

The Virginia Tech–USDA Forest Service Housing Commentary: Section I October 2022



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

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Opening Remarks

In October, month-over-month data declined in the majority of categories. Year-over-year data remain positive in many categories. Single-family permits and starts decreased again, month-over-month and year-over-year. Increasing borrowing costs, slow income growth combined with elevated house prices have resulted in a major obstacle for new and existing house sales. October was the ninth consecutive monthly decrease for existing house sales. Single-family construction spending decreased for the sixth straight month.

The December 15th Atlanta Fed GDPNow™ total residential investment spending forecast was a negative 21.2% for December 2022. New private permanent site expenditures were projected at -39.5%; the improvement spending forecast was -2.0%; and the manufactured/mobile home expenditures projection was -25.8% (all: quarterly log change and at a seasonally adjusted annual rate).¹

“And while some experts are predicting a similar type of [housing] crash is ahead, it’s important to understand that the supply and demand dynamics are very different today. Back in 2007, there were 4 million homes for sale versus just 1.22 million today. Builders were also putting up record numbers of homes while demand was falling. Today, demand is waning, but builders have learned their lesson from a decade ago. Housing Starts for single-family homes declined 20.8% from October of last year, while single-family Building Permits (which are indicative of future supply) fell 22.1% year over year.

... home prices have risen 115% over the last ten years. And in the last two years alone, when so many people in the media were negative about the housing market, prices were up 39%. In the first half of next year, rates are forecasted to move down to 5% due in large part to lower inflation. As a result, many buyers that are currently hibernating due to high rates will likely resume their home search. And given the current low supply environment, we could actually see a reacceleration in home prices – not the doomsday crash so many in the media would have you believe. ... remember that inflation is the main driver of mortgage rates. ... Going forward, the inflation readings that will be replaced are much higher, so if we see lower monthly readings like we did in October’s report, the annual rate of inflation will continue to move lower. Again, lower inflation typically helps both Mortgage Bonds and mortgage rates improve.”² – Barry Habib, MBS Highway

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; 12/15/22;

² <https://blog.mbshighway.com/media-misses-the-mark-on-the-housing-market-again>; 12/8/22

October 2022 Housing Scorecard

		M/M		Y/Y
Housing Starts	▼	4.2%	▼	8.8%
Single-Family (SF) Starts	▼	6.1%	▼	20.8%
Multi-Family (MF) Starts*	▼	1.2%	▲	17.8%
Housing Permits	▼	3.3%	▼	11.0%
SF Permits	▼	3.3%	▼	21.9%
MF Permits*	▼	3.3%	▲	8.1%
Housing Under Construction	▲	0.8%	▲	17.5%
SF Under Construction	▼	0.5%	▲	8.6%
Housing Completions	▼	6.4%	▲	6.6%
SF Completions	▼	8.3%	▲	2.7%
New SF House Sales	▲	7.5%	▼	5.8%
Private Residential Construction Spending	▼	0.3%	▲	8.6%
SF Construction Spending	▼	2.6%	▼	5.4%
Existing House Sales ¹	▼	5.7%	▼	28.4%

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

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

2023 Housing Forecasts*

	Range	Median
Total starts:	1,189 to 1,560	1,408
Single-Family (SF) starts:	759 to 923	891
New SF house sales:	488 to 806	605

Organization	Total Starts	SF Starts	New SF House Sales
Bank of Montreal (BOM) ^a	1,360		
Deloitte Insights LLP ^b	1,560		
Dodge Data & Analytics ^c	1,613	891	
Fannie Mae ^d	1,137	759	527
Morningstar ^e	1,435		
Mortgage Bankers Association (MBA) ^f	1,412	923	488
National Association of Homebuilders (NAHB) ^g	1,429	906	806

* All in thousands of units

2023 Housing Forecasts*

	Range	Median
Total starts:	1,189 to 1,560	1,408
Single-Family (SF) starts:	759 to 923	891
New SF house sales:	488 to 806	806

Organization	Total Starts	SF Starts	New SF House Sales
National Association of Realtors (NAR) ^h	1,540	900	610
PNC Financial Services Group ⁱ	1,189		546
Royal Bank of Canada (RBC) ^j	1,352		
Scotiabank ^k	1,370		
Toronto Dominion (TD) Bank Economics ^l	1,340		
Wells Fargo Securities LLC ^m	1,408	825	611
Zonda ⁿ		805	605

* All in thousands of units

References

- a- https://economics.bmo.com/media/filer_public/0b/04/0b04bb2b-b13a-4675-9000-a9977a388389/outlookus.pdf
- b- <https://www2.deloitte.com/us/en/insights/economy/us-economic-forecast/united-states-outlook-analysis.html>
- c- <https://www.enr.com/articles/55358-dodge-forecast-pace-of-construction-starts-to-flatten-out-in-2023>
- d- <https://www.fanniemae.com/research-and-insights/forecast>
- e- <https://www.morningstar.com/articles/1098911/we-now-see-a-sharper-housing-starts-decline-in-2023-24>
- f- <https://mba-erm.informz.net/mba-erm/data/images/Mortgage%20Finance%20Forecast%20dec%202020.pdf>
- g- <https://www.nahb.org/-/media/NAHB/news-and-economics/docs/housing-economics-plus/builders-forecasts/free-forecast/housing-forecast-free.xls>
- h- <https://www.realtor.com/research/2023-national-housing-forecast/>
- i- https://www.pnc.com/content/dam/pnc-com/pdf/aboutpnc/EconomicReports/NEO%20Reports/2022/NEO_Sept2022.pdf
- j- https://www.rbc.com/economics-subscriber/pdf/economy_us.pdf
- k- <https://www.scotiabank.com/ca/en/about/economics/economics-publications/post.other-publications.global-outlook-and-forecast-tables.scotiabank's-forecast-tables.2022.december-8--2022.html>
- l- <https://economics.td.com/ca-forecast-tables#lt-us>
- m- <https://www.wellsfargo.com/cib/insights/>
- n- <https://calculatedrisk.substack.com/p/2023-housing-forecasts>

2022 Housing Forecasts*

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

2021 Housing Forecasts*

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

2020 Housing Forecasts*

	Range	Median
Total starts:	1,200 to 1,423	1,305
Single-Family (SF) starts:	810 to 990	920
New SF house sales:	695 to 750	726

* All in thousands of units

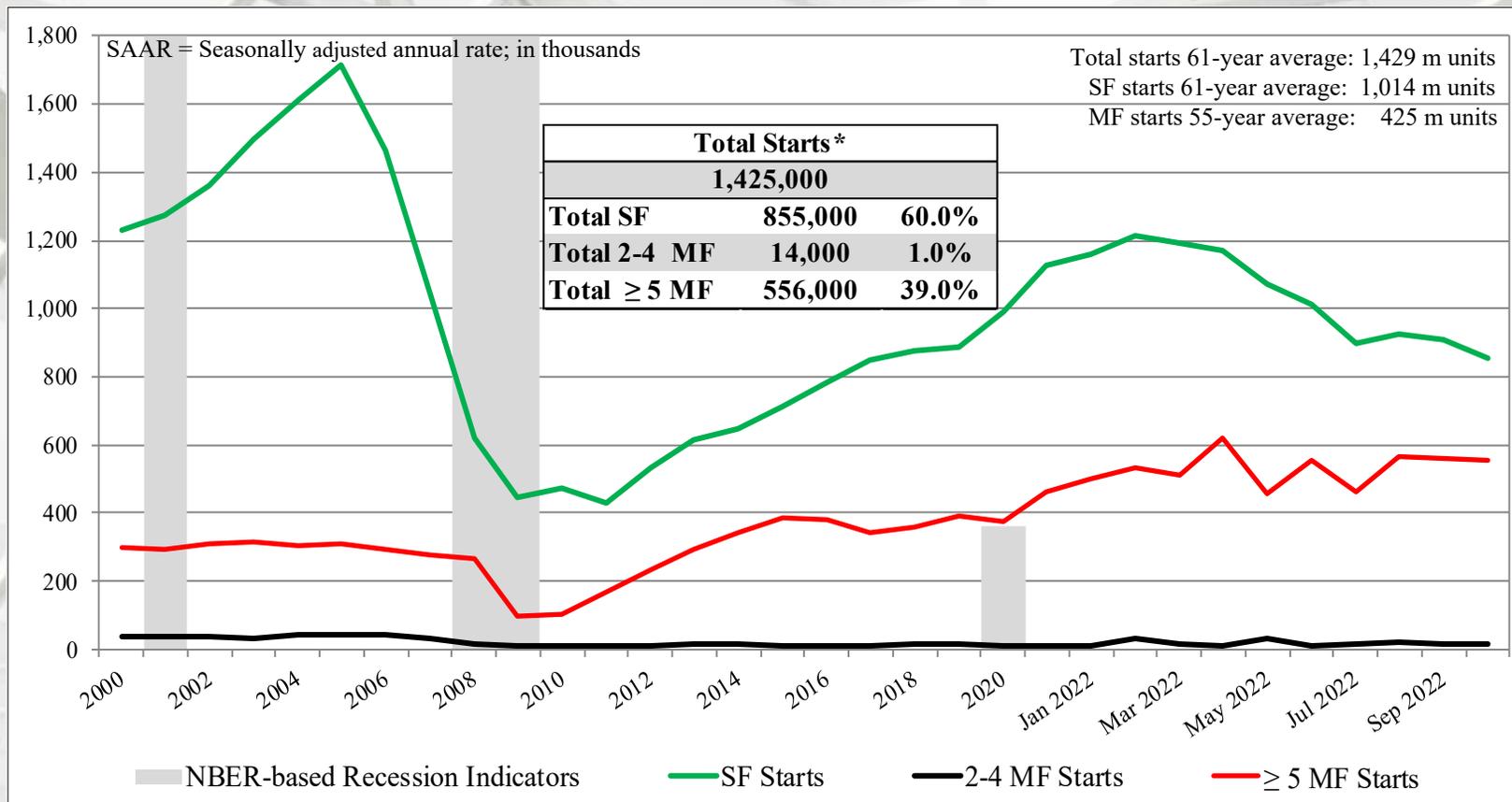
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
October	1,425,000	855,000	14,000	556,000
September	1,488,000	911,000	18,000	559,000
2021	1,563,000	1,079,000	10,000	474,000
M/M change	-4.2%	-6.1%	-22.2%	-0.5%
Y/Y change	-8.8%	-20.8%	40.0%	17.3%

* 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

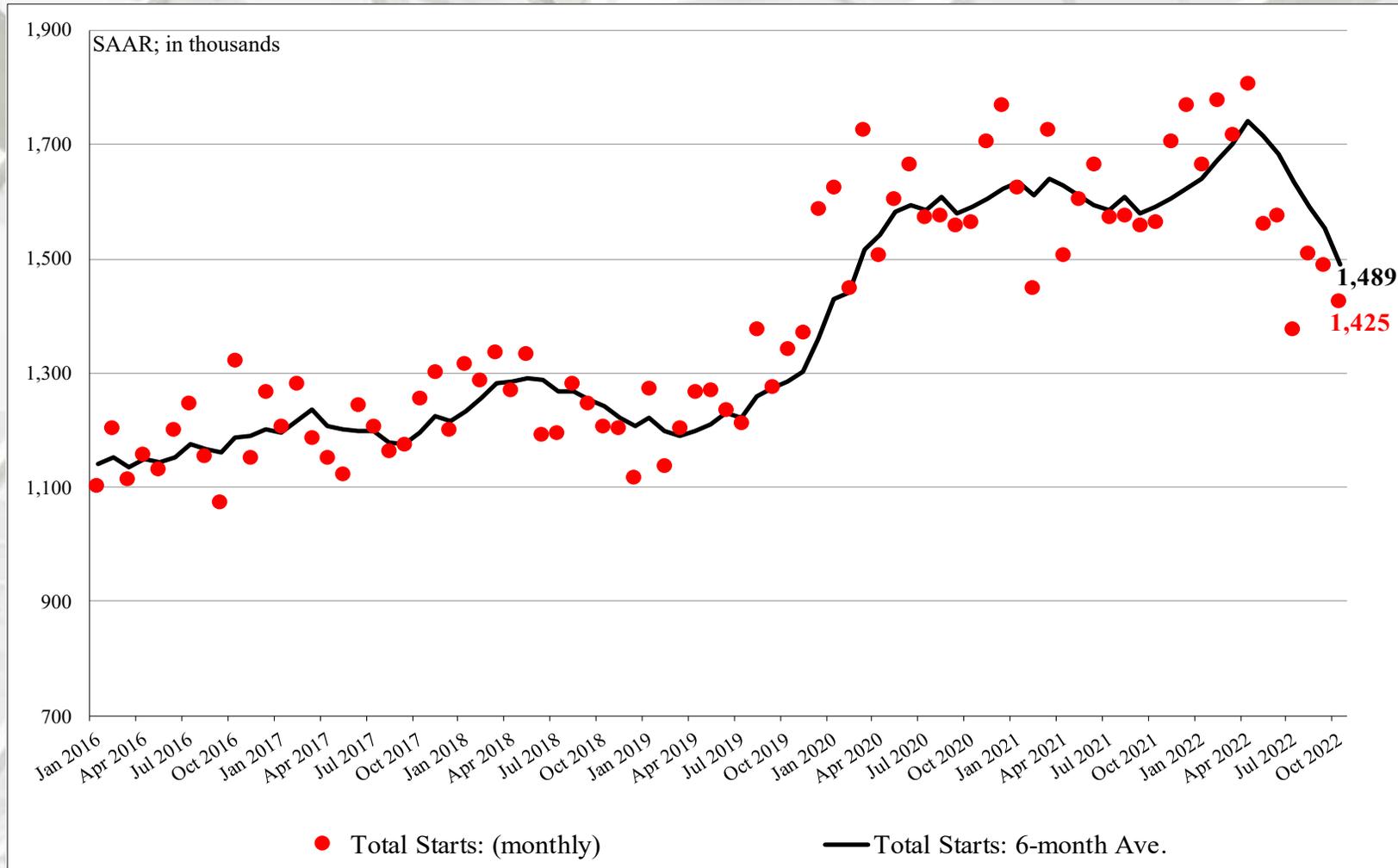


US DOC does not report 2 to 4 multi-family starts directly; this is an estimation: ((Total starts – (SF + ≥ MF))).

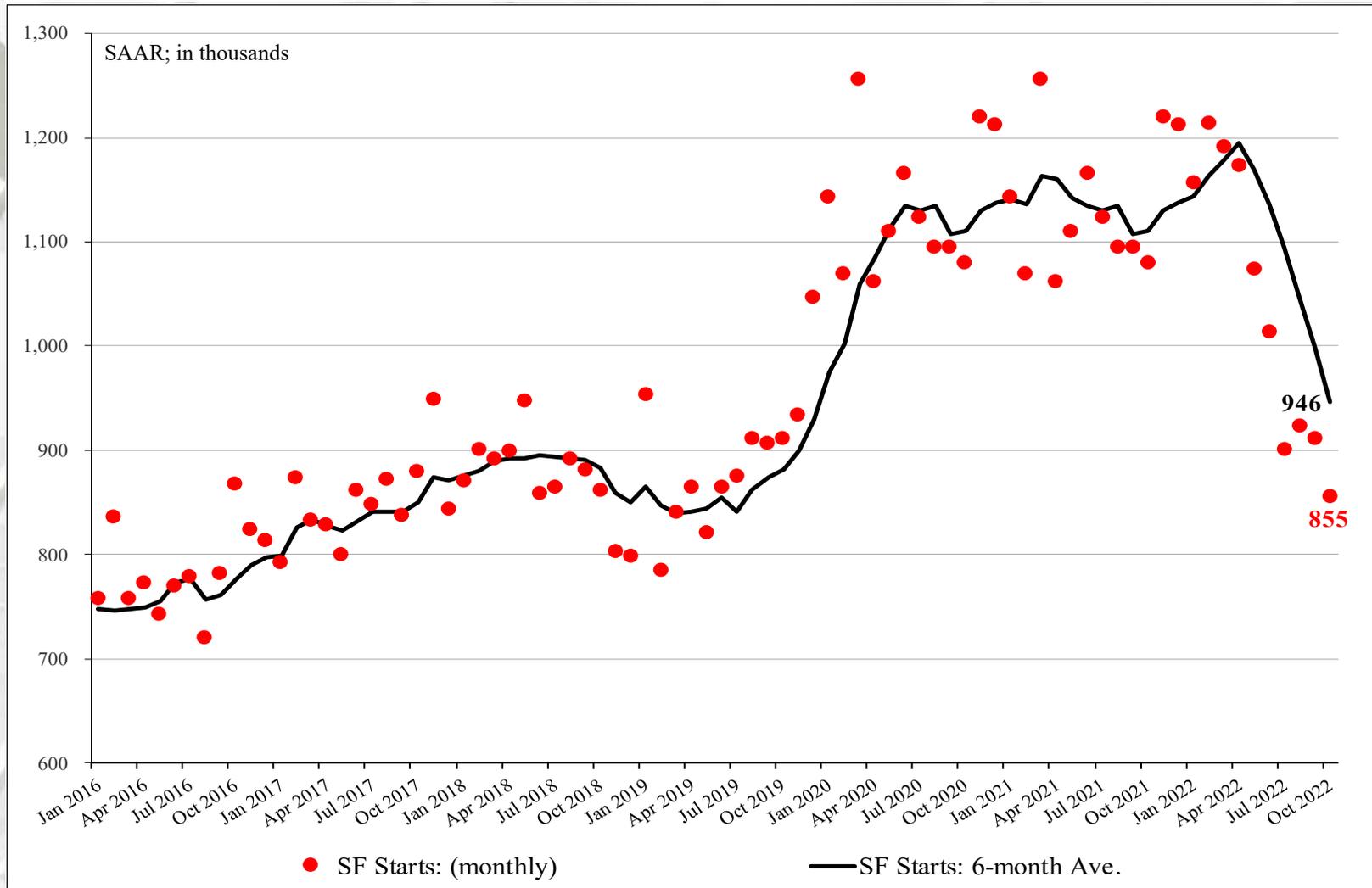
* Percentage of total starts.

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

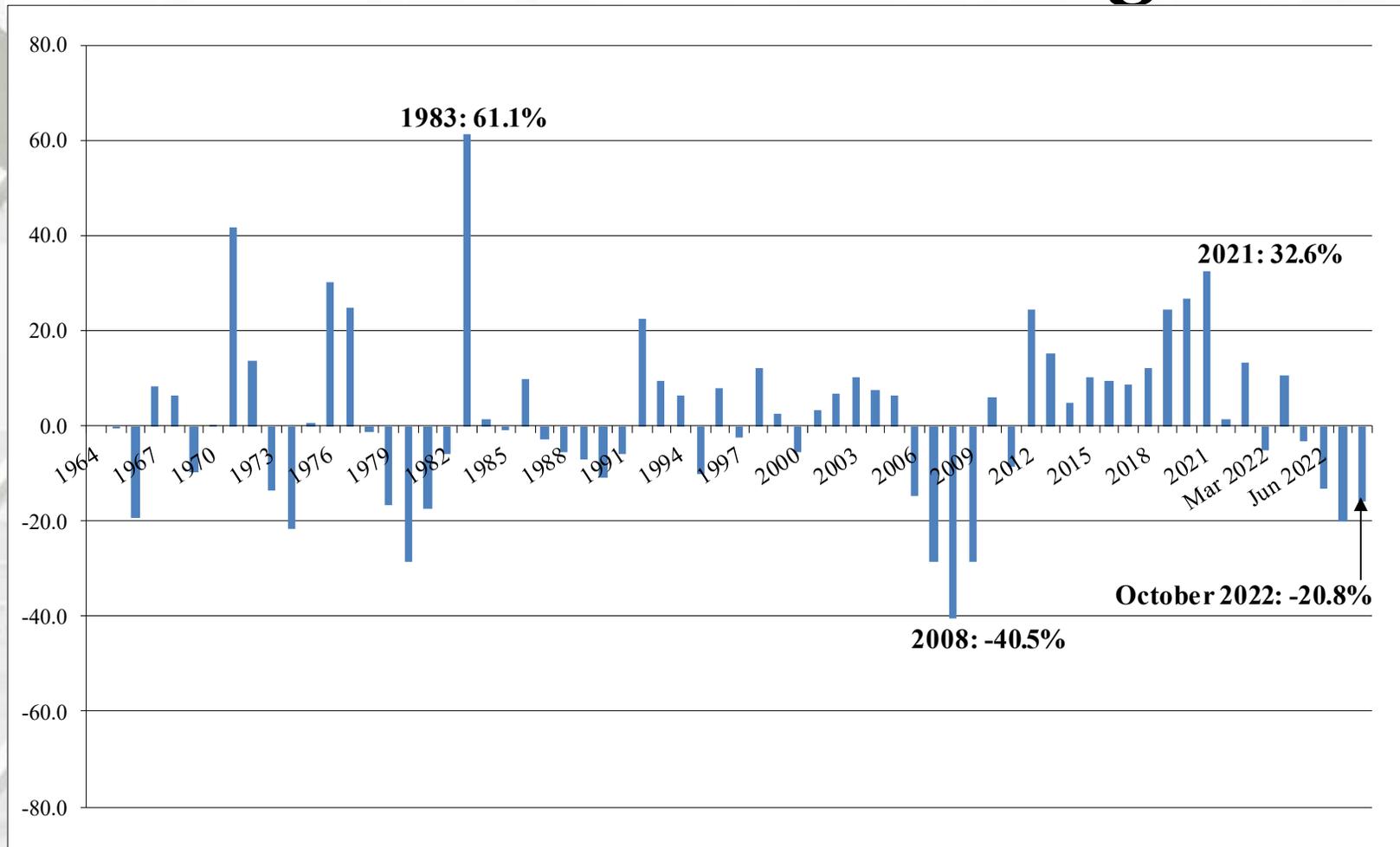
Total Housing Starts: Six-Month Average



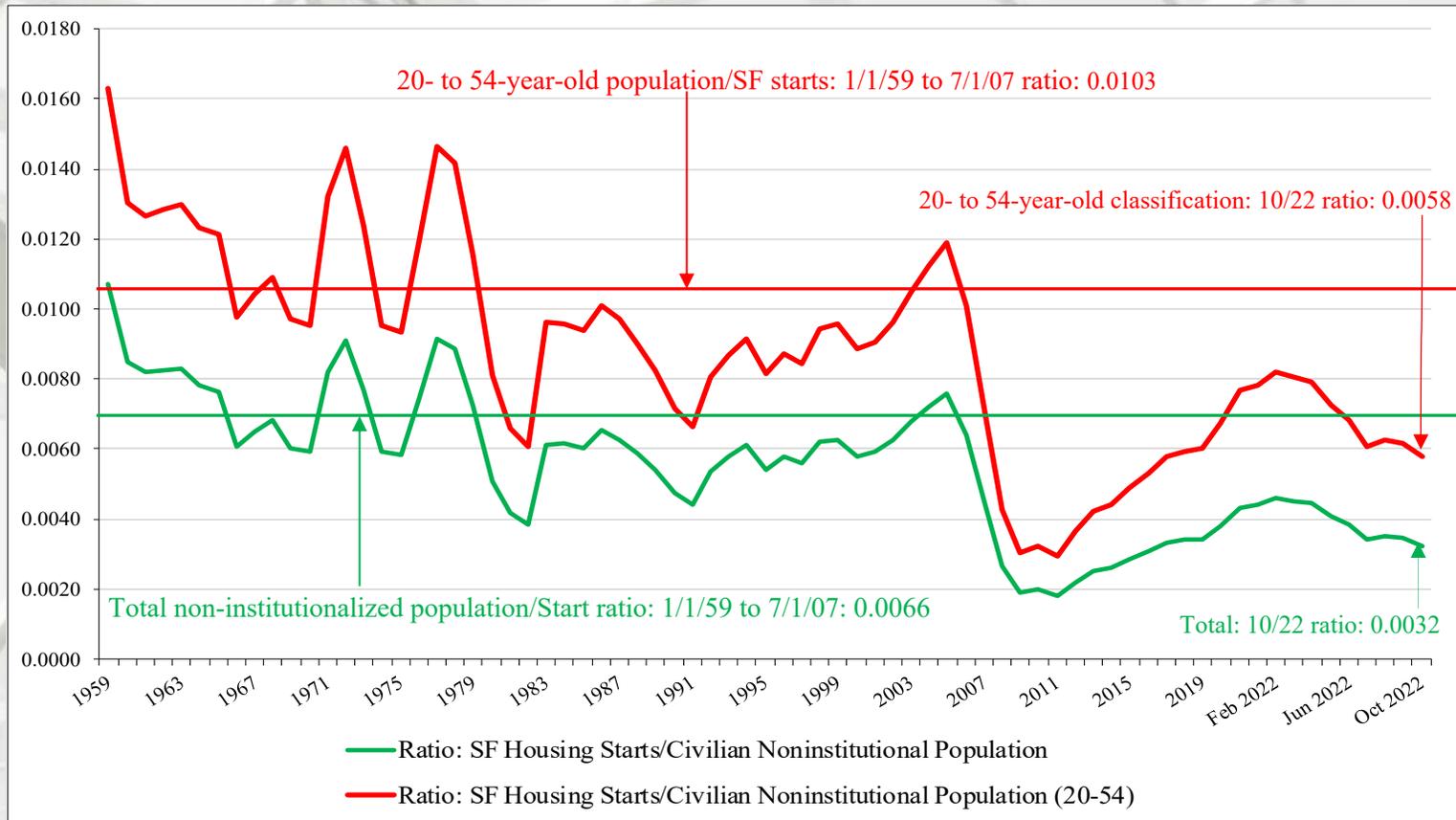
SF Housing Starts: Six-Month Moving Average



SF Housing Starts: Year-over-Year Change



New SF Starts

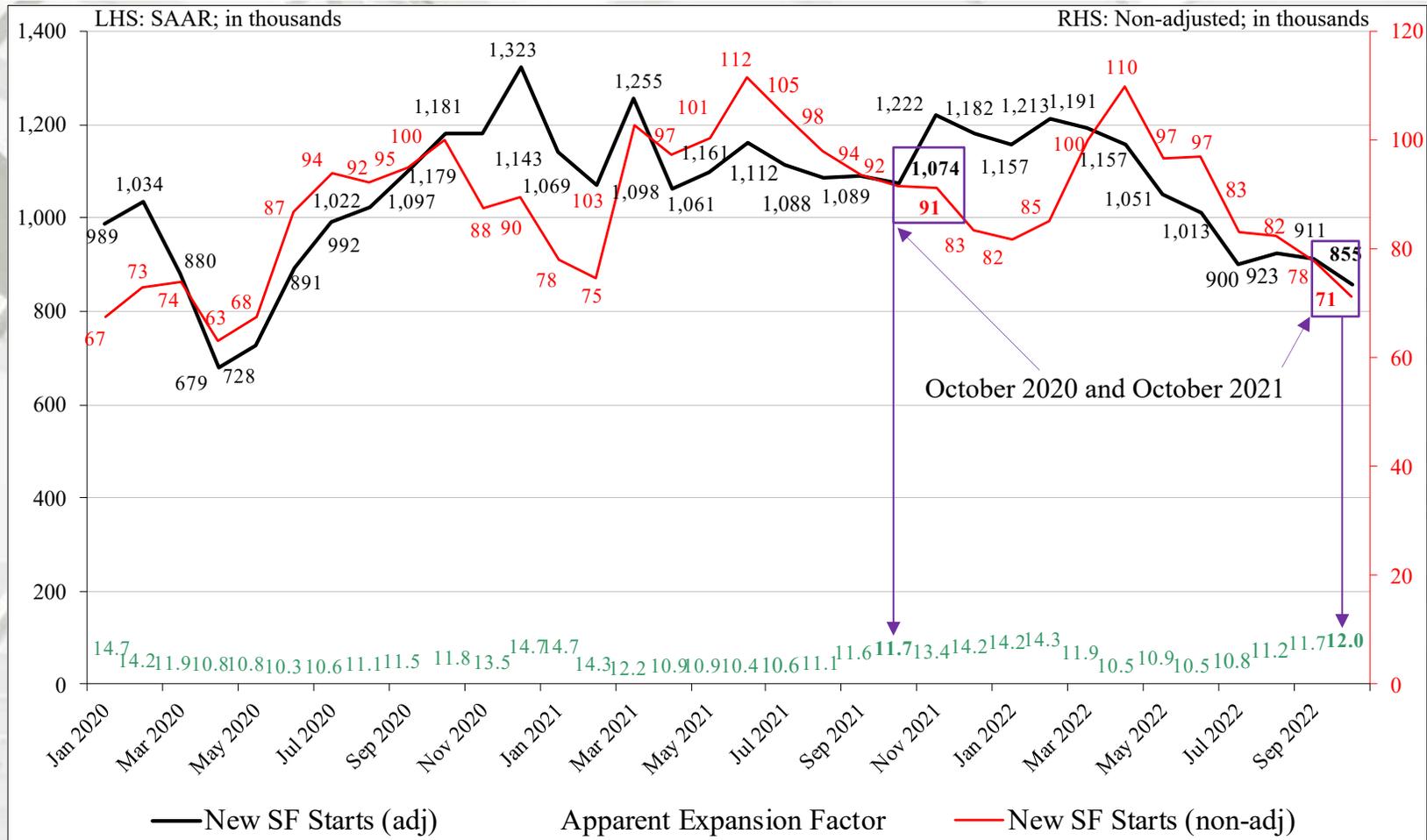


New SF starts adjusted for the US population

From October 1959 to October 2007, the long-term ratio of new SF starts to the total US non-institutionalized population to is 0.0066. In October 2022 it was 0.0032 – a decline from August. The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in October 2022 it was 0.0058 – a decrease from August (0.0062). 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**
October	96,000	52,000	44,000
September	147,000	59,000	88,000
2021	114,000	53,000	61,000
M/M change	-34.7%	-11.9%	-50.0%
Y/Y change	-15.8%	-1.9%	-27.9%
	MW Total	MW SF	MW MF
October	185,000	111,000	74,000
September	208,000	127,000	81,000
2021	214,000	130,000	84,000
M/M change	-11.1%	-12.6%	-8.6%
Y/Y change	-13.6%	-14.6%	-11.9%

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).

