

The Virginia Tech–USDA Forest Service Housing Commentary: Section I October 2020



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2020

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

To request the commentary, please email: buehlmann@gmail.com or Delton.R.Alderman@usda.gov

Opening Remarks

In October, the aggregate United States housing market was mixed. Assessing the month-over-month data yielded decreases for multi-family permits, all three completion categories, and new single-family sales. Year-over-year, the majority of categories were positive, with the exceptions of multi-family starts and permits, and single-family completions. Residential construction spending was positive month-over-month and year-over-year; and expenditures in August, September, and October are the greatest since the residential surge of 2005-2006. Housing remains a bright spot for the United States economy.

The December 9th Atlanta Fed GDPNow™ model forecast was an aggregate 31.5% increase for total residential investment spending in Quarter Four 2020. New private permanent site expenditures were projected at 43.3%; the improvement spending forecast was 5.9%; and the manufactured/mobile expenditures projection was 9.3% (all: quarterly log change and at a seasonally adjusted annual rate).¹

“After hitting a low point in the spring, the housing market staged a dramatic comeback. The boost from loosening credit, along with rising house-buying power, equity and household formation, was strong enough to overcome the negative impact on housing market potential from the increase in tenure length so far in 2020. In 2021, tenure length appears poised to continue to rise, which will prolong the housing supply shortage and dampen housing market potential. Mortgage rates are anticipated to remain low and millennials are widely expected to continue to form households, boosting demand for homes.

The trend in housing market potential will likely depend on the labor market’s recovery and how lenders adjust credit standards. Will the labor market continue to recover or weaken in the coming months as we battle the pandemic, and will any labor market weakness impact potential home buyers? If there is more uncertainty, will lenders tighten credit once more? The historic rebound in housing market potential will slow down if lenders won’t lend and consumers can’t spend.”² – Mark Fleming, Chief Economist, First American Financial Corporation

This month’s commentary contains applicable housing data. Section I contains updated housing forecasts, data, and remodeling commentary. Section II includes regional Federal Reserve analysis, private firm indicators, and demographic and economic information.

Sources: ¹ www.frbatlanta.org/cqer/research/gdpnow.aspx; 12/9/20;

² <https://blog.firstam.com/economics/what-does-the-housing-markets-historic-pandemic-rebound-mean-for-2021>; 11/18/20

October 2020

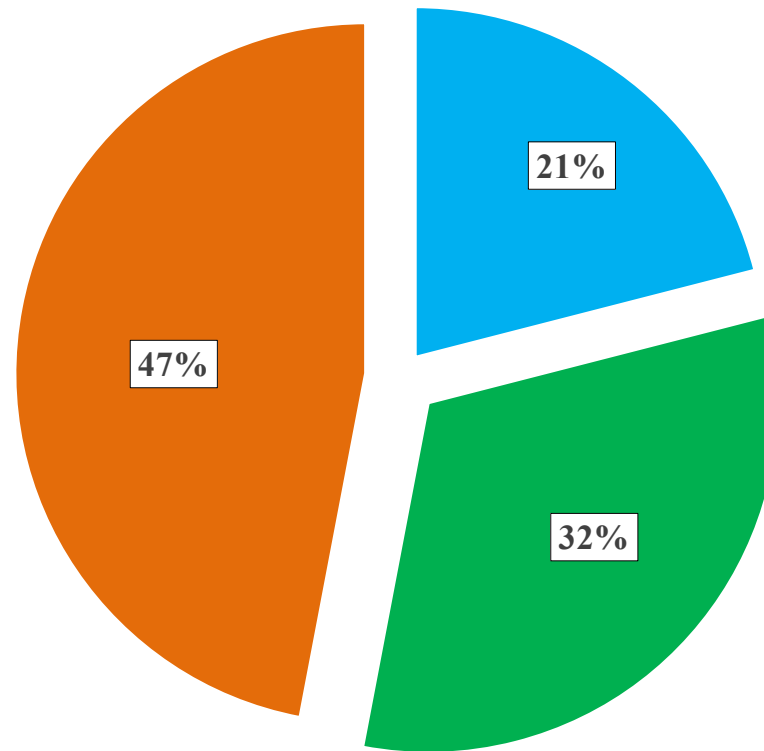
Housing Scorecard

	M/M	Y/Y
Housing Starts	▲ 4.9%	▲ 14.2%
Single-Family (SF) Starts	▲ 6.4%	▲ 29.4%
Multi-Family (MF) Starts*	NC	▼ -18.2%
Housing Permits	NC	▲ 2.8%
SF Permits	▲ 0.6%	▲ 20.6%
MF Permits*	▼ -1.6%	▼ -26.0%
Housing Under Construction	▲ 1.2%	▲ 6.0%
SF Under Construction	▲ 4.3%	▲ 8.5%
Housing Completions	▼ -4.5%	▲ 5.4%
SF Completions	▼ -3.4%	▼ -4.0%
New SF House Sales	▼ 0.3%	▲ 41.5%
Private Residential Construction Spending	▲ 2.9%	▲ 14.5%
SF Construction Spending	▲ 5.6%	▲ 13.3%
Existing House Sales ¹	▲ 4.3%	▲ 26.6%

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

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

New Construction's Percentage of Wood Products Consumption

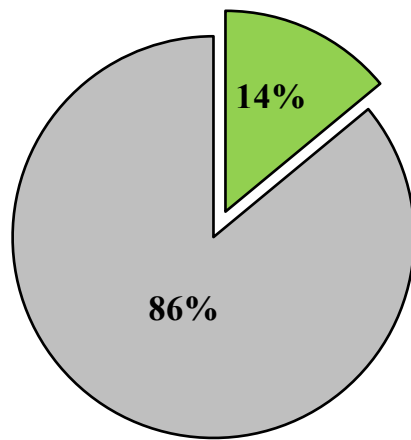


■ Non-structural panels

■ Total Sawnwood

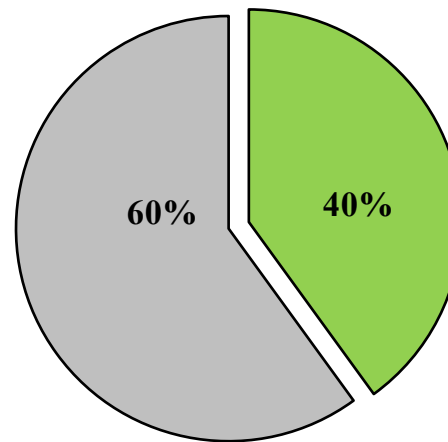
■ Structural panels

New SF Construction Percentage of Wood Products Consumption



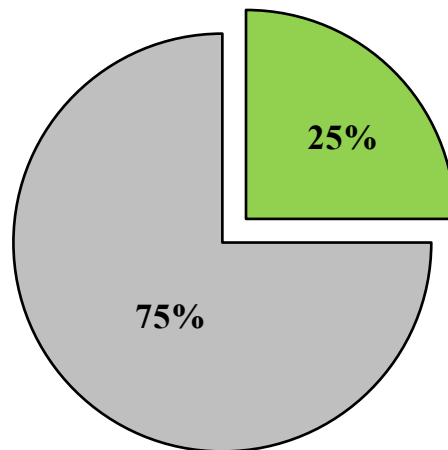
■ Non-structural panels:
New Housing

■ Other markets



■ Structural panels:
New housing

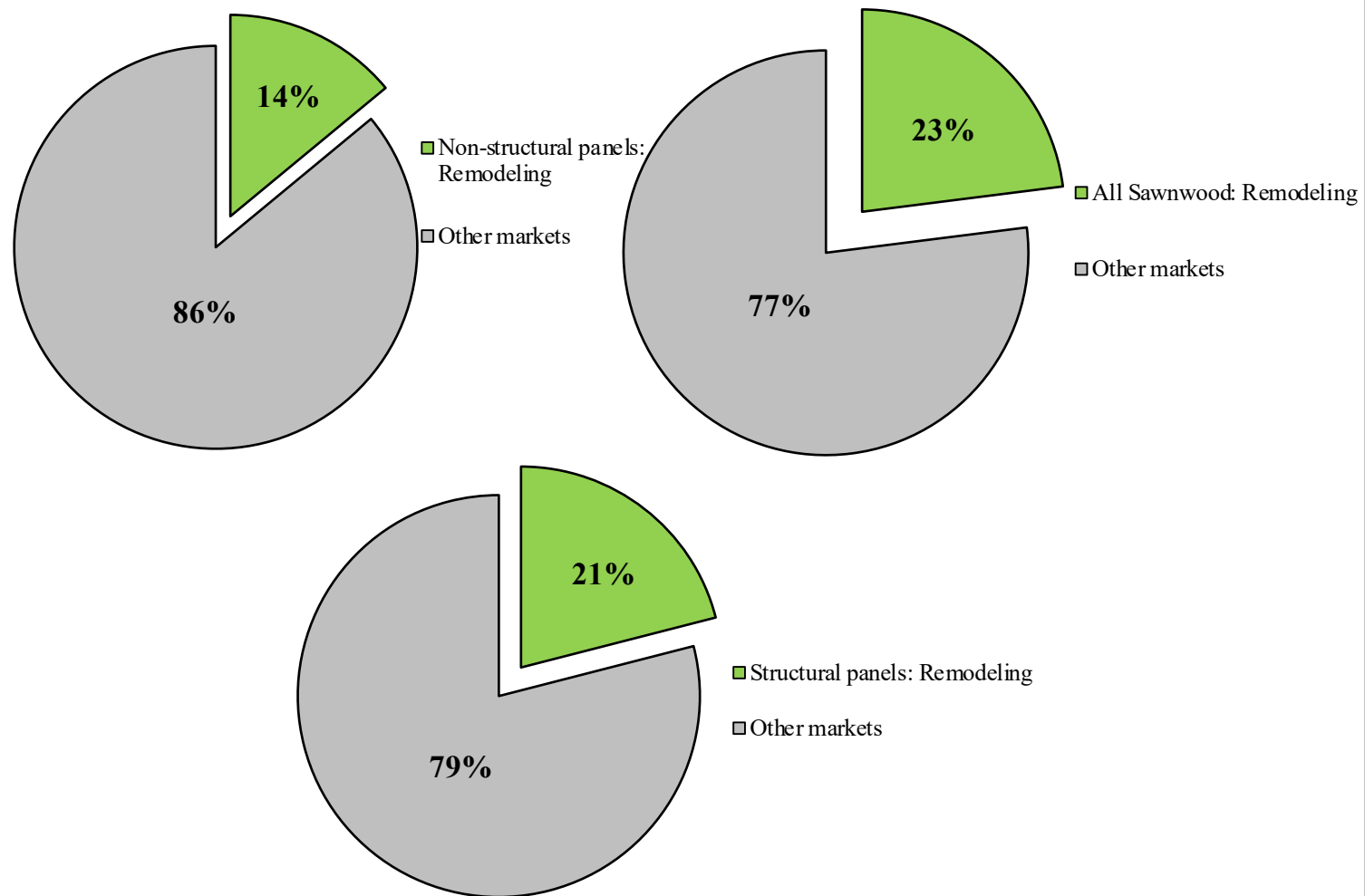
■ Other markets



■ All Sawnwood: New housing

■ Other markets

Repair and Remodeling's Percentage of Wood Products Consumption



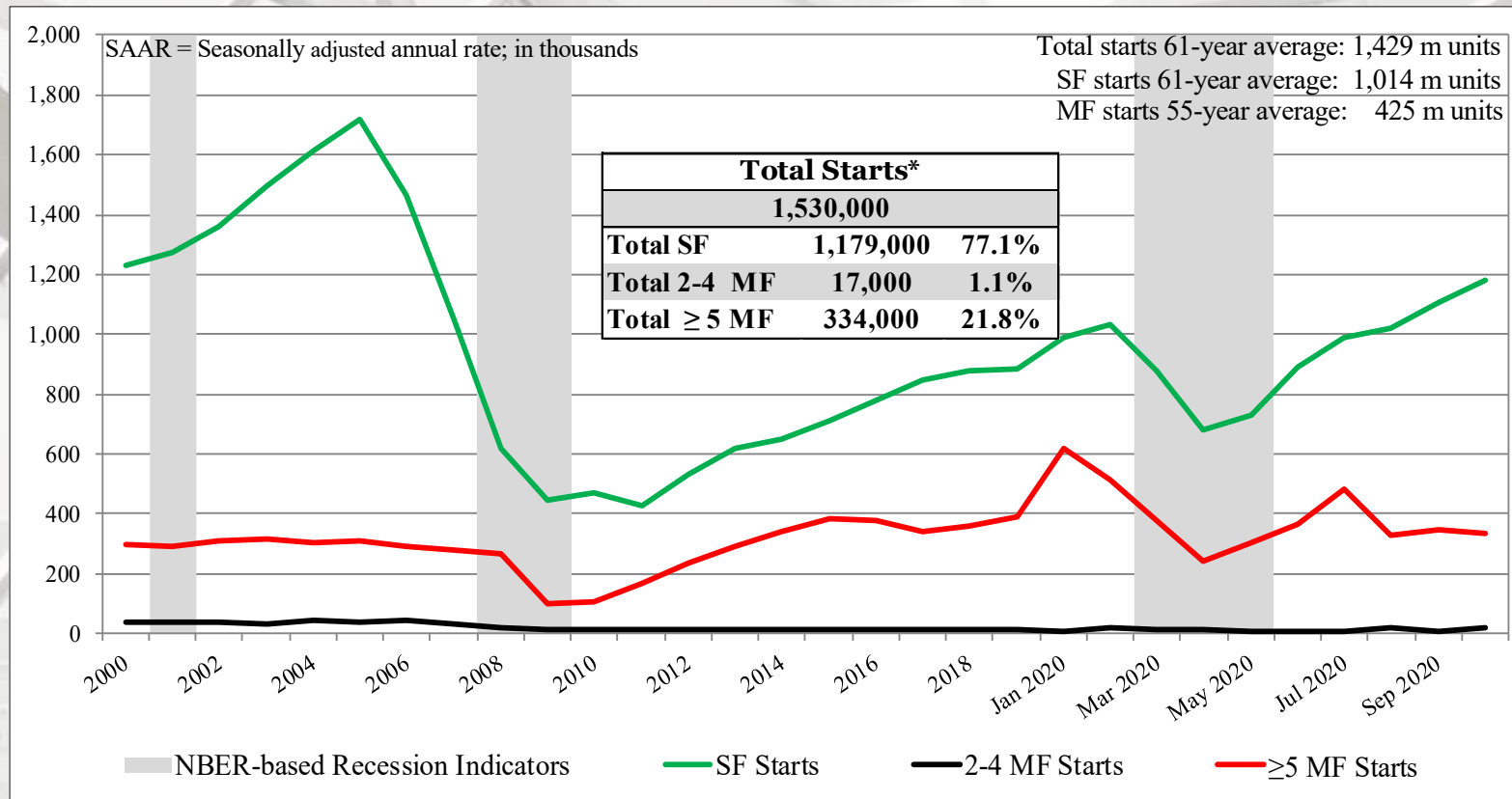
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
October	1,530,000	1,179,000	17,000	334,000
September	1,459,000	1,108,000	6,000	345,000
2019	1,340,000	911,000	12,000	417,000
M/M change	4.9%	6.4%	183.3%	-3.2%
Y/Y change	14.2%	29.4%	41.7%	-19.9%

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

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

Total Housing Starts

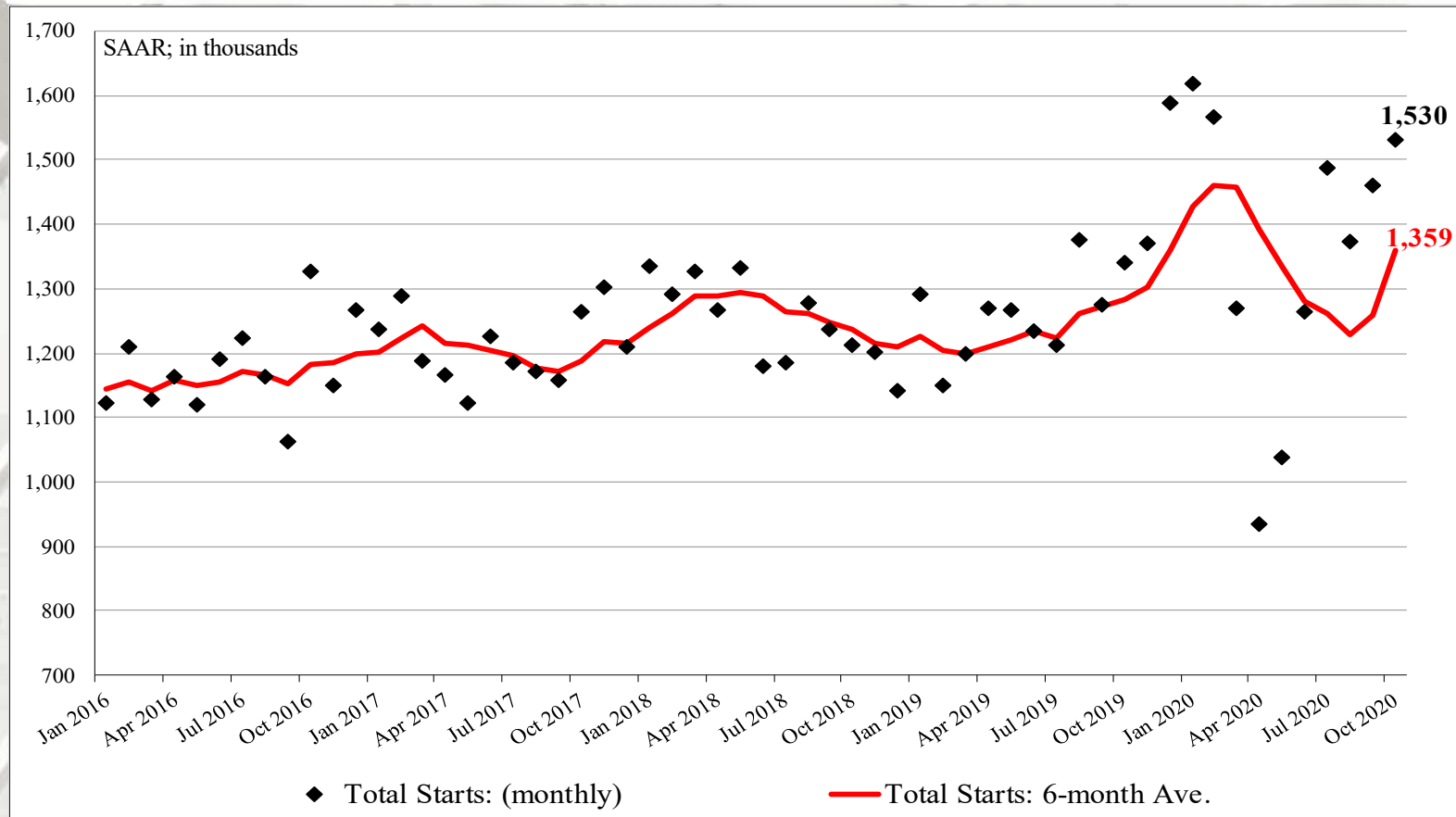


US DOC does not report 2 to 4 multi-family starts directly; this is an estimation: ((Total starts – (SF + ≥ MF)).

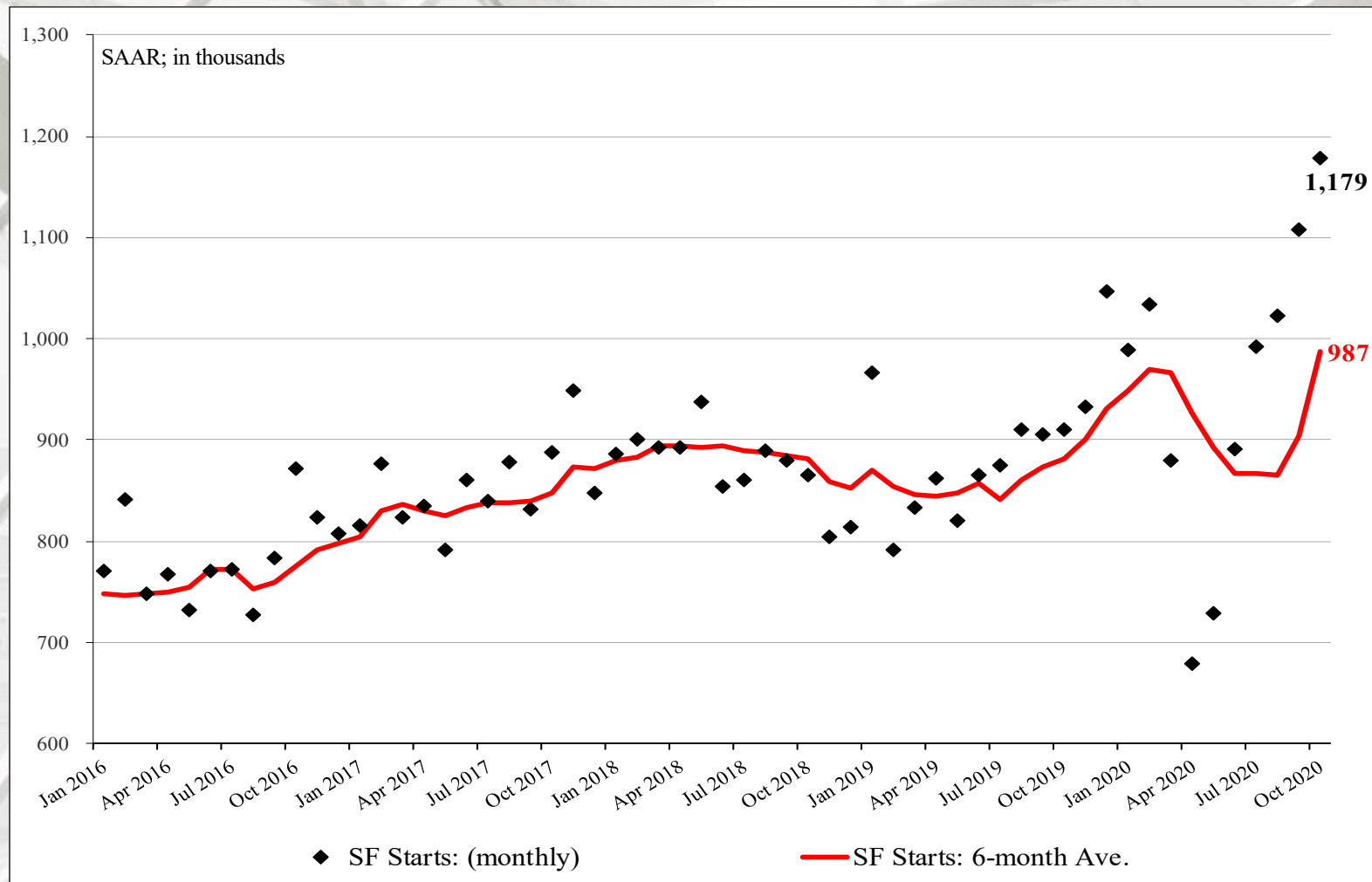
* Percentage of total starts.

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

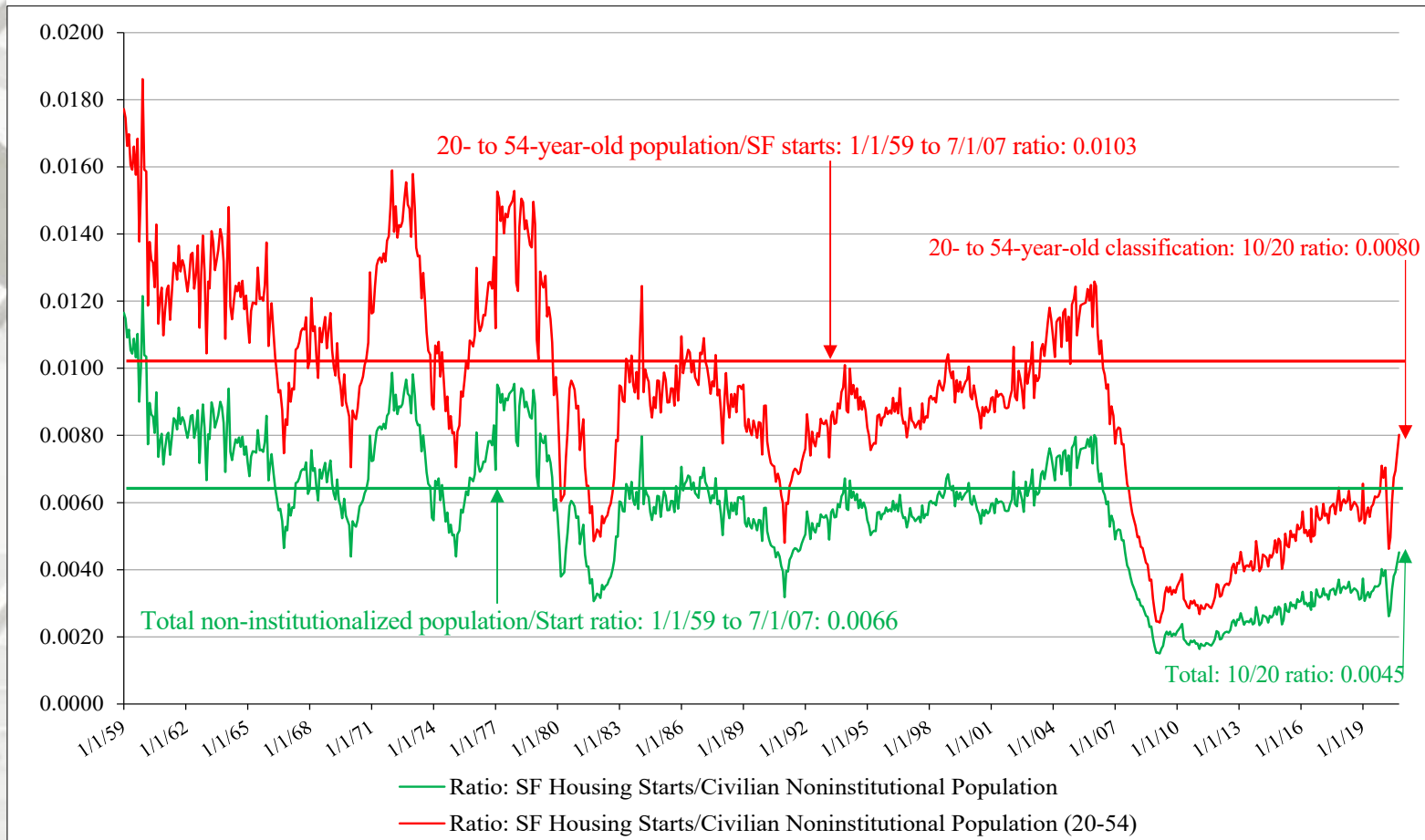
Total Housing Starts: Six-Month Average



SF Housing Starts: Six-Month Average



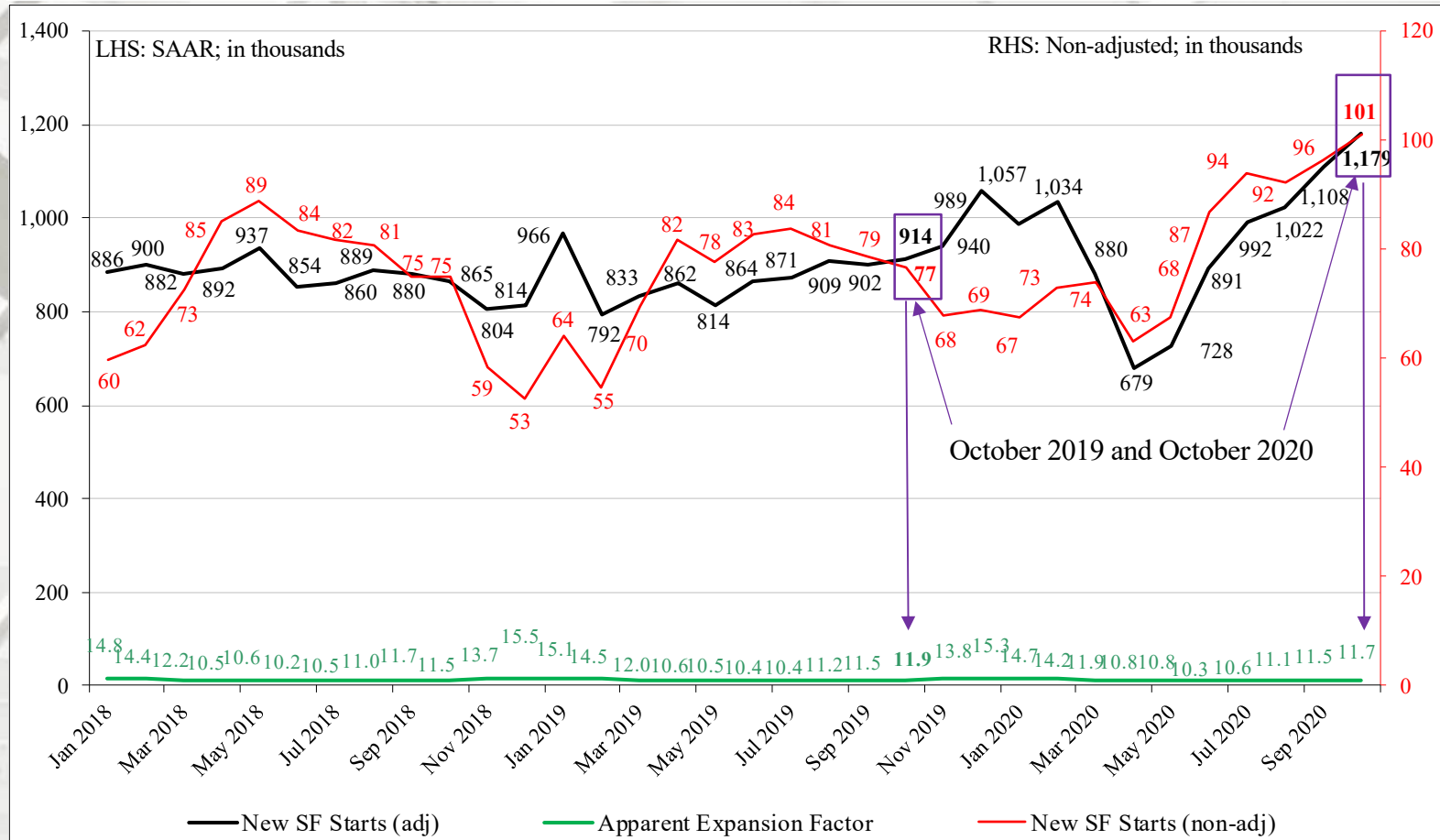
New SF Starts



New SF starts adjusted for the US population

From January 1959 to October 2007, the long-term ratio of the total US non-institutionalized population to new SF starts is 0.0066; in October 2020 it was 0.0042 – an increase from September. The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in October 2020 was 0.0080 – also an increase from September. From a population worldview, new SF construction is less than what is necessary for changes in population (i.e., under-building).

