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

Delton Alderman

Acting Program Manager
Forest Products Business Unit
Forest Products Laboratory
USDA Forest Service
Madison, WI
608.259.6076
delton.r.alderman@usda.gov

Urs Buehlmann

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

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

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Opening Remarks

The Federal Reserve Board of Governor's focus for a "housing reset" was in full-force. In July, month-over-month data continued a negative movement in the majority of data categories. Year-over-year data were better; however, single-family permits decreased again. Again, this portends further moderation in single-family activity in the forthcoming months. The impact of increasing borrowing costs, combined with rising house prices have resulted in a major obstacle for new and existing house sales (a combination of sharply higher prices, higher mortgage rates and slower income growth has sharply reduced affordability). Increased financing costs has resulted in potential house buyers to cancel contracts or postpone a house purchase. July also was the sixth consecutive monthly decrease for existing house sales.

The September 15th Atlanta Fed GDPNow™ total residential investment spending forecast was a negative 23.3% for September 2022. New private permanent site expenditures were projected at -33.4%; the improvement spending forecast was 2.1%; and the manufactured/mobile expenditures projection was -7.4% (all: quarterly log change and at a seasonally adjusted annual rate).[1]

"So right now we're getting a backlash of the change in direction from free money to now the rise in [mortgage] rates and inflation. So the market is poised for a fairly significant [price] correction. And we're already seeing signs of that over the last several months. Inventories in certain markets – mostly on the West Coast, Southwest, and Mountain states – are rising at Mach speed. As fast as [inventory levels] are rising and demand is plummeting, we could see pretty substantial [home] price corrections. But it's going to vary by market. I don't think this will just end quickly. This is going to be a very pressured market nationally in 2023 and 2024. … the forecast model predicts that in 2023 U.S. home prices will fall 4% and in 2024, another 5% drop."[2] – Ivy Zelman, CEO, Zelman & Associates

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; 9/15/22;
[2] https://fortune.com/2022/09/06/home-price-forecast-prediction-2023-2024-ivy-zelman-housing-market/; 9/6/22

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July 2022
Housing Scorecard

	M/M	Y/Y
Housing Starts	▼ 9.6%	▼ 8.1%
Single-Family (SF) Starts	▼ 10.1%	▼ 18.5%
Multi-Family (MF) Starts*	▼ 8.6%	▲ 18.0%
Housing Permits	▼ 0.6%	▲ 1.8%
SF Permits	▼ 3.9%	▼ 11.3%
MF Permits*	▲ 3.7%	▲ 24.7%
Housing Under Construction	▼ 0.1%	▲ 21.1%
SF Under Construction	▼ 1.2%	▲ 17.4%
Housing Completions	▲ 1.1%	▲ 3.5%
SF Completions	▼ 0.8%	▲ 7.0%
New SF House Sales	▼ 12.6%	▼ 29.6%
Private Residential Construction Spending	▼ 1.5%	▲ 14.1%
SF Construction Spending	▼ 4.0%	▲ 2.9%
Existing House Sales[1]	▼ 5.9%	▼ 20.2%

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

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

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

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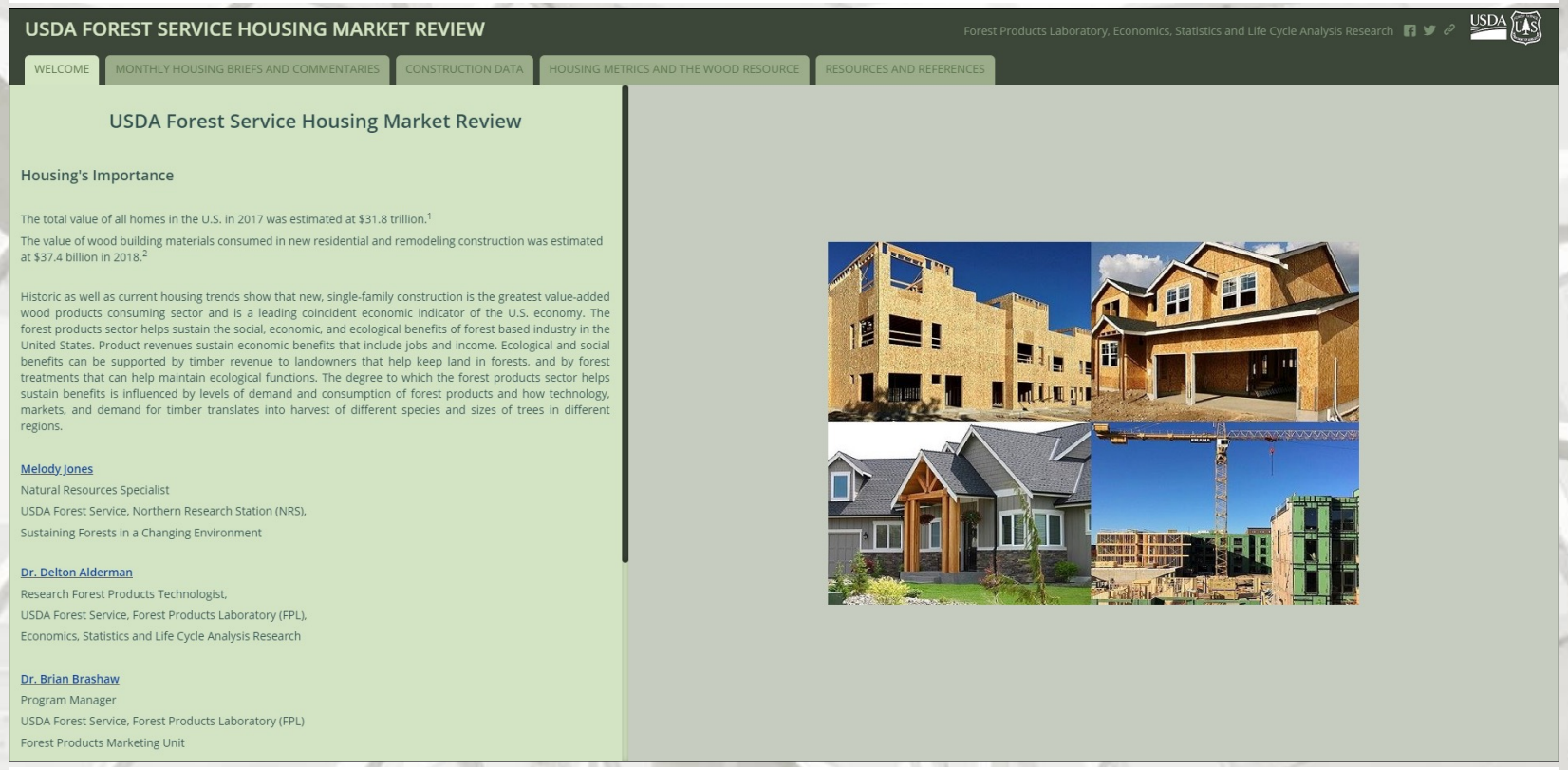
USDA Forest Service Housing Story Map



USDA Forest Service Housing Market Review

Each story map's tab contains a compilation of housing information. The 'Construction Data' tab is interactive and allows one to gather and view US Census-Construction data at the national or metropolitan statistical area (MSA) level.

The story map is available at the following link:

https://www.arcgis.com/apps/MapSeries/index.html?appid=9553db0ea36140d28076399e898dc693

Sources: https://www.arcgis.com/apps/MapSeries/index.html?appid=9553db0ea36140d28076399e898dc693

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New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
July	1,446,000	916,000	16,000	514,000
June	1,599,000	1,019,000	9,000	571,000
2021	1,573,000	1,124,000	11,000	438,000
M/M change	-9.6%	-10.1%	77.8%	-10.0%
Y/Y change	-8.1%	-18.5%	45.5%	17.4%

* 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)).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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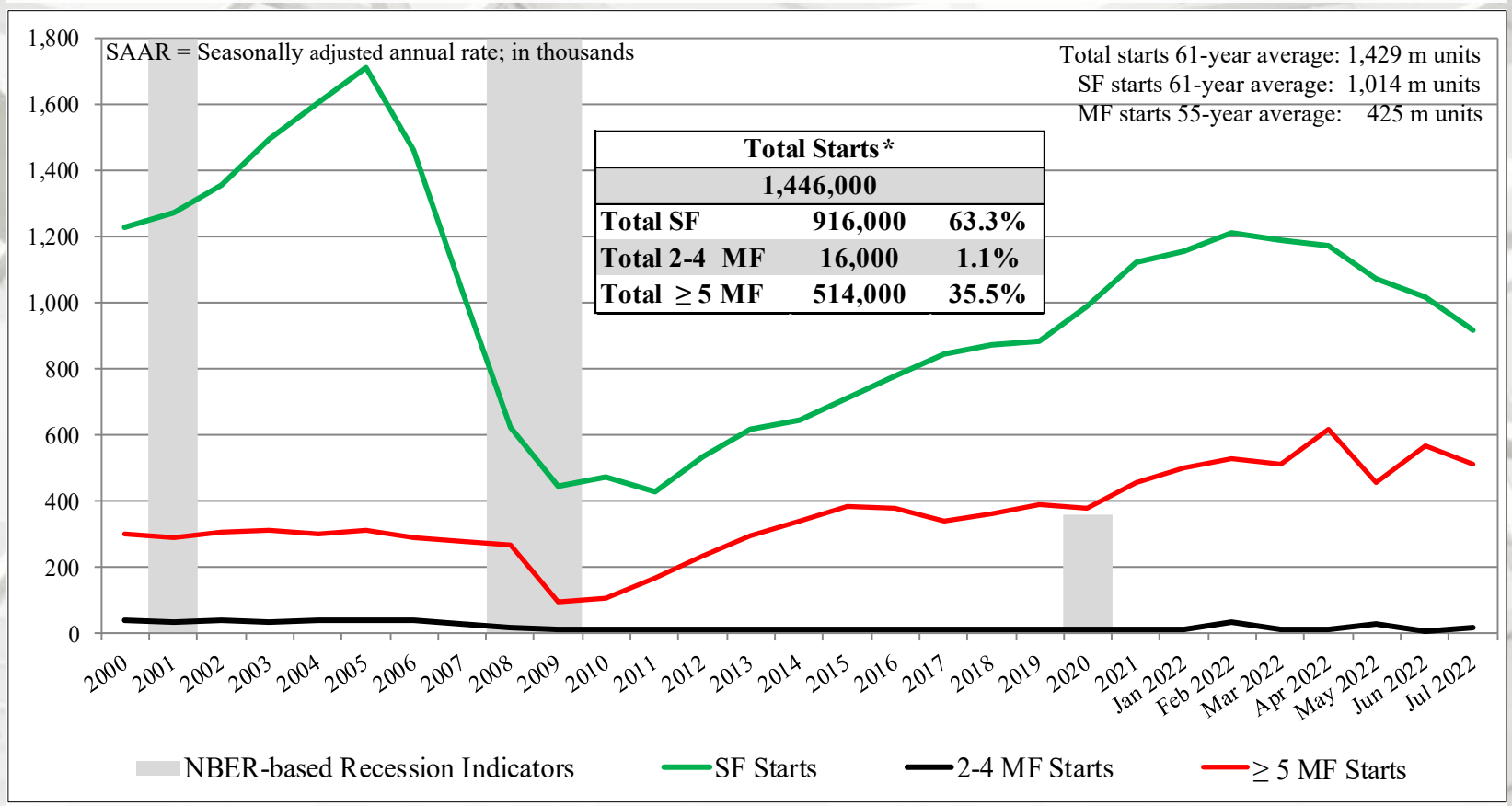
Total Housing Starts



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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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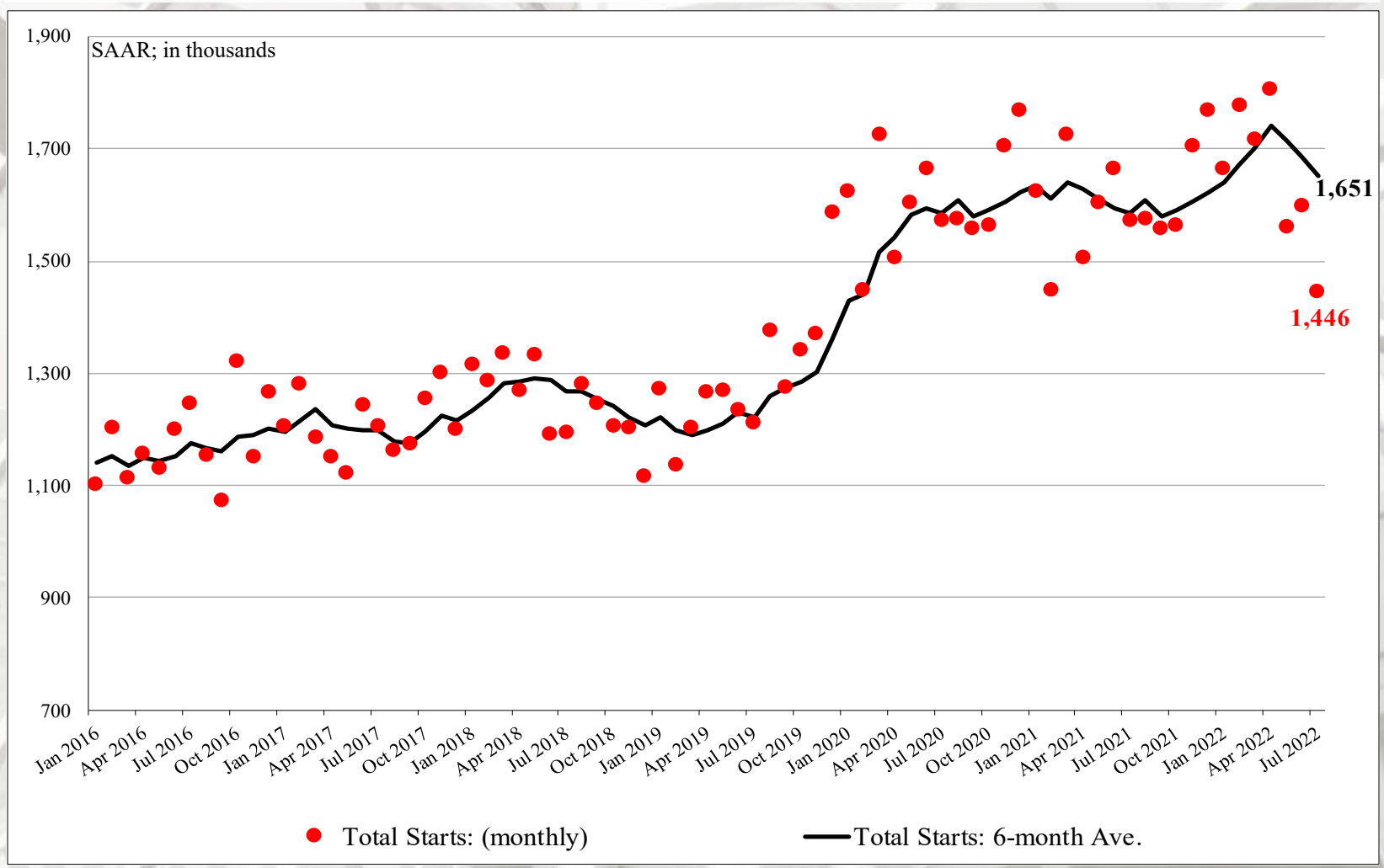
Total Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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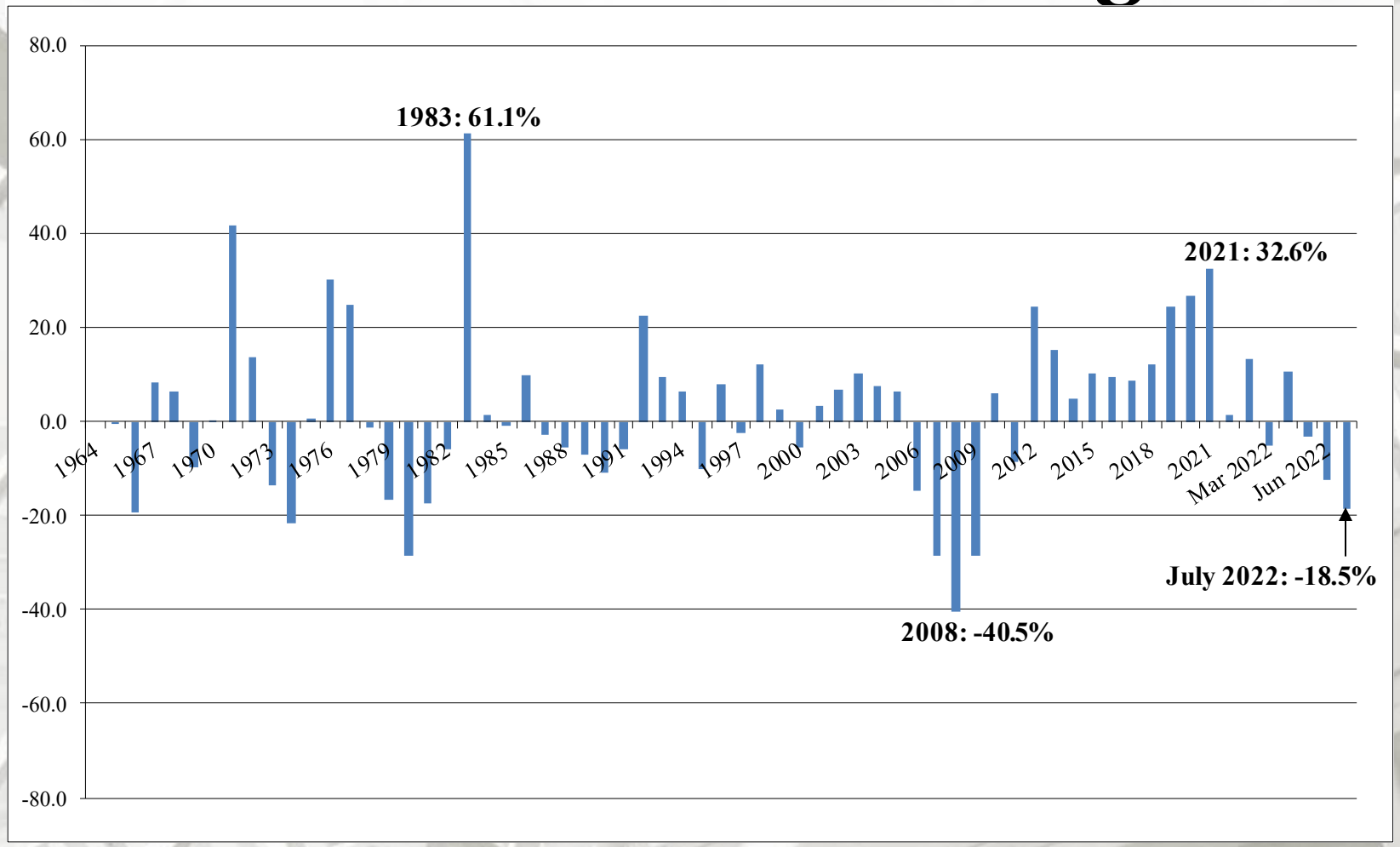
SF Housing Starts: Year-over-Year Change



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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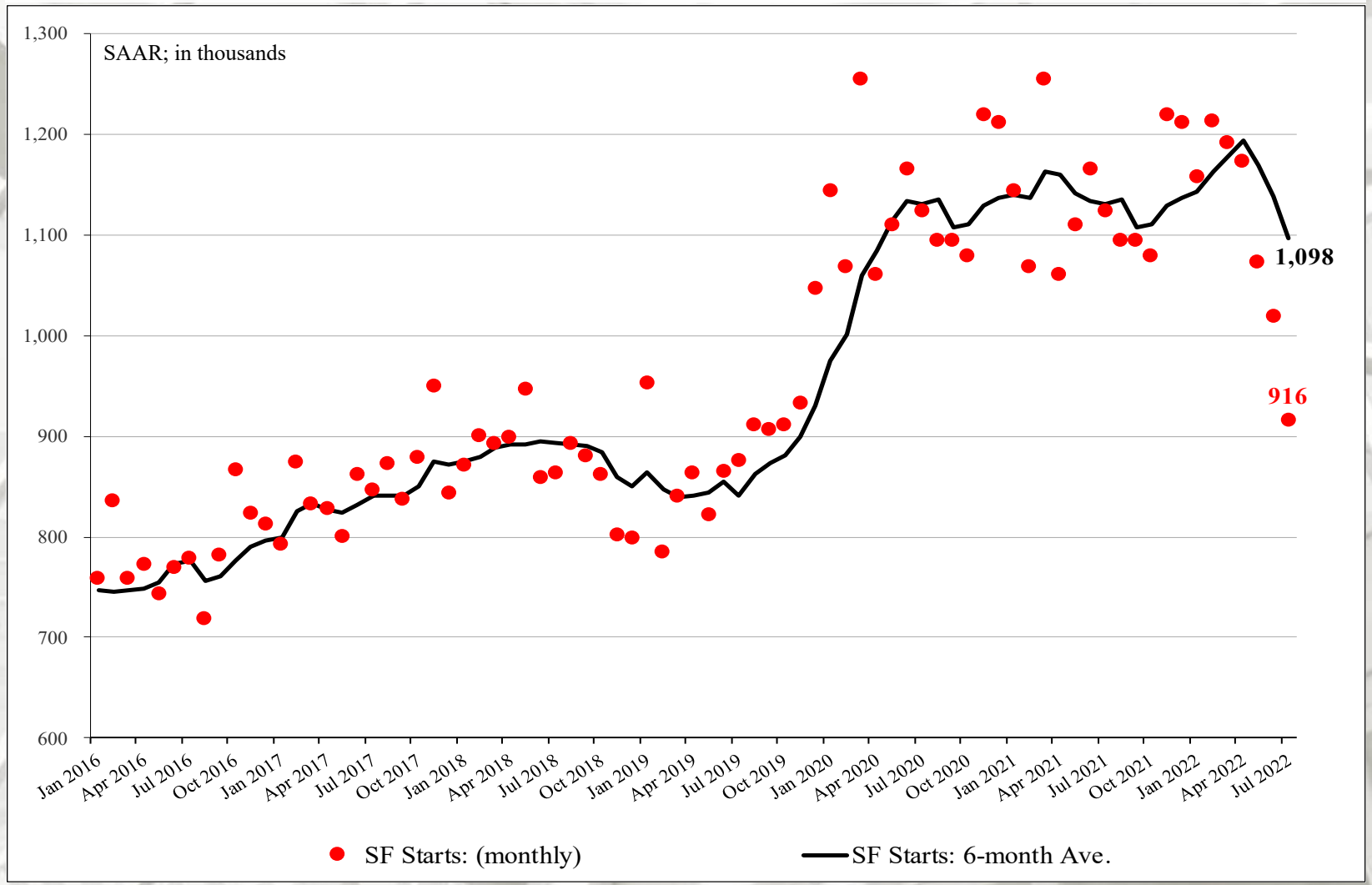
SF Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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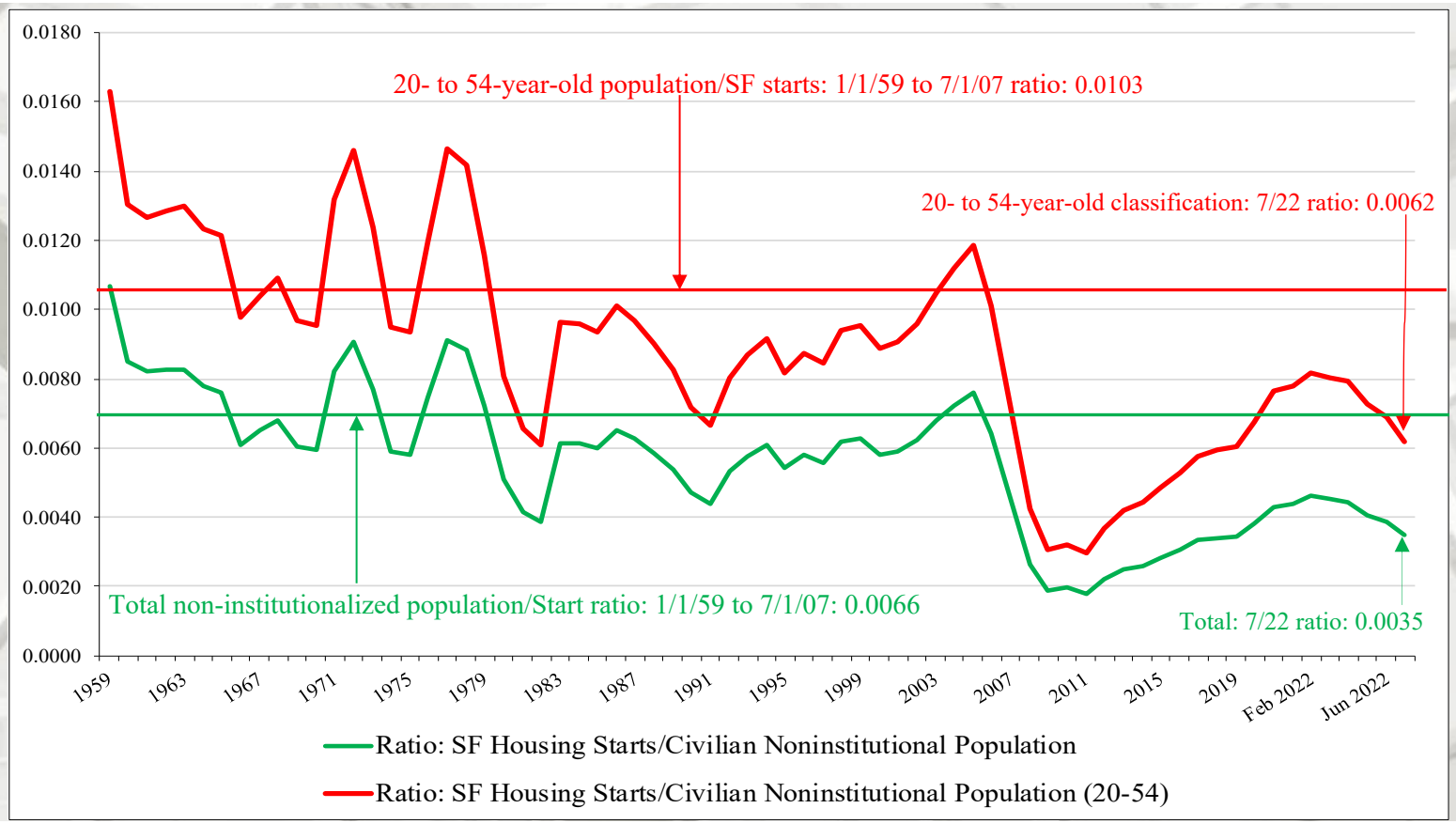
New SF Starts



New SF starts adjusted for the US population

From July 1959 to July 2007, the long-term ratio of new SF starts to the total US non-institutionalized population to is 0.0066. In July 2022 it was 0.0035 – a decrease from June (0.0039). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in July 2022 it was 0.0062 – also a decrease from June (0.0069). New SF construction in both age categories is less than what is necessary for changes in the population (i.e., under-building).

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

Sources: http://www.census.gov/construction/nrc/pdf/newresconst.pdff and The Federal Reserve Bank of St. Louis; 8/16/22

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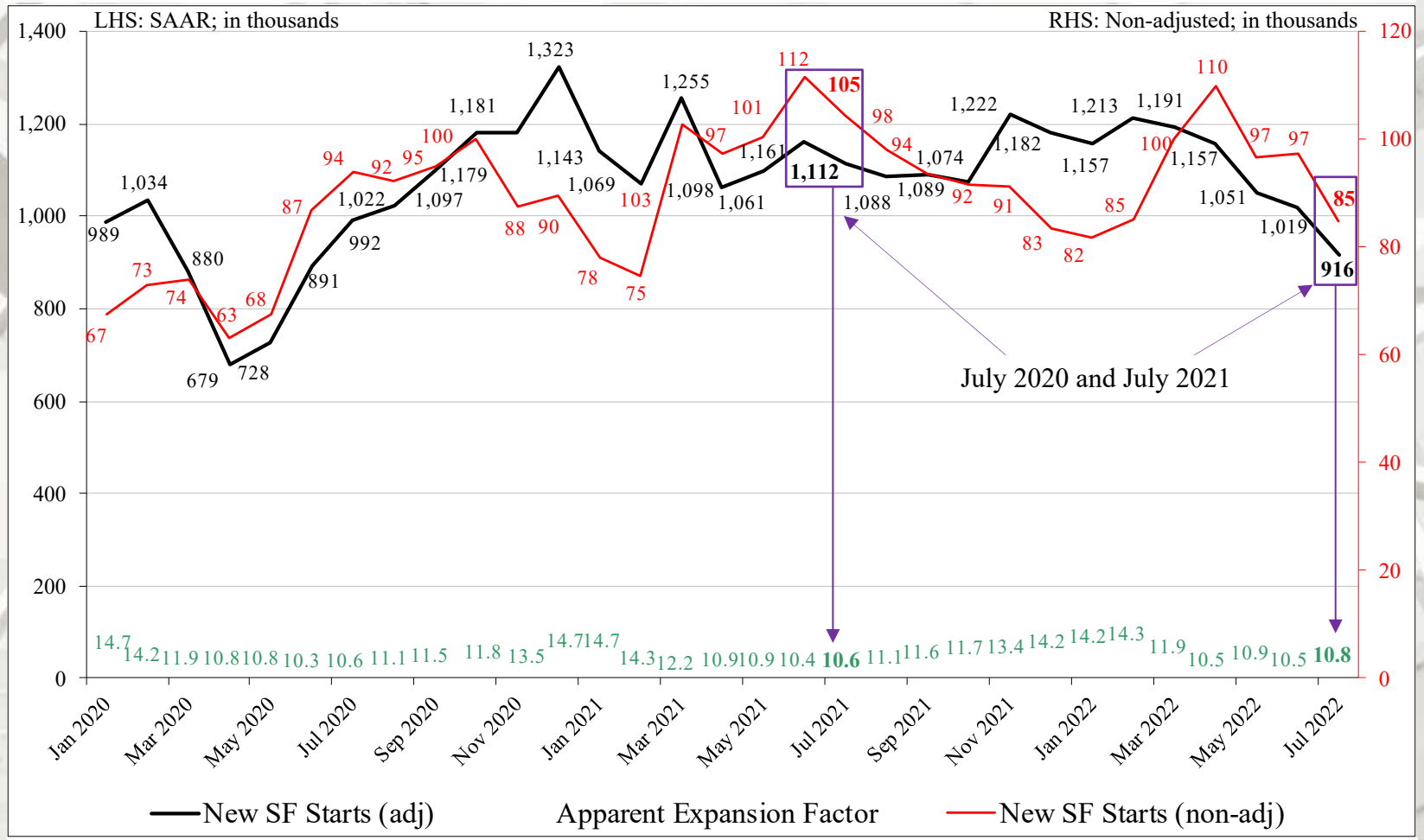
Nominal & SAAR SF Starts



Nominal and Adjusted New SF Monthly Starts

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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Starts by Region

	NE Total	NE SF	NE MF**
July	230,000	77,000	153,000
June	139,000	48,000	91,000
2021	70,000	43,000	27,000
M/M change	65.5%	60.4%	68.1%
Y/Y change	228.6%	79.1%	466.7%
	MW Total	**MW SF**	**MW MF**
July	139,000	104,000	35,000
June	210,000	144,000	66,000
2021	182,000	144,000	38,000
M/M change	-33.8%	-27.8%	-47.0%
Y/Y change	-23.6%	-27.8%	-7.9%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Starts by Region

	S Total	S SF	S MF**
July	710,000	511,000	199,000
June	873,000	621,000	252,000
2021	905,000	674,000	231,000
M/M change	-18.7%	-17.7%	-21.0%
Y/Y change	-21.5%	-24.2%	-13.9%

	W Total	W SF	W MF
July	367,000	224,000	143,000
June	377,000	206,000	171,000
2021	416,000	263,000	153,000
M/M change	-2.7%	8.7%	-16.4%
Y/Y change	-11.8%	-14.8%	-6.5%

All data are SAAR; S = South and W = West.
** US DOC does not report multi-family starts directly; this is an estimation (Total starts – SF starts).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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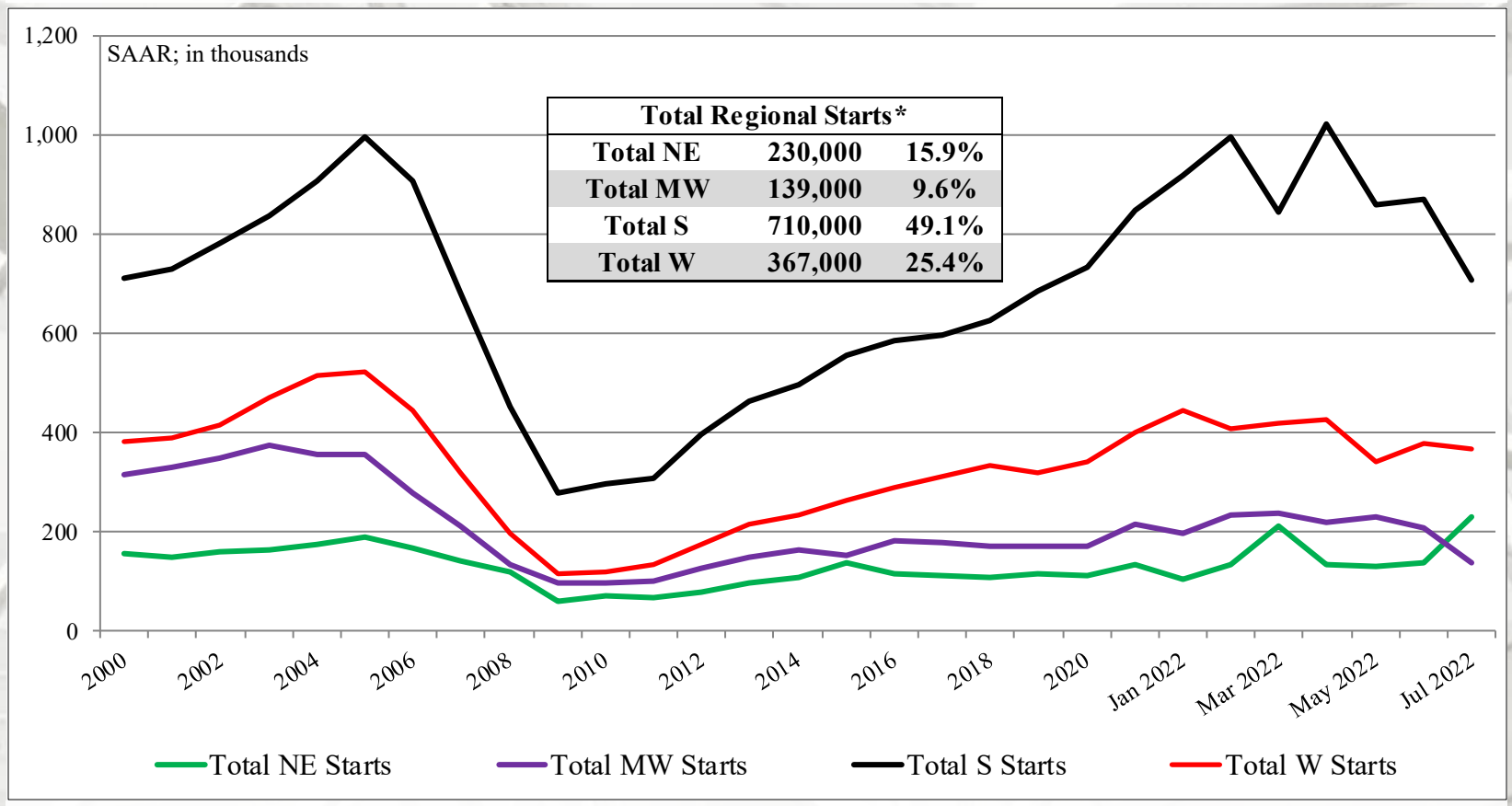
New Housing Starts by Region