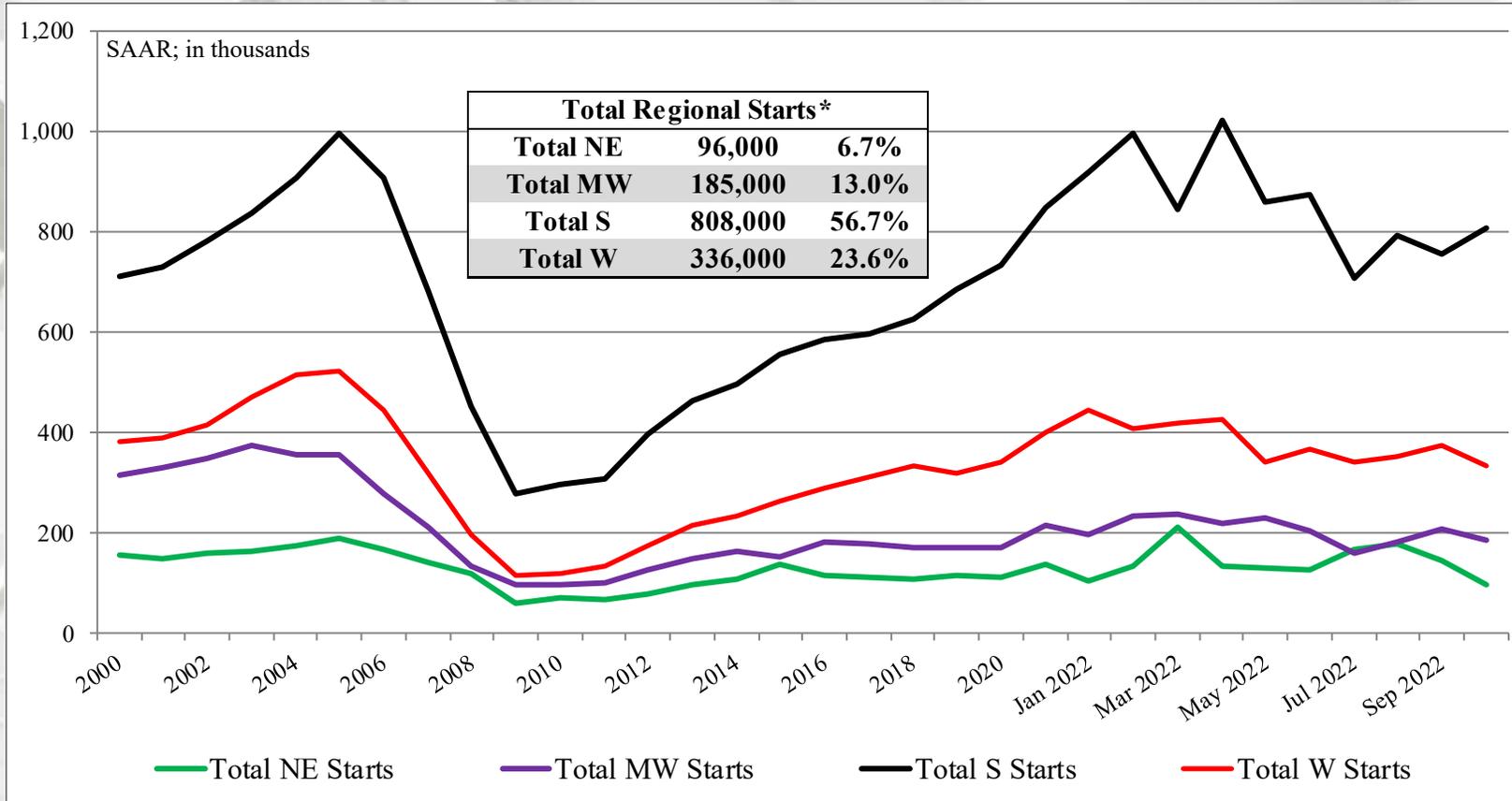
New Housing Starts by Region

	S Total	S SF	S MF**
October	808,000	519,000	289,000
September	757,000	527,000	230,000
2021	817,000	624,000	193,000
M/M change	6.7%	-1.5%	25.7%
Y/Y change	-1.1%	-16.8%	49.7%
	W Total	W SF	W MF
October	336,000	173,000	163,000
September	376,000	198,000	178,000
2021	418,000	272,000	146,000
M/M change	-10.6%	-12.6%	-8.4%
Y/Y change	-19.6%	-36.4%	11.6%

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

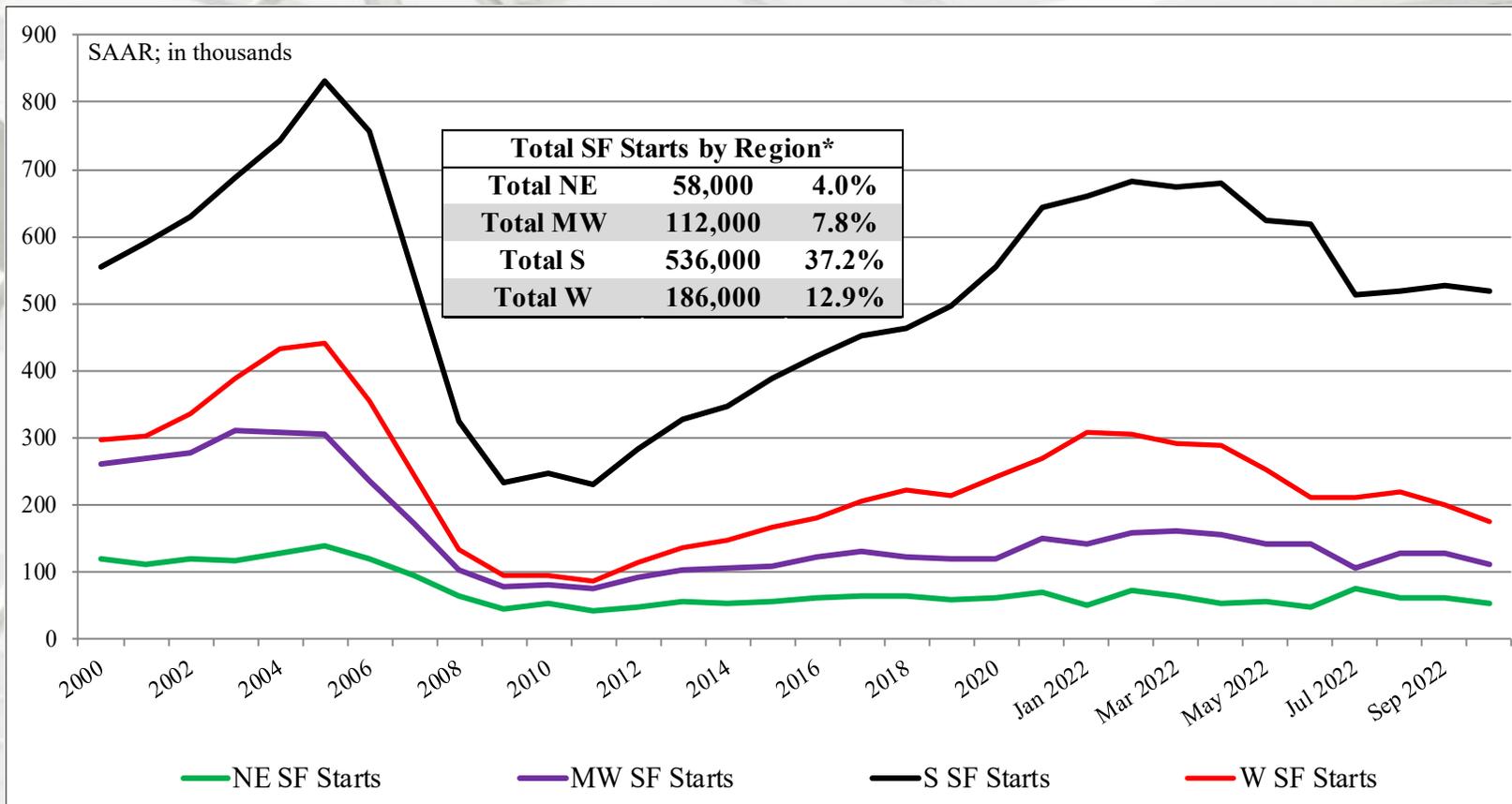


NE = Northeast, MW = Midwest, S = South, W = West

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

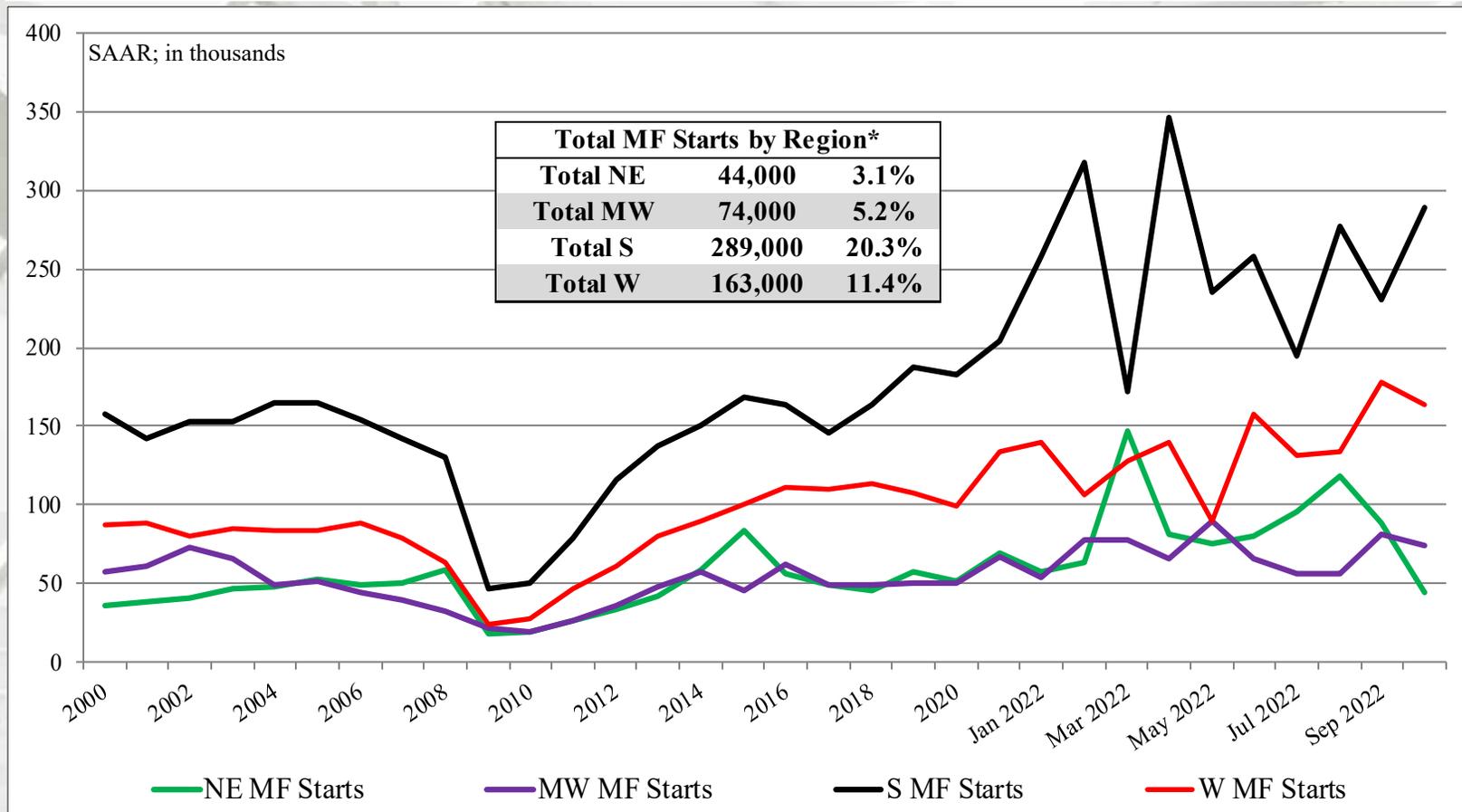


NE = Northeast, MW = Midwest, S = South, W = West

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

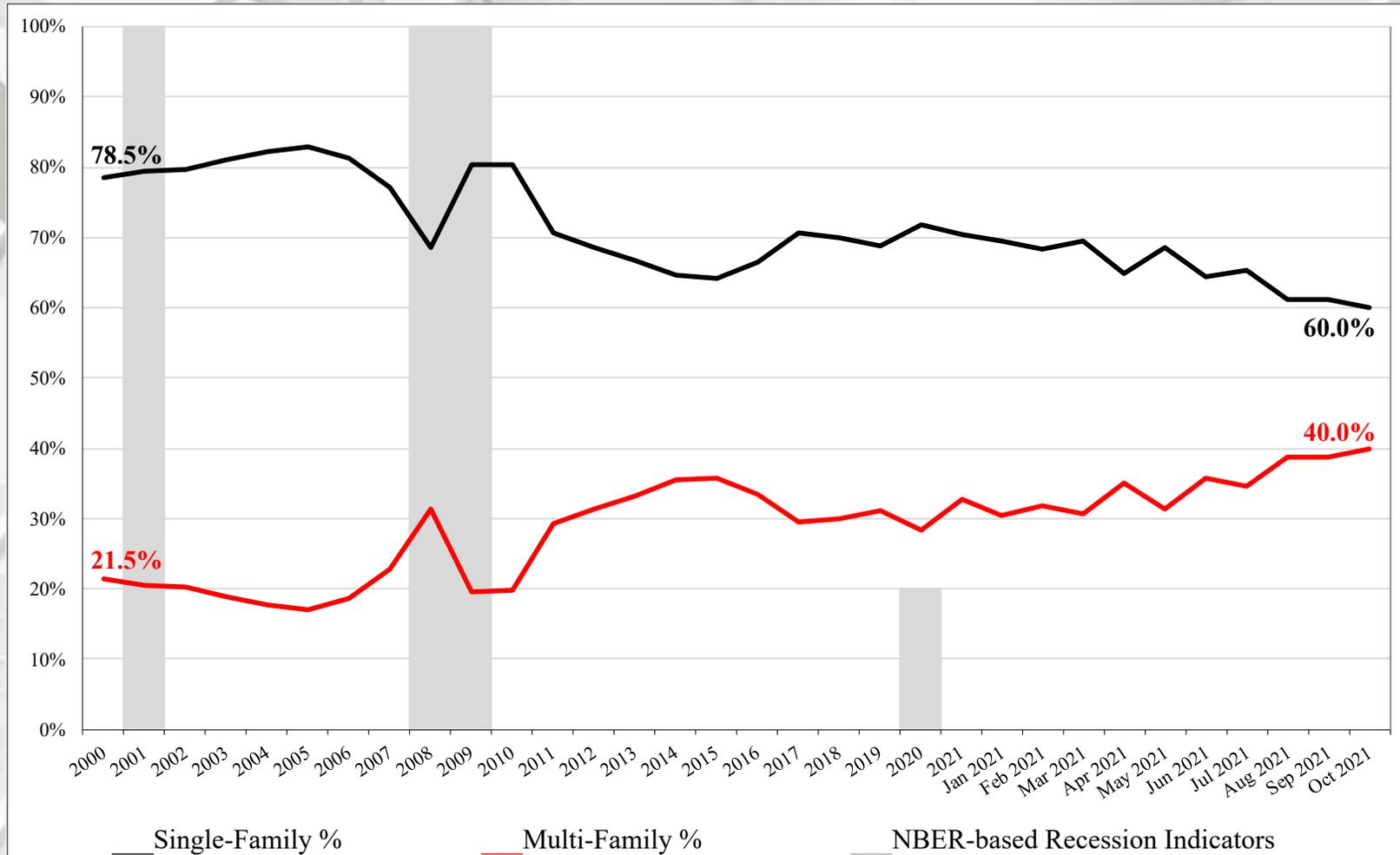


NE = Northeast, MW = Midwest, S = South, W = West

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 (%)



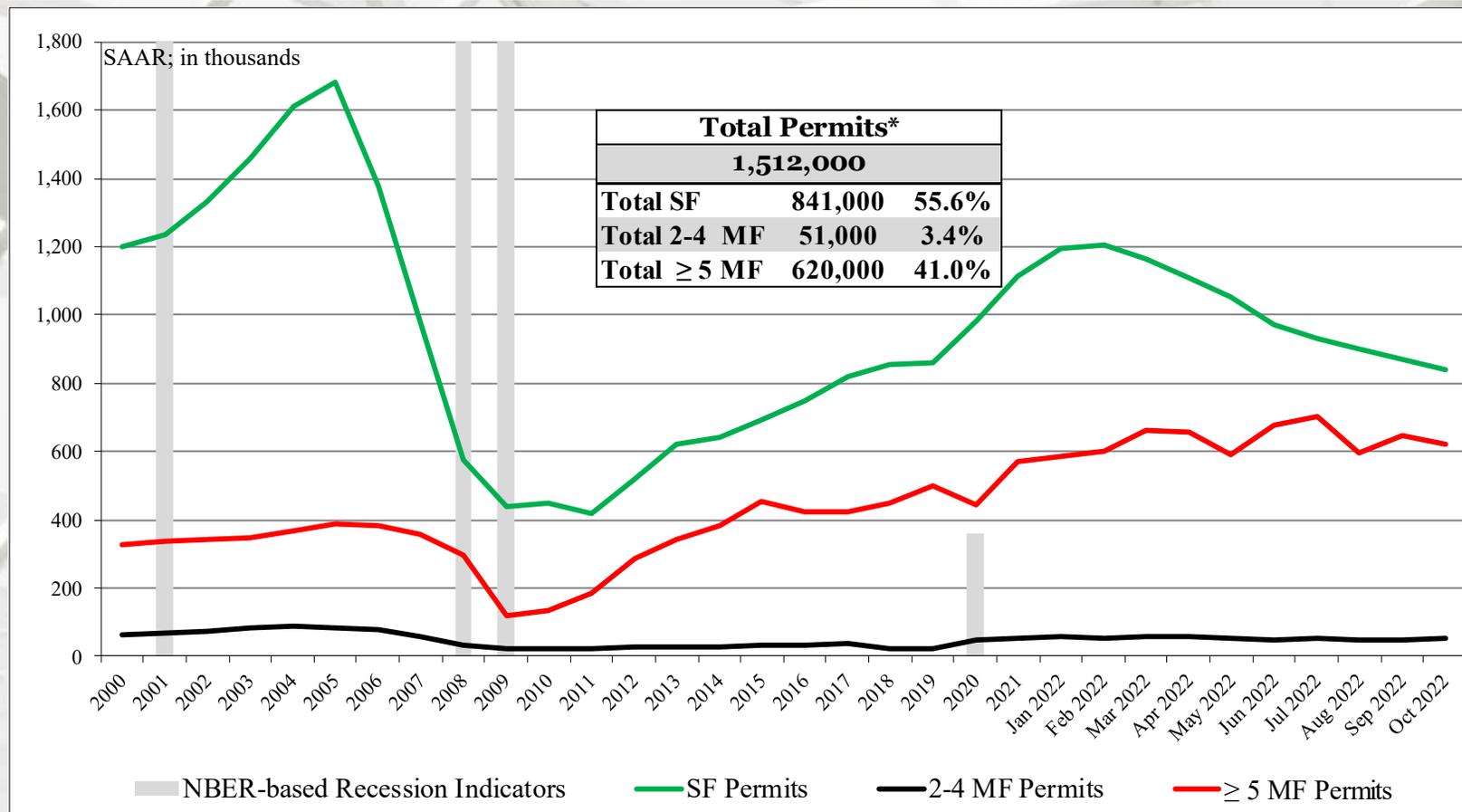
NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
October	1,512,000	841,000	51,000	620,000
September	1,564,000	870,000	49,000	645,000
2021	1,698,000	1,077,000	52,000	569,000
M/M change	-3.3%	-3.3%	4.1%	-3.9%
Y/Y change	-11.0%	-21.9%	-1.9%	9.0%

* 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**
October	112,000	51,000	61,000
September	129,000	58,000	71,000
2021	136,000	61,000	75,000
M/M change	-13.2%	-12.1%	-14.1%
Y/Y change	-17.6%	-16.4%	-18.7%
	MW Total*	MW SF	MW MF**
October	210,000	110,000	100,000
September	209,000	109,000	100,000
2021	233,000	134,000	99,000
M/M change	0.5%	0.9%	0.0%
Y/Y change	-9.9%	-17.9%	1.0%

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

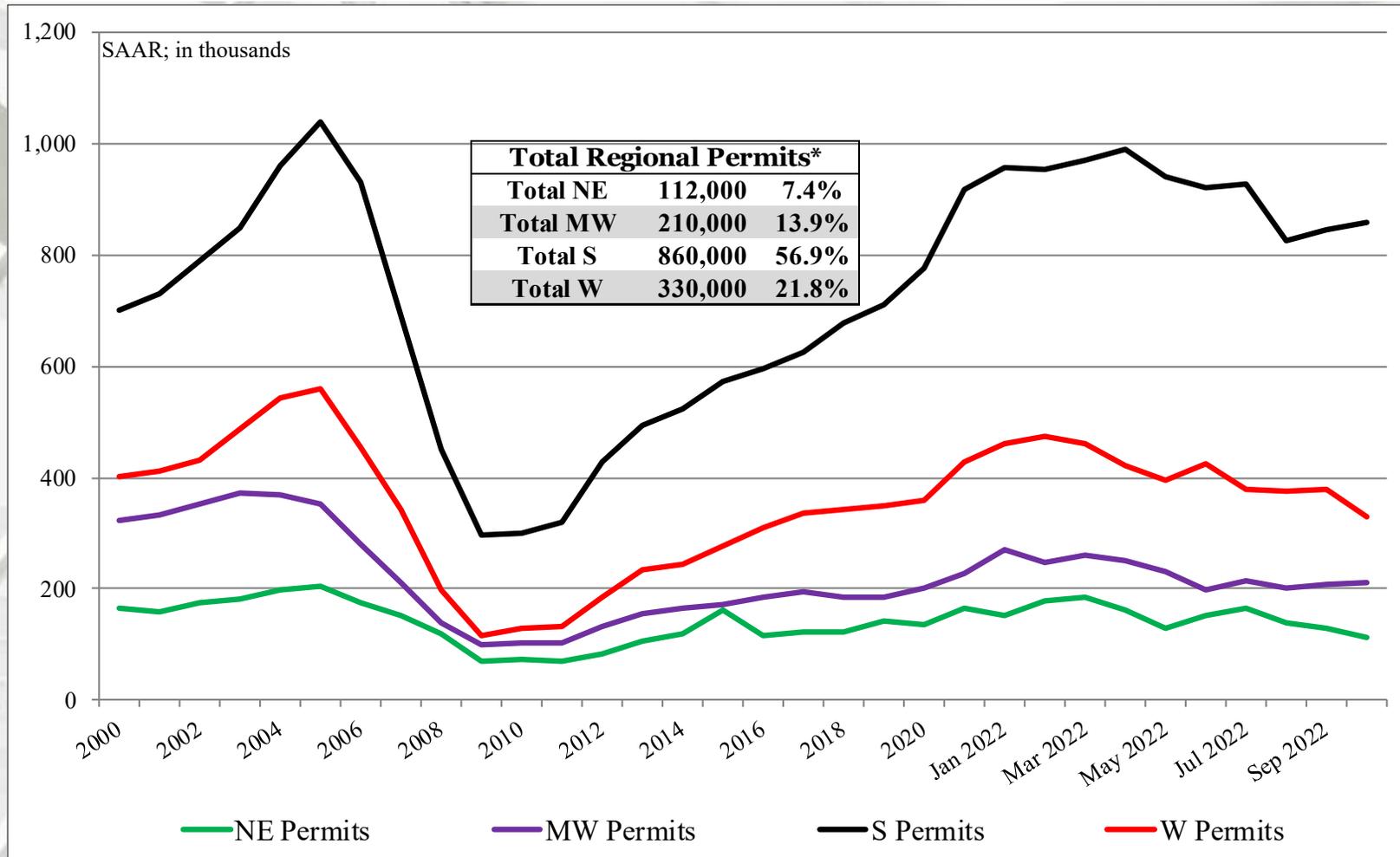
	S Total*	S SF	S MF**
October	860,000	513,000	347,000
September	847,000	526,000	321,000
2021	894,000	643,000	251,000
M/M change	1.5%	-2.5%	8.1%
Y/Y change	-3.8%	-20.2%	38.2%
	W Total*	W SF	W MF**
October	330,000	167,000	163,000
September	379,000	177,000	202,000
2021	435,000	239,000	196,000
M/M change	-12.9%	-5.6%	-19.3%
Y/Y change	-24.1%	-30.1%	-16.8%

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).

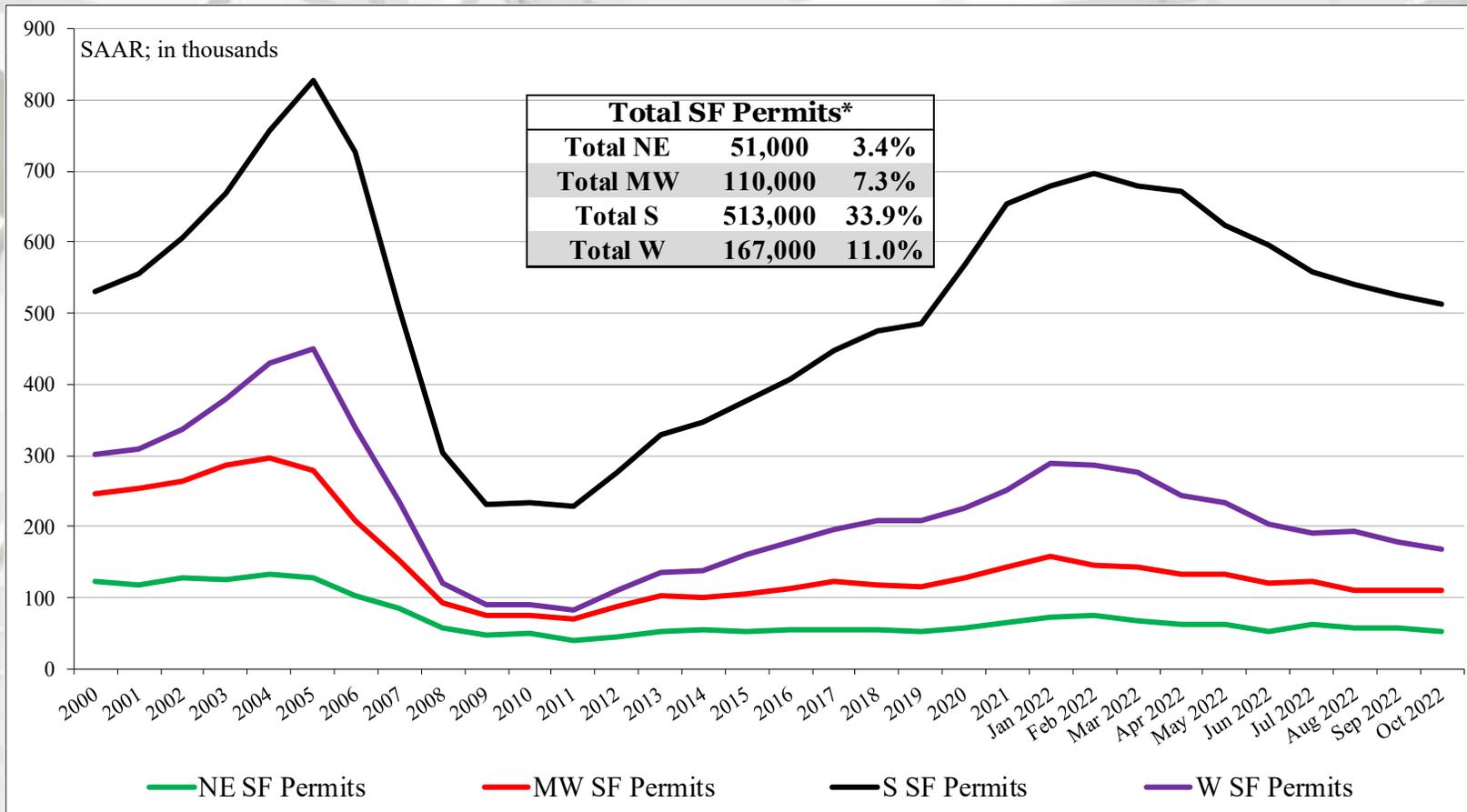
Total Housing Permits by Region



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

* Percentage of total permits.

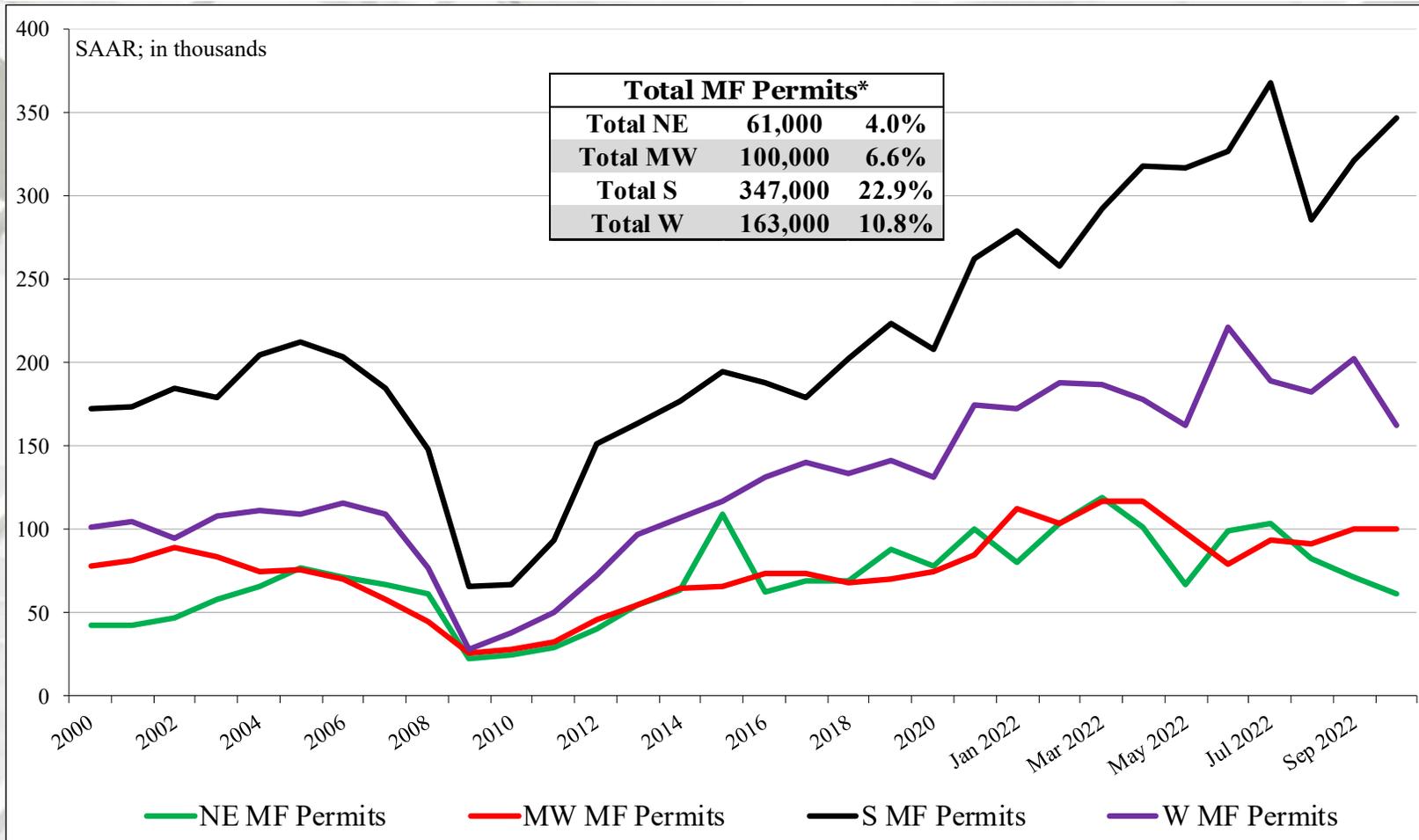
SF Housing Permits by Region



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.

