

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



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Table of Contents

Slide 3: Opening Remarks	Slide 45: Region SF House Sales & Price
Slide 4: Housing Scorecard	Slide 53: New SF Sales-Population Ratio
Slide 5: Wood Use in Construction	Slide 62: Construction Spending
Slide 8: New Housing Starts	Slide 65: Construction Spending Shares
Slide 12: Regional Housing Starts	Slide 68: Remodeling
Slide 20: New Housing Permits	Slide 72: Existing House Sales
Slide 24: Regional New Housing Permits	Slide 77: U.S. Home Ownership
Slide 28: Housing Under Construction	Slide 85: First-Time Purchasers
Slide 30: Regional Under Construction	Slide 88: Affordability
Slide 35: Housing Completions	Slide 92: Summary
Slide 38: Regional Housing Completions	Slide 93: Virginia Tech Disclaimer
Slide 42: New Single-Family House Sales	Slide 94: USDA Disclaimer

This report is a free monthly service of Virginia Tech. Past issues are available at:
<http://woodproducts.sbio.vt.edu/housing-report>.

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Opening Remarks

In October, 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 data categories. New single-family house sales and private residential construction spending recorded monthly declines. The December 6th Atlanta Fed GDPNow™ model estimate for December 2019 projects an aggregate 6.7% increase for residential investment spending. New private permanent site expenditures were projected at an 8.0% increase; the improvement spending forecast was an 1.6% increase; and the manufactured/mobile housing projection was a 0.7% increase (all: quarterly log change and seasonally adjusted annual rate).¹

“The housing sector, for several quarters a drag on the overall economy, has become a contributor, with residential fixed investment growing in the third quarter by a strong 5.1 percent annualized pace amid positive contributions from single-family housing construction, home improvements, and brokers fees. We expect momentum to carry forward with moderate growth in construction activity and sales, although housing market activity will continue to be held back by persistent supply constraints.”² – Economic & Strategic Research Group, Fannie Mae.

This month’s commentary contains applicable housing data. Section I contains data and commentary, and analysis of home ownership. Section II includes regional Federal Reserve analysis, private indicators, and demographic commentary focusing on “aging in place”.

Sources: ¹ www.frbatlanta.org/cqer/research/gdpnow.aspx; 12/6/19;

² <https://www.fanniemae.com/portal/research-insights/forecast/monthly/economic-developments/november-2019.html>; 11/18/19

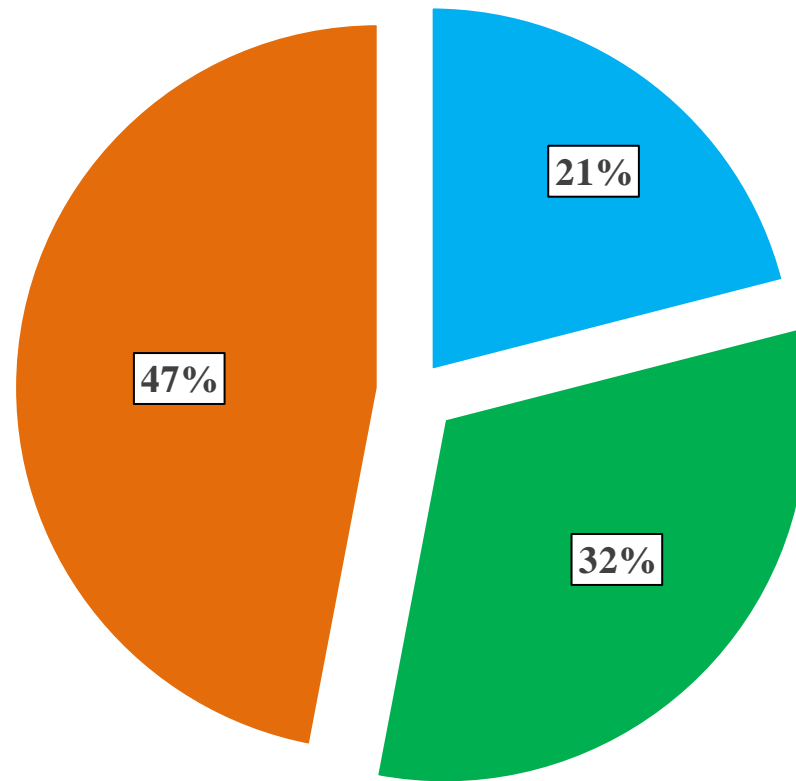
October 2019 Housing Scorecard

	M/M	Y/Y
Housing Starts	▲ 3.8%	▲ 8.5%
Single-Family (SF) Starts	▲ 2.0%	▲ 8.2%
Multi-Family (MF) Starts*	▲ 8.6%	▲ 9.2%
Housing Permits	▲ 5.0%	▲ 14.1%
SF Permits	▲ 3.2%	▲ 7.4%
MF Permits*	▲ 8.2%	▲ 26.9%
Housing Under Construction	▲ 0.1%	▲ 2.1%
SF Under Construction	▲ 0.6%	▼ 0.2%
Housing Completions	▲ 10.3%	▲ 12.4%
SF Completions	▲ 4.5%	▲ 8.6%
New SF House Sales	▼ 0.7%	▲ 31.6%
Private Residential Construction Spending	▼ 0.9%	▲ 0.5%
SF Construction Spending	▲ 1.6%	▼ 3.1%
Existing House Sales ¹	▲ 1.9%	▲ 4.6%

* 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

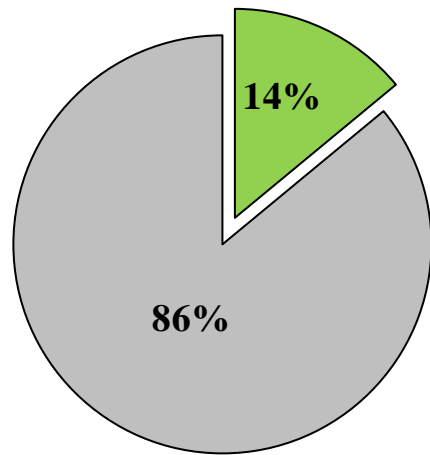


■ Non-structural panels

■ Total Sawnwood

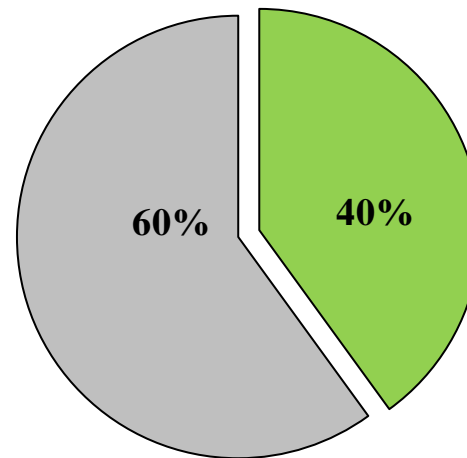
■ Structural panels

New SF Construction Percentage of Wood Products Consumption



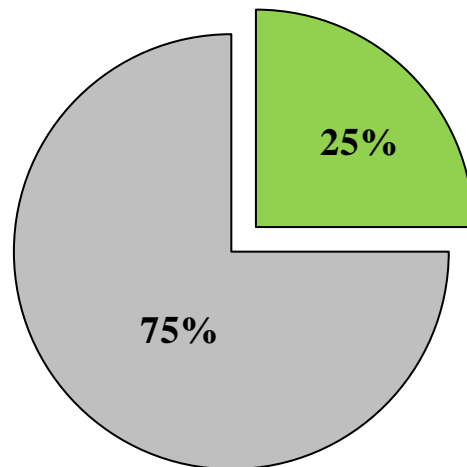
■ Non-structural panels:
New Housing

■ Other markets



■ Structural panels:
New housing

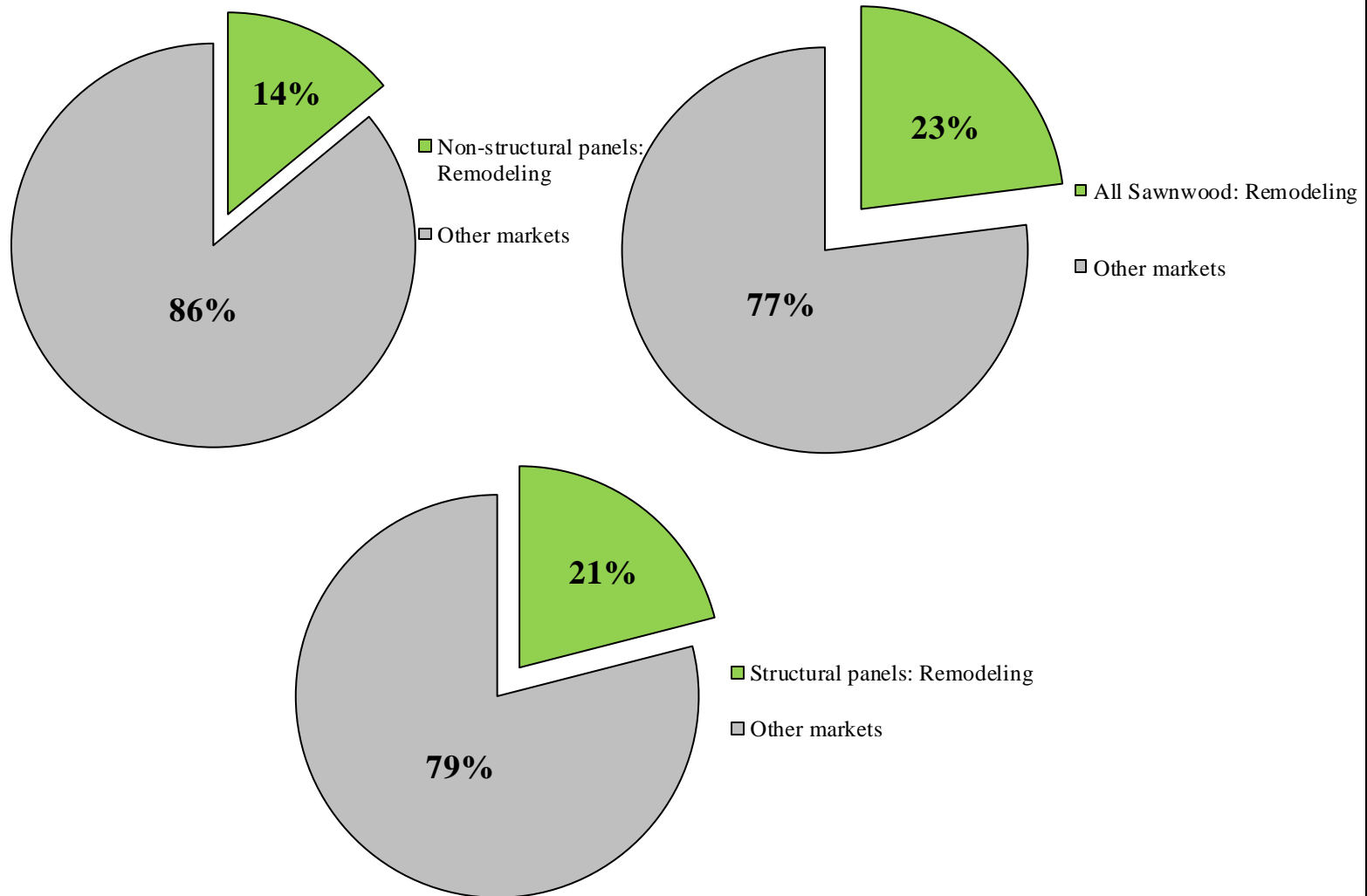
■ Other markets



■ All Sawnwood: New housing

■ Other markets

Repair and Remodeling's Percentage of Wood Products Consumption



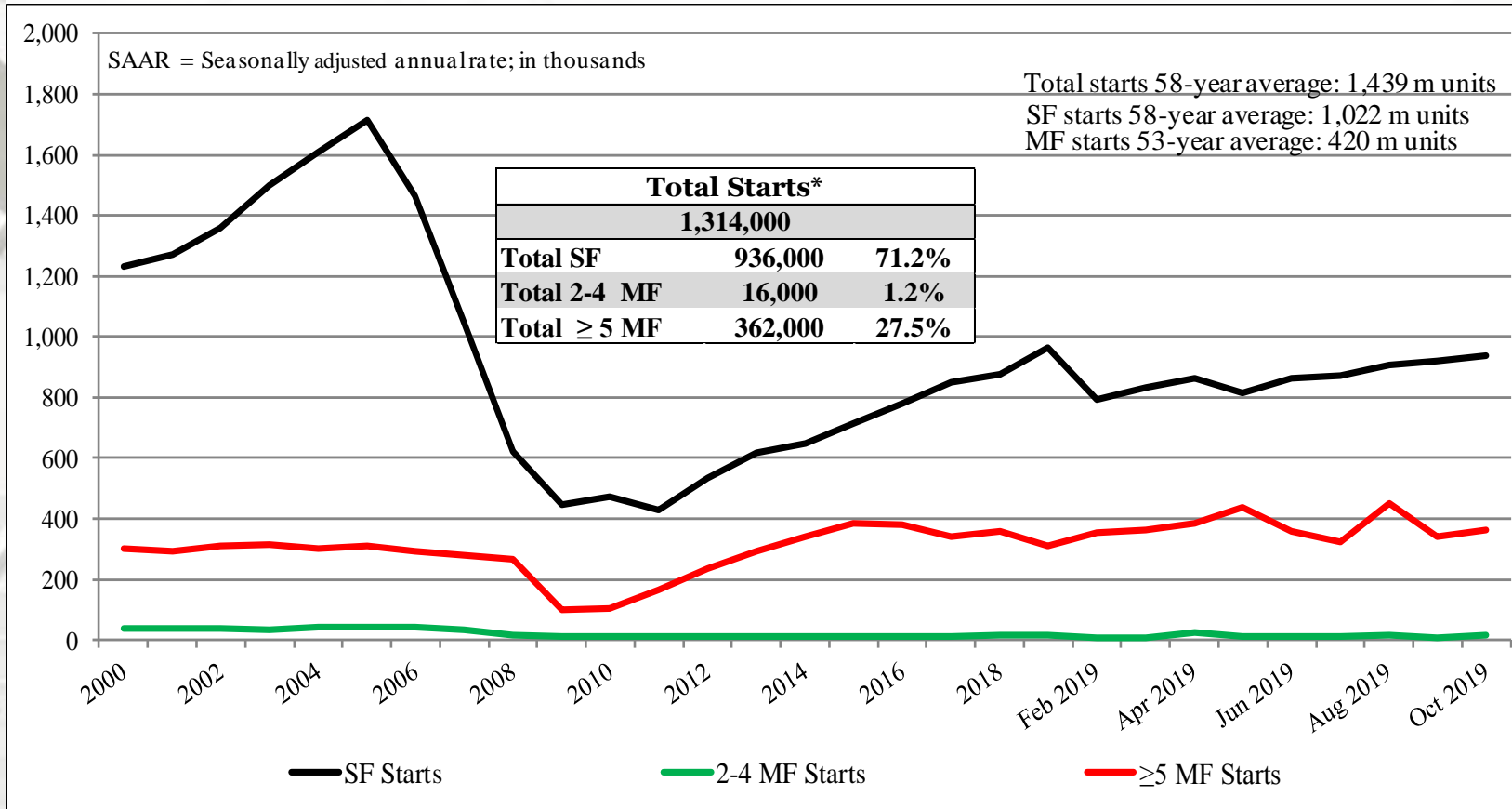
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
October	1,314,000	936,000	16,000	362,000
September	1,266,000	918,000	9,000	339,000
2018	1,211,000	865,000	19,000	327,000
M/M change	3.8%	2.0%	77.8%	6.8%
Y/Y change	8.5%	8.2%	-15.8%	10.7%

* 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)).

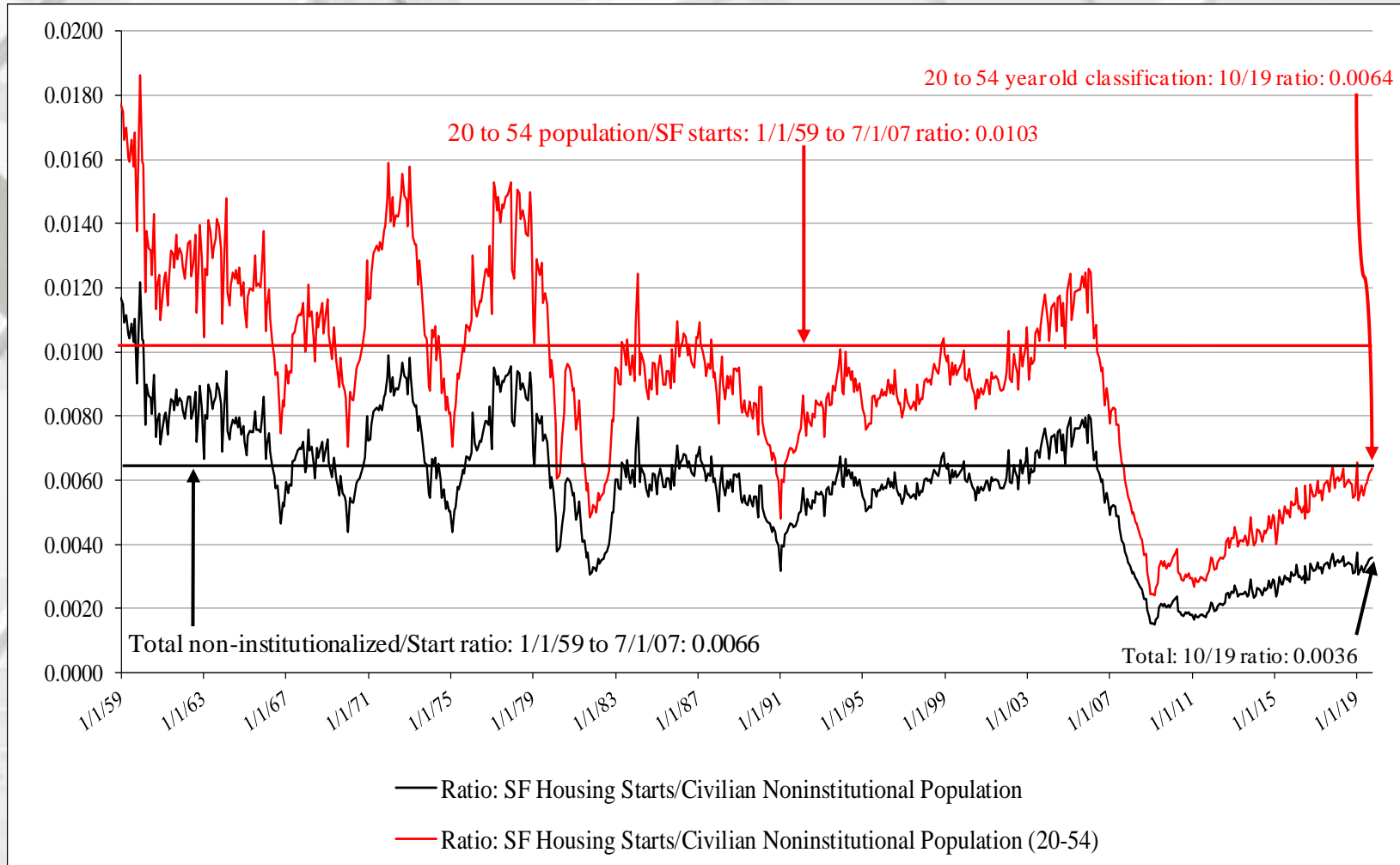
Total Housing Starts



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

* Percentage of total starts.

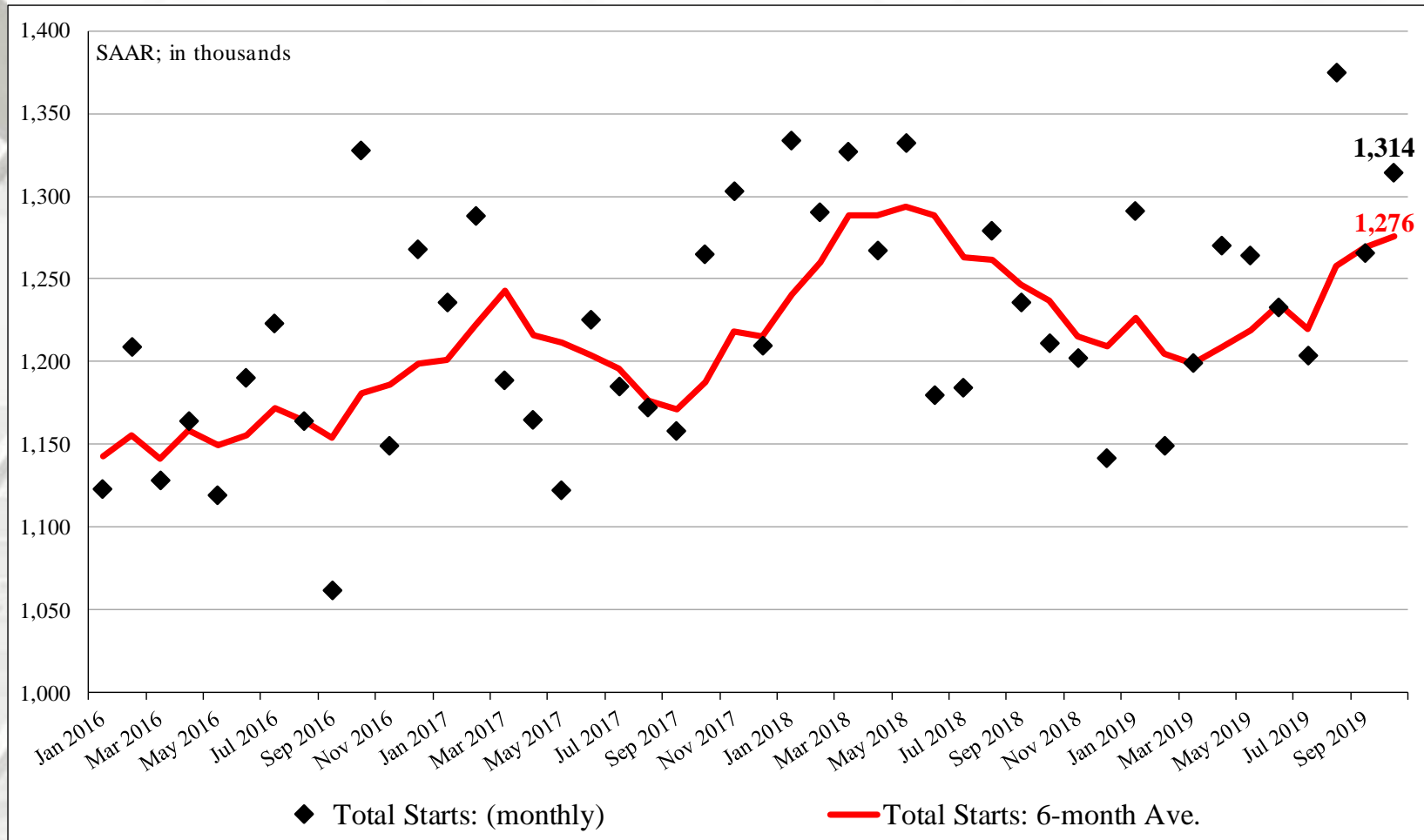
New SF Starts



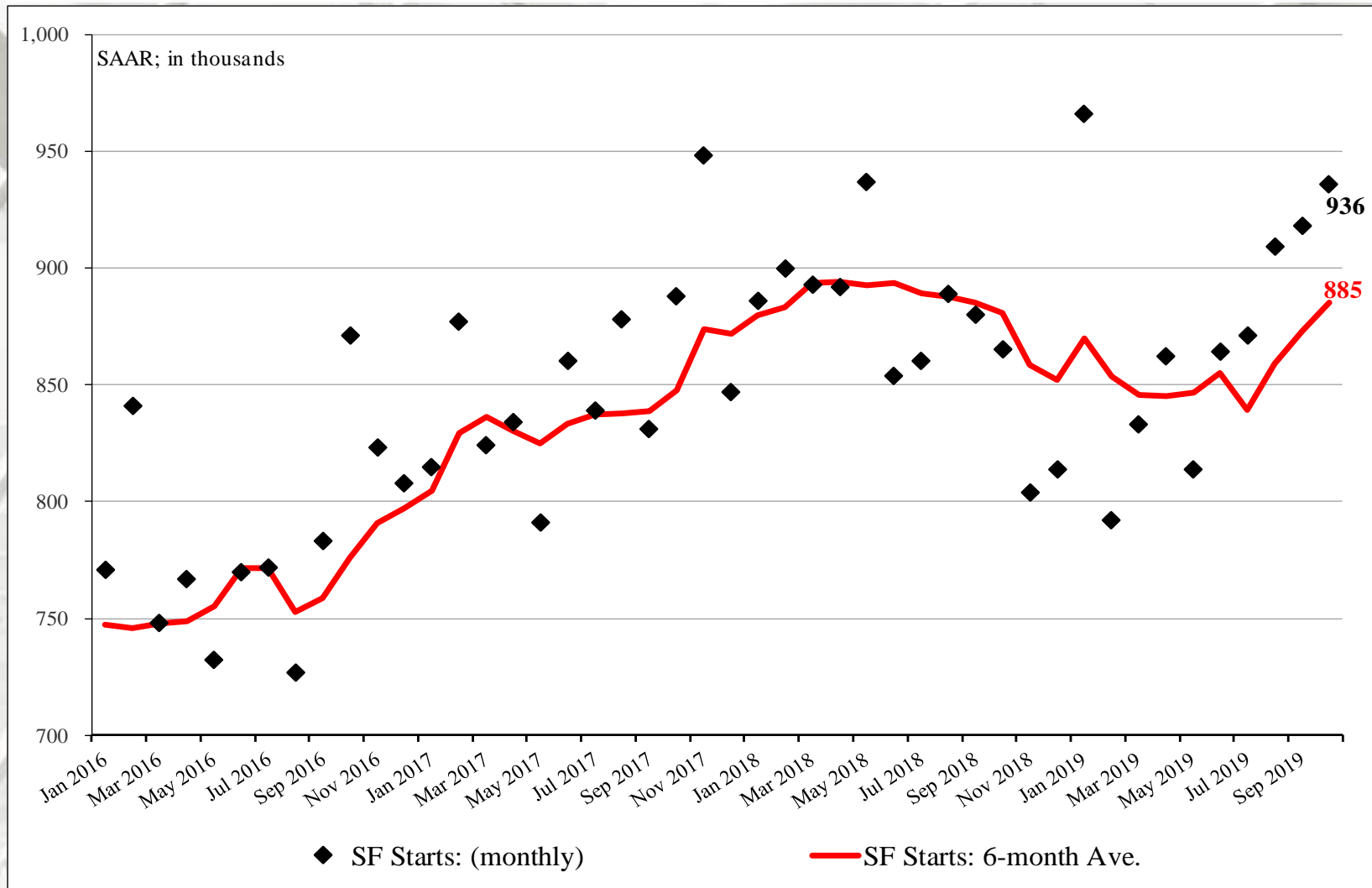
New SF starts adjusted for the US population

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

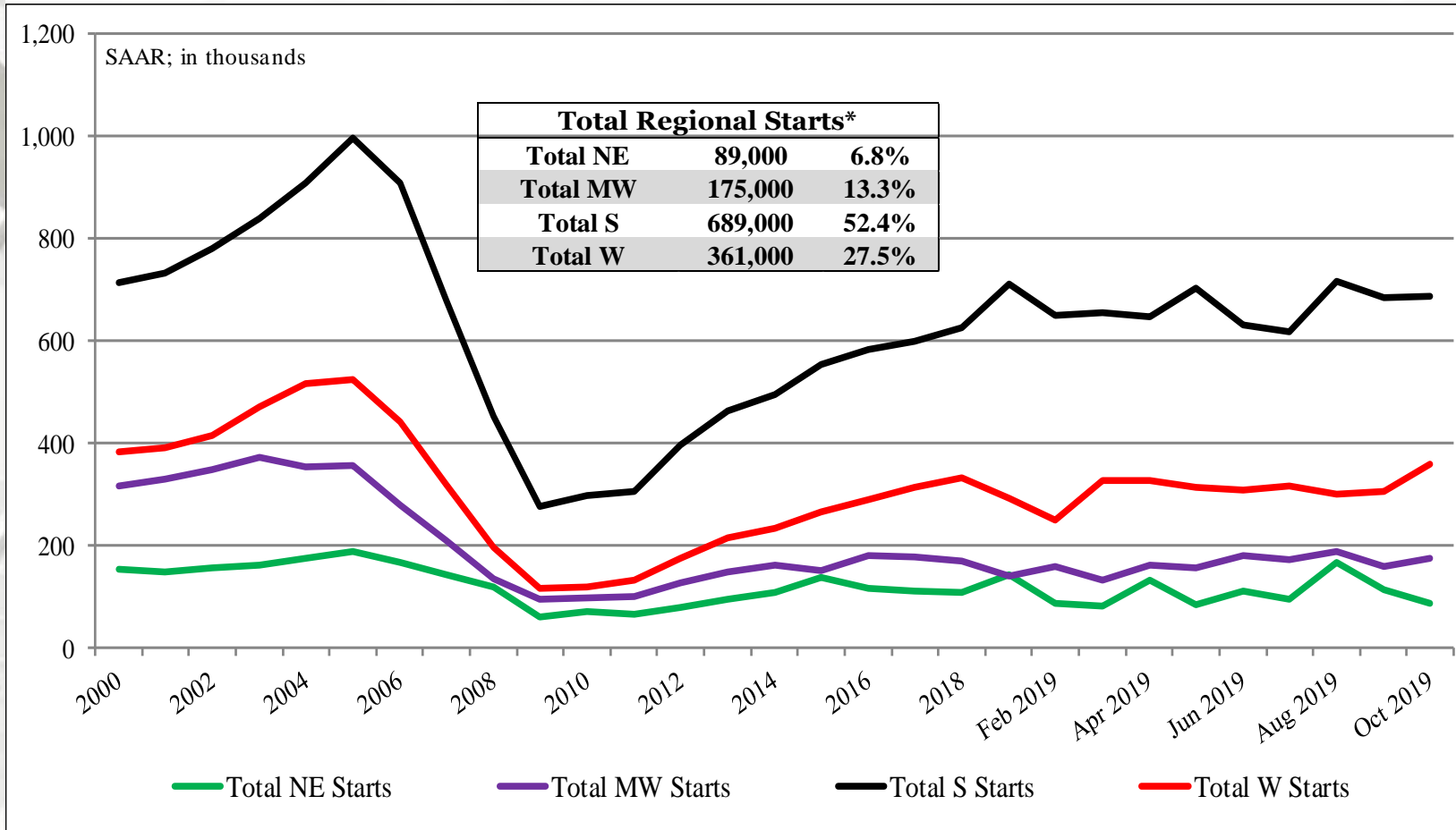
Total Housing Starts: Six-Month Average



SF Housing Starts: Six-Month Average



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.

New Housing Starts by Region

	NE Total	NE SF	NE MF**
October	89,000	41,000	48,000
September	114,000	61,000	53,000
2018	90,000	72,000	18,000
M/M change	-21.9%	-32.8%	-9.4%
Y/Y change	-1.1%	-43.1%	166.7%
	MW Total	MW SF	MW MF
October	175,000	120,000	55,000
September	161,000	119,000	42,000
2018	187,000	122,000	65,000
M/M change	8.7%	0.8%	31.0%
Y/Y change	-6.4%	-1.6%	-15.4%

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).

