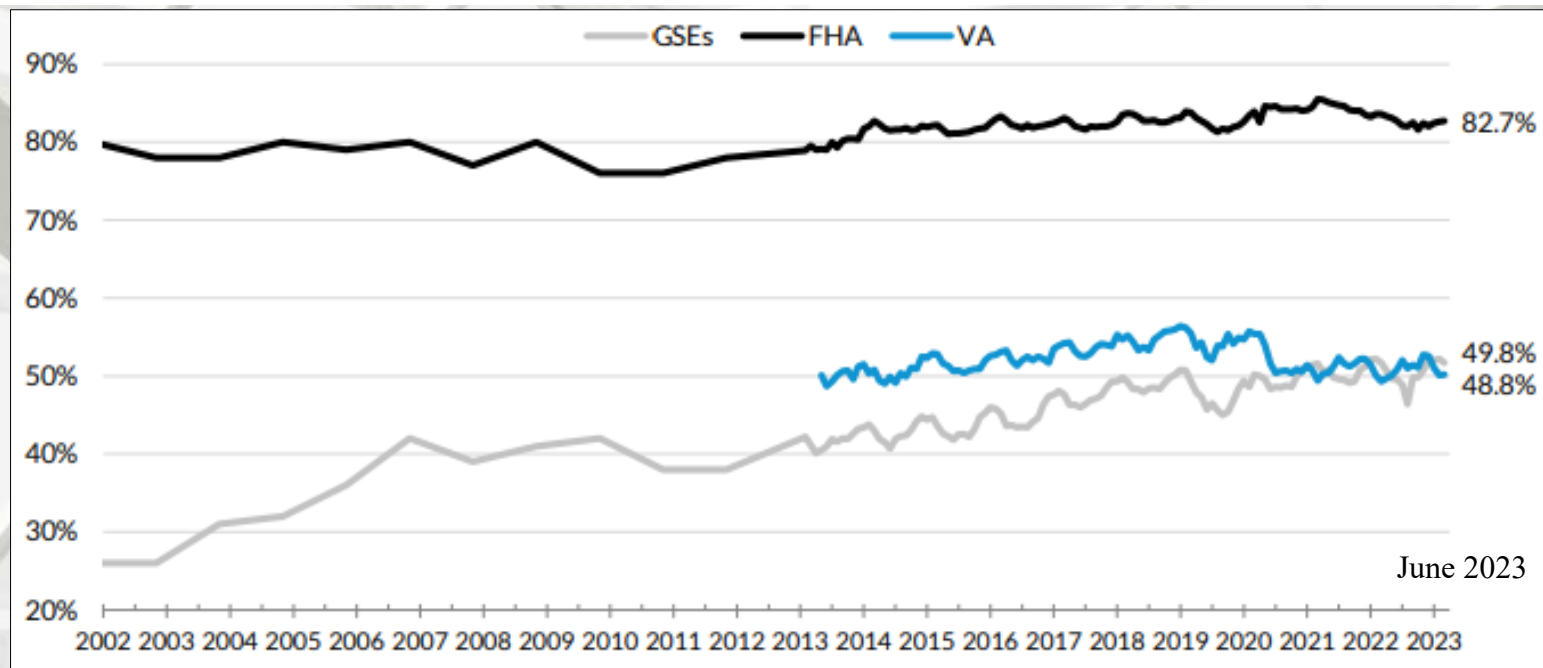
Note: All series measure the first-time home buyer share of purchase loans for principal residences.

Urban Institute

National Mortgage Affordability Over Time

“Mortgage affordability worsened in July, nearing levels last seen in December 2022. As of July 2023, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 34.8 percent, higher than the 30.9 percent at the peak of the housing bubble in November 2005; and with 3.5 percent down it is 40.4 percent, also above the 35.8 percent prior peak in November 2005. ...” – Laurie Goodman *et. al*, Vice President, Urban Institute

U.S. First-Time House Buyers



Sources: eMBS, Federal Housing Administration (FHA), and Urban Institute.

Note: All series measure the first-time homebuyer share of purchase loans for principal residences.

