

The Virginia Tech – U.S. Forest Service

August 2018

Housing Commentary: Section I



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

To request the commentary, please email: buehlmann@gmail.com or dalderman@fs.fed.us

Opening Remarks

August housing data was mixed, with several monthly increases due to revising past months data downward. Total, single-, and multi-family permits were negative on a monthly basis. Further only single-family permits are positive on a year-over-year basis. All housing start data were positive, with the exception being single-family year-over-year starts. Housing under construction remained positive except for monthly single-family data. Total housing completions were positive; yet, multi-family declined on a month-over-month basis. New single-family sales improved month-over-month and were robust on a year-over-year basis. Existing sales continued their stagnant trend, monthly and yearly. Once again, new single-family construction spending indicated a minimal negative change on a monthly basis. Overall, housing construction expenditures appear to be moribund. The October 15th Atlanta Fed GDPNow™ residential investment spending model projects an aggregate -1.7% decline. New private permanent site expenditures were projected for a -5.8% decrease; the improvement spending forecast was a 4.9% increase; and the manufactured/mobile housing projection was a -3.2% decline (all: quarterly log change and seasonally adjusted annual rate)¹.

“Today’s housing market has too much highly leveraged demand chasing too little supply. Historically, there is a strong relationship between the level of supply and price movements. According to the NAR, monthly inventory for August was at 4.3, slightly higher than last year’s reading. While house prices are appreciating at a rate slightly lower than a year ago, this rate is still much higher than the rate of wage and inflation growth. Therefore, it is probably too soon to speak of a market turnaround.”² – Edward Pinto and Tobias Peter; AEI, Center on Housing Markets and Finance

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

Sources: ¹ <https://www.frbatlanta.org/cqer/research/gdpnow.aspx>; 10/15/18;

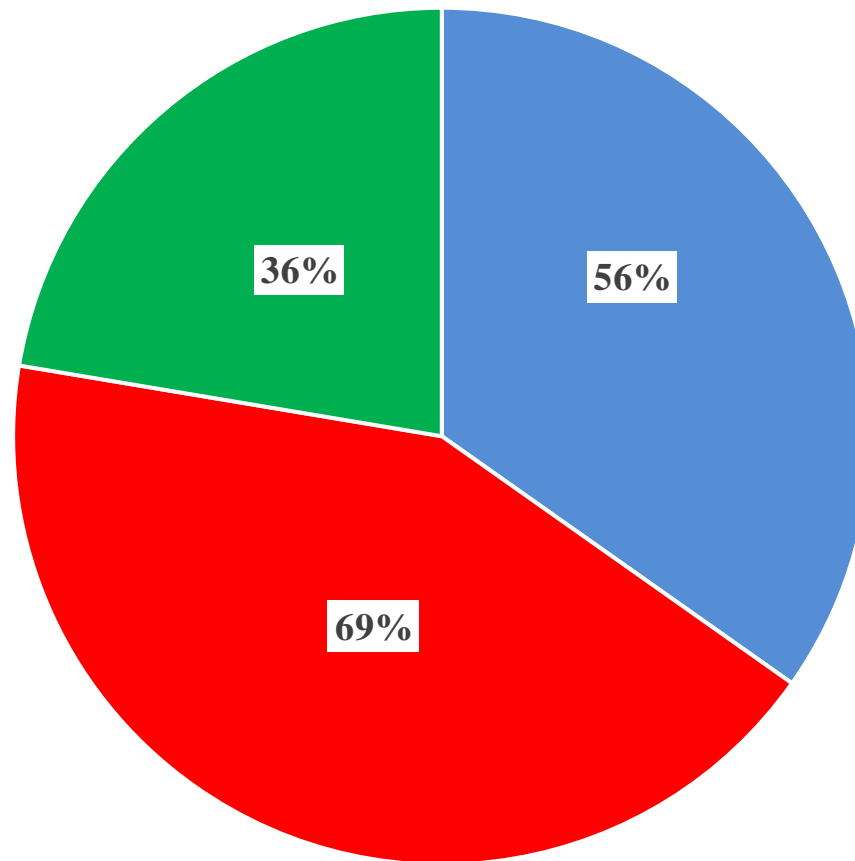
² www.AEI.org/housing; 10/1/18

August 2018

Housing Scorecard

	M/M		Y/Y	
Housing Starts	△	9.2%	△	9.4%
Single-Family Starts	△	1.9%	▽	0.2%
Housing Permits	▽	5.7%	▽	5.5%
Single-Family Permits	▽	6.1%	△	2.1%
Housing Under Construction	△	0.8%	△	4.6%
Single-Family Under Construction	▽	0.2%	△	9.7%
Housing Completions	△	2.5%	△	11.2%
Single-Family Completions	△	11.6%	△	22.9%
New Single-Family House Sales	△	3.5%	△	12.7%
Private Residential Construction Spending	▽	0.7%	△	4.0%
Single-Family Construction Spending	▽	0.7%	△	4.2%
Existing House Sales ¹	NC		▽	1.5%

New Construction's Percentage of Wood Products Consumption

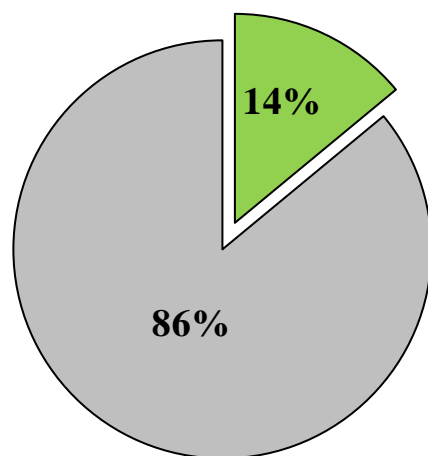


■ All Sawnwood

■ Structural panels

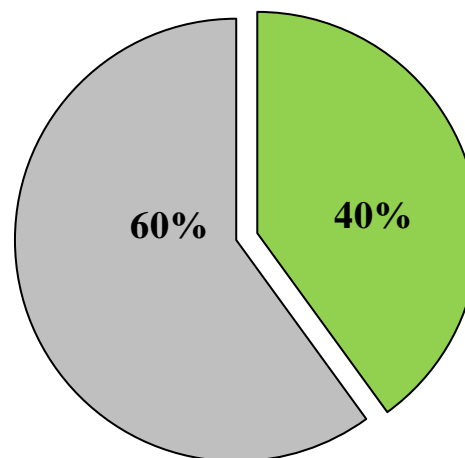
■ Non-structural panels

New SF Construction Percentage of Wood Products Consumption



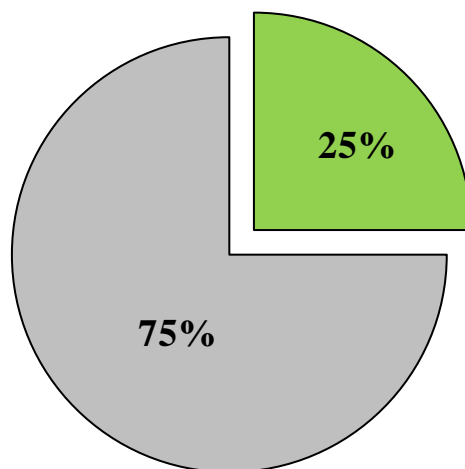
■ Non-structural panels:
New Housing

■ Other markets



■ Structural panels:
New housing

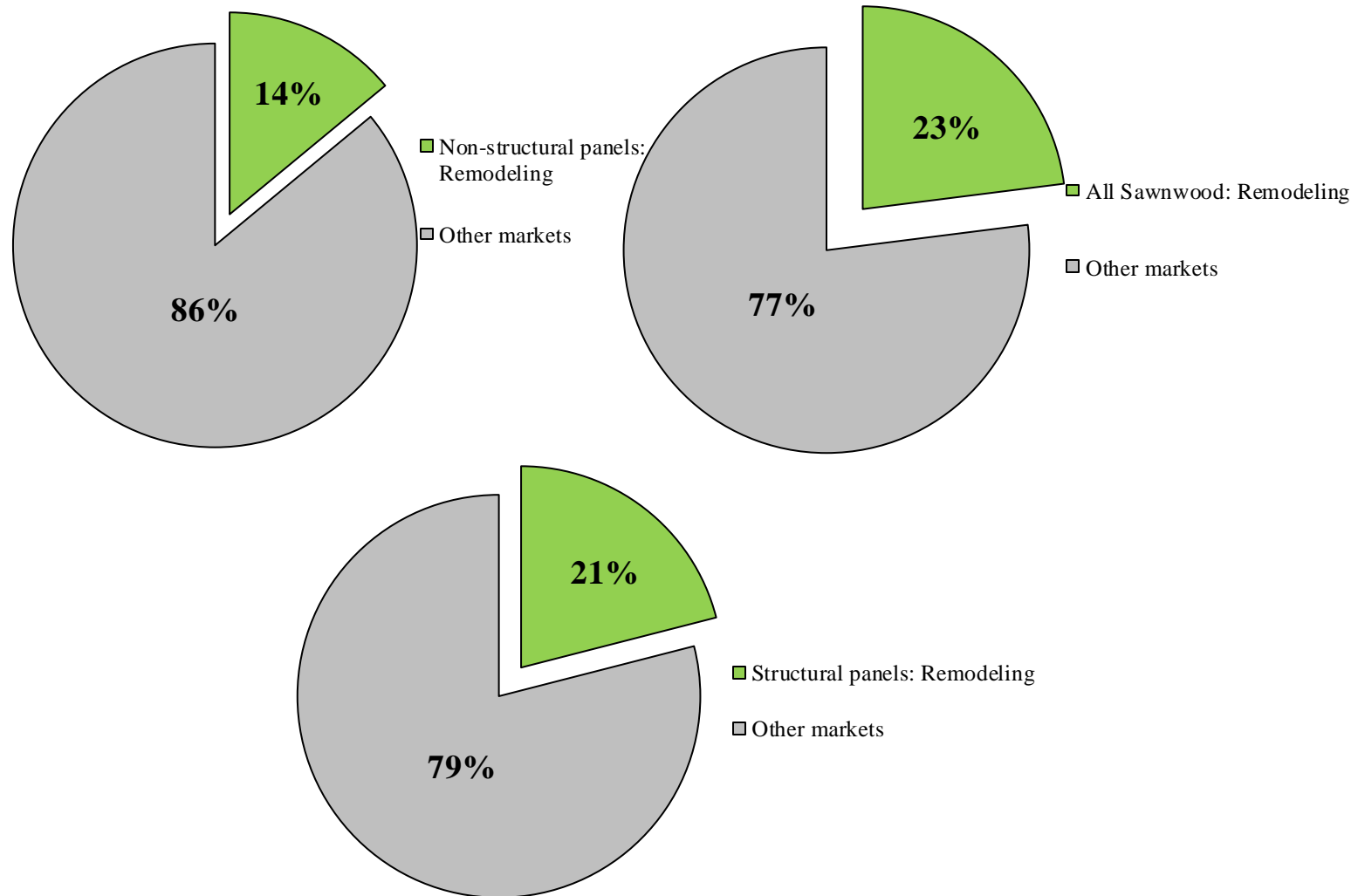
■ Other markets



■ All Sawnwood: New housing

■ Other markets

Repair and Remodeling's Percentage of Wood Products Consumption



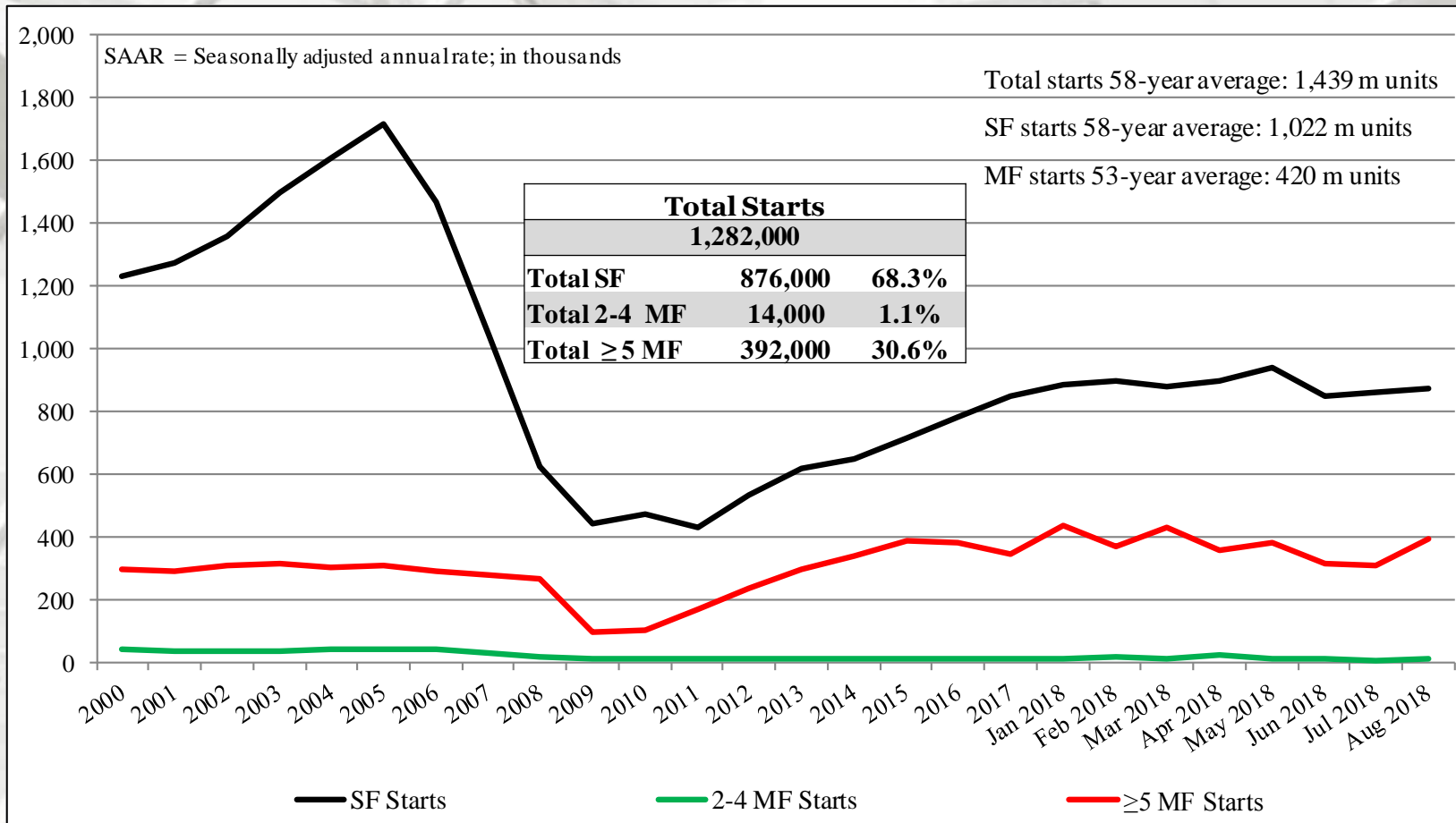
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
August	1,282,000	876,000	14,000	392,000
July	1,174,000	860,000	6,000	308,000
2017	1,172,000	878,000	8,000	286,000
M/M change	9.2	1.9	133.3	27.3
Y/Y change	9.4	-0.2	75.0	37.1

* 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)).

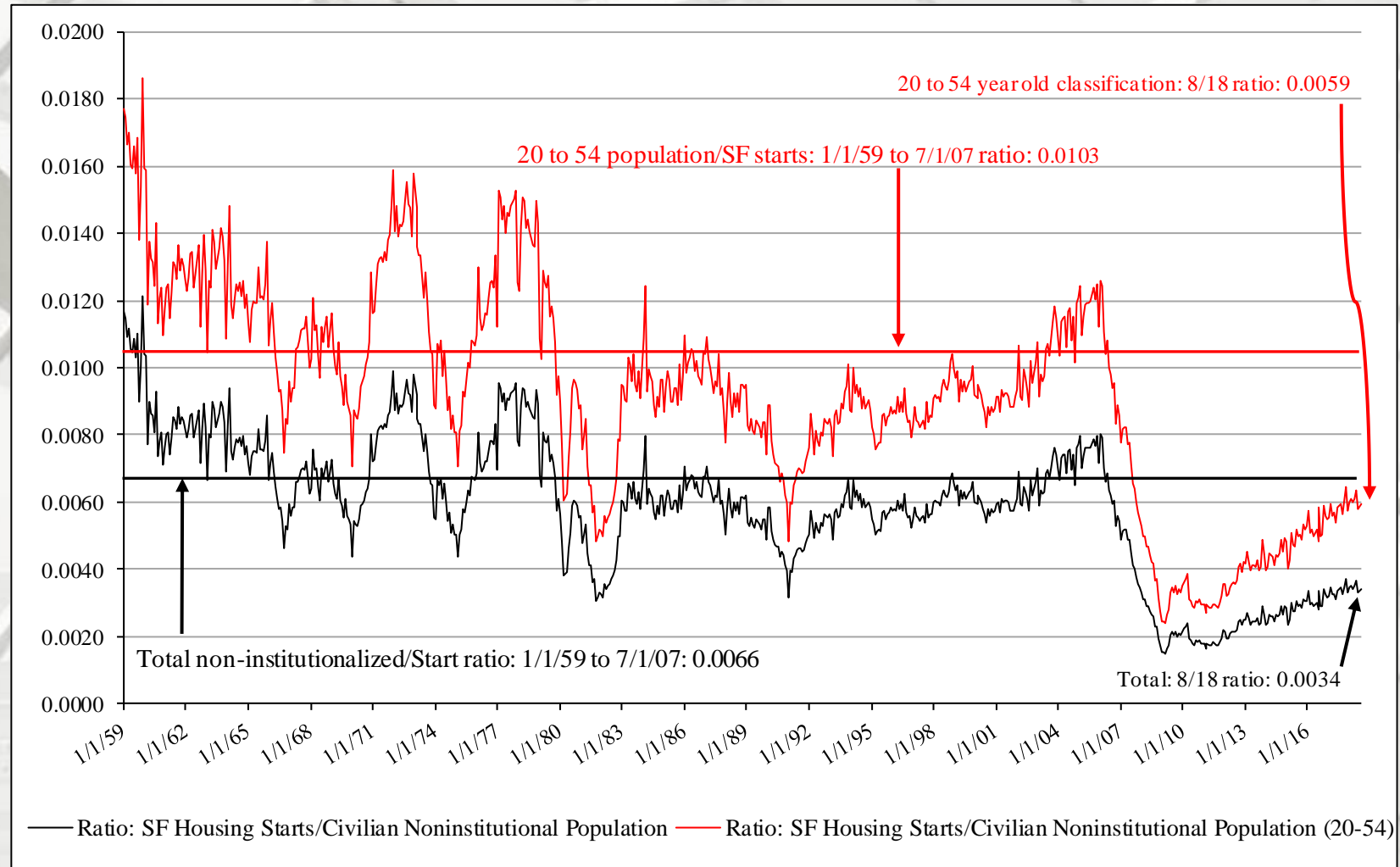
Total Housing Starts



US DOC does not report 2 to 4 multifamily starts directly, this is an estimation: $((\text{Total starts} - (\text{SF} + \text{Total MF})))$.

* Percentage of total starts.

