

The Virginia Tech – U.S. Forest Service November 2019 Housing Commentary: Section I



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

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Opening Remarks

In November, United States the vast majority of the United States housing construction and sales markets were positive – month-over-month and year-over-year. The exceptions were the year-over-year single-family under construction and spending. The January 10th Atlanta Fed GDPNow™ model estimate for January 2020 projects an aggregate 3.9% increase for residential investment spending. New private permanent site expenditures were projected at a 5.5% increase; the improvement spending forecast was a 1.5% increase; and the manufactured/mobile housing projection was a 13.5% increase (all: quarterly log change and seasonally adjusted annual rate).¹

“Tailwinds for Housing in 2020 include:

1. Housing starts of single-family homes are expected to hit the 1M mark for the first time in 12 years. This should help add to much-needed inventory in many parts of the country.
2. In the final Jobs Report for 2019, which was November, the unemployment rate ticked down to 3.5%, a 50+-year low, while we created a massive 266,000 new jobs. Jobs buy homes, not rates. This kind of labor market strength heading into 2020 should further boost the housing sector.
3. The Fed is not likely going to cut or hike rates in 2020, unless new economic threats emerge – meaning short-term interest rates are not likely to move much, if at all.
4. Inflation remains low. Inflation is the main driver of long-term rates like mortgage rates. In the absence of any unforeseen pickup in inflation, home loan rates should remain relatively close to current levels for the foreseeable future.

Bottom line: 2019 was a good year and the data suggests the good times should continue well into the spring of 2020 making it a historic opportunity to have both a strong economy and low rates.”²
– Carrington Mortgage Services, LLC

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

Sources: ¹ www.frbatlanta.org/cqer/research/gdpnow.aspx; 1/10/20;

² <https://www.carringtonwholesale.com/blog/2019/12/13/four-tailwinds-for-housing>; 12/13/19

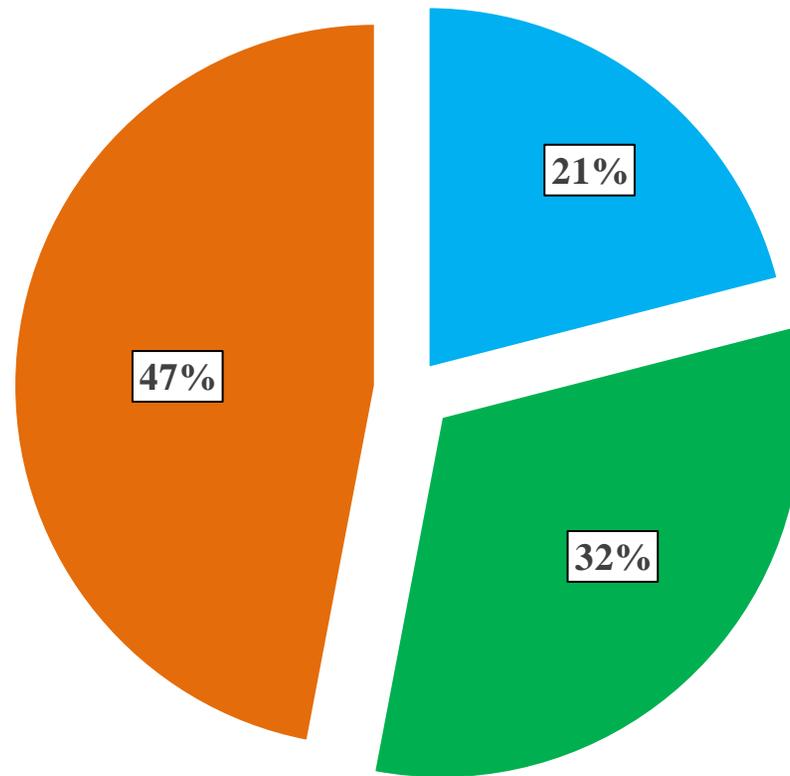
November 2019 Housing Scorecard

	M/M	Y/Y
Housing Starts	▲ 3.2%	▲ 13.6%
Single-Family (SF) Starts	▲ 2.4%	▲ 16.7%
Multi-Family (MF) Starts*	▲ 4.9%	▲ 7.3%
Housing Permits	▲ 1.4%	▲ 11.1%
SF Permits	▲ 0.8%	▲ 8.9%
MF Permits*	▲ 2.5%	▲ 14.9%
Housing Under Construction	▲ 1.0%	▲ 2.4%
SF Under Construction	▲ 0.8%	▼ 0.9%
Housing Completions	▼ 6.6%	▲ 7.3%
SF Completions	▼ 3.6%	▲ 13.5%
New SF House Sales	▲ 1.3%	▲ 16.9%
Private Residential Construction Spending	▲ 1.9%	▲ 2.7%
SF Construction Spending	▲ 1.2%	▼ 0.3%
Existing House Sales ¹	▼ 1.7%	▲ 2.7%

* 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

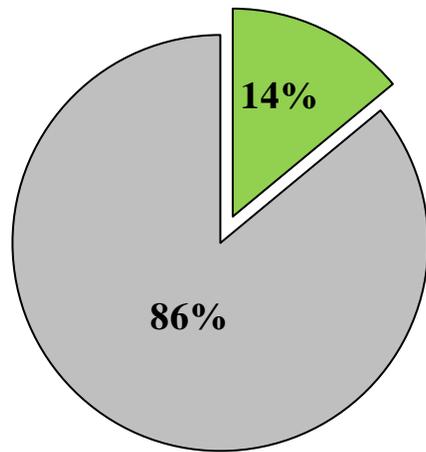


■ Non-structural panels

■ Total Sawnwood

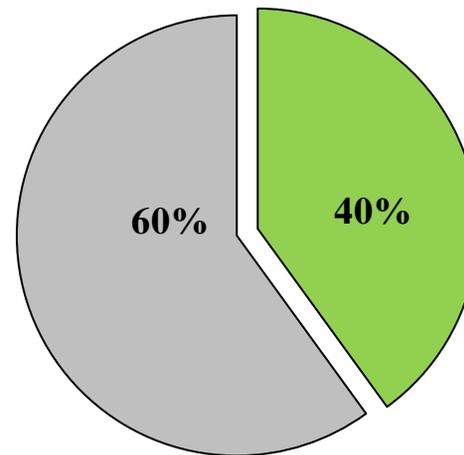
■ Structural panels

New SF Construction Percentage of Wood Products Consumption



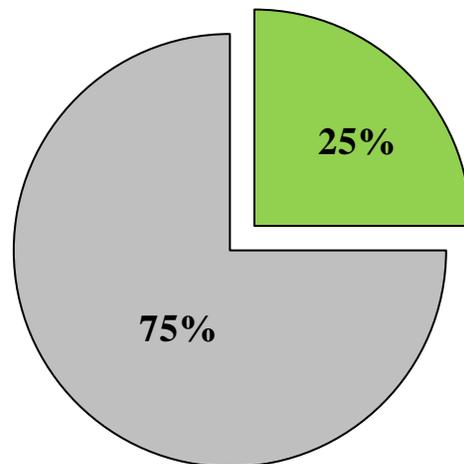
■ Non-structural panels:
New Housing

■ Other markets



■ Structural panels:
New housing

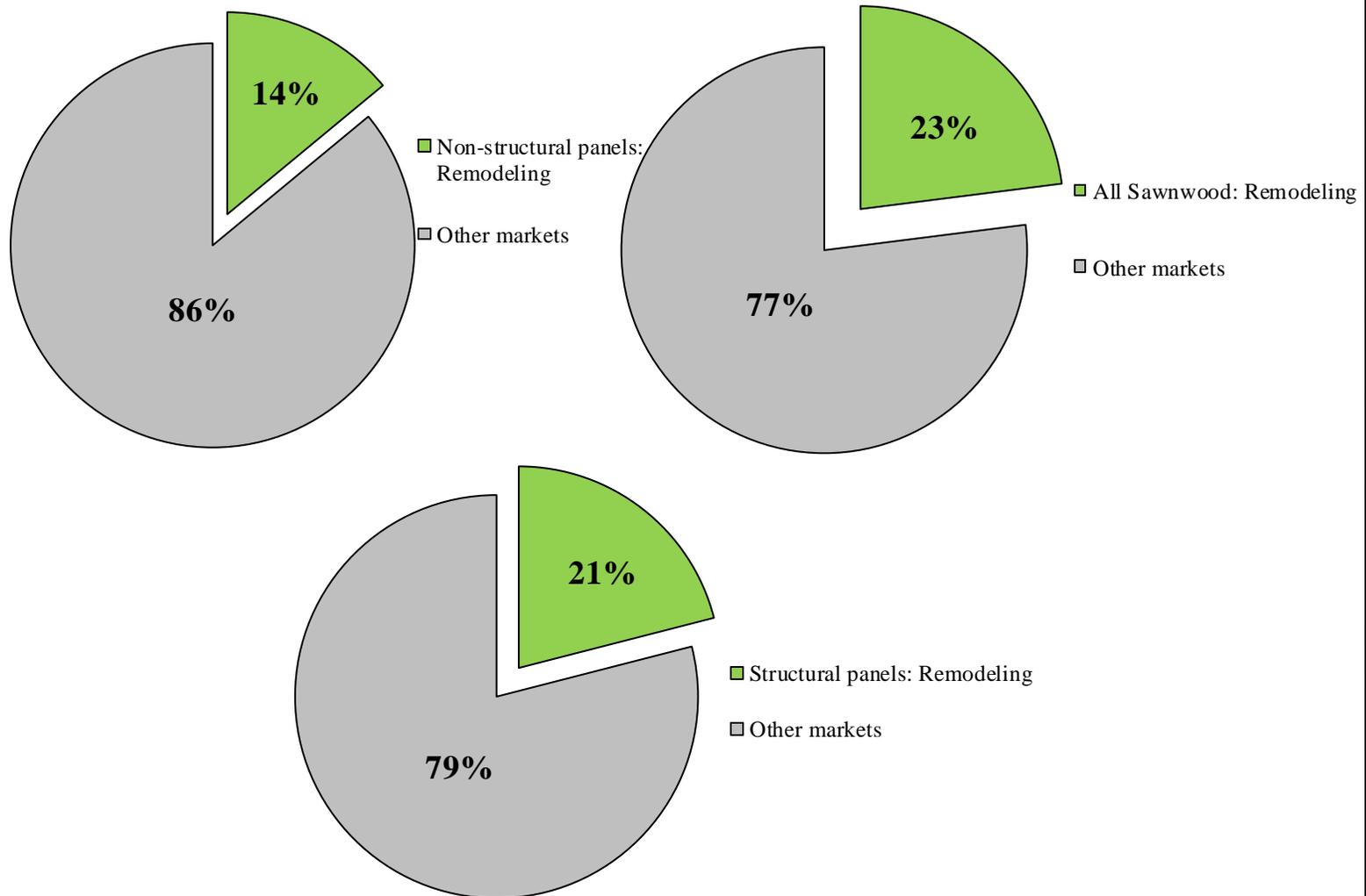
■ Other markets



■ All Sawnwood: New housing

■ Other markets

Repair and Remodeling's Percentage of Wood Products Consumption



2020 Housing Forecasts*

	Range	Median
Total starts:	1,200 to 1,423	1,296
Single-Family (SF) starts:	810 to 975	905
New SF house sales:	700 to 750	725

Organization	Total Starts	SF Starts	New SF House Sales
APA - The Engineered Wood Association ^a	1,260	880	
Bank of Montreal (BOM) ^b	1,350		
Deloitte ^c	1,213		
Fannie Mae ^d	1,351	975	725
Freddie Mac ^e	1,280		
Goldman Sachs ^f	1,381		708
John Burns Real Estate LLC ^g	1,200		
Mortgage Bankers Association (MBA) ^h	1,305	920	726
National Association of Homebuilders ⁱ	1,303	920	708
National Association of Realtors ^j	1,310		750
PNC Financial Services Group ^k	1,423		747
Fastmarkets RISI ^l	1,275	890	
Royal Bank of Canada (RBC) ^m	1,305		
Scotiabank ⁿ	1,260		
TD Economics ^o	1,330		
The Federal Reserve Bank of Chicago ^p	1,280		
UCLA Ziman Center for Real Estate ^q	1,250 to 1,300		
Urban Land Institute ^r		810	
Wells Fargo LLC ^s	1,290	905	700

* All in thousands of units

References

- a- APA – *The Engineered Wood Association*. Housing Starts November 2019. 12/17/19. Tacoma, WA. 35 pps.
- b- https://economics.bmo.com/media/filer_public/56/3f/563f8e0f-83d5-4aee-81d7-3464c6bcd947/usmodel.pdf
- c- <https://www2.deloitte.com/us/en/insights/economy/us-economic-forecast/united-states-outlook-analysis.html>
- d- https://www.fanniemae.com/resources/file/research/emma/pdf/Housing_Forecast_121819.pdf
- e- https://www.urban.org/sites/default/files/publication/101476/housing_finance_at_a_glance_a_monthly_chartbook_december_2019.pdf
- f- <https://www.goldmansachs.com/insights/pages/outlook-2020-f/US/report.pdf>
- g- *SBC Magazine*, Will we see housing's hiccup next year? *SBC Magazine*, Madison, WI. December 2019, p. 17.
- h- <https://www.mba.org/news-research-and-resources/research-and-economics/forecasts-and-commentary/mortgage-finance-forecast-archives>
- i- <http://www.nahbclassic.org/>
- j- <https://www.nar.realtor/sites/default/files/documents/2019-nar-real-estate-forecast-summit-speaker-slides-12-16-2019.pdf>
- k- https://www.pnc.com/content/dam/pnc-com/pdf/aboutpnc/EconomicReports/NEO%20Reports/2019/NEO_Dec2019.pdf
- l- *Random Lengths*, Volume 76, Issue 1 (1/3/20). Random Lengths Publications, Inc. Eugene, OR. 14 pps.
- m- <https://royal-bank-of-canada-2124.docs.contently.com/v/macroeconomic-outlook-december-2019>
- n- <https://www.scotiabank.com/>
- o- <https://economics.td.com/us-quarterly-economic-forecast>
- p- <https://www.chicagofed.org/publications/chicago-fed-letter/2020/429>
- q- https://www.anderson.ucla.edu/Documents/areas/ctr/ziman/UCLA_Economic_Letter_Shulman_12.06.18.pdf
- r- <https://urbanland.uli.org/capital-markets/uli-forecast-says-longest-u-s-economic-and-real-estate-expansion-to-continue-through-2021/>
- s- <https://www.wellsfargo.com/assets/pdf/commercial/insights/economics/real-estate-and-housing/housing-whats-ahead-20190116.pdf>

2019# Housing Forecasts*

Total starts, range:	1,134 to 1,400	Median: 1,280
Single-family starts, range:	815 to 920	Median: 900
New SF house sales, range:	618 to 688	Median: 638

2018# Housing Forecasts*

Total starts, range:	1,248 to 1,320	Median: 1,280
Single-family starts, range:	850 to 981	Median: 912
New SF house sales, range:	653 to 700	Median: 672

2017# Housing Forecasts*

Total starts, range:	1,170 to 1,500	Median: 1,271
Single-family starts, range:	795 to 893	Median: 856
New SF house sales, range:	610 to 680	Median: 642

The Virginia Tech-USDA Forest Service Housing Commentary, November 2018

* All in thousands of units.

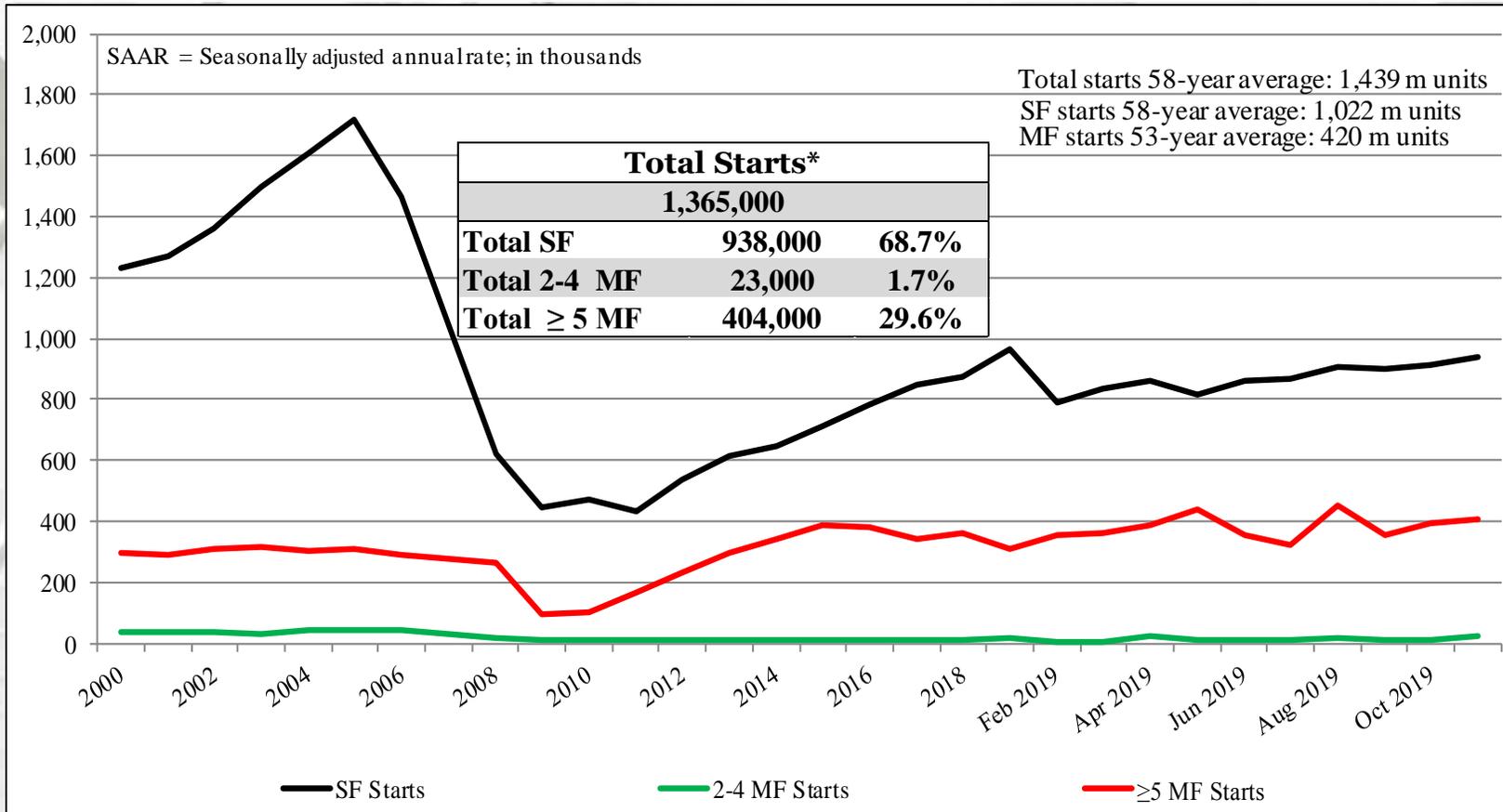
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
November	1,365,000	938,000	23,000	404,000
October	1,323,000	916,000	12,000	395,000
2018	1,202,000	804,000	11,000	387,000
M/M change	3.2%	2.4%	91.7%	2.3%
Y/Y change	13.6%	16.7%	109.1%	4.4%

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

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

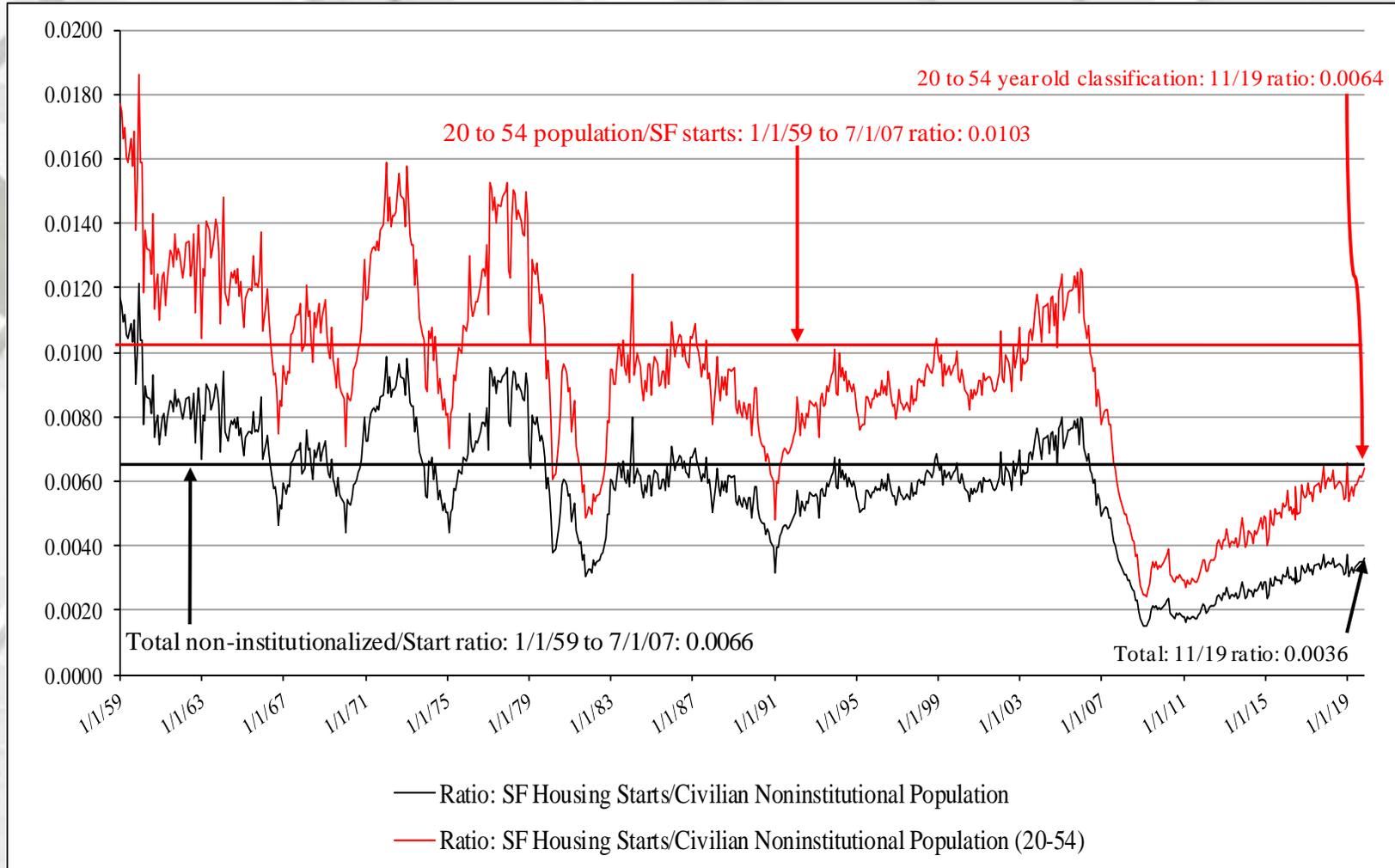
Total Housing Starts



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

* Percentage of total starts.

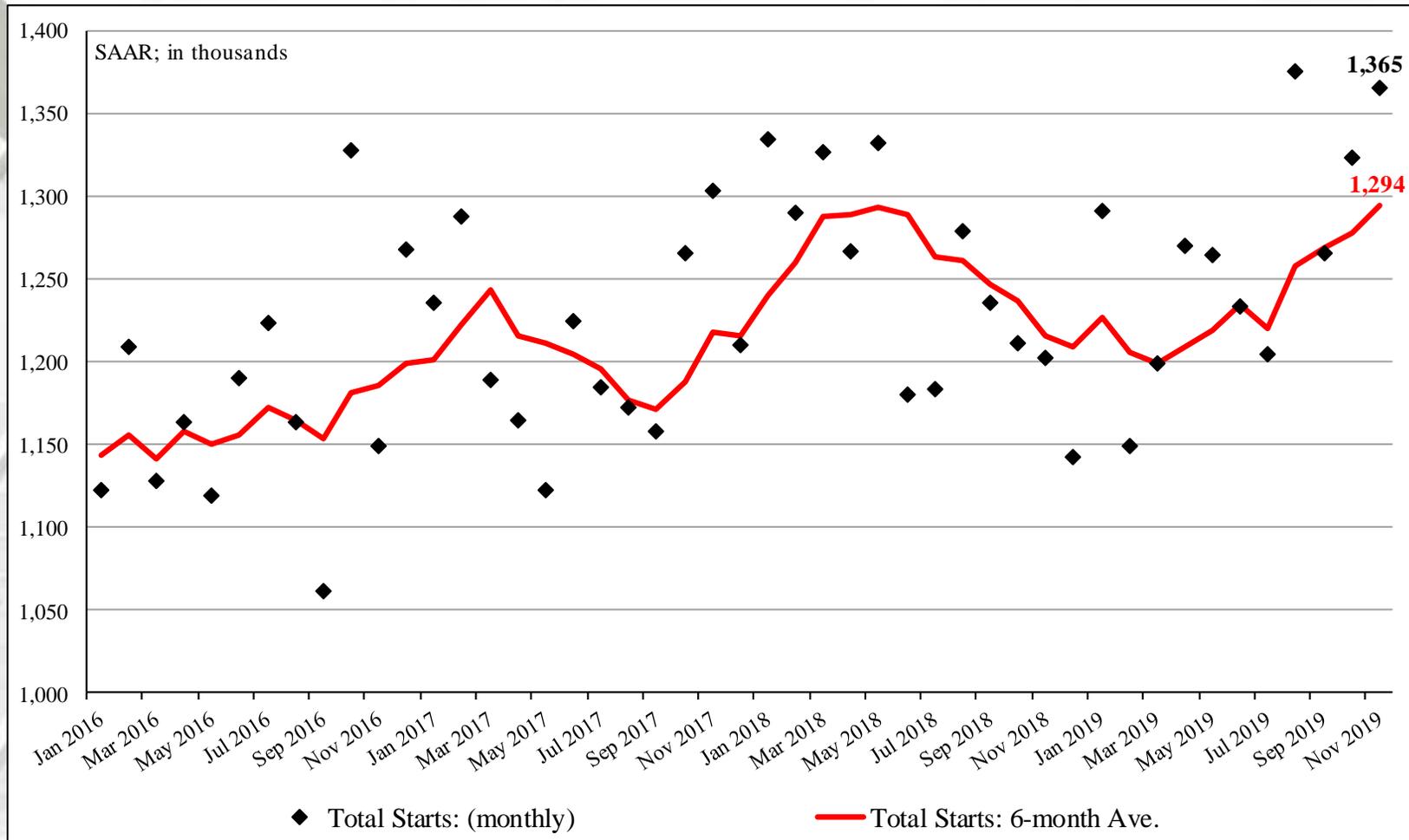
New SF Starts



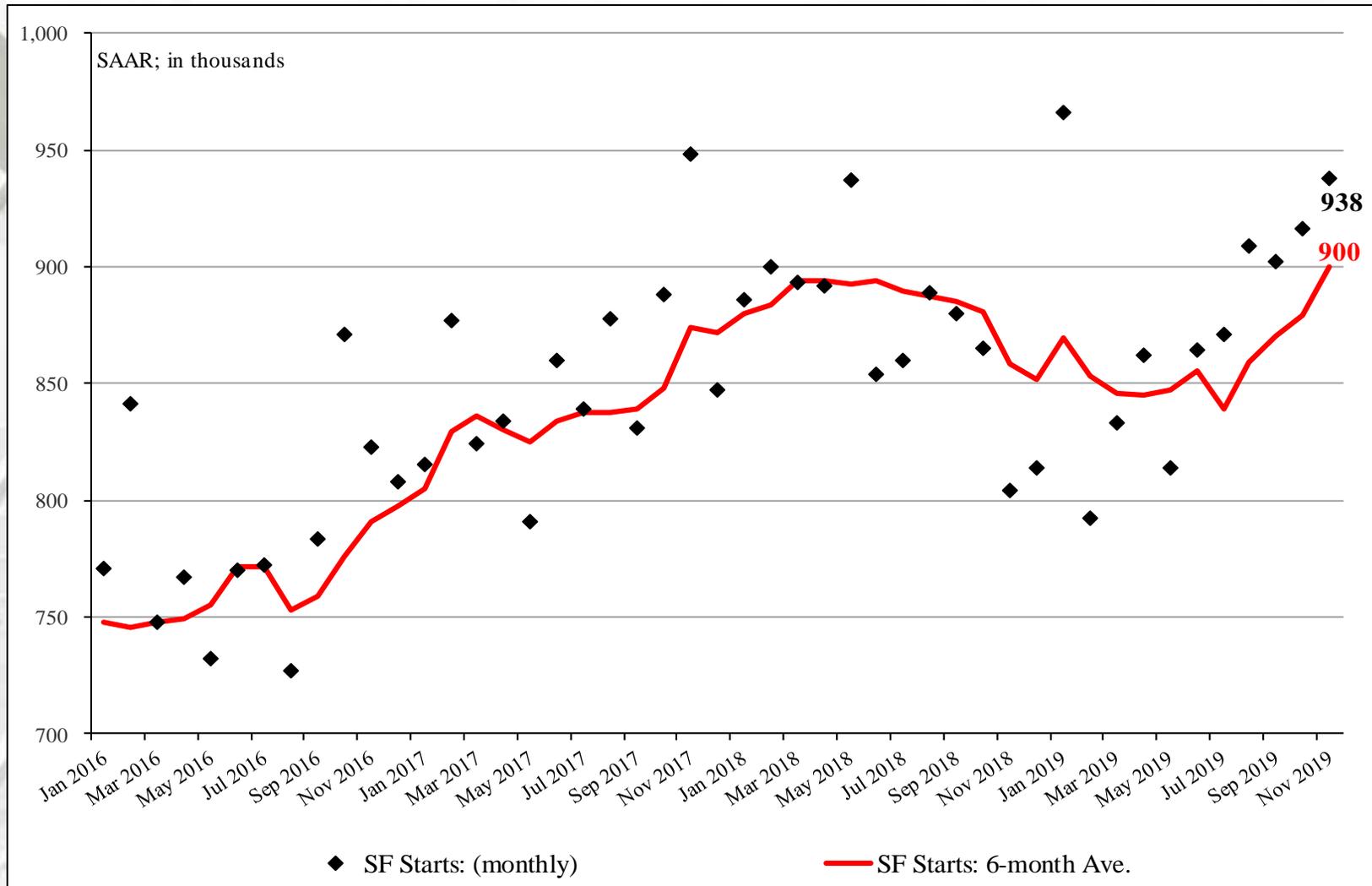
New SF starts adjusted for the US population

From November 1959 to November 2007, the long-term ratio of new SF starts to the total US non-institutionalized population was 0.0066; in November 2019 it was 0.0036 – a slight increase from October (0.0035). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in November 2019 was 0.0064 – also an increase from October (0.0062). From a population worldview, new SF construction is less than what is necessary for changes in population (i.e., under-building).