Total Regional Starts*		
Total NE	230,000	15.9%
Total MW	139,000	9.6%
Total S	710,000	49.1%
Total W	367,000	25.4%

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

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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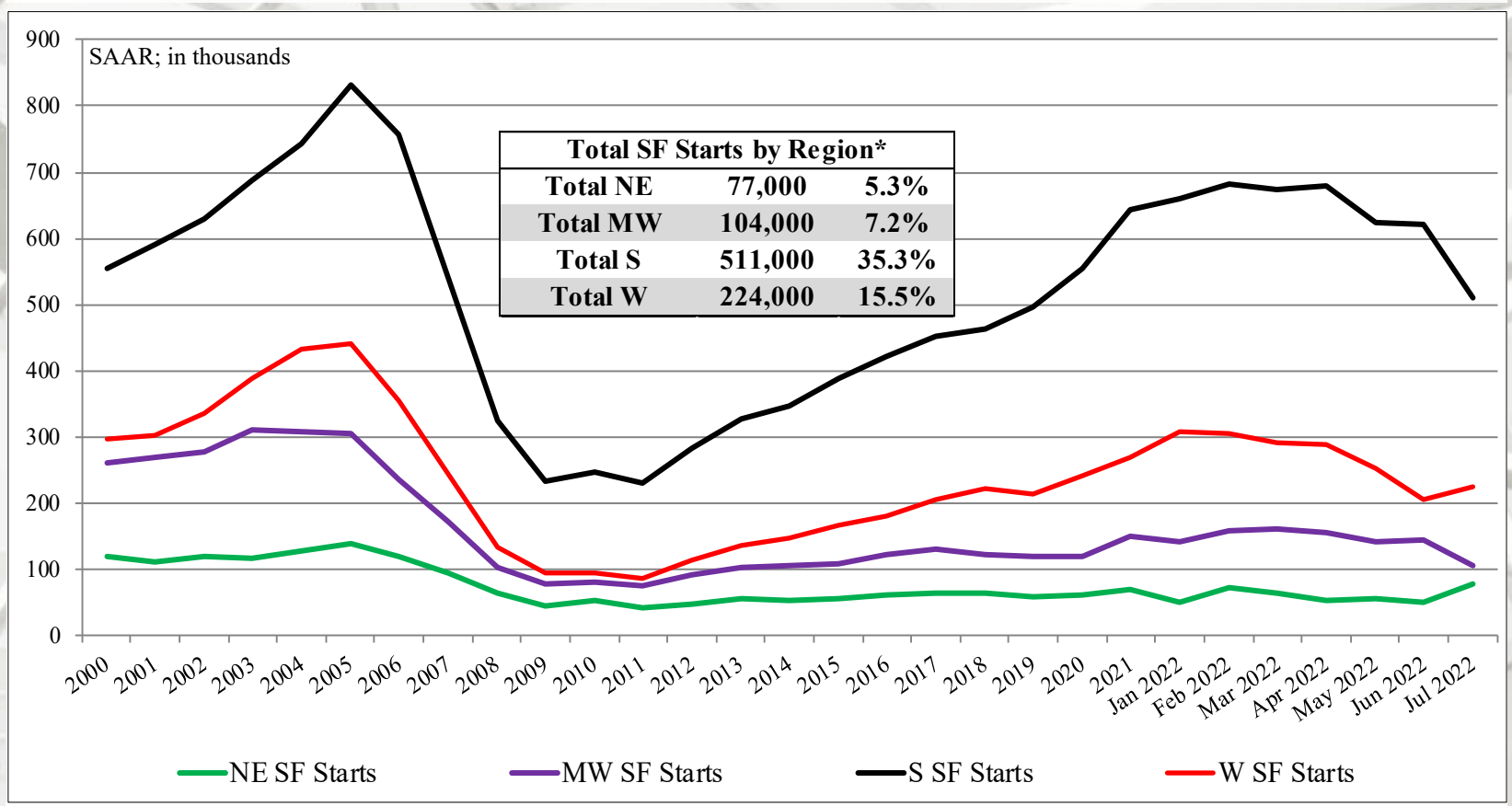
Total SF Housing Starts by Region



Total SF Starts by Region*		
Total NE	77,000	5.3%
Total MW	104,000	7.2%
Total S	511,000	35.3%
Total W	224,000	15.5%

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

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

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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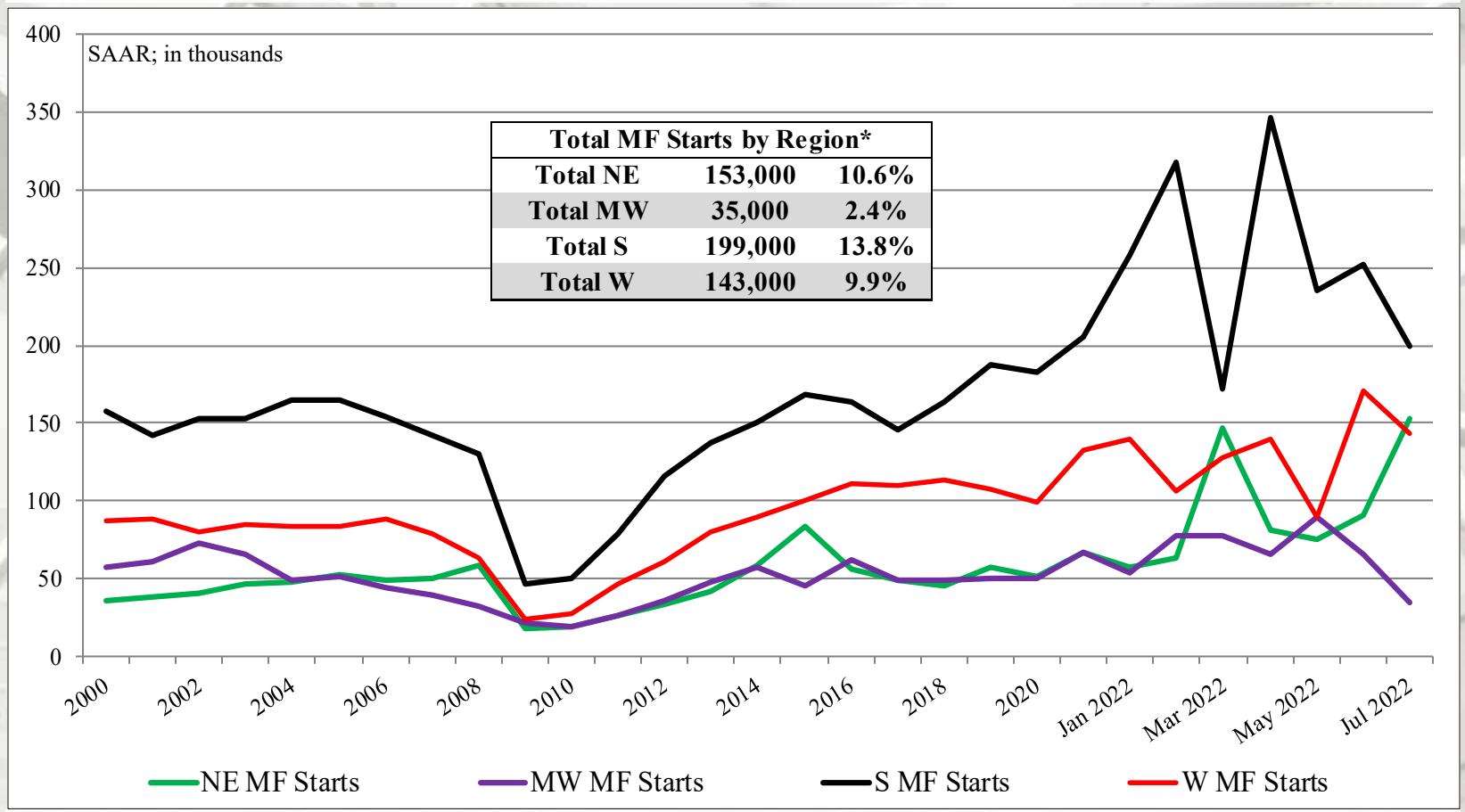
MF Housing Starts by Region



Total MF Starts by Region*		
Total NE	153,000	10.6%
Total MW	35,000	2.4%
Total S	199,000	13.8%
Total W	143,000	9.9%

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

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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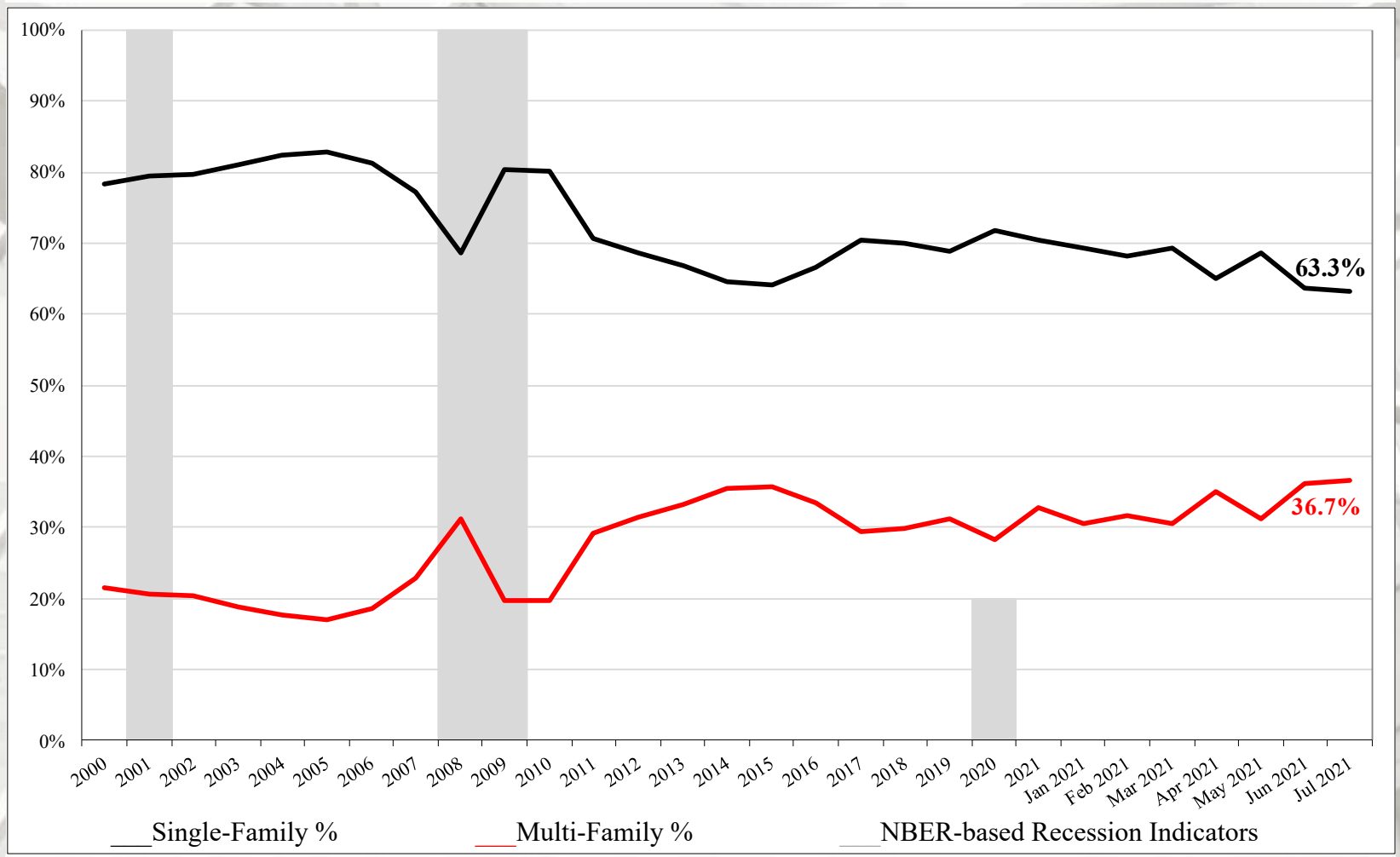
SF vs. MF Housing Starts (%)



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

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
July	1,685,000	932,000	52,000	701,000
June	1,696,000	970,000	50,000	676,000
2021	1,655,000	1,051,000	55,000	549,000
M/M change	-0.6%	-3.9%	4.0%	3.7%
Y/Y change	1.8%	-11.3%	-5.5%	27.7%

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

Source: https://www.census.gov/construction/bps/; 8/23/22

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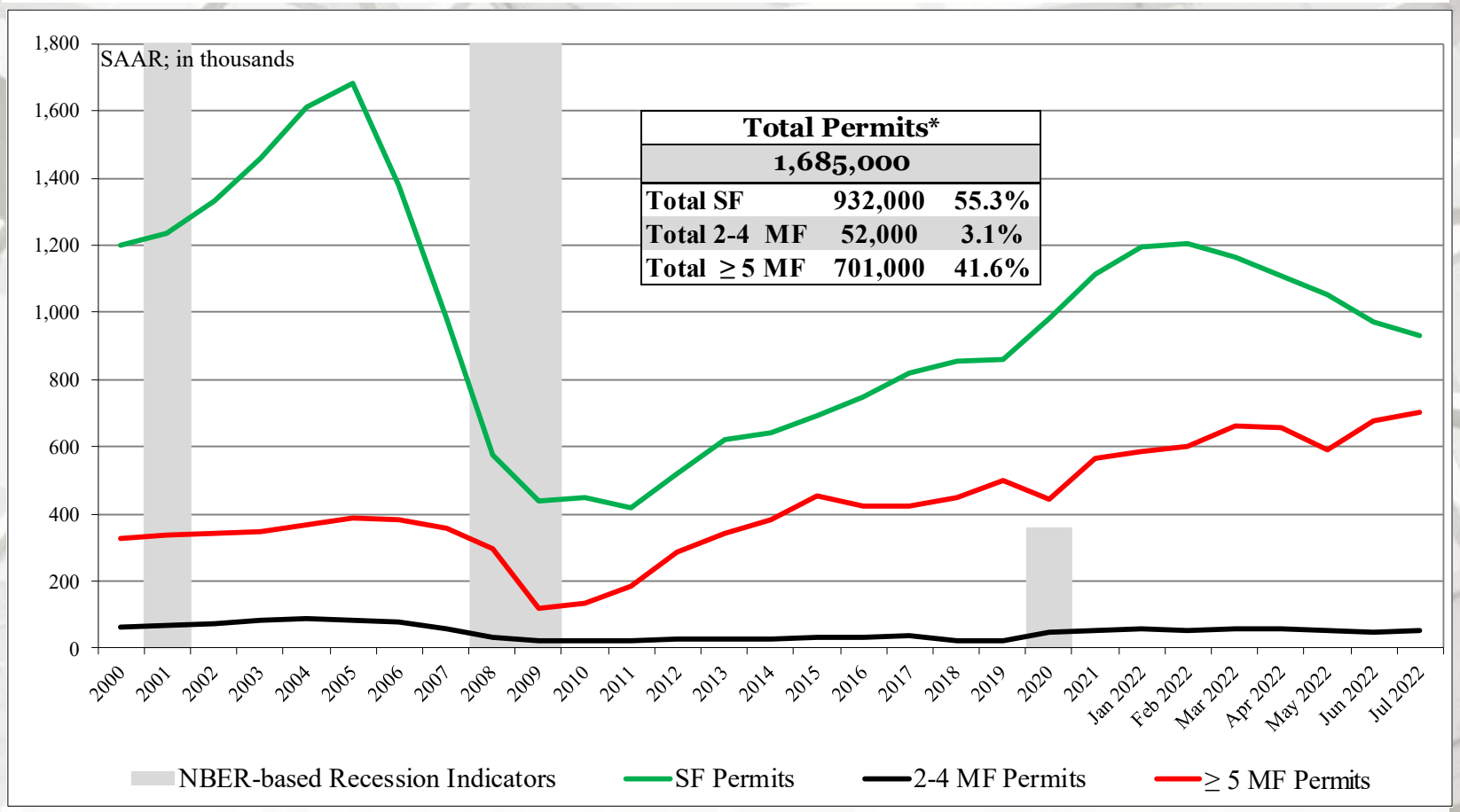
Total New Housing Permits



* 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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; https://www.census.gov/construction/bps/; 8/23/22

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New Housing Permits by Region

	NE Total*	NE SF	NE MF**
July	164,000	61,000	103,000
June	151,000	52,000	99,000
2021	136,000	55,000	81,000
M/M change	8.6%	17.3%	4.0%
Y/Y change	20.6%	10.9%	27.2%
	MW Total*	**MW SF**	**MW MF****
July	215,000	122,000	93,000
June	198,000	119,000	79,000
2021	209,000	128,000	81,000
M/M change	8.6%	2.5%	17.7%
Y/Y change	2.9%	-4.7%	14.8%

NE = Northeast; MW = Midwest
* All data are SAAR
** US DOC does not report multi-family permits directly; this is an estimation (Total permits – SF permits).

Source: https://www.census.gov/construction/bps/; 8/23/22

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New Housing Permits by Region

	S Total*	S SF	S MF**
July	927,000	559,000	368,000
June	922,000	595,000	327,000
2021	879,000	635,000	244,000
M/M change	0.5%	-6.1%	12.5%
Y/Y change	5.5%	-12.0%	50.8%
	W Total*	**W SF**	**W MF****
July	379,000	190,000	189,000
June	425,000	204,000	221,000
2021	431,000	233,000	198,000
M/M change	-10.8%	-6.9%	-14.5%
Y/Y change	-12.1%	-18.5%	-4.5%

S = South; W = West
* All data are SAAR
** US DOC does not report multi-family permits directly; this is an estimation (Total permits – SF permits).

Source: https://www.census.gov/construction/bps/; 8/23/22

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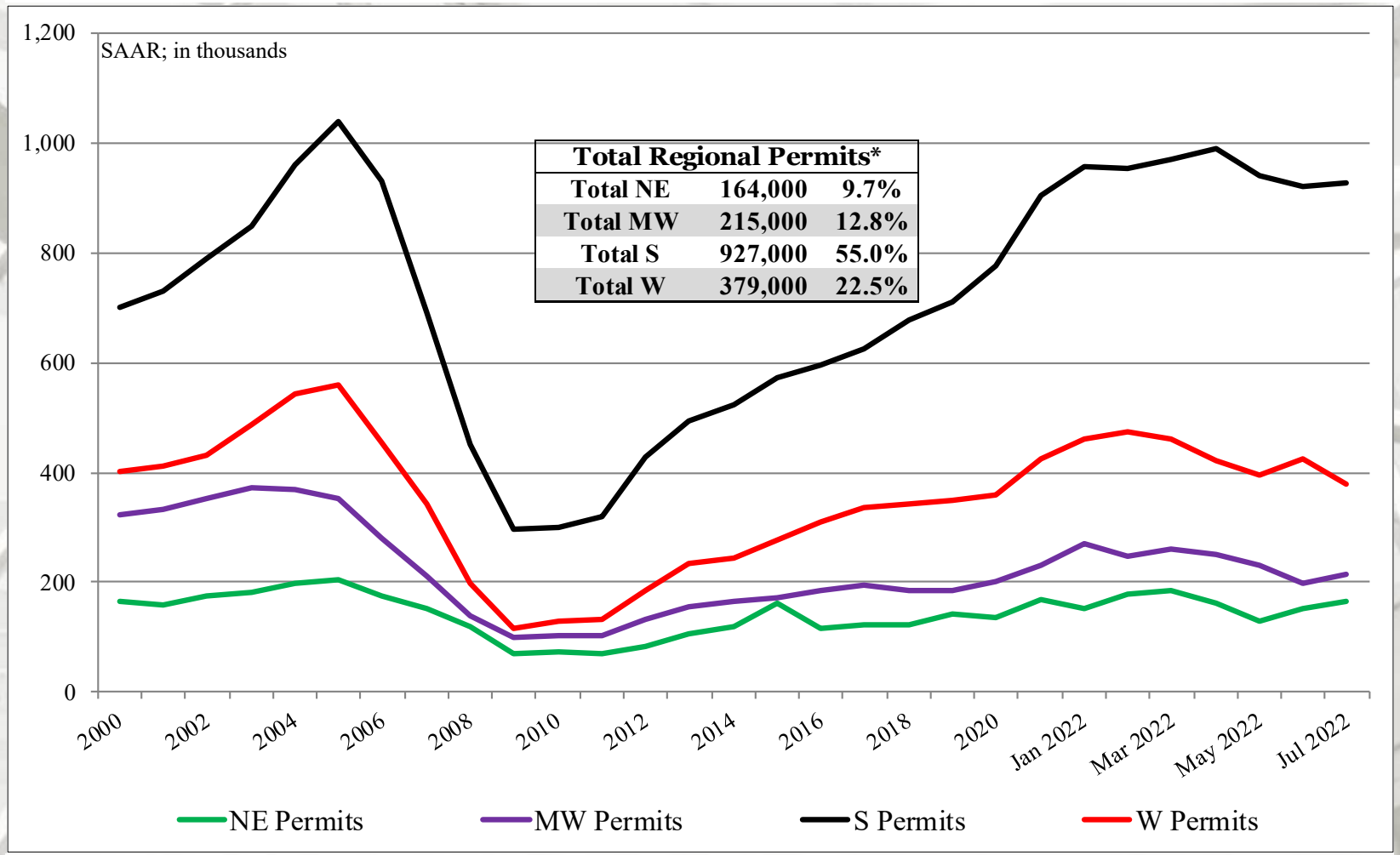
Total Housing Permits by Region



Total Regional Permits*		
Total NE	164,000	9.7%
Total MW	215,000	12.8%
Total S	927,000	55.0%
Total W	379,000	22.5%

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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 8/23/22

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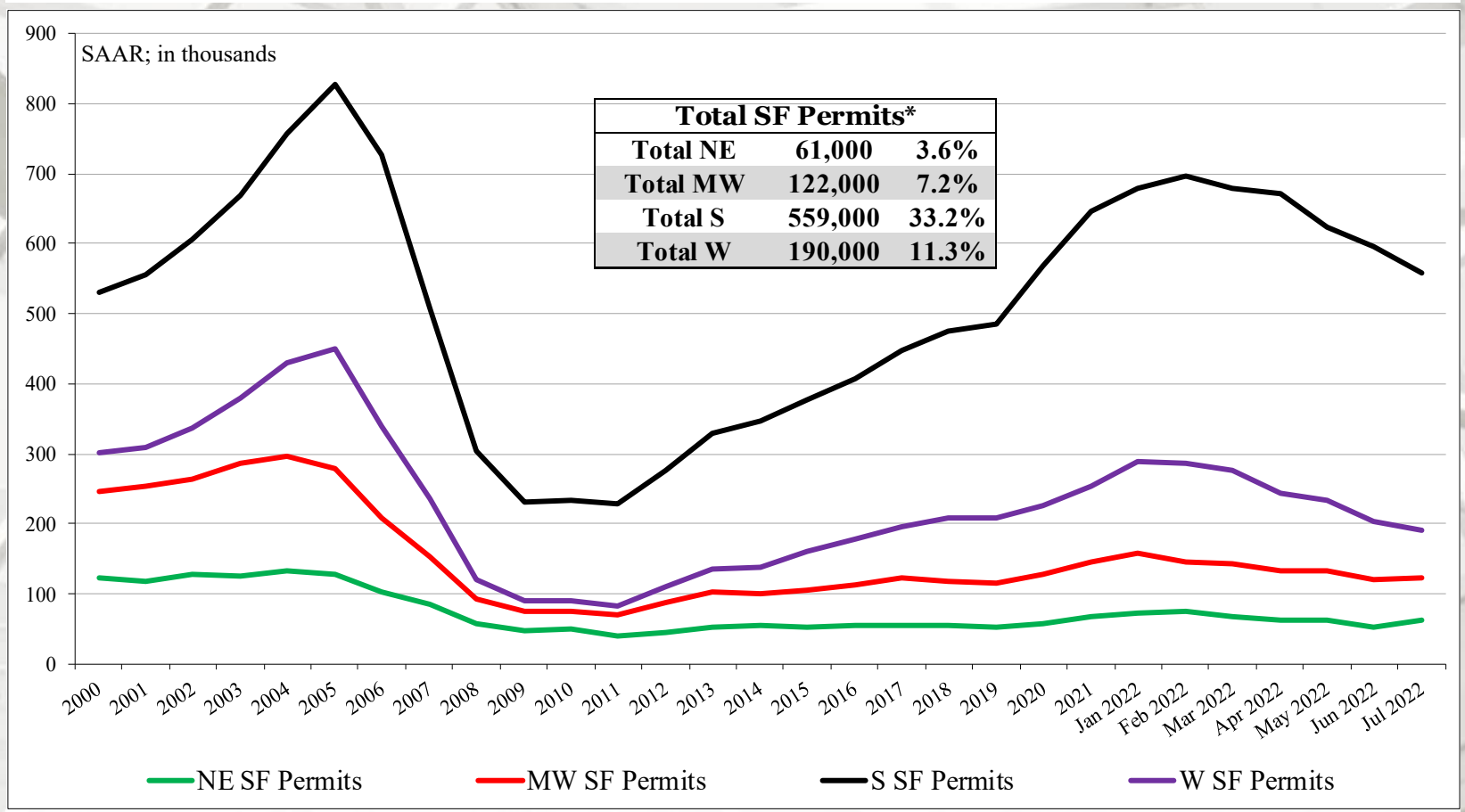
SF Housing Permits by Region



Total SF Permits*		
Total NE	61,000	3.6%
Total MW	122,000	7.2%
Total S	559,000	33.2%
Total W	190,000	11.3%

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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 8/23/22

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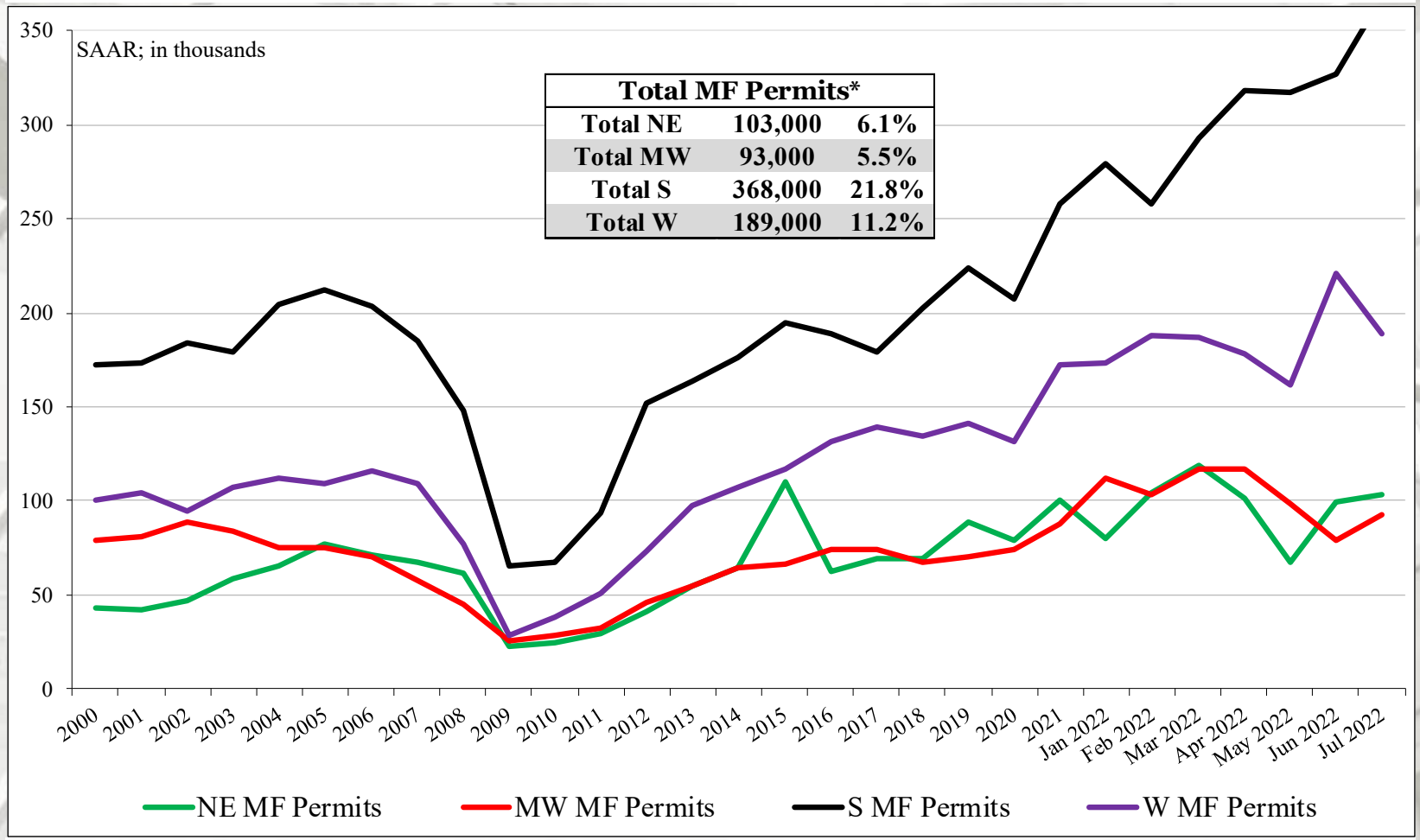
MF Housing Permits by Region



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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 8/23/22

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New Housing Under Construction (HUC)

	Total HUC*	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
July	1,678,000	816,000	16,000	846,000
June	1,680,000	826,000	15,000	839,000
2021	1,386,000	695,000	13,000	678,000
M/M change	-0.1%	-1.2%	6.7%	0.8%
Y/Y change	21.1%	17.4%	23.1%	24.8%

All housing under construction data are presented at a seasonally adjusted annual rate (SAAR).
** US DOC does not report 2-4 multi-family units under construction directly; this is an estimation ((Total under construction – (SF + 5-unit MF)).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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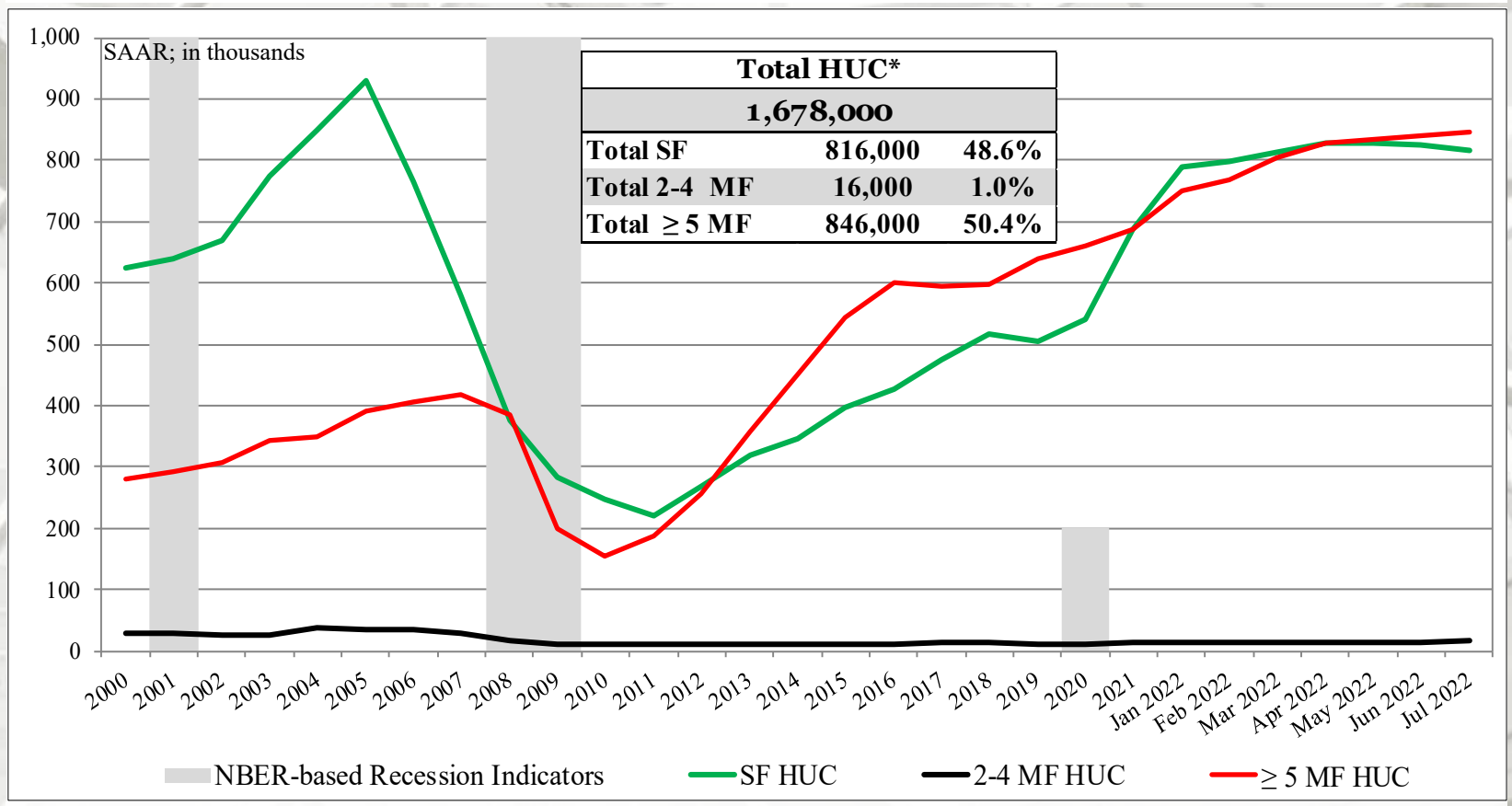
Total Housing Under Construction