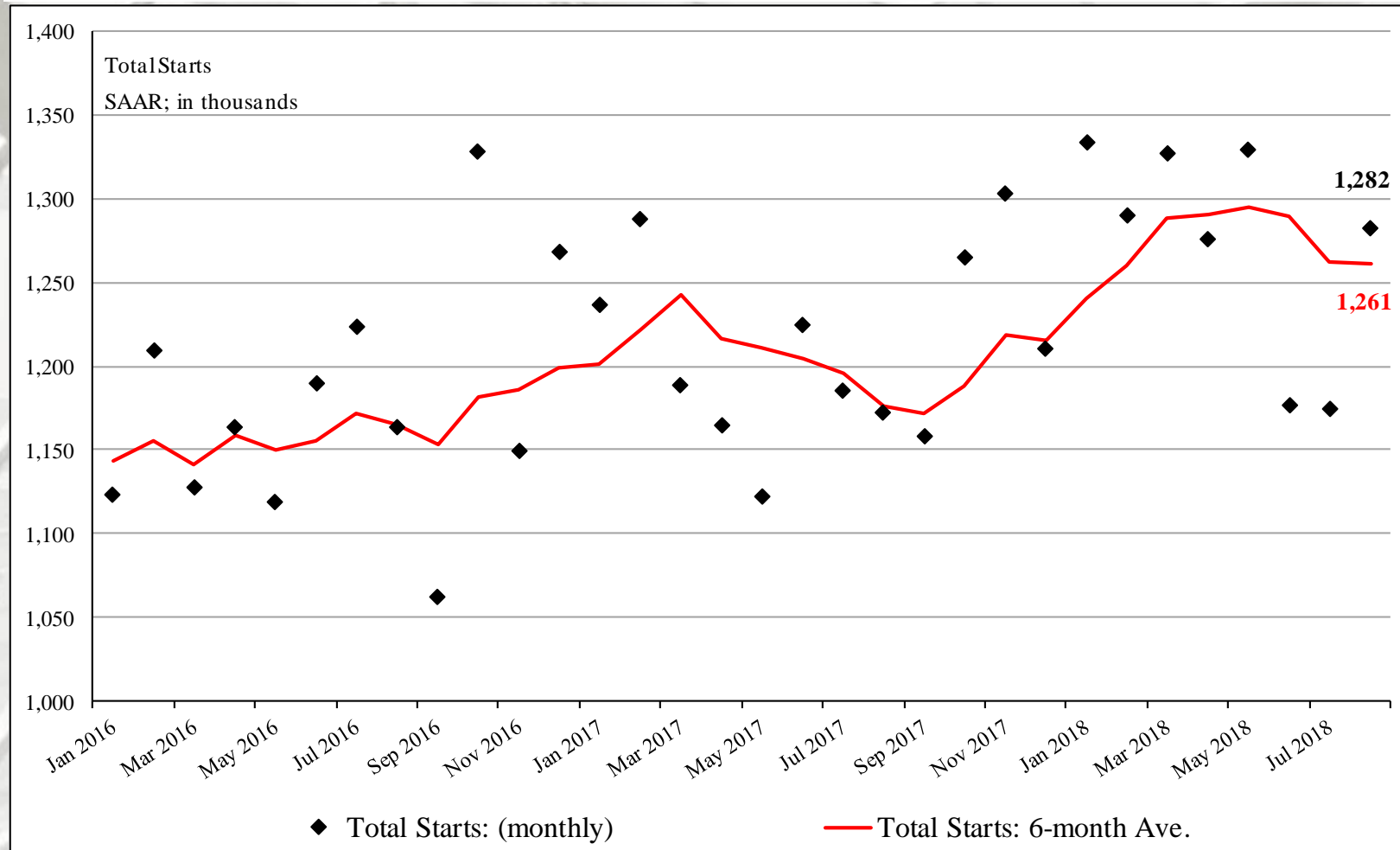
New SF Starts



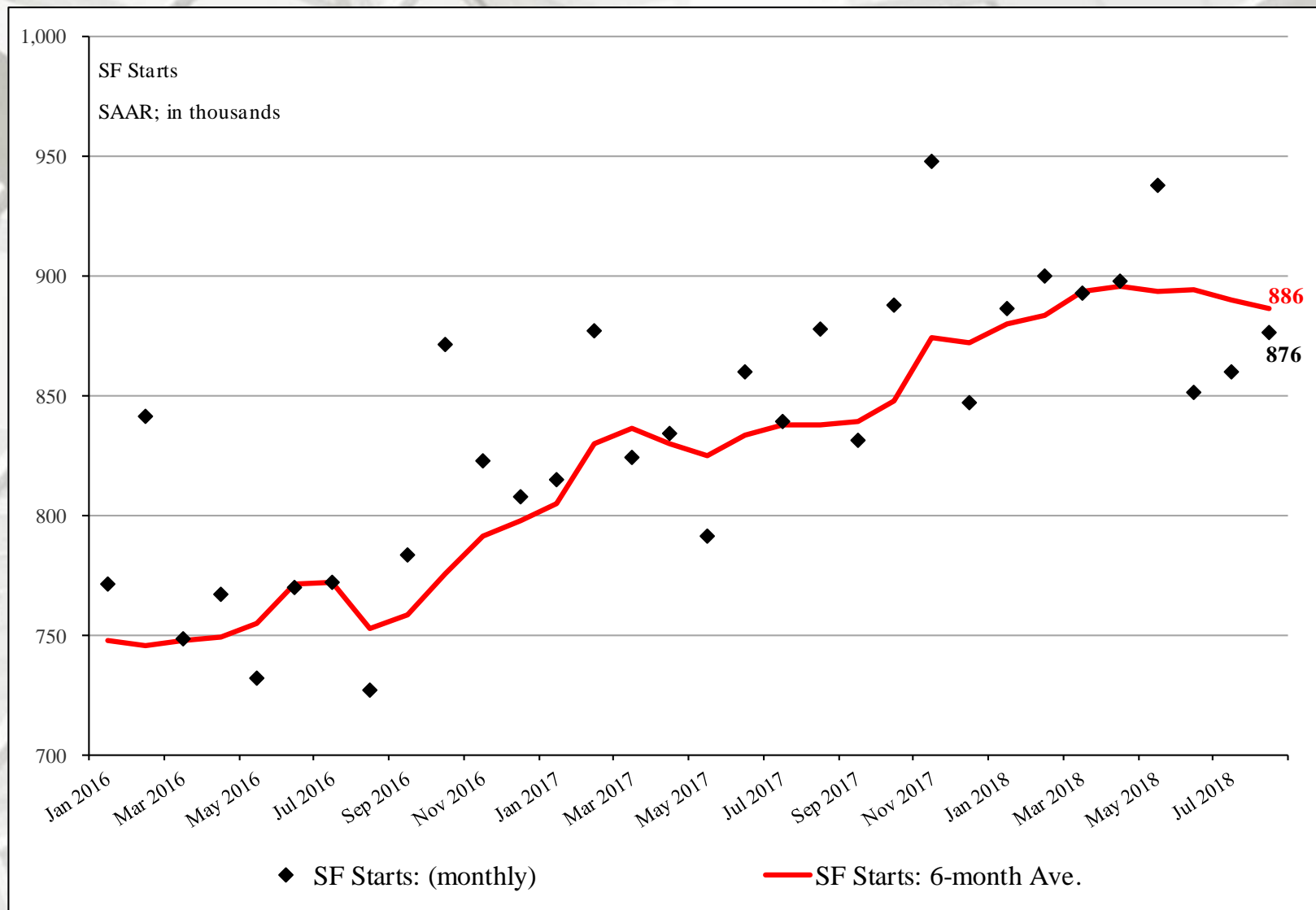
New SF starts adjusted for the US population

From August 1959 to August 2007, the long-term ratio of new SF starts to the total US non-institutionalized population was 0.0066; in August 2018 it was 0.0034 – a minimal increase from July (0.0033). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in August 2018 was 0.0059 – also a minimal increase from July (0.0058). From a population worldview, new SF construction is less than what is necessary for changes in population (i.e., under-building).

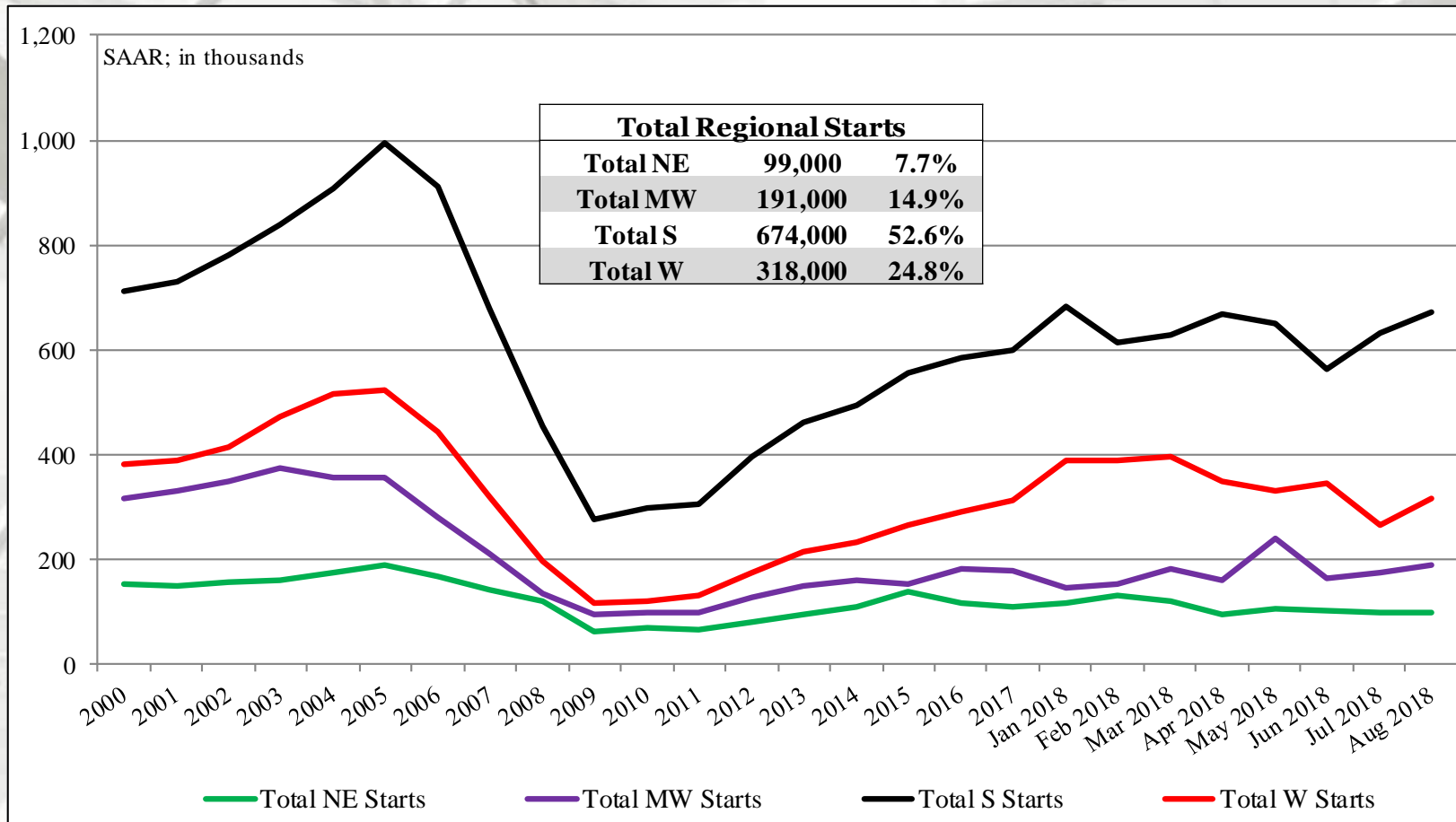
Total Housing Starts: Six-Month Average



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 completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total starts.

New Housing Starts by Region

	NE Total	NE SF	NE MF**
August	99,000	60,000	39,000
July	99,000	67,000	32,000
2017	107,000	68,000	39,000
M/M change	0.0	-10.4	21.9
Y/Y change	-7.5	-11.8	0.0
	MW Total	MW SF	MW MF
August	191,000	117,000	74,000
July	175,000	136,000	39,000
2017	170,000	117,000	53,000
M/M change	9.1	-14.0	89.7
Y/Y change	12.4	0.0	39.6

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).

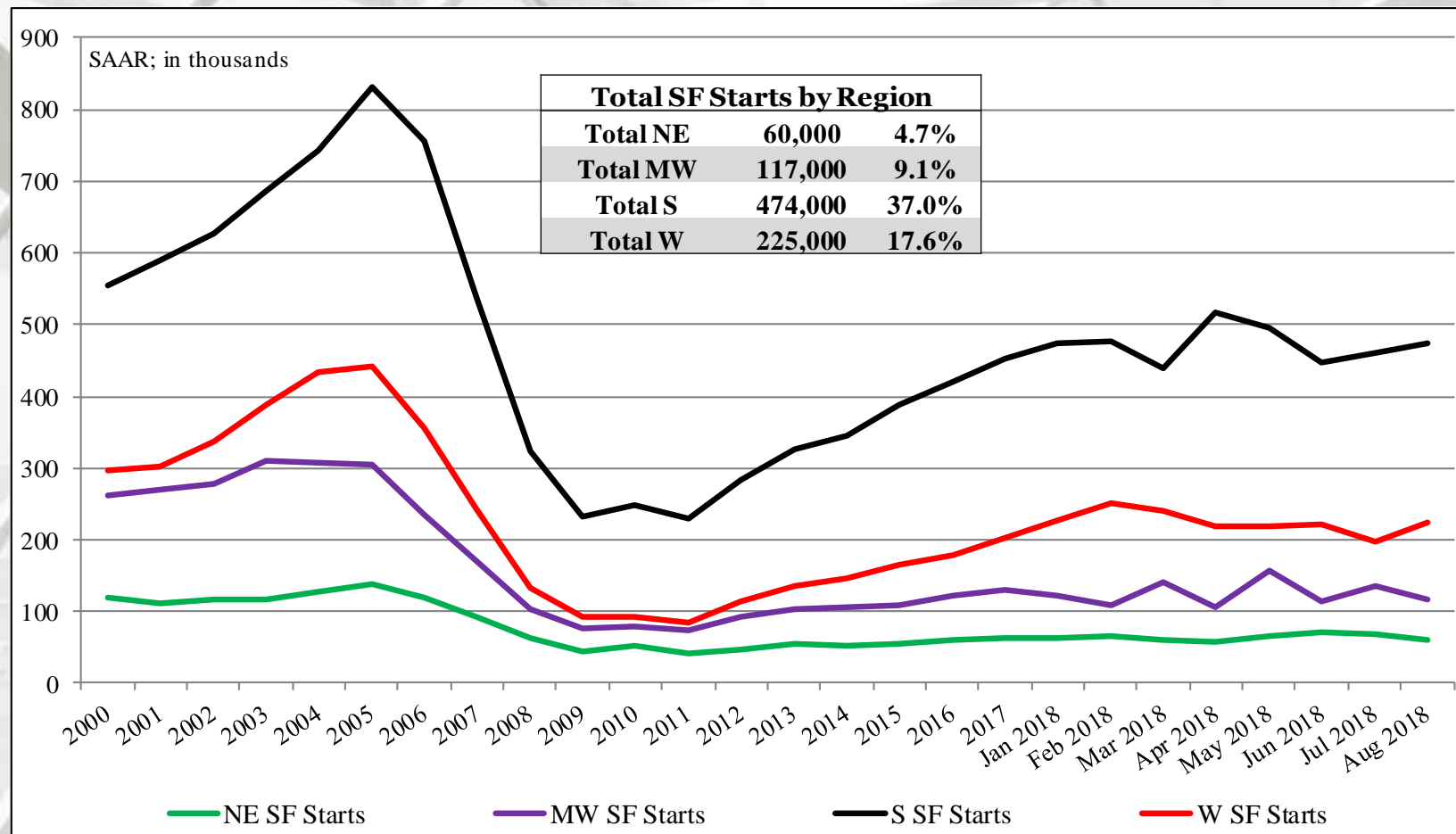
New Housing Starts by Region

	S Total	S SF	S MF**
August	674,000	474,000	200,000
July	633,000	460,000	173,000
2017	586,000	482,000	104,000
M/M change	6.5	3.0	15.6
Y/Y change	15.0	-1.7	92.3
	W Total	W SF	W MF
August	318,000	225,000	93,000
July	267,000	197,000	70,000
2017	309,000	211,000	98,000
M/M change	19.1	14.2	32.9
Y/Y change	2.9	6.6	-5.1

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

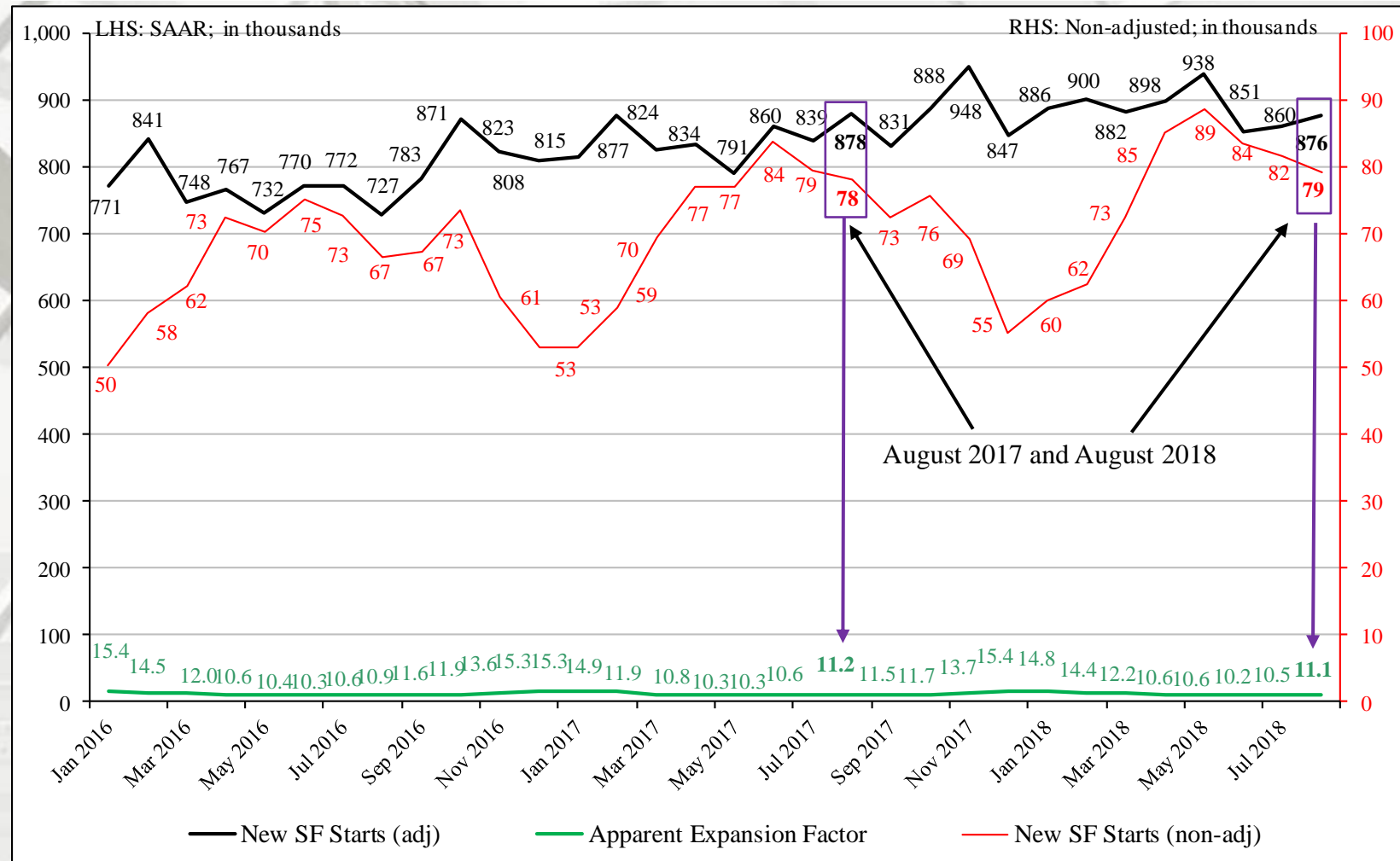


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total starts.