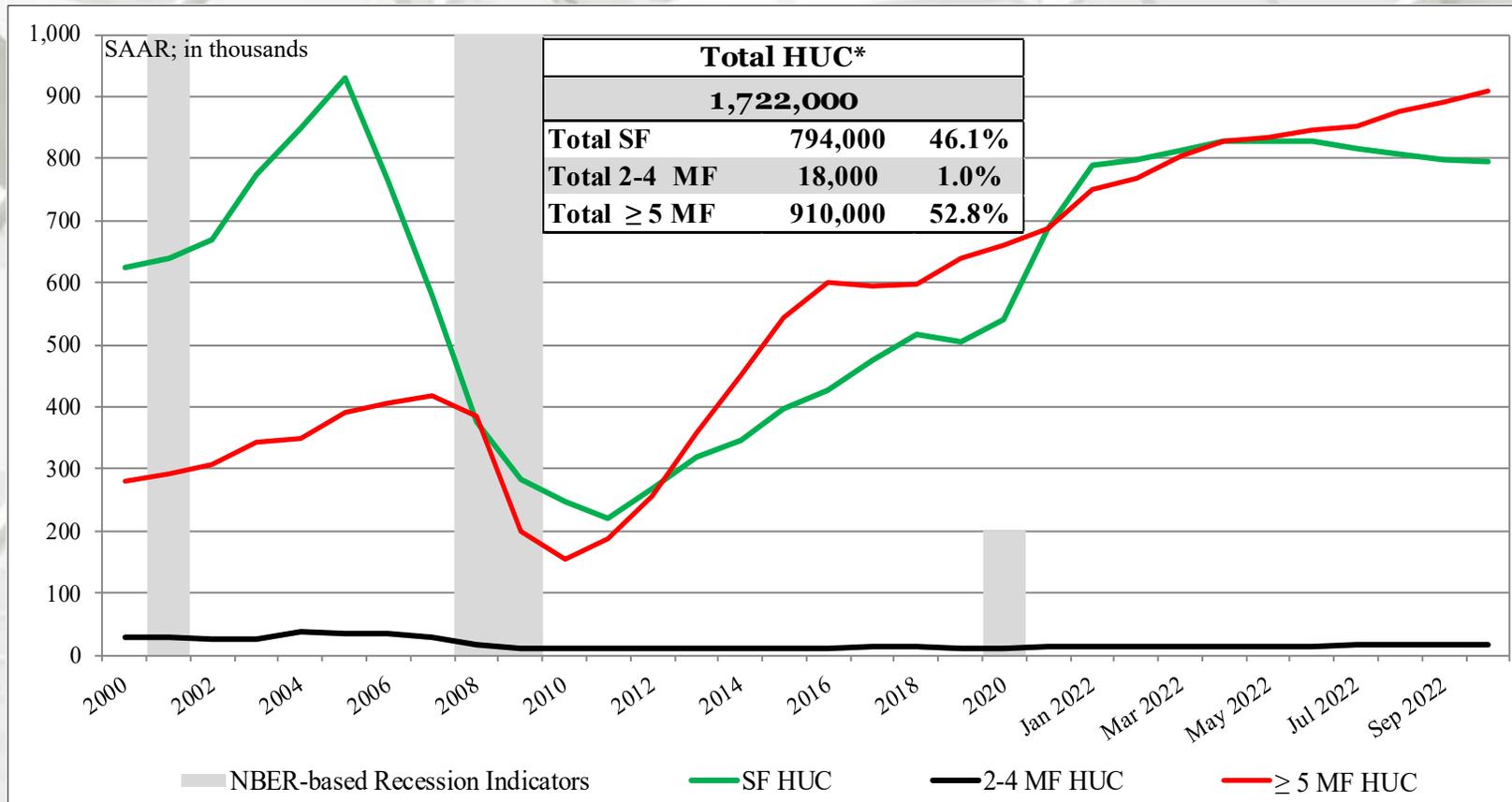
New Housing Under Construction (HUC)

	Total HUC*	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
October	1,722,000	794,000	18,000	910,000
September	1,708,000	798,000	18,000	892,000
2021	1,465,000	731,000	12,000	722,000
M/M change	0.8%	-0.5%	0.0%	2.0%
Y/Y change	17.5%	8.6%	50.0%	26.0%

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

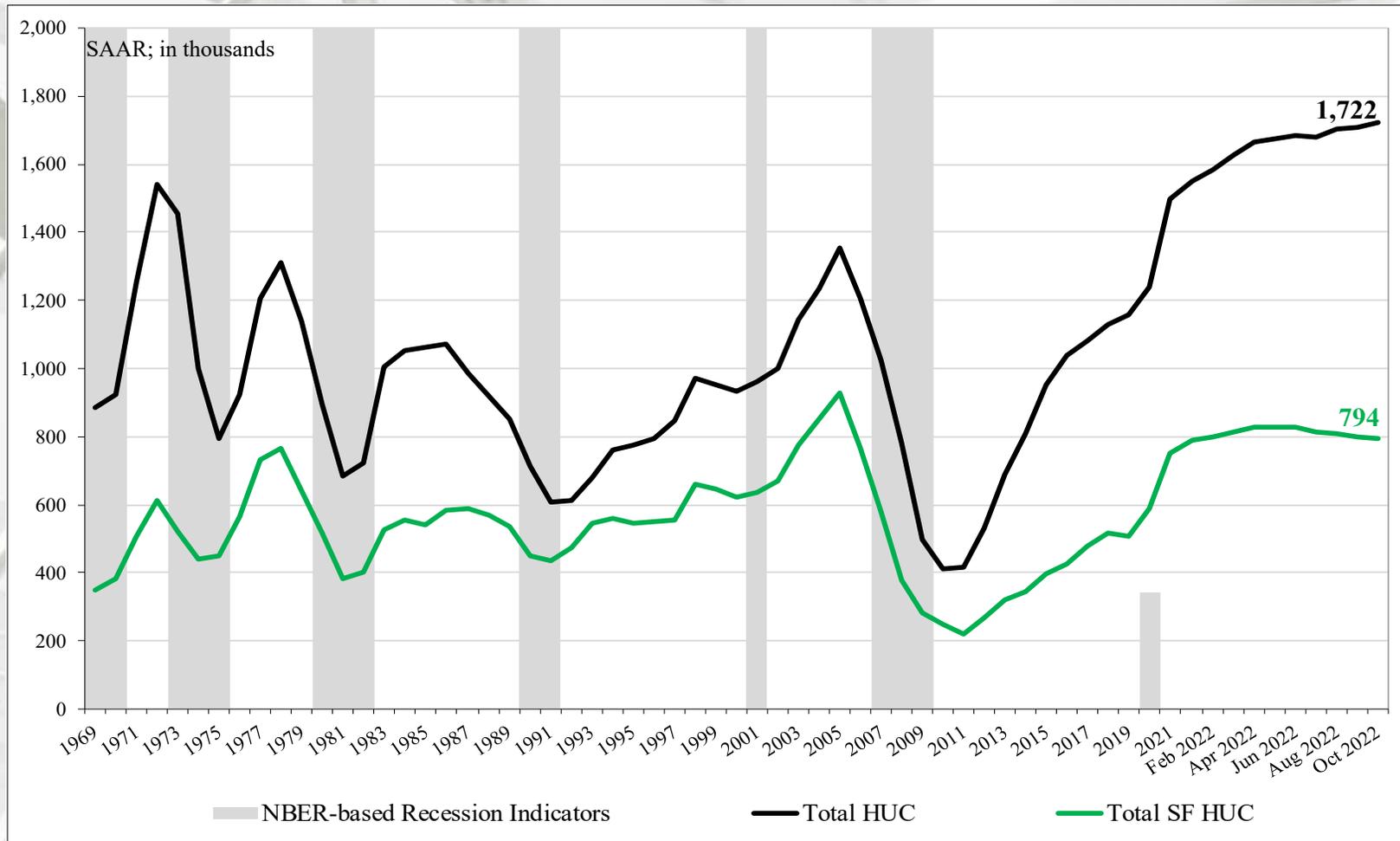


US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + ≥ 5 MF HUC)).

* 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).

Total Housing Under Construction



In October total housing units under construction (HUC) were 1,722,000 units, greater than October 1973 total of 1,628,000 units. October's SF HUC reading, 794,000 units, which was substantially less than reported for October 2006 (929,000 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**
October	221,000	60,000	161,000
September	223,000	60,000	163,000
2021	204,000	62,000	142,000
M/M change	-0.9%	0.0%	-1.2%
Y/Y change	8.3%	-3.2%	13.4%
	MW Total	MW SF	MW MF
October	215,000	105,000	110,000
September	213,000	106,000	107,000
2021	183,000	101,000	82,000
M/M change	0.9%	-0.9%	2.8%
Y/Y change	17.5%	4.0%	34.1%

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).

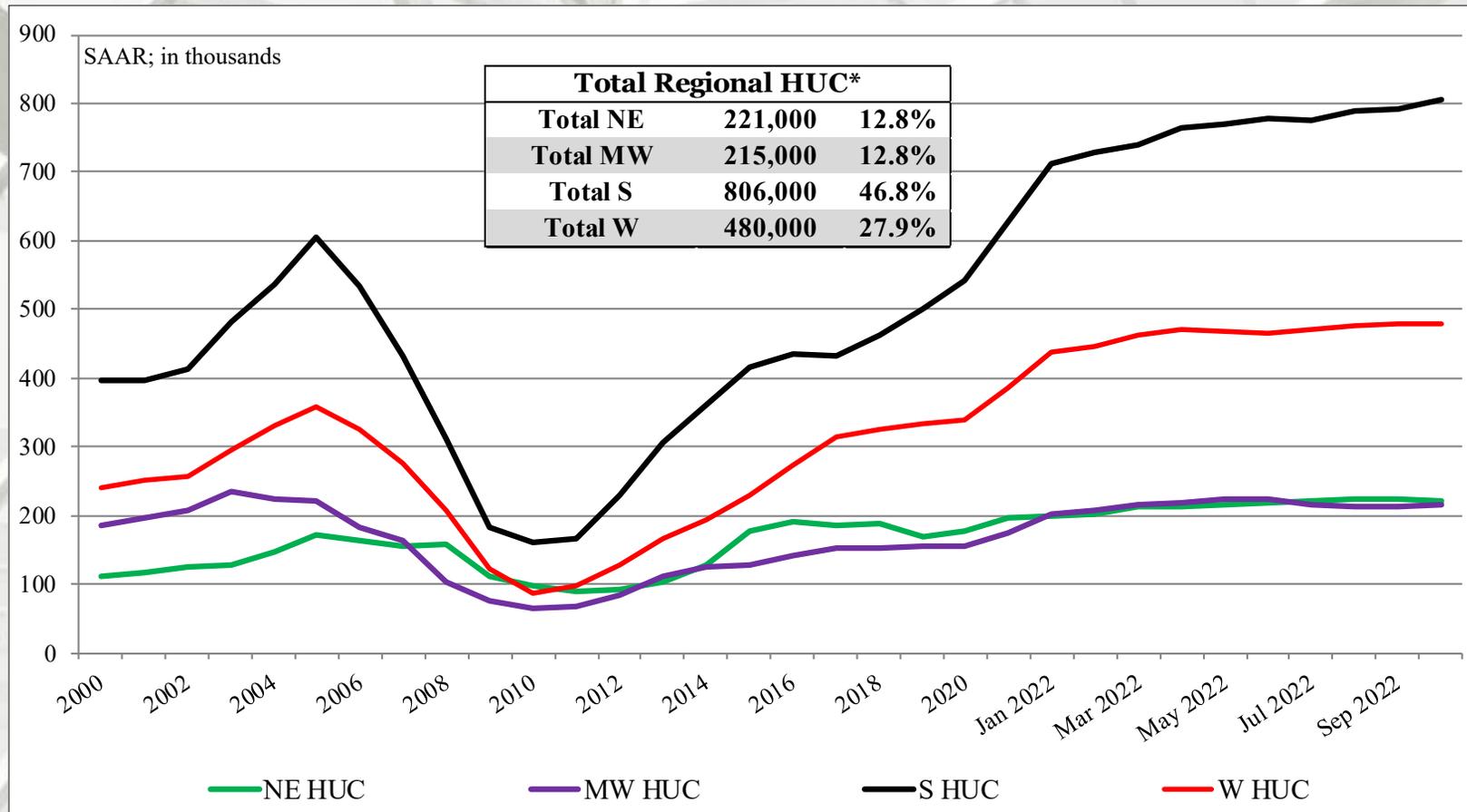
New Housing Under Construction by Region

	S Total	S SF	S MF**
October	806,000	427,000	379,000
September	793,000	428,000	365,000
2021	669,000	378,000	291,000
M/M change	1.6%	-0.2%	3.8%
Y/Y change	20.5%	13.0%	30.2%
	W Total	W SF	W MF
October	480,000	202,000	278,000
September	479,000	204,000	275,000
2021	409,000	190,000	219,000
M/M change	0.2%	-1.0%	1.1%
Y/Y change	17.4%	6.3%	26.9%

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

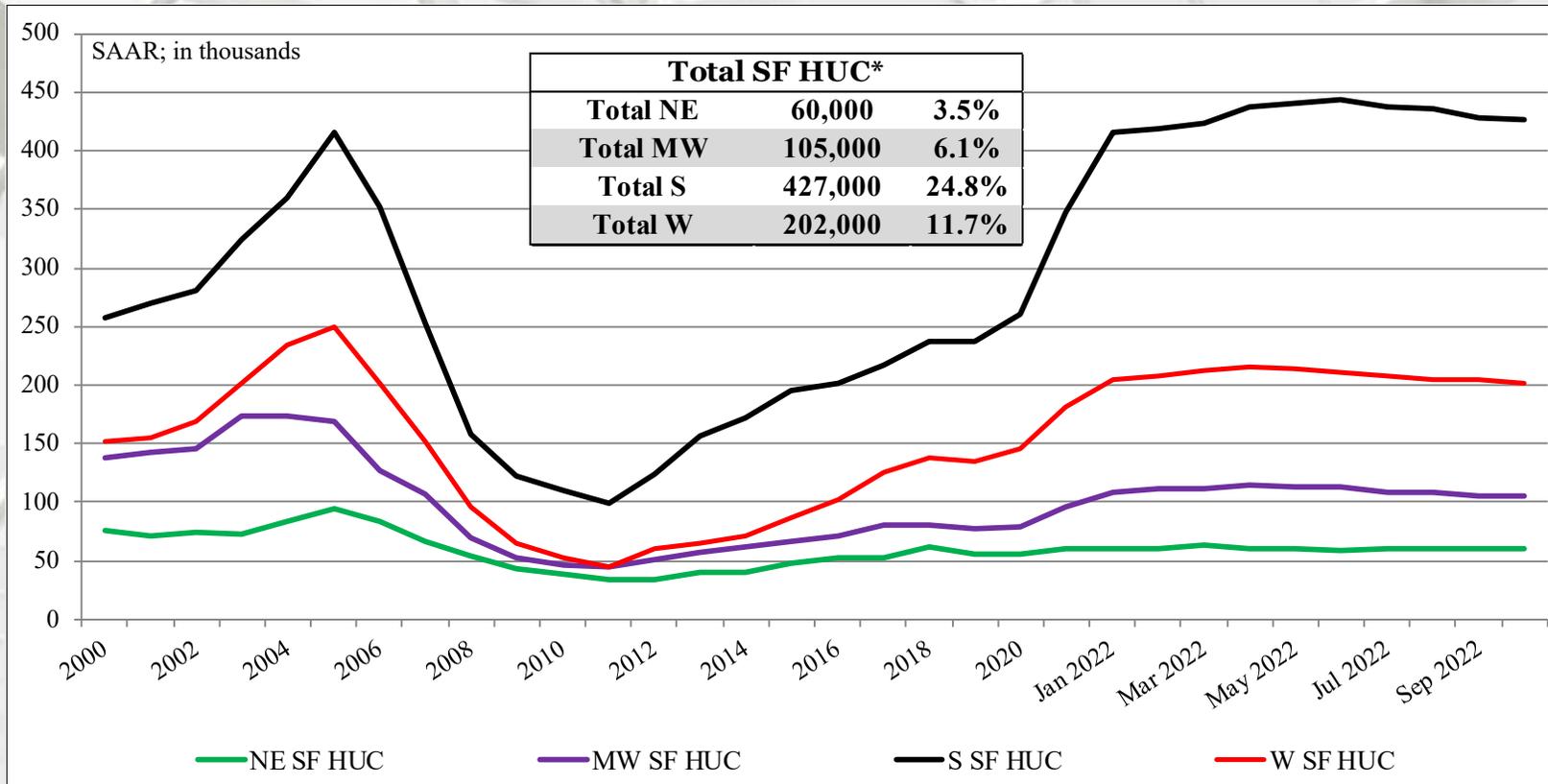


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing under construction units.

SF Housing Under Construction by Region

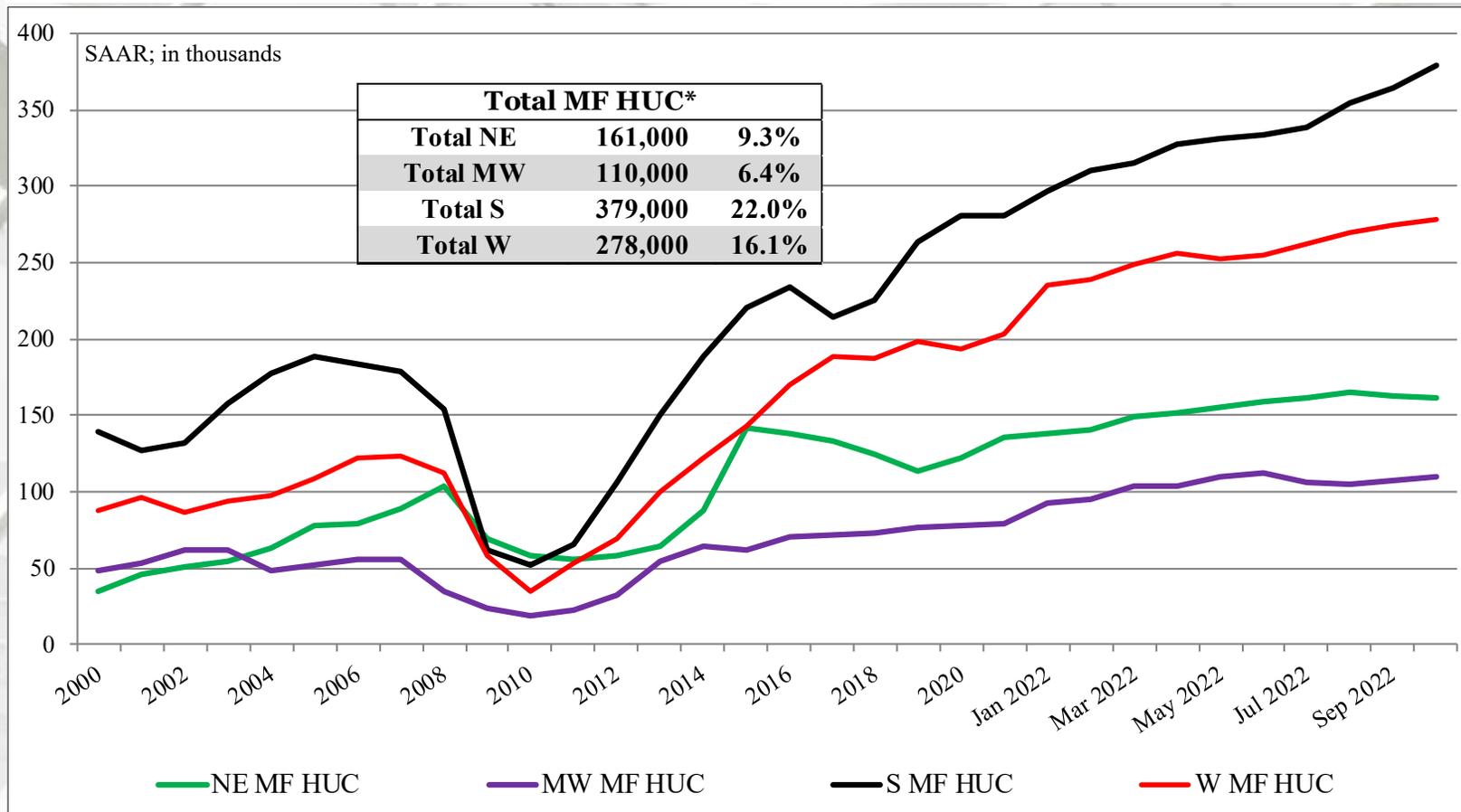


NE = Northeast, MW = Midwest, S = South, W = West.

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

* Percentage of total housing under construction units.

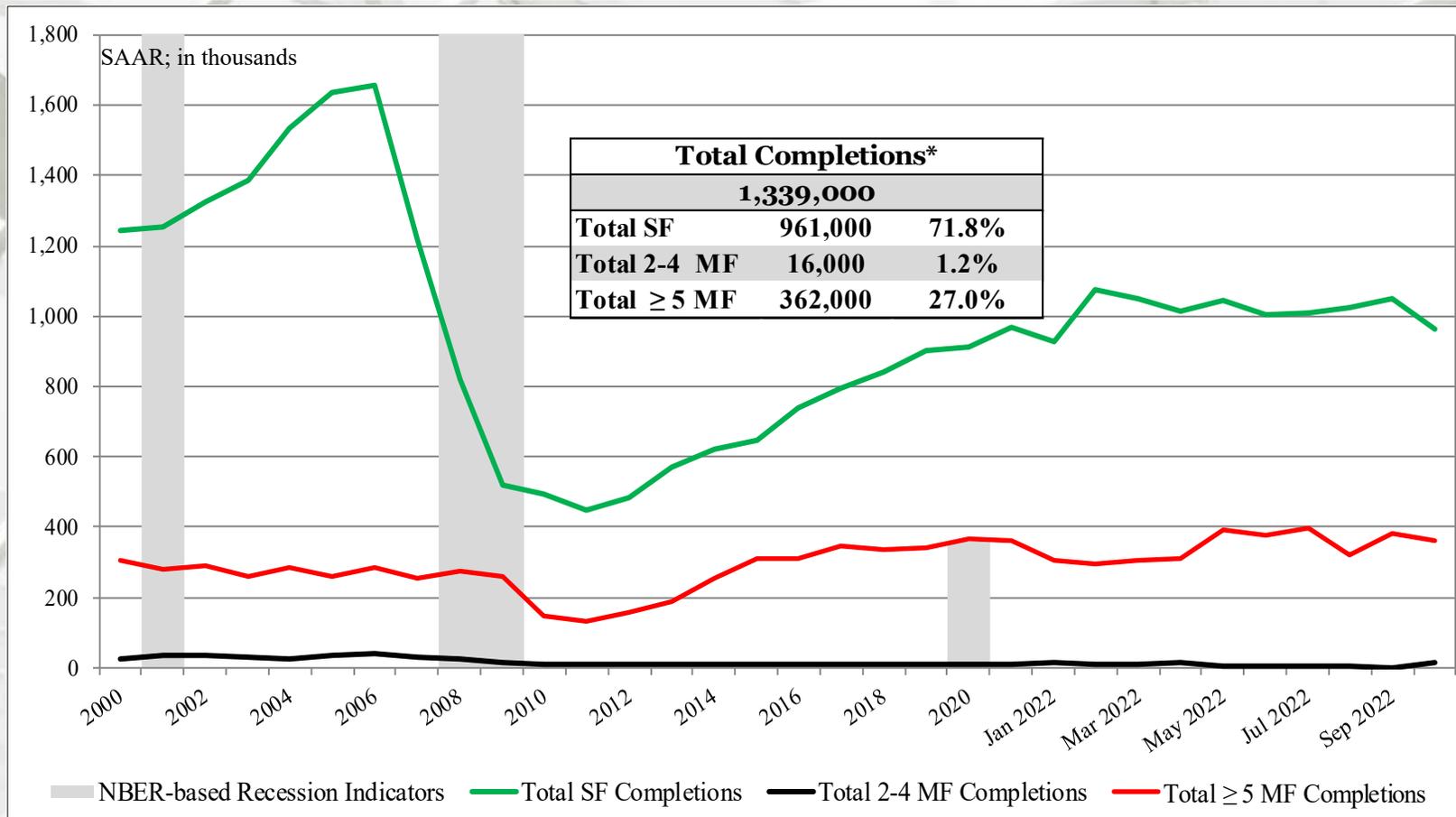
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
October	1,339,000	961,000	16,000	362,000
September	1,431,000	1,048,000	2,000	381,000
2021	1,256,000	936,000	14,000	306,000
M/M change	-6.4%	-8.3%	700.0%	-5.0%
Y/Y change	6.6%	2.7%	14.3%	18.3%

* 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**
October	102,000	59,000	43,000
September	122,000	42,000	80,000
2021	115,000	51,000	64,000
M/M change	-16.4%	40.5%	-46.3%
Y/Y change	-11.3%	15.7%	-32.8%
	MW Total	MW SF	MW MF
October	177,000	122,000	55,000
September	207,000	151,000	56,000
2021	171,000	121,000	50,000
M/M change	-14.5%	-19.2%	-1.8%
Y/Y change	3.5%	0.8%	10.0%

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

New Housing Completions by Region

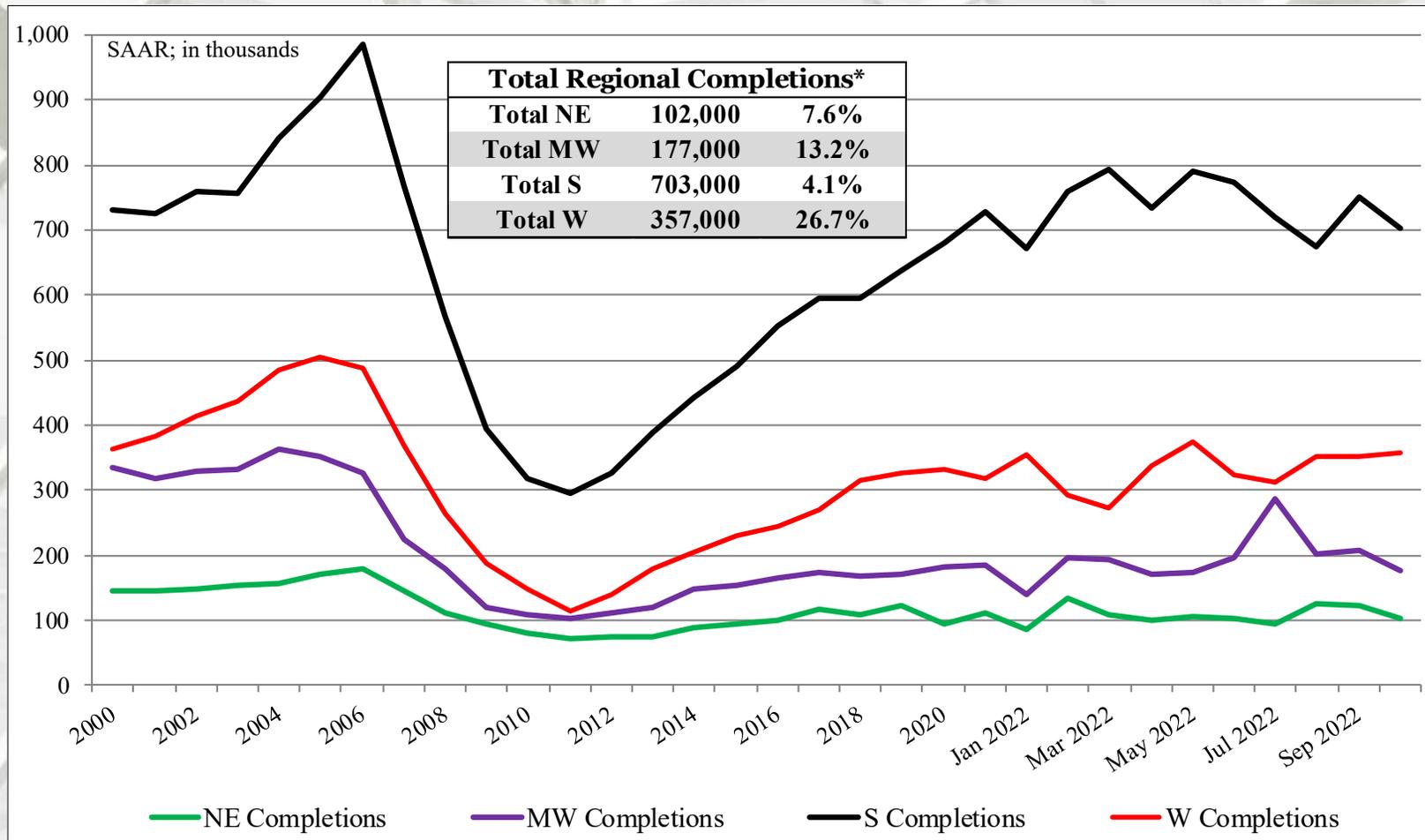
	S Total	S SF	S MF**
October	703,000	568,000	135,000
September	750,000	630,000	120,000
2021	645,000	517,000	128,000
M/M change	-6.3%	-9.8%	12.5%
Y/Y change	9.0%	9.9%	5.5%
	W Total	W SF	W MF
October	357,000	212,000	145,000
September	352,000	225,000	127,000
2021	325,000	247,000	78,000
M/M change	1.4%	-5.8%	14.2%
Y/Y change	9.8%	-14.2%	85.9%