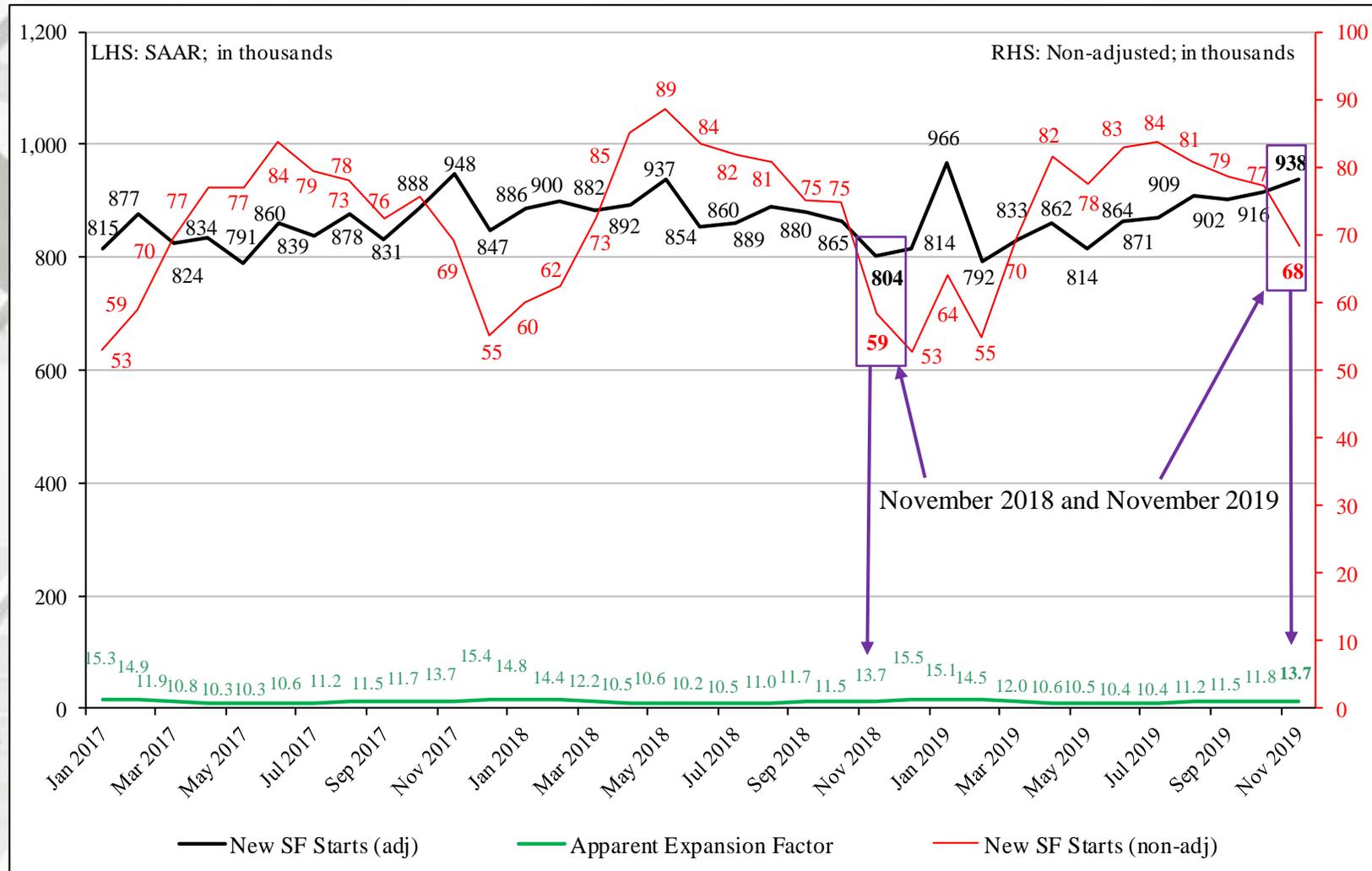
Total Housing Starts: Six-Month Average



SF Housing Starts: Six-Month Average



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**
November	104,000	62,000	42,000
October	108,000	37,000	71,000
2018	109,000	63,000	46,000
M/M change	-3.7%	67.6%	-40.8%
Y/Y change	-4.6%	-1.6%	-8.7%
	MW Total	MW SF	MW MF
November	158,000	118,000	40,000
October	187,000	119,000	68,000
2018	144,000	112,000	32,000
M/M change	-15.5%	-0.8%	-41.2%
Y/Y change	9.7%	5.4%	25.0%

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

** US DOC does not report multifamily starts directly, this is an estimation (Total starts – SF starts).

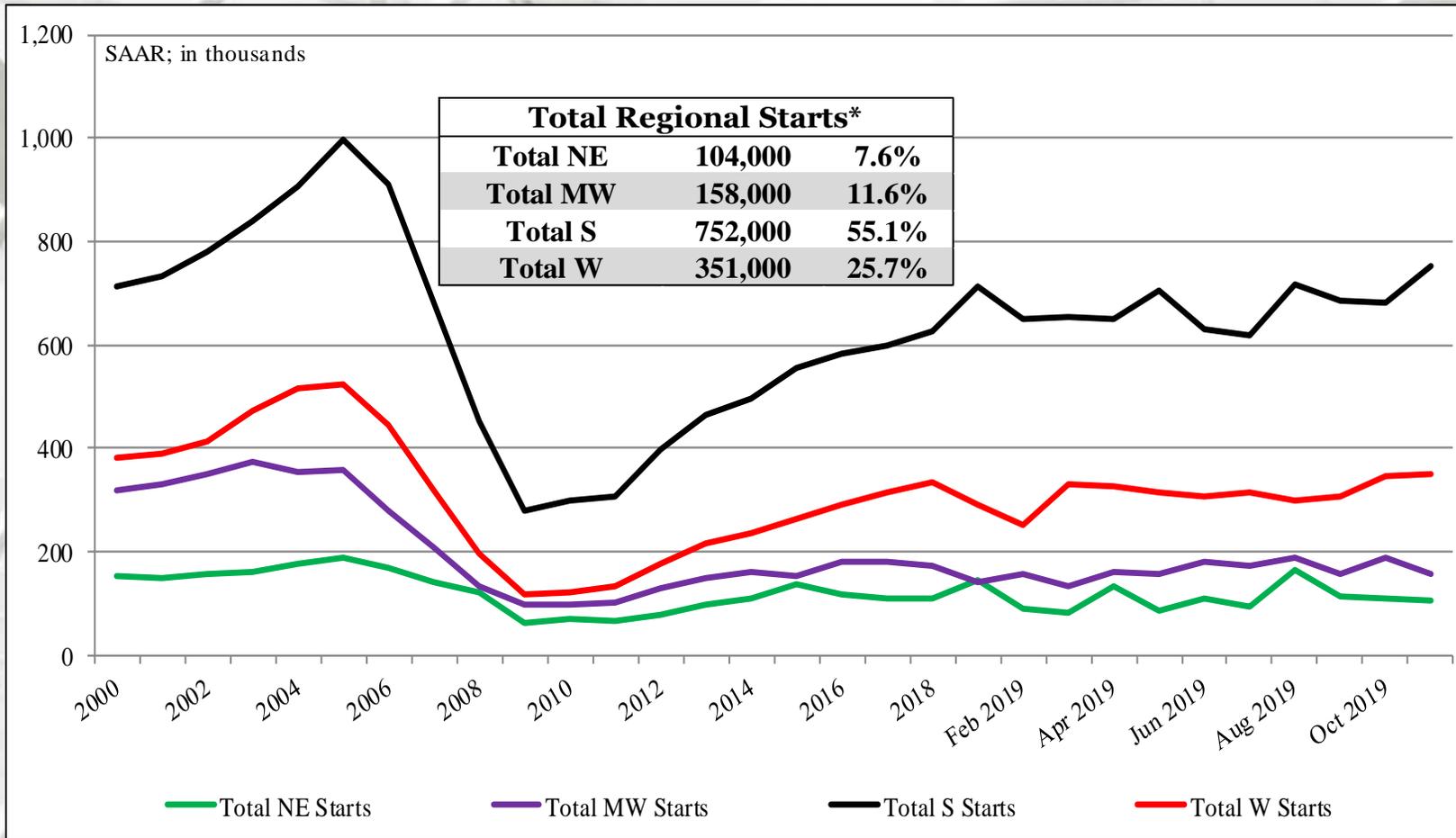
New Housing Starts by Region

	S Total	S SF	S MF**
November	752,000	512,000	240,000
October	682,000	534,000	148,000
2017	663,000	444,000	219,000
M/M change	10.3%	-4.1%	62.2%
Y/Y change	13.4%	15.3%	9.6%
	W Total	W SF	W MF
November	351,000	246,000	105,000
October	346,000	226,000	120,000
2018	286,000	185,000	101,000
M/M change	1.4%	8.8%	-12.5%
Y/Y change	22.7%	33.0%	4.0%

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

** US DOC does not report multifamily starts directly, this is an estimation (Total starts – SF starts).

New Housing Starts by Region

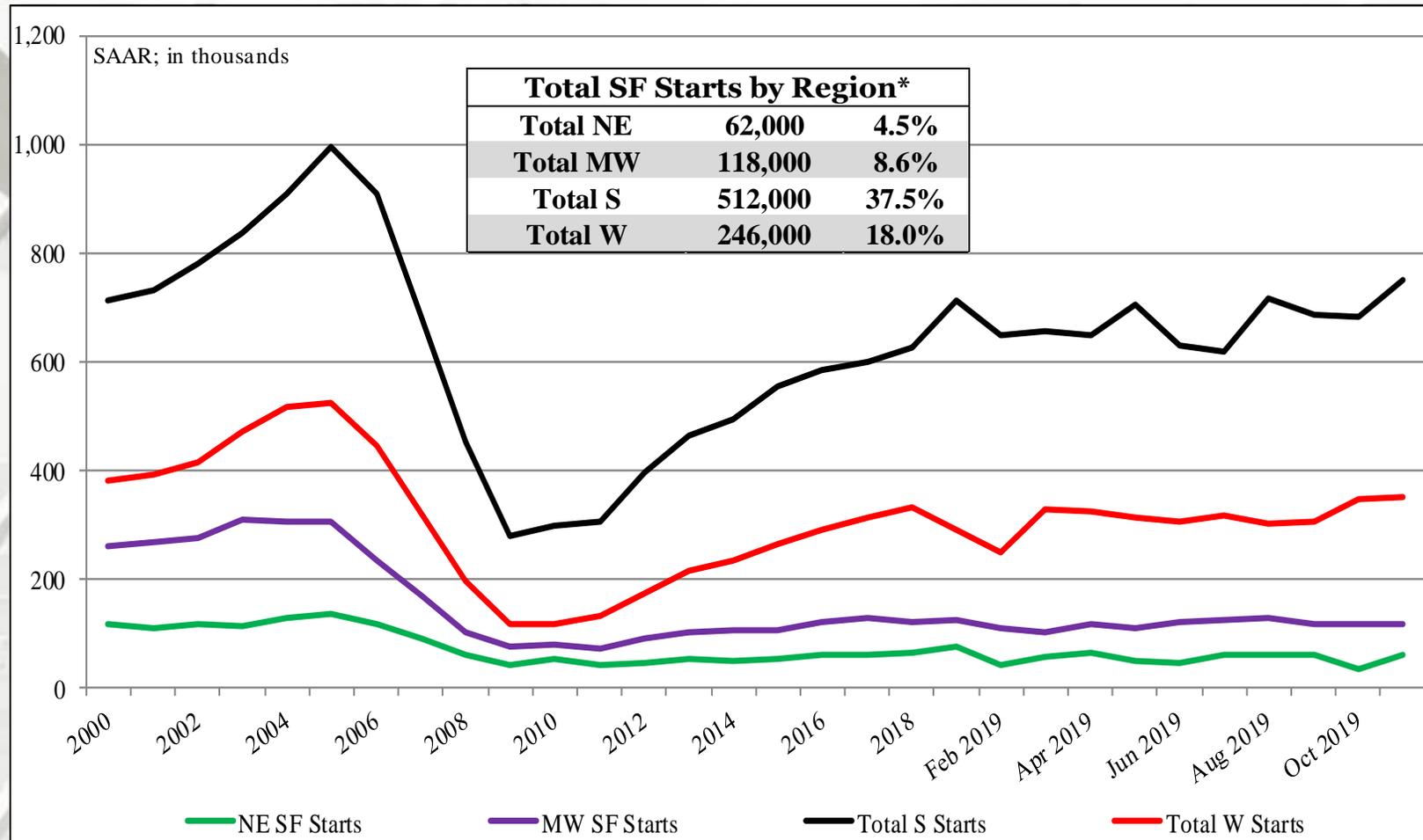


NE = Northeast, MW = Midwest, S = South, W = West

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

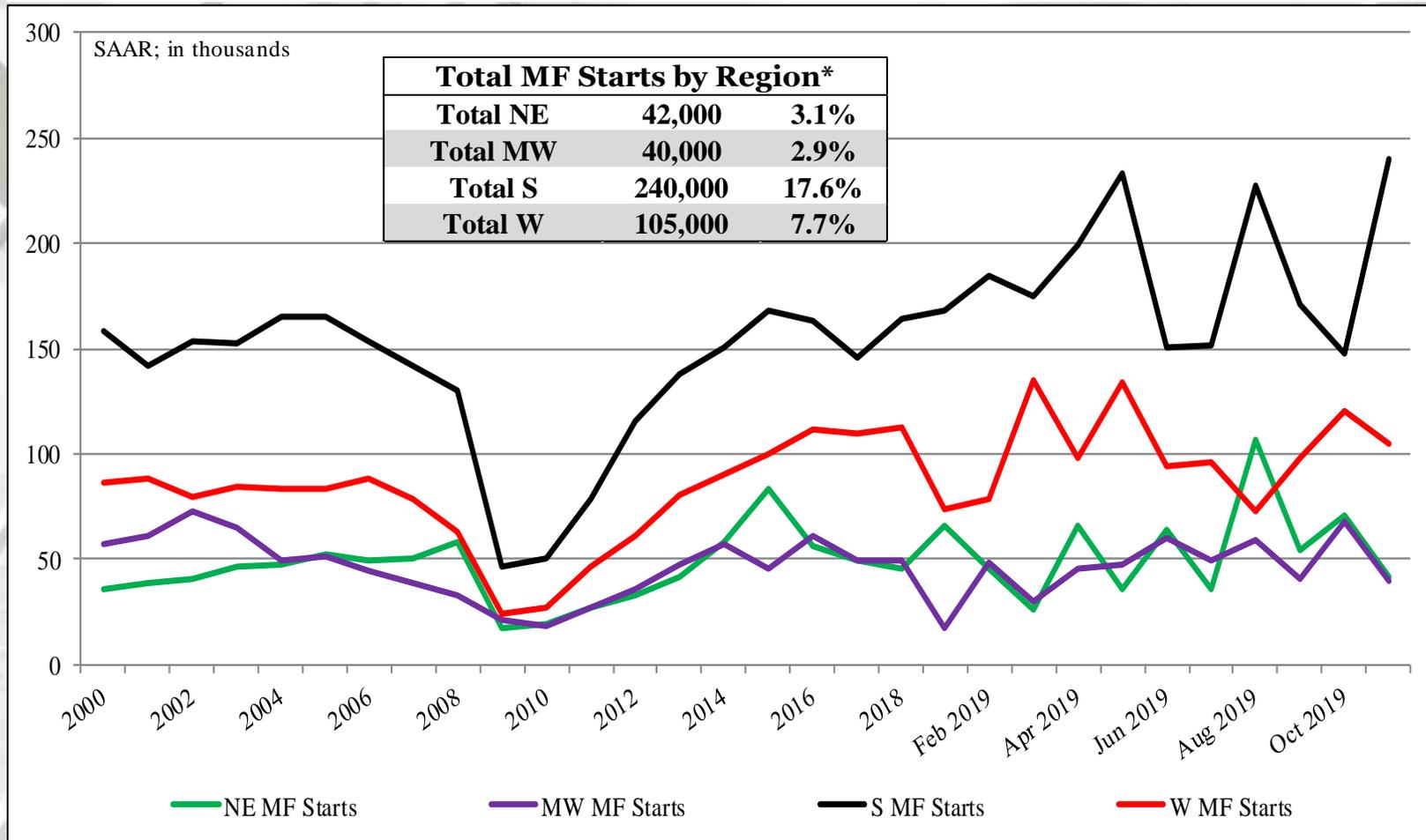


NE = Northeast, MW = Midwest, S = South, W = West

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

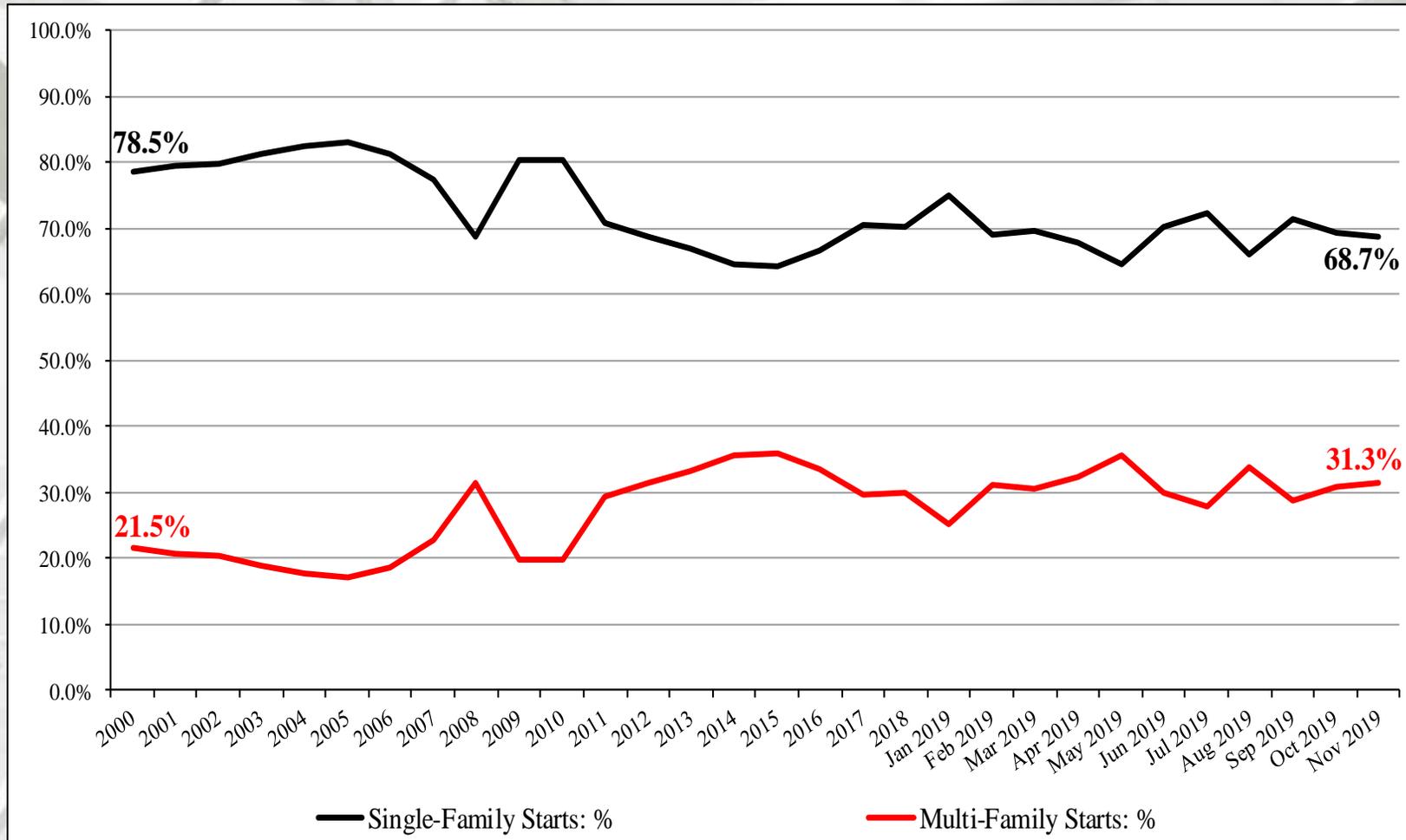


NE = Northeast, MW = Midwest, S = South, W = West

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 (%)

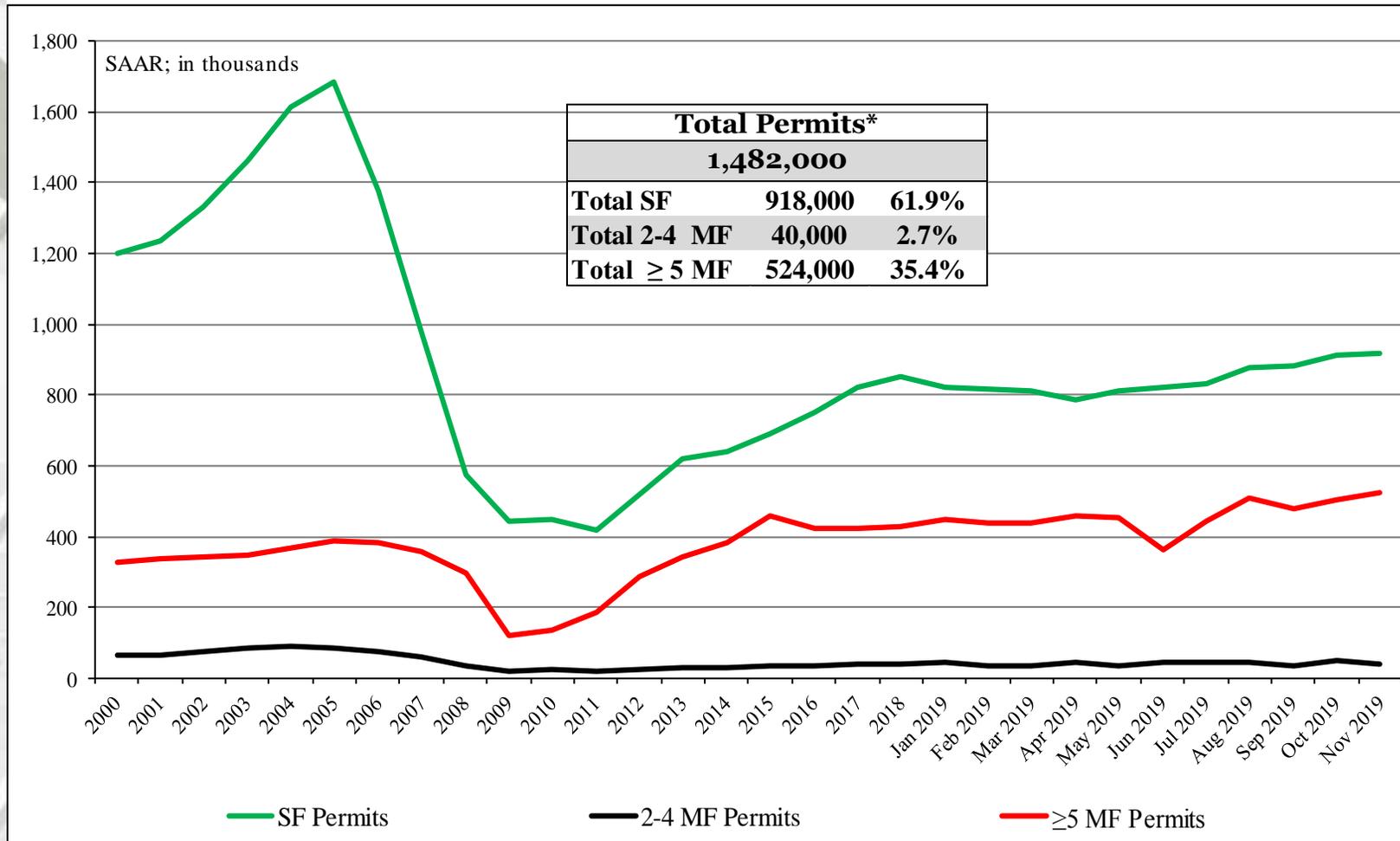


New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
November	1,482,000	918,000	40,000	524,000
October	1,461,000	911,000	48,000	502,000
2018	1,334,000	843,000	41,000	450,000
M/M change	1.4%	0.8%	-16.7%	4.4%
Y/Y change	11.1%	8.9%	-2.4%	16.4%

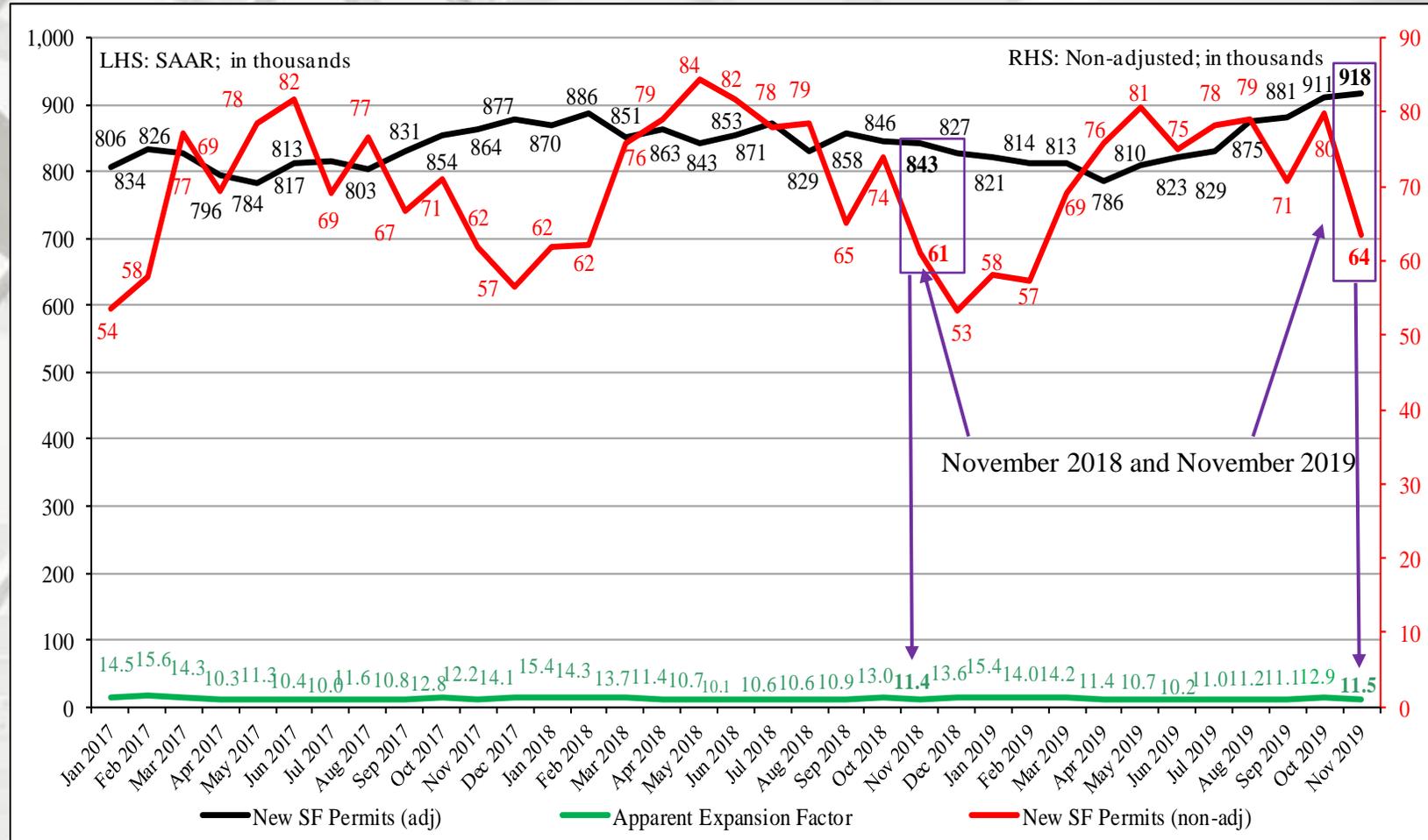
* All permit data are presented at a seasonally adjusted annual rate (SAAR).

Total New Housing Permits



* Percentage of total permits.