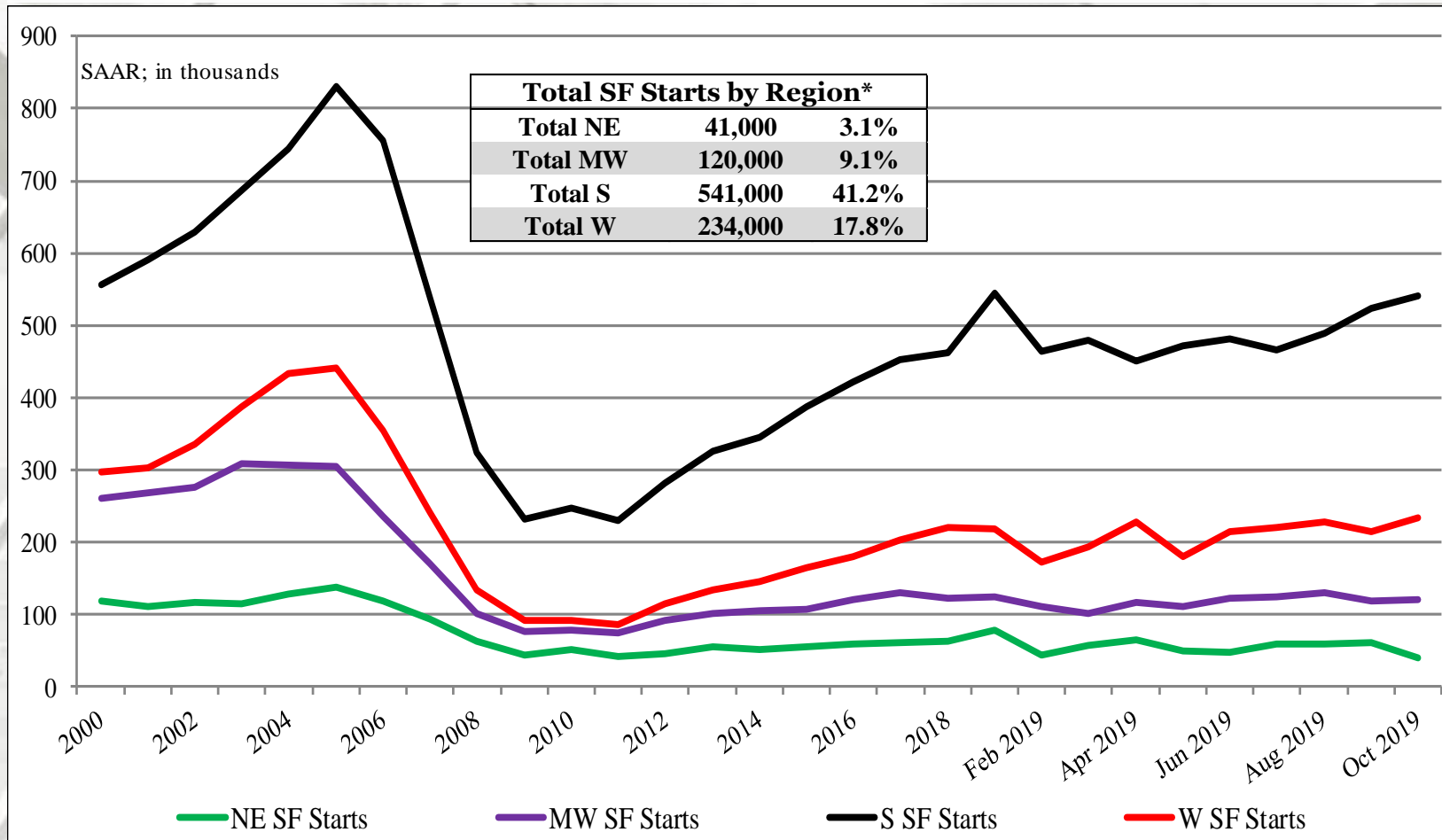
New Housing Starts by Region

	S Total	S SF	S MF**
October	689,000	541,000	148,000
September	684,000	524,000	160,000
2017	596,000	430,000	166,000
M/M change	0.7%	3.2%	-7.5%
Y/Y change	15.6%	25.8%	-10.8%
	W Total	W SF	W MF
October	361,000	234,000	127,000
September	307,000	214,000	93,000
2018	338,000	241,000	97,000
M/M change	17.6%	9.3%	36.6%
Y/Y change	6.8%	-2.9%	30.9%

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).

Total SF Housing Starts by Region

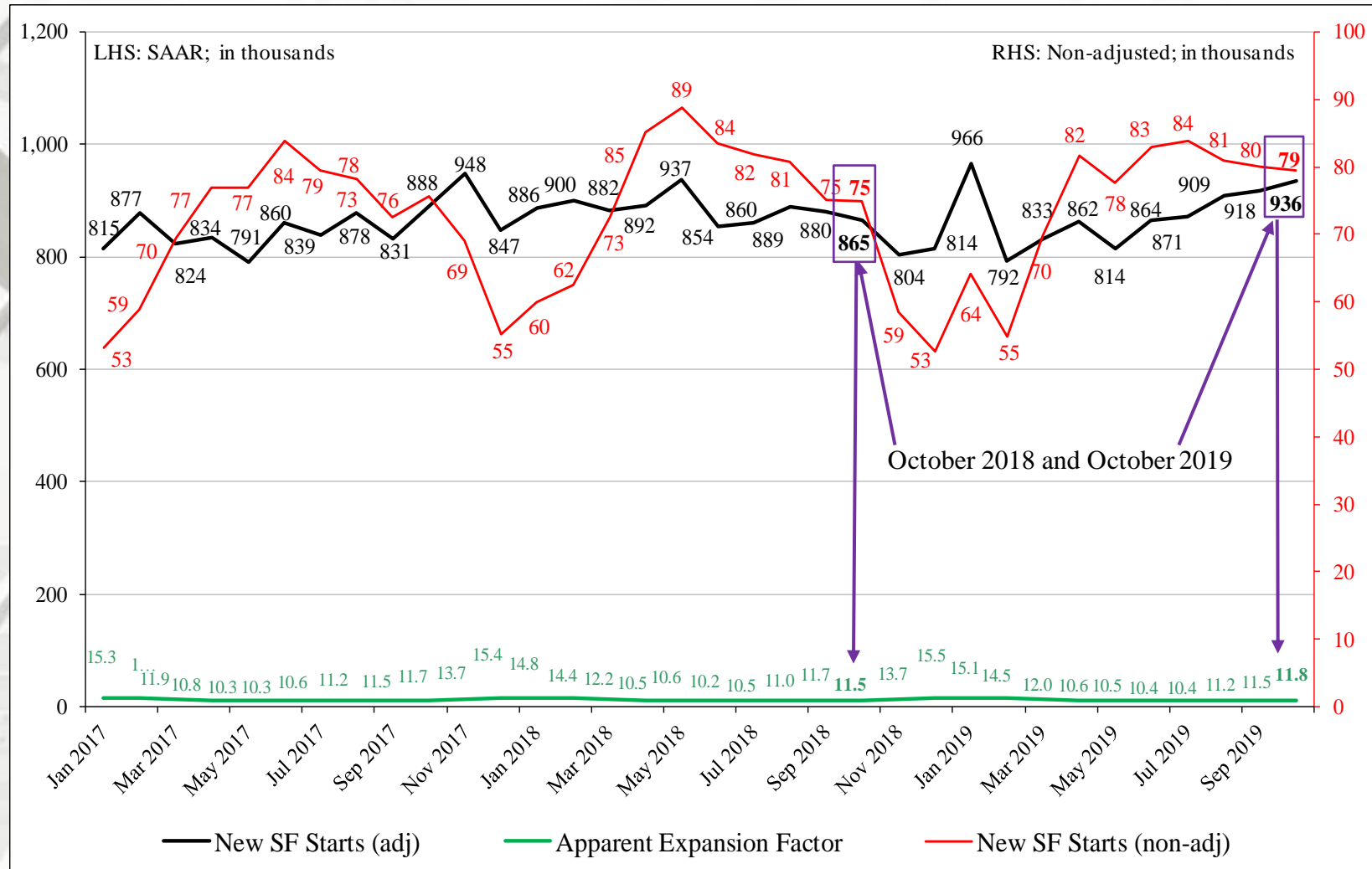


NE = Northeast, MW = Midwest, S = South, W = West

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.

Nominal & SAAR SF Starts

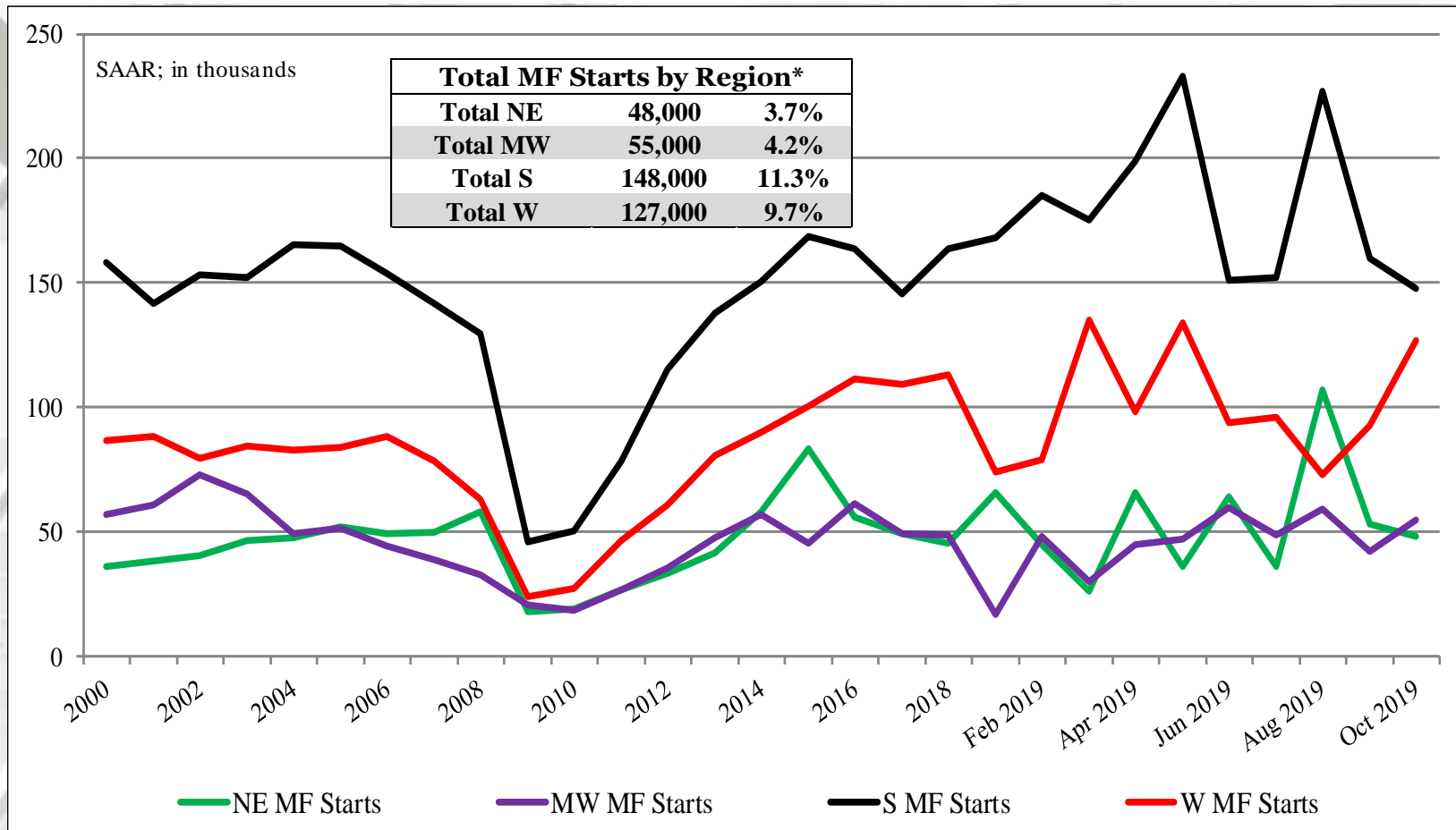


Nominal and Adjusted New SF Monthly Starts

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

MF Housing Starts by Region

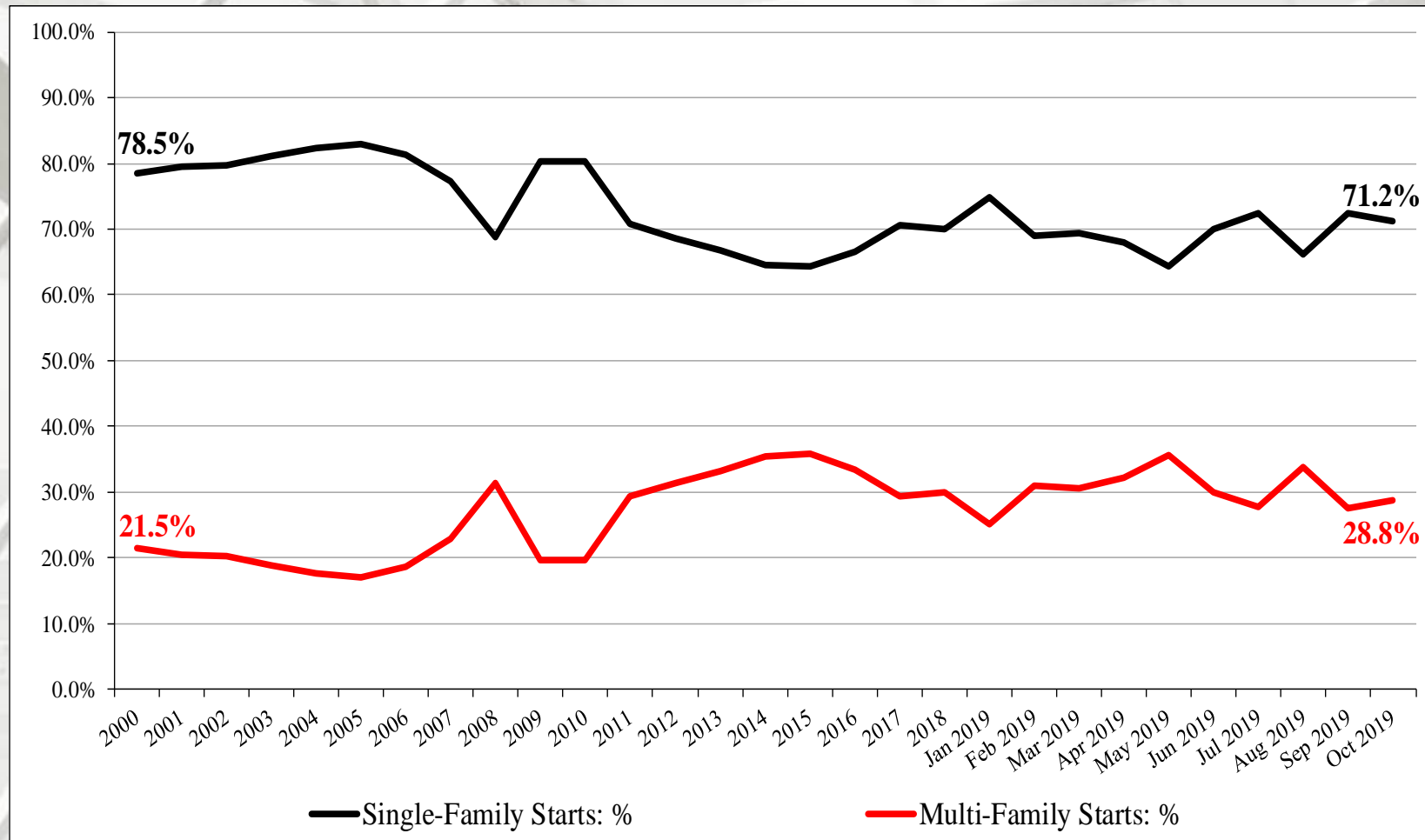


NE = Northeast, MW = Midwest, S = South, W = West

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 (%)

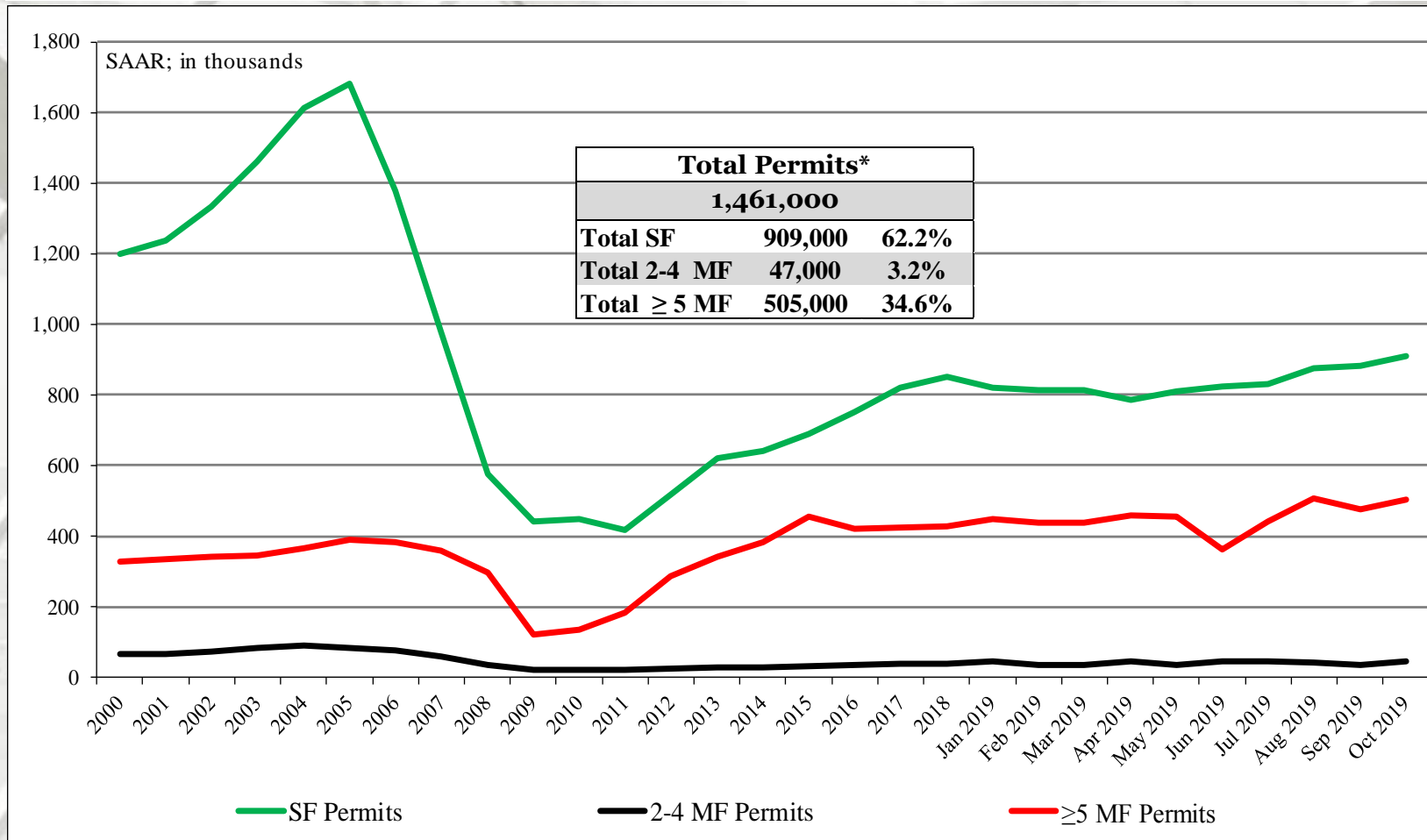


New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
October	1,461,000	909,000	47,000	505,000
September	1,391,000	881,000	34,000	476,000
2018	1,281,000	846,000	39,000	396,000
M/M change	5.0%	3.2%	38.2%	6.1%
Y/Y change	14.1%	7.4%	20.5%	27.5%

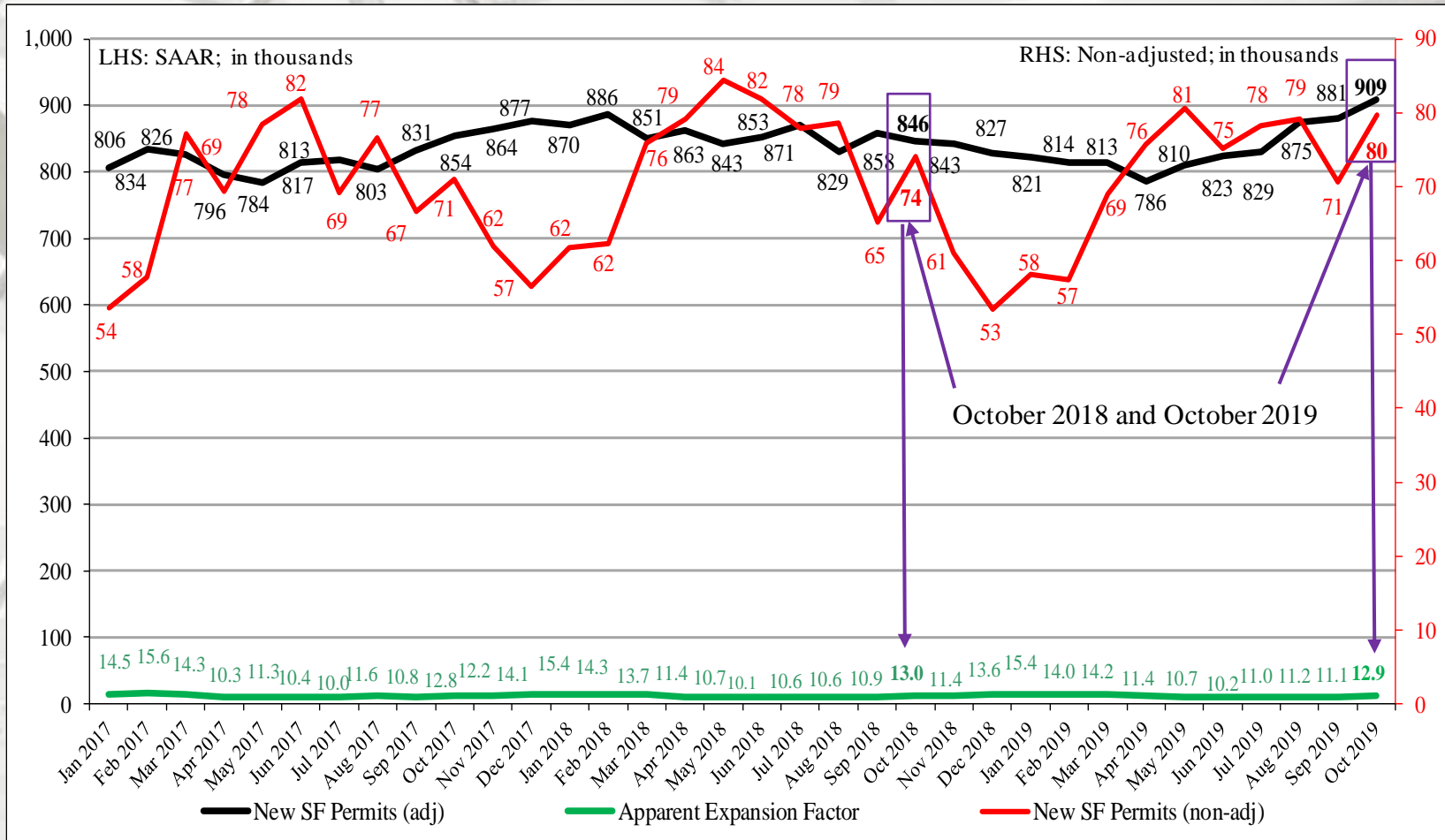
* All permit data are presented at a seasonally adjusted annual rate (SAAR).

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**
October	141,000	49,000	92,000
September	118,000	46,000	72,000
2018	129,000	61,000	68,000
M/M change	19.5%	6.5%	27.8%
Y/Y change	9.3%	-19.7%	35.3%
	MW Total*	MW SF	MW MF**
October	176,000	119,000	57,000
September	173,000	124,000	49,000
2018	187,000	114,000	73,000
M/M change	1.7%	-4.0%	16.3%
Y/Y change	-5.9%	4.4%	-21.9%

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

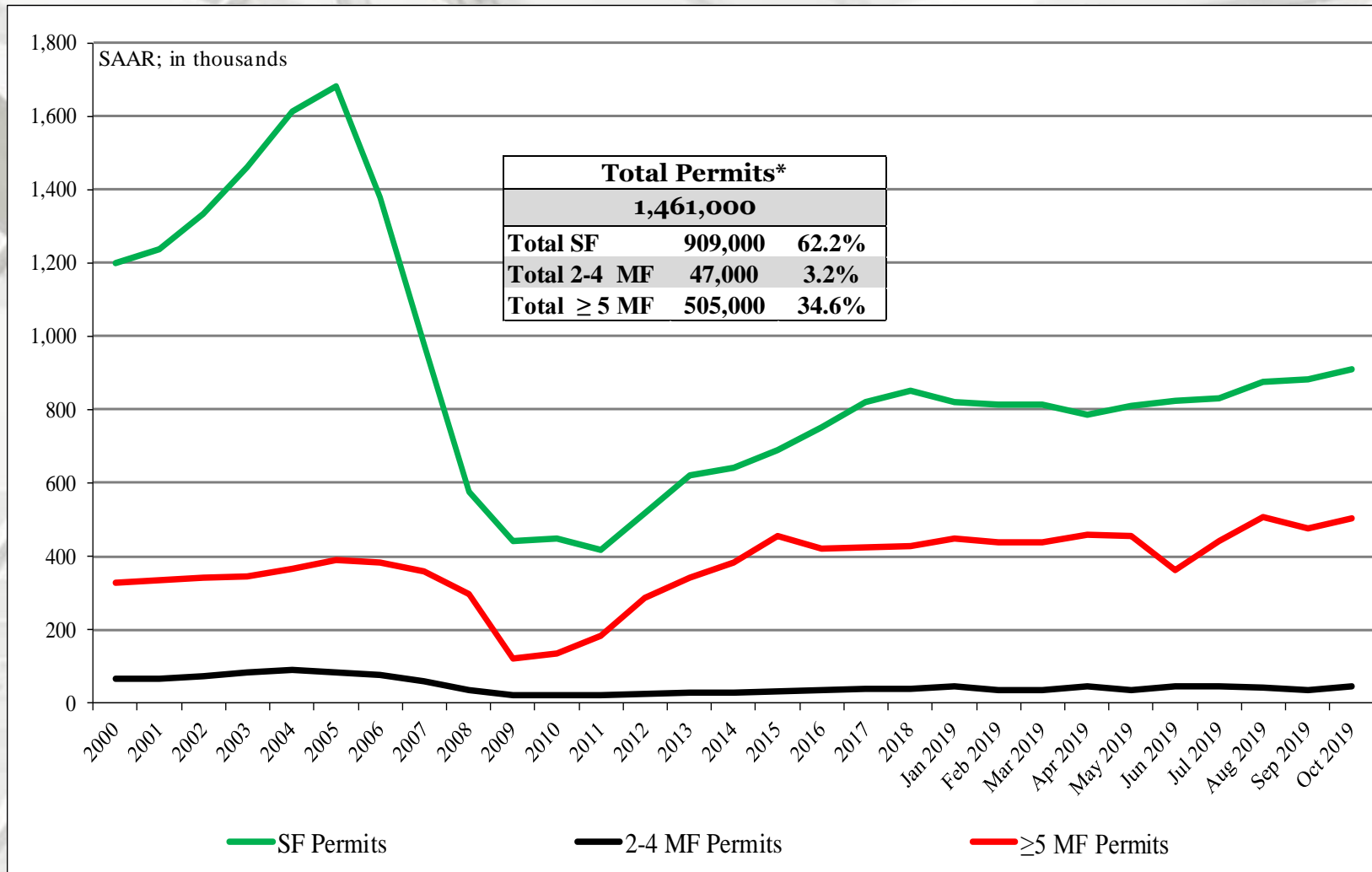
	S Total*	S SF	S MF**
October	776,000	521,000	255,000
September	735,000	507,000	228,000
2018	644,000	468,000	176,000
M/M change	5.6%	2.8%	11.8%
Y/Y change	20.5%	11.3%	44.9%
	W Total*	W SF	W MF**
October	368,000	220,000	148,000
September	365,000	204,000	161,000
2018	321,000	203,000	118,000
M/M change	0.8%	7.8%	-8.1%
Y/Y change	14.6%	8.4%	25.4%

S = South; W = West

* All data are SAAR

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

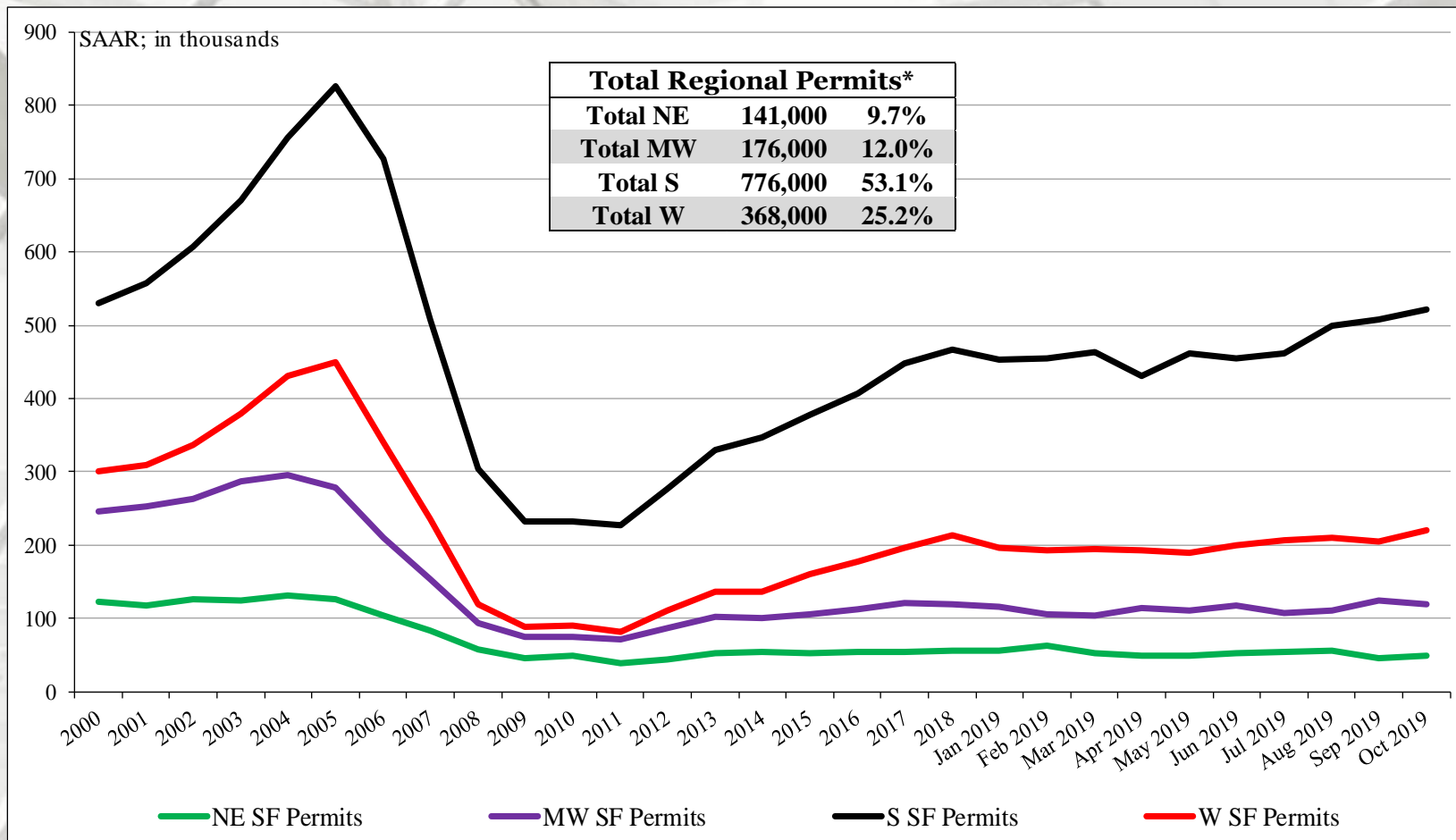
Total Housing Permits by Region



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

* Percentage of total permits.