Nominal & SAAR SF Starts

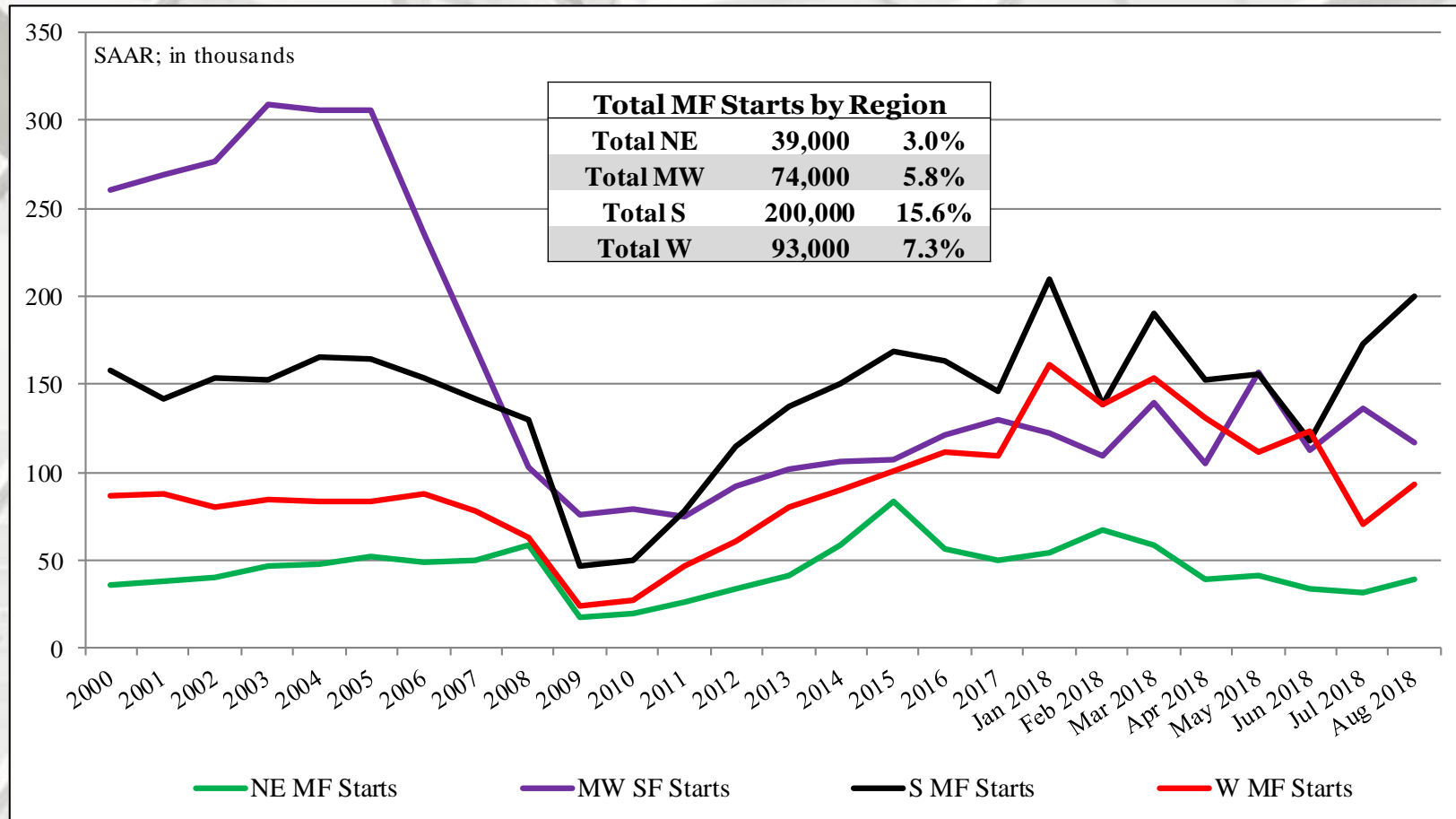


Nominal and Adjusted New SF Monthly Starts

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

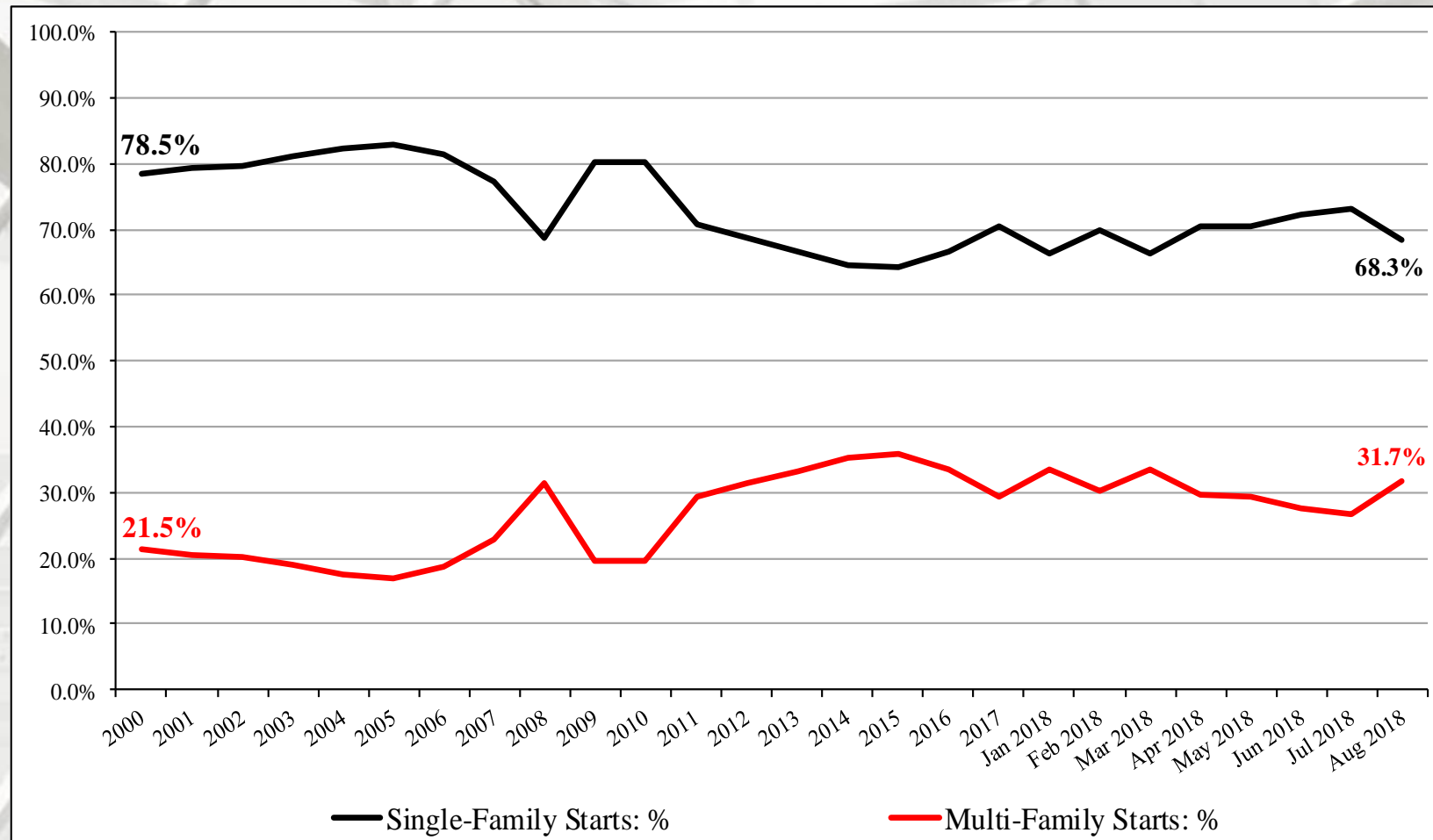


NE = Northeast, MW = Midwest, S = South, W = West

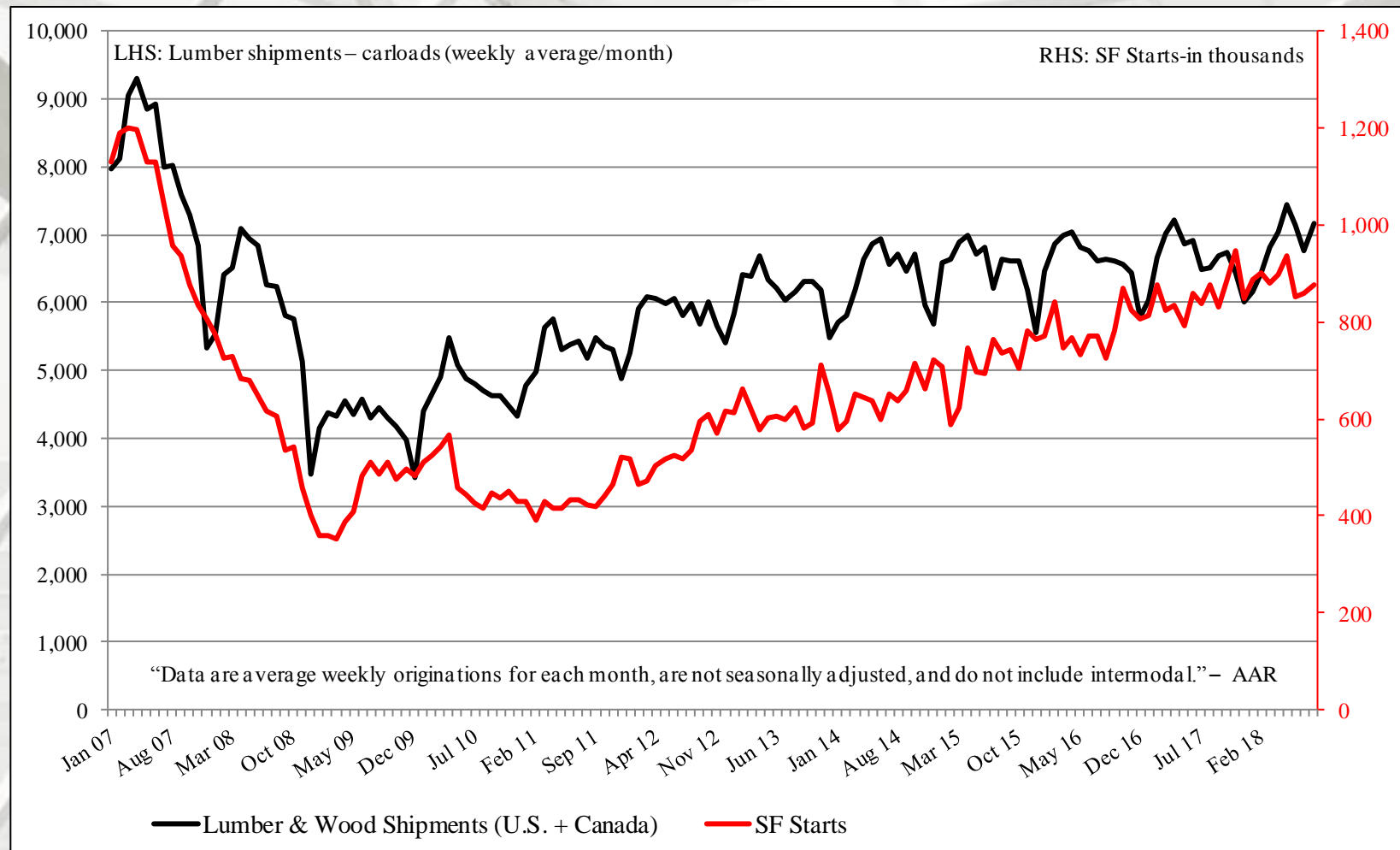
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total starts.

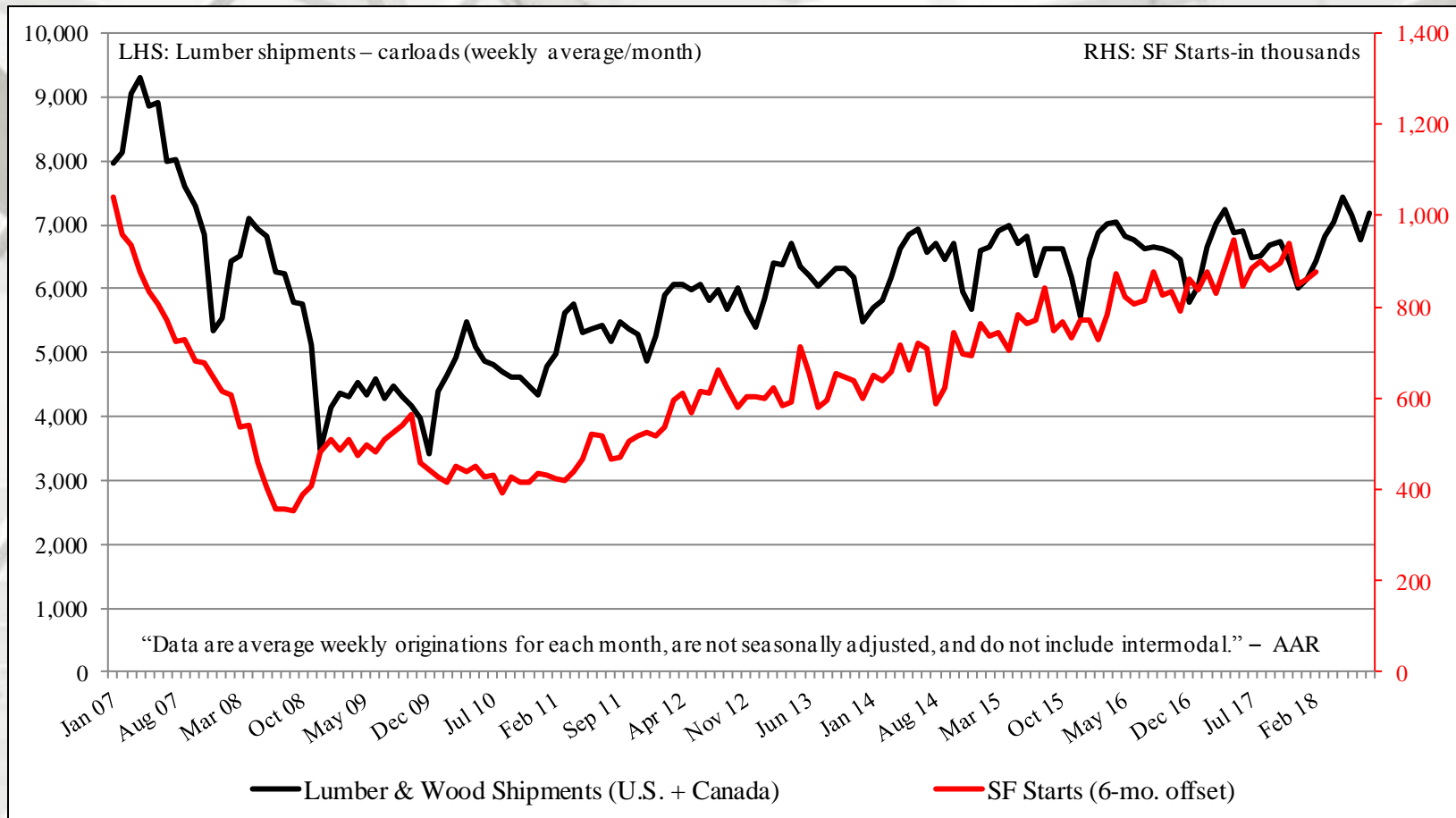
SF & MF Housing Starts (%)



Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts



Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts: 6-month Offset



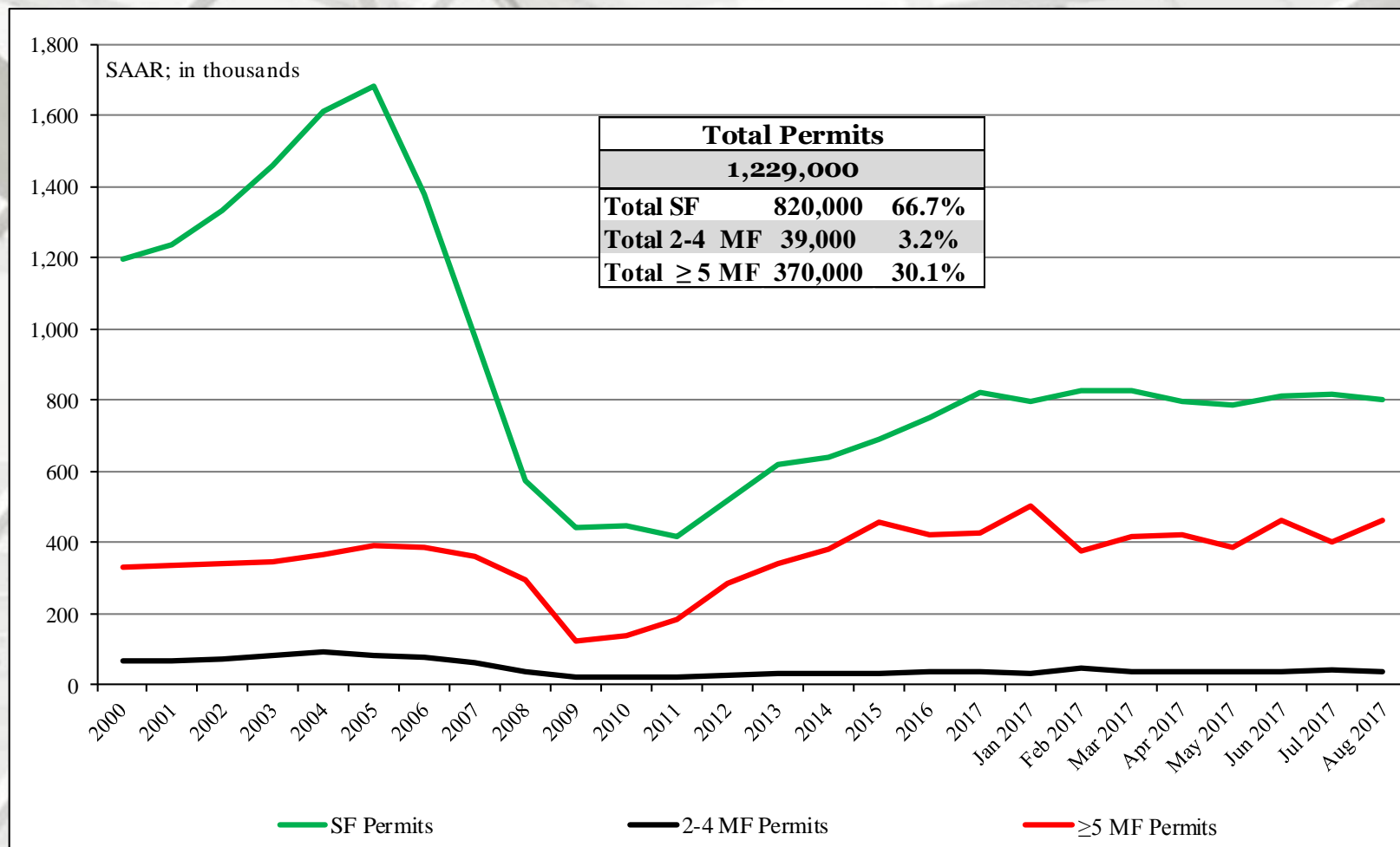
In this graph, January 2007 lumber shipments are contrasted with August 2007 SF starts, and continuing through August 2018 SF starts. The purpose is to discover if lumber shipments relate to future single-family starts. Also, it is realized that lumber and wood products are trucked; however, to our knowledge comprehensive trucking data is not available.

New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
August	1,229,000	820,000	39,000	370,000
July	1,303,000	873,000	28,000	402,000
2017	1,300,000	803,000	36,000	461,000
M/M change	-5.7	-6.1	39.3	-8.0
Y/Y change	-5.5	2.1	8.3	-19.7

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

Total New Housing Permits

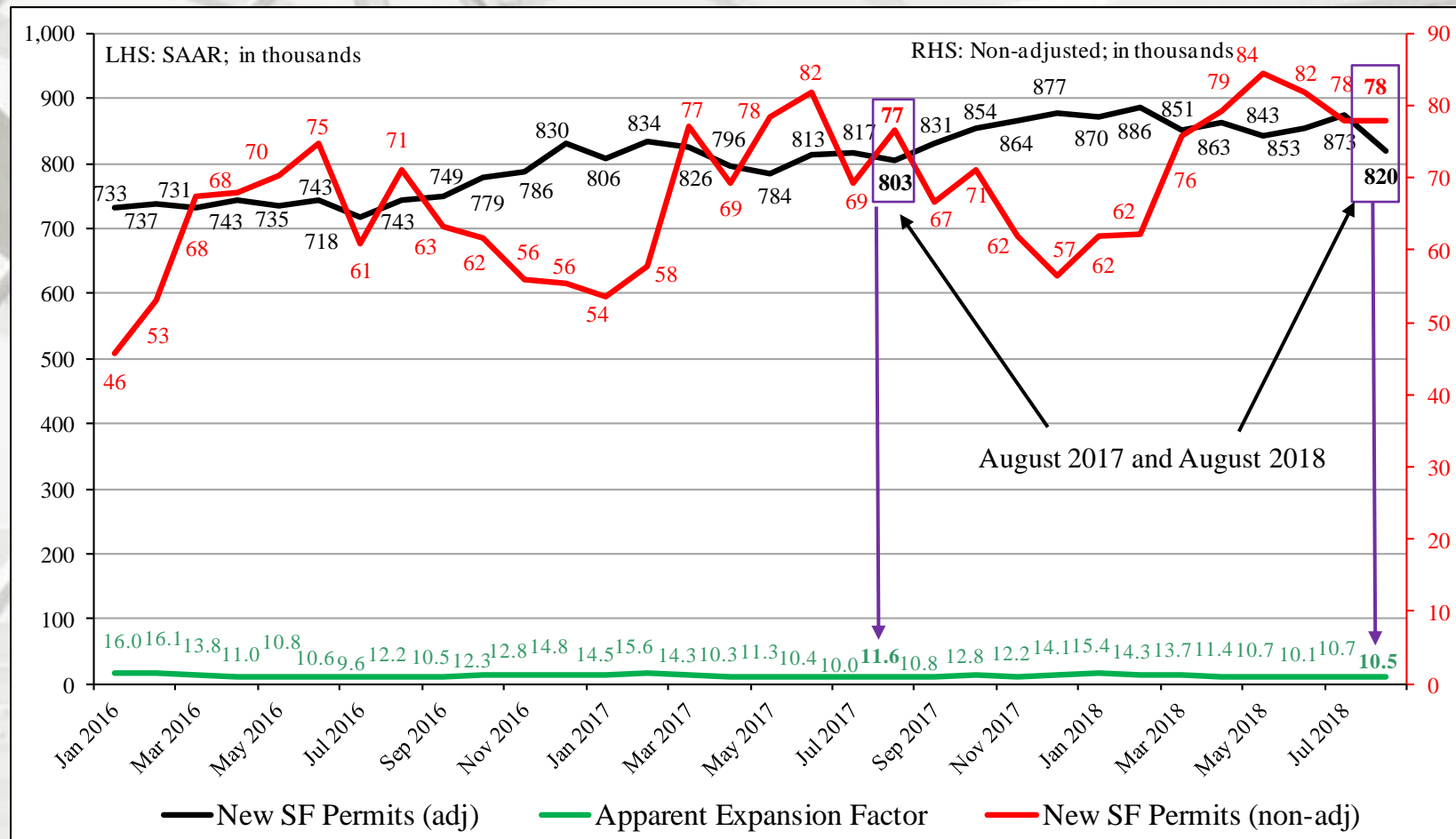


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total 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**
August	101,000	49,000	52,000
July	125,000	56,000	69,000
2017	109,000	56,000	53,000
M/M change	-19.2	-12.5	-24.6
Y/Y change	-7.3	-12.5	-1.9
	MW Total*	MW SF	MW MF**
August	178,000	116,000	62,000
July	181,000	118,000	63,000
2017	189,000	114,000	75,000
M/M change	-1.7	-1.7	-1.6
Y/Y change	-5.8	1.8	-17.3