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

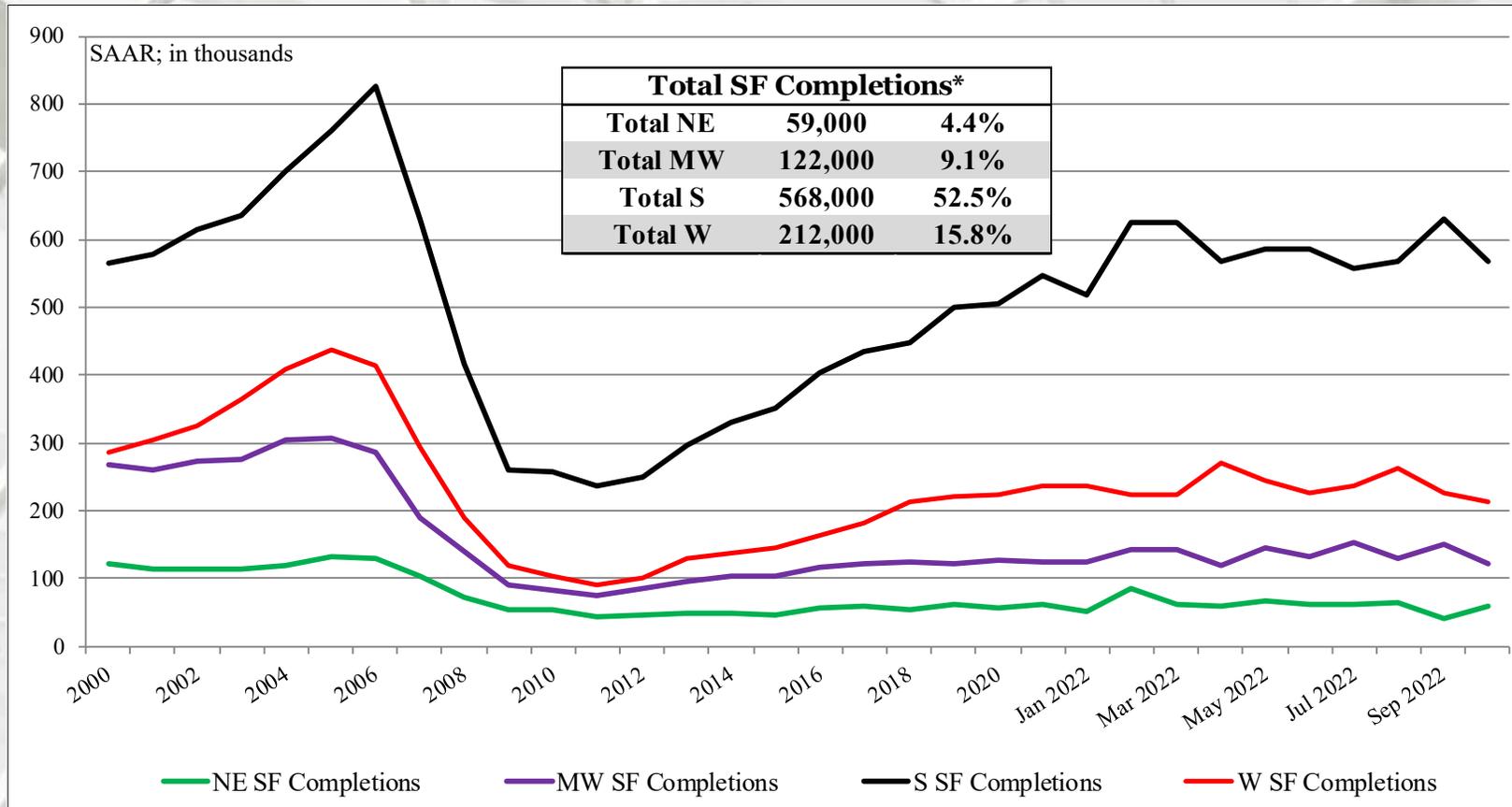
Total Housing Completions by Region



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

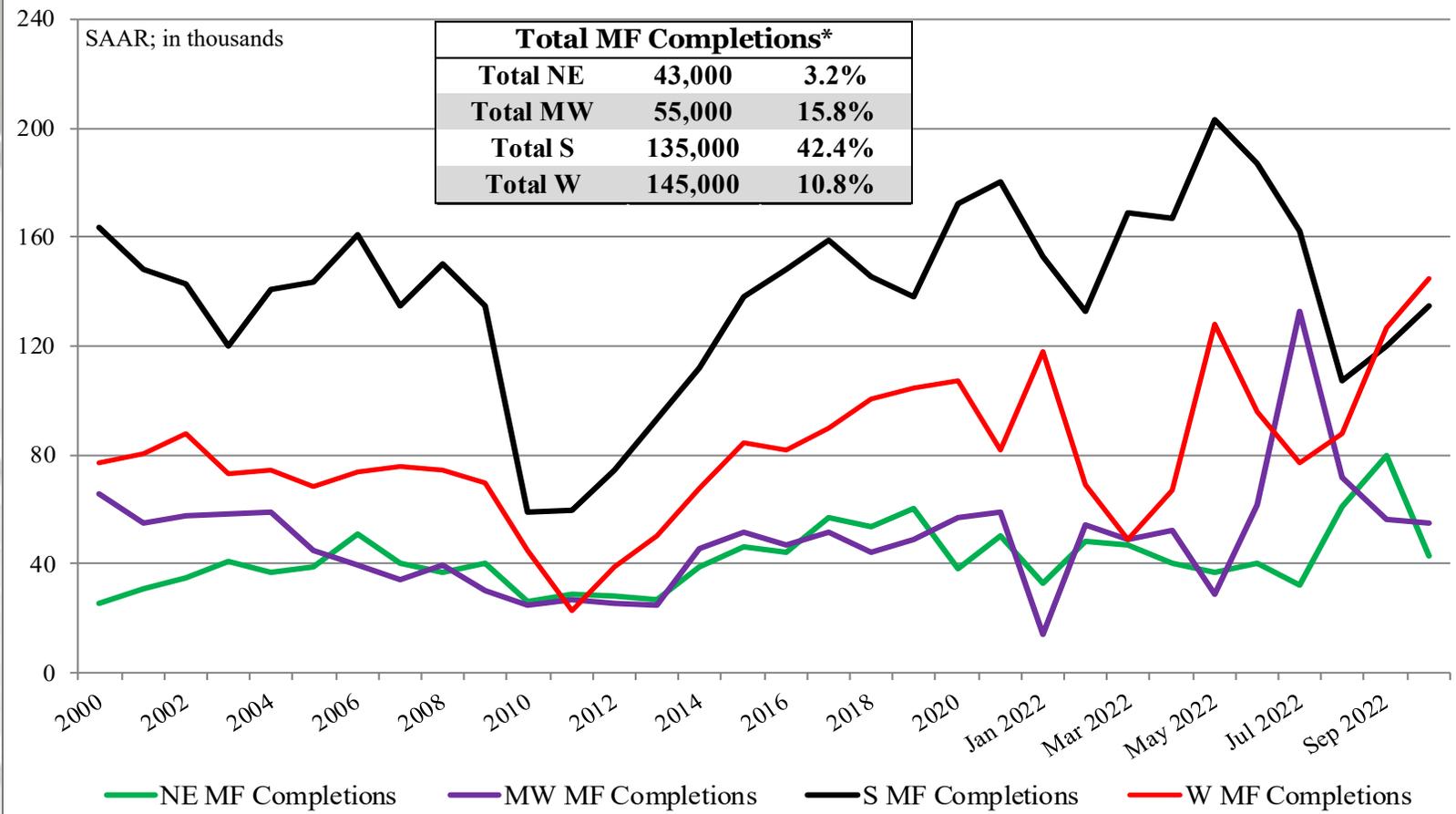


NE = Northeast, MW = Midwest, S = South, W = West

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

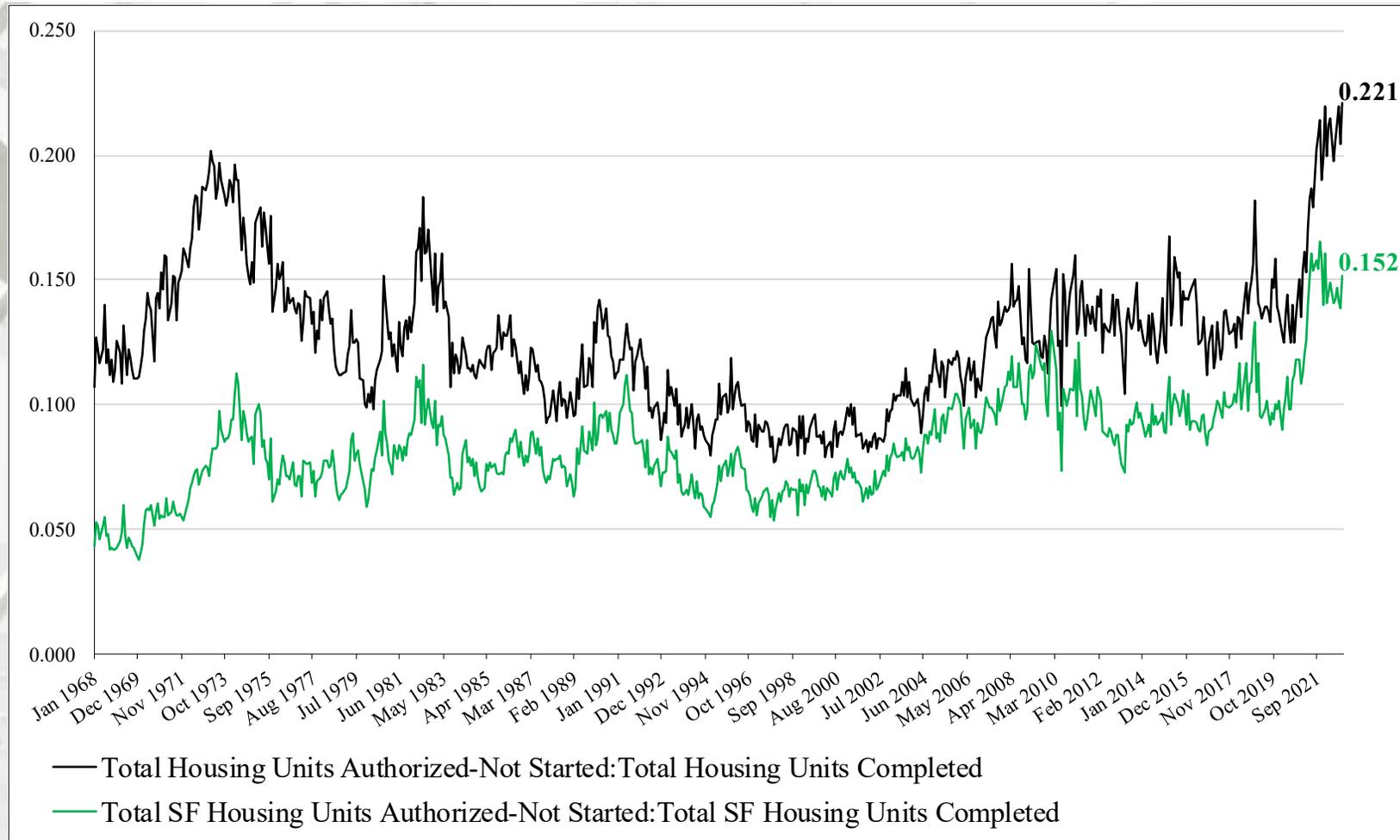


NE = Northeast, MW = Midwest, S = South, W = West

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

Ratio of Housing Units Authorized & Not Started to Housing Units Completed: M/M



Authorized, Not Started vs. Housing Completions

Total authorized units “not” started increased to 296,000 in October and SF authorized units “not” started increased to 146,000 in October.

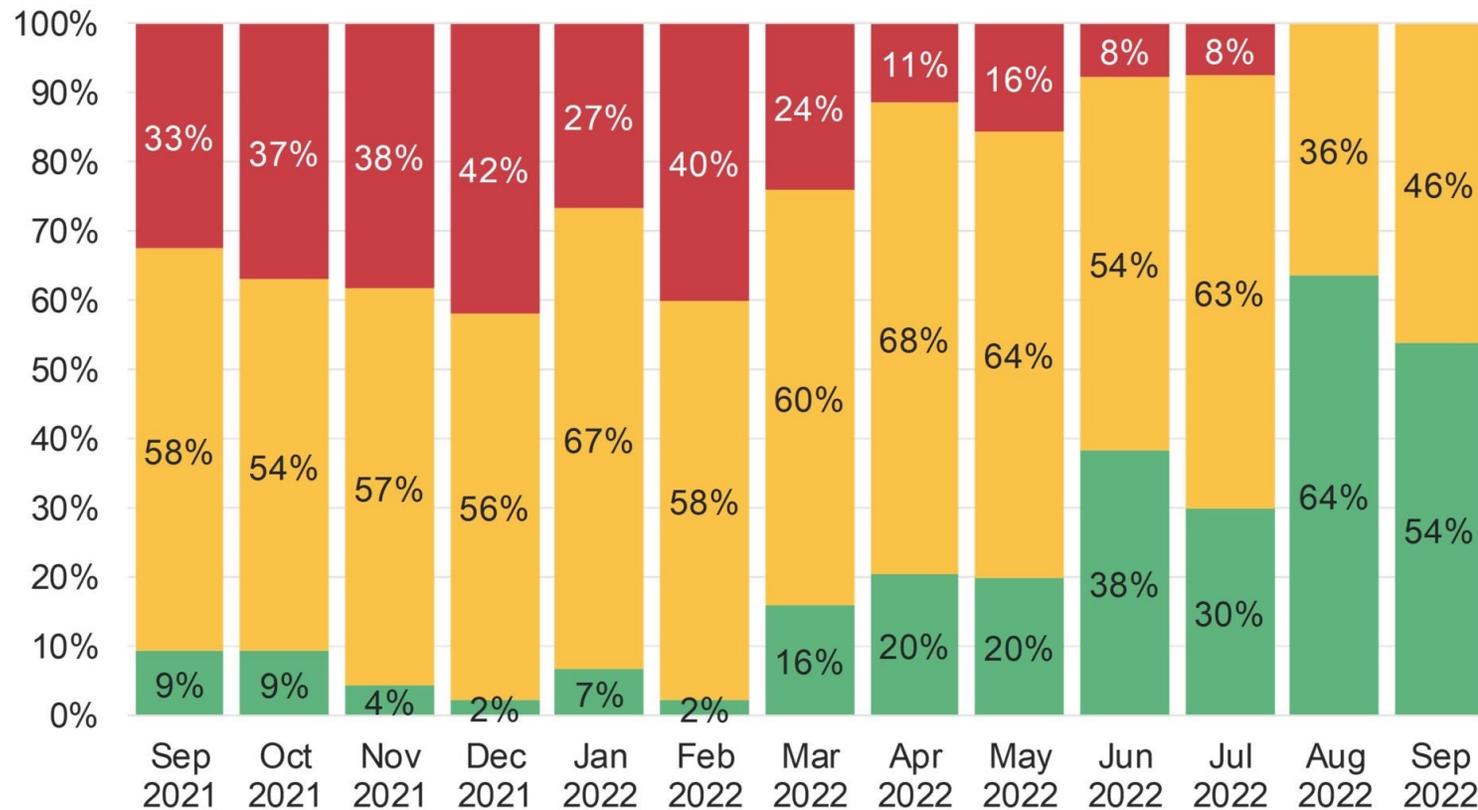
The primary reason is manufacturing supply chain disruptions – ranging from appliances to windows; labor, logistics, and local building regulations.

U.S. Logistics

John Burns Real Estate Consulting LLC

Building Materials Dealers' Supply Bottlenecks: Are they getting worse, better, or staying the same?

■ Getting better ■ Are the same ■ Getting worse



New Single-Family House Sales

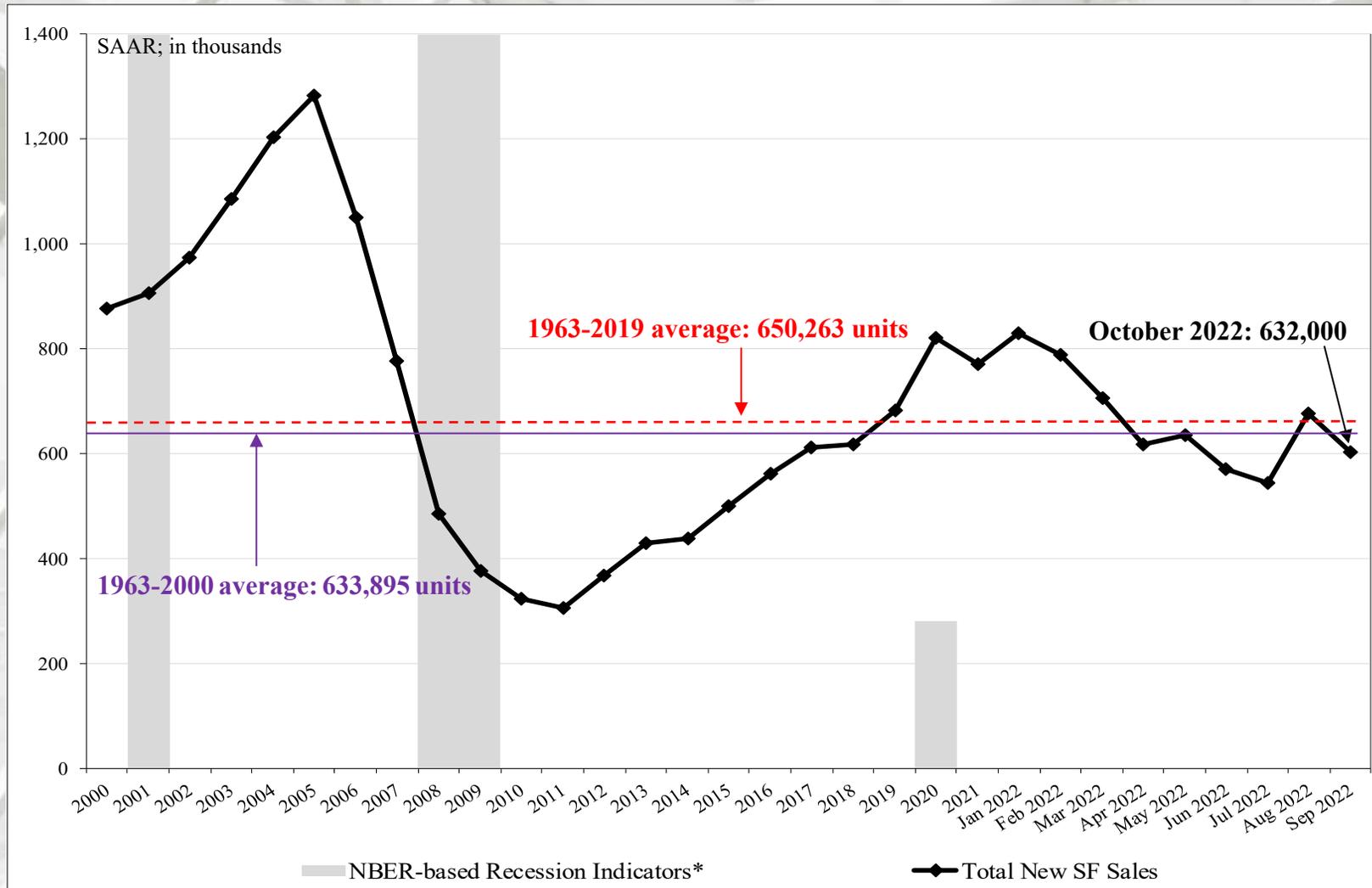
	New SF Sales*	Median Price	Mean Price	Month's Supply
October	632,000	\$493,000	\$544,000	8.9
September	588,000	\$455,700	\$516,400	9.4
2021	671,000	\$427,300	\$487,700	6.9
M/M change	7.5%	8.2%	5.3%	-5.3%
Y/Y change	-5.8%	15.4%	11.5%	29.0%

* 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 575 m (range: 540 m to 625 m). The past three month's new SF sales data also were revised:

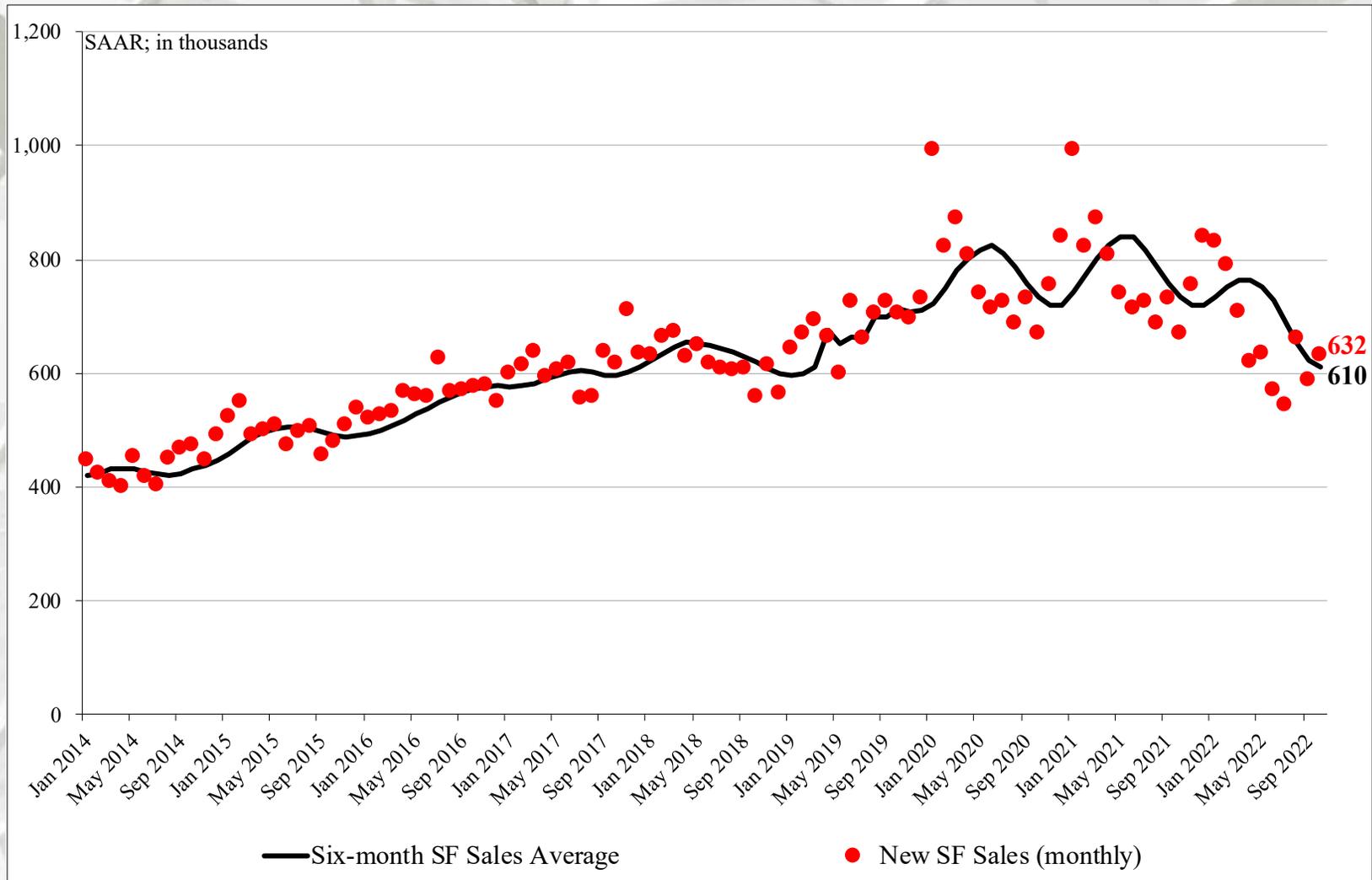
July initial: 511 m, revised to 543 m.
 August initial: 685 m, revised to 661 m.
 September initial: 603 m, revised to 588 m.

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			
October	51,000	50,000	399,000	132,000			
September	35,000	76,000	344,000	133,000			
2021	32,000	68,000	400,000	171,000			
M/M change	45.7%	-34.2%	16.0%	-0.8%			
Y/Y change	59.4%	-26.5%	-0.2%	-22.8%			
	\$150 - ≤ \$150m	\$200 - \$199.9m 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥ \$750m	
September ^{1,2,3,4}	250	1,000	5,000	9,000	10,000	16,000	7,000
August	500	500	3,000	13,000	11,000	13,000	7,000
2021	1,000	500	8,000	13,000	13,000	11,000	6,000
M/M change	-50.0%	100.0%	66.7%	-30.8%	-9.1%	23.1%	0.0%
Y/Y change	-75.0%	100.0%	-37.5%	-30.8%	-23.1%	45.5%	16.7%
New SF sales: %	0.5%	2.1%	10.4%	18.8%	20.8%	33.3%	14.6%

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 October not add to total because of rounding.

⁴ Housing prices are adjusted at irregular intervals.

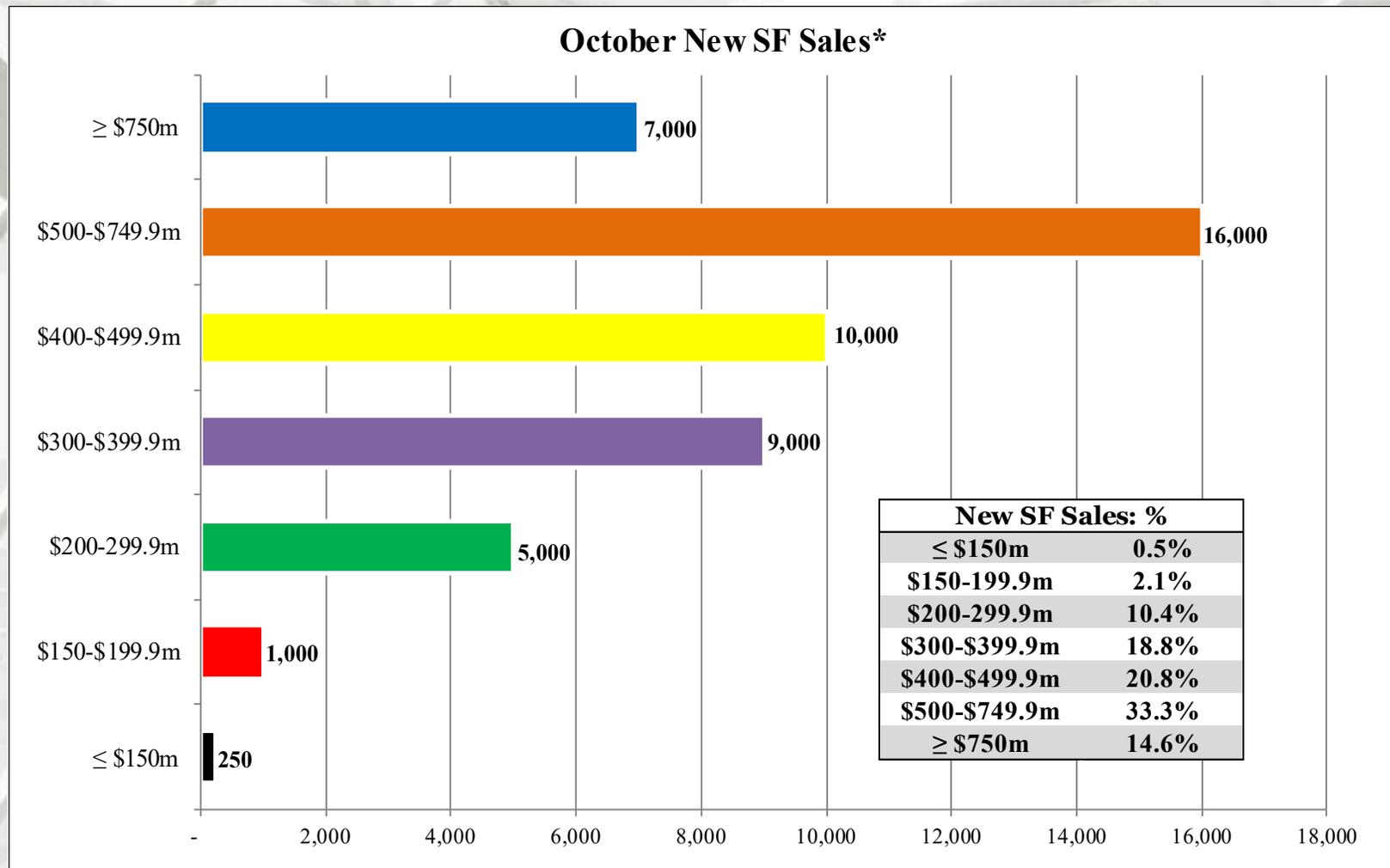
⁵ Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} <https://www.census.gov/construction/nrs/index.html>; 11/23/22;

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

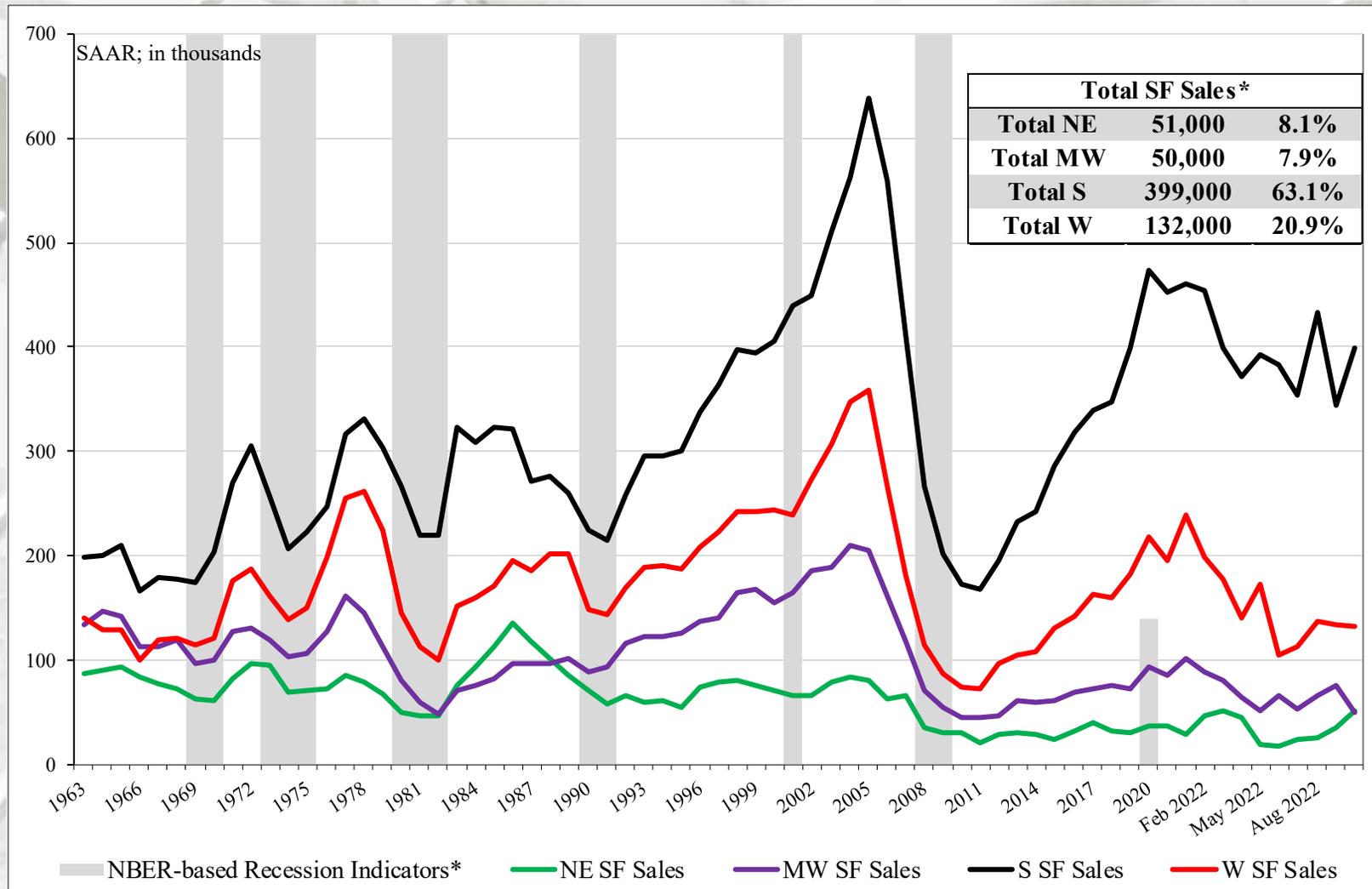
Return TOC

New SF House Sales



* Total new sales by price category and percent.

