The Virginia Tech–USDA Forest Service Housing Commentary: Section I October 2021

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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 month-over-month and year-over-year housing data for October were mostly positive. Total and single-family starts, and single-family family housing completions were negative month-over-month. Total and single-family starts, and single-family family housing completions were negative month-over-month. Single-family permits and starts, total housing completions, and new and existing house sales were negative year-over-year. Currently more multi-family units are under construction than at any time in the past 47-years. Completions remained restrained due to the unavailability of building materials and products, among other factors. Thus, certain builders may be reluctant to start new projects while waiting to complete units under construction.

The December 10th Atlanta Fed GDPNow™ model forecast was an aggregate 1.9% for total residential investment spending. New private permanent site expenditures were projected at -13.5%; the improvement spending forecast was 4.4%; and the manufactured/mobile expenditures projection was 28.6% for December 2021 (all: quarterly log change and at a seasonally adjusted annual rate).[1]

"In 1981, 73% of home buyers were married couples, 11% were single women and 10% were single men. Today those shares stand at 60% married couples, 19% single women, and 9% single men. The highest share of single women buyers was in 2006 when the share stood at 22%. After 2006, the share of single women buyers dropped incrementally to a recent low in 15% in 2015. Since 2015, the share of single women has risen to a recent high of 19%. In 2010, the share of single men rose to a high of 12% but has stayed in recent years between 7% to 9% of buyers."[2] – Jessica Lautz, Vice President of Demographics and Behavioral Insights, National Association of Realtors®.

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 economic information.

Sources: [1] www.frbatlanta.org/cqer/research/gdpnow.aspx; 12/9/21;
[2] https://www.nar.realtor/blogs/economists-outlook/single-women-buyers-outpace-men-but-not-without-sacrifices; 12/8/21

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October 2021
Housing Scorecard

	M/M	Y/Y
Housing Starts	▼ -0.7%	▲ 0.4%
Single-Family (SF) Starts	▼ -3.9%	▼ -10.6%
Multi-Family (MF) Starts*	▲ 7.1%	▲ 36.6%
Housing Permits	▲ 4.2%	▲ 3.6%
SF Permits	▲ 3.2%	▼ -5.9%
MF Permits*	▲ 6.2%	▲ 27.5%
Housing Under Construction	▲ 1.6%	▲ 18.2%
SF Under Construction	▲ 1.4%	▲ 28.3%
Housing Completions	0.0%	▼ -8.4%
SF Completions	▼ -1.7%	▲ 3.5%
New SF House Sales	▲ 0.4%	▼ 23.1%
Private Residential Construction Spending	▼ 0.5%	▲ 16.7%
SF Construction Spending	▲ 0.8%	▲ 23.1%
Existing House Sales[1]	▲ 0.8%	▼ 5.8%

* 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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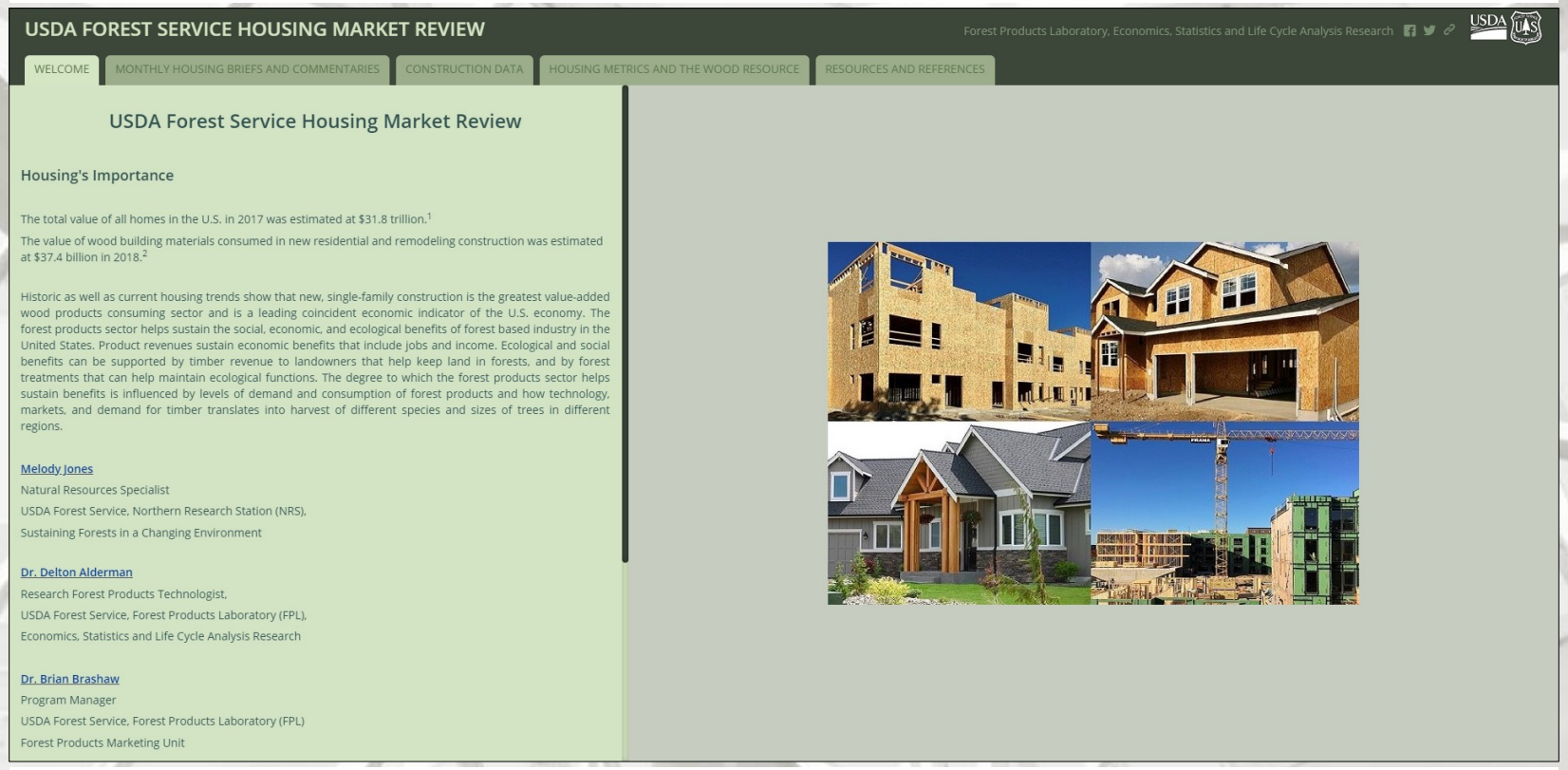
USDA Forest Service Housing Story Map



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 the capability 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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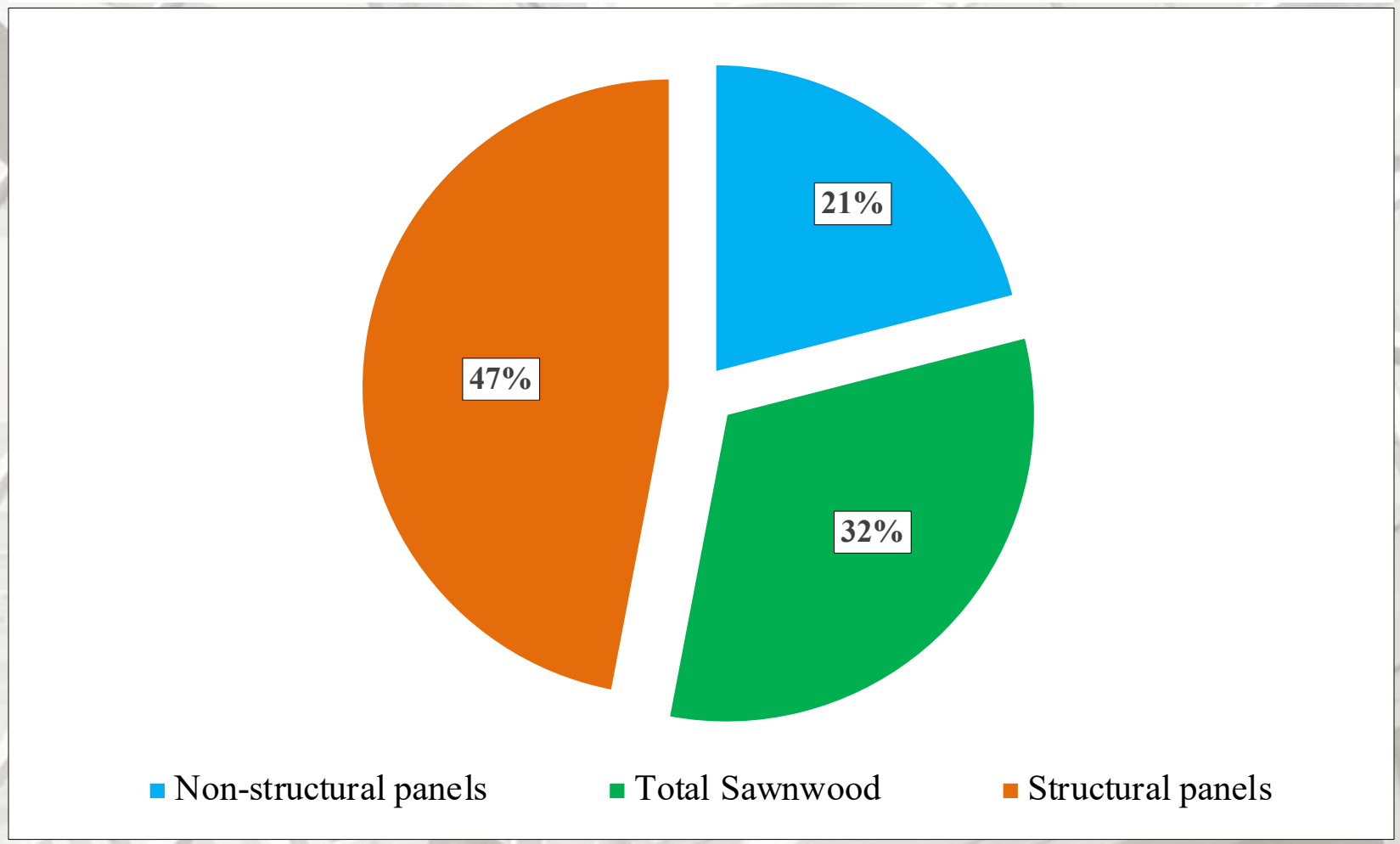
New Construction's Percentage of Wood Products Consumption



Source: USDA Forest Service. Howard, J., D. McKeever, and S. Liang. 2017. U.S. Forest Products Annual Market Review and Prospects, 2013-2017

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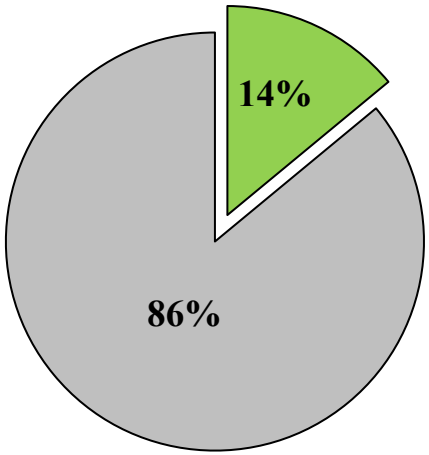
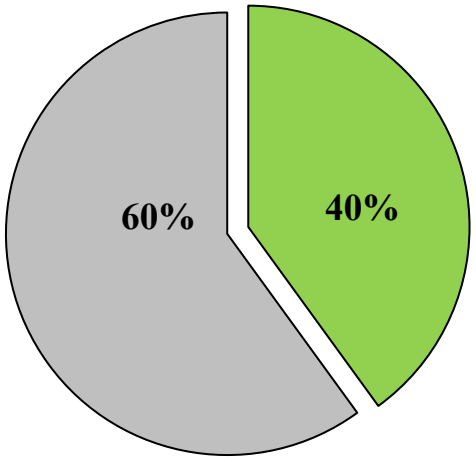
New SF Construction Percentage of Wood Products Consumption



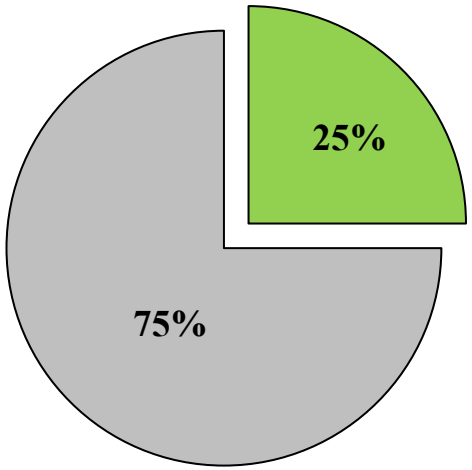
Non-structural panels: New Housing

Other markets



Structural panels: New housing

Other markets



All Sawnwood: New housing

Other markets

Source: USDA Forest Service. Howard, J., D. McKeever, and S. Liang. 2017. U.S. Forest Products Annual Market Review and Prospects, 2013-2017

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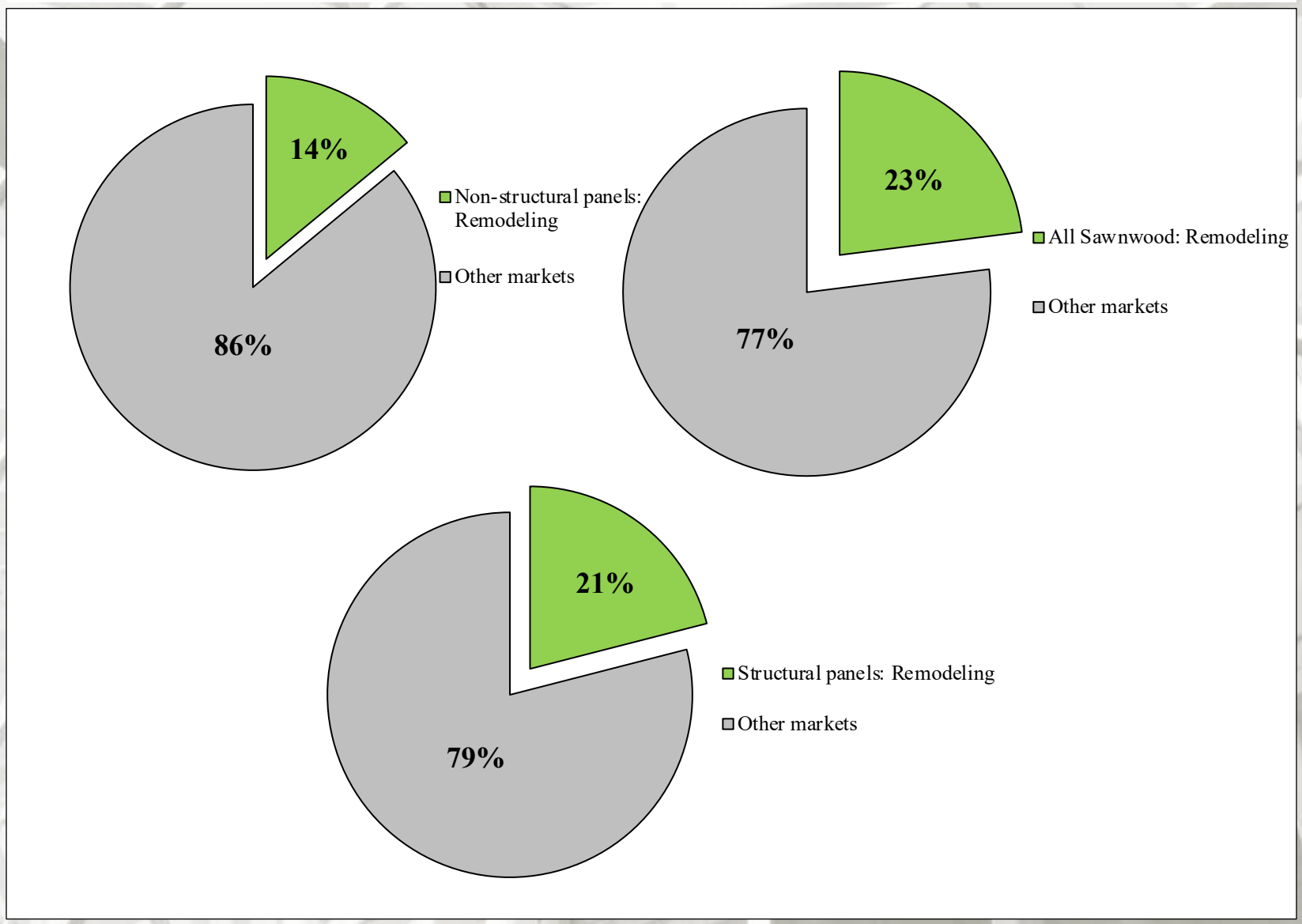
Repair and Remodeling's Percentage of Wood Products Consumption



Source: USDA Forest Service. Howard, J., D. McKeever, and S. Liang. 2017. U.S. Forest Products Annual Market Review and Prospects, 2013-2017

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New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
October	1,520,000	1,039,000	11,000	470,000
September	1,530,000	1,081,000	9,000	440,000
2020	1,514,000	1,162,000	15,000	337,000
M/M change	-0.7%	-3.9%	22.2%	6.8%
Y/Y change	0.4%	-10.6%	-26.7%	39.5%

* 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; 11/17/21

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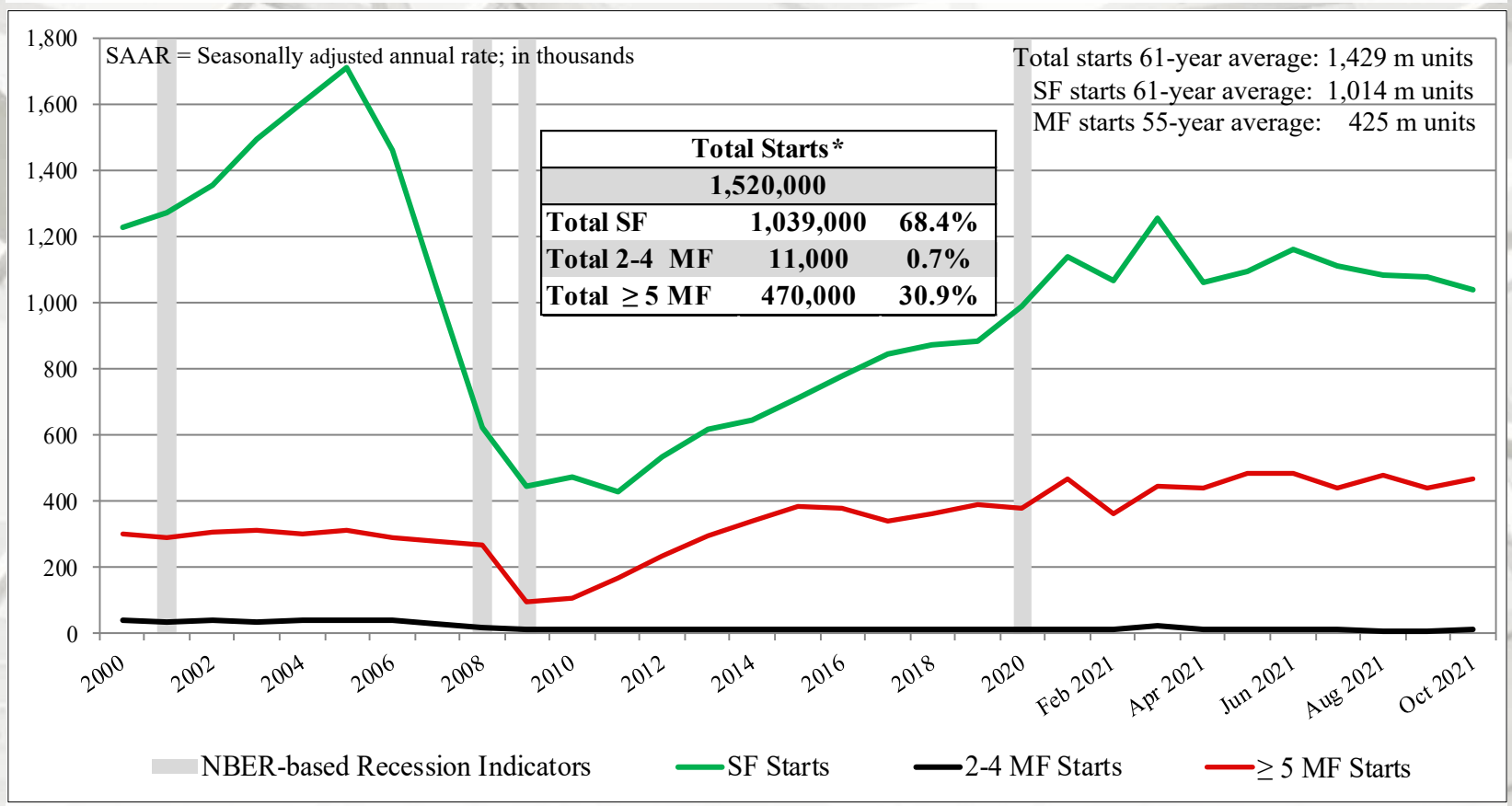
Total Housing Starts



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; 11/17/21

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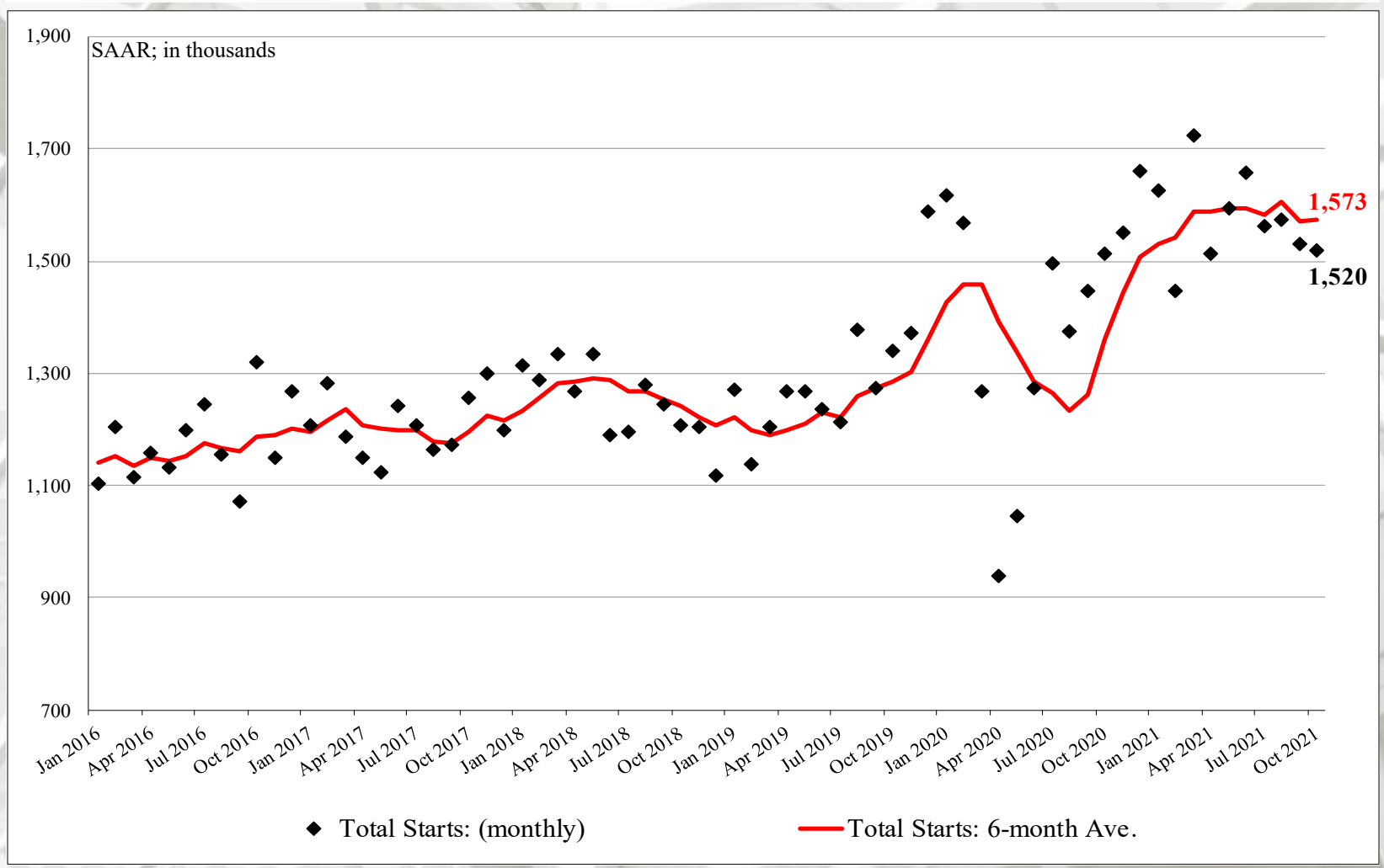
Total Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

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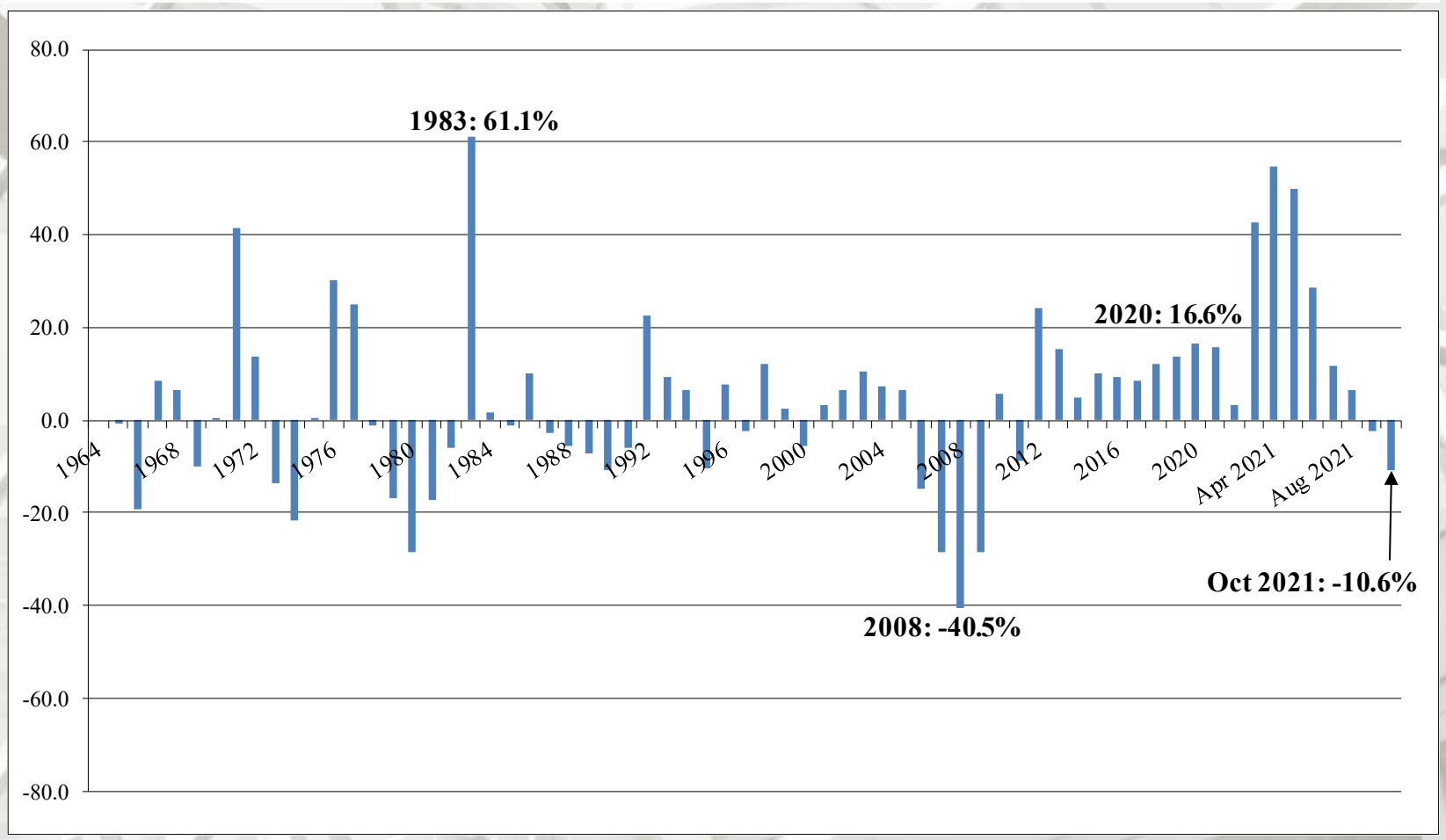
SF Housing Starts: Year-over-Year Change



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

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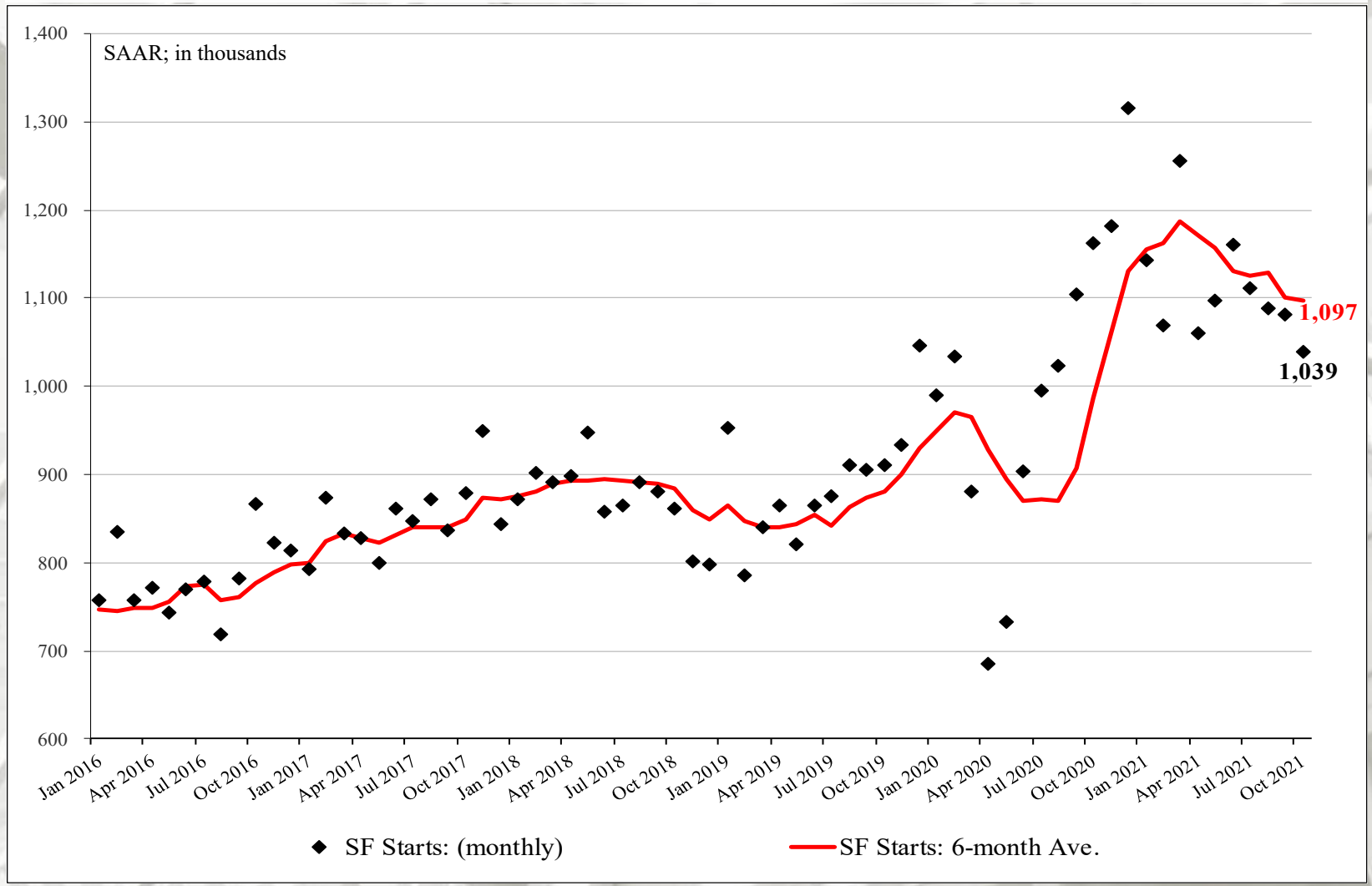
SF Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

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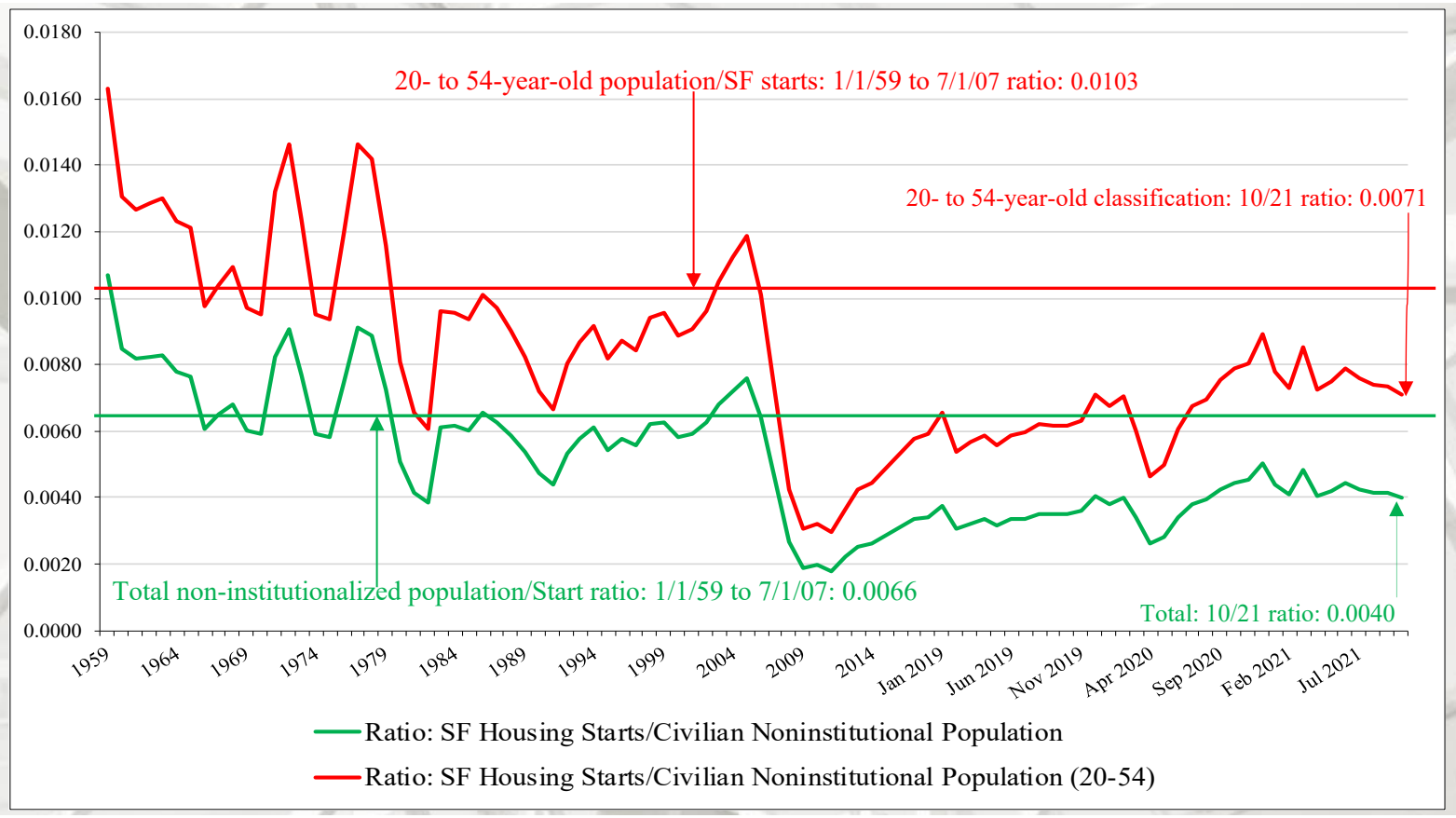
New SF Starts



New SF starts adjusted for the US population

From January 1959 to July 2007, the long-term ratio of the total US non-institutionalized population to new SF starts is 0.0066; in October 2021 it was 0.0040 – a slight decrease from September (0.0040). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in October 2021 was 0.0071 – a decrease from September (0.0074). From a population worldview, new SF construction is less than what is necessary for changes in population (i.e., under-building).