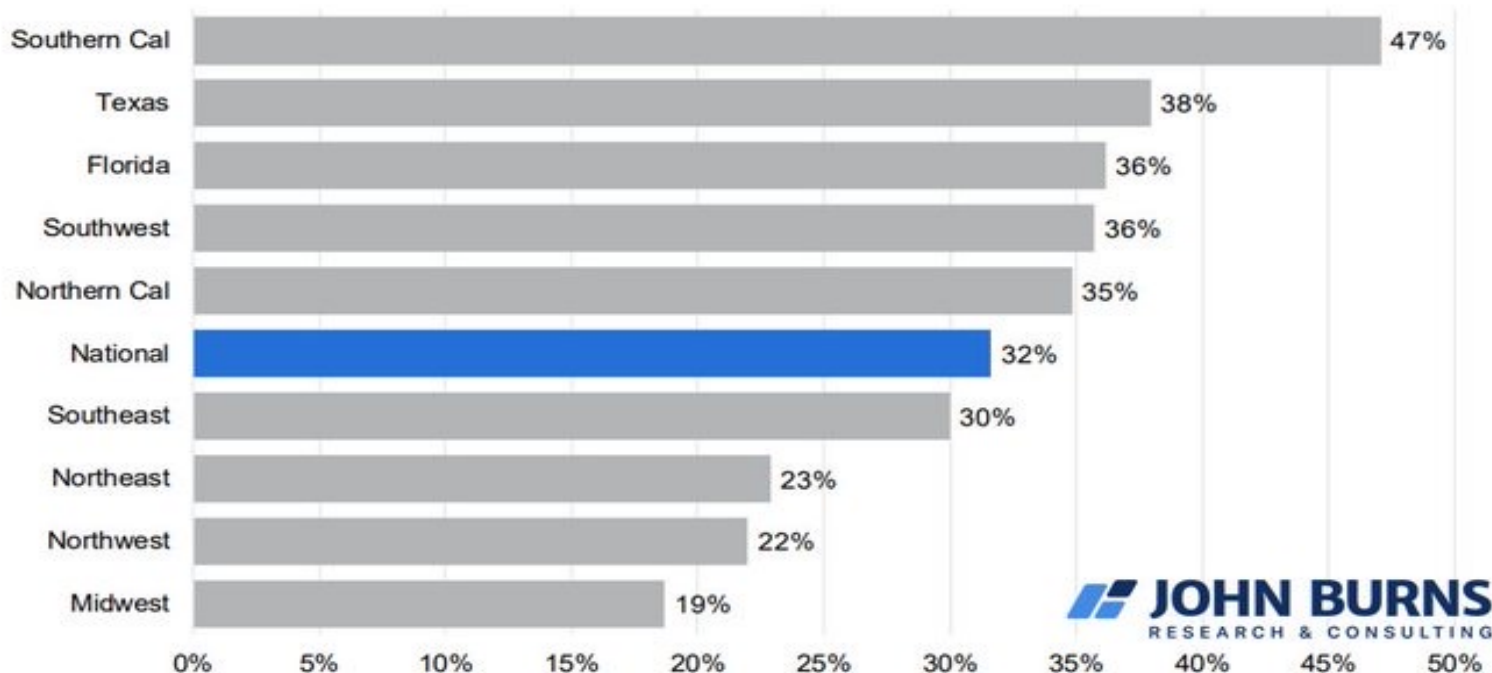
Urban Institute First-time House Buyer Share

“In June 2023, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 82.7 percent. The FTHB share of GSE lending in April was 49.8 percent; the VA share was 48.8 percent. ...” – Laurie Goodman *et. al*, Vice President, Urban Institute

U.S. First-Time House Buyers

First-time buyers are 32% of the new home market this year.

Regional Differences: Average Year-to-Date Percentage of Net Sales to First-Time Buyers
Weighted averages



Sources: John Burns Research and Consulting, LLC independent survey of ~20% of all new home sales, NSA (Data: Aug-23; Pub: Sep-23)

As seen in **Burns Home Builder Survey**

John Burns Real Estate Research and Consulting

“Home builders tell us 32% of net sales this year have been to first-time buyers. How are first-timers affording new homes?

- 1) Price cuts 2) Rate buydowns 3) Smaller floorplans 4) Lower-cost finishes
- 5) Help from Mom + Dad 6) Moving farther from cities 7) Spending “excess” savings.” – Eric Finnigan, VP of Research & Demographics; John Burns Real Estate Research and Consulting

U.S. Housing Finance

Mortgage Bankers Association (MBA)