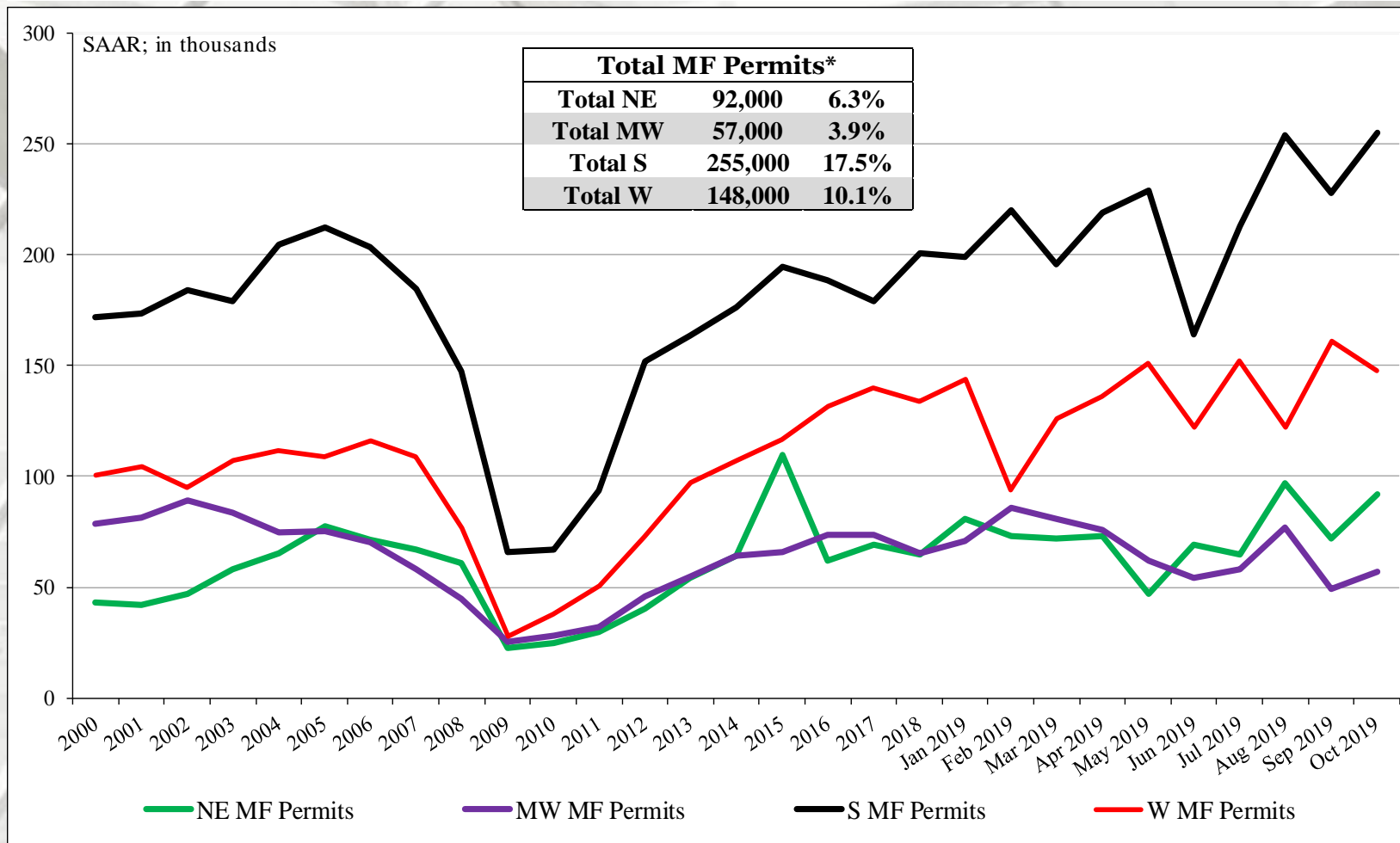
SF Housing Permits by Region



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.

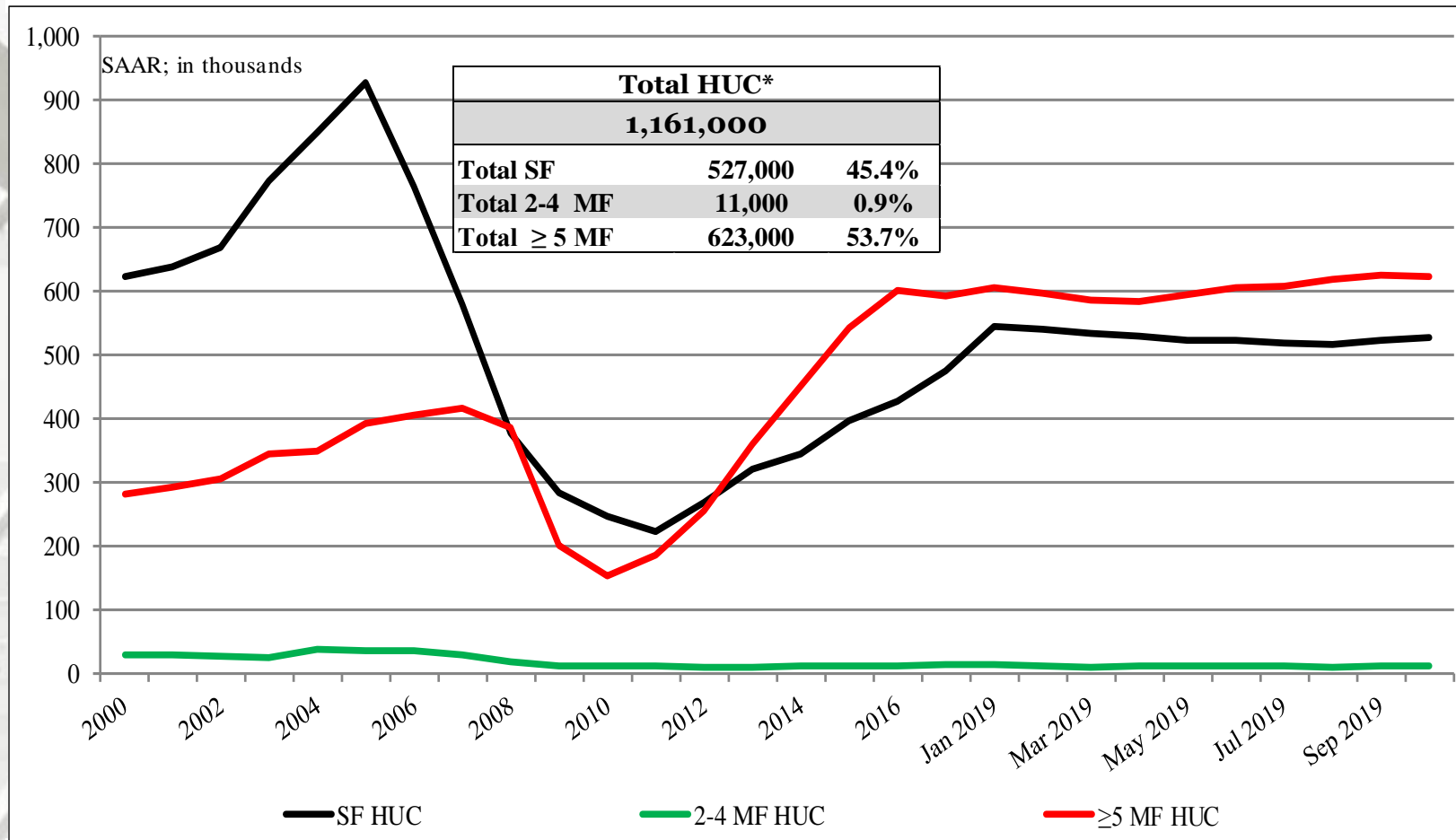
New Housing Under Construction (HUC)

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
October	1,161,000	527,000	11,000	623,000
September	1,160,000	524,000	11,000	625,000
2018	1,137,000	528,000	13,000	596,000
M/M change	0.1%	0.6%	0.0%	-0.3%
Y/Y change	2.1%	-0.2%	-15.4%	4.5%

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**
October	178,000	57,000	121,000
September	179,000	58,000	121,000
2018	187,000	61,000	126,000
M/M change	-0.6%	-1.7%	0.0%
Y/Y change	-4.8%	-6.6%	-4.0%
	MW Total	MW SF	MW MF
October	147,000	77,000	70,000
September	147,000	77,000	70,000
2018	152,000	80,000	72,000
M/M change	0.0%	0.0%	0.0%
Y/Y change	-3.3%	-3.8%	-2.8%

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).

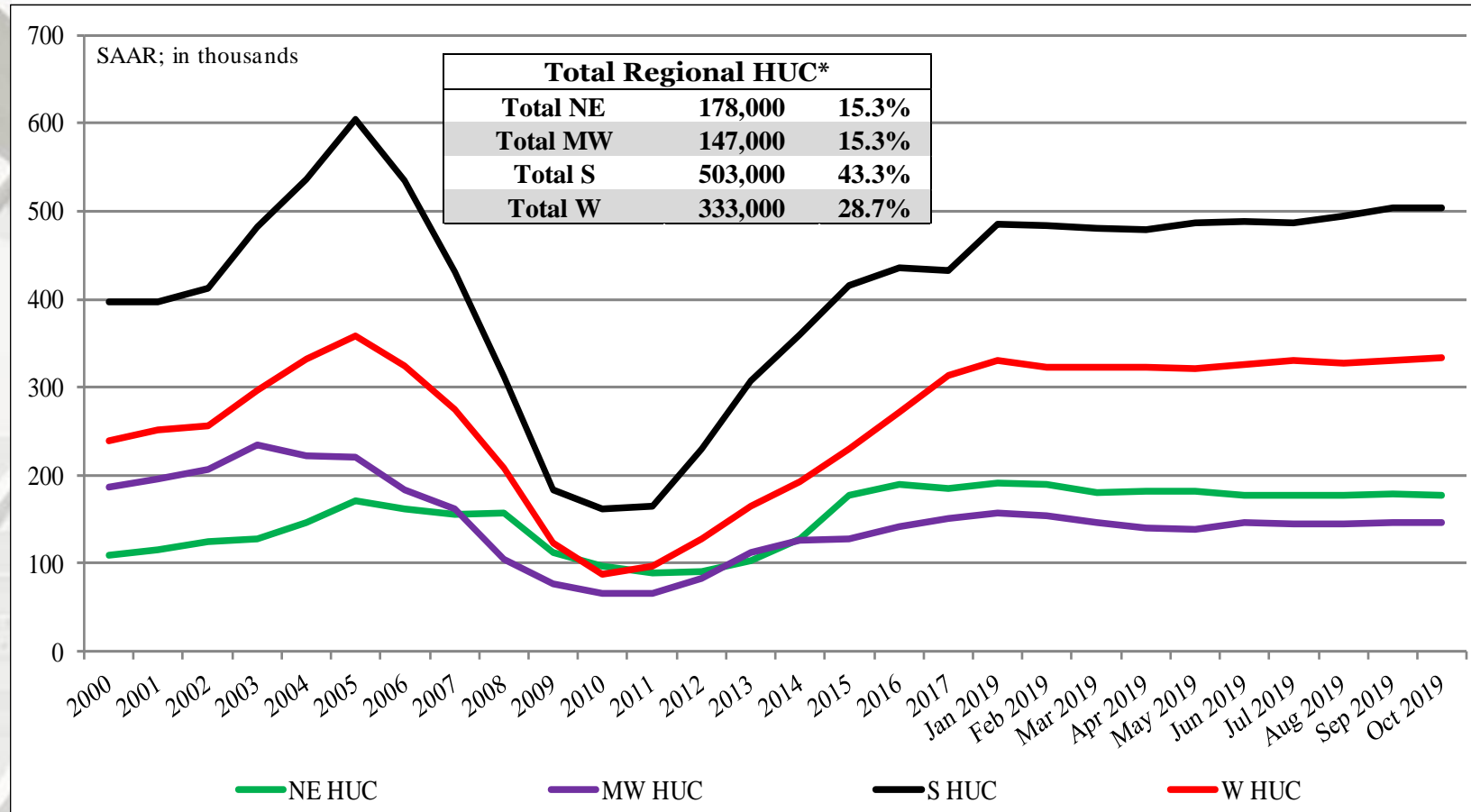
New Housing Under Construction by Region

	S Total	S SF	S MF**
October	503,000	253,000	250,000
September	503,000	250,000	253,000
2018	458,000	242,000	216,000
M/M change	0.0%	1.2%	-1.2%
Y/Y change	9.8%	4.5%	15.7%
	W Total	W SF	W MF
October	333,000	140,000	193,000
September	331,000	139,000	192,000
2018	340,000	145,000	195,000
M/M change	0.6%	0.7%	0.5%
Y/Y change	-2.1%	-3.4%	-1.0%

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

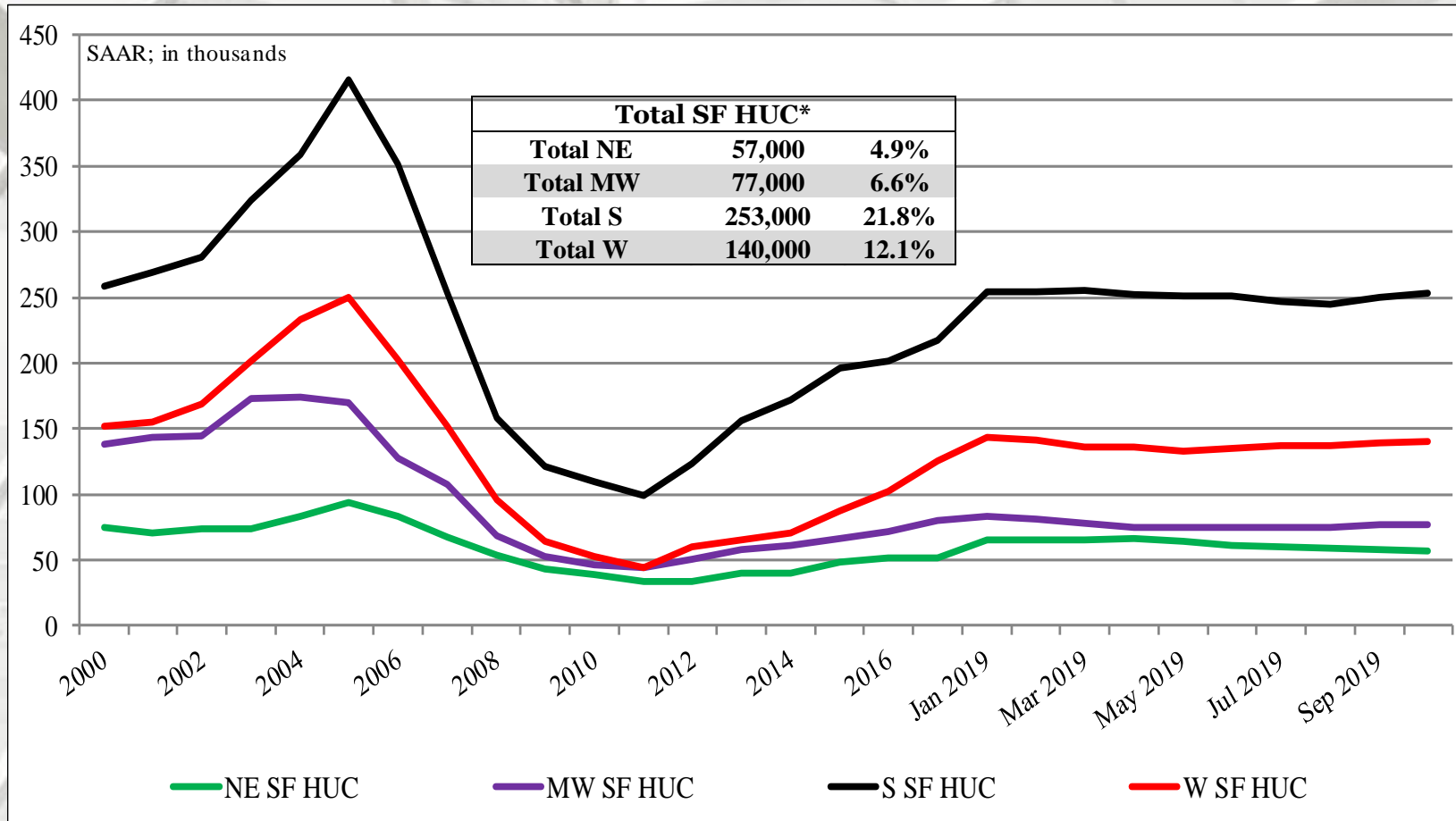


NE = Northeast, MW = Midwest, S = South, W = West

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

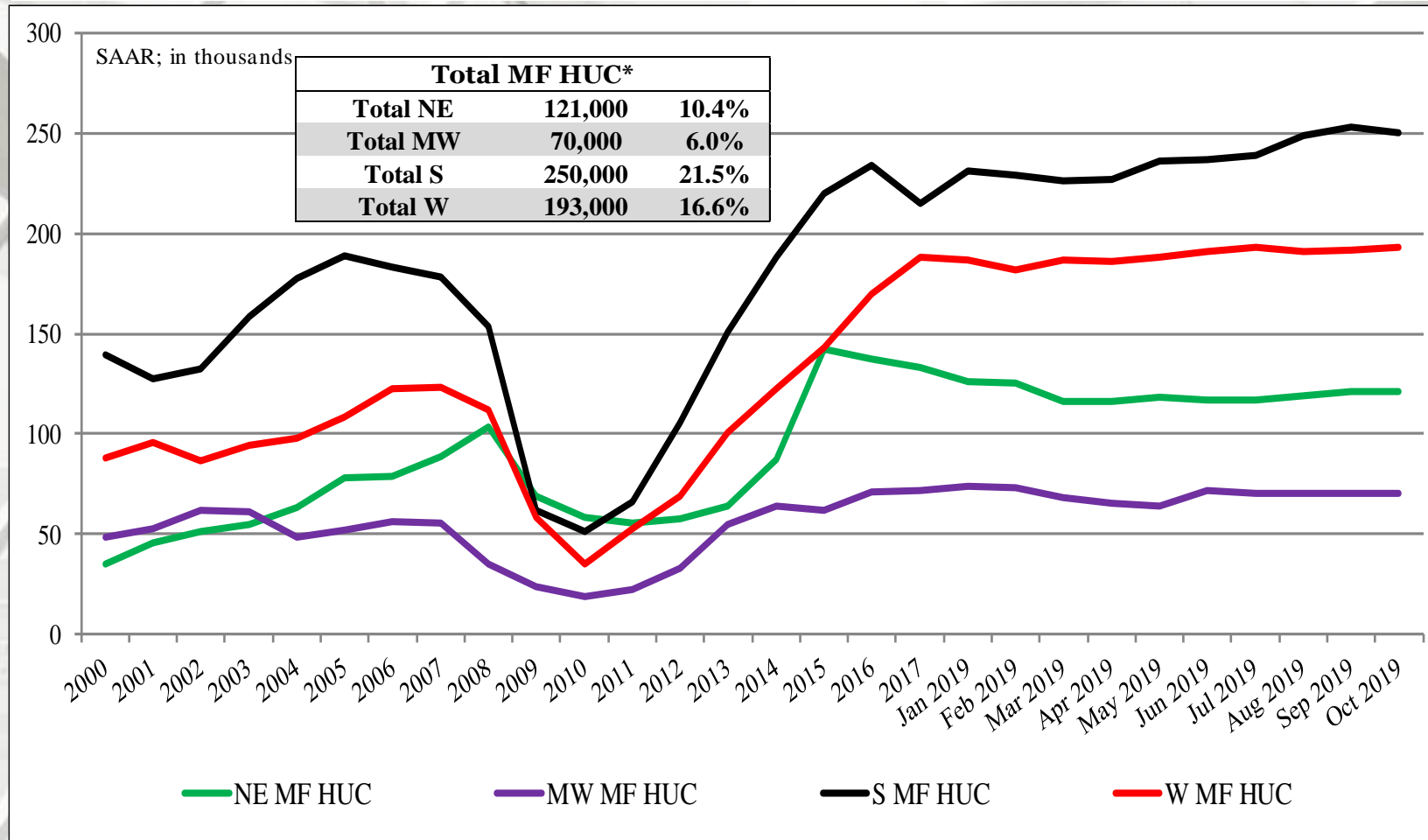


NE = Northeast, MW = Midwest, S = South, W = West.

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.

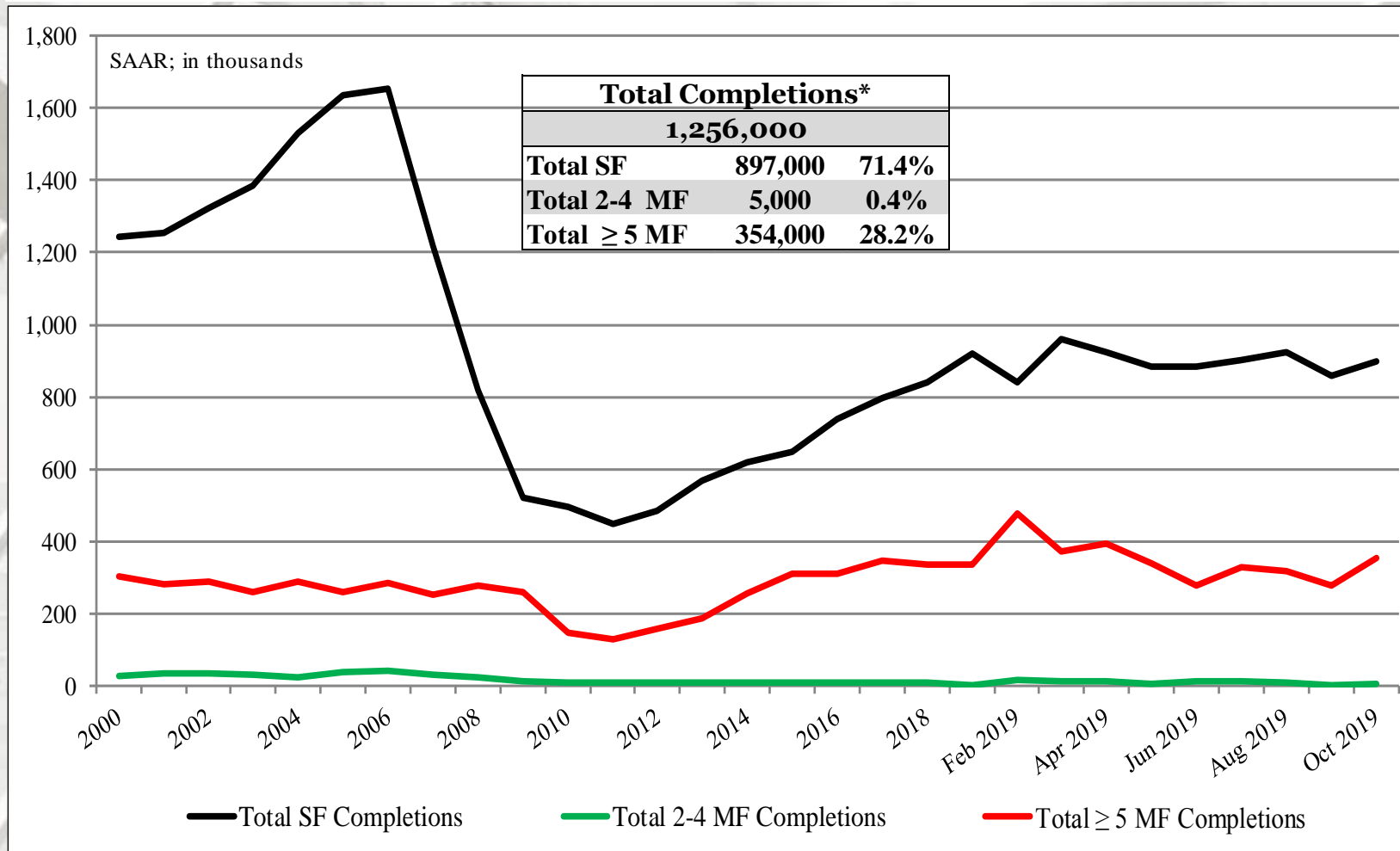
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
October	1,256,000	897,000	5,000	354,000
September	1,139,000	858,000	3,000	278,000
2018	1,117,000	826,000	9,000	282,000
M/M change	10.3%	4.5%	66.7%	27.3%
Y/Y change	12.4%	8.6%	-44.4%	25.5%

* 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**
October	121,000	57,000	64,000
September	104,000	65,000	39,000
2018	92,000	55,000	37,000
M/M change	16.3%	-12.3%	64.1%
Y/Y change	31.5%	3.6%	73.0%
	MW Total	MW SF	MW MF
October	153,000	111,000	42,000
September	148,000	110,000	38,000
2018	179,000	125,000	54,000
M/M change	3.4%	0.9%	10.5%
Y/Y change	-14.5%	-11.2%	-22.2%

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).

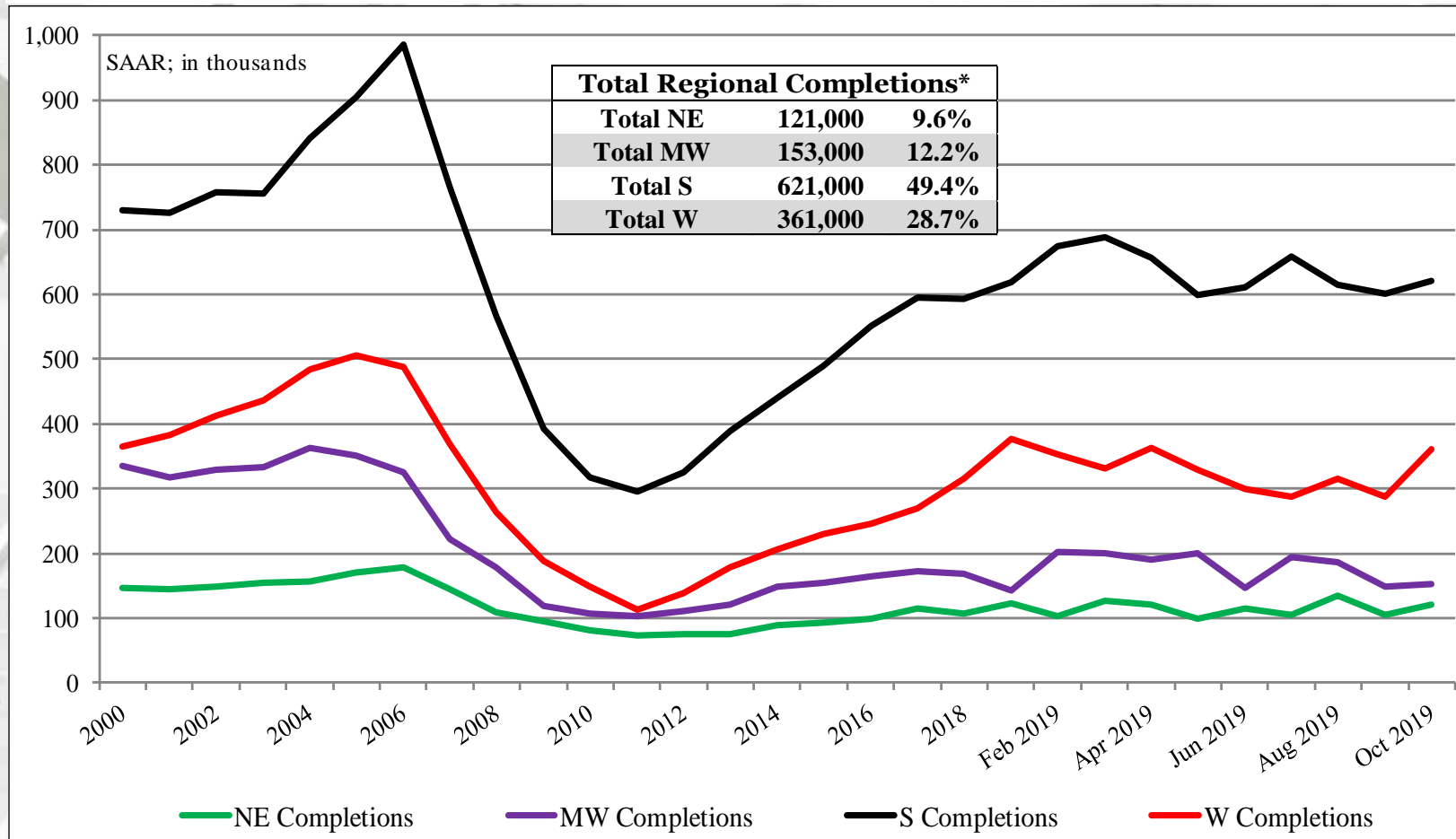
New Housing Completions by Region

	S Total	S SF	S MF**
October	621,000	499,000	122,000
September	600,000	487,000	113,000
2018	546,000	423,000	123,000
M/M change	3.5%	2.5%	8.0%
Y/Y change	13.7%	18.0%	-0.8%
	W Total	W SF	W MF
October	361,000	230,000	131,000
September	287,000	196,000	91,000
2018	300,000	223,000	77,000
M/M change	25.8%	17.3%	44.0%
Y/Y change	20.3%	3.1%	70.1%