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.

Sources: http://www.census.gov/construction/nrc/pdf/newresconst.pdff and The Federal Reserve Bank of St. Louis; 11/17/21

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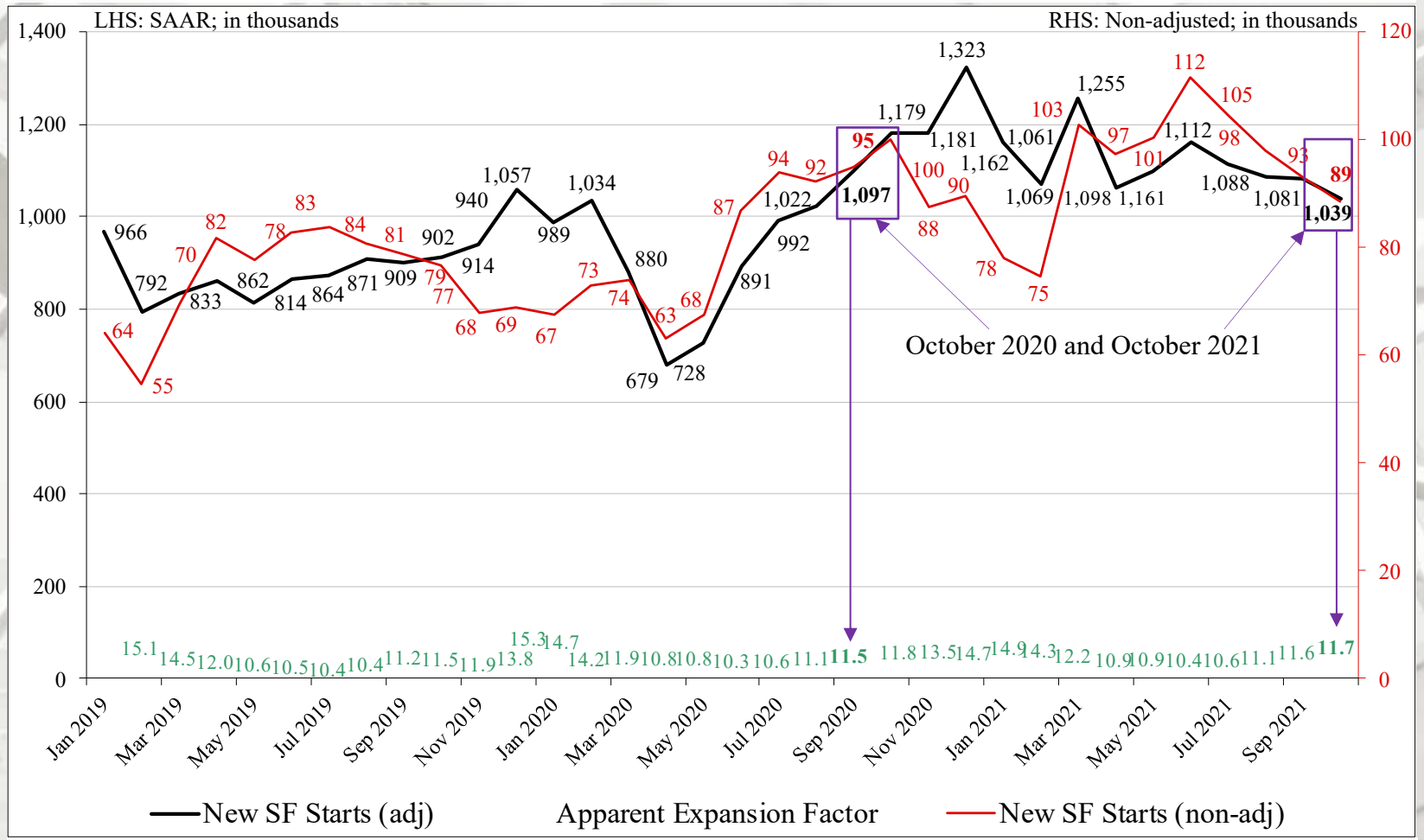
Nominal & SAAR SF Starts



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; 11/17/21

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New Housing Starts by Region

	NE Total	NE SF	NE MF**
October	122,000	56,000	66,000
September	123,000	66,000	57,000
2020	84,000	56,000	28,000
M/M change	-0.8%	-15.2%	15.8%
Y/Y change	45.2%	0.0%	135.7%

	MW Total	MW SF	MW MF
October	226,000	124,000	102,000
September	214,000	134,000	80,000
2020	208,000	153,000	55,000
M/M change	5.6%	-7.5%	27.5%
Y/Y change	8.7%	-19.0%	85.5%

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; 11/17/21

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New Housing Starts by Region

	S Total	S SF	S MF**
October	792,000	610,000	182,000
September	800,000	621,000	179,000
2020	840,000	668,000	172,000
M/M change	-1.0%	-1.8%	1.7%
Y/Y change	-5.7%	-8.7%	5.8%

	W Total	W SF	W MF
October	380,000	249,000	131,000
September	393,000	260,000	133,000
2020	382,000	285,000	97,000
M/M change	-3.3%	-4.2%	-1.5%
Y/Y change	-0.5%	-12.6%	35.1%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

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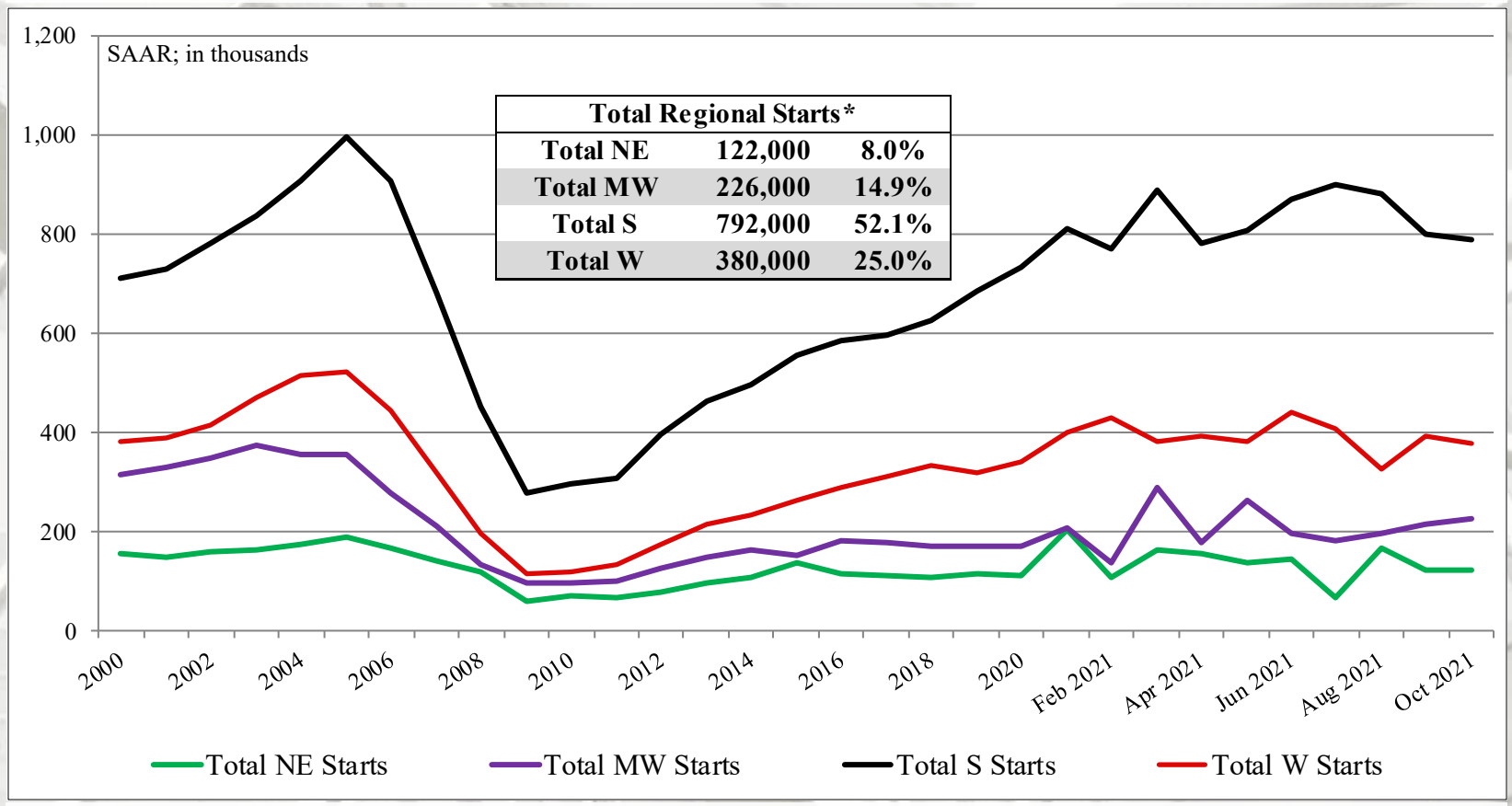
New Housing Starts by Region



Total Regional Starts*		
Total NE	122,000	8.0%
Total MW	226,000	14.9%
Total S	792,000	52.1%
Total W	380,000	25.0%

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; 11/17/21

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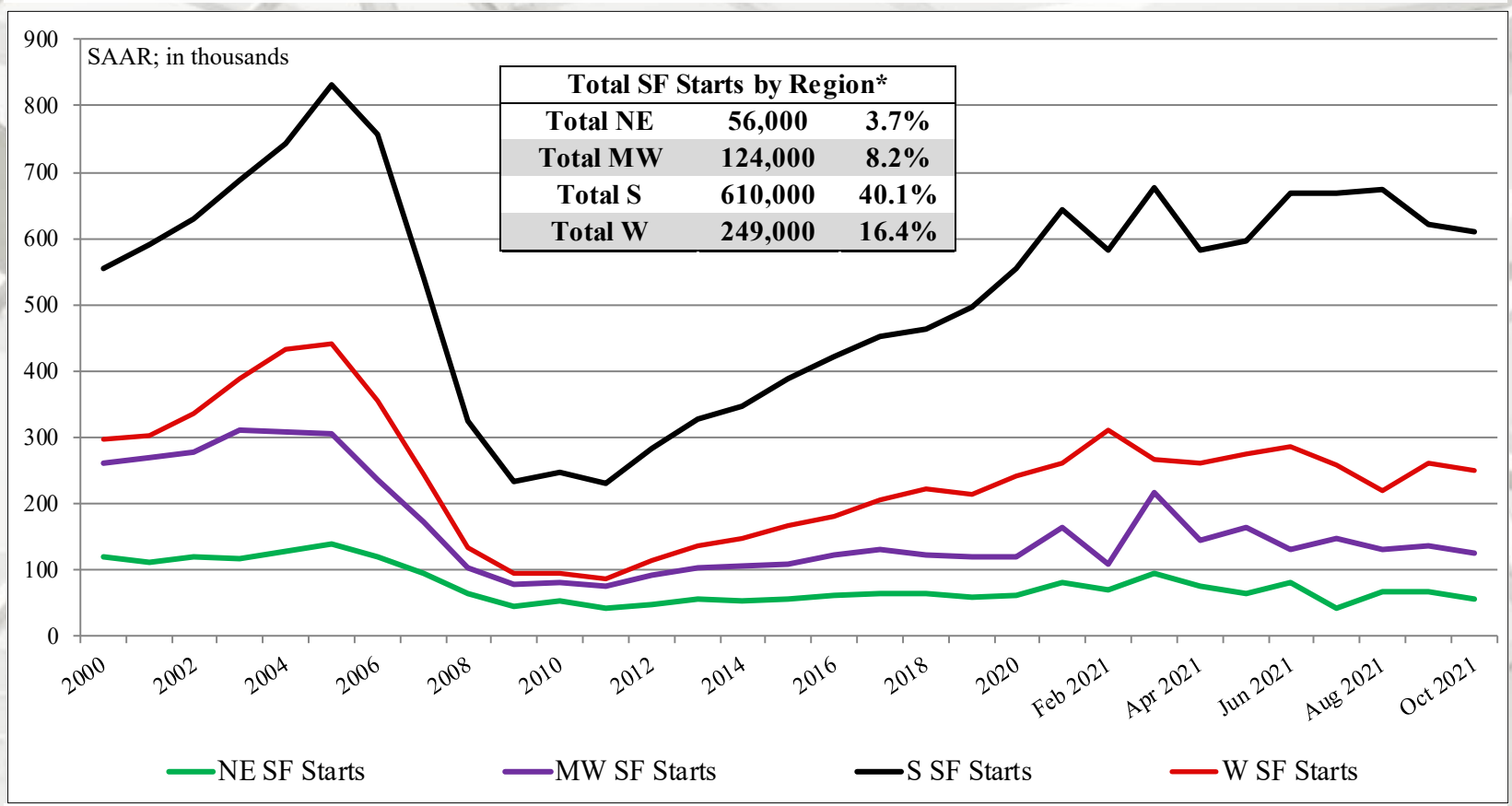
Total SF Housing Starts by Region



Total SF Starts by Region*		
Total NE	56,000	3.7%
Total MW	124,000	8.2%
Total S	610,000	40.1%
Total W	249,000	16.4%

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; 11/17/21

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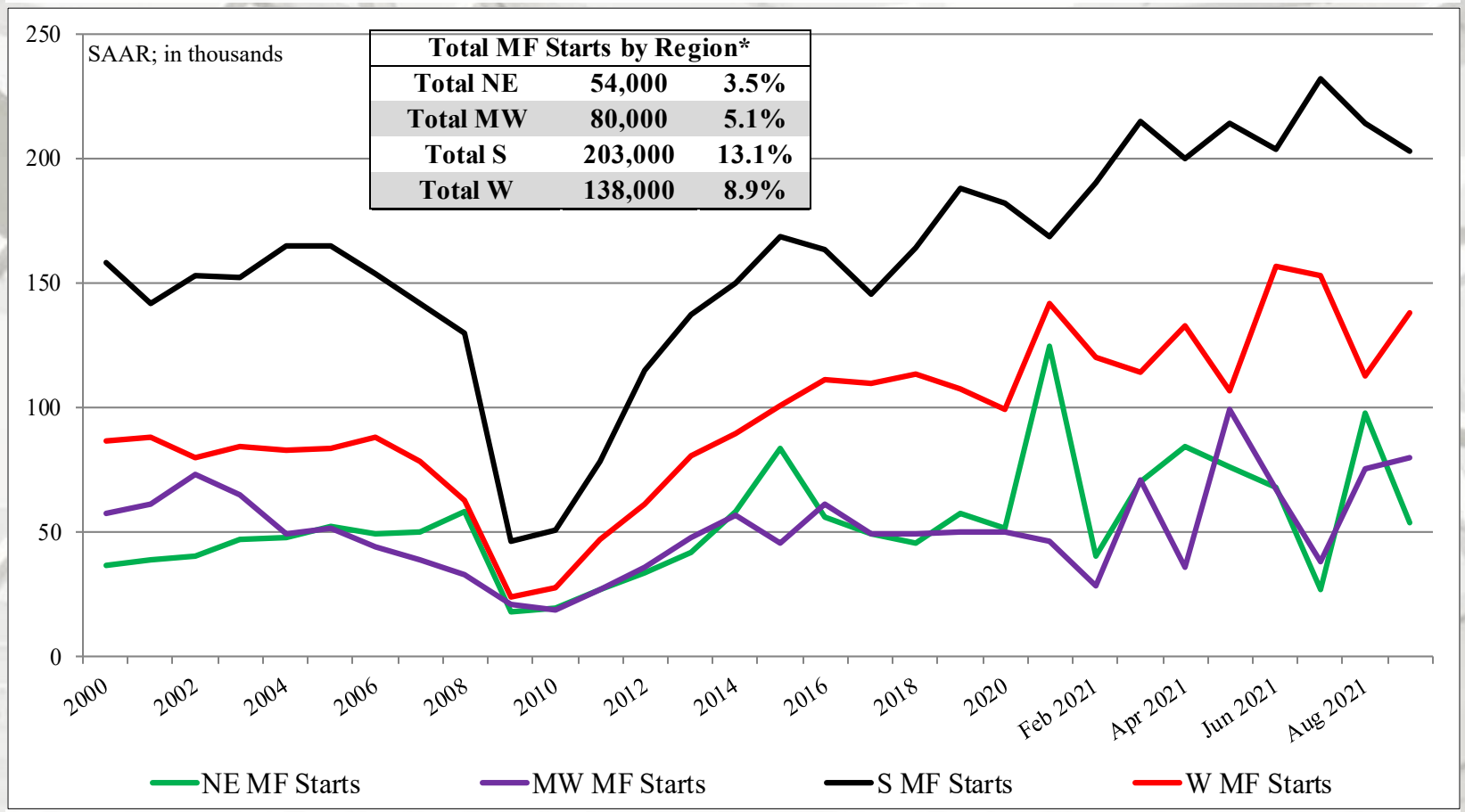
MF Housing Starts by Region



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.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

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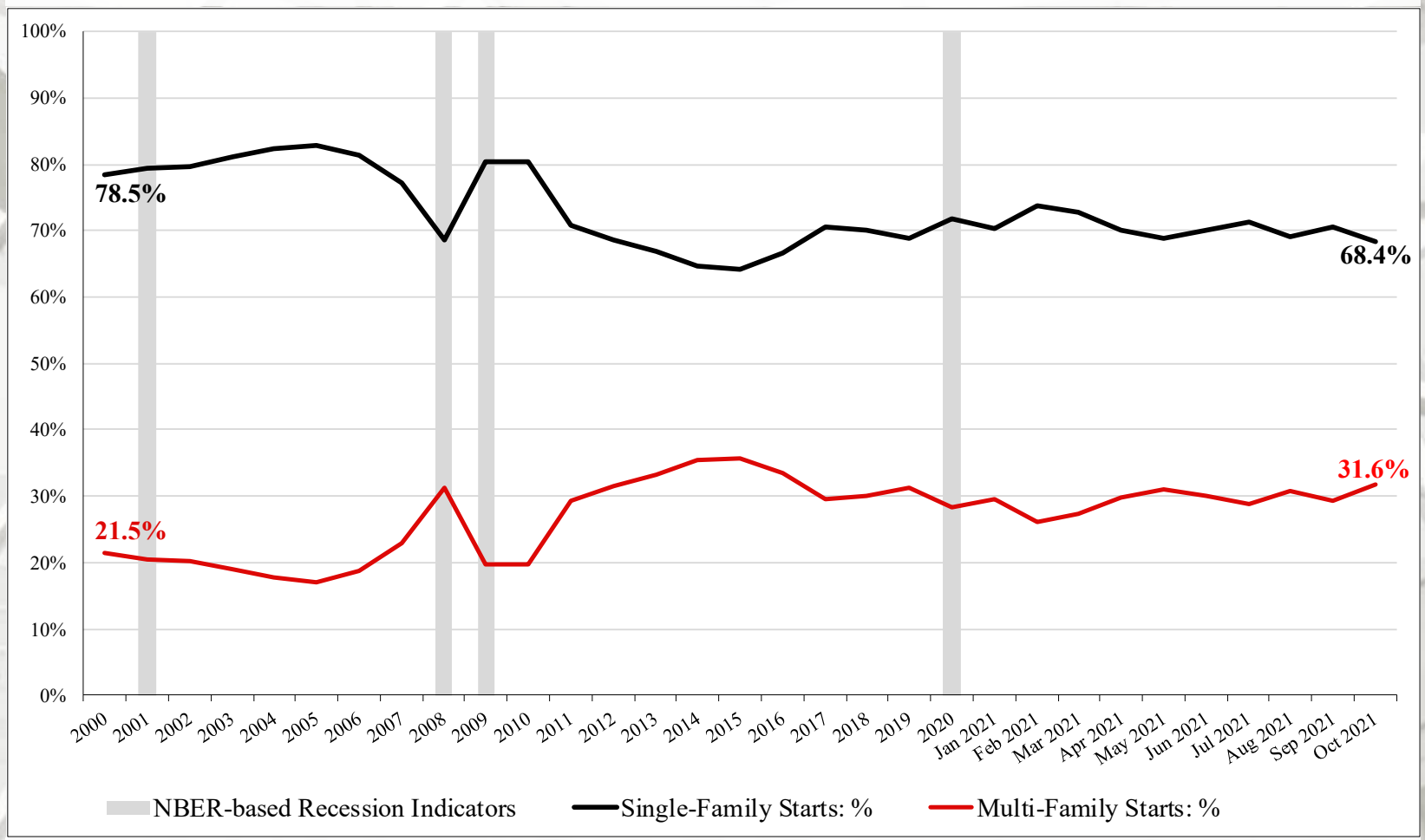
SF vs. MF Housing Starts (%)



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; 11/17/21

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New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
October	1,653,000	1,074,000	51,000	528,000
September	1,586,000	1,041,000	49,000	496,000
2020	1,595,000	1,141,000	60,000	394,000
M/M change	4.2%	3.2%	4.1%	6.5%
Y/Y change	3.6%	-5.9%	-15.0%	34.0%

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

Source: https://www.census.gov/construction/bps/; 11/24/21

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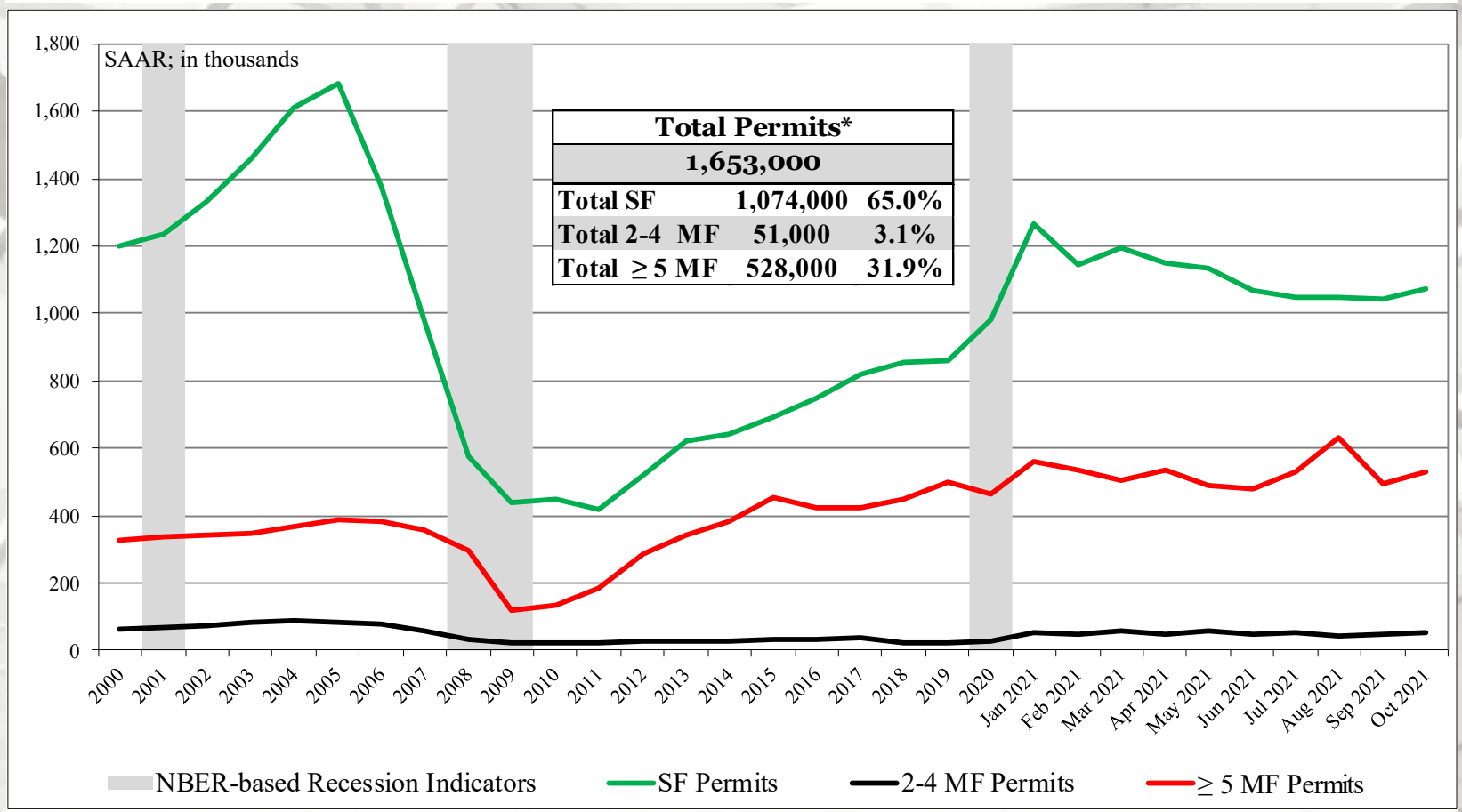
Total New Housing Permits



* 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/; 11/24/21

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New Housing Permits by Region

	NE Total*	NE SF	NE MF**
October	129,000	63,000	66,000
September	124,000	55,000	69,000
2020	141,000	59,000	82,000
M/M change	4.0%	14.5%	-4.3%
Y/Y change	-8.5%	6.8%	-19.5%

	MW Total*	MW SF	MW MF**
October	234,000	133,000	101,000
September	216,000	126,000	90,000
2020	220,000	144,000	76,000
M/M change	8.3%	5.6%	12.2%
Y/Y change	6.4%	-7.6%	32.9%

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/; 11/24/21

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New Housing Permits by Region

	S Total*	S SF	S MF**
October	859,000	639,000	220,000
September	849,000	619,000	230,000
2020	848,000	665,000	183,000
M/M change	1.2%	3.2%	-4.3%
Y/Y change	1.3%	-3.9%	20.2%

	W Total*	W SF	W MF**
October	431,000	239,000	192,000
September	397,000	241,000	156,000
2020	386,000	273,000	113,000
M/M change	8.6%	-0.8%	23.1%
Y/Y change	11.7%	-12.5%	69.9%

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/; 11/24/21

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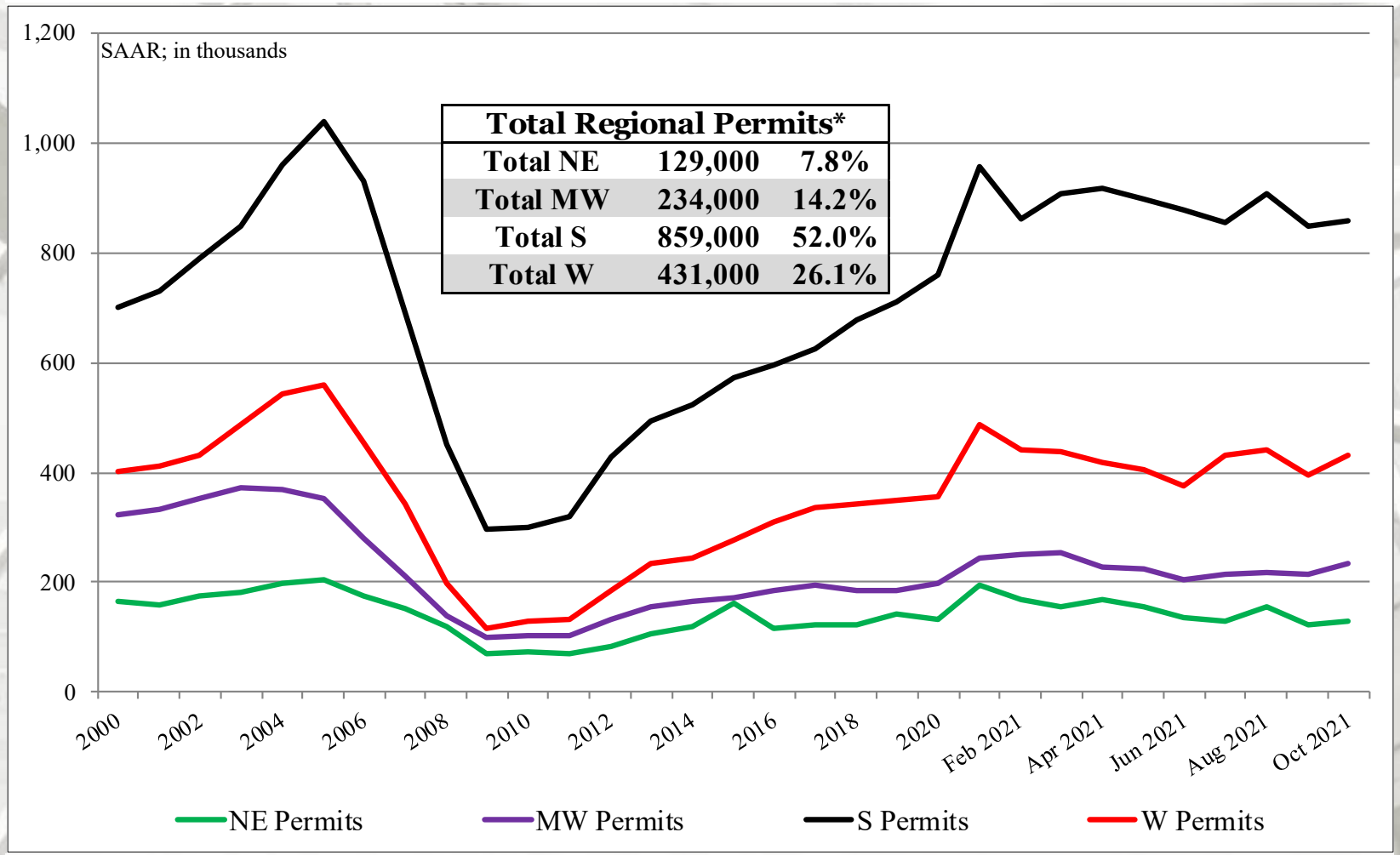
Total Housing Permits by Region



Total Regional Permits*		
Total NE	129,000	7.8%
Total MW	234,000	14.2%
Total S	859,000	52.0%
Total W	431,000	26.1%

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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 11/24/21

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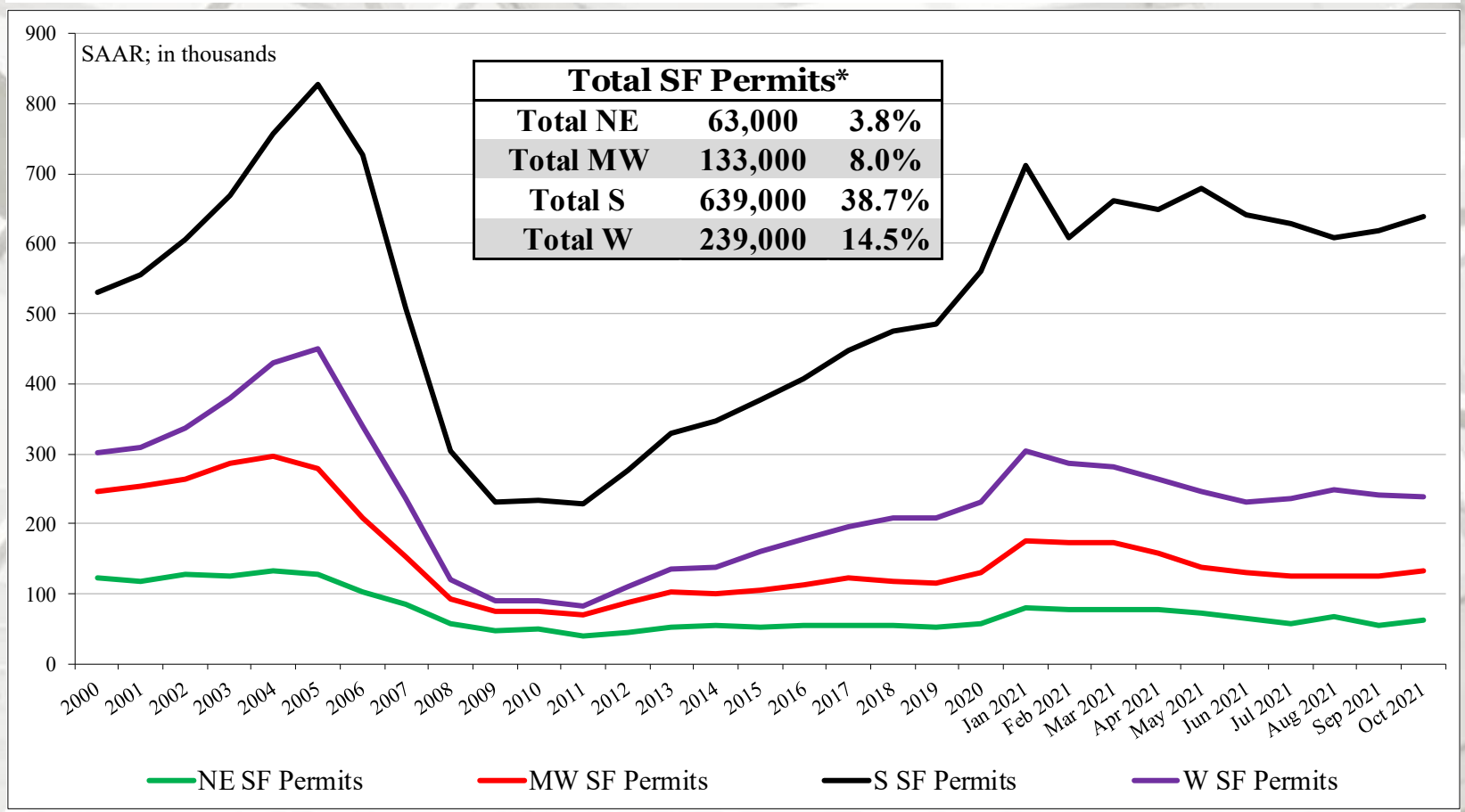
SF Housing Permits by Region



Total SF Permits*		
Total NE	63,000	3.8%
Total MW	133,000	8.0%
Total S	639,000	38.7%
Total W	239,000	14.5%

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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 11/24/21

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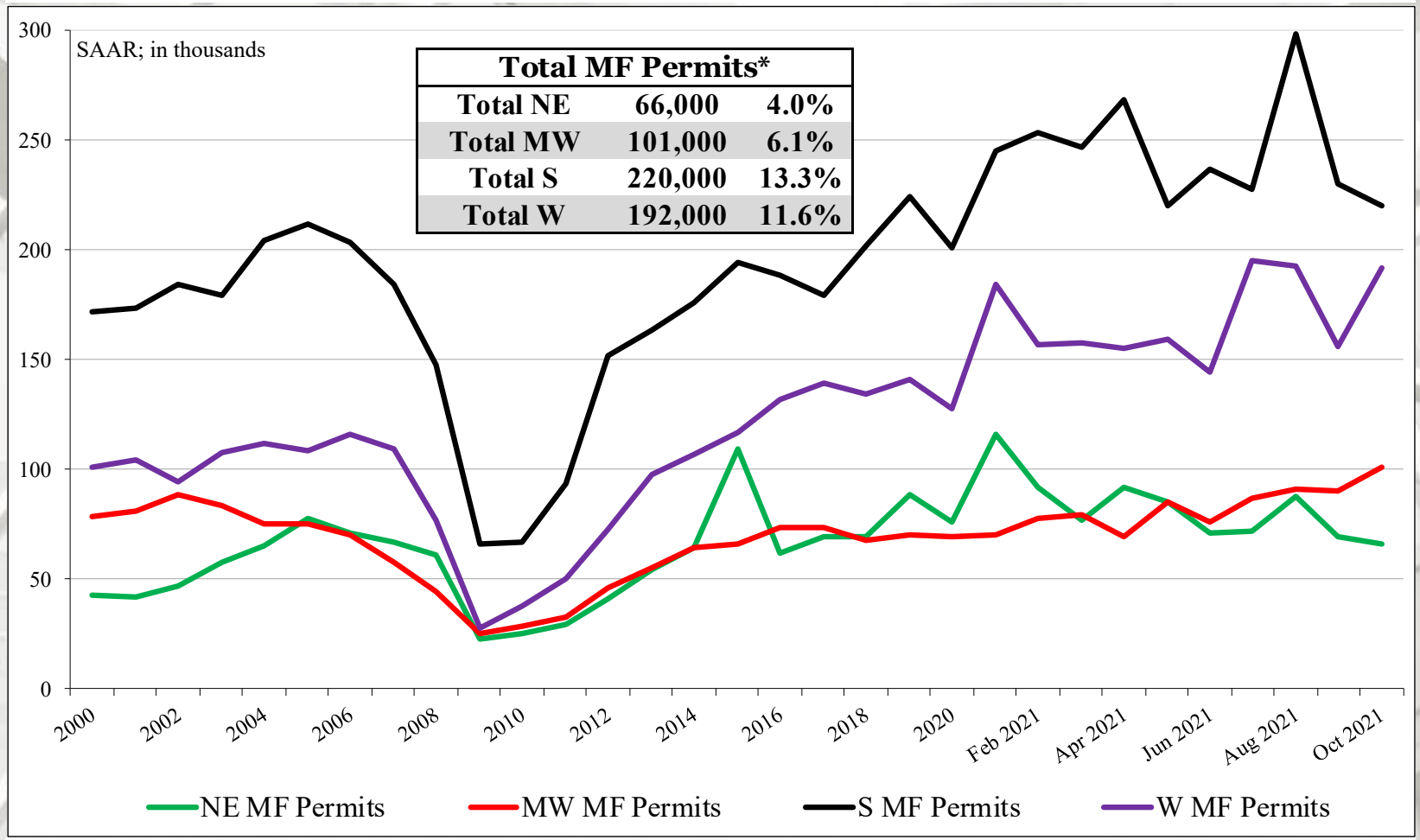
MF Housing Permits by Region



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

* Percentage of total permits.