Nominal & SAAR SF Starts



Nominal and Adjusted New SF Monthly Starts

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

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

New Housing Starts by Region

	NE Total	NE SF	NE MF**
October	78,000	55,000	23,000
September	127,000	67,000	60,000
2019	116,000	39,000	77,000
M/M change	-38.6%	-17.9%	-61.7%
Y/Y change	-32.8%	41.0%	-70.1%
	MW Total	MW SF	MW MF
October	219,000	155,000	64,000
September	212,000	127,000	85,000
2019	178,000	116,000	62,000
M/M change	3.3%	22.0%	-24.7%
Y/Y change	23.0%	33.6%	3.2%

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

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

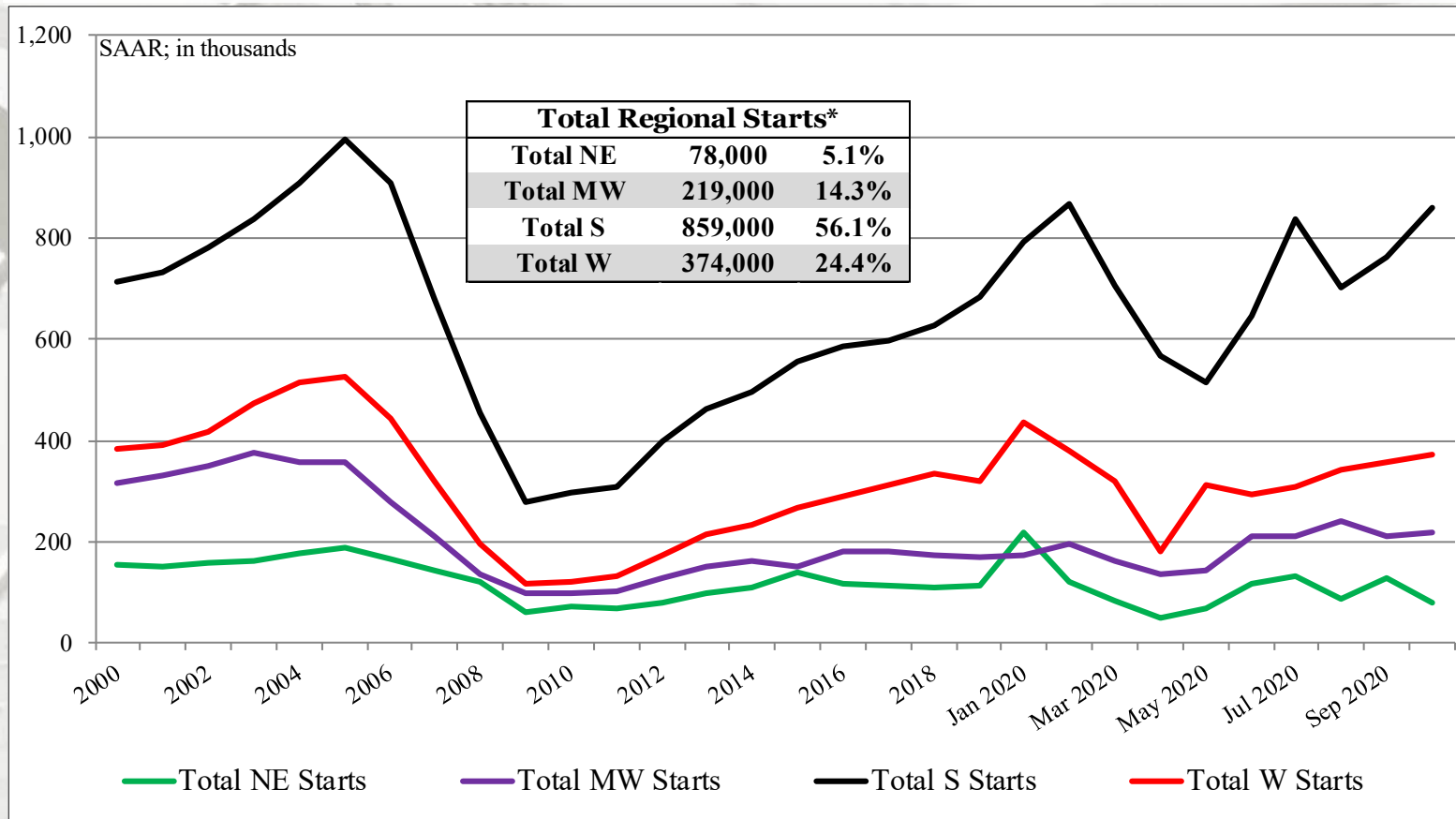
New Housing Starts by Region

	S Total	S SF	S MF**
October	859,000	682,000	177,000
September	761,000	639,000	122,000
2019	691,000	532,000	159,000
M/M change	12.9%	6.7%	45.1%
Y/Y change	24.3%	28.2%	11.3%
	W Total	W SF	W MF
October	374,000	287,000	87,000
September	359,000	275,000	84,000
2019	355,000	224,000	131,000
M/M change	4.2%	4.4%	3.6%
Y/Y change	5.4%	28.1%	-33.6%

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

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

New Housing Starts by Region

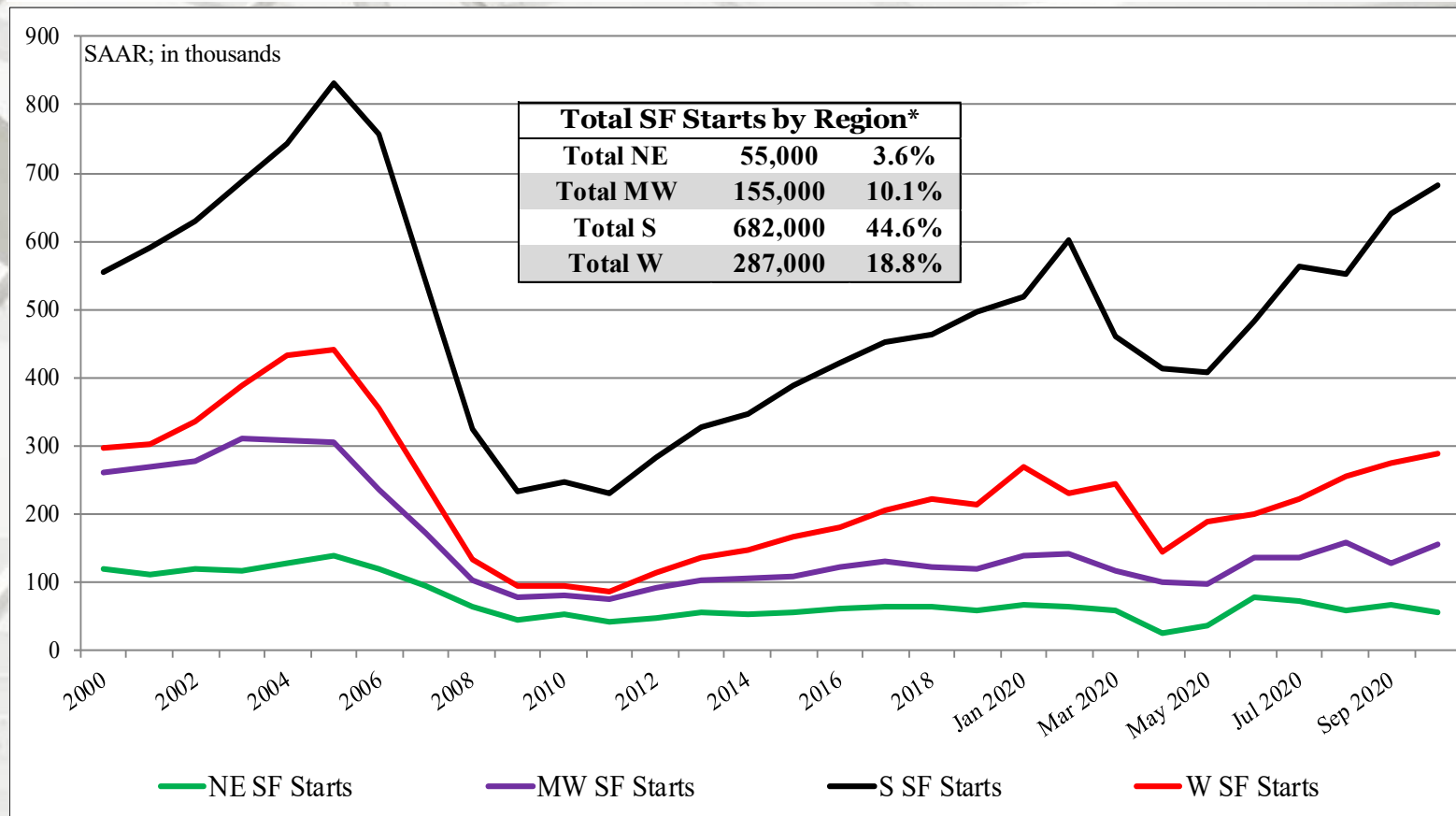


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

Total SF Housing Starts by Region

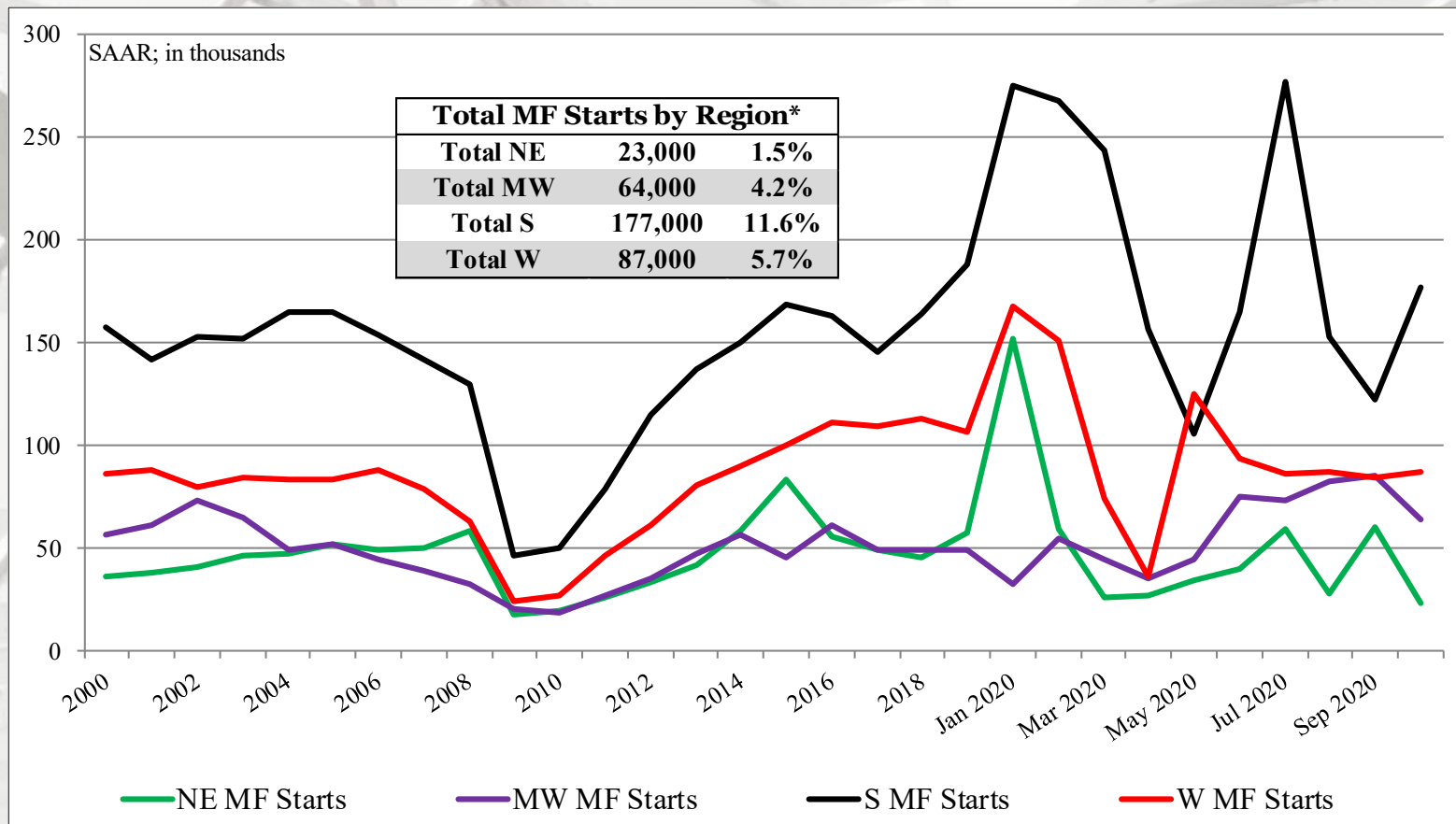


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

MF Housing Starts by Region

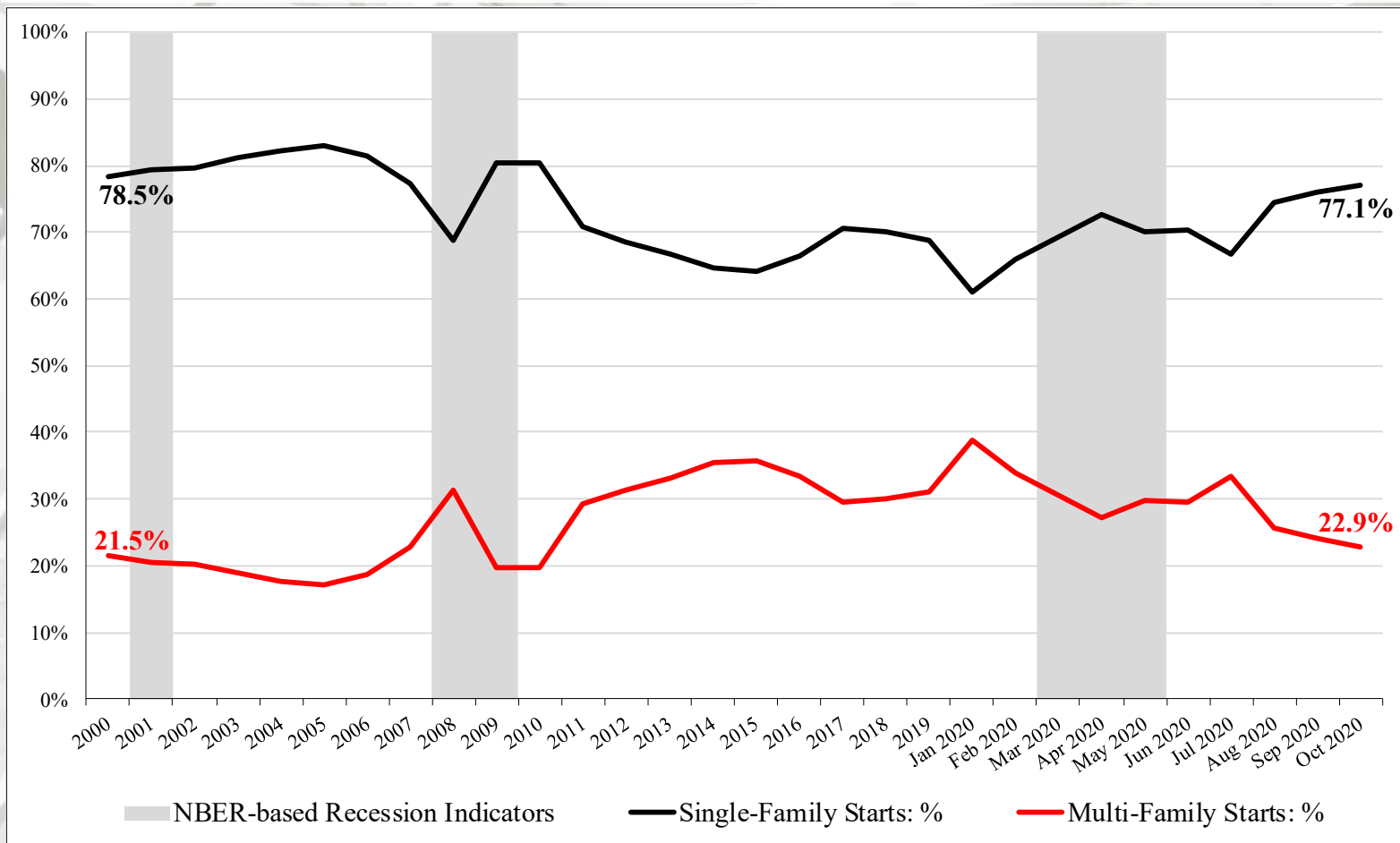


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

SF vs. MF Housing Starts (%)



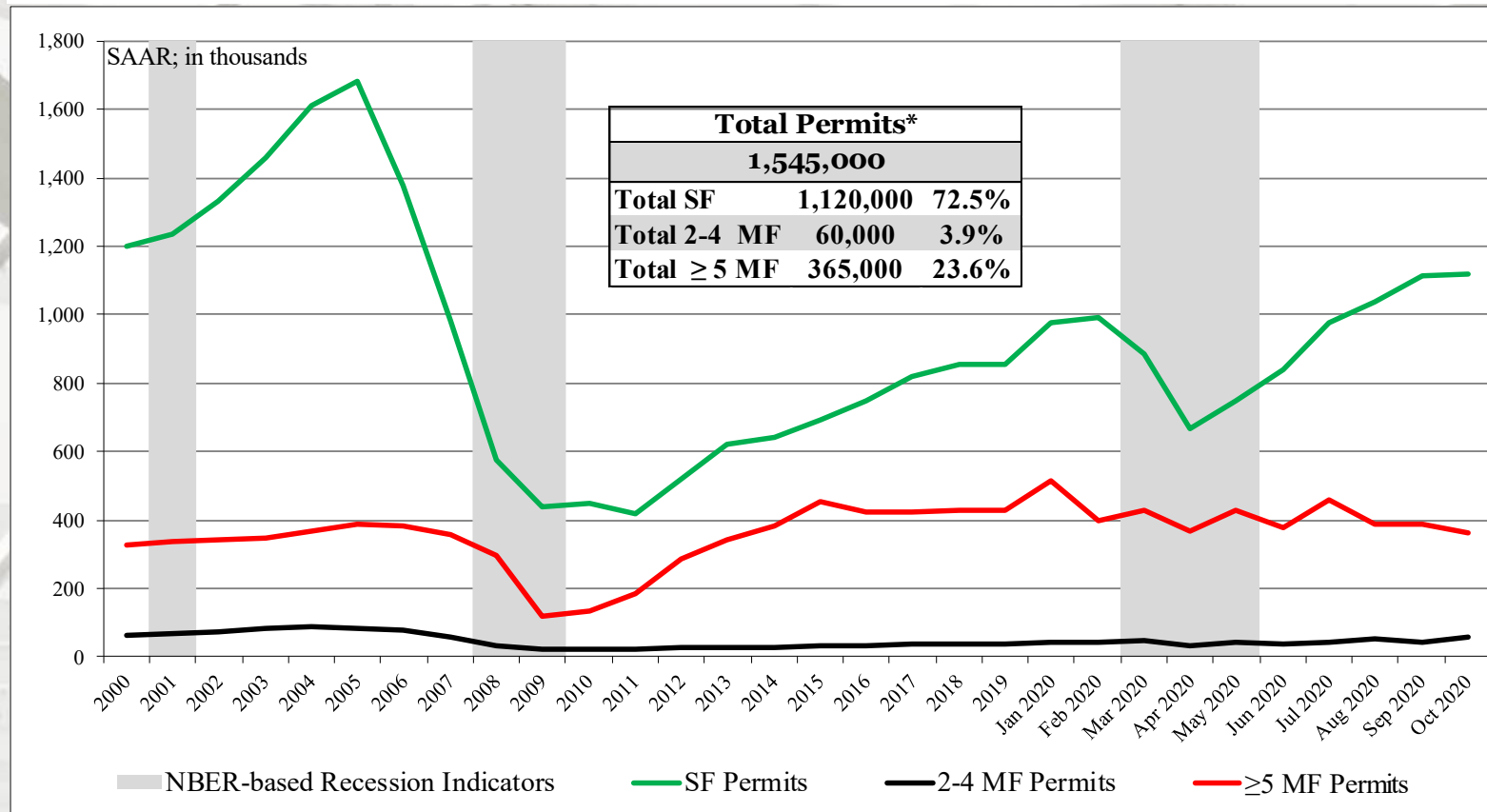
NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
October	1,545,000	1,120,000	60,000	365,000
September	1,545,000	1,113,000	44,000	388,000
2019	1,503,000	929,000	48,000	526,000
M/M change	0.0%	0.6%	36.4%	-5.9%
Y/Y change	2.8%	20.6%	25.0%	-30.6%

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

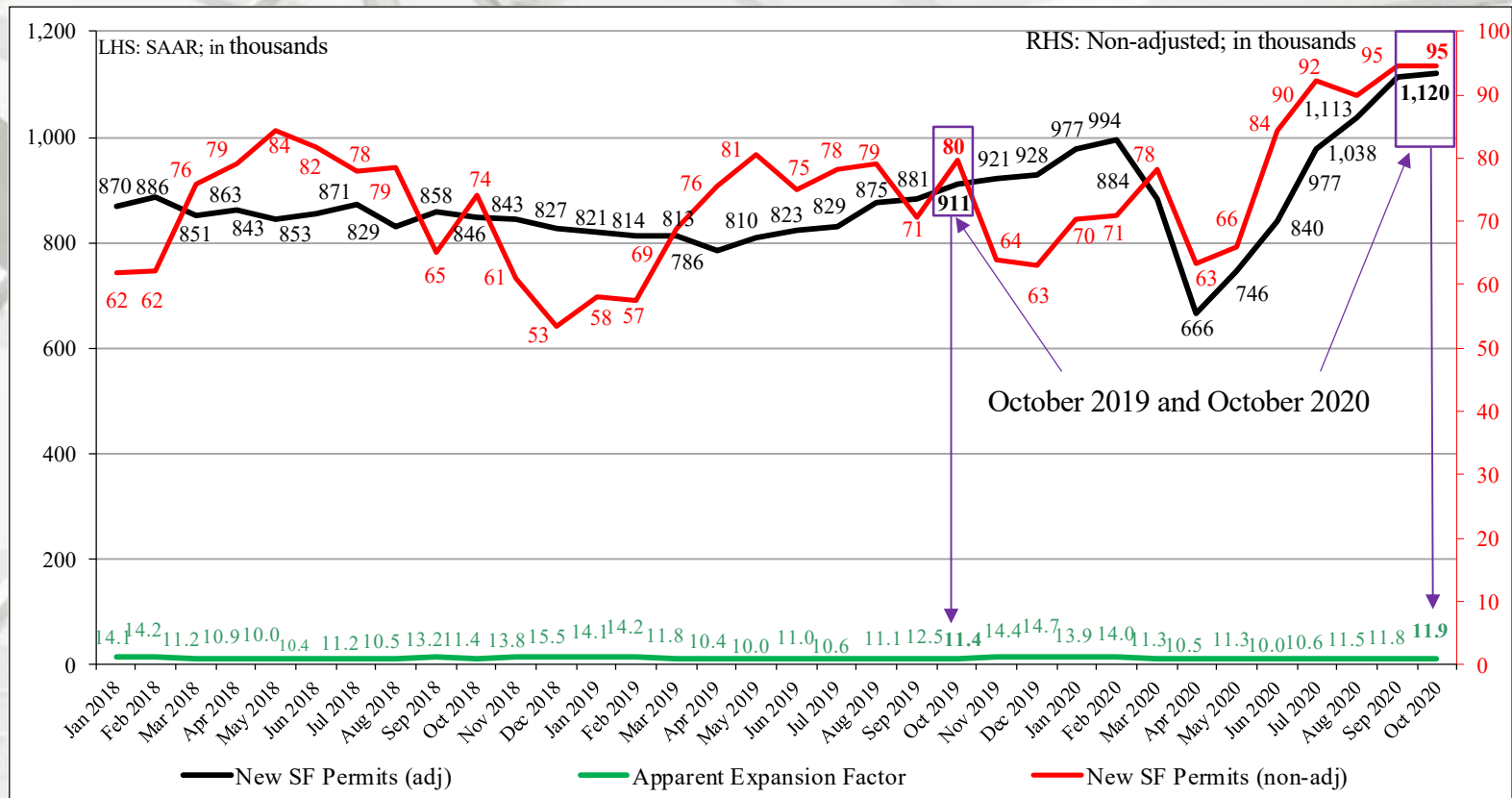
Total New Housing Permits



* Percentage of total permits.

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

Nominal & SAAR SF Permits



Nominal and Adjusted New SF Monthly Permits

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

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

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
October	134,000	60,000	74,000
September	148,000	69,000	79,000
2019	155,000	50,000	105,000
M/M change	-9.5%	-13.0%	-6.3%
Y/Y change	-13.5%	20.0%	-29.5%

	MW Total*	MW SF	MW MF**
October	213,000	145,000	68,000
September	207,000	144,000	63,000
2019	183,000	121,000	62,000
M/M change	2.9%	0.7%	7.9%
Y/Y change	16.4%	19.8%	9.7%

NE = Northeast; MW = Midwest

* All data are SAAR

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

New Housing Permits by Region

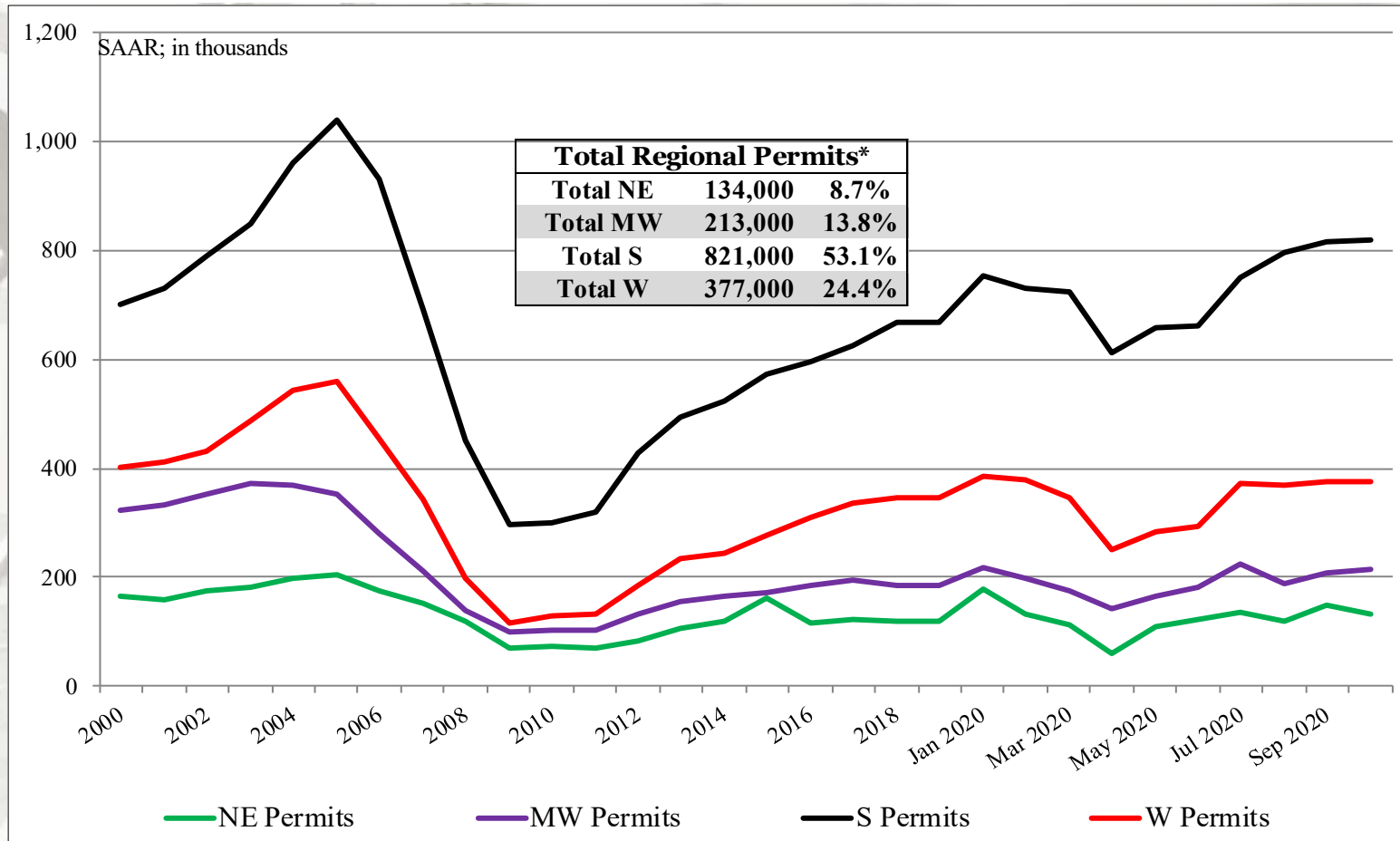
	S Total*	S SF	S MF**
October	821,000	645,000	176,000
September	815,000	631,000	184,000
2019	790,000	532,000	258,000
M/M change	0.7%	2.2%	-4.3%
Y/Y change	3.9%	21.2%	-31.8%
	W Total*	W SF	W MF**
October	377,000	270,000	107,000
September	375,000	269,000	106,000
2019	375,000	226,000	149,000
M/M change	0.5%	0.4%	0.9%
Y/Y change	0.5%	19.5%	-28.2%

S = South; W = West

* All data are SAAR

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

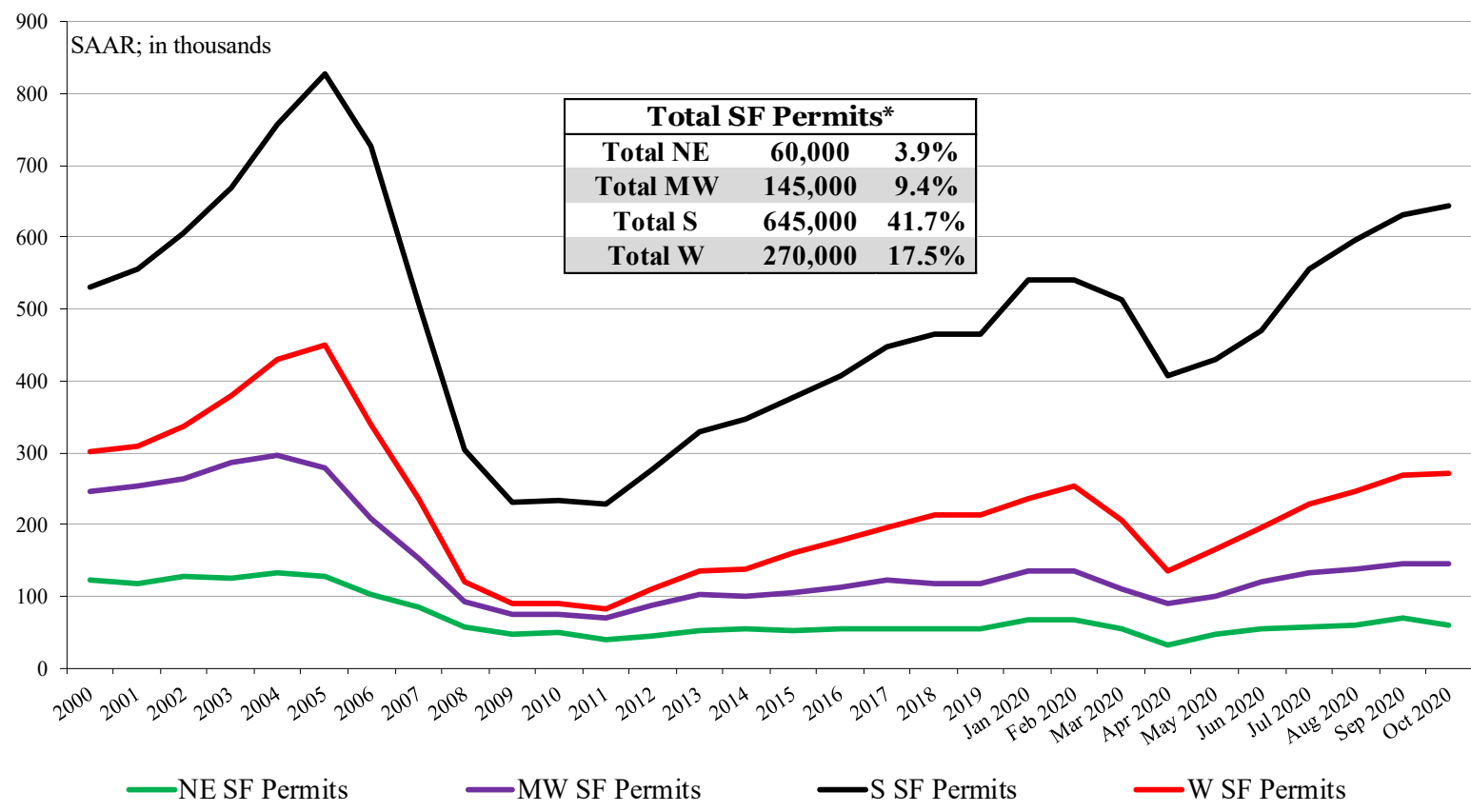
Total Housing Permits by Region



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

* Percentage of total permits.

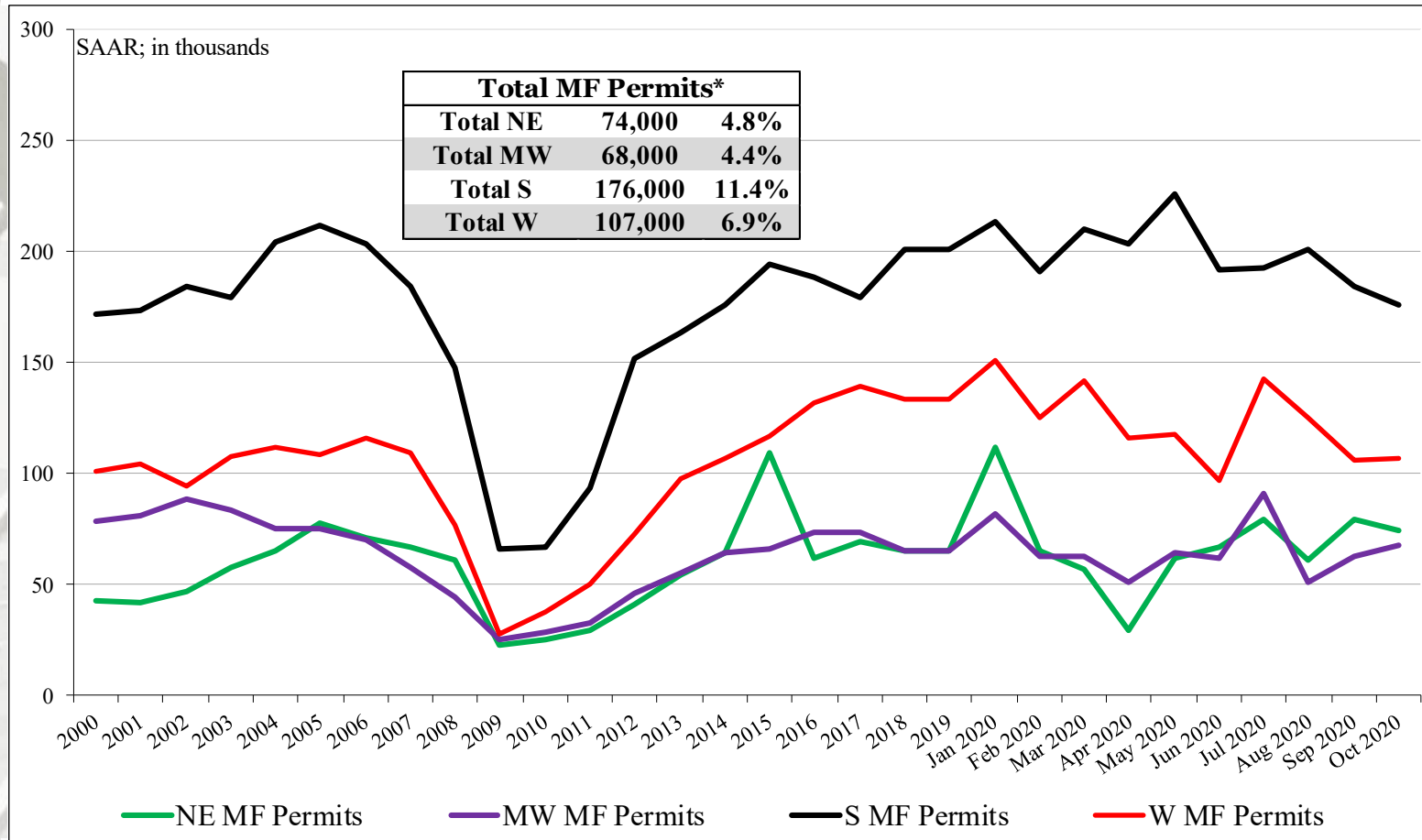
SF Housing Permits by Region



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

* Percentage of total permits.

MF Housing Permits by Region



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

* Percentage of total permits.

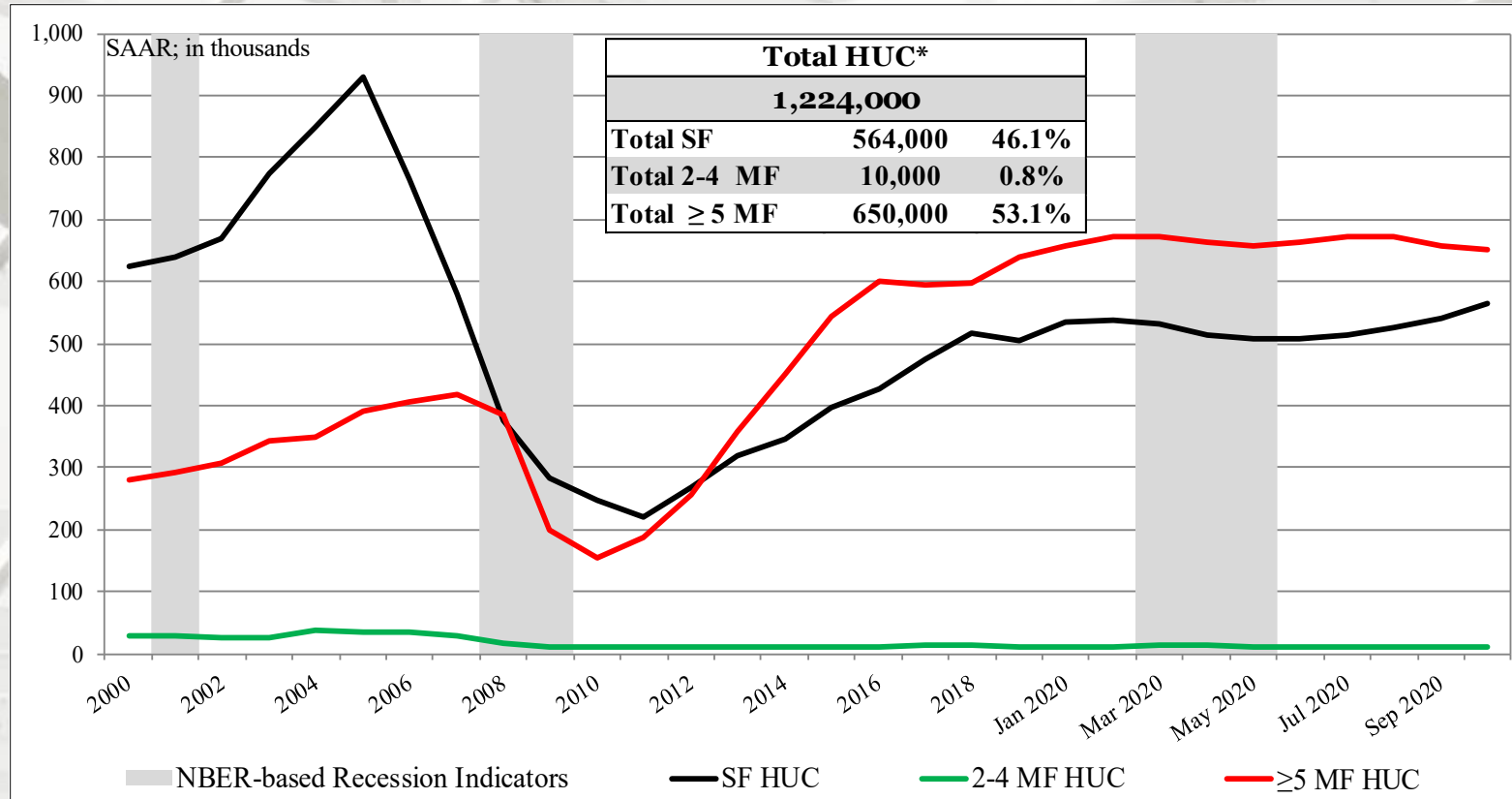
New Housing Under Construction (HUC)

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
October	1,224,000	564,000	10,000	650,000
September	1,209,000	541,000	11,000	657,000
2019	1,155,000	520,000	11,000	624,000
M/M change	1.2%	4.3%	-9.1%	-1.1%
Y/Y change	6.0%	8.5%	-9.1%	4.2%

All housing under construction data are presented at a seasonally adjusted annual rate (SAAR).