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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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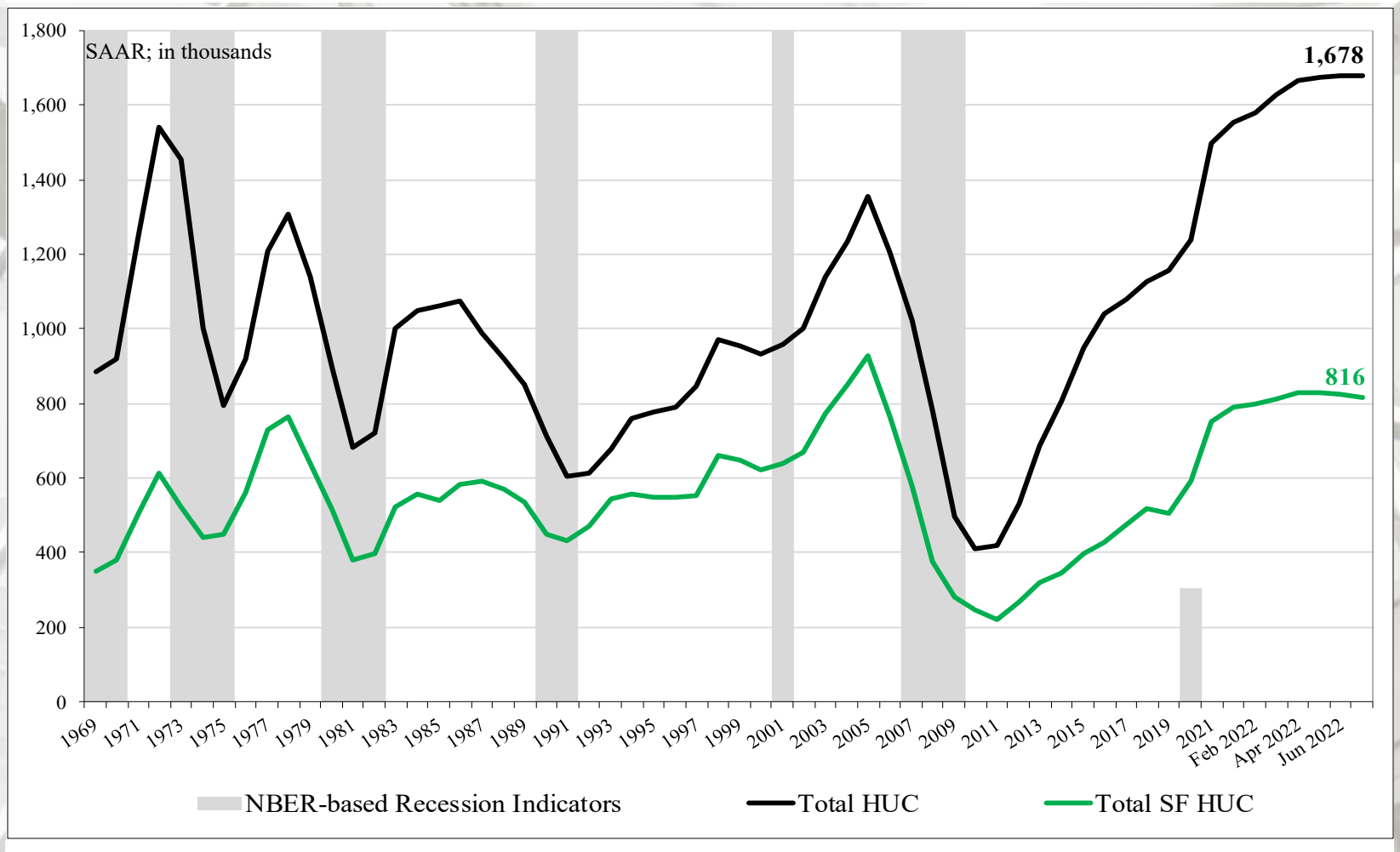
Total Housing Under Construction



In July total housing units under construction (HUC) were 1,680,000 units, the most since July 1973: 1,628,000 units. July's SF HUC reading, 824,000 units, which was substantially less than reported for July 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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
July	220,000	59,000	161,000
June	216,000	59,000	157,000
2021	198,000	60,000	137,000
M/M change	1.9%	0.0%	2.5%
Y/Y change	11.1%	-1.7%	17.5%
	MW Total	**MW SF**	**MW MF**
July	213,000	110,000	103,000
June	222,000	114,000	108,000
2021	174,000	98,000	76,000
M/M change	-4.1%	-3.5%	-4.6%
Y/Y change	22.4%	12.2%	35.5%

All data are SAAR; NE = Northeast and MW = Midwest.
** US DOC does not report multi-family units under construction directly; this is an estimation (Total under construction – SF under construction).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Under Construction by Region

	S Total	S SF	S MF**
July	771,000	436,000	335,000
June	775,000	441,000	334,000
2021	631,000	353,000	278,000
M/M change	-0.5%	-1.1%	0.3%
Y/Y change	22.2%	23.5%	20.5%
	W Total	**W SF**	**W MF**
July	474,000	211,000	263,000
June	467,000	212,000	255,000
2021	383,000	184,000	199,000
M/M change	1.5%	-0.5%	3.1%
Y/Y change	23.8%	14.7%	32.2%

All data are SAAR; S = South and W = West.
** US DOC does not report multi-family units under construction directly; this is an estimation (Total under construction – SF under construction).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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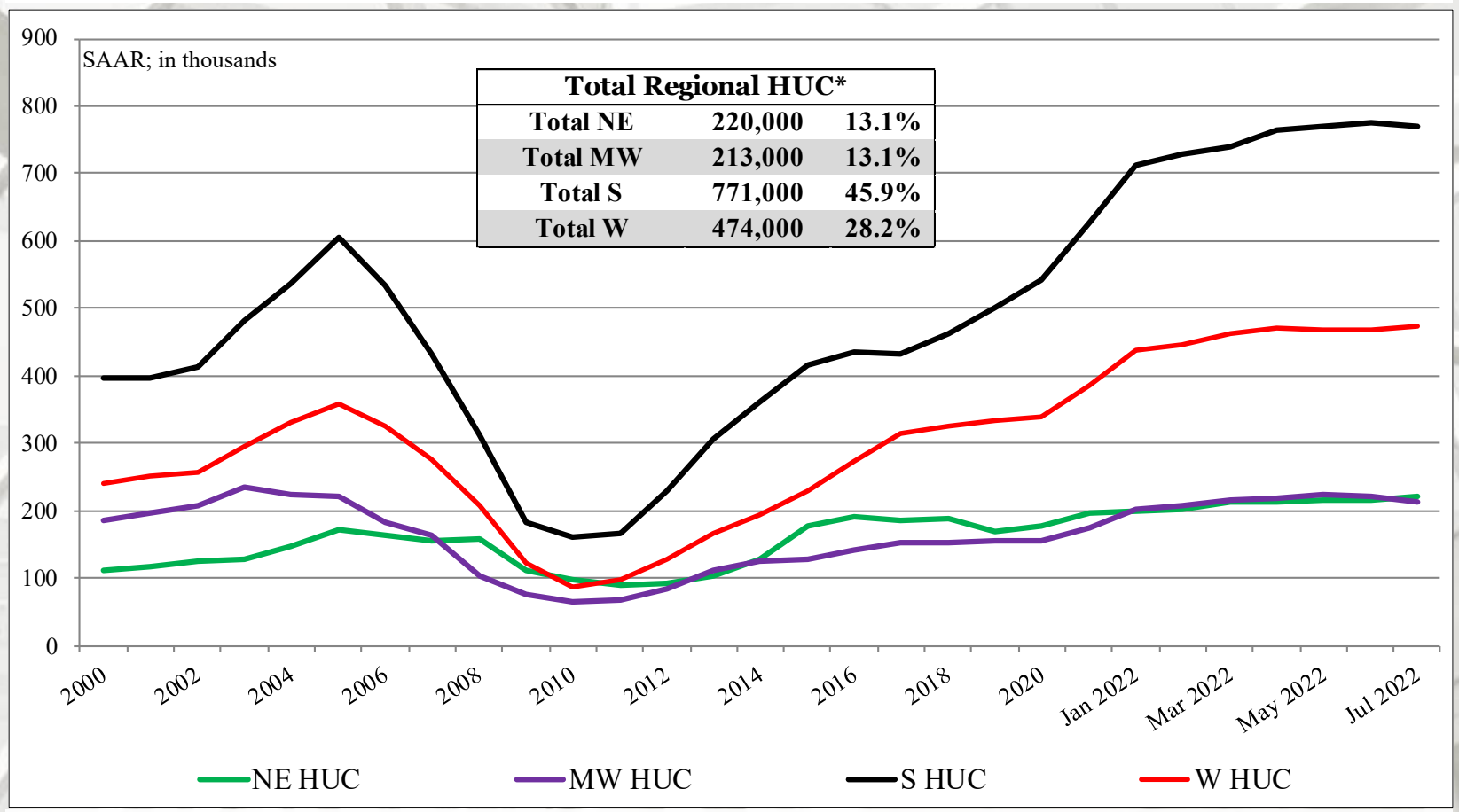
Total Housing Under Construction by Region



Total Regional HUC*		
Total NE	220,000	13.1%
Total MW	213,000	13.1%
Total S	771,000	45.9%
Total W	474,000	28.2%

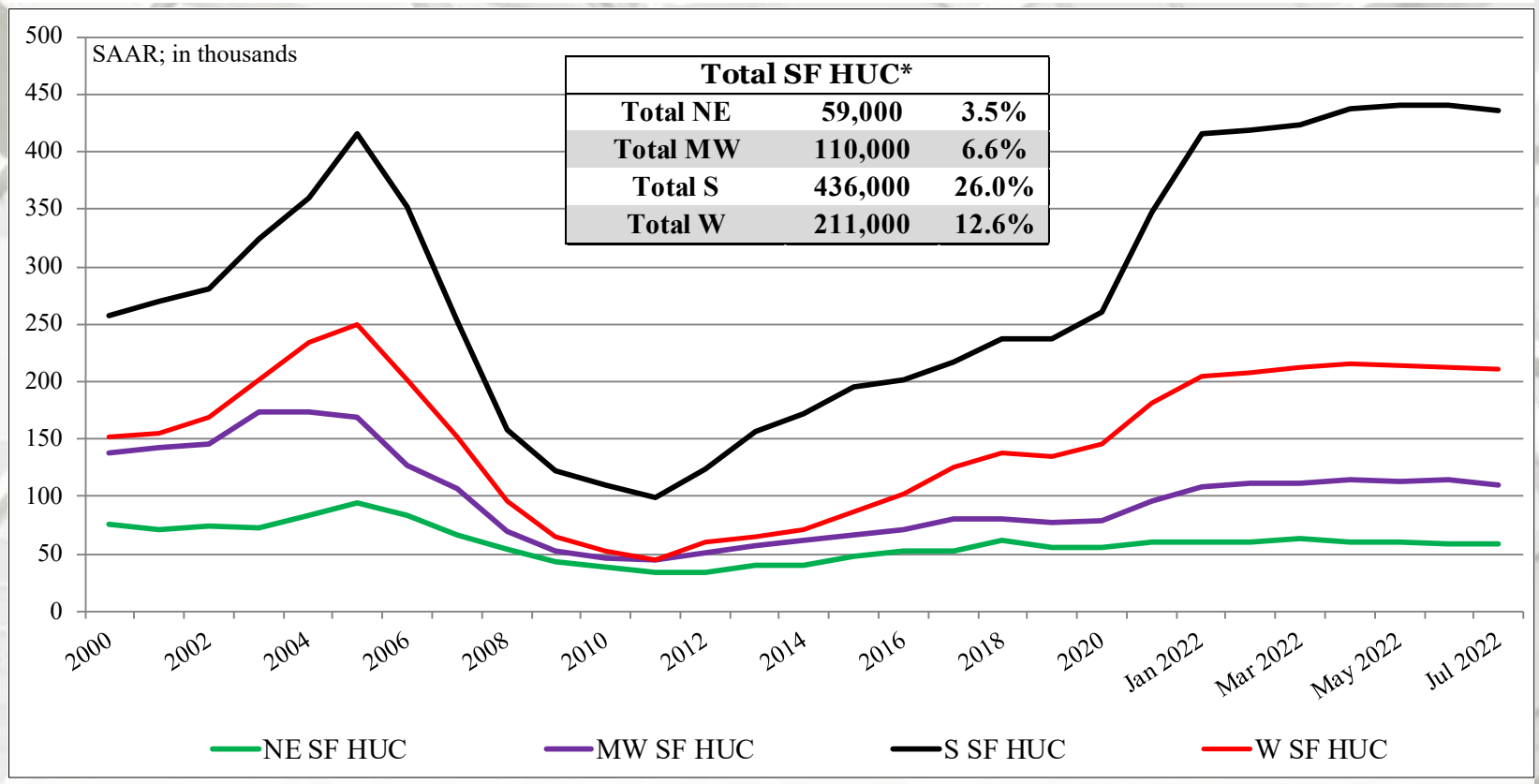
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family under construction directly; this is an estimation (Total under construction – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

Return TOC

SF Housing Under Construction by Region



Total SF HUC*		
Total NE	59,000	3.5%
Total MW	110,000	6.6%
Total S	436,000	26.0%
Total W	211,000	12.6%

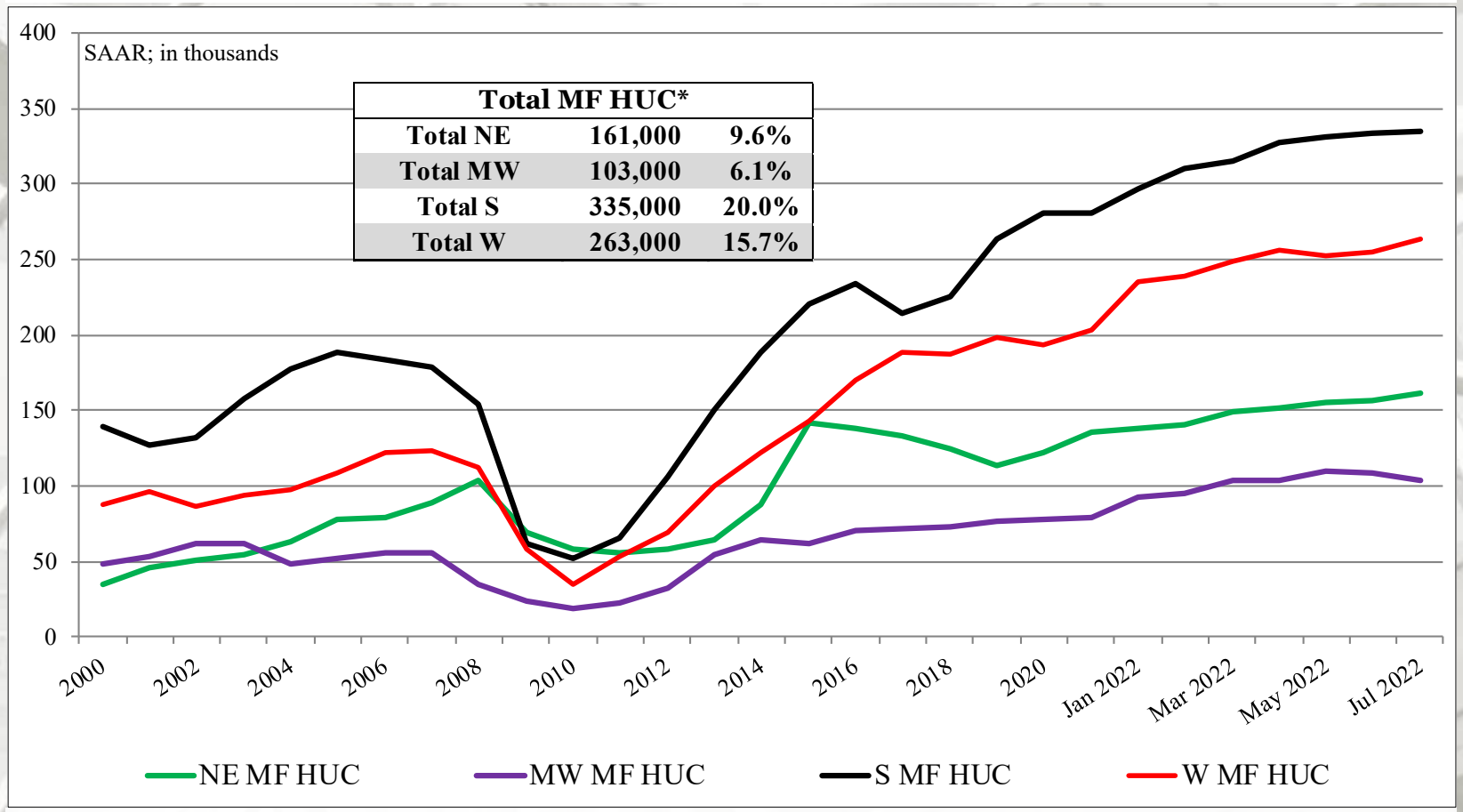
NE = Northeast, MW = Midwest, S = South, W = West.
US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under construction – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

Return TOC

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.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
July	1,424,000	1,009,000	3,000	412,000
June	1,409,000	1,017,000	6,000	386,000
2021	1,376,000	943,000	13,000	420,000
M/M change	1.1%	-0.8%	-50.0%	6.7%
Y/Y change	3.5%	7.0%	-76.9%	-1.9%

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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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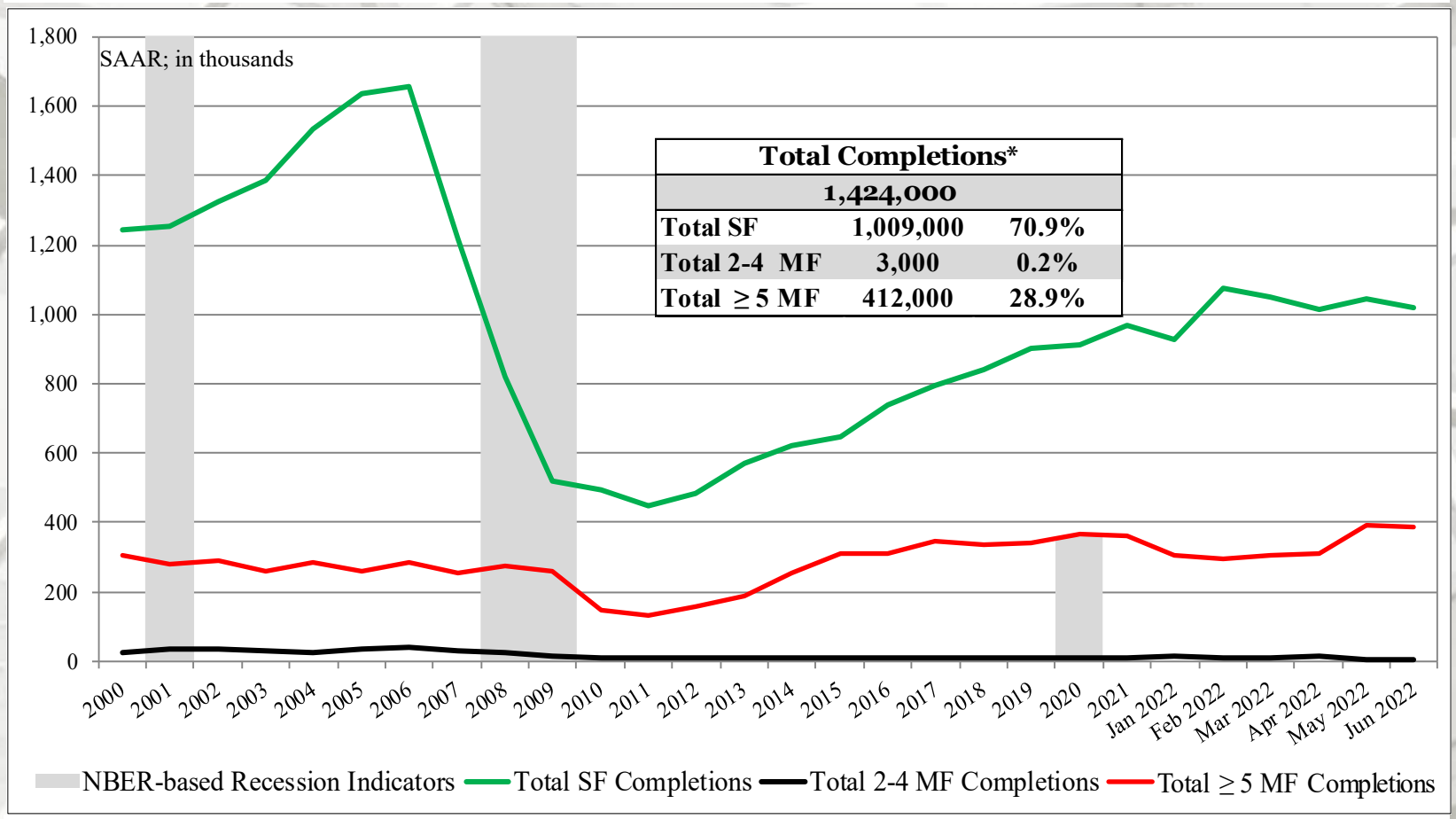
Total Housing Completions



** 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).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Completions by Region

	NE Total	NE SF	NE MF**
July	98,000	68,000	30,000
June	103,000	63,000	40,000
2021	106,000	55,000	51,000
M/M change	-4.9%	7.9%	-25.0%
Y/Y change	-7.5%	23.6%	-41.2%
	MW Total	**MW SF**	**MW MF**
July	295,000	149,000	146,000
June	201,000	136,000	65,000
2021	188,000	121,000	67,000
M/M change	46.8%	9.6%	124.6%
Y/Y change	56.9%	23.1%	117.9%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Housing Completions by Region

	S Total	S SF	S MF**
July	721,000	567,000	154,000
June	776,000	591,000	185,000
2021	710,000	513,000	197,000
M/M change	-7.1%	-4.1%	-16.8%
Y/Y change	1.5%	10.5%	-21.8%
	W Total	**W SF**	**W MF**
July	310,000	225,000	85,000
June	329,000	227,000	102,000
2021	372,000	254,000	118,000
M/M change	-5.8%	-0.9%	-16.7%
Y/Y change	-16.7%	-11.4%	-28.0%

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

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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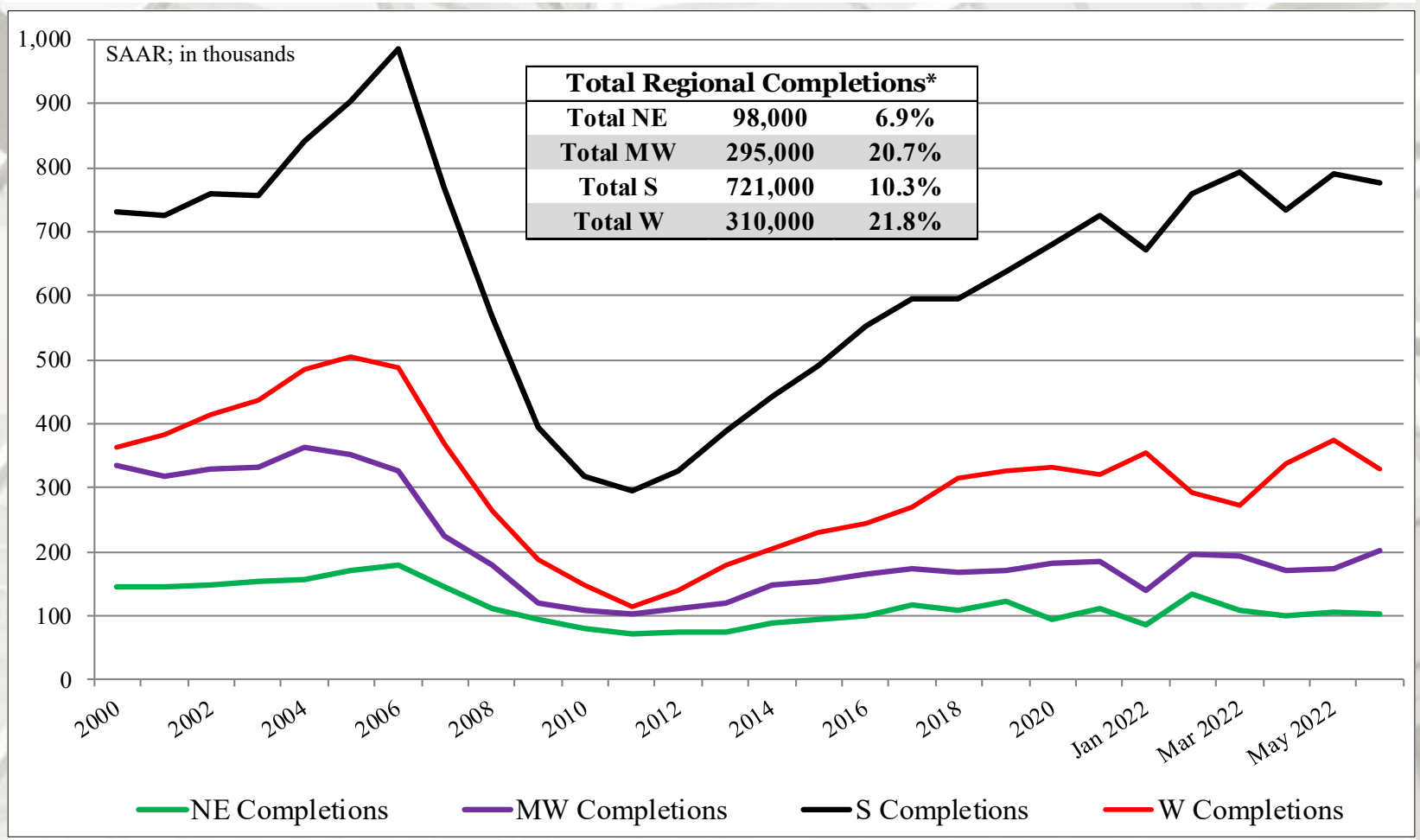
Total Housing Completions by Region



Total Regional Completions*		
Total NE	98,000	6.9%
Total MW	295,000	20.7%
Total S	721,000	10.3%
Total W	310,000	21.8%

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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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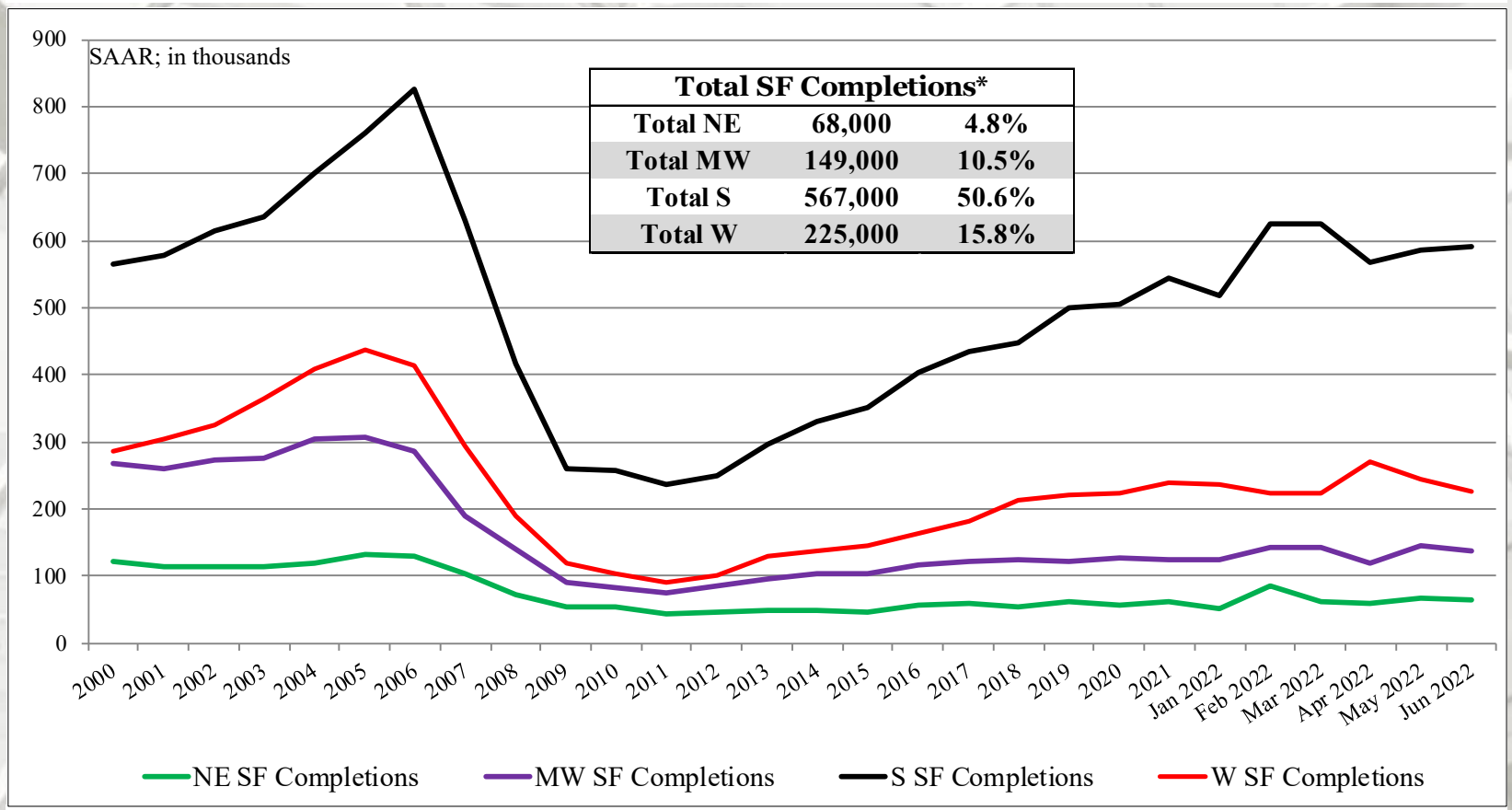
SF Housing Completions by Region



Total SF Completions*		
Total NE	68,000	4.8%
Total MW	149,000	10.5%
Total S	567,000	50.6%
Total W	225,000	15.8%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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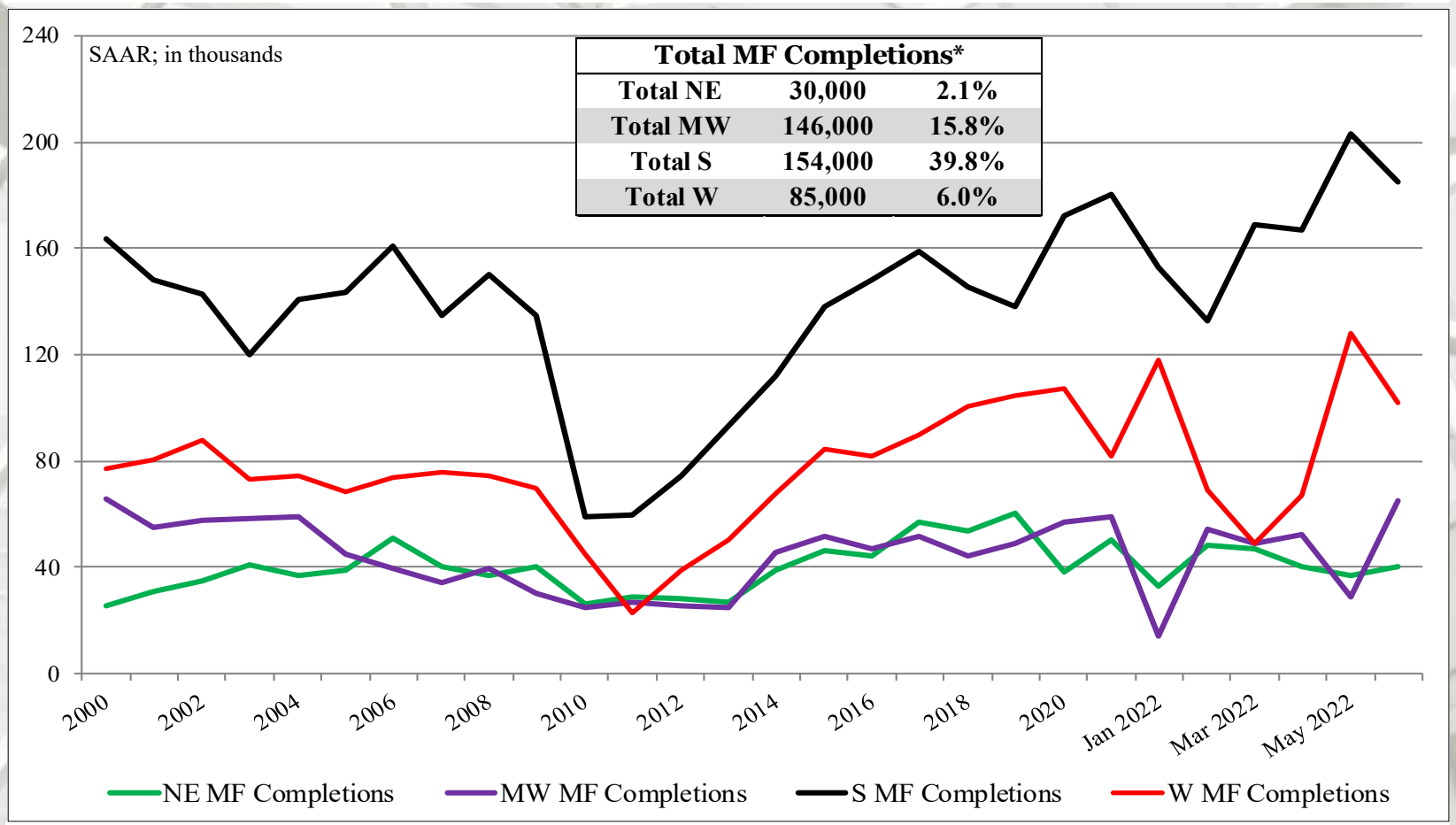
MF Housing Completions by Region



Total MF Completions*		
Total NE	30,000	2.1%
Total MW	146,000	15.8%
Total S	154,000	39.8%
Total W	85,000	6.0%

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

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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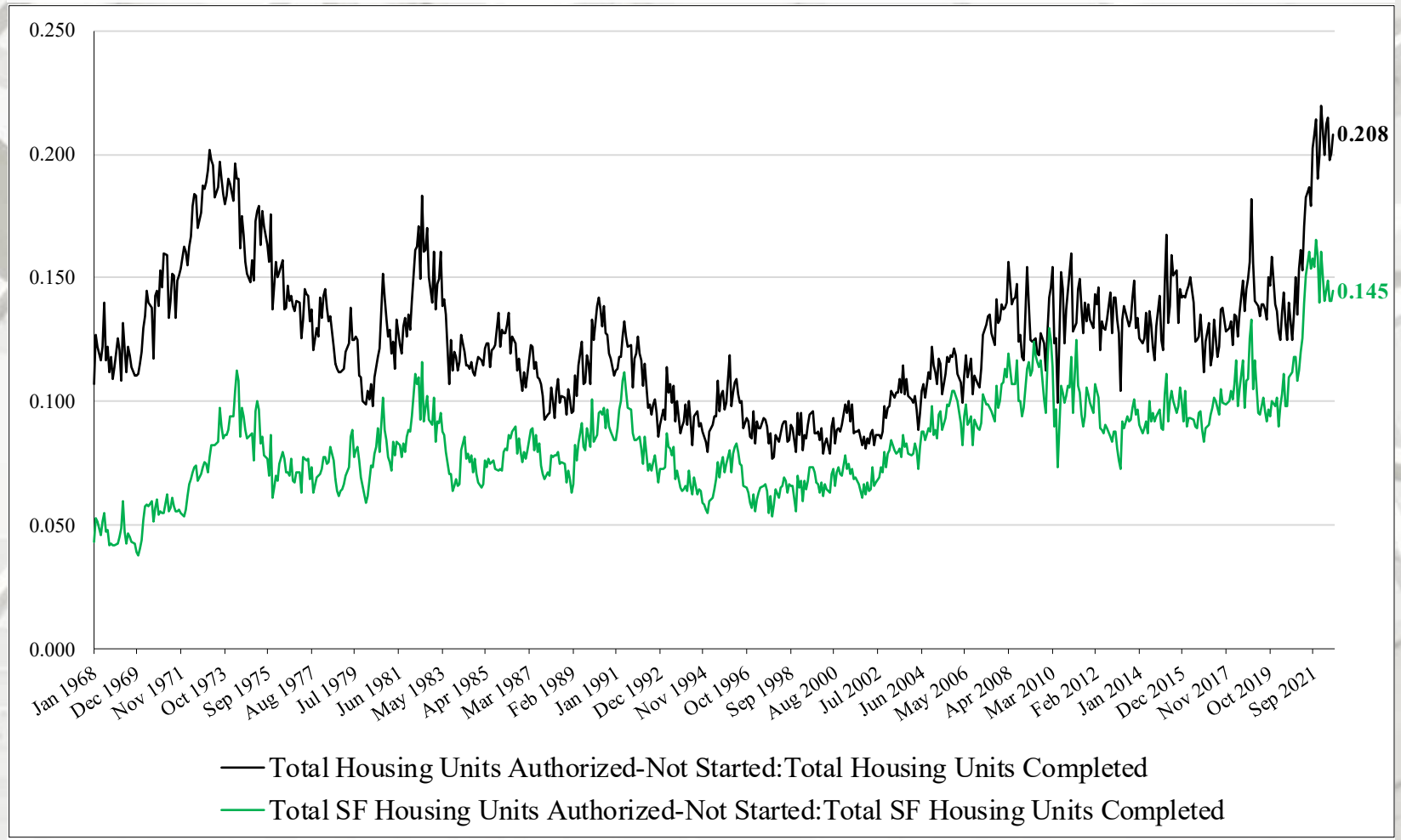
Ratio of Housing Units Authorized & Not Started to Housing Units Completed: M/M



Authorized, Not Started vs. Housing Completions

The ratio of SF houses authorized-not started to SF houses completed was less than the greatest in the history of this data series (0.165 – October 2021). Total authorized units not started increased to 296,000 in July and SF authorized units not started increased to 146,000 in July.