Mortgage Credit Availability Increased in August

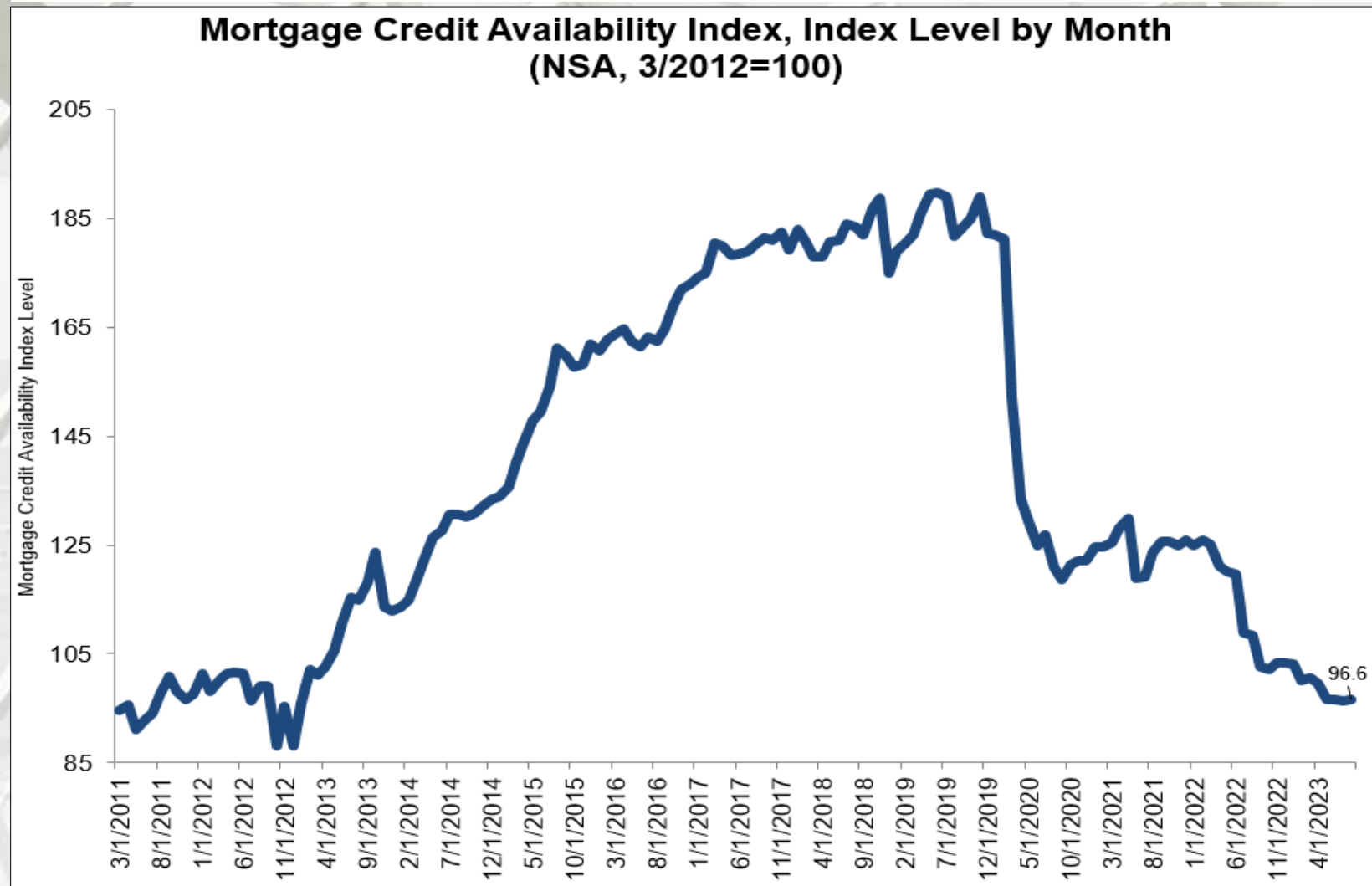
“Mortgage credit availability increased in August according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) that analyzes data from ICE Mortgage Technology.

The MCAI rose by 0.3 percent to 96.6 in August. 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 increased 0.6 percent, while the Government MCAI was unchanged. Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 2.7 percent, and the Conforming MCAI fell by 2.7 percent.

Credit availability in August increased slightly but remained close to the very low levels last seen in January 2013. The overall increase was driven by an increased number of loan programs that included parameters such as cash-out refinances and mid-range credit scores. The conforming index dropped to its lowest level since 2011, while the jumbo index increased after three monthly declines. Industry capacity continues to decline as lenders reduce staffing and simplify their product offerings to reduce costs and raise profitability. While this dynamic has led to lower credit availability, it has also provided some lenders with new opportunities to expand some of their product offerings, and we saw some of that growth in the jumbo space last month.” – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