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

Total Housing Under Construction

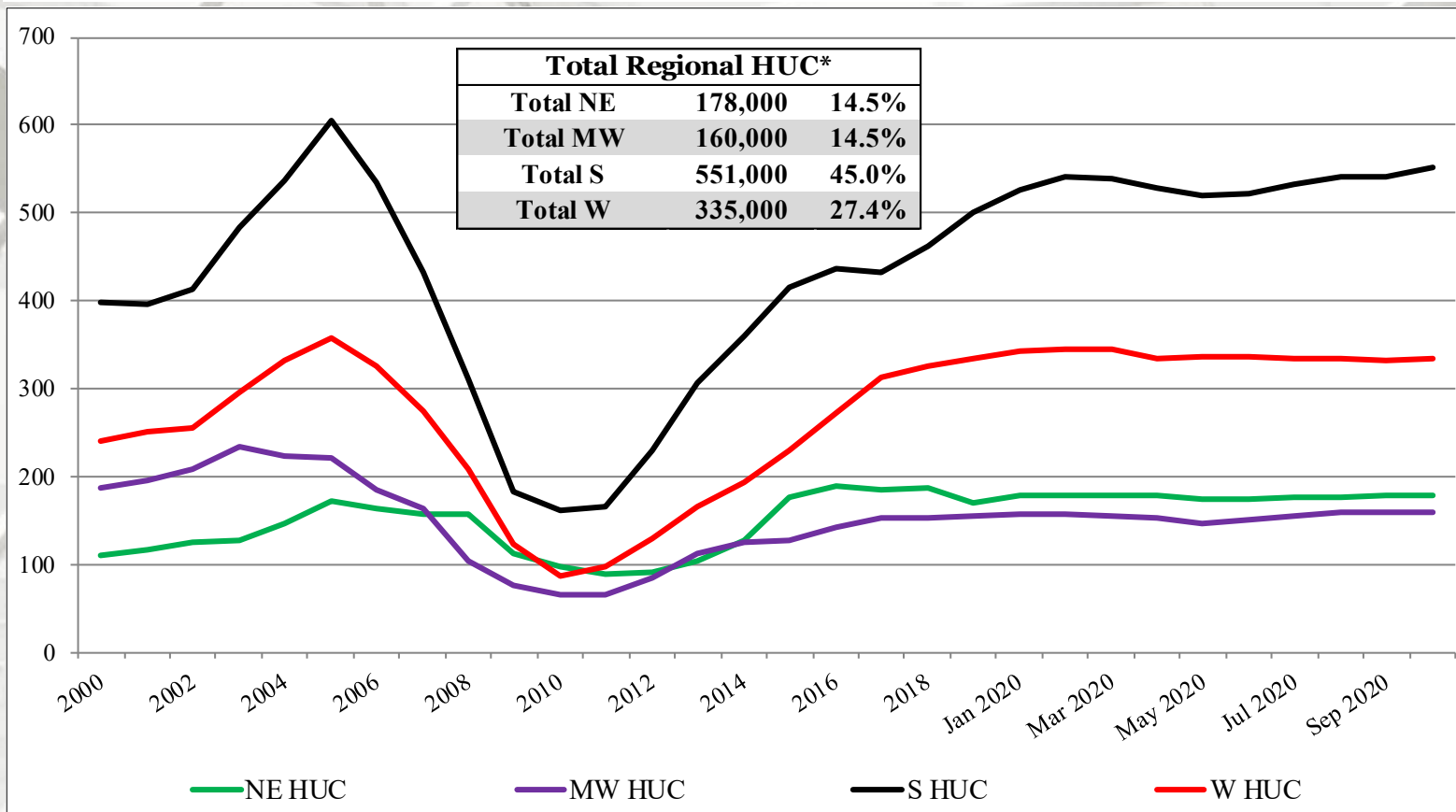


US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + ≥ 5 MF under construction)).

* Percentage of total housing under construction units.

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

New Housing Under Construction by Region



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

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

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
October	178,000	57,000	121,000
September	178,000	57,000	121,000
2019	178,000	56,000	119,000
M/M change	0.0%	0.0%	0.0%
Y/Y change	0.0%	1.8%	1.7%
	MW Total	MW SF	MW MF
October	160,000	83,000	77,000
September	158,000	79,000	79,000
2019	147,000	76,000	71,000
M/M change	1.3%	5.1%	-2.5%
Y/Y change	8.8%	9.2%	8.5%

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).

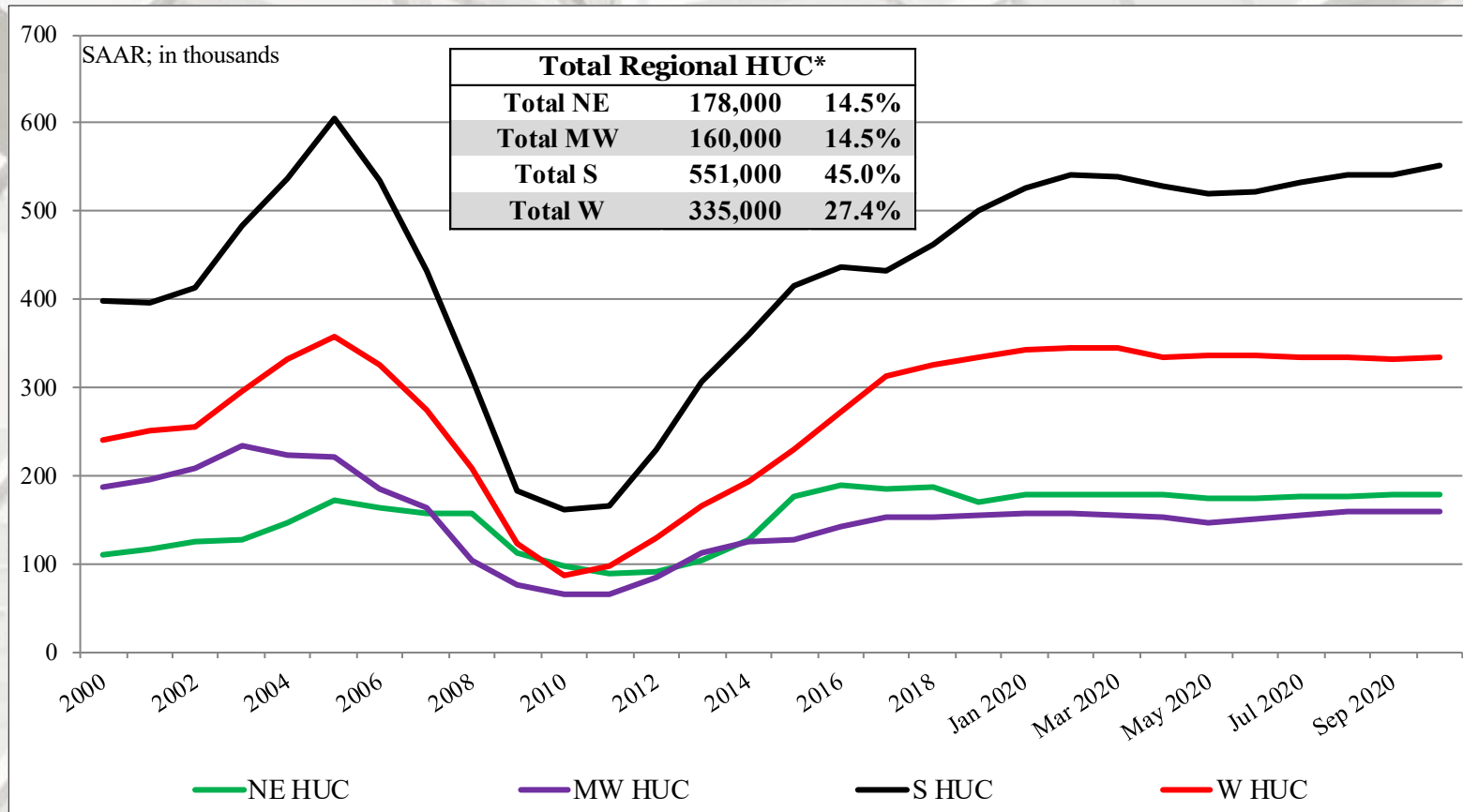
New Housing Under Construction by Region

	S Total	S SF	S MF**
October	551,000	276,000	275,000
September	541,000	263,000	278,000
2019	499,000	250,000	249,000
M/M change	1.8%	4.9%	-1.1%
Y/Y change	10.4%	10.4%	10.4%
	W Total	W SF	W MF
October	335,000	148,000	187,000
September	332,000	142,000	190,000
2019	331,000	138,000	193,000
M/M change	0.9%	4.2%	-1.6%
Y/Y change	1.2%	7.2%	-3.1%

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).

Total Housing Under Construction by Region

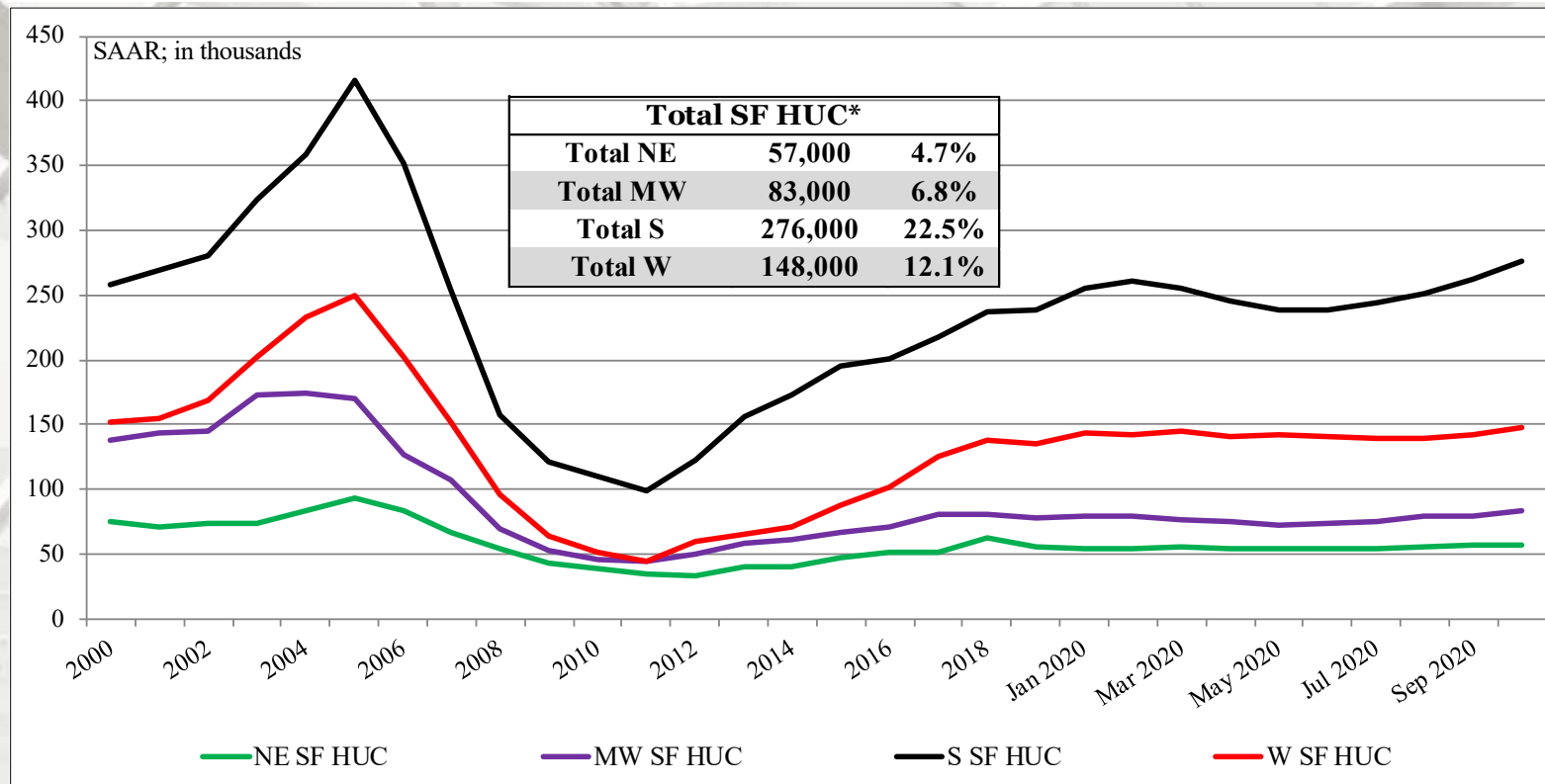


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing under construction units.

SF Housing Under Construction by Region

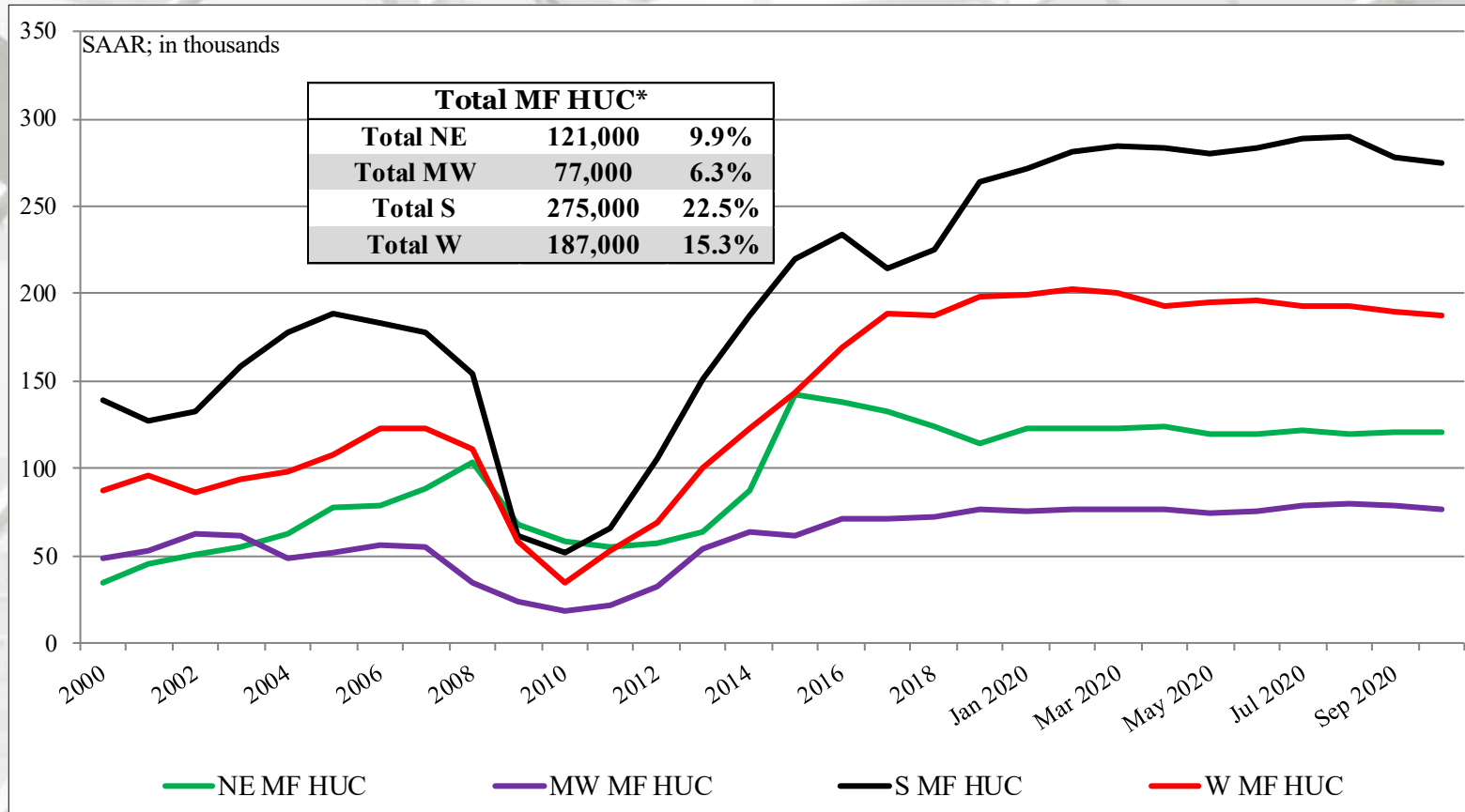


NE = Northeast, MW = Midwest, S = South, W = West.

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

* Percentage of total housing under construction units.

MF Housing Under Construction by Region



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

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

* Percentage of total housing under construction units.

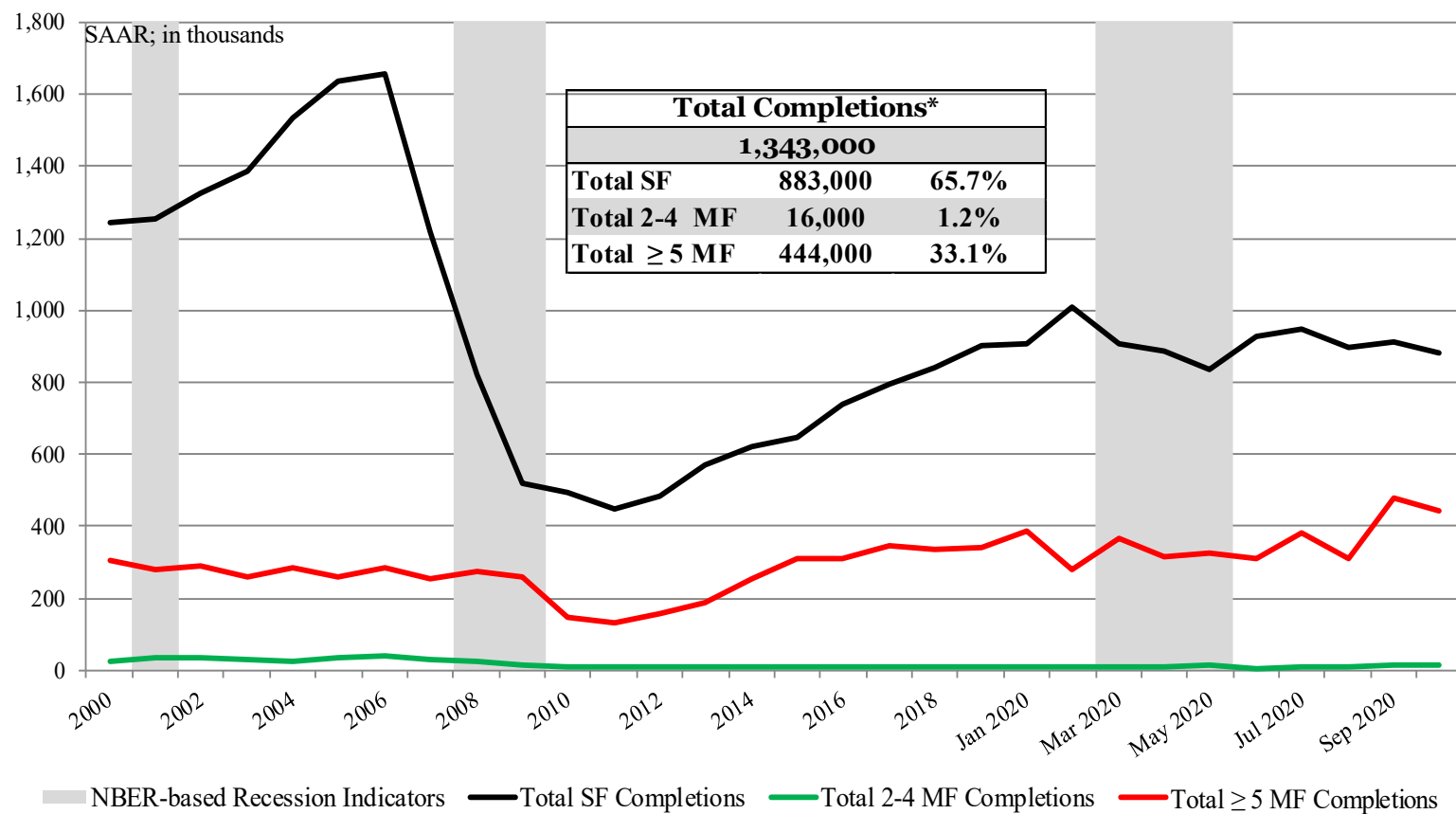
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
October	1,343,000	883,000	16,000	444,000
September	1,406,000	914,000	13,000	479,000
2019	1,274,000	920,000	6,000	348,000
M/M change	-4.5%	-3.4%	23.1%	-7.3%
Y/Y change	5.4%	-4.0%	166.7%	27.6%

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

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

Total Housing Completions



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

* Percentage of total housing completions

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

New Housing Completions by Region

	NE Total	NE SF	NE MF**
October	97,000	62,000	35,000
September	95,000	45,000	50,000
2019	119,000	59,000	60,000
M/M change	2.1%	37.8%	-30.0%
Y/Y change	-18.5%	5.1%	-41.7%
	MW Total	MW SF	MW MF
October	196,000	115,000	81,000
September	201,000	121,000	80,000
2019	159,000	119,000	40,000
M/M change	-2.5%	-5.0%	1.3%
Y/Y change	23.3%	-3.4%	102.5%

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

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

* Percentage of total housing completions

New Housing Completions by Region

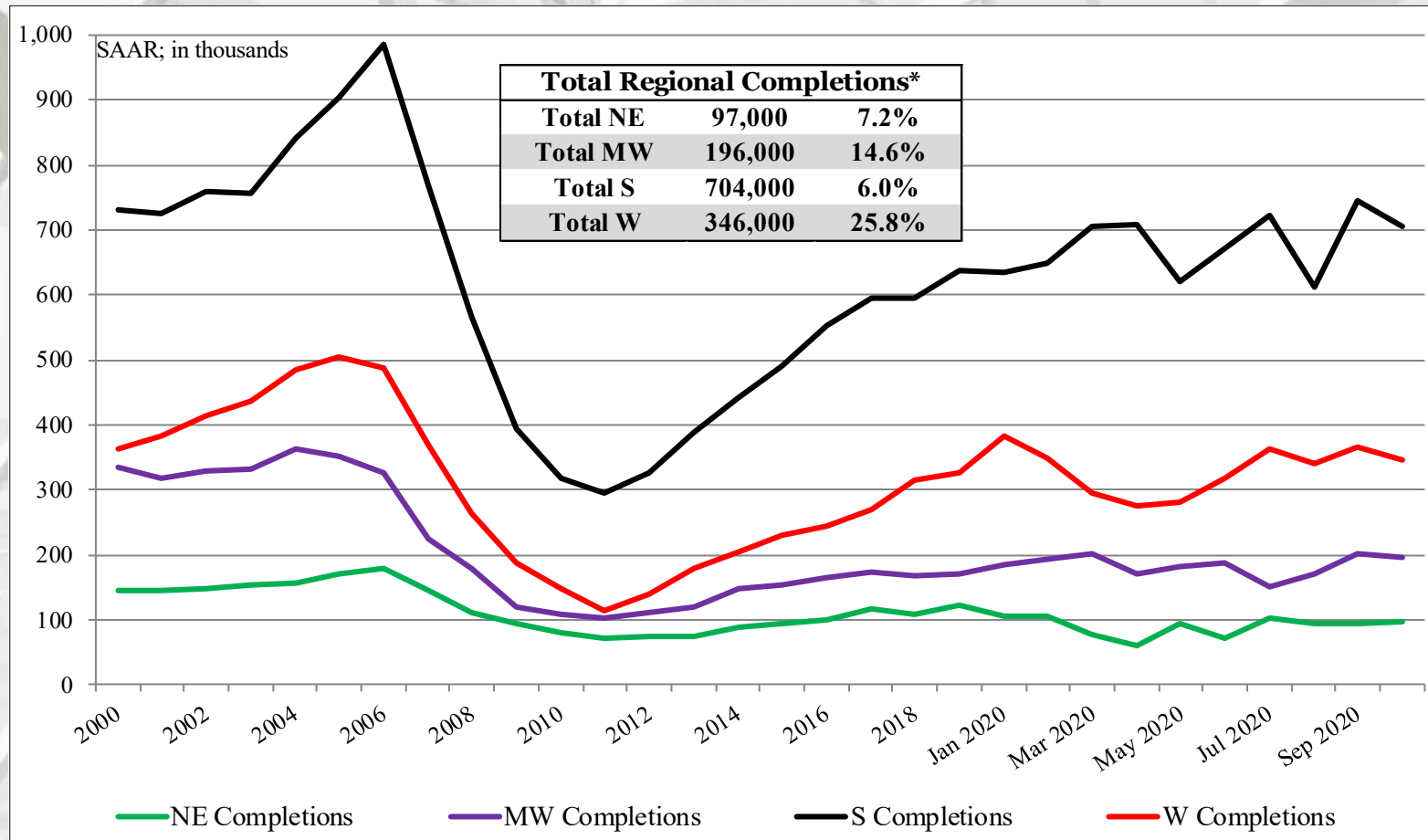
	S Total	S SF	S MF**
October	704,000	482,000	222,000
September	744,000	499,000	245,000
2019	635,000	509,000	126,000
M/M change	-5.4%	-3.4%	-9.4%
Y/Y change	10.9%	-5.3%	76.2%
	W Total	W SF	W MF
October	346,000	224,000	122,000
September	366,000	249,000	117,000
2019	361,000	233,000	128,000
M/M change	-5.5%	-10.0%	4.3%
Y/Y change	-4.2%	-3.9%	-4.7%

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

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

* Percentage of total housing completions

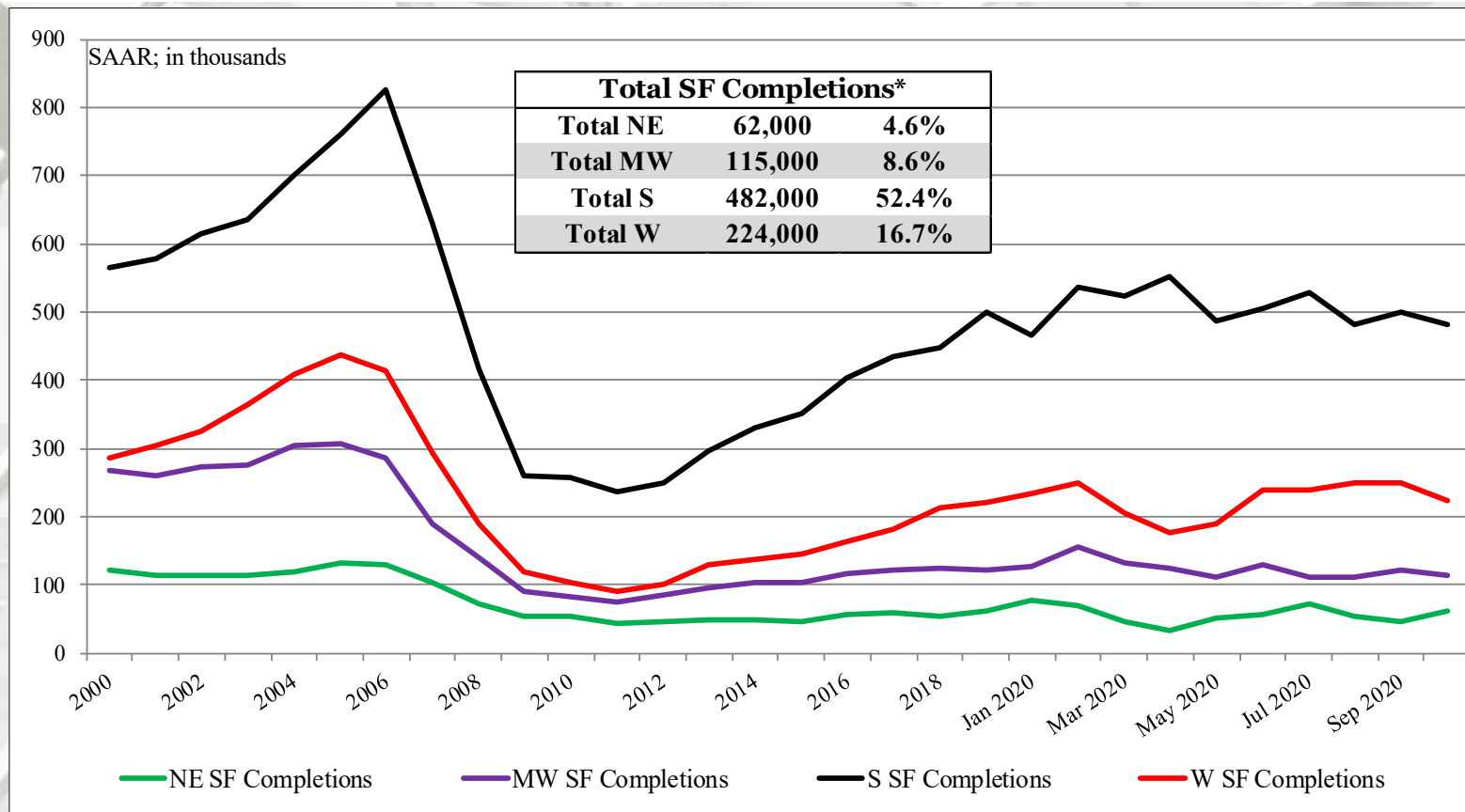
Total Housing Completions by Region



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

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

SF Housing Completions by Region

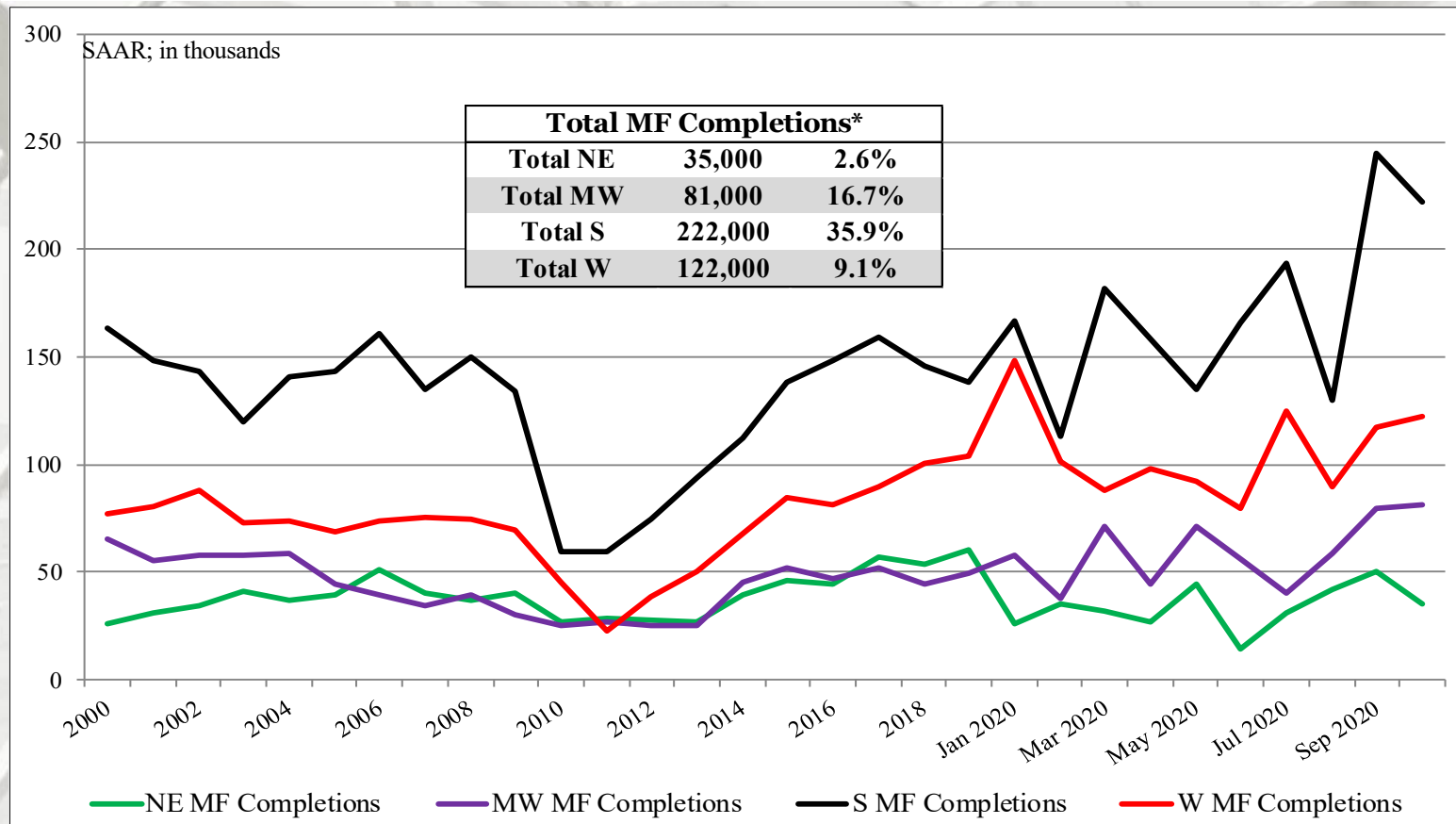


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing completions

MF Housing Completions by Region



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

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

* Percentage of total housing completions

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
October	999,000	\$330,600	\$386,200	3.3
September	1,002,000	\$331,600	\$403,900	3.3
2019	706,000	\$322,400	\$380,300	5.5
M/M change	-0.3%	-0.3%	-4.4%	0.0%
Y/Y change	41.5%	2.5%	1.6%	-40.0%

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

New SF sales were more than the consensus forecast³ of 975 m (range: 945 m to 1,035 m). The past three month's new SF sales data also were revised:

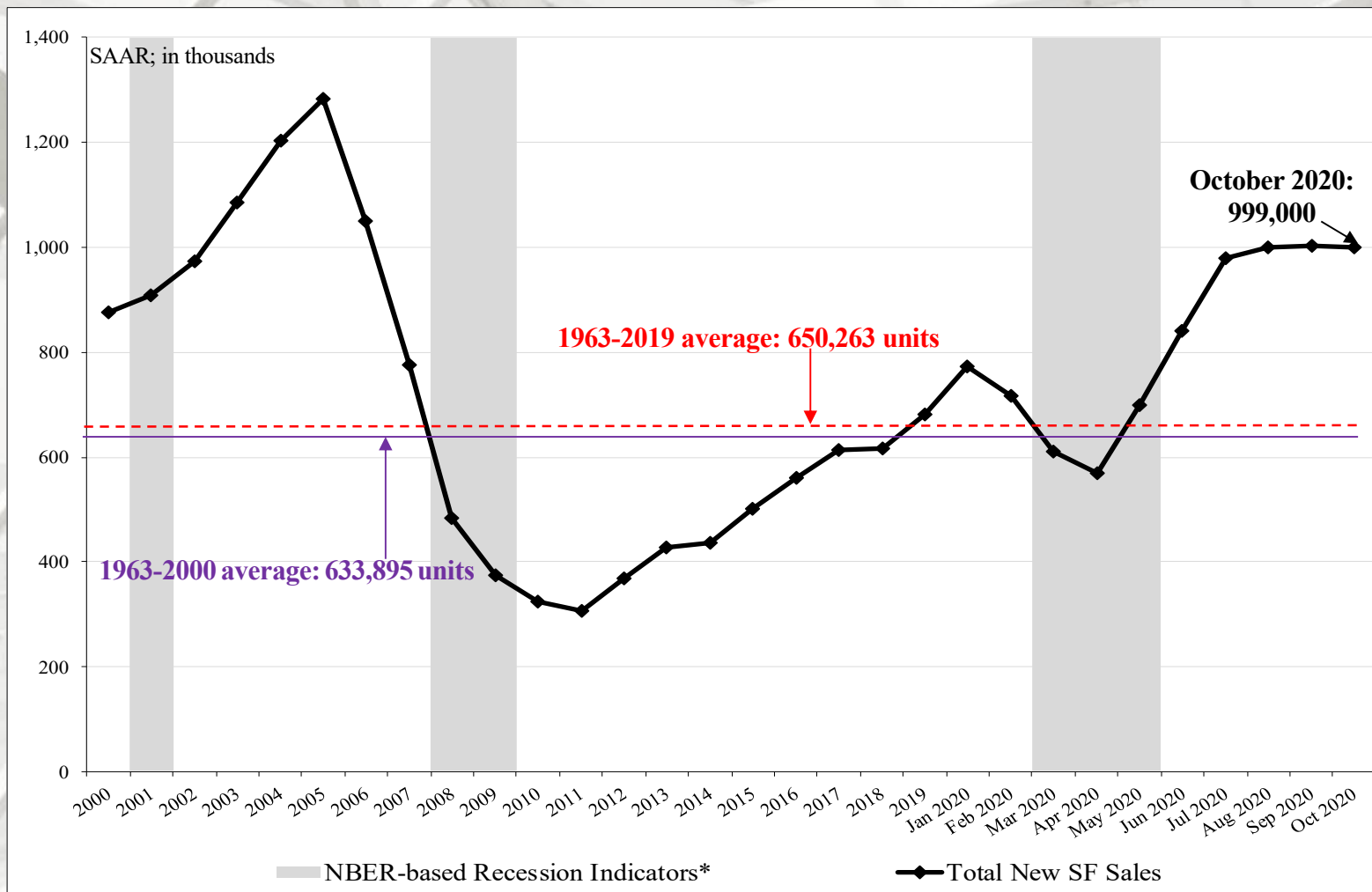
July initial:	901m, revised to 979 m;
August initial:	1,011m, revised to 1,001 m;
September initial:	959m, revised to 1,002 m.