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

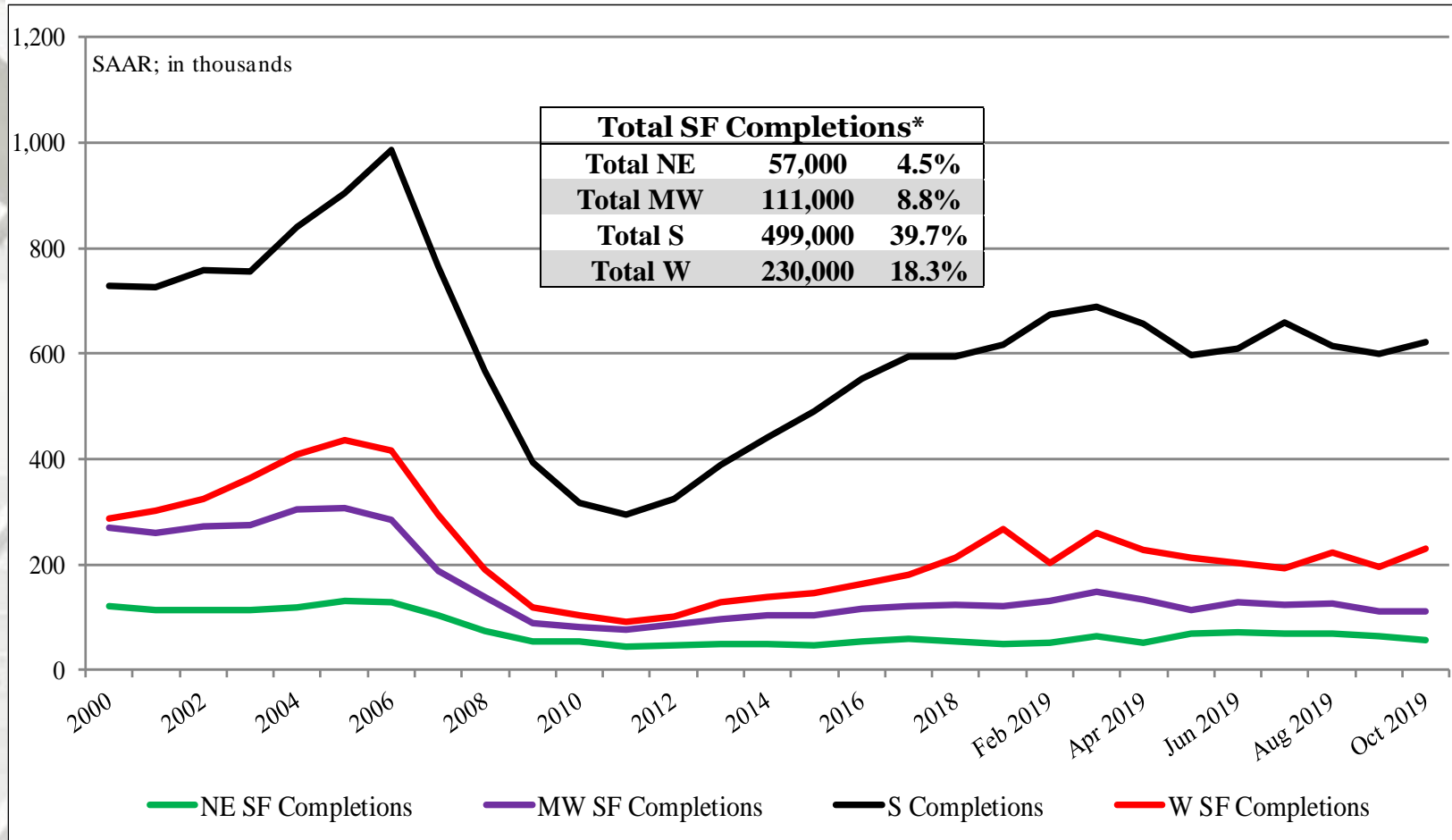


NE = Northeast, MW = Midwest, S = South, W = West

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

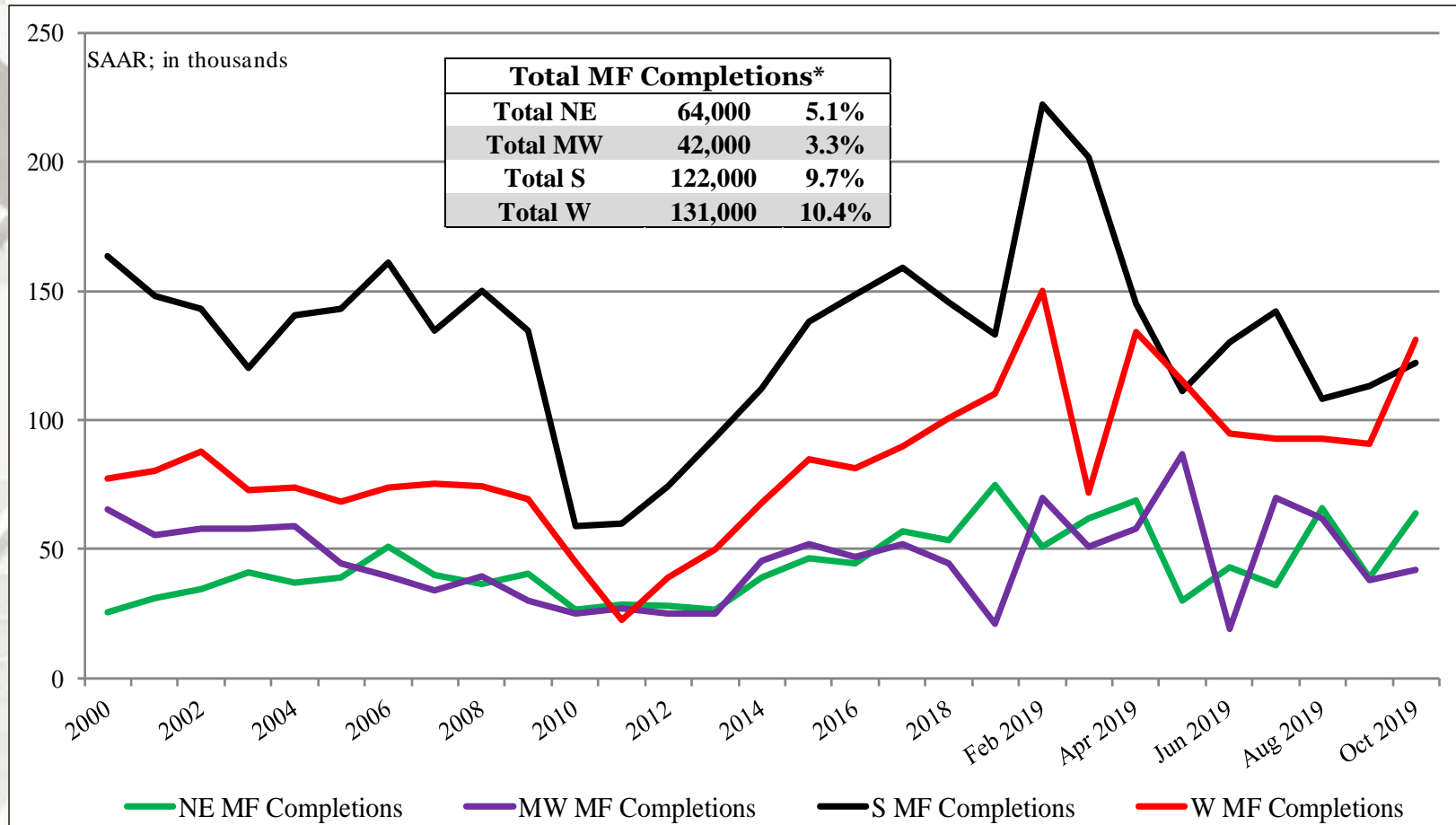


NE = Northeast, MW = Midwest, S = South, W = West

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
October	733,000	\$316,700	\$383,300	5.3
September	738,000	\$310,200	\$366,900	5.2
2018	557,000	\$328,300	\$394,900	7.2
M/M change	-0.7%	2.1%	4.5%	1.9%
Y/Y change	31.6%	-3.5%	-2.9%	-26.4%

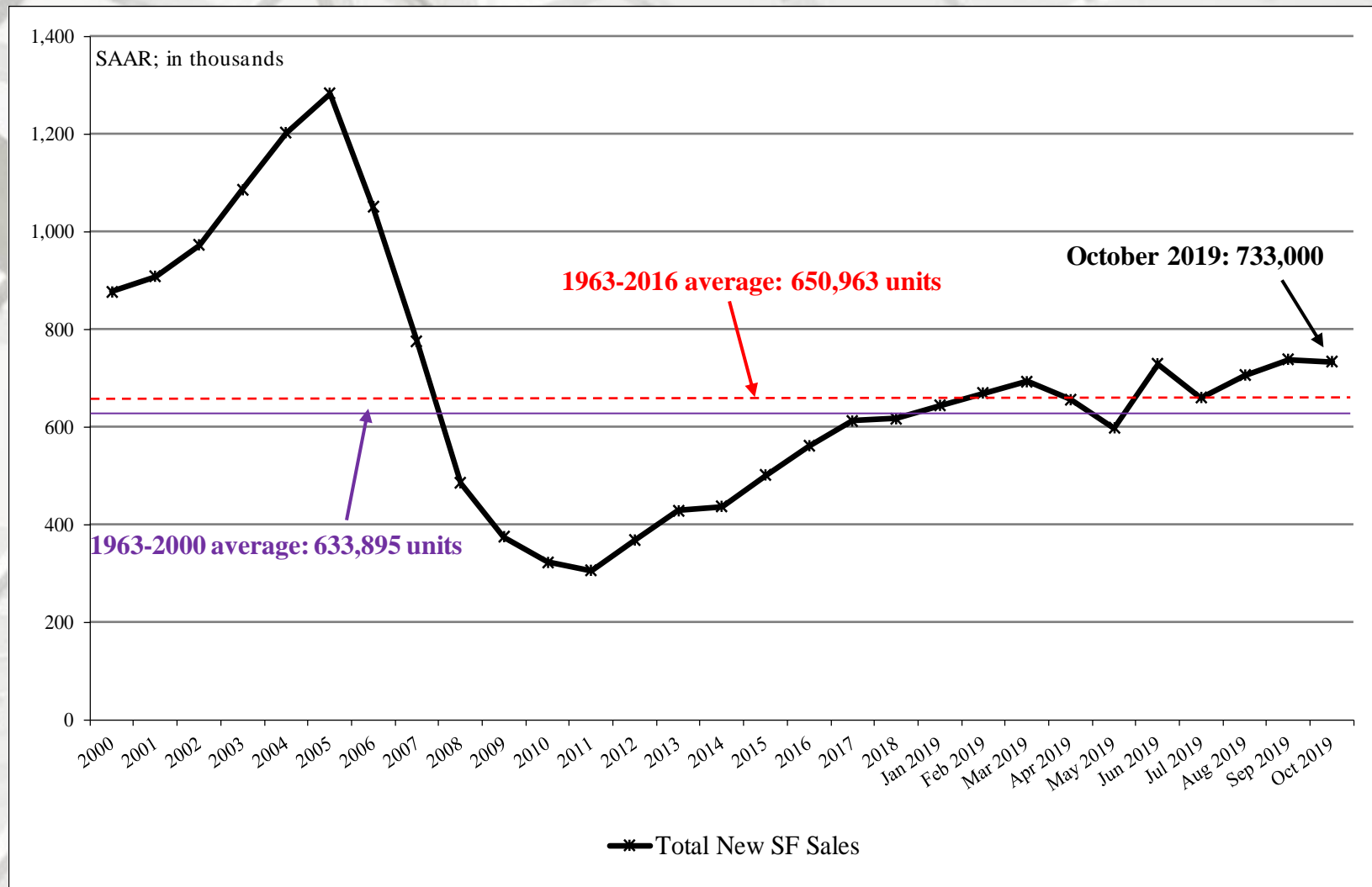
* All new sales data are presented at a seasonally adjusted annual rate (SAAR)¹ and housing prices are adjusted at irregular intervals².

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:

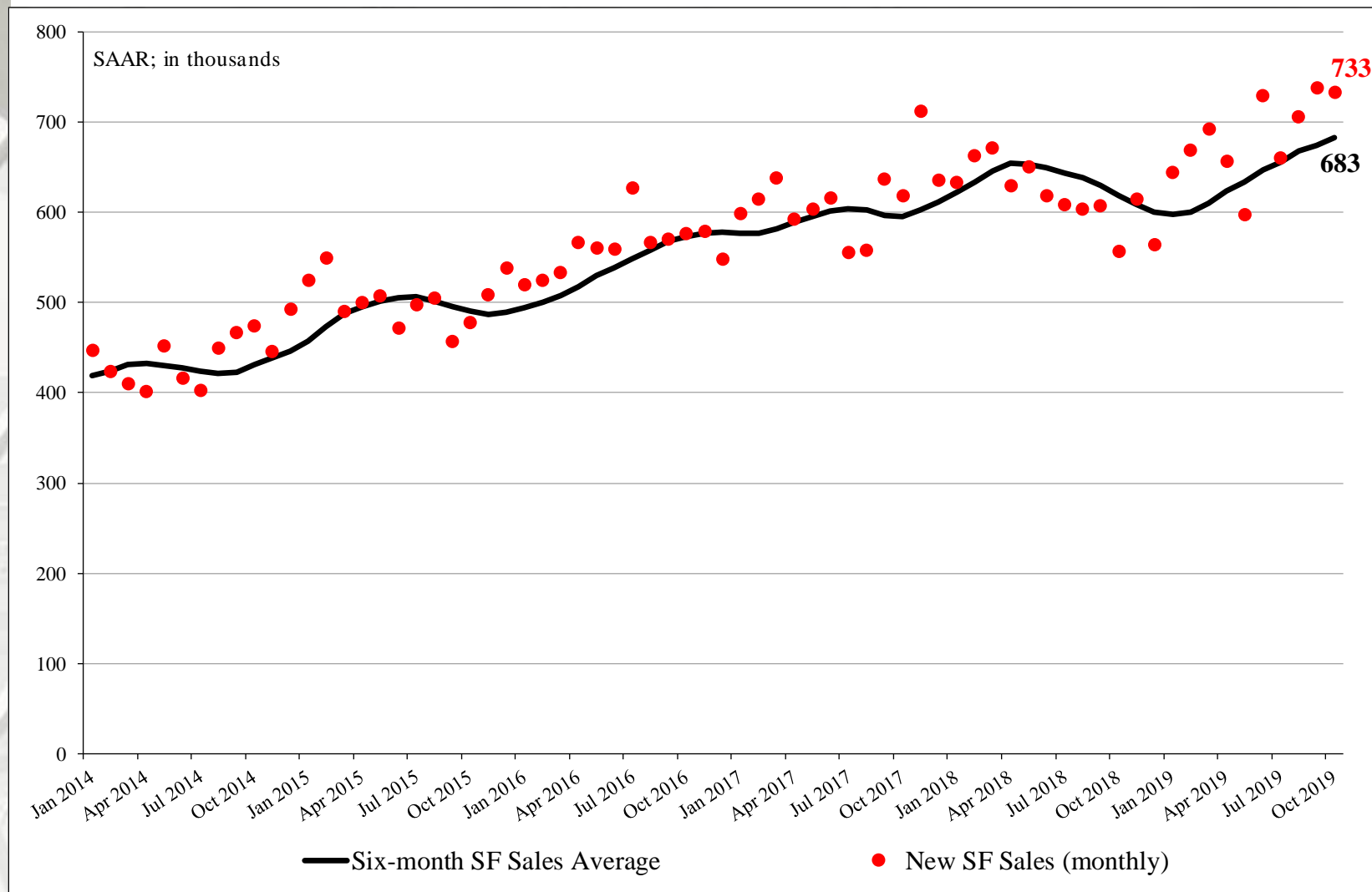
July initial: 635 m revised to 660 m;
 August initial: 713 m revised to 706 m;
 September initial: 701 m revised to 738 m.

Sources: ¹ <https://www.census.gov/construction/nrs/index.html>; 11/26/19; ² <https://www.census.gov/construction/nrs/pdf/newressales.pdf>
³ <http://us.econoday.com/>; 11/26/19

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			
October	27,000	75,000	436,000	195,000			
September	33,000	72,000	451,000	182,000			
2018	23,000	64,000	310,000	160,000			
M/M change	-18.2%	4.2%	-3.3%	7.1%			
Y/Y change	17.4%	17.2%	40.6%	21.9%			
	\$150 - ≤ \$150m	\$200 - \$199.9m	\$300 - 299.9m	\$400 - \$399.9m	\$500 - \$499.9m	\$750 - \$749.9m	≥ \$750m
October ^{1,2,3,4}	1,000	4,000	20,000	14,000	7,000	7,000	4,000
September	1,000	5,000	20,000	16,000	6,000	6,000	2,000
2018	2,000	2,000	14,000	11,000	6,000	5,000	2,000
M/M change	0.0%	-20.0%	0.0%	-12.5%	16.7%	16.7%	100.0%
Y/Y change	-50.0%	100.0%	42.9%	27.3%	16.7%	40.0%	100.0%
New SF sales: %	1.8%	7.0%	35.1%	24.6%	12.3%	12.3%	7.0%

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

¹ All data are SAAR

² Houses for which sales price were not reported have been distributed proportionally to those for which sales price was reported;

³ Detail October not add to total because of rounding.

⁴ Housing prices are adjusted at irregular intervals.

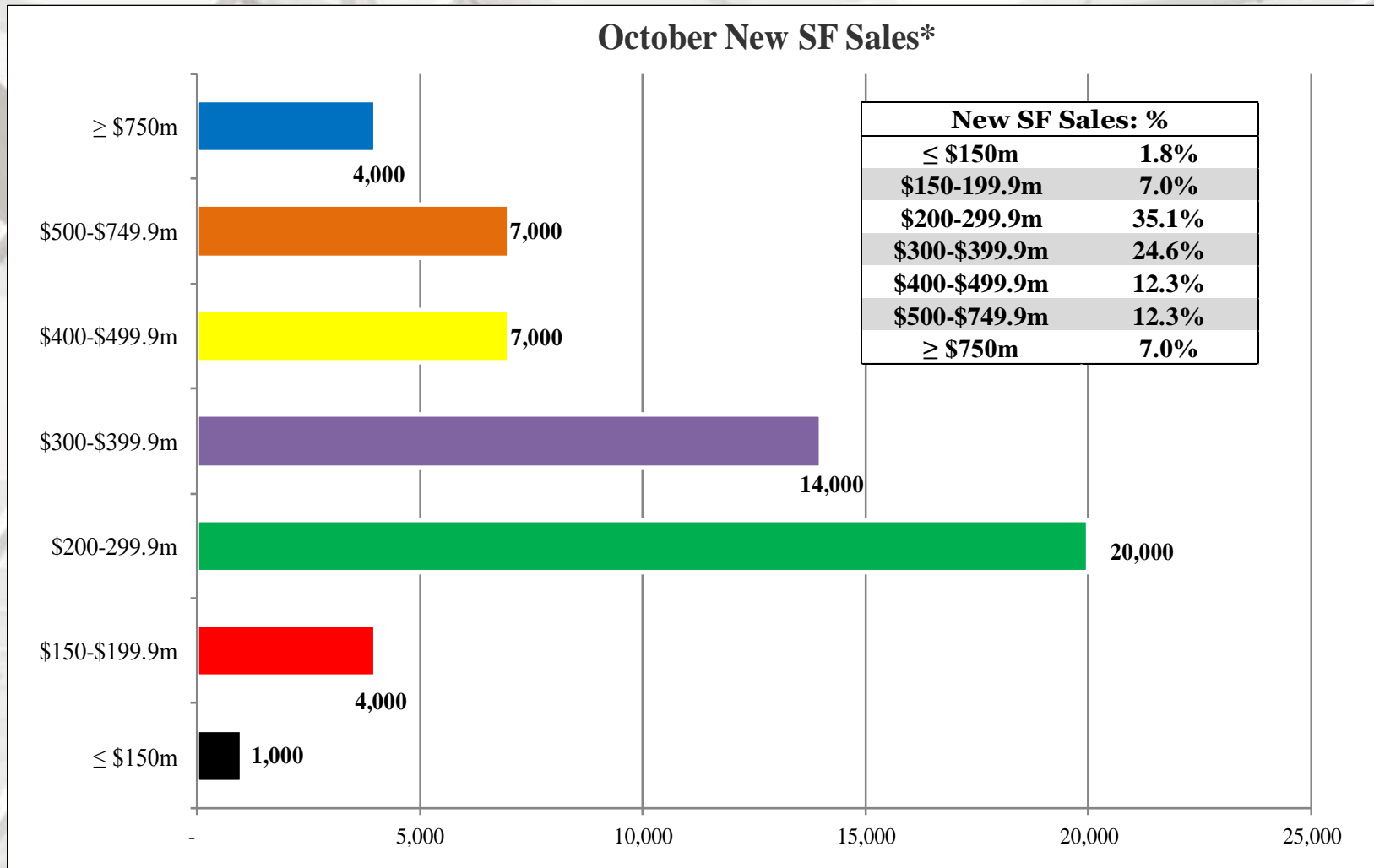
⁵ Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} <https://www.census.gov/construction/nrs/index.html>; 11/26/19;

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

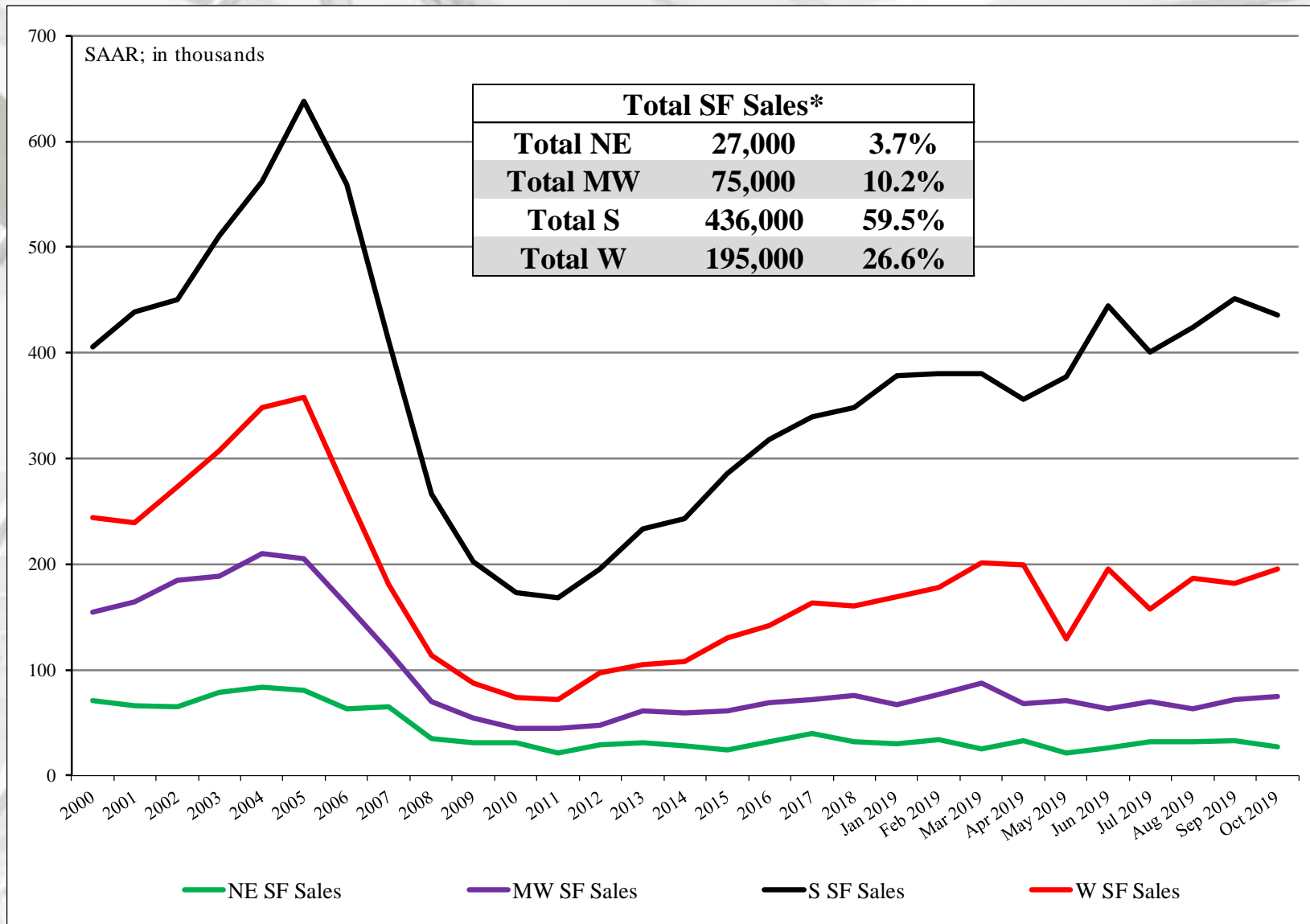
New SF House Sales

October New SF Sales*



- Total new sales by price category and percent.

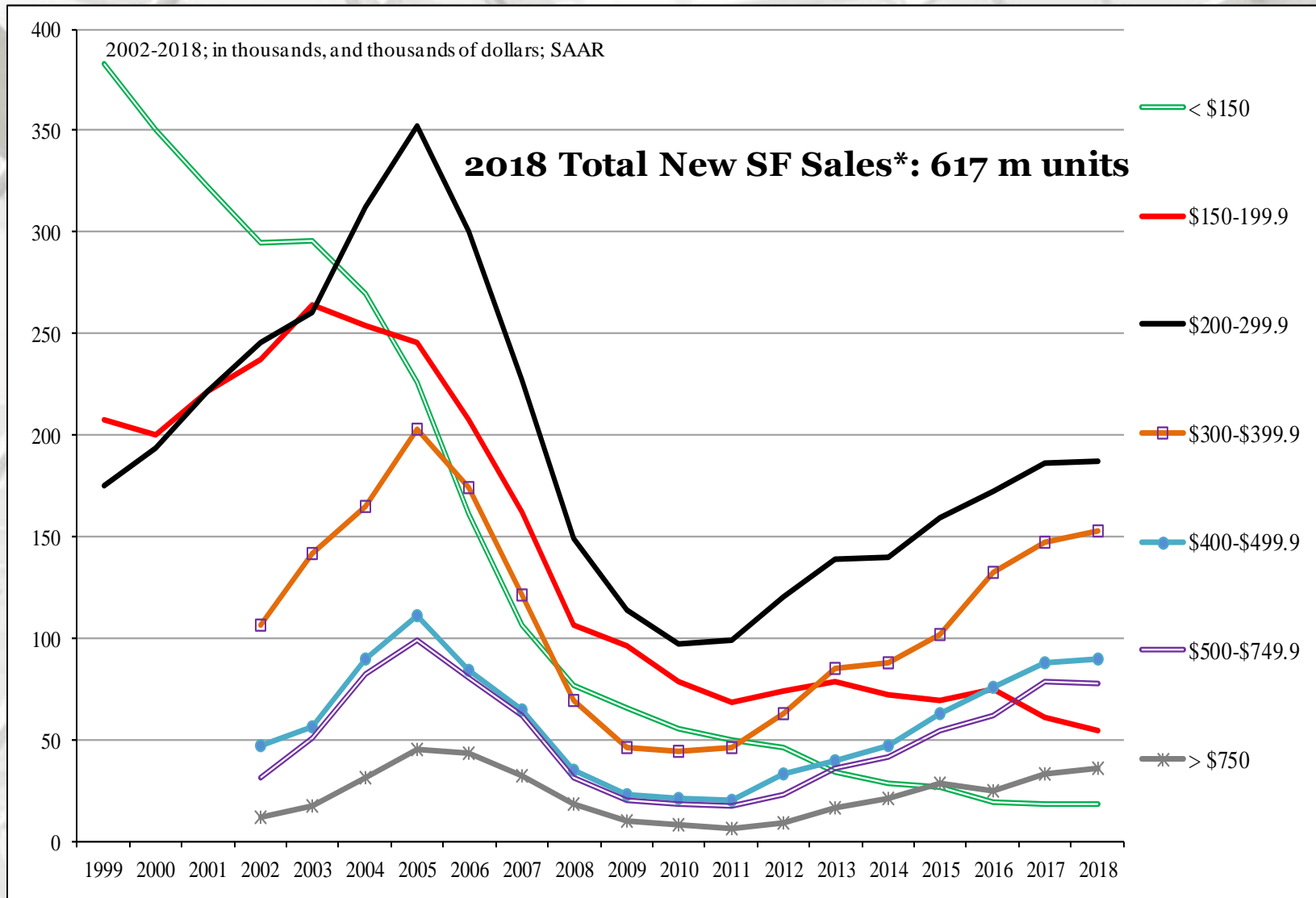
New SF House Sales by Region



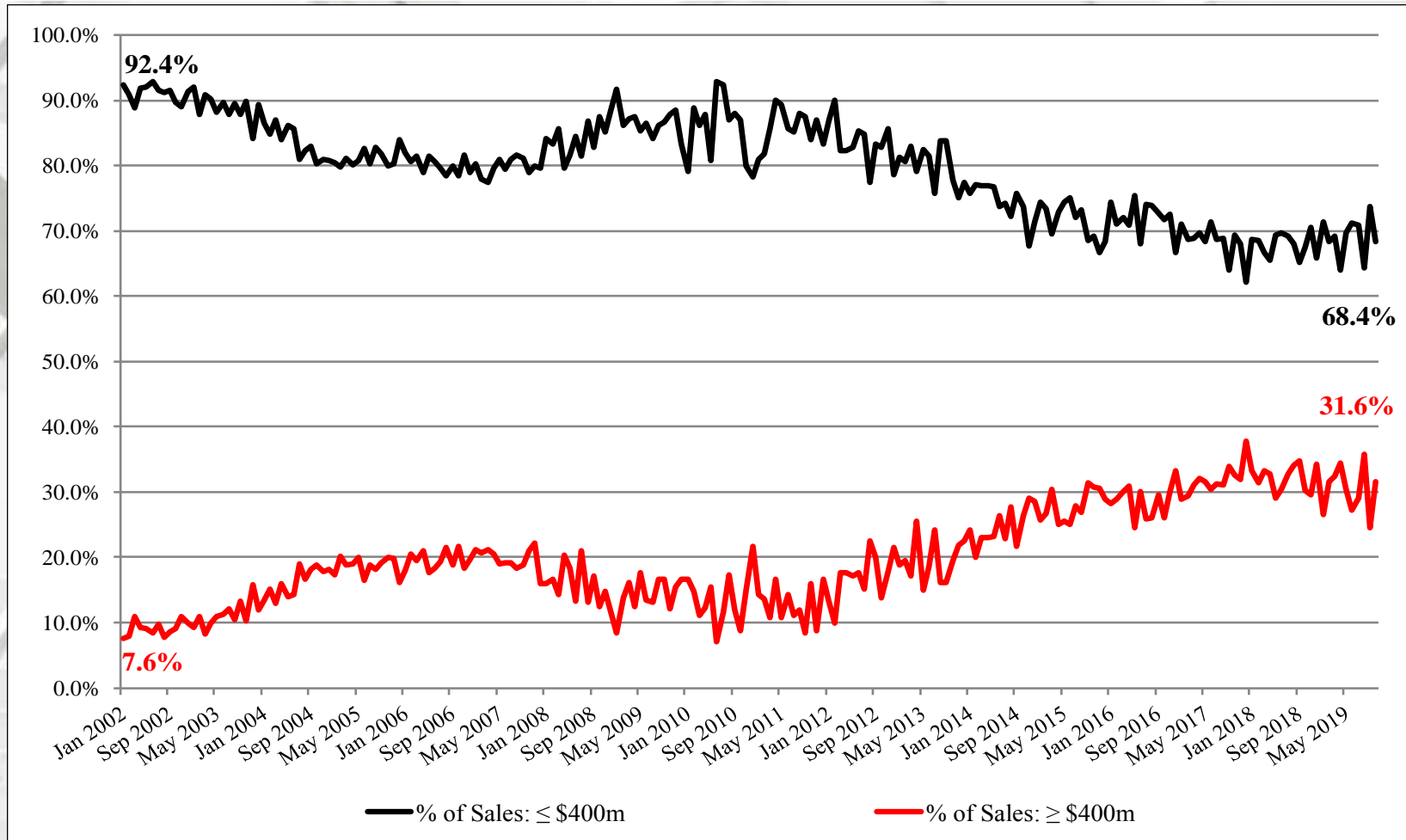
NE = Northeast; MW = Midwest; S = South; W = West

* Percentage of total new sales.