U.S. Housing Finance

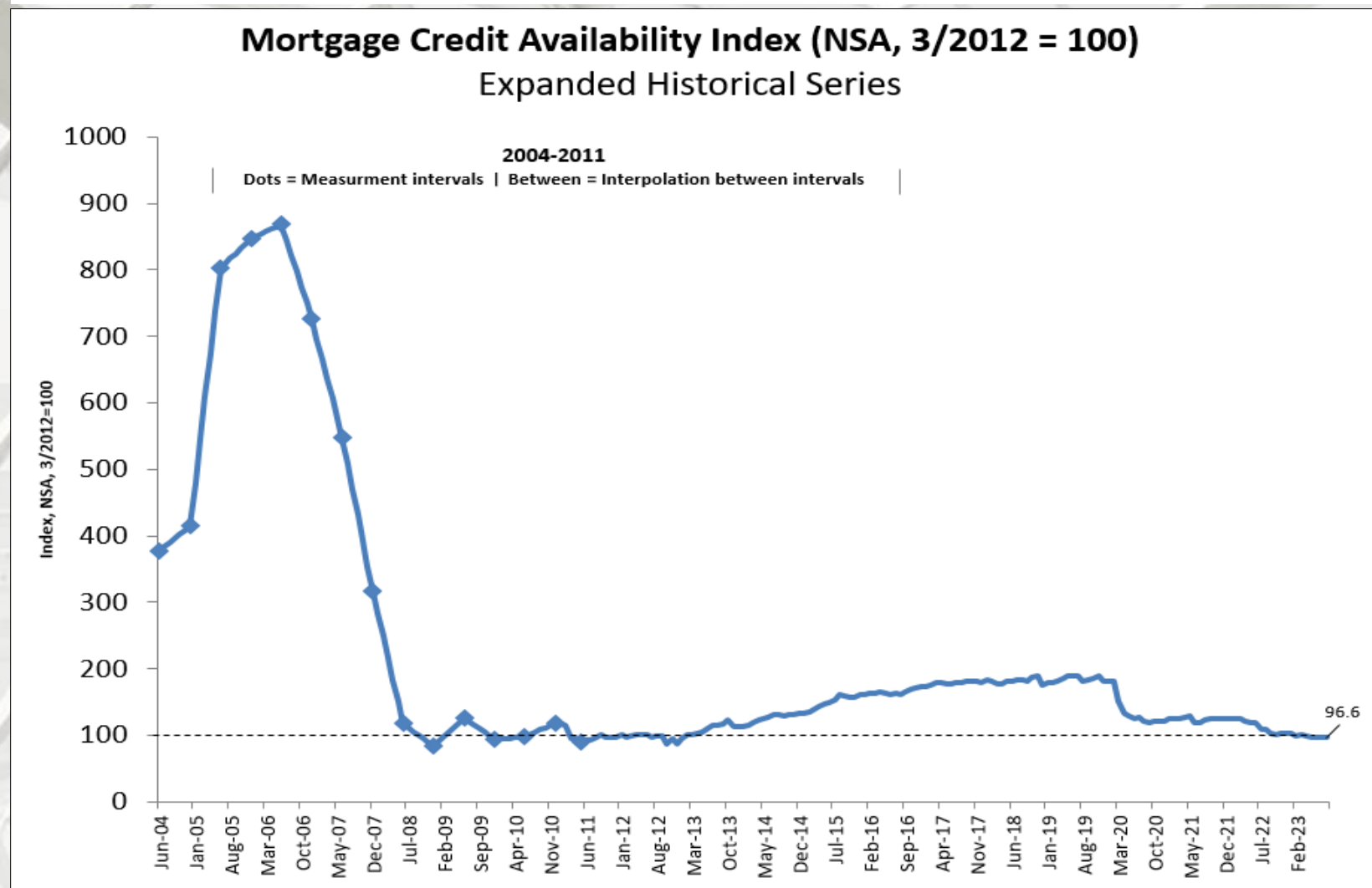
Mortgage Credit Availability (MBA)



Source: <https://www.mba.org/news-and-research/newsroom/news/2023/09/12/mortgage-credit-availability-increased-in-august>; 9/12/23

U.S. Housing Finance

Mortgage Credit Availability (MBA)



Source: Mortgage Bankers Association; Powered by ICE Mortgage Technology

MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

September 18, 2023

	2022				2023				2024				2022	2023	2024	2025
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Housing Measures																
Housing Starts (SAAR, Thous)	1,718	1,636	1,446	1,405	1,385	1,443	1,465	1,462	1,470	1,462	1,471	1,502	1,551	1,439	1,476	1,584
Single-Family	1,182	1,084	901	850	834	927	995	990	1,012	1,020	1,046	1,082	1,004	936	1,040	1,154
Two or More	535	551	545	556	552	516	470	472	458	442	425	420	547	503	436	430
Home Sales (SAAR, Thous)																
Total Existing Homes	6,057	5,373	4,770	4,197	4,327	4,250	4,138	4,204	4,345	4,466	4,674	4,835	5,099	4,230	4,580	5,053
New Homes	776	609	580	598	638	694	737	747	746	753	770	763	641	704	758	801
FHFA US House Price Index (YOY % Change)	18.7	17.5	12.2	8.3	4.6	3.1	2.2	1.5	1.0	0.7	0.8	1.1	8.3	1.5	1.1	3.2
Median Price of Total Existing Homes (Thous \$)	365.8	405.9	391.5	372.8	366.7	397.5	409.3	395.9	392.5	386.7	384.3	389.5	384.0	392.3	388.2	387.7
Median Price of New Homes (Thous \$)	431.3	447.0	465.4	479.5	434.8	418.0	429.7	430.6	435.8	430.6	430.7	437.5	455.8	428.3	433.7	442.2
Interest Rates																
30-Year Fixed Rate Mortgage (%)	3.9	5.3	5.7	6.6	6.4	6.5	7.0	6.3	6.1	5.8	5.5	5.4	6.6	6.3	5.4	5.1
10-Year Treasury Yield (%)	1.9	2.9	3.1	3.8	3.6	3.6	4.1	3.7	3.6	3.5	3.3	3.2	3.8	3.7	3.2	2.9
Mortgage Originations																
Total 1- to 4-Family (Bil \$)	708	696	493	409	333	463	444	440	429	532	552	535	2,305	1,680	2,048	2,355
Purchase	391	489	398	341	267	371	363	358	324	406	405	382	1,619	1,359	1,517	1,707
Refinance	317	207	95	68	66	92	81	82	105	126	147	153	686	321	531	648
Refinance Share (%)	45	30	19	17	20	20	18	19	24	24	27	29	30	19	26	28
FHA Originations (Bil \$)													228	137	150	149
Total 1- to 4-Family (000s loans)	2,223	2,031	1,364	1,102	895	1,239	1,177	1,168	1,154	1,429	1,491	1,448	6,720	4,479	5,523	6,258
Purchase	1,110	1,334	1,054	884	686	948	923	910	824	1,033	1,029	968	4,382	3,466	3,854	4,257
Refinance	1,113	697	310	218	210	291	255	258	330	397	462	480	2,338	1,013	1,669	2,001
Refinance Share (%)	50	34	23	20	23	23	22	22	29	28	31	33	35	23	30	32
Mortgage Debt Outstanding																
1- to 4-Family (Bil \$)	12,708	12,989	13,217	13,381	13,430	13,554	13,652	13,733	13,793	13,855	13,916	13,971	13,381	13,733	13,971	14,255