* All data are SAAR

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

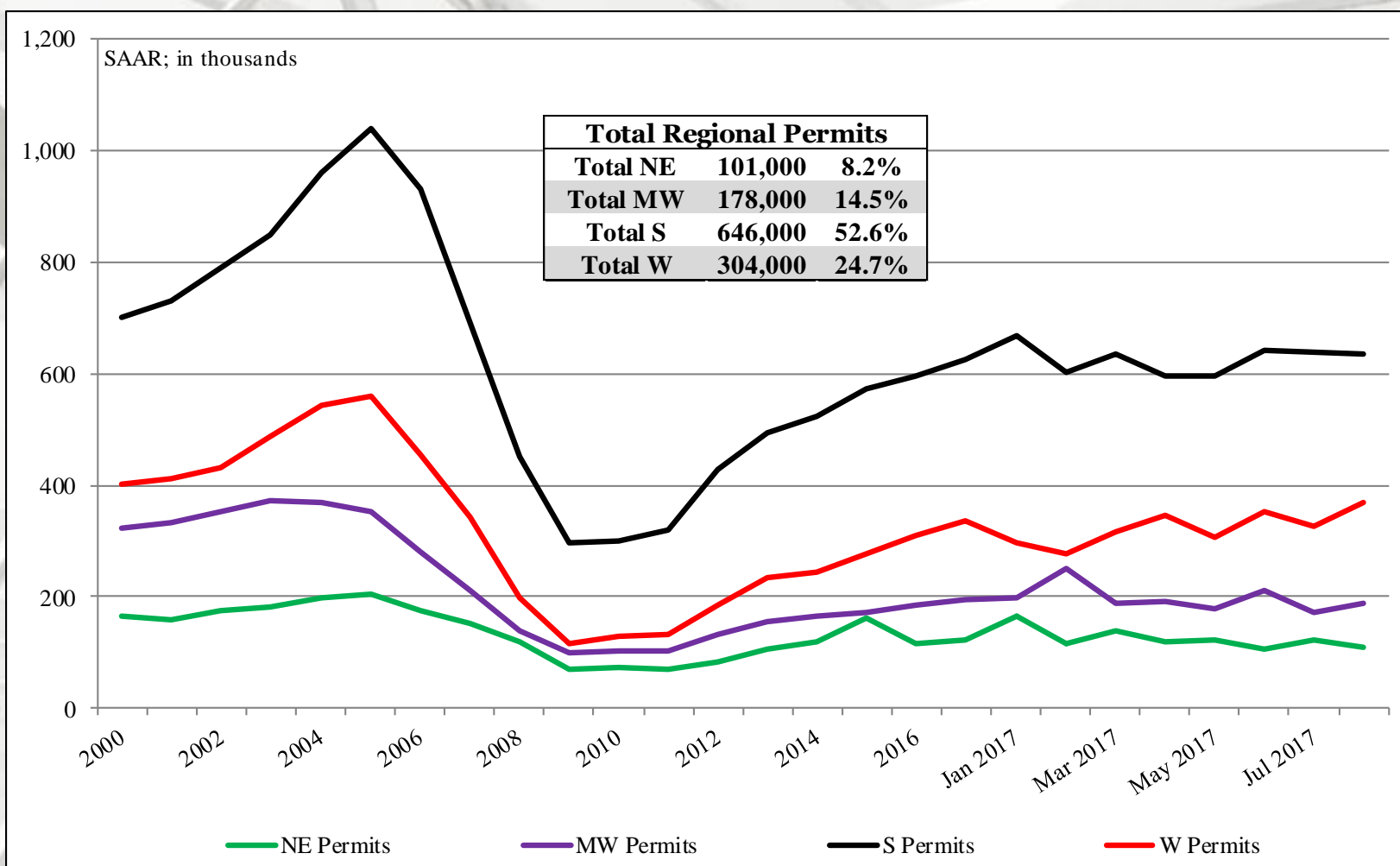
New Housing Permits by Region

	S Total*	S SF	S MF**
August	646,000	448,000	198,000
July	665,000	483,000	182,000
2017	634,000	432,000	202,000
M/M change	-2.9	-7.2	8.8
Y/Y change	1.9	3.7	-2.0
	W Total*	W SF	W MF**
August	304,000	207,000	97,000
July	332,000	216,000	116,000
2017	368,000	201,000	167,000
M/M change	-8.4	-4.2	-16.4
Y/Y change	-17.4	3.0	-41.9

All data are SAAR

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

Total Housing Permits by Region

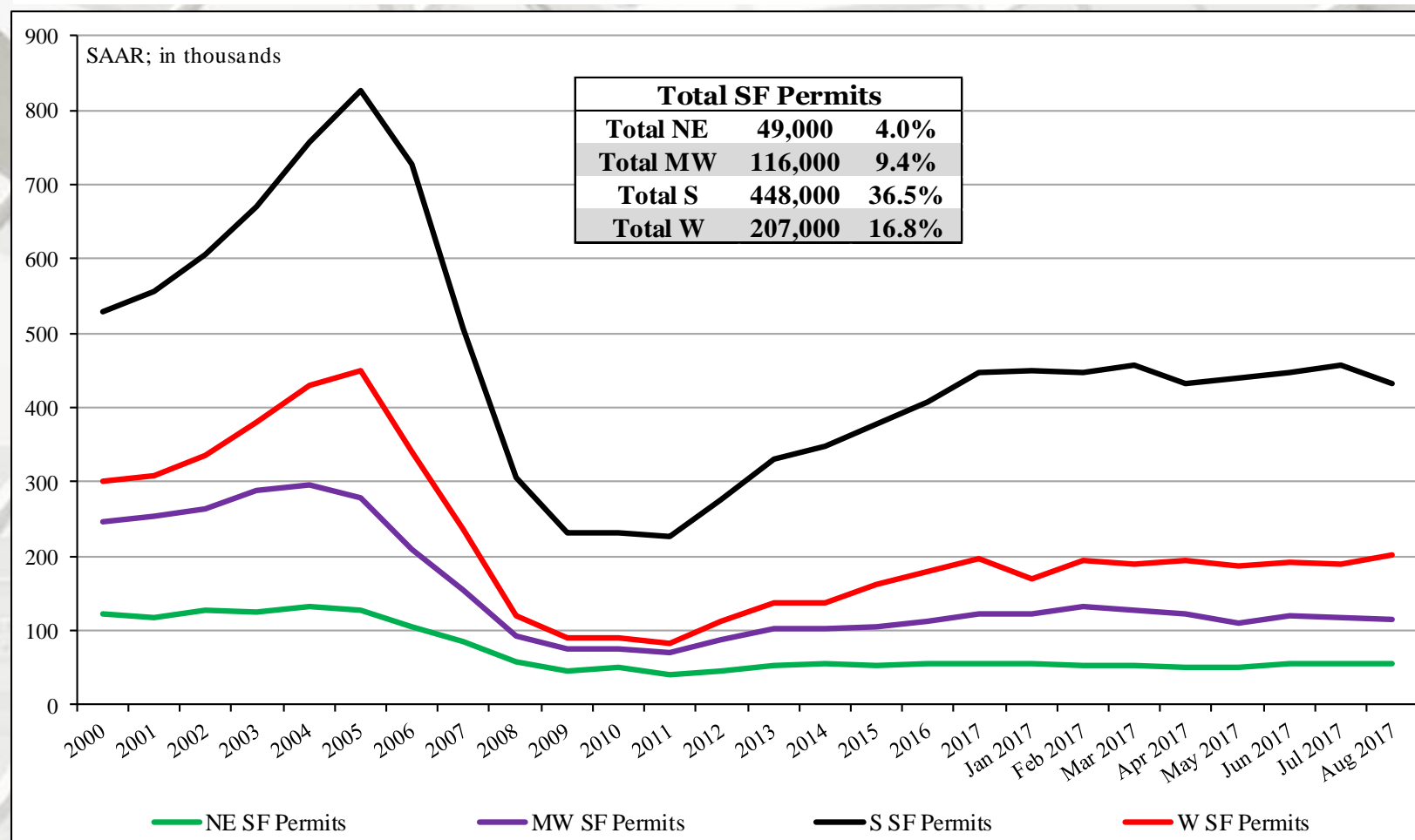


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total permits.

SF Housing Permits by Region

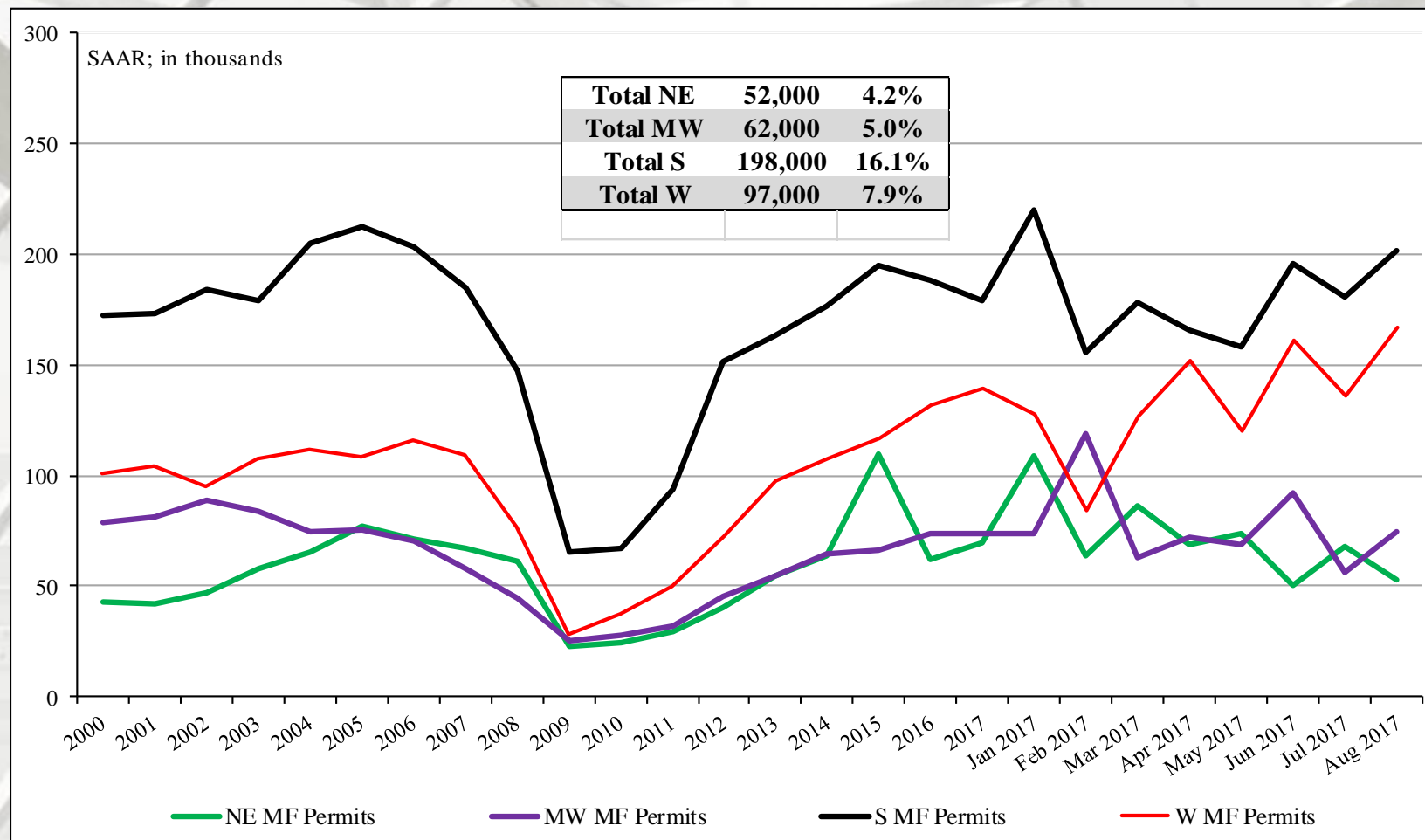


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* Percentage of total permits.

MF Housing Permits by Region

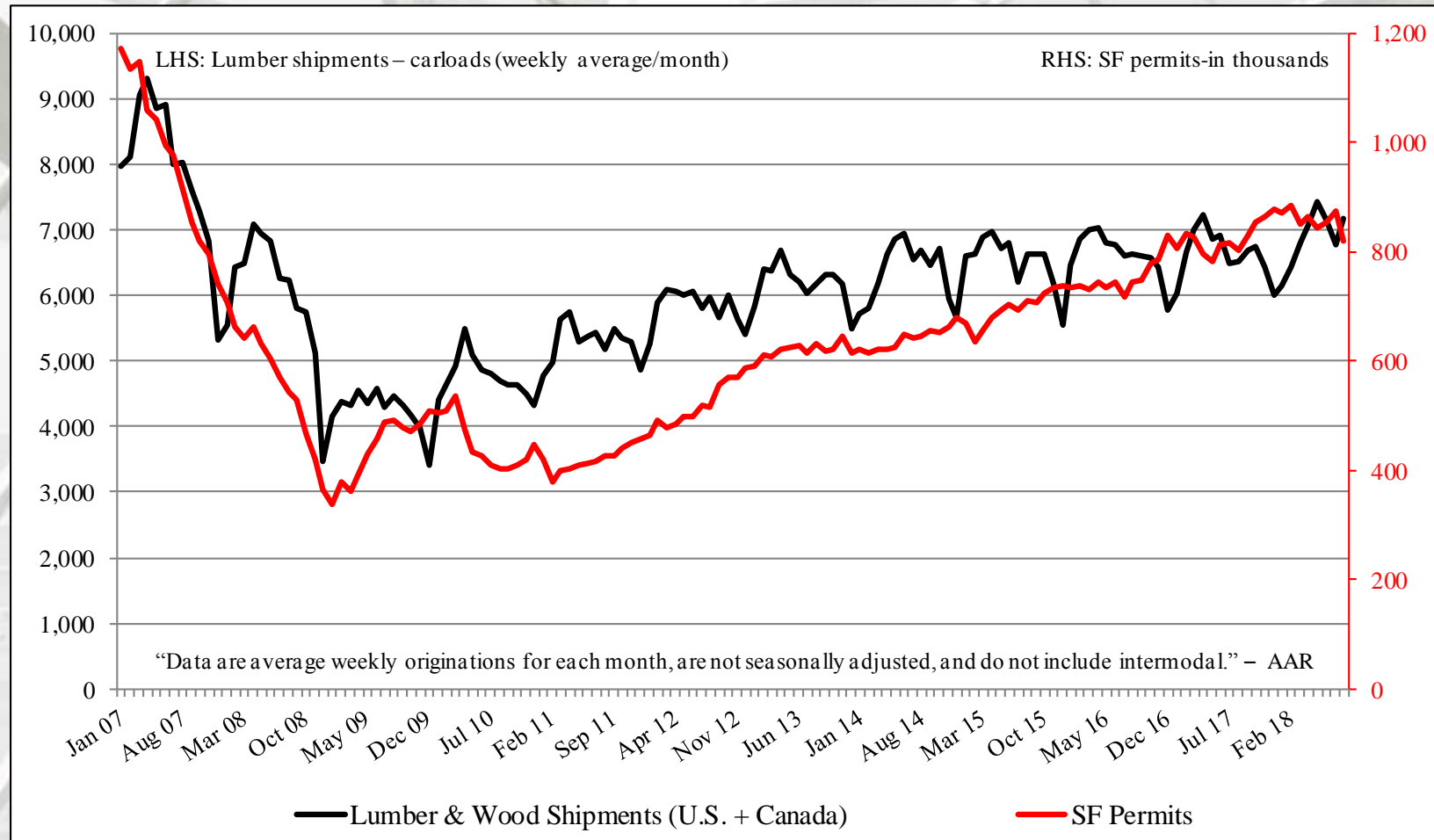


NE = Northeast, MW = Midwest, S = South, W = West

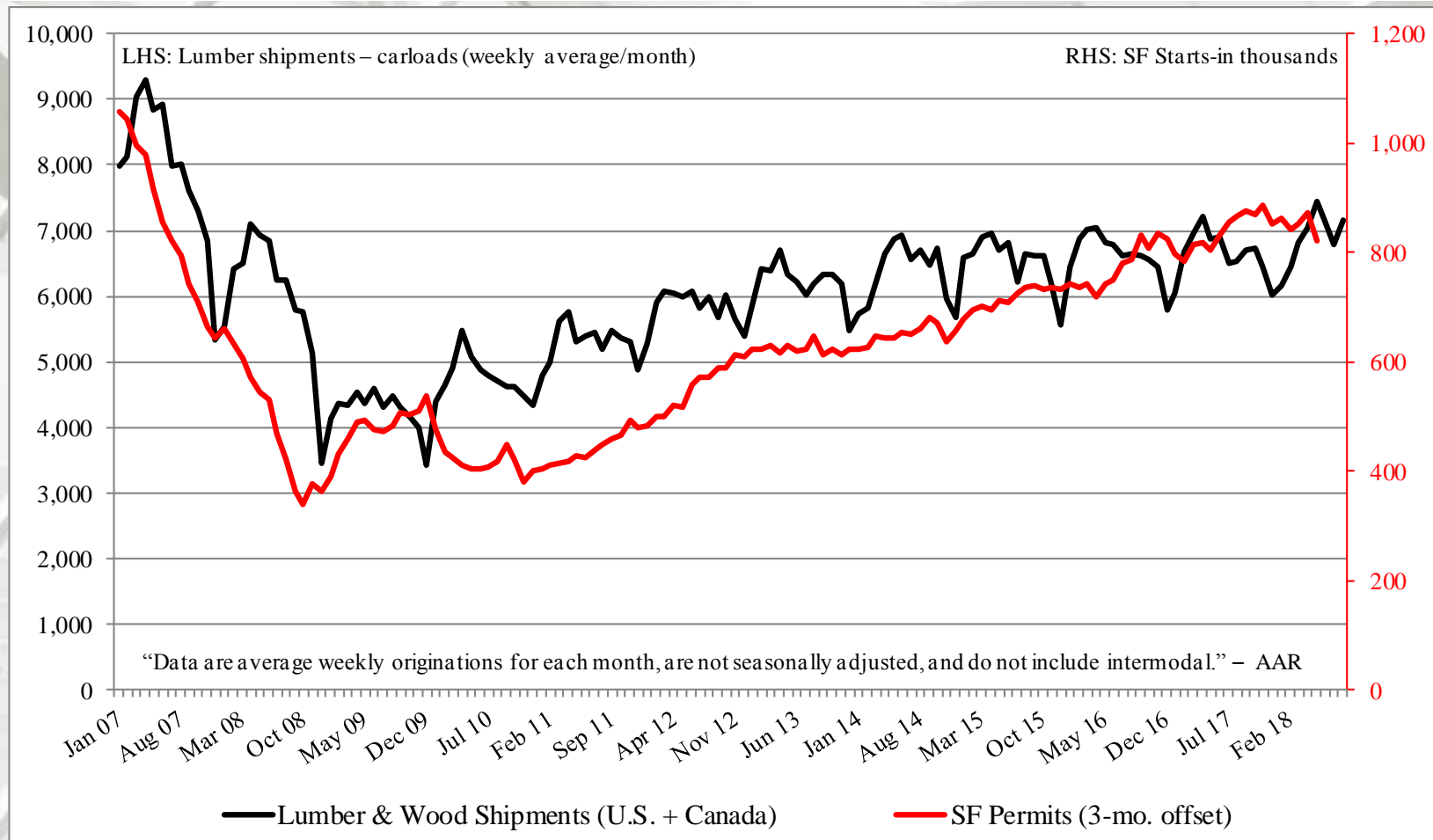
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total permits.

Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits



Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits: 3-month Offset



In this graph, January 2007 lumber shipments are contrasted with August 2007 SF permits, continuing through August 2018. The purpose is to discover if lumber shipments relate to future single-family permits. Also, it is realized that lumber and wood products are trucked; however, to our knowledge comprehensive trucking data is not available.

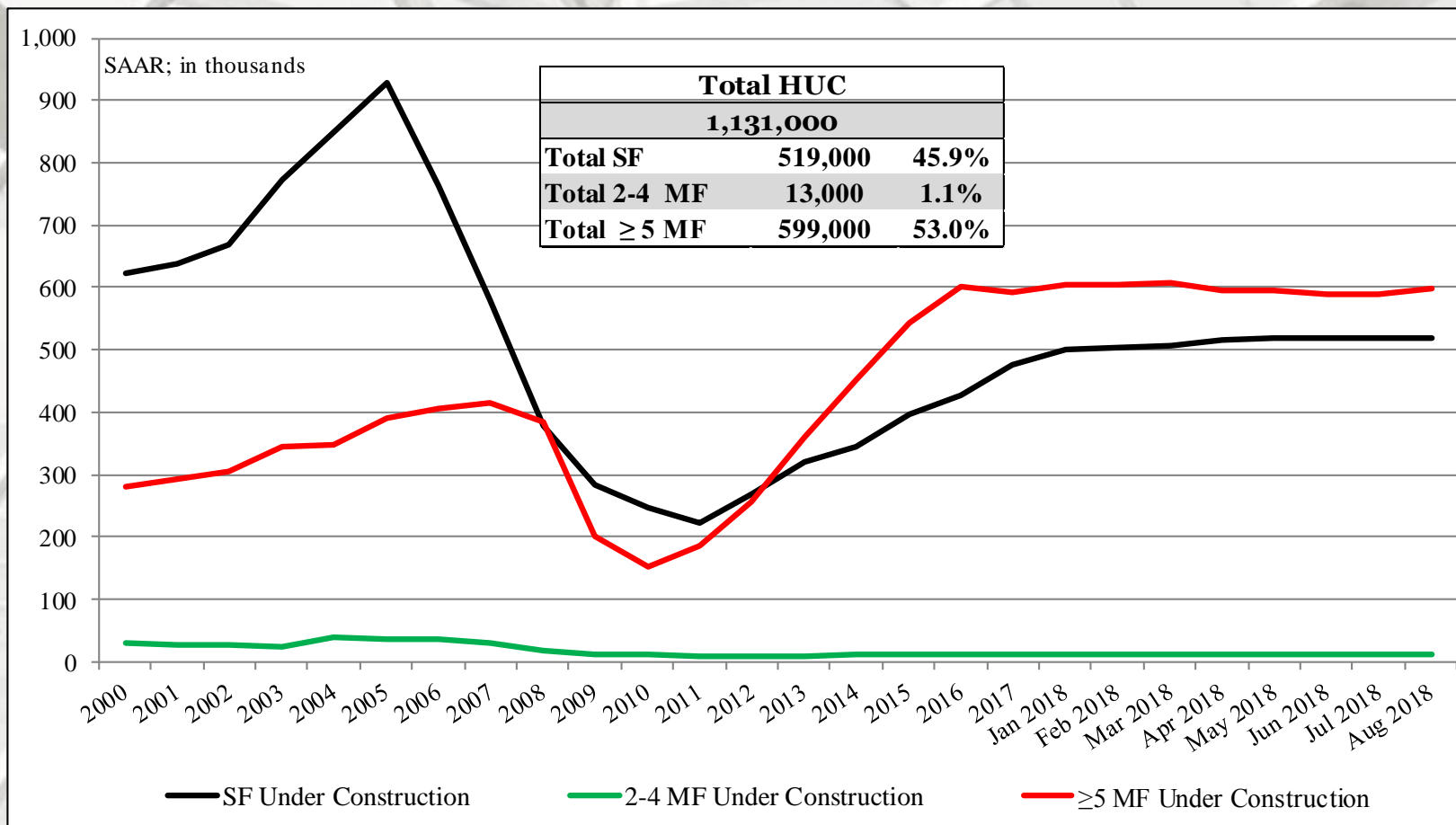
New Housing Under Construction (HUC)

	Total Under Construction*	SF Under Construction	Under Construction	MF ≥ 5 unit Under Construction
August	1,131,000	519,000	13,000	599,000
July	1,122,000	520,000	12,000	590,000
2017	1,081,000	473,000	10,000	598,000
M/M change	0.8	-0.2	8.3	1.5
Y/Y change	4.6	9.7	30.0	0.2

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



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 under construction units.