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

Sources: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/16/22

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New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
July	511,000	$439,400	$546,800	10.9
June	585,000	$414,900	$457,300	9.2
2021	726,000	$406,000	$462,100	6.0
M/M change	-12.6%	5.9%	19.6%	18.5%
Y/Y change	-29.6%	8.2%	18.3%	81.7%

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

New SF sales were substantially less than the consensus forecast[3] of 575 m (range: 540 m to 610 m). The past three month's new SF sales data also were revised:

April initial: 591 m, revised to 619 m.
May initial: 696 m, revised to 630 m.
June initial: 590 m, revised to 585 m.

Sources: [1] https://www.census.gov/construction/nrs/index.html; 6/24/21; [2] https://www.census.gov/construction/nrs/pdf/newressales.pdf
[3] http://us.econoday.com; 8/23/22

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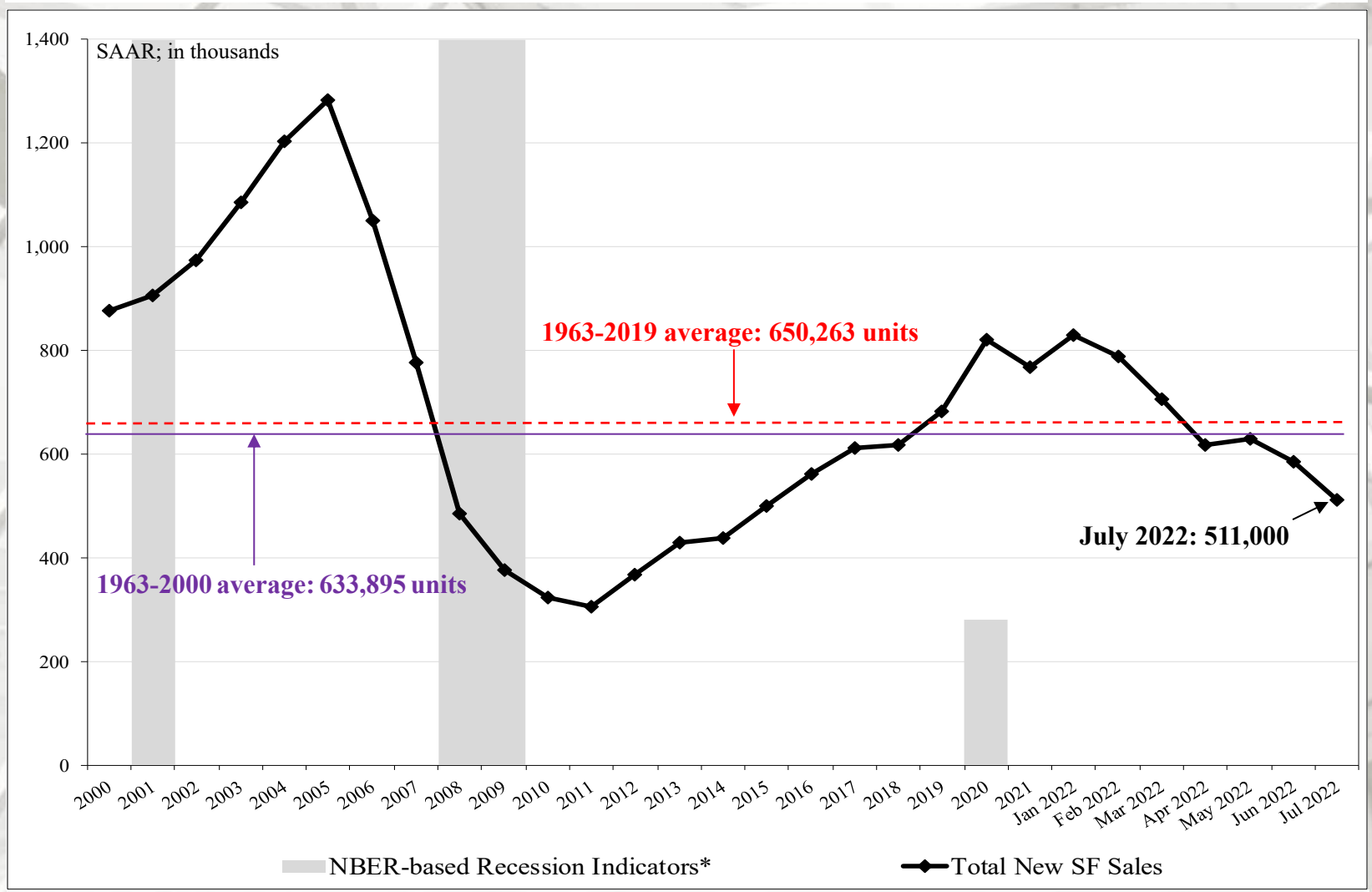
New SF House Sales



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

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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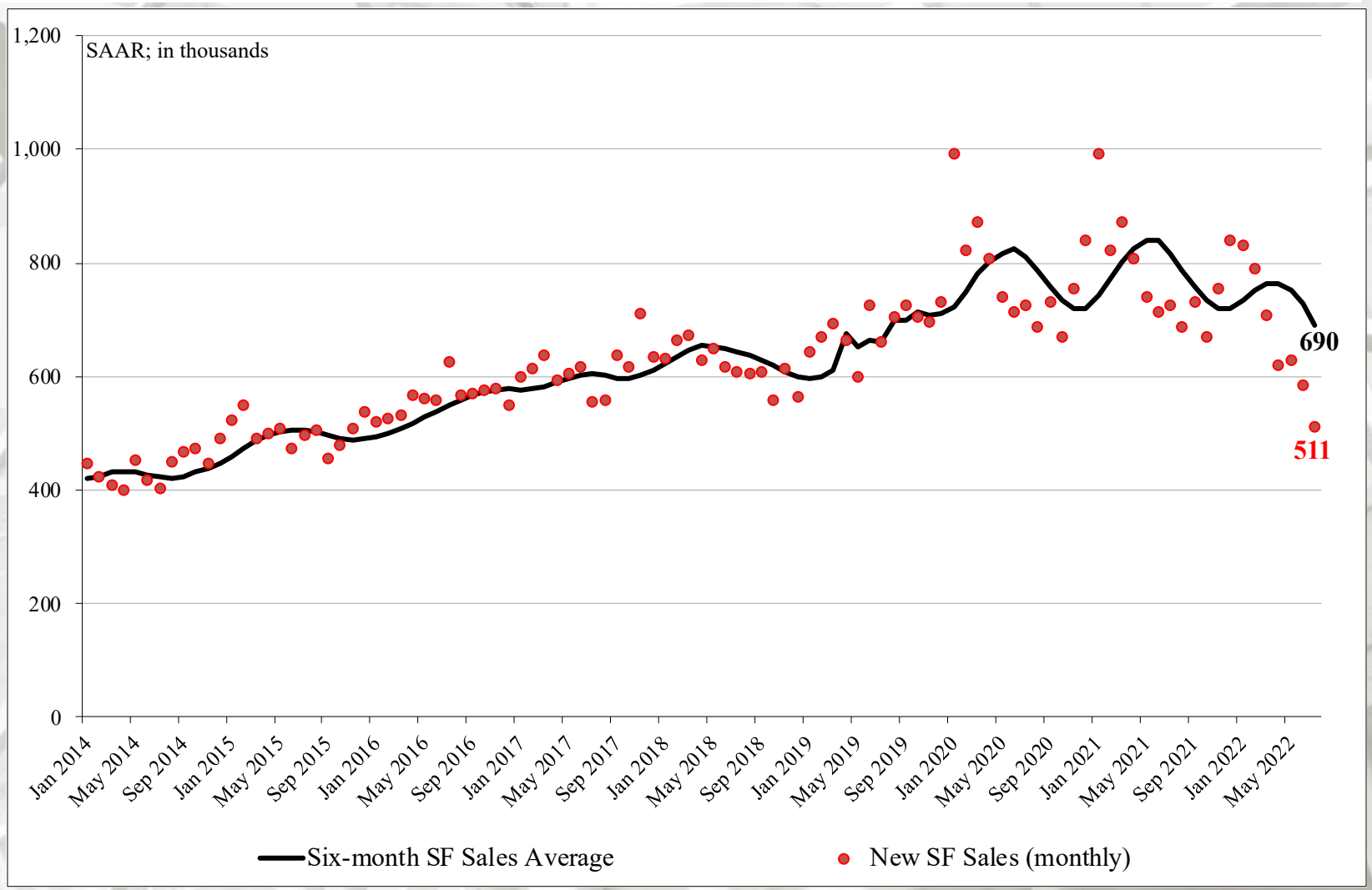
New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22.

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New SF House Sales by Region and Price Category

	NE	MW	S	W
July	17,000	54,000	342,000	98,000
June	15,000	68,000	389,000	113,000
2021	27,000	70,000	432,000	197,000
M/M change	13.3%	-20.6%	-12.1%	-13.3%
Y/Y change	-37.0%	-22.9%	-20.8%	-50.3%

	≤ $150m	$150 - $199.9m	$200 - 299.9m	$300 - $399.9m	$400 - $499.9m	$500 - $749.9m	≥ $750m
July[1,2,3,4]	500	500	6,000	17,000	10,000	14,000	2,000
June	500	500	5,000	18,000	13,000	13,000	8,000
2021	500	1,000	16,000	17,000	10,000	13,000	4,000
M/M change	0.0%	0.0%	-50.0%	-36.4%	16.7%	-16.7%	0.0%
Y/Y change	-50.0%	-50.0%	-76.5%	-41.7%	27.3%	0.0%	60.0%
New SF sales: %	1.0%	1.0%	12.0%	34.0%	20.0%	28.0%	4.0%

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; 8/23/22;
[4]https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

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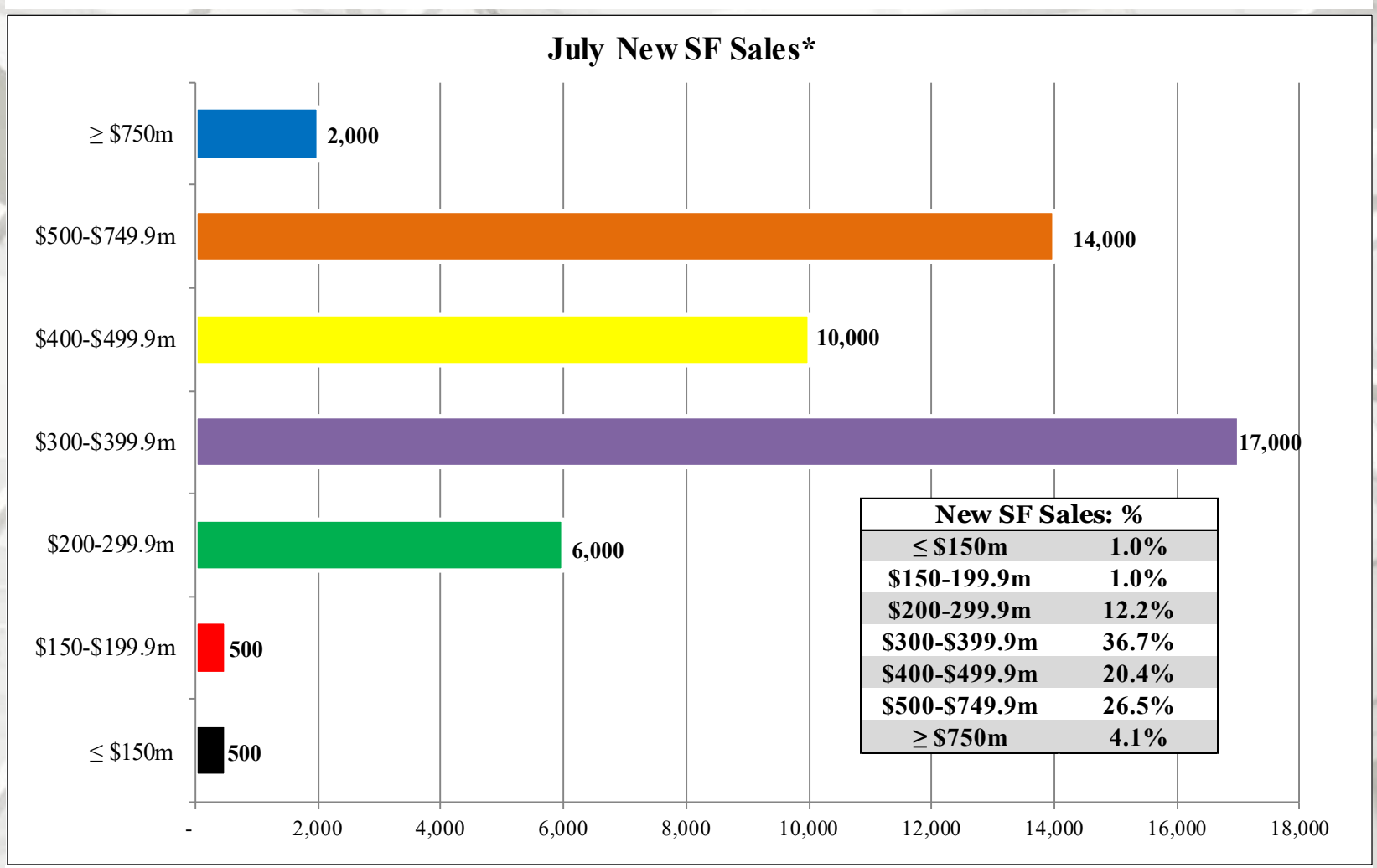
New SF House Sales



New SF Sales: %	
≤ $150m	1.0%
$150-199.9m	1.0%
$200-299.9m	12.2%
$300-$399.9m	36.7%
$400-$499.9m	20.4%
$500-$749.9m	26.5%
≥ $750m	4.1%

* Total new sales by price category and percent.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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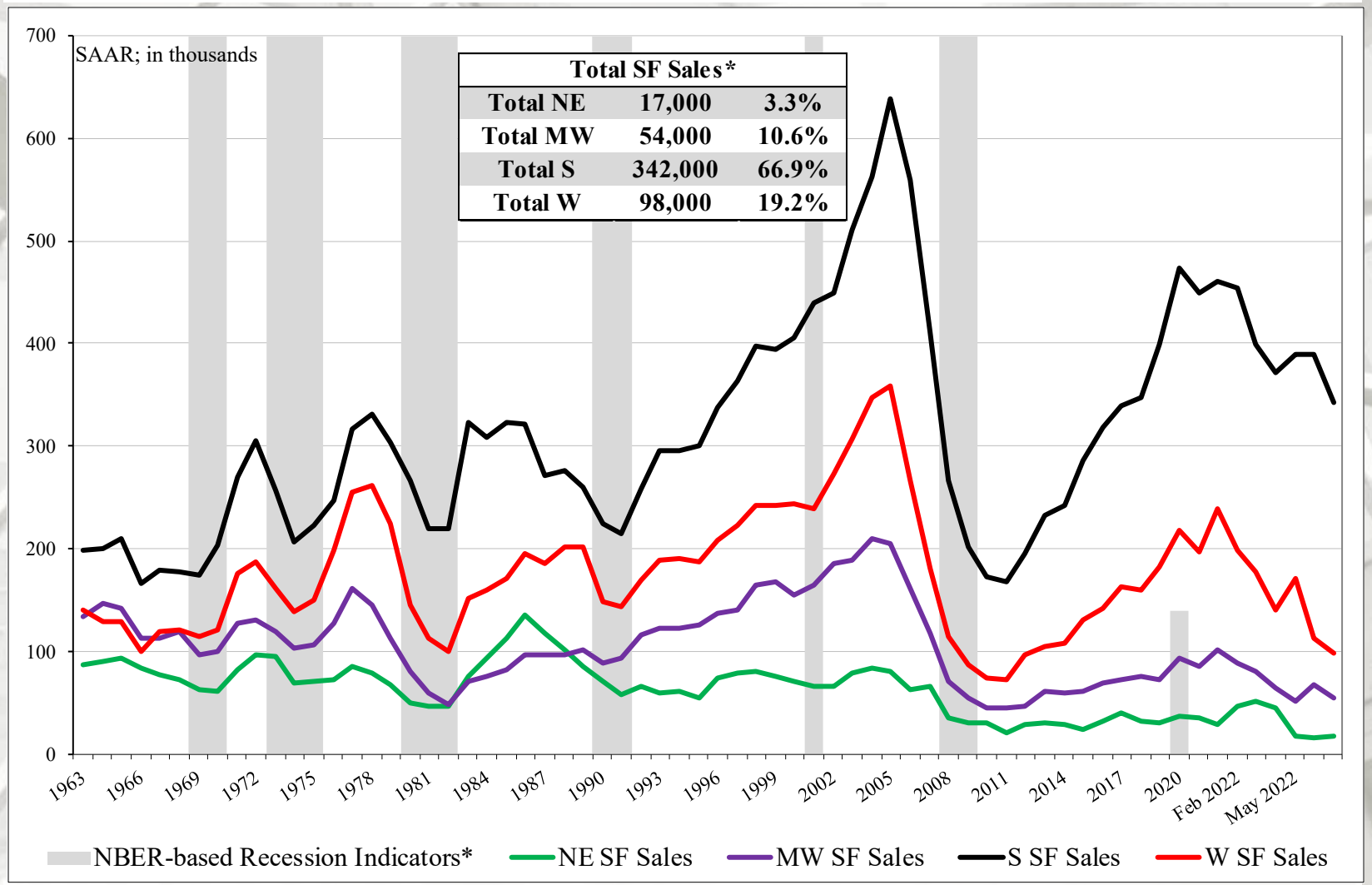
New SF House Sales by Region



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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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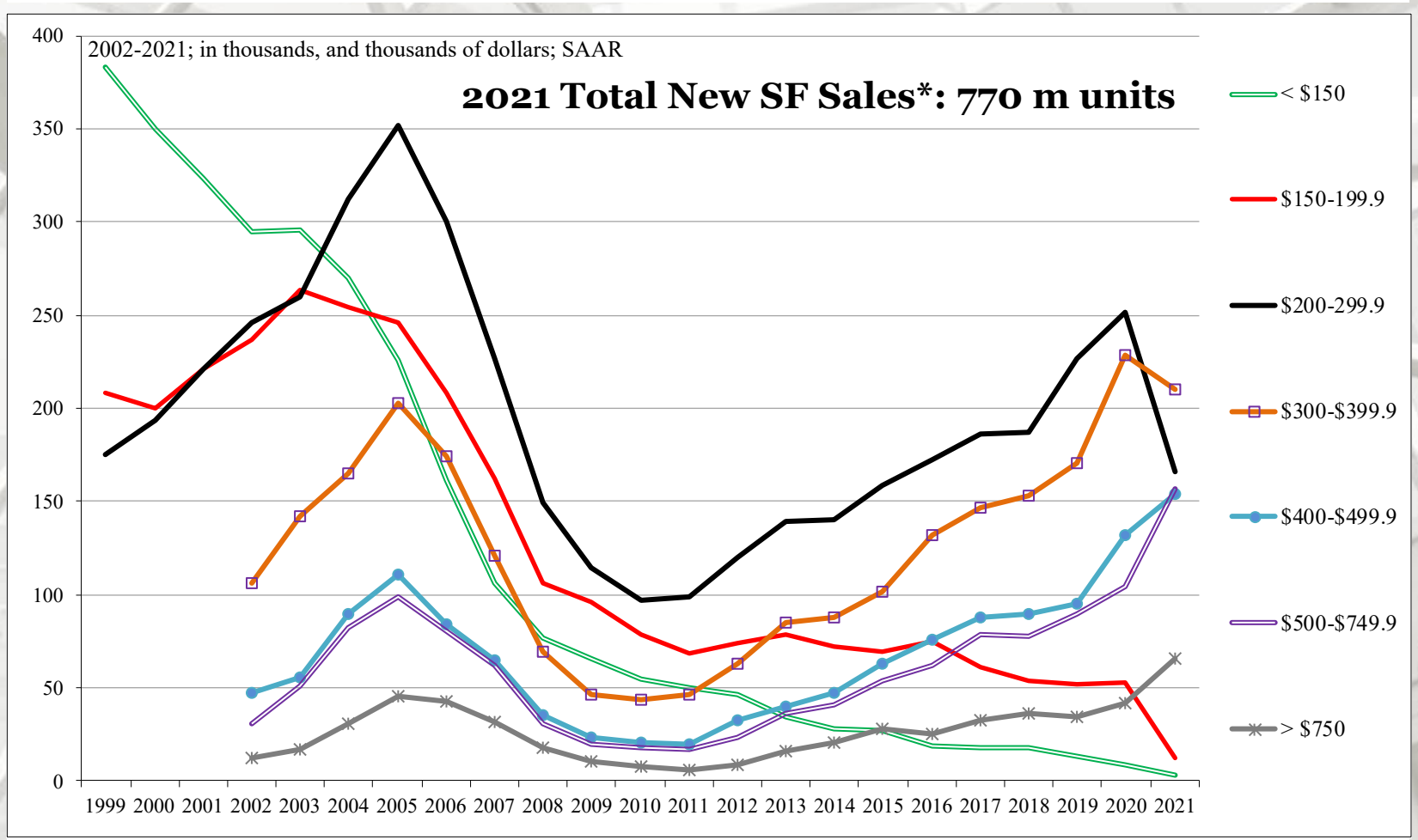
New SF House Sales by Price Category



* Sales tallied by price category, nominal dollars.

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

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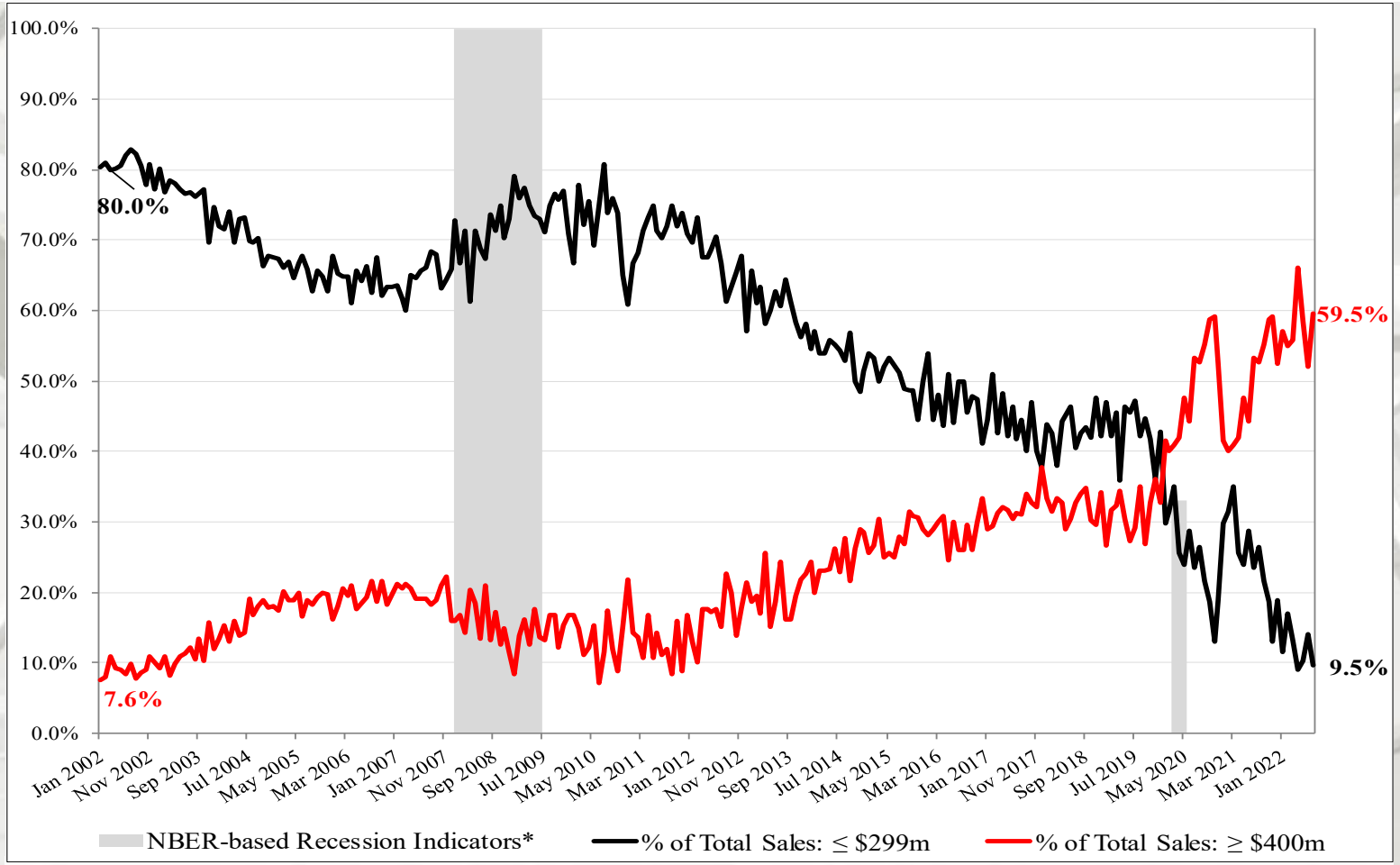
New SF House Sales



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

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

Source: [1] https://www.census.gov/construction/nrs/index.html; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 8/23/22

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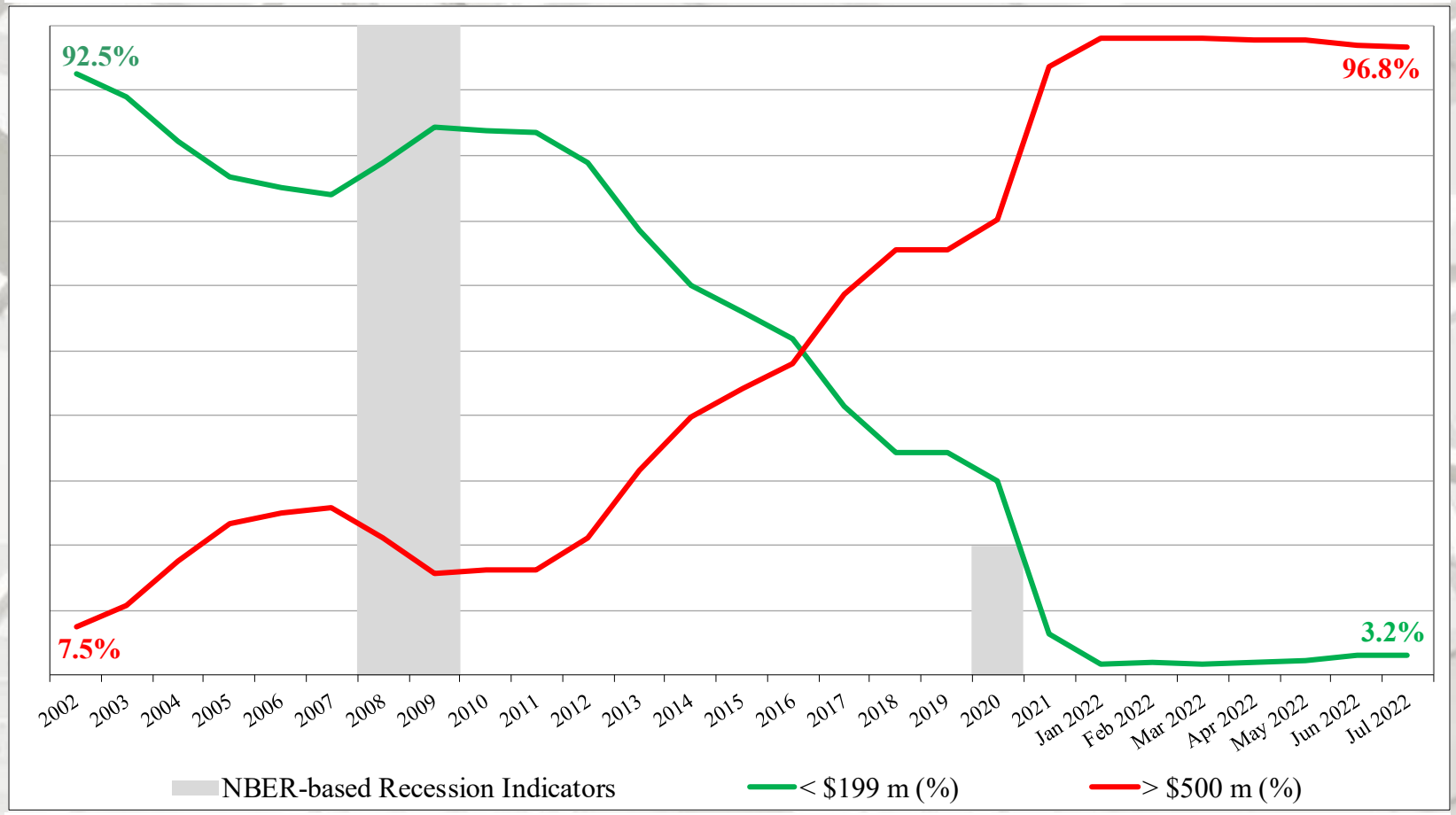
New SF House Sales



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).