New SF House Sales by Price Category



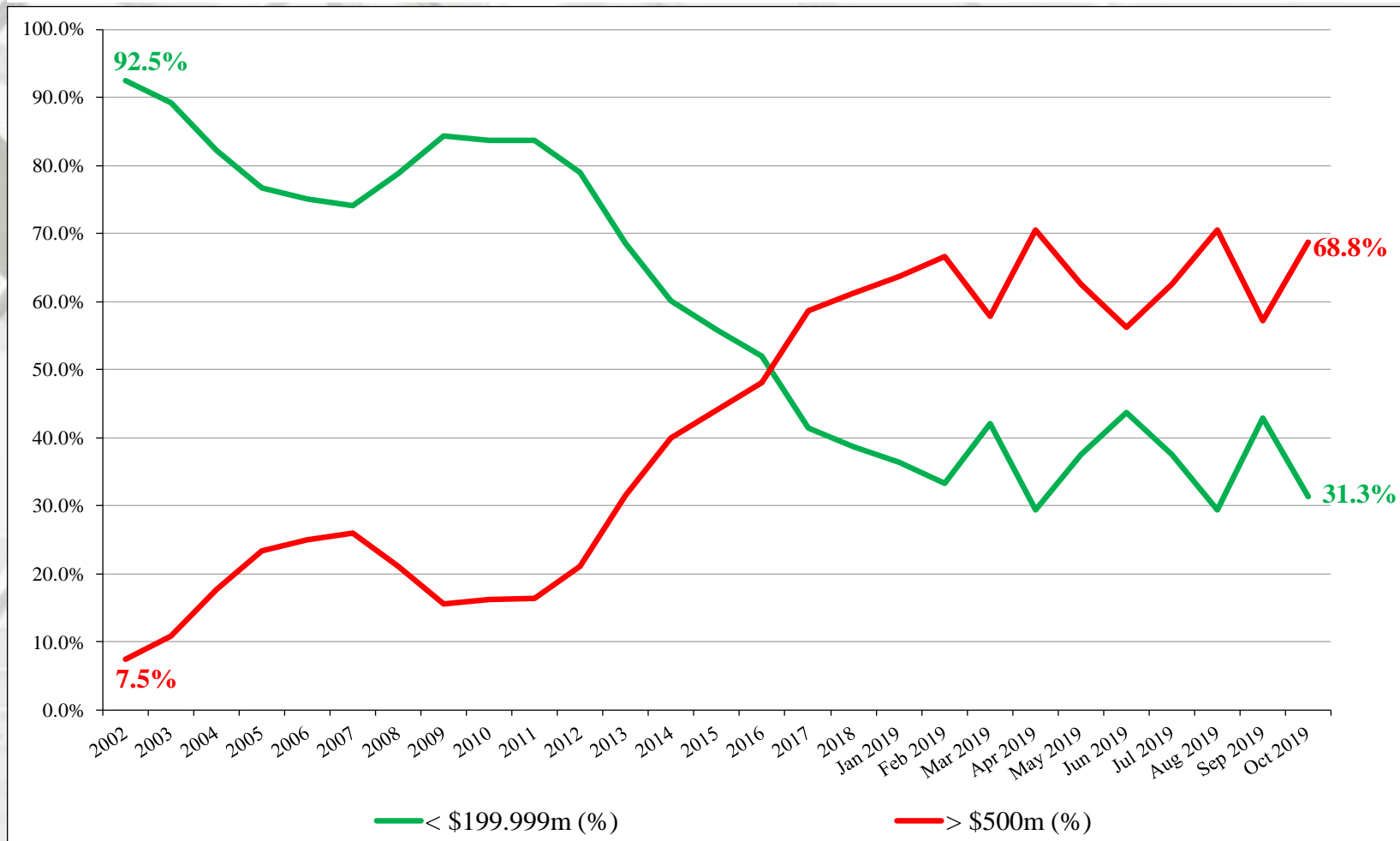
New SF House Sales



New SF Sales \$400m houses: 2002 – October 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

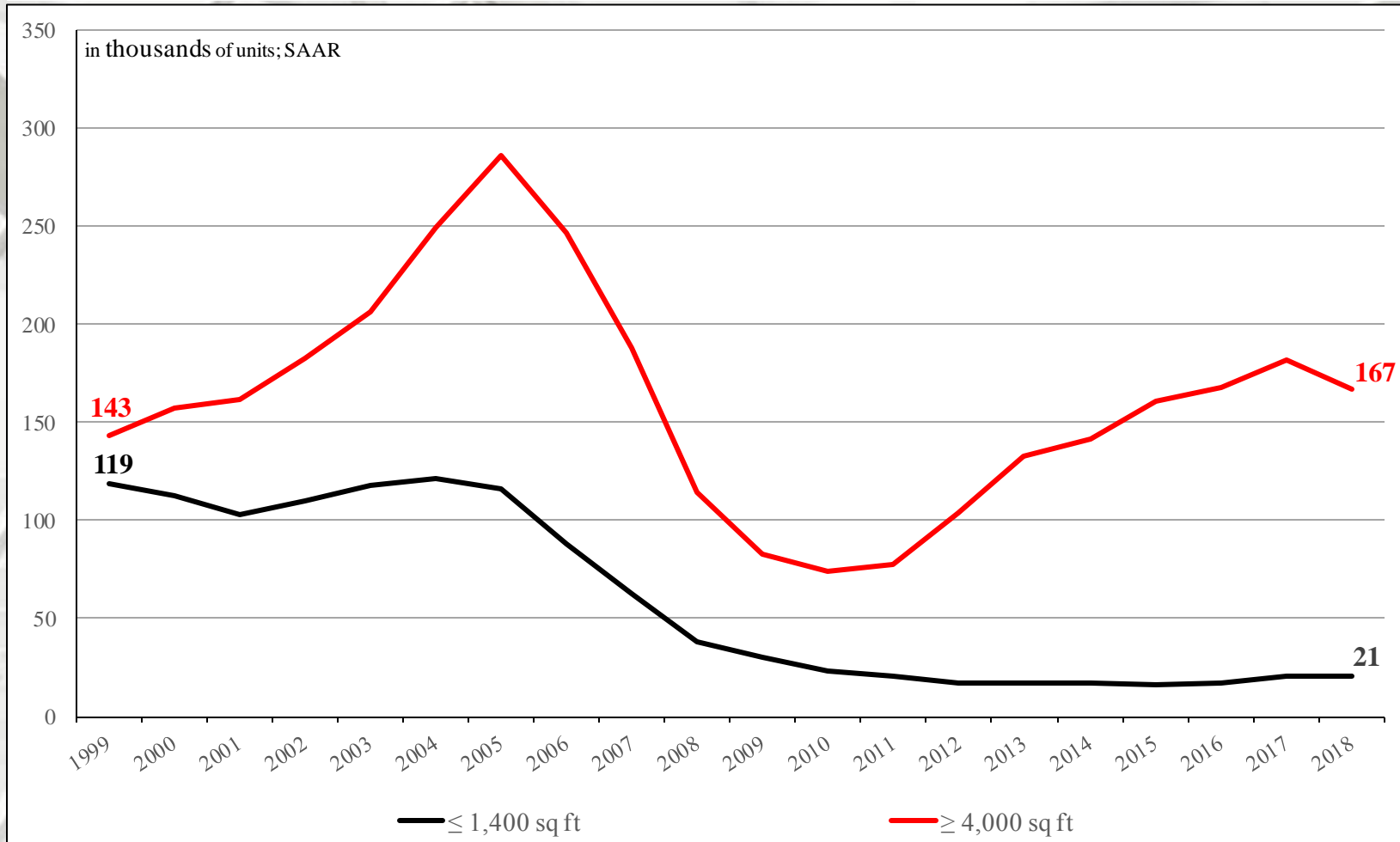


New SF Sales: ≤ \$ 200m and ≥ \$500m: 2002 to October 2019

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.

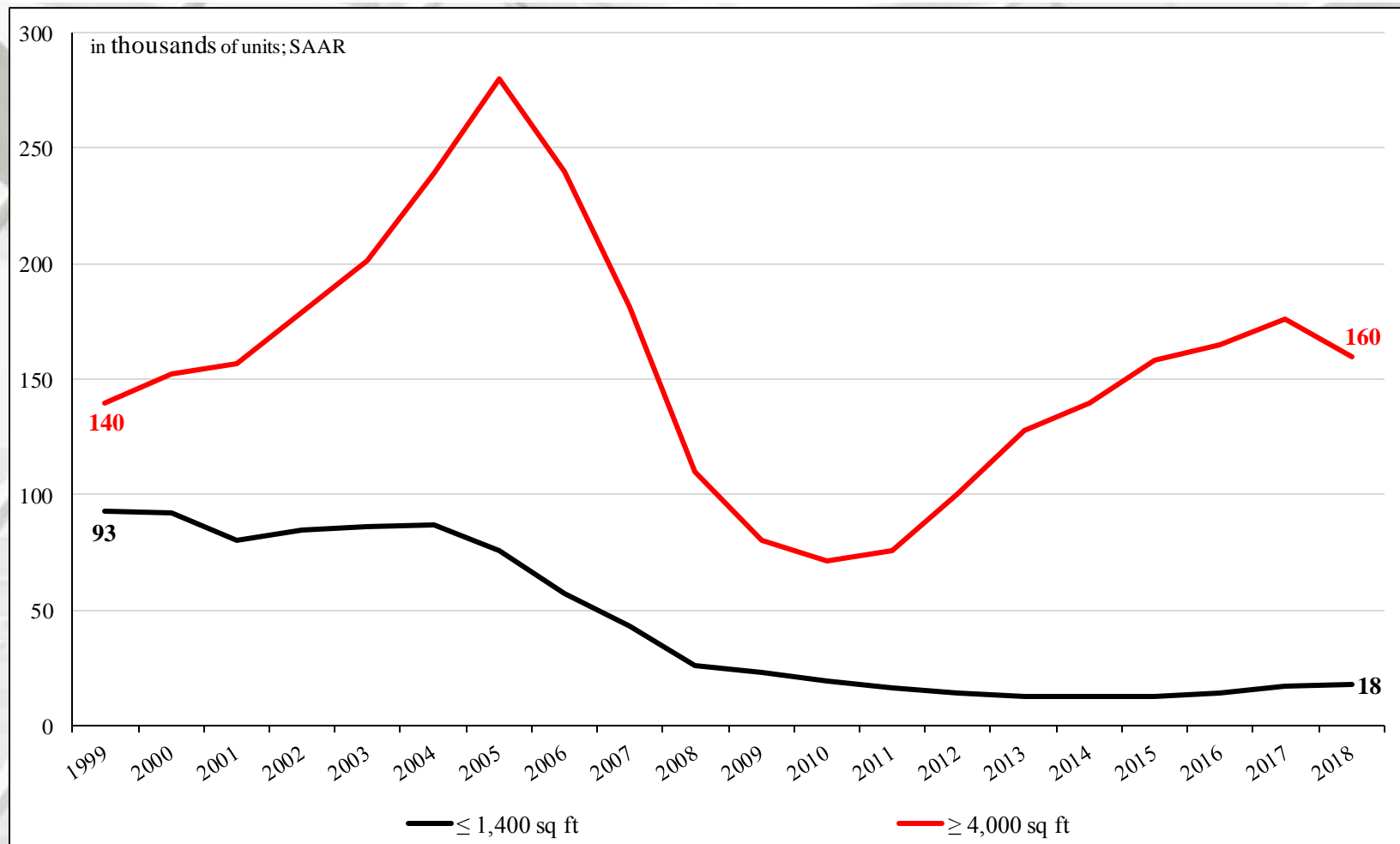
Total New SF House Sales by Square Feet of Floor Area



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

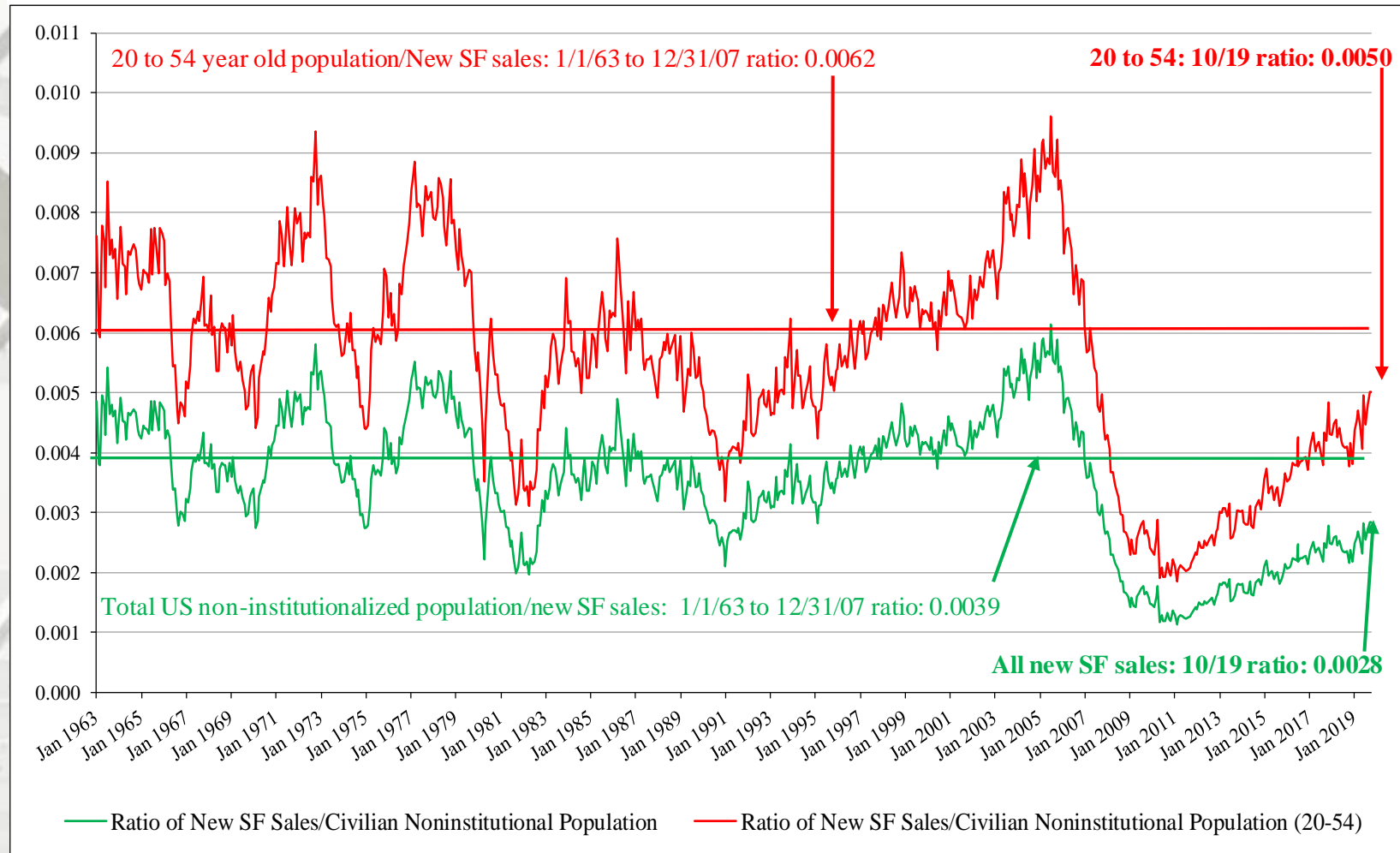
The number of SF houses sold ($\geq 4,000$ sq ft) has risen dramatically since 2010 in comparison to the $\leq 1,400$ sq ft houses. Some of the most oft mentioned reasons for this is builder net margins and regulation.

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

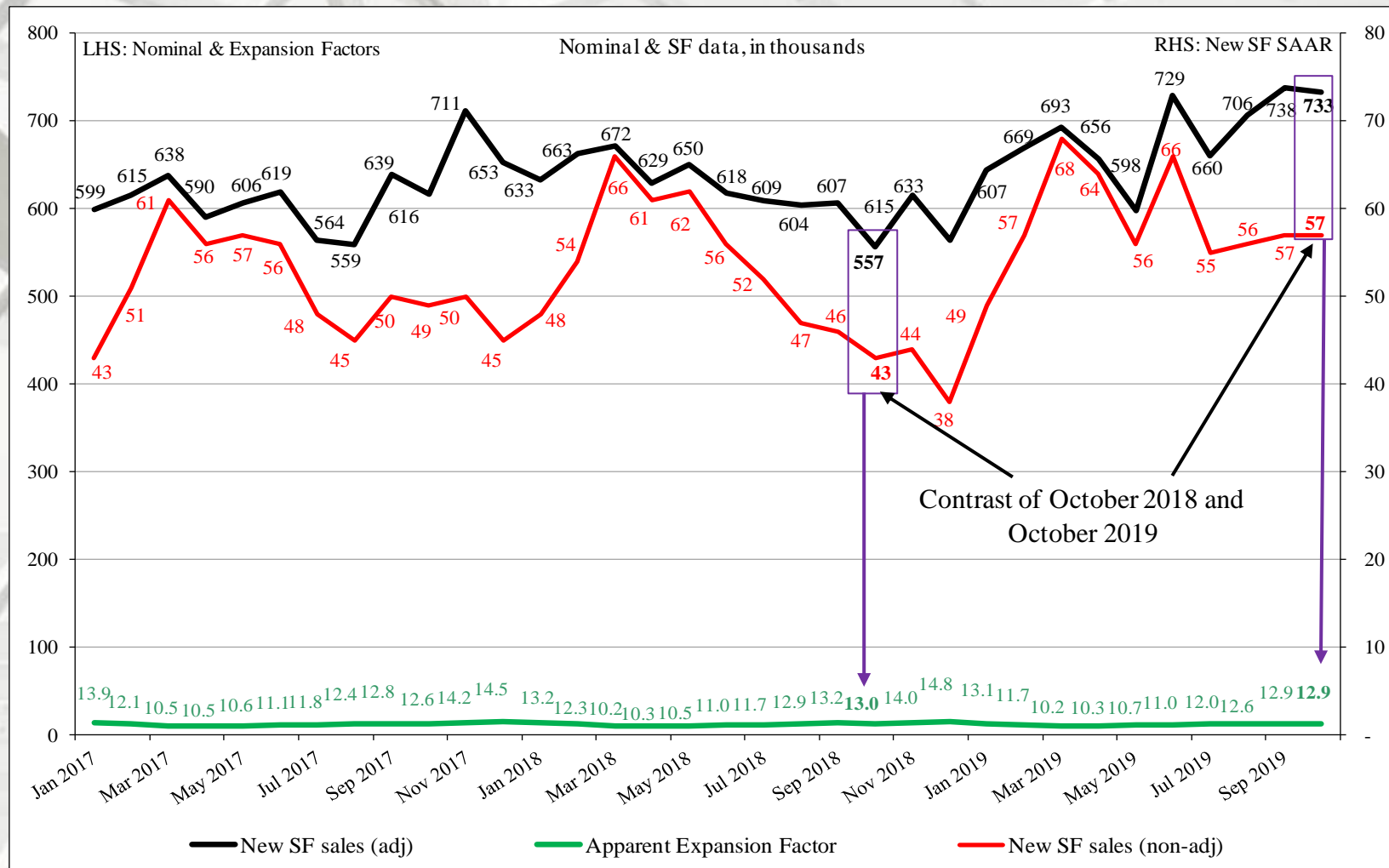
New SF House Sales



New SF sales adjusted for the US population

From October 1963 to October 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in October 2019 it was 0.0028 – no change from September. The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in October 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

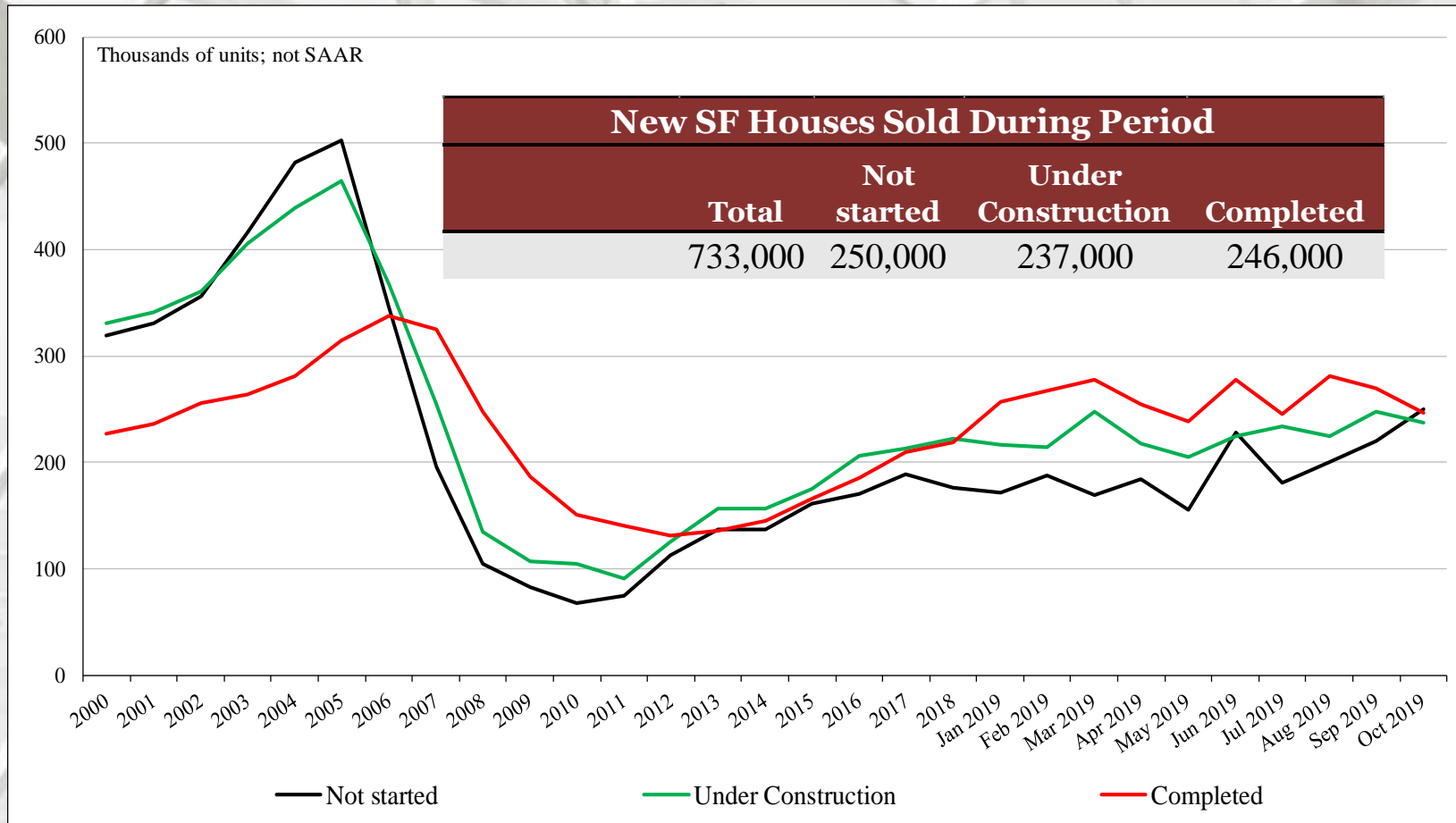
New SF House Sales

New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
October	733,000	250,000	237,000	246,000
September	738,000	220,000	248,000	270,000
2018	557,000	151,000	216,000	190,000
M/M change	-0.7%	13.6%	-4.4%	-8.9%
Y/Y change	31.6%	65.6%	9.7%	29.5%
Total percentage		34.1%	32.3%	33.6%

Not SAAR

New SF House Sales: Sold During Period



Not SAAR

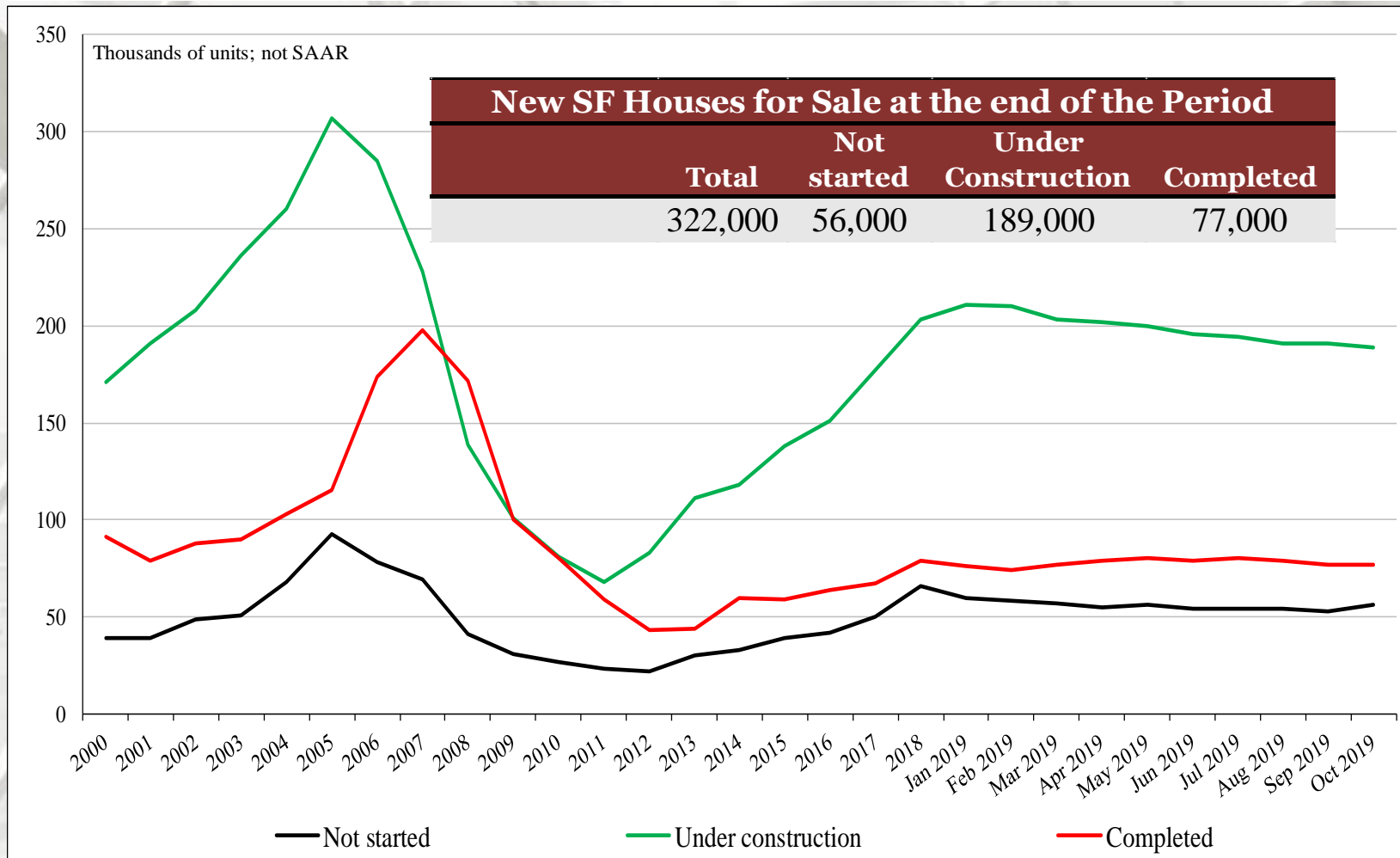
New SF House Sales: For Sale at End of Period

New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
October	322,000	56,000	189,000	77,000
September	321,000	53,000	191,000	77,000
2018	333,000	58,000	201,000	74,000
M/M change	0.3%	5.7%	-1.0%	0.0%
Y/Y change	-3.3%	-3.4%	-6.0%	4.1%
Total percentage		17.4%	58.7%	23.9%

Not SAAR

New SF Houses for Sale at End of Period



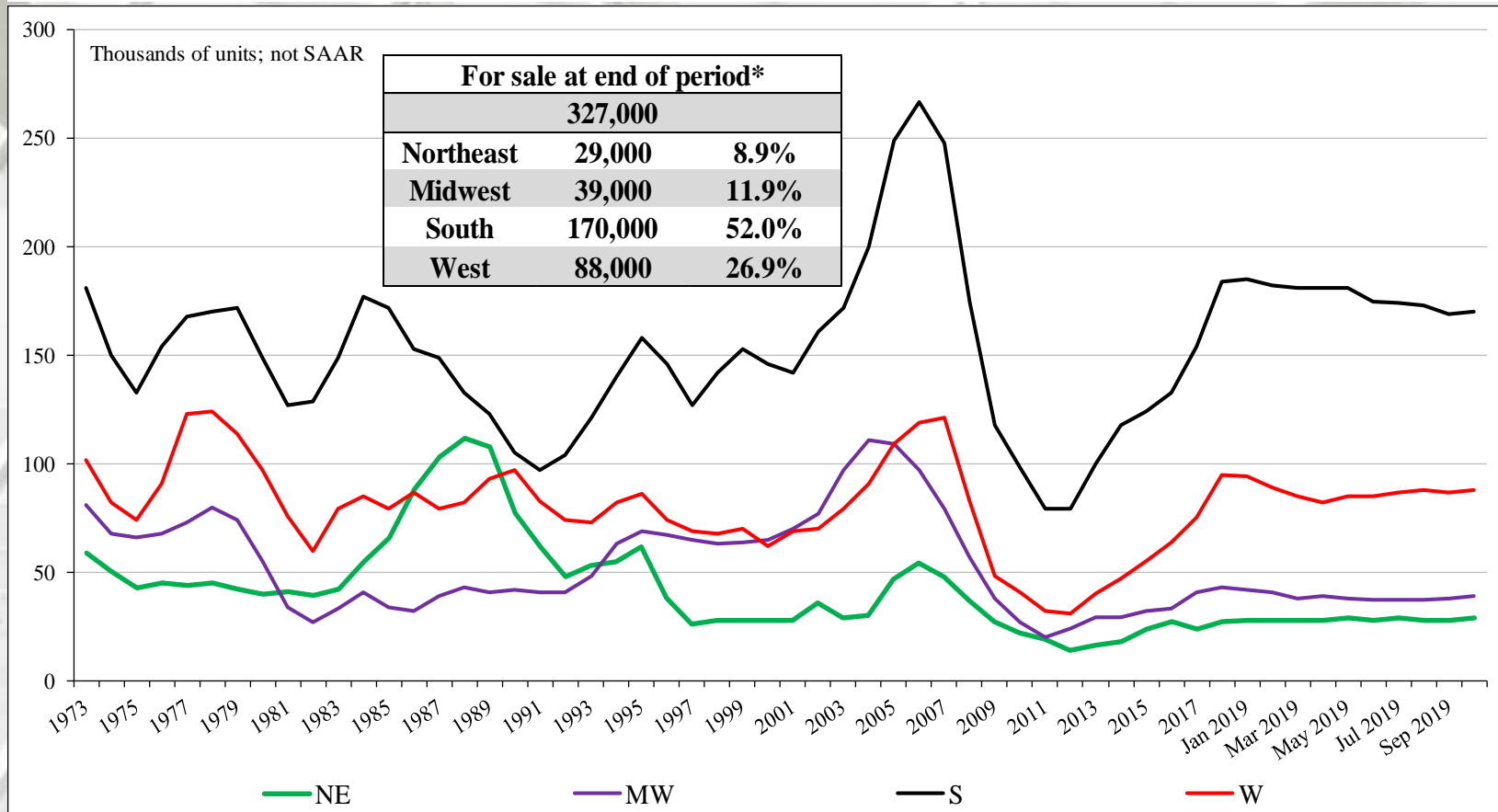
New SF House Sales

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

	Total	NE	MW	S	W
October	327,000	29,000	39,000	170,000	88,000
September	326,000	28,000	37,000	173,000	88,000
2018	335,000	27,000	42,000	177,000	89,000
M/M change	0.3%	3.6%	5.4%	-1.7%	0.0%
Y/Y change	-2.4%	7.4%	-7.1%	-4.0%	-1.1%

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.