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
August	188,000	59,000	129,000
July	187,000	58,000	129,000
2017	187,000	51,000	136,000
M/M change	0.5	1.7	0.0
Y/Y change	0.5	15.7	-5.1
	MW Total	MW SF	MW MF
August	153,000	82,000	71,000
July	152,000	83,000	69,000
2017	153,000	78,000	75,000
M/M change	0.7	-1.2	2.9
Y/Y change	0.0	5.1	-5.3

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).

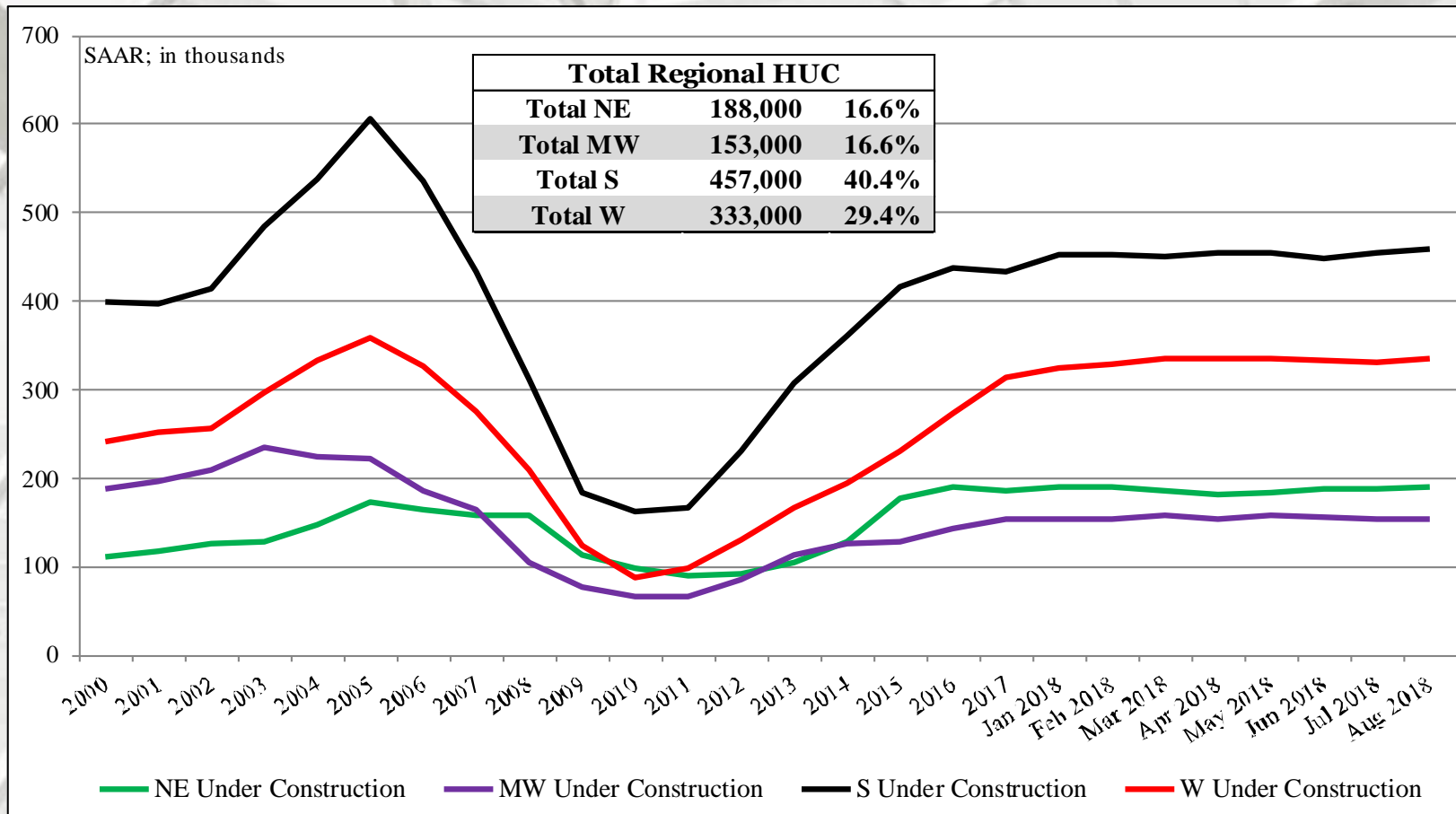
New Housing Under Construction by Region

	S Total	S SF	S MF**
August	457,000	239,000	218,000
July	454,000	242,000	212,000
2017	448,000	227,000	221,000
M/M change	0.7	-1.2	2.8
Y/Y change	2.0	5.3	-1.4
	W Total	W SF	W MF
August	333,000	139,000	194,000
July	329,000	137,000	192,000
2017	293,000	117,000	176,000
M/M change	1.2	1.5	1.0
Y/Y change	13.7	18.8	10.2

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

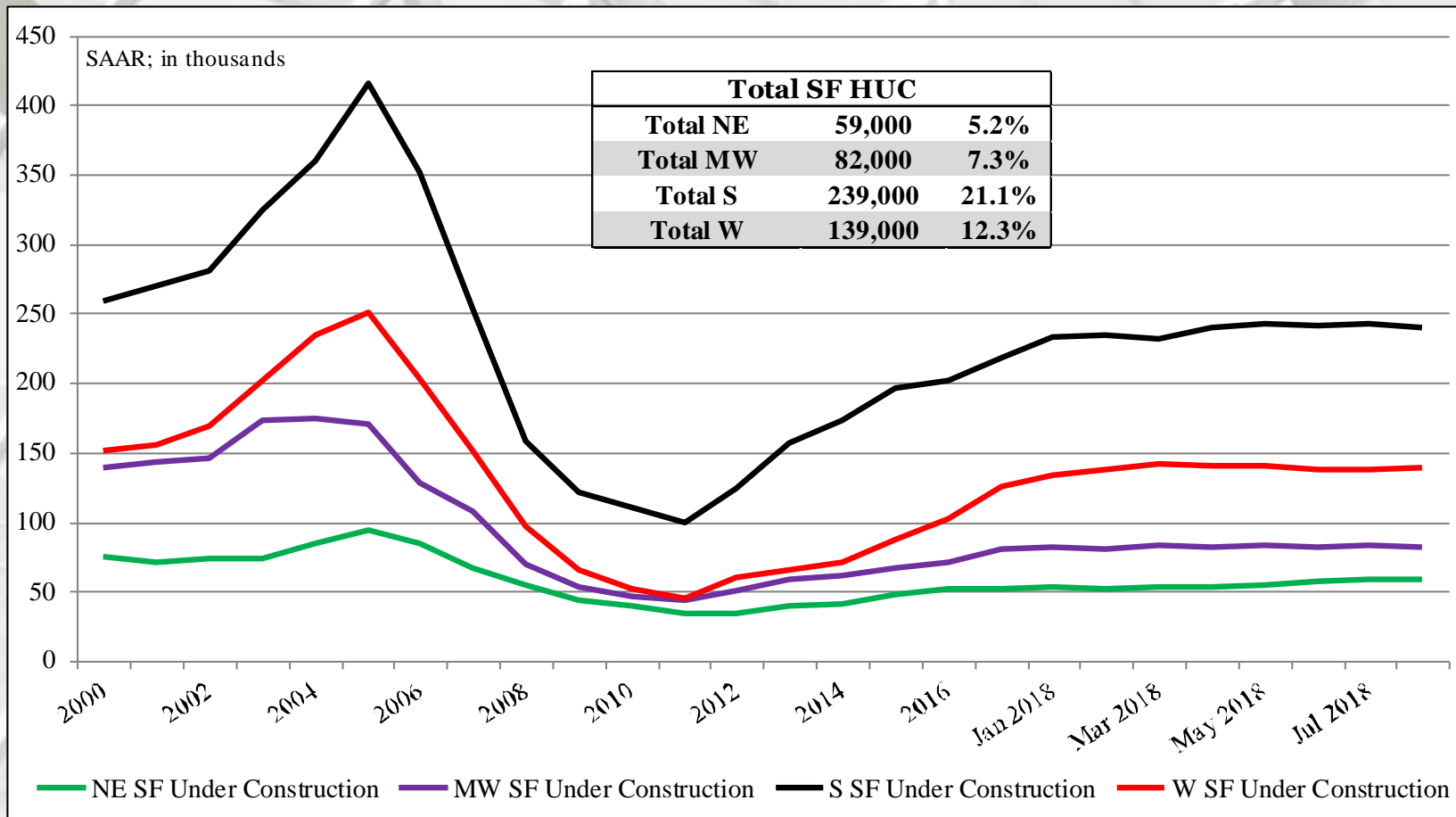


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing under construction units.

SF Housing Under Construction by Region

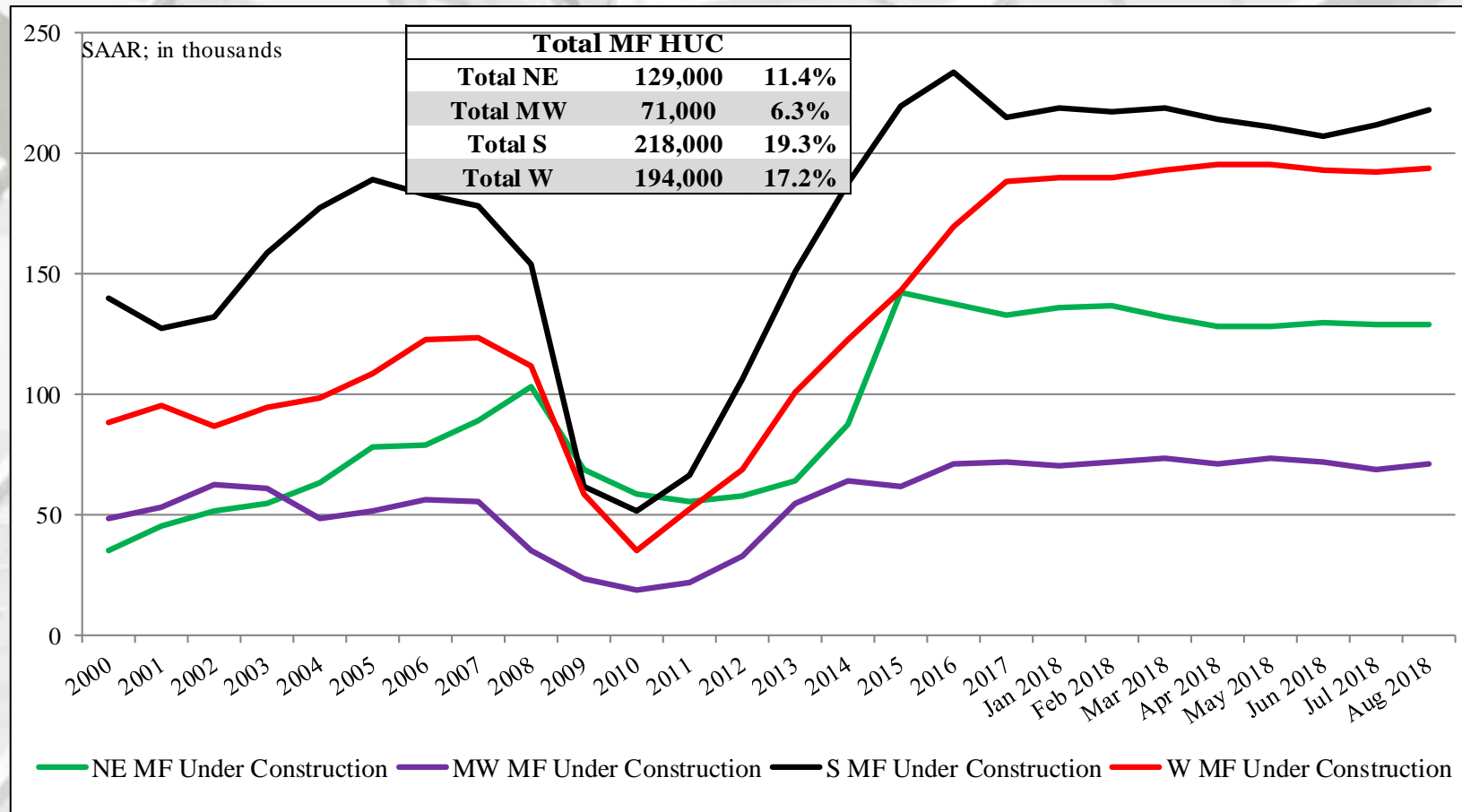


NE = Northeast, MW = Midwest, S = South, W = West

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

* 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 completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing under construction units.

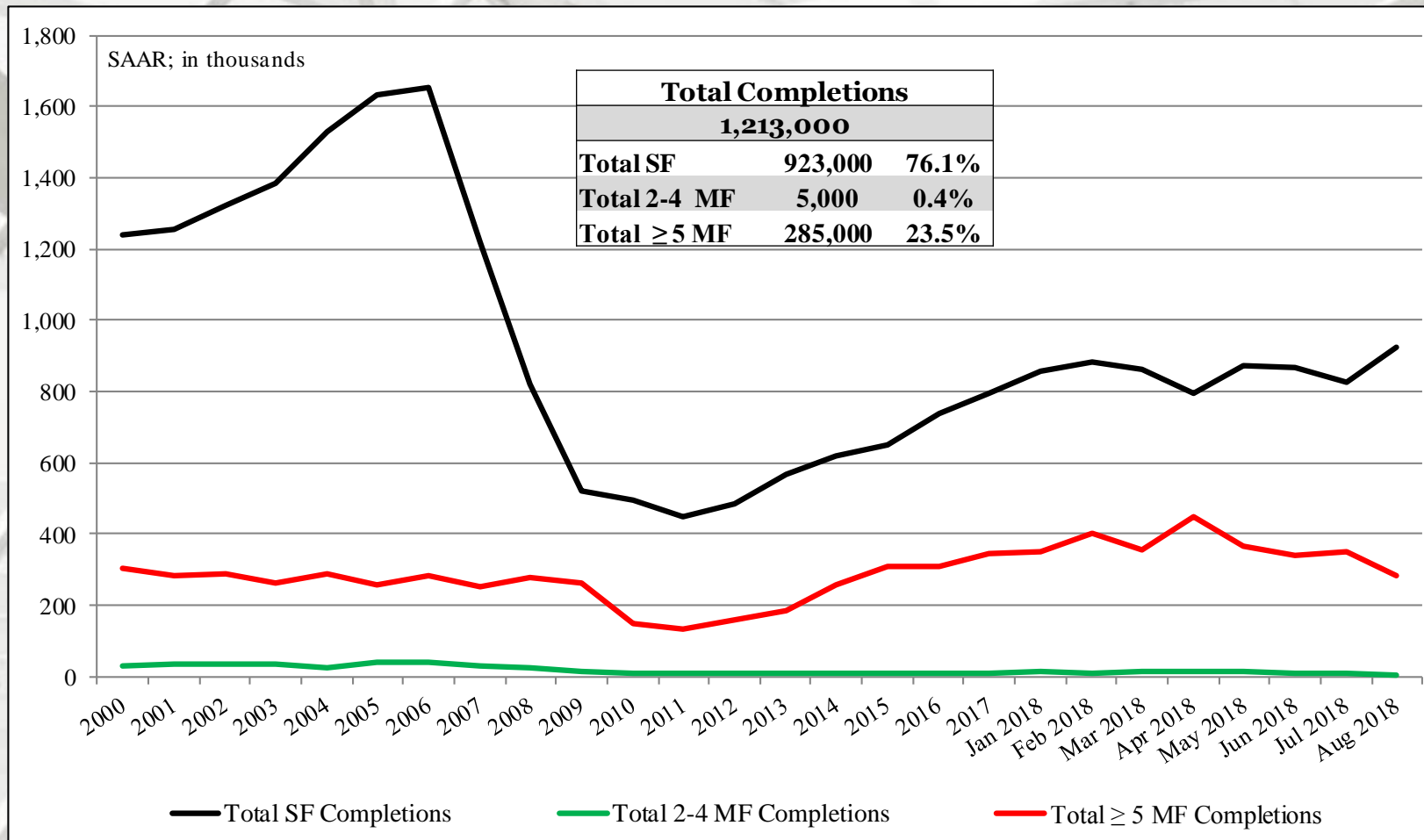
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
August	1,213,000	923,000	5,000	285,000
July	1,091,000	751,000	3,000	337,000
2017	1,213,000	923,000	5,000	285,000
M/M change	2.5%	11.6%	-16.7%	-18.6%
Y/Y change	11.2%	22.9%	66.7%	-15.4%

* 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)).

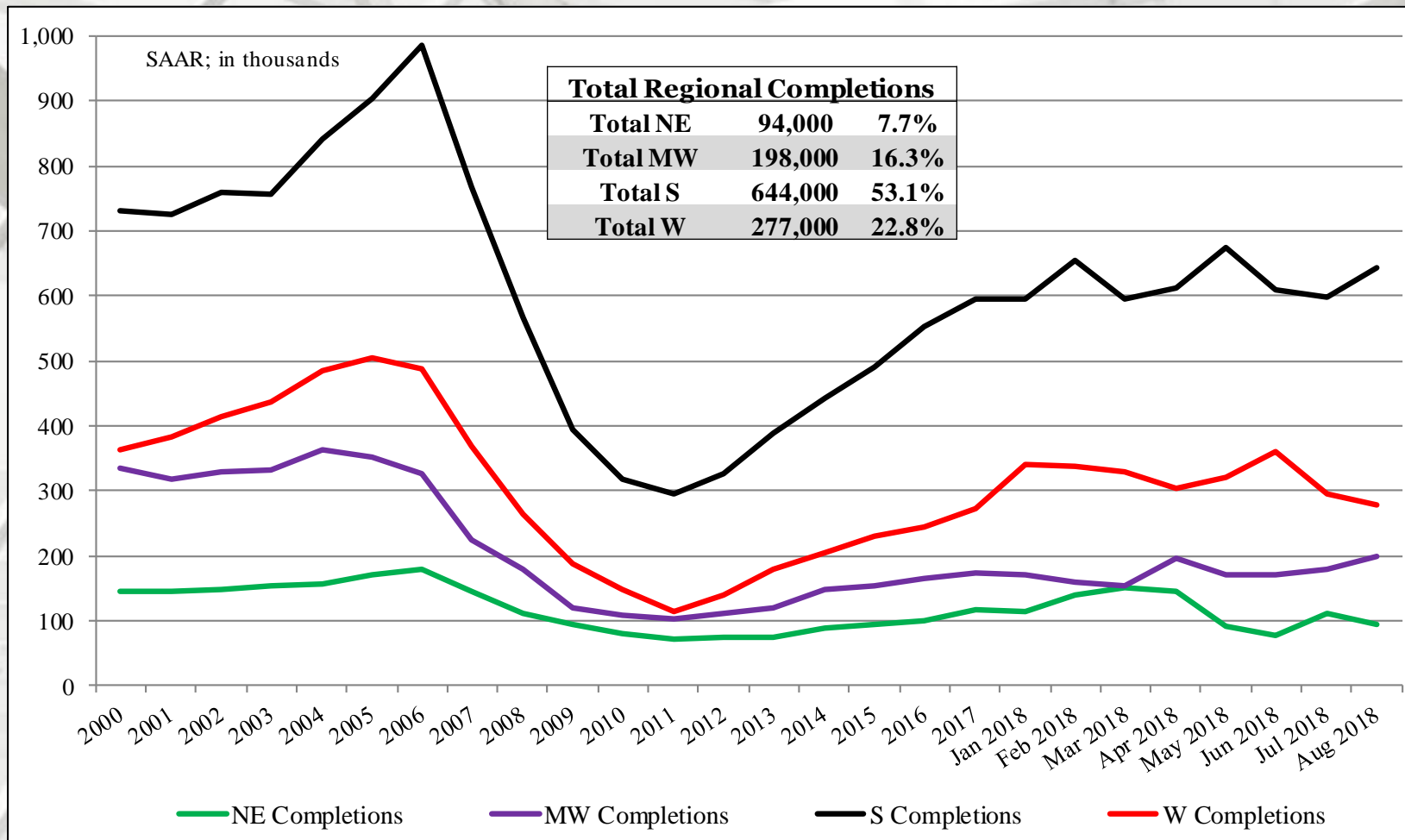
Total Housing Completions



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

* Percentage of total housing completions

Total Housing Completions by Region



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

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

* Percentage of total housing completions

New Housing Completions by Region

	NE Total	NE SF	NE MF**
August	94,000	50,000	44,000
July	133,000	56,000	77,000
2017	94,000	50,000	44,000
M/M change	-14.5%	2.0%	-27.9%
Y/Y change	-29.3%	-10.7%	-42.9%
	MW Total	MW SF	MW MF
August	198,000	144,000	54,000
July	177,000	125,000	52,000
2017	198,000	144,000	54,000
M/M change	10.0%	13.4%	1.9%
Y/Y change	11.9%	15.2%	3.8%

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).