Notes:

As of the August 2023 forecast, 2022 origination volume was revised based on the 2022 Home Mortgage Disclosure Act data. Total 1-to-4-family originations and refinance share are MBA estimates. These exclude second mortgages and home equity loans. Mortgage rate forecast is based on Freddie Mac's 30-Yr fixed rate which is based on predominantly home purchase transactions. The 10-Year Treasury Yield and 30-Yr mortgage rate are the average for the quarter, but annual columns show Q4 values. The FHFA US House Price Index is the forecasted year over year percent change of the FHFA Purchase-Only House Price Index. Copyright 2023 Mortgage Bankers Association. All rights reserved. THE HISTORICAL DATA AND PROJECTIONS ARE PROVIDED "AS IS" WITH NO WARRANTIES OF ANY KIND.

MBA Economic Forecast

MBA Economic Forecast

September 18, 2023

	2022				2023				2024				2022	2023	2024	2025
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Percent Change, SAAR																
Real Gross Domestic Product	-1.6	-0.6	3.2	2.6	2.0	2.1	2.7	1.1	-0.1	-0.3	0.3	1.1	0.9	2.0	0.3	1.9
Personal Consumption Expenditures	1.3	2.0	2.3	1.0	4.2	1.7	2.0	1.2	0.6	0.3	0.9	1.1	1.7	2.3	0.7	1.6
Business Fixed Investment	7.9	0.1	6.2	4.0	0.6	6.1	-0.9	1.7	-0.5	-1.8	-1.4	0.3	4.5	1.9	-0.9	2.2
Residential Investment	-3.1	-17.8	-27.1	-25.1	-4.0	-3.6	12.5	3.5	6.6	2.1	4.1	5.4	-18.8	1.9	4.6	6.4
Govt. Consumption & Investment	-2.3	-1.6	3.7	3.8	5.0	3.3	1.9	1.5	1.3	1.0	0.8	0.6	0.9	2.9	0.9	0.5
Net Exports (Bil. Chain 2012\$)	-1260.3	-1207.6	-1063.8	-1037.8	-1010.3	-1015.1	-1022.4	-1028.5	-1077.6	-1119.0	-1139.0	-1146.6	-1142.4	-1019.1	-1120.6	-1163.5
Inventory Investment (Bil. Chain 2012\$)	182.4	93.7	32.9	116.1	3.0	-1.5	28.7	17.2	11.5	13.9	9.5	11.9	106.3	11.8	11.7	39.2
Consumer Prices (YOY)	8.0	8.6	8.3	7.1	5.8	4.1	3.6	3.2	2.9	2.7	2.5	2.4	7.1	3.2	2.4	2.1
Percent																
Unemployment Rate	3.8	3.6	3.5	3.6	3.5	3.5	3.7	3.9	4.2	4.6	4.9	4.9	3.6	3.7	4.6	4.6
Federal Funds Rate	0.375	1.625	3.125	4.375	4.875	5.125	5.375	5.375	5.375	4.875	4.375	3.875	4.375	5.375	3.875	2.875
10-Year Treasury Yield	1.9	2.9	3.1	3.8	3.6	3.6	4.1	3.7	3.6	3.5	3.3	3.2	3.8	3.7	3.2	2.9

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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MBA

MORTGAGE BANKERS ASSOCIATION

Fannie Mae Housing Forecast



Housing Forecast: August 2023

	2022				2023				2024				2022	2023	2024
	22.1	22.2	22.3	22.4	23.1	23.2	23.3	23.4	24.1	24.2	24.3	24.4			
SAAR, Thous. Units															
Total Housing Starts	1,718	1,636	1,446	1,405	1,385	1,447	1,438	1,361	1,302	1,286	1,302	1,327	1,553	1,408	1,304
Percent Change: YoY													-3.0	-9.3	-7.4
Single-Family (1 Unit)	1,182	1,084	901	850	834	929	958	925	903	896	906	921	1,005	912	907
Percent Change: YoY													-10.8	-9.3	-0.5
Multifamily (2+ Units)	535	551	545	556	552	518	480	436	399	390	396	405	547	496	398
Percent Change: YoY													15.5	-9.3	-19.9
Total Home Sales	6,747	5,970	5,359	4,795	4,965	4,944	4,866	4,814	4,799	4,870	4,969	5,069	5,671	4,897	4,927
Percent Change: YoY													-17.7	-13.6	0.6
New Single-Family	763	603	583	598	638	694	715	705	675	684	691	696	641	688	687
Percent Change: YoY													-16.9	7.3	-0.2
Existing (Single-Family, Condos/Co-Ops)	5,983	5,367	4,777	4,197	4,327	4,250	4,151	4,109	4,124	4,186	4,278	4,373	5,030	4,209	4,240
Percent Change: YoY													-17.8	-16.3	0.7
Percent Change: Quarterly YoY, Annual Q4/Q4															
Fannie Mae HPI	19.4	18.2	12.5	8.3	4.7	3.4	3.5	3.9	2.6	0.0	-0.1	-0.7	8.3	3.9	-0.7
Percent: Quarterly Avg, Annual Avg															
30-Year Fixed Rate Mortgage	3.8	5.2	5.6	6.7	6.4	6.5	6.8	6.7	6.5	6.3	6.2	6.0	5.3	6.6	6.3
NSA, Bil. \$, 1-4 Units															
Single-Family Mortgage Originations	774	683	534	396	320	442	429	410	347	504	565	502	2,386	1,601	1,918
Purchase	386	495	426	327	261	367	369	343	268	396	423	375	1,633	1,341	1,462
Refinance	388	188	108	69	59	74	59	68	79	108	142	127	753	261	456
Refinance Share (Percent)	50	27	20	17	19	17	14	16	23	21	25	25	32	16	24