Source: [1] https://www.census.gov/construction/nrs/index.html; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 8/23/22

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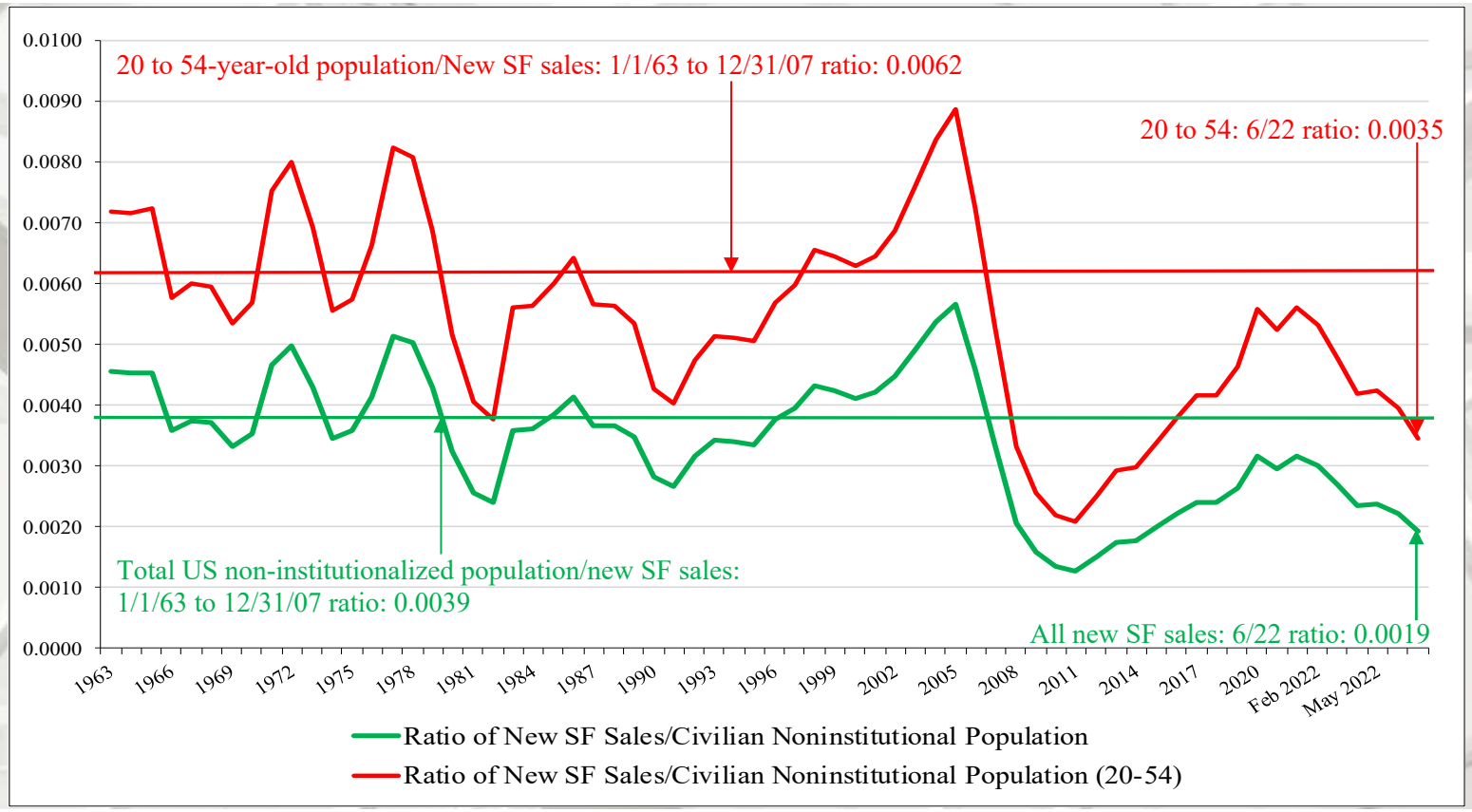
New SF House Sales



New SF sales adjusted for the US population

From July 1963 to July 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in July 2022 it was 0.0019 – a decrease from June (0.0035). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in July 2022 it was 0.0040 – also a decrease from June (0.0040). All are non-adjusted data. From a non-institutionalized population world view, new sales remain less than the long-term average.

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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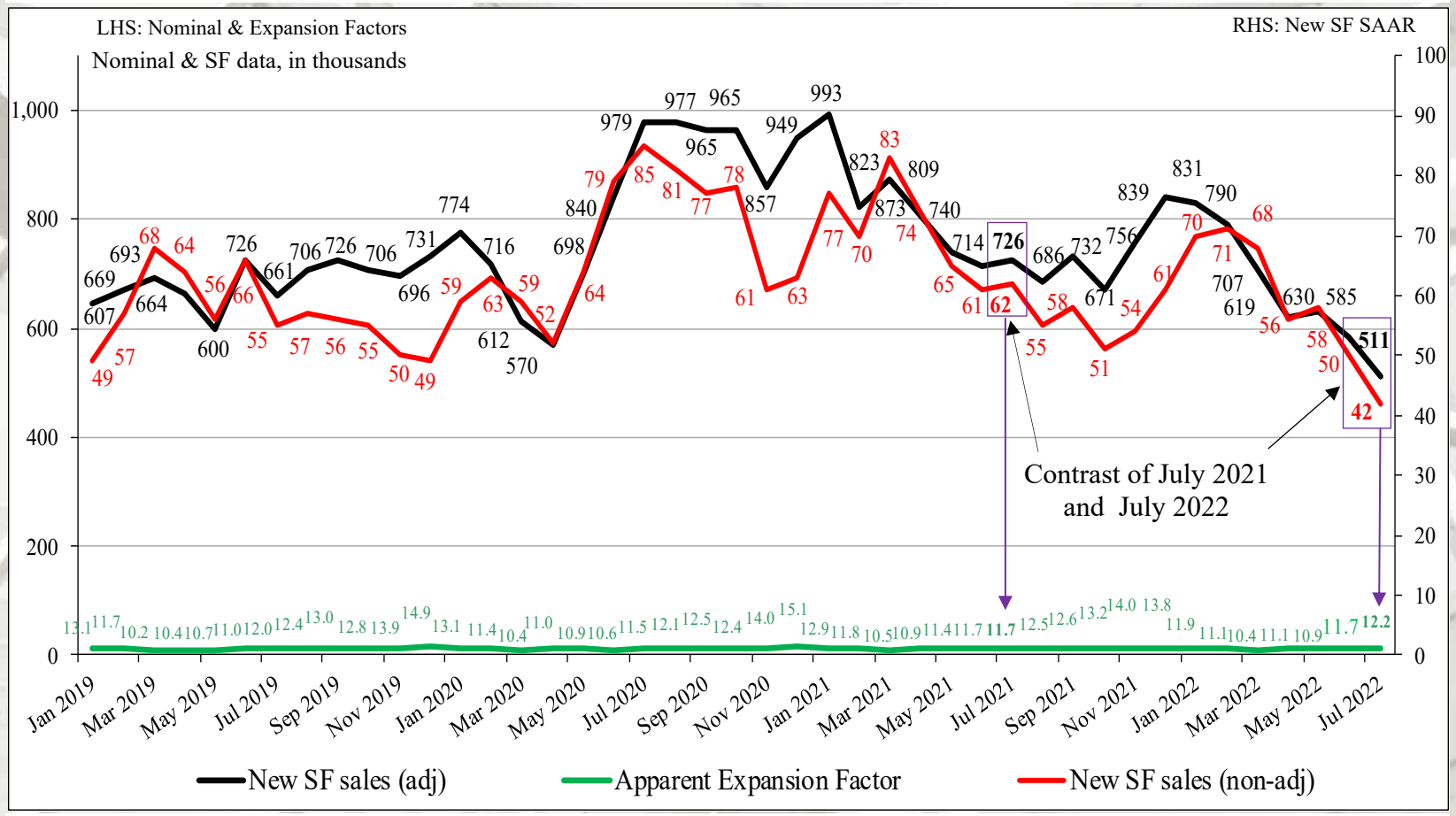
Nominal vs. SAAR New SF House Sales



Nominal and Adjusted New SF Monthly Sales

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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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New SF House Sales

New SF Houses Sold During Period				
	Total	Not started	Under Construction	Completed
July	511,000	165,000	201,000	145,000
June	585,000	140,000	268,000	177,000
2021	726,000	201,000	334,000	191,000
M/M change	-12.6%	17.9%	-25.0%	-18.1%
Y/Y change	-29.6%	-17.9%	-39.8%	-24.1%
Total percentage		32.3%	39.3%	28.4%

SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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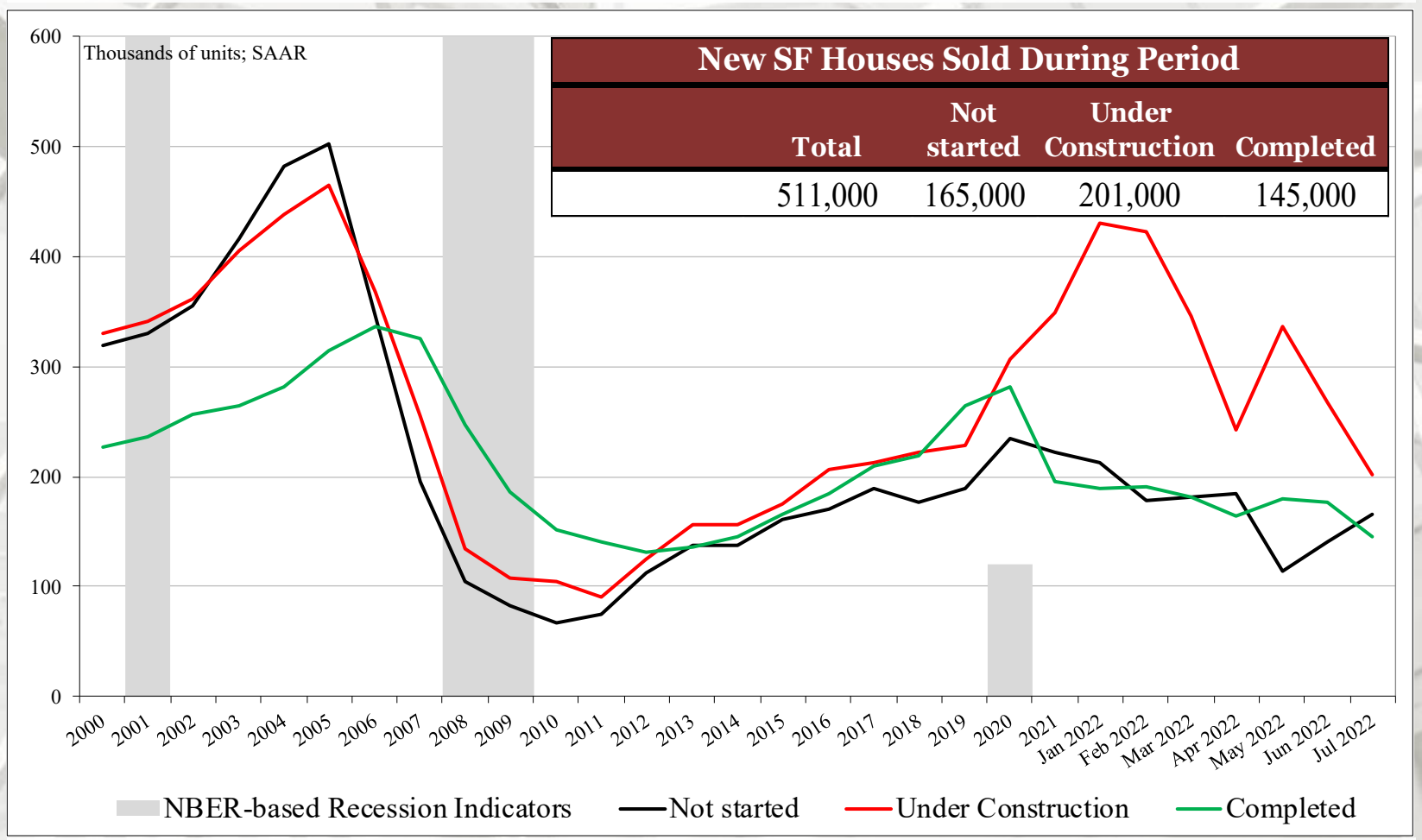
New SF House Sales: Sold During Period



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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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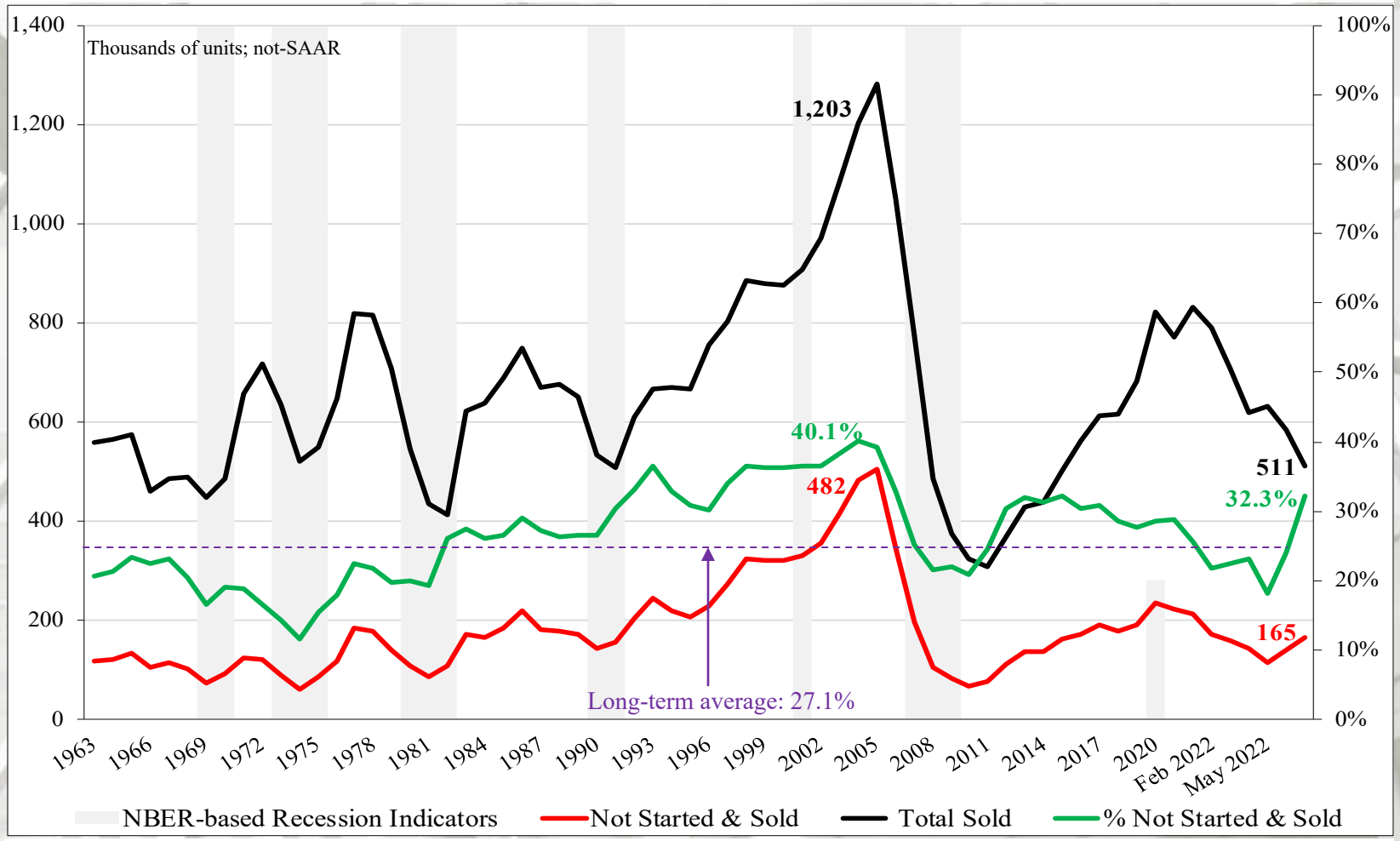
New SF House Sales:
Percentage Not Started & Sold During Period



Of the new houses sold in July (511 m), 32.3% (165 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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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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
July	464,000	107,000	312,000	45,000
June	450,000	99,000	311,000	40,000
2021	362,000	96,000	234,000	32,000
M/M change	3.1%	8.1%	0.3%	12.5%
Y/Y change	28.2%	11.5%	33.3%	40.6%
Total percentage		23.1%	67.2%	9.7%

Not SAAR

Of houses listed for sale (464 m) in July, 9.7% (45 m) have been built. In the 'ground had not been broken for construction' or 'not started' category, 107 m (23.1%) were sold.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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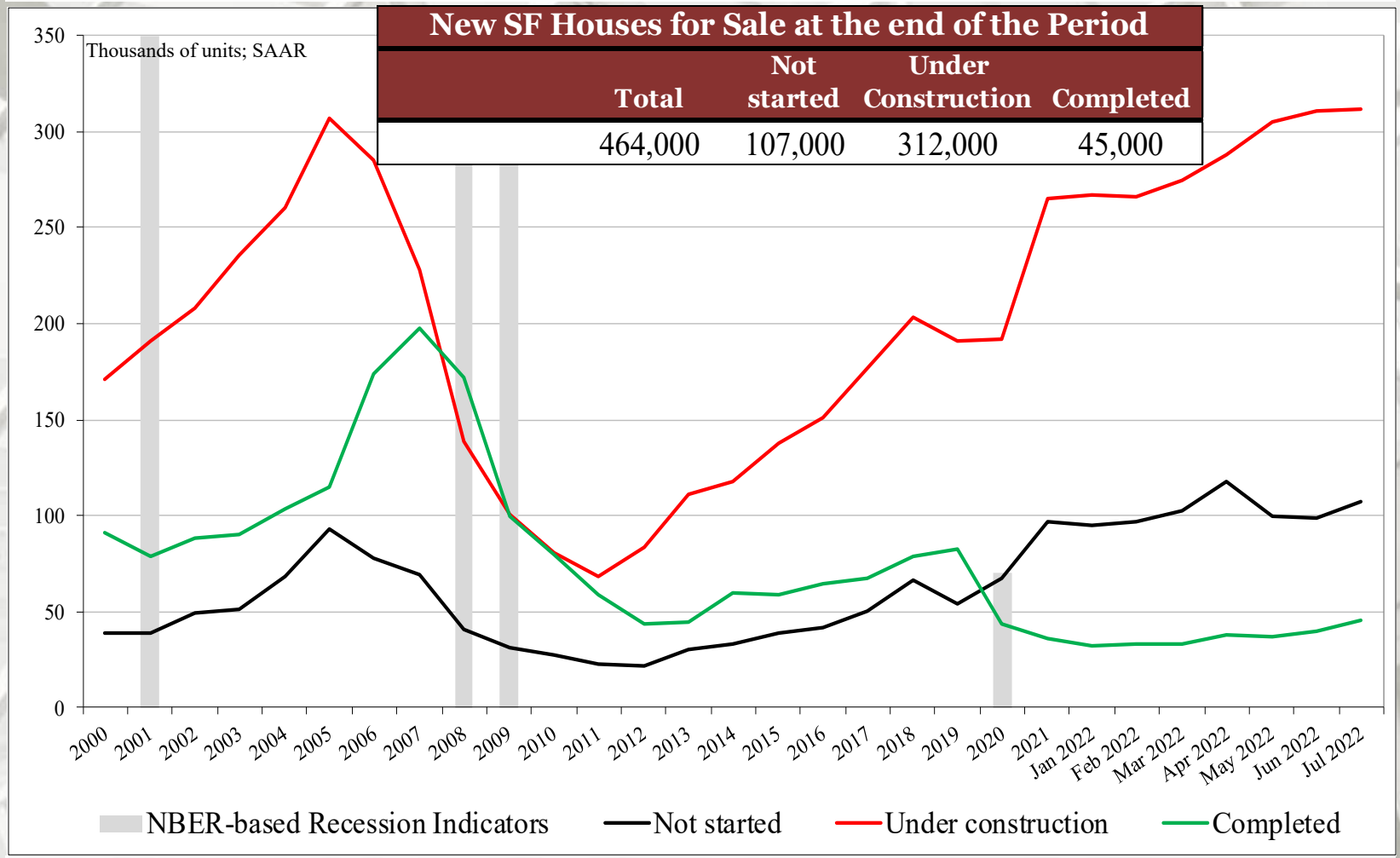
New SF House Sales: For Sale at End of Period

New SF Houses for Sale at the end of the Period			
Total	Not started	Under Construction	Completed
464,000	107,000	312,000	45,000



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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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New SF House Sales

New SF Houses for Sale at the end of the Period by Region*	Total	NE	MW	S	W
July	466,000	28,000	51,000	272,000	116,000
June	454,000	26,000	49,000	269,000	110,000
2021	364,000	28,000	32,000	215,000	90,000
M/M change	2.6%	7.7%	4.1%	1.1%	5.5%
Y/Y change	28.0%	0.0%	59.4%	26.5%	28.9%

* Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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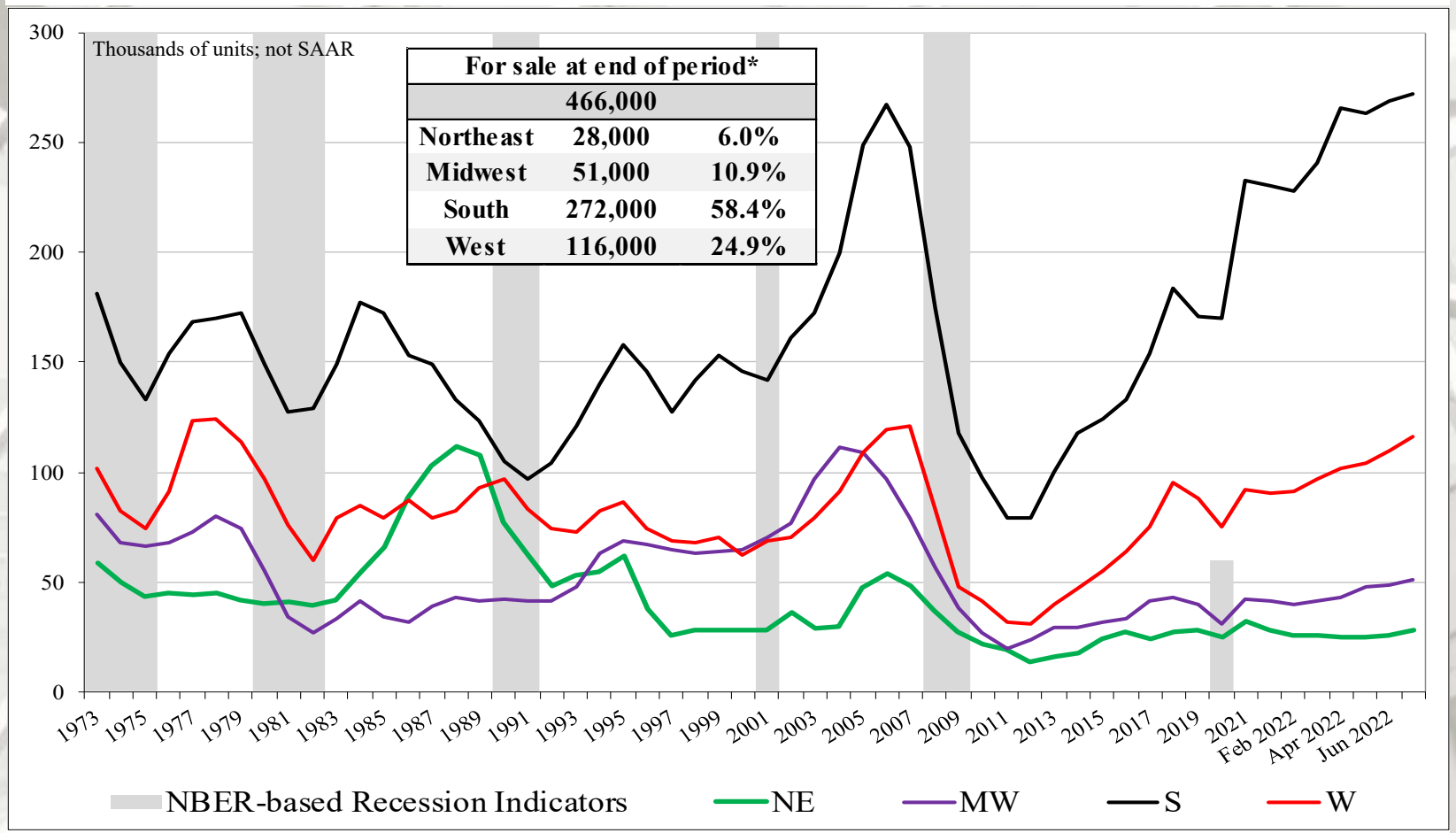
New SF Houses for Sale at End of Period by Region



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

* Percentage of new SF sales.

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

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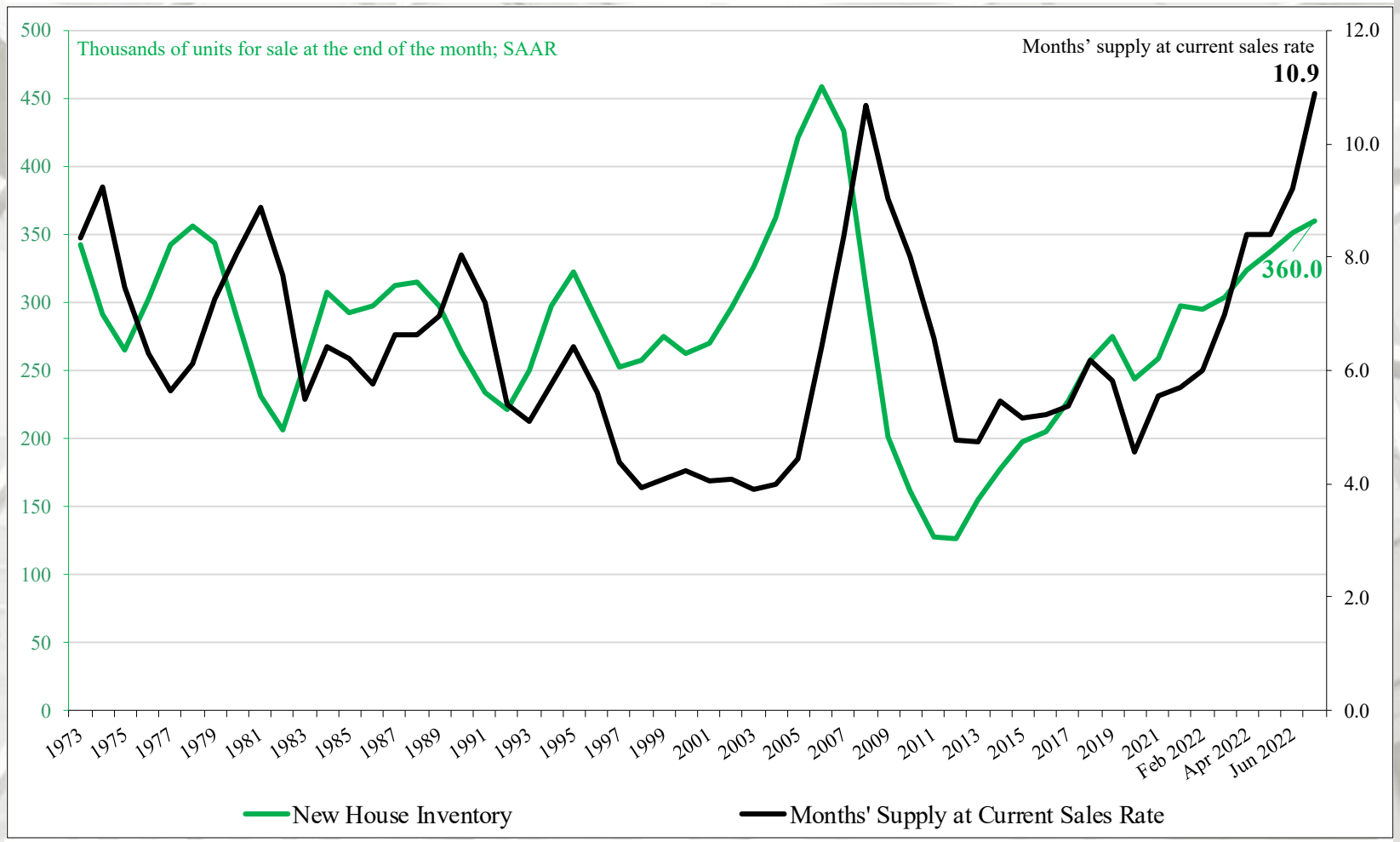
Months' Supply and New House Inventory[a]



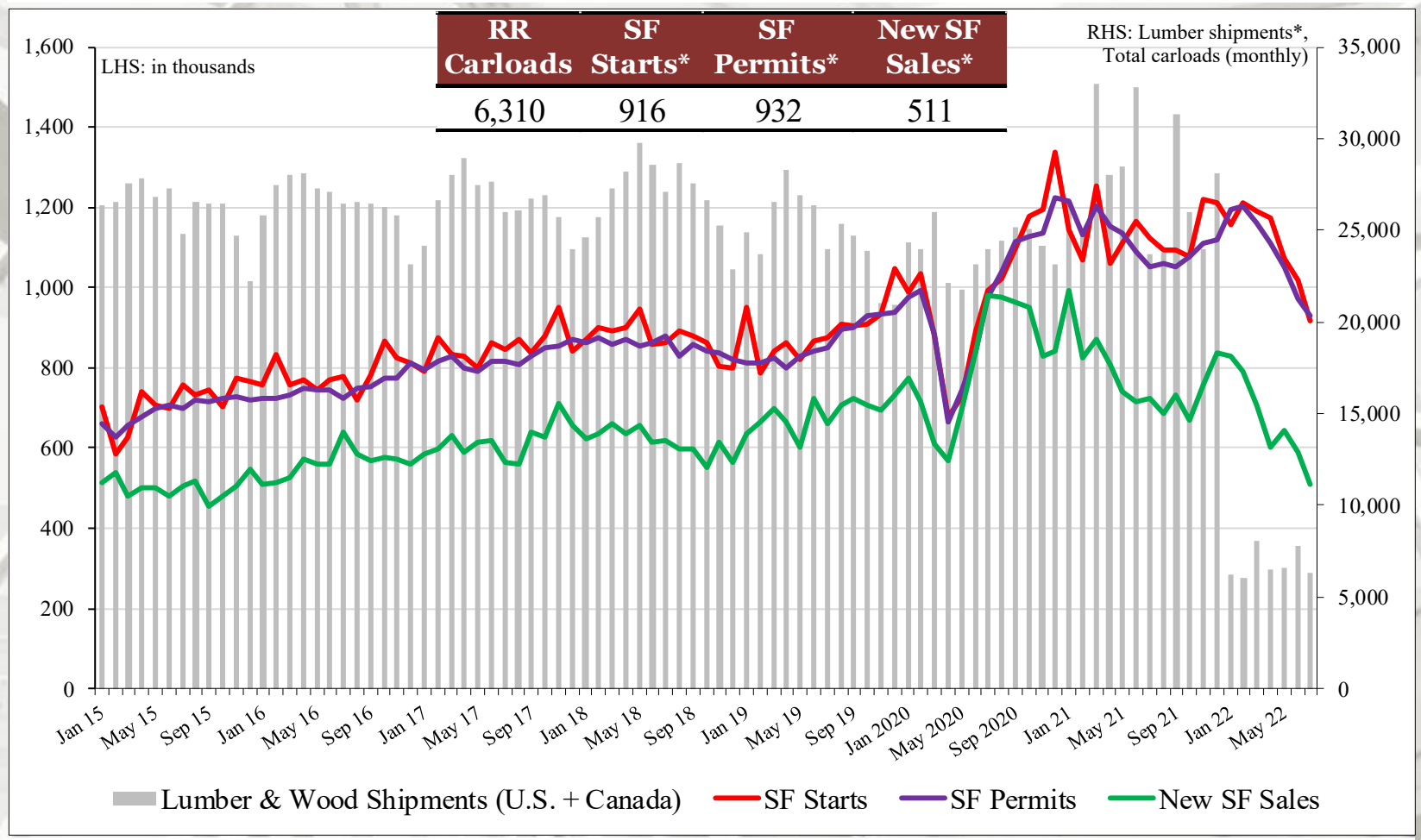
[a] New HUC + New House Completions (sales data only)

The months' supply of new houses for sale was 10.9 at the end of July 2022 (SAAR).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 8/23/22