Sources: ¹ <https://www.census.gov/construction/nrs/index.html>; 11/25/20; ² <https://www.census.gov/construction/nrs/pdf/newressales.pdf>

³ <http://us.econoday.com/>; 11/25/20

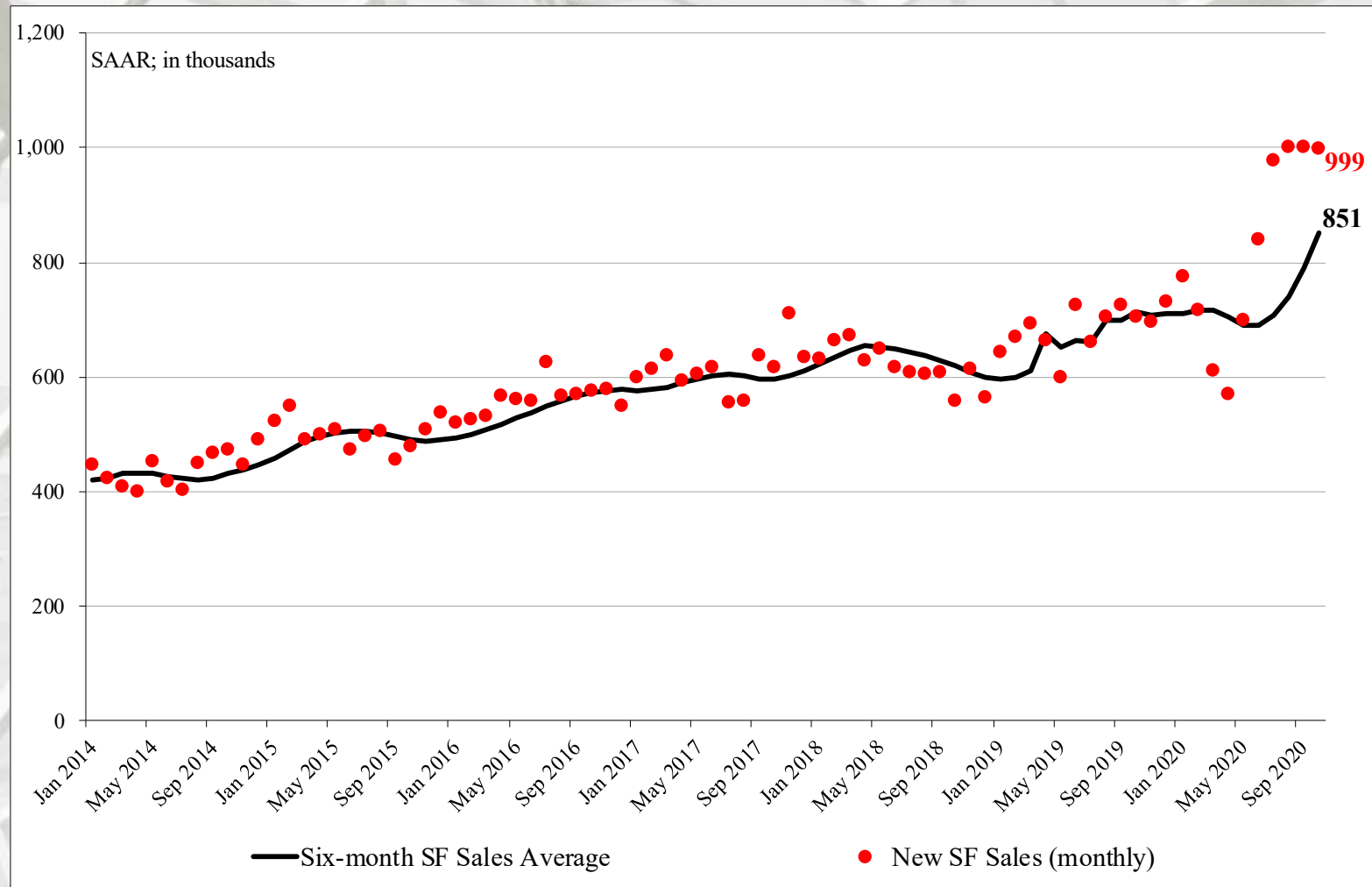
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New SF House Sales



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

New SF Housing Sales: Six-month average & monthly



New SF House Sales by Region and Price Category

	NE	MW	S	W
October	41,000	109,000	580,000	269,000
September	39,000	98,000	592,000	273,000
2019	22,000	72,000	414,000	198,000
M/M change	5.1%	11.2%	-2.0%	-1.5%
Y/Y change	86.4%	51.4%	40.1%	35.9%

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.

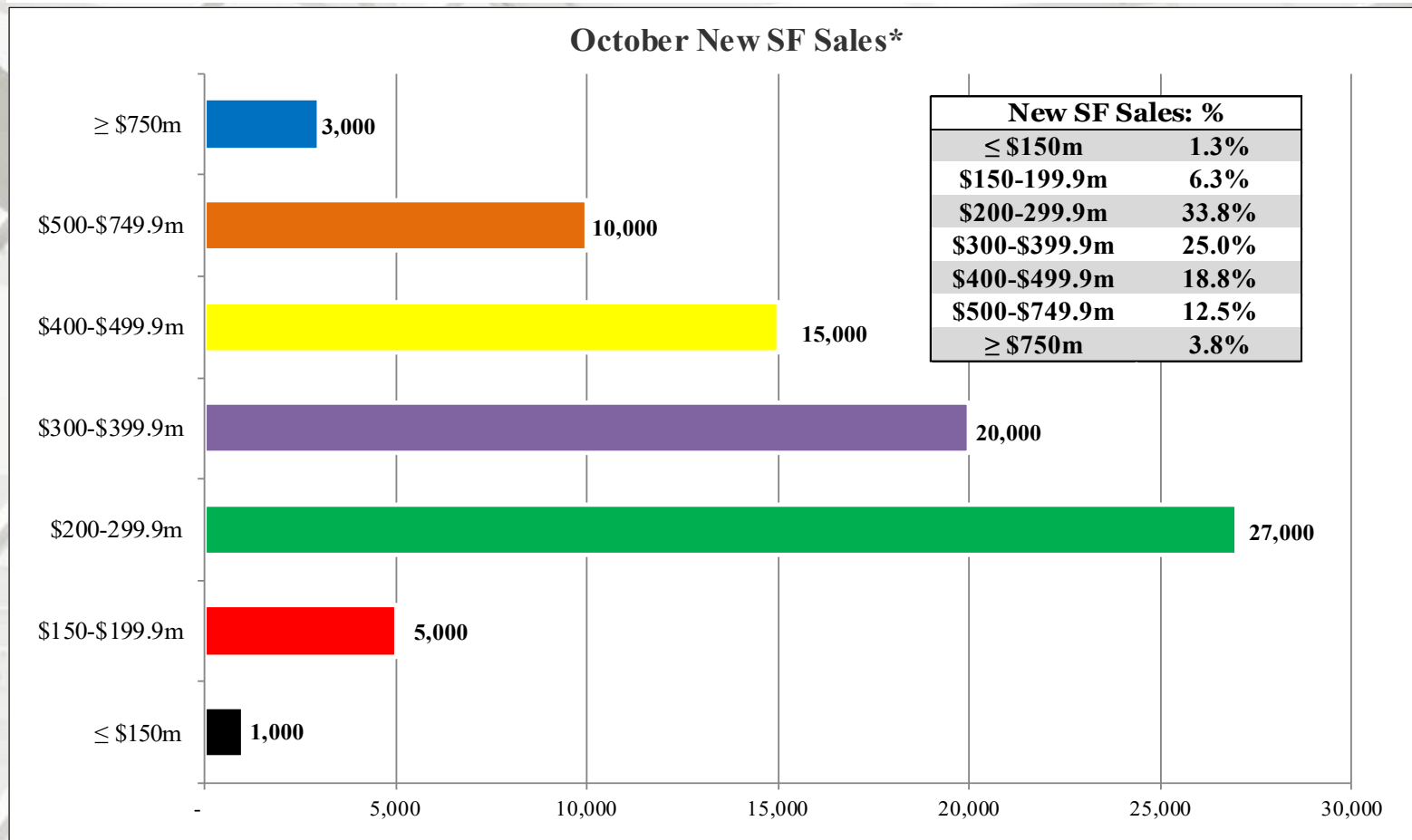
⁵ Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} <https://www.census.gov/construction/nrs/index.html>; 11/25/20;

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

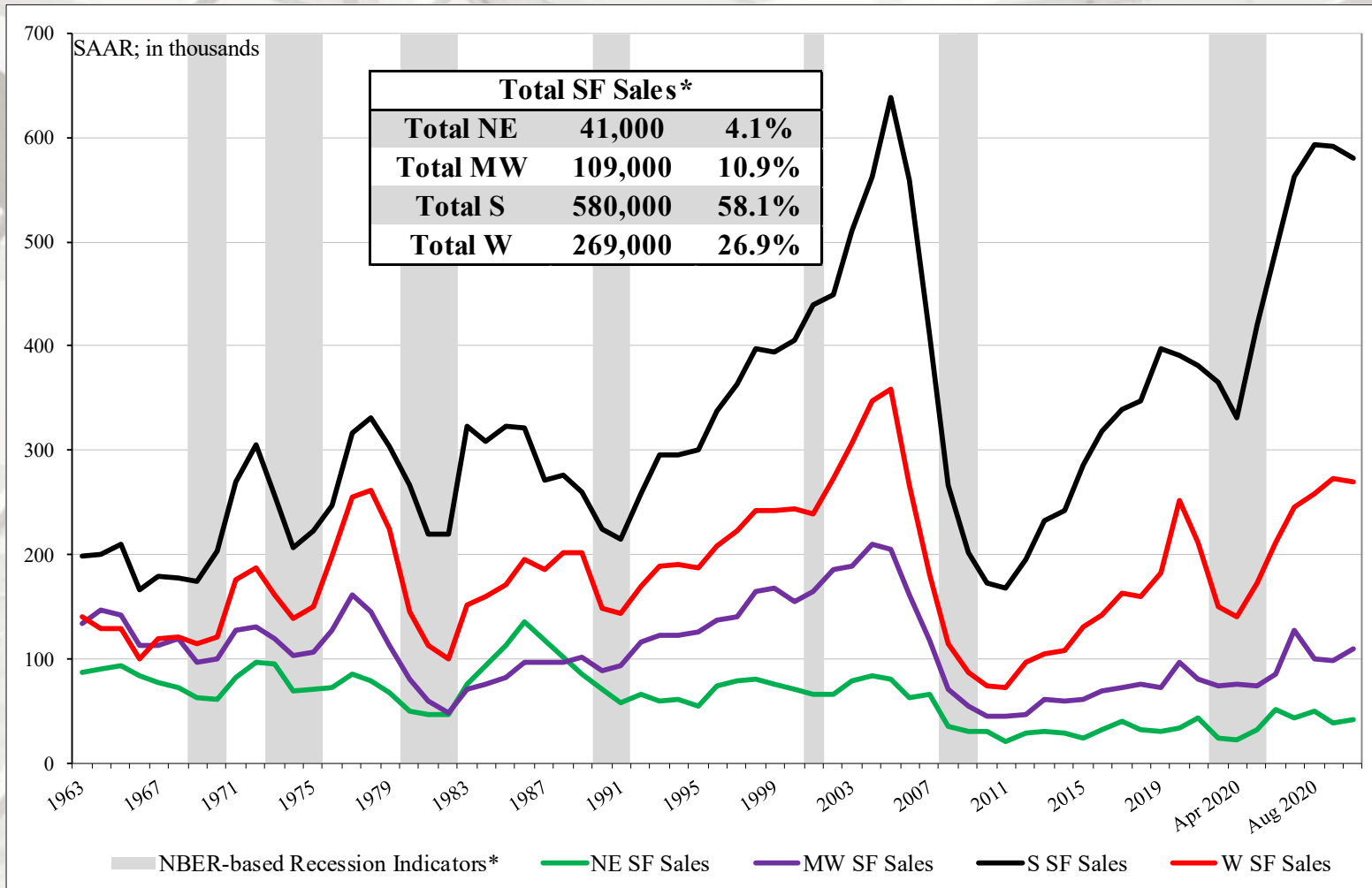
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New SF House Sales



- Total new sales by price category and percent.

New SF House Sales by Region

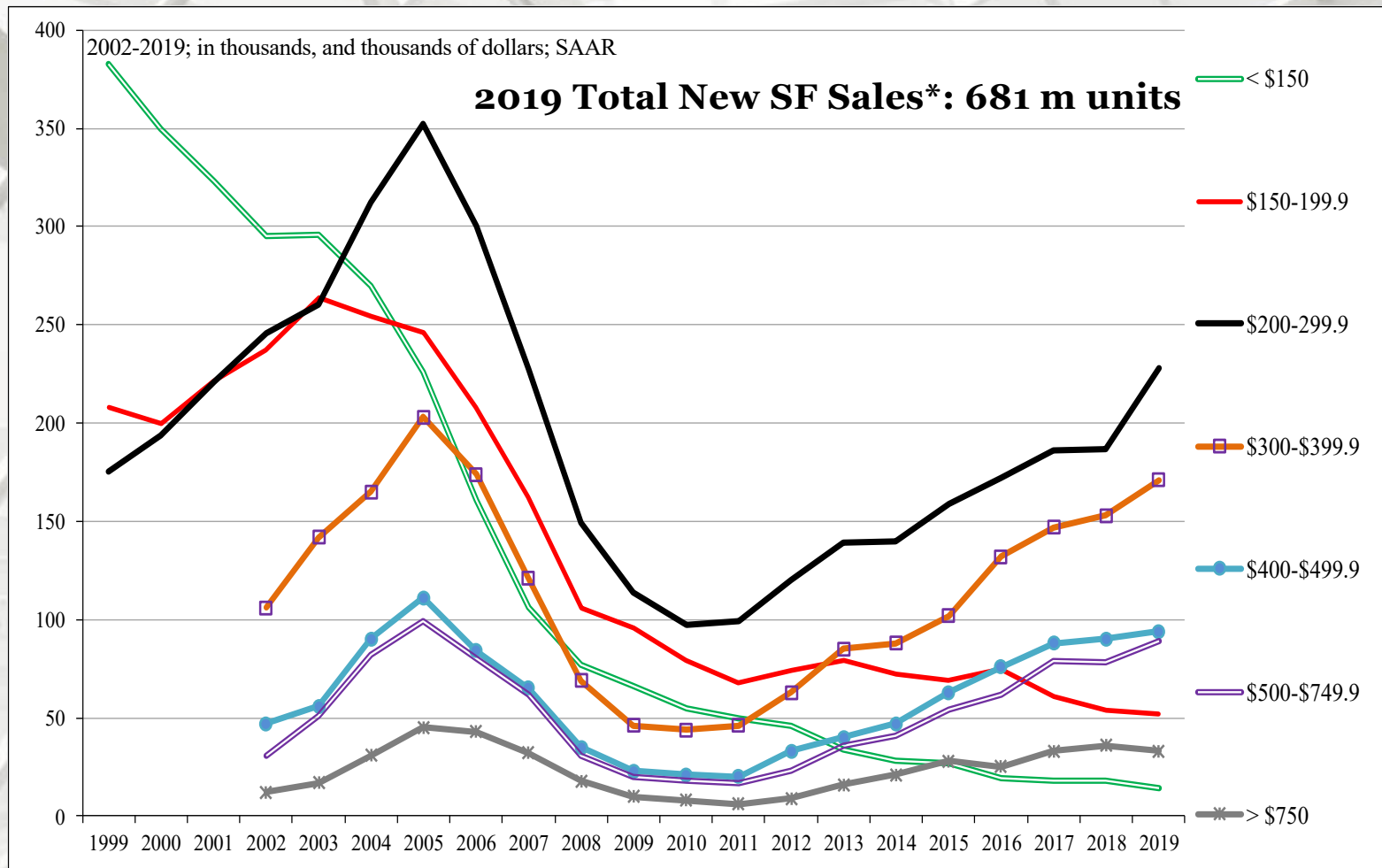


NE = Northeast; MW = Midwest; S = South; W = West

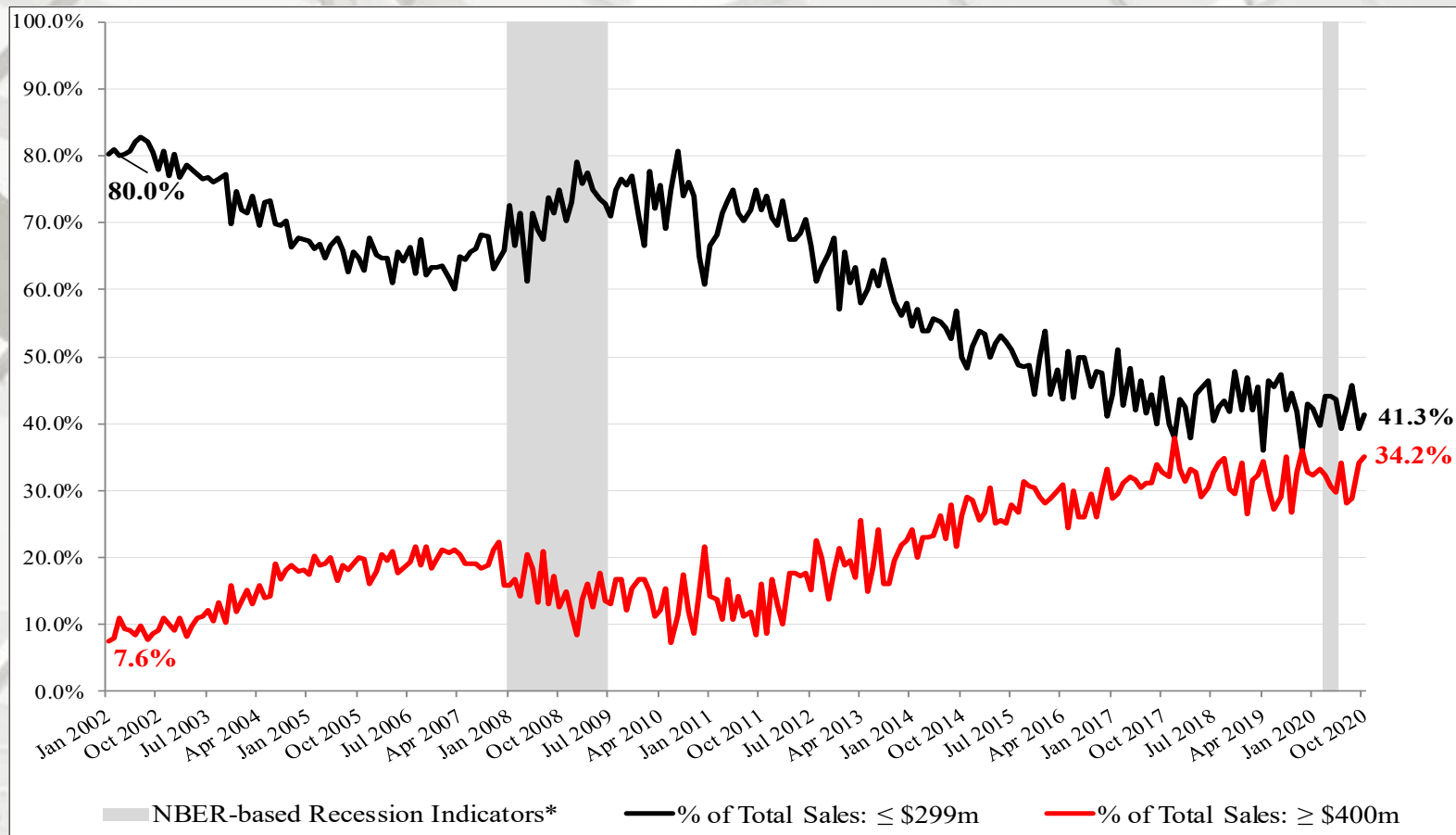
* Percentage of total new sales.

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

New SF House Sales by Price Category



New SF House Sales



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

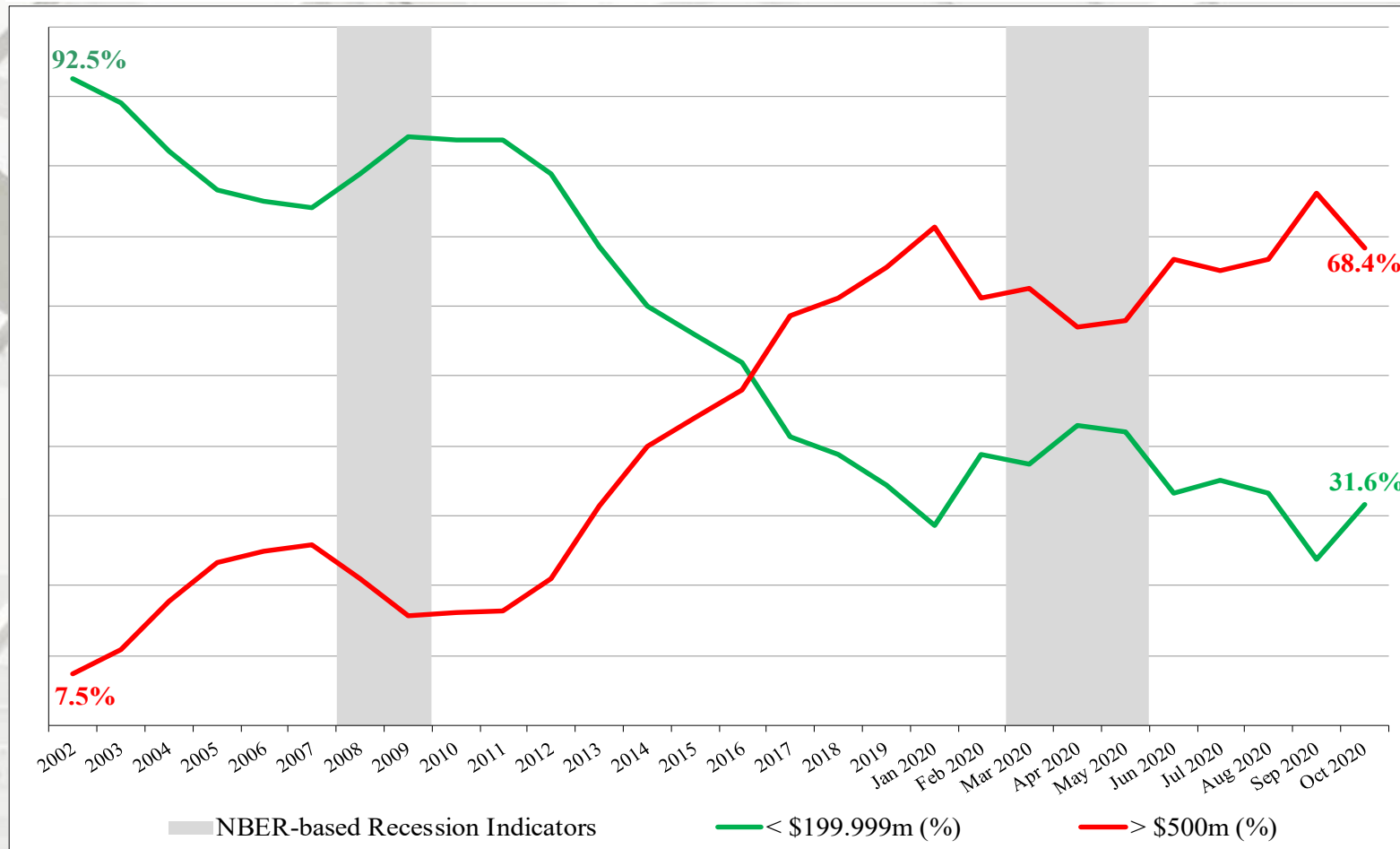
New SF Sales: ≤ \$200m and ≥ \$400m: 2002 – October 2020

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 10/26//20

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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: $\leq \$200m$ and $\geq \$500m$: 2002 to October 2020

The number of $\leq \$200$ thousand SF houses has declined dramatically since 2002^{1, 2}. Subsequently, from 2012 onward, the $\geq \$500$ thousand class has soared (on a percentage basis) in contrast to the $\leq \$200m$ class. One of the most oft mentioned reasons for this occurrence is builder net margins.

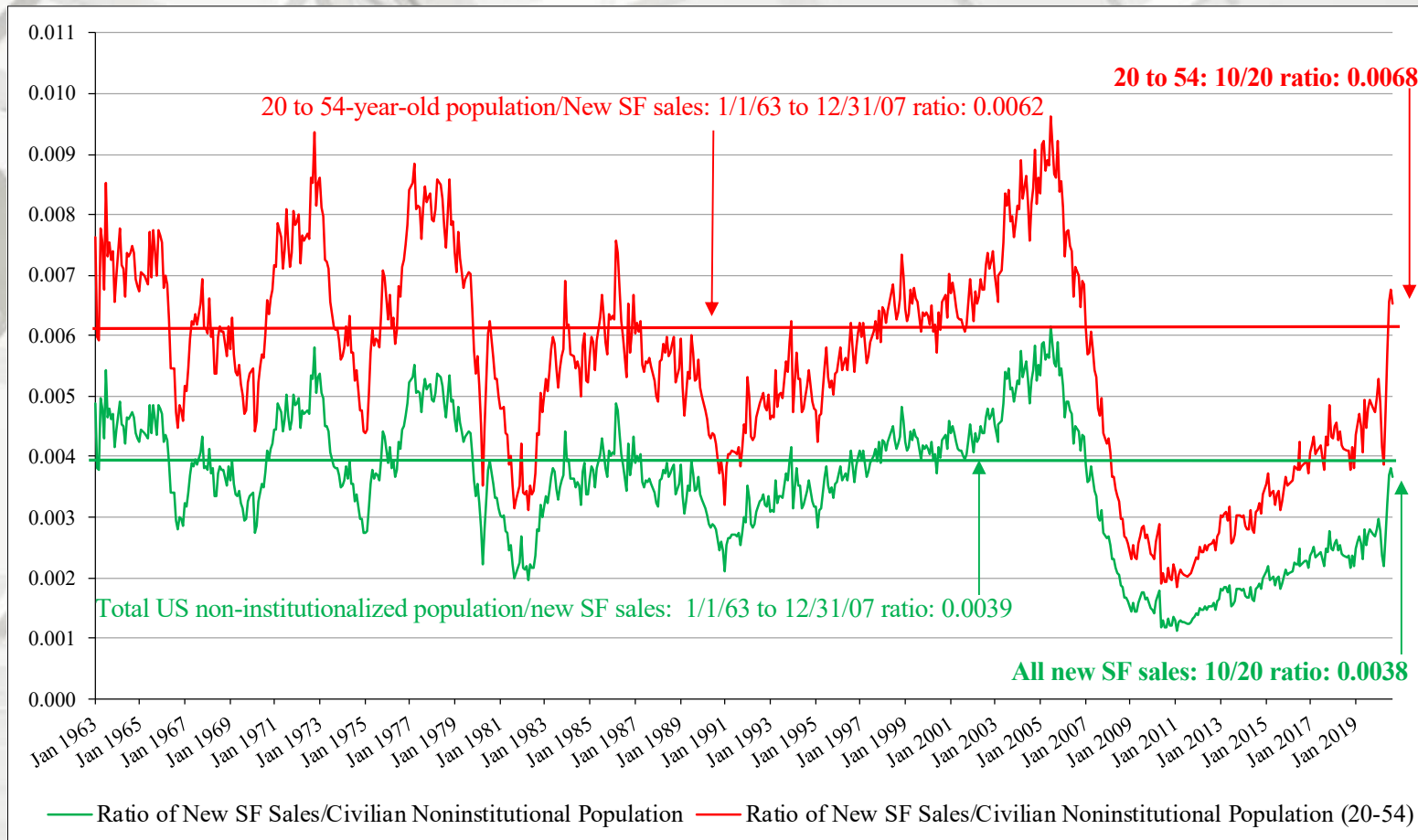
Note: Sales values are not adjusted for inflation.

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 11/25/20

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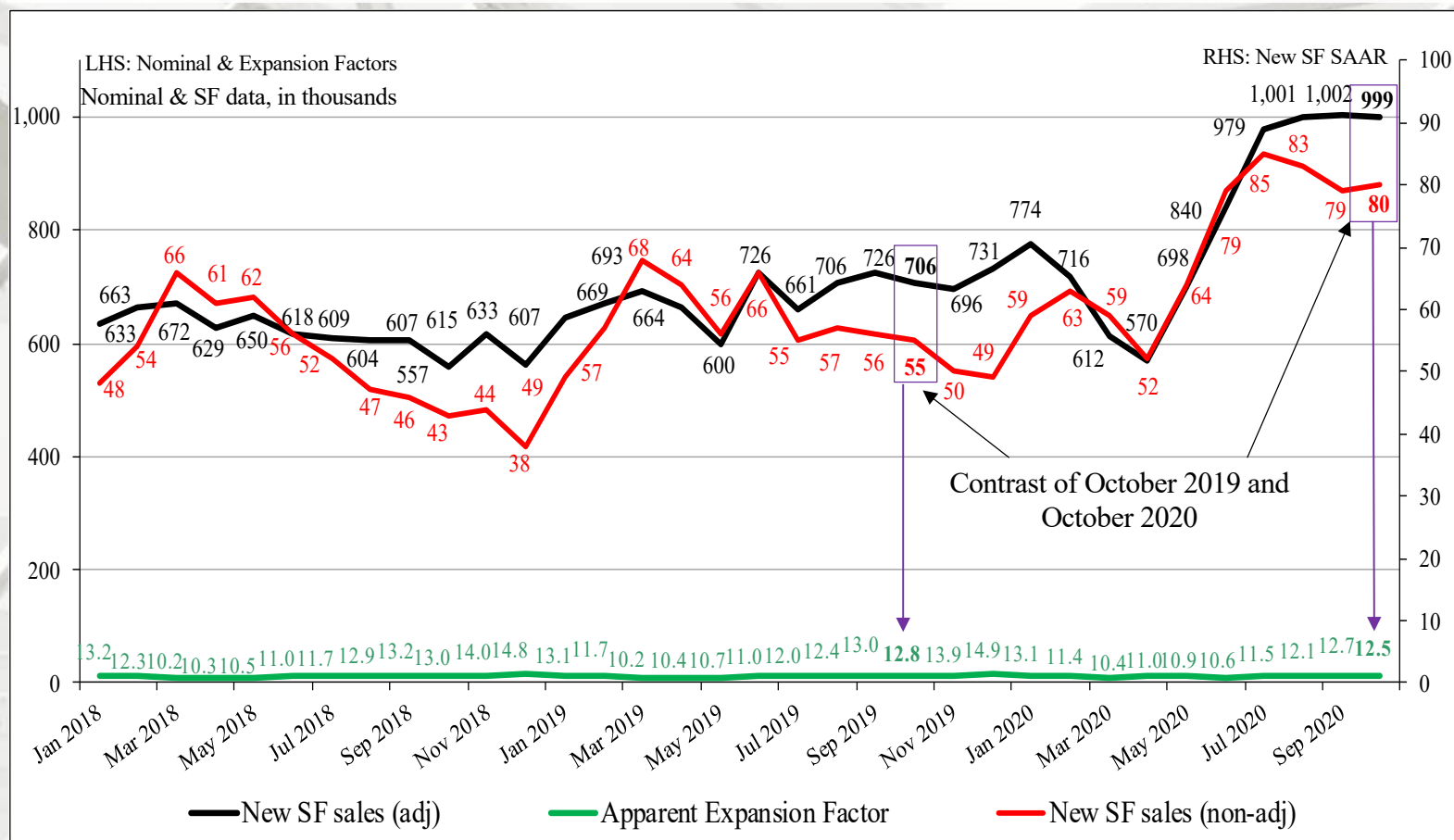
New SF House Sales



New SF sales adjusted for the US population

From January 1963 to January 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in October 2020 it was 0.0038 – no change from September. The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in October 2020 it was 0.0068 – 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.