August 10, 2023

Note: Interest rate forecasts are based on rates from July 31, 2023; all other forecasts are based on the date above.

Note: All mortgage originations data are Fannie Mae estimates as there is no universal source for market-wide originations data.

Note: The Fannie Mae HPI forecast is updated on the first month of every quarter.

Note: Unshaded areas denote actuals. Shaded areas denote forecasts.

Sources: Actuals: Census Bureau, National Association of REALTORS®, Freddie Mac. Forecasts: Fannie Mae Economic & Strategic Research

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Fannie Mae Economic Forecast



Economic Forecast: August 2023

	2022				2023				2024				2022	2023	2024
	22.1	22.2	22.3	22.4	23.1	23.2	23.3	23.4	24.1	24.2	24.3	24.4			
Percent Change: Quarterly SAAR, Annual Q4/Q4															
Gross Domestic Product	-1.6	-0.6	3.2	2.6	2.0	2.4	2.2	1.1	-0.1	-0.9	-0.4	0.6	0.9	1.9	-0.2
Personal Consumption Expenditures (PCE)	1.3	2.0	2.3	1.0	4.2	1.6	1.8	1.3	0.3	-0.5	-0.1	0.7	1.7	2.2	0.1
Residential Fixed Investment	-3.1	-17.8	-27.1	-25.1	-4.0	-4.2	6.6	-2.3	-4.7	-3.7	-0.3	2.5	-18.8	-1.0	-1.6
Business Fixed Investment	7.9	0.1	6.2	4.0	0.6	7.7	0.3	1.4	-2.4	-4.8	-4.4	-2.5	4.5	2.5	-3.5
Government Consumption & Investment	-2.3	-1.6	3.7	3.8	5.0	2.6	2.3	1.0	0.7	1.0	1.0	0.9	0.9	2.7	0.9
Billions of Chained 2012\$															
Net Exports	-1480	-1421	-1260	-1230	-1199	-1197	-1190	-1208	-1214	-1204	-1186	-1171	-1348	-1198	-1194
Change in Business Inventories	215	110	39	137	4	9	17	24	26	16	5	3	125	13	13
Percent Change: Quarterly YoY, Annual Q4/Q4															
Consumer Price Index	8.0	8.6	8.3	7.1	5.8	4.1	3.5	3.2	2.9	2.9	2.8	2.8	7.1	3.2	2.8
Core Consumer Price Index (ex. Food & Energy)	6.3	6.0	6.3	6.0	5.6	5.2	4.6	4.2	3.7	3.3	3.0	2.8	6.0	4.2	2.8
PCE Chain Price Index	6.4	6.6	6.3	5.7	4.9	3.7	3.4	3.1	2.7	2.7	2.6	2.5	5.7	3.1	2.5
Core PCE Chain Price Index (ex. Food & Energy)	5.3	5.0	4.9	4.8	4.6	4.4	4.1	3.8	3.2	3.0	2.8	2.5	4.8	3.8	2.5
Change: Quarterly Avg Mo. Chg, Thous., Annual Mil.															
Employment, Total Nonfarm	561	329	423	284	312	228	114	19	-74	-82	-108	-117	4.8	2.0	-1.1
Percent Change: Q4/Q4													3.4	1.5	-0.6
Percent: Quarterly Avg, Annual Avg															
Unemployment Rate	3.8	3.6	3.6	3.6	3.5	3.5	3.5	3.6	3.8	4.1	4.5	4.9	3.6	3.5	4.3
Federal Funds Rate	0.1	0.8	2.2	3.7	4.5	5.0	5.3	5.4	5.2	5.0	4.7	4.4	1.7	5.0	4.8
1-Year Treasury Note Yield	1.0	2.2	3.4	4.6	4.8	4.9	5.3	5.1	4.8	4.6	4.3	4.1	2.8	5.0	4.4
10-Year Treasury Note Yield	1.9	2.9	3.1	3.8	3.6	3.6	3.9	3.9	3.9	3.8	3.8	3.8	3.0	3.8	3.8

August 10, 2023

Note: Interest rate forecasts are based on rates from July 31, 2023; all other forecasts are based on the date above.