Return TOC

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



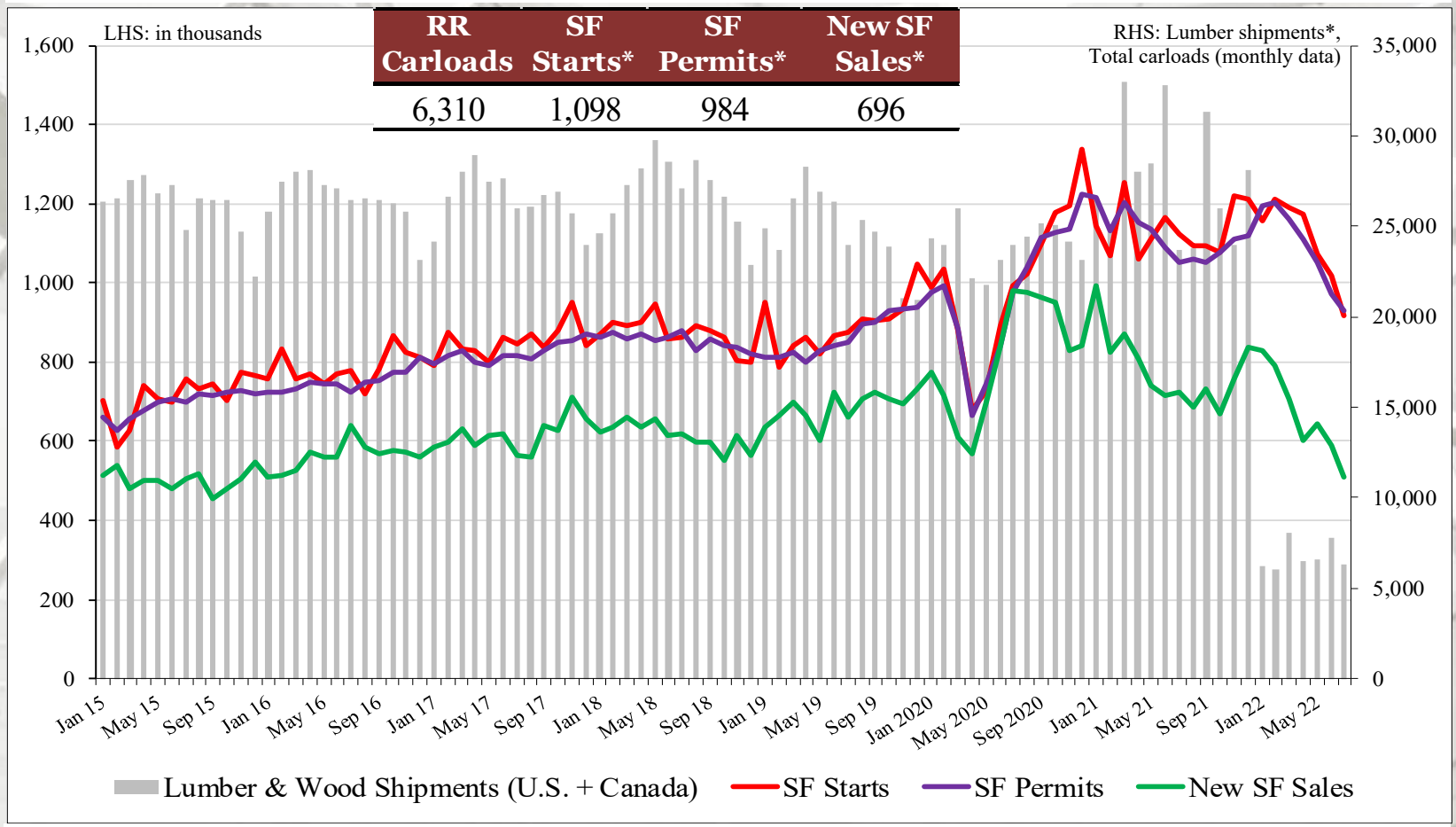
Carloads of Canadian + U.S. lumber and wood shipments to the U.S. are contrasted above to U.S. housing metrics. Annual SF starts, SF Permits, and New sales are compared to total carload lumber and wood shipments. The intent is to discern if lumber shipments relate to future SF starts, SF permits, and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

* In thousands

Sources: *Association of American Railroads, *Rail Time Indicators* report-July 2022; http://www.census.gov/construction/; 8/16/22 & 8/23/22

Return TOC

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



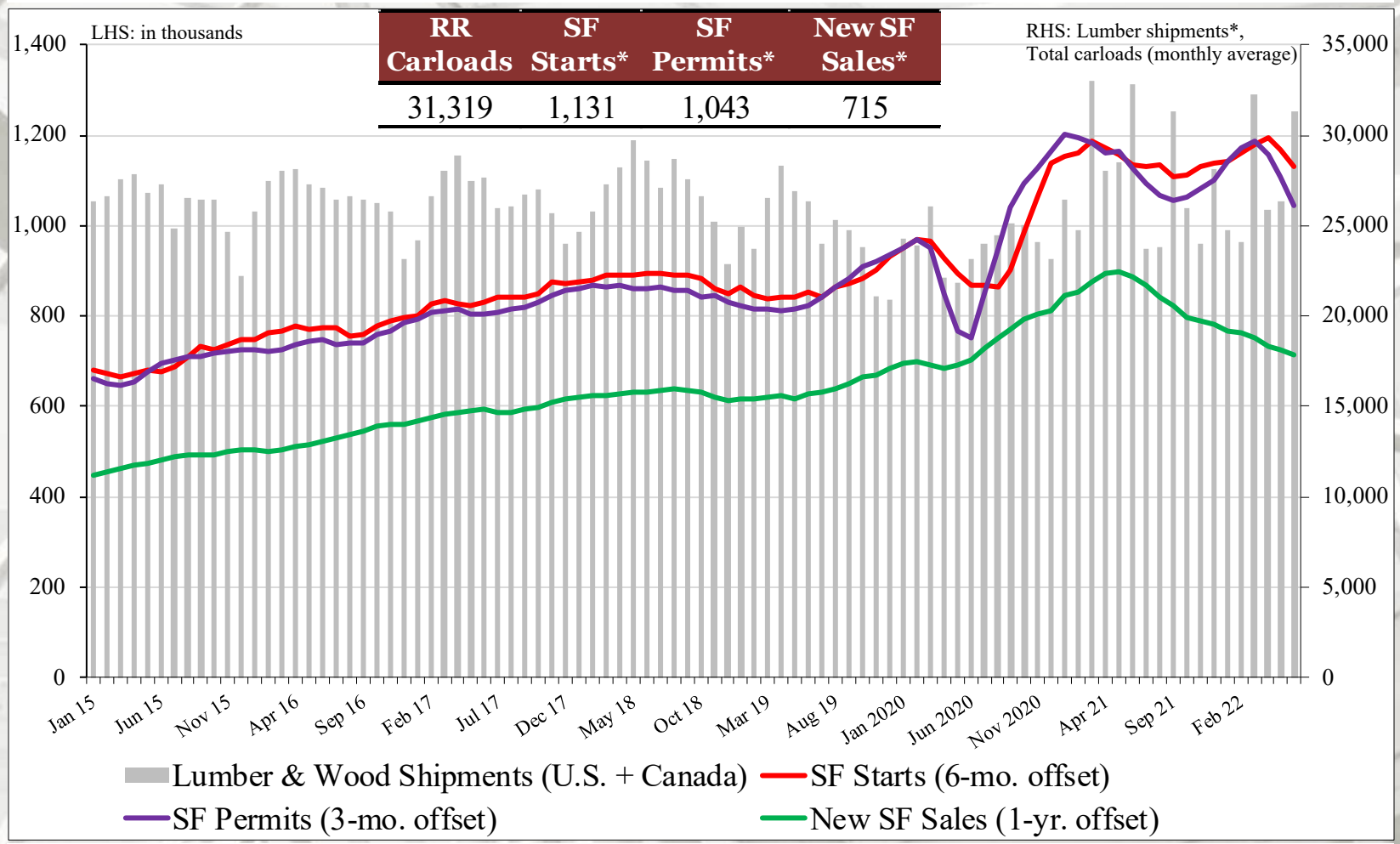
Total carloads of Canadian + U.S. lumber and wood shipments to the U.S. are contrasted above to U.S. housing metrics. Annual SF starts, SF Permits, and New sales are compared to total carload lumber and wood shipments. The intent is to discern if lumber shipments relate to future SF starts, SF permits, 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/; 8/16/22; & 8/23/22

Return TOC

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-July 2022; http://www.census.gov/construction/; 8/16/22 & 8/23/22

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July 2022
Construction Spending

	Total Private Residential*	SF	MF	Improvement**
July	$920,354	$450,077	$100,481	$369,796
June	$934,369	$468,968	$101,072	$364,329
2021	$806,484	$437,294	$101,732	$267,458
M/M change	-1.5%	-4.0%	-0.6%	1.5%
Y/Y change	14.1%	2.9%	-1.2%	38.3%

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

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

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

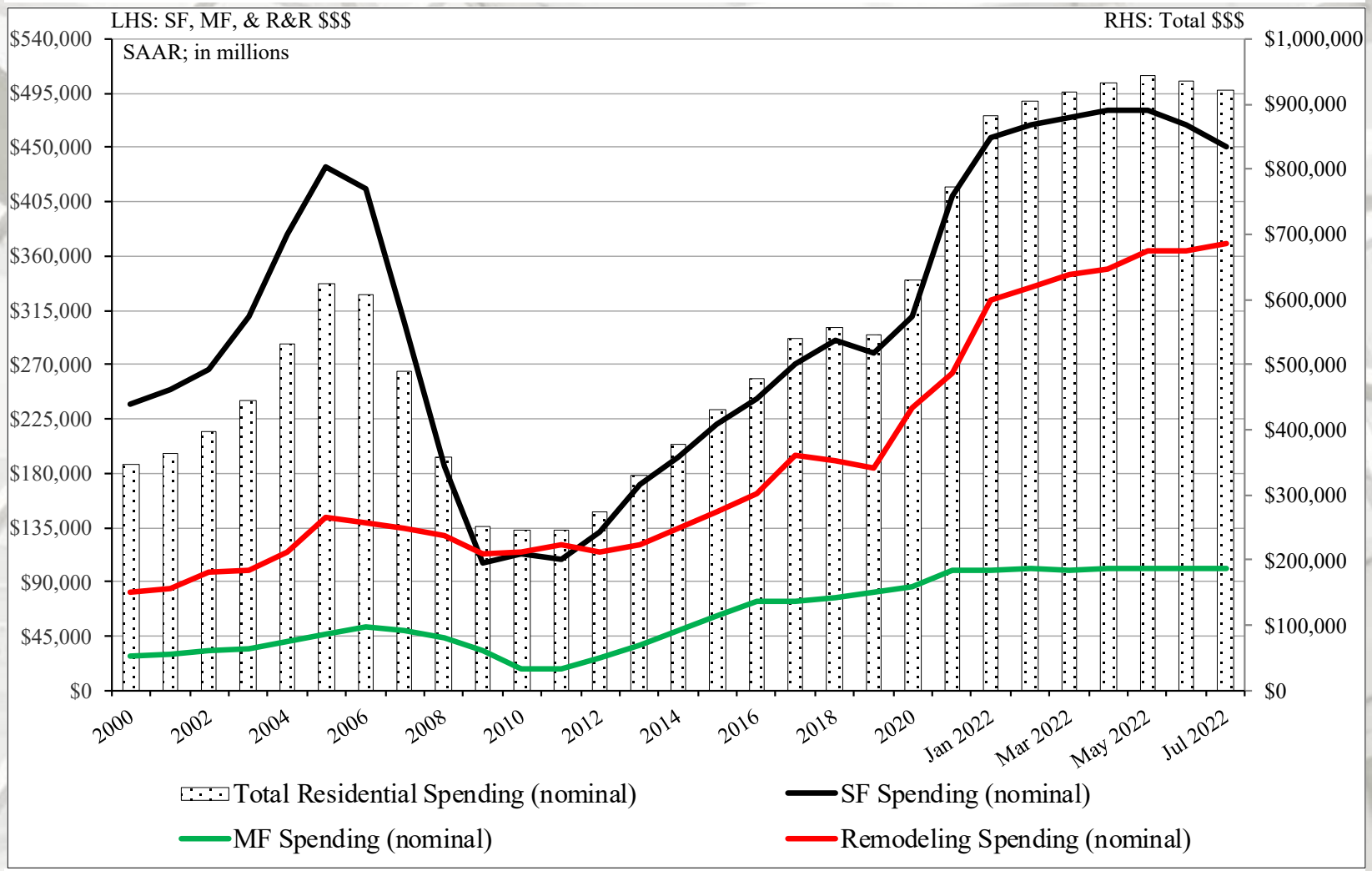
New multi-family includes new apartments and condominiums. The classification excludes residential units in buildings that are primarily nonresidential.

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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 9/1/22

Return TOC

Total Construction Spending (nominal): 2000 – July 2022



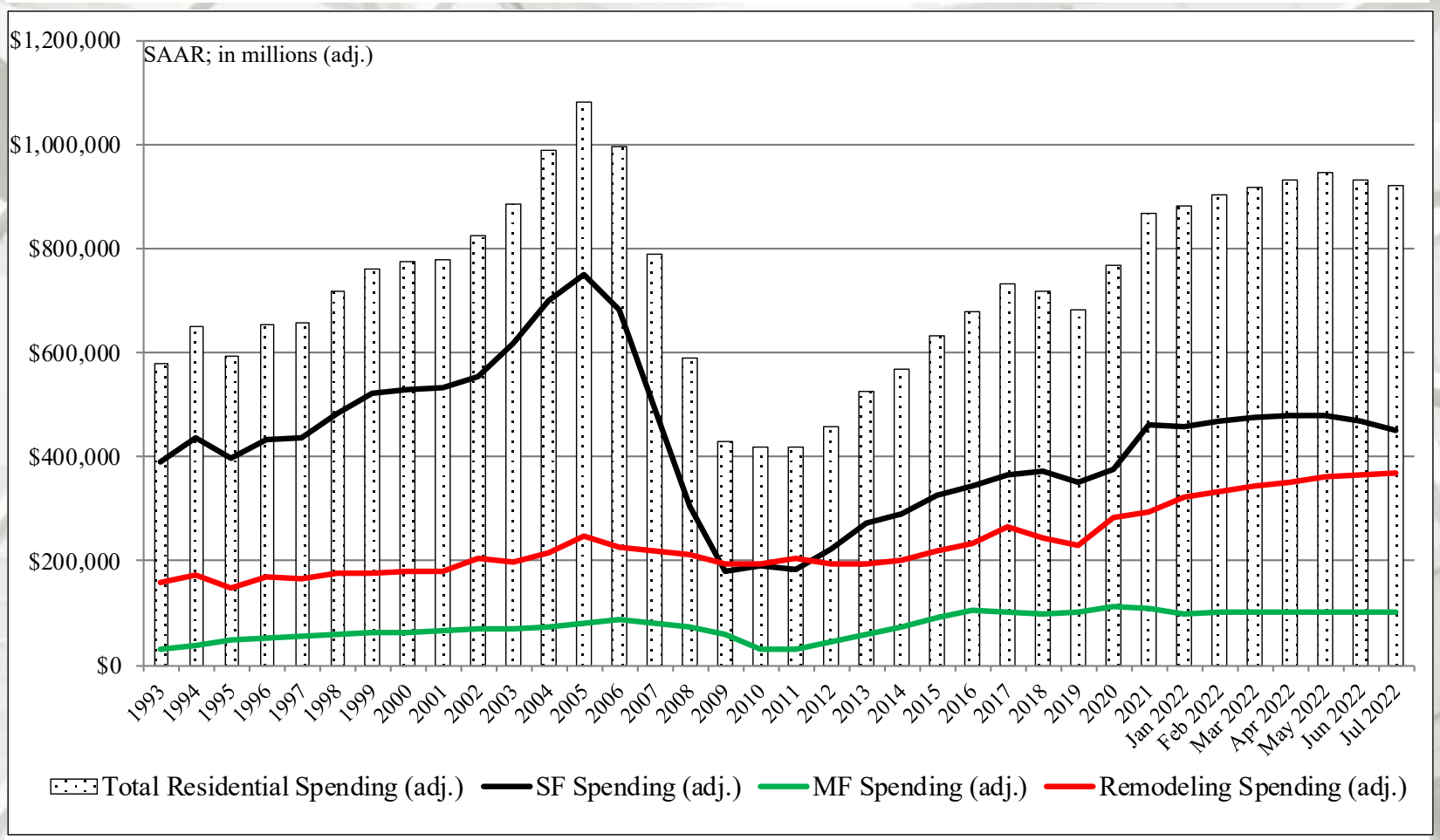
Reported in nominal US$.

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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 9/1/22

Return TOC

Total Construction Spending (adjusted): 1993 – July 2022

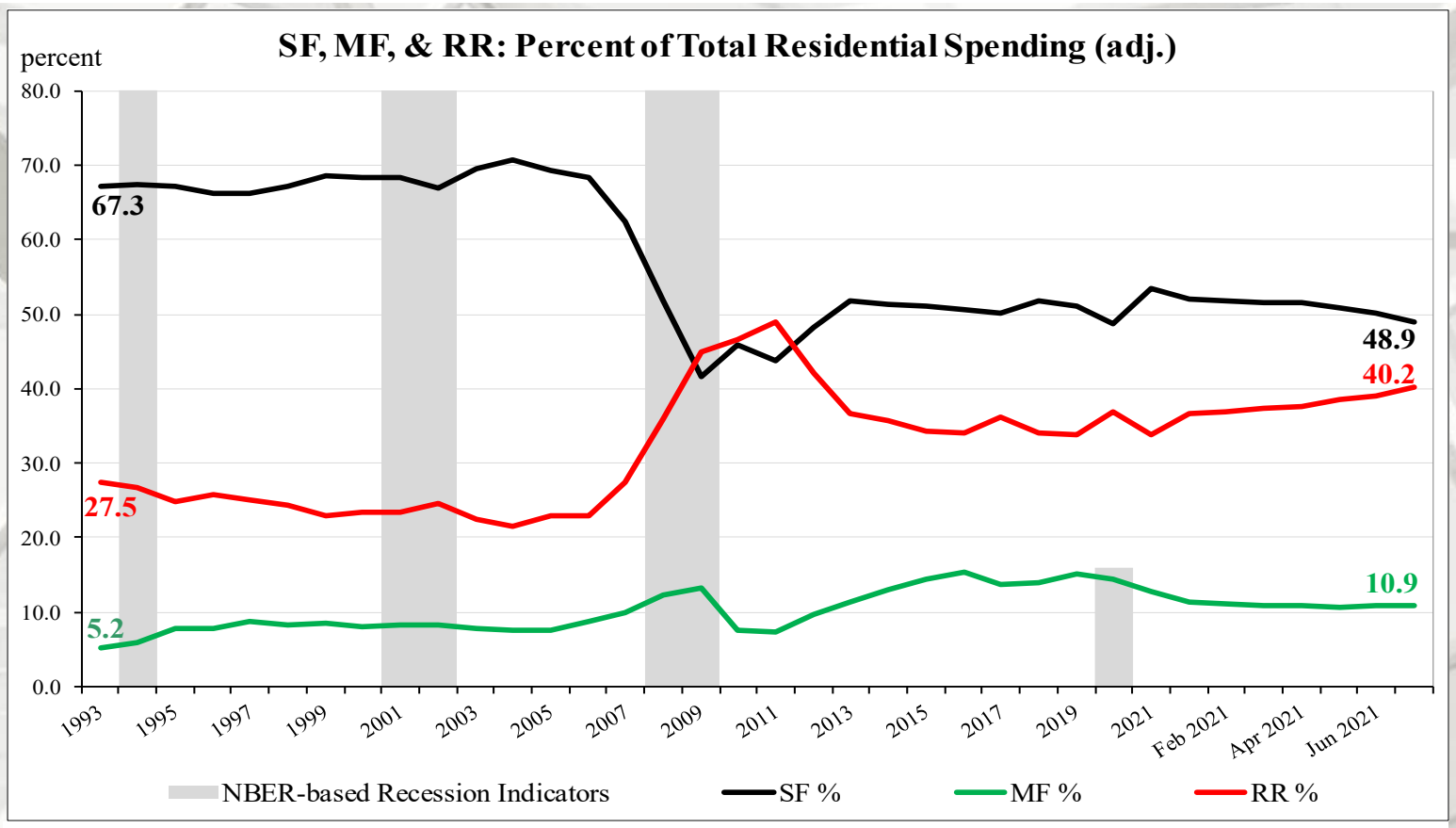


Reported in adjusted $US: 1993 – 2021 (adjusted for inflation, BEA Table 1.1.9); July 2022 reported in nominal US$.

Sources: * http://www.bea.gov/iTable/iTable.cfm; 3/30/22; http://www.census.gov/construction/c30/pdf/privsa.pdf; 9/1/22

Return TOC

Construction Spending Shares: 1993 – July 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).

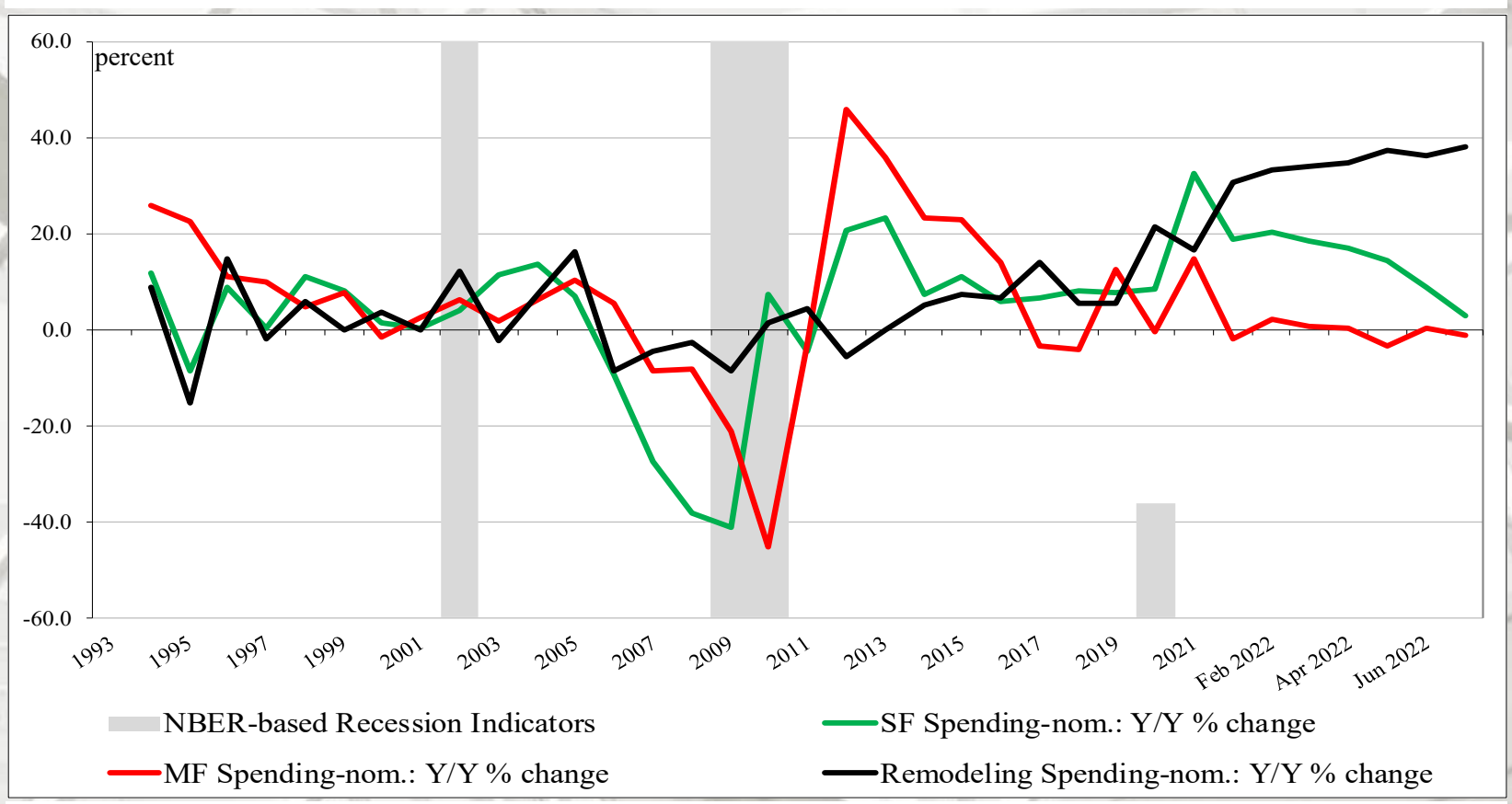
Note: 1993 to 2021 (adjusted for inflation, BEA Table 1.1.9); July 2022 reported in nominal US$.

* NBER based Recession Indicator Bar s 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; 9/1/22 and http://www.bea.gov/iTable/iTable.cfm; 3/30/22

Return TOC

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



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

Presented above is the percentage change of inflation adjusted Y/Y construction spending. SF and RR expenditures were positive on a percentage basis, year-over-year (July 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; 9/1/22 and http://www.bea.gov/iTable/iTable.cfm; 3/30/22

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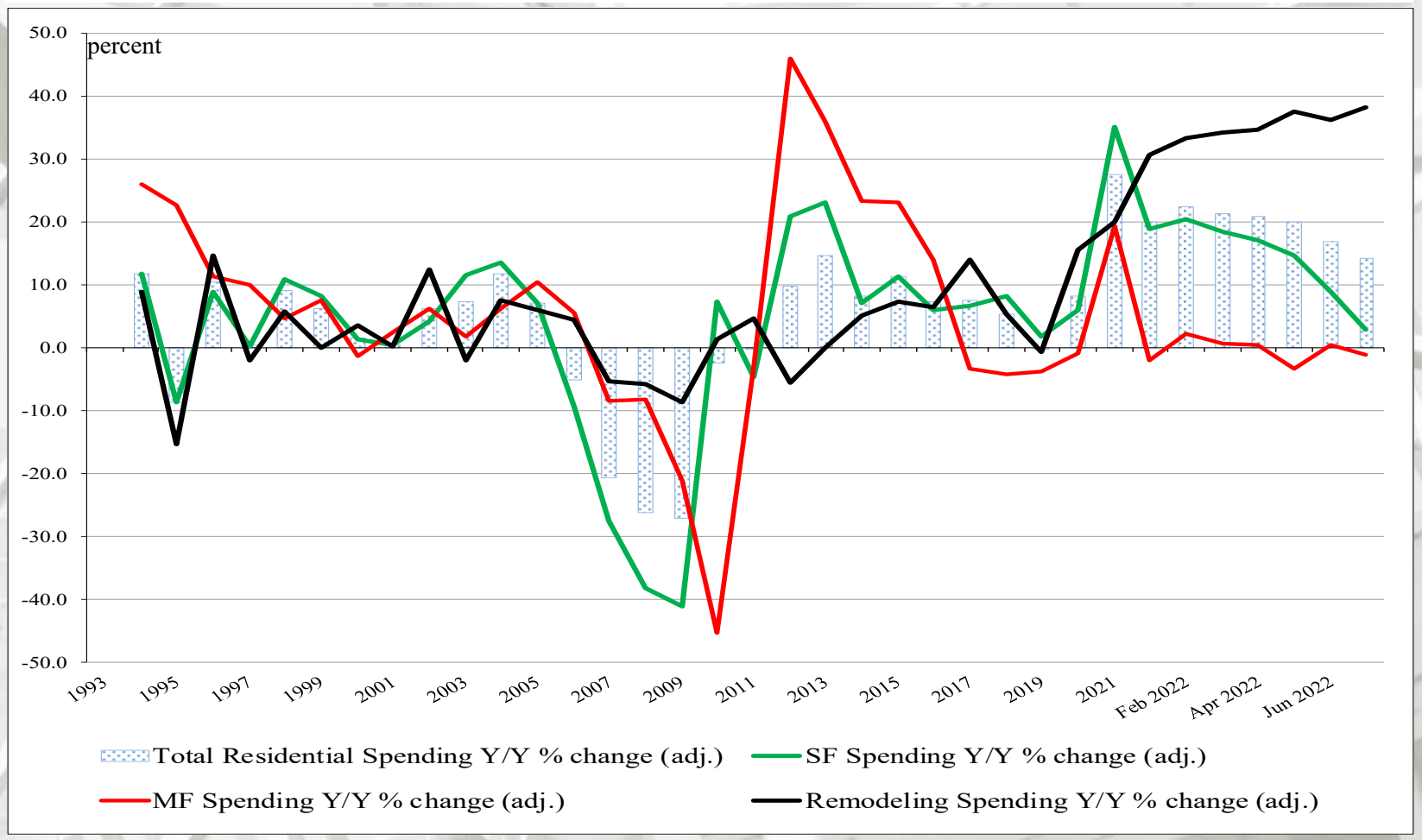
Adjusted Construction Spending: Y/Y Percentage Change, 1993 – July 2022



Sources: http://www.census.gov/construction/c30/pdf/privsa.pdf; 9/1/22 and http://www.bea.gov/iTable/iTable.cfm; 3/30/22

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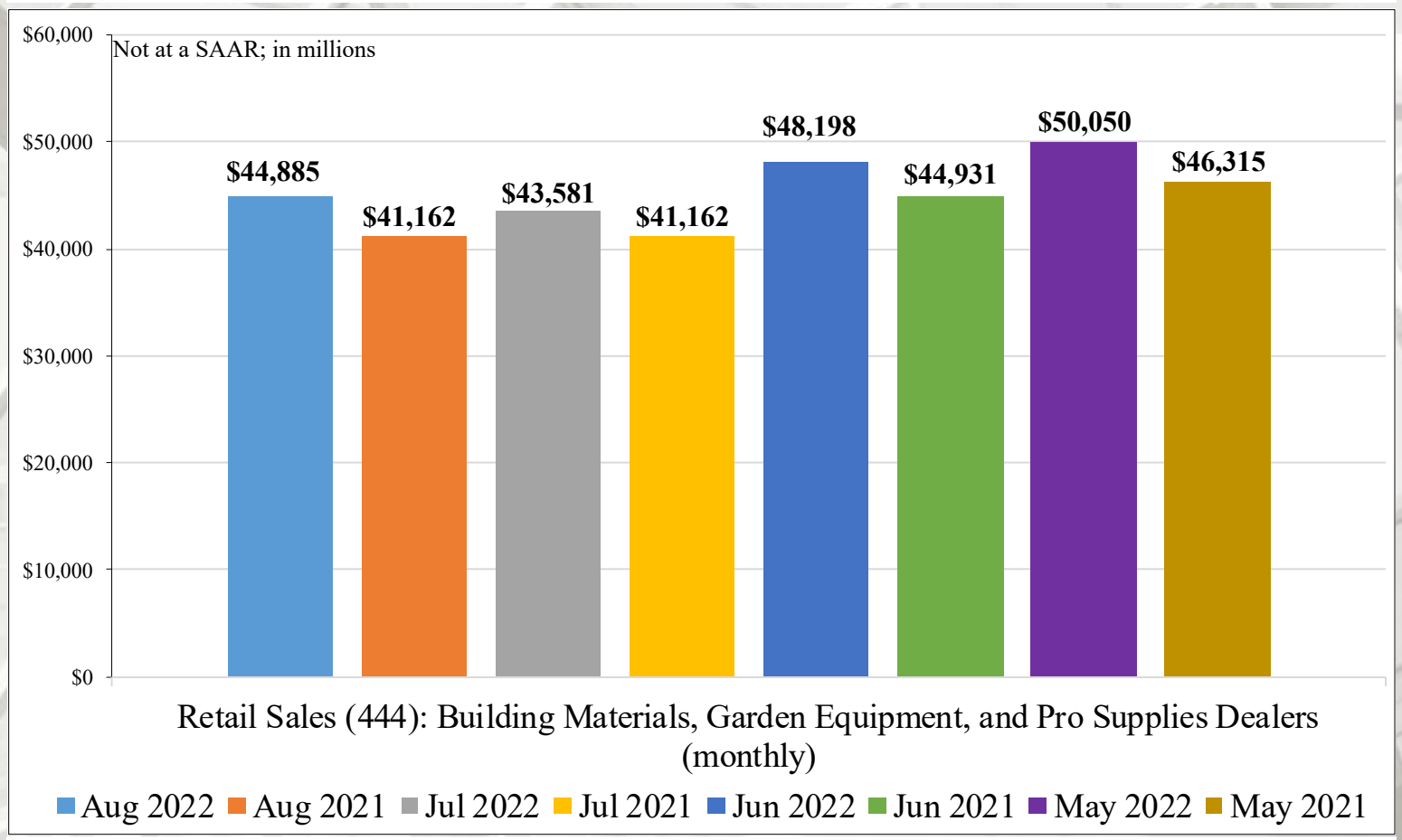
Remodeling

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



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

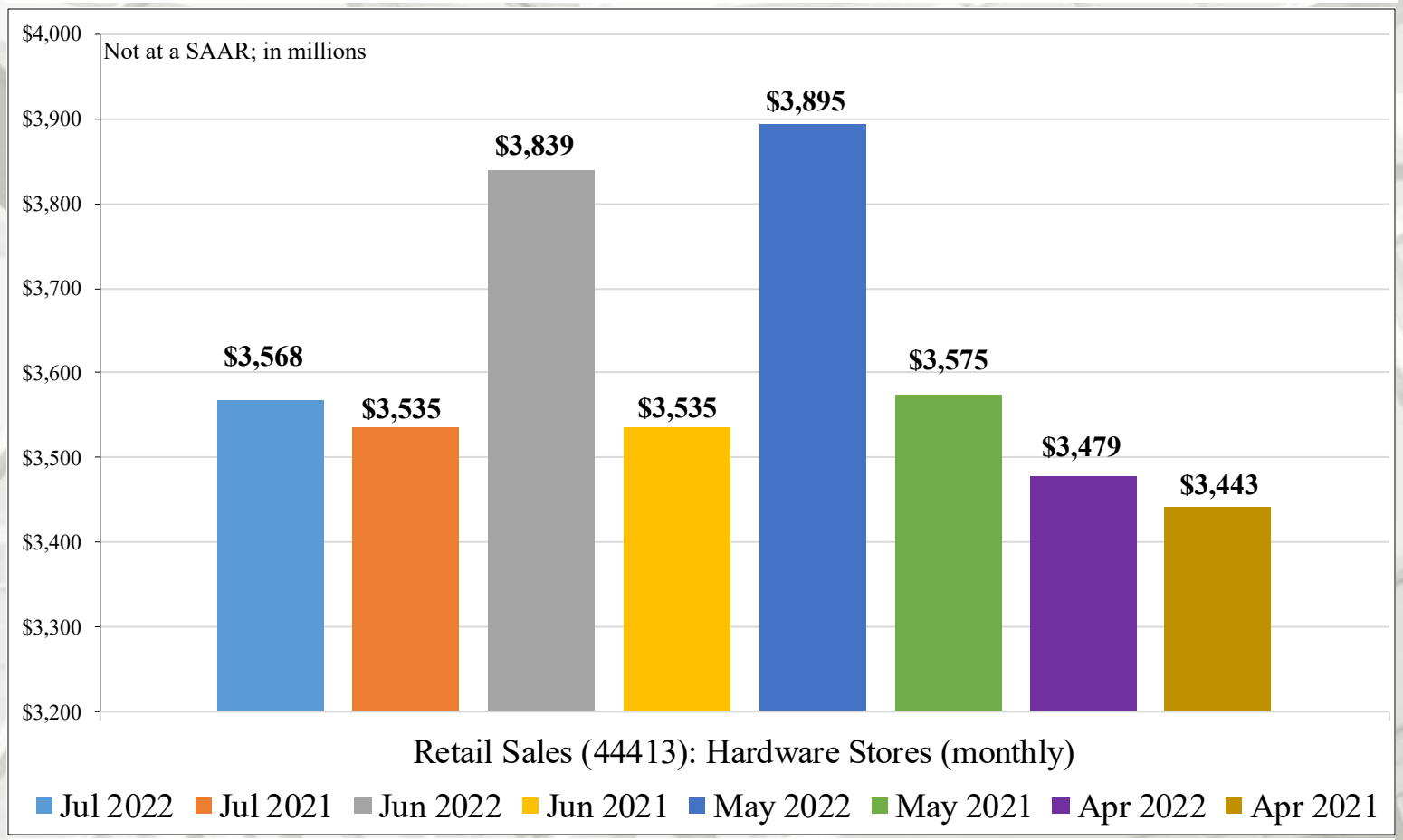
NAICS 444 sales increased 3.0% in August 2022 from July 2022 and improved 13.4% Y/Y (on a non-adjusted basis).