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**
November	163,000	57,000	106,000
October	138,000	48,000	90,000
2018	129,000	52,000	77,000
M/M change	18.1%	18.8%	17.8%
Y/Y change	26.4%	9.6%	37.7%
	MW Total*	MW SF	MW MF**
November	206,000	112,000	94,000
October	179,000	120,000	59,000
2018	177,000	112,000	65,000
M/M change	15.1%	-6.7%	59.3%
Y/Y change	16.4%	0.0%	44.6%

NE = Northeast; ME = Midwest

* All data are SAAR

** US DOC does not report multifamily permits directly, this is an estimation (Total permits – SF permits).

New Housing Permits by Region

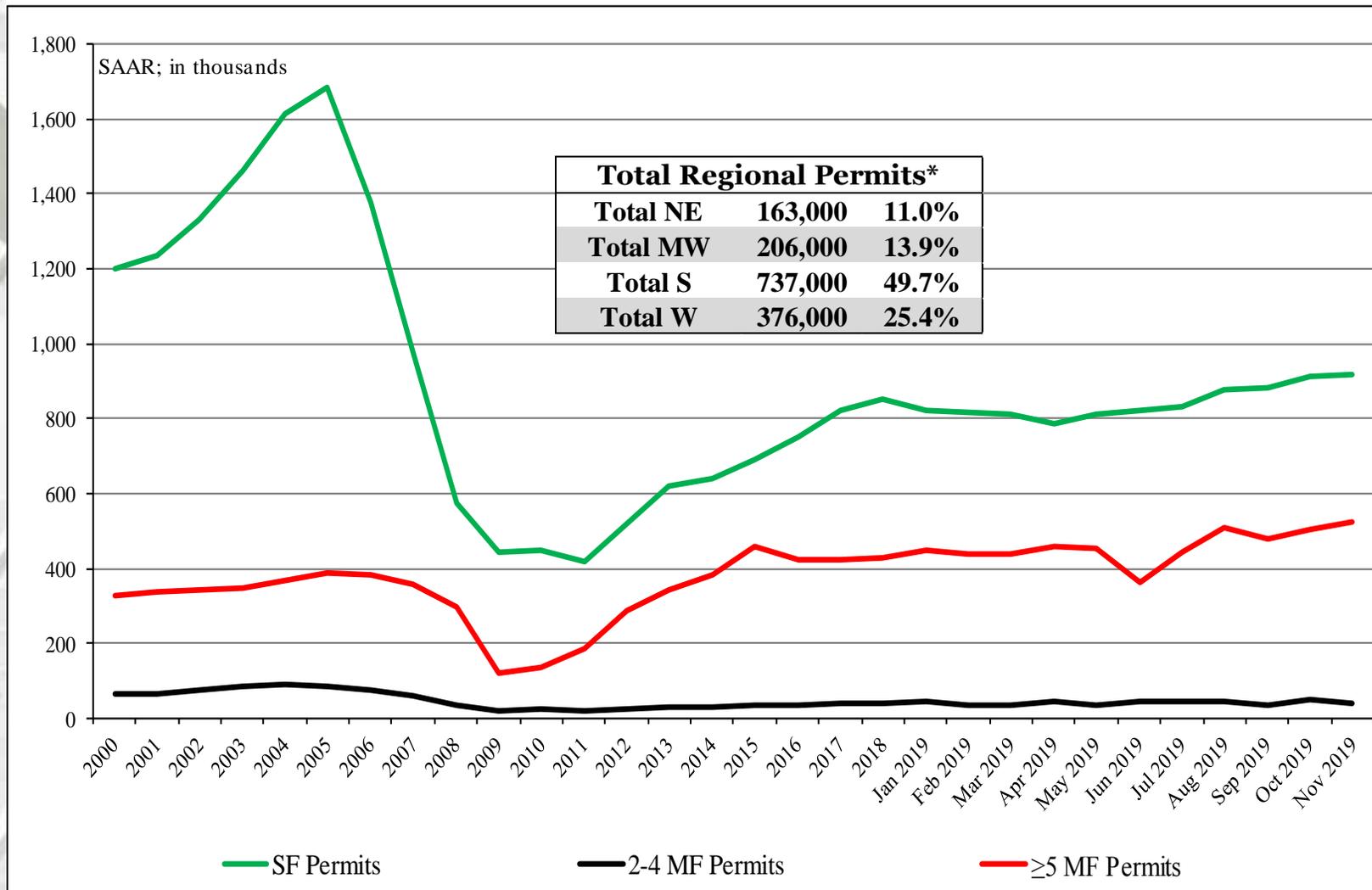
	S Total*	S SF	S MF**
November	737,000	516,000	221,000
October	773,000	523,000	250,000
2018	706,000	478,000	228,000
M/M change	-4.7%	-1.3%	-11.6%
Y/Y change	4.4%	7.9%	-3.1%
	W Total*	W SF	W MF**
November	376,000	233,000	143,000
October	371,000	220,000	151,000
2018	322,000	201,000	121,000
M/M change	1.3%	5.9%	-5.3%
Y/Y change	16.8%	15.9%	18.2%

S = South; W = West

* All data are SAAR

** US DOC does not report multifamily permits directly, this is an estimation (Total permits – SF permits).

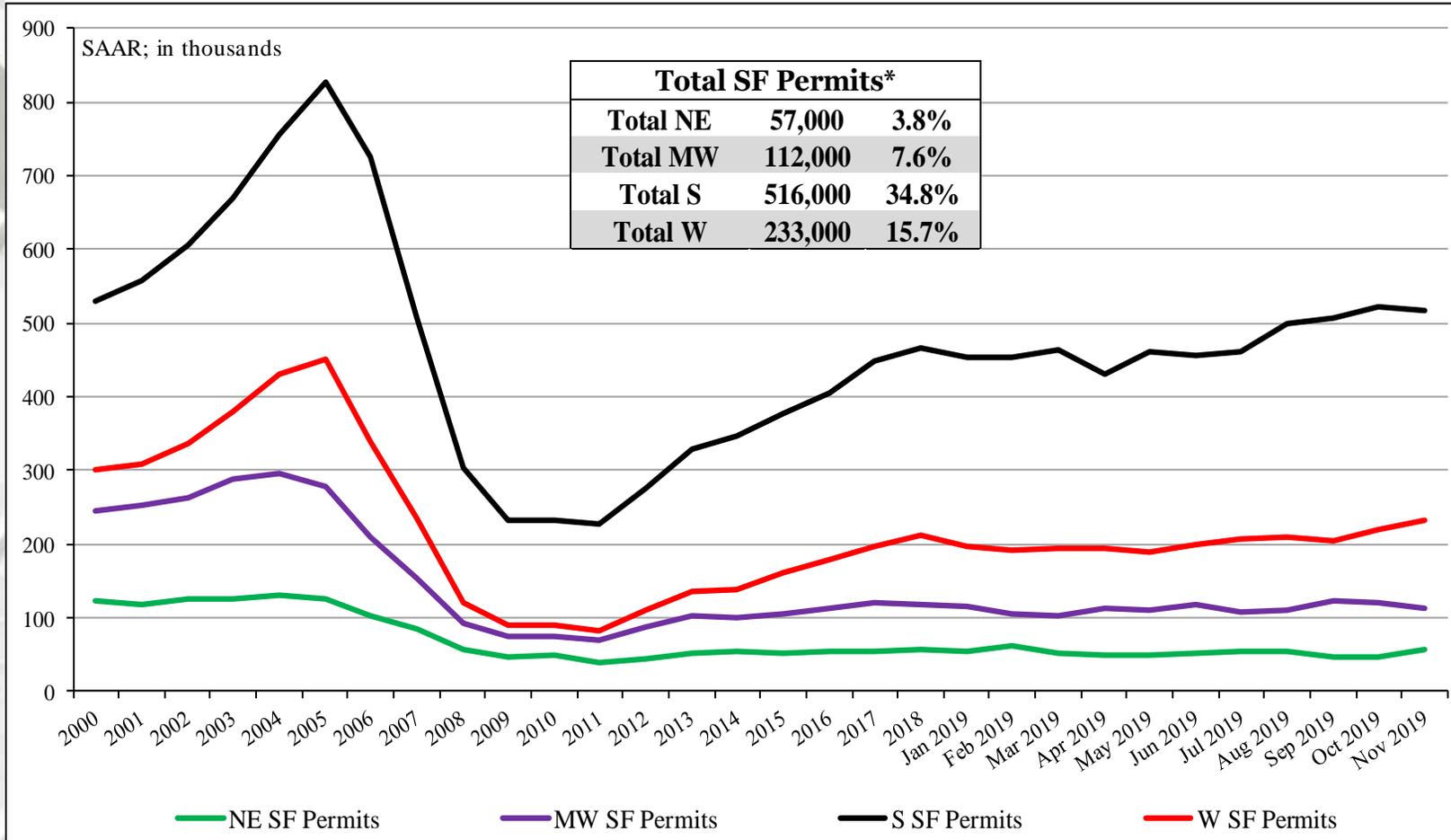
Total Housing Permits by Region



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

* Percentage of total permits.

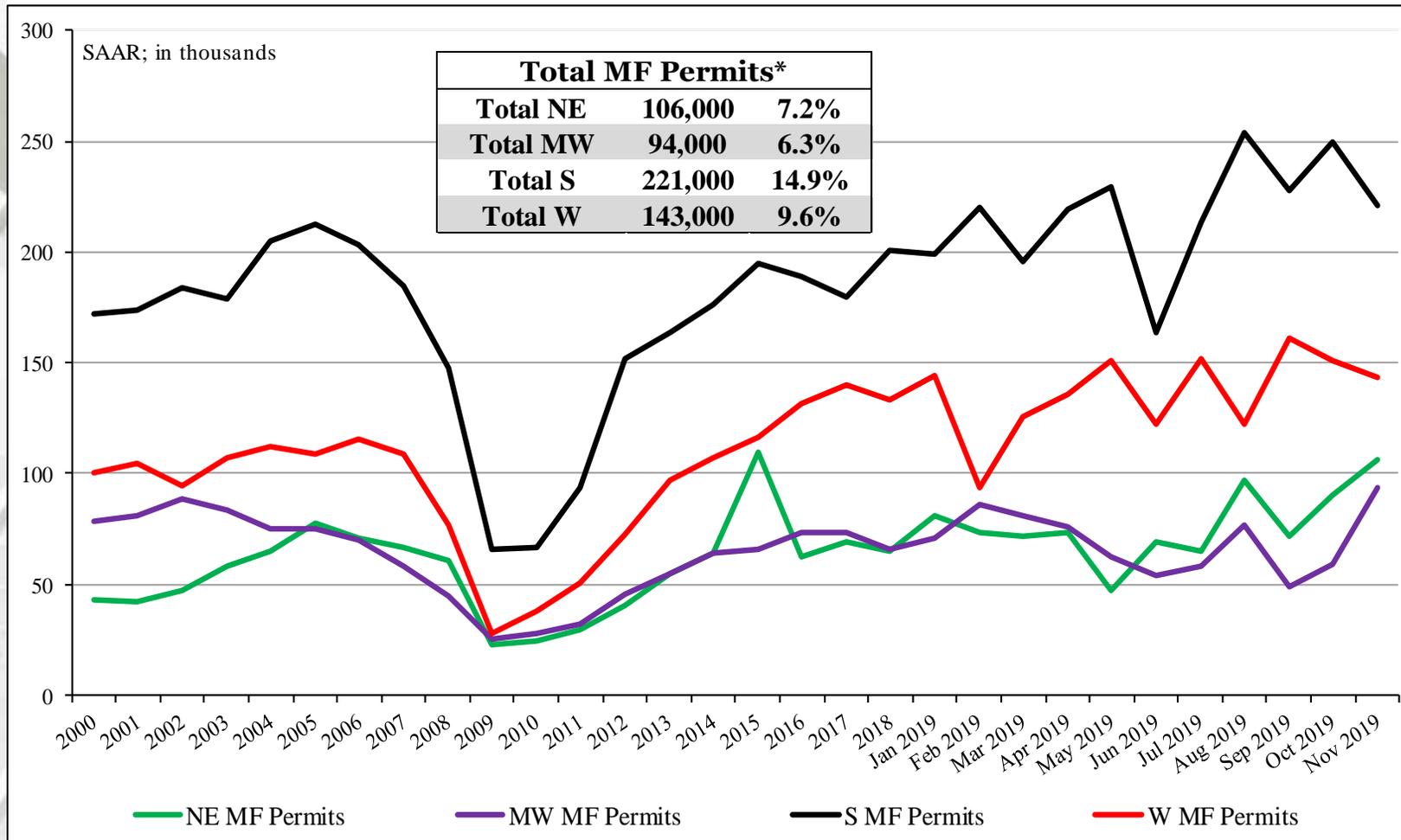
SF Housing Permits by Region



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.

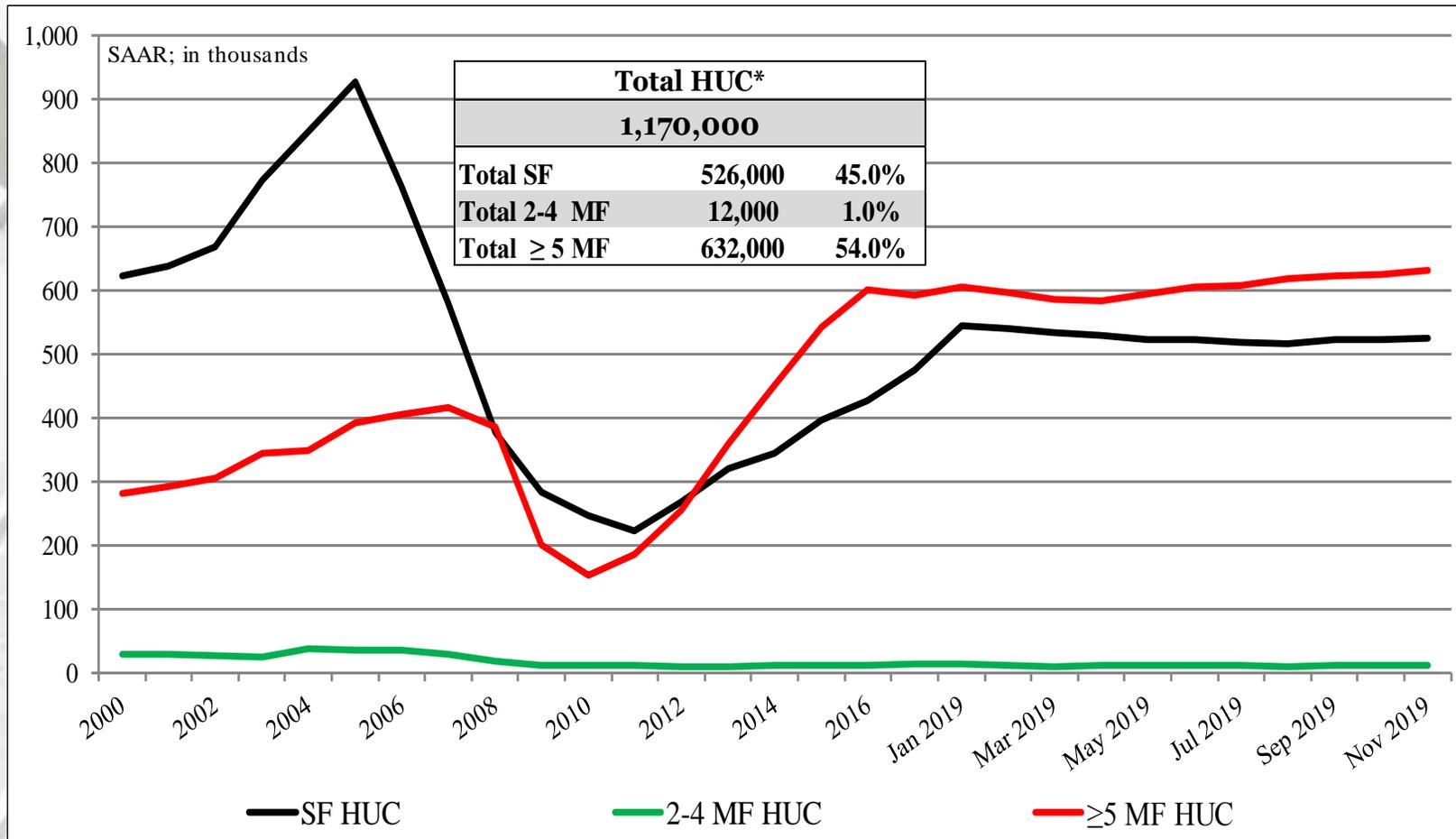
New Housing Under Construction (HUC)

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
November	1,170,000	526,000	12,000	632,000
October	1,158,000	522,000	11,000	625,000
2018	1,143,000	531,000	12,000	600,000
M/M change	1.0%	0.8%	9.1%	1.1%
Y/Y change	2.4%	-0.9%	0.0%	5.3%

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

** US DOC does not report 2-4 multifamily 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.

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
November	178,000	56,000	122,000
October	179,000	56,000	123,000
2018	187,000	62,000	125,000
M/M change	-0.6%	0.0%	-0.8%
Y/Y change	-4.8%	-9.7%	-2.4%
	MW Total	MW SF	MW MF
November	148,000	77,000	71,000
October	149,000	77,000	72,000
2018	153,000	81,000	72,000
M/M change	-0.7%	0.0%	-1.4%
Y/Y change	-3.3%	-4.9%	-1.4%

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

** US DOC does not report multifamily units under construction directly, this is an estimation
(Total under construction – SF under construction).

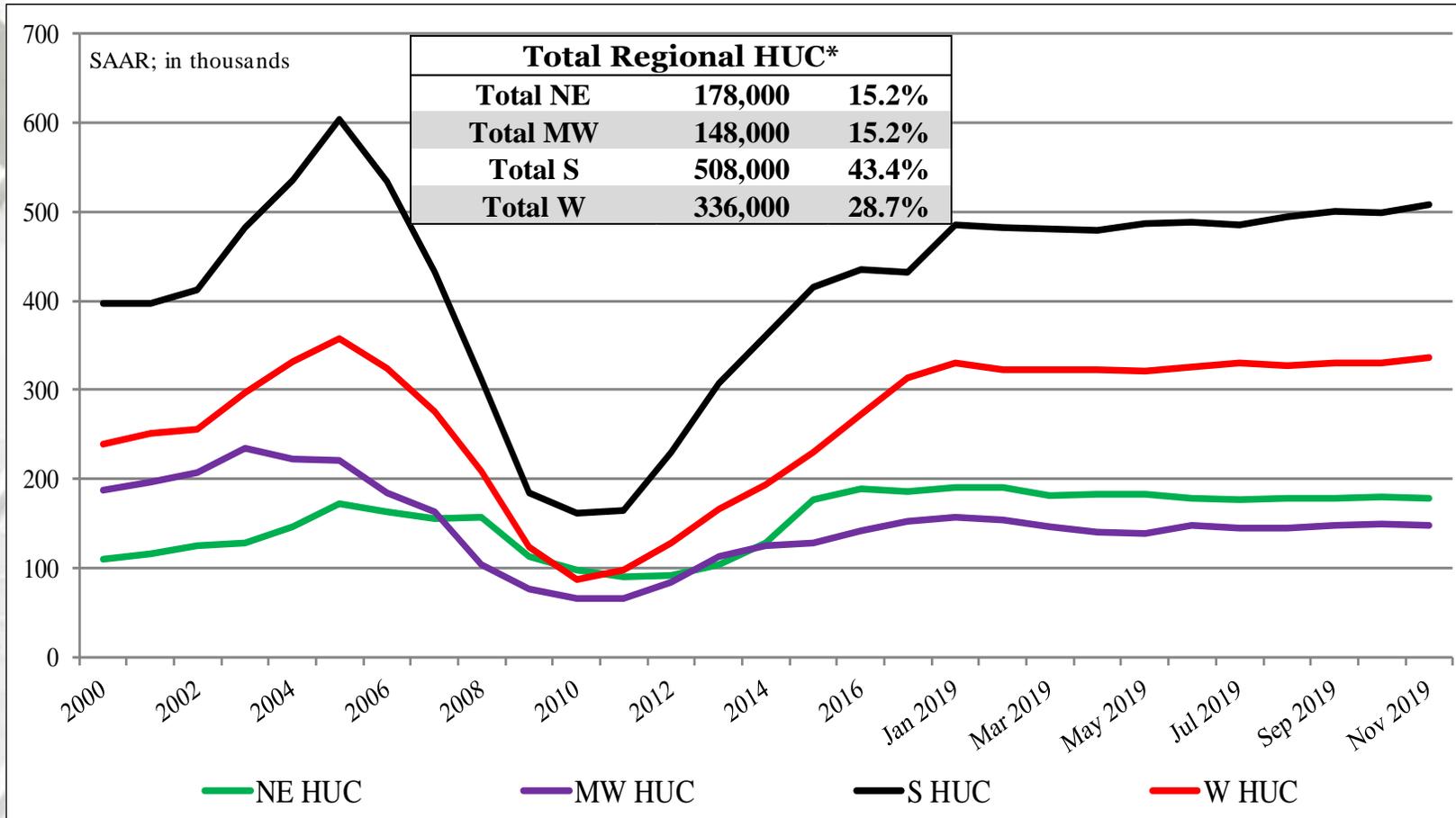
New Housing Under Construction by Region

	S Total	S SF	S MF**
November	508,000	251,000	257,000
October	499,000	250,000	249,000
2018	464,000	242,000	222,000
M/M change	1.8%	0.4%	3.2%
Y/Y change	9.5%	3.7%	15.8%
	W Total	W SF	W MF
November	336,000	142,000	194,000
October	331,000	139,000	192,000
2018	339,000	146,000	193,000
M/M change	1.5%	2.2%	1.0%
Y/Y change	-0.9%	-2.7%	0.5%

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

** US DOC does not report multifamily units under construction directly, this is an estimation
(Total under construction – SF under construction).

Total Housing Under Construction by Region

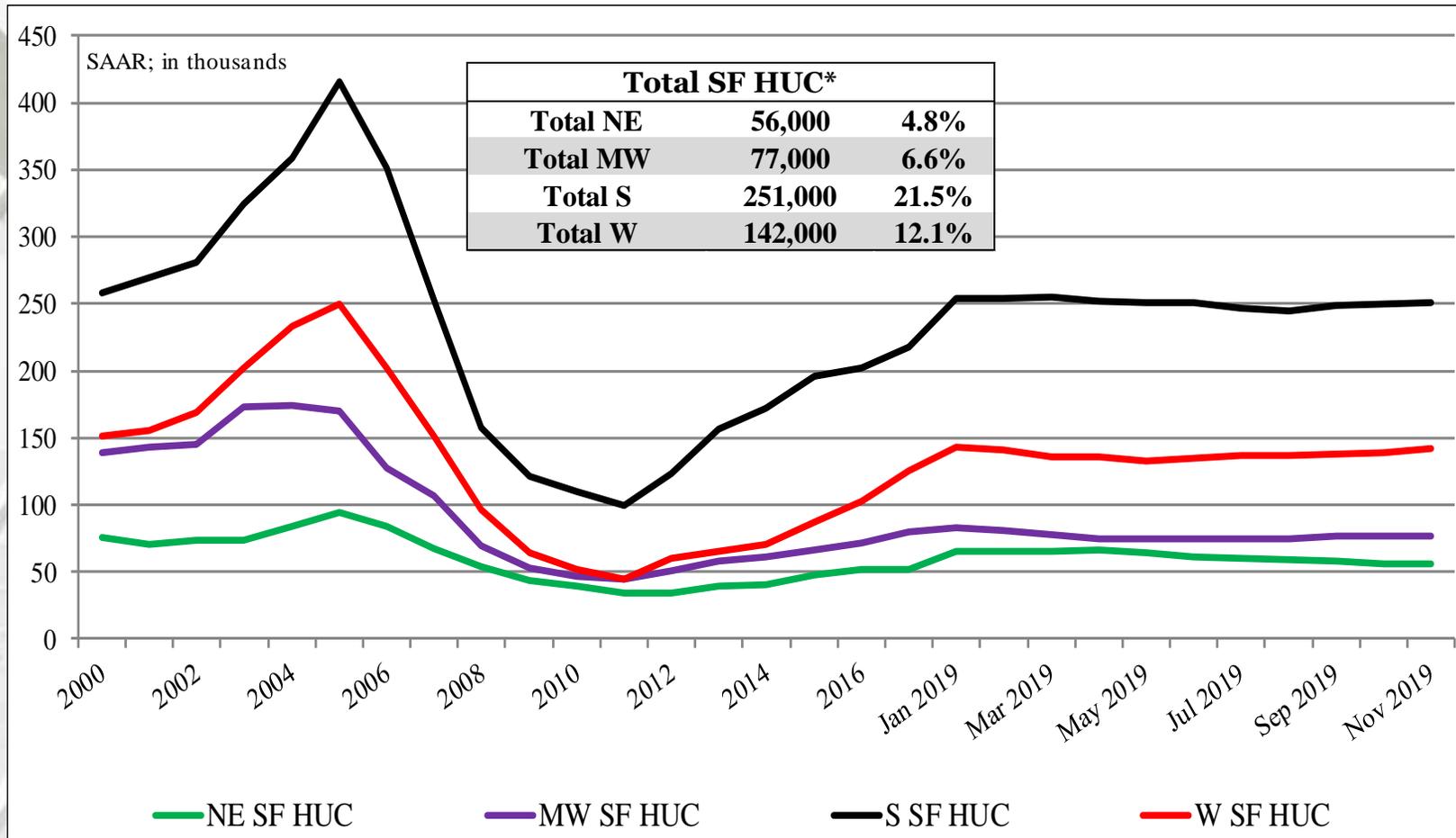


NE = Northeast, MW = Midwest, S = South, W = West

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

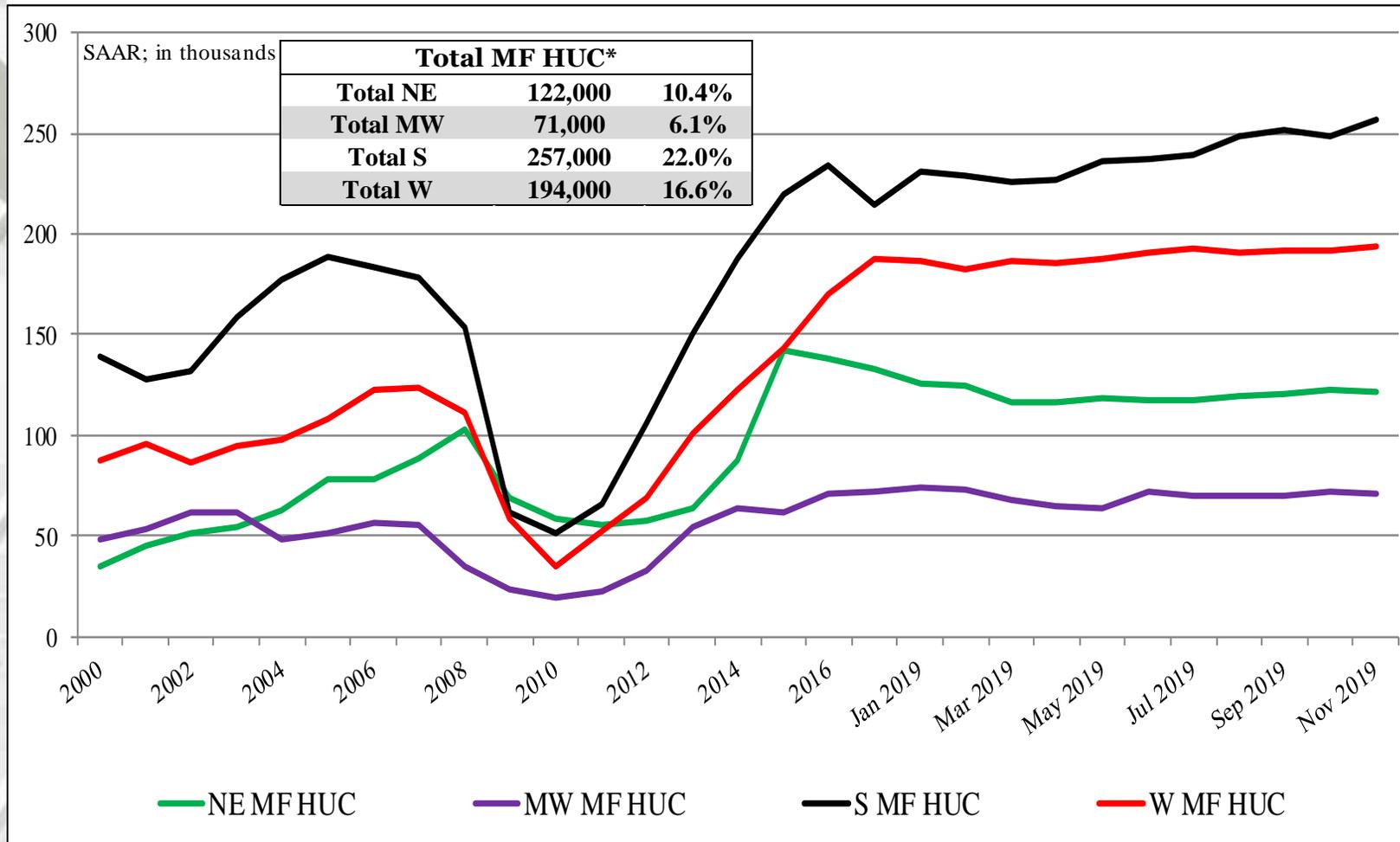


NE = Northeast, MW = Midwest, S = South, W = West.

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.

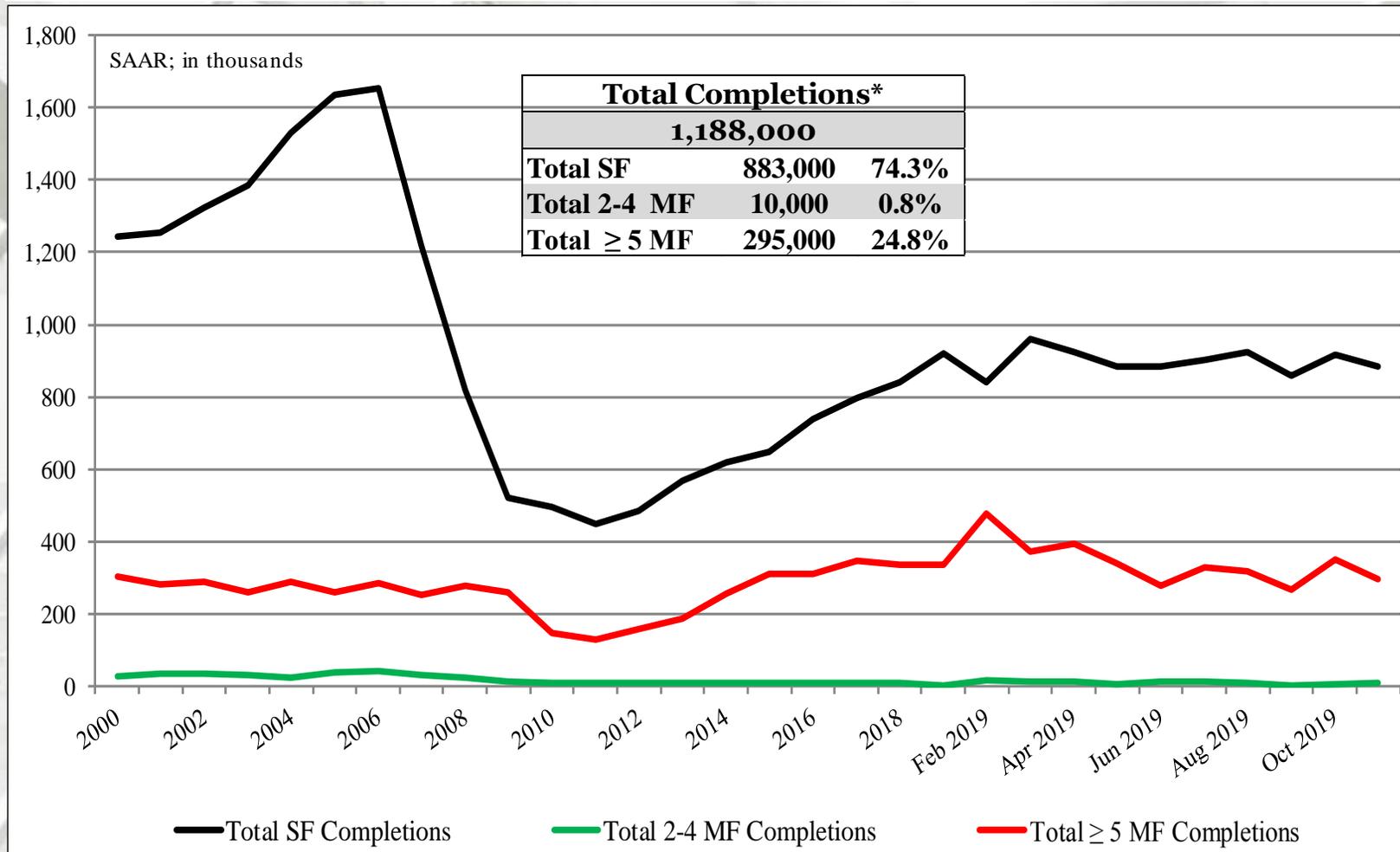
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
November	1,188,000	883,000	10,000	295,000
October	1,272,000	916,000	5,000	351,000
2018	1,107,000	778,000	12,000	317,000
M/M change	-6.6%	-3.6%	100.0%	-16.0%
Y/Y change	7.3%	13.5%	-16.7%	-6.9%

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

** US DOC does not report multifamily 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

New Housing Completions by Region

	NE Total	NE SF	NE MF**
November	107,000	56,000	51,000
October	121,000	59,000	62,000
2018	123,000	56,000	67,000
M/M change	-11.6%	-5.1%	-17.7%
Y/Y change	-13.0%	0.0%	-23.9%
	MW Total	MW SF	MW MF
November	150,000	107,000	43,000
October	157,000	116,000	41,000
2018	137,000	110,000	27,000
M/M change	-4.5%	-7.8%	4.9%
Y/Y change	9.5%	-2.7%	59.3%

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

** US DOC does not report multifamily units completions directly, this is an estimation
(Total completions – SF completions).