Note: Unshaded areas denote actuals. Shaded areas denote forecasts.

Sources: Actuals: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Board. Forecasts: Fannie Mae Economic and Strategic Research

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Wells Fargo Economic Forecast

U.S. Forecast Table

Wells Fargo U.S. Economic Forecast																
	Actual				Forecast											
	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Real Gross Domestic Product (a)	-1.6	-0.6	3.2	2.6	2.0	2.1	3.4	0.4	-0.8	-1.1	1.6	2.3	2.2	1.9	2.4	2.4
Personal Consumption	1.3	2.0	2.3	1.0	4.2	1.7	3.4	0.8	-0.8	-1.6	0.4	2.0	1.7	1.8	2.1	2.2
Business Fixed Investment	7.9	0.1	6.2	4.0	0.6	6.1	0.1	-4.5	-5.4	-0.3	2.1	3.7	4.0	4.8	5.6	4.4
Equipment	11.4	-2.0	10.6	-3.5	-8.9	7.7	-2.6	-7.2	-9.2	0.4	3.5	4.1	2.4	2.0	2.2	2.4
Intellectual Property Products	10.8	8.9	6.8	6.2	3.1	2.2	2.0	-2.5	-2.0	1.5	3.8	5.5	6.6	7.6	9.6	7.3
Structures	-4.3	-12.7	-3.6	15.8	15.8	11.2	2.5	-2.5	-4.8	-6.9	-5.8	-2.5	1.2	4.0	2.9	1.5
Residential Investment	-3.1	-17.8	-27.1	-25.1	-4.0	-3.6	4.5	2.5	-0.9	-1.3	1.9	3.8	4.6	3.1	3.7	4.7
Government Purchases	-2.3	-1.6	3.7	3.8	5.0	3.3	2.5	1.5	1.2	0.8	0.7	0.4	0.3	0.4	0.5	0.7
Net Exports	-1488.7	-1430.5	-1268.8	-1238.6	-1208.4	-1212.2	-1202.0	-1195.2	-1146.4	-1102.6	-1096.0	-1103.8	-1116.1	-1138.1	-1158.6	-1179.6
Pct. Point Contribution to GDP	-3.1	1.2	2.9	0.4	0.6	-0.2	0.2	0.1	1.0	0.9	0.1	-0.2	-0.2	-0.4	-0.4	-0.4
Inventory Change	214.5	110.2	38.7	136.5	3.5	-1.8	9.4	11.3	-18.8	-65.9	-32.9	-16.9	9.4	20.7	37.6	56.5
Pct. Point Contribution to GDP	0.2	-1.9	-1.2	1.5	-2.1	-0.1	0.2	0.0	-0.6	-0.9	0.6	0.3	0.5	0.2	0.3	0.4
Nominal GDP (a)	6.6	8.5	7.7	6.6	6.1	4.1	6.5	2.6	0.9	0.2	3.5	4.7	4.5	4.1	4.6	4.6
Real Final Sales	-1.8	1.3	4.5	1.1	4.2	2.2	3.2	0.3	-0.3	-0.2	0.9	2.0	1.7	1.7	2.1	2.1
Retail Sales (b)	13.0	9.4	9.9	7.0	4.9	1.7	2.8	2.2	0.5	-0.6	-3.0	-3.5	-2.6	-1.1	0.7	2.1
Inflation Indicators (b)																
PCE Deflator	6.4	6.6	6.3	5.7	4.9	3.7	3.3	3.0	2.4	2.1	1.8	1.8	1.9	2.1	2.2	2.2
Core PCE Deflator	5.3	5.0	4.9	4.8	4.7	4.4	3.9	3.4	2.7	2.3	2.2	2.1	2.1	2.1	2.1	2.1
Consumer Price Index	8.0	8.6	8.3	7.1	5.8	4.1	3.4	3.0	2.6	2.2	1.9	1.9	2.0	2.3	2.4	2.3
Core Consumer Price Index	6.3	6.0	6.3	6.0	5.6	5.2	4.3	3.7	3.2	2.6	2.5	2.4	2.2	2.2	2.2	2.3
Producer Price Index (Final Demand)	10.8	11.0	8.9	7.3	4.4	1.2	1.2	0.9	0.9	1.6	1.5	1.8	2.1	2.2	2.2	2.0
Employment Cost Index	4.5	5.1	5.0	5.1	4.8	4.5	4.3	4.1	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.2
Real Disposable Income (a)	-10.6	-2.3	3.2	2.5	8.5	3.3	-0.6	0.4	1.0	1.3	2.5	3.0	2.9	2.1	2.1	2.3
Nominal Personal Income (a)	3.0	4.9	7.5	5.0	5.1	4.2	2.9	2.3	2.2	2.0	3.8	4.8	4.9	4.3	4.3	4.5
Industrial Production (a)	3.7	4.1	2.1	-2.5	-0.3	0.0	-0.2	-5.8	-6.5	0.3	2.6	3.0	2.3	1.7	2.1	2.4
Capacity Utilization	80.0	80.6	80.8	79.9	79.6	79.3	79.0	77.9	76.6	76.7	77.1	77.7	78.1	78.4	78.8	79.3
Corporate Profits Before Taxes (b)	10.9	7.7	5.5	2.6	-1.8	-6.5	-4.0	-2.0	-1.0	-4.0	-2.0	1.0	6.0	12.0	8.0	6.0
Corporate Profits After Taxes	6.1	5.0	3.5	1.6	-1.9	-6.2	-4.9	-2.5	0.3	-4.4	-2.2	1.0	6.2	11.9	8.0	6.0
Federal Budget Balance (c)	-291	153	-860	-421	-679	-292	-407	-529	-683	-205	-433	-545	-704	-206	-445	-562
Trade Weighted Dollar Index (d)	109.6	114.7	121.4	116.6	116.2	114.8	117.3	118.5	117.5	115.5	114.5	113.5	112.5	111.5	111.0	111.0
Nonfarm Payroll Change (e)	561	329	423	284	312	201	165	115	12	-183	-50	67	115	120	128	140
Unemployment Rate	3.8	3.6	3.6	3.6	3.5	3.6	3.7	3.7	3.9	4.2	4.4	4.4	4.2	4.0	3.9	3.8
Housing Starts (f)	1.72	1.64	1.45	1.41	1.39	1.44	1.40	1.31	1.22	1.35	1.50	1.51	1.40	1.40	1.40	1.40
Light Vehicle Sales (g)	14.1	13.3	13.4	14.3	15.3	15.6	15.1	14.7	14.5	14.0	14.8	15.3	15.8	16.3	16.6	17.1
Crude Oil - Brent - Front Contract (h)	95.7	109.8	95.5	87.9	81.9	77.6	85.0	81.8	74.7	74.0	76.7	78.3	77.3	78.3	79.3	77.7
Quarter-End Interest Rates (i)																
Federal Funds Target Rate (j)	0.50	1.75	3.25	4.50	5.00	5.25	5.50	5.50	5.25	4.50	3.75	3.25	3.25	3.25	3.25	3.25
Secured Overnight Financing Rate	0.29	1.50	2.98	4.30	4.87	5.09	5.30	5.35	5.10	4.35	3.60	3.10	3.10	3.10	3.10	3.10
Prime Rate	3.50	4.75	6.25	7.50	8.00	8.25	8.50	8.50	8.25	7.50	6.75	6.25	6.25	6.25	6.25	6.25
Conventional Mortgage Rate	4.27	5.58	6.01	6.36	6.54	6.71	7.05	6.75	6.40	6.15	5.95	5.70	5.80	5.75	5.70	5.70
3 Month Bill	0.52	1.72	3.33	4.42	4.85	5.43	5.35	5.30	4.90	4.10	3.40	3.10	3.15	3.15	3.15	3.15
6 Month Bill	1.06	2.51	3.92	4.76	4.94	5.47	5.45	5.20	4.60	3.75	3.30	3.05	3.15	3.15	3.15	3.15
1 Year Bill	1.63	2.80	4.05	4.73	4.64	5.40	5.30	4.90	4.20	3.50	3.25	3.05	3.20	3.20	3.20	3.20
2 Year Note	2.28	2.92	4.22	4.41	4.06	4.87	4.85	4.40	3.80	3.45	3.25	3.10	3.25	3.25	3.25	3.25
5 Year Note	2.42	3.01	4.06	3.99	3.60	4.13	4.25	3.95	3.55	3.35	3.25	3.15	3.30	3.30	3.30	3.30
10 Year Note	2.32	2.98	3.83	3.88	3.48	3.81	4.10	3.90	3.60	3.40	3.30	3.25	3.40	3.40	3.40	3.40
30 Year Bond	2.44	3.14	3.79	3.97	3.67	3.85	4.25	4.10	3.90	3.80	3.70	3.65	3.75	3.75	3.75	3.75