Source: https://www.census.gov/retail/index.html; 9/15/22

Return TOC

Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales decreased 7.1% in July 2022 from June 2022 and increased 9.6% in July 2022 from July 2021 (on a non-adjusted basis).

Source: https://www.census.gov/retail/index.html; 9/15/22

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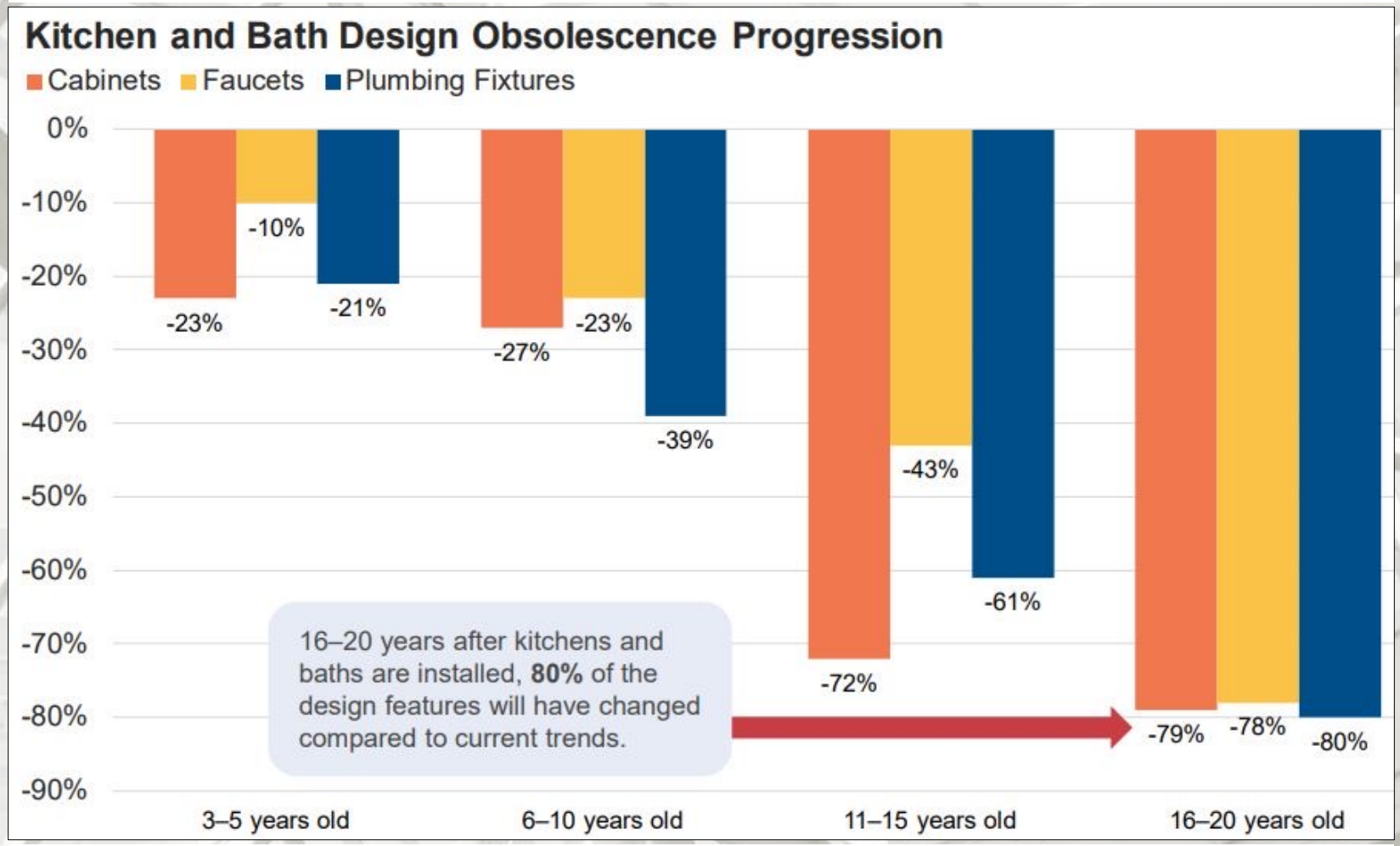
Remodeling



John Burns Real Estate Consulting LLC

"Great news for our friends in the kitchen and bath industry. The boom in construction 16-20 years ago (2002-2006) is ready for a kitchen and bath remodel. On a personal note, we remodeled our kitchen when it was 18 years old." – John Burns, Chief Executive Officer, John Burns Real Estate Consulting LLC

Source: https://twitter.com/johnburnsjbrec/status/1559873438235459585; 8/17/22

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Existing House Sales

National Association of Realtors®

	Existing Sales	Median Price	Month's Supply
July	4,810,000	$403,800	3.3
June	5,110,000	$413,800	2.9
2021	6,030,000	$364,600	2.6
M/M change	-5.9%	-2.4%	13.8%
Y/Y change	-20.2%	10.8%	26.9%

All sales data: SAAR

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 8/18/22

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Existing House Sales

	NE	MW	S	W
July	620,000	1,190,000	2,130,000	870,000
June	670,000	1,230,000	2,250,000	960,000
2021	740,000	1,390,000	2,650,000	1,250,000
M/M change	-7.5%	-3.3%	-5.3%	-9.4%
Y/Y change	-16.2%	-14.4%	-19.6%	-30.4%

	Existing SF Sales	SF Median Price
July	4,310,000	$370,000
June	4,560,000	$360,700
2021	5,320,000	$315,100
M/M change	-5.5%	-2.4%
Y/Y change	-19.0%	10.6%

All sales data: SAAR.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 8/18/22

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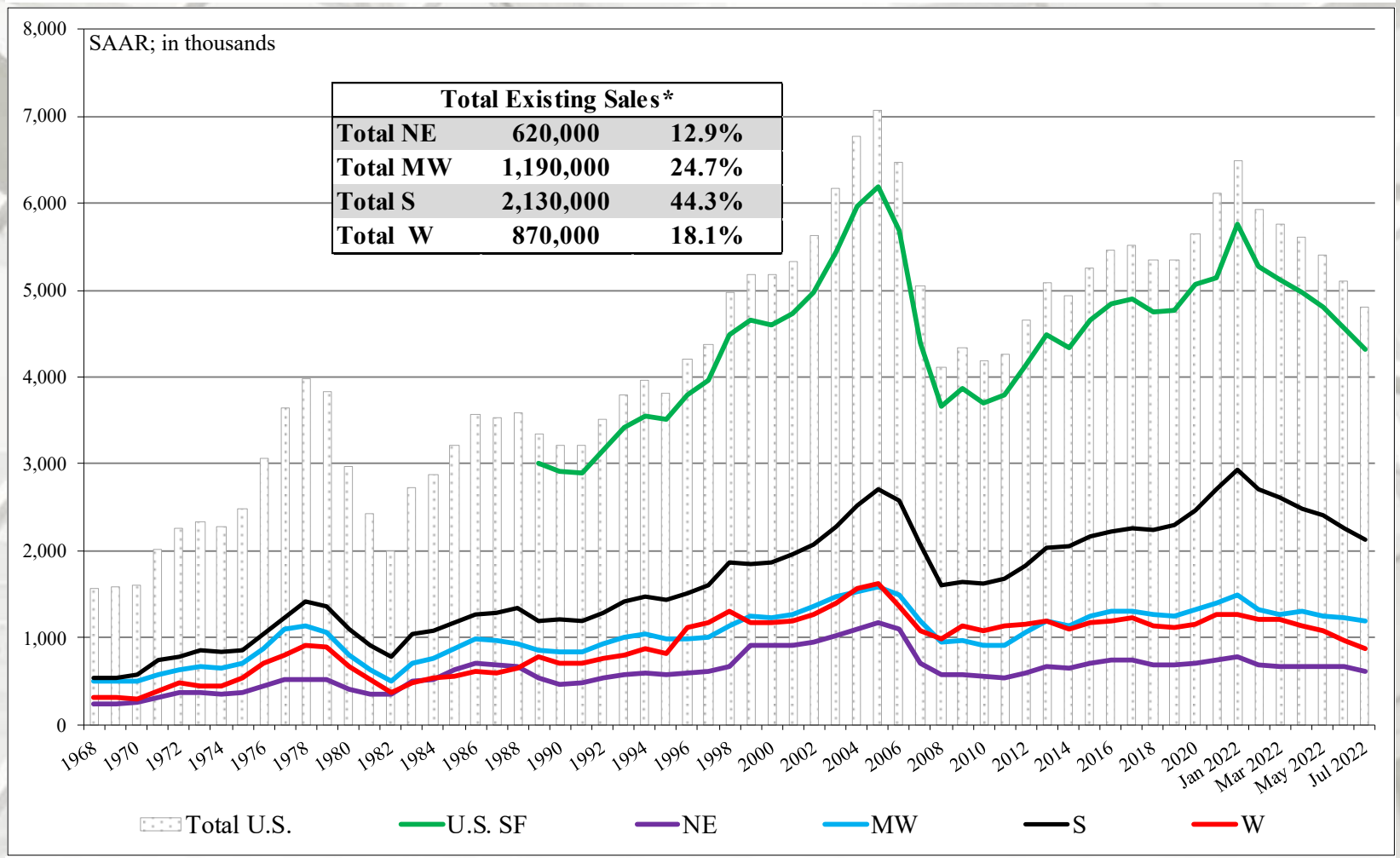
Existing House Sales



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

* Percentage of total existing sales.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 8/18/22

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U.S. Housing Prices

Federal Housing Finance Agency

U.S. House Price Index – August 2022

U.S. House Prices Rise 17.7 Percent over the Last Year; Up 4.0 Percent from the First Quarter

Significant Findings

"U.S. house prices rose **17.7 percent** from the second quarter of 2021 to the second quarter of 2022 according to the Federal Housing Finance Agency House Price Index (FHFA HPI®). House prices were up **4.0 percent** compared to the first quarter of 2022. FHFA's seasonally adjusted monthly index for June was up **0.1 percent** from May.

- Nationally, the U.S. housing market has experienced positive annual appreciation each quarter since the start of 2012.
- House prices rose in all 50 states and the District of Columbia between the second quarters of 2021 and 2022. The five areas with the highest annual appreciation were: 1) Florida 29.8 percent; 2) Arizona 25.5 percent; 3) North Carolina 25.2 percent; 4) Montana 24.9 percent; and 5) Tennessee 24.3 percent. The areas showing the lowest annual appreciation were: 1) District of Columbia 5.2 percent; 2) North Dakota 10.6 percent; 3) Louisiana 10.8 percent; 4) Minnesota 11.3 percent and 5) Maryland 12.0 percent.
- House prices rose in all of the top 100 largest metropolitan areas over the last four quarters. Annual price increases were greatest in North Port-Sarasota-Bradenton, FL, where prices increased by 36.4 percent. Prices were weakest in Washington-Arlington-Alexandria, DC-VA-MD-WV (MSAD), where they increased by 9.1 percent.
- Of the nine census divisions, the South Atlantic division recorded the strongest four-quarter appreciation, posting a 23.0 percent gain between the second quarters of 2021 and 2022 and a 5.2 percent increase in the second quarter of 2022. Annual house price appreciation was weakest in the West North Central division, where prices rose by 13.9 percent between the second quarters of 2021 and 2022." – Raffi Williams and Adam Russell, FHFA

Source: https://www.fhfa.gov/Media/PublicAffairs/Pages/US-House-Prices-Rise-17pt7-Percent-over-the-Last-Year.aspx; 8/30/22

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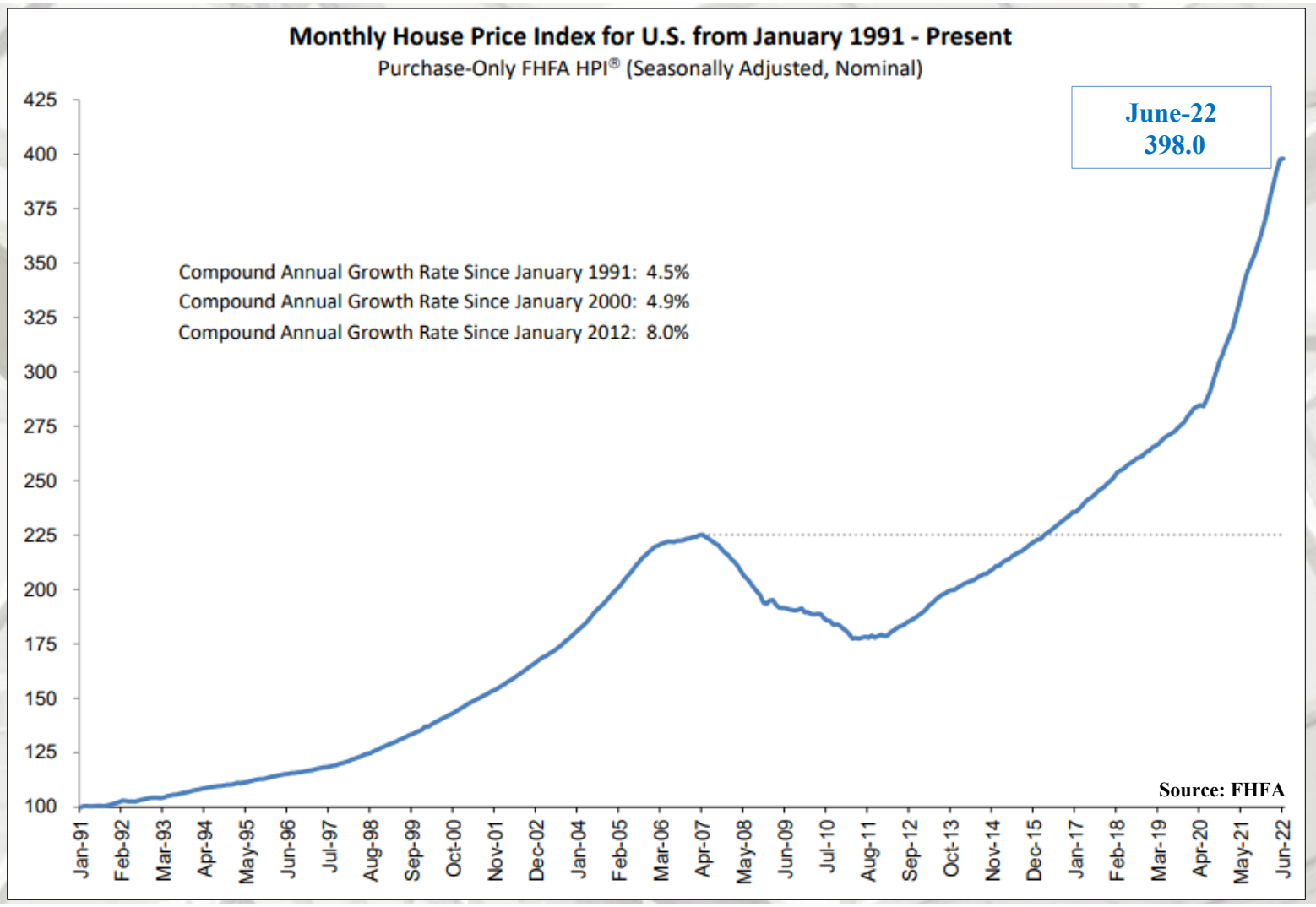
U.S. Housing Prices



Federal Housing Finance Agency

U.S. House Price Index – August 2022

"Housing prices grew quickly through most of the second quarter of 2022, but a deceleration has appeared in the June monthly data. The pace of growth has subsided recently, which is consistent with other recent housing data." – William Doerner, Ph.D., Supervisory Economist, Division of Research and Statistics, FHFA

Source: https://www.fhfa.gov/Media/PublicAffairs/Pages/US-House-Prices-Rise-17pt7-Percent-over-the-Last-Year.aspx; 8/30/22

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U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Reports Annual Home Price Gain of 19.7% in June

"… Data for June 2022 show that home prices continue to increase 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 an 18.0% annual gain in June, down from 19.9% in the previous month. The 10-City Composite annual increase came in at 17.4%, down from 19.1% in the previous month. The 20-City Composite posted an 18.6% year-over-year gain, down from 20.5% in the previous month.

Tampa, Miami, and Dallas reported the highest year-over-year gains among the 20 cities in June. Tampa led the way with a 35.0% year-over-year price increase, followed by Miami in second with a 33.0% increase, and Dallas in third with a 28.2% increase. Only one of the 20 cities reported higher price increases in the year ending June 2022 versus the year ending May 2022.

Month-Over-Month

Before seasonal adjustment, the U.S. National Index posted a 0.6% month-over-month increase in June, while the 10-City and 20-City Composites both posted increases of 0.4%.

After seasonal adjustment, the U.S. National Index posted a month-over-month increase of 0.3%, and the 10-City and 20-City Composites posted increases of 0.3% and 0.4%, respectively. In June, 13 cities reported increases before and after seasonal adjustments." – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

Source: https://www.spglobal.com/spdji/en/documents/indexnews/announcements/20220830-1455422/1455422_cshomeprice-release-0830.pdf/; 8/30/22

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U.S. Housing Prices

S&P CoreLogic Case-Shiller Index

Analysis

"The deceleration in U.S. housing prices that we began to observe several months ago continued in June 2022, as the National Composite Index rose by 18.0% on a year-over-year basis. Relative to May's 19.9% gain (and April's 20.6%), prices are clearly increasing at a slower rate. This pattern is consistent with our 10-City Composite (up 17.4% in June vs. 19.1% in May) and our 20-City Composite (up 18.6% in June vs. 20.5% in May). It's important to bear in mind that *deceleration* and *decline* are two entirely different things, and that prices are still rising at a robust clip. June's growth rates for all three composites are at or above the 95th percentile of historical experience. For the first six months of 2022, in fact, the National Composite is up 10.6%. In the last 35 years, only four complete years have witnessed increases that large.

The market's strength continues to be broadly based, as all 20 cities recorded double-digit price increases for the 12 months ended in June. In 19 out of 20 cases, however, June's reading was less than May's, showing the impact of deceleration at the regional level. Tampa (+35.0%) was the fastest growing city for the fourth consecutive month, with Miami (+33.0%) and Dallas (+28.2%) holding on to silver and bronze positions. Prices continued strongest in the Southeast (+29.6%) and South (+29.3%).

We've noted previously that mortgage financing has become more expensive as the Federal Reserve ratchets up interest rates, a process that continued as our June data were gathered. As the macroeconomic environment continues to be challenging, home prices may well continue to decelerate." – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

Source: https://www.spglobal.com/spdji/en/documents/indexnews/announcements/20220830-1455422/1455422_cshomeprice-release-0830.pdf/; 8/30/22

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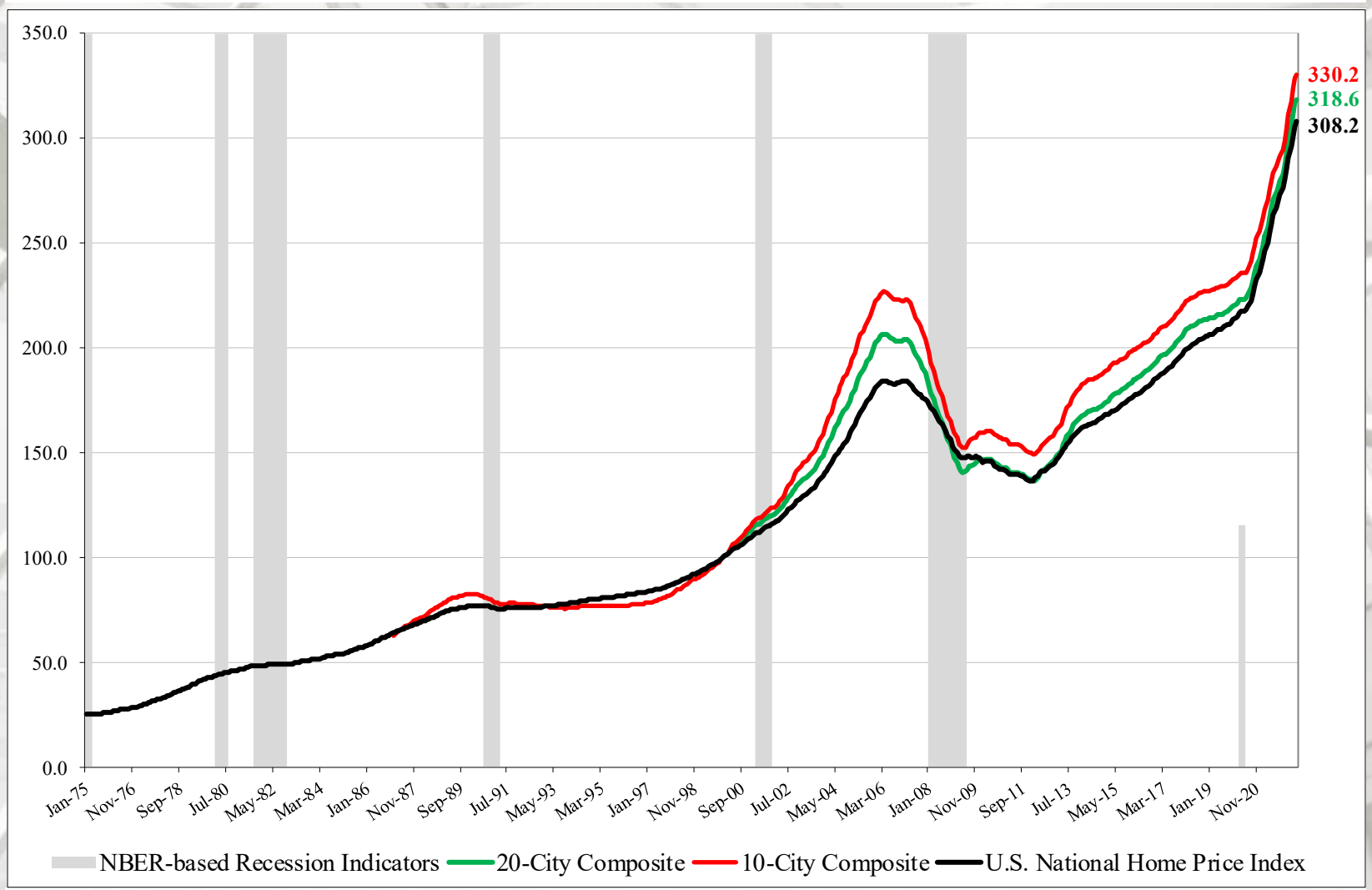
S&P/Case-Shiller Home Price Indices



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

Source: https://www.spglobal.com/spdji/en/documents/indexnews/announcements/20220830-1455422/1455422_cshomeprice-release-0830.pdf/; 8/30/22

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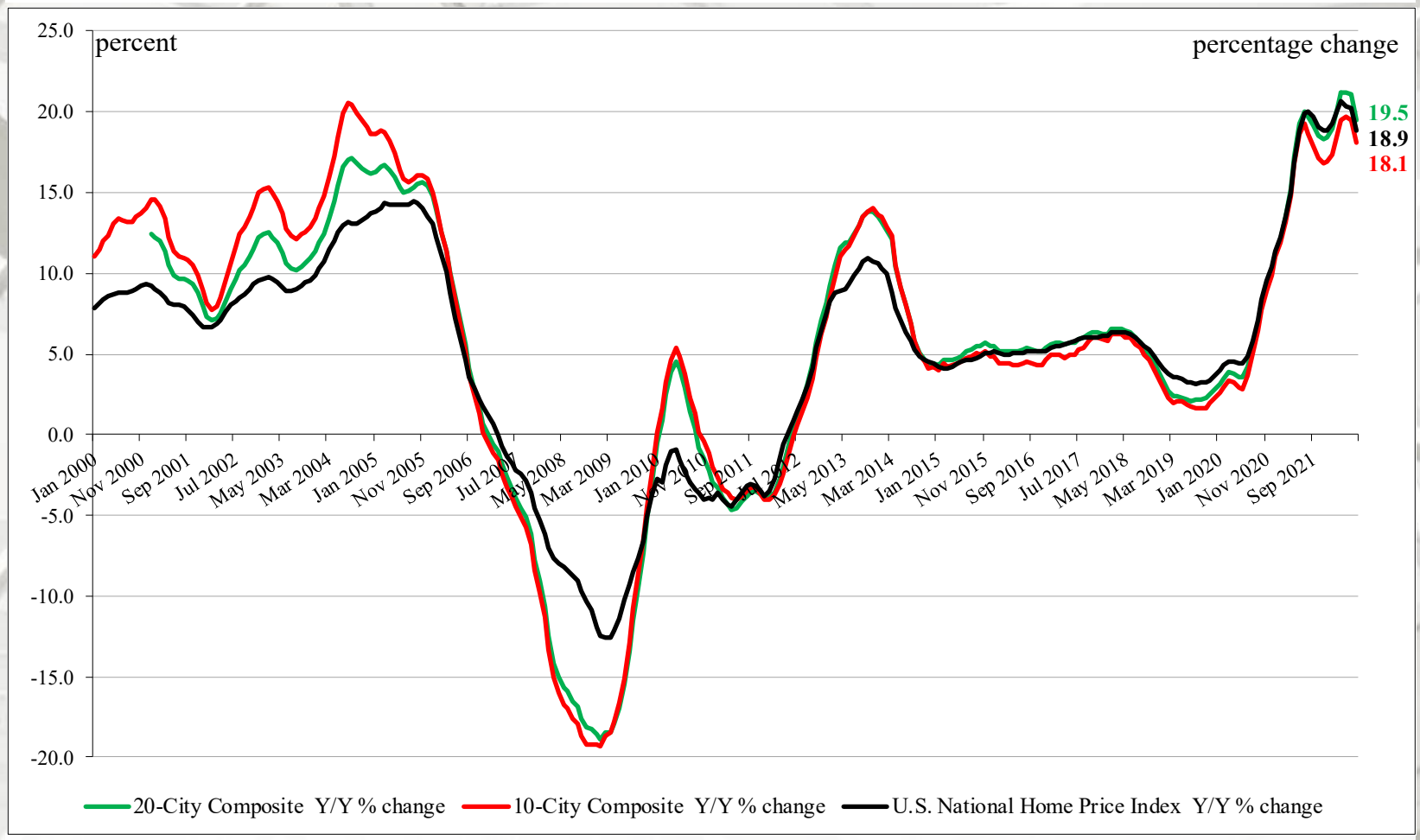
S&P/Case-Shiller Home Price Indices



* 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 2021 to June 2022, the National Index increased 18.9%; the Ten-City by 18.1%, and the Twenty-City by 19.5%.

Source: https://www.spglobal.com/spdji/en/documents/indexnews/announcements/20220830-1455422/1455422_cshomeprice-release-0830.pdf/; 8/30/22

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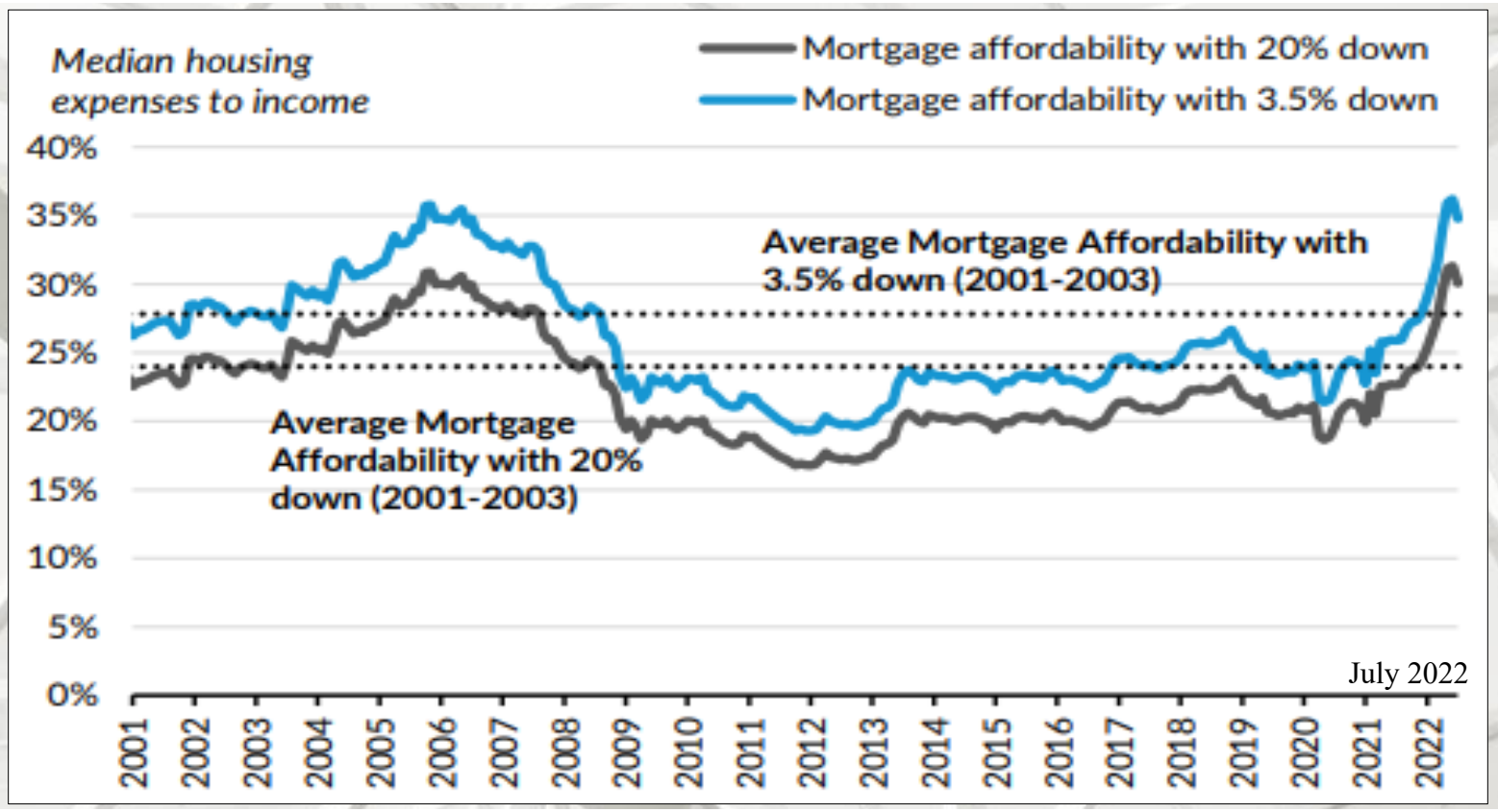
U.S. Housing Affordability



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 July 2022, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 30.1 percent, slightly lower than the 30.9 percent at the peak of the housing bubble in November 2005; with 3.5 percent down it is 34.8 percent, again slightly below 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

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-august-2022; 8/30/22

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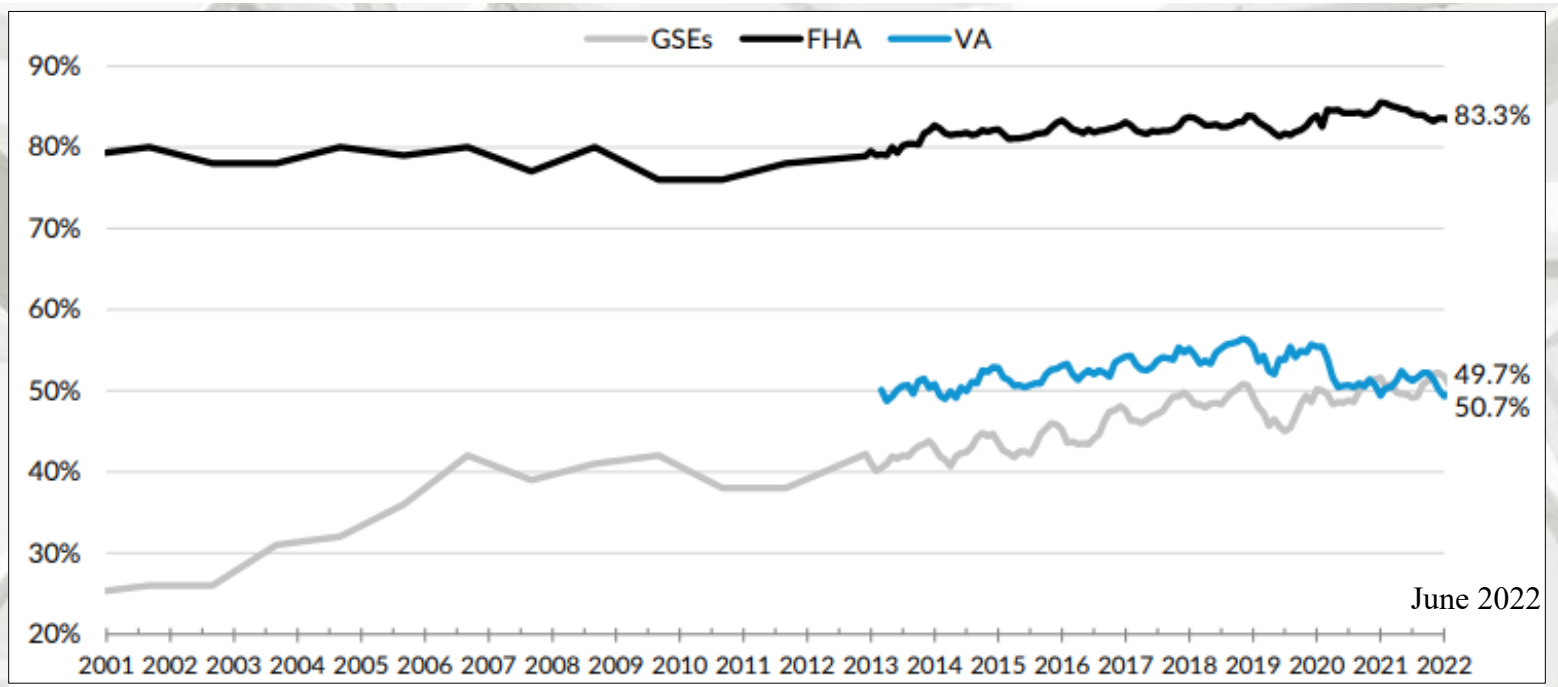
U.S. Housing



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

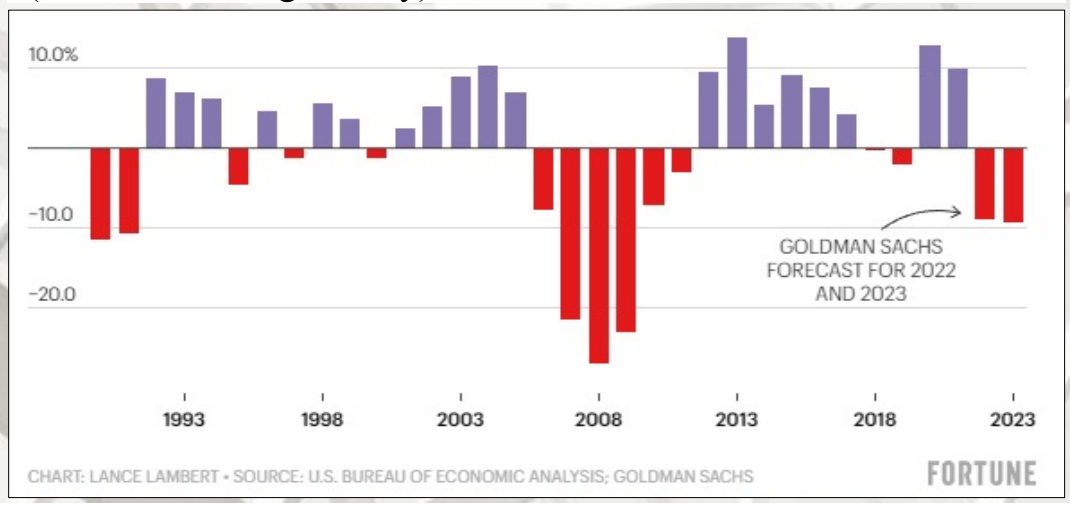
"In June 2022, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 83.3 percent. The FTHB share of GSE lending in June was 50.7 percent; the VA share was a very similar 49.7 percent. The bottom table shows that based on mortgages originated in July 2022, the average 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

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-august-2022; 8/30/22

Return TOC

U.S. Housing Market

The housing market recession to carry over into 2023
Year-over-year change in private residential fixed investment GDP (i.e., U.S. housing activity).