Source: https://www.census.gov/construction/bps/; 11/24/21

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New Housing Under Construction (HUC)

	Total HUC*	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
October	1,451,000	726,000	13,000	712,000
September	1,428,000	716,000	13,000	699,000
2020	1,228,000	566,000	11,000	651,000
M/M change	1.6%	1.4%	0.0%	1.9%
Y/Y change	18.2%	28.3%	18.2%	9.4%

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; 11/17/21

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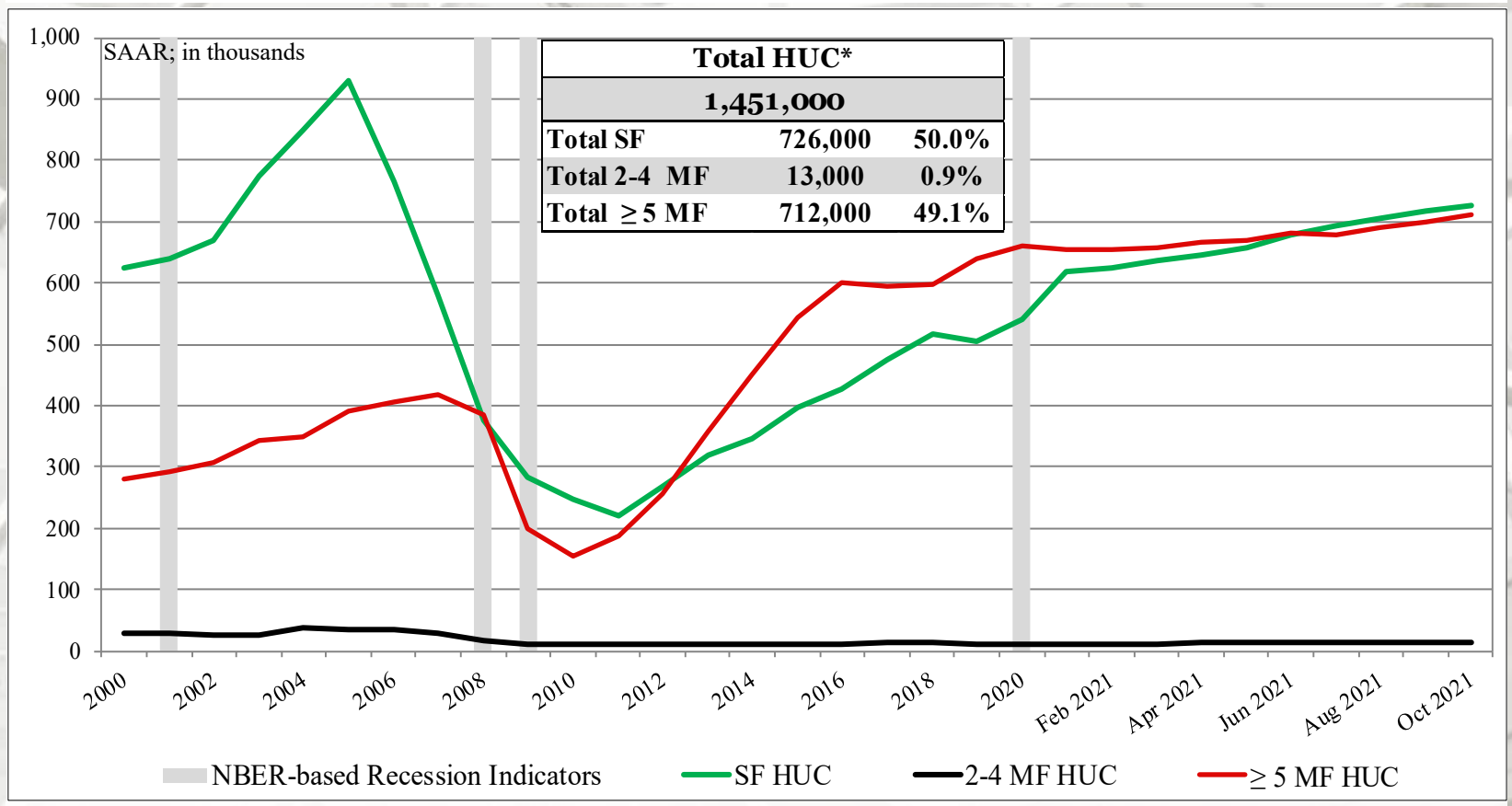
Total Housing Under Construction



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; 11/17/21

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New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
October	201,000	62,000	139,000
September	200,000	61,000	139,000
2020	179,000	57,000	120,000
M/M change	0.5%	1.6%	0.0%
Y/Y change	12.3%	8.8%	15.8%
	MW Total	**MW SF**	**MW MF**
October	183,000	99,000	84,000
September	179,000	99,000	80,000
2020	162,000	83,000	79,000
M/M change	2.2%	0.0%	5.0%
Y/Y change	13.0%	19.3%	6.3%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

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New Housing Under Construction by Region

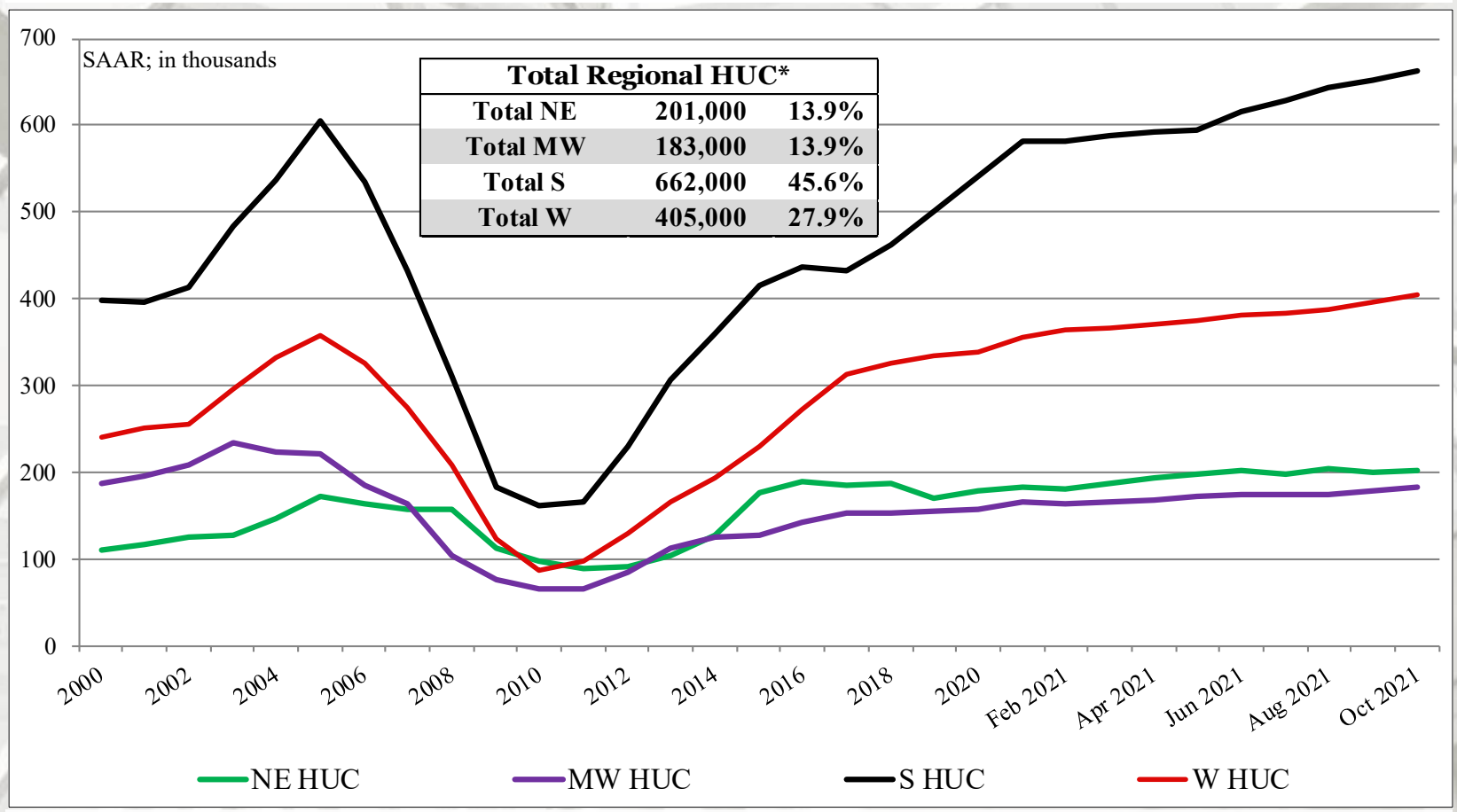
	S Total	S SF	S MF**
October	662,000	376,000	286,000
September	652,000	369,000	283,000
2020	552,000	277,000	275,000
M/M change	1.5%	1.9%	1.1%
Y/Y change	19.9%	35.7%	4.0%
	W Total	**W SF**	**W MF**
October	405,000	189,000	216,000
September	397,000	187,000	210,000
2020	335,000	149,000	186,000
M/M change	2.0%	1.1%	2.9%
Y/Y change	20.9%	26.8%	16.1%

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; 11/17/21

Return TOC

Total Housing Under Construction by Region



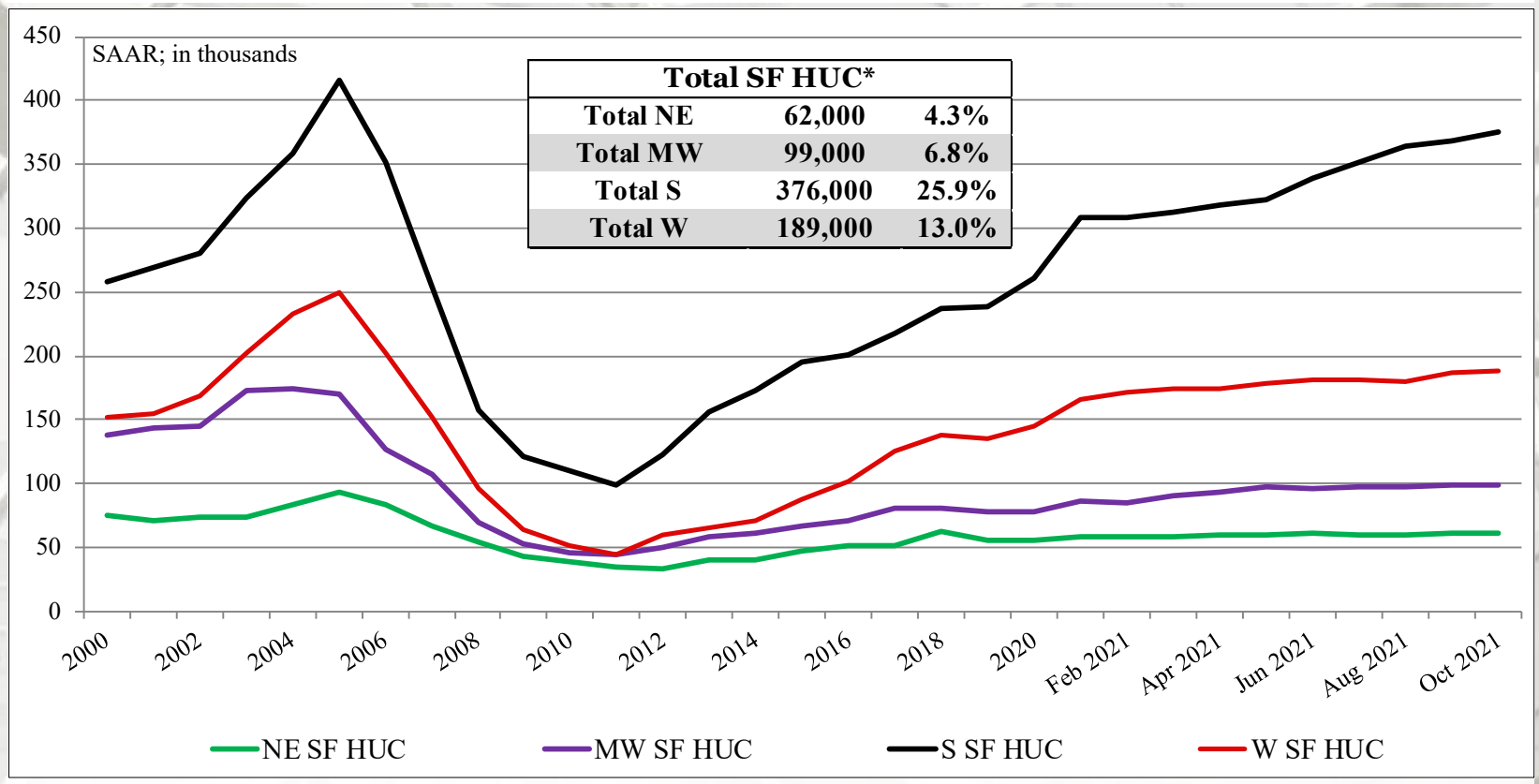
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family under construction directly; this is an estimation (Total under construction – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

Return TOC

SF Housing Under Construction by Region



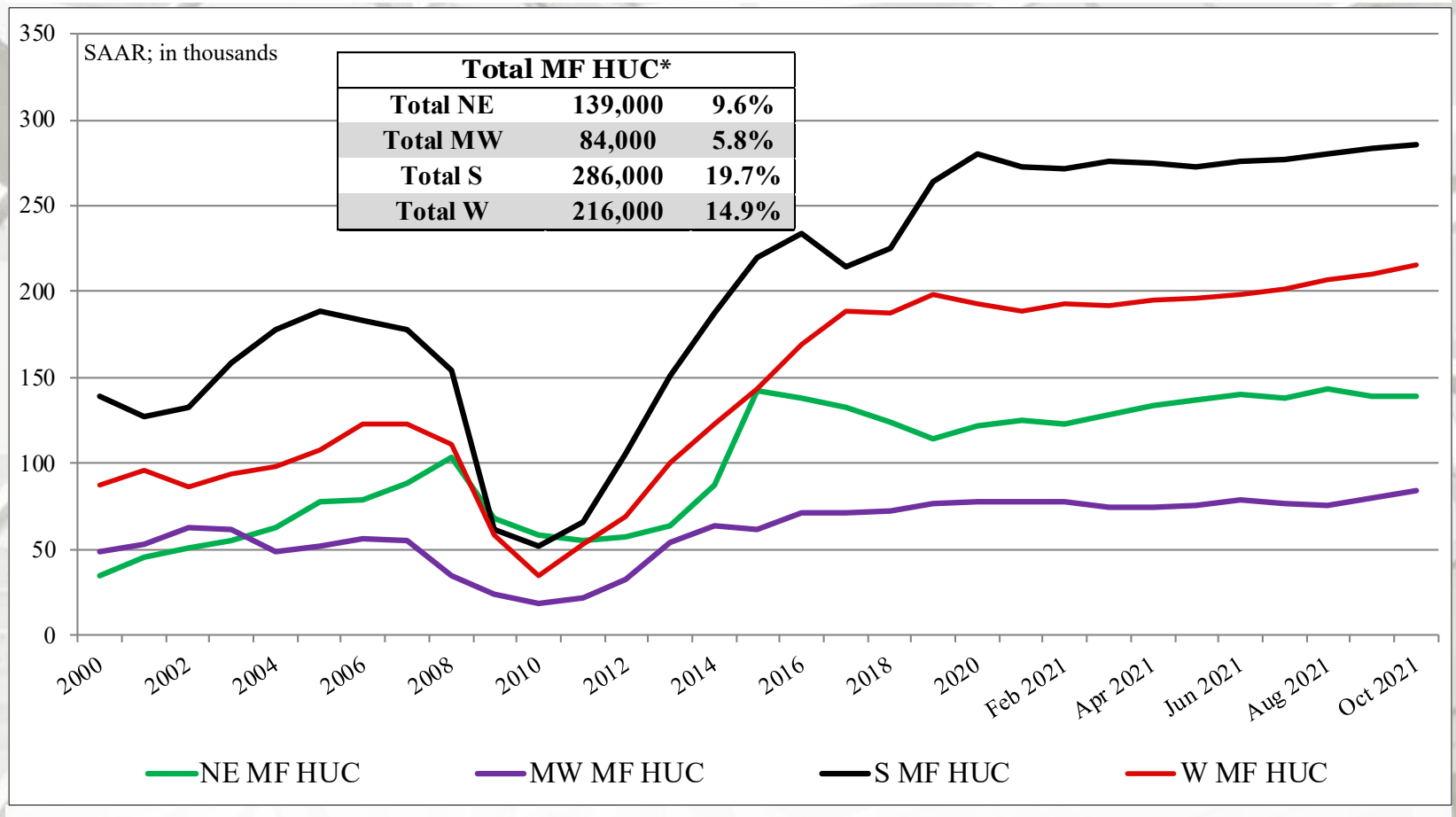
NE = Northeast, MW = Midwest, S = South, W = West.
US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under construction – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

Return TOC

MF Housing Under Construction by Region



Total MF HUC*		
Total NE	139,000	9.6%
Total MW	84,000	5.8%
Total S	286,000	19.7%
Total W	216,000	14.9%

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; 11/17/21

Return TOC

New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
October	1,242,000	929,000	11,000	302,000
September	1,242,000	945,000	7,000	290,000
2020	1,356,000	898,000	16,000	442,000
M/M change	0.0%	-1.7%	57.1%	4.1%
Y/Y change	-8.4%	3.5%	-31.3%	-31.7%

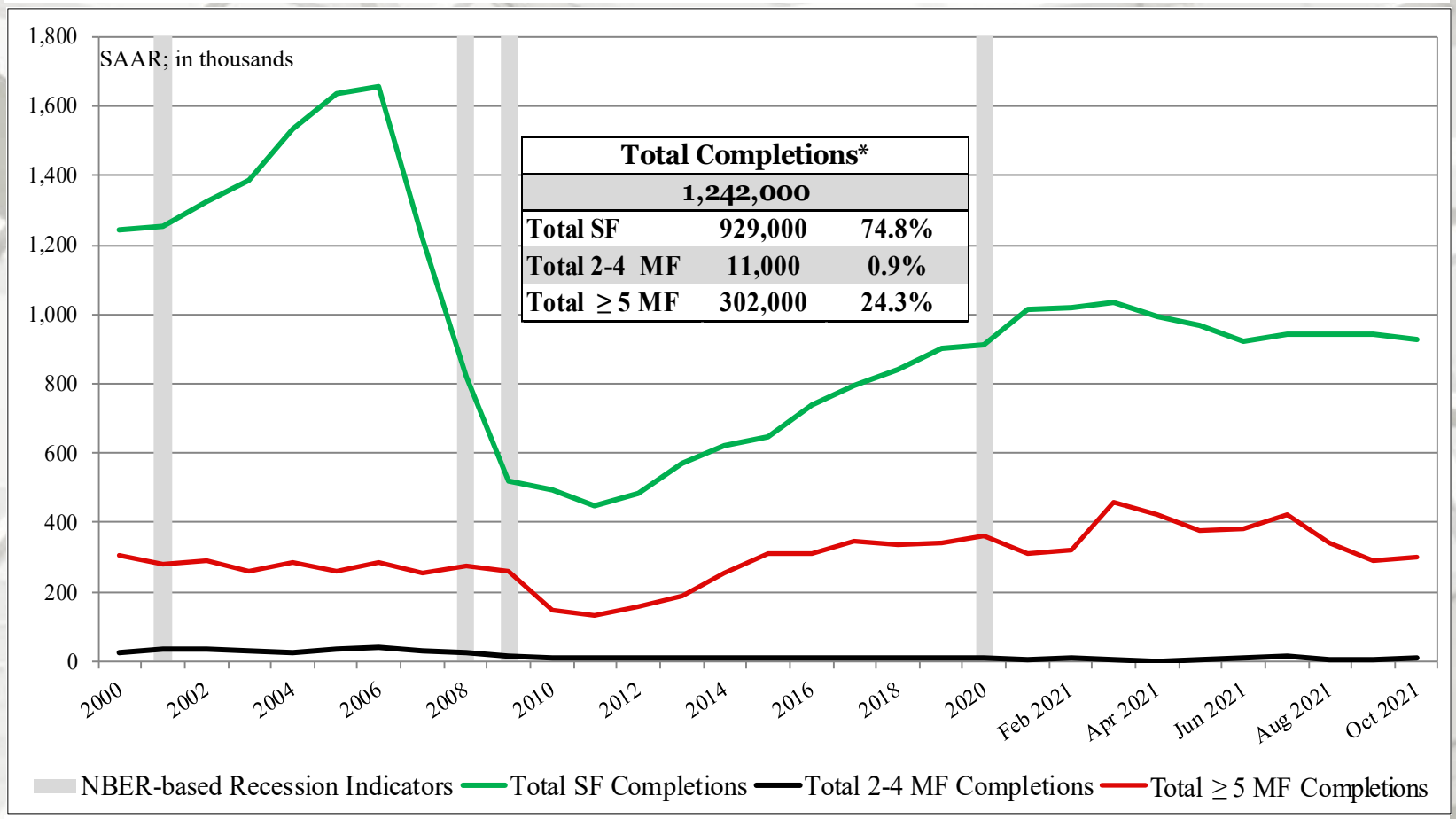
* All completion data are presented at a seasonally adjusted annual rate (SAAR).

** 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; 11/17/21

Return TOC

Total Housing Completions



Total Completions*		
1,242,000		
Total SF	929,000	74.8%
Total 2-4 MF	11,000	0.9%
Total ≥ 5 MF	302,000	24.3%

** 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; 11/17/21

Return TOC

New Housing Completions by Region

	NE Total	NE SF	NE MF**
October	121,000	50,000	71,000
September	101,000	54,000	47,000
2020	97,000	60,000	37,000
M/M change	19.8%	-7.4%	51.1%
Y/Y change	24.7%	-16.7%	91.9%
	MW Total	**MW SF**	**MW MF**
October	165,000	119,000	46,000
September	196,000	126,000	70,000
2020	194,000	117,000	77,000
M/M change	-15.8%	-5.6%	-34.3%
Y/Y change	-14.9%	1.7%	-40.3%

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

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

Return TOC

New Housing Completions by Region

	S Total	S SF	S MF**
October	643,000	521,000	122,000
September	689,000	556,000	133,000
2020	722,000	498,000	224,000
M/M change	-6.7%	-6.3%	-8.3%
Y/Y change	-10.9%	4.6%	-45.5%
	W Total	**W SF**	**W MF**
October	313,000	239,000	74,000
September	256,000	209,000	47,000
2020	343,000	223,000	120,000
M/M change	22.3%	14.4%	57.4%
Y/Y change	-8.7%	7.2%	-38.3%

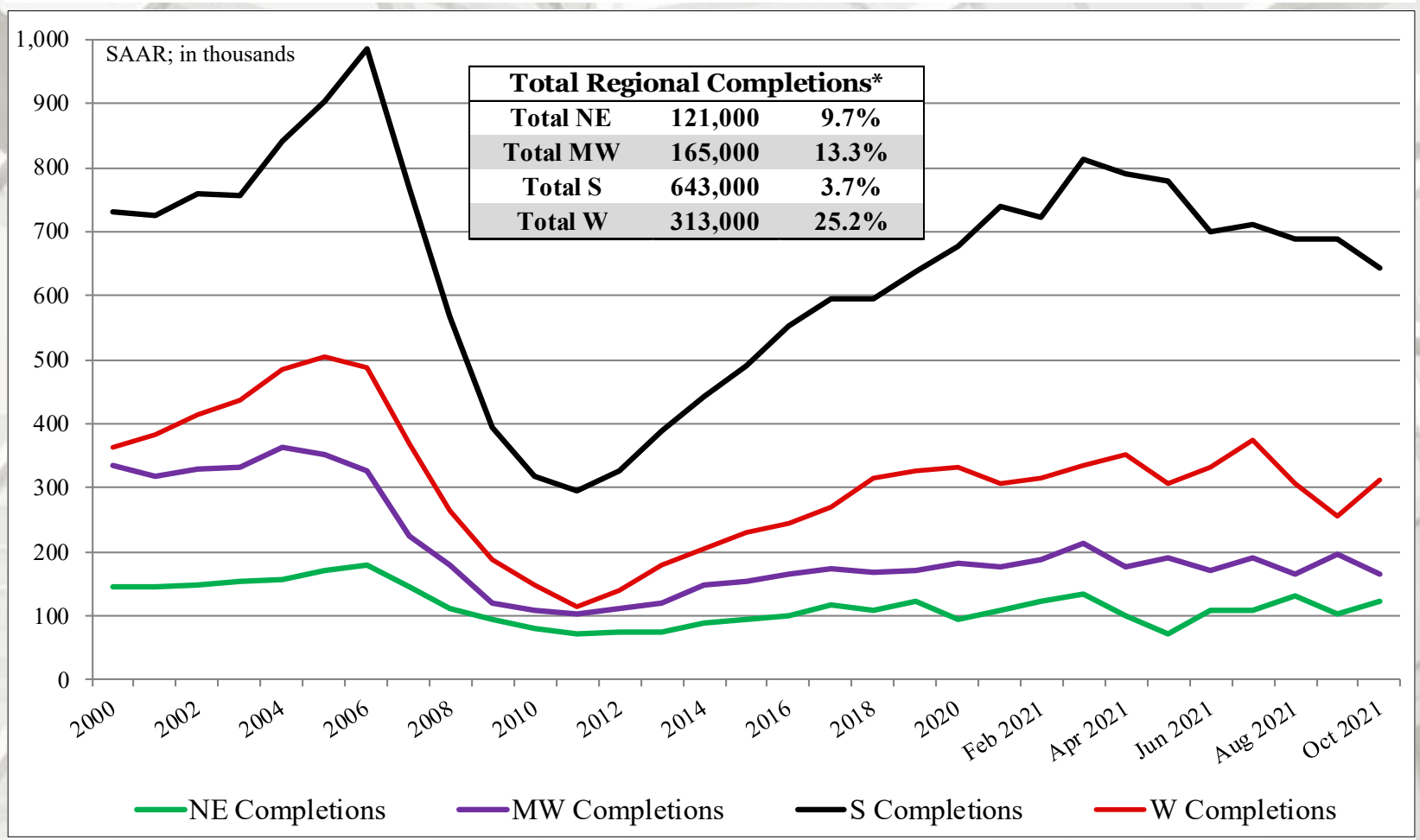
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

Return TOC

Total Housing Completions by Region



Total Regional Completions*		
Total NE	121,000	9.7%
Total MW	165,000	13.3%
Total S	643,000	3.7%
Total W	313,000	25.2%

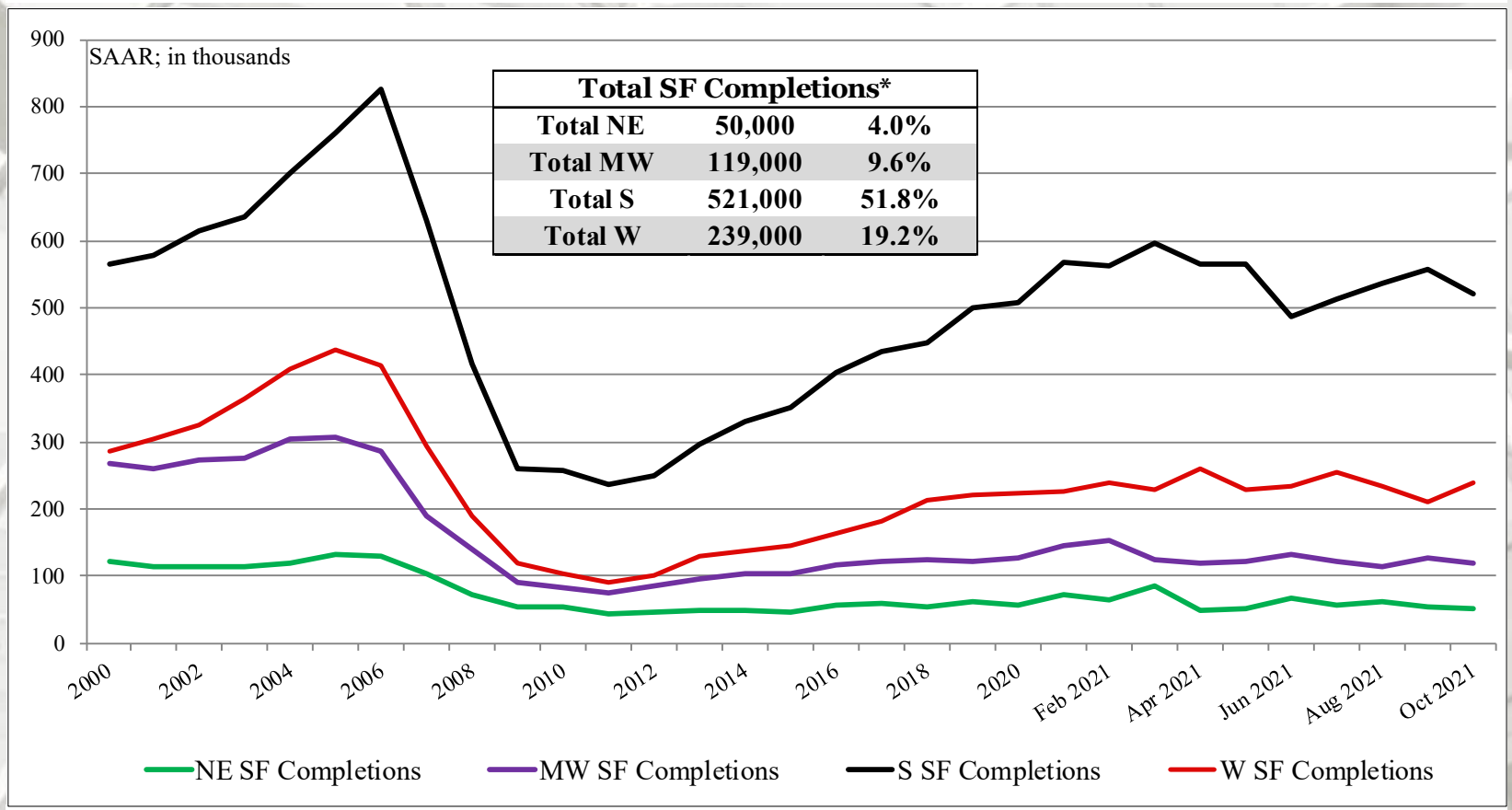
All data are SAAR; NE = Northeast and MW = Midwest; S = South, W = West