Nominal vs. SAAR New SF House Sales



Nominal and Adjusted New SF Monthly Sales

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

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

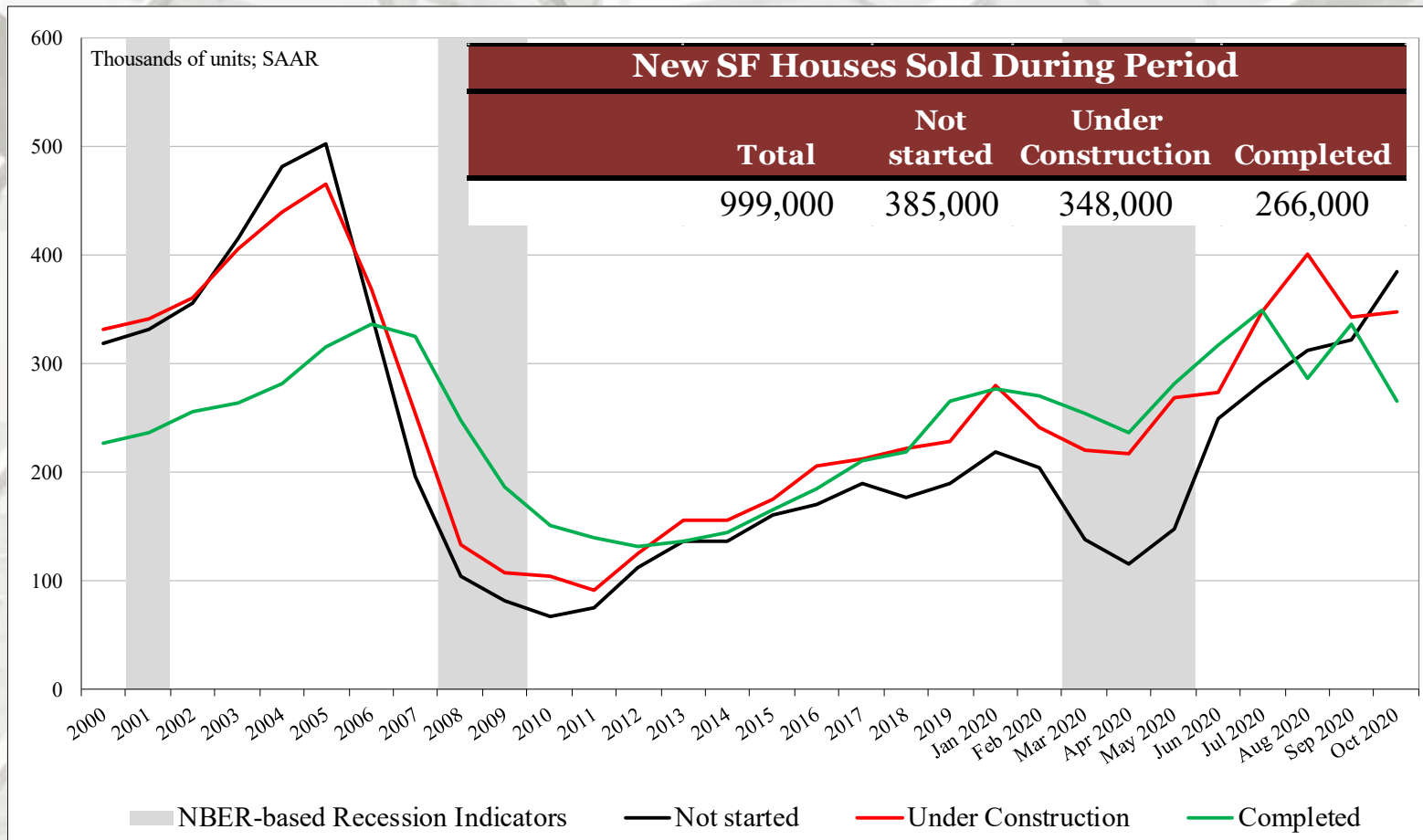
New SF House Sales

New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
October	999,000	385,000	348,000	266,000
September	1,002,000	322,000	343,000	337,000
2019	706,000	201,000	237,000	268,000
M/M change	-0.3%	19.6%	1.5%	-21.1%
Y/Y change	41.5%	91.5%	46.8%	-0.7%
Total percentage		38.5%	34.8%	26.6%

SAAR

New SF House Sales: Sold During Period



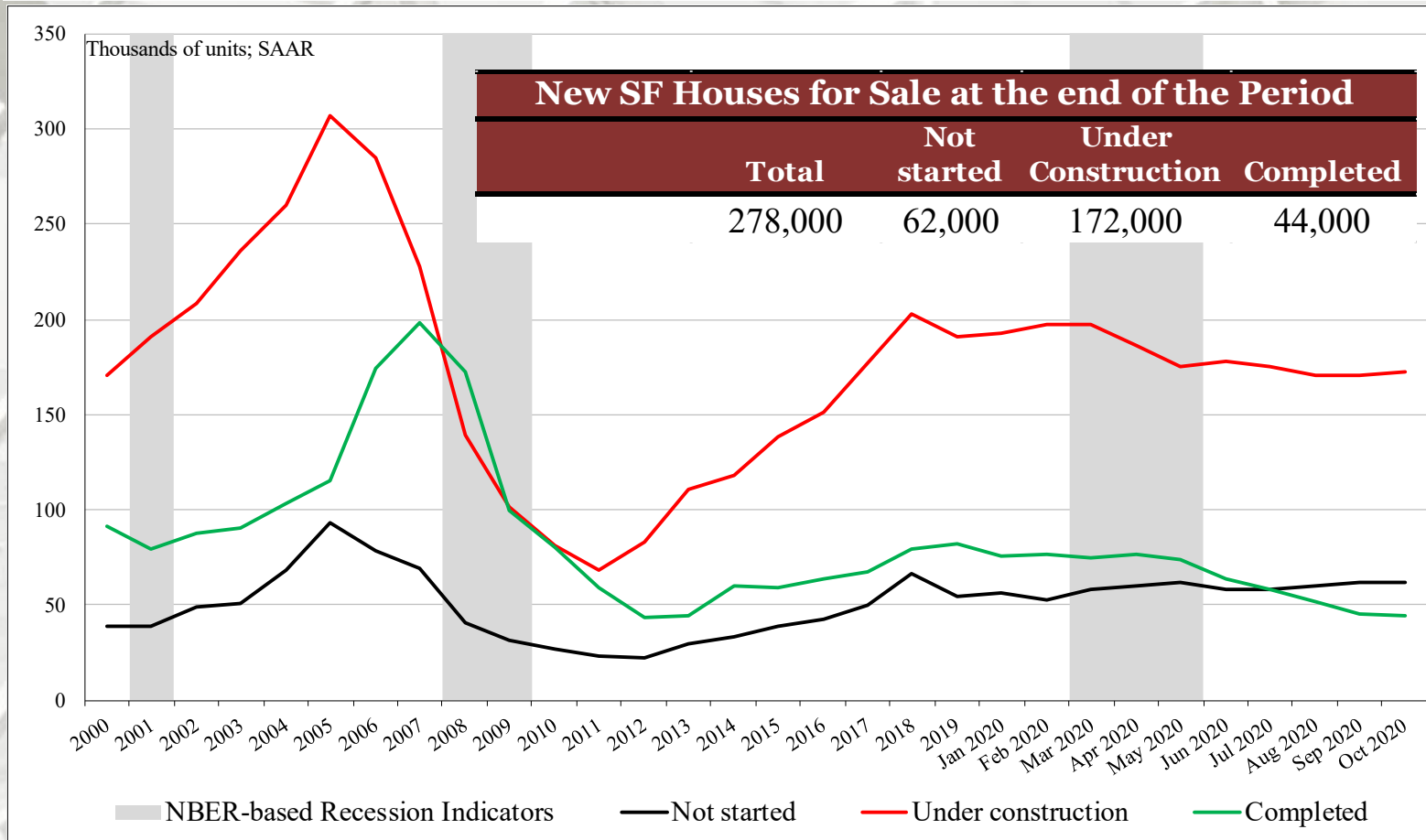
* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF 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	278,000	62,000	172,000	44,000
September	278,000	62,000	171,000	45,000
2019	321,000	52,000	192,000	77,000
M/M change	0.0%	0.0%	0.6%	-2.2%
Y/Y change	-13.4%	19.2%	-10.4%	-42.9%
Total percentage		22.3%	61.9%	15.8%

Sales of homes “Not started” registered an increase in October.

New SF House Sales: For Sale at End of Period



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

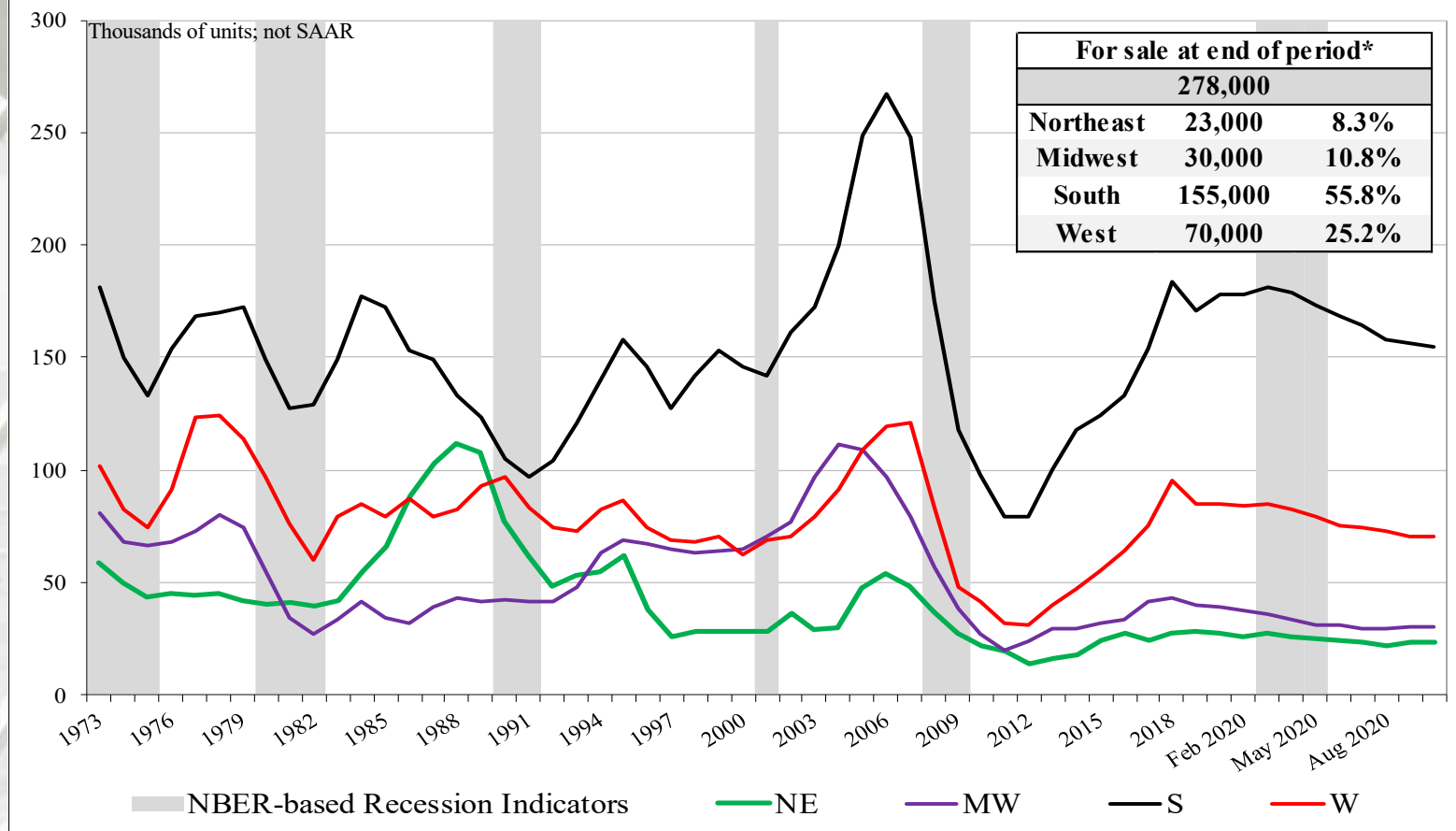
New SF House Sales

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

	Total	NE	MW	S	W
October	278,000	23,000	30,000	155,000	70,000
September	279,000	23,000	30,000	156,000	70,000
2019	324,000	29,000	39,000	171,000	86,000
M/M change	-0.4%	0.0%	0.0%	-0.6%	0.0%
Y/Y change	-14.2%	-20.7%	-23.1%	-9.4%	-18.6%

* Not SAAR

New SF Houses for Sale at End of Period by Region

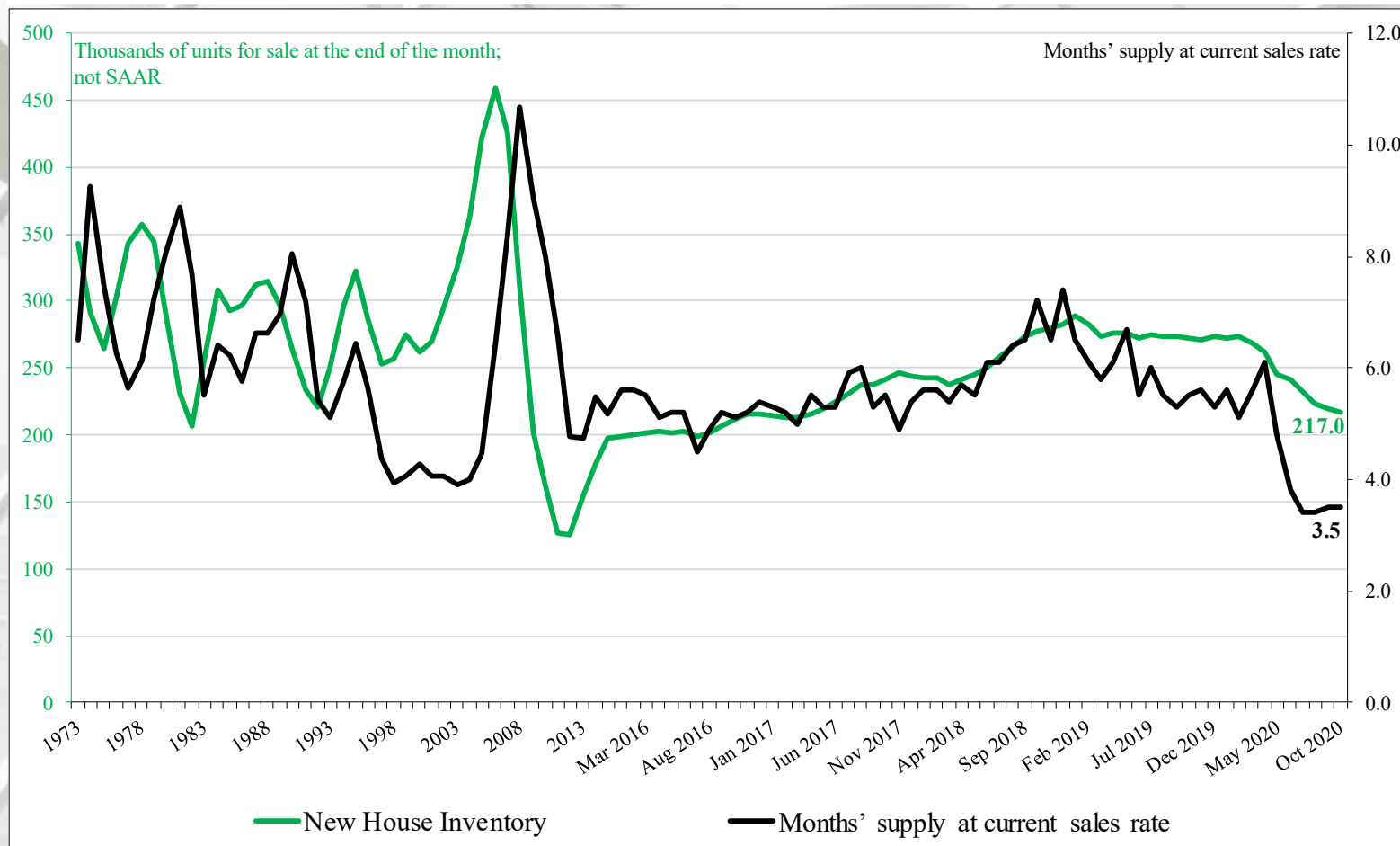


NE = Northeast; MW = Midwest; S = South; W = West

* Percentage of new SF sales.

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

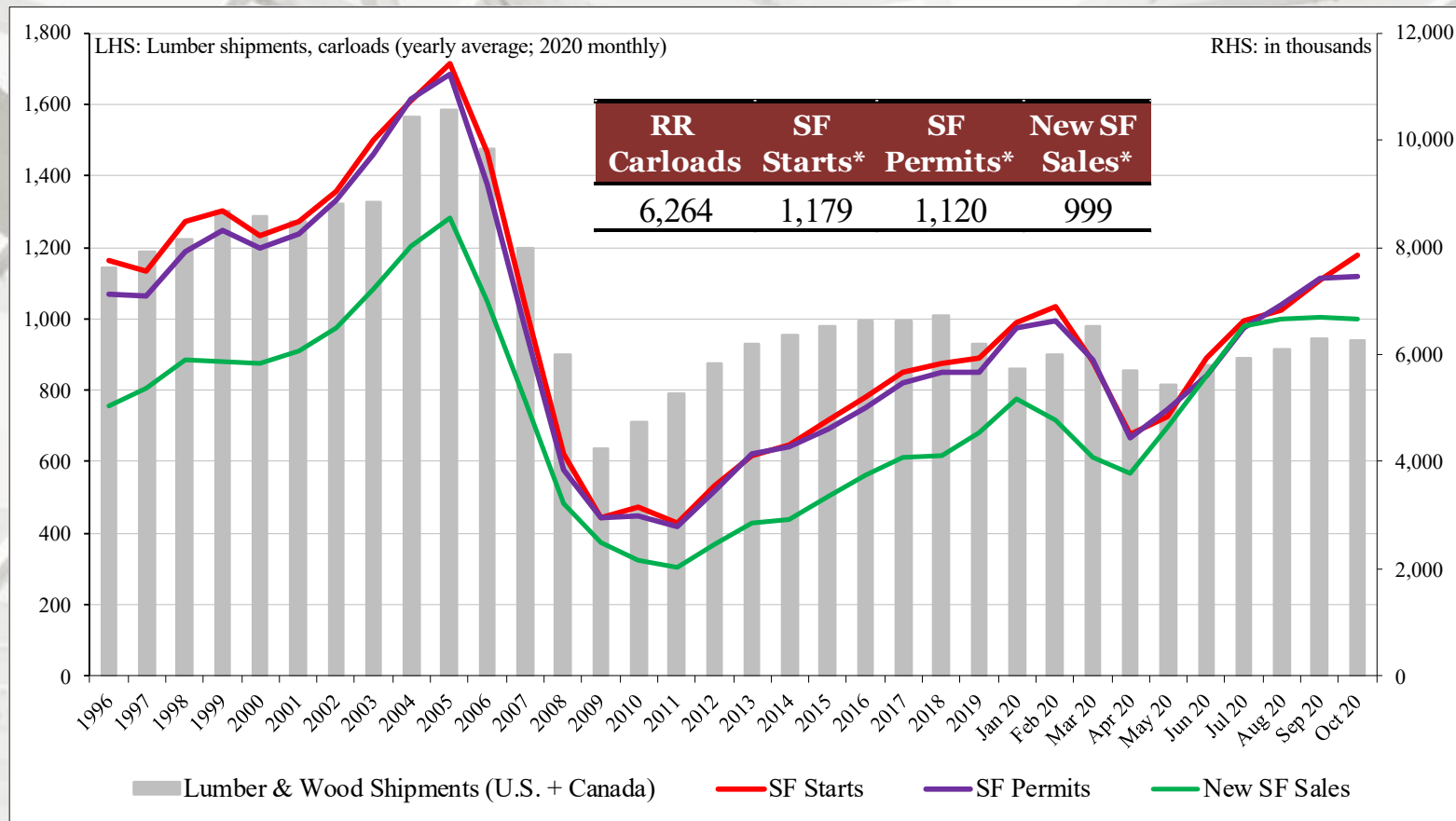
Months' Supply and New House Inventory^a



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

The months supply of new houses for sale was 3.6 months in October. Historic lows of 3.5 months were reported in June and August of 2003.

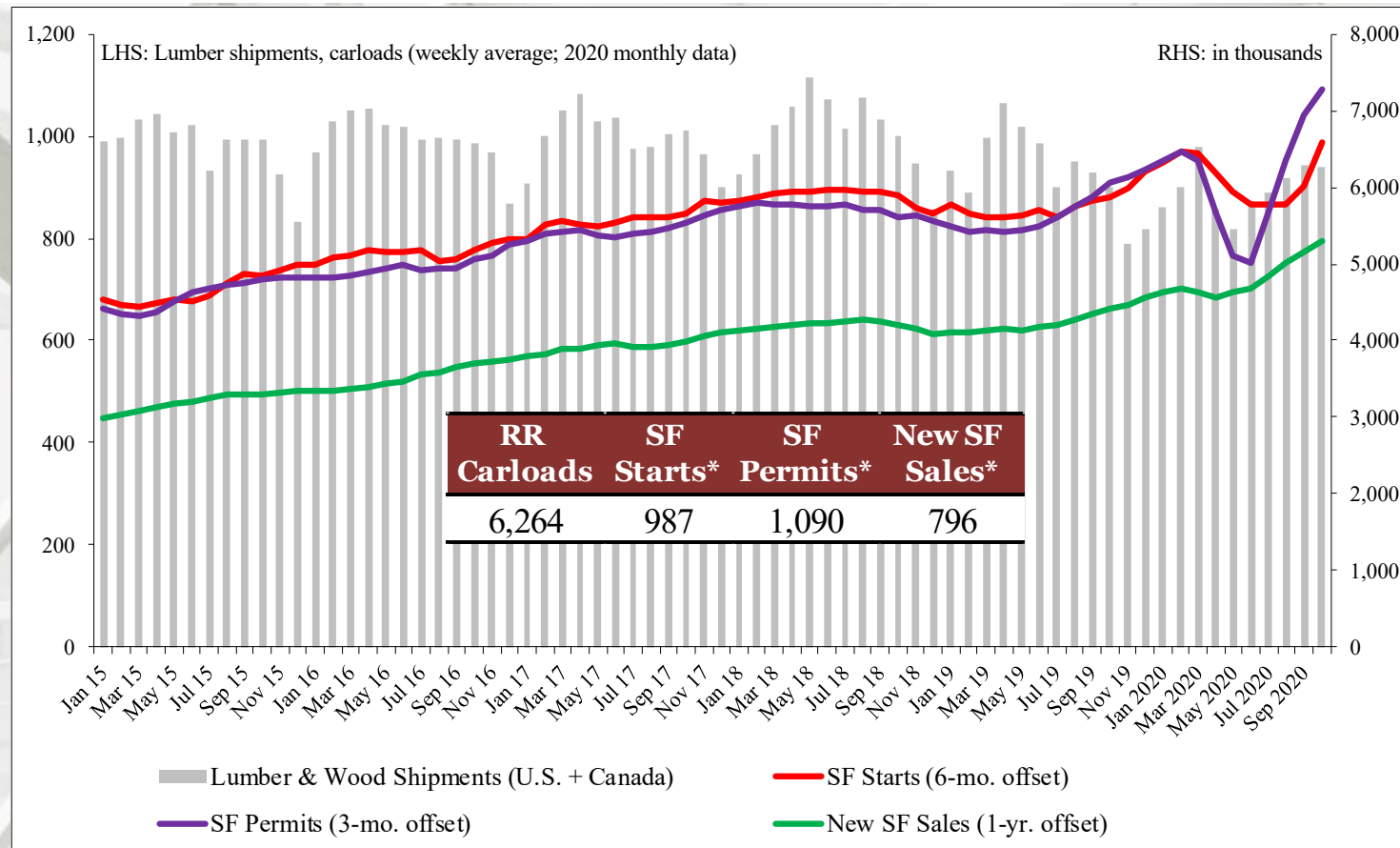
U.S.-Canada Lumber & Wood Shipments vs. SF Starts, Permits, and New Sales



Carloads of Canadian + US lumber and wood shipments to the US are contrasted above to U.S. housing metrics. 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 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 2020 data is on a monthly basis.

* In thousands

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



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

* In thousands

October 2019 Construction Spending

	Total Private Residential*	SF	MF	Improvement**
October	\$637,138	\$324,023	\$90,162	\$222,953
September	\$619,090	\$306,935	\$89,110	\$223,045
2019	\$556,693	\$286,035	\$76,126	\$194,532
M/M change	2.9%	5.6%	1.2%	0.0%
Y/Y change	14.5%	13.3%	18.4%	14.6%

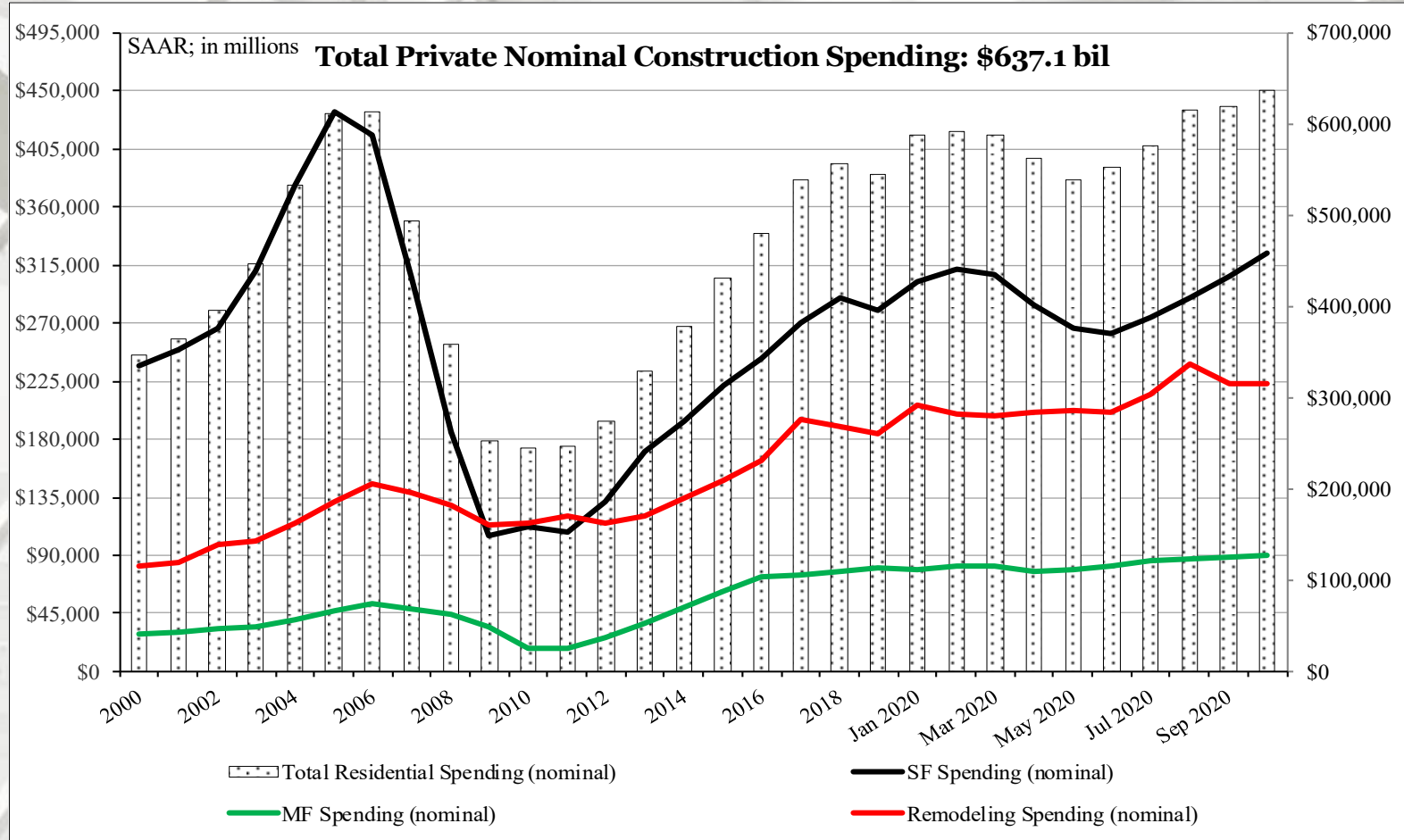
* billion.

** 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\$.

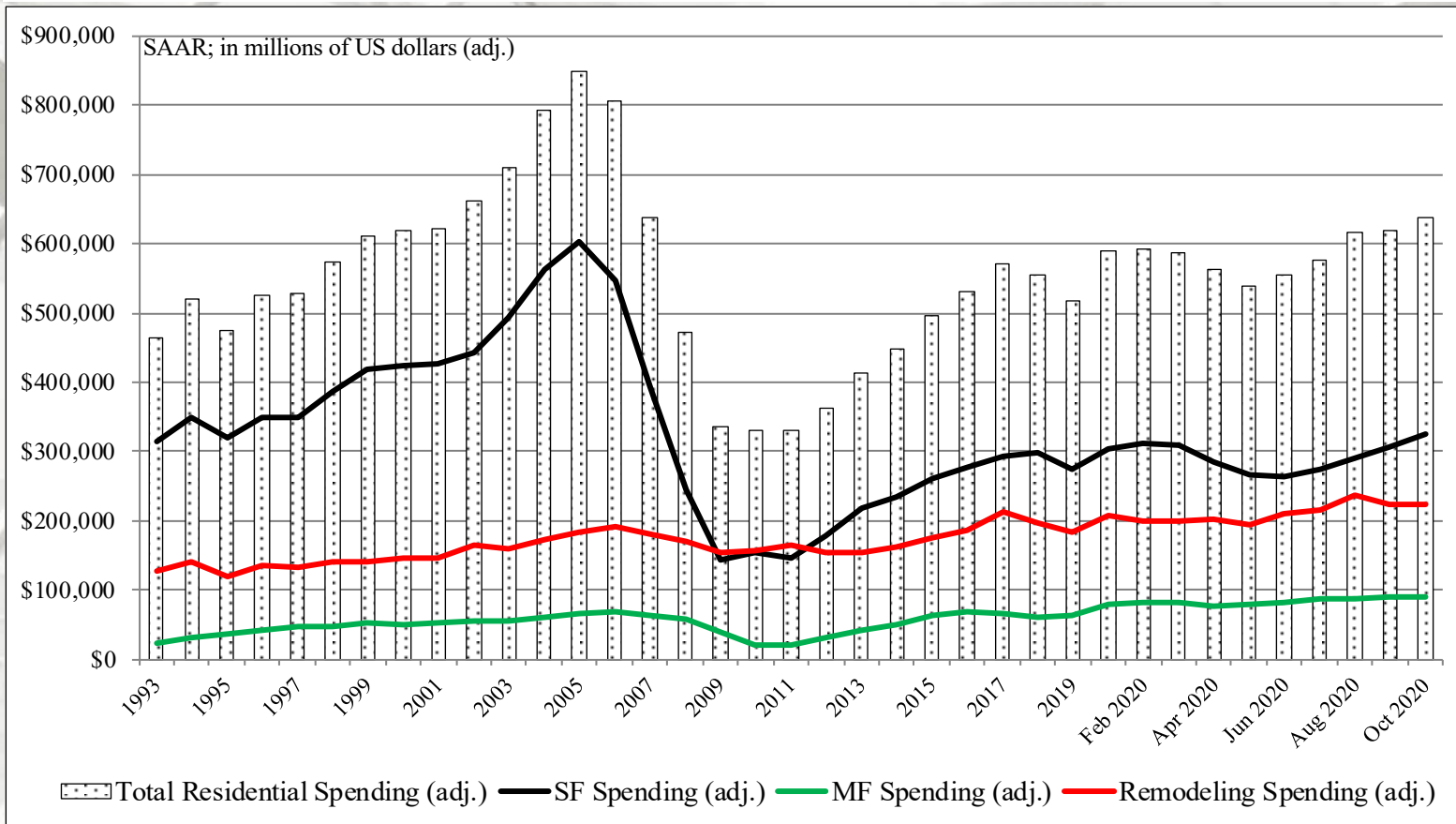
Total Construction Spending (nominal): 2000 – October 2020



Reported in nominal US\$.

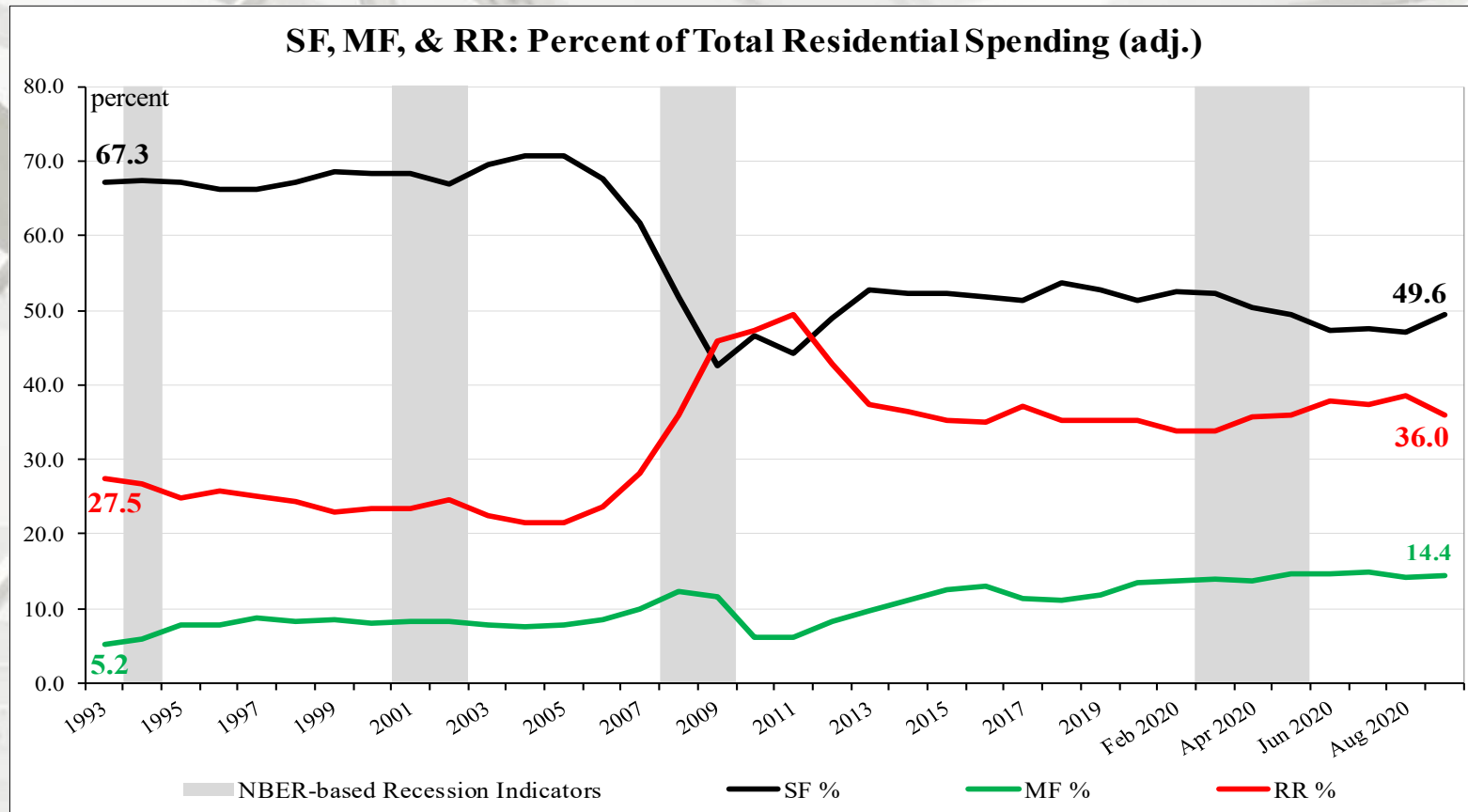
The US DOC does not report improvement spending directly, this is a monthly estimation for 2020.

Total Construction Spending (adjusted): 1993-October 2020



Reported in adjusted US\$: 1993 – 2018 (adjusted for inflation, BEA Table 1.1.9); January to October 2020 reported in nominal US\$.