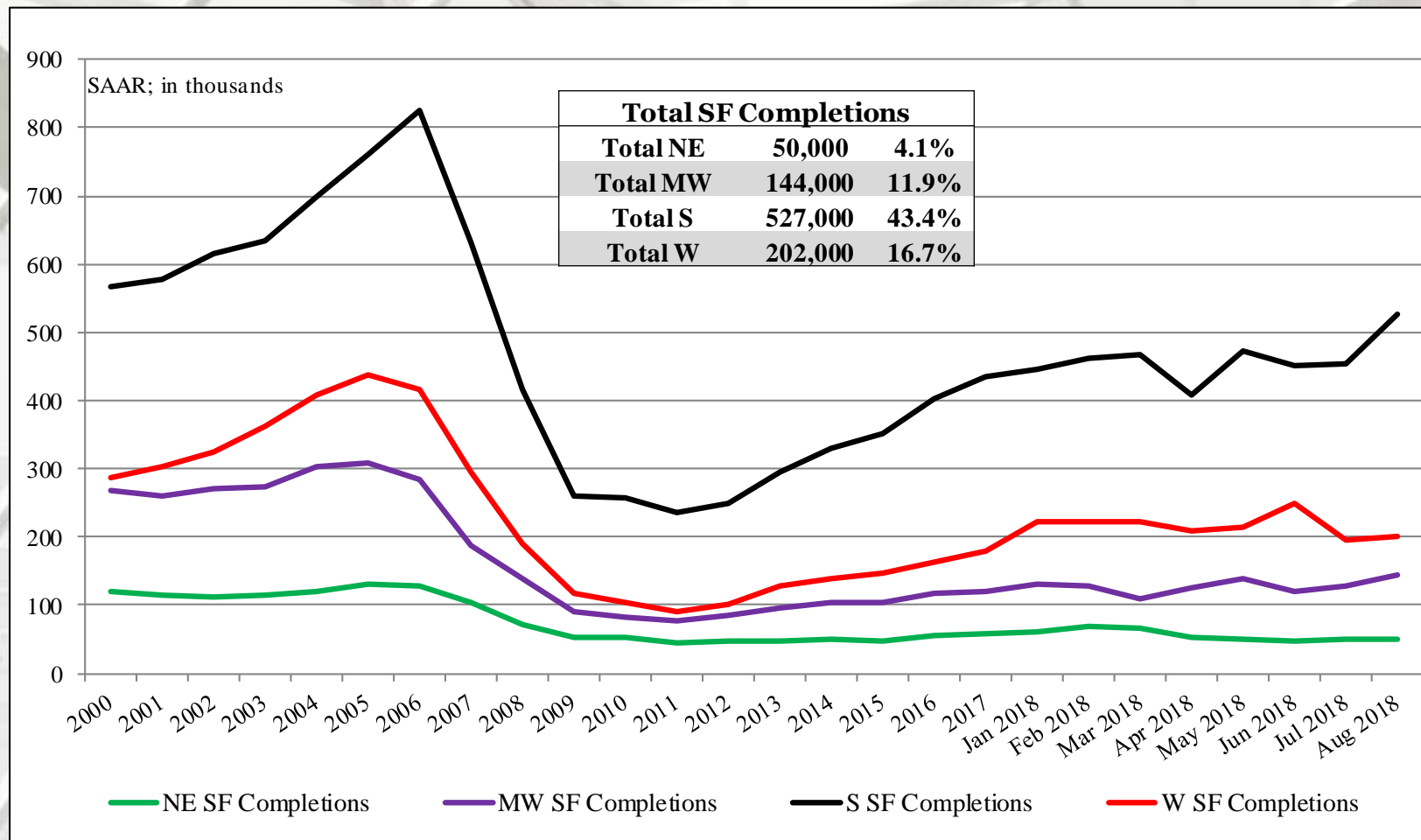
New Housing Completions by Region

	S Total	S SF	S MF**
August	644,000	527,000	117,000
July	530,000	398,000	132,000
2017	644,000	527,000	117,000
M/M change	7.9%	15.8%	-17.6%
Y/Y change	21.5%	32.4%	-11.4%
	W Total	W SF	W MF
August	277,000	202,000	75,000
July	251,000	172,000	79,000
2017	277,000	202,000	75,000
M/M change	-6.4%	3.1%	-25.0%
Y/Y change	10.4%	17.4%	-5.1%

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 SF Completions by Region

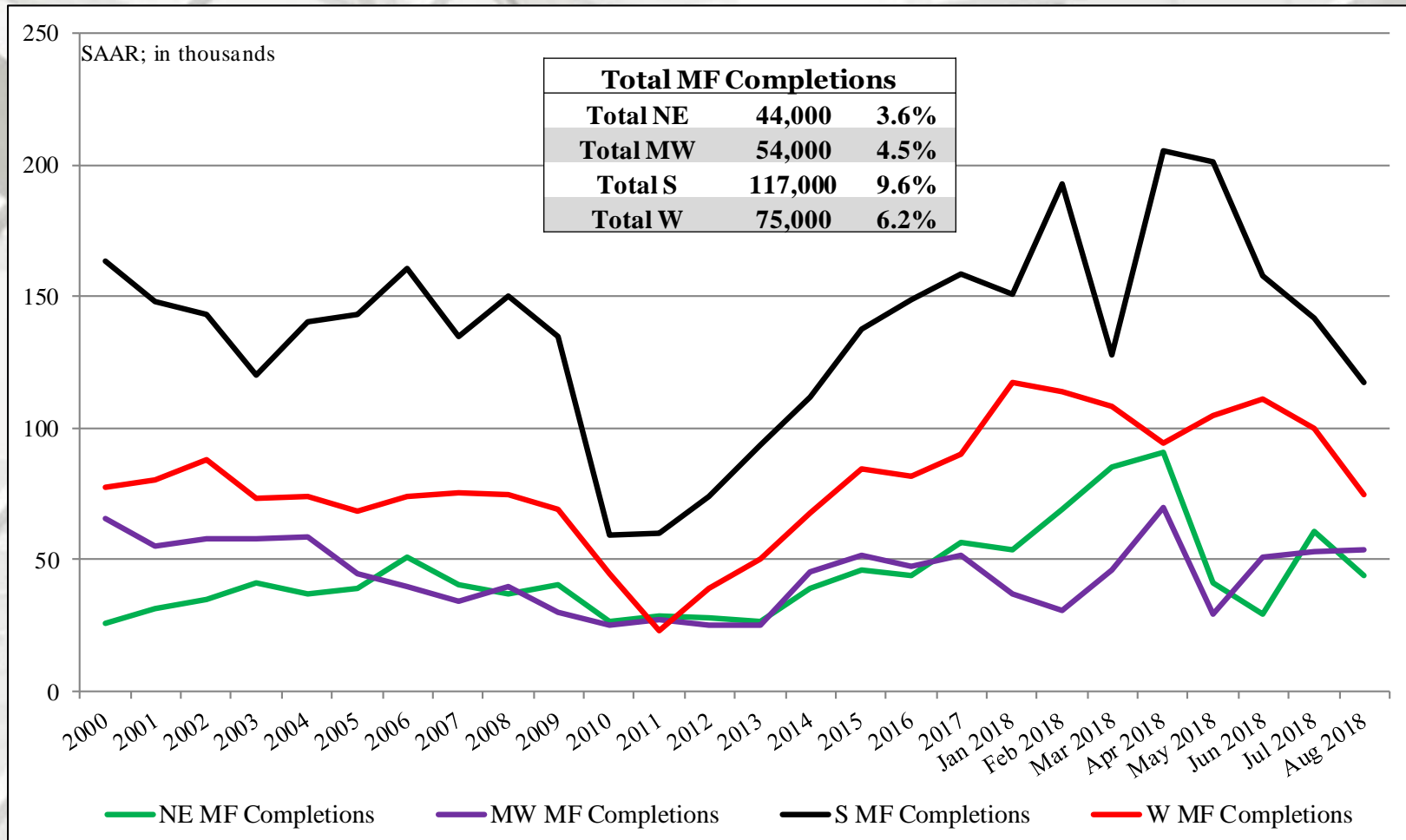


NE = Northeast, MW = Midwest, S = South, W = West

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 Housing MF 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

All data are SAAR; NE = Northeast and MW = Midwest; * Percentage of total housing completions.

New Single-Family House Sales

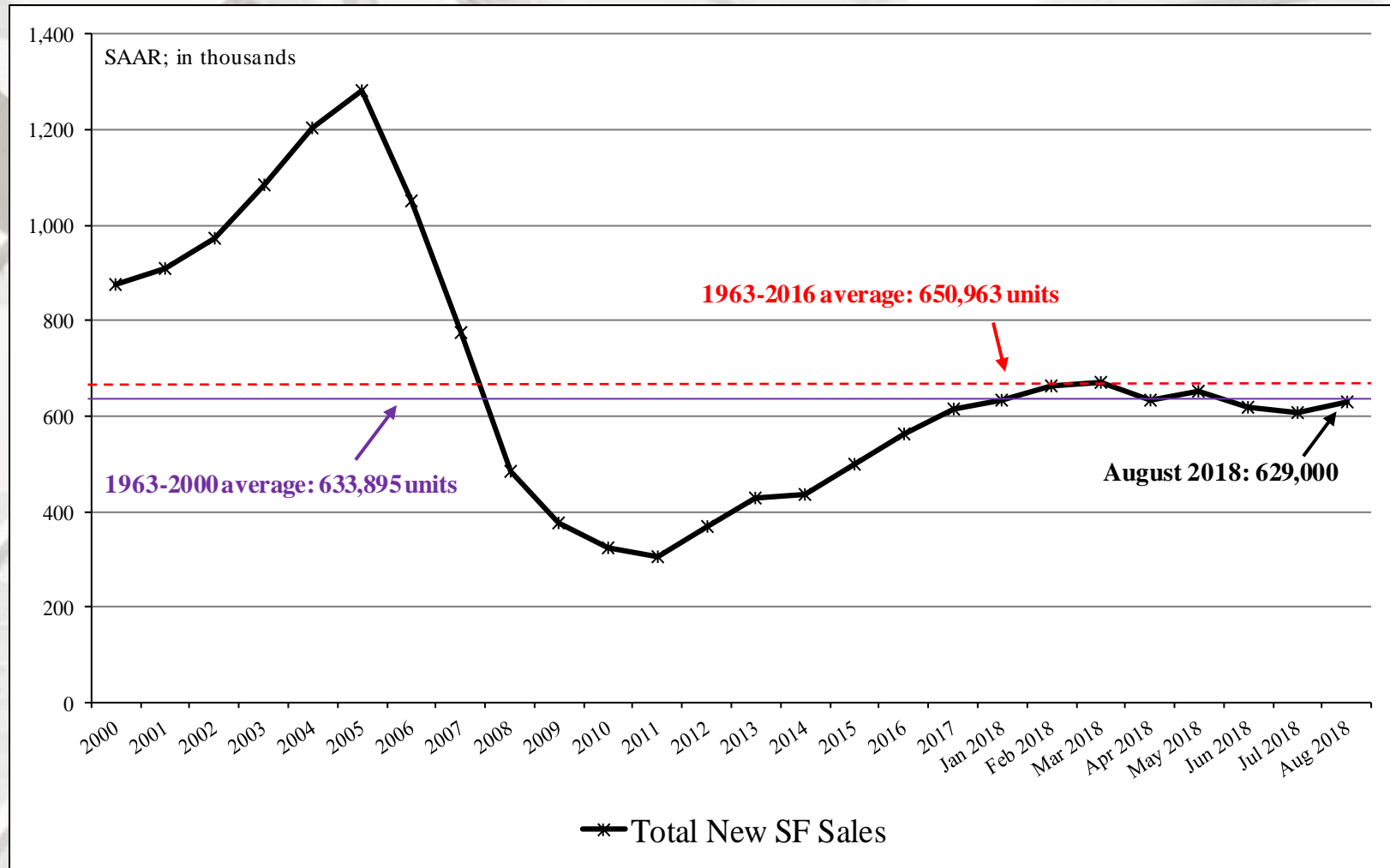
	New SF Sales*	Median Price	Mean Price	Month's Supply
August	629,000	\$320,200	\$388,400	6.1
July	608,000	\$328,100	\$389,000	6.2
2017	558,000	\$314,200	\$369,200	6.0
M/M change	3.5%	-2.4%	-0.2%	-1.6%
Y/Y change	12.7%	1.9%	5.2%	1.7%

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

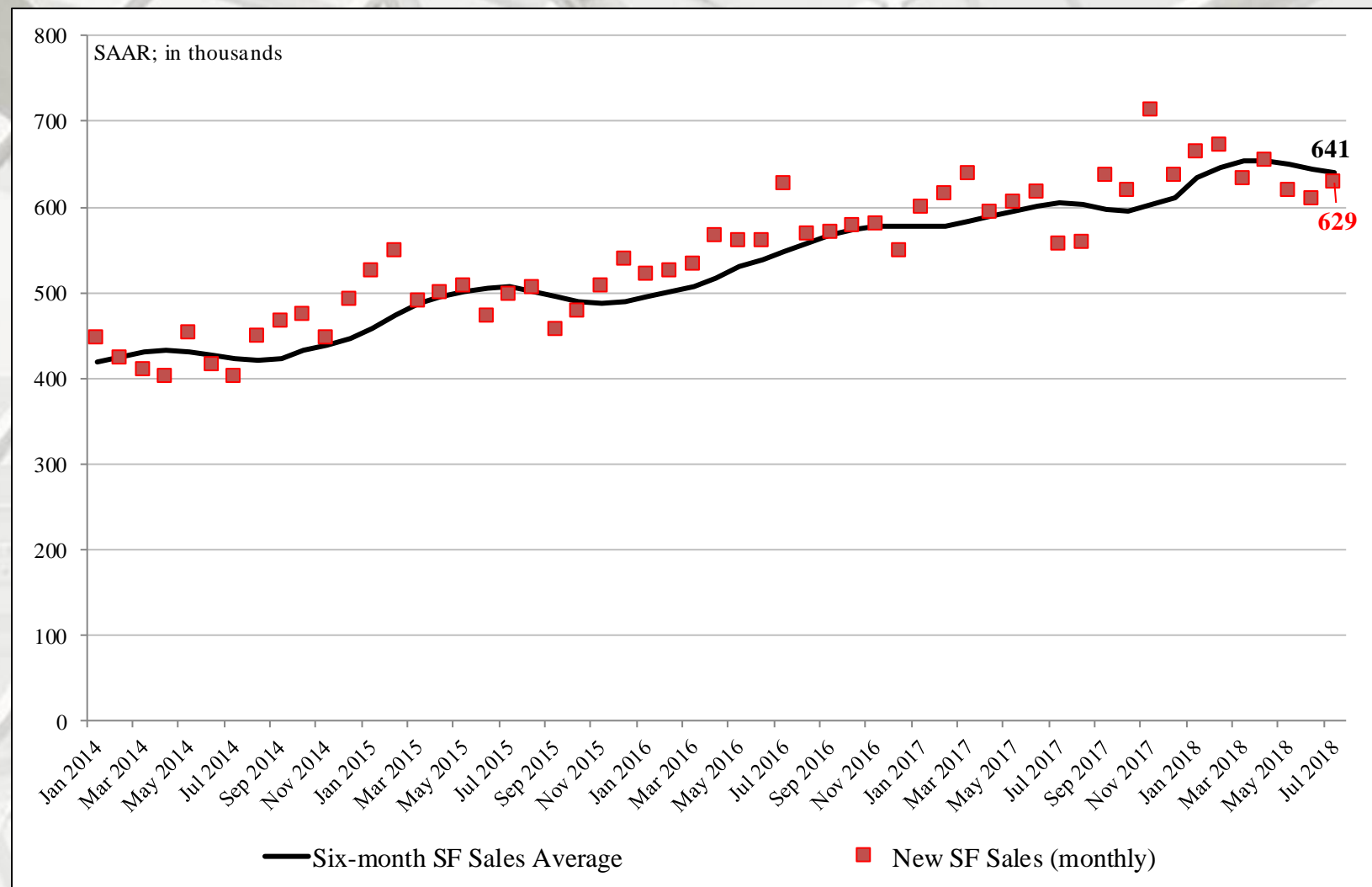
New SF sales were slightly less than the consensus forecast³ of 630 m. The past three month's new SF sales data were revised:

May initial: 689 m revised to 653 m;
 June initial: 631 m revised to 618 m;
 July initial: 627 m revised to 608 m.

New SF House Sales



New SF Housing Sales: Six-month average & monthly



New SF House Sales by Region and Price Category

NE SF Sales MW SF Sales S SF Sales W SF Sales							
August	34,000		77,000		350,000		168,000
July	23,000		75,000		356,000		154,000
2017	35,000		68,000		314,000		141,000
M/M change	47.8%		2.7%		-1.7%		9.1%
Y/Y change	-2.9%		13.2%		11.5%		19.1%
		\$150 - ≤ \$150m	\$200 - \$199.9m 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥ \$750m
August ^{1,2,3,4}	1,000	5,000	16,000	11,000	7,000	6,000	3,000
July	2,000	4,000	15,000	15,000	6,000	5,000	4,000
2017	2,000	5,000	13,000	11,000	7,000	5,000	2,000
M/M change	-50.0%	25.0%	6.7%	-26.7%	16.7%	20.0%	-25.0%
Y/Y change	-50.0%	0.0%	23.1%	0.0%	0.0%	20.0%	50.0%
New SF sales: %	2.0%	10.0%	32.0%	22.0%	14.0%	12.0%	6.0%

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 may not add to total because of rounding.

⁴ Housing prices are adjusted at irregular intervals.

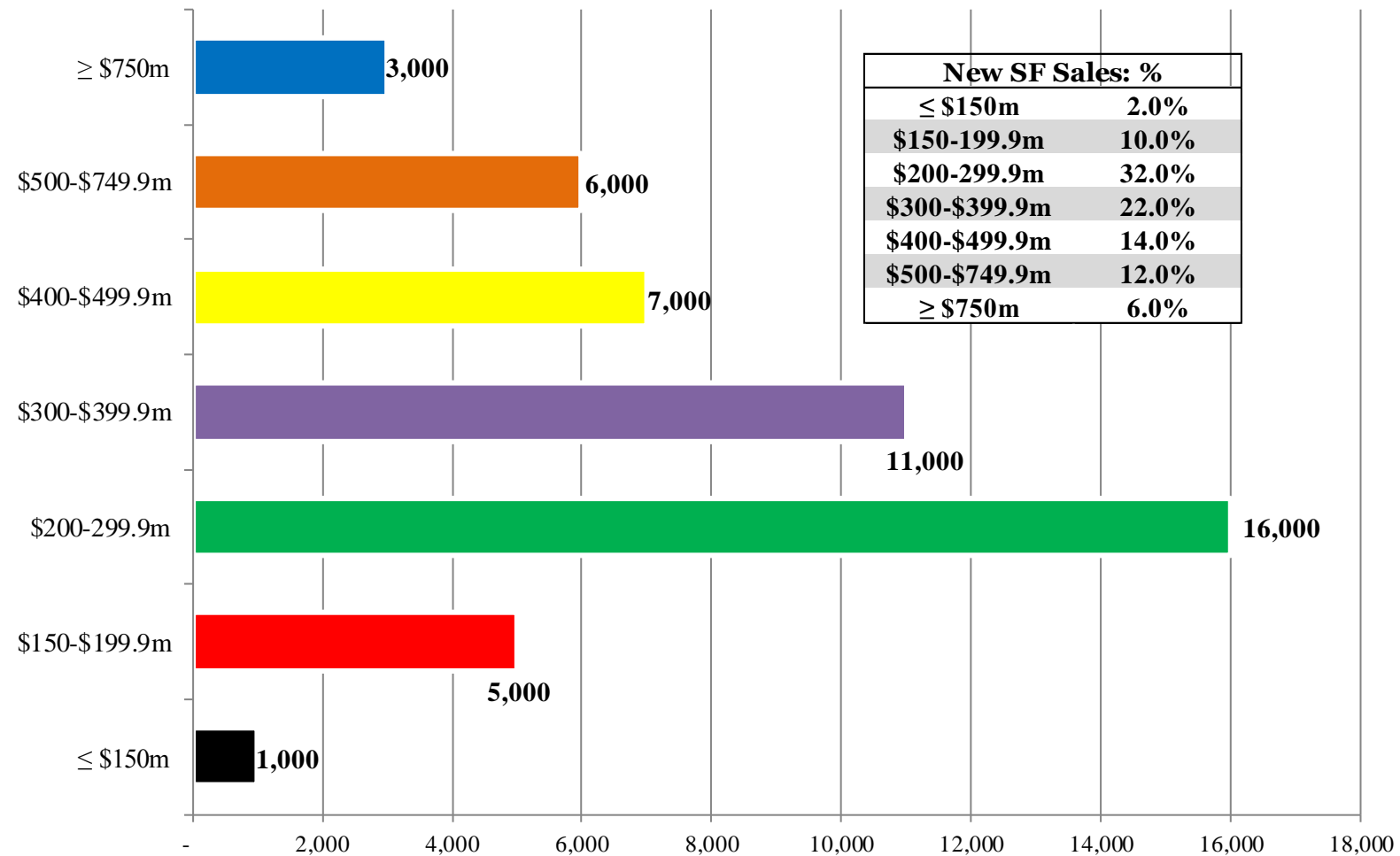
Sources: ^{1,2,3} <http://www.census.gov/construction/nrc/pdf/newresconst.pdf>; 9/26/18;