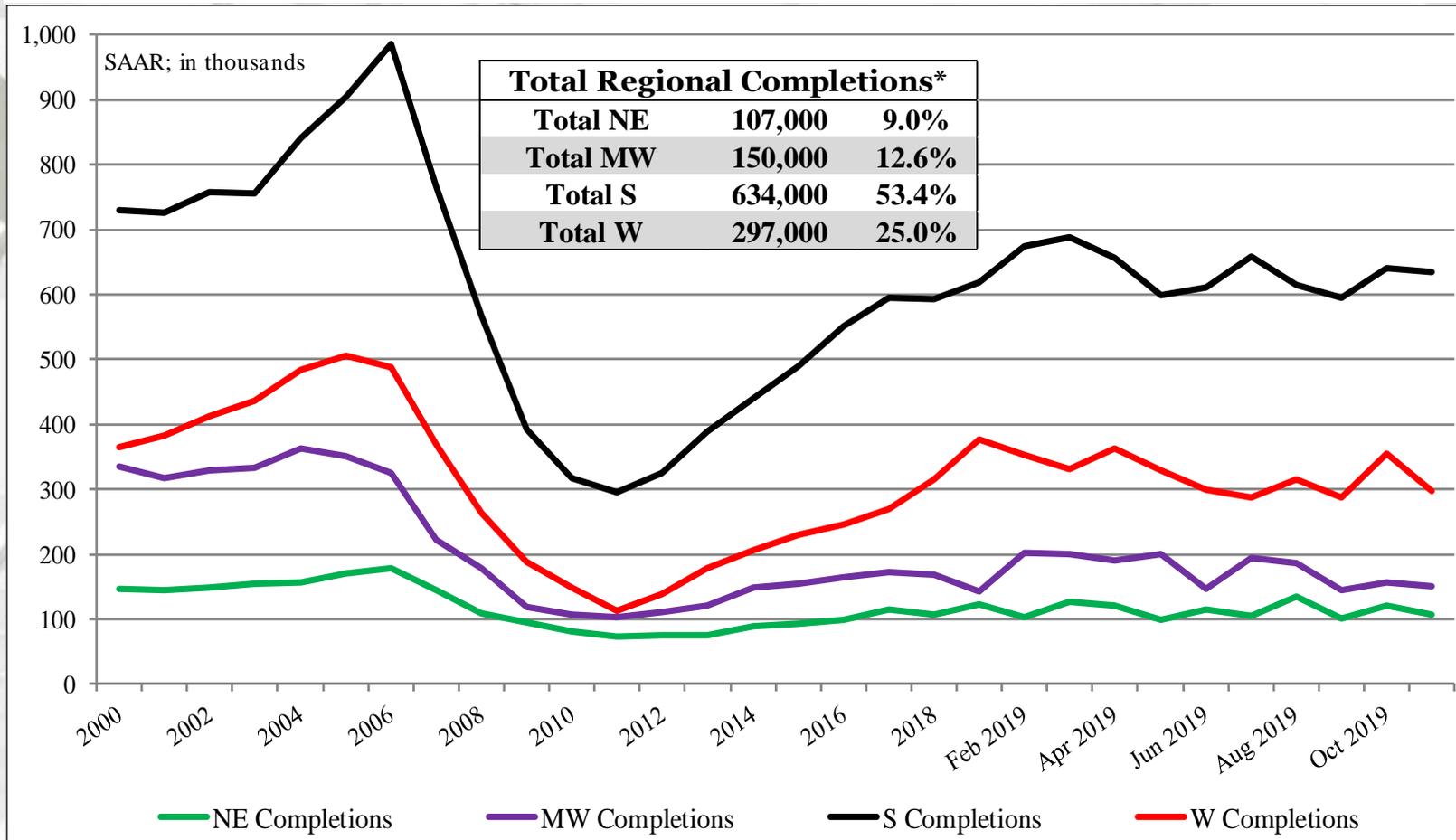
New Housing Completions by Region

	S Total	S SF	S MF**
November	634,000	508,000	126,000
October	640,000	514,000	126,000
2018	542,000	440,000	102,000
M/M change	-0.9%	-1.2%	0.0%
Y/Y change	17.0%	15.5%	23.5%
	W Total	W SF	W MF
November	297,000	212,000	85,000
October	354,000	227,000	127,000
2018	305,000	172,000	133,000
M/M change	-16.1%	-6.6%	-33.1%
Y/Y change	-2.6%	23.3%	-36.1%

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

** US DOC does not report multifamily units completions directly, this is an estimation
(Total completions – SF completions).

Total Housing Completions by Region

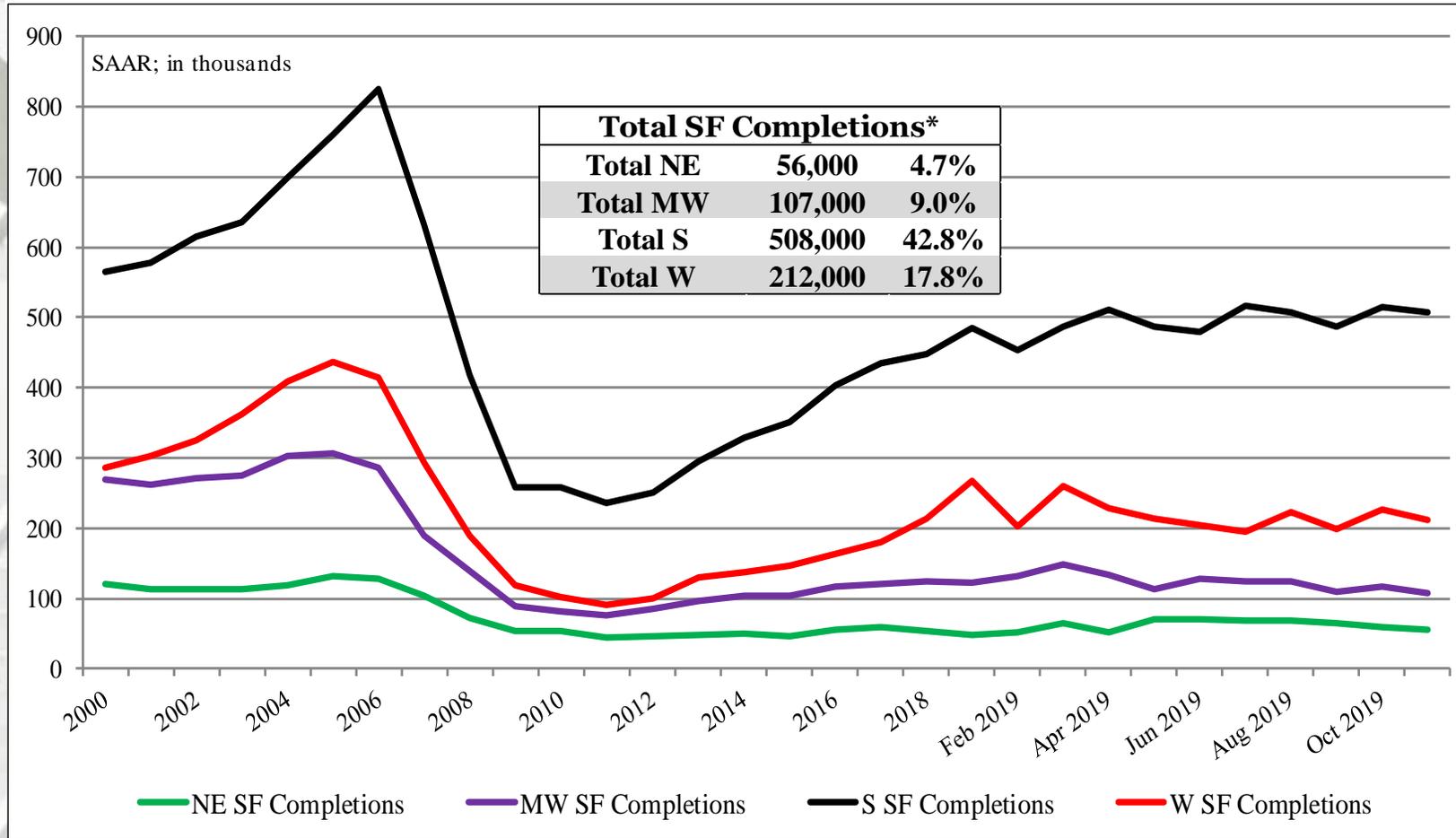


NE = Northeast, MW = Midwest, S = South, W = West

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

SF Housing Completions by Region

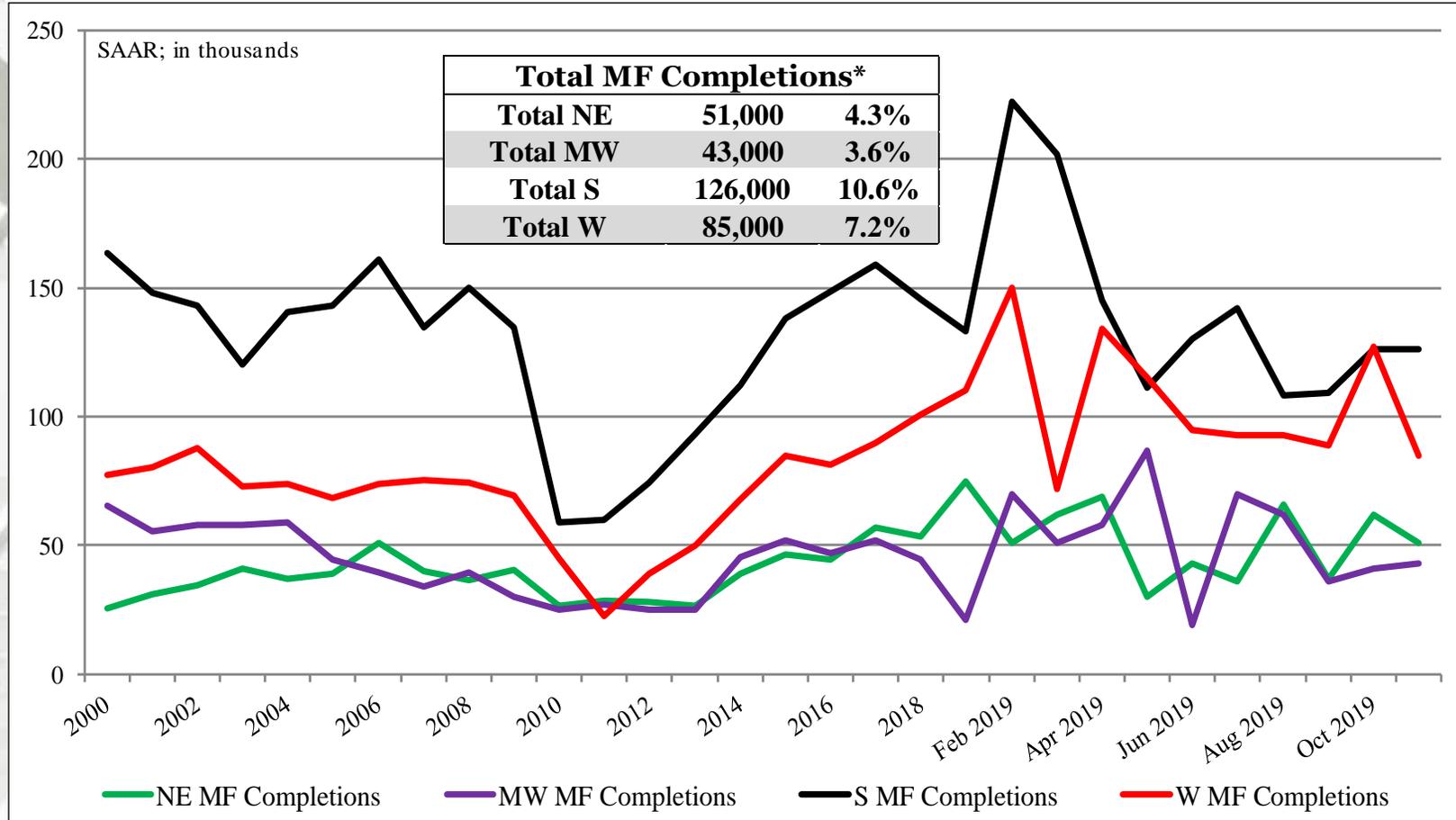


NE = Northeast, MW = Midwest, S = South, W = West

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

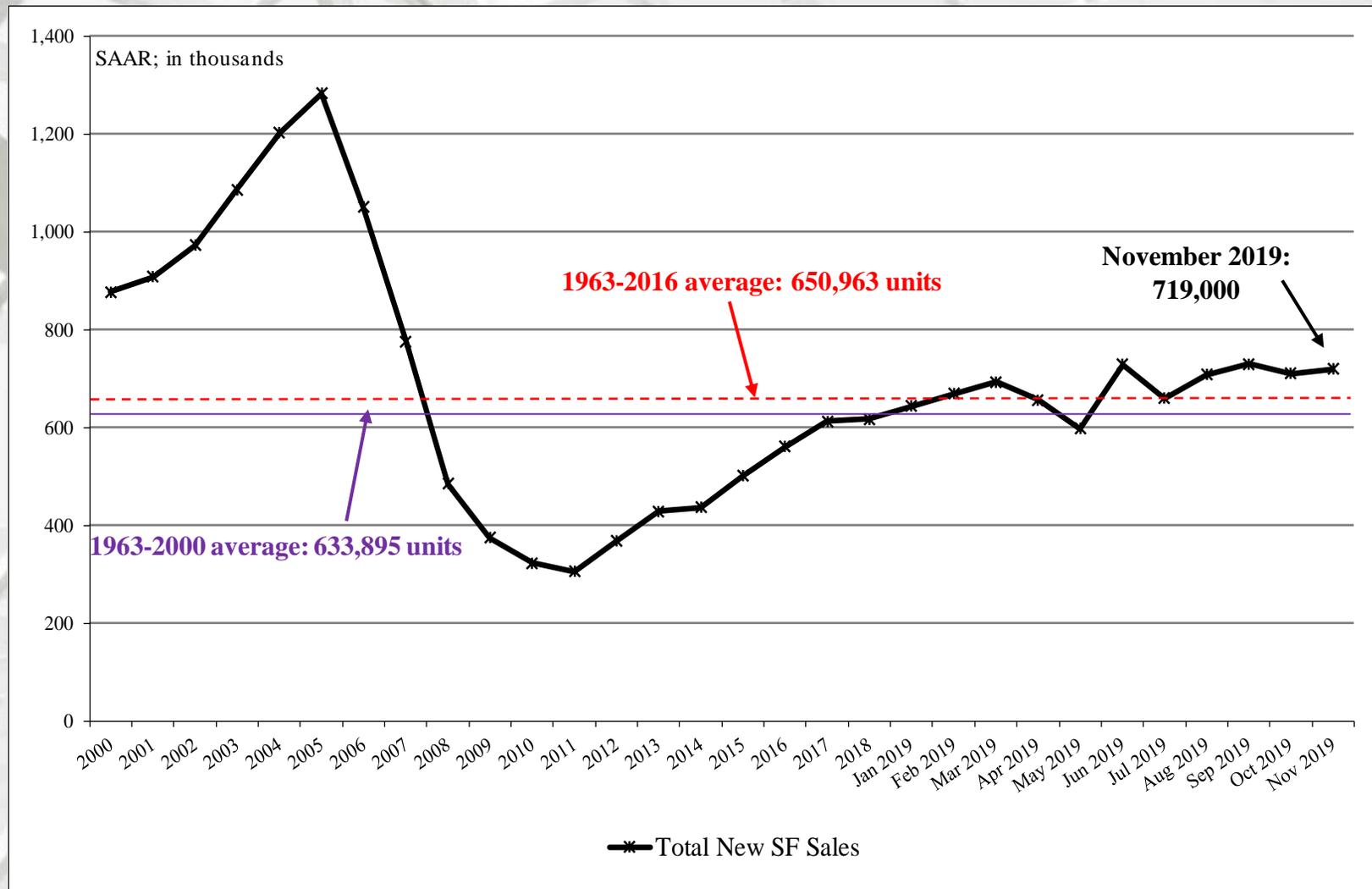
	New SF Sales*	Median Price	Mean Price	Month's Supply
November	719,000	\$330,800	\$388,200	5.4
October	710,000	\$316,900	\$377,900	5.5
2018	615,000	\$308,500	\$367,100	6.5
M/M change	1.3%	4.4%	2.7%	-1.8%
Y/Y change	16.9%	7.2%	5.7%	-16.9%

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

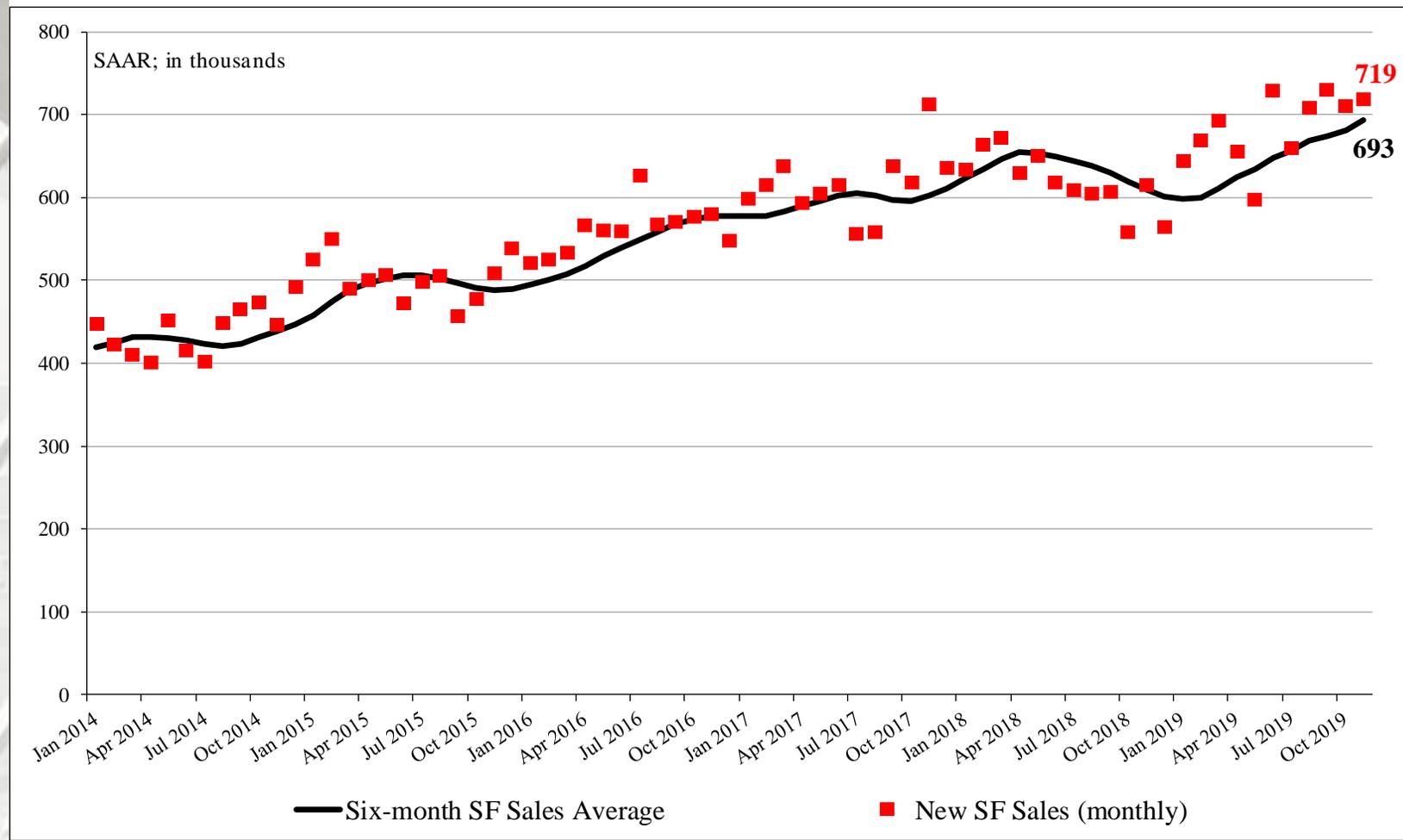
New SF sales were greater than the consensus forecast³ of 707 m (range: 694 m to 720 m). The past three month's new SF sales data also were revised:

August initial:	713 m revised to 708 m;
September initial:	701 m revised to 730 m;
October initial:	733 m revised to 710 m.

New SF House Sales



New SF Housing Sales: Six-month average & monthly



New SF House Sales by Region and Price Category

	NE	MW	S	W			
November	32,000	71,000	400,000	216,000			
October	21,000	71,000	417,000	201,000			
2018	30,000	72,000	367,000	146,000			
M/M change	52.4%	0.0%	-4.1%	7.5%			
Y/Y change	6.7%	-1.4%	9.0%	47.9%			
	≤ \$150m	\$150 - \$199.9m	\$200 - 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥ \$750m
November ^{1,2,3,4}	1,000	4,000	16,000	13,000	8,000	8,000	3,000
October	1,000	4,000	20,000	13,000	6,000	8,000	3,000
2018	1,000	4,000	16,000	10,000	6,000	5,000	2,000
M/M change	0.0%	0.0%	-20.0%	0.0%	33.3%	0.0%	0.0%
Y/Y change	0.0%	0.0%	0.0%	30.0%	33.3%	60.0%	50.0%
New SF sales: %	1.9%	7.7%	30.8%	25.0%	15.4%	15.4%	5.8%

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 November not add to total because of rounding.

⁴ Housing prices are adjusted at irregular intervals.

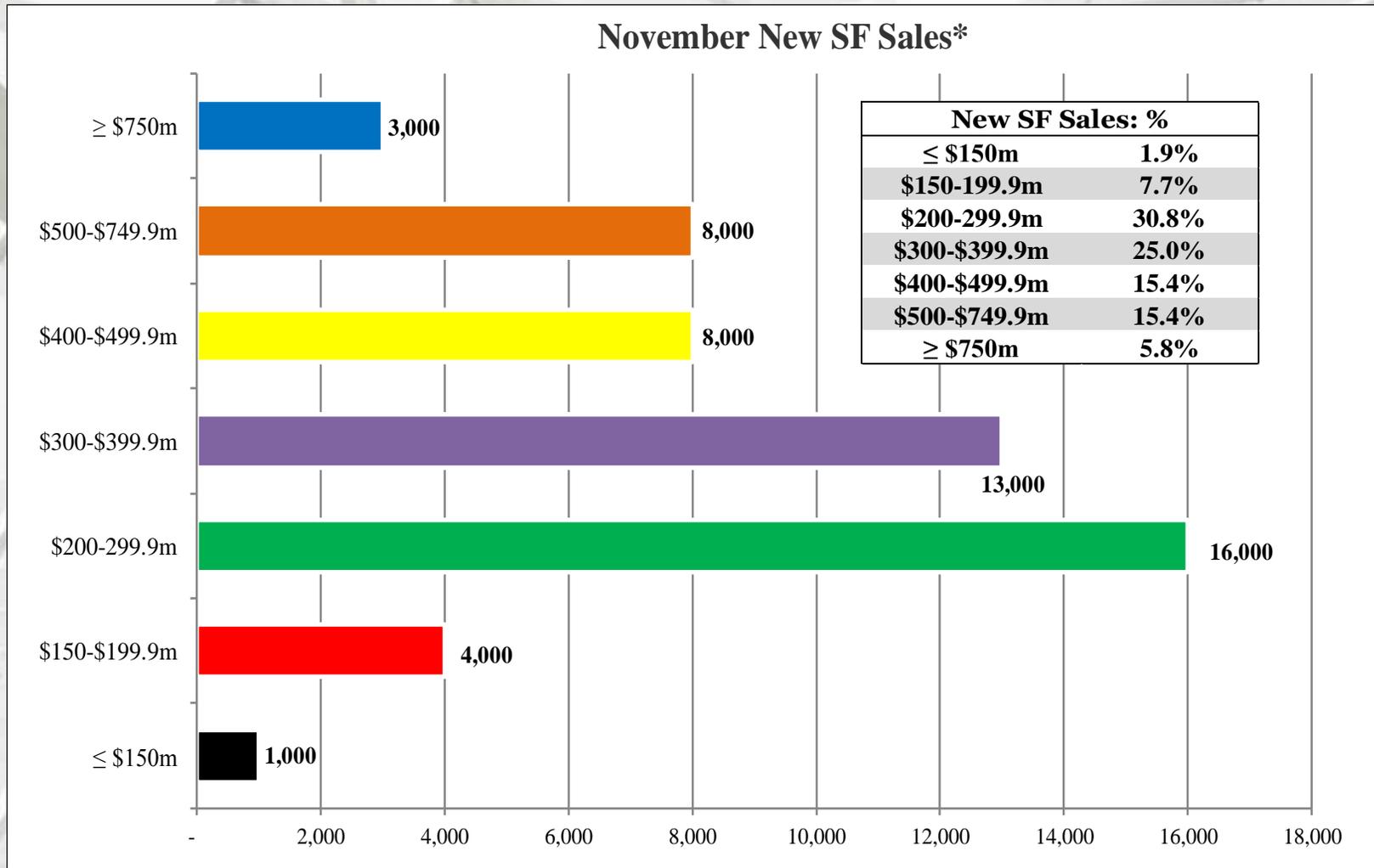
⁵ Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} <https://www.census.gov/construction/nrs/index.html>; 12/23/19;

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

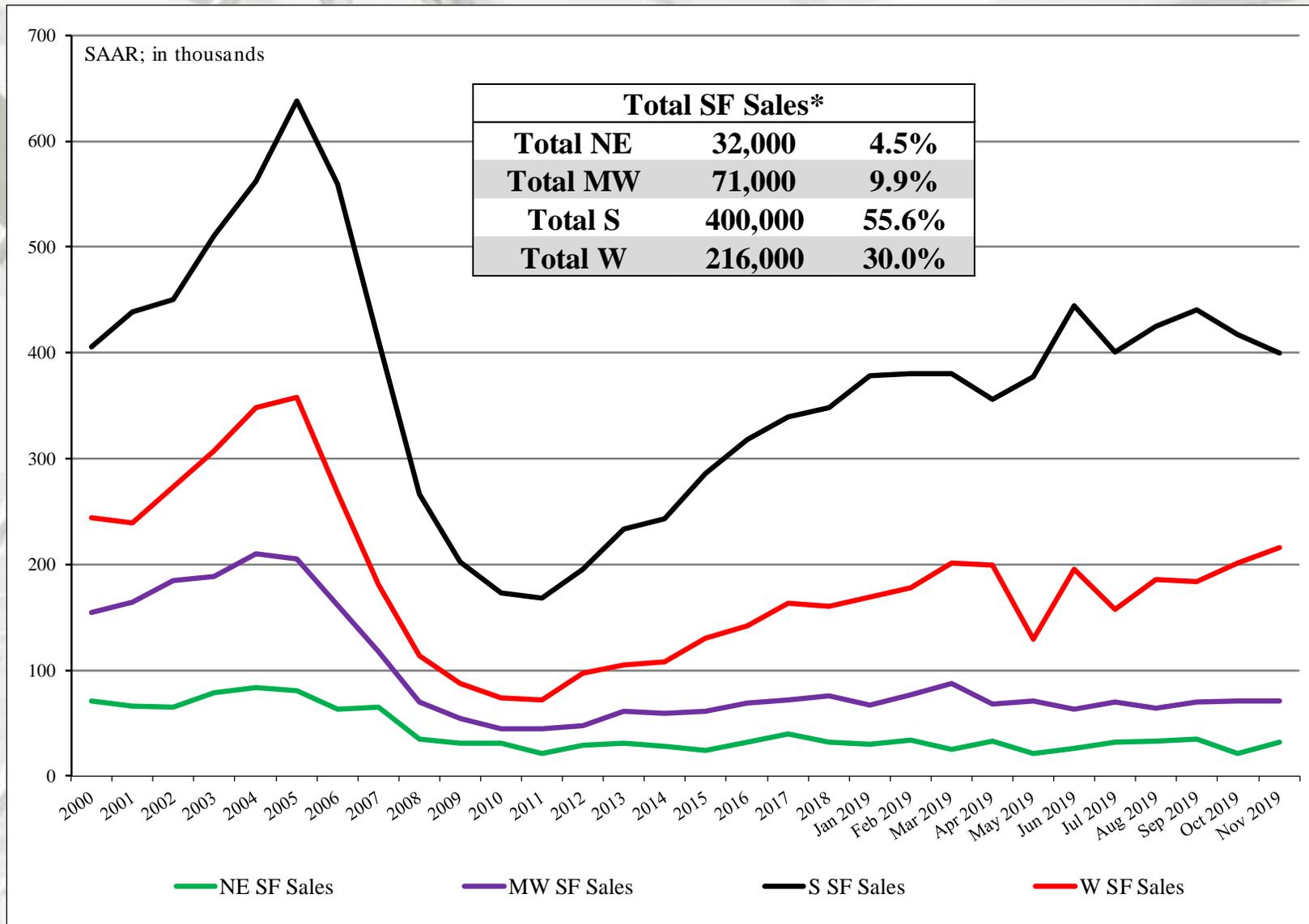
New SF House Sales

November New SF Sales*



- Total new sales by price category and percent.