Construction Spending Shares: 1993 to October 2020



Total Residential Spending: 1993 through 2006

SF spending average: 69.2%

MF spending average: 7.5 %

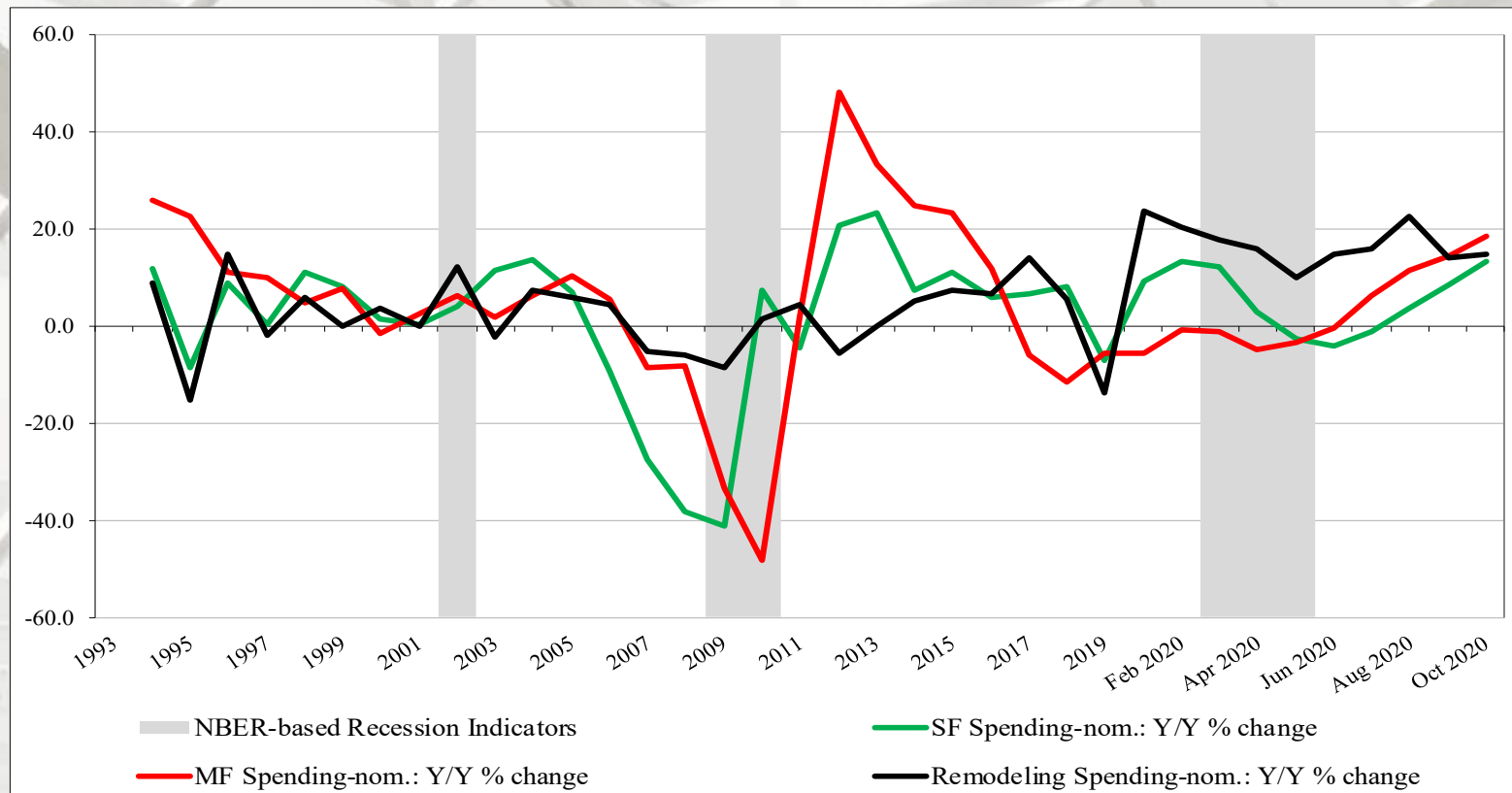
Residential remodeling (RR) spending average: 23.3 % (SAAR).

Note: 1993 to 2019 (adjusted for inflation, BEA Table 1.1.9); January-October 2020 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>, 6/8/20; <http://www.census.gov/construction/c30/pdf/privsa.pdf>; 12/1/20 and <http://www.bea.gov/iTable/iTable.cfm>; 3/2/20

Adjusted Construction Spending: Y/Y Percentage Change, 1993 to October 2020

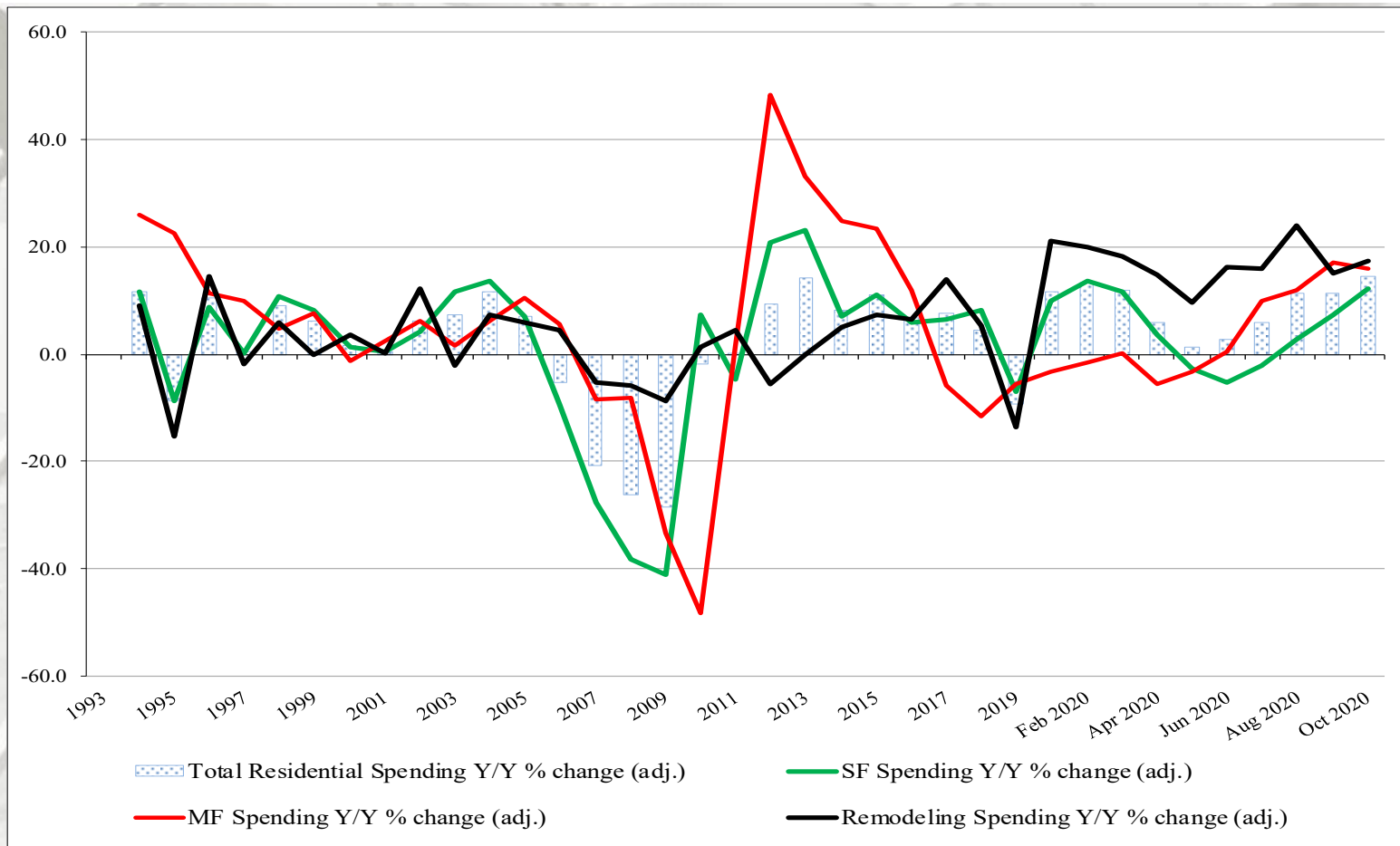


Nominal Residential Construction Spending: Y/Y percentage change, 1993 to October 2020

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 (2020 data reported in nominal dollars).

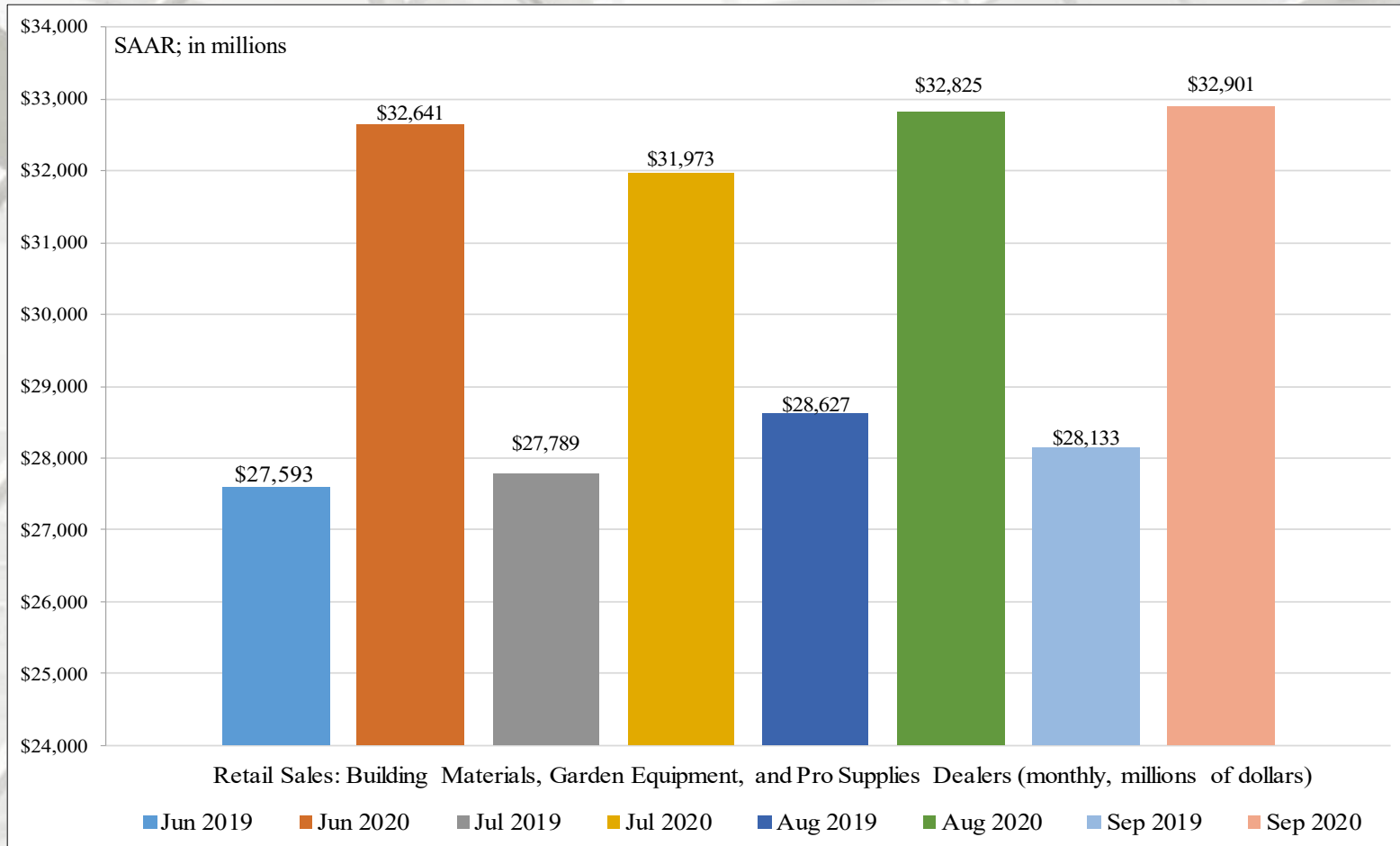
* NBER based Recession Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Adjusted Construction Spending: Y/Y Percentage Change, 1993 to October 2020



Remodeling

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

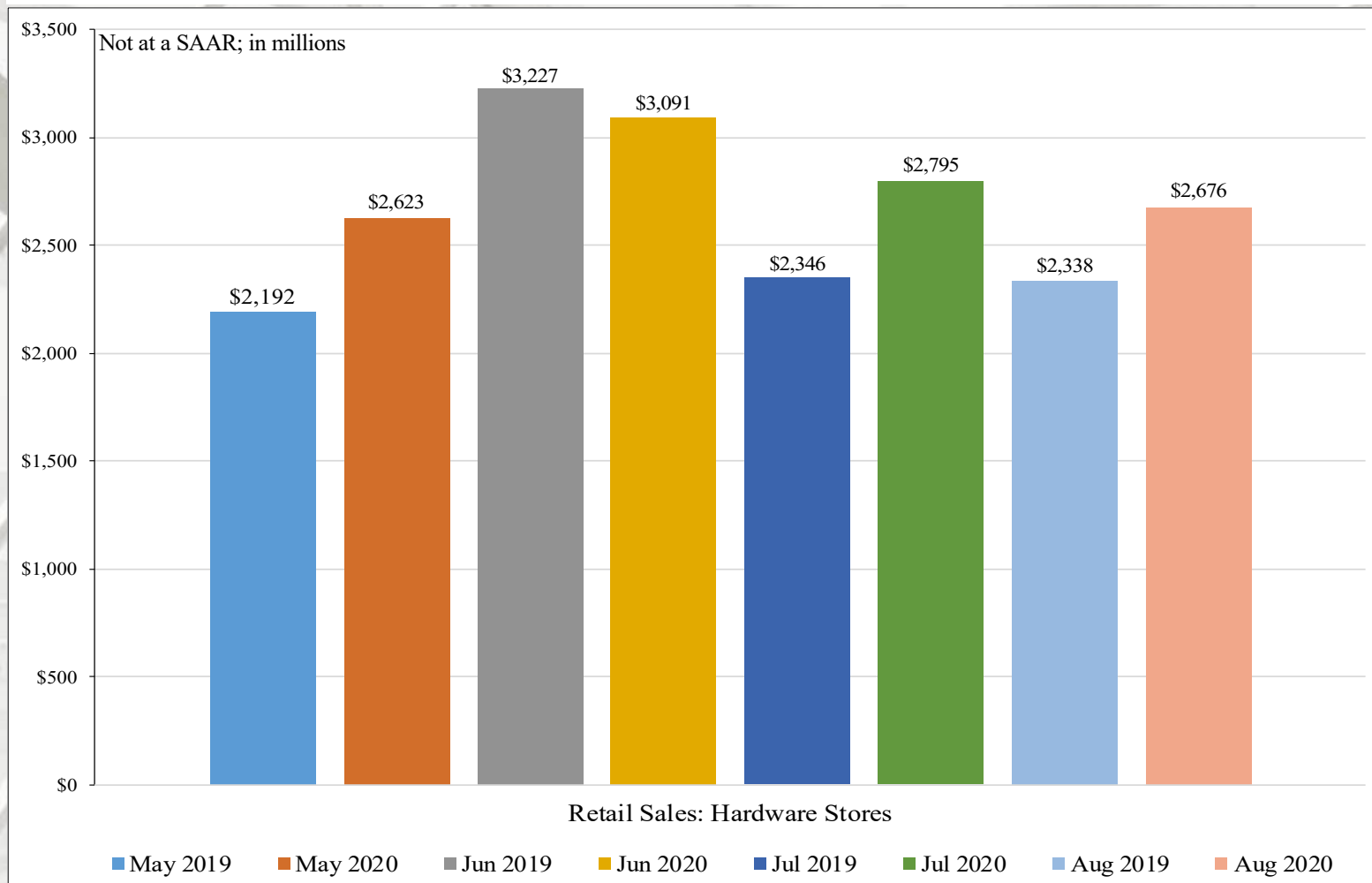


Building materials, Garden Equipment, & PRO Supply Dealers: NAICS 4441

NAICS 4441 sales increased 2.7% from August to September and improved 14.1% from September 2019 (on a non-adjusted basis).

Remodeling

Retail Sales: Hardware Stores



Hardware Stores: NAICS 44413

NAICS 44413 retail sales increased 14.5% from July to August and improved 14.5% from August 2019 (on a non-adjusted basis).

Sources: <https://www.census.gov/retail/index.html>; 12/9/20

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Remodeling

ProRemodeler

The New Normal: What Will Stick?

Some business practices will revert back to the way they were after the pandemic – while others are forever changed.

How the client will change post-pandemic

- “1) Clients will continue to make their home a top priority.
- 2) Clients will care deeply about who they are working with and who will be safe in their space.
- 3) Clients will see their house as having many functions, not just shelter.
- 4) Clients will focus on the health and safety of their sanctuary such as air and water quality.
- 5) Clients will be comfortable interacting virtually to make decisions and discuss the project.
- 6) Clients will want to stay put vs. moving if they like the community and the outdoor space.
- 7) Older clients will not want to move into assisted living where illness is more likely. Instead, they will try to remain in their home.
- 8) Men will be more active in the design and decision making process because they are home more.
- 9) Contactless interactions will continue to be important.
- 10) Reputation and differentiation will far outweigh costs in the decision process.– Mark Richardson, ProRemodeler

Remodeling

ProRemodeler

The New Normal: What Will Stick?

How remodeling projects will change

- “1) Outdoor living is here to stay in a big way.
- 2) Vintage styling is always popular, but clients will be less comfortable bringing old items into their homes.
- 3) Bathroom and kitchens will remain hot.
- 4) Open spaces will not be as desirable as defined rooms.
- 5) Energy efficiency will be here to stay.
- 6) Mud rooms will become the sanitation filter for entering the home.
- 7) Healthy materials will be a preferred choice.
- 8) Air and water systems will become the norm.
- 9) An innovative home office may become the most important room.
- 10) Project type and focus may shift with scarcity of certain materials. ... ” – Mark Richardson, ProRemodeler

Remodeling

Metrostudy/Zonda

RRI: Remodeling Market Remains Strong, But Economic Uncertainty Looms in 2021

Metrostudy/Zonda projects remodeling activity will see quarterly declines beginning in the first quarter of 2021

“Big-ticket remodeling spending increased 9.0% year-over-year (YOY) in the third quarter of 2020 and 1.4% from the second quarter, according to the latest Residential Remodeling Index (RRI) released by Metrostudy/Zonda. The Q3 2020 reading of 132.6 indicates economic conditions known to impact remodeling are 32.6% higher than the old peak in 2007.

The third quarter RRI marked the 34th consecutive quarter of annual and quarterly gains since national remodeling activity bottomed in 2011. However, Metrostudy/Zonda said forecasts from Moody’s Analytics for the economic and housing variables that are used in the RRI model suggest the streak of quarterly growth will come to an end in the first quarter of 2021. Beginning in the first quarter of 2021, Metrostudy/Zonda projects the RRI will see small quarterly decreases, which will lead to modest YOY decreases starting in the third quarter of 2021. The projected decreases in 2021 will be relatively moderate and the RRI is still expected to increase on an annual basis in 2021. The RRI is forecast to post a 0.4% gain for all of 2021, much lower than the 8.1% gain for the full year in 2020.” – Vincent Salandro, Associate Editor, Remodeling

Remodeling

Metrostudy/Zonda

RRI: Remodeling Market Remains Strong, But Economic Uncertainty Looms in 2021

Metrostudy/Zonda projects remodeling activity will see quarterly declines beginning in the first quarter of 2021

“The projected moderation in remodeling growth for 2021 is mostly due to expectations of a slow employment recovery, a still-fragile economy, and the unknown status of further government stimulus, according to Metrostudy/Zonda. While September employment data indicates the U.S. has recovered 54% of jobs lost since March, Metrostudy/Zonda expressed concern that without another large round of stimulus, high-unemployment, record hospitalizations, new shutdowns, and more workers self-selecting out of the economy could be a recipe that puts the United States at risk of a “double-dip recession.” If another round of stimulus is distributed “wisely,” there is a better likelihood that the economic recovery can maintain the current baseline, according to Metrostudy/Zonda.

In 2020, Metrostudy/Zonda said the remodeling market has benefited from the injection of government stimulus, the strong existing home market, and the “K-shaped” economic recovery. During the recovery, skilled professionals whose employment situation has been relatively unchanged by the pandemic comprise the top part of the “K” and doing fine, while those on the bottom of the “K” are struggling or facing “serious near-term struggles,” according to Metrostudy/Zonda. Workers at the top of the “K” also have unleashed large amounts of pent-up spending on their homes, making upgrades with money that would have otherwise been spent on vacations or going out.” – Vincent Salandro, Associate Editor, Remodeling

Remodeling

Metrostudy/Zonda

RRI: Remodeling Market Remains Strong, But Economic Uncertainty Looms in 2021

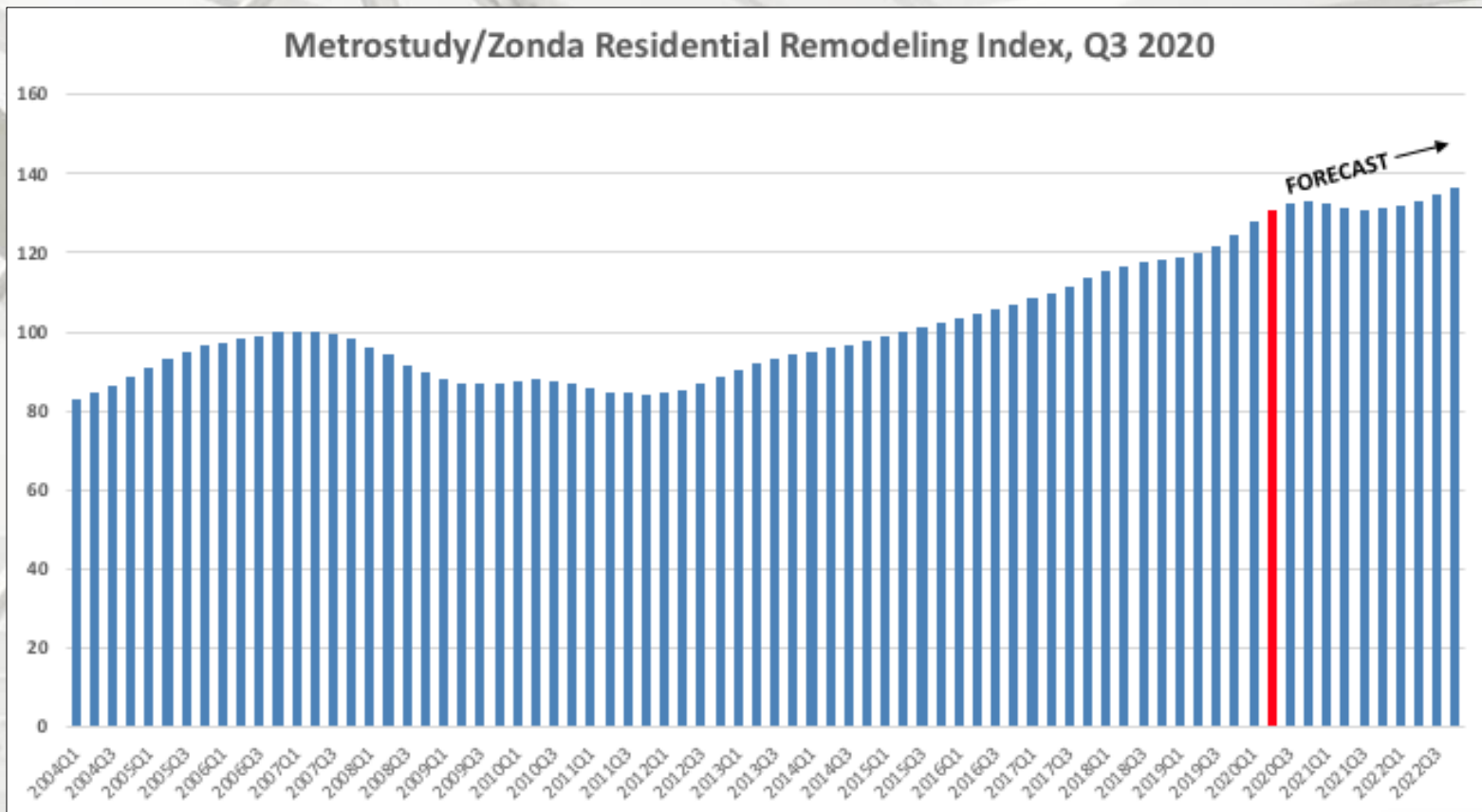
Metrostudy/Zonda projects remodeling activity will see quarterly declines beginning in the first quarter of 2021

“Metrostudy/Zonda projects the number of big-ticket, pro-worthy remodeling projects – worth \$1,000 or more – completed in 2020 will total 14.1 million, an 8.1% increase from 2019. Metrostudy/Zonda forecasts the number of big-ticket projects completed nationally will increase by 54,000 to 14.2 million in 2021.

According to Metrostudy/Zonda, 381 metropolitan statistical areas are expected to see growth in annual project volume in 2020 and, among those markets, the average growth rate is expected to be 5.7%.

The RRI is based on a statistical model that takes into account data such as household level remodeling permits and consumer-reported remodeling and replacement projects. It uses a model to predict the number and dollar volume of home improvement and replacement projects nationwide worth at least \$1,000 in 381 metropolitan statistical areas and nationwide.” – Vincent Salandro, Associate Editor, Remodeling

Remodeling



Existing House Sales

National Association of Realtors

October 2020 sales: 6.850 thousand

	Existing Sales	Median Price	Mean Price	Month's Supply
October	6,850,000	\$313,000	\$345,100	2.5
September	6,570,000	\$311,400	\$343,100	2.7
2019	5,410,000	\$271,100	\$307,300	3.9
M/M change	4.3%	0.5%	0.6%	-7.4%
Y/Y change	26.6%	15.5%	12.3%	-35.9%

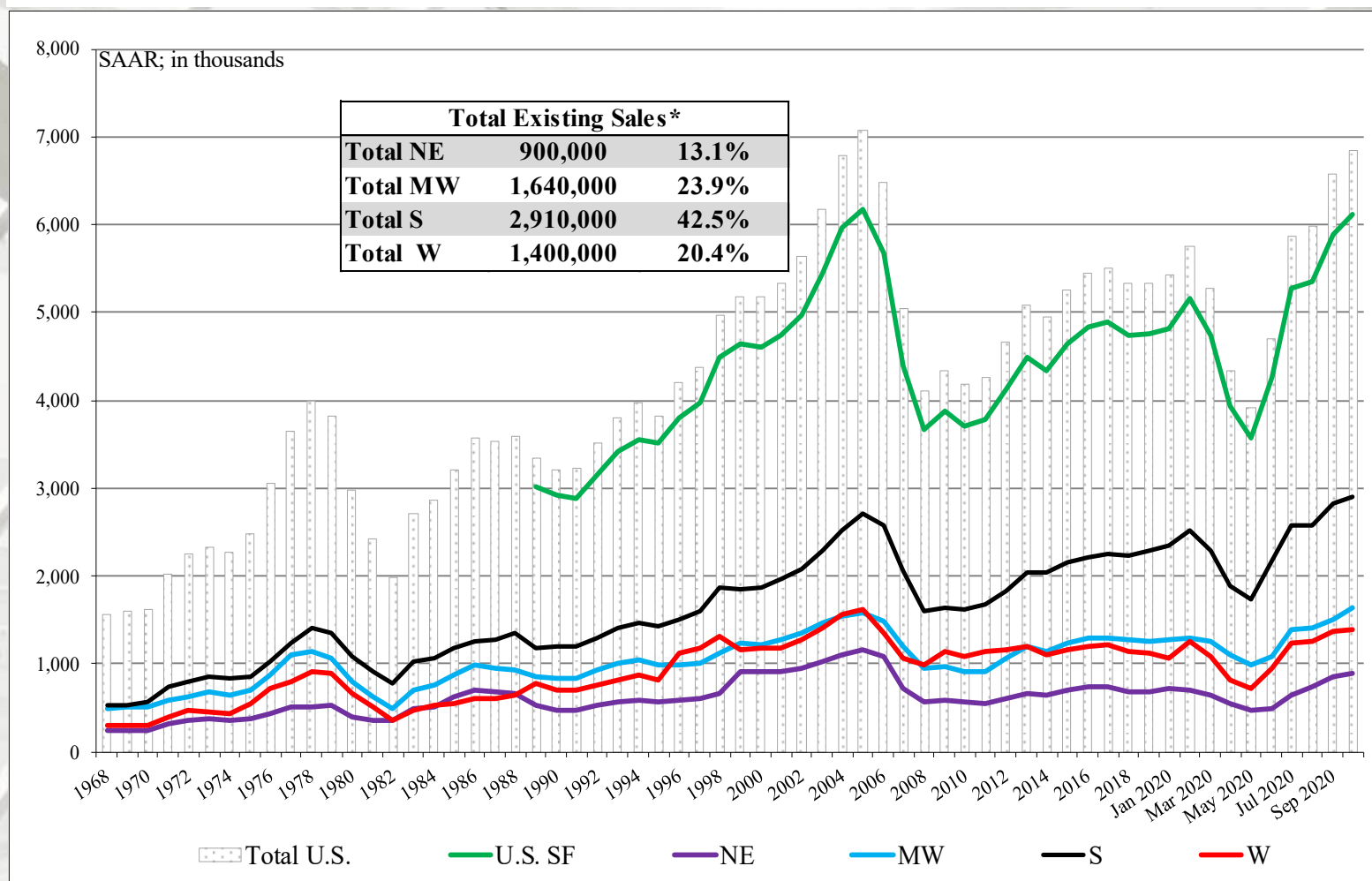
All sales data: SAAR

Existing House Sales

	Existing SF Sales	SF Median Price	SF Mean Price	
October	6,120,000	\$317,700	\$348,700	
September	5,880,000	\$316,000	\$346,500	
2019	4,830,000	\$273,800	\$308,900	
M/M change	4.1%	0.5%	0.6%	
Y/Y change	26.7%	16.0%	12.9%	
	NE	MW	S	W
October	900,000	1,640,000	2,910,000	1,400,000
September	860,000	1,510,000	2,820,000	1,380,000
2019	690,000	1,280,000	2,300,000	1,140,000
M/M change	4.7%	8.6%	3.2%	1.4%
Y/Y change	30.4%	28.1%	26.5%	22.8%

All sales data: SAAR.

Existing House Sales



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

* Percentage of existing sales.

U.S. Housing Prices

Federal Housing Finance Agency

U.S. House Prices Rise 3.1 Percent in Third Quarter; Up 7.8 Percent over the Last Year

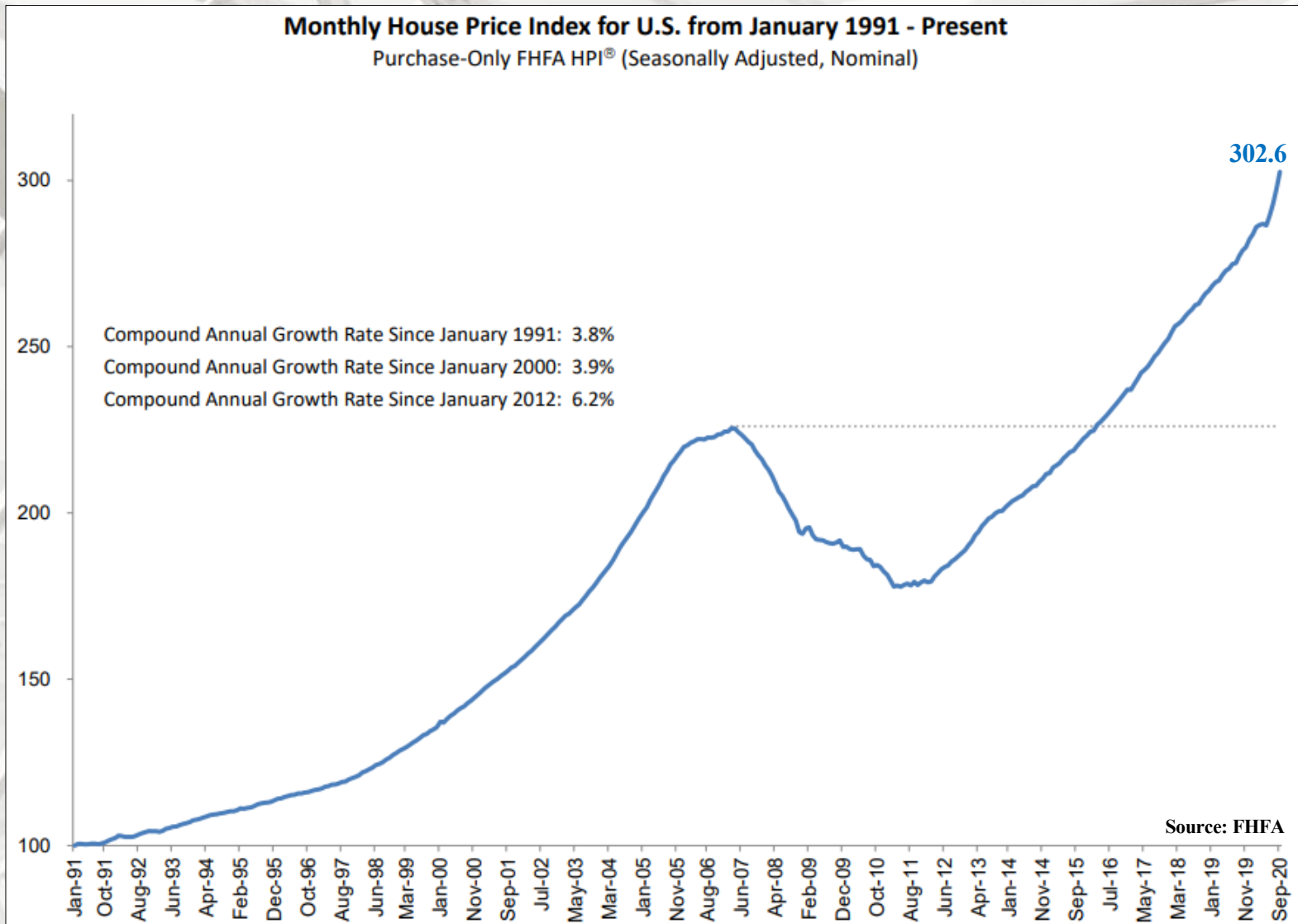
Significant Findings

**House prices have risen for 37 consecutive quarters,
or since September 2011.**

“U.S. house prices rose **7.8 percent** from the third quarter of 2019 to the third quarter of 2020 according to the Federal Housing Finance Agency House Price Index (FHFA HPI®). House prices were up **3.1 percent** in the third quarter of 2020. FHFA’s seasonally adjusted monthly index for September was up **1.7 percent** from August.” – Raffi Williams and Adam Russell, FHFA

“House prices recorded their strongest quarterly gain in the history of the FHFA HPI purchase-only series in the third quarter of 2020. Relative to a year ago, prices were up 7.8 percent during the quarter – the fastest year-over-year rate of appreciation since 2006. Monthly data indicate that prices continued to accelerate during the quarter, reaching 9.1 percent in September, as demand continues to outpace the supply of homes available for sale.” – Dr. Lynn Fisher, Deputy Director of the Division of Research and Statistics, FHFA

U.S. Housing Prices



U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Shows Annual Home Price Gains Increased to 7% in September

“Data for September 2020 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 7.0% annual gain in September, up from 5.8% in the previous month. The 10-City Composite annual increase came in at 6.2%, up from 4.9% in the previous month. The 20-City Composite posted a 6.6% year-over-year gain, up from 5.3% in the previous month.