New SF Housing



Meyers Research New Home Pending Sales Index (PSI) for October 2019

“The New Home PSI, backed by data from Zonda and Metrostudy, shows pending sales increased both year-over-year and month-over-month across the United States. The index is a leading residential real estate indicator based on the number of new home sales contracts signed across the country. The New Home PSI came in at 119.0 for October, representing a 14.5% increase from October 2018. On a month-over-month basis, new home sales increased by 0.2% between September and October 2019.

The US housing market regained momentum this year after a tough close to 2018. October’s new home sales capture stronger demand as lower mortgage rates, softer home price appreciation, and positive wage trends favor buyers.” – Ali Wolf, Director of Economic Research, Meyers Research

October 2019 Construction Spending

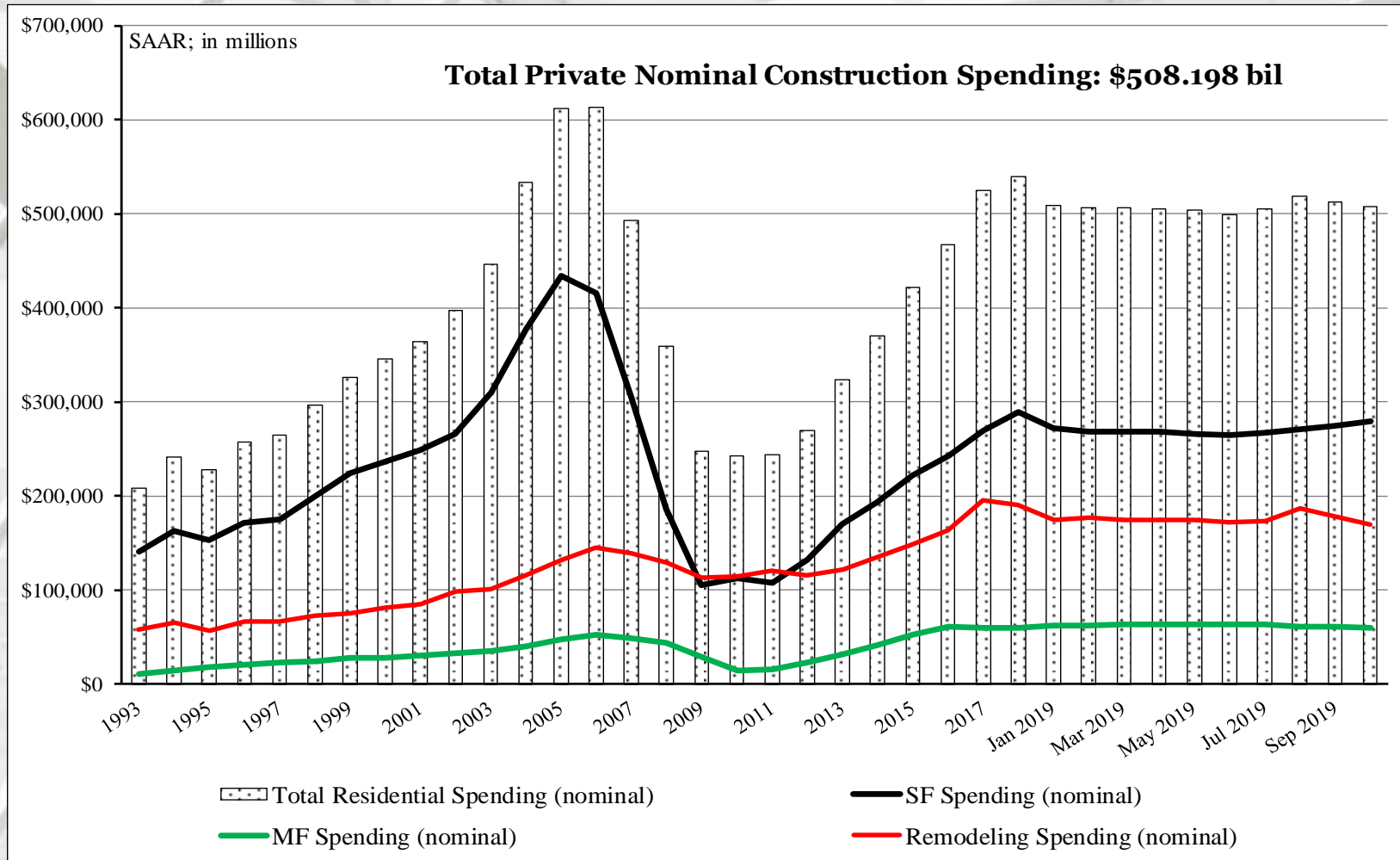
	Total Private Residential*	SF	MF	Improvement**
October	\$508,198	\$279,080	\$59,466	\$169,652
September	\$512,634	\$274,596	\$60,403	\$177,635
2018	\$505,566	\$287,992	\$60,768	\$156,806
M/M change	-0.9%	1.6%	-1.6%	-4.5%
Y/Y change	0.5%	-3.1%	-2.1%	8.2%

* 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\$.

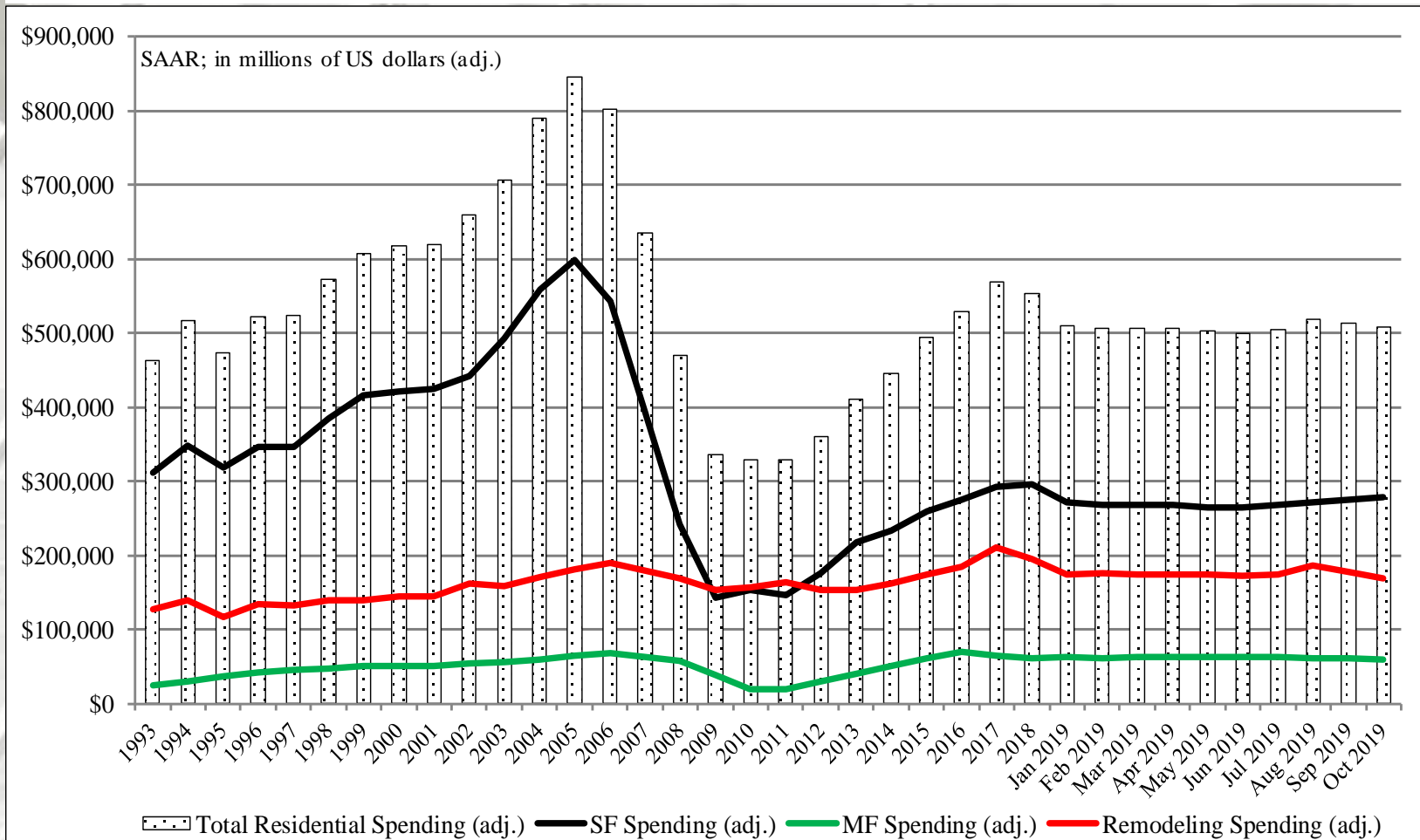
Total Construction Spending (nominal): 1993 – October 2019



Reported in nominal US\$.

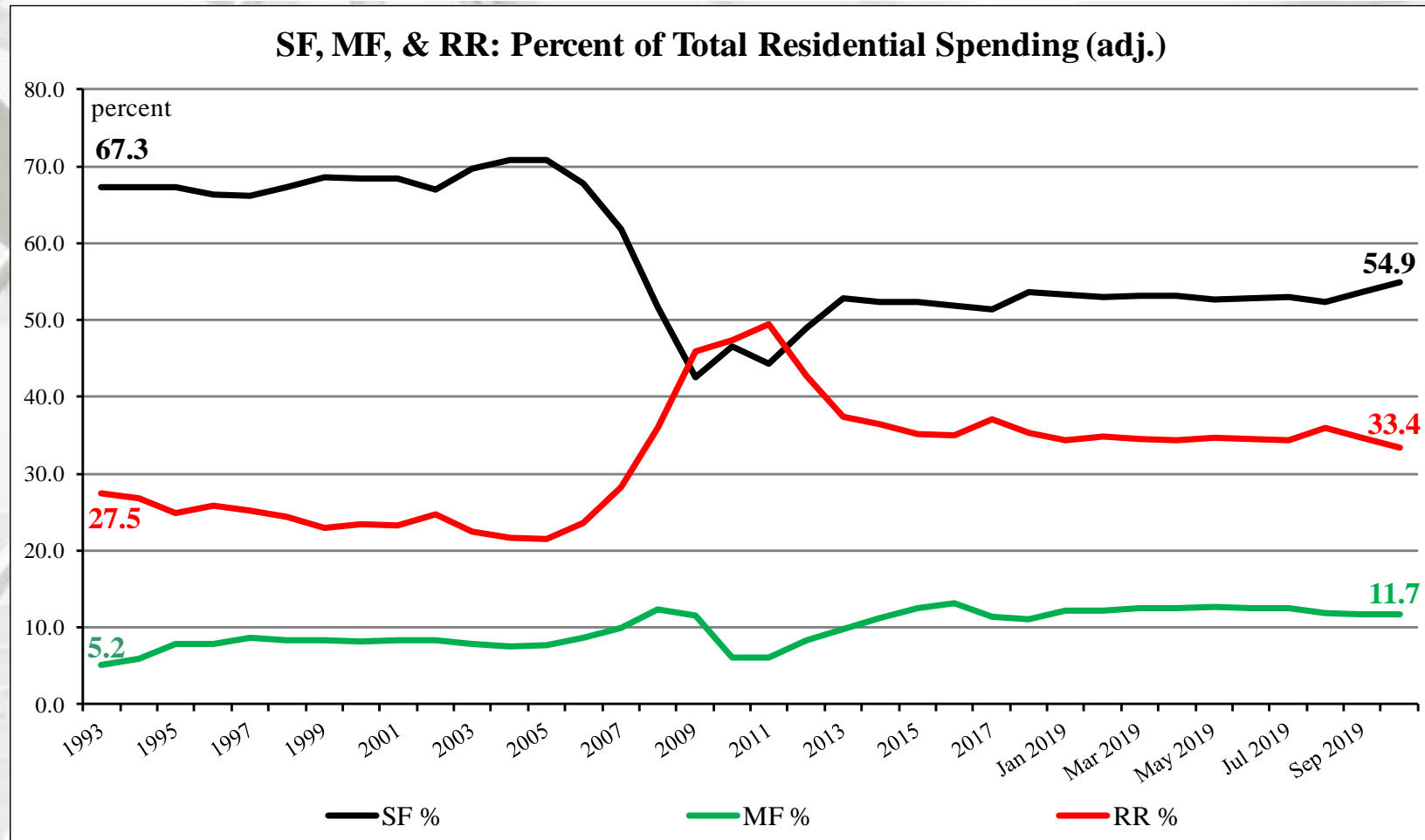
The US DOC does not report improvement spending directly, this is a monthly estimation for 2019.

Total Construction Spending (adjusted): 1993-2019*



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

Construction Spending Shares: 1993 to October 2019



Total Residential Spending: 1993 through 2006

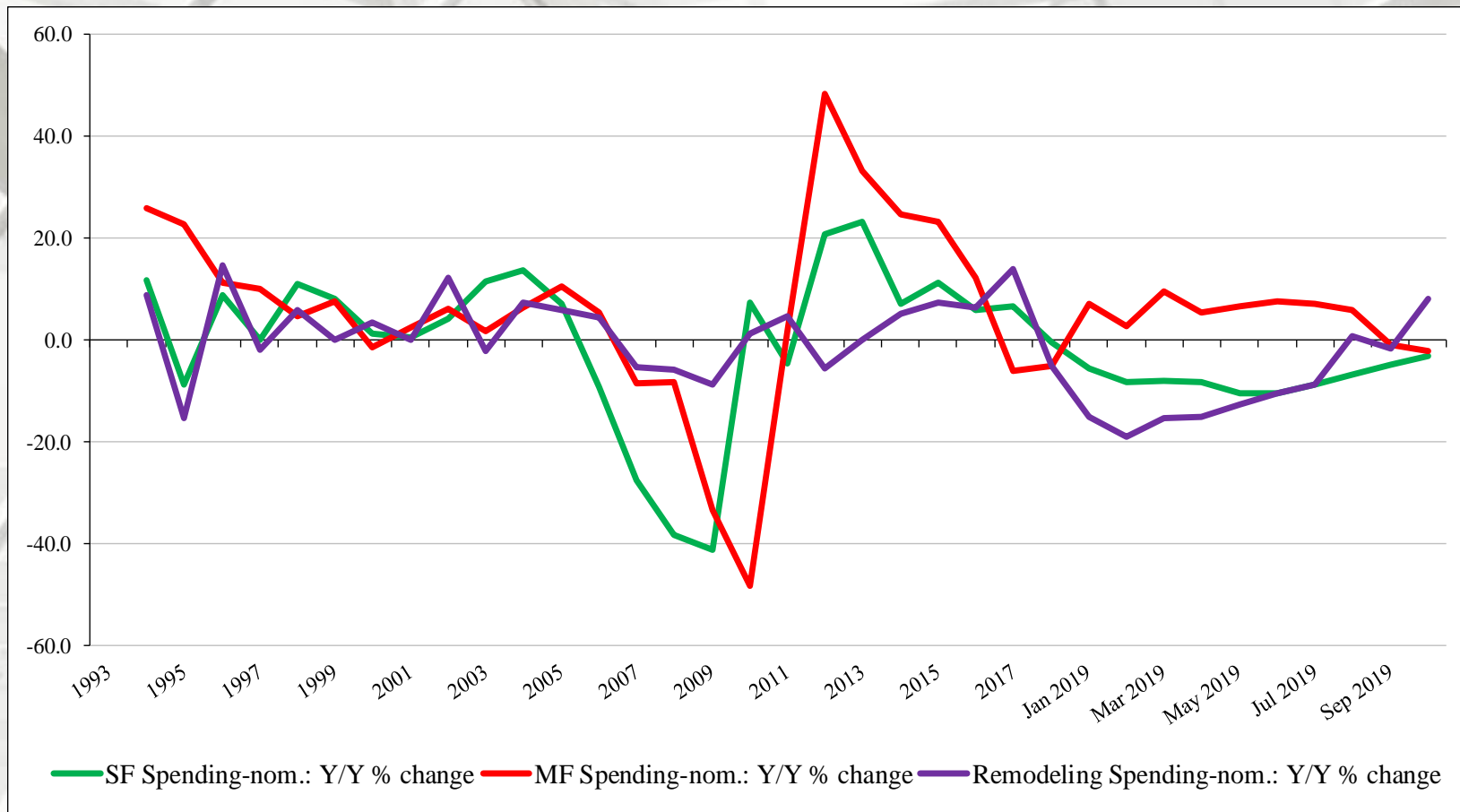
SF spending average: 69.2%

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-October 2018 reported in nominal US\$.

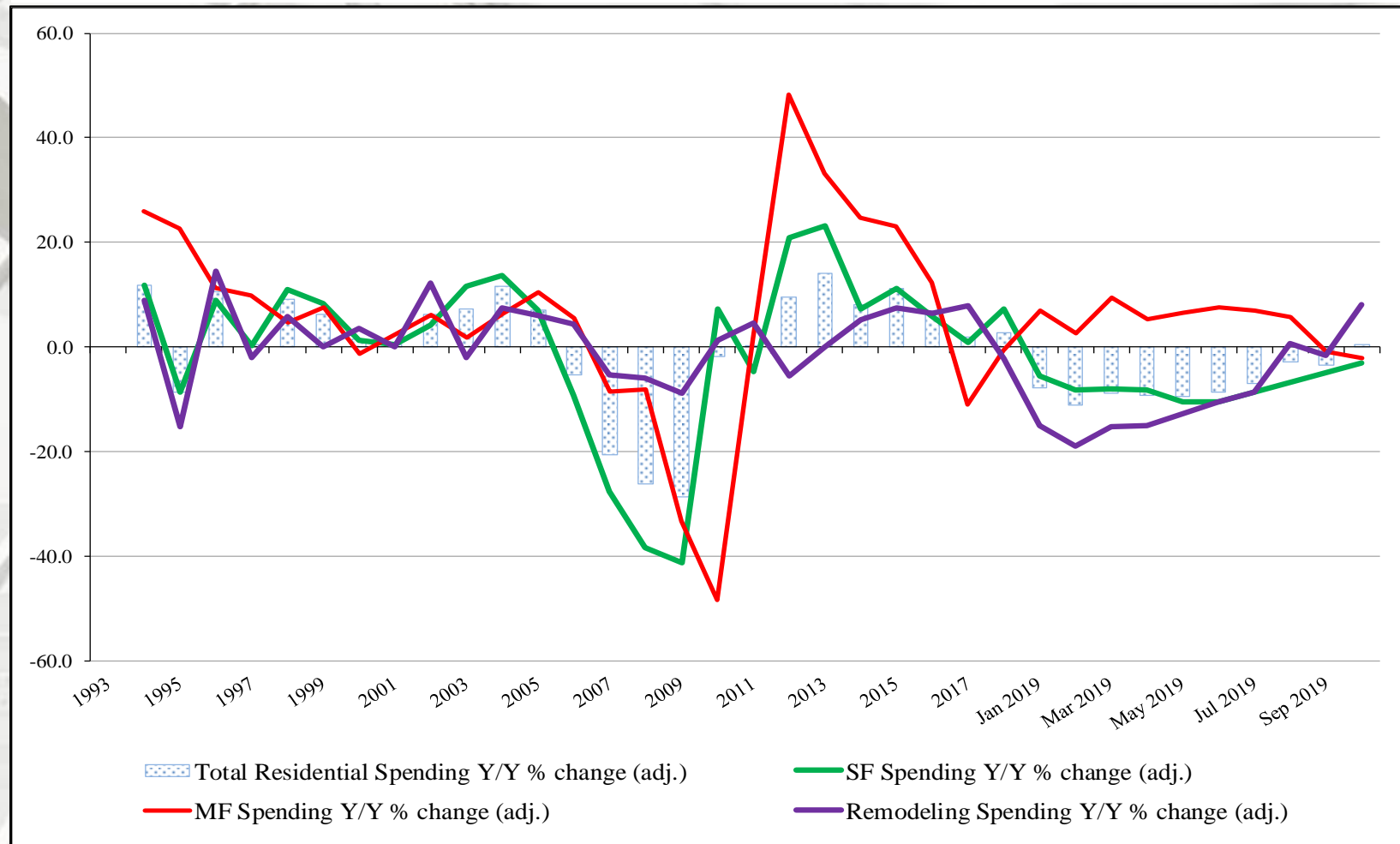
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to October 2019



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



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

Total and RR expenditures were positive in October, 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

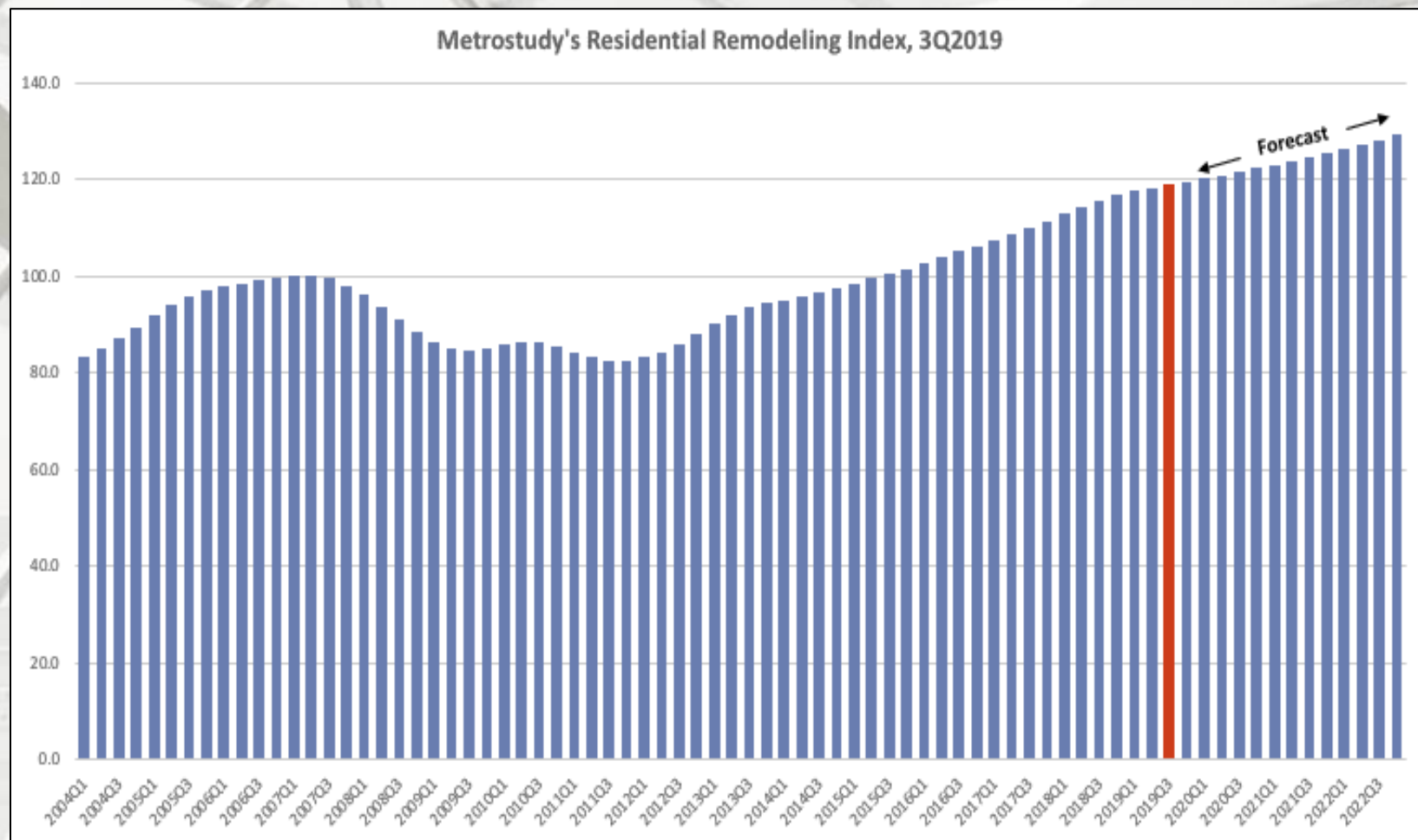
RRI Positive, But Projects Smaller Growth in Next Two Years

““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.”

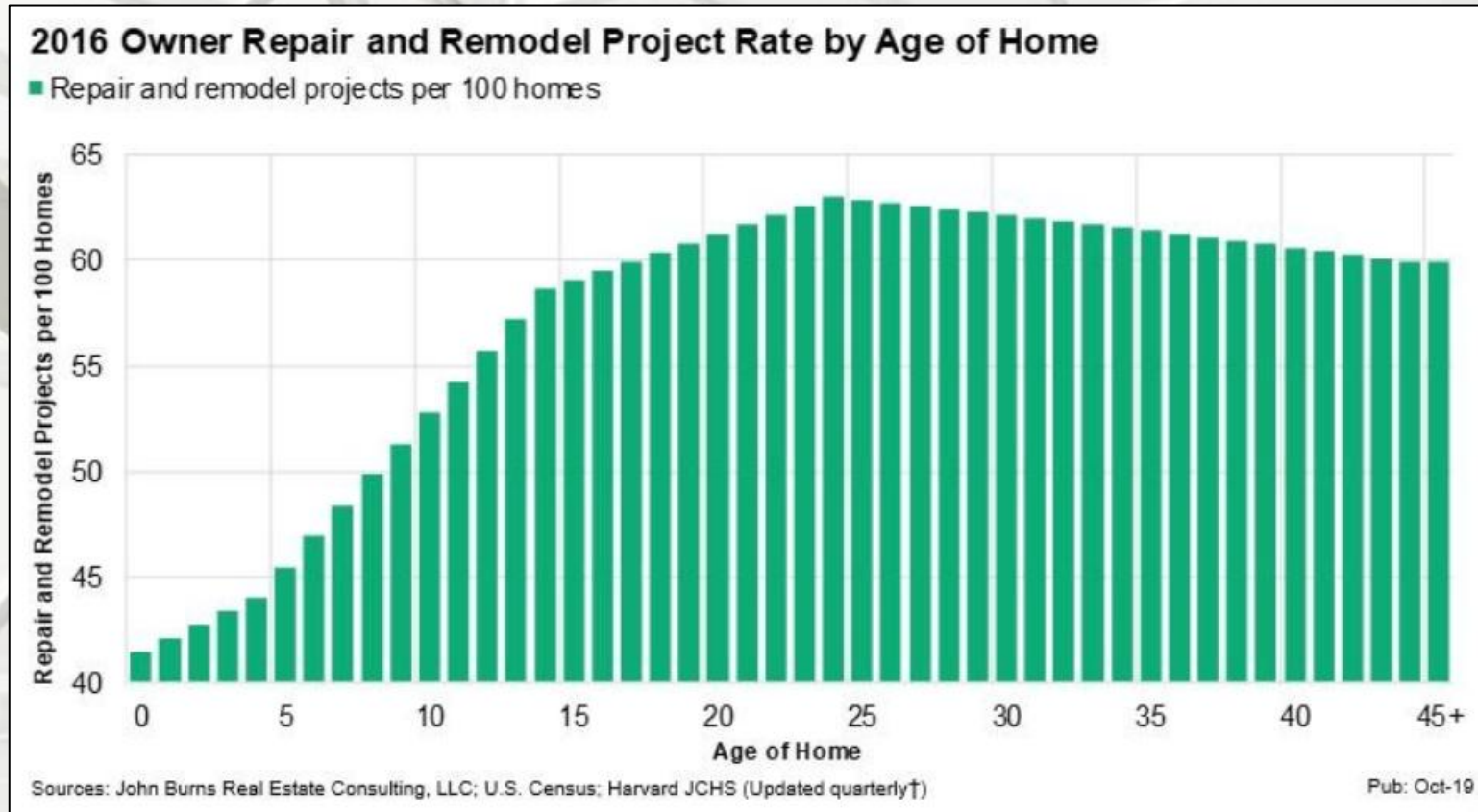
Metrostudy/Zonda projects the number of remodeling projects worth \$1,000 or more will total 13.0 million in 2019, a 3.2% YOY increase. Big-ticket exterior and flooring projects are expected to experience the largest increases compared to 2018, while pool and addition projects will have the smallest 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

Existing House Sales

National Association of Realtors

October 2019 sales: 5.460 thousand

	Existing Sales	Median Price	Mean Price	Month's Supply
October	5,460,000	\$270,900	\$307,800	3.9
September	5,360,000	\$271,500	\$307,500	4.1
2018	5,220,000	\$255,100	\$293,900	4.3
M/M change	1.9%	-0.2%	0.1%	-4.9%
Y/Y change	4.6%	6.2%	4.7%	-9.3%

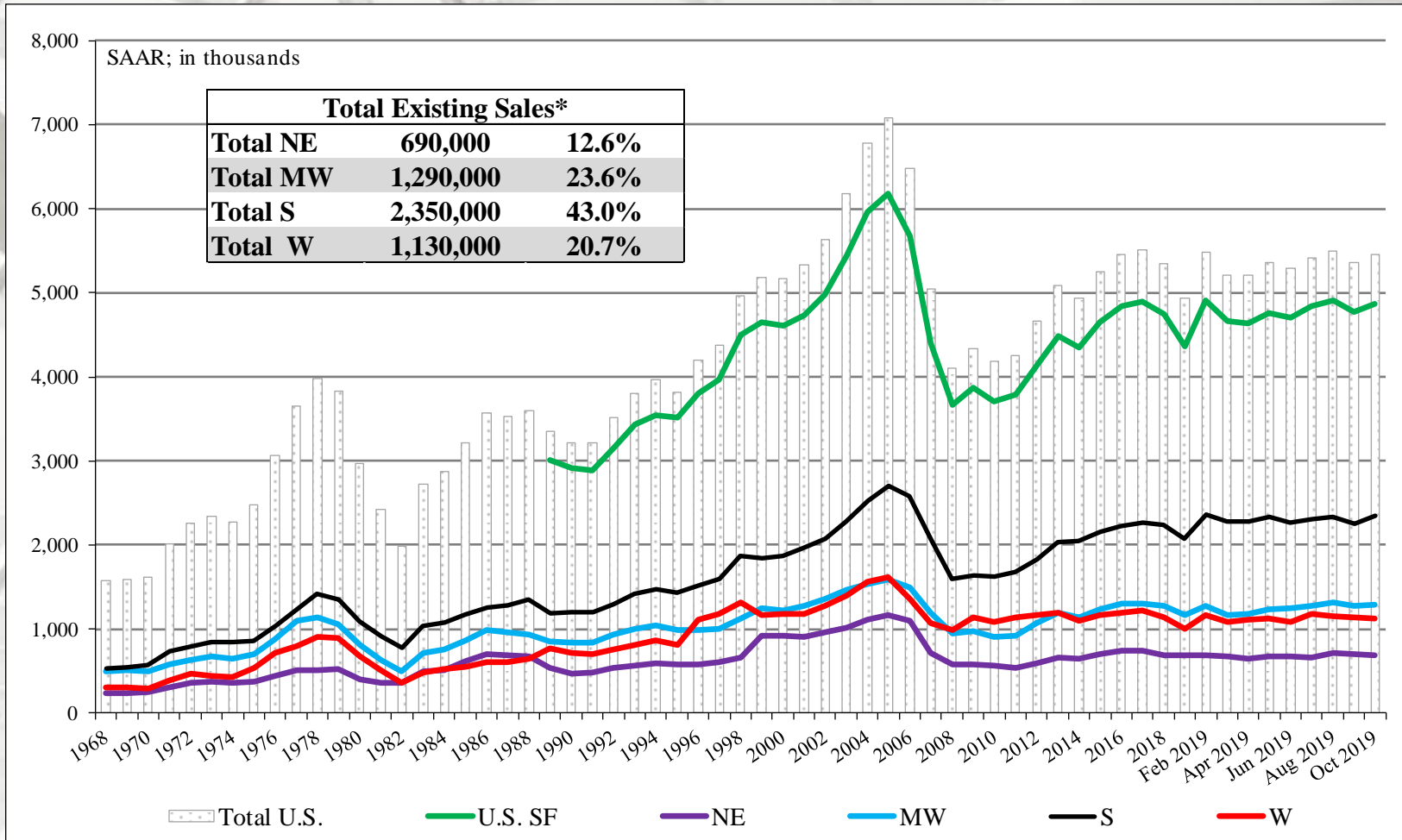
All sales data: SAAR

Existing House Sales

	Existing SF Sales	SF Median Price	SF Mean Price
October	4,870,000	273,600	309,500
September	4,770,000	274,400	309,400
2018	4,620,000	257,700	295,300
M/M change	2.1%	-0.2%	0.0%
Y/Y change	5.4%	6.2%	4.8%

All sales data: SAAR.