** 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; 11/17/21

Return TOC

SF Housing Completions by Region



Total SF Completions*		
Total NE	50,000	4.0%
Total MW	119,000	9.6%
Total S	521,000	51.8%
Total W	239,000	19.2%

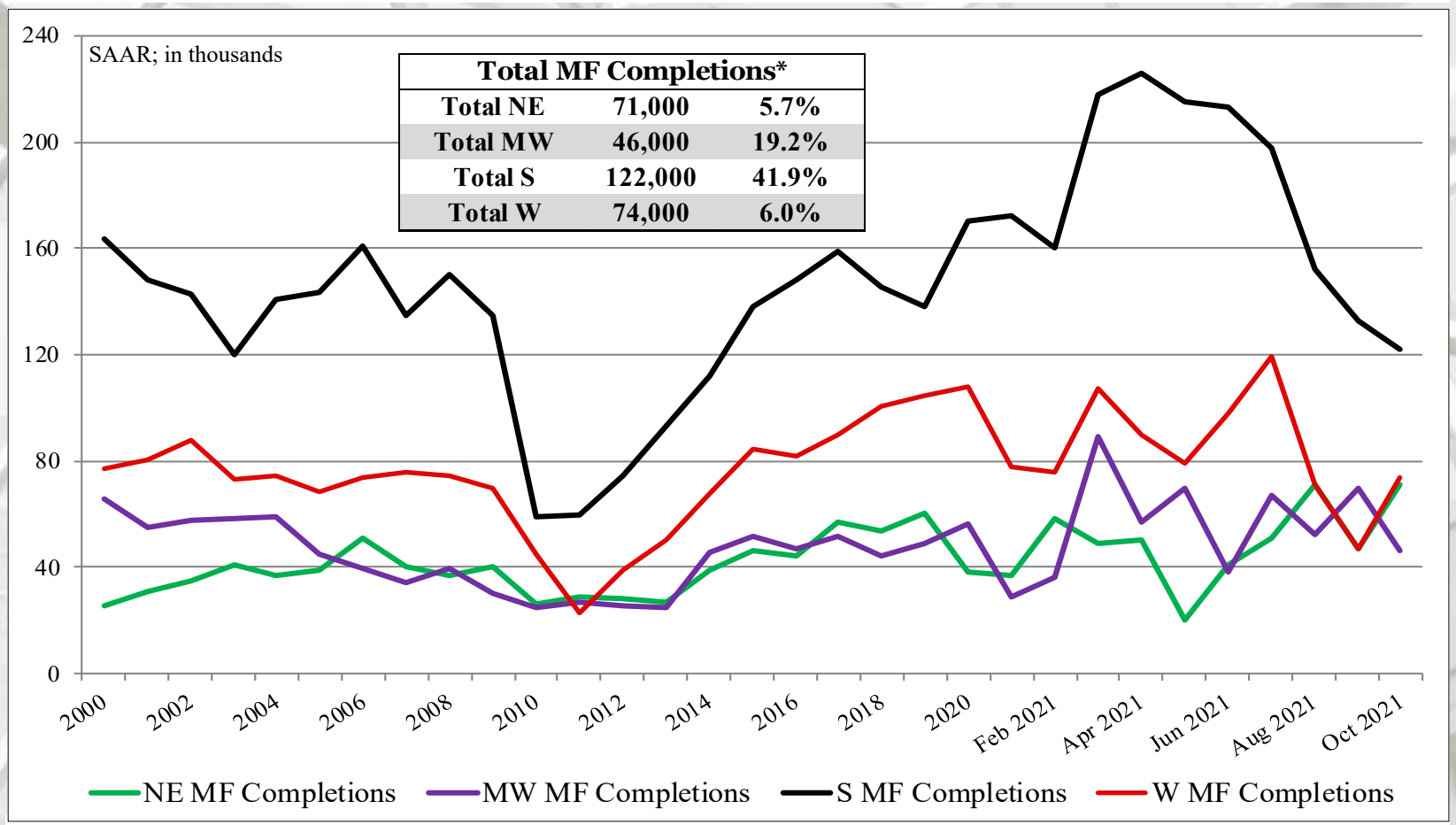
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

Return TOC

MF Housing Completions by Region



Total MF Completions*		
Total NE	71,000	5.7%
Total MW	46,000	19.2%
Total S	122,000	41.9%
Total W	74,000	6.0%

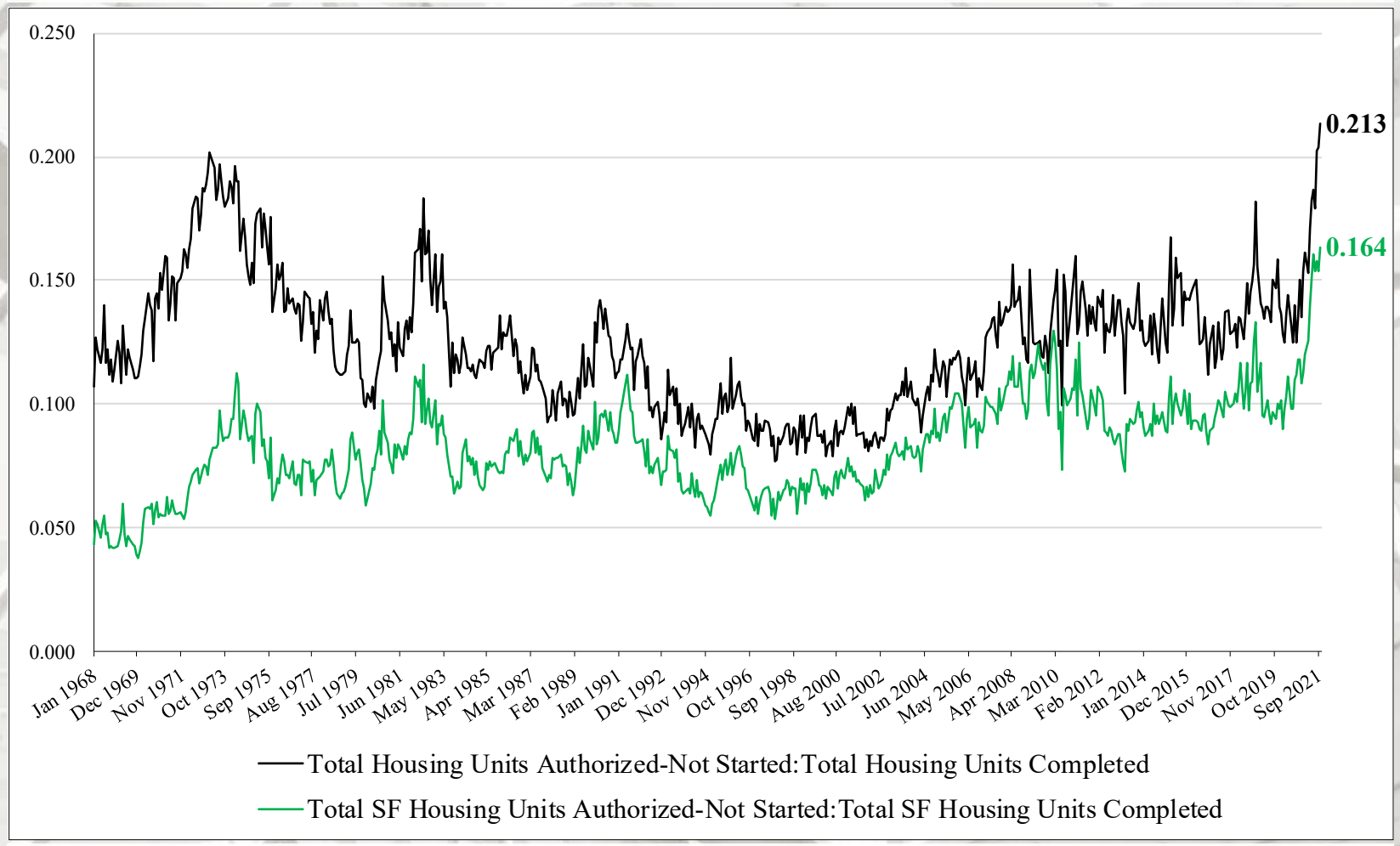
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly; this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/17/21

Return TOC

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



Authorized, Not Started to Housing Completions

The ratio of SF houses authorized-not started to SF completed is the greatest in the history of this data series. The total housing unit ratio is the greatest since February 1973 (0.202). authorized units not started increased to 265,000, a record.

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; 11/17/21

Return TOC

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
October	745,000	$407,700	$477,800	6.3
September	742,000	$404,700	$457,200	6.1
2020	969,000	$346,900	$394,600	3.5
M/M change	0.4%	0.7%	4.5%	3.3%
Y/Y change	-23.1%	17.5%	21.1%	80.0%

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

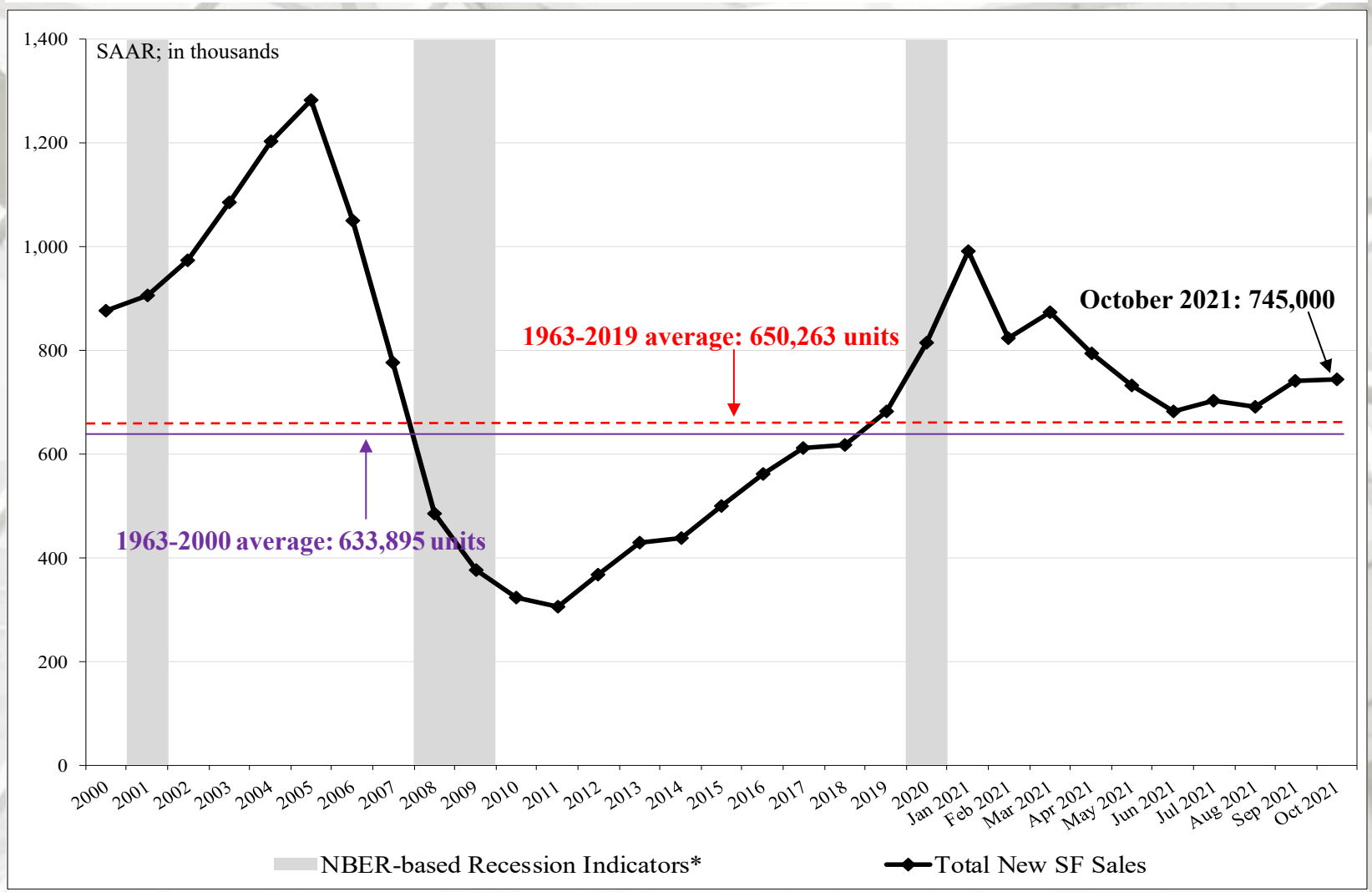
New SF sales were the same as the consensus forecast[3] of 745 m (range: 735 m to 820 m). The past three month's new SF sales data also were revised:

July initial:	708 m, revised to 704 m.
August initial:	740 m, revised to 693 m.
September initial:	800 m, revised to 742 m.

Sources: [1] https://www.census.gov/construction/nrs/index.html; 11/24/21; [2] https://www.census.gov/construction/nrs/pdf/newressales.pdf
[3] http://us.econoday.com/; 11/24/21

Return TOC

New SF House Sales

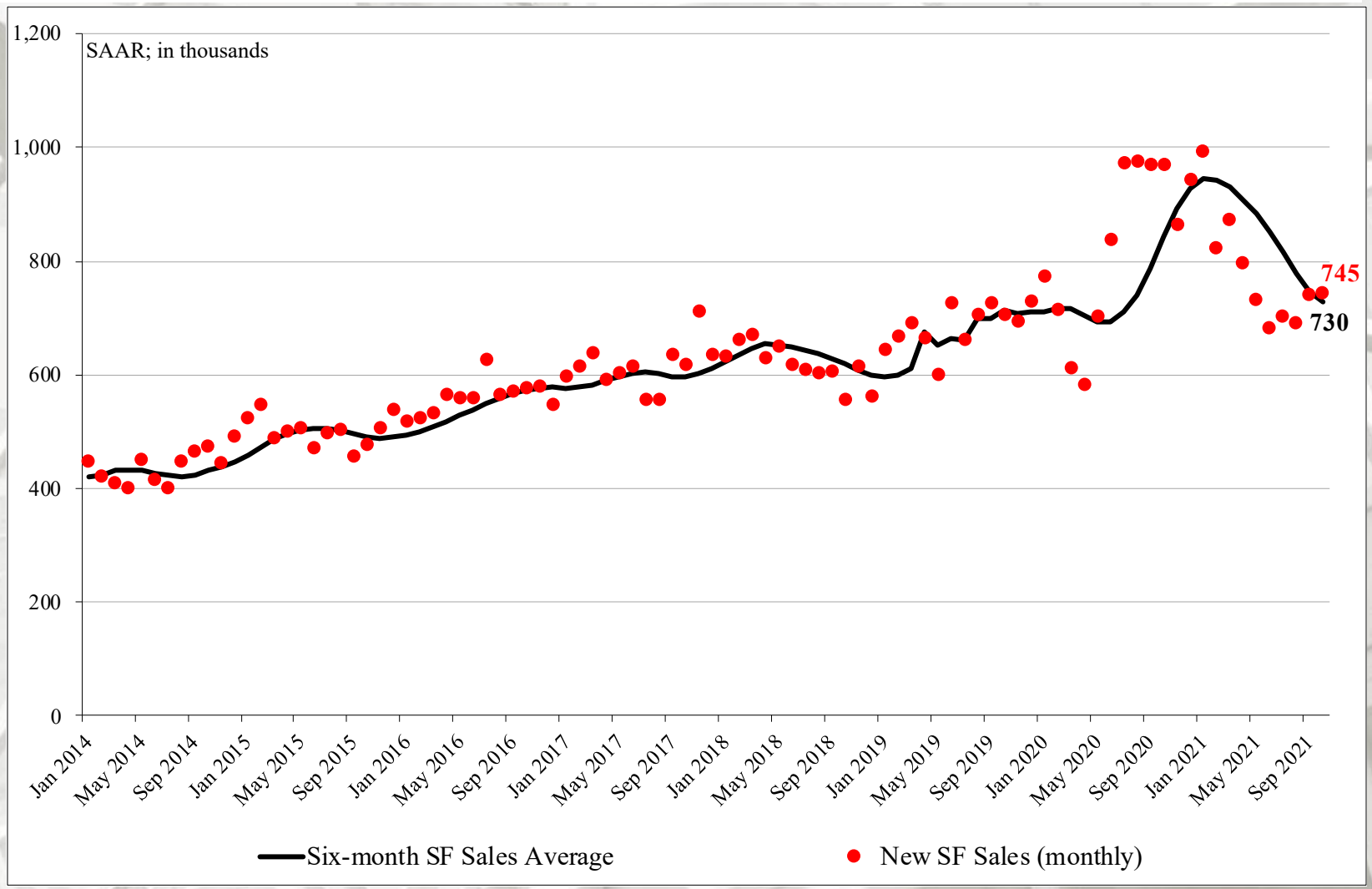


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 6/1/21; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

Return TOC

New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21.

Return TOC

New SF House Sales by Region and Price Category

	NE	MW	S	W
October	30,000	81,000	450,000	184,000
September	34,000	73,000	449,000	186,000
2020	41,000	113,000	540,000	275,000
M/M change	-11.8%	11.0%	0.2%	-1.1%
Y/Y change	-26.8%	-28.3%	-16.7%	-33.1%

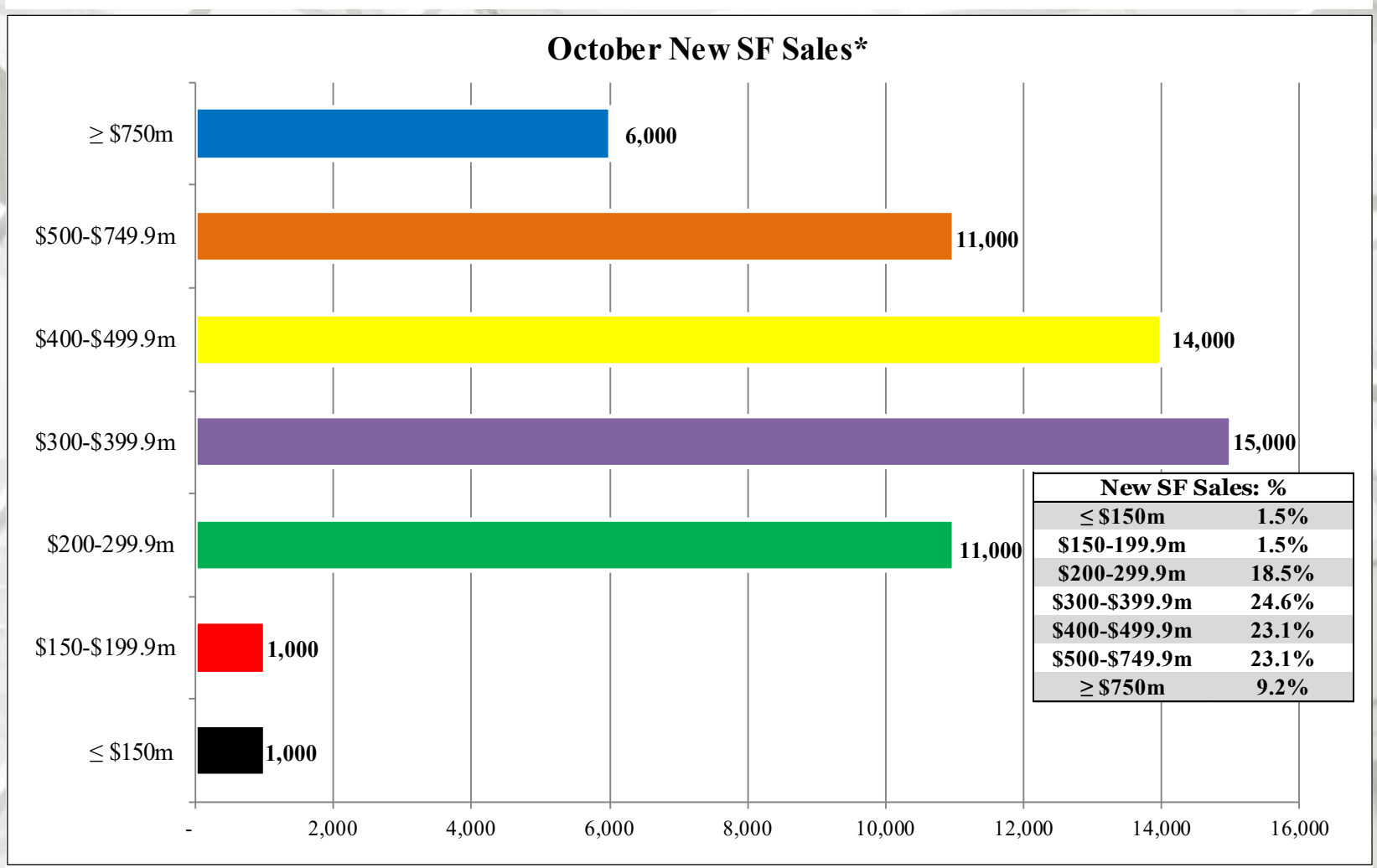
	≤ $150m	$150 - $199.9m	$200 - 299.9m	$300 - $399.9m	$400 - $499.9m	$500 - $749.9m	≥ $750m
October[1,2,3,4]	1,000	1,000	11,000	15,000	14,000	11,000	6,000
September	1,000	1,000	12,000	15,000	13,000	13,000	6,000
2020	1,000	4,000	24,000	21,000	15,000	10,000	3,000
M/M change	0.0%	0.0%	-7.7%	25.0%	0.0%	8.3%	20.0%
Y/Y change	0.0%	-75.0%	-45.5%	-37.5%	18.2%	30.0%	20.0%
New SF sales: %	1.7%	1.7%	18.6%	25.4%	23.7%	18.6%	10.2%

NE = Northeast; MW = Midwest; S = South; W = West
[1] All data are SAAR
[2] Houses for which sales price were not reported have been distributed proportionally to those for which sales price was reported;
[3] Detail 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; 11/24/21;
[4]https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

Return TOC

New SF House Sales



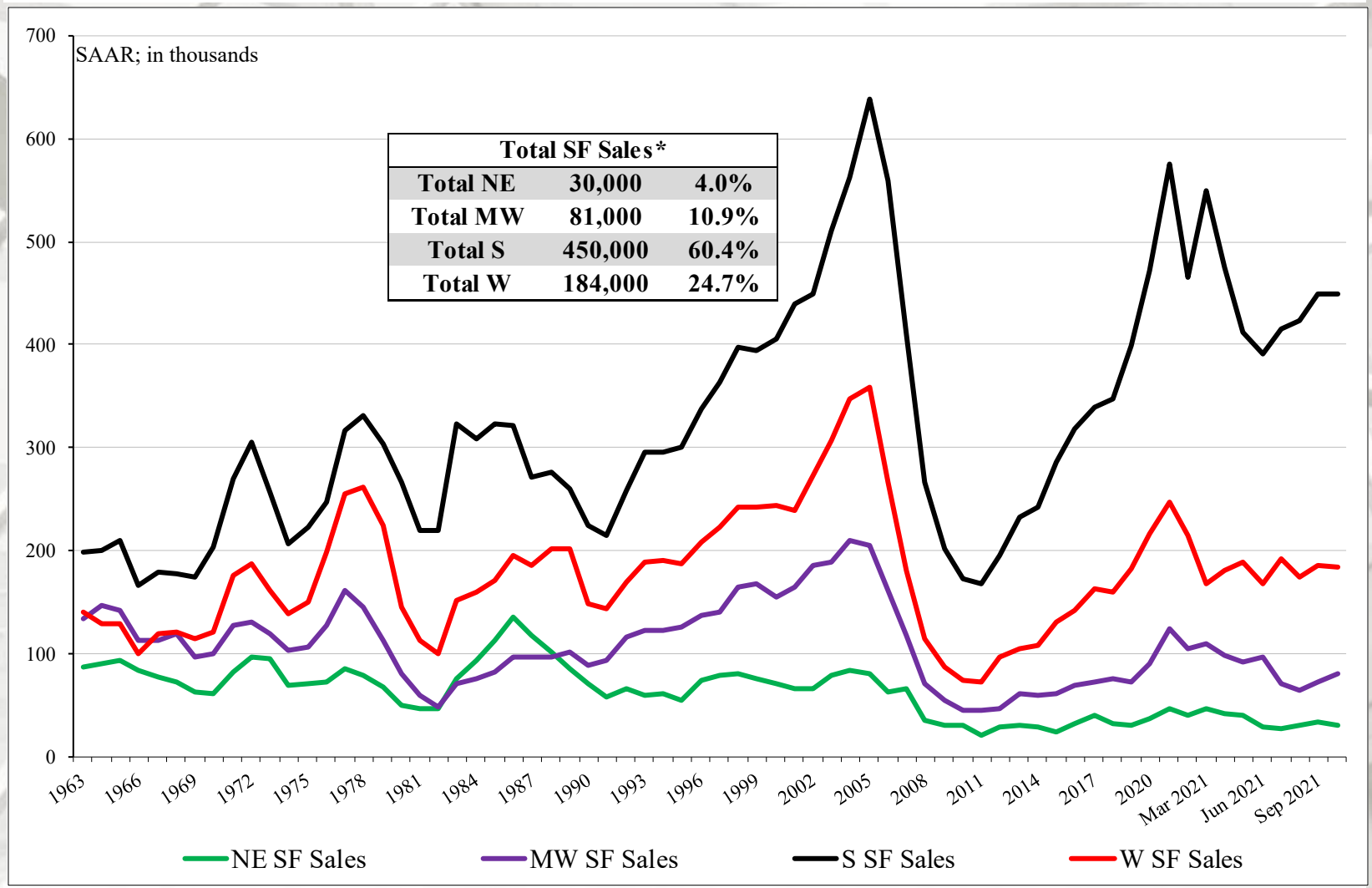
New SF Sales: %	
≤ $150m	1.5%
$150-199.9m	1.5%
$200-299.9m	18.5%
$300-$399.9m	24.6%
$400-$499.9m	23.1%
$500-$749.9m	23.1%
≥ $750m	9.2%

* Total new sales by price category and percent.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

Return TOC

New SF House Sales by Region



Total SF Sales*		
Total NE	30,000	4.0%
Total MW	81,000	10.9%
Total S	450,000	60.4%
Total W	184,000	24.7%

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; 11/24/21

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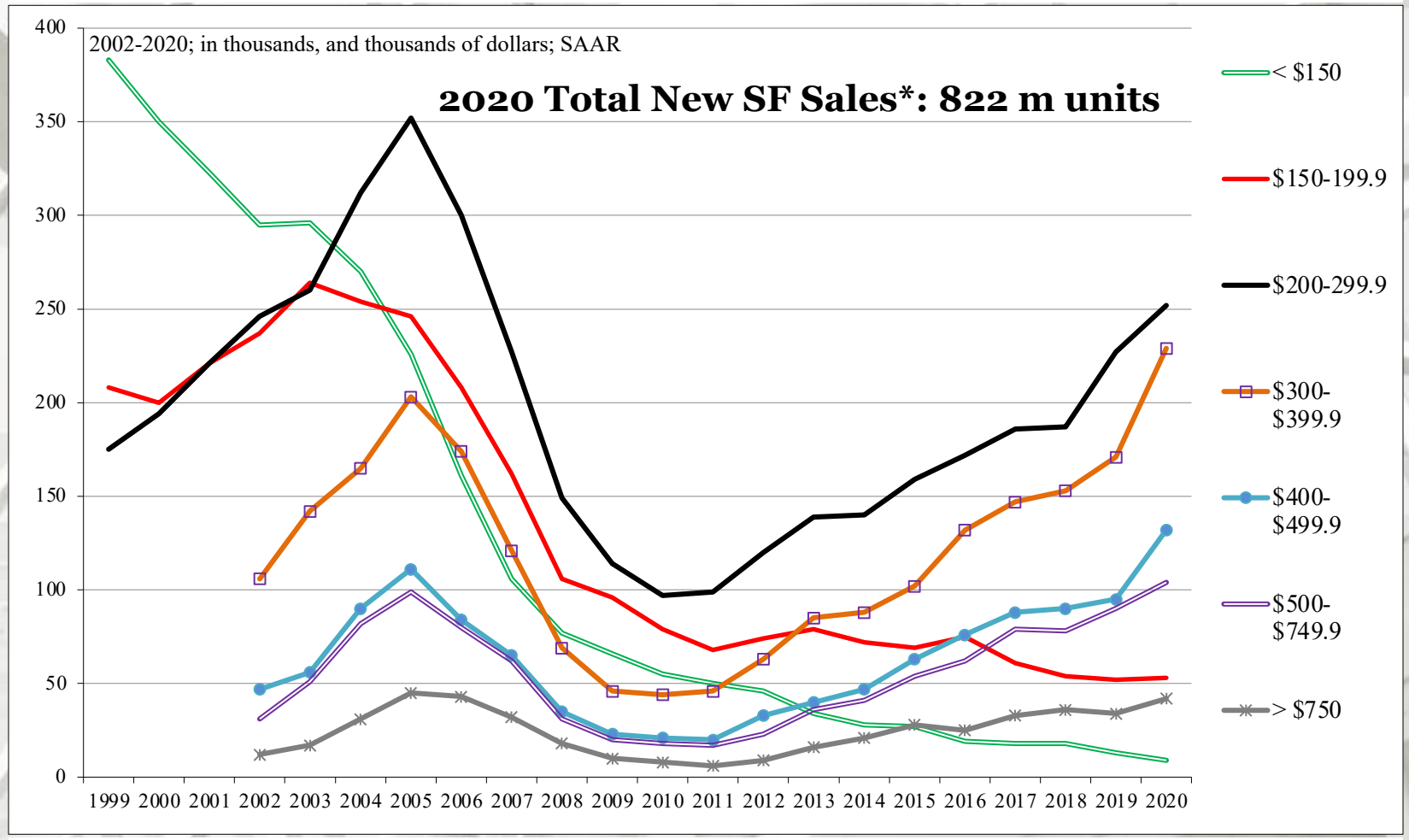
New SF House Sales by Price Category



* Sales tallied by price category, nominal dollars.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 5/25/21

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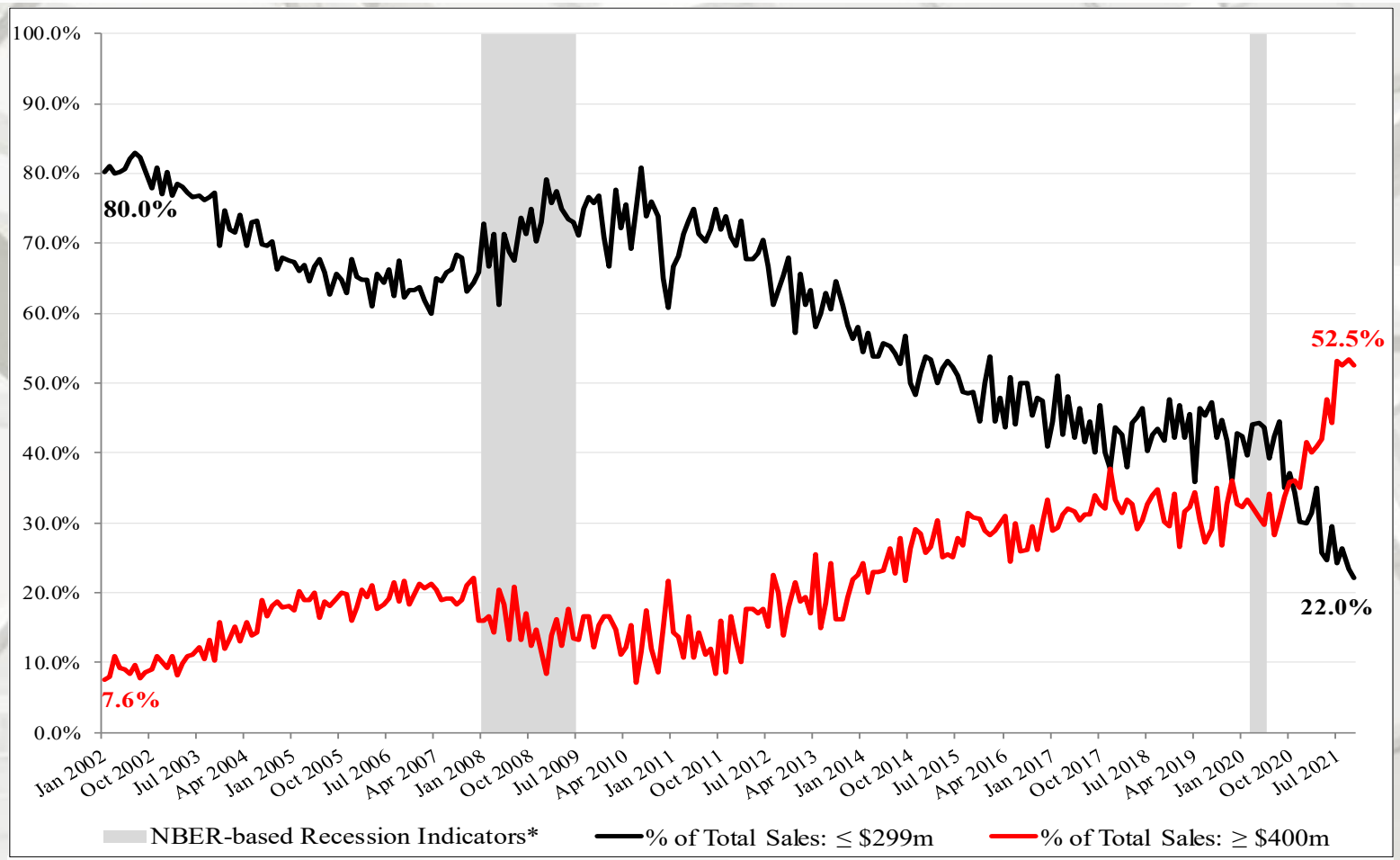
New SF House Sales



* 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 – October 2021

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 11/24/21

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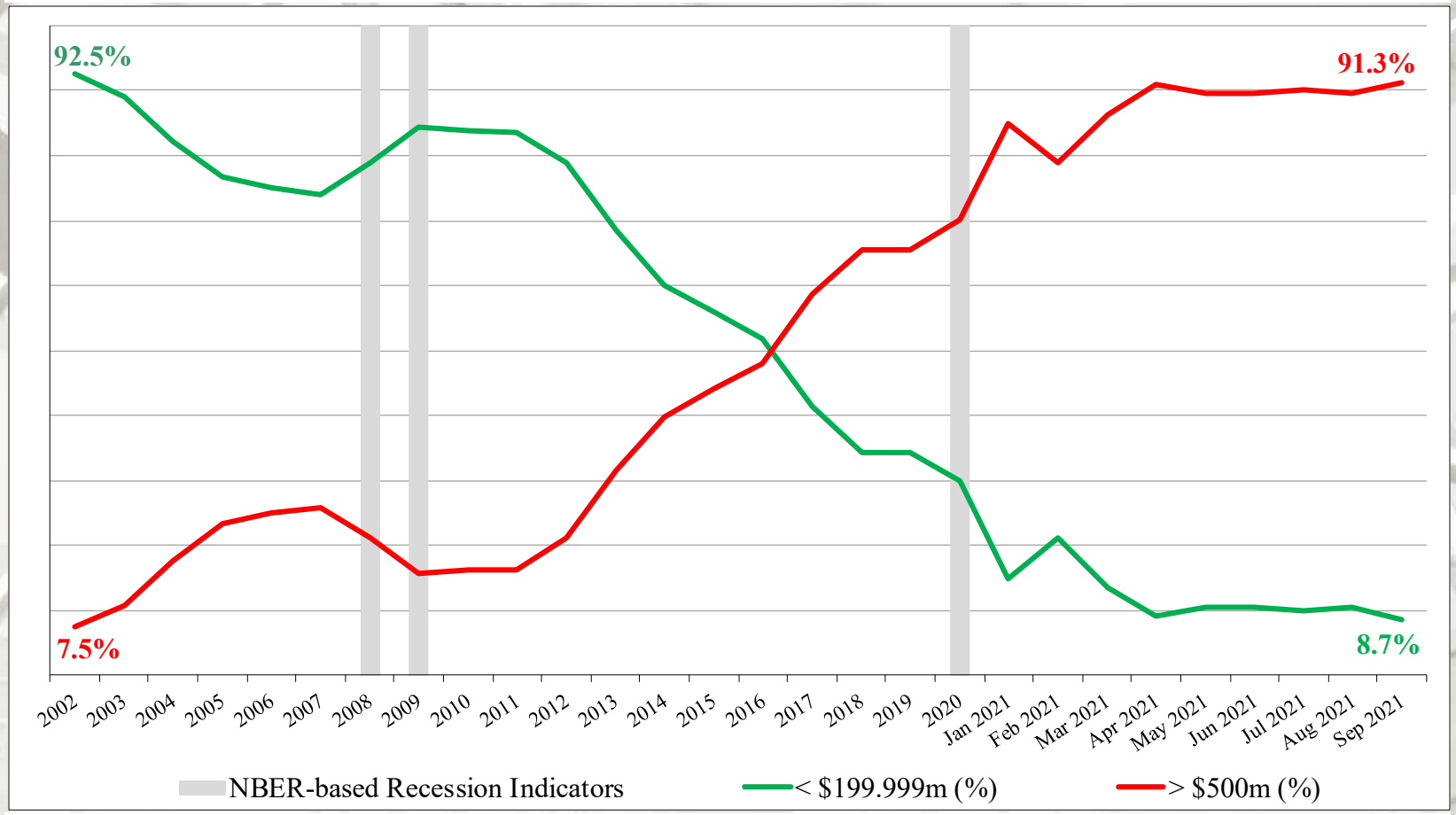
New SF House Sales



New SF Sales: ≤ $ 200m and ≥ $500m: 2002 to October 2021

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 ≤ $200m class. One of the most oft mentioned reasons for this occurrence is builder net margins.