Phoenix, Seattle and San Diego continued to report the highest year-over-year gains among the 19 cities (excluding Detroit) in September. Phoenix led the way with an 11.4% year-over-year price increase, followed by Seattle with a 10.1% increase and San Diego with a 9.5% increase. All 19 cities reported higher price increases in the year ending September 2020 versus the year ending August 2020.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

U.S. Housing Prices

S&P CoreLogic Case-Shiller Index

Month-Over-Month

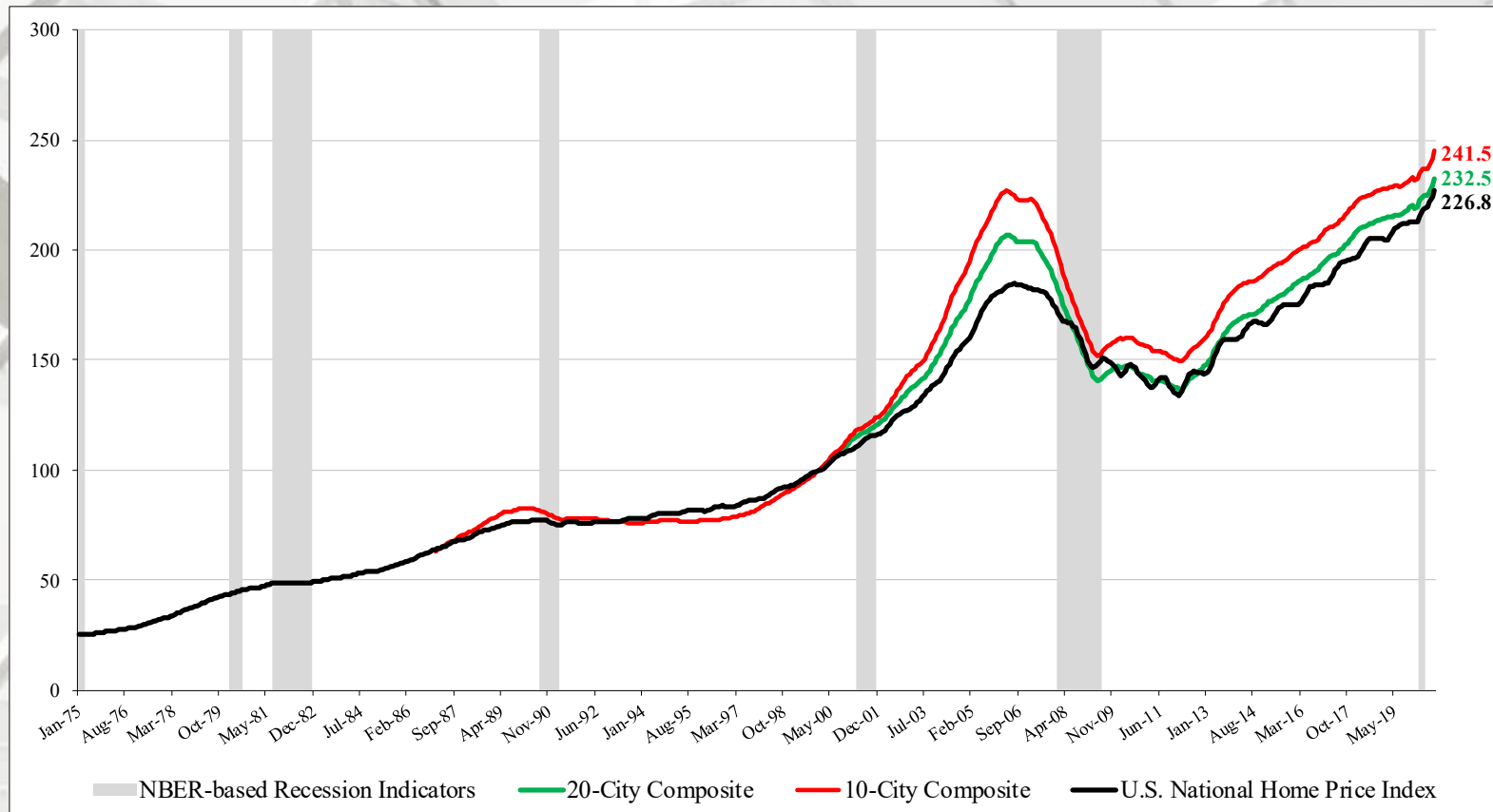
“The National Index posted a 1.2% month-over-month increase, while the 10-City and 20-City Composites both posted increases of 1.3% and 1.2% respectively, before seasonal adjustment in September. After seasonal adjustment, the National Index posted a month-over-month increase of 1.4%, while the 10-City and 20-City Composites both posted increases of 1.2% and 1.3% respectively. In September, all 19 cities (excluding Detroit) reported increases before seasonal adjustment, and after seasonal adjustment.

Analysis

“Housing prices were notably – I am tempted to say ‘very’ – strong in September. The National The National Composite Index gained 7.0% relative to its level a year ago, well ahead of August’s 5.8% increase. The 10- and 20-City Composites (up 6.2% and 6.6%, respectively) also rose at an accelerating pace in September. The strength of the housing market was consistent nationally – all 19 cities for which we have September data rose, and all 19 gained more in the 12 months ended in September than they had done in the 12 months ended in August.

A trend of accelerating increases in the National Composite Index began in August 2019 but was interrupted in May and June, as COVID-related restrictions produced modestly-decelerating price gains. Our three monthly readings since June of this year have all shown accelerating growth in home prices, and September’s results are quite strong. The last time that the National Composite matched September’s 7.0% growth rate was more than six years ago, in May 2014. This month’s increase may reflect a catch-up of COVID-depressed demand from earlier this year; it might also presage future strength, as COVID encourages potential buyers to move from urban apartments to suburban homes. The next several months’ reports should help to shed light on this question.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

S&P/Case-Shiller Home Price Indices



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

“Phoenix’s 11.4% increase topped the league table for September; this is the 16th consecutive month in which Phoenix home prices rose more than those of any other city. Seattle (10.1%) and San Diego (9.5%) repeated in second and third place. Even the worst-performing cities, New York (4.3%) and Chicago (4.7%), did better in September than in August. Prices were strongest in the West and Southwest regions, but even the comparatively weak Midwest scored 6.0% gains.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

U.S. Housing Market

Deloitte

Why is the housing sector booming during COVID-19?

Housing demand has been robust amid the pandemic due to high-wage remote workers' continued strong economic positions, low mortgage rates, and millennials entering the prime home buying age. That said, many renters and homeowners who lost their jobs risk becoming homeless.

“The US economy posted record-breaking growth in Q3 as restrictions lifted and consumers and businesses reignited their spending and investment. Yet even with this growth, the economy remains smaller than at the end of 2019. Subsequent quarters are likely to be challenging as infection caseloads rise and states face the possibility of reintroducing restrictions. One sector that has been resilient through the downturn and is likely to remain so amid the ongoing recovery is housing. Housing permits and starts have returned to trend and are likely to grow further in response to the sharp acceleration in home sales since the middle of Q2.

Apart from the fact that buyers and sellers have found ways to navigate through the restrictions of the pandemic, a few factors have combined to boost housing demand. These include the continued strong economic positions of high-wage remote workers, historically low mortgage rates, and more millennials moving into prime home buying age. Yet there are risks – the housing sector's strong performance could be derailed by a resurgence in the pandemic and a continued thinning of housing inventory.

Furthermore, unequal impact of the pandemic has led to a dichotomy in the housing sector where although housing demand is robust among those whose jobs are less at risk, there are millions of renters and home owners who have lost their jobs and risk facing eviction and foreclosure.¹ As the economic recovery progresses, policymakers might soon be dealing with the myriad of issues that come with increased homelessness.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Market

Deloitte

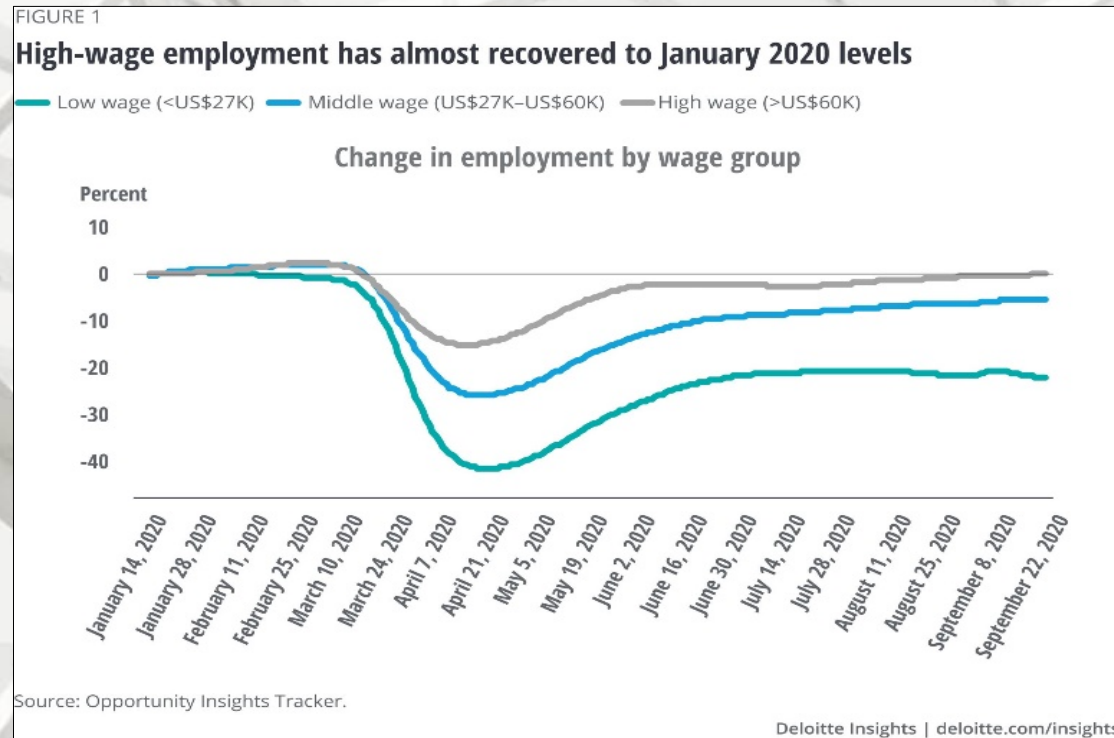
“1. High-wage workers are driving housing demand

High-wage workers – workers who fall into the upper half of the income distribution – have been relatively unscathed during the pandemic. This is primarily because of the greater likelihood that they are employed in industries and have occupations where remote work is possible. Job security, negligible impact on income, and reduced spending on services due to the pandemic have left them with more money to spend on housing. Moreover, these workers are more likely to be current home owners and are, therefore, more likely to benefit from rising home prices. This increased equity has allowed them to upgrade to bigger homes or to buy second homes. Finally, the likelihood that remote working will persist is driving demand for more spacious homes, and telecommuting is opening more affordable options to potential home buyers who can now widen their search farther away from the workplace.

High-wage workers have escaped the pandemic’s economic impact and have more money to spend on housing

Data from the Opportunity Insights Economic Tracker shows that by the end of September, employment among workers who fall into the upper half of the income distribution (roughly those who earn above US\$60,000 a year) had almost recovered to its January 2020 level (figure 1).² These workers are more likely to be employed in industries such as finance or professional and business services in which it is possible to work remotely without a loss of productivity or income. The economic impact of the pandemic has been disproportionately borne by workers who make up the lowest quartile in the income distribution (roughly those earning less than US\$27,000 a year).³ Low-wage workers are more likely to be employed in high-contact service industries, such as leisure and hospitality, which have found it hard to generate demand as consumers choose to stay away.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Market



Deloitte

“Data from the tracker also shows that high-wage workers were spending 7.5% less in mid-October than they did in January (figure 2).⁴ The lower spending is more than accounted for by a reduction in spending on services. Overall consumer spending in Q3 was a little more than 3% lower than at the end of 2019 because increased spending on goods was more than counterbalanced by decreased spending on services that account for roughly 65% of all consumer spending. This pattern leaves high-wage earners with more money to spend on big-ticket purchases such as home improvement, or in some cases, new housing.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Market

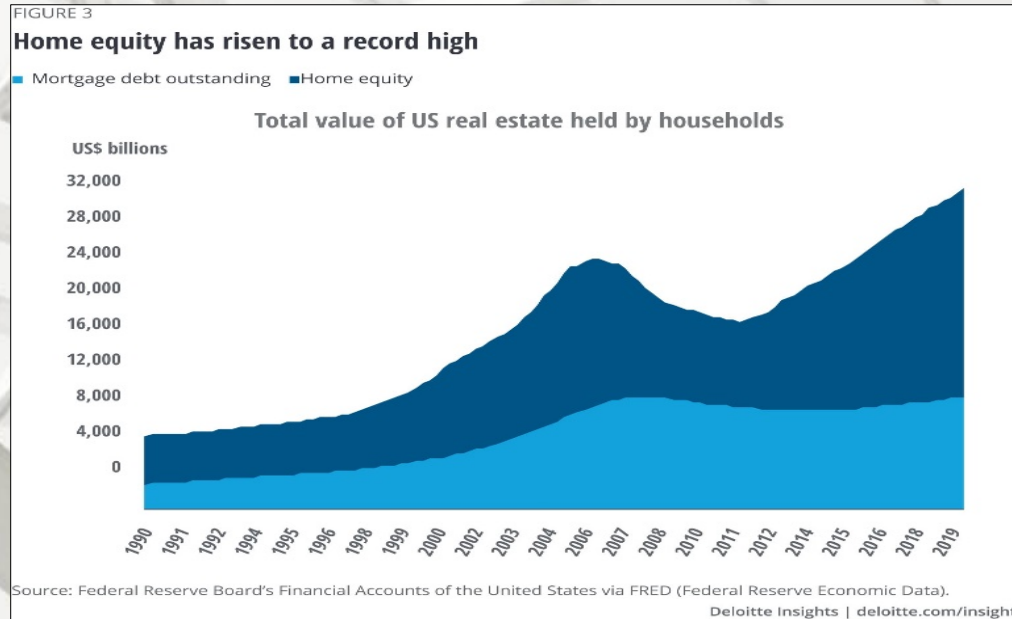


Deloitte

Rising home equity is an additional benefit to high-wage workers

“High-wage workers are also more likely to be home owners. Four out of five households in the upper half of the income distribution own houses.⁵ Strong demand for housing and a shortage of housing inventory have sent nominal home prices higher. While this blunts affordability, especially for first-time home buyers, it builds equity for existing home owners (figure 3). Record-high levels of home equity allow high-wage remote-working home owners the opportunity to upgrade to a bigger home or buy a second home.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Market



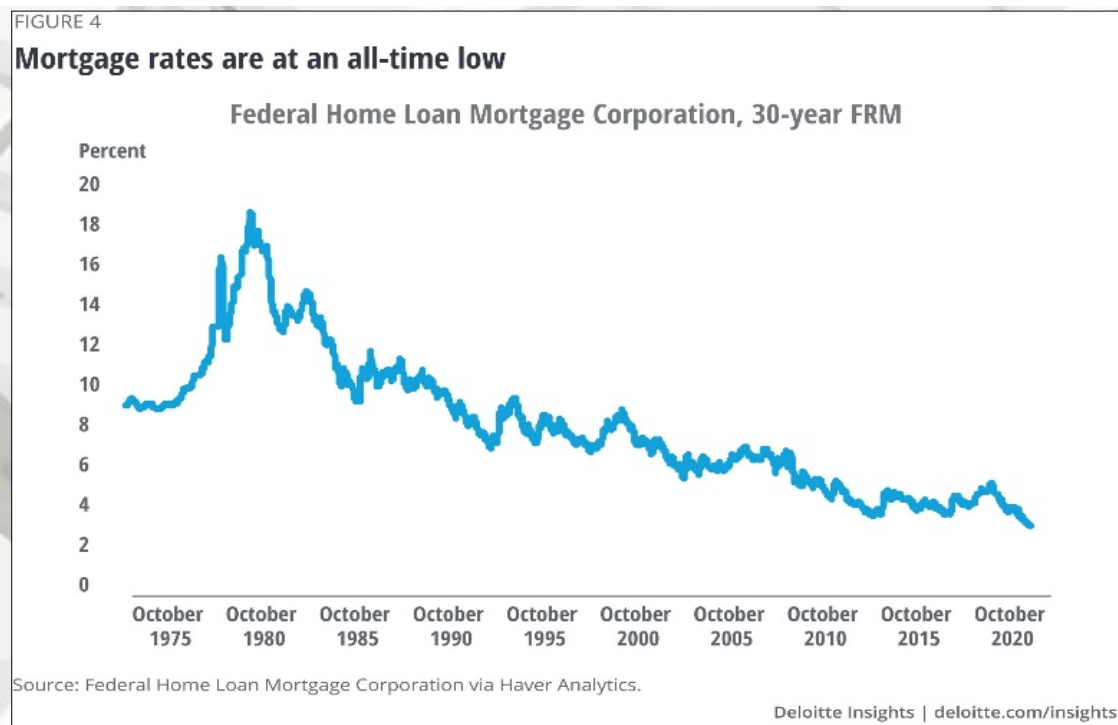
Deloitte

Continued remote working is likely to increase the demand for space; telecommuting widens the options

“A University of Chicago research paper found that 37% of jobs in the US can be done entirely at home.⁶ It is highly likely that most of the workers in such jobs fall into the upper half of the income distribution. Furthermore, the Federal Reserve Bank of Atlanta estimates that the share of working days spent at home by full-time workers is likely to triple after the pandemic relative to pre-pandemic levels.⁷ Remote working is likely to boost the need for more space as houses become common arenas for living, working, and recreation. This has resulted in greater demand for bigger homes. The demand for more space is reflected in the outsized growth in larger mortgages.⁸ Moreover, the falling value of proximity to the workplace is likely to allow home buyers to widen their housing search. High-wage city renters could become suburban home owners or even choose to move to more affordable homes in smaller cities.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

Source: <https://www2.deloitte.com/us/en/insights/economy/spotlight/economics-insights-analysis.html>; 11/20/20

U.S. Housing Market

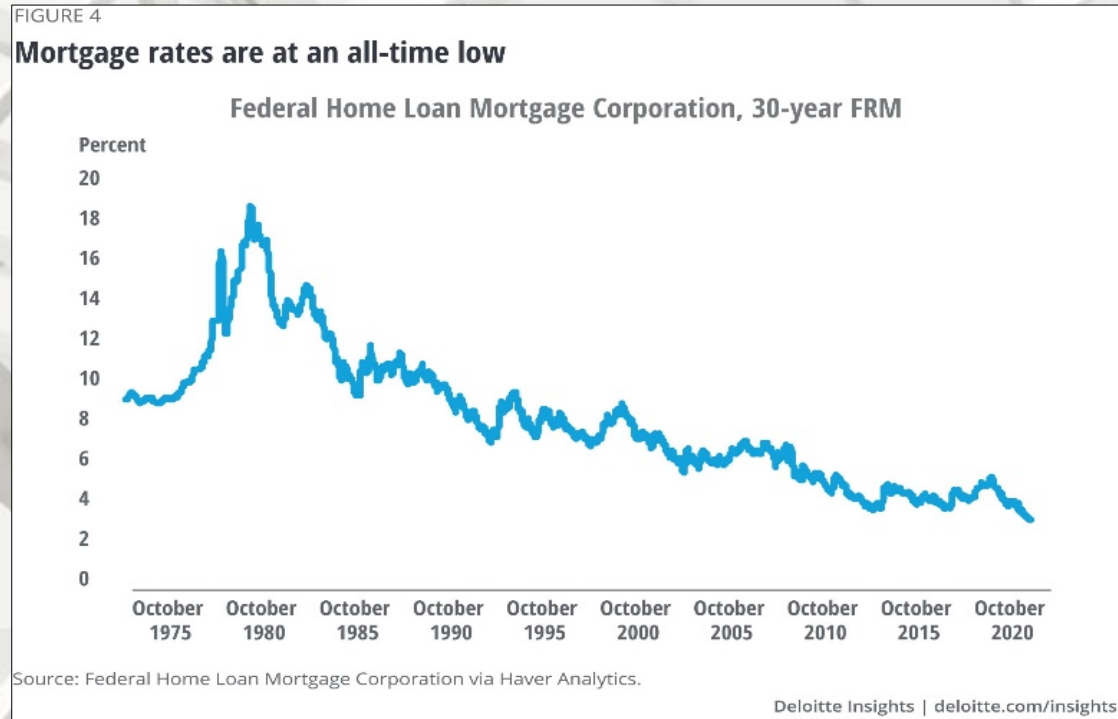


Deloitte

2. Mortgage rates are down, and affordability has trended up

“The Federal Reserve’s monetary policy response to the pandemic as well as its revised approach to inflation means that short-term interest rates are likely to stay low until at least the end of 2023. The Fed is also keeping long-term interest rates low. Since March 2020, the Fed has purchased mortgage-backed securities at the fastest pace since initiating quantitative easing as a monetary policy tool in 2008.⁹ The Fed’s response to the pandemic has dropped 30-year fixed mortgage rates, which were already trending down since the 1980s, to historical lows (figure 4). This is arguably the strongest tailwind for the housing sector and is beneficial to both existing home owners and new home buyers.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Market

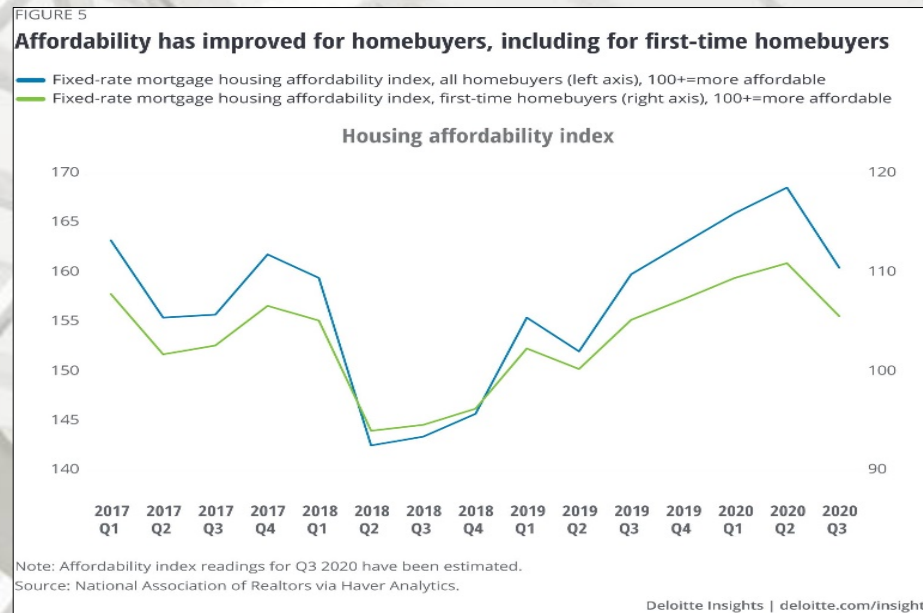


Deloitte

2. Mortgage rates are down, and affordability has trended up

“Falling mortgage rates and rising median household incomes have improved housing affordability, which has increased since mid-2018 for all home buyers, including first-time home buyers (figure 5). Though affordability took a hit in Q3 as home price appreciation likely overshadowed the fall in mortgage rates, it remains better than it was a year ago. First American’s Real House Price Index, which was down 9% from a year ago in January, was still down 6% in August.¹⁰” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Market



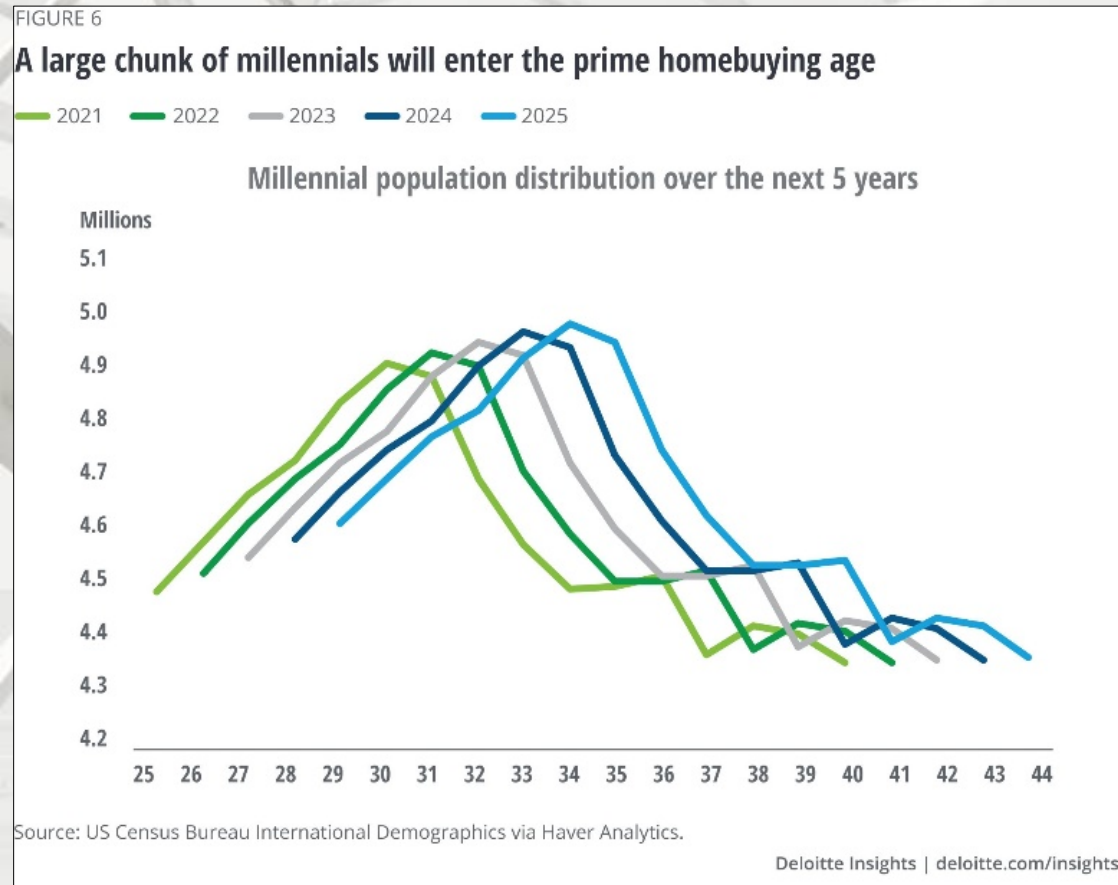
Deloitte

3. The millennial wave is coming of age

“Americans are taking key life decisions, such as getting married and buying a house, later than in previous decades. The median age of first-time home buyers has increased from about 29 years in 1981 to 33 years in 2019.¹¹ This has implications for the millennial generation, which has often been tagged as a generation of renters – homeownership among the millennial generation is low at 43%.¹² But this means there is room for increased home buying, and the demographic distribution of the generation is likely to play a part. In 2021, a large wave of millennials will be on the cusp of entering the prime home buying age for first-time buyers (figure 6), which is age 30–35. The number of millennials in this age group is projected to increase over the next five years. Millennials, while less likely to currently own homes, are increasingly likely to purchase homes. Millennials’ share of mortgage origination in 2020 is projected to exceed 50%.¹³” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

Source: <https://www2.deloitte.com/us/en/insights/economy/spotlight/economics-insights-analysis.html>; 11/20/20

U.S. Housing Market



U.S. Housing Market

Deloitte

Is the housing boom likely to continue?

“Elevated mortgage applications for purchase at the end of October indicate that housing market strength is likely to continue into Q4. However, there are some risks to the housing boom.

1. **The virus:** If infections rise and lockdowns are imposed, housing construction activity could take a beating as it did in March and April. This could exacerbate the current inventory shortage.
2. **Thinning of the housing inventory:** The lean housing inventory has raised the income required to qualify for a home loan at a time when the labor market remains weak. Even though the qualifying income is below median household income, and current demand for housing is being driven by higher-wage earners, a further thinning of the inventory, particularly of entry-level homes, might lock potential buyers out of the market.
3. **Housing demand is not endless:** The pool of prospective buyers will continue to narrow as the boom continues. Furthermore, low interest rates, access to capital, and current needs might have brought forward a significant portion of future demand. In the medium to long term, a weak and protracted economic recovery will likely add fewer potential home buyers to the housing market.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

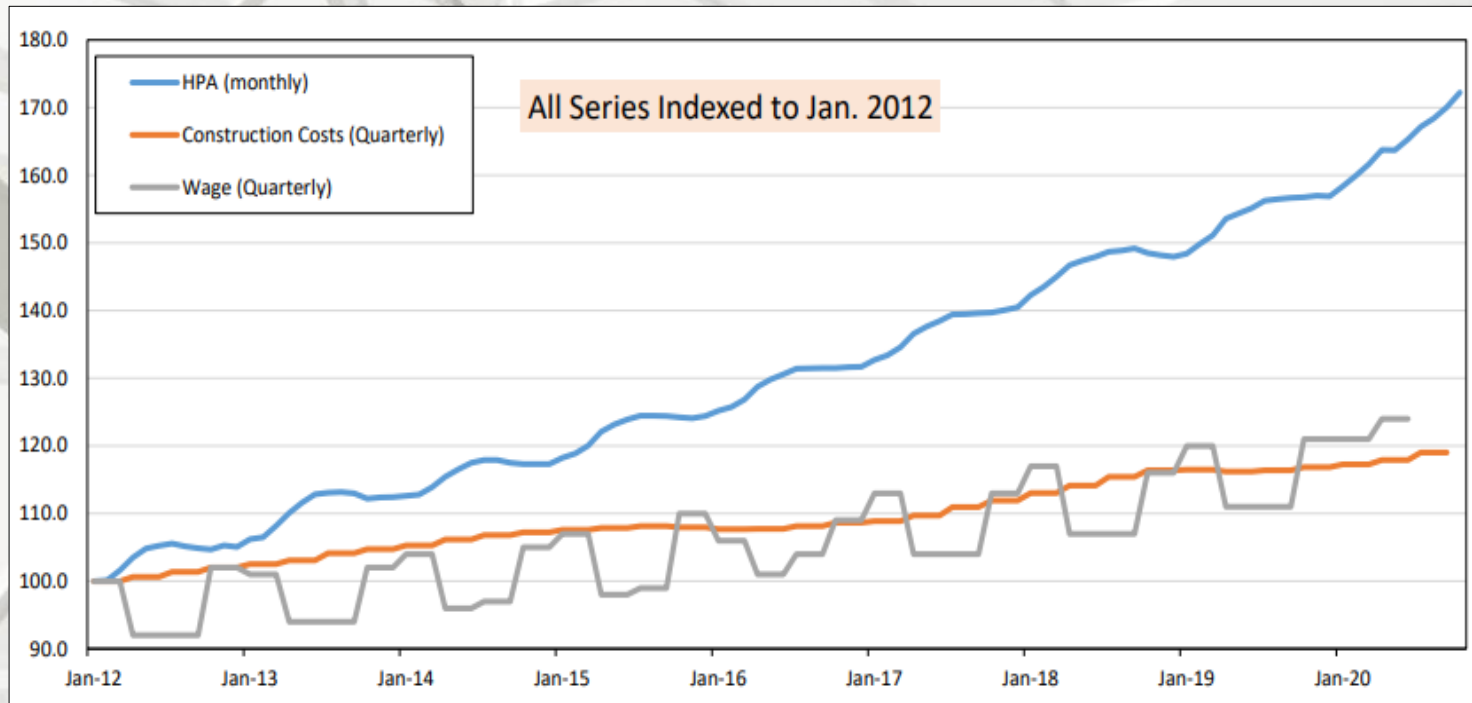
U.S. Housing Market

Deloitte

A tale of diverging realities

“The housing boom is emblematic of the inequality that the pandemic has created. Income and wealth inequality narrowed between 2016 and 2019, but the gap might have widened in 2020. Not all existing home owners are in a sweet spot. In July, we highlighted that millions of home owners are struggling with mortgage payments due to a loss of income.¹⁴ Increased home equity might be a saving grace in the short-term, but we could start to see a rise in foreclosures. The situation is direr for renters who, lacking the cushion of home equity, may face eviction. Therefore, even as we see home sales soar, homelessness could also increase.” – Lester Gunnion, Assistant Manager, MK Marketing, Deloitte SVCS India Pvt L

U.S. Housing Prices

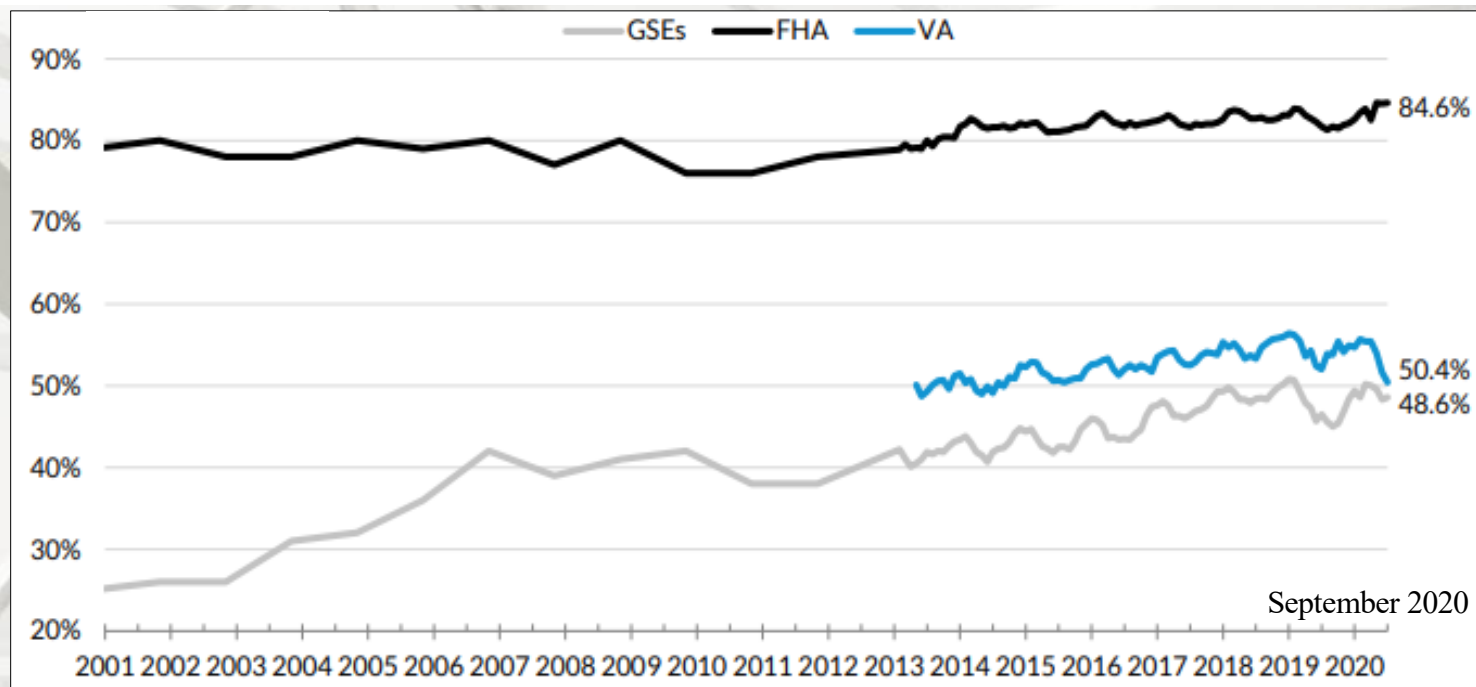


Note: Data are for the entire country. Data for October 2020 are preliminary. Wage data come from the Quarterly Census of Employment Wages (QCEW).
Sources: CoreLogic, BLS, and AEI Housing Center, www.AEI.org/housing.