New SF House Sales by Region

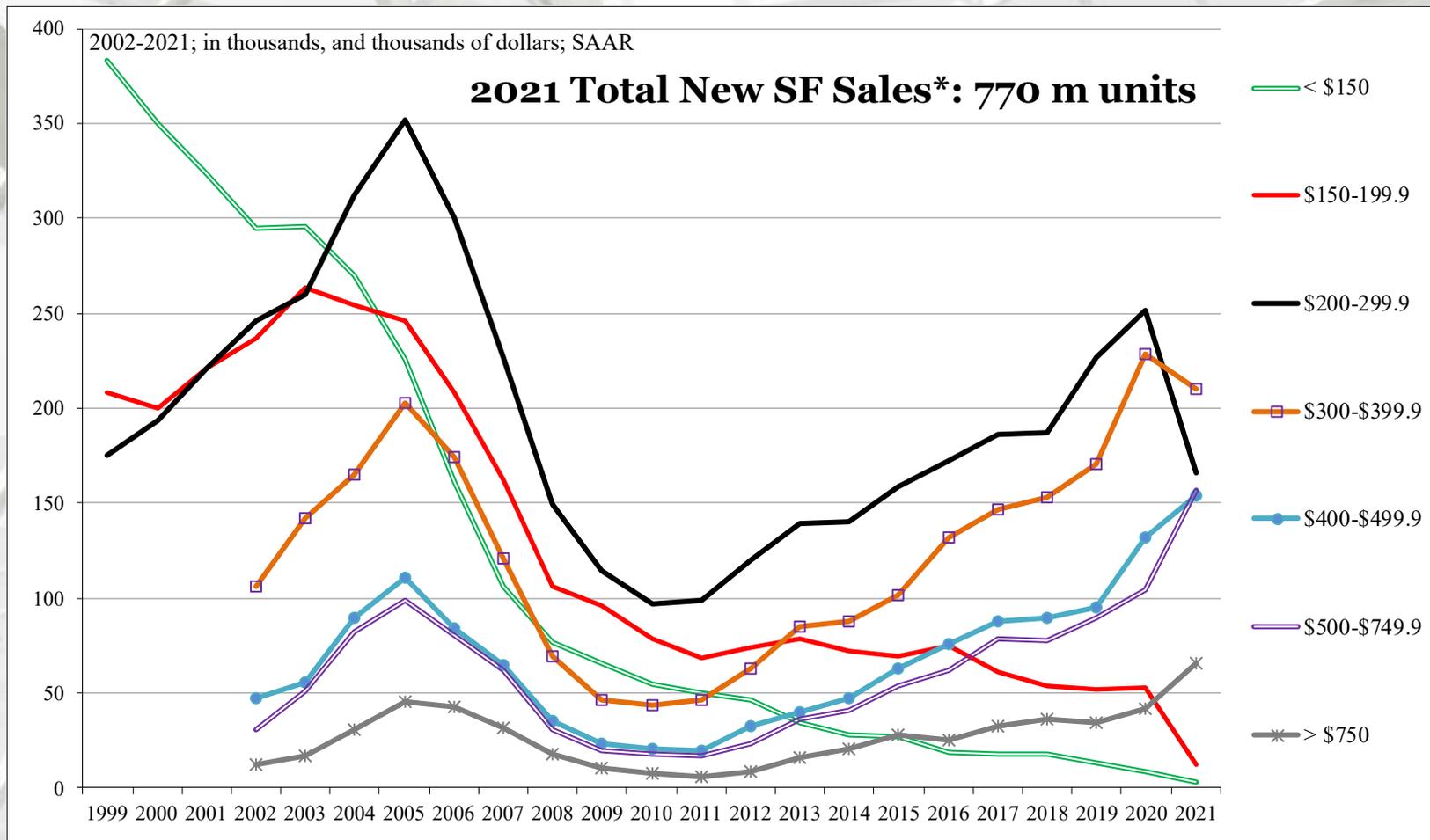


NE = Northeast; MW = Midwest; S = South; W = West

* Percentage of total new sales.

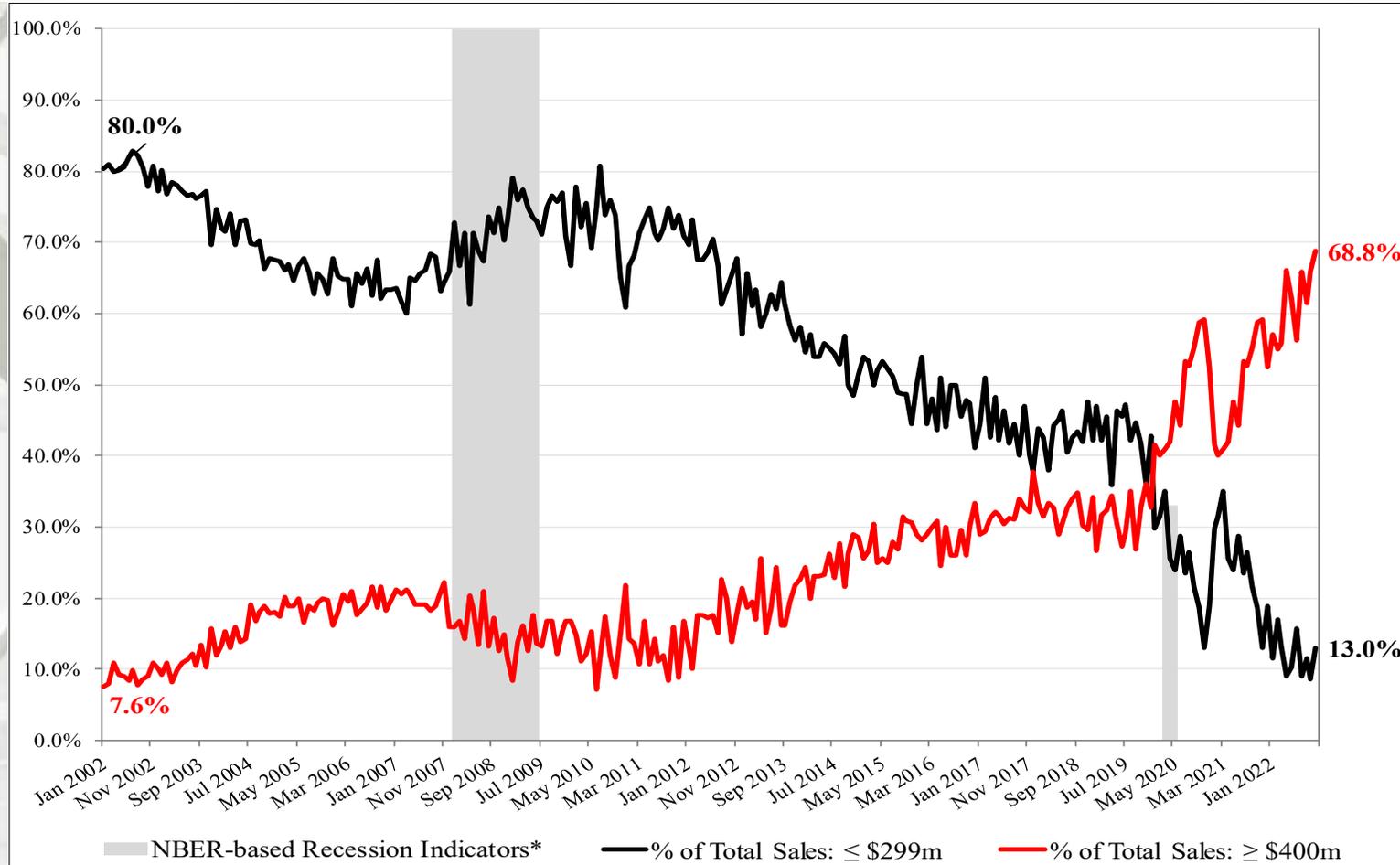
* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF House Sales by Price Category



* Sales tallied by price category, nominal dollars.

New SF House Sales

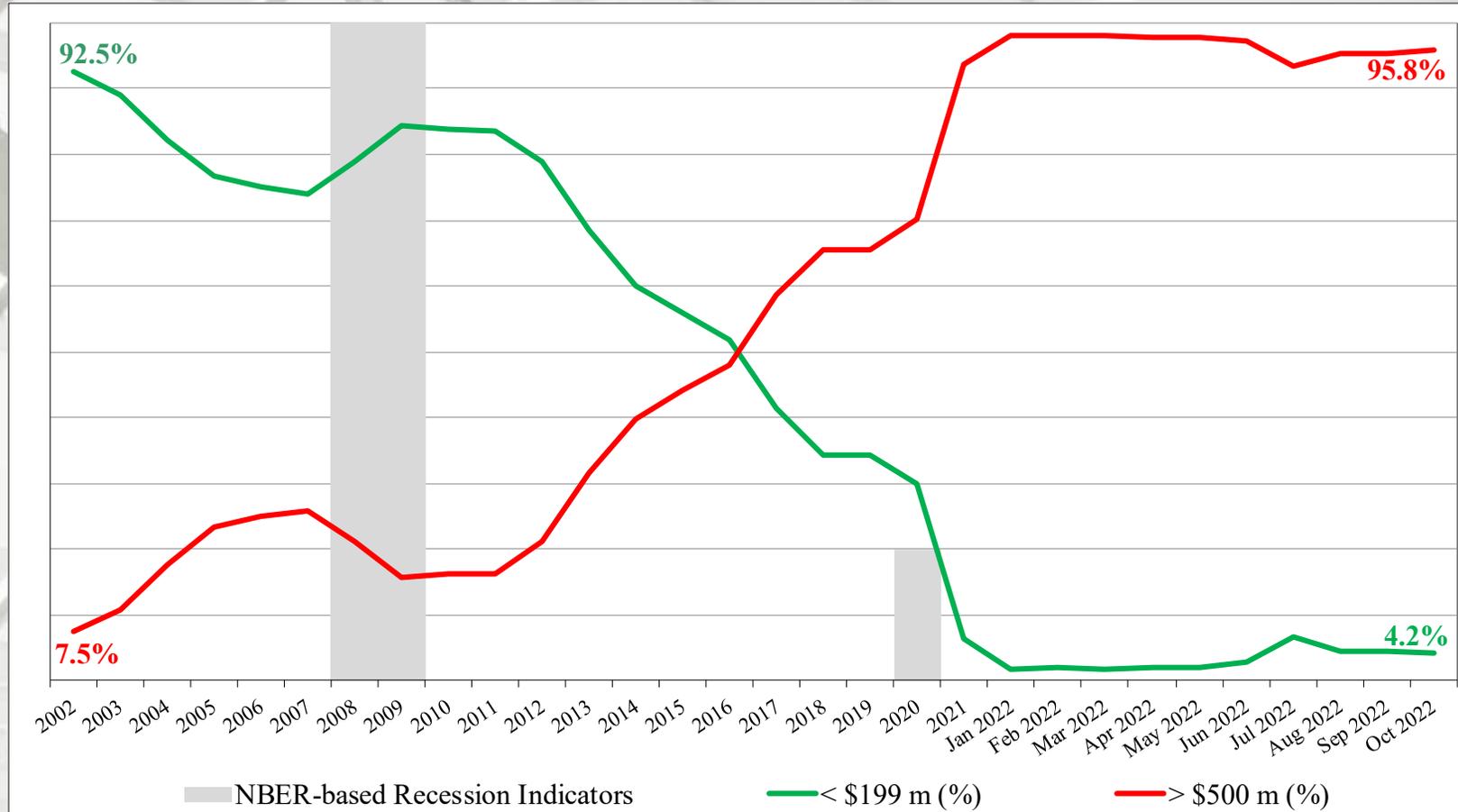


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Sales: ≤ \$299m and ≥ \$400m: 2002 – October 2022

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

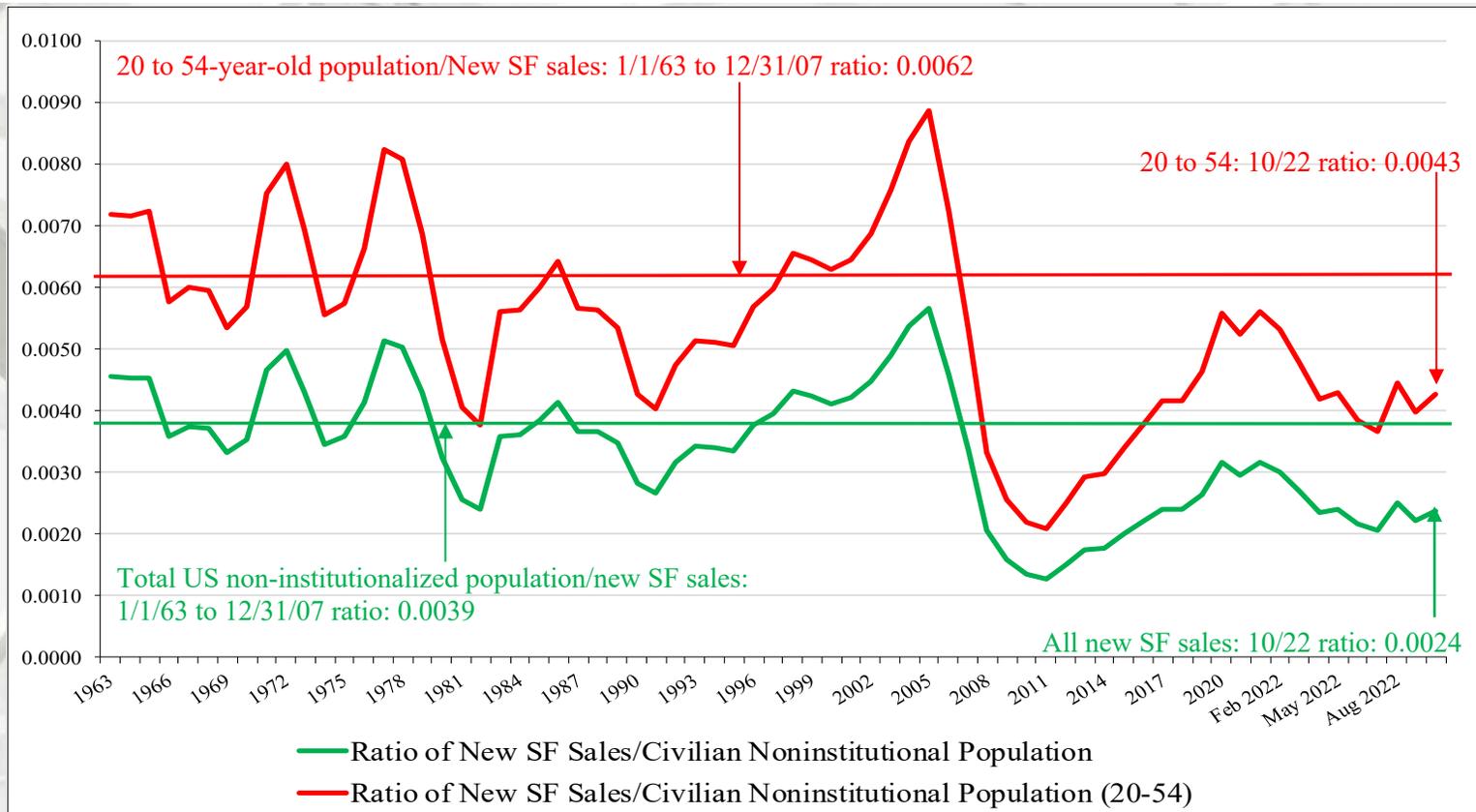


New SF Sales: ≤ \$ 200m and ≥ \$500m: 2002 to October 2022

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

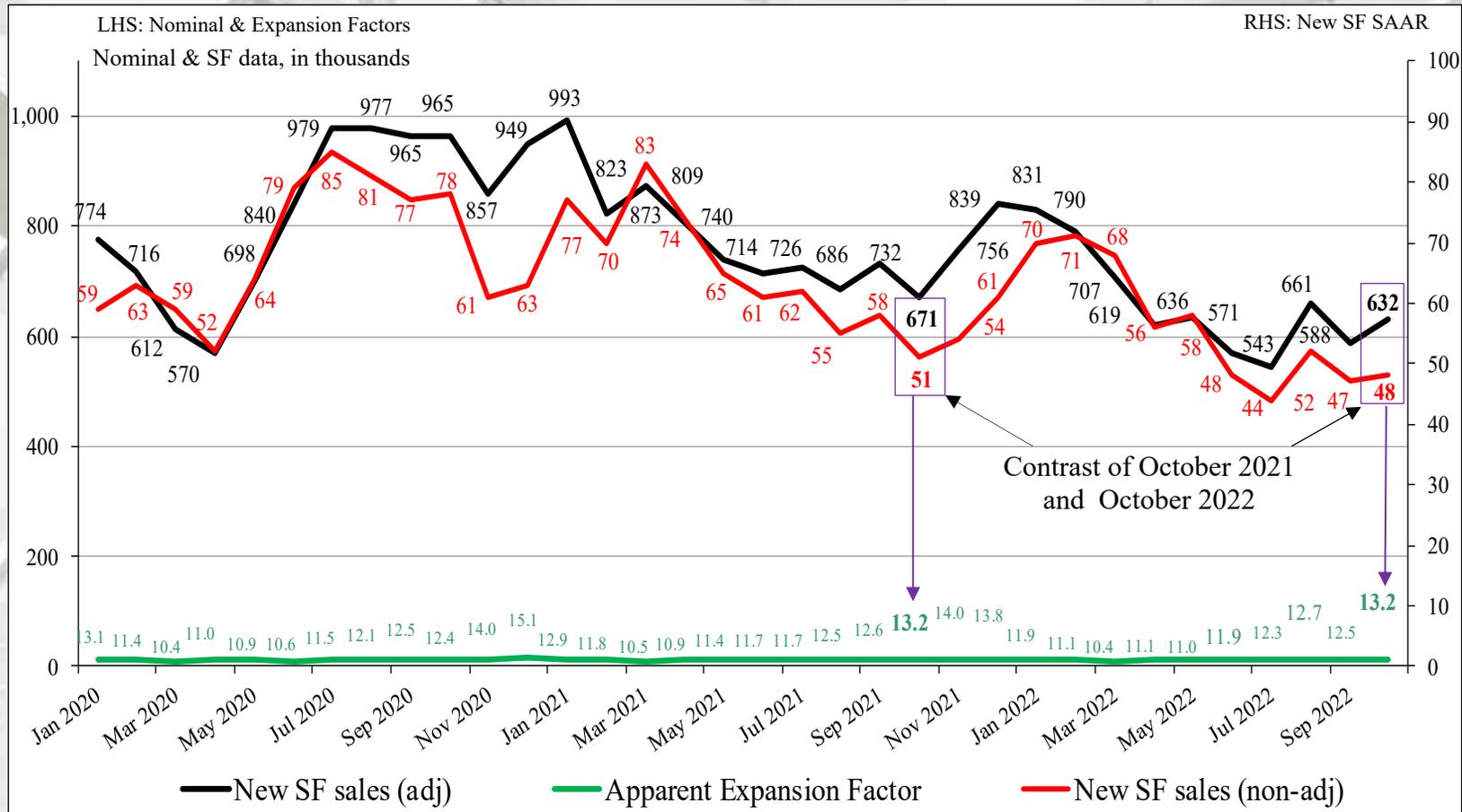


New SF sales adjusted for the US population

From October 1963 to October 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in October 2022 it was 0.0024 – an increase from August (0.0022). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in October 2022 it was 0.0043 – also an improvement from August (0.0040). 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

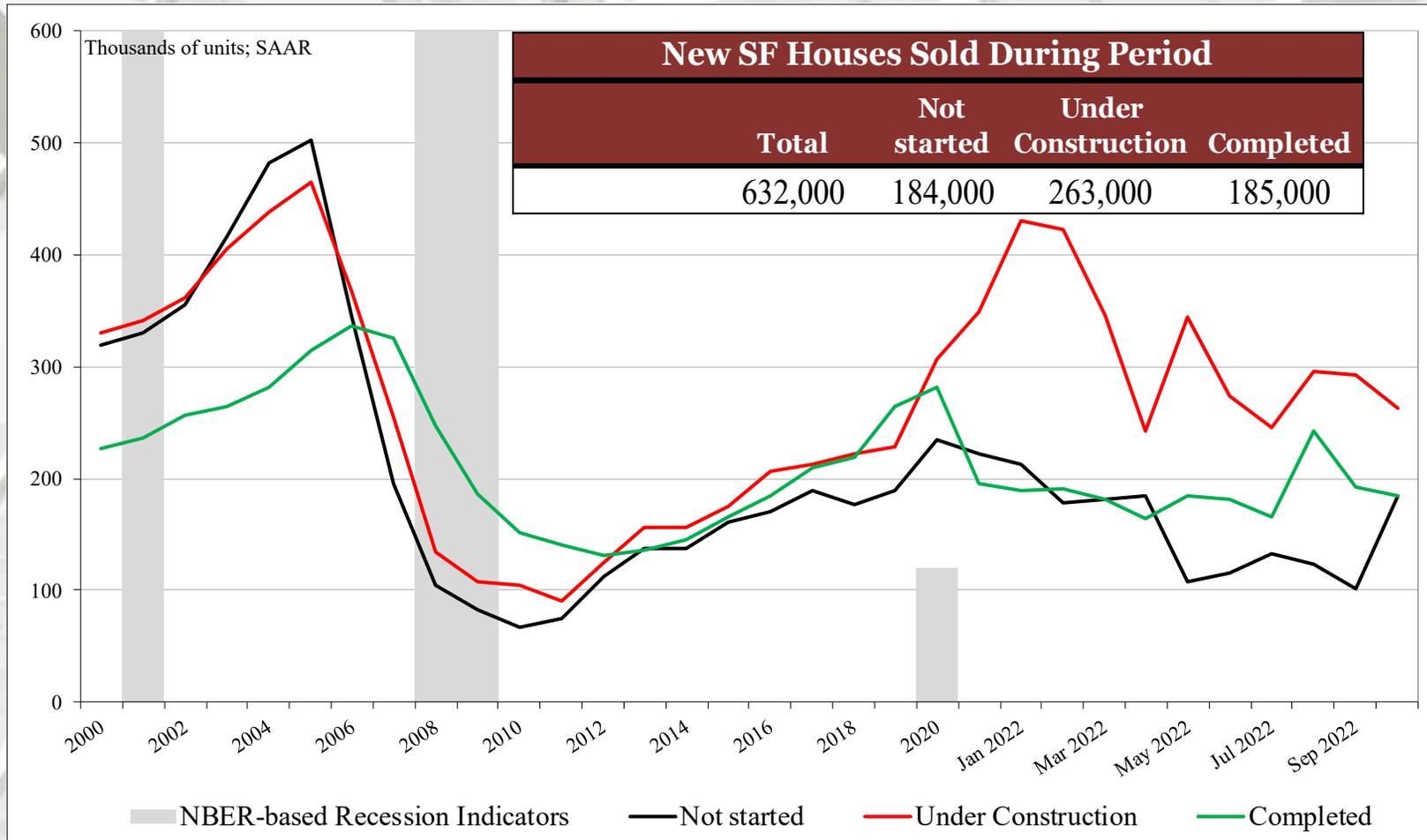
New SF House Sales

New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
October	632,000	184,000	263,000	185,000
September	588,000	102,000	293,000	193,000
2021	671,000	191,000	299,000	181,000
M/M change	7.5%	80.4%	-10.2%	-4.1%
Y/Y change	-5.8%	-3.7%	-12.0%	2.2%
Total percentage		29.1%	41.6%	29.3%

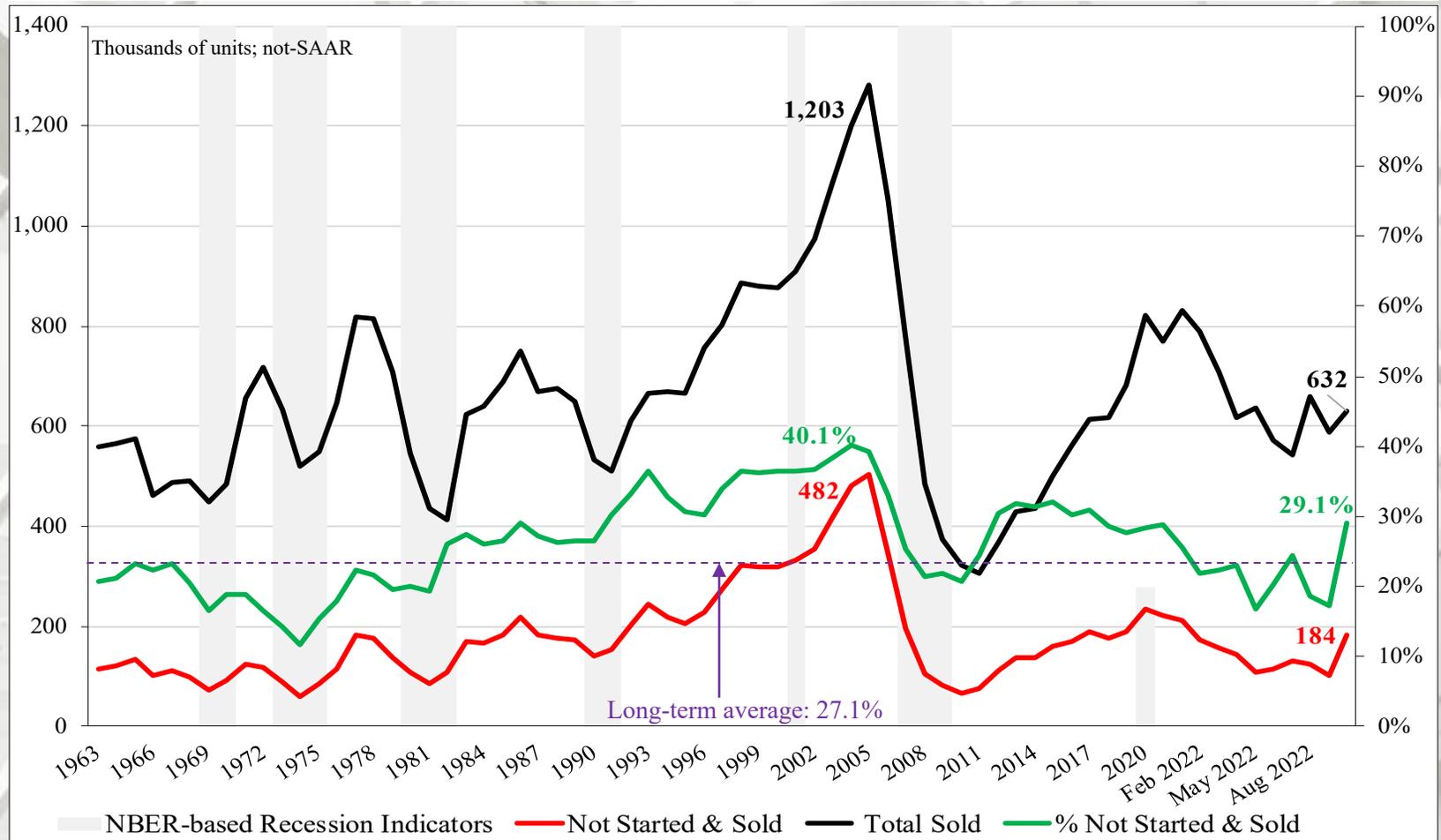
SAAR

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 October (632 m), 29.1% (184 m) had not been started. 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 at End of Period

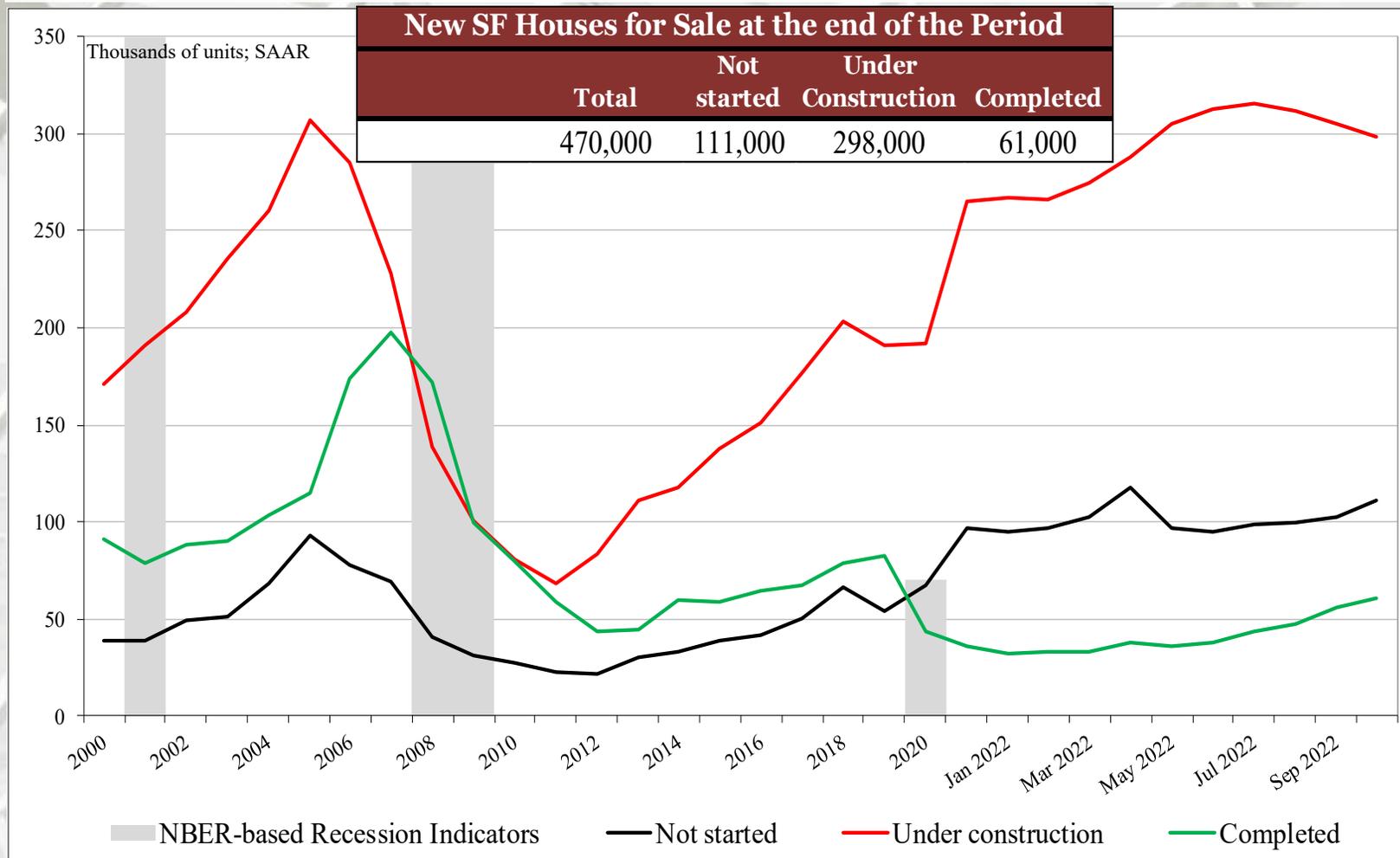
New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
October	470,000	111,000	298,000	61,000
September	463,000	102,000	305,000	56,000
2021	387,000	99,000	253,000	35,000
M/M change	1.5%	8.8%	-2.3%	8.9%
Y/Y change	21.4%	12.1%	17.8%	74.3%
Total percentage		23.6%	63.4%	13.0%

Not SAAR

Of houses listed for sale (470 m) in October, 12.9% (61 m) have been built. In the 'ground had not been broken for construction' or 'not started' category, 111 m (23.6%) 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).