Note: Sales values are not adjusted for inflation.
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 11/24/21

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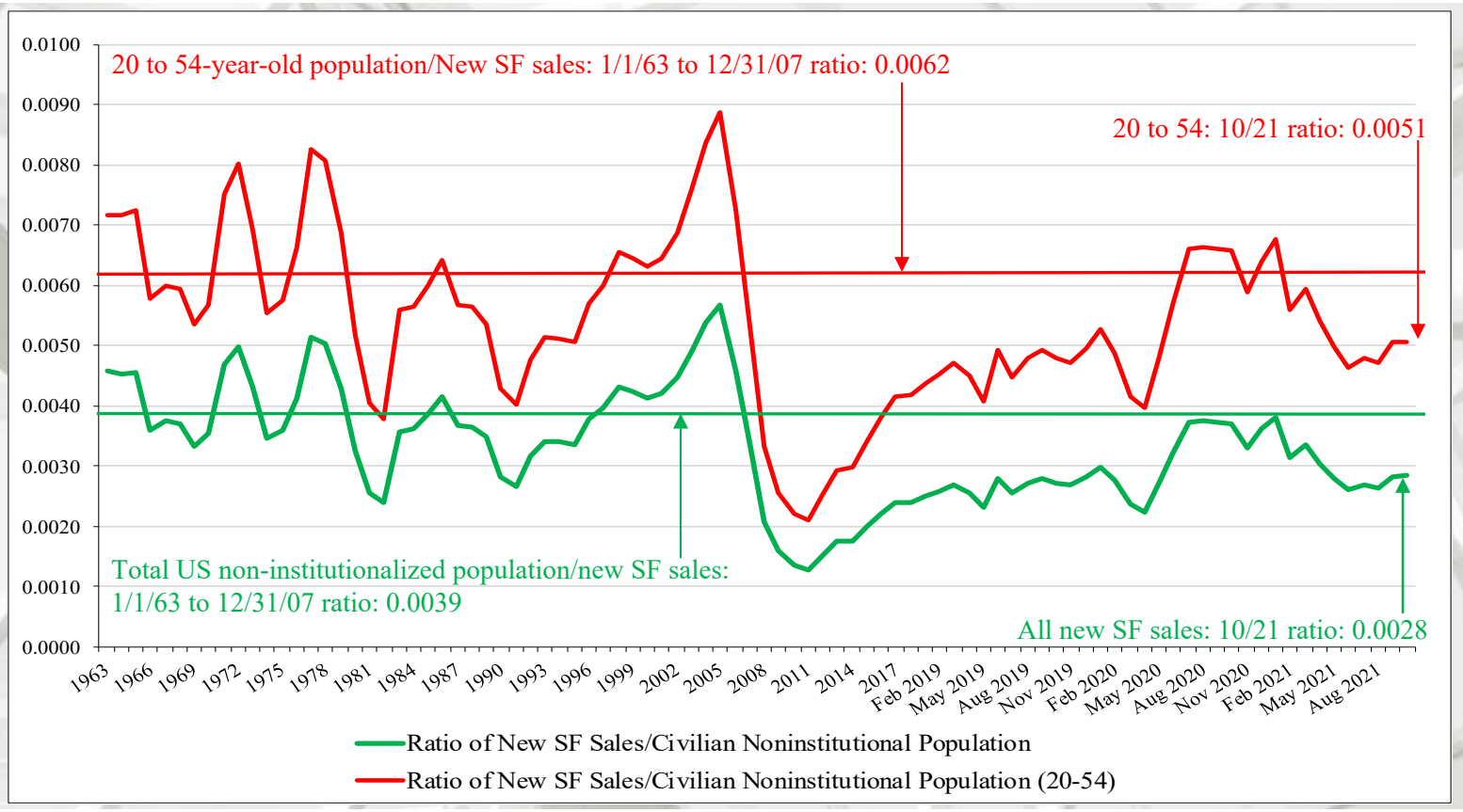
New SF House Sales



New SF sales adjusted for the US population

From January 1963 to July 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in October 2021 it was 0.0028 – no change from September. The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0048; in October 2021 it was 0.0051 – also no change from September. All are non-adjusted data. New house sales for the 20 to 54 class exceeded population growth for the second time in more than a decade. From a total 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; 11/24/21

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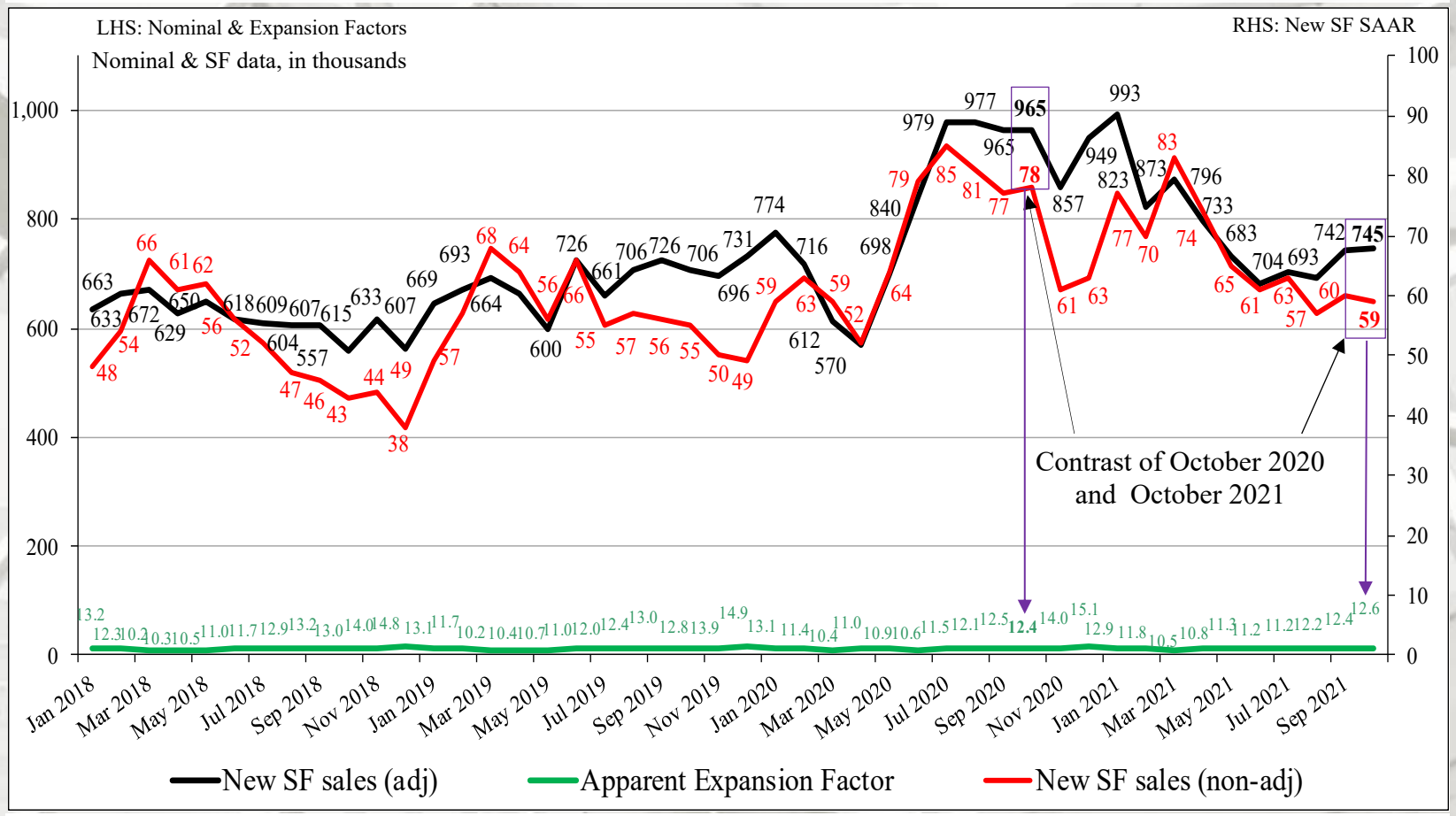
Nominal vs. SAAR New SF House Sales



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; 11/24/21

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New SF House Sales

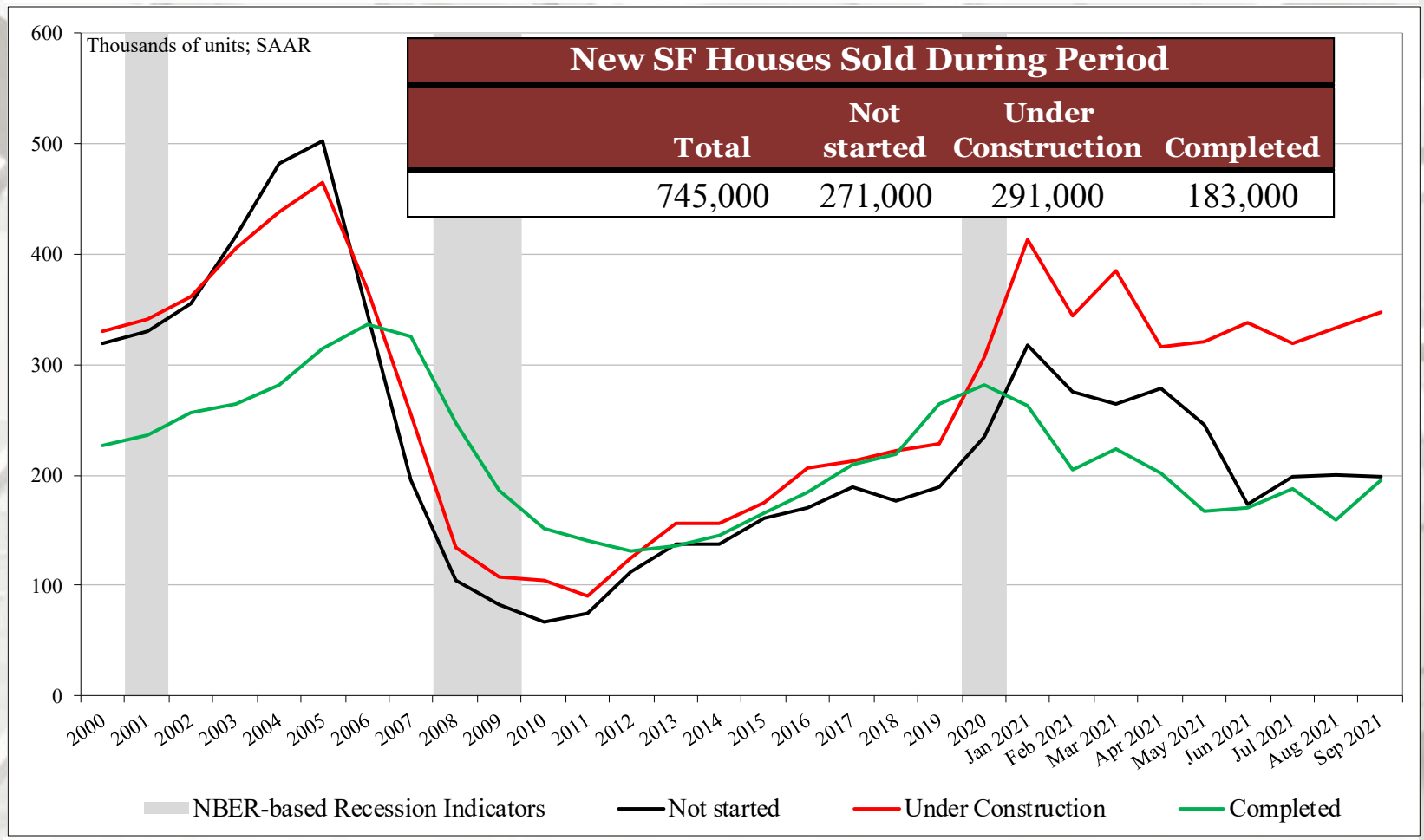
New SF Houses Sold During Period				
	Total	Not started	Under Construction	Completed
October	745,000	271,000	291,000	183,000
September	742,000	199,000	347,000	196,000
2020	969,000	323,000	373,000	273,000
M/M change	0.4%	36.2%	-16.1%	-6.6%
Y/Y change	-23.1%	-16.1%	-22.0%	-33.0%
Total percentage		36.4%	39.1%	24.6%

SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

Return TOC

New SF House Sales: Sold During Period

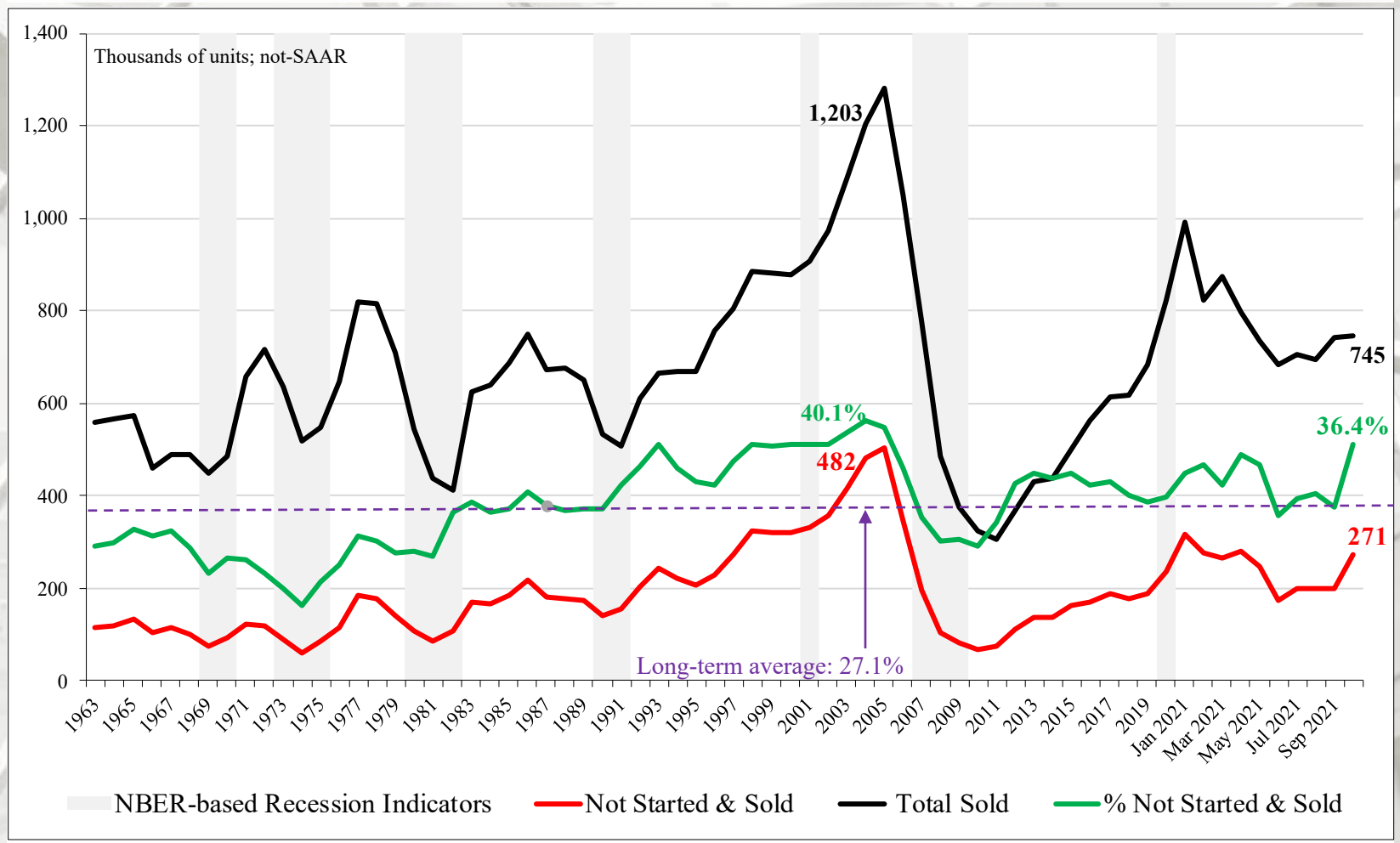


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

Return TOC

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



Of the new houses sold in October (745 m), 36.4% (271 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; 11/24/21

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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
October	389,000	109,000	242,000	38,000
September	378,000	102,000	241,000	35,000
2020	284,000	60,000	181,000	43,000
M/M change	2.9%	6.9%	0.4%	8.6%
Y/Y change	37.0%	81.7%	33.7%	-11.6%
Total percentage		28.0%	62.2%	9.8%

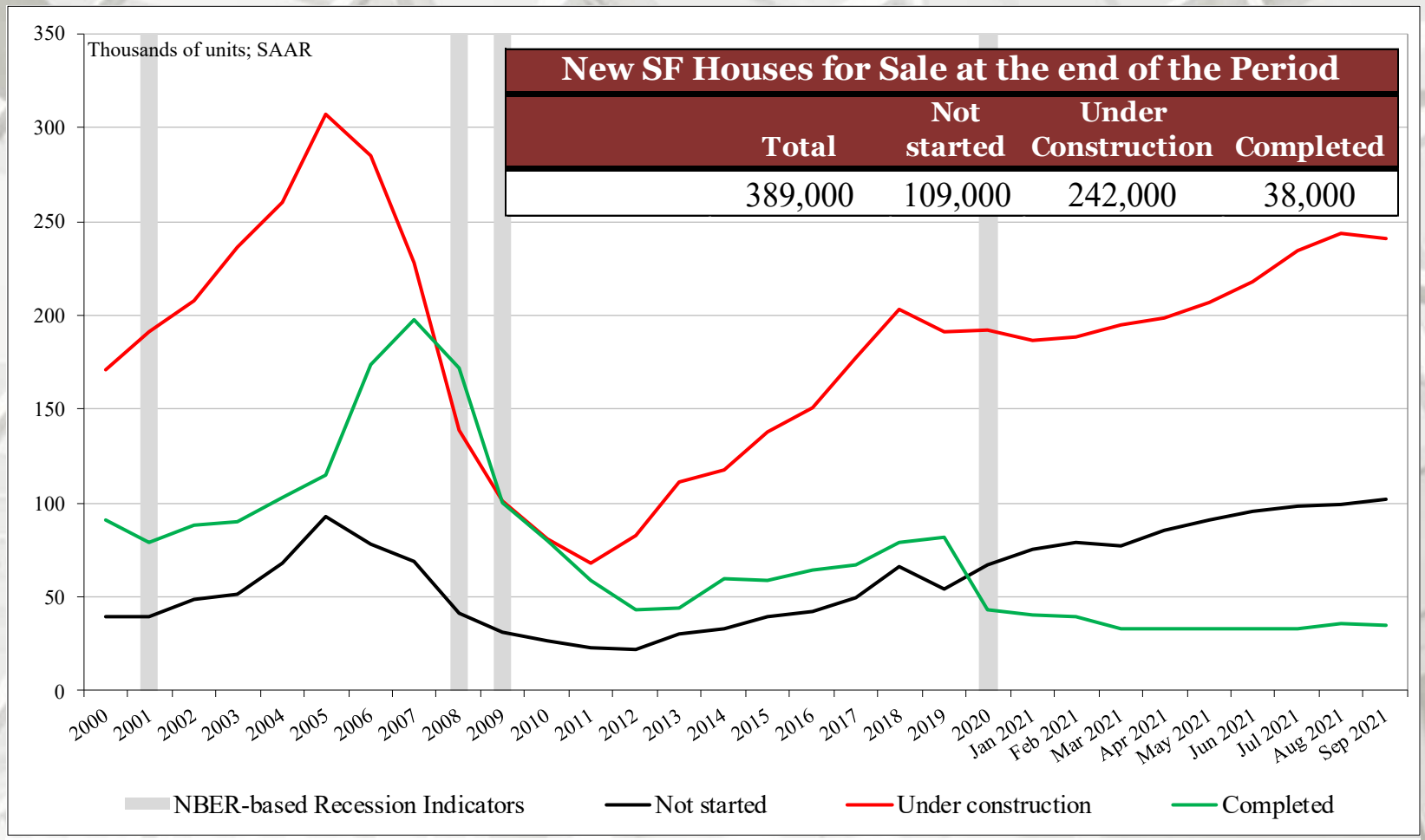
Not SAAR

Of houses listed for sale (389m) in October, 9.8% (38m) have been built. In the 'ground had not been broken for construction' or 'not started' category, 109m (28.0%) were sold; the greatest number since April of 2006 (100m).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

Return TOC

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
389,000	109,000	242,000	38,000

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; 11/24/21

Return TOC

New SF House Sales

New SF Houses for Sale at the end of the Period by Region*	Total	NE	MW	S	W
October	388,000	30,000	37,000	226,000	95,000
September	382,000	29,000	34,000	227,000	92,000
2020	284,000	21,000	30,000	162,000	71,000
M/M change	1.6%	3.4%	8.8%	-0.4%	3.3%
Y/Y change	36.6%	42.9%	23.3%	39.5%	33.8%

* Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

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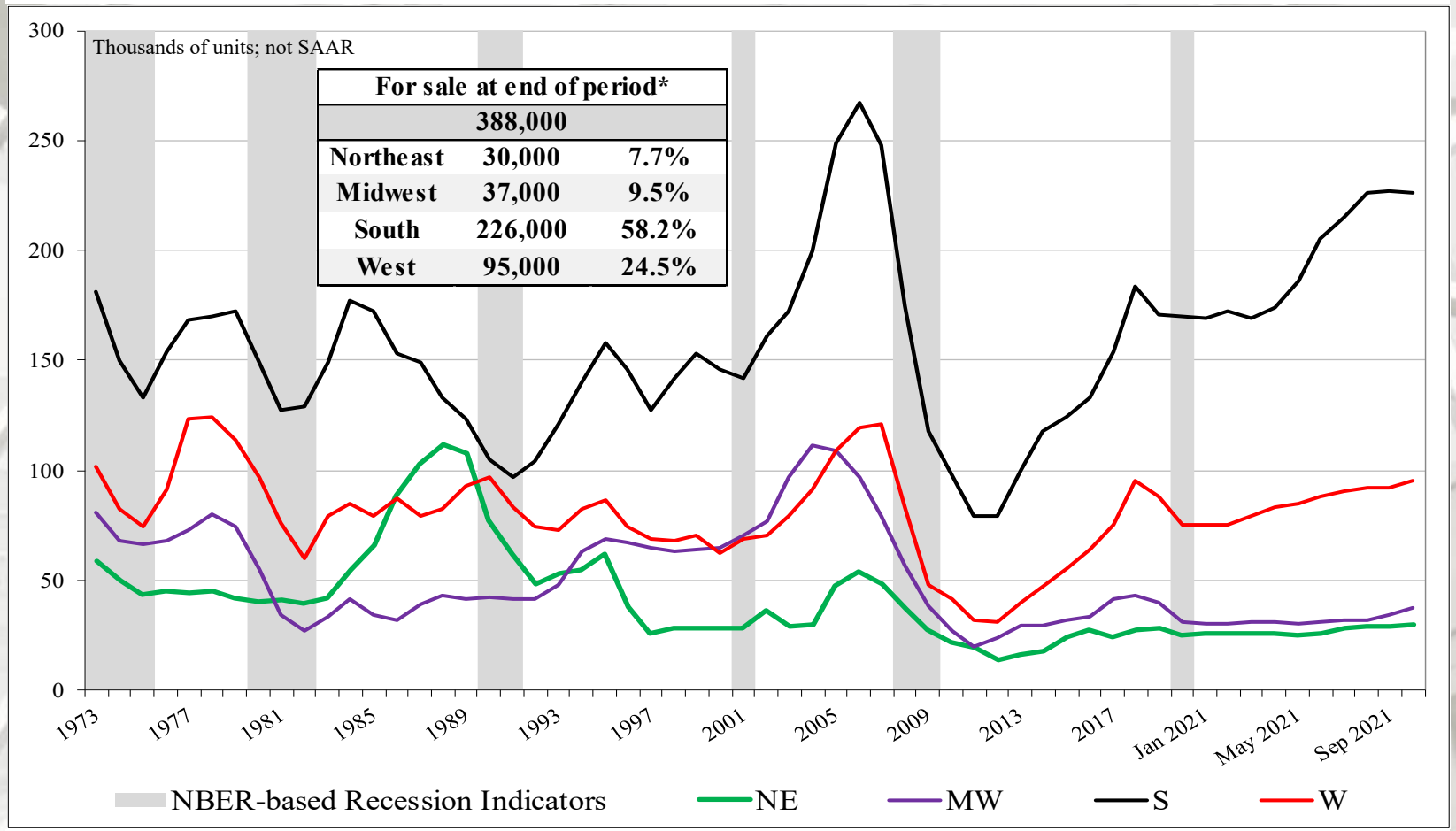
New SF Houses for Sale at End of Period by Region



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; 11/24/21

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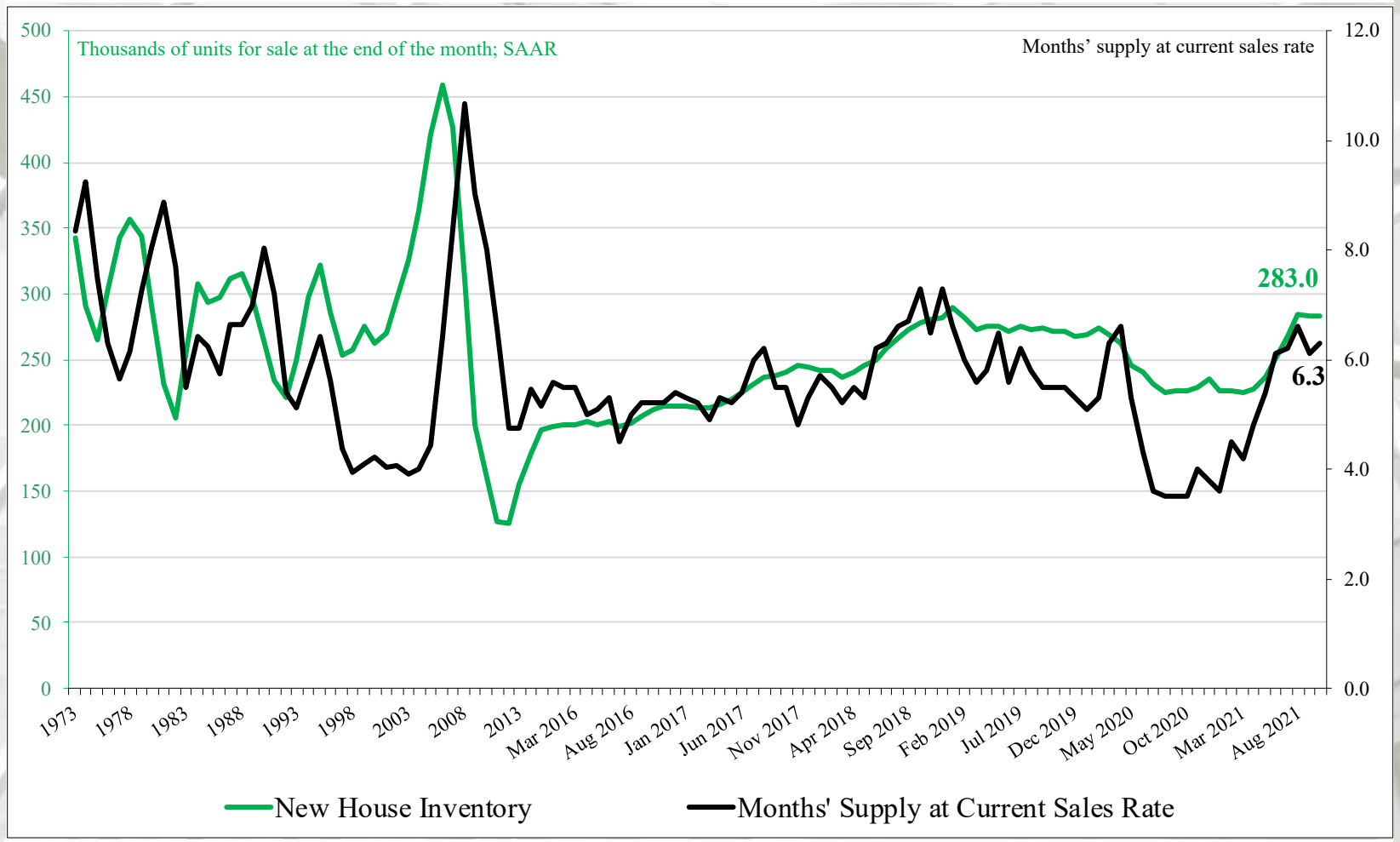
Months' Supply and New House Inventory[a]



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

The months supply of new houses for sale was 6.3 at the end of October (SAAR).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 11/24/21

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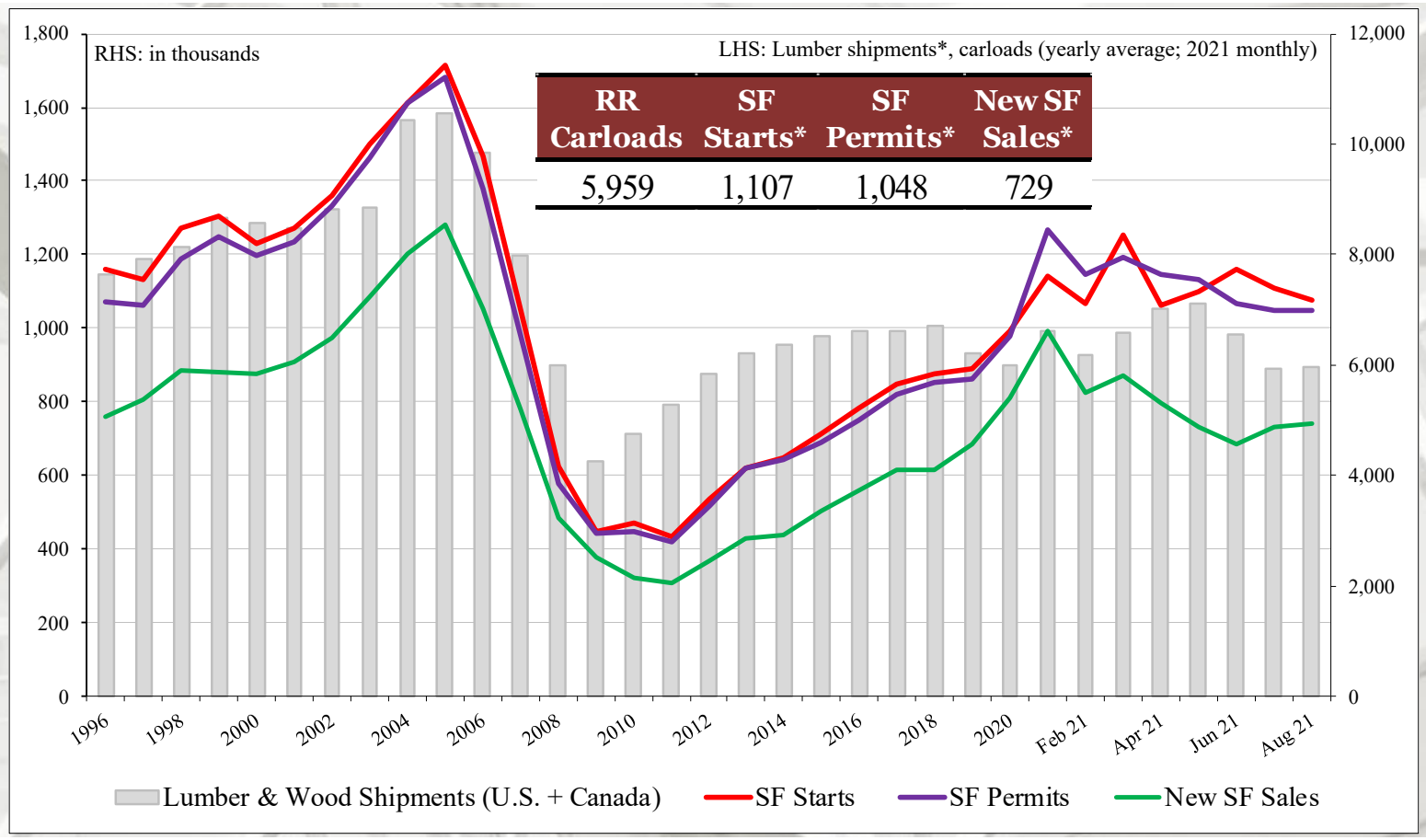
U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



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 carload lumber and wood shipments. The intent is to learn 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. Note that 2021 data is on a monthly basis.