AEI Housing Center Market Fundamentals and Home Price Appreciation

“Since 2012, home prices have appreciated at about 3 times the rate of market fundamentals. Since fundamentals ultimately underpin prices, this is unsustainable over the long run. While it is unknowable how much higher prices will rise or when the cycle will turn, the longer that higher prices deviate from fundamentals, the more painful will be the eventual correction.” – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

First-Time House Buyers



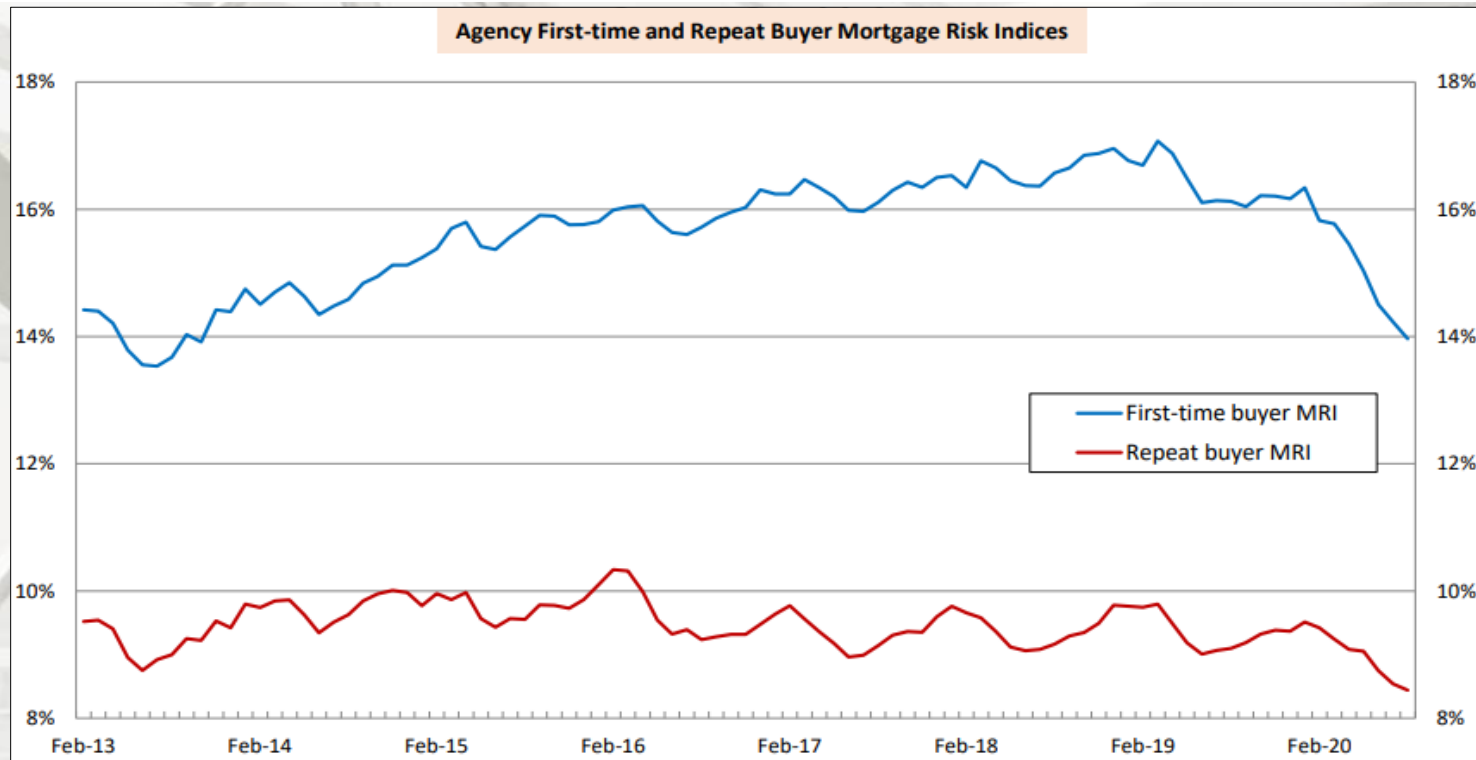
Sources: eMBS, Federal Housing Administration (FHA) and Urban Institute.

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

Urban Institute

“In September 2020, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 84.6 percent. The FTHB share of VA lending declined in September to 50.4 percent. The GSE FTHB share in September was slightly up from August, at 48.6 percent. The bottom table shows that based on mortgages originated in September 2020, 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

First-Time House Buyers



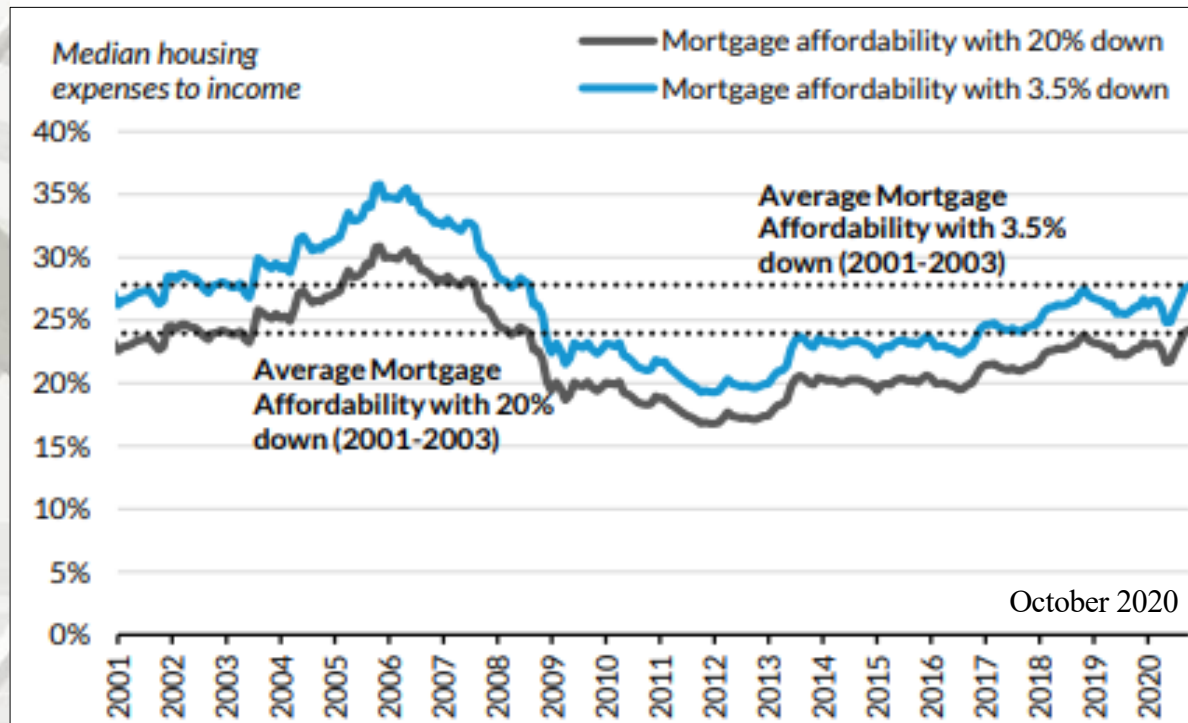
Source: AEI Housing Center, www.AEI.org/housing.

AEI Housing Center

“The first-time buyer (FTB) MRI is back to its 2013 level. The FTB leverage punch bowl is less spiked due to a lower FHA share, less competition between GSEs and FHA, higher credit scores, and lower DTIs. However, the unprecedented spiking of the monetary punch bowl is driving home price appreciation, as a result of growing demand and tightening supply.” – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Housing Affordability

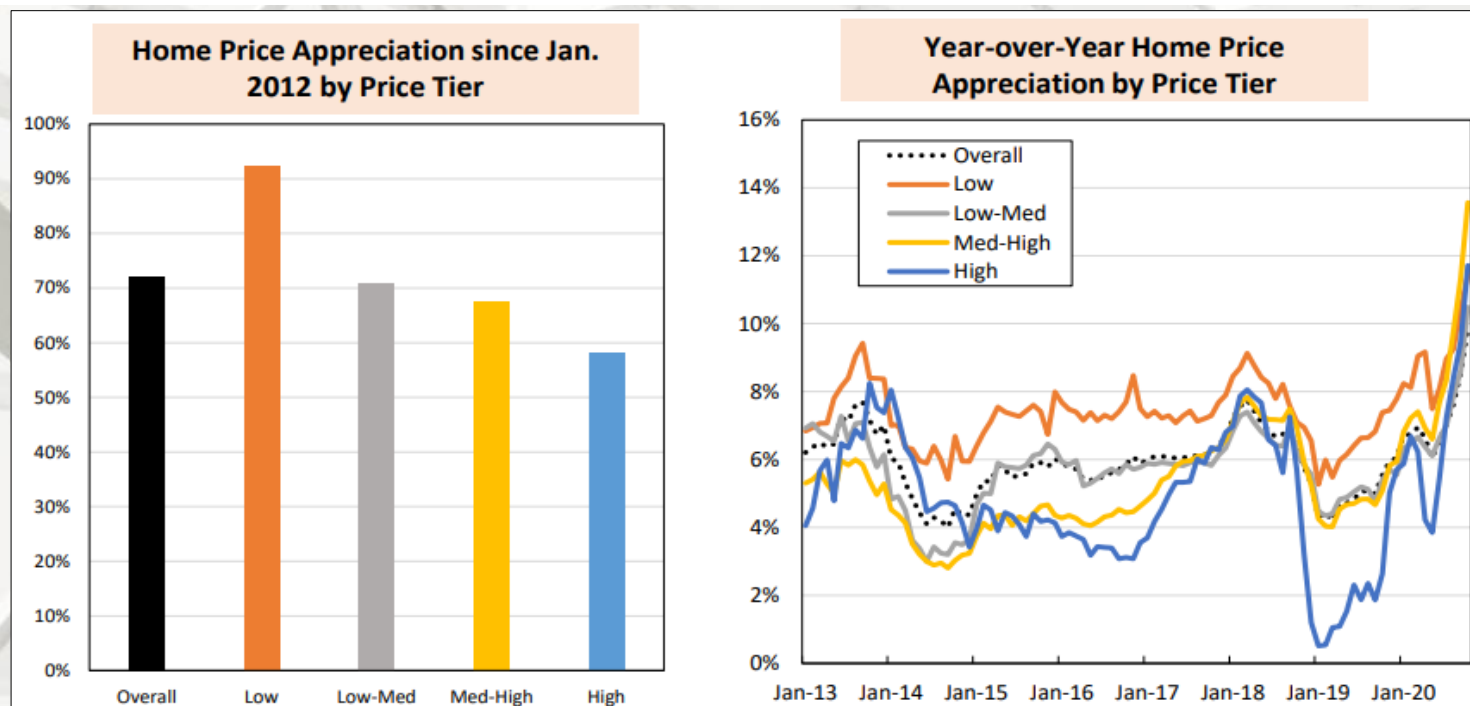
National Housing Affordability Over Time



Urban Institute

“Despite price increases over the last 8 years, home prices remain affordable by historic standards, as interest rates are now near generational lows. As of October 2020, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 24.3 percent; with 3.5 down, it is 27.7 percent. These numbers are very close to the 2001-2003 median, and represent a sharp decrease in affordability in recent months. The last time we were at this affordability level was in February of 2019, and before that, in 2008. ...” – Laurie Goodman, VP, Housing Finance Policy Center

Housing Affordability



Note: Data for October 2020 are preliminary. Price tiers are set at the metro level and are defined as follows: Low: all sales at or below the 40th percentile of FHA sales prices; Low-Medium: all sales at or below the 80th percentile of FHA sales prices; Medium-High: all sales at or below the 125% of the GSE loan limit; and High: all other sales. HPAs are smoothed around the times of FHFA loan limit changes

Source: AEI Housing Center, www.AEI.org/housing.

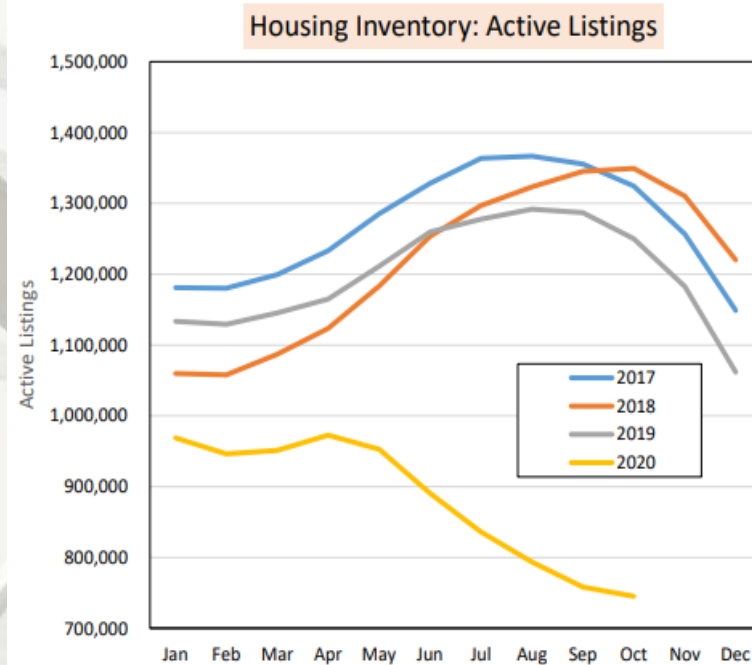
AEI Housing Center House Price Appreciation (HPA) by Price Tier

“Since 2012 a large gap in HPA has developed between the lower and upper end of the market (left panel). Preliminary numbers for October 2020 indicate that overheating of the low price tier continued (right panel). HPA in the low price tier was 11.4% year-over-year. The med-high and high price tiers are more dependent on the monetary punch bowl and thus are also showing strong and accelerating rates of appreciation.” – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

Source: <https://www.aei.org/wp-content/uploads/2020/10/HMI-Briefing-presentation-12-1-20-FINAL-2.pdf>; 12/1/20

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Housing Supply



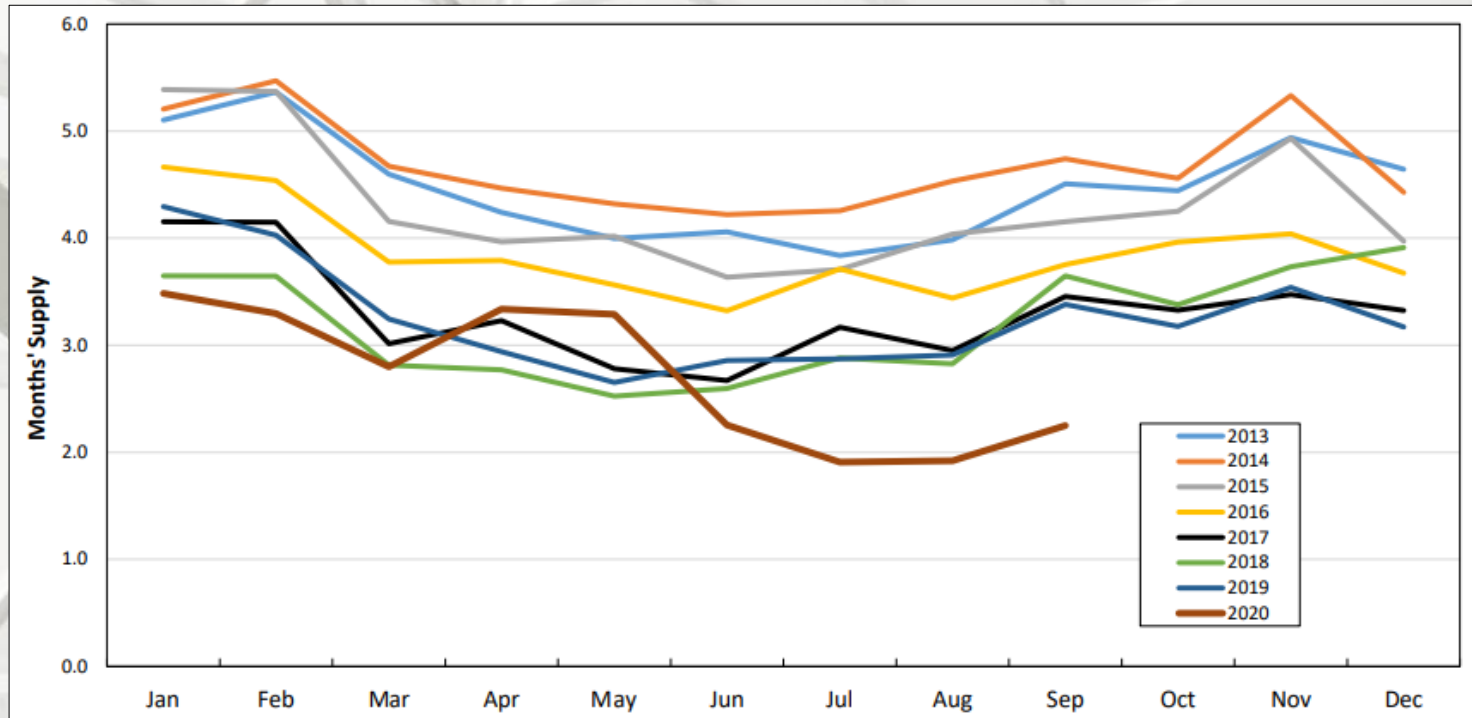
Sources: Realtor.com, Census Bureau, and AEI Housing Center, www.AEI.org/housing.

Year-over-Year Change in Active Listings (October 2020)			
Density Quintile	Nation	LA	NYC
All	-41%	-23%	-6%
1 (least)	-52%	-37%	-26%
2	-46%	-34%	-24%
3	-43%	-25%	-11%
4	-38%	-14%	+22%
5 (most)	-7%	+7%	+52%

AEI Housing Center Supply Is Being Depleted

“Supply has fallen dramatically in 2020 and is most depleted in less dense areas. For the foreseeable future, it will be difficult to replenish or add to supply: (i) baby boomers are tending to stay put more, (ii) it takes time to acquire land, entitle, and build new construction even in places like North Carolina and Texas, (iii) adding supply will face the usual difficulties in the Northeast and West, & (iv) new construction supply has fallen from 5.7 months in August 2019 to 3.4 months in August 2020.” – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

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, Census Bureau, and AEI Housing Center, www.AEI.org/housing.

AEI Housing Center Months' Supply

“With the start of the lockdown, inventory levels first increased due to reduced demand. However, levels have noticeably tightened during the housing market recovery, which stated in mid-May. Low mortgage rates combined with about 2 months inventory mean that HPA will remain strong over the coming months.” – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center

MBA Mortgage Finance Forecast

	2020				2021				2022				2019	2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
Housing Measures																	
Housing Starts (SAAR, Thous)	1,484	1,079	1,430	1,392	1,390	1,410	1,420	1,423	1,395	1,405	1,410	1,410	1,295	1,346	1,411	1,405	1,428
Single-Family	968	766	1,040	1,012	1,025	1,040	1,060	1,078	1,065	1,075	1,090	1,090	893	946	1,051	1,080	1,118
Two or More	517	313	390	380	365	370	360	345	330	330	320	320	403	400	360	325	310
Home Sales (SAAR, Thous)																	
Total Existing Homes	5,483	4,474	6,079	6,051	6,031	6,068	6,098	6,100	6,106	6,128	6,134	6,120	5,331	5,522	6,074	6,122	6,196
New Homes	701	676	1,017	972	932	941	950	950	953	959	953	955	685	841	943	955	969
FHFA US House Price Index (YOY % Change)	5.0	4.0	3.4	3.1	2.7	2.4	2.2	2.1	1.9	1.8	1.8	1.7	5.1	3.1	2.1	1.7	1.6
Median Price of Total Existing Homes (Thous \$)	272.4	288.3	304.2	290.5	289.1	289.5	289.0	287.7	286.9	286.4	286.4	286.5	269.7	288.9	293.0	293.3	289.5
Median Price of New Homes (Thous \$)	330.8	315.5	321.3	326.5	333.7	330.4	332.5	335.6	338.4	340.6	342.4	344.1	319.3	323.5	324.3	328.0	330.8
Interest Rates																	
30-Year Fixed Rate Mortgage (%)	3.5	3.2	3.0	3.0	3.1	3.1	3.2	3.3	3.4	3.5	3.6	3.6	3.7	3.0	3.3	3.6	3.9
10-Year Treasury Yield (%)	1.4	0.7	0.6	0.8	0.9	1.0	1.1	1.3	1.4	1.6	1.7	1.8	1.8	0.8	1.3	1.8	2.4
Mortgage Originations																	
Total 1- to 4-Family (Bil \$)	563	928	860	824	660	638	626	564	498	523	570	555	2,253	3,175	2,488	2,146	2,131
Purchase	257	348	410	403	340	370	422	410	348	382	428	415	1,225	1,418	1,542	1,573	1,611
Refinance	306	580	450	421	320	268	204	154	150	141	142	140	1,028	1,757	946	573	520
Refinance Share (%)	54	63	52	51	48	42	33	27	30	27	25	25	46	55	38	27	24
FHA Originations (Bil \$)													255	309	242	210	193
Total 1- to 4-Family (000s loans)	1,869	3,034	2,826	2,698	2,125	2,053	2,027	1,831	1,587	1,664	1,819	1,769	7,779	10,427	8,037	6,839	6,674
Purchase	891	1,196	1,405	1,374	1,138	1,231	1,402	1,360	1,136	1,242	1,393	1,350	4,392	4,866	5,131	5,119	5,143
Refinance	978	1,838	1,421	1,324	987	822	625	471	451	422	426	420	3,387	5,561	2,905	1,719	1,531
Refinance Share (%)	52	61	50	49	46	40	31	26	28	25	23	24	44	53	36	25	23
Mortgage Debt Outstanding																	
1- to 4-Family (Bil \$)	10,775	10,875	10,984	11,106	11,257	11,399	11,535	11,667	11,793	11,920	12,049	12,177	10,677	11,106	11,667	12,177	12,681

Notes:

Housing starts and home sales are seasonally adjusted at annual rate.

Total existing home sales include condos and co-ops.

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

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

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

The FHFA US House Price Index is the forecasted year over year percent change of the FHFA All Transactions House Price Index.

The mortgage debt outstanding forecast is for 1-4 unit mortgage debt and excludes home equity loans. Annual MDO numbers.

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MBA

MORTGAGE BANKERS ASSOCIATION

MBA Economic Forecast

	2020				2021				2022				2019	2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
Percent Change, SAAR																	
Real Gross Domestic Product	-5.0	-31.4	30.9	3.4	3.1	3.1	3.0	3.1	2.5	2.2	2.2	2.1	2.3	-3.1	3.1	2.3	2.0
Personal Consumption Expenditures	-6.9	-33.2	35.6	3.8	2.3	4.1	2.5	2.8	2.1	2.1	2.2	2.1	2.5	-3.3	2.9	2.1	1.7
Business Fixed Investment	-6.7	-27.2	20.8	-1.0	0.6	1.9	2.6	4.3	3.4	3.1	3.4	3.6	1.4	-5.0	2.3	3.4	3.7
Residential Investment	19.0	-35.6	59.3	14.6	3.5	1.7	2.3	1.9	-0.1	-0.6	0.9	0.8	1.6	8.8	2.3	0.2	1.4
Govt. Consumption & Investment	1.3	2.5	-1.5	-3.3	0.1	0.3	0.6	0.1	0.3	0.3	0.5	0.0	3.0	-0.3	0.3	0.3	0.4
Net Exports (Bil. Chain 2012\$)	-650.7	-649.0	-806.9	-809.3	-759.7	-784.8	-764.8	-745.2	-717.6	-699.4	-684.8	-670.2	-763.9	-729.0	-763.6	-693.0	-625.2
Inventory Investment (Bil. Chain 2012\$)	-68.8	-244.0	-21.1	21.2	35.6	55.5	72.6	76.8	81.5	82.4	77.4	72.8	41.3	-78.2	60.1	78.5	66.0
Consumer Prices (YOY)	2.1	0.4	1.3	1.3	1.7	3.3	2.7	2.7	2.6	2.5	2.4	2.4	1.8	1.3	2.7	2.4	2.5
Percent																	
Unemployment Rate	3.8	13.0	8.9	7.7	7.3	7.1	6.7	6.2	5.8	5.4	5.2	5.0	3.7	8.4	6.8	5.4	4.8
Federal Funds Rate	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	1.625	0.125	0.125	0.125	0.625
10-Year Treasury Yield	1.4	0.7	0.6	0.8	0.9	1.0	1.1	1.3	1.4	1.6	1.7	1.8	1.8	0.8	1.3	1.8	2.4

Notes:

The Fed Funds Rate forecast is shown as the mid point of the Fed Funds range at the end of the period.

All data except interest rates are seasonally adjusted

The 10-Year Treasury Yield is the average for the quarter, while the annual value is the Q4 value

Forecast produced with the assistance of the Macroeconomic Advisers' model

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MBA

MORTGAGE BANKERS ASSOCIATION

U.S. Housing Finance

Mortgage Bankers Association (MBA)

Mortgage Credit Availability Increased in November

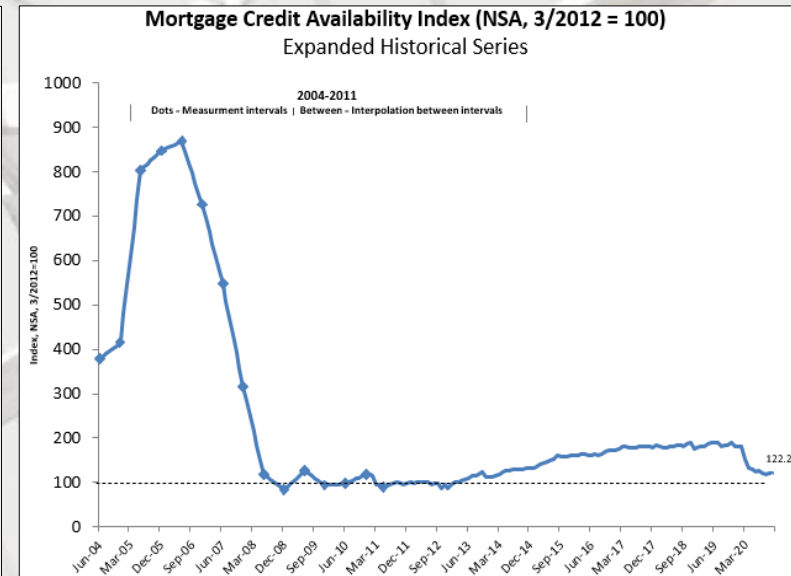
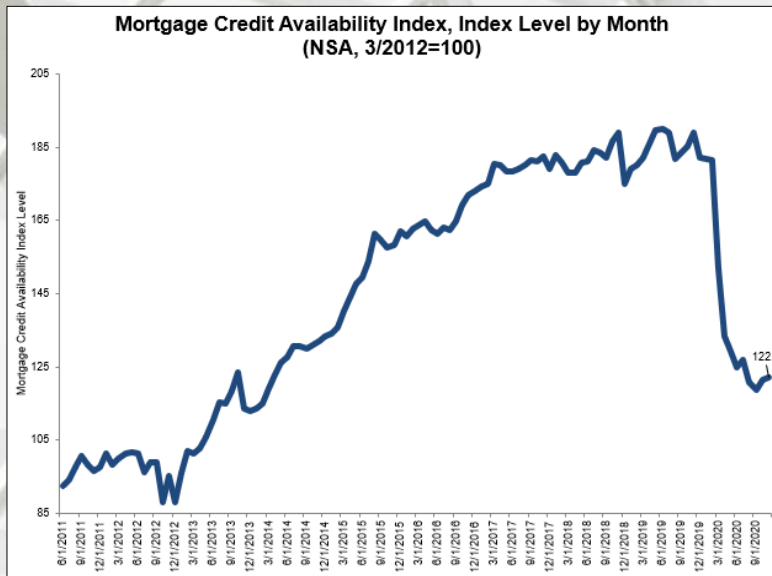
“Mortgage credit availability decreased in October according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) that analyzes data from Ellie Mae's AllRegs® Market Clarity® business information tool.

The MCAI rose by 0.7 percent to 122.2 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 1.3 percent, while the Government MCAI increased by 0.3 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 1.6 percent, and the Conforming MCAI rose by 0.9 percent.

Mortgage credit availability increased slightly in November to its highest level since July, as the job market improved, and the housing sector continued to show strong borrower demand. There was an increase in credit availability for jumbo loans, as well as loan products with low credit scores, higher LTVs, and adjustable-rate features. Home purchase and refinance activity have remained strong in recent months, and the increased credit supply should help qualified borrowers still looking to capitalize on record-low mortgage rates. However, credit availability is still more than 30 percent below pre-pandemic levels and close to the restricted standards seen in 2014. This has especially impacted government borrowers and first-time buyers.” – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

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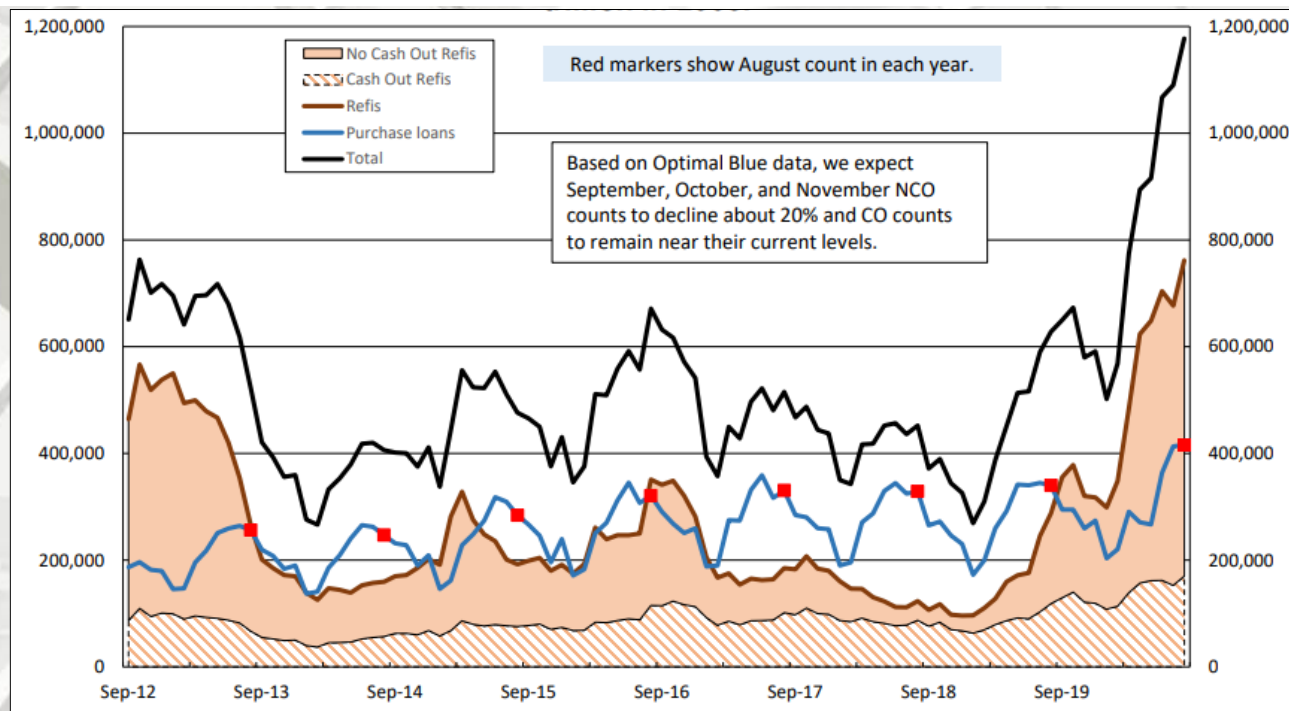
Mortgage Credit Availability (MBA)



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

U.S. Housing Finance

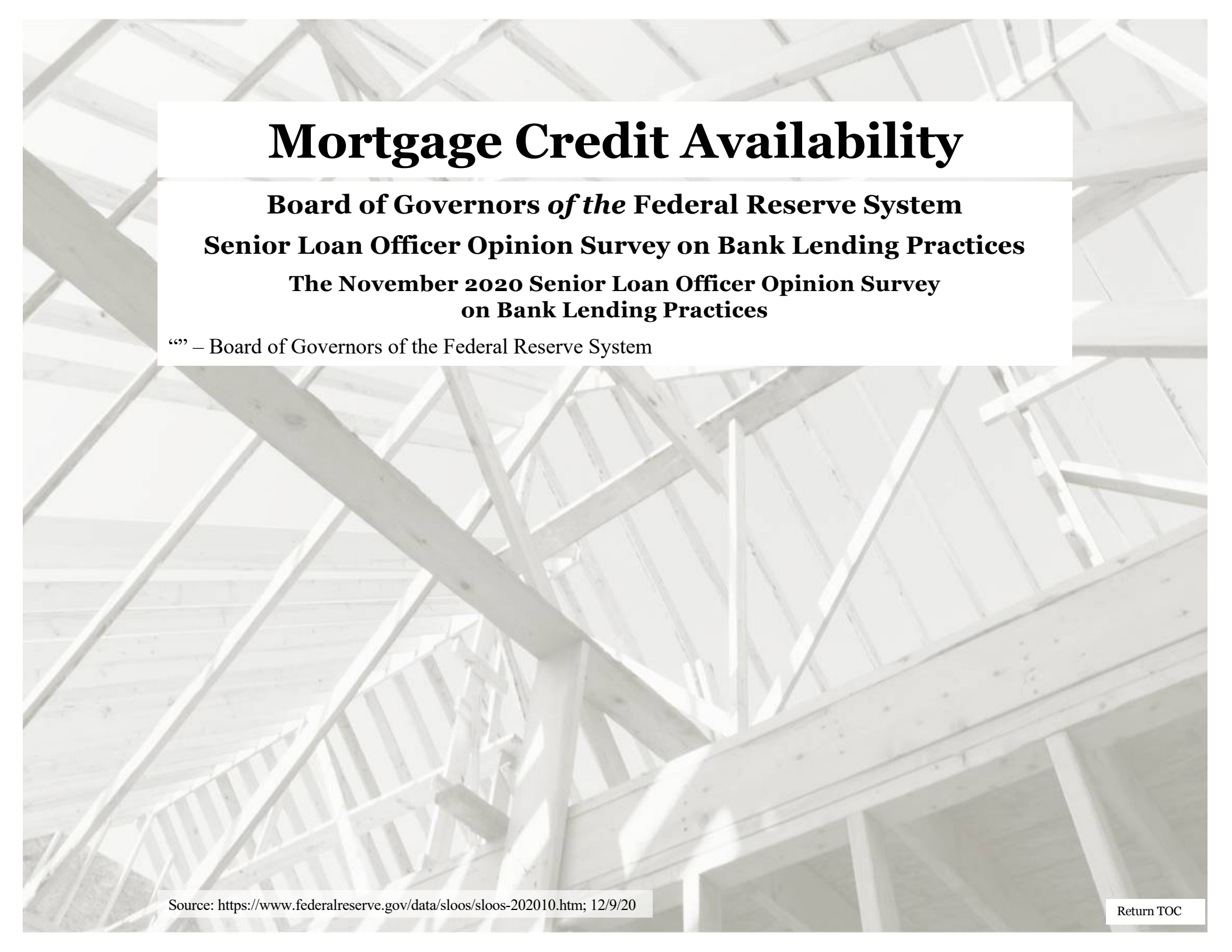
AEI Housing Center



Source: AEI Housing Center, www.AEI.org/housing.

The Refi Boom

“Driven by the lowest mortgage rates in history, all loan purposes are now at or near series’ highs. No cash out and cash out refinances are especially blowing past their prior highs. Compared to a year ago, no cash out refis are up 250% and cash-out refis are up 43%. For 2020, the MBA is estimating \$3.39 trillion in mortgage originations – the highest since \$3.81 trillion in 2003.” – Edward Pinto, Resident Fellow; Director and Tobias Peter, Research Fellow and Director of Research, AEI Housing Center



Mortgage Credit Availability

Board of Governors *of the* Federal Reserve System

Senior Loan Officer Opinion Survey on Bank Lending Practices

The November 2020 Senior Loan Officer Opinion Survey on Bank Lending Practices

“” – Board of Governors of the Federal Reserve System

Summary

In conclusion:

In October, the aggregate United States housing market was mixed. Assessing the month-over-month data yielded decreases for multi-family permits and under construction, all three completion categories, and new single-family sales. Year-over-year, the majority of categories were positive, with the exceptions of multi-family starts, permits, and single-family completions. Residential construction spending was positive month-over-month and year-over-year; and expenditures in August, September, and October are the greatest since the residential surge of 2005-2006. Housing remains a bright spot for the United States economy.

Housing, in the majority of categories, remains substantially less than their respective historical averages. The new SF housing construction sector is where the majority of value-added forest products are utilized, and this housing sector has ample room for improvement.

Pros:

- 1) Historically low interest rates are still in place;
- 2) Select builders are beginning to focus on entry-level houses;
- 3) Housing affordability indicates improvement;

Cons:

- 1) Coronavirus19 (Covid19);
- 2) Lot availability and building regulations (according to several sources);
- 3) Laborer shortages;
- 4) Household formations still lag historical averages;
- 5) Changing attitudes towards SF ownership;
- 6) Job creation is improving and consistent, but some economists question the quantity and types of jobs being created;
- 7) Debt: Corporate, personal, government – United States and globally;
- 8) Other global uncertainties.

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