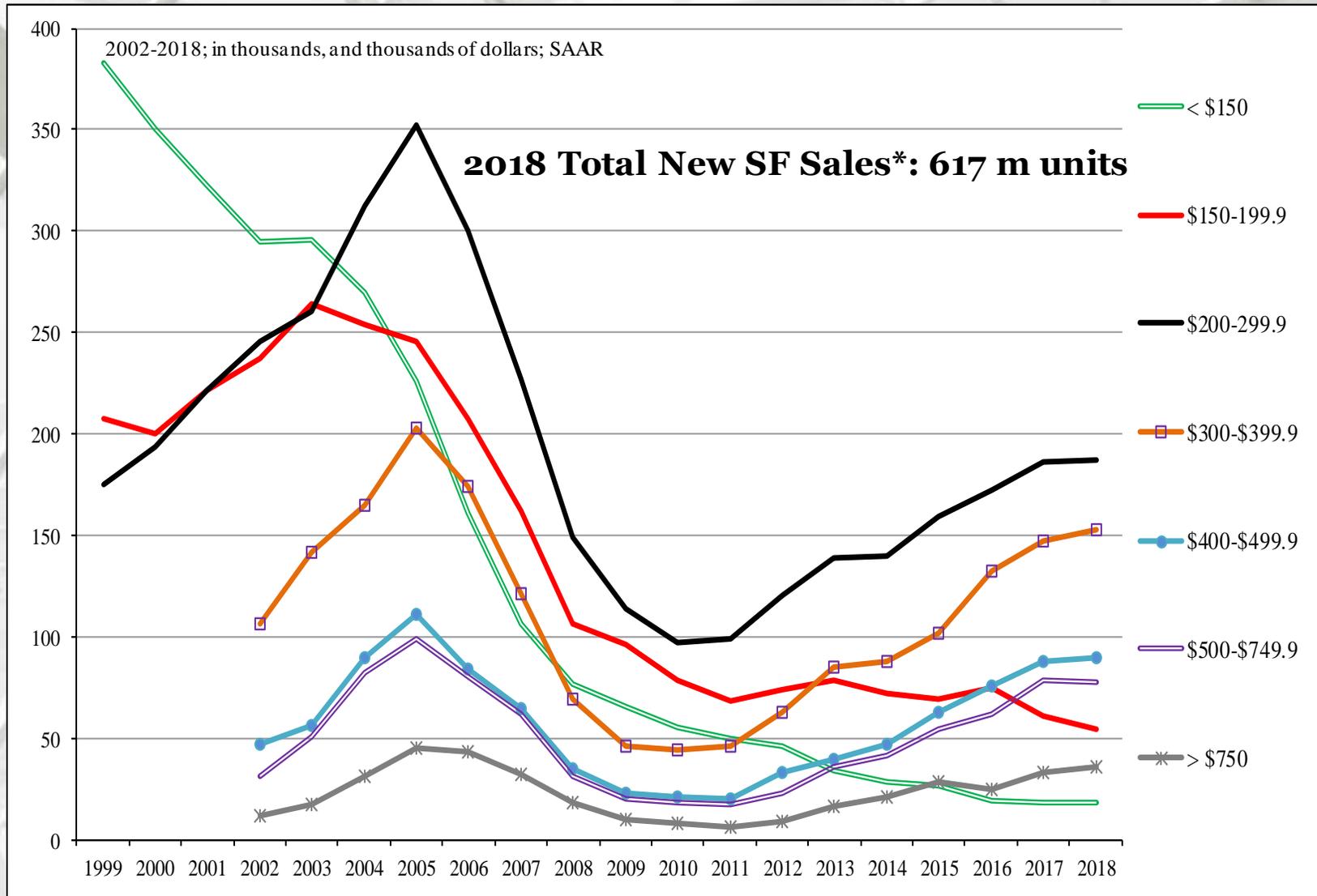
New SF House Sales by Region



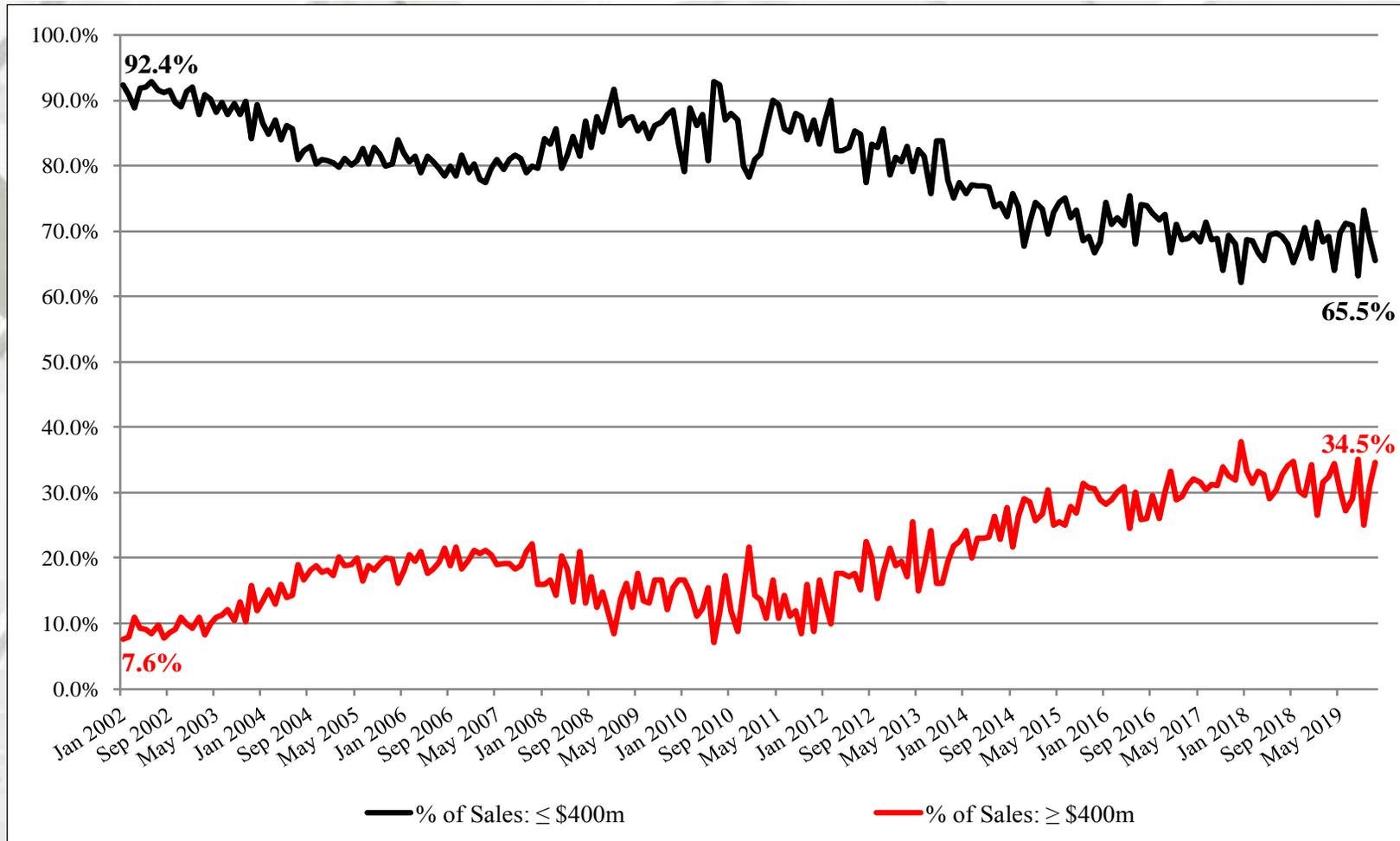
NE = Northeast; MW = Midwest; S = South; W = West

* Percentage of total new sales.

New SF House Sales by Price Category



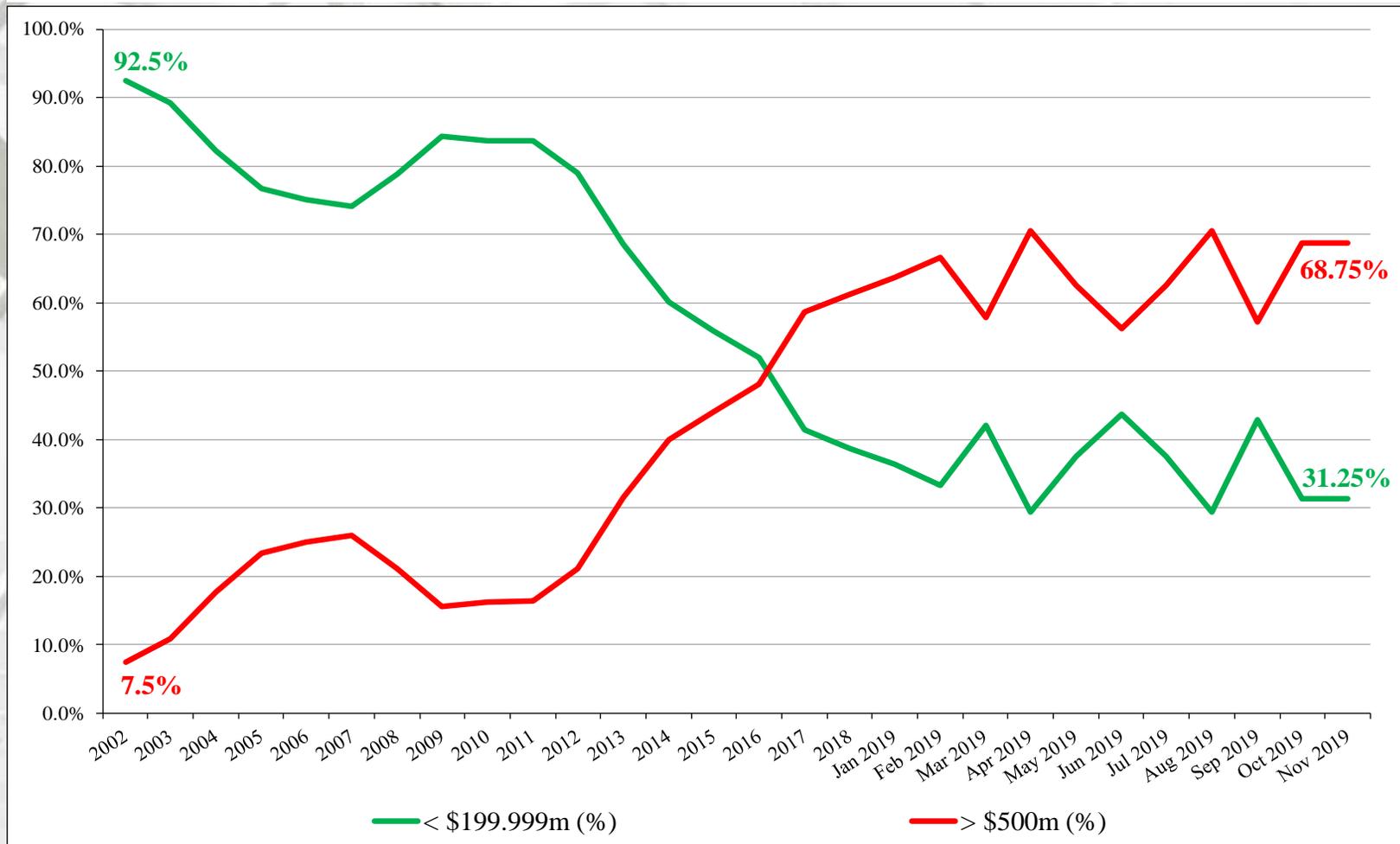
New SF House Sales



New SF Sales \$400m houses: 2002 – November 2019

The sales share of \$400 thousand plus SF houses is presented above^{1,2}. Since the beginning of 2012, the upper priced houses have and are garnering a greater percentage of sales. A decreasing spread indicates that more high-end luxury homes are being sold. Several reasons are offered by industry analysts; 1) builders can realize a profit on higher priced houses; 2) historically low interest rates have indirectly resulted in increasing house prices; and 3) purchasers of upper end houses fared better financially coming out of the Great Recession.

New SF House Sales

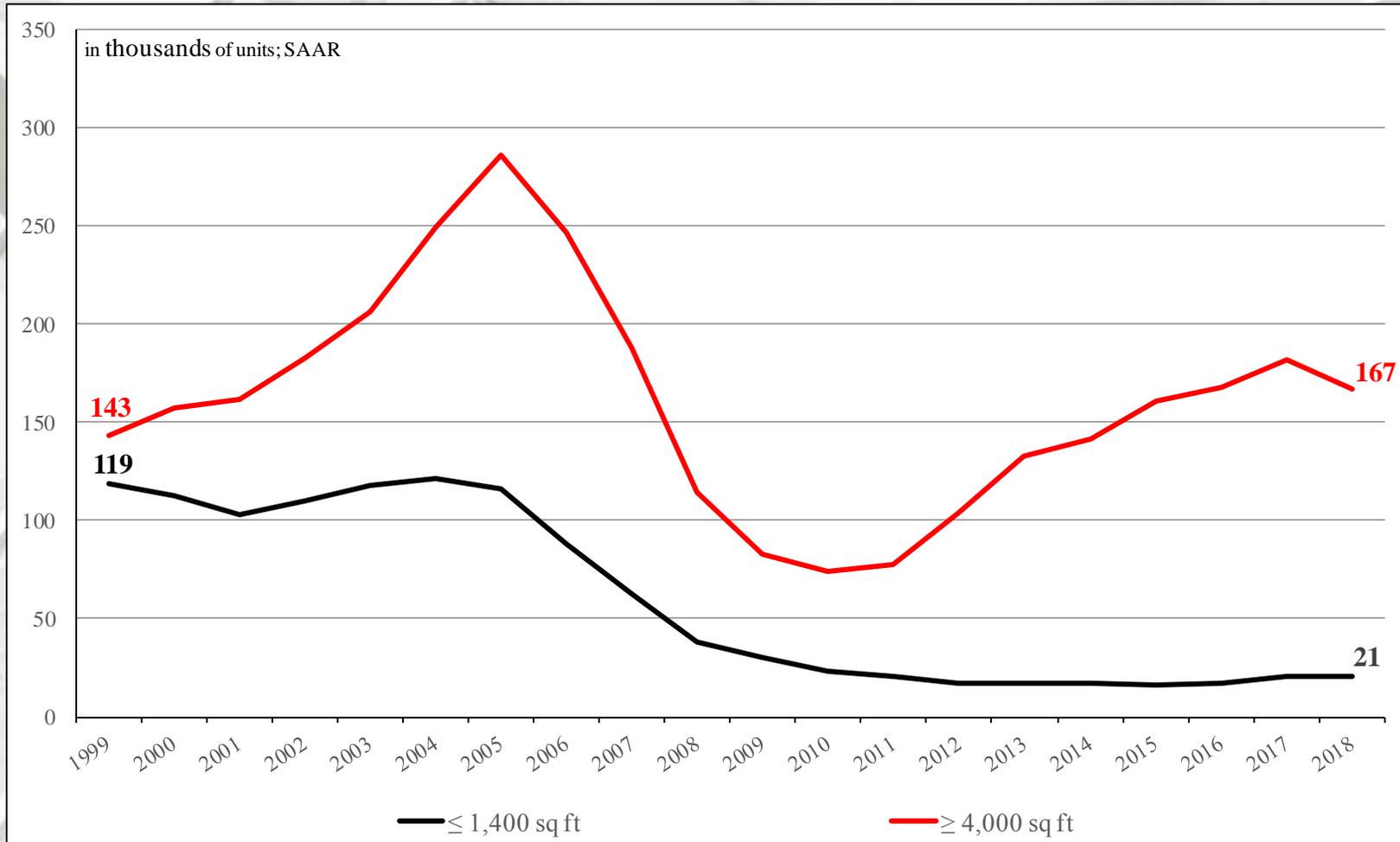


New SF Sales: ≤ \$ 200m and ≥ \$500m: 2002 to November 2019

The number of ≤ \$200 thousand plus 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.

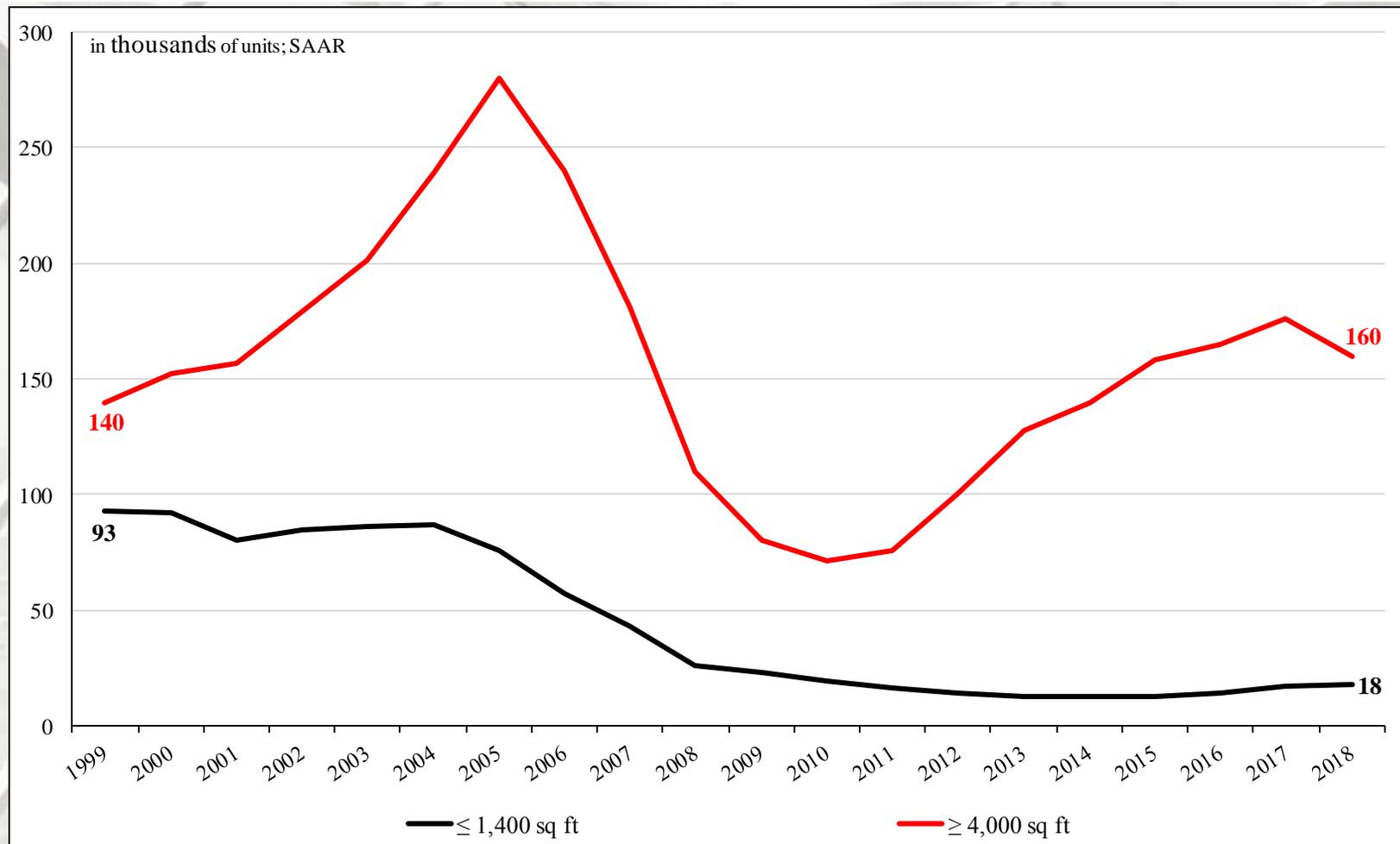
Total New SF House Sales by Square Feet of Floor Area



Total new SF Sales: ≤ 1,400 square feet and ≥ 4,000 square feet: 1999 to 2018

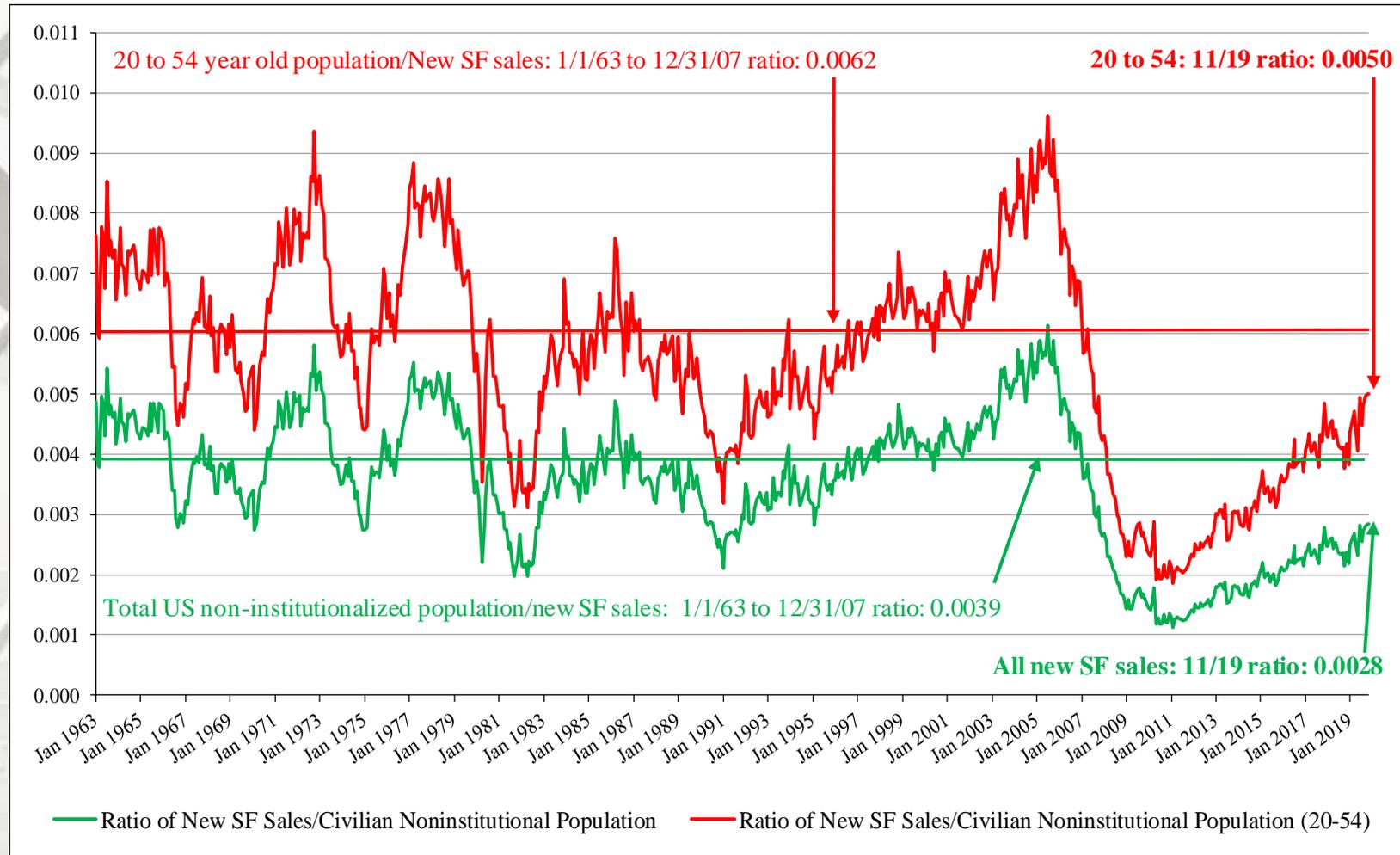
The number of SF houses sold ($\geq 4,000$ sq ft) has risen dramatically since 2010 in comparison to the $\leq 1,400$ sq ft houses. Some of the most oft mentioned reasons for this is builder net margins and regulation.

New Detached SF House Sales by Square Feet of Floor Area



New Detached SF Sales: ≤ 1,400 square feet and ≥ 4,000 square feet: 1999 to 2018

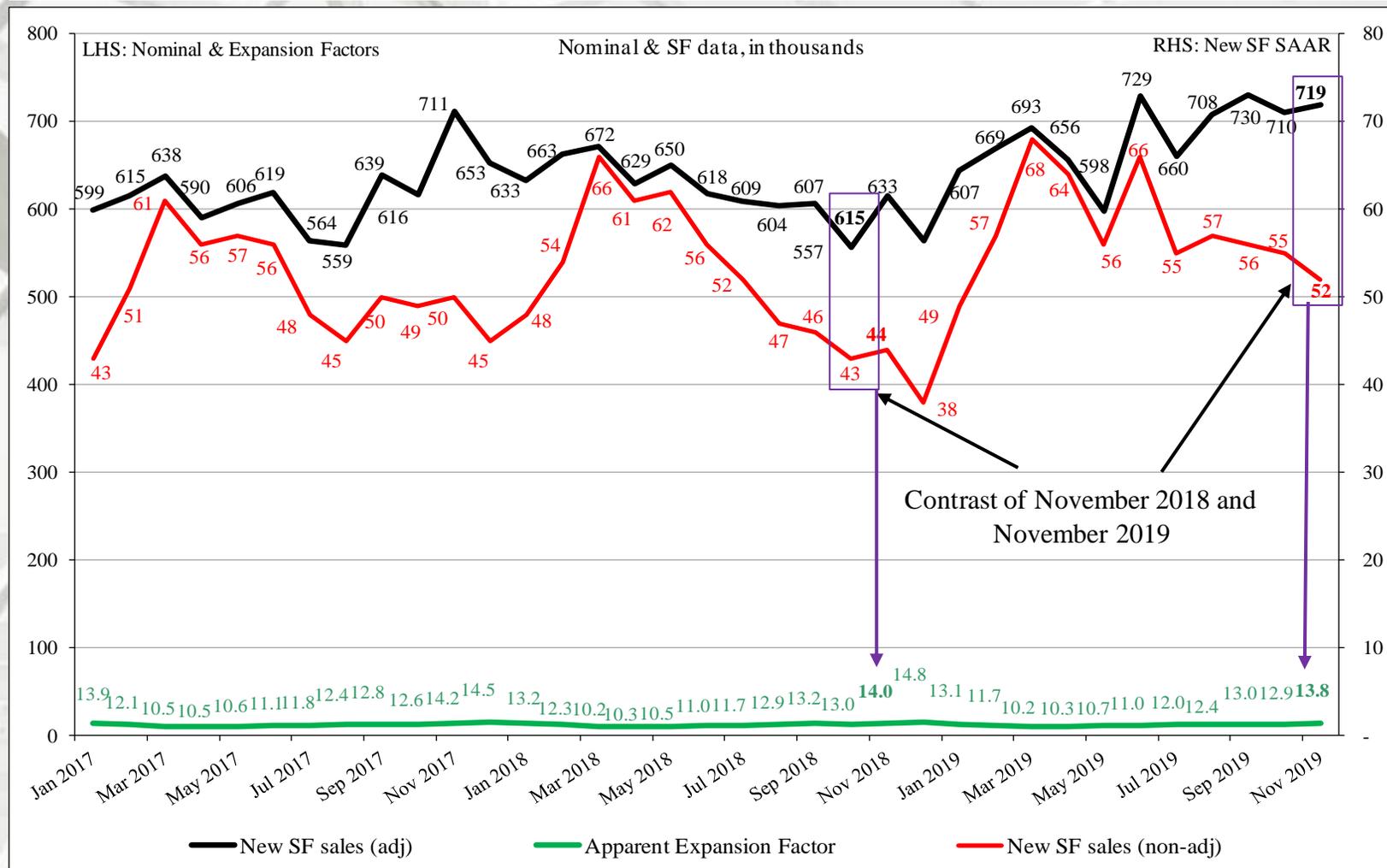
New SF House Sales



New SF sales adjusted for the US population

From November 1963 to November 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in November 2019 it was 0.0028 – no change from September. The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in November 2019 it was 0.0050 – also no change from September. All are non-adjusted data. From a population viewpoint, construction is less than what is necessary for changes in the population (i.e., under-building).