Forecast as of September 07, 2023

Notes: (a) Compound Annual Growth Rate Quarter-over-Quarter

(b) Year-over-Year Percentage Change

(c) Quarterly Sum - Billions USD; Annual Data Represents Fiscal Year

(d) Federal Reserve Advanced Foreign Economic Index, 2006=100 - Quarter End

(e) Average Monthly Change

(f) Quarterly Data - Average Monthly SAAR; Annual Data - Actual Total Houses Started

(g) Quarterly Data - Average Monthly SAAR; Annual Data - Actual Total Vehicles Sold

(h) Quarterly Average of Daily Close

(i) Quarterly Data - Period End; Annual Data - Annual Averages

(j) Upper Bound of the Federal Funds Target Range

Source: U.S. Department of Commerce, U.S. Department of Labor, IHS Markit, Federal Reserve Board and Wells Fargo Economics

Summary

In conclusion:

Housing data, year-over-year and month-over-month, were mixed and improvement was noted in certain categories on a monthly basis. Total starts; total permits; total housing construction, and new housing sales, and total construction spending improved month-over-month. Year-over-year, total housing and single-family starts; single-family permits, multi-family under construction; single-family completions, new house sales; and total residential spending increased. The influence of the mortgage rates increasing is evident, as aggregate costs have decreased affordability.

Pros:

- 1) The desire to own a house remains strong, though consumer sentiment July 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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