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

Return TOC

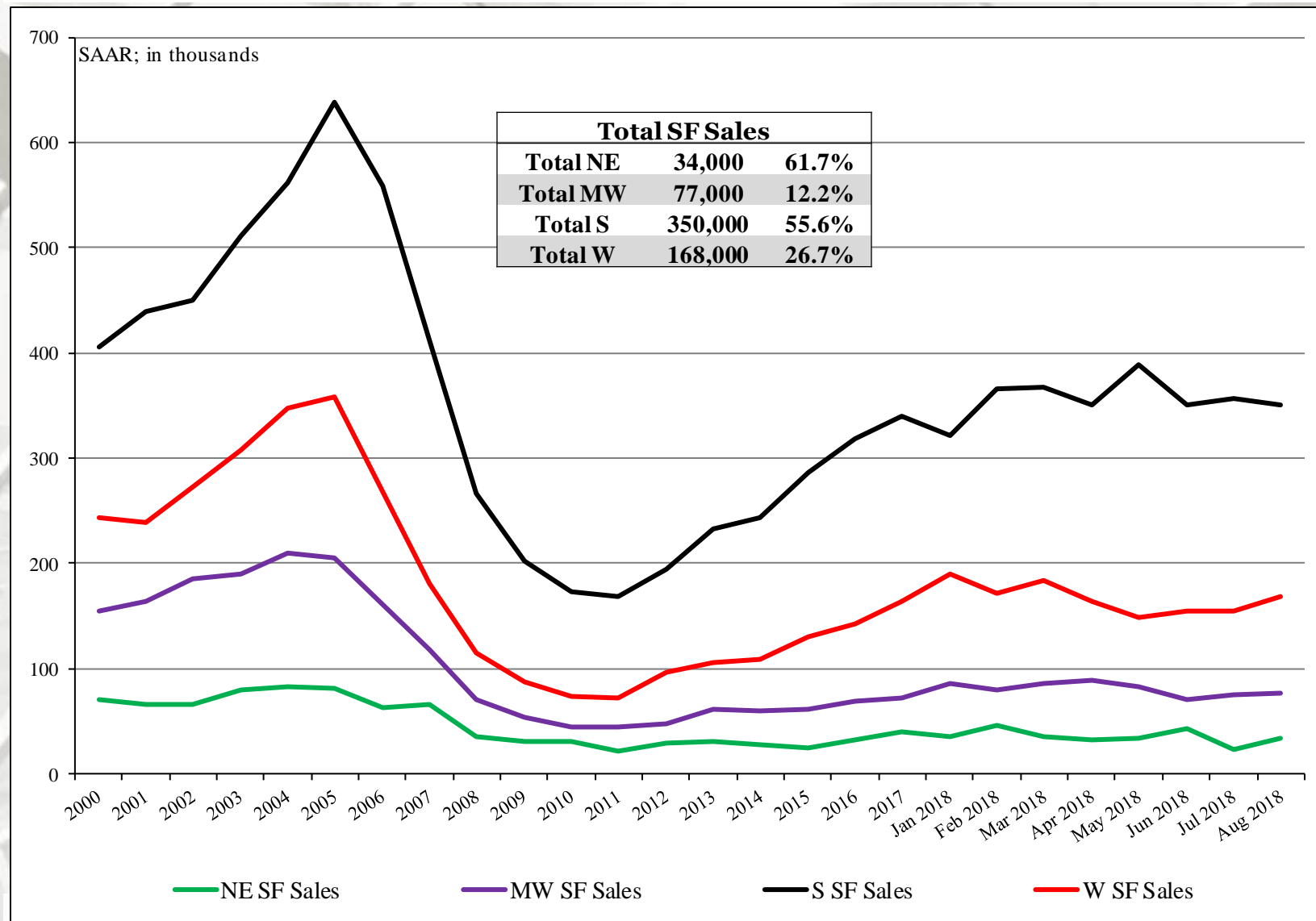
New SF House Sales

August New SF Sales*

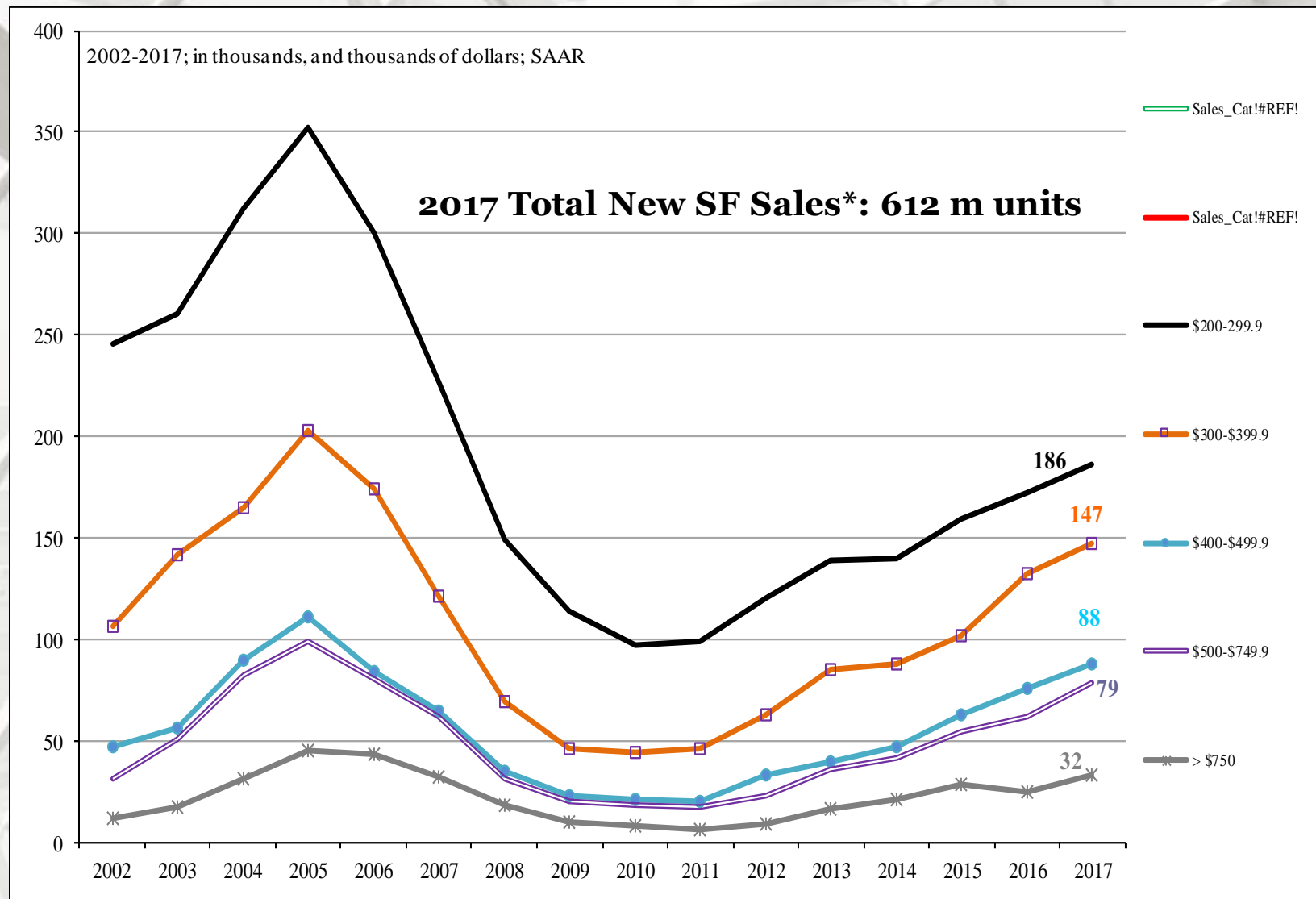


* Total new sales by price category and percent.

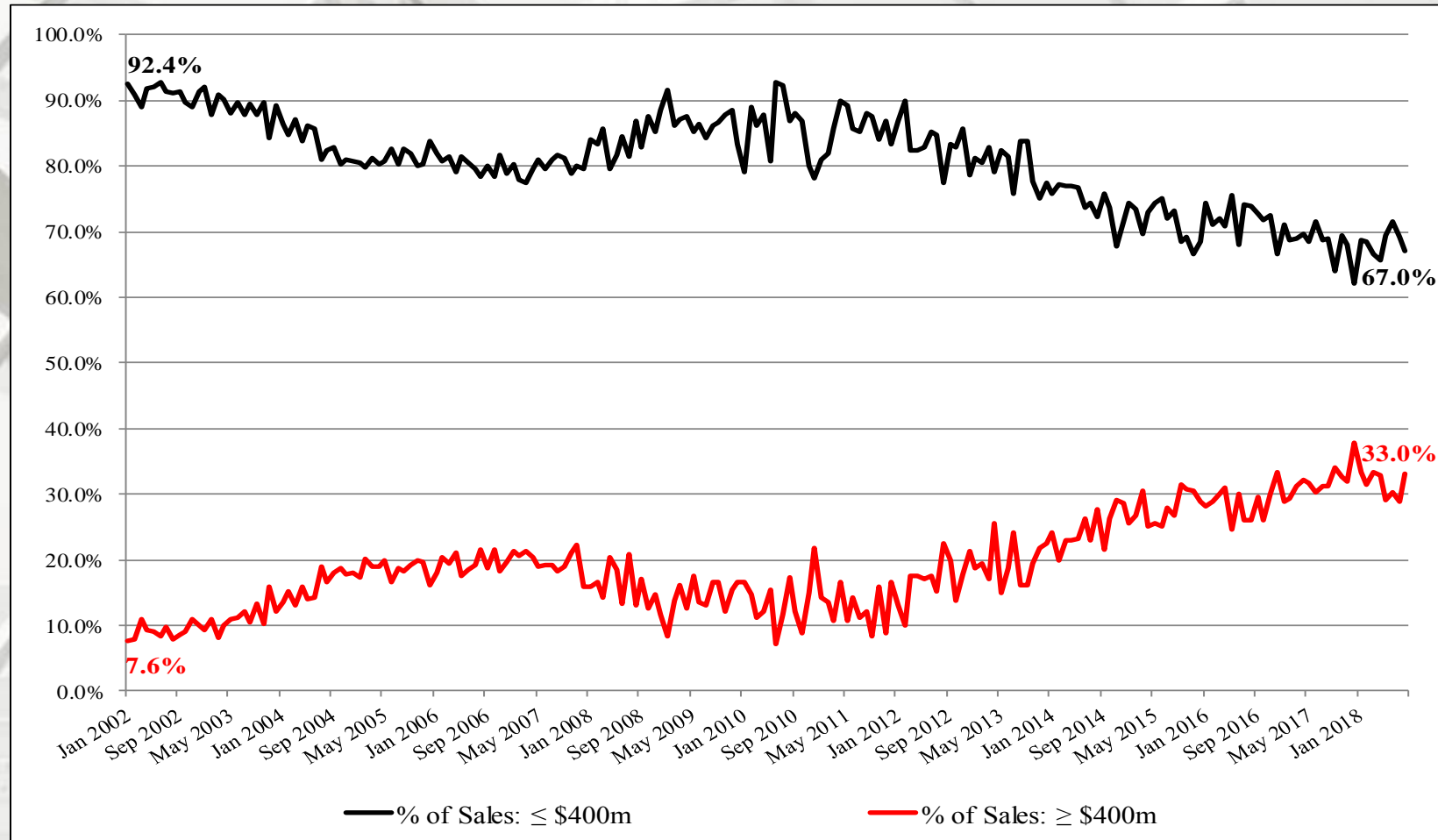
New SF House Sales by Region



New SF House Sales by Price Category



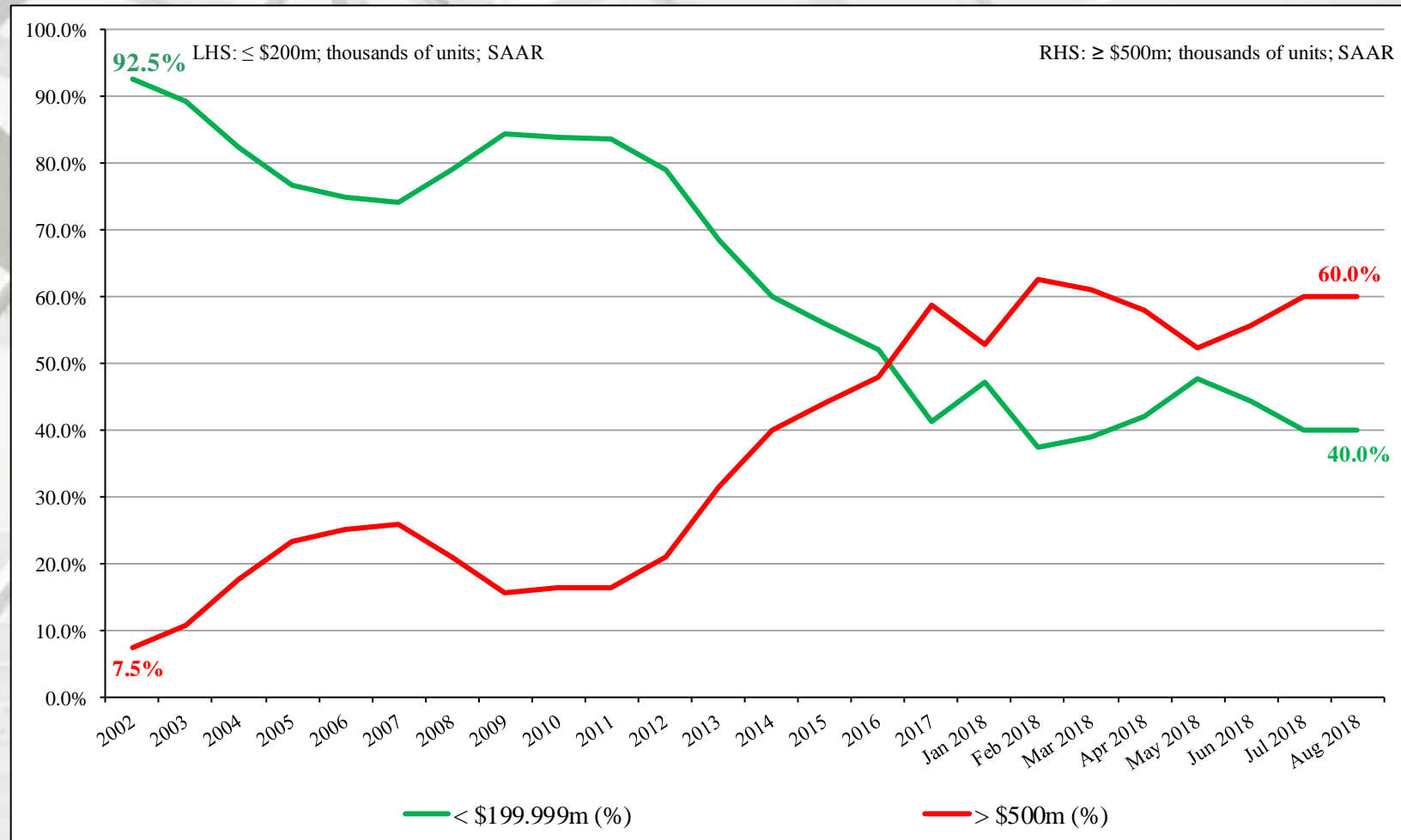
New SF House Sales



New SF Sales \$400m houses: 2002 – August 2018

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

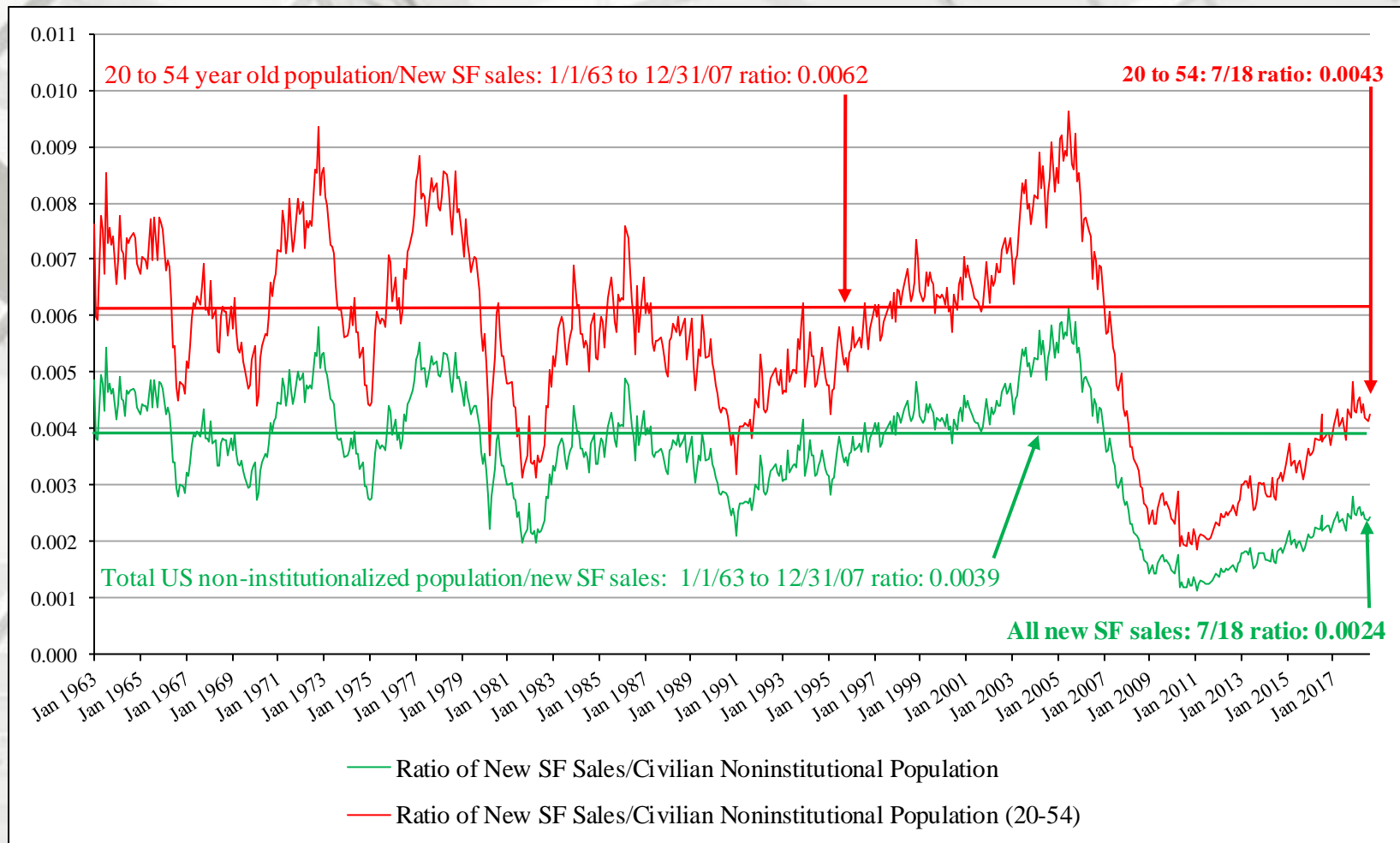


New SF Sales: $\leq \$200m$ and $\geq \$500m$: 2002 to August 2018

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

Note: Sales values are not adjusted for inflation.