Fortune

The U.S. housing market downturn will be worse in 2023, forecasts Goldman Sachs

"The U.S. entered into its first housing downturn of the post–Great Financial Crisis era. And the worst still awaits.

On Tuesday, researchers at Goldman Sachs released a paper titled "The Housing Downturn: Further to Fall." The investment bank now forecasts that activity in the U.S. housing market will end 2022 down across the board. The firm projects sharp declines this year in new home sales (22% drop), existing home sales (17% drop), and housing GDP (8.9% drop). For perspective, Russia's souring economy is only expected to see its GDP fall 3% this year.

And don't expect relief in 2023. Goldman Sachs projects further declines next year in new home sales (another 8% drop), existing home sales (another 14% drop), and housing GDP (another 9.2% drop)." – Lance Lambert, Fortune

Source: https://fortune.com/2022/08/31/housing-market-recession-to-be-even-bigger-in-2023-forecast-goldman-sachs; 8/31/22

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U.S. Housing Market

Fortune

“This housing downturn, of course, is a direct result of the Federal Reserve's inflation fight. Not long after the central bank began applying upward pressure this spring on mortgage rates, the housing market slipped into slowdown mode. Home shoppers across the country put their home search on pause. That housing market downturn, the Fed hopes, will slow down the rest of the economy and, in theory, help to rein in runaway inflation.

“It [housing] is not the target, but it [housing] is essentially the target,” Bill McBride, author of the economics blog Calculated Risk, told *Fortune* last month.

There's another driving force behind the housing downturn: household formation. The pandemic — and the WFH revolution it set off — saw a historic spike in household formation. Can you blame Gen Zers for not wanting to work from home alongside their roommate? But that phenomenon is over now, according to Goldman Sachs.

“Some of the recent weakness appears to reflect the reversal of pandemic-related preference shifts that are proving more fleeting than we’d expected. We previously noted that the virus shock accelerated household formation and boosted demand for second homes...[but] those tailwinds have already largely faded, as regions that experienced outsized increases in home sales and building permits in 2020 and 2021 are now experiencing disproportionate declines this year," write Goldman Sachs researchers.

What does this housing downturn mean for home prices? The honest answer: It's hard to say.

Heading forward, Goldman Sachs expects home price growth to decelerate significantly. The investment bank expects home prices to rise just 1.8% in 2023.

“Past housing downturns have typically been accompanied by economy wide recessions, which led to an influx of housing supply as unemployment rose and individuals were forced to sell their homes (this was especially the case in the financial crisis). However, an influx of supply from this channel seems unlikely this cycle: the labor market remains robust (and likely will, even in a mild recession) and, as we wrote last week, household balance sheets are extremely strong and loan delinquency rates are likely to remain historically low,” writes Goldman Sachs researchers. “Thereafter, we expect home prices to be flat in 2023.”” – Lance Lambert, Fortune

Source: https://fortune.com/2022/08/31/housing-market-recession-to-be-even-bigger-in-2023-forecast-goldman-sachs; 8/31/22

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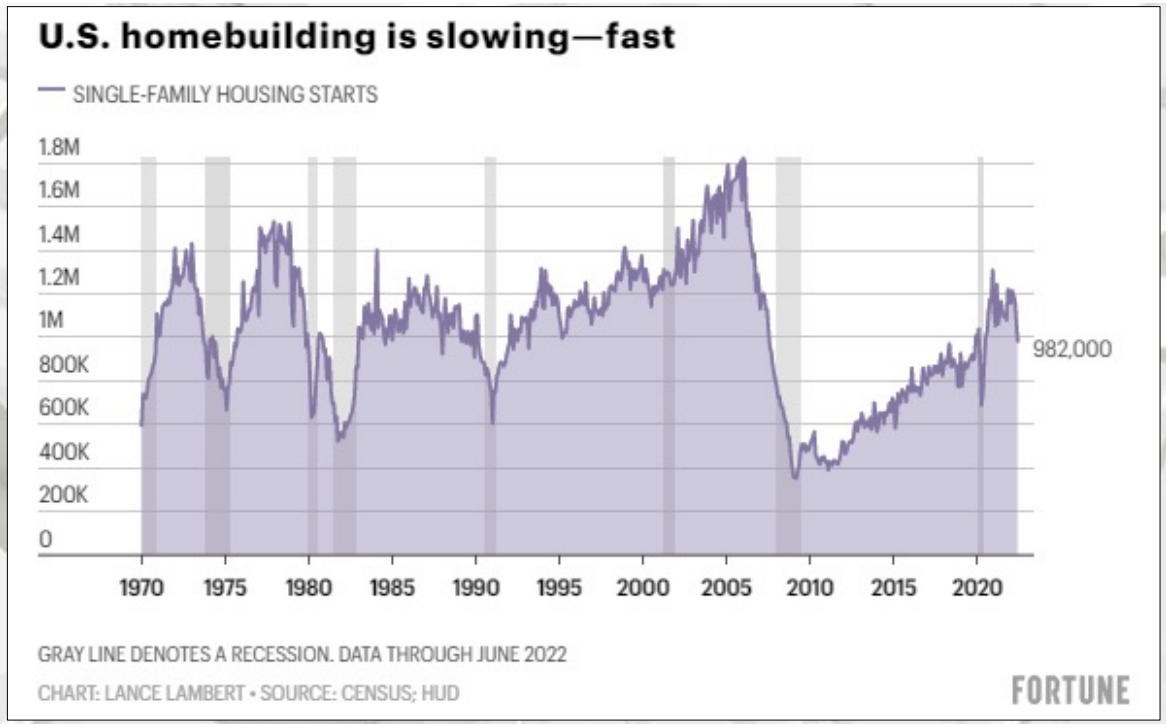
U.S. Housing Market



Fortune

"Over the coming year, the Mortgage Bankers Association, Fannie Mae, Freddie Mac, CoreLogic, and Zillow also predict a single-digit rise in home prices. Others think falling home prices are on the horizon. Indeed, modest home price declines are currently forecasted by Moody's Analytics, John Burns Real Estate Consulting, Capital Economics, Zelman & Associates, and Zonda. Both Fitch Ratings and economist Robert Shiller, who predicted the 2008 housing crash, think a greater than 10% decline in U.S. house prices could be in the cards.

"While outright declines in national home prices are possible and appear quite likely for some regions, large declines seem unlikely," writes Goldman Sachs researchers.

If Goldman Sachs' forecast comes to fruition, it'll mean next year is the bottom of the housing downturn. In 2024, the investment bank expects housing activity to begin to rebound. That'll also see, according to Goldman Sachs, home price growth climb to 3.5% in 2024 and 3.8% in 2025." – Lance Lambert, Fortune

Source: https://fortune.com/2022/08/31/housing-market-recession-to-be-even-bigger-in-2023-forecast-goldman-sachs; 8/31/22

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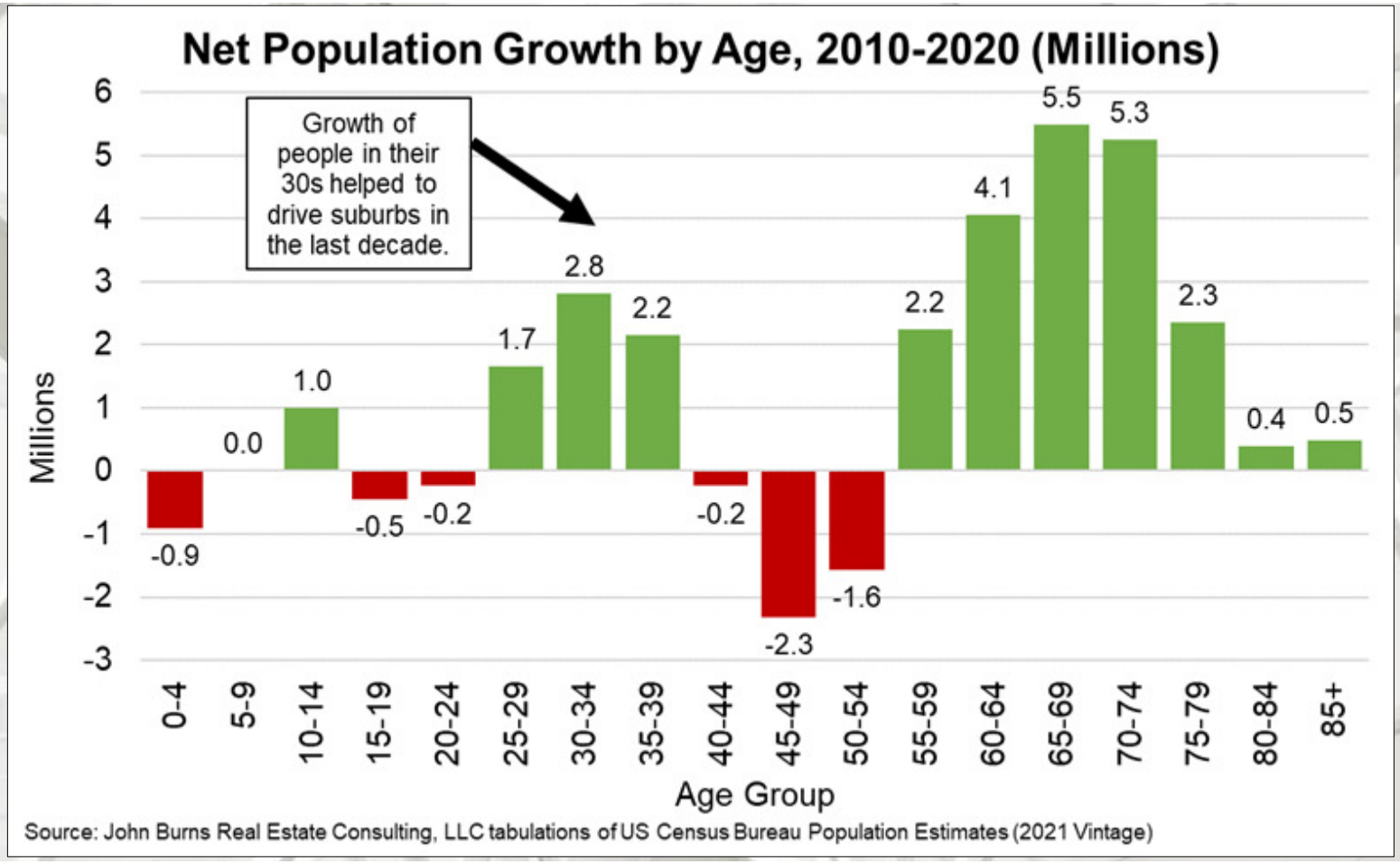
U.S. Housing Market



John Burns Real Estate Consulting, LLC

"Growth of people in their 30s fueled the shift to the suburbs in the last decade (even before the pandemic). The same population fueled urban growth the prior decade in their 20s. Cities aren't dead, but age trends suggests continued suburban growth. All that rental demand last decade is now for sale demand." – Chris Porter, Chief Demographer and John Burns, Chief Executive Officer, Real Estate Consulting, LLC

Source: https://twitter.com/johnburnsjbrec/status/1549831457975111680; 7/20/22

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U.S. Housing Market

John Burns Real Estate Consulting, LLC

"Housing Reset" Becoming Widespread

"The Fed's plan – in the words of Chair Powell – to create a "housing reset" is working in more ways than many realize. While much has been written about declining home sales due to higher mortgage rates, much less has been written about declines throughout other areas of the housing industry. As we called out in our client webinar 4-months ago, the Fed is throwing the housing market "under the bus" in its attempt to rein in inflationary pressures.

Investor Pullback
Rising borrowing costs have driven many investors, including fix and flippers, out of the market.

For those of you that think flipping is a small part of the market, think again. For starters, the real estate investor website BiggerPockets has almost 1 million subscribers to their Youtube channel. Higher rates are hurting the fix-and-flip market from both ends by shrinking pool the pool of available home buyers as well as the pool of feasible home acquisitions. Our 2Q22 survey of fix-and-flip investors across the country, which was fielded in mid-July, revealed that 35% of flippers saw at least half of their deals fall through due to the rise in financing costs. These two comments we received from flippers succinctly sum up current market conditions:

- **Atlanta, GA flipper**: "This is a much higher risk environment due to rising rates. Sellers still have not reset expectations from earlier this year, so ***acquisitions have essentially come to a halt***."
- **Charlotte, NC flipper**: "Higher prices for purchases and rising interest rates are hurting our ability to acquire homes. We are seeing ***weaker after-repair-value (ARV) for flips*** and tighter profit margins." – Alex Thomas, Senior Research Analyst and Devyn Bachman, Senior Vice President, John Burns Real Estate Consulting, LLC

Source: https://www.realestateconsulting.com/the-light-housing-reset-becoming-widespread/; 8/26/22

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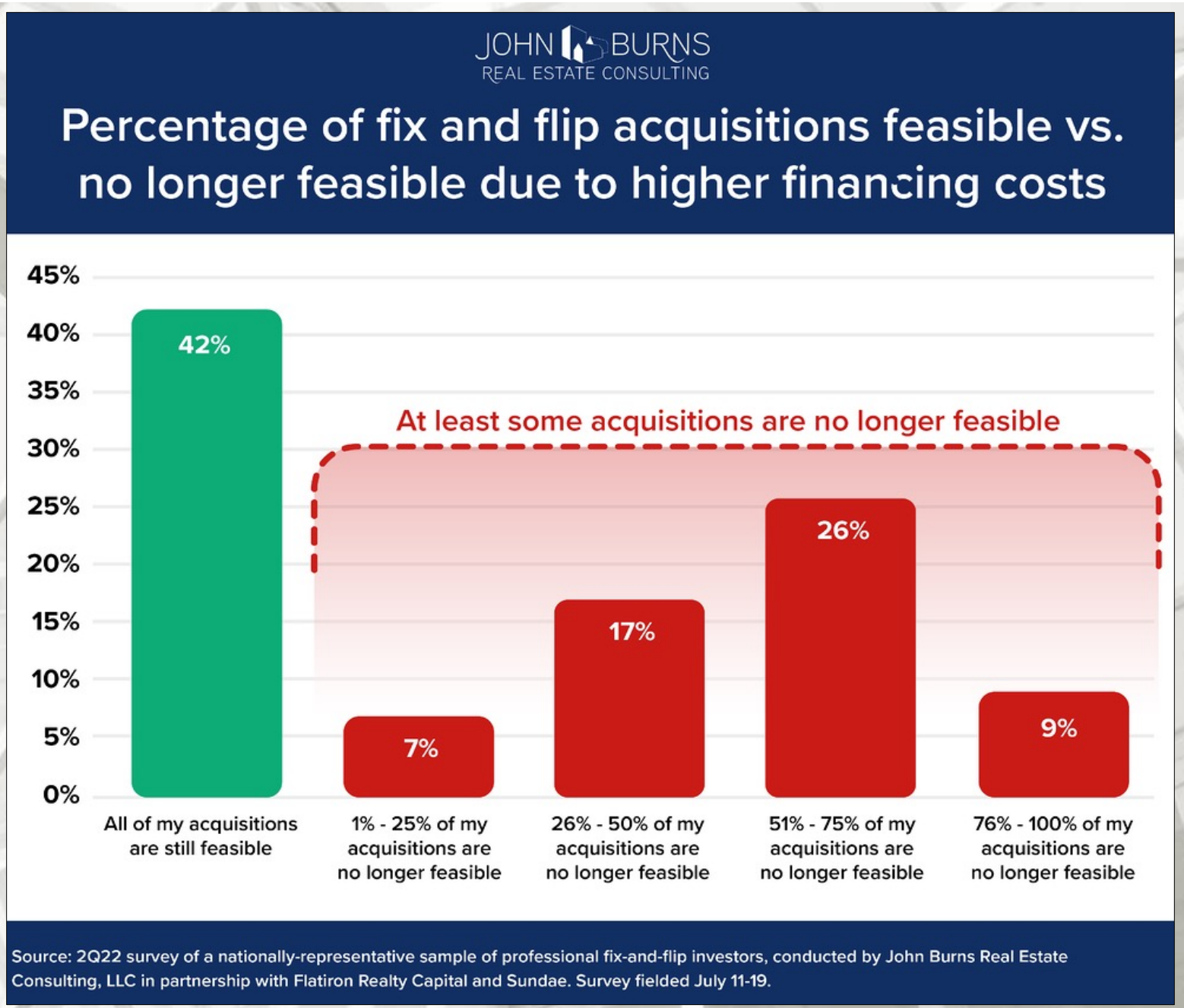

Source: https://www.realestateconsulting.com/the-light-housing-reset-becoming-widespread/; 8/26/22

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John Burns Real Estate Consulting, LLC

"Housing Reset" Becoming Widespread

Rental Home Pullback

Rising borrowing costs have also slowed the single-family rental market.

"This is a theme that the SFR REITs echoed in their 2Q22 earnings commentary over the last few weeks, and was reiterated by attendees at two of John Burns' recent capital markets presentations. As capital markets recalibrate, we will likely see a slower pace of acquisitions from all institutional investors. CEOs of two of the largest rental home companies say it best:

- "Capital cost for us as well as for the individual home owner has changed, and that's got to get reflected in the marketplace. It's getting there, but it's not there yet." – American Homes for Rent (2Q22 Earnings Call)
- "We don't love where our cost of capital is today on our balance sheet. But we've done a nice job of building out our investment management business over the last couple of years, so we think that will lend itself to additional opportunities in the future." – Invitation Homes (2Q22 Earnings Call).

Home Building Industry Pullback

It isn't just home builders who are feeling the pain of higher rates.

- "We evaluate each land deal through our portfolio investment committee to determine the optimal financing vehicle by weighing cost of capital, duration, and underwriting assumptions to maximize our long-term risk-adjusted expected returns. Going forward, further expansion in our controlled share will be dependent on market dynamics as we are pleased with the current balanced mix of our portfolio." – Taylor Morrison (2Q22 Earnings Call)." – Alex Thomas, Senior Research Analyst and Devyn Bachman, Senior Vice President, John Burns Real Estate Consulting, LLC

Source: https://www.realestateconsulting.com/the-light-housing-reset-becoming-widespread/; 8/26/22

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"Housing Reset" Becoming Widespread

But Aren't Apartments Booming?
Apartment operators feel the pain as well.

"While rising mortgage rates create increased rental demand, rising interest costs have cut into their profits, causing asset buyers to pause and cap rates to rise as market uncertainty proliferates. John Burns recently met with a large apartment company who told him they would be selling most of their holdings at a loss these days, so they will continue holding.

- "The transaction market has slowed down substantially given everything that's going on with the Fed. The cost of capital has gone up for everyone, and for buyers that were using 60% to 80% leverage – that game has changed and their return on equities have gone down. We think that values have probably gone down anywhere from -10% to -15%." – Camden Property Trust (2Q22 Earnings Call).

Won't People Remodel Instead?
Remodeling is also slowing as higher rates limit HELOCs (home equity lines of credit) and cash-out refis.

Customers taking out loans for large remodeling projects now face stricter lending criteria and may delay their projects until they save up cash or interest rates fall. Both our US Remodeling Index, in partnership with Qualified Remodeler, and our National Kitchen and Bath Index, in partnership with the National Kitchen and Bath Association, forecast slower times ahead.

- "Residential remodeling is softening as consumers postpone upgrading their homes." – Mohawk Industries (2Q22 Earnings Call).

And we could go on and on, starting with the mortgage and real estate agent industries who have been announcing significant layoffs, and ending with home furnishings and other businesses that are impacted in a much less obvious way." – Alex Thomas, Senior Research Analyst and Devyn Bachman, Senior Vice President, John Burns Real Estate Consulting, LLC

Source: https://www.realestateconsulting.com/the-light-housing-reset-becoming-widespread/; 8/26/22

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Conclusion

Rising rates hurt most housing industry businesses across the board, from rental homes to homeownership to every business involved in the home.

"The extent of the impact on the broader economy remains to be seen, though the Fed's reference to a "softish" landing for the economy suggests that there may be more pain on the way. What is clear, though, is that the boom times associated with cheap debt have come to an end." – Alex Thomas, Senior Research Analyst and Devyn Bachman, Senior Vice President, John Burns Real Estate Consulting, LLC

Source: https://www.realestateconsulting.com/the-light-housing-reset-becoming-widespread/; 8/26/22

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U.S. Housing Finance

Mortgage Bankers Association (MBA)

Mortgage Credit Availability Decreased in August

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

The MCAI fell by 0.5 percent to 108.3 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 decreased 1.0 percent, while the Government MCAI remained essentially unchanged. Of the component indices of the Conventional MCAI, the Jumbo MCAI decreased by 0.7 percent, and the Conforming MCAI fell by 1.2 percent.

Mortgage credit availability declined slightly in August, as investors reduced their offerings of ARM and non-QM loan programs. With overall origination volume expected to shrink in 2022, some lenders continue to streamline their operations by dropping certain loan programs to simplify their offerings. Additionally, with a worsening economic outlook and signs of cooling in home-price growth, the appetite for riskier loan programs has been reduced. Slightly offsetting these trends, however, was a small increase last month in new HELOC products. With aggregate home equity still at elevated levels, HELOCs could benefit borrowers who might not want to give up on their current, low mortgage rate but do want to utilize their home equity to support other spending plans." – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

Source: https://www.mba.org/news-and-research/newsroom/news/2022/09/13/mortgage-credit-availability-decreased-in-august; 9/13/22

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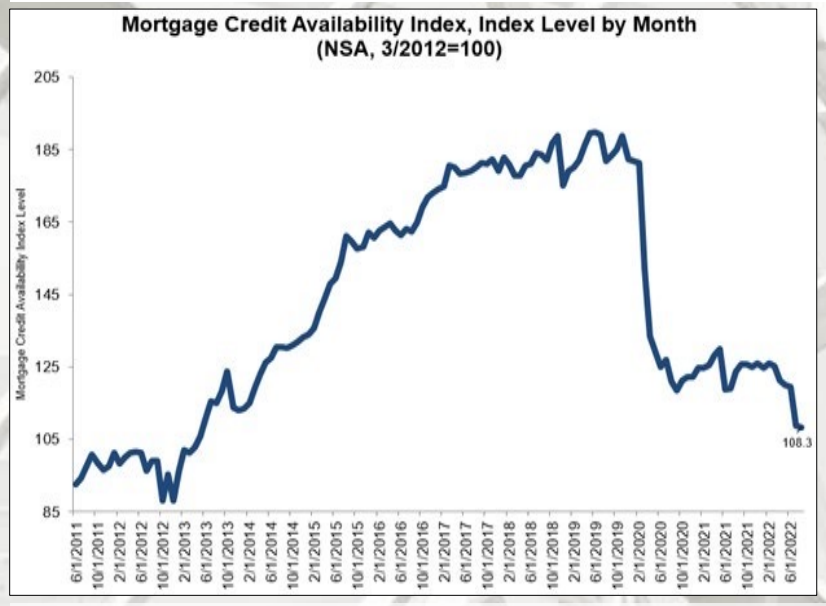
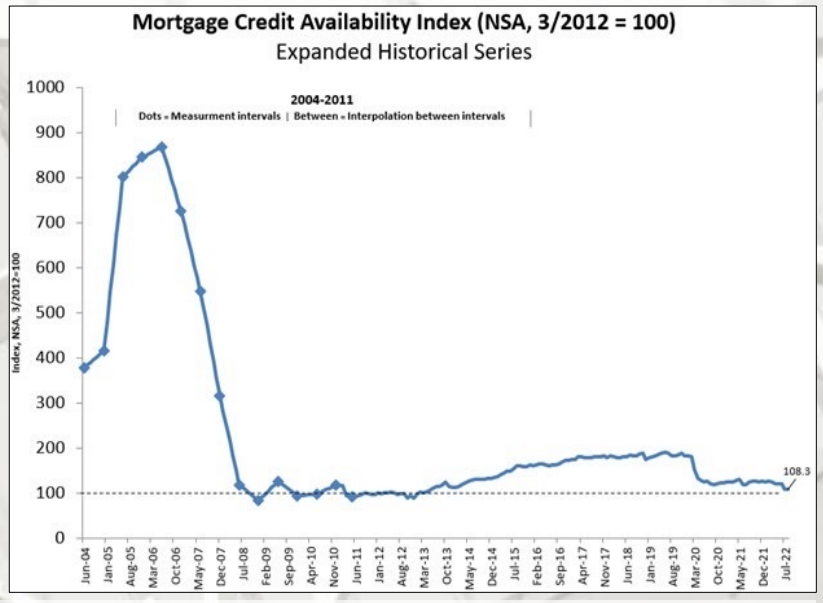
U.S. Housing Finance
Mortgage Credit Availability (MBA)





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

Source: https://www.mba.org/news-and-research/newsroom/news/2022/09/13/mortgage-credit-availability-decreased-in-august; 9/13/22

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MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

August 22, 2022

	2021				2022				2023							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023	2024
Housing Measures																
Housing Starts (SAAR, Thous)	1,581	1,591	1,569	1,679	1,720	1,652	1,471	1,457	1,488	1,513	1,557	1,590	1,605	1,575	1,537	1,674
Single-Family	1,138	1,112	1,104	1,170	1,187	1,074	950	964	1,006	1,048	1,105	1,143	1,131	1,044	1,076	1,232
Two or More	443	479	465	509	533	577	521	493	482	465	452	447	474	531	462	443
Home Sales (SAAR, Thous)																
Total Existing Homes	6,287	5,950	6,067	6,203	6,057	5,373	5,157	5,242	5,239	5,330	5,394	5,478	6,127	5,457	5,360	5,582
New Homes	853	754	715	755	776	612	689	751	724	724	756	776	769	707	745	787
FHFA US House Price Index (YOY % Change)	13.1	17.7	18.6	17.6	18.8	17.9	12.8	9.9	7.3	5.2	3.5	3.1	17.6	9.9	3.1	2.5
Median Price of Total Existing Homes (Thous $)	317.6	355.9	360.4	357.6	365.8	405.9	379.3	376.2	389.1	393.7	400.0	402.0	347.9	381.8	396.2	410.4
Median Price of New Homes (Thous $)	364.9	380.6	407.8	422.5	431.3	434.6	438.6	440.7	440.9	442.5	443.7	445.0	394.0	436.3	443.0	447.7
Interest Rates																
30-Year Fixed Rate Mortgage (%)	2.9	3.0	2.9	3.1	3.8	5.2	5.3	5.2	5.1	5.0	4.9	4.9	3.1	5.2	4.9	4.3
10-Year Treasury Yield (%)	1.3	1.6	1.3	1.5	1.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	1.5	2.9	2.8	2.5
Mortgage Originations																
Total 1- to 4-Family ($Bil $)	1,212	1,168	1,062	994	689	678	480	497	467	620	577	580	4,436	2,344	2,244	2,501
Purchase	362	521	500	480	381	477	388	392	343	482	444	435	1,863	1,638	1,704	1,806
Refinance	850	648	562	515	308	201	92	105	124	138	133	145	2,574	706	540	695
Refinance Share (%)	70	55	53	52	45	30	19	21	27	22	23	25	58	30	24	28
FHA Originations ($Bil $)													326	165	168	180
Total 1- to 4-Family (000s loans)	3,767	3,554	3,220	3,009	1,830	1,846	1,520	1,423	1,309	1,664	1,557	1,493	13,549	6,619	6,023	6,296
Purchase	1,012	1,454	1,398	1,340	1,025	1,282	1,092	1,047	908	1,246	1,139	1,081	5,204	4,446	4,374	4,494
Refinance	2,755	2,100	1,822	1,669	805	564	428	376	401	418	418	412	8,346	2,173	1,649	1,802
Refinance Share (%)	73	59	57	55	44	31	28	26	31	25	27	28	62	33	27	29
Mortgage Debt Outstanding																
1- to 4-Family ($Bil $)	11,783	12,022	12,274	12,536	12,777	12,993	13,211	13,389	13,590	13,800	14,000	14,188	12,536	13,389	14,188	14,814

Notes:

Total 1-to-4-family originations and refinance share are MBA estimates. These exclude second mortgages and home equity loans.

Mortgage rate forecast is based on Freddie Mac's 30-Yr fixed rate which is based on predominantly home purchase transactions.

The 10-Year Treasury Yield and 30-Yr mortgage rate are the average for the quarter, but annual columns show Q4 values.

The FHFA US House Price Index is the forecasted year over year percent change of the FHFA Purchase-Only House Price Index.

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Source: https://img03.en25.com/Web/MortgageBankersAssociation/%7B7ec45487-7016-4abd-be42-1a08bdd12e46%7D_Mortgage_Finance_Forecast_Aug_2022.pdf; 8/23/22

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MBA Economic Forecast

MBA Economic Forecast

August 22, 2022

	2021				2022				2023							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023	2024
Percent Change, SAAR																
Real Gross Domestic Product	6.3	6.7	2.3	6.9	-1.6	-0.9	1.5	2.1	1.2	1.3	1.4	1.8	5.5	0.3	1.4	1.5
Personal Consumption Expenditures	11.4	12.0	2.0	2.5	1.8	1.0	2.4	2.8	1.6	1.5	2.0	2.3	6.9	2.0	1.8	2.1
Business Fixed Investment	12.9	9.2	1.7	2.9	10.0	-0.1	5.8	3.8	1.6	0.5	0.1	0.3	6.6	4.8	0.6	-0.2
Residential Investment	13.3	-11.7	-7.7	2.2	0.4	-14.0	-27.3	-15.4	4.3	9.6	11.1	12.6	-1.5	-14.6	9.4	8.6
Govt. Consumption & Investment	4.2	-2.0	0.9	-2.6	-2.9	-1.9	-0.4	1.6	3.2	1.2	1.3	1.4	0.1	-0.9	1.8	1.0
Net Exports (Bil. Chain 2012$)	-1033.0	-1048.4	-1112.3	-1139.5	-1311.0	-1247.5	-1226.1	-1211.7	-1266.2	-1282.8	-1306.8	-1331.1	-1083.3	-1249.1	-1296.7	-1399.7
Inventory Investment (Bil. Chain 2012$)	-75.1	-143.3	-56.8	164.3	160.3	69.4	74.0	67.8	74.0	69.5	57.0	45.4	-27.7	92.9	61.5	34.1
Consumer Prices (YOY)	1.9	4.8	5.3	6.7	8.0	8.6	8.5	6.7	4.7	2.8	1.9	2.2	6.7	6.7	2.2	1.7
Percent																
Unemployment Rate	6.2	5.9	5.1	4.2	3.8	3.6	3.6	3.7	3.7	3.9	4.1	4.3	5.4	3.7	4.0	4.6
Federal Funds Rate	0.125	0.125	0.125	0.125	0.375	1.625	2.375	3.375	3.625	3.875	3.875	3.875	0.125	3.375	3.875	2.875
10-Year Treasury Yield	1.3	1.6	1.3	1.5	1.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	1.5	2.9	2.8	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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Source: https://img03.en25.com/Web/MortgageBankersAssociation/%7B9d0615b2-3694-44b3-988e-668bcf1d2a06%7D_Economic_Forecast_Aug_2022.pdf; 8/23/22

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Summary

In conclusion:

The Federal Reserve Board of Governor's focus for a "housing reset" was in full-force. In July, month-over-month data continued a negative movement in the majority of data categories. Year-over-year data were better; however, single-family permits decreased again. Again, this portends further moderation in single-family activity in the forthcoming months. The impact of increasing borrowing costs, combined with rising house prices have resulted in a major obstacle for new and existing house sales (a combination of sharply higher prices, higher mortgage rates and slower income growth has sharply reduced affordability). Increased financing costs has resulted in potential house buyers to cancel contracts or postpone a house purchase. July also was the sixth consecutive monthly decrease for existing house sales.

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, July 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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