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

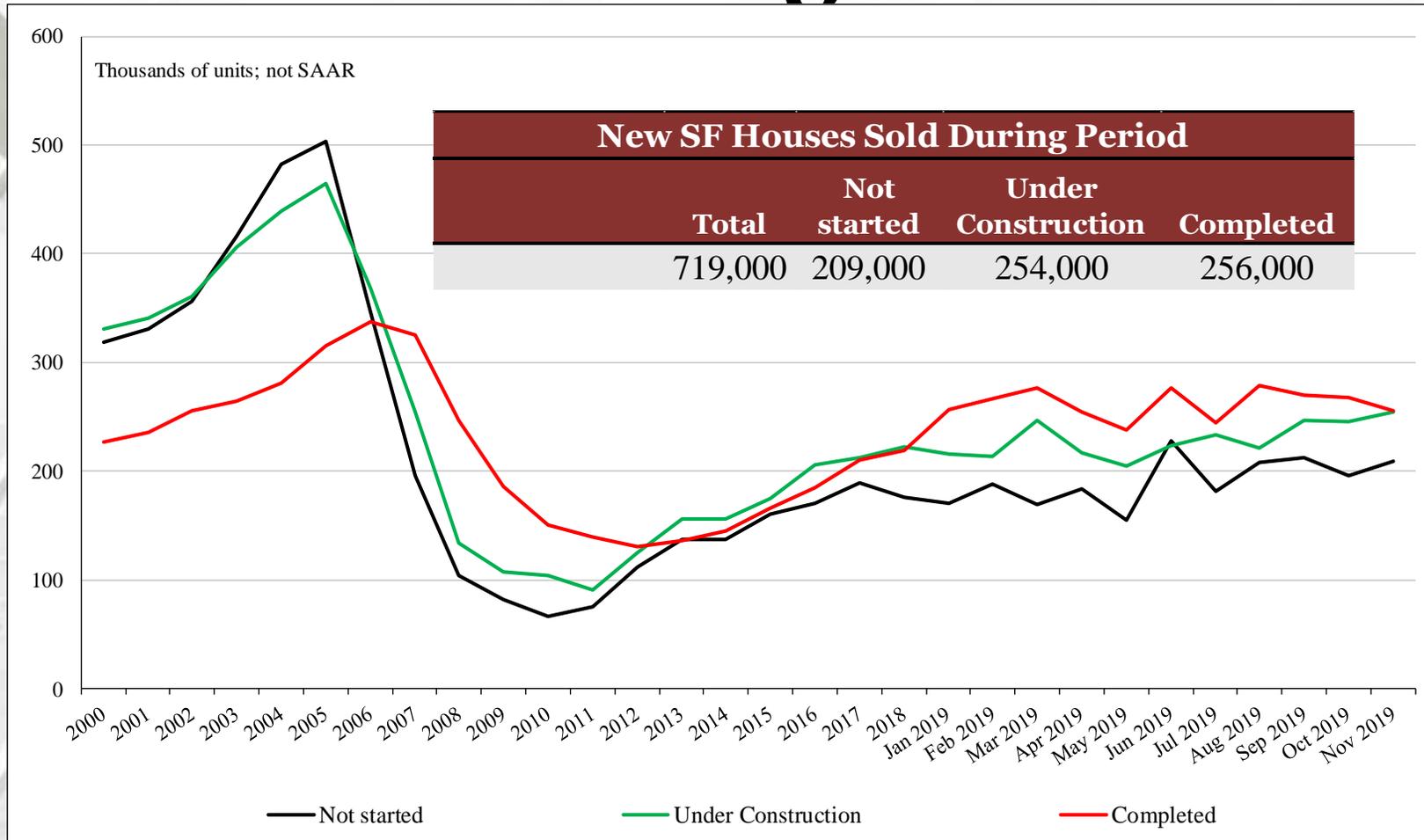
New SF House Sales

New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
November	719,000	209,000	254,000	256,000
October	710,000	196,000	246,000	268,000
2018	615,000	185,000	201,000	229,000
M/M change	1.3%	6.6%	3.3%	-4.5%
Y/Y change	16.9%	13.0%	26.4%	11.8%
Total percentage		29.1%	35.3%	35.6%

Not SAAR

New SF House Sales: Sold During Period



Not SAAR

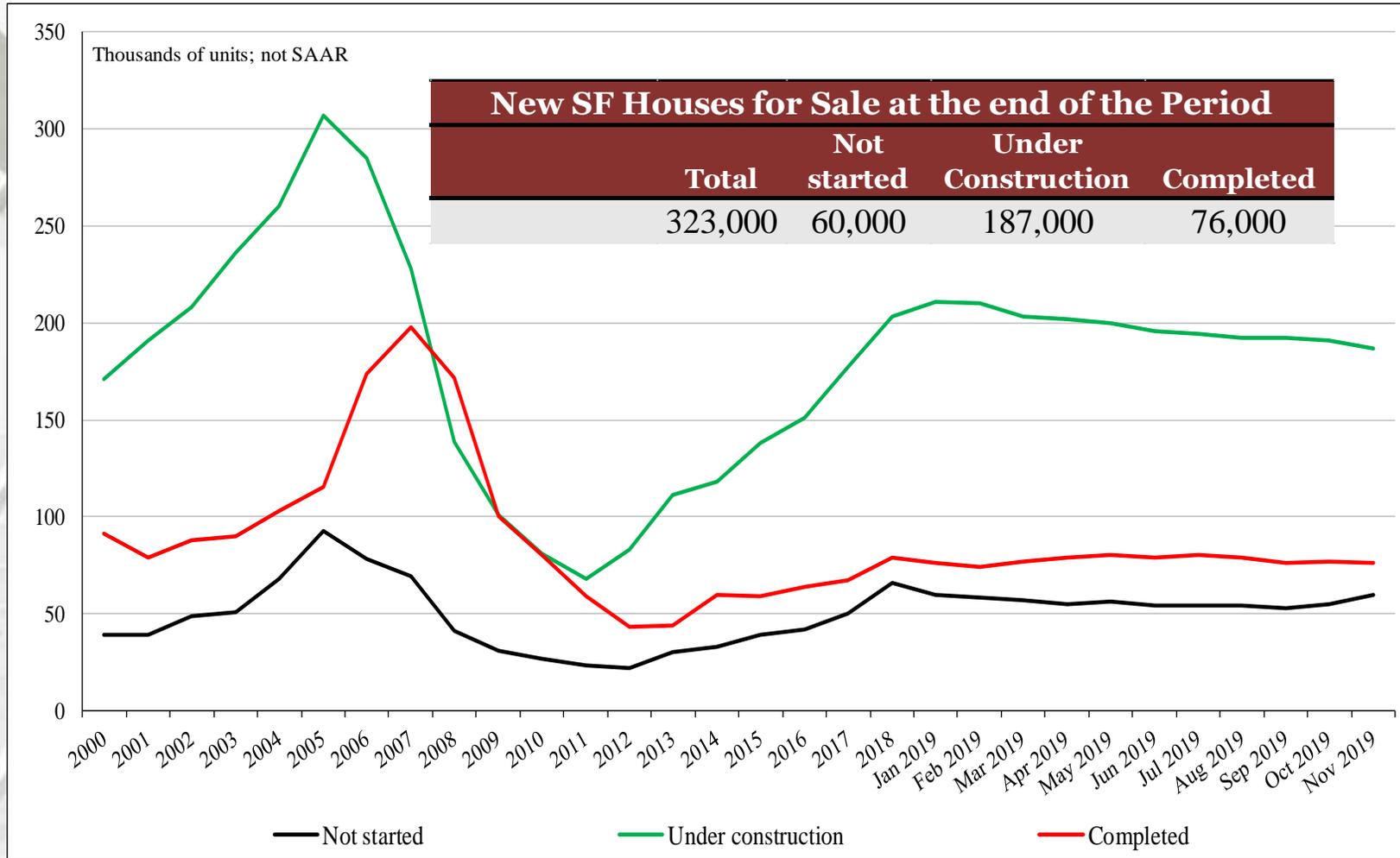
New SF House Sales: For Sale at End of Period

New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
November	323,000	60,000	187,000	76,000
October	323,000	55,000	191,000	77,000
2018	334,000	61,000	199,000	74,000
M/M change	0.0%	9.1%	-2.1%	-1.3%
Y/Y change	-3.3%	-1.6%	-6.0%	2.7%
Total percentage		18.6%	57.9%	23.5%

Not SAAR

New SF Houses for Sale at End of Period



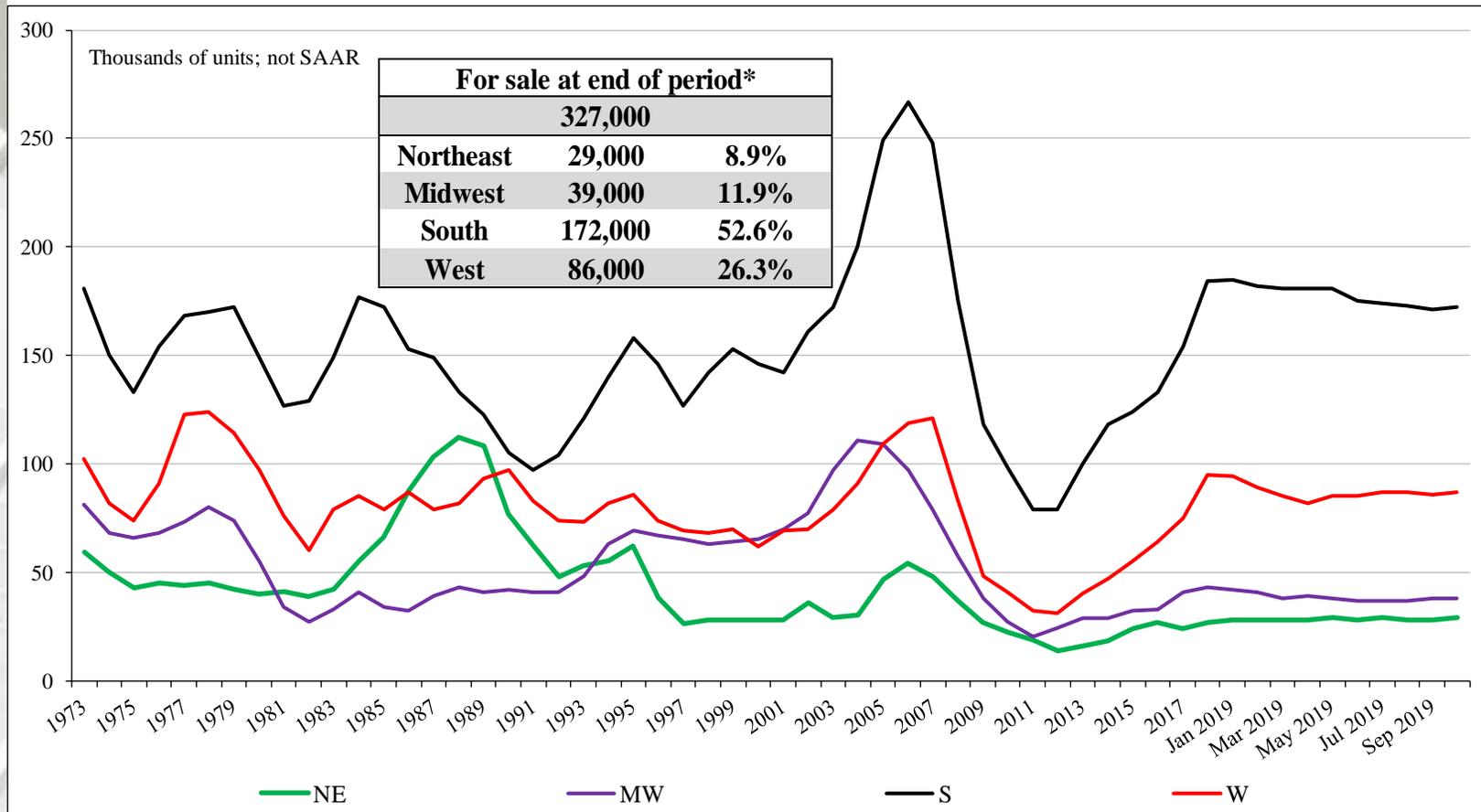
New SF House Sales

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

	Total	NE	MW	S	W
November	327,000	29,000	39,000	172,000	86,000
October	323,000	28,000	38,000	171,000	86,000
2018	341,000	27,000	43,000	179,000	92,000
M/M change	1.2%	3.6%	2.6%	0.6%	0.0%
Y/Y change	-4.1%	7.4%	-9.3%	-3.9%	-6.5%

Not SAAR

New SF Houses Sale at End of Period by Region



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

* Percentage of new SF sales.

SF Housing: Rental Market

JBREC/NRHC Single-Family Rental Market Index: Healthy Industry with Strong Leasing Demand and High Occupancy

“[John Burns Real Estate Consulting \(JBREC\)](#) and [The National Rental Home Council \(NRHC\)](#) released the inaugural **Single-Family Rental Market Index (SFRMI)**, a first-of-its-kind resource that will serve as the definitive gauge of professionally managed single-family rental industry conditions.

With scores above 50 indicating growth, the **3Q19 SFRMI** at **65.8** confirms the state of the single-family rental industry remains strong. The survey of professional operators who manage 122,275 rental homes in 48 metropolitan areas revealed stable occupancy year-over-year at already strong rates, as well as high current and expected leasing demand. On a scale of 1 to 100, the index and sub-indices are:

- Single-family Rental Market Index (SFRMI): **65.8**
- Current Leasing Activity (3Q19): **72.8**
- Expected Leasing Activity (in the next 6 months): **69.9**
- Occupancy (3Q19) Compared to 1 Year Ago: **50.4.**” – Rick Palacios Jr., Principal and Director of Research and Devyn Bachman, Research Manager; John Burns Real Estate Consulting LLC

SF Housing: Rental Market

JBREC/NRHC Single-Family Rental Market Index

“Key takeaways from the SFRMI’s third-quarter report include:

- **An expanding market:** A SFRMI of 65.8 (below/above 50 = contracting/expanding) indicates an optimistic view of current and future single-family rental industry market conditions.
- **Current leasing activity slightly stronger than expected leasing activity next six months.** The industry is slightly more positive on current leasing activity (73 index reading) than on expected leasing activity the next six months (70 index reading). Seasonality is likely playing a role, as leasing activity generally slows during 4Q through early 1Q.
- **Occupancy for same store portfolios remains unchanged from one year ago.** Most large-scale operators continue to report stabilized occupancy rates at ~96%, a high occupancy rate.

The survey for the Q319 index was conducted from November 8, 2019 to November 14, 2019. A complete copy of the report is available to NRHC members, JBREC clients, and survey participants, well as anyone else interested in gaining a greater understanding of this crucial housing segment. ... ”” – Rick Palacios Jr., Principal and Director of Research and Devyn Bachman, Research Manager; John Burns Real Estate Consulting LLC

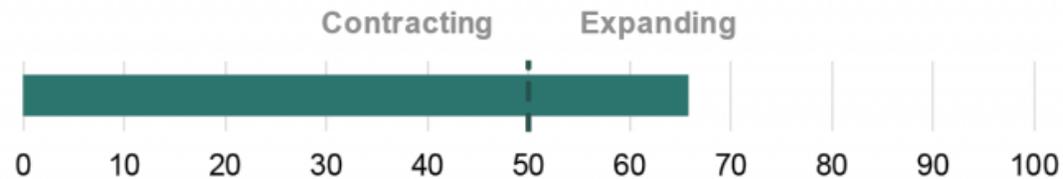
SF Housing: Rental Market

3Q19 SFRMI Executive Summary



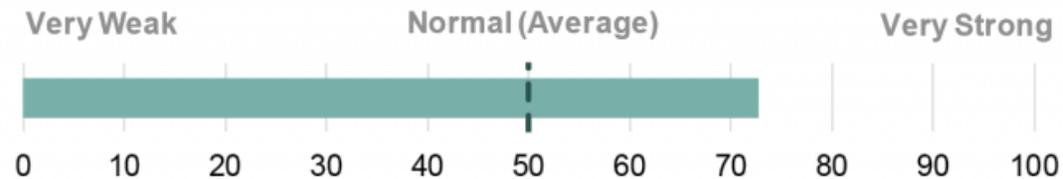
Single-Family Rental Market Index (3Q19)

65.8
out of 100



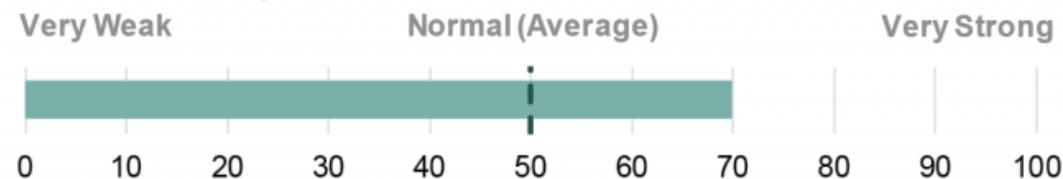
Current Leasing Activity (3Q19)

72.8
out of 100



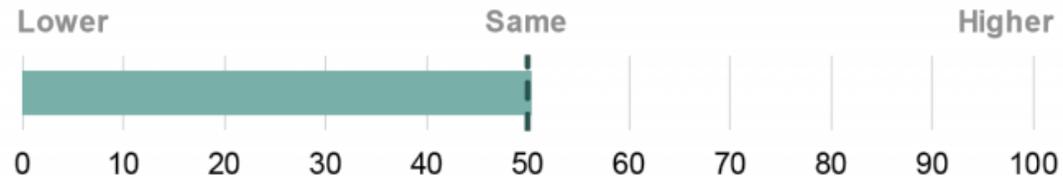
Expected Leasing Activity (Next six months)

69.9
out of 100



Occupancy: Same Store Portfolio vs. One Year Ago

50.4
out of 100



Sources: John Burns Real Estate Consulting, LLC (Data: 3Q19, Pub: Dec-19)



November 2019 Construction Spending

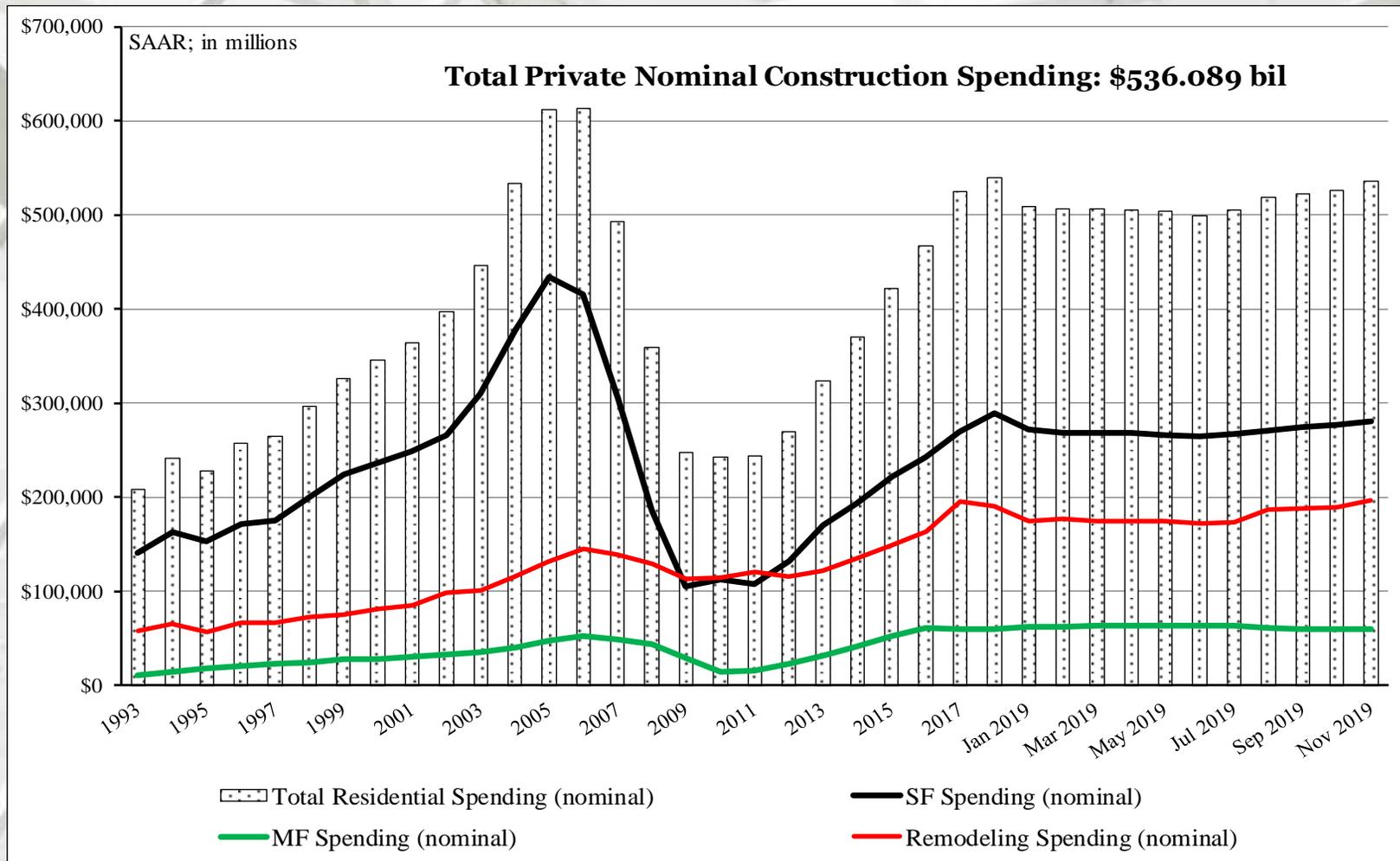
	Total Private Residential*	SF	MF	Improvement**
November	\$536,089	\$280,661	\$59,118	\$196,310
October	\$526,349	\$277,460	\$59,101	\$189,788
2018	\$521,907	\$281,401	\$61,522	\$178,984
M/M change	1.9%	1.2%	0.0%	3.4%
Y/Y change	2.7%	-0.3%	-3.9%	9.7%

* 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\$.

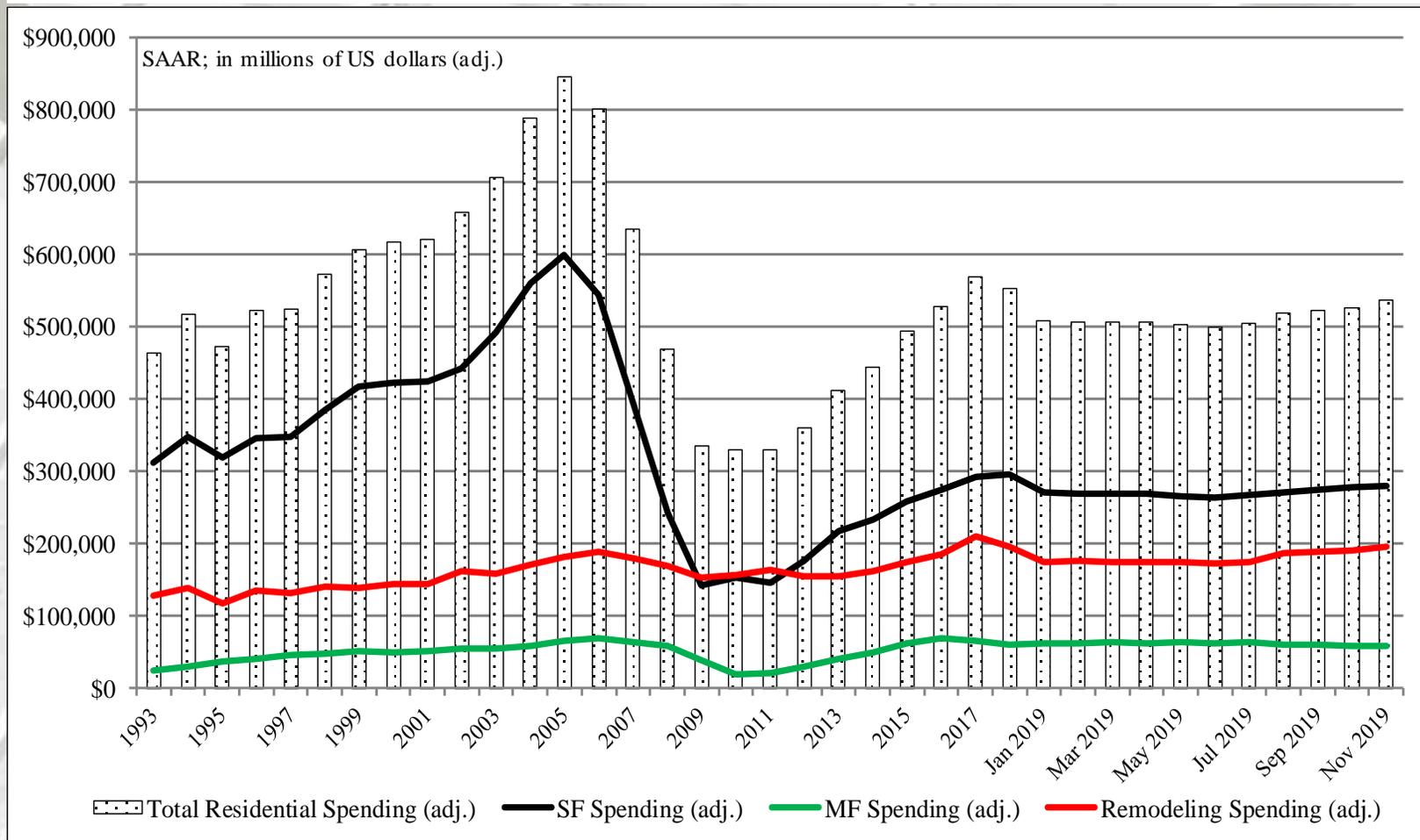
Total Construction Spending (nominal): 1993 – November 2019



Reported in nominal US\$.

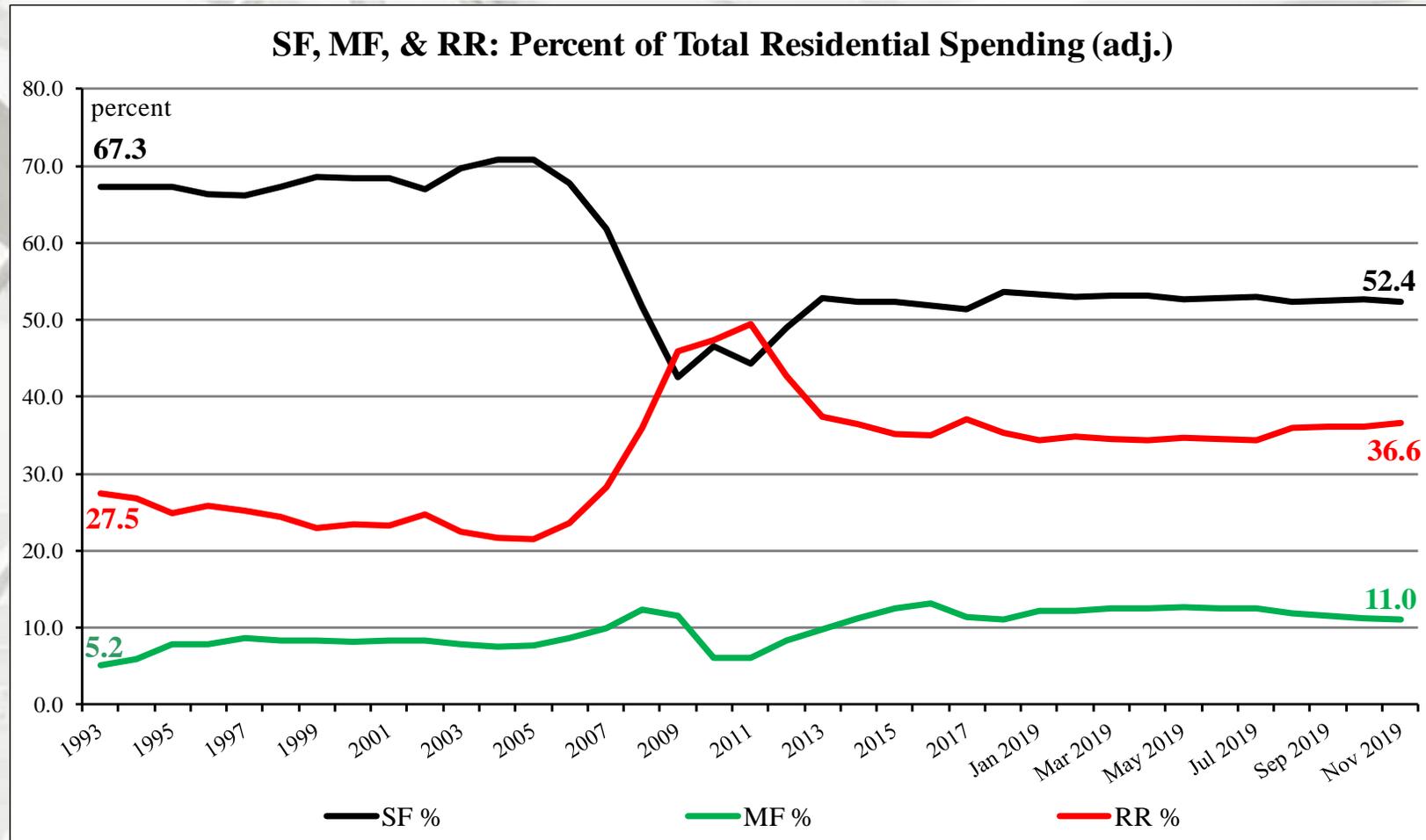
The US DOC does not report improvement spending directly, this is a monthly estimation for 2019.

Total Construction Spending (adjusted): 1993-2019*



Reported in adjusted US\$: 1993 – 2018 (adjusted for inflation, BEA Table 1.1.9); *January to November 2019 reported in nominal US\$.

Construction Spending Shares: 1993 to November 2019



Total Residential Spending: 1993 through 2006

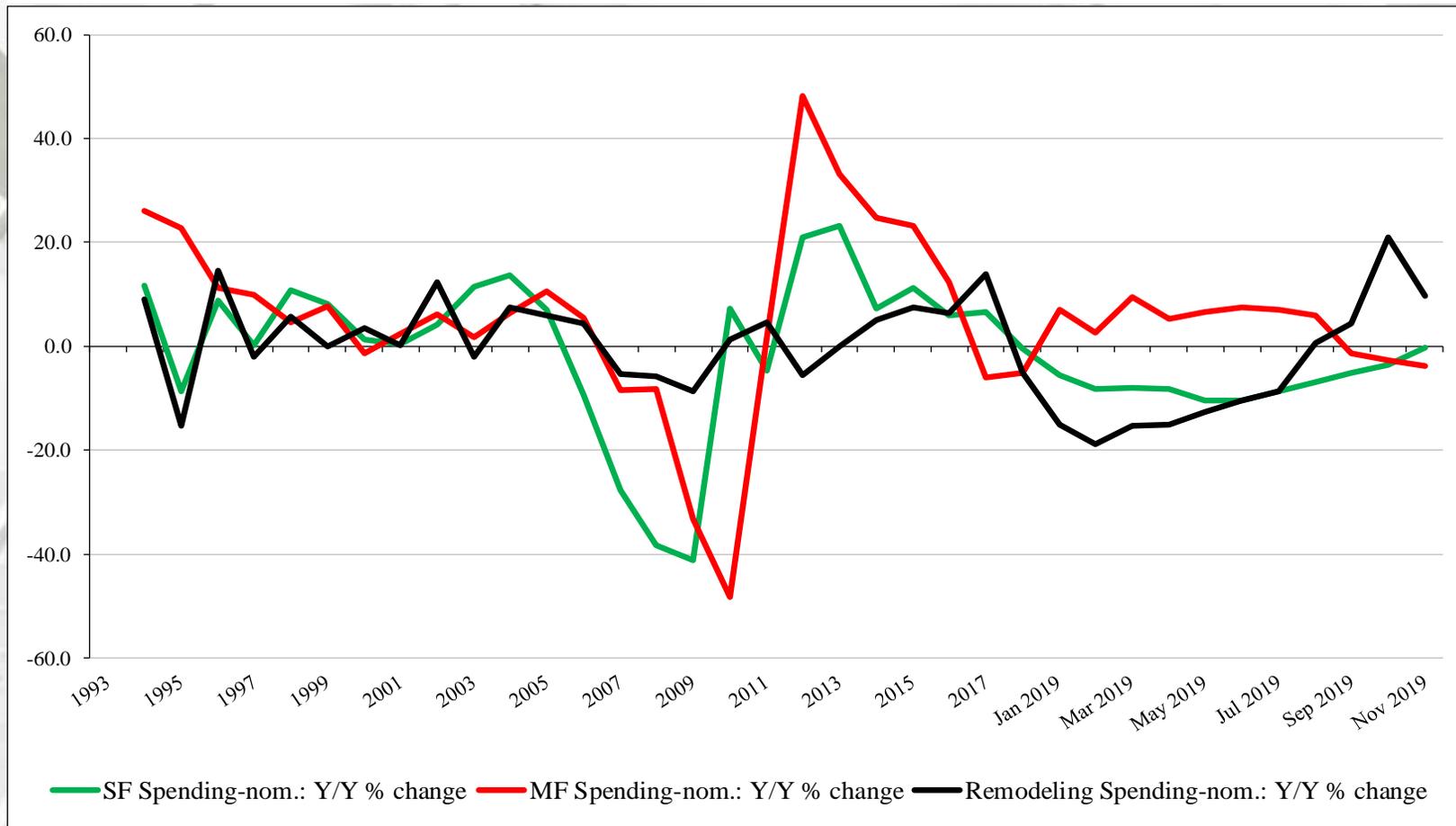
SF spending average: 69.2%

MF spending average: 7.5%

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

Note: 1993 to 2017 (adjusted for inflation, BEA Table 1.1.9); Jan-November 2018 reported in nominal US\$.