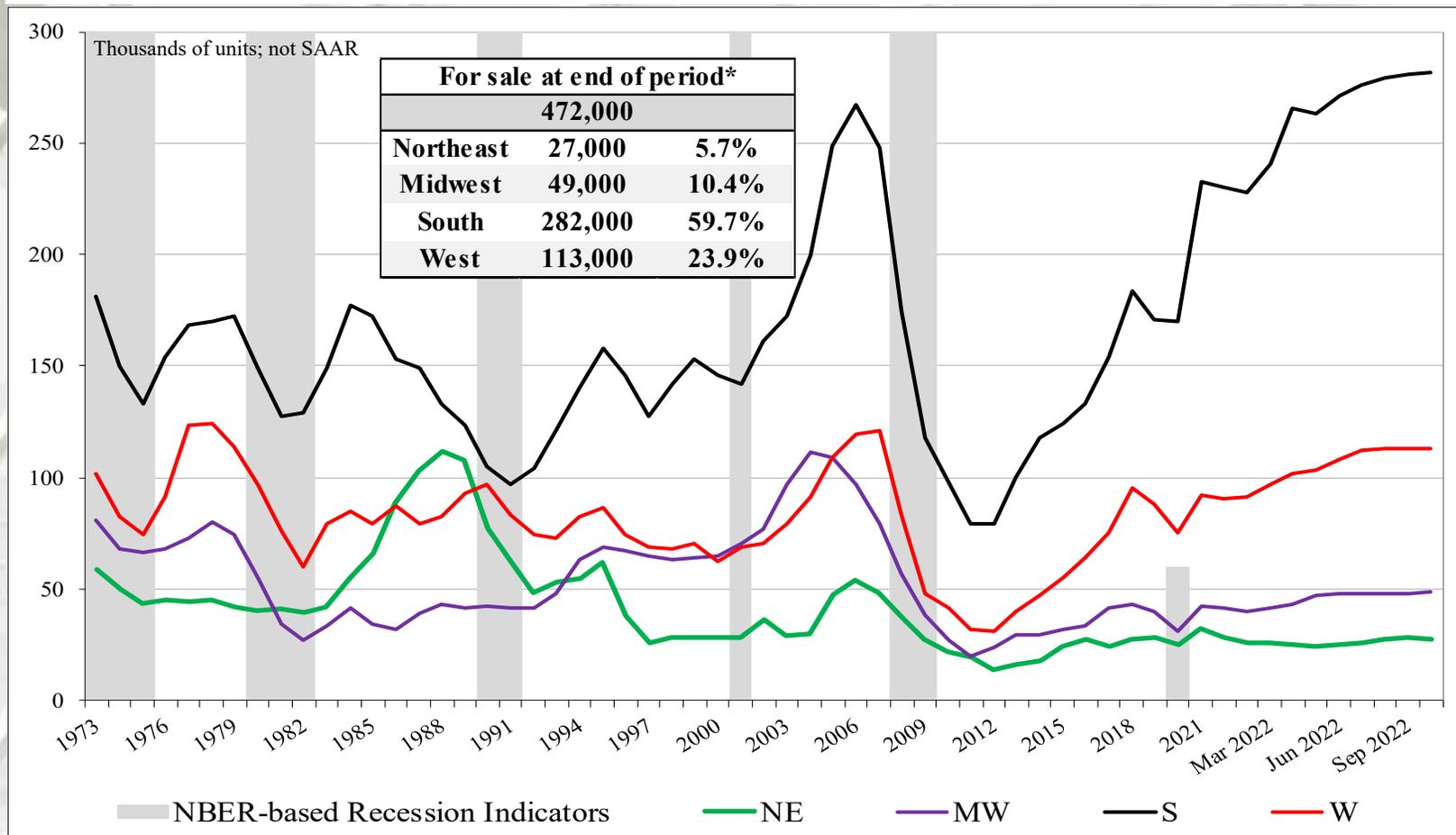
New SF House Sales

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

	Total	NE	MW	S	W
October	472,000	27,000	49,000	282,000	113,000
September	469,000	28,000	48,000	281,000	113,000
2021	387,000	29,000	36,000	227,000	94,000
M/M change	0.6%	-3.6%	2.1%	0.4%	0.0%
Y/Y change	22.0%	-6.9%	36.1%	24.2%	20.2%

* Not SAAR

New SF Houses for Sale at End of Period by Region

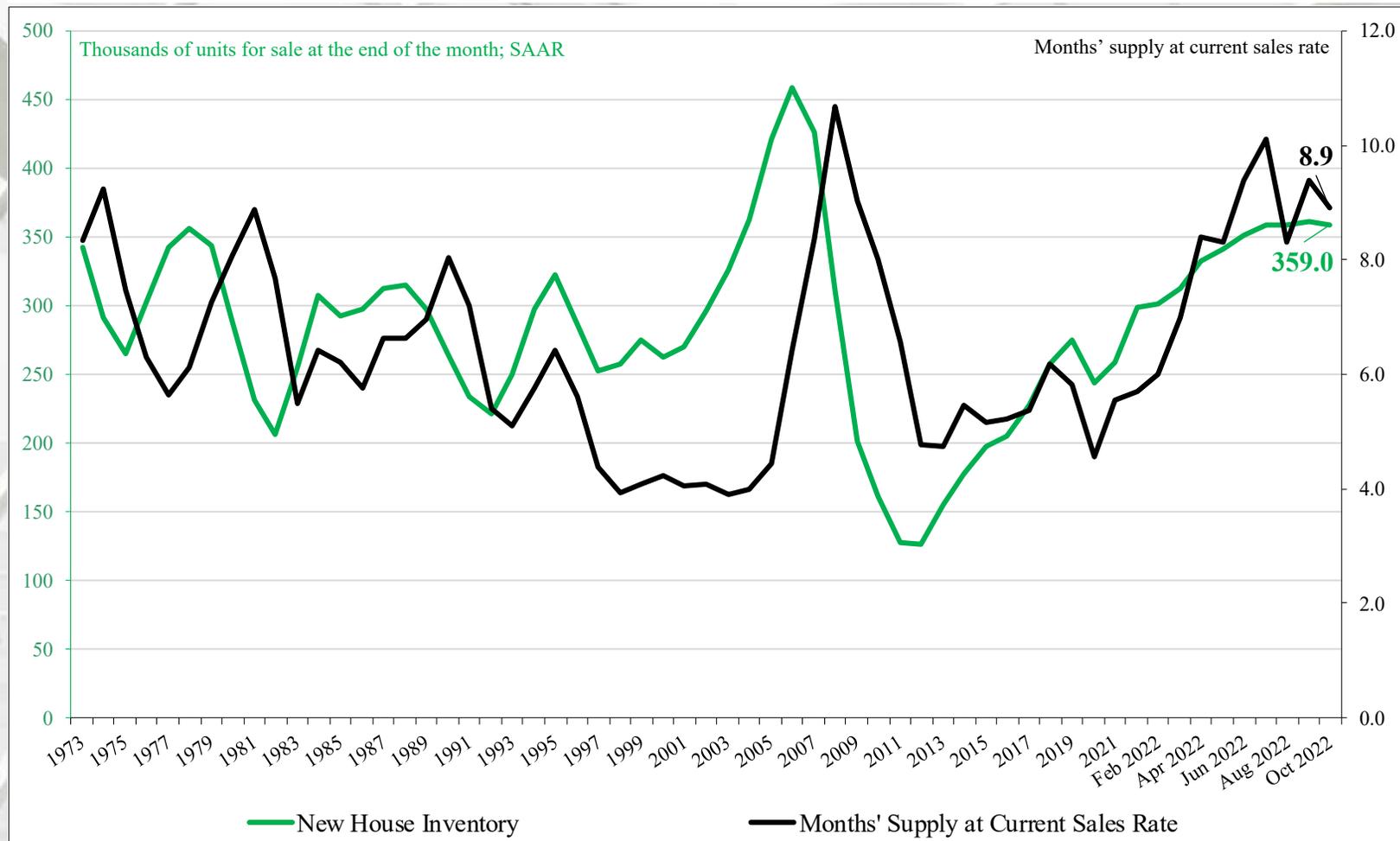


NE = Northeast; MW = Midwest; S = South; W = West

* 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).

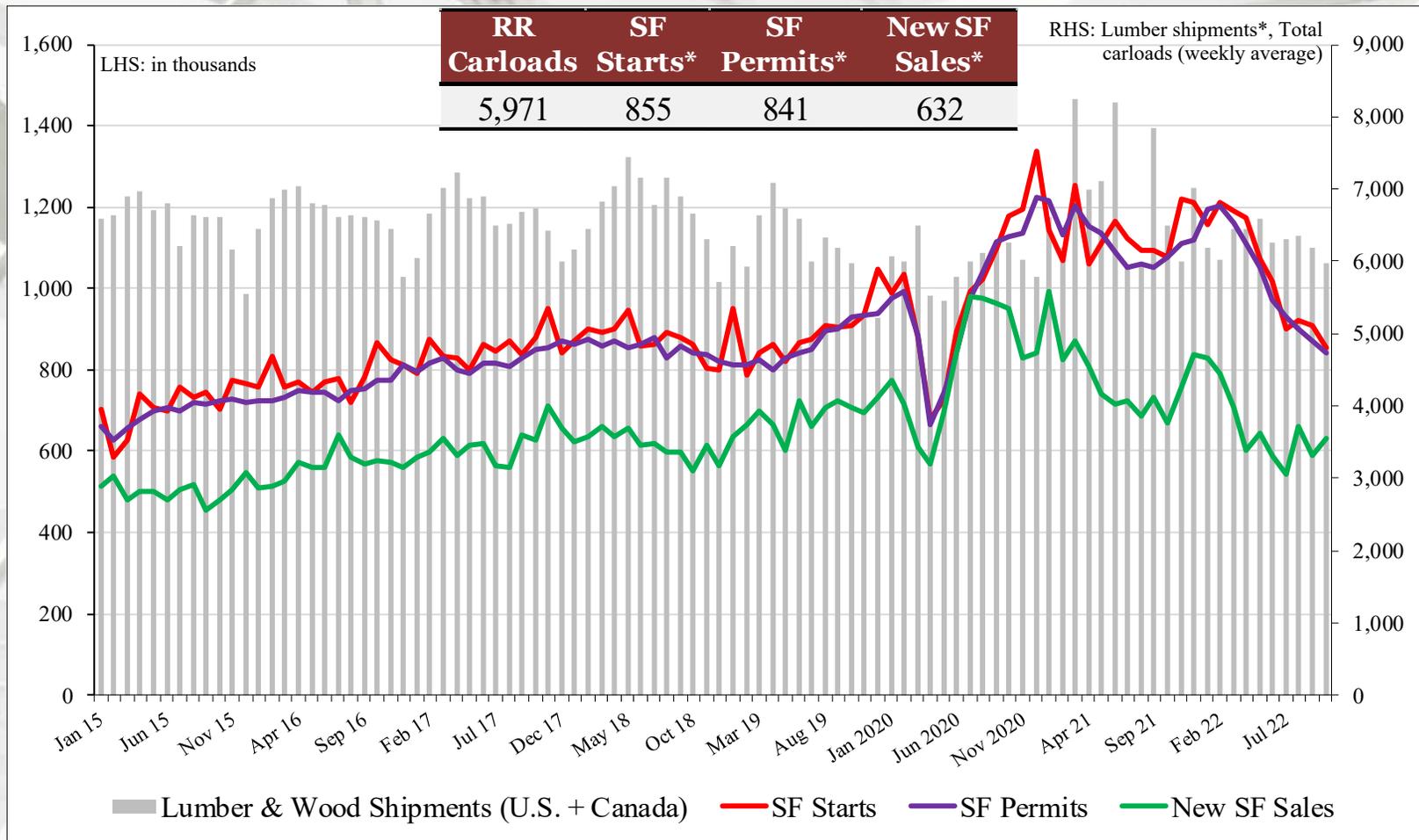
Months' Supply and New House Inventory^a



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

The months' supply of new houses for sale was 8.9 at the end of October 2022 (SAAR).

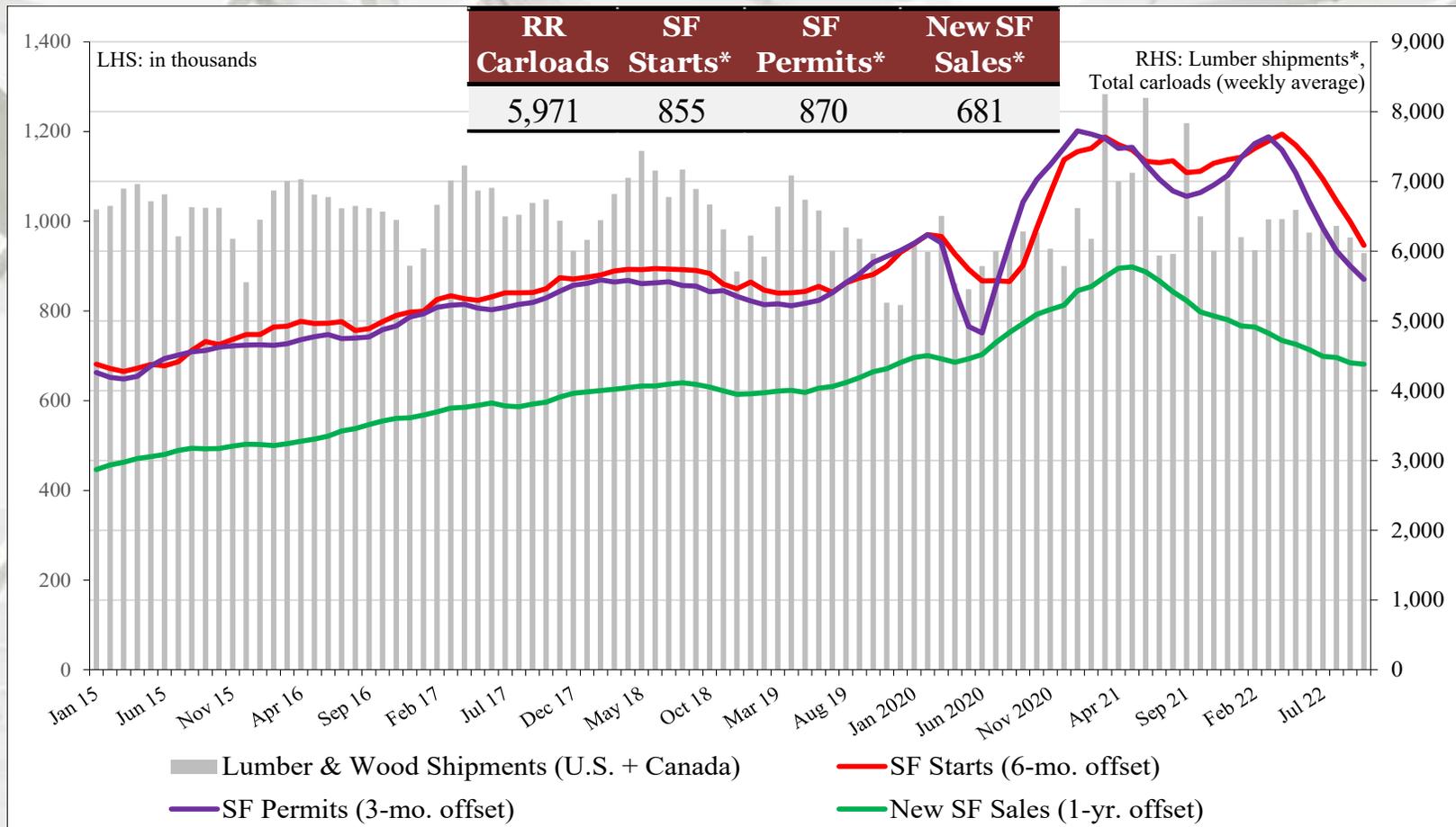
U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



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

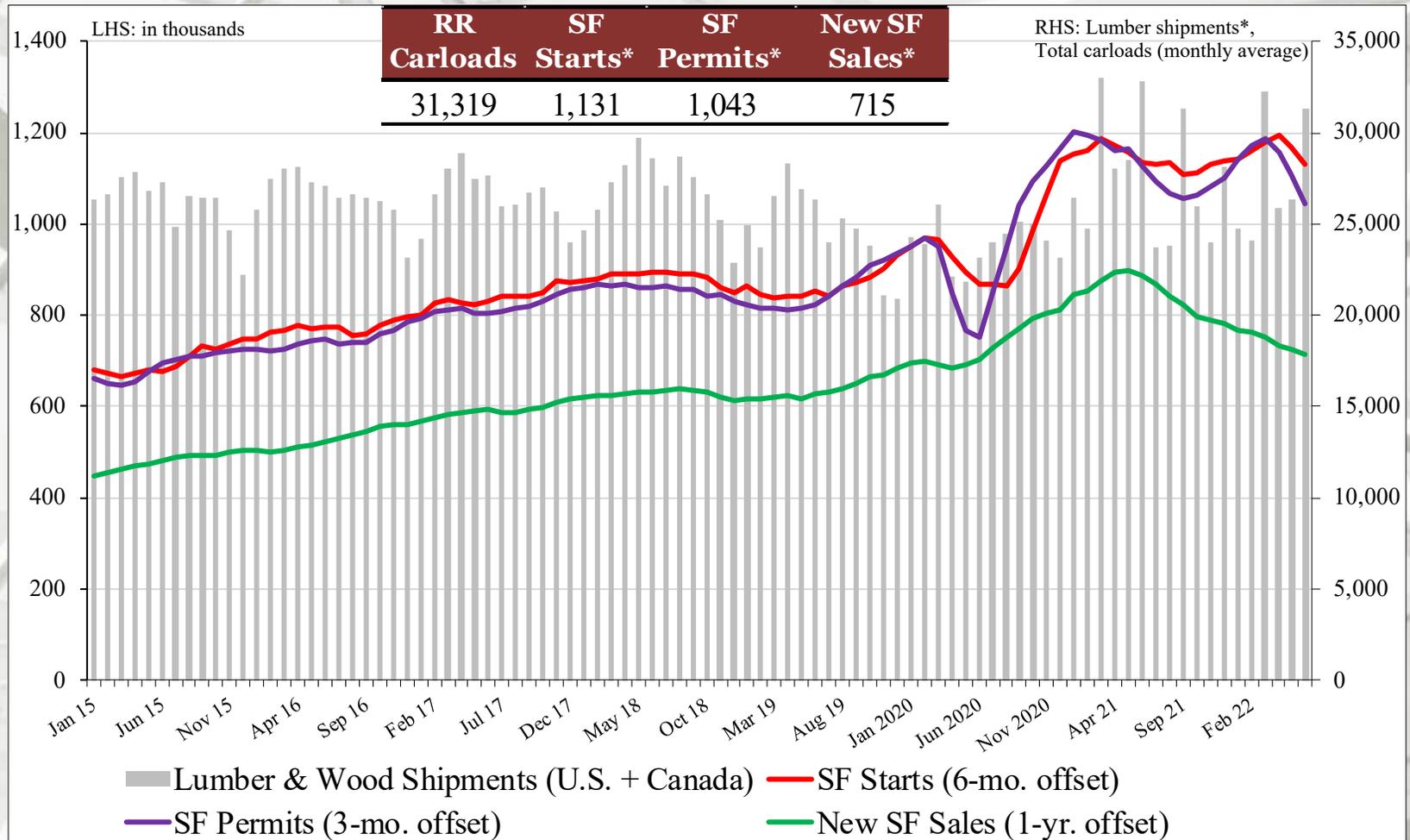
U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



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.

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



Total carloads of Canadian + U.S. lumber and wood shipments to the U.S. 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 and offset by respective time-frames.

Sources: *Association of American Railroads, *Rail Time Indicators* report-October 2022; <http://www.census.gov/construction/>; 11/17/22 & 11/23/22

October 2022 Construction Spending

	Total Private Residential*	SF	MF	Improvement**
September	\$887,224	\$410,076	\$102,593	\$374,555
October	\$889,963	\$420,900	\$102,024	\$367,039
2021	\$816,908	\$433,480	\$100,988	\$282,440
M/M change	-0.3%	-2.6%	0.6%	2.0%
Y/Y change	8.6%	-5.4%	1.6%	32.6%

* 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\$.

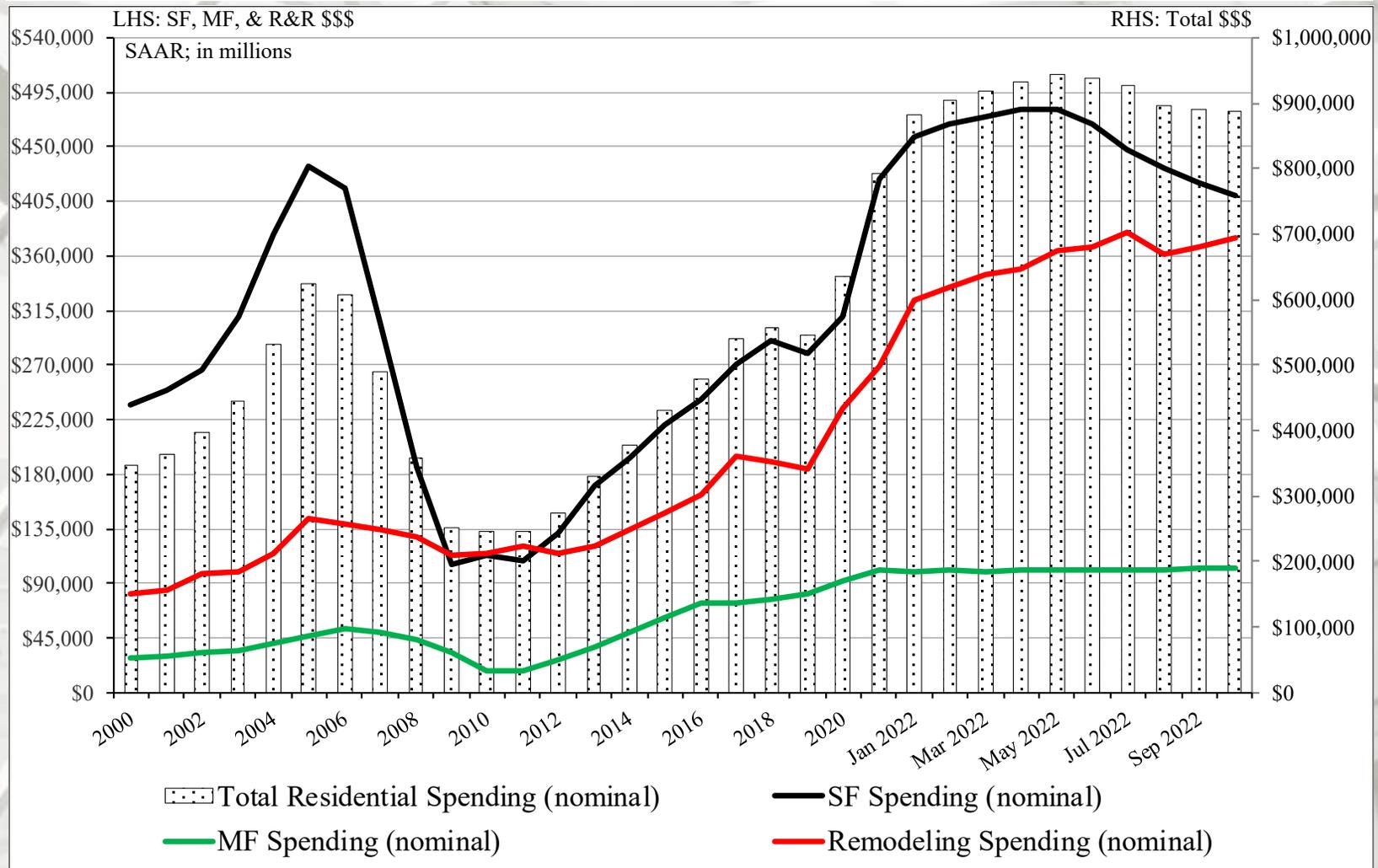
Total private residential construction spending includes new single-family, new multi-family, and improvement (AKA repair and remodeling) expenditures.

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.

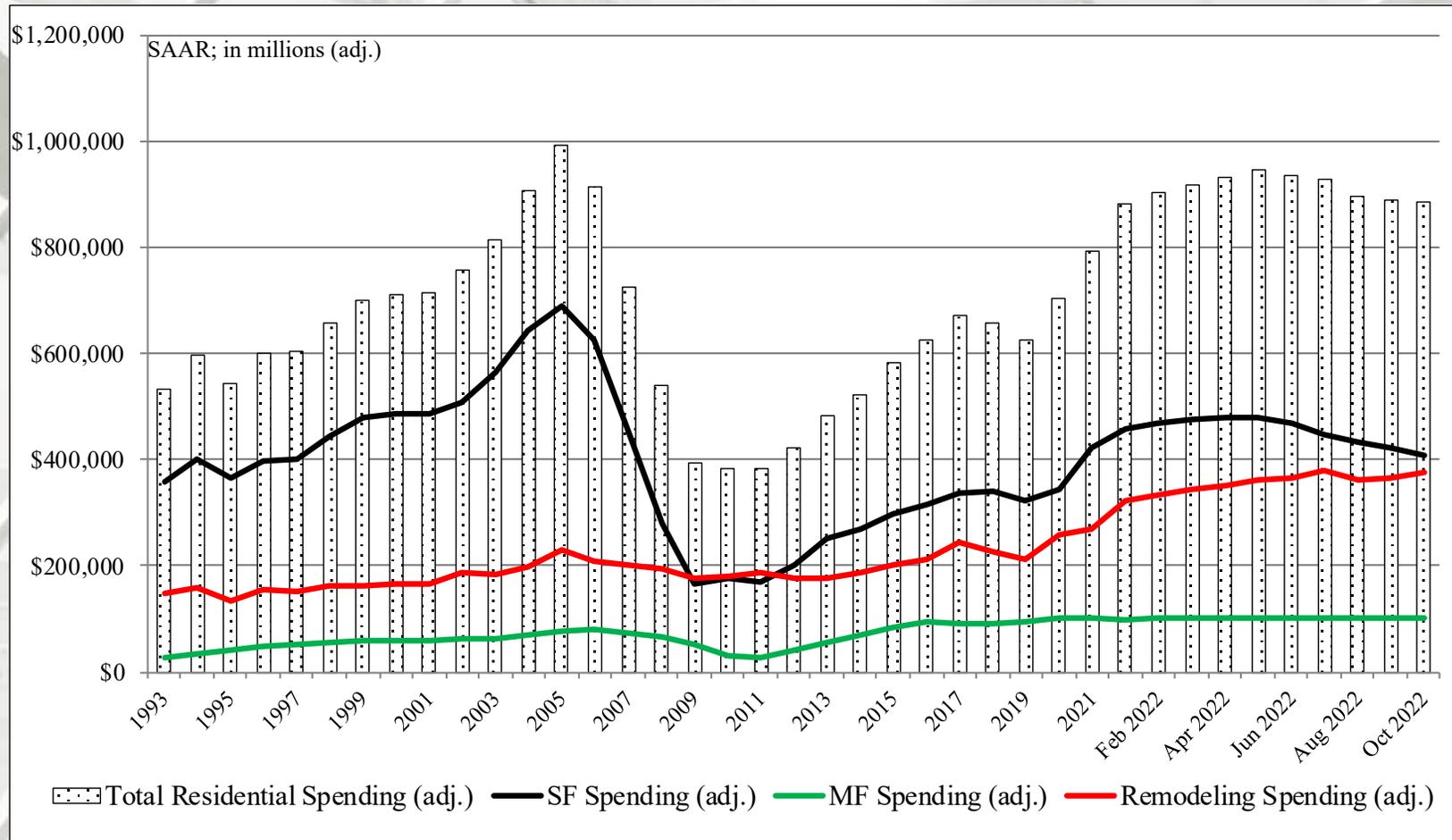
Total Construction Spending (nominal): 2000 – October 2022



Reported in nominal US\$.