* In thousands

Sources: *Association of American Railroads, *Rail Time Indicators* report-October 2021; http://www.census.gov/construction; 11/17/21 & 11/24/21

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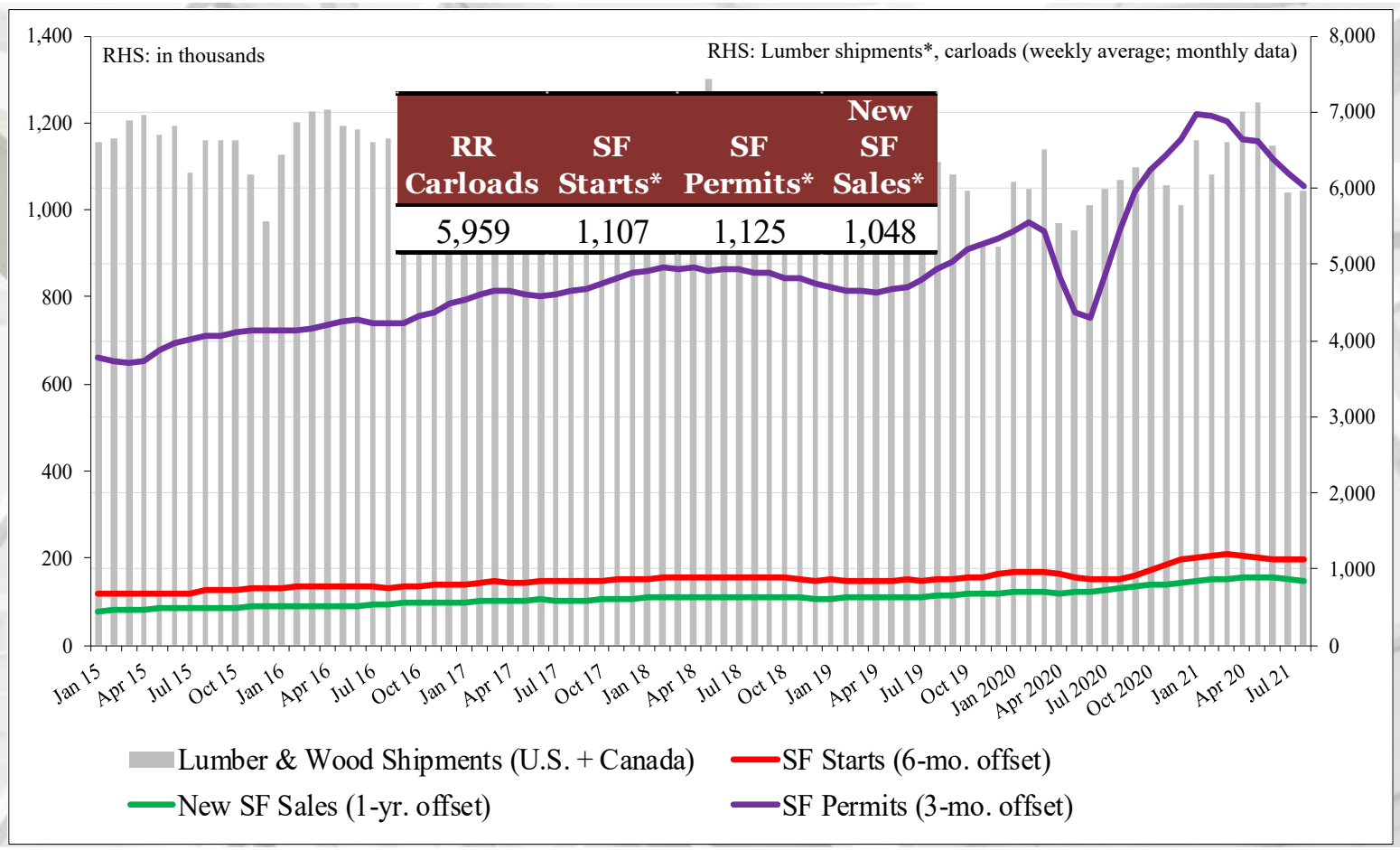
U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



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

* In thousands

Sources: *Association of American Railroads, *Rail Time Indicators* report-October 2021; http://www.census.gov/construction; 11/17/21; & 11/24/21

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October 2021
Construction Spending

	Total Private Residential*	SF	MF	Improvement**
November	$774,688	$412,084	$100,115	$262,489
September	$778,569	$415,398	$100,238	$262,933
2020	$664,062	$334,671	$91,100	$238,291
M/M change	-0.5%	-0.8%	-0.1%	-0.2%
Y/Y change	16.7%	23.1%	9.9%	10.2%

* 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; 12/1/21

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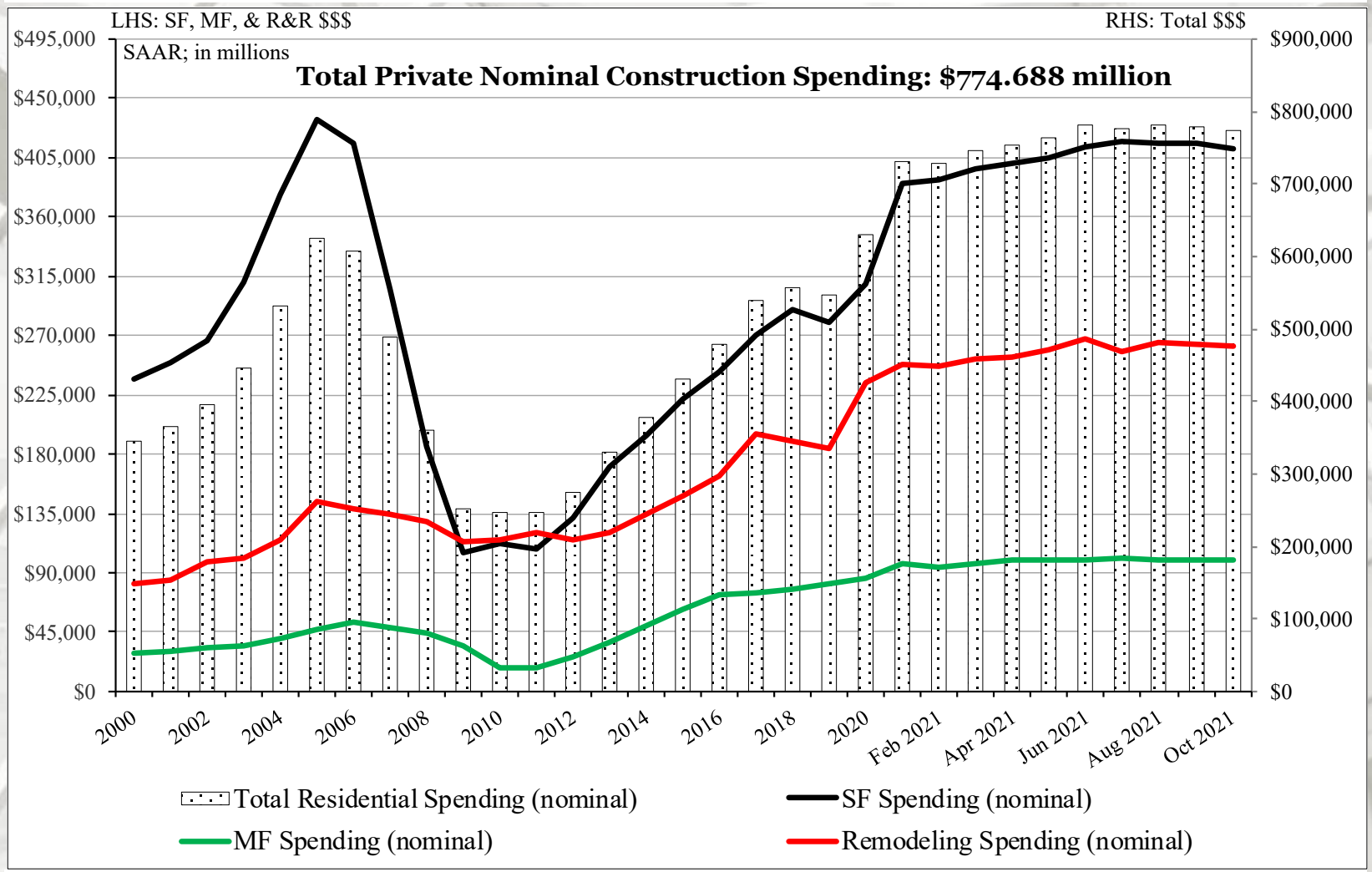
Total Construction Spending (nominal): 2000 – October 2021



Reported in nominal US$.
The US DOC does not report improvement spending directly, this is a monthly estimation for 2021.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 12/1/21

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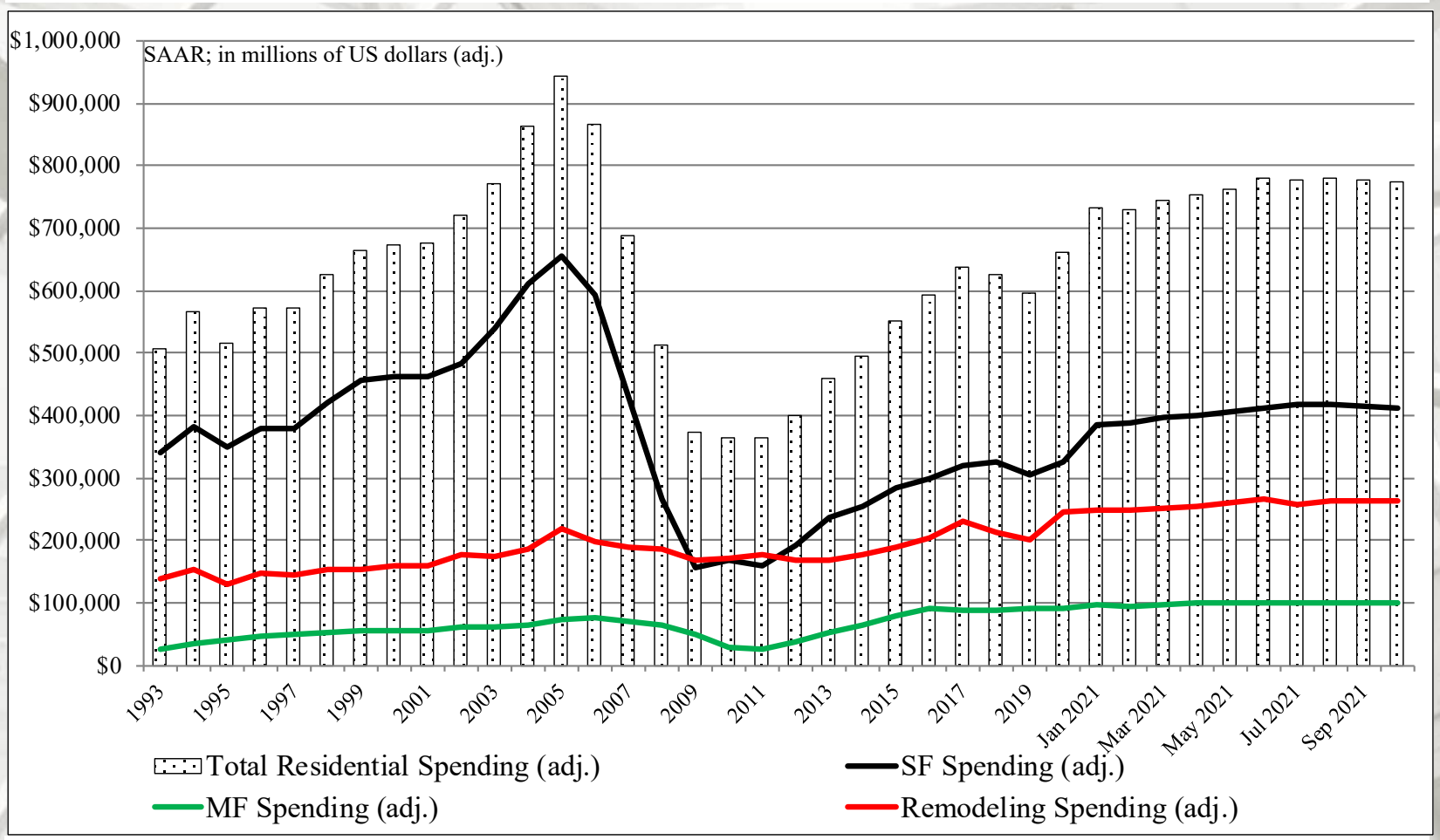
Total Construction Spending (adjusted): 1993-October 2021



Reported in adjusted US$: 1993 – 2020 (adjusted for inflation, BEA Table 1.1.9); October 2021 reported in nominal US$.

Sources: * http://www.bea.gov/iTable/iTable.cfm; 6/24/21; http://www.census.gov/construction/c30/pdf/privsa.pdf; 12/1/21

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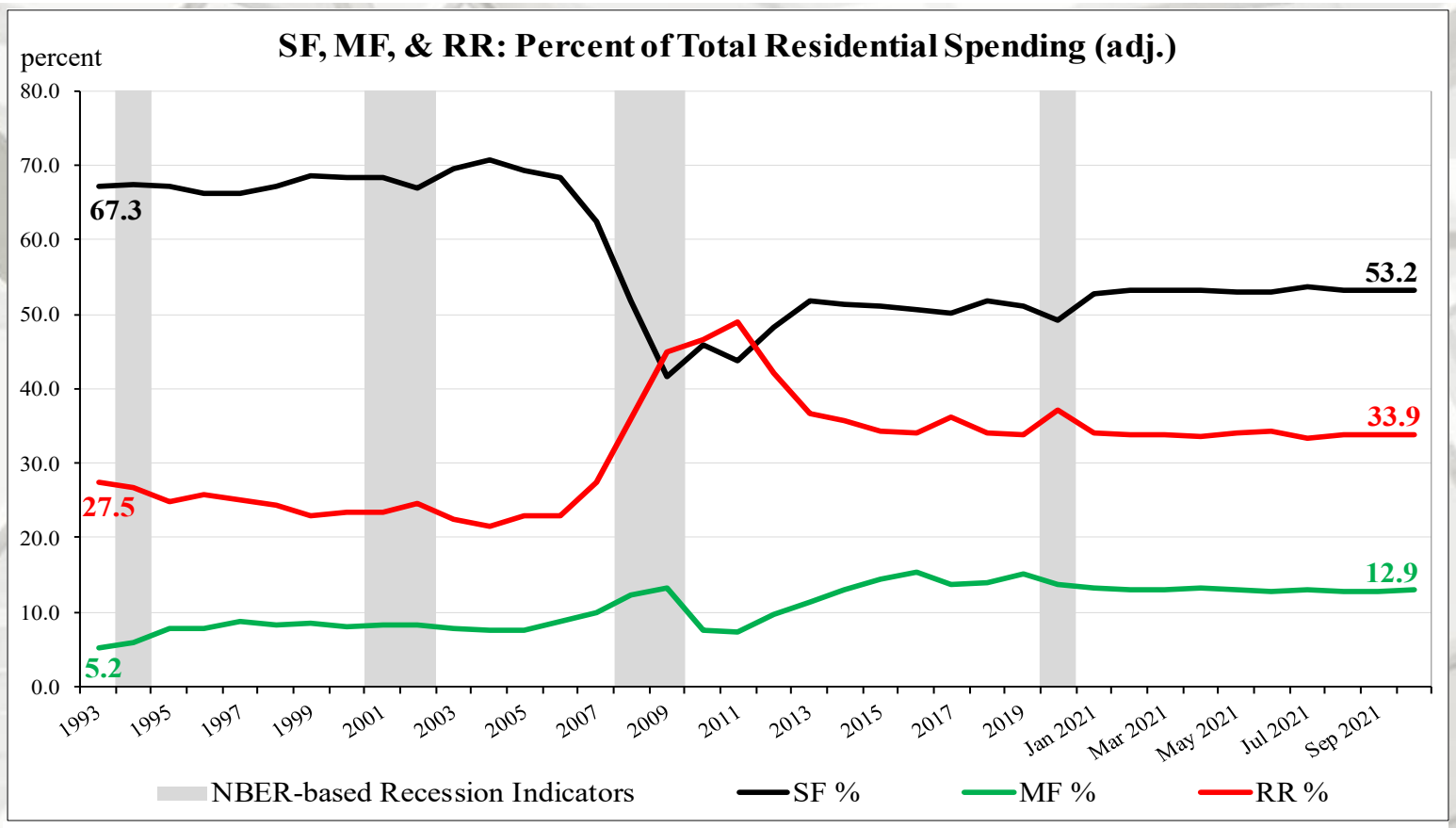
Construction Spending Shares: 1993 to October 2021



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 2020 (adjusted for inflation, BEA Table 1.1.9); October 2021 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, 6/24/21; http://www.census.gov/construction/c30/pdf/privsa.pdf; 12/1/21 and http://www.bea.gov/iTable/iTable.cfm; 6/24/21

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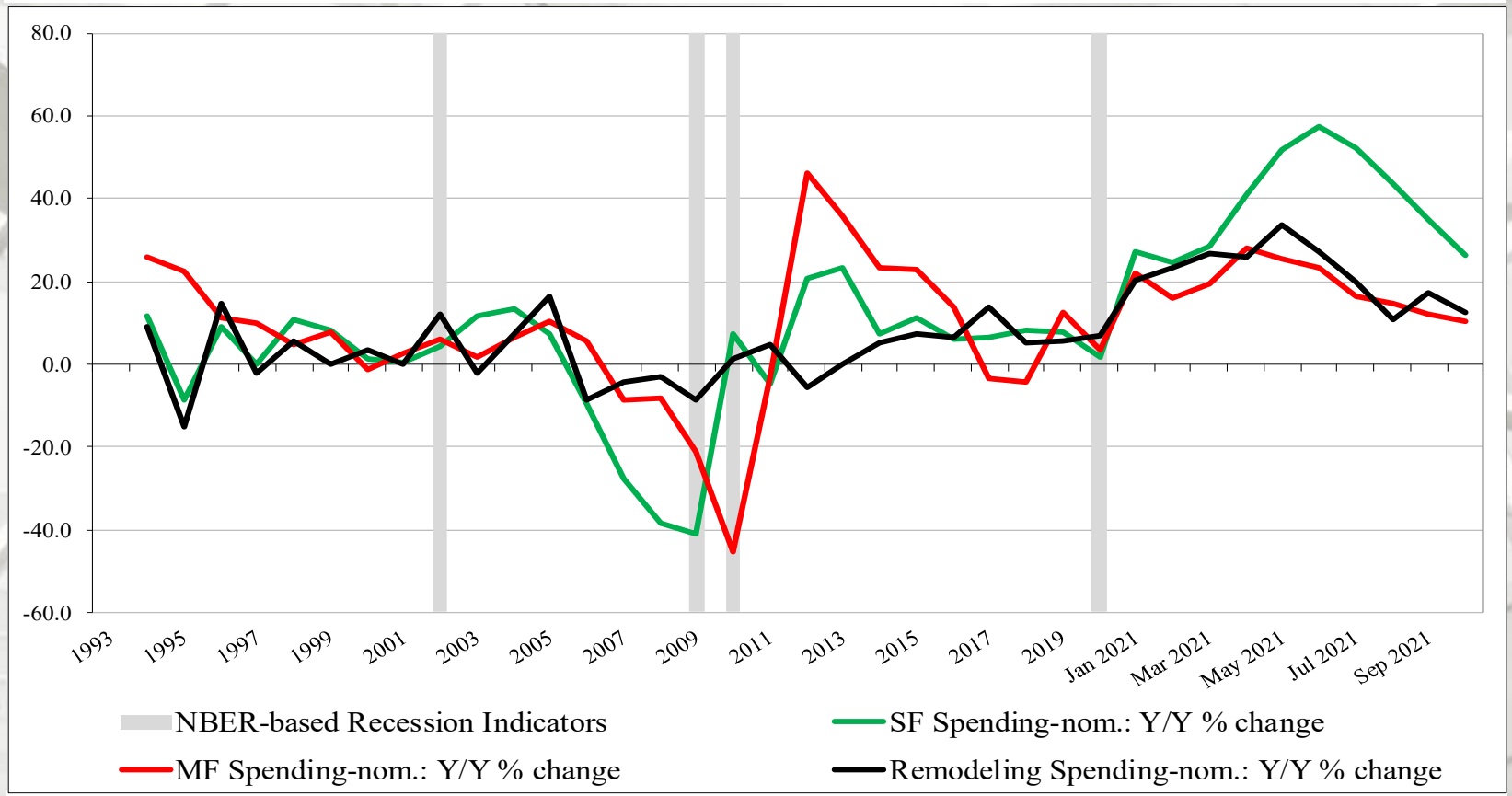
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to October 2021



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. SF, MF, and RR expenditures were positive on a percentage basis, year-over-year and month-over-month (October 2021 data reported in nominal dollars) – yet all are trending negatively.

* 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; 12/1/21 and http://www.bea.gov/iTable/iTable.cfm; 6/24/21

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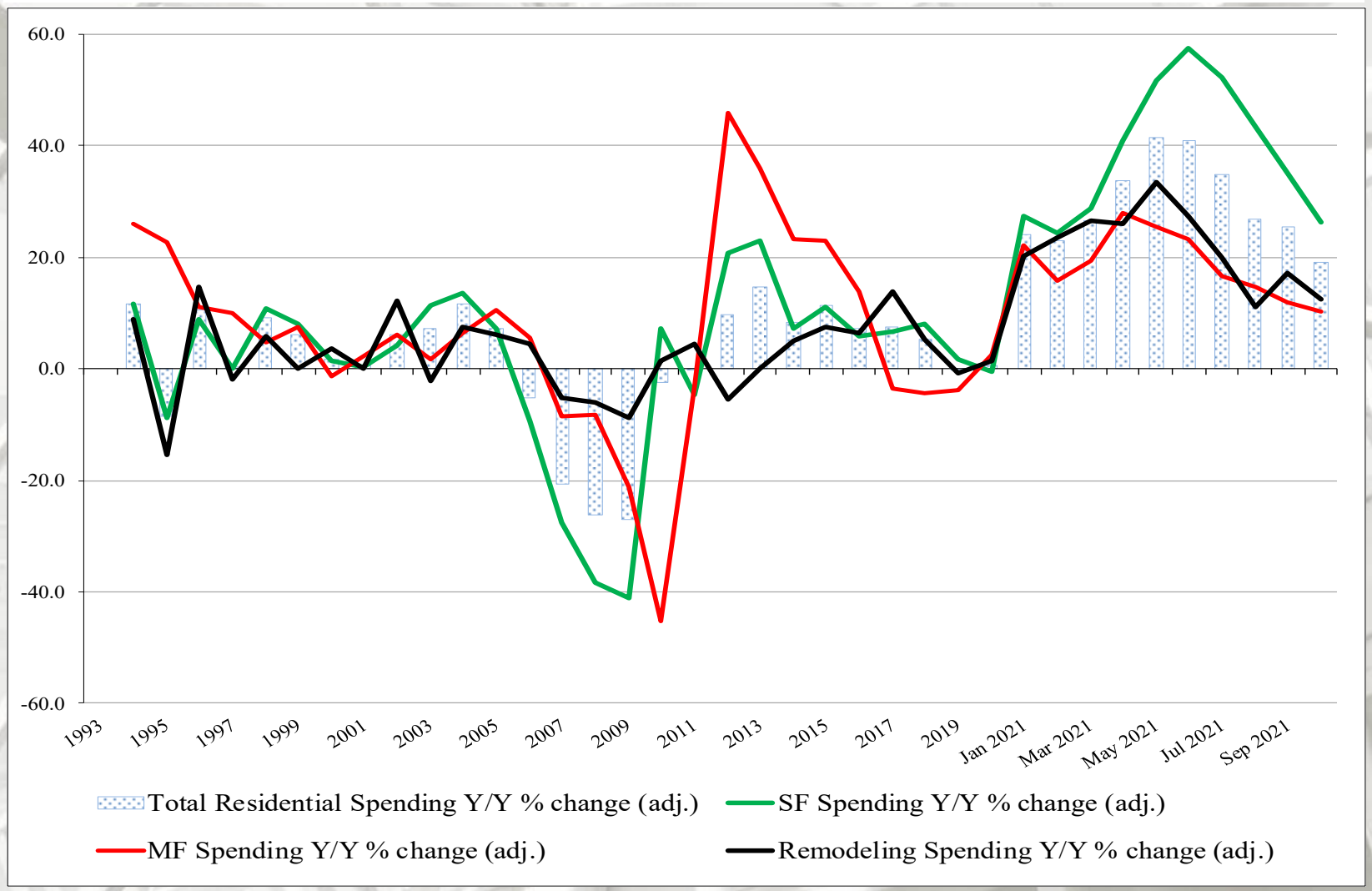
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to October 2021



Sources: http://www.census.gov/construction/c30/pdf/privsa.pdf; 12/1/21 and http://www.bea.gov/iTable/iTable.cfm; 6/24/21

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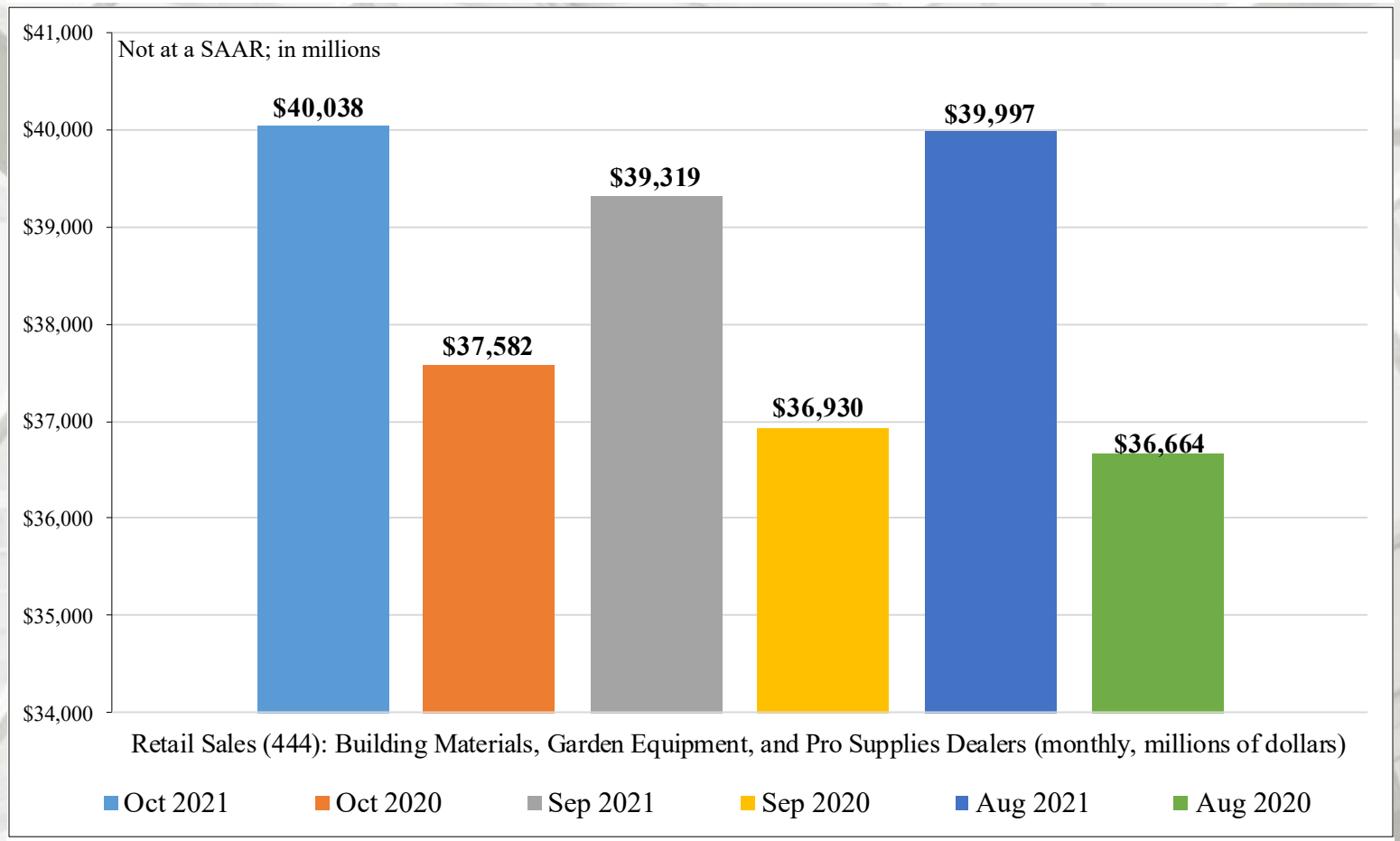
Remodeling

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



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

NAICS 444 sales increased 1.8% in October 2021 from September 2021 and improved 6.5% in October 2021 from October 2020 (on a non-adjusted basis).

Source: https://www.census.gov/retail/index.html; 12/17/21

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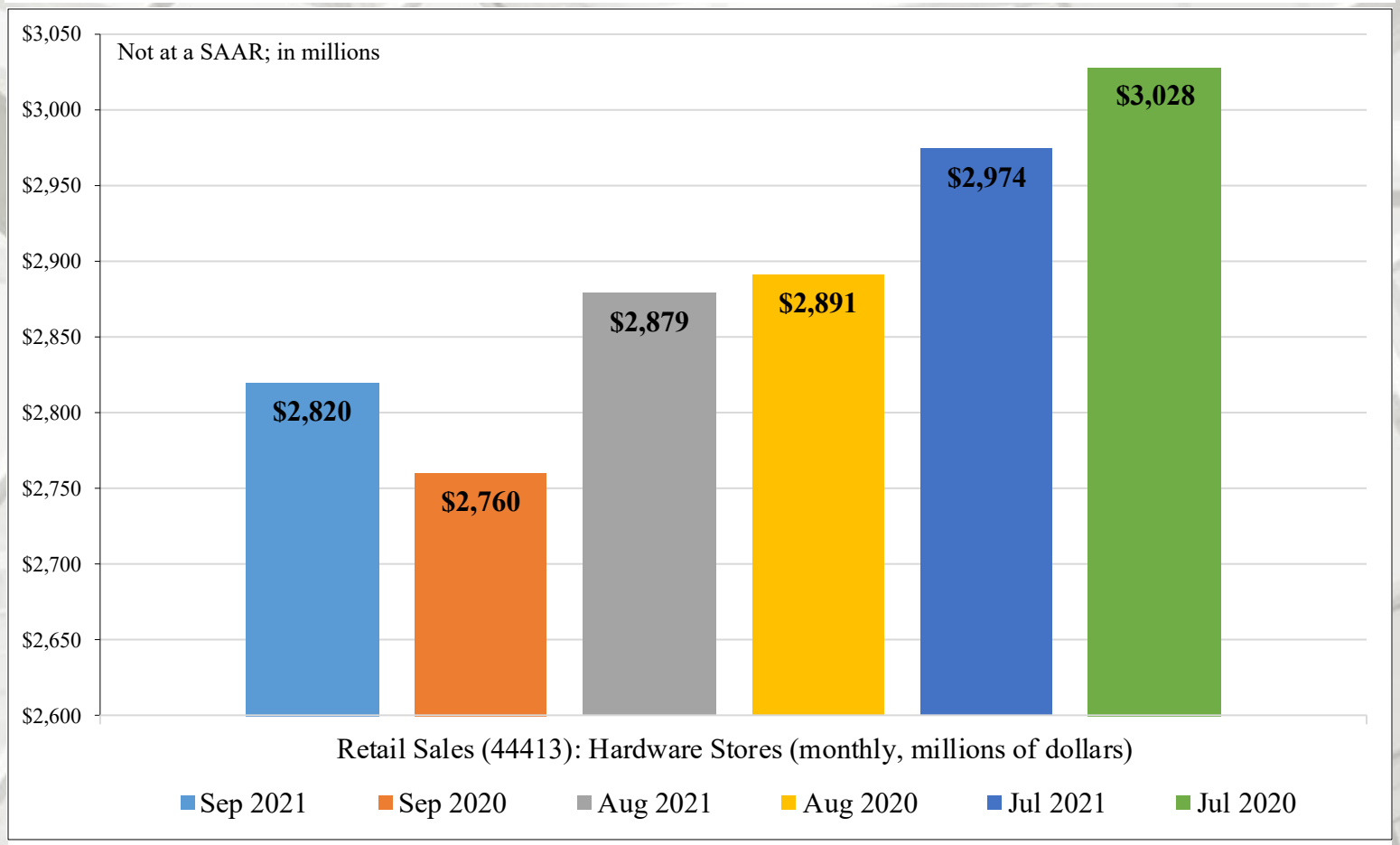
Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales decreased 2.0% in September 2021 from August 2021 and increased 2.2% in September 2021 from August 2020 (on a non-adjusted basis).

Source: https://www.census.gov/retail/index.html;11/17/21

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Remodeling

Zonda: RRI Forecasts Remodeling Market Relaxation in 2022

After record annual gains in 2021, the remodeling market is expected cool down in step with the housing market in 2022.