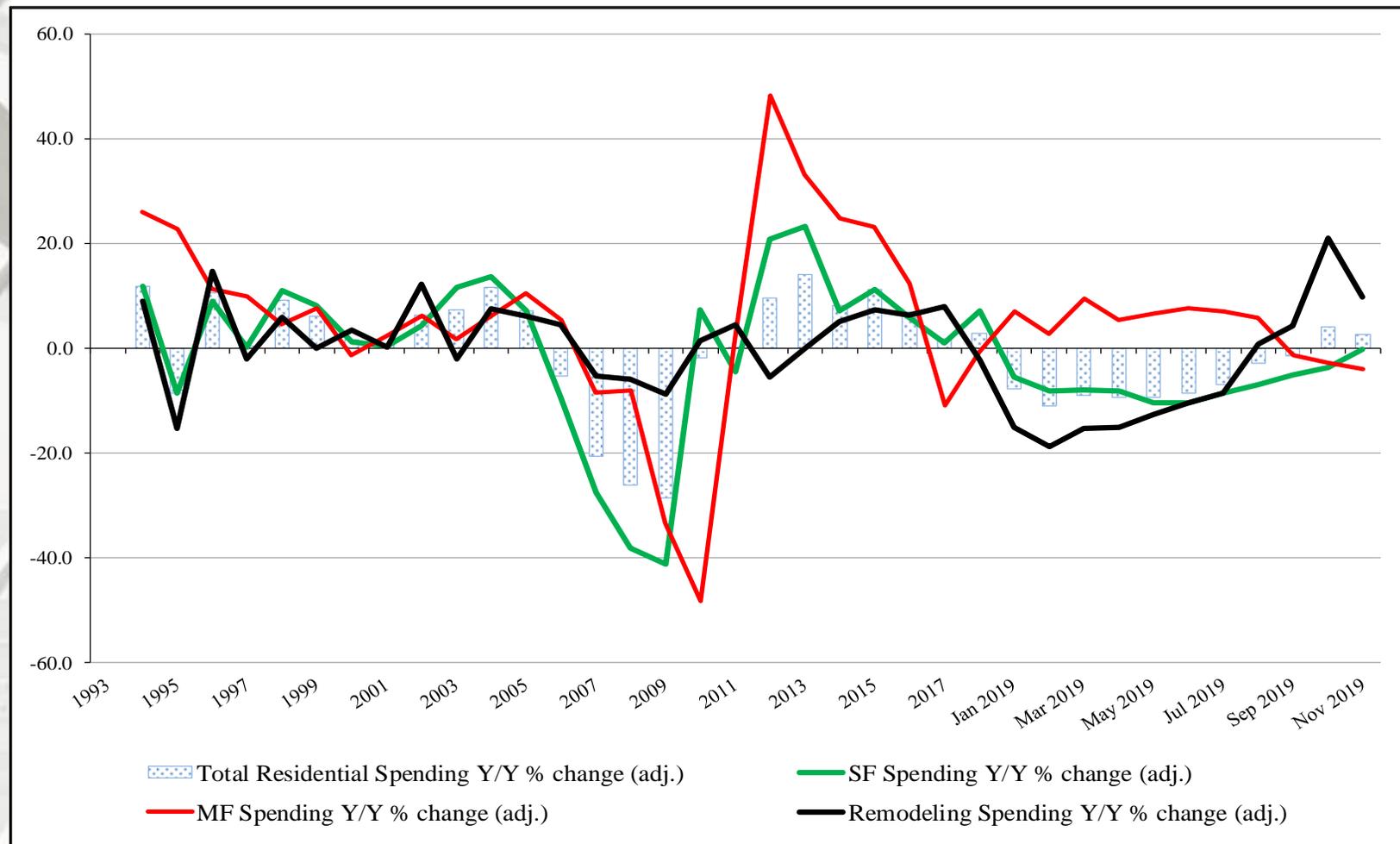
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to November 2019



Nominal Residential Construction Spending: Y/Y percentage change, 1993 to November 2019

Presented above is the percentage change of inflation adjusted Y/Y construction spending. RR expenditures were positive on a percentage basis, year-over-year (2019 data reported in nominal dollars).

Total Adjusted Construction Spending: Y/Y Percentage Change, 1993 to November 2019



Inflation Adjusted Residential Construction Spending: Y/Y percentage change, 1993 to November 2019

Total and RR expenditures were positive in November, all others were negative; 2019 data reported in nominal dollars.

Remodeling

Remodeling

RRI Positive, But Projects Smaller Growth in Next Two Years

Annual growth rates in the remodeling industry have cooled significantly compared with the 5% growth averaged the past several years.

“Big-ticket remodeling spending increased 2.8% year over year (YOY) in the third quarter of 2019 and 0.5% from the second quarter, Metrostudy/Zonda announced in its release of the latest Residential Remodeling Index (RRI). The index climbed to a new high of 118.9, meaning economic conditions known to influence remodeling activity are 18.9% better than the old peak in 2007.

While the positive growth in the RRI marks the 30th consecutive quarter of YOY gains since remodeling activity bottomed in 2011, growth is coming at increasingly smaller rates. Annual rates have cooled significantly compared with the 5% growth that the industry averaged the past several years.

Metrostudy/Zonda calls for continued gains over the next few years, but at a slower rate than the industry has become accustomed to. The RRI is projected to average YOY gains of 2.2% in 2020 and 2.4% in 2021. The projected gains for 2020 are marginally higher than projections from the [second quarter RRI](#).

The strength of the consumer is continuing to support the economy as business investment and manufacturing are being constrained by a near 16-month-long trade war with China, according to Metrostudy/Zonda chief economist Mark Boud.” – Vincent Salandro, Assistant Editor, Remodeling and ProSales

Remodeling

Remodeling

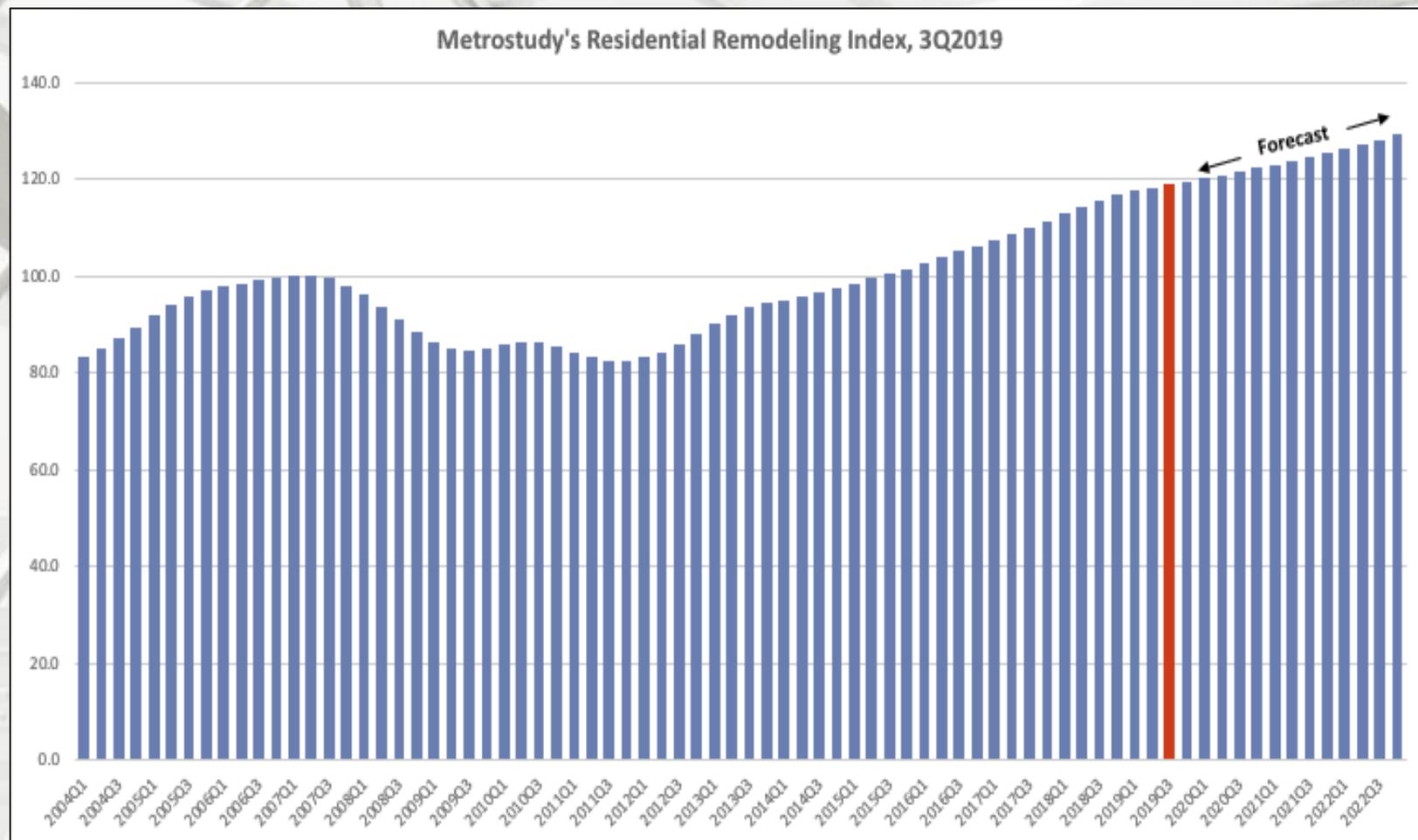
RRI Positive, But Projects Smaller Growth in Next Two Years

““Even if a trade agreement with China is reached, slower employment growth is projected over the next few years as the economic cycle wanes. In addition, existing home sales continue to struggle under lack of supply, a trend that will likely continue given the low rates of new home construction, particularly at the lower price levels. Weaker employment-generated demand and low housing turnover points to slower rates of remodeling growth compared to the last few years of booming business, Boud said.”

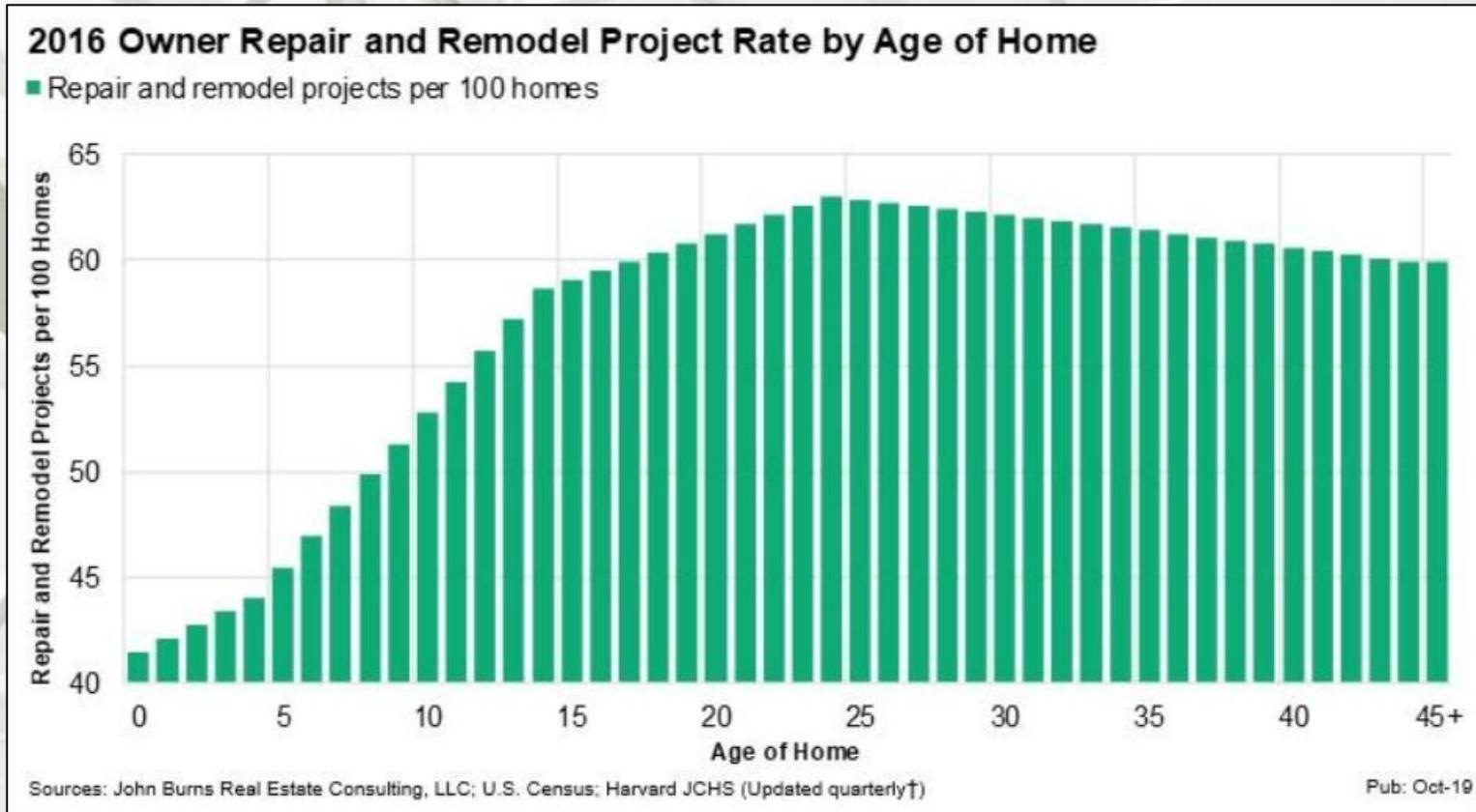
Metrostudy/Zonda projects the number of remodeling projects worth \$1,000 or more will total 13.0 million in 2019, a 3.2% YOY increase. Big-ticket exterior and flooring projects are expected to experience the largest increases compared to 2018, while pool and addition projects will have the smallest YOY increases. The inflation-adjusted value of big-ticket remodeling projects in 2019 is predicted to increase \$9.2 million from 2018 to \$203.7 billion by the end of 2019. The number of big-ticket remodeling projects is forecast to increase by roughly 300,000 in 2020 to 13.3 million, with the inflation-adjusted value of remodeling projects predicted to jump to \$211.5 billion.

According to Metrostudy/Zonda, all but one metro area — Bismarck, N.D. — will see growth in 2019 remodeling project volume. The average growth rate in project volume in 2019 nationally is projected to be 3.1%. In 2020, 25 — or 6.6% — of the 381 metro areas surveyed are projected to see declines in remodeling project volume.” – Vincent Salandro, Assistant Editor, Remodeling and ProSales

Remodeling



Remodeling

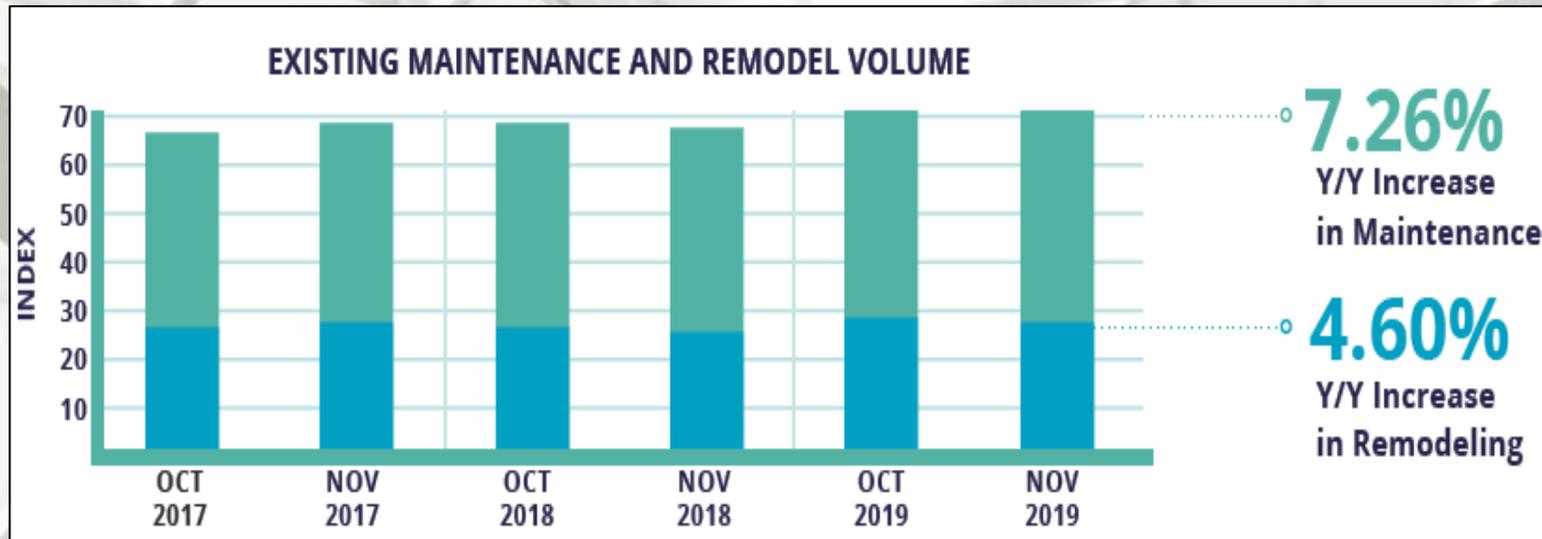


John Burns Real Estate Consulting LLC

Repair & Remodel

“The age of the housing stock should factor into every repair & remodel related business decision. The census reports the median owner-occupied housing unit was built in 1978, 41 years ago. R&R project rates don't slow down much for homes 25+ years old.” – Jacob Belk, John Burns Real Estate Consulting LLC

Remodeling



BuildFax

Existing Housing Supply

“Existing maintenance volume and spend increased 7.26% and 12.08% year over year, respectively. Additionally, remodel volume and spend – a subset of maintenance that includes renovations, additions, and alterations – increased 4.60% and 2.65%, respectively. Increasing home-buying sentiment, in addition to lower mortgage rates, is likely propelling existing housing activity higher.¹ As more people buy or sell properties, there’s a resulting increase in maintenance and remodeling activity.” – Jonathan Kanarek, Managing Director, BuildFax

¹Fannie Mae. Home Purchase Sentiment Rebounds in November, Re-Approaches Survey High (11/19).

Existing House Sales

National Association of Realtors

November 2019 sales: 5.350 thousand

	Existing Sales	Median Price	Mean Price	Month's Supply
November	5,350,000	\$271,300	\$308,000	3.7
October	5,440,000	\$271,000	\$307,200	3.9
2018	5,210,000	\$257,400	\$296,100	4.0
M/M change	-1.7%	0.1%	0.3%	-5.1%
Y/Y change	2.7%	5.4%	4.0%	-7.5%

All sales data: SAAR

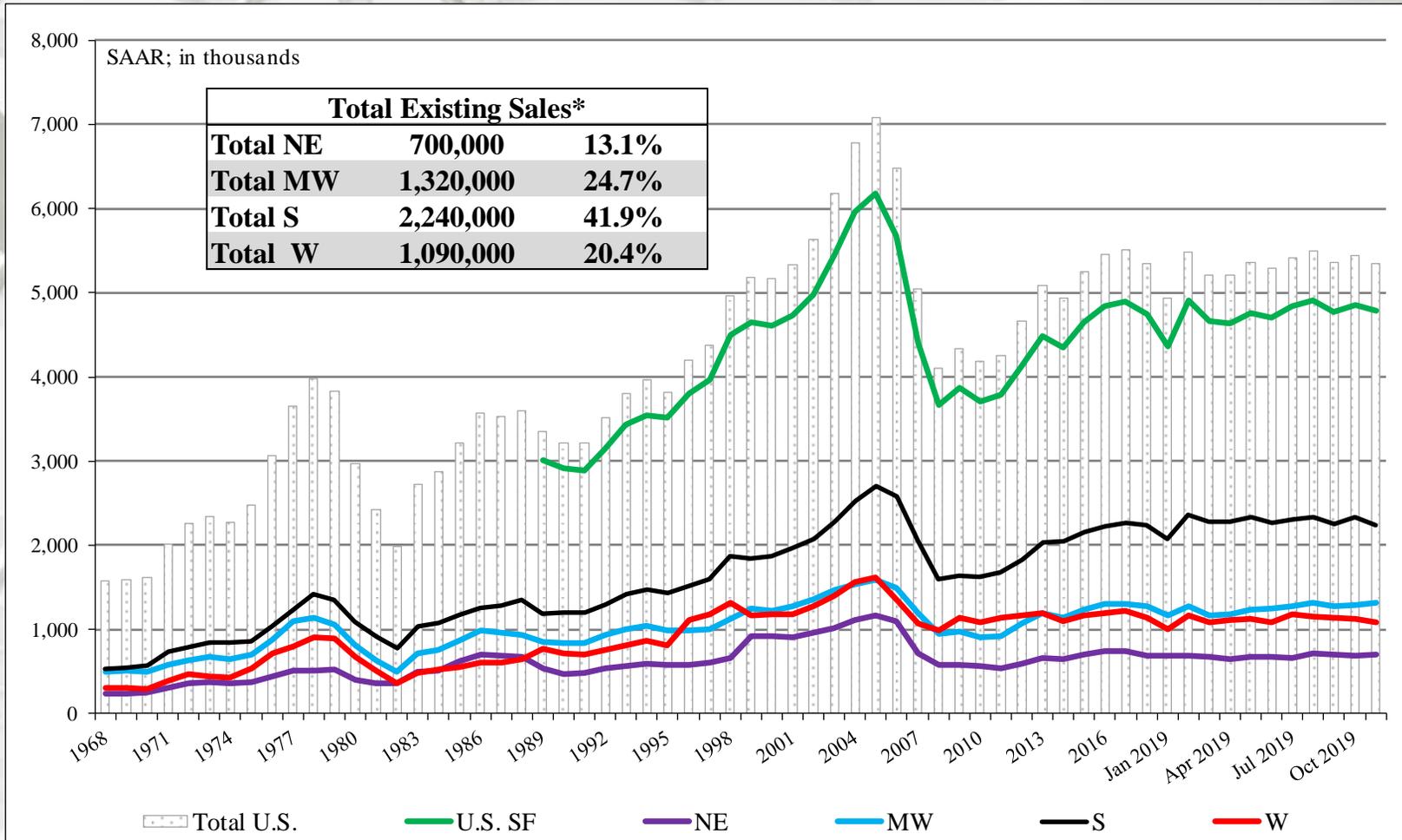
Existing House Sales

	Existing SF Sales	SF Median Price	SF Mean Price
November	4,790,000	274,000	331,900
October	4,850,000	273,800	309,600
2018	4,630,000	259,900	297,300
M/M change	-1.2%	0.1%	7.2%
Y/Y change	3.5%	5.4%	11.6%

	NE	MW	S	W
November	700,000	1,320,000	2,240,000	1,090,000
October	690,000	1,290,000	2,330,000	1,130,000
2018	710,000	1,300,000	2,160,000	1,040,000
M/M change	1.4%	2.3%	-3.9%	-3.5%
Y/Y change	-1.4%	1.5%	3.7%	4.8%

All sales data: SAAR.

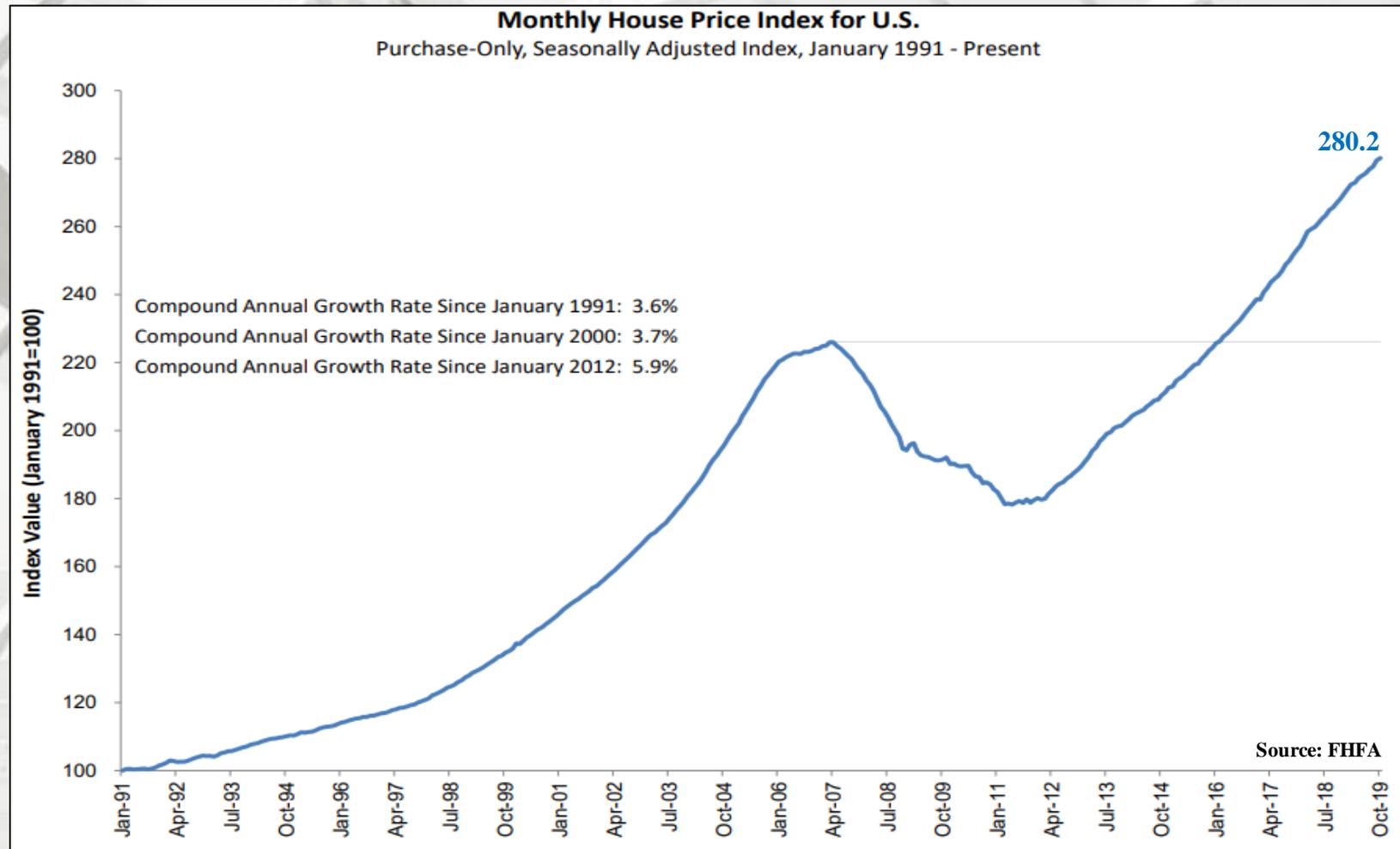
Existing House Sales



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

* Percentage of existing sales.