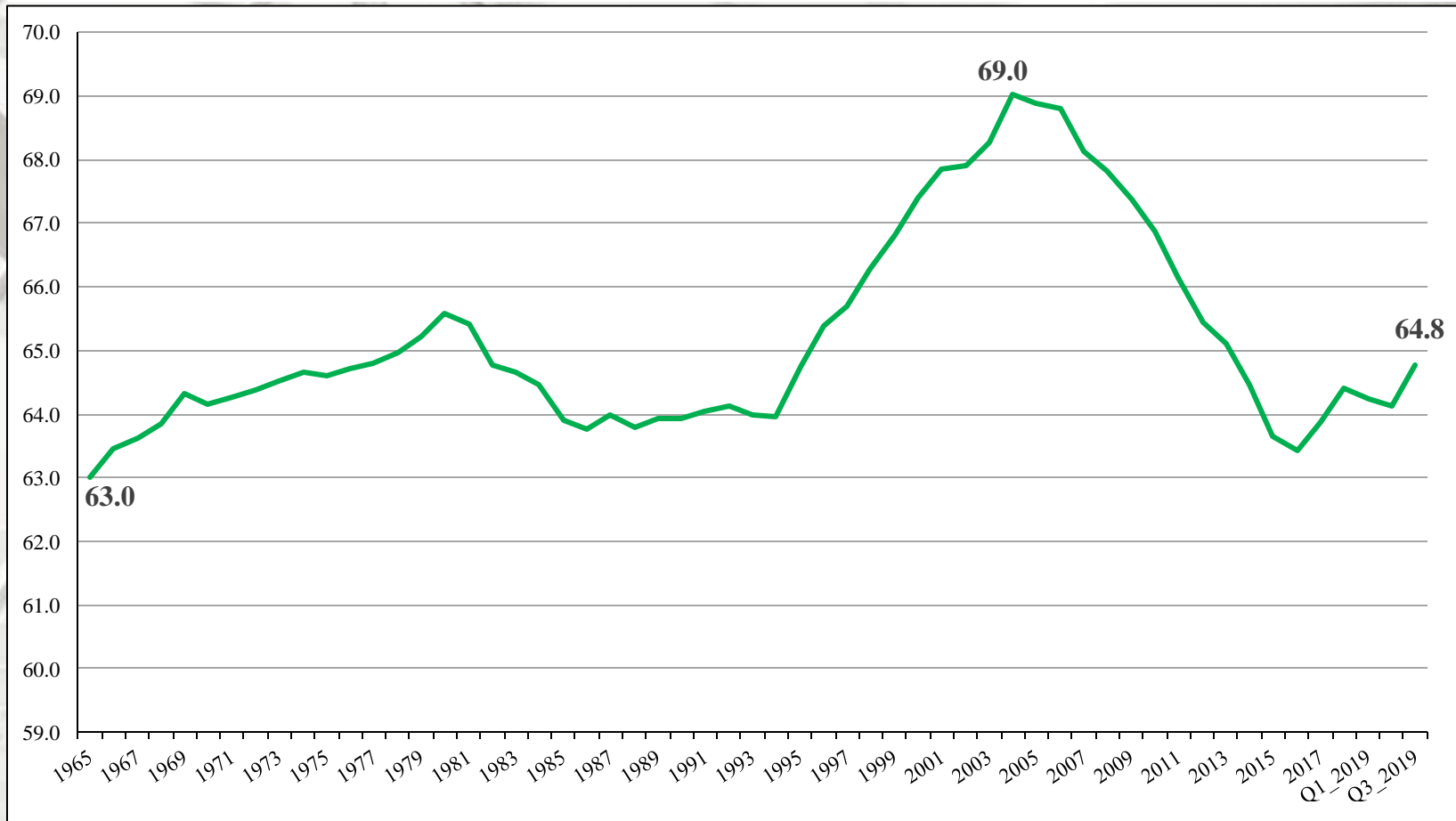
Existing House Sales



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

* Percentage of existing sales.

U.S. Home Ownership

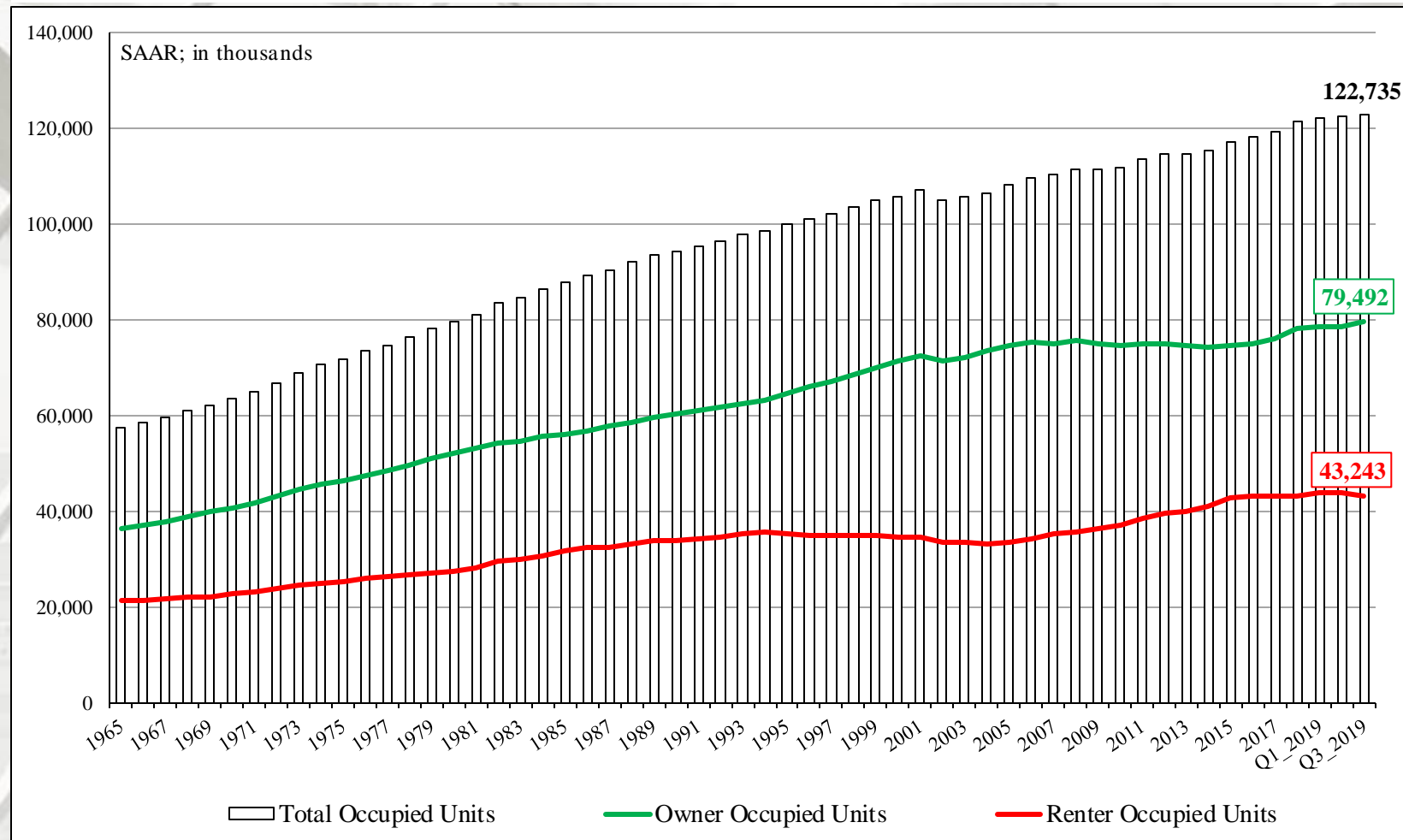


Home Ownership Rate: 1965 to Q3 2019

The U.S. home ownership rate for the third quarter of 2019 was 64.8%, an increase of 0.3% from Q2 and a 0.4% increase from Q3 2018.

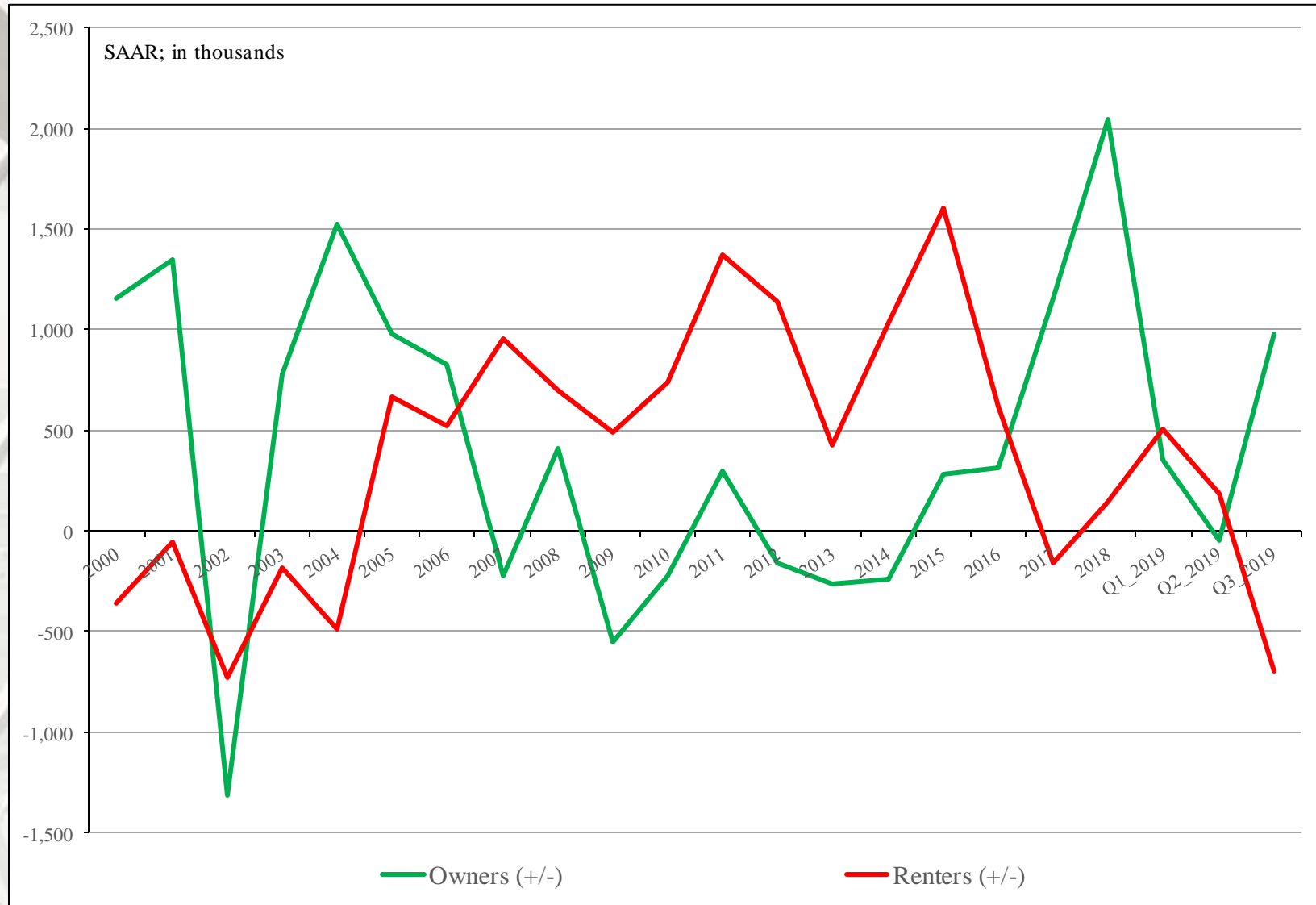
U.S. Home Ownership

Owner Occupied vs. Renter Occupied housing: 1965 to Q3 2019



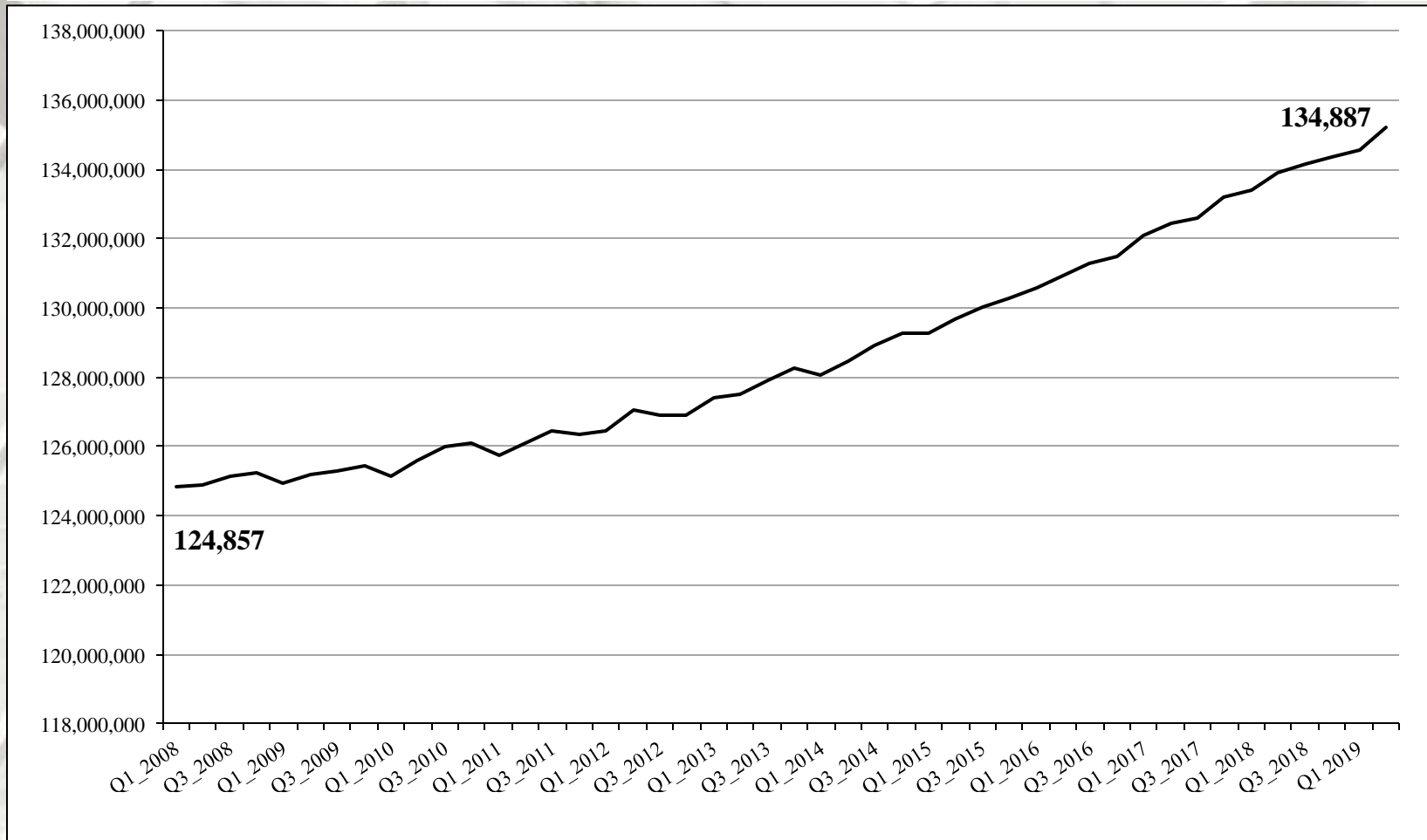
U.S. Home Ownership

Net Change Owner Occupied vs. Renter Occupied housing: 2000 to Q3 2019



U.S. House Ownership

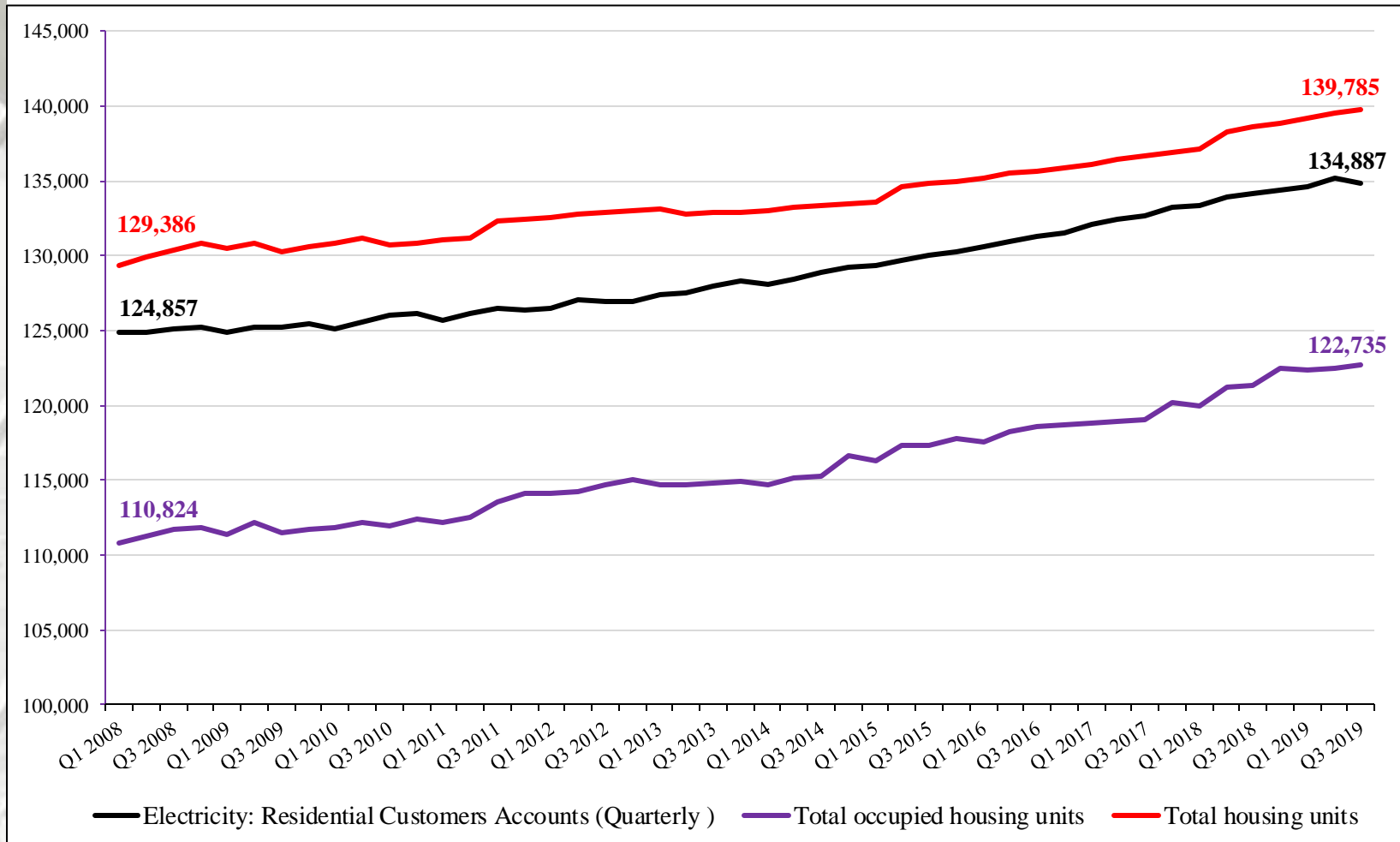
Residential Electricity Customer Accounts: Q1 2008 to Q3 2019*



* Q3 is an estimate based on extrapolation of Q1 & Q2 2019 data.

U.S. House Ownership

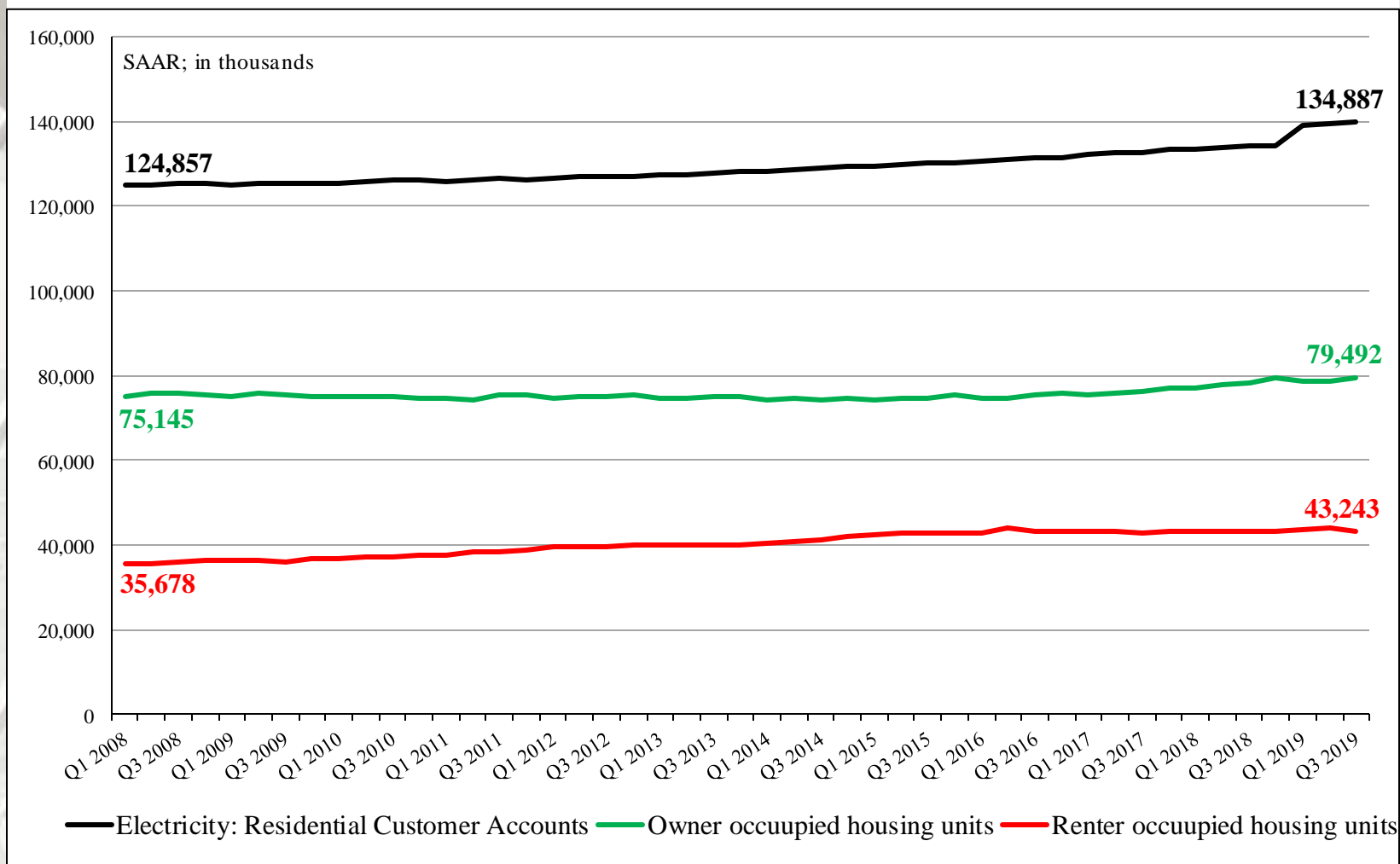
Residential Electricity Customer Accounts, Total Housing & Total Occupied Units: Q1 2008 to Q3 2019*



* Q3 residential electricity accounts is an estimate based on extrapolation of Q1 & Q2 2019 data.

U.S. House Ownership

Residential Electricity Customer Accounts, Owner Occupied and Renter Occupied Housing: Q1 2008 to Q3 2019*



* Q3 residential electricity accounts is an estimate based on extrapolation of Q1 & Q2 2019 data.

U.S. Housing Prices

House Price Index - 3Q 2019

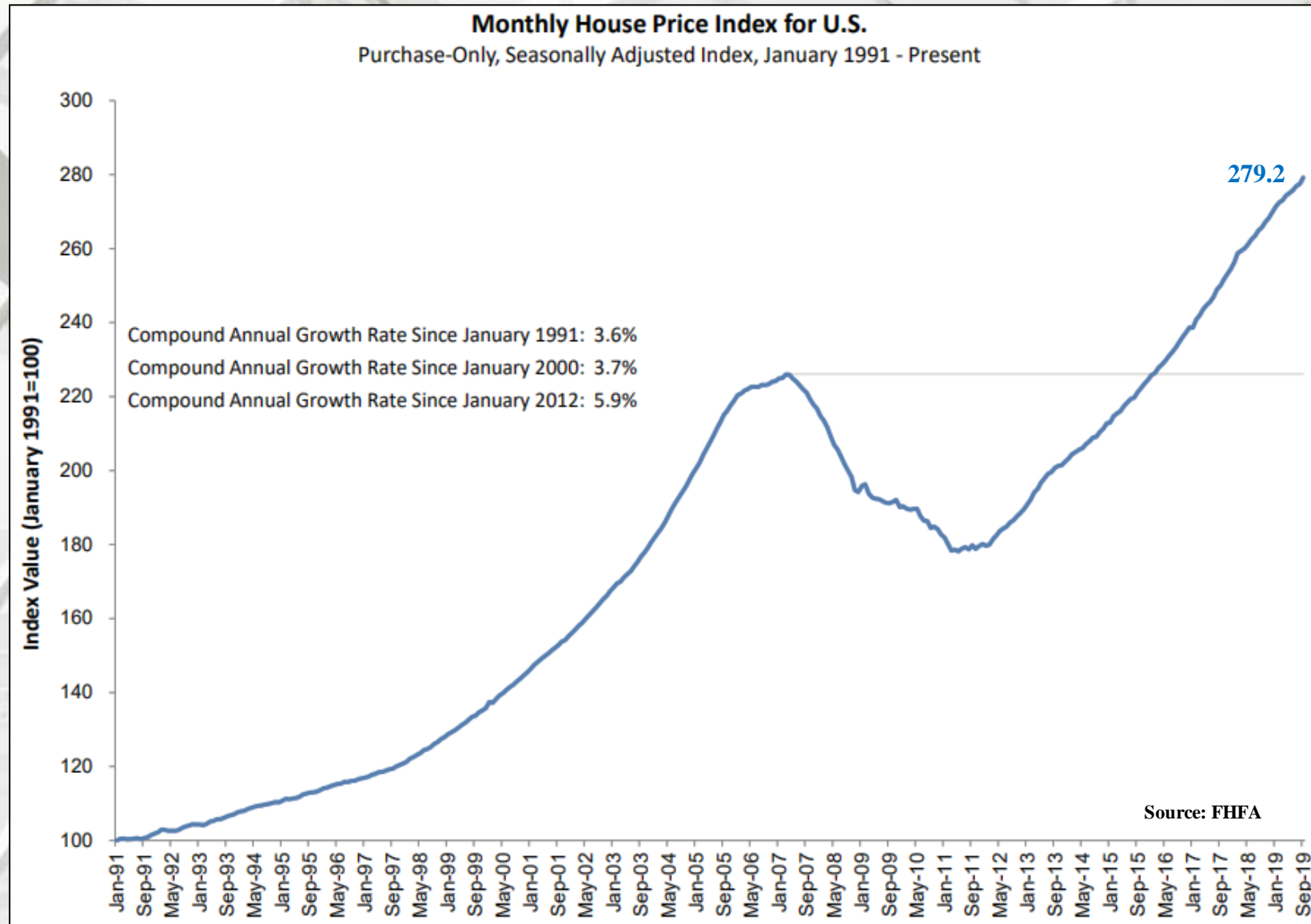
U.S. House Prices Rise 1.1 Percent in Third Quarter; Up 4.9 Percent from Last Year

“U.S. house prices rose in the third quarter of 2019, up 1.1 percent according to the Federal Housing Finance Agency (FHFA) House Price Index (HPI). House prices rose 4.9 percent from the third quarter of 2018 to the third quarter of 2019. FHFA's seasonally adjusted monthly index for September was up 0.6 percent from August.