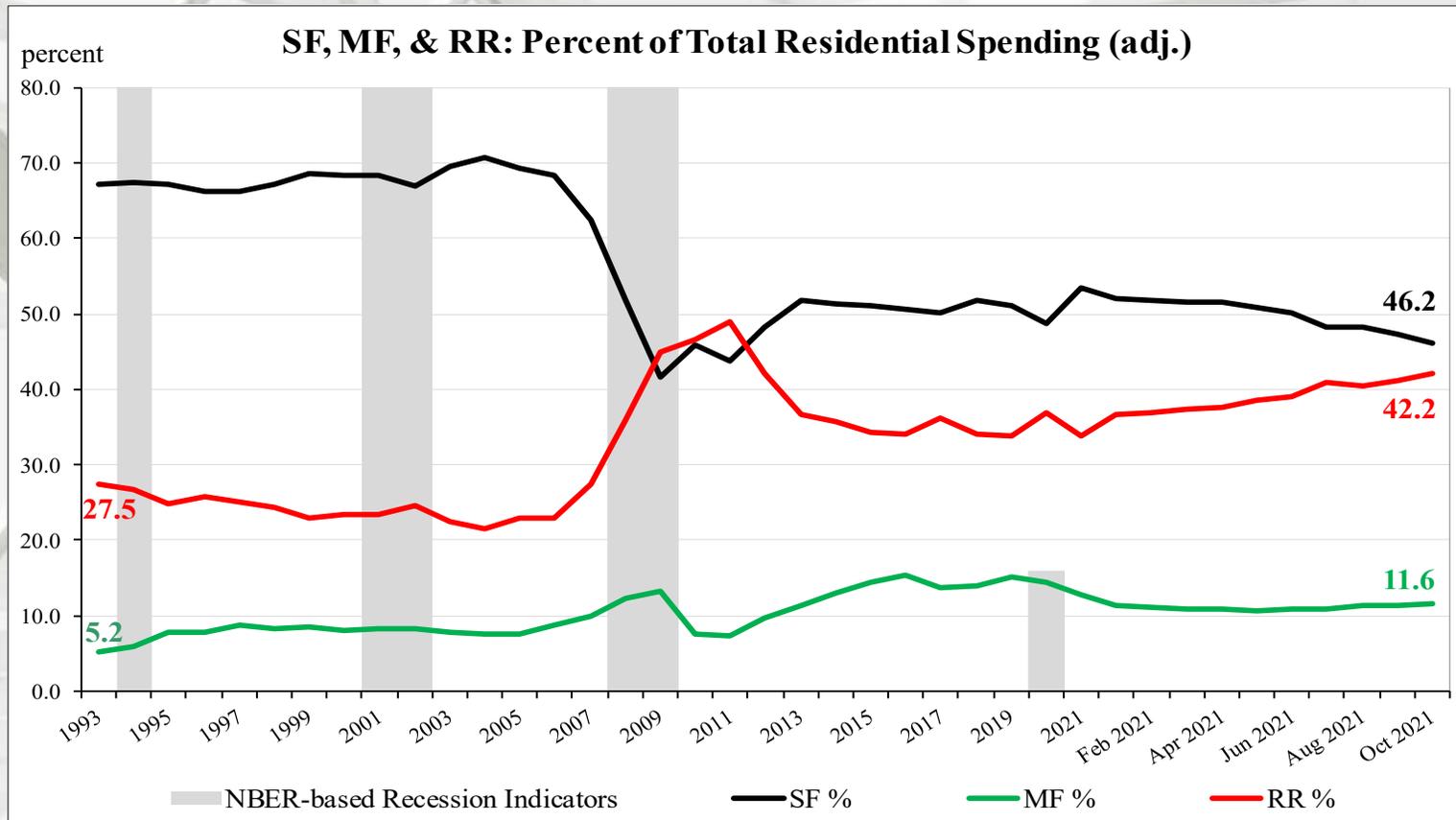
The US DOC does not report improvement spending directly, this is a monthly estimation for 2022.

Total Construction Spending (adjusted): 1993 – October 2022



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

Construction Spending Shares: 1993 – October 2022



Total Residential Spending: 1993 through 2006

SF spending average: 69.2%

MF spending average: 7.5%

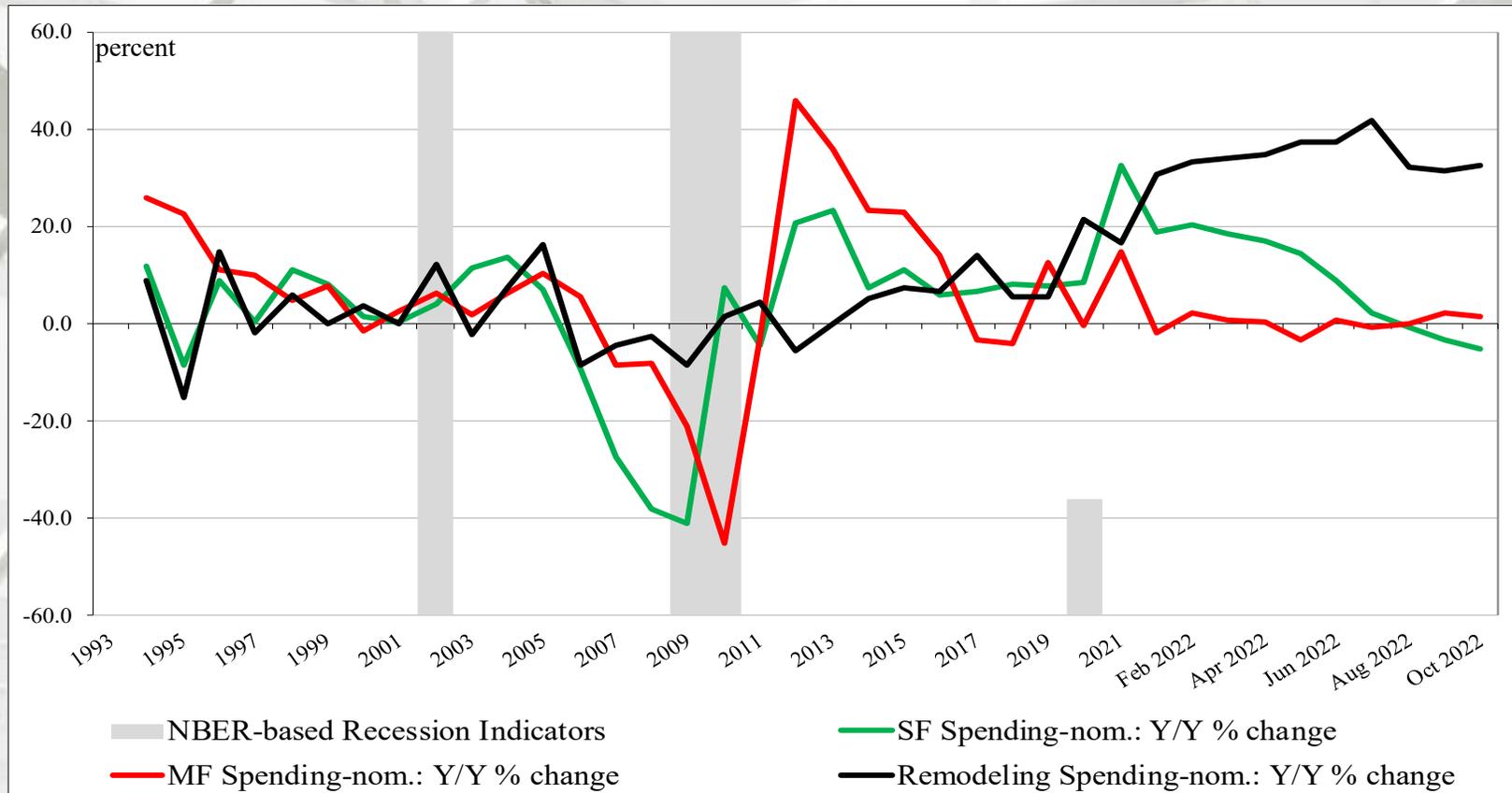
Residential remodeling (RR) spending average: 23.3% (SAAR).

Note: 1993 to 2021 (adjusted for inflation, BEA Table 1.1.9); October 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>; 12/1/22 and <http://www.bea.gov/iTable/iTable.cfm>; 9/30/22

Adjusted Construction Spending: Y/Y Percentage Change, 1993 – October 2022



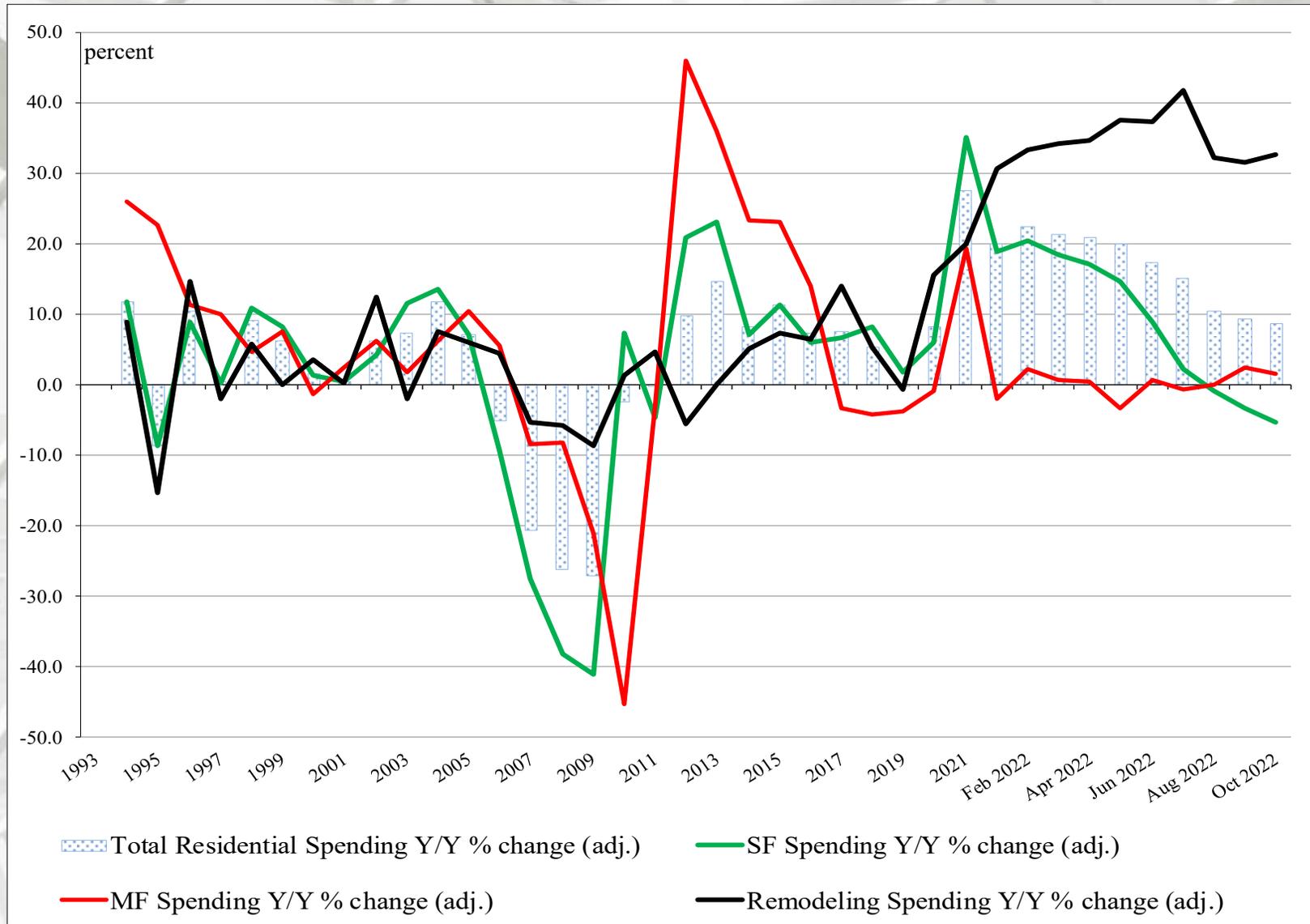
Nominal Residential Construction Spending: Y/Y percentage change, 1993 to October 2021

Presented above is the percentage change of inflation adjusted Y/Y construction spending. MF and RR expenditures were positive on a percentage basis, year-over-year (October 2022 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).

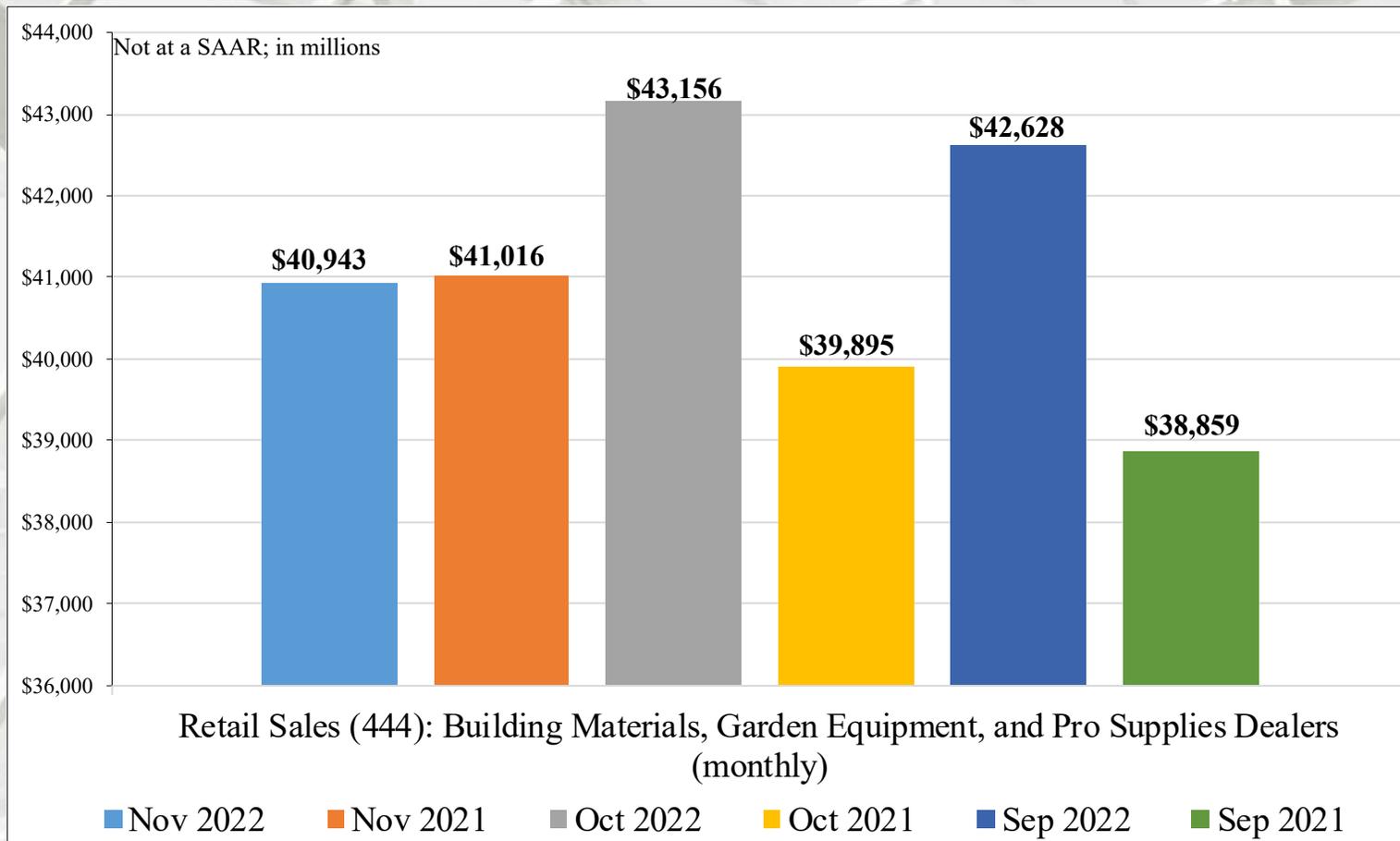
Sources: * <https://fred.stlouisfed.org/series/USREC>, 6/24/21; <http://www.census.gov/construction/c30/pdf/privsa.pdf>; 12/1/22 and <http://www.bea.gov/iTable/iTable.cfm>; 9/30/22

Adjusted Construction Spending: Y/Y Percentage Change, 1993 – October 2022



Remodeling

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



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

NAICS 444 sales decreased 5.1% in November 2022 from October 2022 and declined 0.2% Y/Y (on a non-adjusted basis).

Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales increased 11.2% in October 2022 from September 2022 and increased 19.9% in October 2022 from October 2021 (on a non-adjusted basis).

Remodeling

Harvard Joint Center for Housing Studies

Sharp Slowdown Projected in the Pace of Home Remodeling

“Annual gains in improvement and maintenance expenditures to owner-occupied homes are expected to decline sharply by the middle of next year, according to the Leading Indicator of Remodeling Activity (LIRA) released today by the Remodeling Futures Program at the Joint Center for Housing Studies of Harvard University. The LIRA projects year-over-year growth in homeowner remodeling and repair spending to shrink from 16.1 percent in 2022 to 6.5 percent by the third quarter of 2023.

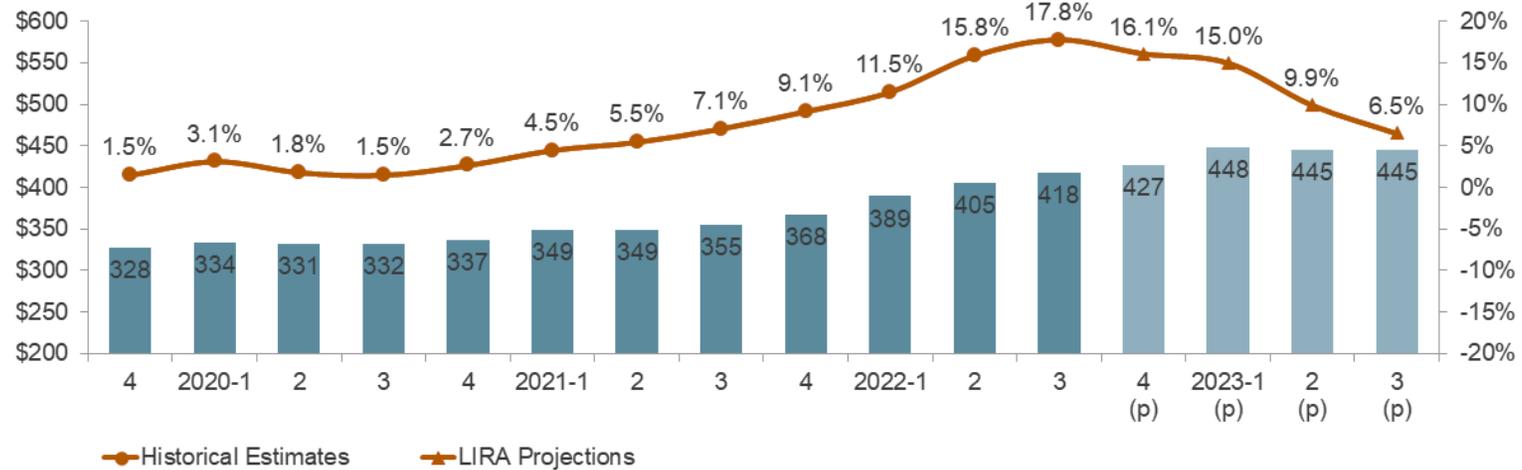
“Housing and remodeling markets are undoubtedly slowing from the exceptionally high and unsustainable growth rates that followed in the wake of the pandemic-induced recession,” says Carlos Martín, Project Director of the Remodeling Futures Program at the Center. “Spending for home improvements will continue to face headwinds from declining home sales, rising interest rates, and the increasing costs of contractor labor and building materials.”

“Although remodeling market gains are expected to cool significantly next year, homeowners still have record levels of home equity to support financing of renovations,” says Abbe Will, Associate Project Director of the Remodeling Futures Program. “Energy-efficiency retrofits incentivized by the Inflation Reduction Act of 2022, as well as disaster repairs and mitigation projects following Hurricane Ian will further support expansion of the home remodeling market to almost \$450 billion in 2023.”” – Kerry Donahue, Associate Director of Communications, Harvard Joint Center for Housing Studies

Remodeling

Leading Indicator of Remodeling Activity – Third Quarter 2022

**Homeowner Improvements & Repairs
Four-Quarter Moving Totals
Billions**



Notes: Improvements include remodels, replacements, additions, and structural alterations that increase the value of homes. Routine maintenance and repairs preserve the current quality of homes. Historical estimates since 2019 are produced using the LIRA model until American Housing Survey benchmark data become available.

Existing House Sales

National Association of Realtors®

	Existing Sales	Median Price	Month's Supply
October	4,430,000	\$379,100	3.3
September	4,710,000	\$383,500	3.1
2021	6,190,000	\$355,700	2.4
M/M change	-5.9%	-1.1%	6.5%
Y/Y change	-28.4%	6.6%	37.5%

All sales data: SAAR

Existing House Sales

	NE	MW	S	W
October	570,000	1,080,000	1,980,000	800,000
September	610,000	1,140,000	2,080,000	880,000
2021	740,000	1,450,000	2,720,000	1,280,000
M/M change	-6.6%	-5.3%	-4.8%	-9.1%
Y/Y change	-23.0%	-25.5%	-27.2%	-37.5%

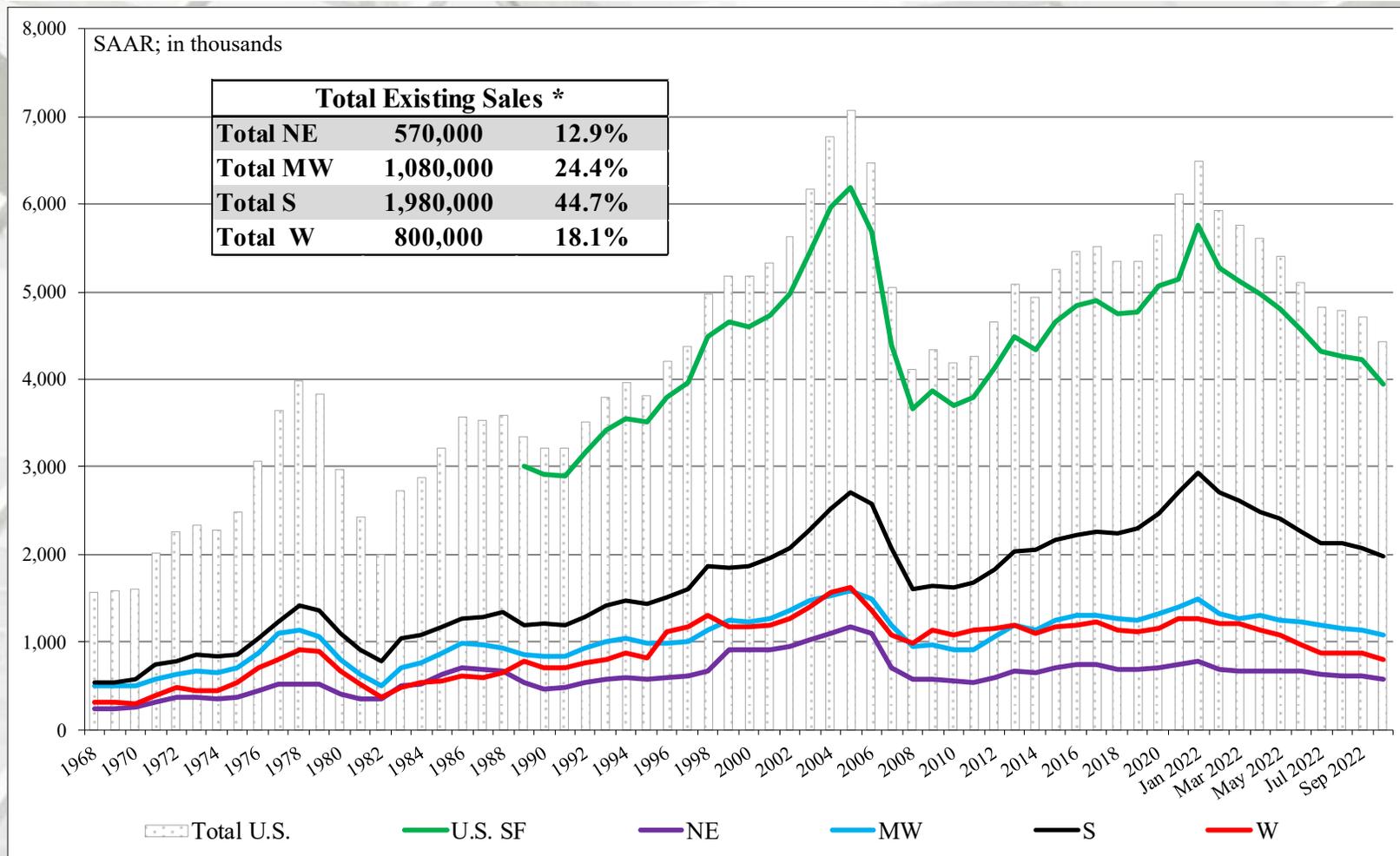
	Existing SF Sales	SF Median Price
October	3,950,000	\$384,900
September	4,222,000	\$389,600
2021	5,500,000	\$362,600
M/M change	-6.4%	-1.1%
Y/Y change	-28.2%	6.2%

All sales data: SAAR.

Source: <https://fred.stlouisfed.org/series/EXHOSLUSM495S>; 11/18/22

Return TOC

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

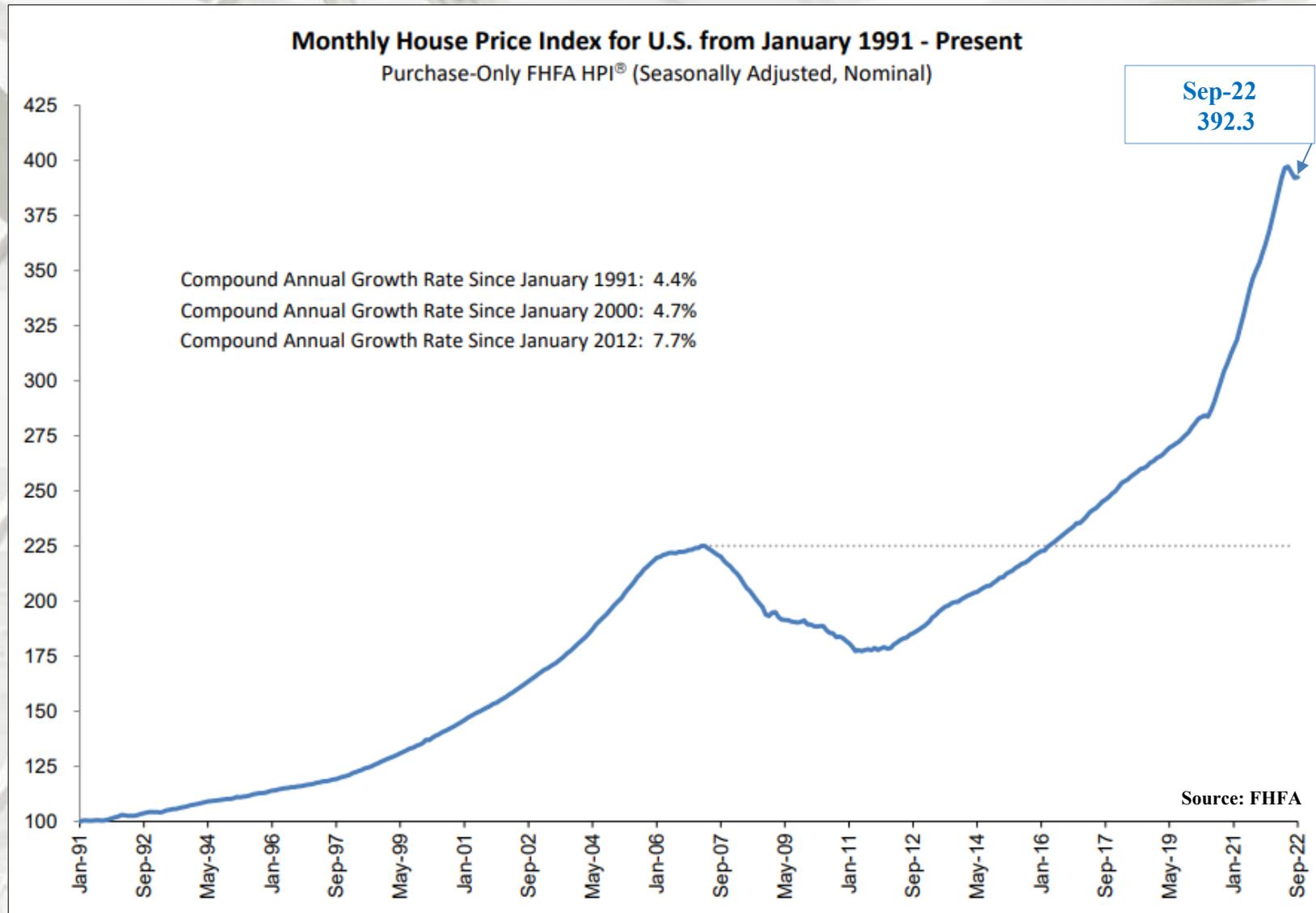
U.S. House Prices Rise 12.4 Percent over the Last Year; Up 0.1 Percent from the Second Quarter

Significant Findings

“U.S. house prices rose **12.4 percent** from the third quarter of 2021 to the third quarter of 2022 according to the Federal Housing Finance Agency House Price Index (FHFA HPI®). House prices were up **0.1 percent** compared to the second quarter of 2022. FHFA’s seasonally adjusted monthly index for September was up 0.1 percent from August.” – Raffi Williams and Adam Russell, FHFA

“House prices were flat for the third quarter but continued to remain above levels from a year ago. The rate of U.S. house price growth has substantially decelerated. This deceleration is widespread with about one-third of all states and metropolitan statistical areas registering annual growth below 10 percent.” – William Doerner, Ph.D., Supervisory Economist, Division of Research and Statistics, FHFA

U.S. Housing Prices



U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Continued its Deceleration in July

“... Data for September 2022 show that home price gains decelerated across the U.S. More than 27 years of history are available for these data series, and can be accessed in full by going to www.spdji.com.