U.S. Housing Prices



FHFA House Price Index Up 0.2 Percent in October; Up 5.0 Percent from Last Year

“U.S. house prices rose in October, up **0.2 percent** from the previous month, according to the Federal Housing Finance Agency (FHFA) House Price Index (HPI). House prices rose **5.0 percent** from October 2018 to October 2019. The previously reported 0.6 percent increase for September 2019 was revised upward to 0.7 percent.” – Corinne Russell and Raffi Williams, FHFA

U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Shows Annual Home Price Gains Increased In October

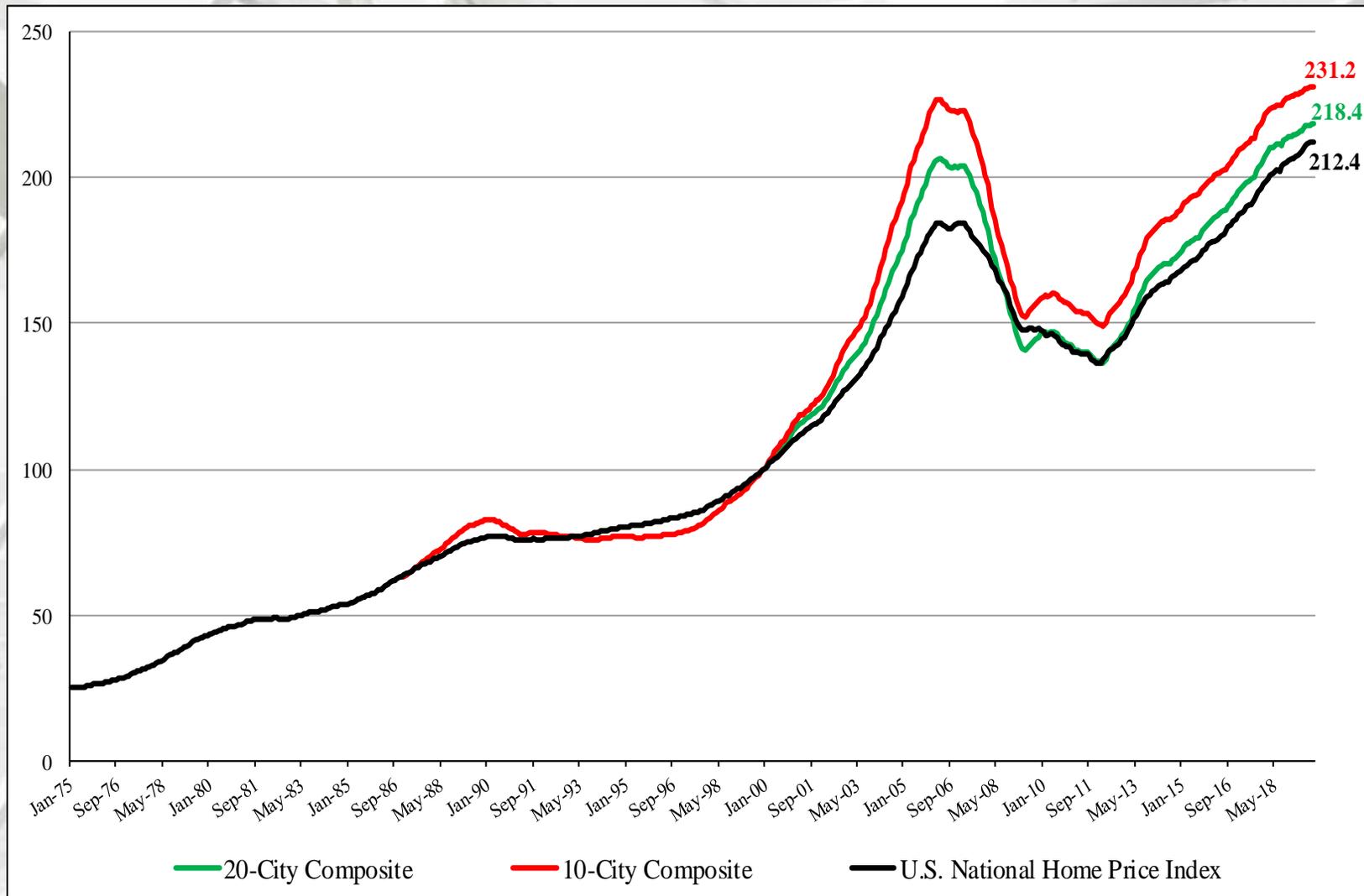
Data released for October 2019 show that home prices continue to increase at a modest rate across the U.S.

“The S&P CoreLogic Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 3.3% annual gain in October, up from 3.2% in the previous month. The 10-City Composite annual increase came in at 1.7%, up from 1.5% in the previous month. The 20-City Composite posted a 2.2% year-over-year gain, up from 2.1% in the previous month. Phoenix, Tampa and Charlotte reported the highest year-over-year gains among the 20 cities. In October, Phoenix led the way with a 5.8% year-over-year price increase, followed by Tampa with a 4.9% increase and Charlotte with a 4.8% increase. Twelve of the 20 cities reported greater price increases in the year ending October 2019 versus the year ending September 2019.

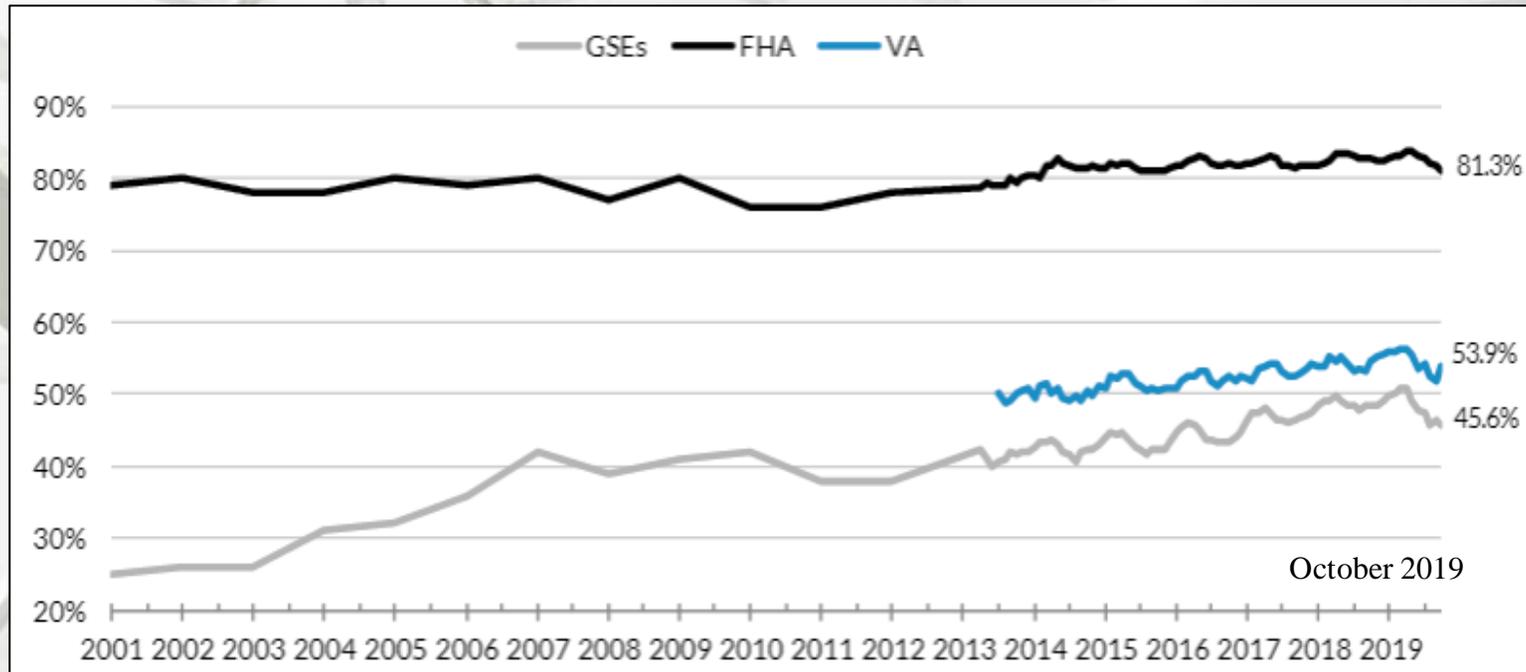
October’s U.S. housing data continue to be reassuring. With October’s 3.3% increase in the national composite index, home prices are currently more than 15% above the pre-financial crisis peak reached July 2006. October’s results were broad-based, as both our 10- and 20-city composites rose. Of the 20 cities in the composite, only San Francisco saw a year-over-year price decline in October.

At a regional level, Phoenix retains the top spot for the fifth consecutive month with October’s 5.8% year-over-year gain. The Southeast region was also strong, as Tampa, Charlotte, and Atlanta all rose by more than 4.0%. As was the case last month, after a long period of decelerating price increases, the national, 10-city, and 20-city composites all rose at a modestly faster rate in October compared to September. This stability was broad-based, reflecting data in 12 of 20 cities. It is, of course, still too soon to say whether this marks an end to the deceleration or is merely a pause in the longer-term trend.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

S&P/Case-Shiller Home Price Indices



First-Time House Buyers



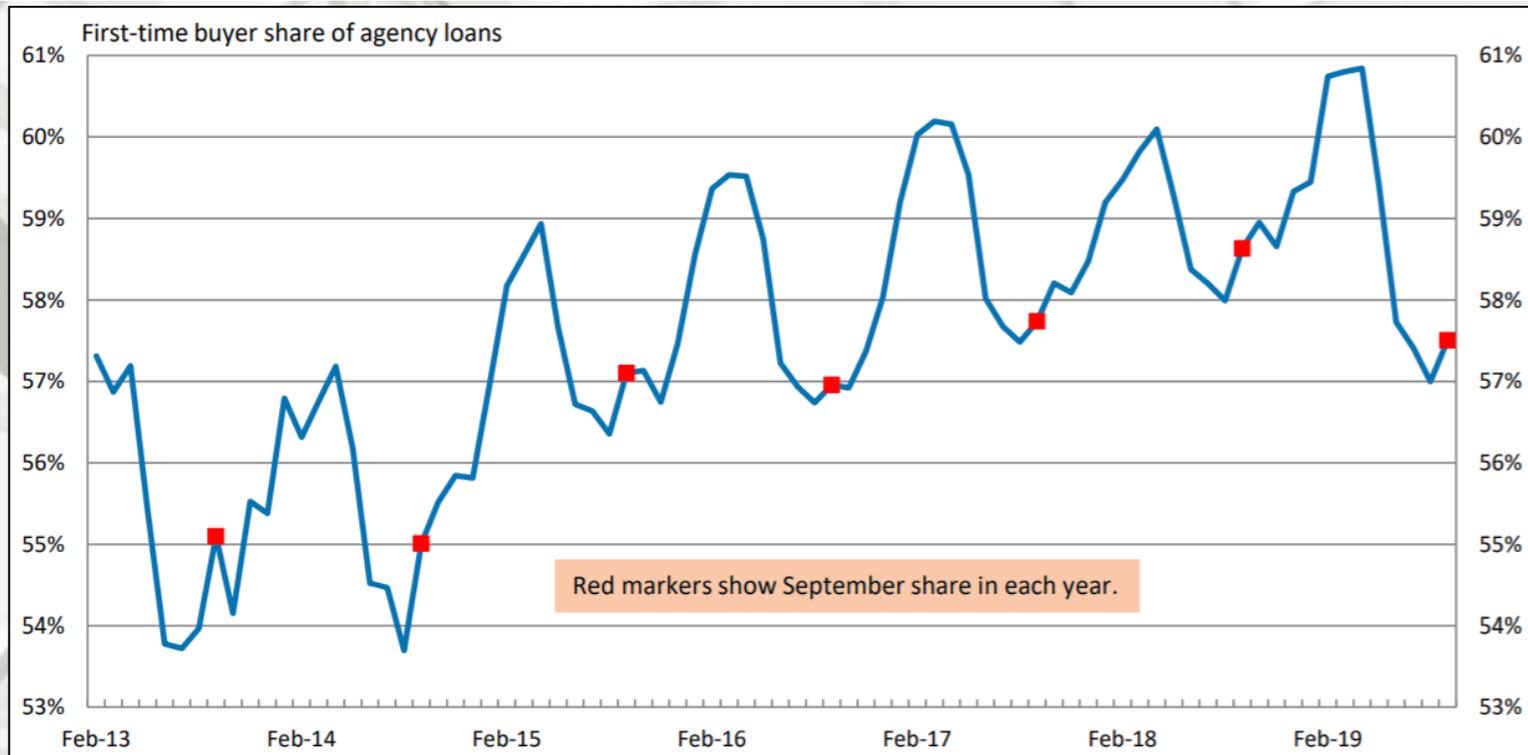
Sources: eMBS, Federal Housing Administration (FHA) and Urban Institute.

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

Urban Institute

“In October 2019, the FTHB share for FHA, which has always been more focused on first time homebuyers, fell very slightly to 81.3 percent. The FTHB share of VA lending increased slightly in October, to 53.9 percent. The GSE FTHB share in October was 45.6 percent. ... based on mortgages originated in October 2019, the average FTHB was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, and higher LTV and higher DTI, thus paying a higher interest rate.” – Bing Lai, Research Associate, Housing Finance Policy Center

First-Time House Buyers



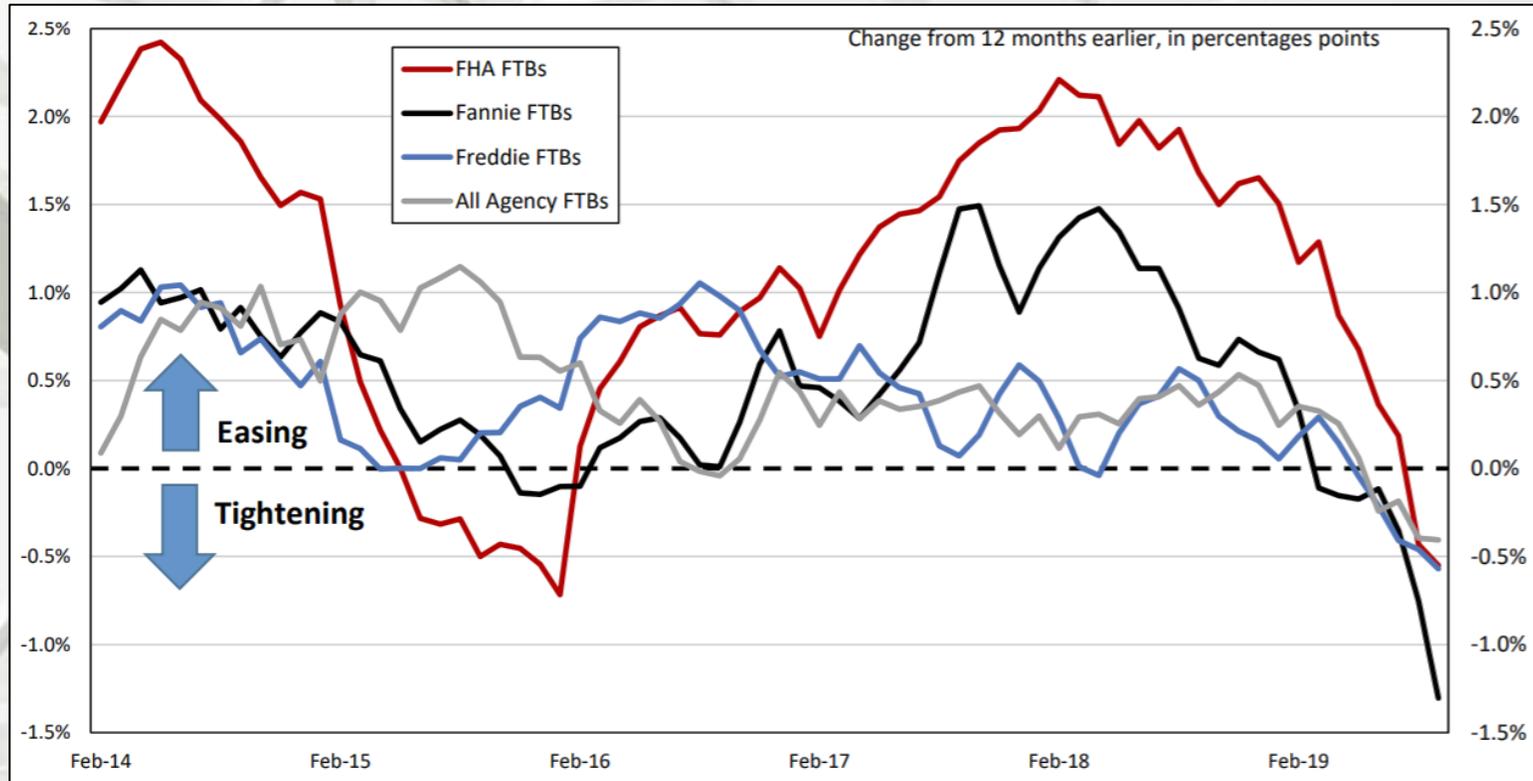
Note: Data are for primary owner-occupied agency purchase loans.

AEI Housing Center

Agency First-time Buyer (FTB) Loan Share

“The Agency FTB loan share has declined to 57.5% in September 2019. This is down from 58.6% in September 2018 and represents a significant trend reversal from the last 5 years, during which the FTB share continuously marched up. The decline in FTB volume has helped reduce the overall level of mortgage risk. This is evidence of counter-cyclical policies, especially appropriate at this point in the 8-year long home price boom.” – Edward Pinto and Tobias Peter, AEI Housing Center

First-Time House Buyers



Note: Includes all types of NMRI purchase loans (primary owner-occupied, second home, and investor loans).

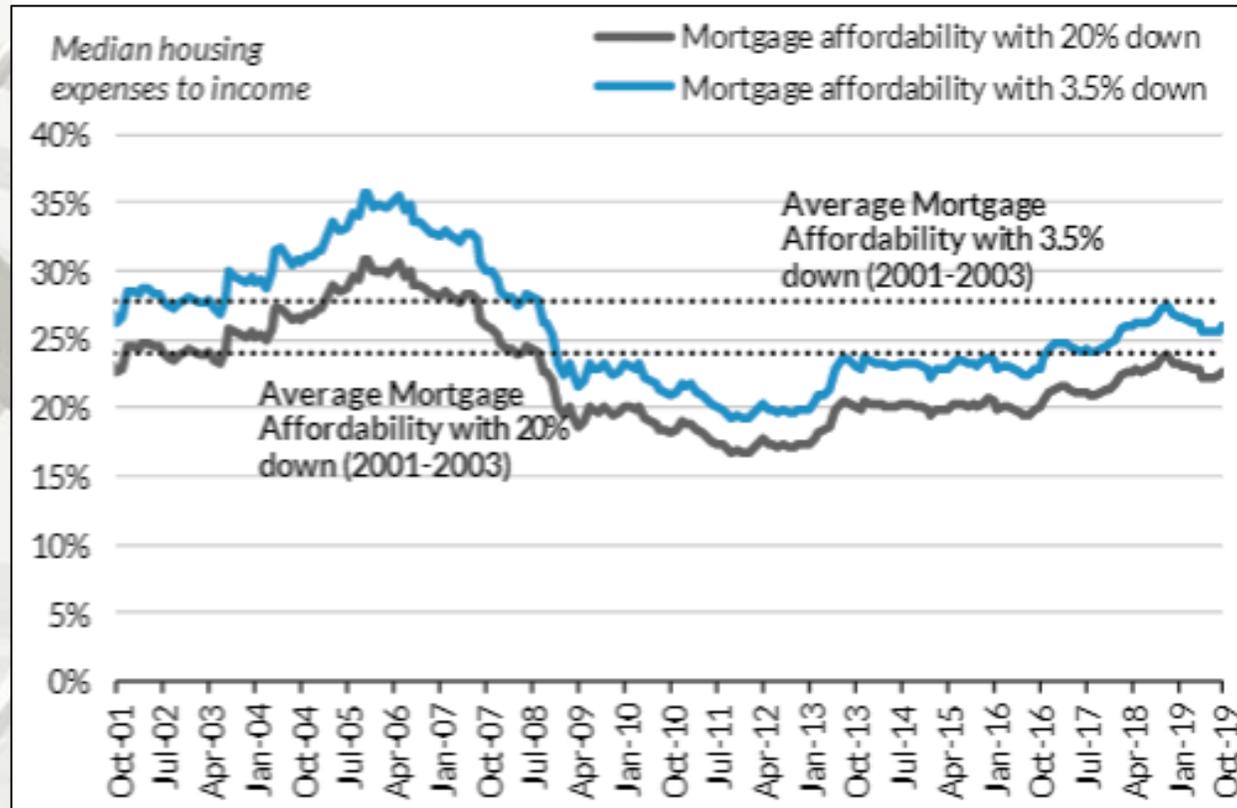
AEI Housing Center

FTB Purchase Loan NMRI: Credit Tightening Continues

“The First-time Buyer (FTB) MRI continued to decrease led by Fannie, which has been tightening since March 2019. FHA’s First-time Buyer MRI stood at 27.8% in September, down 0.6 ppt from a year earlier. While this change is encouraging, the decrease is coming off of very high risk levels and more needs to be done.” – Edward Pinto and Tobias Peter, AEI Housing Center

Housing Affordability

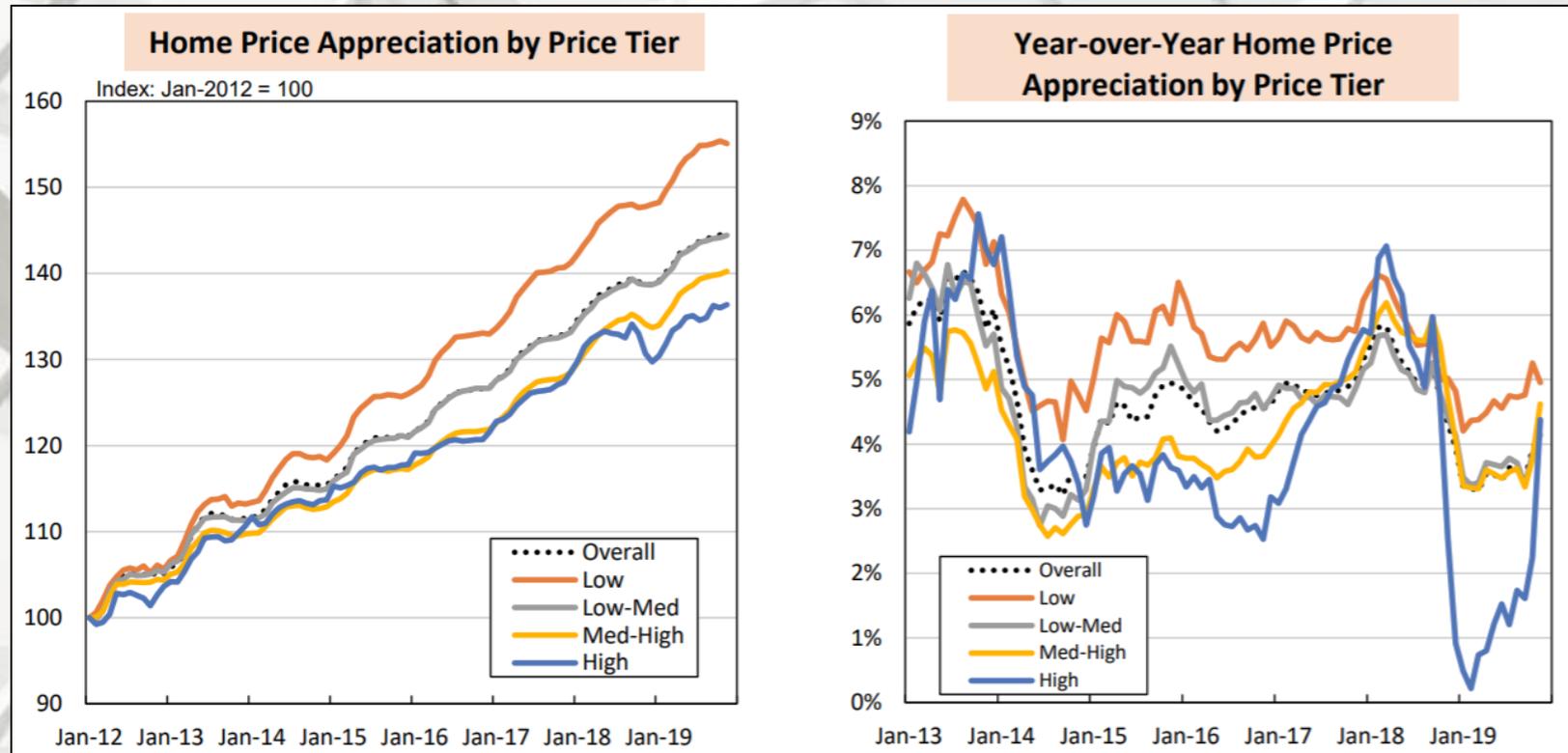
National Housing Affordability Over Time



Urban Institute

“Home prices remain affordable by historic standards, despite price increases over the last 7 years, as interest rates remain relatively low in an historic context. As of October 2019, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 22.7 percent; with 3.5 down, it is 26.0 percent. Since February, the median housing expenses to income ratio has been slightly lower than the 2001-2003 average.” – Laurie Goodman, VP, Housing Finance Policy Center

Housing Affordability



Note: Data for November 2019 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.

AEI Housing Center

National House Price Appreciation (HPA) by Price Tier

“In November 2019, overheating of the low price tier continued (right panel). HPA in the low price tier was 5.0% year-over-year (yoy). In the low-medium and medium-high tiers, HPA was 4.1% and 4.6%, respectively. HPA in the high tier (about 7% share) increased significantly to 4.4%. This tier was first hit by the Fed’s tightening and is now buoyed by the Fed’s loosening.” – Edward Pinto and Tobias Peter, AEI Housing Center

Housing Affordability

AEI Housing Center

New Carpenter Index: They Can Build It, But Can They Afford It?

“The [AEI Carpenter Index](#), developed by the [AEI Housing Center](#), uses a carpenter’s household income to compare relative affordability for entry-level housing across the nation’s 100 largest metro areas. It estimates the share of entry-level homes that average carpenter households – a proxy for the blue-collar workforce – can afford to purchase. This share ranges from seven percent in the least affordable metro to 100 percent in 22 metro areas.

Edward Pinto and Tobias Peter say the strength of the Carpenter Index is its simplicity, beginning with average carpenter wages at the metro level (nationally this is around \$47,000). It then assumes a household income that totals 150 percent of the carpenter’s wage, which is roughly the national average. This yields a typical total carpenter household income of \$71,000.

Pinto says a rule of thumb is that a household should purchase a home no more than three times the household’s income in order for that home to be considered affordable. Based on this equation, the typical carpenter household could afford a home valued at no more than \$213,000.

- In San Diego, the most unaffordable metro area in 2018, the carpenter household with \$250,000 in purchasing power would have to settle for a 500 square feet, one-bedroom “doll house.” In Pittsburgh, one of the most affordable metros, the household with roughly the same amount to spend could buy a 3,600 square feet, six-bedroom home.
- In two-thirds of the 100 largest metros, entry-level or starter homes are still affordable for the average carpenter household (2018 data). However, housing has become increasingly unaffordable as home prices have generally risen faster than wages.
- San Diego, Los Angeles, San Francisco, Denver, and Portland ranked as the least affordable metros, while Chicago, Detroit, Indianapolis, Philadelphia, and St. Louis ranked as the most affordable metros. Las Vegas, Houston, Minneapolis, Atlanta, and Tampa ranked in the middle of the index.” – Brendan Rascius, AEI Housing Center

Housing Affordability

AEI Housing Center New Carpenter Index

They Can Build It, But Can They Afford It?

“While home prices have far outpaced wage gains, Pinto and Peter say is the result of a regulatory failure, not the market. In any regular market, the price signal – which prevent massive shortages and ensure that consumer wants are largely satisfied – would alert suppliers to ramp up production, capping price increases until supply and demand return to equilibrium. In the housing market, however, land use and building regulations constrain builders from providing additional entry-level supply, even at the higher marginal price. This is particularly evident on the West Coast, where builders are so constrained there is little new housing supply of any type.

Based on analysis of the Carpenter Index, Pinto and Peter conclude that the policy prescription is clear: Reduce burdensome local regulations so that builders can respond to price signals, while keeping prices more in line with wage growth.” – Brendan Rascius, AEI Housing Center

Mortgage Credit Availability

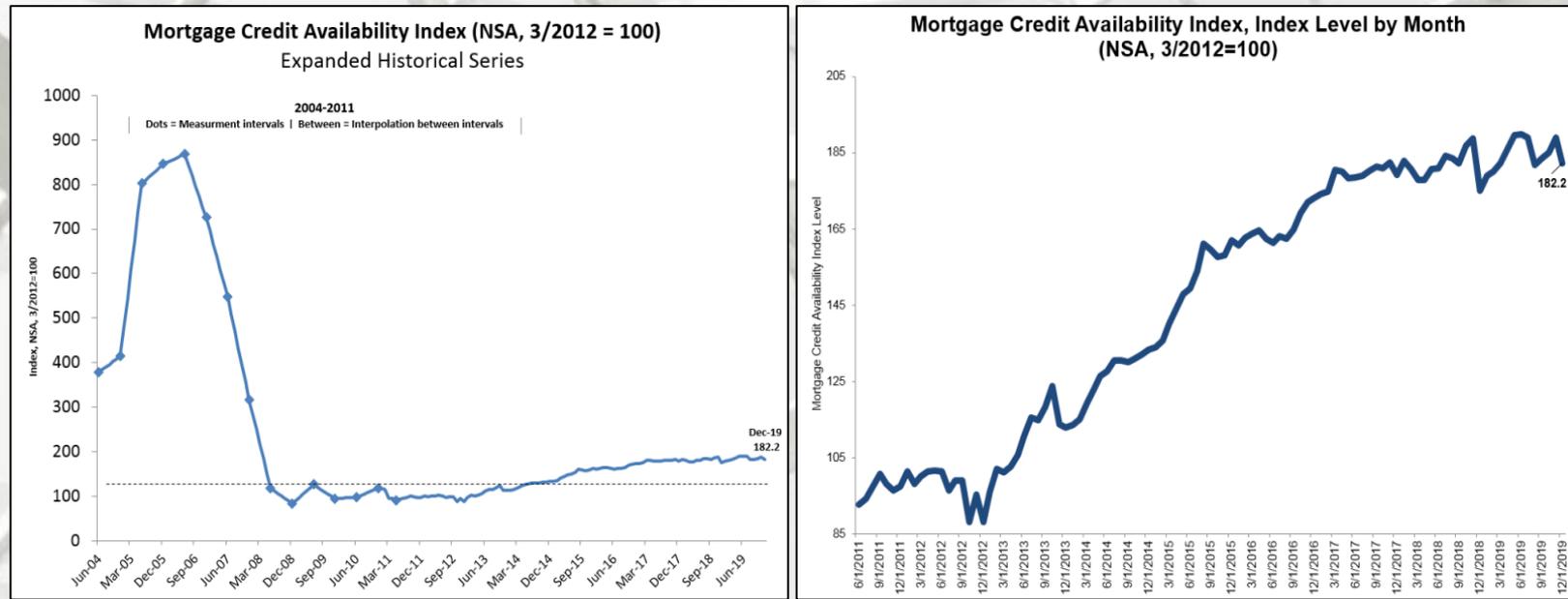
Mortgage Credit Availability Decreased in December

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

The MCAI fell by 3.5 percent to 182.2 in December. A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening credit. The index was benchmarked to 100 in March 2012. The Conventional MCAI decreased 1.4 percent, while the Government MCAI decreased by 6.1 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI decreased by 1.3 percent, and the Conforming MCAI fell by 1.6 percent.

Credit availability fell in December after three months of expansion, driven by drops in both conventional and government supply. Perhaps most noteworthy was a 6 percent drop in government credit supply because of changes to the Veterans Administration (VA) loan program, which eliminated loan limits for certain borrowers as of Jan 1, 2020. This likely prompted many investors to remove VA programs in high cost counties from their offerings. There was also a reduction in streamline refinance programs, as slightly higher rates slowed the refinance market at the end of 2019.” – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

Mortgage Credit Availability



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

Summary

In conclusion:

In November, United States the vast majority of the United States housing construction and sales markets were positive – month-over-month and year-over-year. The exceptions were the yearly single-family under construction and spending. New single-family house sales and private residential construction spending also recorded monthly declines.

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.

Cons:

- 1) Housing affordability indicates improvement;
- 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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