"Zonda's Residential Remodeling Index (RRI) posted a record reading of 150.2 in the third quarter of 2021, marking a gain of 12.1% on a year-over-year basis. The RRI reading indicates that big-ticket residential remodeling spending increased 1.2% from the second quarter of 2021, the 38th consecutive quarter of quarterly growth since remodeling activity bottomed in 2011.

The reading of 150.2 indicates current remodeling and replacement activity is 50% higher than the old peak for remodeling activity in 2007. Despite construction labor and materials shortages, remodeling growth has been historically strong in 2021 and will "easily beat 2020," according to Zonda. The RRI is expected to post an annual gain of 12.4% for the full year in 2021; the last time an annual increase of 10% or more was achieved was in 2005.

Remodeling activity's strength has emanated primarily from the housing sector, even as the broader economy continues to be impacted by the COVID-19 pandemic. Existing home sales are expected to end 2021 6% higher than 2020 and will represent the highest volume since 2006. Zonda said home prices reached record levels during the year and the median existing home price is projected to appreciate 14.7% for all of 2021. Home renovations have been spurred by strong housing turnover and boosted by homeowners tapping into their equity, according to Zonda. Zonda projects that, as is expected in a rising interest rate environment, the refinance market will shift from rate and term refinances to a higher volume of cash-out refinances, which bodes well for spending on both large and small home improvement projects." – Vincent Salandro, Associate Editor, Remodeling

Source: https://www.remodeling.hw.net/benchmarks/rri-forecasts-remodeling-market-relaxation-in-2022_o; 11/28/21

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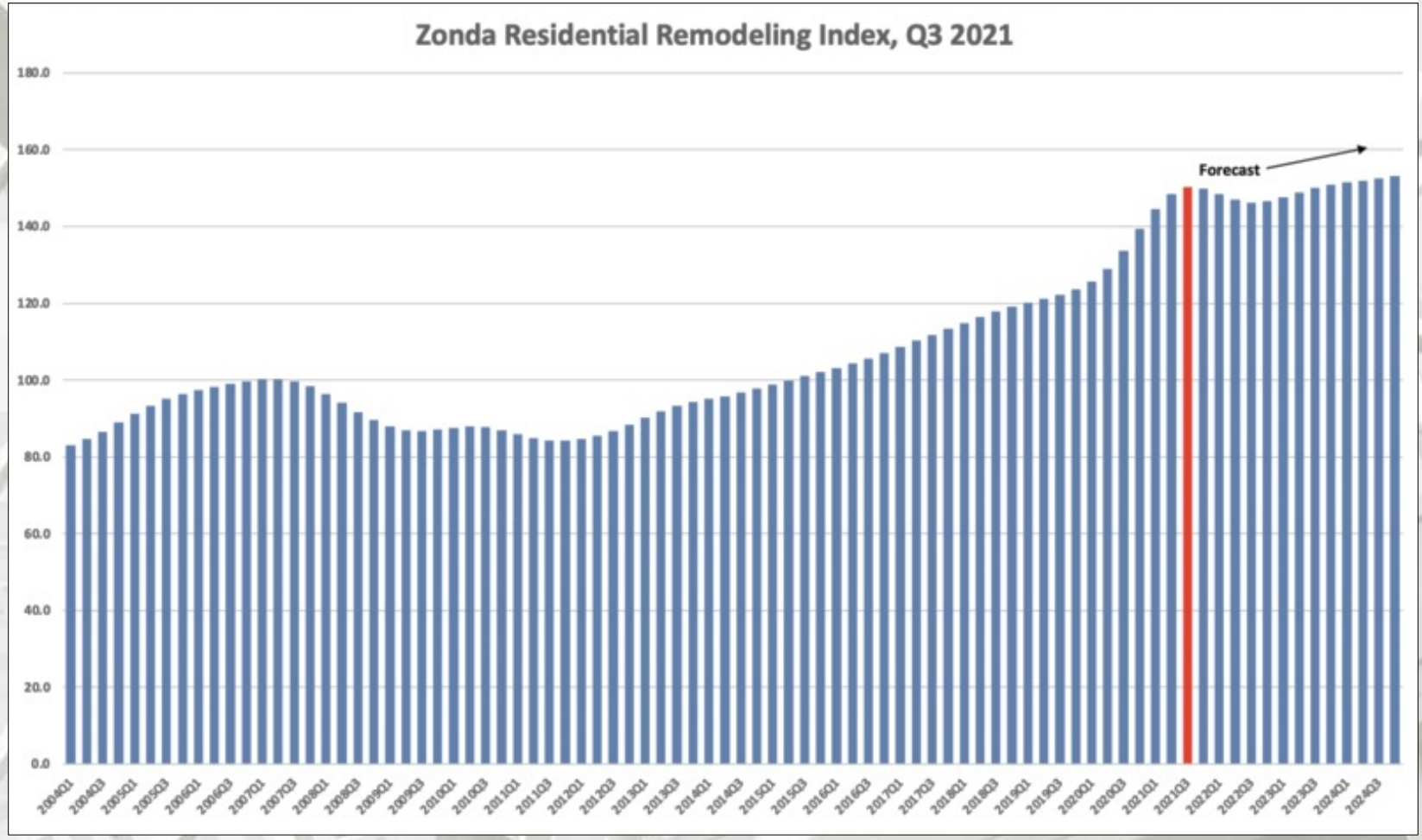
Remodeling

Zonda: RRI Forecasts Remodeling Market Relaxation in 2022



Source: https://www.remodeling.hw.net/benchmarks/rri-forecasts-remodeling-market-relaxation-in-2022_o; 11/28/21

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Remodeling

Zonda: RRI Forecasts Remodeling Market Relaxation in 2022

"Zonda said some of the strongest correlations in the RRI model are tied to existing home prices and sales. Thus, as the housing market is projected to relax in 2022, so, too, is remodeling and replacement activity. Zonda forecasts the RRI will see a 0.8% decrease in 2022 before expected growth rates of 1.6% and 2.0% in 2023 and 2024. Even with the relaxation expected in 2022, remodeling activity in the U.S. is expected to remain historically elevated, and "a more normal housing market will be well received by a deep pool of qualified Americans who still want to buy a home," according to Zonda.

The uncertainty of when the supply chain bottleneck and inflation will end add caution to short-term projections. Some economists project both issues will resolve in the middle of 2022, while others forecast an end closer to the final months of 2022. Although the supply chain is expected to return to normalcy over the next 12 months, Zonda said there does not appear to be a quick solution to the shortage of construction workers and skilled tradesmen. The labor shortage crisis has worsened over the past couple years, and a recent report from the Home Builders Institute (HBI) estimates the construction industry needs an additional 2.2 million new hires from 2022 through 2024 to keep up with demand.

Zodna estimates the number of pro-worthy remodeling projects worth $1,000 or more completed in 2020 was 14.2 million. For 2021, the number of projects is forecast to increase to approximately 16 million.

As part of the RRI estimation, Zonda predicts all 384 observed metropolitan statistical areas will record growth in annual project volume in 2021. The average growth rate across all markets in 2021 is expected to be 11.2%." – Vincent Salandro, Associate Editor, Remodeling

Source: https://www.remodeling.hw.net/benchmarks/rri-forecasts-remodeling-market-relaxation-in-2022_o; 11/28/21

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Existing House Sales

National Association of Realtors

October 2021 sales: 6.290 thousand

	Existing Sales	Median Price	Mean Price	Month's Supply
October	6,340,000	$353,900	$372,800	2.4
September	6,290,000	$351,200	$371,400	2.4
2020	6,730,000	$313,000	$344,700	2.5
M/M change	0.8%	0.8%	0.4%	0.0%
Y/Y change	-5.8%	13.1%	8.2%	-4.0%

All sales data: SAAR

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 11/22/21

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Existing House Sales

	Existing SF Sales	SF Median Price	SF Mean Price
October	5,560,000	$360,800	$377,300
September	5,590,000	$357,900	$375,700
2020	6,010,000	$317,800	$348,300
M/M change	-0.5%	0.8%	0.4%
Y/Y change	-7.5%	13.5%	8.3%

	NE	MW	S	W
October	750,000	1,500,000	2,780,000	1,310,000
September	770,000	1,440,000	2,770,000	1,310,000
2020	870,000	1,600,000	2,880,000	1,380,000
M/M change	-2.6%	4.2%	0.4%	0.0%
Y/Y change	-13.8%	-6.3%	-3.5%	-5.1%

All sales data: SAAR.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 11/22/21

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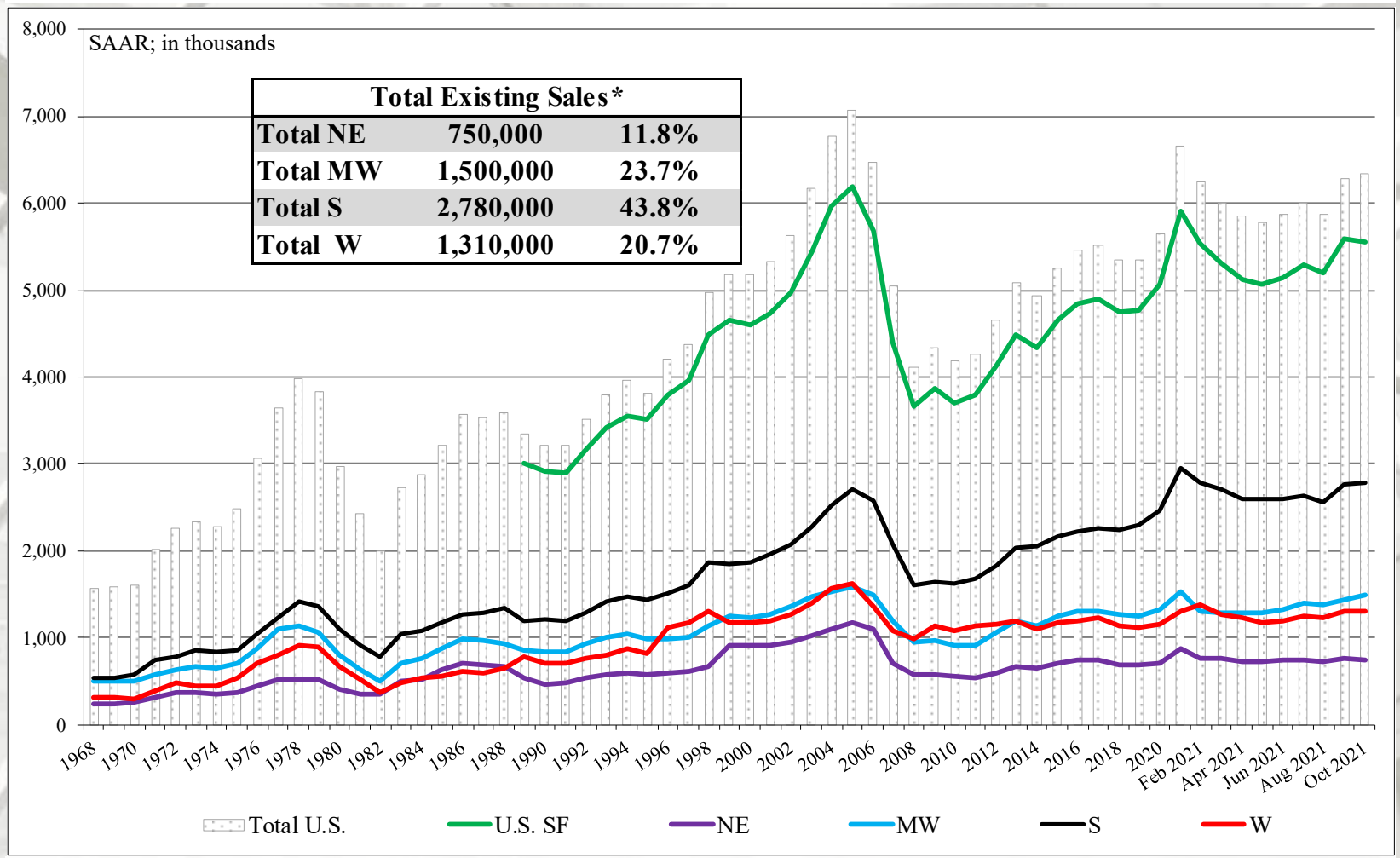
Existing House Sales



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

* Percentage of total existing sales.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 11/22/21

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U.S. Housing Prices

Federal Housing Finance Agency

U.S. House Price Index — November 2021

U.S. House Prices Rise 18.5 Percent over the Last Year; Up 4.2 Percent from the Second Quarter

Significant Findings

"U.S. house prices rose **18.5 percent** from the third quarter of 2020 to the third quarter of 2021 according to the Federal Housing Finance Agency House Price Index (FHFA HPI®). House prices were up **4.2 percent** compared to the second quarter of 2021. FHFA's seasonally adjusted monthly index for September was up **0.9 percent** from August.

… Of the nine census divisions, the **Mountain** division recorded the strongest four-quarter appreciation, posting a 25.0 percent gain between the third quarters of 2020 and 2021 and a 5.8 percent increase in the third quarter of 2021. Annual house price appreciation was weakest in the **West North Central** division, where prices rose by 14.8 percent between the third quarters of 2020 and 2021." – Raffi Williams and Adam Russell, FHFA

"House price appreciation reached its highest historical level in the quarterly series. Compared to a year ago, annual gains have increased in every state and metro area. Real estate prices have risen exceptionally fast, but market momentum peaked in July as month-over-month gains have moderated." – William Doerner, Ph.D., Supervisory Economist, Division of Research and Statistics, FHFA

Source: https://www.fhfa.gov//Media/PublicAffairs/Pages/US-House-Prices-Rise-18pt5-Percent-over-the-Last-Year-Up-4pt2-Percent-from-2Q.aspx; 11/30/21

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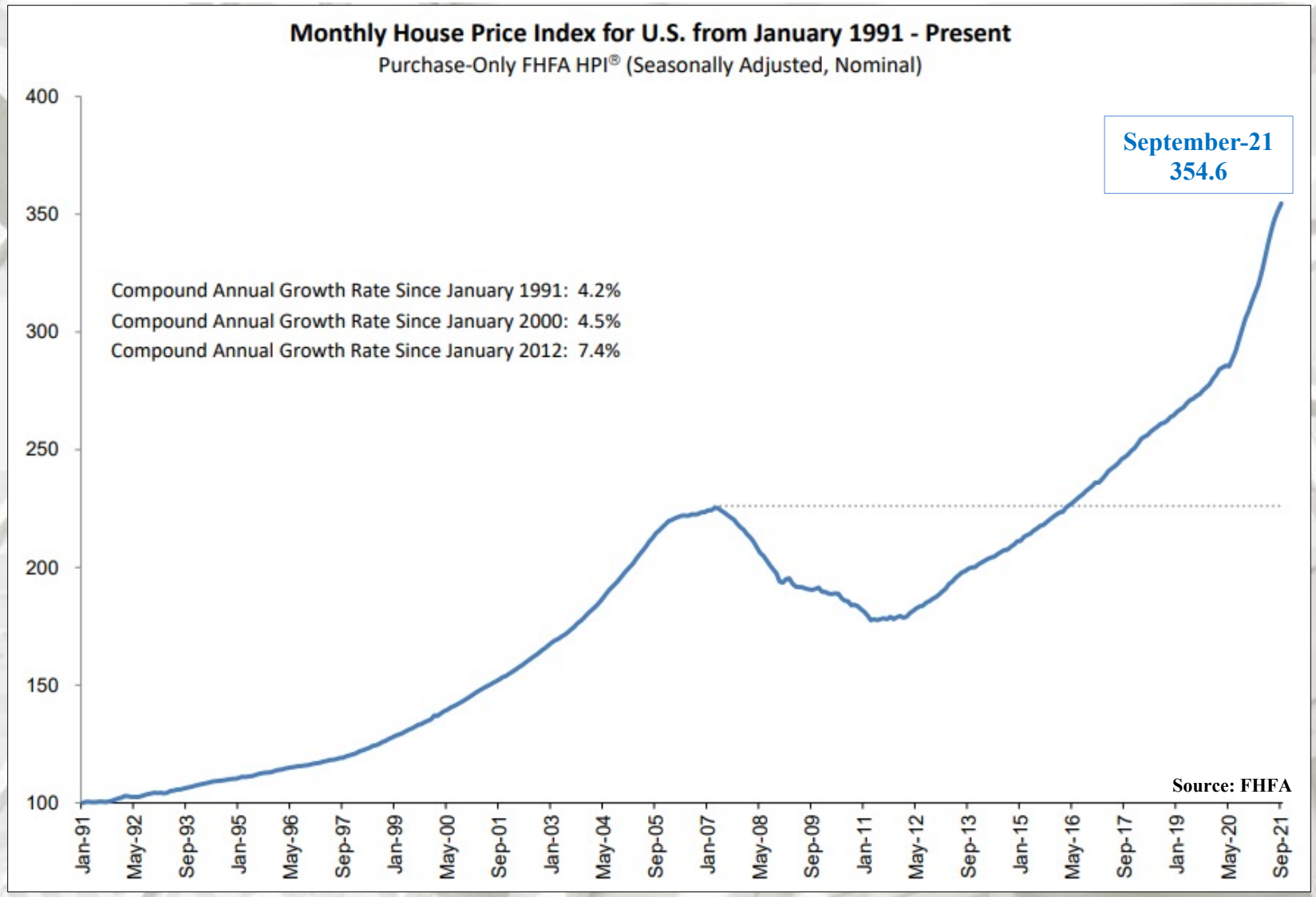
U.S. Housing Prices



Source: https://www.fhfa.gov//Media/PublicAffairs/Pages/US-House-Prices-Rise-18pt5-Percent-over-the-Last-Year-Up-4pt2-Percent-from-2Q.aspx; 11/30/21

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U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Reports 19.5% Annual Home Price Gain In September

"… Data for September 2021 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 a 19.5% annual gain in September, down from 19.8% in the previous month. The 10-City Composite annual increase came in at 17.8%, down from 18.6% in the previous month. The 20- City Composite posted a 19.1% year-over-year gain, down from 19.6% in the previous month.

Phoenix, Tampa, and Miami reported the highest year-over-year gains among the 20 cities in September. Phoenix led the way with a 33.1% year-over-year price increase, followed by Tampa with a 27.7% increase and Miami with a 25.2% increase. Six of the 20 cities reported higher price increases in the year ending September 2021 versus the year ending August 2021.

Month-Over-Month

"Before seasonal adjustment, the U.S. National Index posted a 1.0% month-over-month increase in September, while the 10-City and 20-City Composites both posted increases of 0.7% and 0.8%, respectively.

After seasonal adjustment, the U.S. National Index posted a month-over-month increase of 1.2%, and the 10-City and 20-City Composites both posted increases of 0.8% and 1.0%, respectively. In September, 19 of the 20 cities reported increases before seasonal adjustments while all 20 cities reported increases 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/20211130-1445588/1445588_cshomeprice-release-1130.pdf/; 11/30/21

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U.S. Housing Prices

S&P CoreLogic Case-Shiller Index

Analysis

"If I had to choose only one word to describe September 2021's housing price data, the word would be 'deceleration.' Housing prices continued to show remarkable strength in September, though the pace of price increases declined slightly. The National Composite Index rose 19.5% from year-ago levels, with the 10- and 20-City Composites up 17.8% and 19.1%, respectively. This month, however, the rate of price growth began to decline, as each of our three composites rose less in September than in August..

We also saw very strong price growth at the city level. All 20 cities saw price increases in September, and all 20 cities stand at their all-time highs. September's price increase ranked in the top quintile of historical experience for all 20 cities, and in the top decile for 17 of them. That said, in 14 of 20 cities, prices decelerated – i.e., increased by less in September than in August.

Phoenix's 33.1% increase led all cities for the 28th consecutive month. Tampa (+27.7%) rose to second place in September, and Miami (+25.2%) edged out Dallas, San Diego, and Las Vegas for the bronze medal. Prices were strongest in the South (+24.3%) and the Sunbelt (+24.2%), but every region logged double-digit gains.

We have previously suggested that the strength in the U.S. housing market is being driven by households' reaction to the COVID pandemic, as potential buyers move from urban apartments to suburban homes. More data will be required to understand whether this demand surge represents simply an acceleration of purchases that would have occurred over the next several years, or reflects a secular change in locational preferences. September's report is consistent with either explanation." – 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/20211130-1445588/1445588_cshomeprice-release-1130.pdf/; 11/30/21

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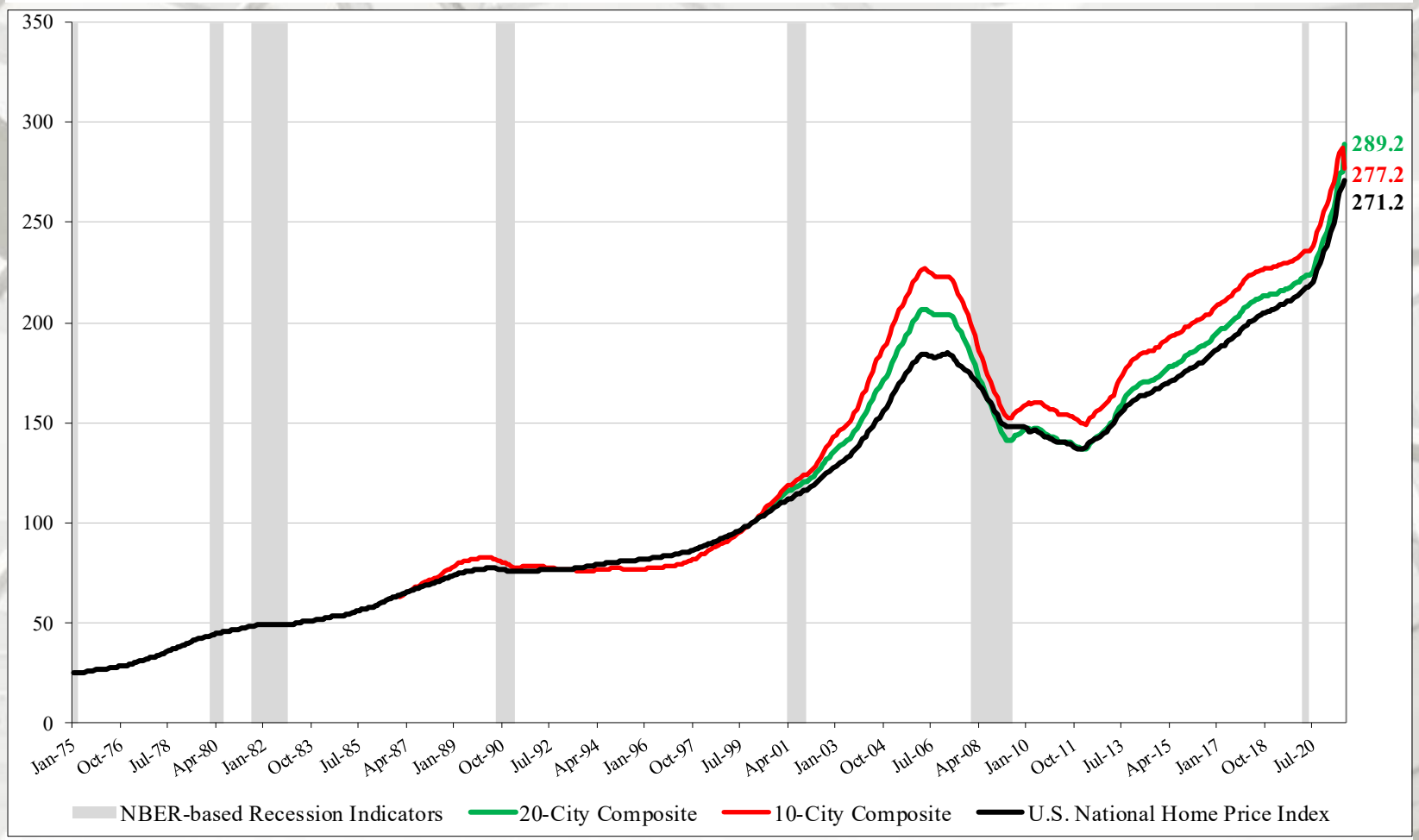
S&P/Case-Shiller Home Price Indices



* 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/20211130-1445588/1445588_cshomeprice-release-1130.pdf/; 11/30/21

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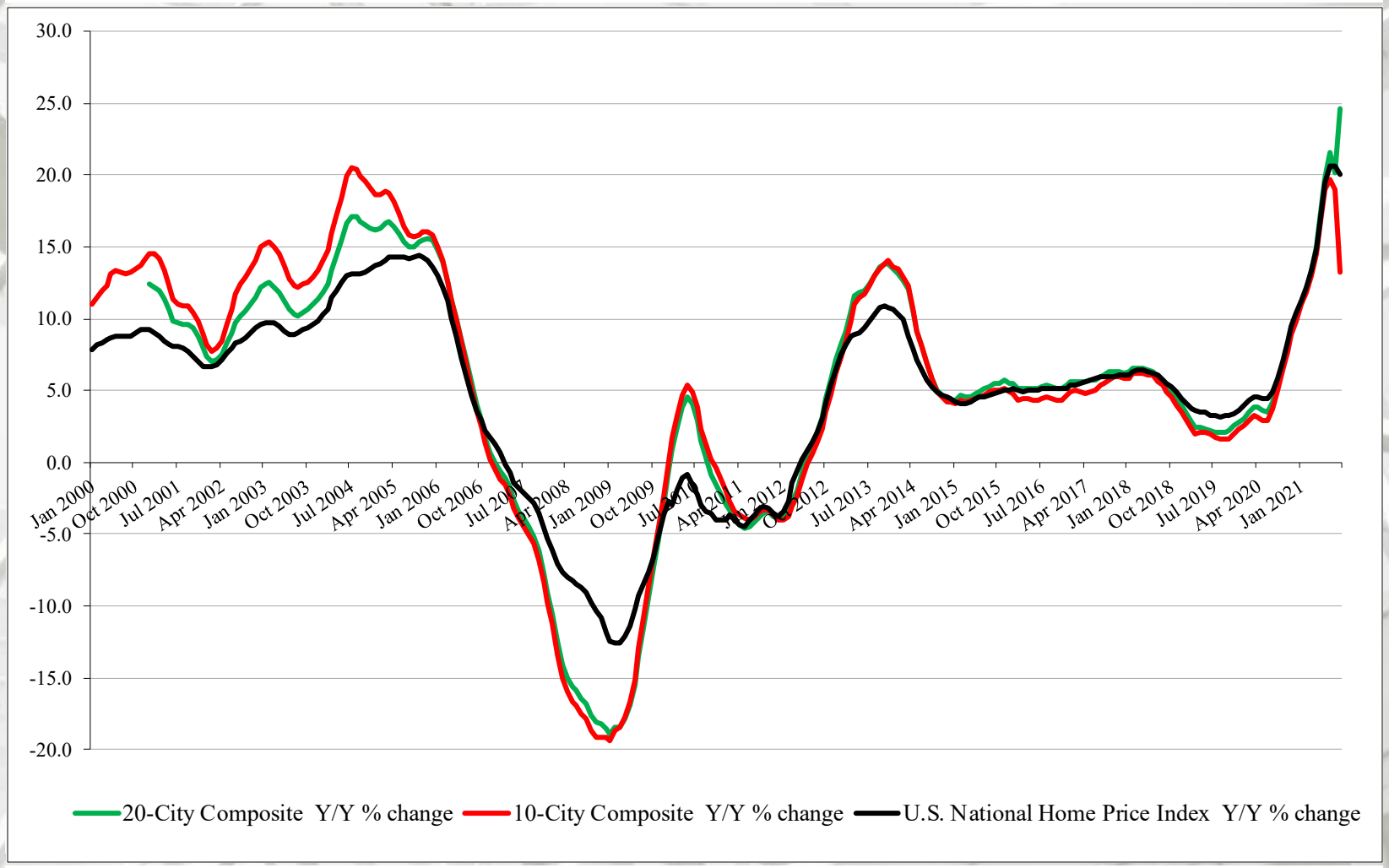
S&P/Case-Shiller Home Price Indices



Y/Y Price Change

From September 2020 to September 2021, the National Index increased 20.0%; the Ten-City by 13.2%, and the Twenty-City by 24.6%.

Source: https://www.spglobal.com/spdji/en/documents/indexnews/announcements/20211130-1445588/1445588_cshomeprice-release-1130.pdf/; 11/30/21

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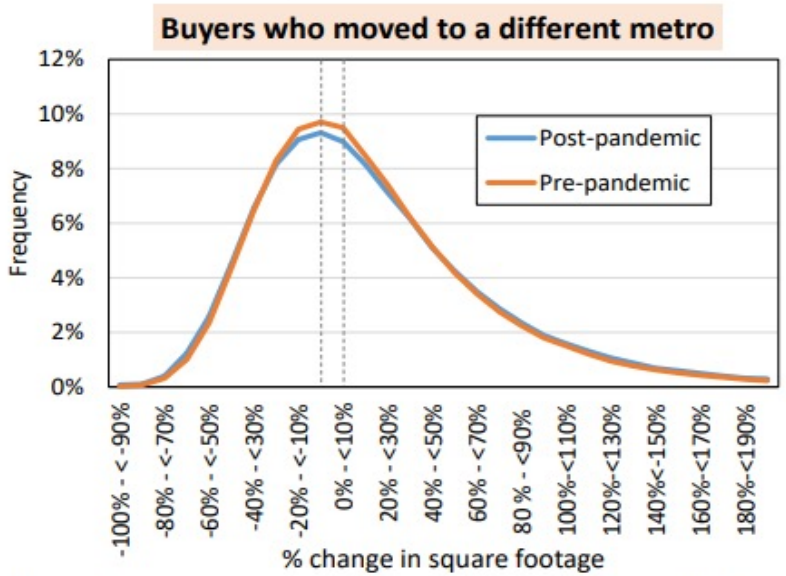
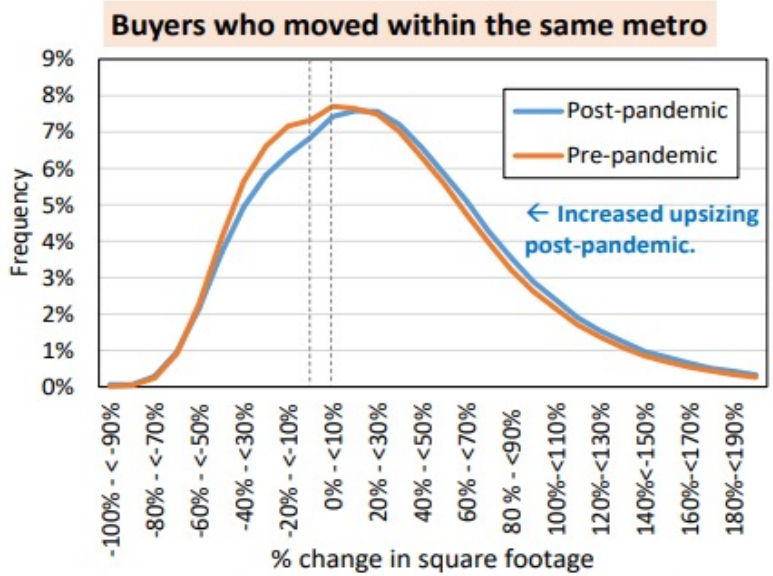
U.S. Housing

	Median % Change in Building Sq. Ft.		
Move to	Pre-pandemic	Post-pandemic	Overall
Different metro	9.0%	9.8%	9.3%
Same metro	21.3%	26.1%	23.0%





Note: We trace home owners who sold a home and filed a USPS change of address request. Data include 3.2M traced moves since 2018. We then compare the building square footage of the new home versus the home sold.
Source: Melissa and AEI Housing Center, www.AEI.org/housing.

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AEI Housing Center

How Frequent Do Move Up Borrowers Upsize?

"The tendency to upsize has increased since the pandemic, especially for people moving within the metro. This is in line with our previous finding of a shift in preference for larger homes in the WFH economy. In general, buyers moving within their metro are more likely to upsize than buyers moving between metros. New home purchases are on average 34% larger than the home sold for buyers staying in their same metro." – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Source: https://www.aei.org/housing/housing-market-indicators/; 11/30/21

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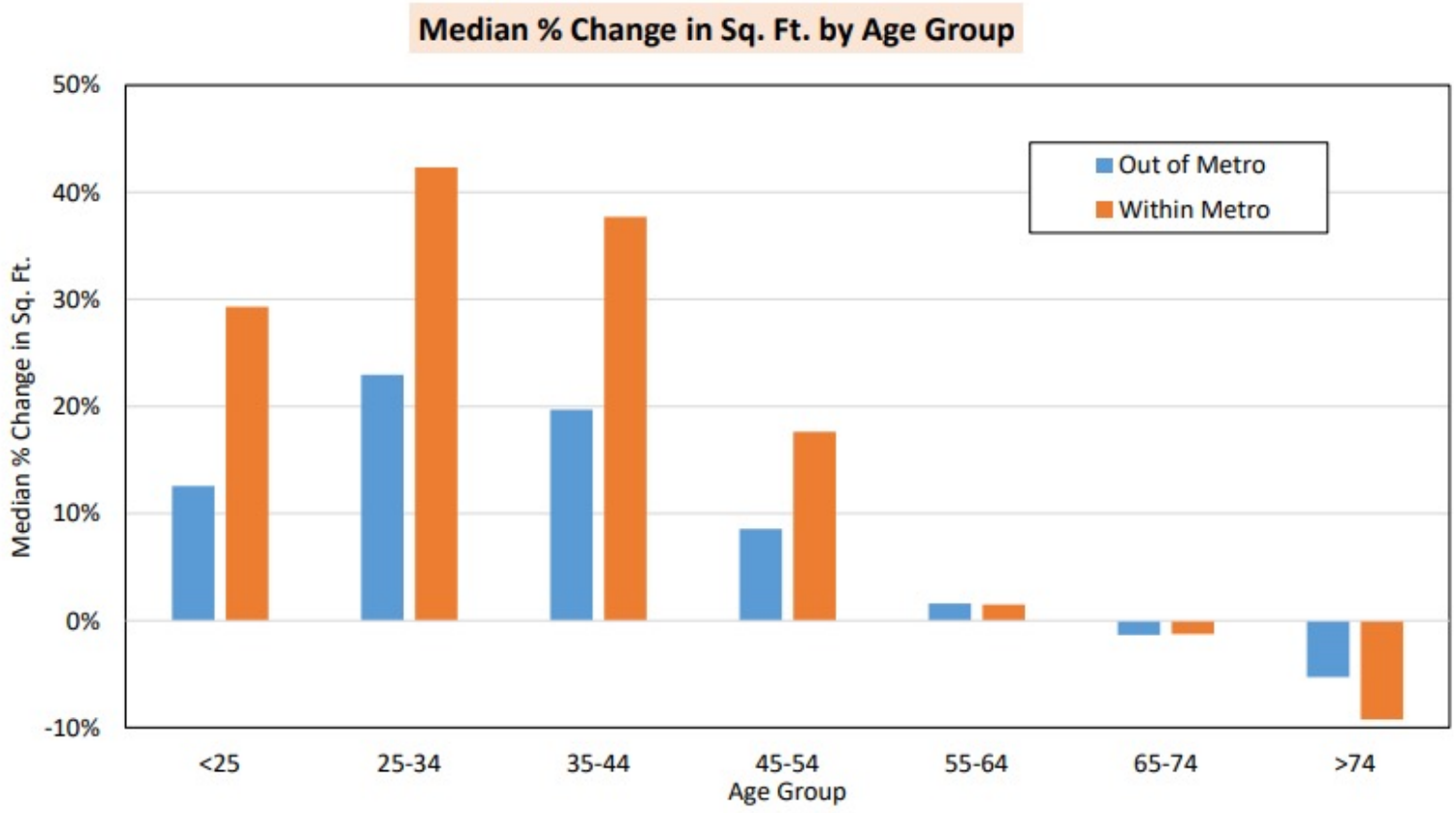
U.S. Housing



Note: Data include 337K moves out of metro and 847K moves within metro.
Source: Melissa, HMDA and AEI Housing Center, www.AEI.org/housing.