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 10.6% annual gain in September, down from 12.9% in the previous month. The 10-City Composite annual increase came in at 9.7%, down from 12.1% in the previous month. The 20-City Composite posted a 10.4% year-over-year gain, down from 13.1% in the previous month.

Miami, Tampa, and Charlotte reported the highest year-over-year gains among the 20 cities in August. Miami led the way with a 24.6% year-over-year price increase, followed by Tampa in second with a 23.8% increase, and Charlotte in third with a 17.8% increase. All 20 cities reported lower price increases in the year ending September 2022 versus the year ending August 2022.

Month-Over-Month

Before seasonal adjustment, the U.S. National Index posted a -1.1% month-over-month decrease in September, while the 10-City and 20-City Composites posted decreases of -1.4% and -1.5%, respectively.

After seasonal adjustment, the U.S. National Index posted a month-over-month decrease of -0.8%, and the 10-City and 20-City Composites both posted decreases of -1.2%. In September, all 20 cities reported declines before and after seasonal adjustments.” – 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

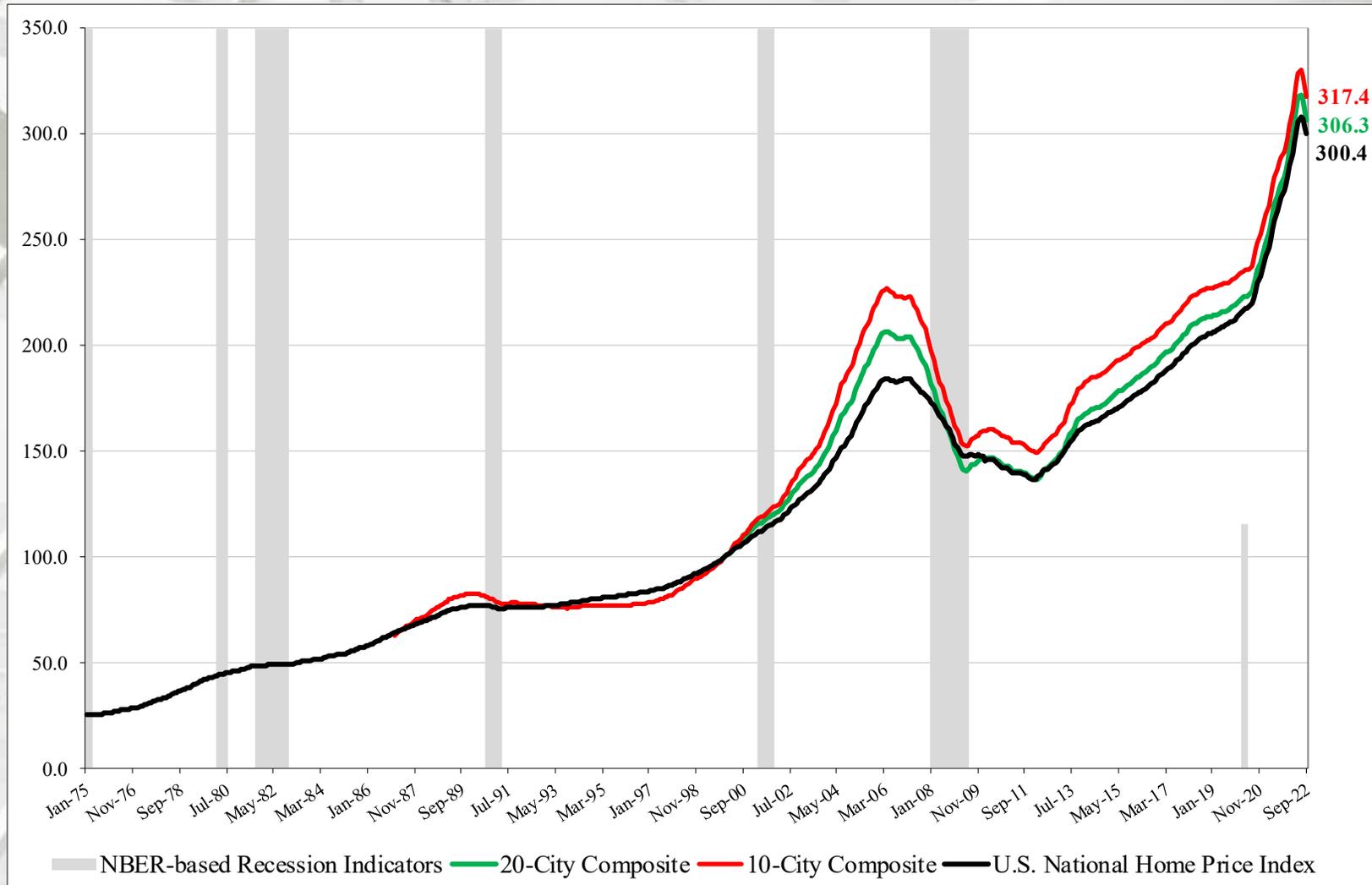
“As has been the case for the past several months, our September 2022 report reflects short-term declines and medium-term deceleration in housing prices across the U.S. For example, the National Composite Index fell -1.0% in September, and now stands 10.6% above its year-ago level. We see comparable patterns in our 10- and 20-City Composites, which declined -1.4% and -1.5%, respectively, bringing their year-over-year gains down to 9.7% and 10.4%. For all three composites, year-over-year gains, while still well above their historical medians, peaked roughly six months ago and have decelerated since then.

Despite considerable regional differences, all 20 cities in our September report reflect these trends of short-term decline and medium-term deceleration. Prices declined in every city in September, with a median change of -1.2%. Year-over-year price gains in all 20 cities were lower in September than they had been in August.

The three best-performing cities in August repeated their performance in September. On a year-over-year basis, Miami (+24.6%) edged Tampa (+23.8%) for the top spot, with Charlotte (+17.8%) beating Atlanta (+17.1%) for third place. The Southeast (+20.8%) and South (+19.9%) were the strongest regions by far, with gains more than double those of the Northeast, Midwest, and West; the two worst performing cities were San Francisco (+2.3%) and Seattle (+6.2%).

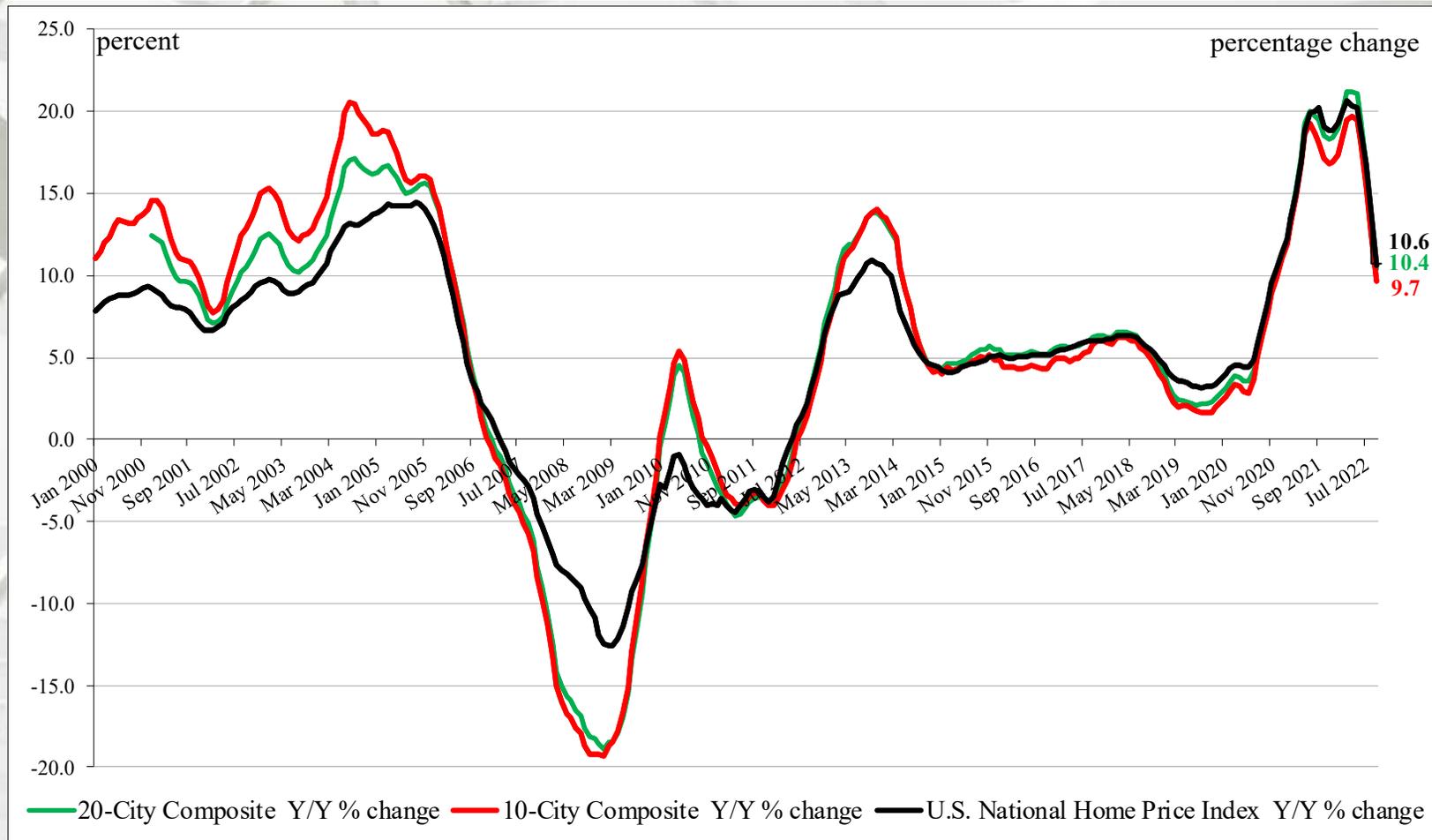
As the Federal Reserve continues to move interest rates higher, mortgage financing continues to be more expensive and housing becomes less affordable. Given the continuing prospects for a challenging macroeconomic environment, home prices may well continue to weaken.” – Craig J. Lazzara, Managing Director 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

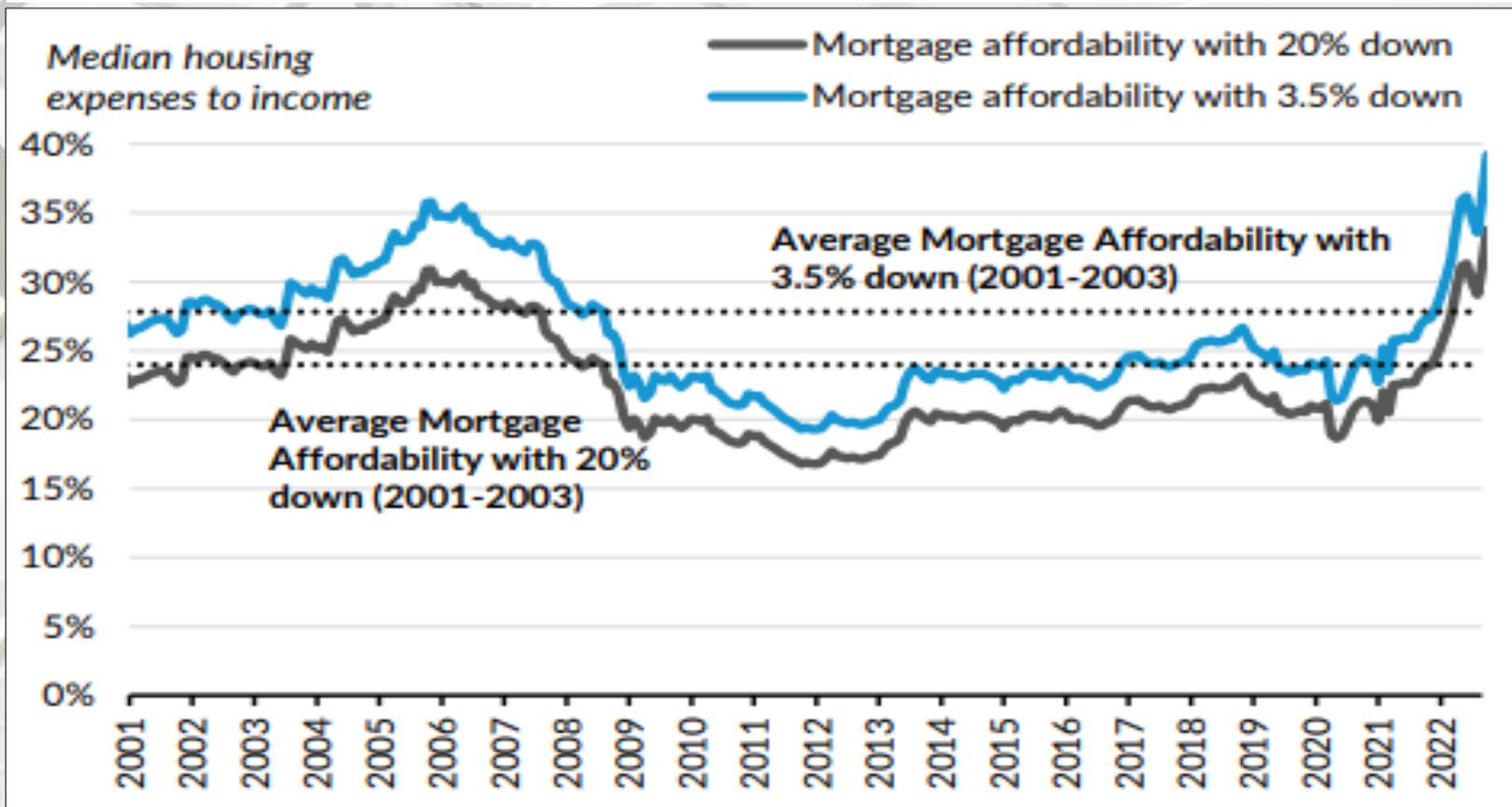


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Y/Y Price Change

From September 2021 to September 2022, the National Index decreased 10.6%; the Ten-City by 9.7%, and the Twenty-City by 10.4%.

U.S. Housing Affordability

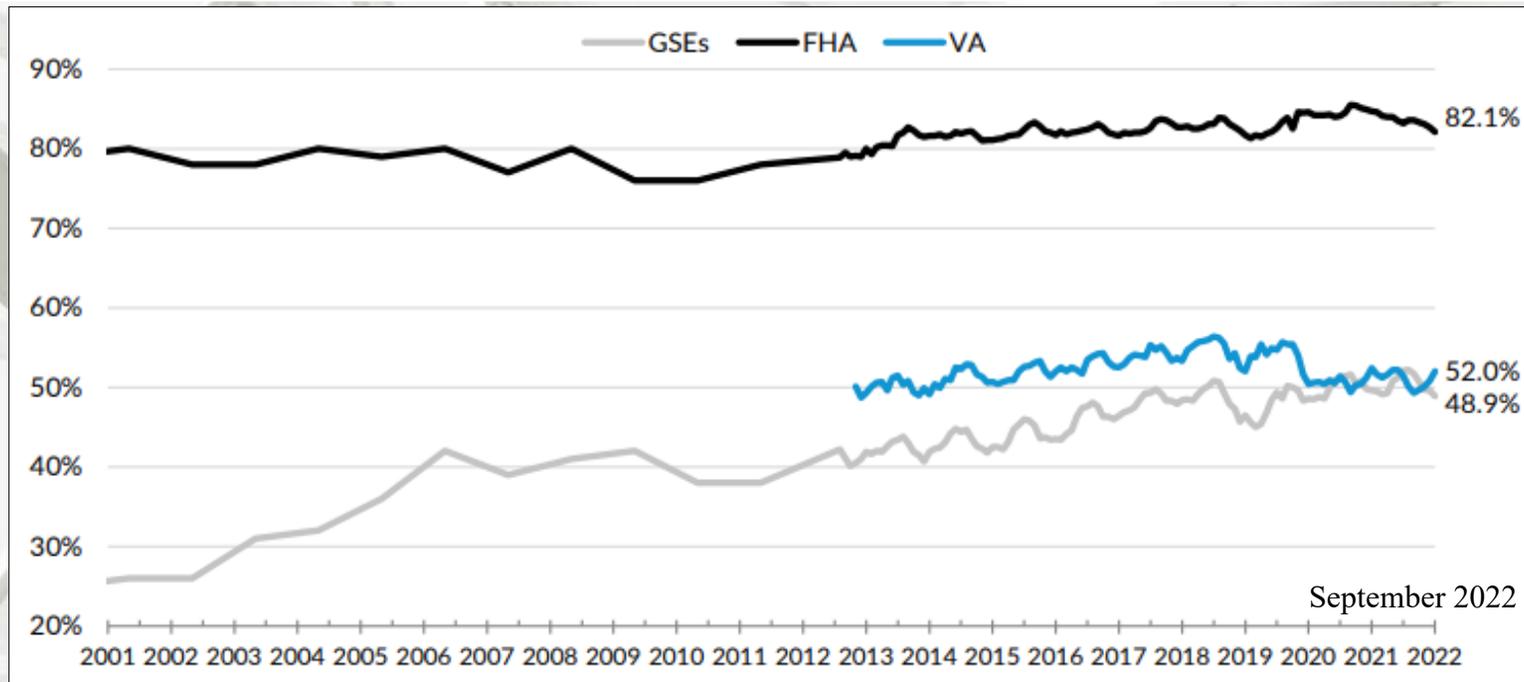


Urban Institute

National Mortgage Affordability Over Time

“With the rise in interest rates, and rapid increases in home prices, affordability continues to worsen. As of October 2022, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 33.8 percent, slightly higher than the 30.9 percent at the peak of the housing bubble in November 2005; with 3.5 percent down it is 39.2 percent, also slightly above the 35.8 percent prior peak in November 2005. These numbers represent a sharp worsening in affordability over the past year. ... ” – Laurie Goodman *et. al*, Vice President, Urban Institute

U.S. Housing



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 Buyers

“In September 2022, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 82.1 percent. The FTHB share of GSE lending in September was 48.9 percent; the VA share was 52.0 percent. The bottom table shows that based on mortgages originated in July 2022, 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

U.S. Housing Finance

Mortgage Bankers Association (MBA)

Mortgage Credit Availability Increased in November

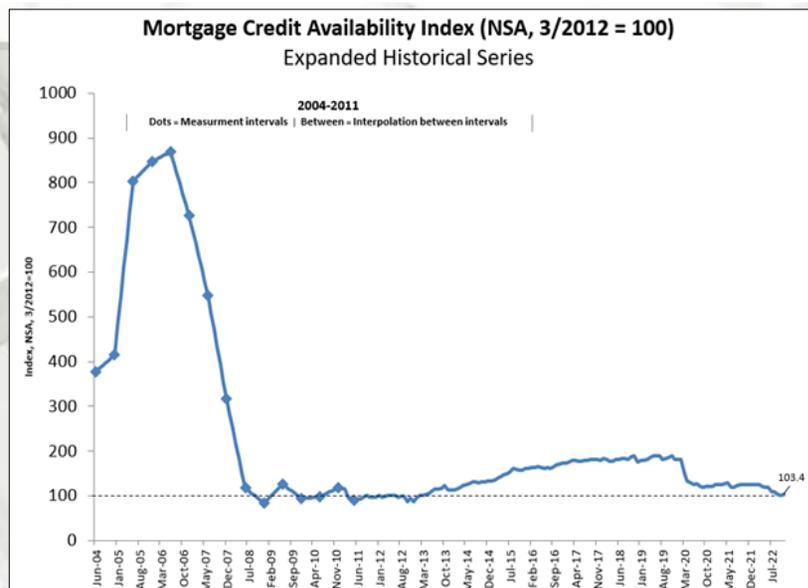
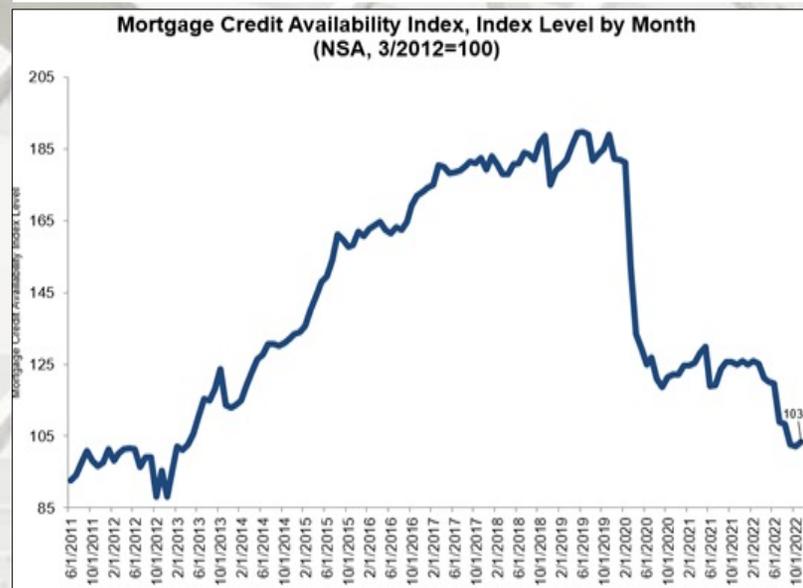
“Mortgage credit availability decreased in November according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) that analyzes data from ICE Mortgage Technology. Mortgage credit availability decreased in October according to the Mortgage Credit Availability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

The MCAI rose by 1.4 percent to 103.4 in November. 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 2.8 percent, while the Government MCAI remained unchanged. Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 3.9 percent, and the Conforming MCAI rose by 1.0 percent.

Jumbo credit availability saw a 4 percent increase, as jumbo rates remained more competitive than rates on conforming loans. Lenders are seeking to capture more volume in this space. Most of last month’s increase came from more ARM loan programs being offered.” – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

U.S. Housing Finance

Mortgage Credit Availability (MBA)



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

MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

December 19, 2022

	2022				2023				2024				2021	2022	2023	2024	2025
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
Housing Measures																	
Housing Starts (SAAR, Thous)	1,720	1,647	1,458	1,424	1,404	1,405	1,413	1,427	1,460	1,535	1,572	1,597	1,605	1,562	1,412	1,541	1,657
Single-Family	1,187	1,086	911	872	883	901	935	974	1,019	1,103	1,146	1,179	1,131	1,014	923	1,112	1,227
Two or More	533	561	546	552	521	504	478	453	441	432	426	418	474	548	489	429	430
Home Sales (SAAR, Thous)																	
Total Existing Homes	6,057	5,373	4,770	4,445	4,380	4,419	4,529	4,725	4,858	5,183	5,270	5,385	6,127	5,161	4,513	5,174	5,585
New Homes	776	612	610	580	561	589	637	679	703	743	758	770	769	644	616	744	806
FHFA US House Price Index (YOY % Change)	18.8	17.9	14.2	8.2	4.1	2.4	0.9	-0.6	-2.5	-2.5	-1.9	-1.2	17.6	8.2	-0.6	-1.2	2.1
Median Price of Total Existing Homes (Thous \$)	365.8	405.9	391.5	375.2	369.4	365.6	374.1	376.4	380.3	380.3	379.8	380.0	347.9	384.6	371.4	380.1	387.2
Median Price of New Homes (Thous \$)	431.3	447.0	462.0	471.3	447.3	436.6	436.0	440.6	433.4	436.4	440.2	443.4	394.0	452.9	440.1	438.4	449.8
Interest Rates																	
30-Year Fixed Rate Mortgage (%)	3.9	5.3	5.7	6.6	6.2	5.6	5.4	5.2	5.0	4.7	4.4	4.4	3.2	6.6	5.2	4.4	4.4
10-Year Treasury Yield (%)	1.9	2.9	3.1	3.8	3.5	3.3	3.2	3.0	2.9	2.7	2.5	2.5	1.5	3.8	3.0	2.5	2.5
Mortgage Originations																	
Total 1- to 4-Family (Bil \$)	689	678	480	398	345	510	519	525	470	628	595	586	4,436	2,245	1,899	2,279	2,468
Purchase	381	477	388	332	270	400	393	387	324	474	428	418	1,863	1,578	1,450	1,644	1,783
Refinance	308	201	92	66	75	110	126	138	146	154	167	168	2,574	667	449	635	685
Refinance Share (%)	45	30	19	17	22	22	24	26	31	25	28	29	58	30	24	28	28
FHA Originations (Bil \$)													337	158	129	139	139
Total 1- to 4-Family (000s loans)	1,939	1,789	1,206	973	842	1,237	1,259	1,274	1,196	1,534	1,461	1,439	13,549	5,907	4,613	5,631	5,986
Purchase	1,000	1,202	946	790	637	938	917	901	802	1,117	1,009	983	5,204	3,938	3,394	3,911	4,140
Refinance	938	588	260	182	205	299	342	372	395	417	453	455	8,346	1,969	1,219	1,720	1,846
Refinance Share (%)	48	33	22	19	24	24	27	29	33	27	31	32	62	33	26	31	31
Mortgage Debt Outstanding																	
1- to 4-Family (Bil \$)	12,704	12,985	13,180	13,327	13,465	13,606	13,722	13,815	13,893	13,980	14,041	14,088	12,549	13,327	13,815	14,088	14,269

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. Copyright 2022 Mortgage Bankers Association. All rights reserved. THE HISTORICAL DATA AND PROJECTIONS ARE PROVIDED "AS IS" WITH NO WARRANTIES OF ANY KIND.

MBA

MORTGAGE BANKERS ASSOCIATION

MBA Economic Forecast

MBA Economic Forecast

December 19, 2022

	2022				2023				2024				2021	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	2.9	0.7	-1.3	-1.0	1.3	1.5	1.9	1.8	1.9	1.8	5.7	0.3	0.1	1.8	1.6
Personal Consumption Expenditures	1.3	2.0	1.7	3.1	0.5	0.3	1.0	1.2	1.8	1.7	2.1	2.1	7.2	2.1	0.8	1.9	2.2
Business Fixed Investment	7.9	0.1	5.1	2.1	-2.5	-2.8	-0.6	0.1	1.2	0.9	1.4	1.3	5.0	3.8	-1.4	1.2	1.3
Residential Investment	-3.1	-17.8	-26.8	-22.0	-9.7	-0.1	7.4	9.3	11.2	14.0	13.8	11.0	-0.3	-17.9	1.4	12.5	4.5
Govt. Consumption & Investment	-2.3	-1.6	3.0	1.5	3.5	1.0	0.9	0.8	0.8	0.8	0.7	0.8	0.5	0.1	1.5	0.8	0.8
Net Exports (Bil. Chain 2012\$)	-1260.3	-1207.6	-1060.2	-1151.3	-1180.4	-1168.2	-1170.4	-1182.4	-1209.1	-1243.2	-1283.4	-1325.4	-1037.4	-1169.9	-1175.3	-1265.3	-1403.4
Inventory Investment (Bil. Chain 2012\$)	182.4	93.7	42.1	75.4	32.3	-21.3	-11.3	2.4	15.3	29.7	39.6	48.5	-16.5	98.4	0.5	33.3	56.2
Consumer Prices (YOY)	8.0	8.6	8.3	7.0	5.7	3.6	2.9	3.0	2.6	2.5	2.4	2.3	5.6	7.0	3.0	2.3	2.1
Percent																	
Unemployment Rate	3.8	3.6	3.5	3.7	4.0	4.6	5.1	5.5	5.3	5.0	4.6	4.4	5.4	3.7	4.8	4.8	4.2
Federal Funds Rate	0.375	1.625	3.125	4.375	4.875	4.875	4.875	4.875	4.875	4.375	3.875	3.375	0.125	4.375	4.875	3.375	2.375
10-Year Treasury Yield	1.9	2.9	3.1	3.8	3.5	3.3	3.2	3.0	2.9	2.7	2.5	2.5	1.5	3.8	3.0	2.5	2.5

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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Summary

In conclusion:

In October, month-over-month data declined in the majority of categories. Year-over-year data remain positive in many categories. Single-family permits and starts decreased again, month-over-month and year-over-year. Increasing borrowing costs, slow income growth combined with elevated house prices have resulted in a major obstacle for new and existing house sales. October was the ninth consecutive monthly decrease for existing house sales. Single-family construction spending decreased for the sixth straight month.

The disparity between the number of houses started versus houses completed are at the greatest level since 1984. This spread is evident for both single- and multi-family starts as builders await building materials and products necessary to complete started houses. New and existing house sales were negative, due to a lack of available inventory for sale and increasing mortgage interest rates. Increasing mortgage rates, in combination with record house prices, October reduce affordability for potential house buyers.

Pros:

- 1) The desire to own a house remains strong.

Cons:

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

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