- House prices have risen for 33 consecutive quarters across the United States.
- House prices rose in all 50 states and the District of Columbia between the third quarters of 2018 and 2019. The top five states in annual appreciation were: 1) Idaho 11.6 percent; 2) Maine 7.9 percent; 3) Arizona 7.9 percent; 4) Utah 7.8 percent; and 5) Indiana 7.4 percent. The states showing the smallest annual appreciation were: 1) Illinois 1.9 percent; 2) Connecticut 2.2 percent; 3) Maryland 2.4 percent; 4) South Dakota 2.7 percent; and 5) Iowa 3.2 percent.
- House prices rose in all 100 of the largest metropolitan areas in the U.S. over the last four quarters. Annual price increases were greatest in Boise City, ID, where prices increased by 11.1 percent. Prices were weakest in Camden, NJ (MSAD), where they increased 0.7 percent.
- Of the nine census divisions, the Mountain division experienced the strongest four quarter appreciation, posting a 6.9 percent gain between the third quarters of 2018 and 2019 and a 1.8 percent increase in the third quarter of 2019. Annual house price appreciation was weakest in the Middle Atlantic division, where prices rose by 4.0 percent between the third quarters of 2018 and 2019.” – Corinne Russell and Raffi Williams, FHFA

“House prices have risen every quarter for the last eight years. Relative to a year ago, market indices are still trending upward for the nation as a whole as well as in every census division, state, and the top 100 metro areas. Price gains, though, are continuing to slow their upward pace in a few cities with large housing markets.” – Dr. William Doerner, Supervisory Economist, FHFA

U.S. Housing Prices



U.S. Housing Prices

Cities In Sun Belt Region Lead In Annual Gains According To S&P CoreLogic Case-Shiller Index

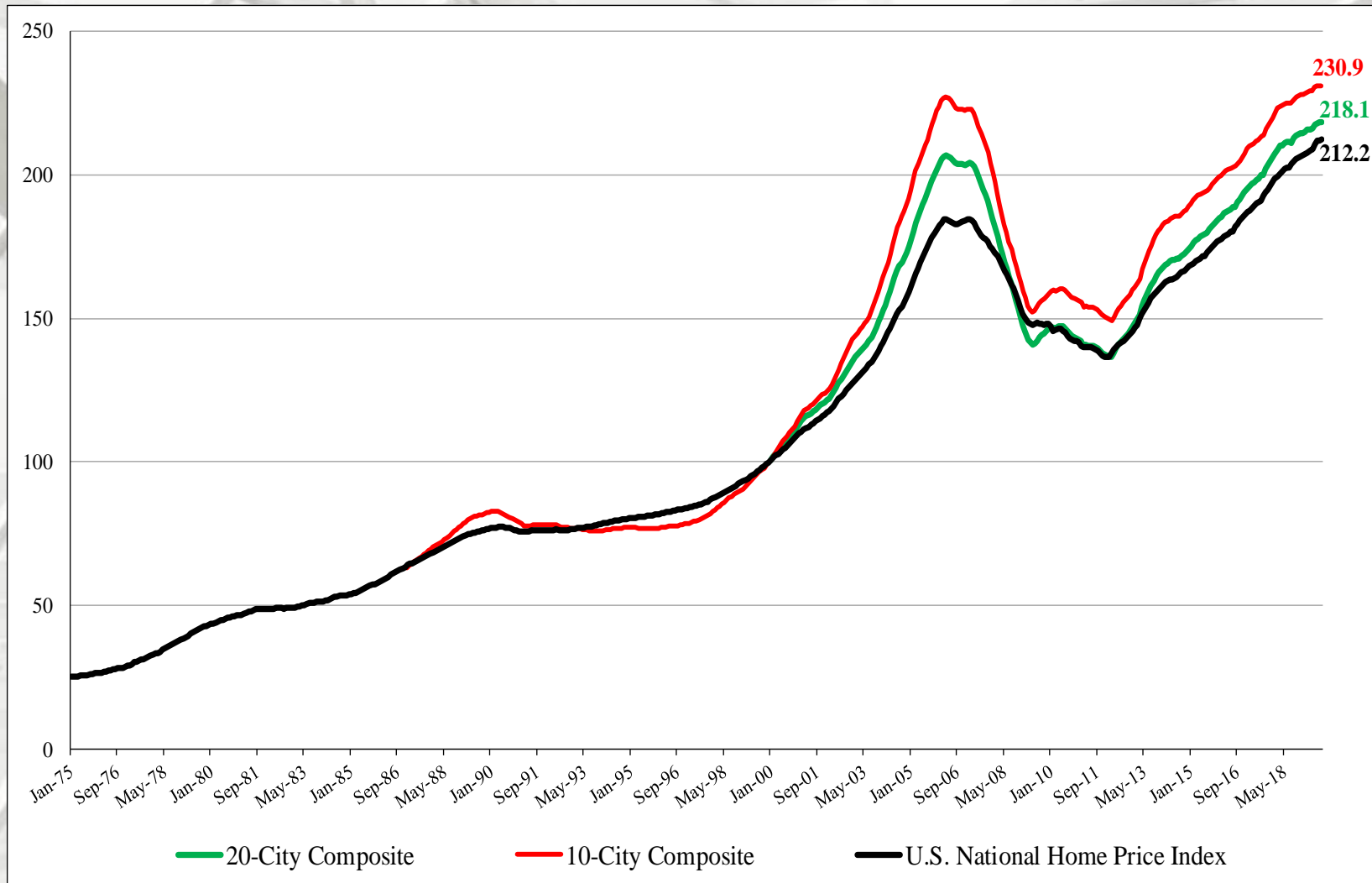
“Data for August 2019 show that home prices continue to increase at a modest rate across the U.S. The S&P CoreLogic Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 3.2% annual gain in September, up from 3.1% in the previous month. The 10-City Composite annual increase came in at 1.5%, no change from the previous month. The 20-City Composite posted a 2.1% year-over-year gain, up from 2.0% in the previous month.

Phoenix, Charlotte and Tampa reported the highest year-over-year gains among the 20 cities. In September, Phoenix led the way with a 6.0% year-over-year price increase, followed by Charlotte with a 4.6% increase and Tampa with a 4.5% increase. Ten of the 20 cities reported greater price increases in the year ending September 2019 versus the year ending August 2019.

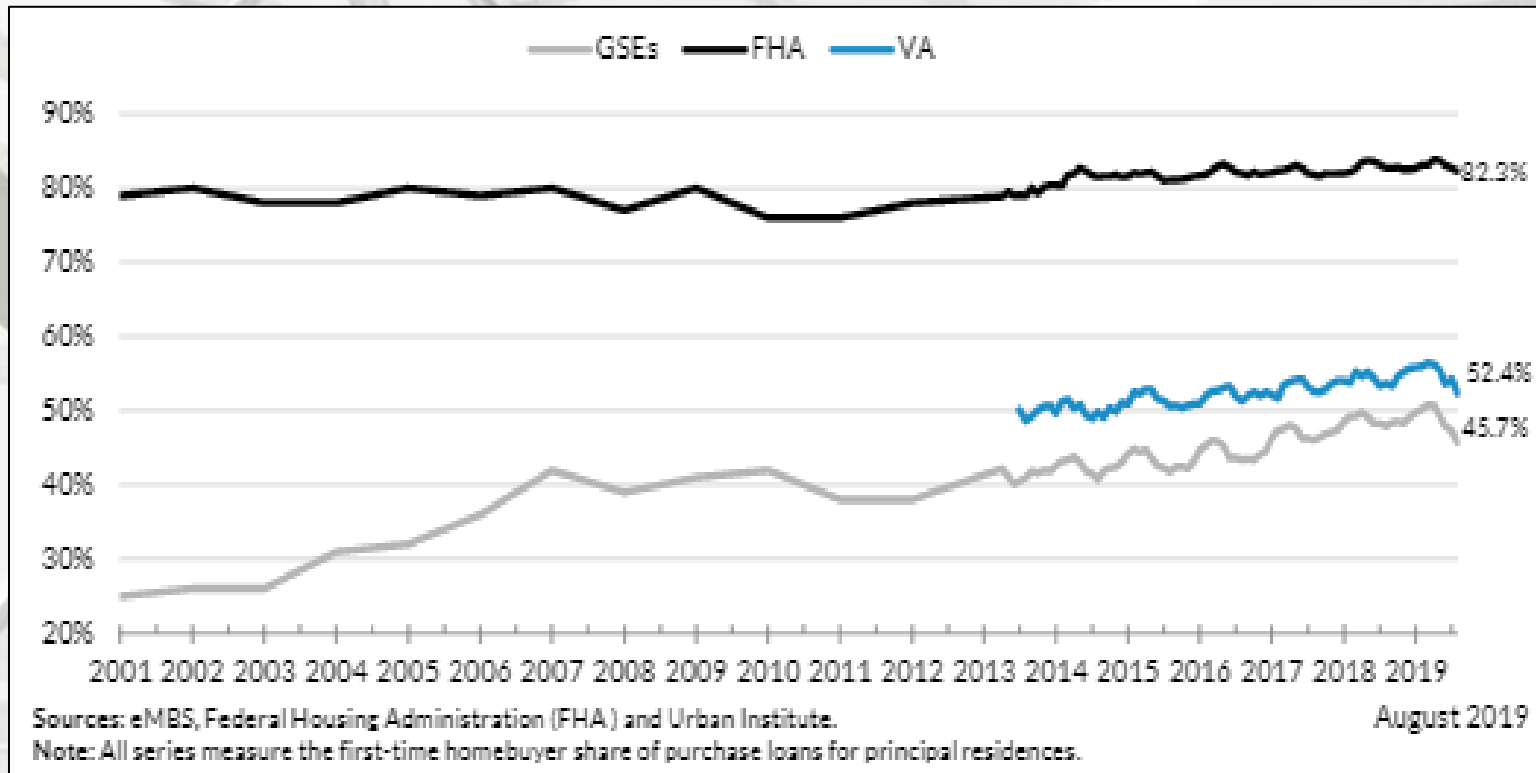
Before seasonal adjustment, the National Index posted a month-over-month increase of 0.1% in September. The 10-City Composite did not post any gains and the 20-City Composite posted a 0.1% increase for the month. After seasonal adjustment, the National Index recorded a 0.4% month-over-month increase in September. The 10-City Composite posted a 0.2% increase and the 20-City Composite posted a 0.4% increase. In September, 12 of 20 cities reported increases before seasonal adjustment while 17 of 20 cities reported increases after seasonal adjustment.

September’s report for the U.S. housing market is reassuring. The national composite index rose 3.2% relative to year-ago levels, with smaller increases in our 10- and 20-city composites. Of the 20 cities in the composite, only one (San Francisco) saw a year-over-year price decline in September. After a long period of decelerating price increases, it’s notable that in September both the national and 20-city composite indices rose at a higher rate than in August, while the 10-city index’s September rise matched its August performance. It is, of course, too soon to say whether this month marks an end to the deceleration or is merely a pause in the longer-term trend. At a regional level, Phoenix retains the top spot for the fourth consecutive month with September’s 6.0% year-over-year gain. The Southeast region was also strong, as Charlotte, Tampa, and Atlanta all rose at greater than a 4.0% clip.” – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

S&P/Case-Shiller Home Price Indices



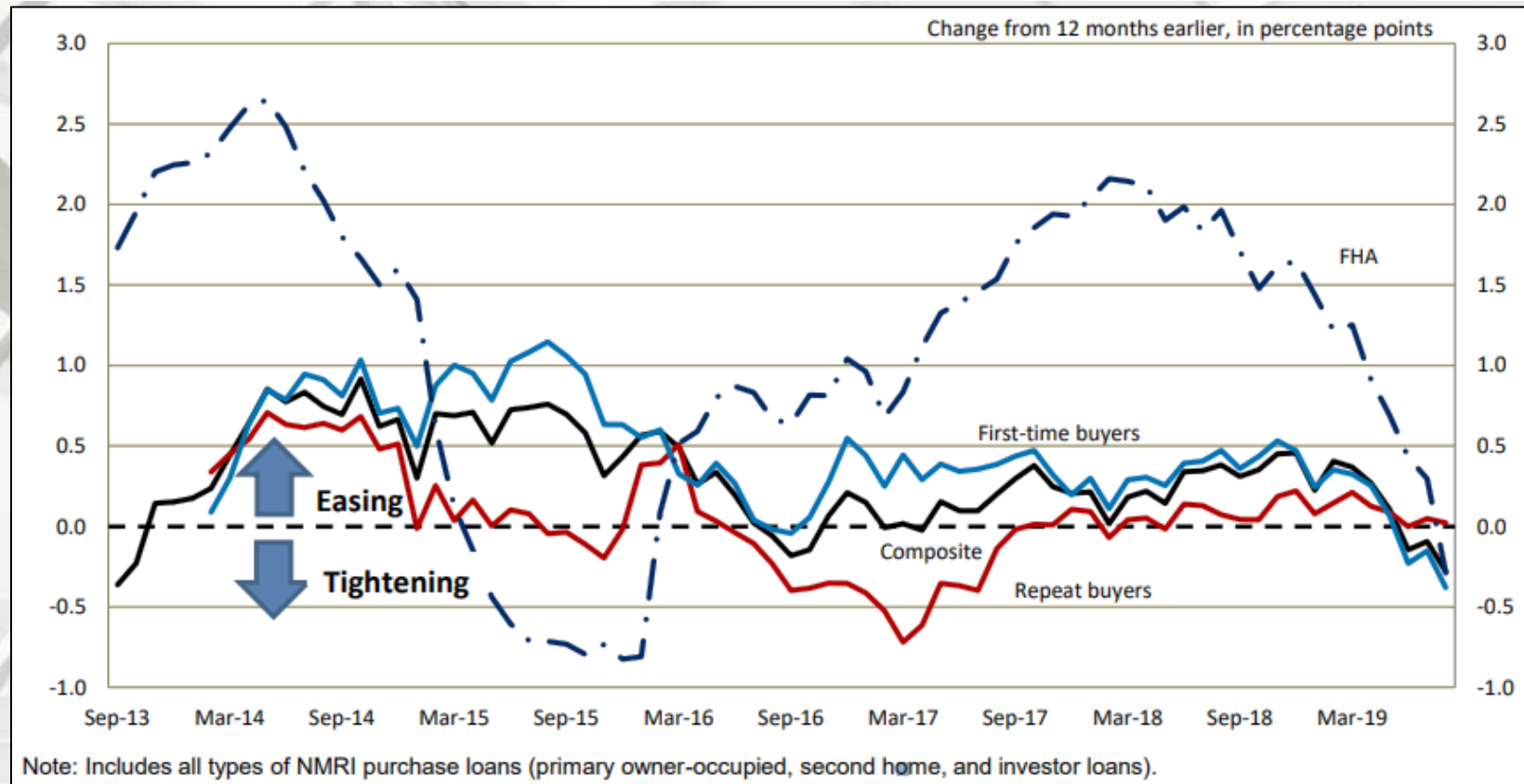
First-Time House Buyers



Urban Institute

“In August 2019, the FTHB share for FHA, which has always been more focused on first time home buyers, fell very slightly to 82.3 percent. The FTHB share of VA lending also fell slightly in August, to 52.4 percent. The GSE FTHB share in July was 45.7 percent. ...based on mortgages originated in July 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

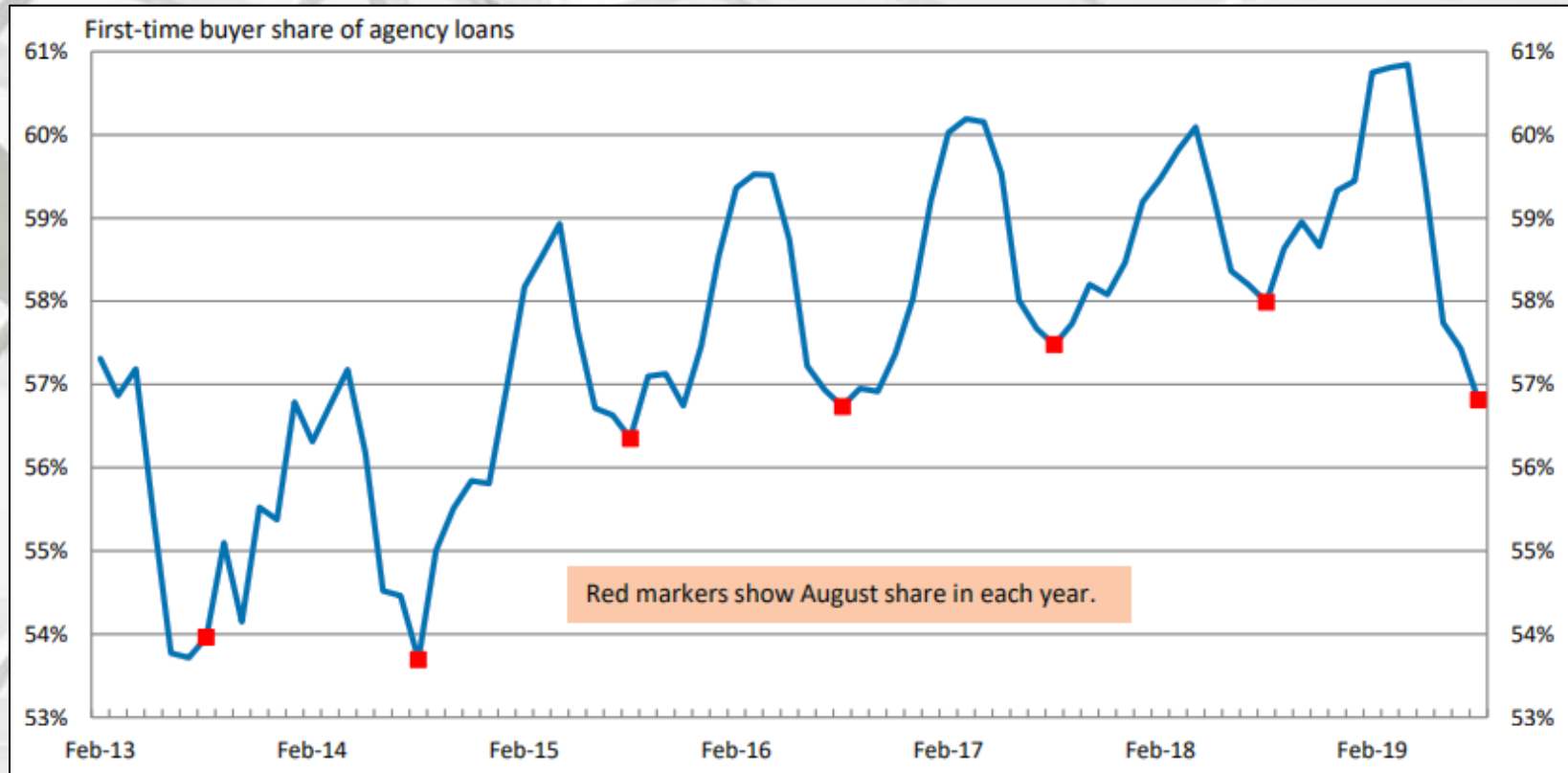
First-Time House Buyers



AEI Housing Center Slight Credit Tightening Continues

“The Composite NMRI for purchase loans declined 0.3% year-over-year (yoy). For FHA, the index is also declining at a rate of 0.3% (yoy), and it is down substantially from a year ago. Interestingly, credit tightened for first-time buyers but remained unchanged for repeat buyers, in a significant trend reversal. Credit has slightly tightened for the last 3 months. Time will tell whether this trend continues.” – Edward Pinto and Tobias Peter, AEI Housing Center

First-Time House Buyers



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

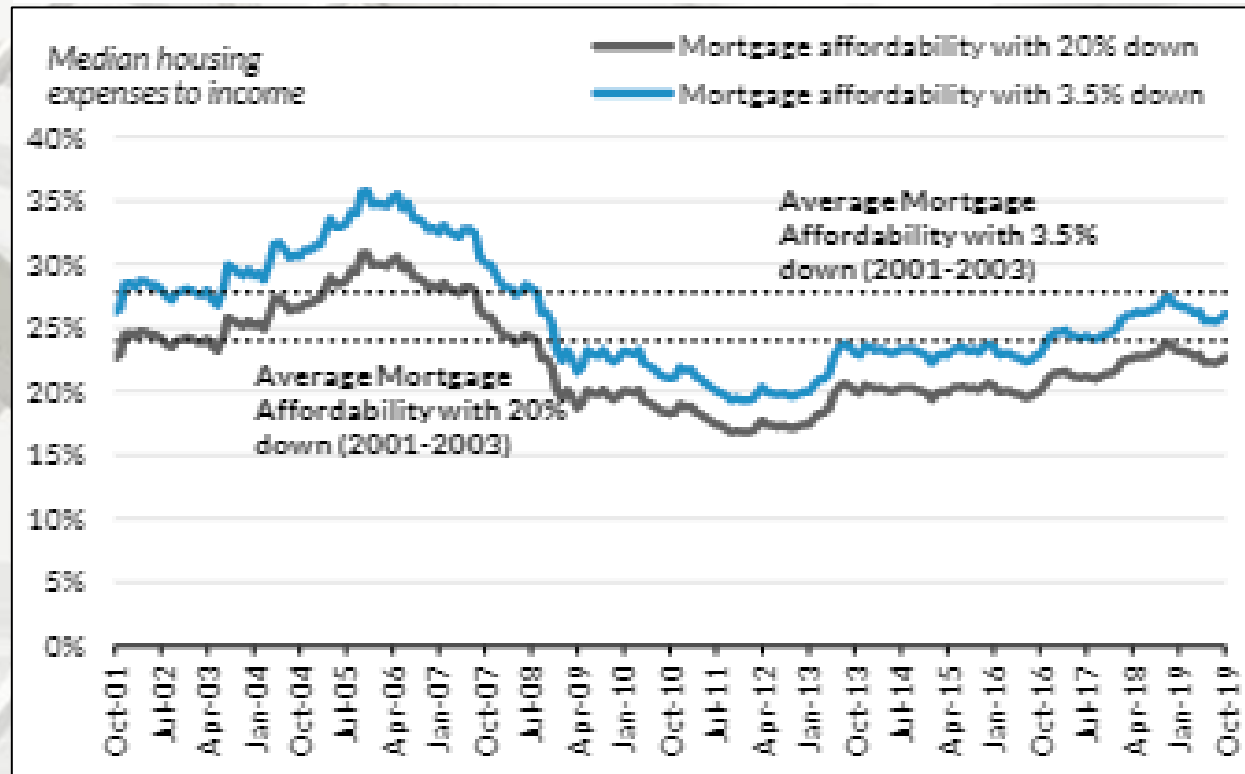
AEI Housing Center

Agency First-time Buyer (FTB) Loan Share

“Because of faster growth in repeat buyer volume, the Agency FTB loans share has declined to 56.8% in August 2019. This is down from 58.0% in August 2018 and represents a significant trend reversal from the last 5 years, during which the FTB share continuously marched up.” – Edward Pinto and Tobias Peter, AEI Housing Center

Housing Affordability

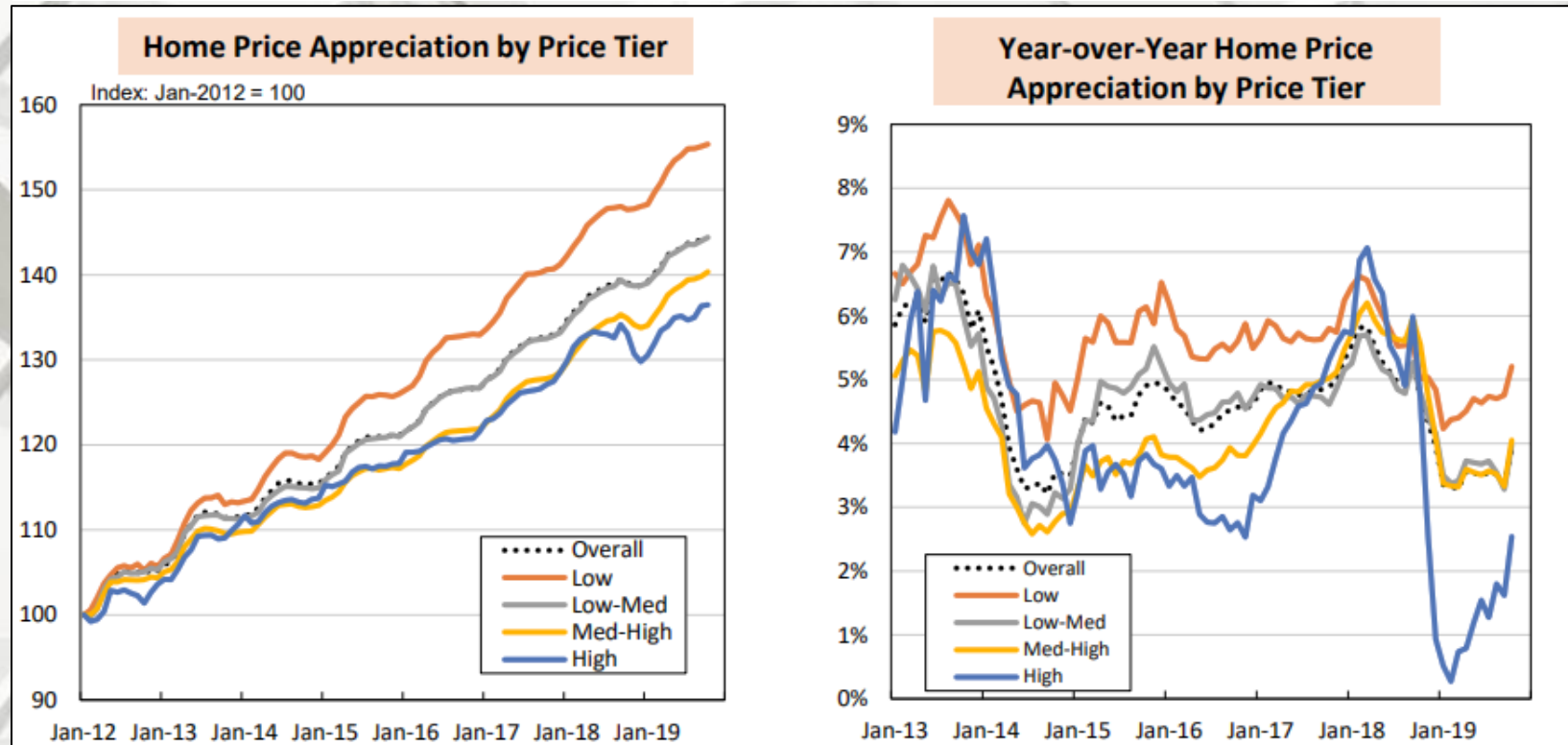
National Housing Affordability Over Time



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 October 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. From last month's release, we have changed our HPA methodology to better deal with outliers. This change has primarily affected the high price tier.

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National House Price Appreciation (HPA) by Price Tier

“In October 2019, overheating of the low price tier continued (right panel). HPA in the low price tier was 5.2% year-over-year (yoy). In both the low-medium and medium-high tiers, HPA was 4.0% and 4.1%, respectively. HPA in the high tier (about 7% of the market) was a more modest 2.5%.” – Edward Pinto and Tobias Peter, AEI Housing Center

Mortgage Credit Availability

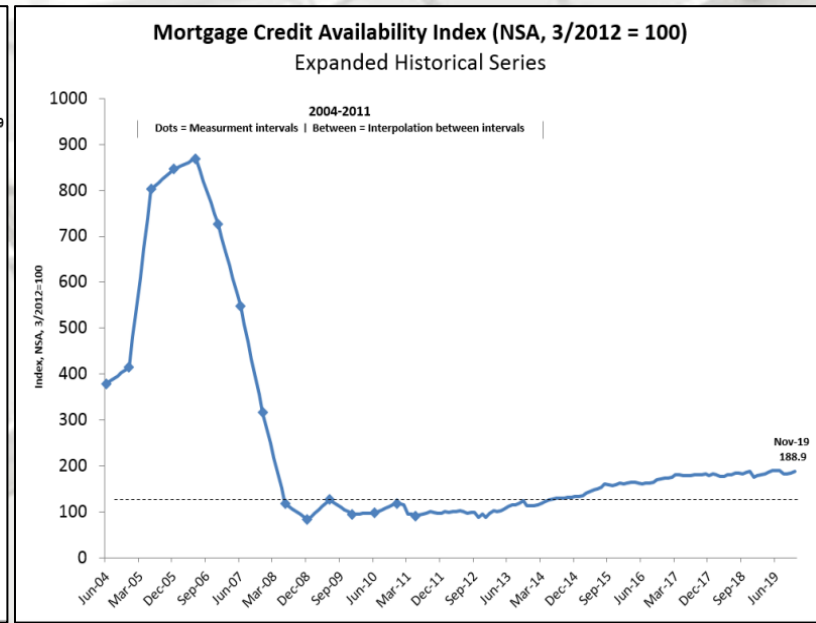
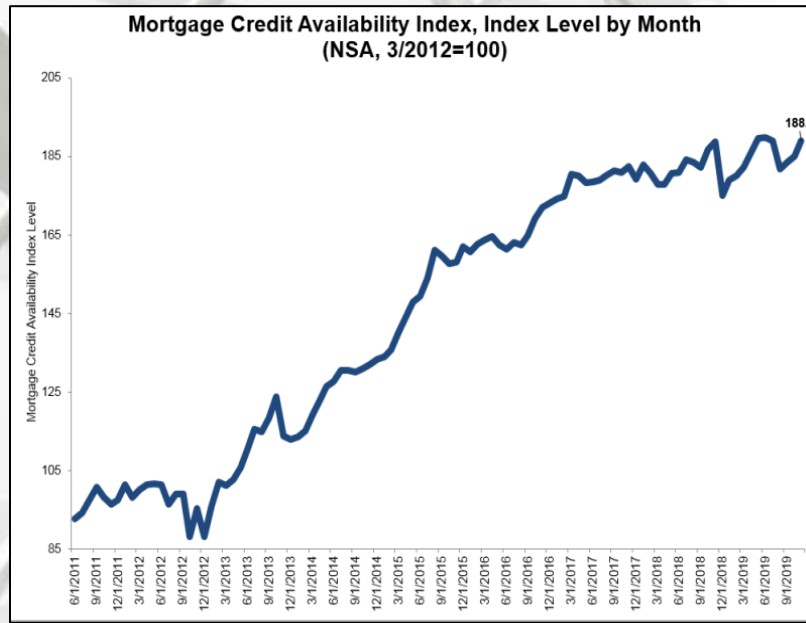
Mortgage Credit Availability Increased in November

“Mortgage credit availability increased in November 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 rose by 2.1 percent to 188.9 in November. A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening credit. The index was benchmarked to 100 in March 2012. The Conventional MCAI increased 1.4 percent, while the Government MCAI increased by 2.9 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 2.2 percent, and the Conforming MCAI rose by 0.2 percent.

Credit availability rose for the third straight month in November, with an increase in supply across all loan types. Most notably, the jumbo index climbed to yet another record high, as investors increased their willingness to purchase loans with lower credit scores and higher LTV ratios. Additionally, the government index saw its first increase in nine months, driven by streamline refinance programs. Expanding credit availability will continue to support active levels in mortgage lending, even as refinance activity starts to level off.” – 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 October, 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 data categories. New single-family house sales and private residential construction spending 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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