AEI Housing Center

Change in Home Size by Age Group

"We further find that younger borrowers are more likely to upsize. The age group that upsizes the most is 25-34. These borrowers are likely move-up buyers who are looking for larger homes for their family. On the other hand, age 65-74 and >74 are the only age groups that tend to downsize." – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Source: https://www.aei.org/housing/housing-market-indicators/; 11/30/21

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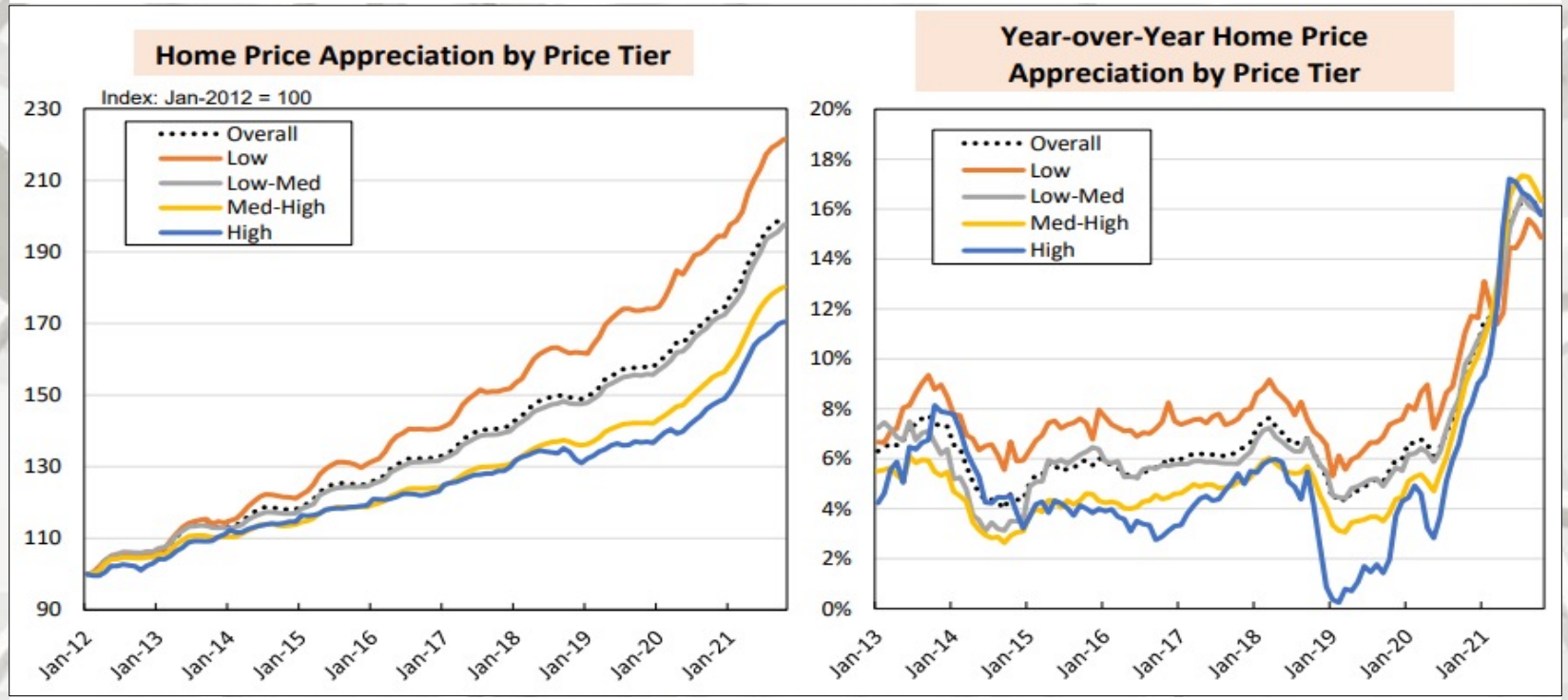
U.S. Housing Affordability & Prices



Note: Data are for the entire country. Data for October 2021 are preliminary.
Source: AEI Housing Center, www.AEI.org/housing.

AEI Housing Center

Home Price Appreciation by Price Tier

"Since 2012 a large gap in HPA has developed between the lower and upper end of the market (left panel). Preliminary numbers for October 2021 indicate that the low price tier continued to have strong HPA, but the med-high and high price tiers, which are more dependent on the Fed's monetary punch bowl (historically low interest rates), are showing the strongest rates of appreciation (right panel). This is a trend reversal, since historically the low price tier has shown the fastest y-o-y HPA. HPA appears to have peaked but is expected to recede slowly." – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Source: https://www.aei.org/housing/housing-market-indicators/; 11/30/21

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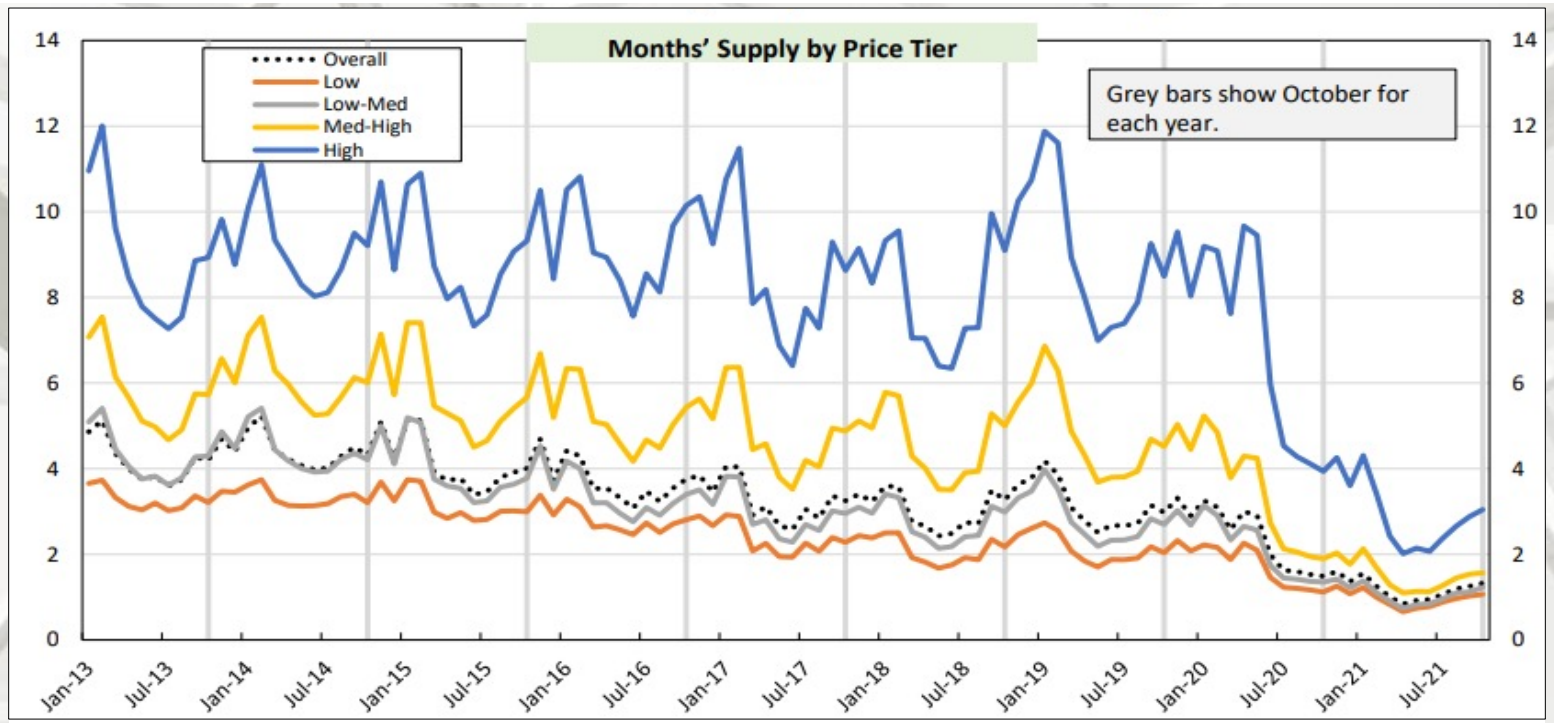
Housing Supply



Note: Months' supply measures how long it would take for the existing level of inventory to be sold off at the current sale's pace. While the listings data come from the MLS, the sales numbers come from the public records

Sources: Realtor.com, Zillow, and AEI Housing Center, www.AEI.org/housing.

AEI Housing Center

Months' Supply by Price Tiers

"Starting with June 2020, months' supply started to drop precipitously across all price tiers. In October 2021, overall months' supply stood at 1.3 months. While supply remains lowest in the low (1.1 months) and low-med tiers (1.2 months), the drop in the med-high and high price tiers are especially noteworthy. The high tier has fallen from 9.4 months in May 2020 to 3.0 months in October 2021 and med-high tier has fallen from 4.2 to 1.6." – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Source: https://www.aei.org/housing/housing-market-indicators/; 11/30/21

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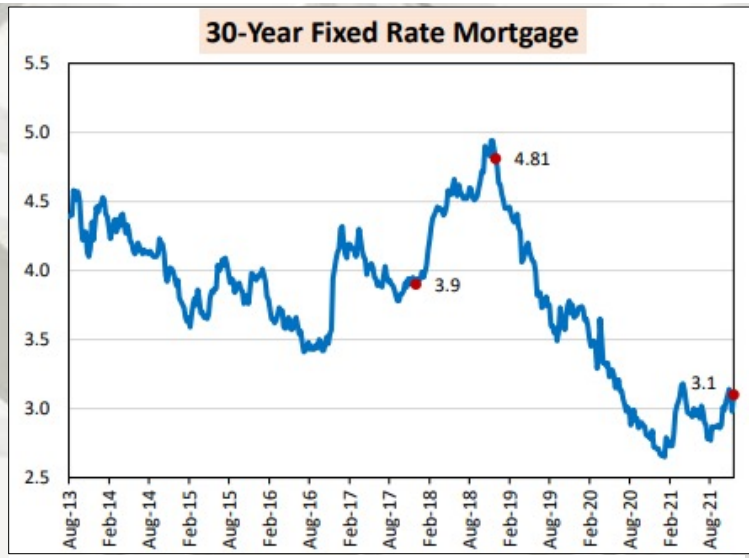
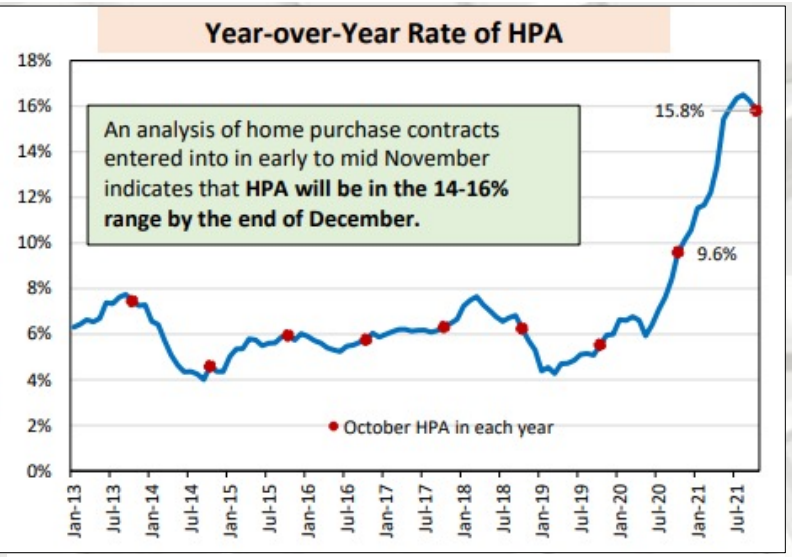
U.S. Housing Finance



Note: Data are for 30-year fixed-rate prime conventional conforming home purchase mortgages with a loan-to-value of 80 percent.
Source: Freddie Mac.



Note: Data are for the entire country. Data for October 2021 are preliminary.
Source: AEI Housing Center, www.AEI.org/housing.

AEI Housing Center

For the 2nd time in 20 years the Fed's Monetary Punchbowl Is Fueling Rampant Home Price Appreciation, Resulting in a Disparate Impact

"From 1990 to 2007, mortgage rates fell from 10% to 6%. This drop in rates, along with policy induced credit easing, led to a massive home price boom and bust with millions of foreclosures for low income families in 2008. Since 2012 rates have dropped from 4.5% to under 3%, which along with credit loosening by federal agencies, a lack of supply, and WFH, has fueled a second home price boom. The preliminary national HPA rate for October 2021 was 15.8%, up from 9.6% a year ago. With prices increasing much faster than incomes, the Fed's policy is having a disparate impact. Higher income households will be able to take advantage of WFH to improve their housing situation, while low income ones will be increasingly crowded out of home buying. This disparate impact will not be transitory as today's high HPA will become the base for future price levels. This will slow gains in racial integration and further increase socio-economic stratification. " – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Source: https://www.aei.org/housing/housing-market-indicators/; 11/30/21

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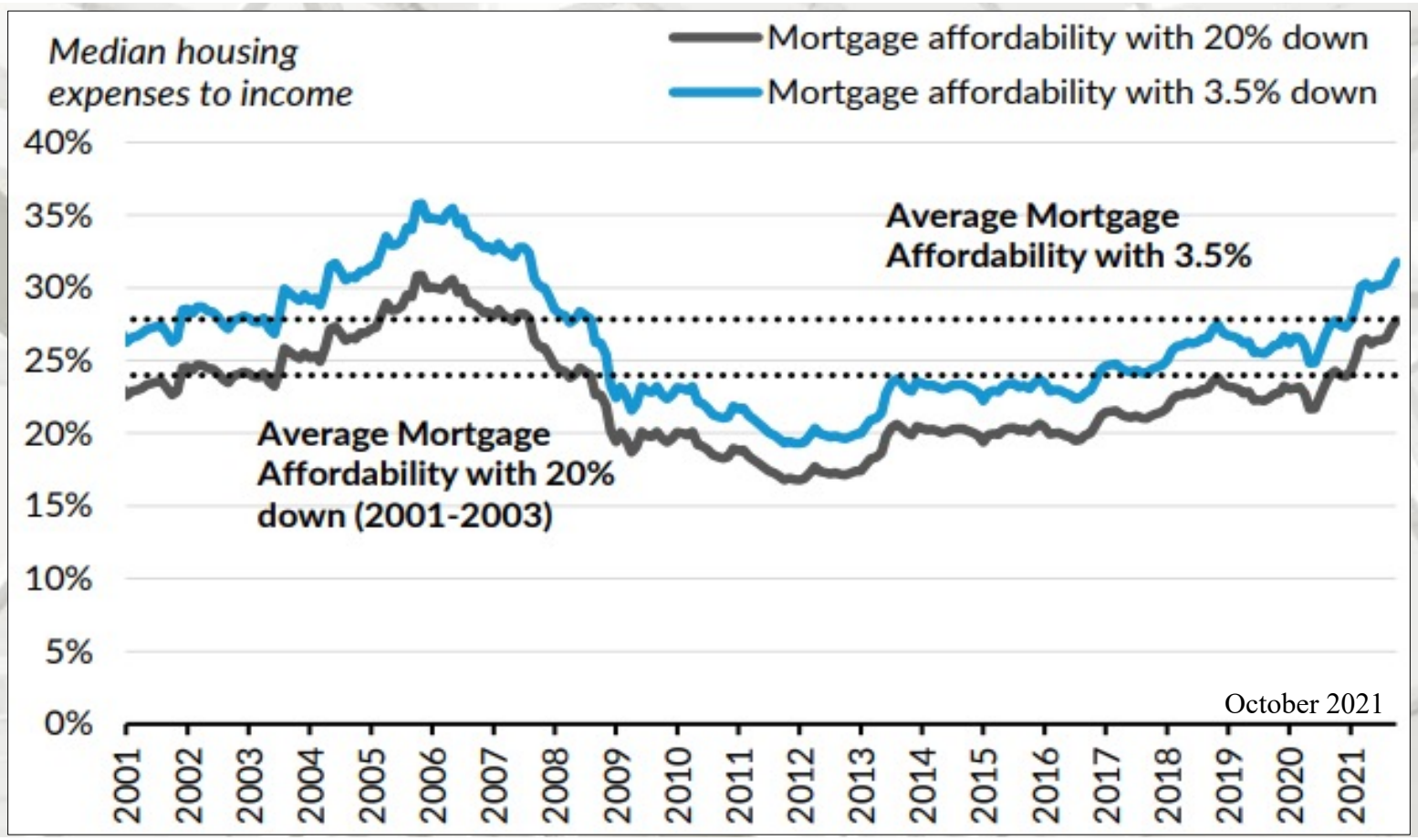
Housing Affordability



Urban Institute

National Mortgage Affordability Over Time

"Despite historic low interest rates, increases in home prices have pushed affordability to the worst levels since 2008. As of October2021, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 27.8 percent; with 3.5 percent down it is 31.8 percent. These numbers are well above the 2001-2003 median, and represent a sharp worsening in affordability over the past year. ... " – Laurie Goodman, Vice President, Urban Institute

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-november-2021; 11/29/21

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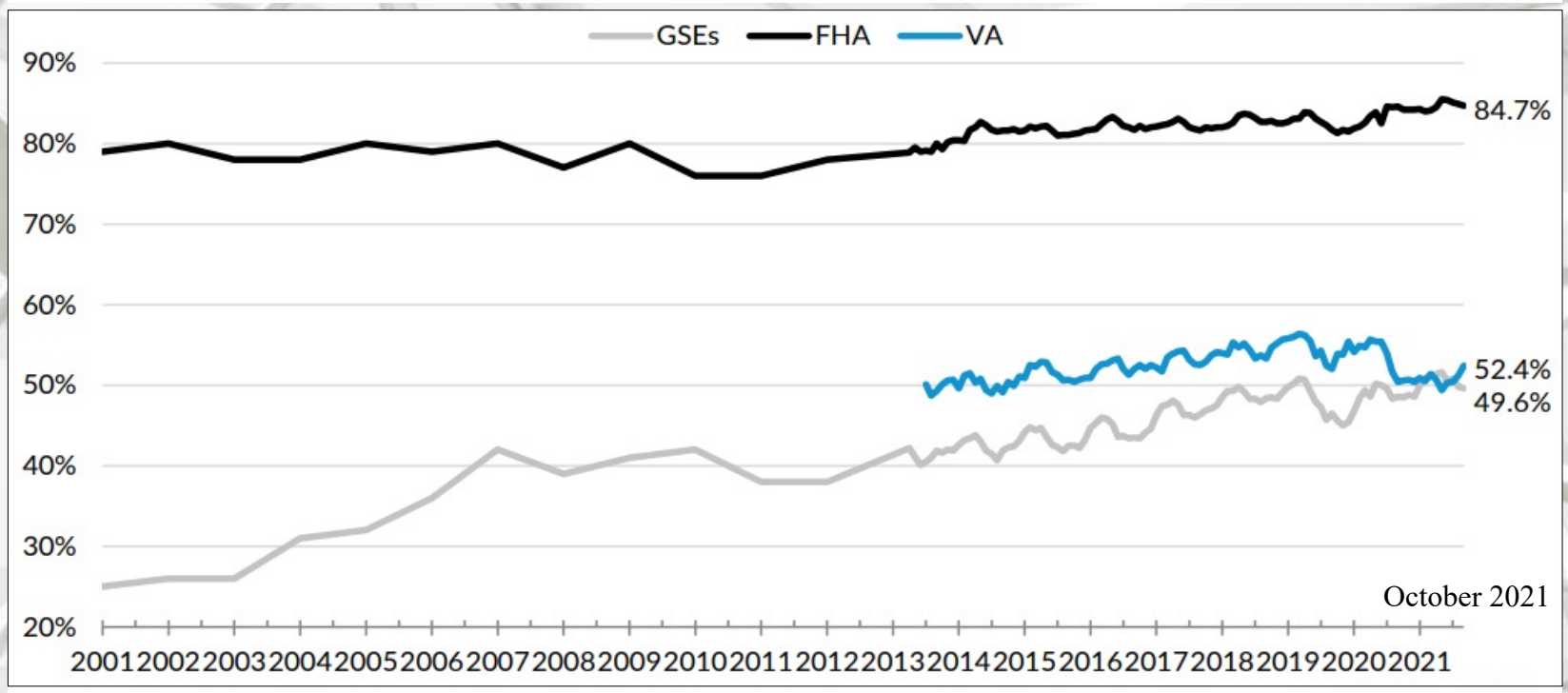
First-Time House Buyers



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

Urban Institute

First-Time Home Buyer Share

"In October 2021, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 84.7 percent. The FTHB share of VA lending in October was 52.4 percent. The GSE FTHB share decreased in October relative to September, to 49.6 percent. The bottom table shows that based on mortgages originated in September 2021, 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." – Bing Lai, Research Associate, Housing Finance Policy Center

Source: https://www.urban.org/sites/default/files/publication/105183/housing-finance-at-a-glance-a-monthly-chartbook-november-2021.pdf; 11/29/21

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U.S. Housing Finance

Mortgage Bankers Association (MBA)

Mortgage Credit Availability Decreased in November

"Mortgage credit availability increased in November according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) that analyzes data from Ellie Mae's AllRegs® Market Clarity® business information tool.

The MCAI fell by 0.6 percent to 124.9 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 1.9 percent, while the Government MCAI decreased by 2.7 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 3.0 percent, and the Conforming MCAI rose by 0.2 percent.

Credit availability in November was down slightly, even as the housing market continues to thrive amidst the improving job market. However, the picture was different depending on the market segment. An increase in conventional credit availability was offset by a decrease in government credit, as lenders reduced their offerings of government loan programs with lower credit scores, as well as those for investment homes. Credit supply for jumbo loans increased for the fifth straight month. Lenders scaled back on jumbo supply at the onset of the pandemic, and even with the recent growth in credit availability, the jumbo index remains more than 40 percent below February 2020 levels. As home-price growth continues, and mortgage rates creep higher, increased credit availability is needed for qualified borrowers looking to purchase a home – especially for first-time homebuyers, who rely heavily on government mortgage programs." – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

Source: www.mba.org/news-research-and-resources/research-and-economics/single-family-research/mortgage-credit-availability-index; 12/10/21

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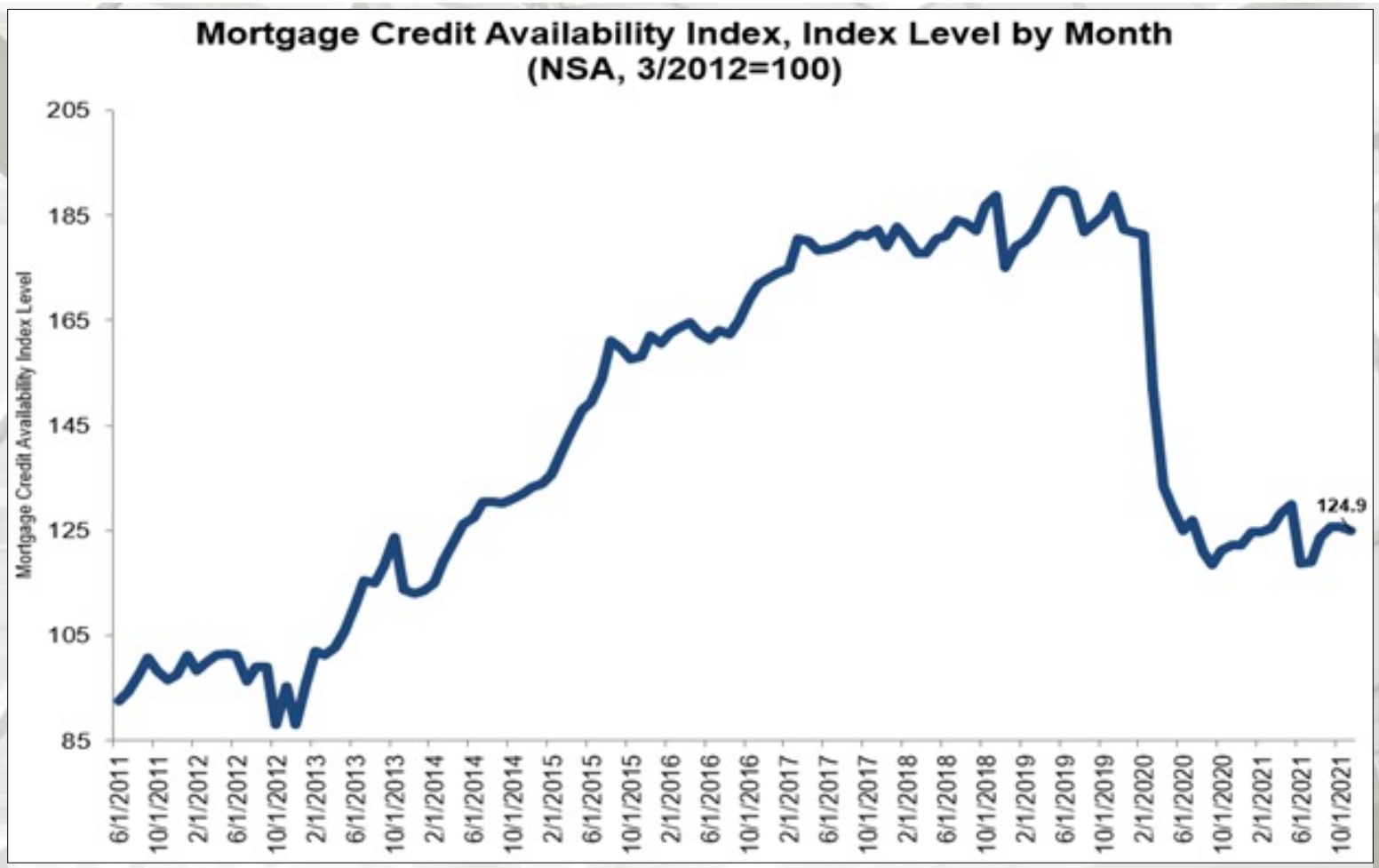
U.S. Housing Finance
Mortgage Credit Availability (MBA)



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

Source: www.mba.org/news-research-and-resources/research-and-economics/single-family-research/mortgage-credit-availability-index; 12/10/21

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MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

November 22, 2021

	2021				2022				2023								
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022	2023	2024
Housing Measures																	
Housing Starts (SAAR, Thous)	1,599	1,588	1,566	1,561	1,570	1,603	1,663	1,704	1,717	1,704	1,701	1,691	1,397	1,579	1,635	1,703	1,621
Single-Family	1,156	1,107	1,091	1,075	1,118	1,172	1,243	1,302	1,343	1,358	1,369	1,364	1,004	1,107	1,209	1,359	1,321
Two or More	443	482	475	486	452	431	420	402	374	346	332	327	393	472	426	345	300
Home Sales (SAAR, Thous)																	
Total Existing Homes	6,303	5,833	6,057	6,197	6,296	6,377	6,439	6,557	6,610	6,606	6,591	6,552	5,678	6,097	6,417	6,590	6,410
New Homes	896	737	738	805	841	911	952	983	1,012	1,045	1,051	1,051	828	794	922	1,040	1,027
FHFA US House Price Index (YOY % Change)	12.7	17.4	17.6	16.1	13.2	10.1	7.3	5.1	4.0	3.4	3.5	4.1	10.9	16.1	5.1	4.1	5.4
Median Price of Total Existing Homes (Thous $)	313.5	351.3	356.6	359.7	363.9	360.9	362.1	358.7	363.9	365.1	362.2	359.7	295.4	345.3	361.4	362.7	361.8
Median Price of New Homes (Thous $)	364.9	380.9	403.3	410.9	410.6	404.1	402.0	399.1	405.4	407.1	403.9	400.6	335.0	390.0	404.0	404.3	401.5
Interest Rates																	
30-Year Fixed Rate Mortgage (%)	2.9	3.0	2.9	3.1	3.3	3.5	3.7	4.0	4.1	4.2	4.3	4.3	2.8	3.1	4.0	4.3	4.3
10-Year Treasury Yield (%)	1.3	1.6	1.3	1.6	1.8	1.9	2.1	2.3	2.4	2.4	2.5	2.5	0.9	1.6	2.3	2.5	2.5
Mortgage Originations																	
Total 1- to 4-Family ($Bil $)	1,094	1,050	954	834	653	697	625	610	553	693	648	632	4,108	3,932	2,585	2,526	2,530
Purchase	320	460	442	390	346	492	449	438	378	526	482	464	1,482	1,612	1,725	1,850	1,784
Refinance	774	590	512	444	307	205	176	172	175	167	166	168	2,625	2,320	860	676	746
Refinance Share (%)	71	56	54	53	47	29	28	28	32	24	26	27	64	59	33	27	29
FHA Originations ($Bil $)													302	285	162	159	147
Total 1- to 4-Family (000s loans)	3,146	2,926	2,714	2,325	1,807	1,880	1,755	1,714	1,500	1,867	1,705	1,707	13,696	11,112	7,156	6,779	6,566
Purchase	974	1,341	1,302	1,124	1,006	1,302	1,254	1,264	1,043	1,402	1,243	1,267	4,917	4,741	4,826	4,955	4,600
Refinance	2,172	1,585	1,412	1,201	801	578	501	450	457	465	462	440	8,780	6,370	2,330	1,824	1,966
Refinance Share (%)	69	54	52	52	44	31	29	26	30	25	27	26	64	57	33	27	30
Mortgage Debt Outstanding																	
1- to 4-Family ($Bil $)	11,042	11,200	11,386	11,554	11,715	11,916	12,131	12,338	12,525	12,718	12,908	13,085	10,925	11,554	12,338	13,085	13,749

Notes:

As of the Sep, 2021 forecast, the 2020 originations numbers have been revised based on the 2020 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.

MBa
MORTGAGE BANKERS ASSOCIATION

Source: https://www.mba.org/assets/Documents/Research/Mortgage%20Finance%20Forecast%20Nov%202021.pdf; 12/22/21

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MBA Economic Forecast

MBA Economic Forecast

November 22, 2021

	2021				2022				2023								
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022	2023	2024
Percent Change, SAAR																	
Real Gross Domestic Product	6.3	6.7	2.0	4.5	5.4	4.9	4.3	2.7	2.2	2.1	2.2	2.1	-2.3	4.9	4.3	2.2	2.0
Personal Consumption Expenditures	11.4	12.0	1.6	4.5	3.0	2.2	2.0	1.4	1.7	2.3	2.5	2.5	-2.4	7.3	2.1	2.3	2.9
Business Fixed Investment	12.9	9.2	1.8	6.0	9.9	8.0	7.2	5.4	4.0	3.9	3.9	3.6	-3.8	7.4	7.6	3.9	3.0
Residential Investment	13.3	-11.7	-7.7	-7.0	-1.8	6.4	8.1	7.9	5.4	3.9	1.6	0.7	15.7	-3.7	5.1	2.9	-1.1
Govt. Consumption & Investment	4.2	-2.0	0.8	0.1	5.0	2.6	2.2	1.2	1.3	1.0	0.9	1.0	1.2	0.7	2.7	1.1	0.8
Net Exports (Bil. Chain 2012$)	-1033.0	-1048.4	-1107.7	-1103.8	-1109.9	-1102.4	-1099.0	-1104.0	-1108.4	-1116.1	-1129.2	-1144.8	-785.1	-1073.2	-1103.8	-1124.6	-1199.9
Inventory Investment (Bil. Chain 2012$)	-75.1	-143.3	-66.1	-29.3	24.0	81.8	126.2	145.7	146.1	134.7	127.2	120.5	-35.9	-78.4	94.4	132.1	104.2
Consumer Prices (YOY)	1.9	4.8	5.3	5.8	5.2	3.6	3.1	3.0	2.7	2.8	2.4	2.2	1.2	5.8	3.0	2.2	2.0
Percent																	
Unemployment Rate	6.2	5.9	5.1	4.5	4.2	3.8	3.6	3.5	3.5	3.5	3.5	3.5	8.1	5.4	3.8	3.5	3.8
Federal Funds Rate	0.125	0.125	0.125	0.125	0.125	0.125	0.375	0.375	0.375	0.625	0.875	1.125	0.125	0.125	0.375	1.125	2.125
10-Year Treasury Yield	1.3	1.6	1.3	1.6	1.8	1.9	2.1	2.3	2.4	2.4	2.5	2.5	0.9	1.6	2.3	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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Source: https://www.mba.org/Documents/Research/Economic%20Forecast%20Nov%202021.pdf; 12/22/21

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Summary

In conclusion:

The month-over-month and year-over-year housing data for October were mostly positive. Total and single-family starts, and single-family family housing completions were negative month-over-month. Total and single-family starts, and single-family family housing completions were negative month-over-month. Single-family permits and starts, total housing completions, and new and existing house sales were negative year-over-year. Currently more multi-family units are under construction than at any time in the past 47-years. Completions remained restrained due to the unavailability of building materials and products, among other factors. Thus, certain builders may be reluctant to start new projects while waiting to complete units under construction.

Pros:

1) Historically low-interest rates remain in place;
2) Select builders are beginning to focus on entry-level houses;

Cons:

1) COVID-19;
2) Construction material and appliance constraints;
3) Logistics/Supply chains;
4) Lot availability and building regulations (according to several sources);
5) Laborer shortages in many sectors;
6) Household formations still lag historical averages;
7) Job creation is improving and consistent, but some economists question the quantity and types of jobs being created;
8) Debt: Corporate, personal, government – United States and globally;
9) Other global uncertainties.

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