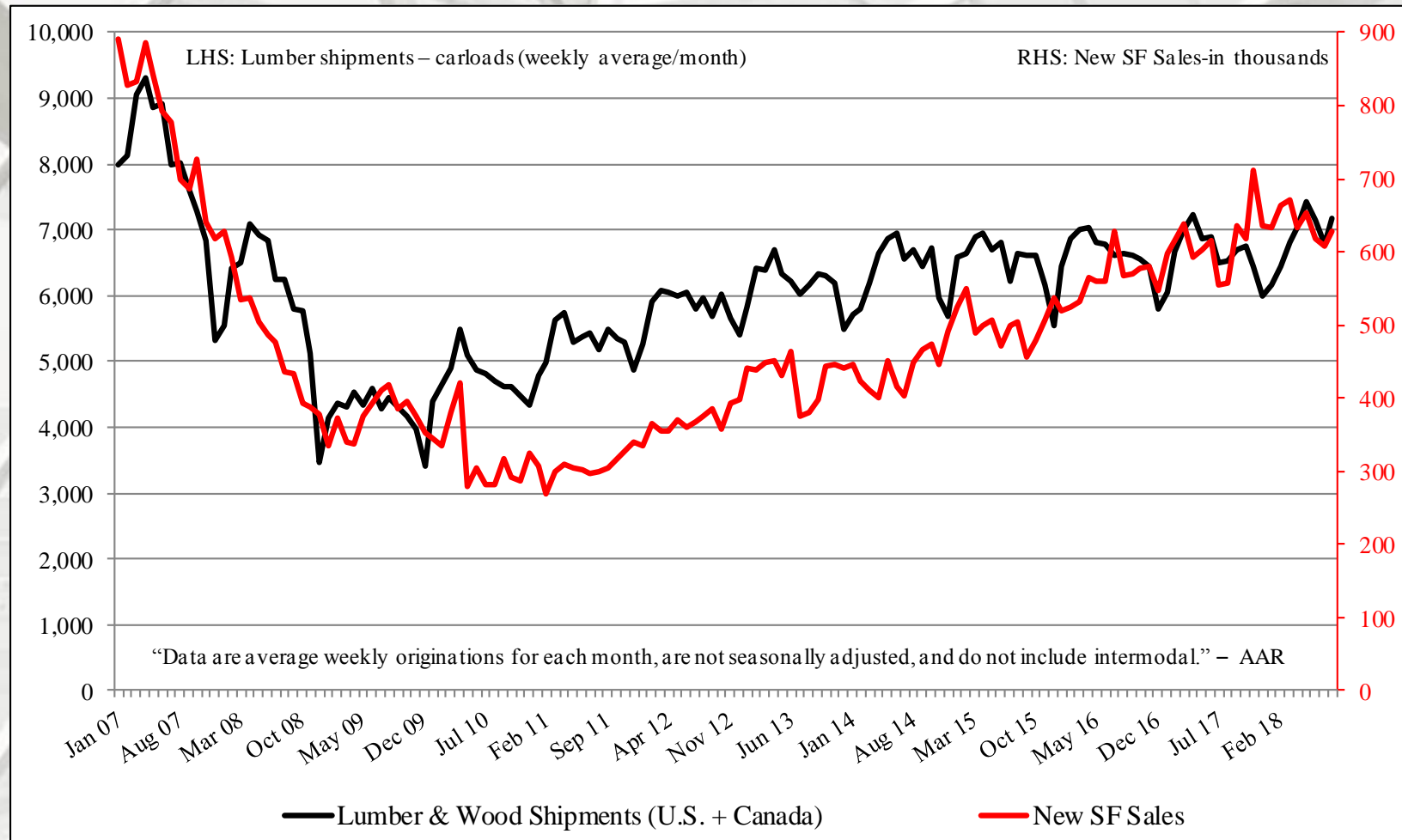
New SF House Sales



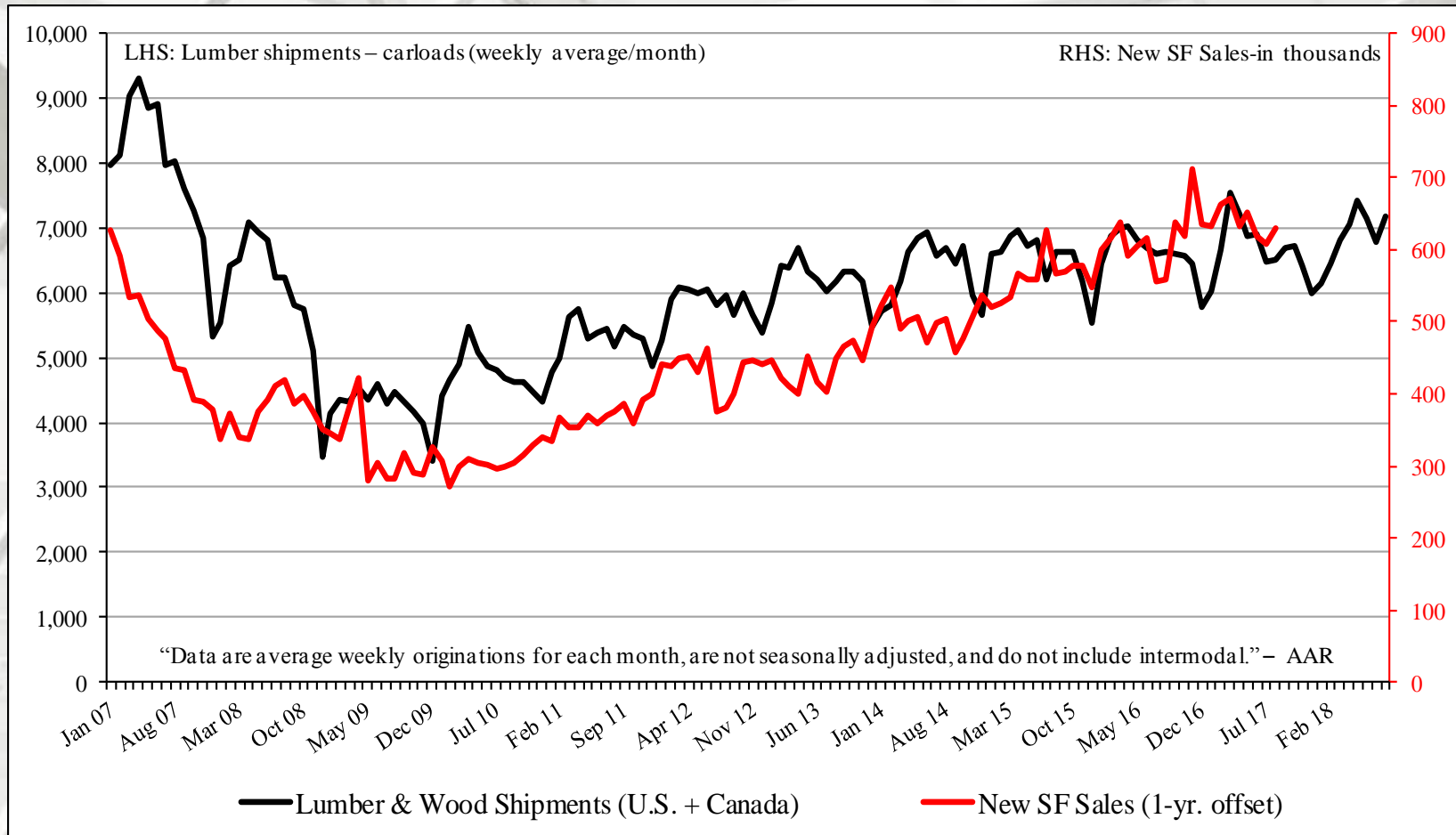
New SF sales adjusted for the US population

From August 1963 to November 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in August 2018 it was 0.0024 – no change from July. The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in August 2018 it was 0.0043 – a slight increase from July (0.0041). 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).

Railroad Lumber & Wood Shipments vs. U.S. SF House Sales

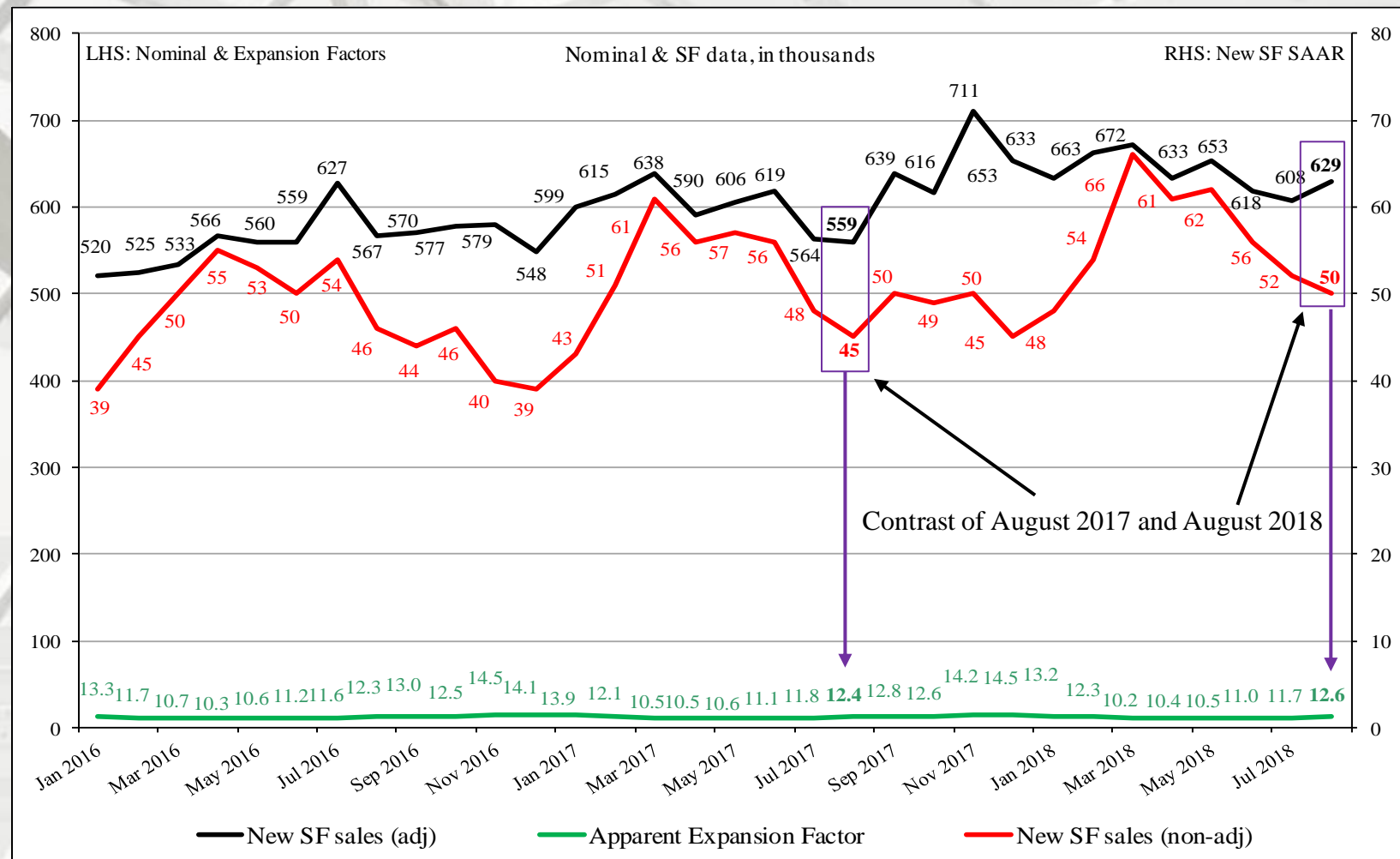


Railroad Lumber & Wood Shipments vs. U.S. SF Housing Sales: 1-year Offset



In this graph, January 2007 lumber shipments are contrasted with January 2008 SF sales, and continuing through August 2018. The purpose is to discover if lumber shipments relate to future single-family sales. Also, it is realized that lumber and wood products are trucked; however, to our knowledge comprehensive trucking data is not available.

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

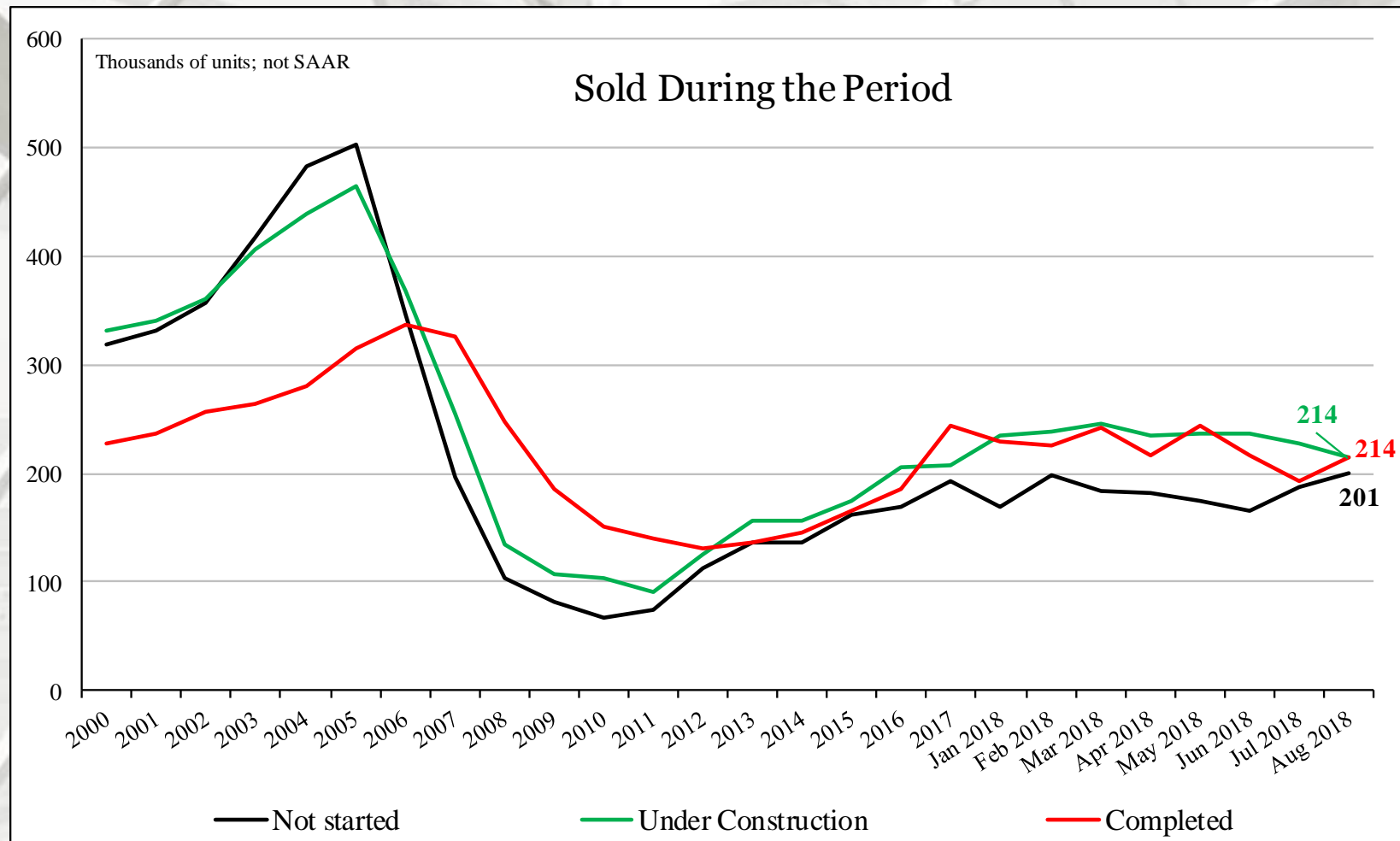
	Total	Not started	Under Construction	Completed
August	629,000	201,000	214,000	214,000
July	608,000	187,000	228,000	193,000
2017	558,000	164,000	192,000	202,000
M/M change	3.5%	7.5%	-6.1%	10.9%
Y/Y change	12.7%	22.6%	11.5%	5.9%
Total percentage		32.0%	34.0%	34.0%

New SF Houses Sold During Period

In August 2018, a substantial portion of new sales – 32.0% – have not been started.

* Not SAAR

New SF House Sales



Not SAAR

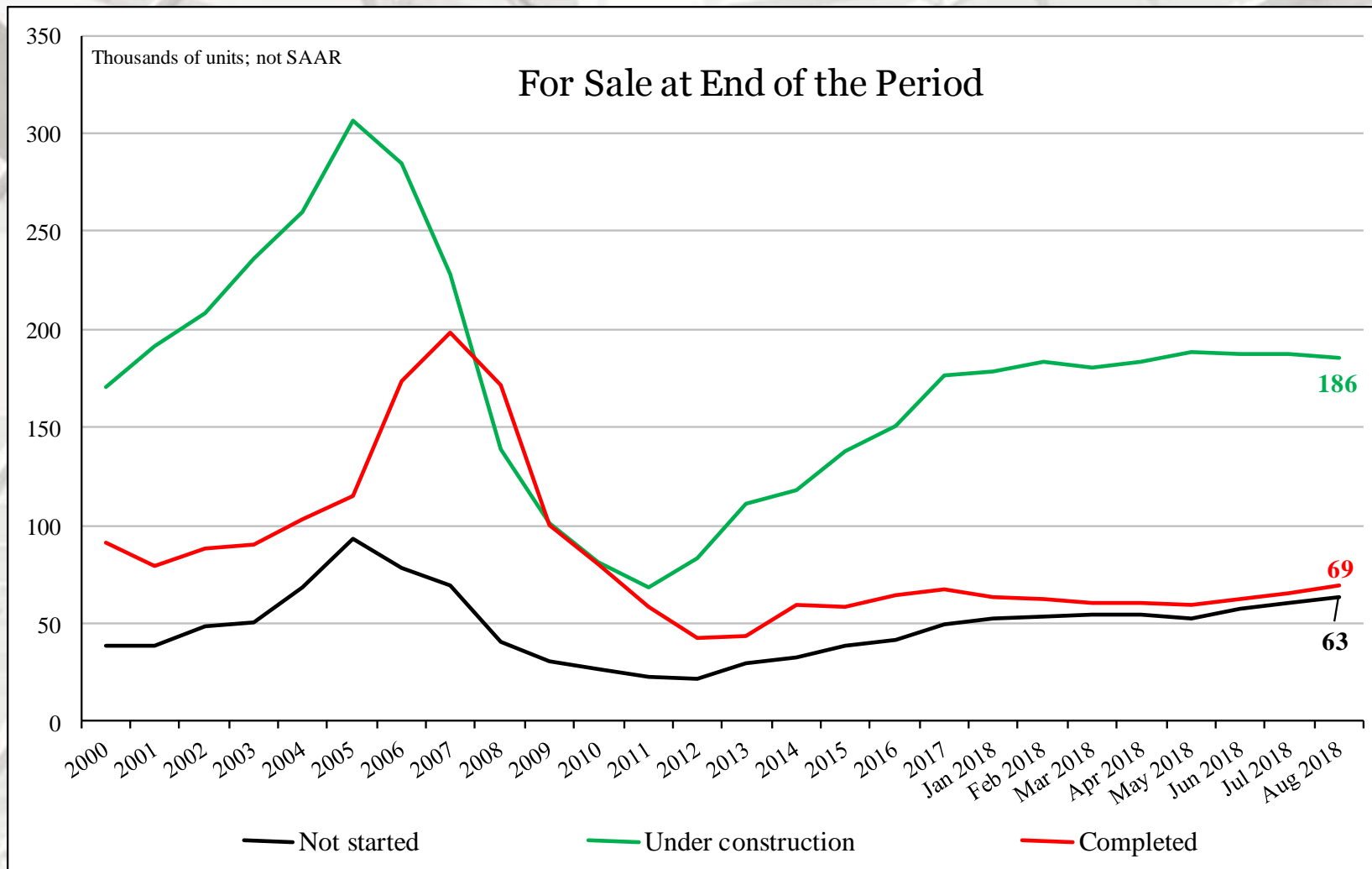
New SF House Sales

New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
August	318,000	63,000	186,000	69,000
July	313,000	61,000	187,000	65,000
2017	284,000	47,000	176,000	61,000
M/M change	1.6%	3.3%	-0.5%	6.2%
Y/Y change	12.0%	34.0%	5.7%	13.1%
Total percentage		19.8%	58.5%	21.7%

Not SAAR

New SF House Sales



Not SAAR

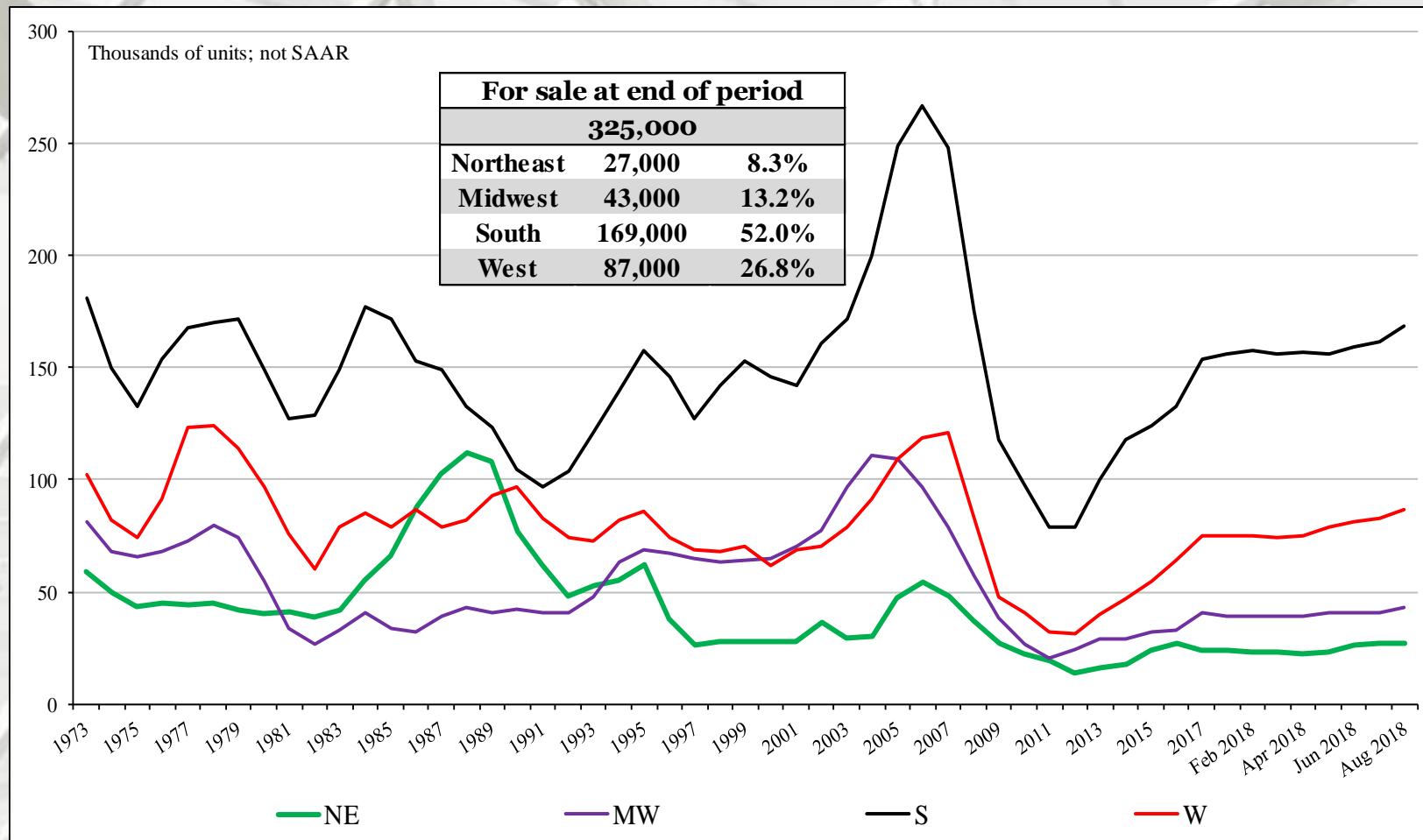
New SF House Sales

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

	Total	NE	MW	S	W
August	325,000	27,000	43,000	169,000	87,000
July	313,000	27,000	41,000	162,000	83,000
2017	284,000	24,000	37,000	153,000	70,000
M/M change	3.8%	0.0%	4.9%	4.3%	4.8%
Y/Y change	14.4%	12.5%	16.2%	10.5%	24.3%

* Not SAAR

New SF Houses Sale at End of Period by Region



August 2018

Construction Spending

	Total Private Residential*	SF	MF	Improvement**
August	\$548,892	\$284,920	\$58,551	\$205,421
July	\$553,020	\$286,829	\$59,564	\$206,627
2017	\$527,533	\$273,545	\$58,916	\$195,072
M/M change	-0.7%	-0.7%	-1.7%	-0.6%
Y/Y change	4.0%	4.2%	-0.6%	5.3%

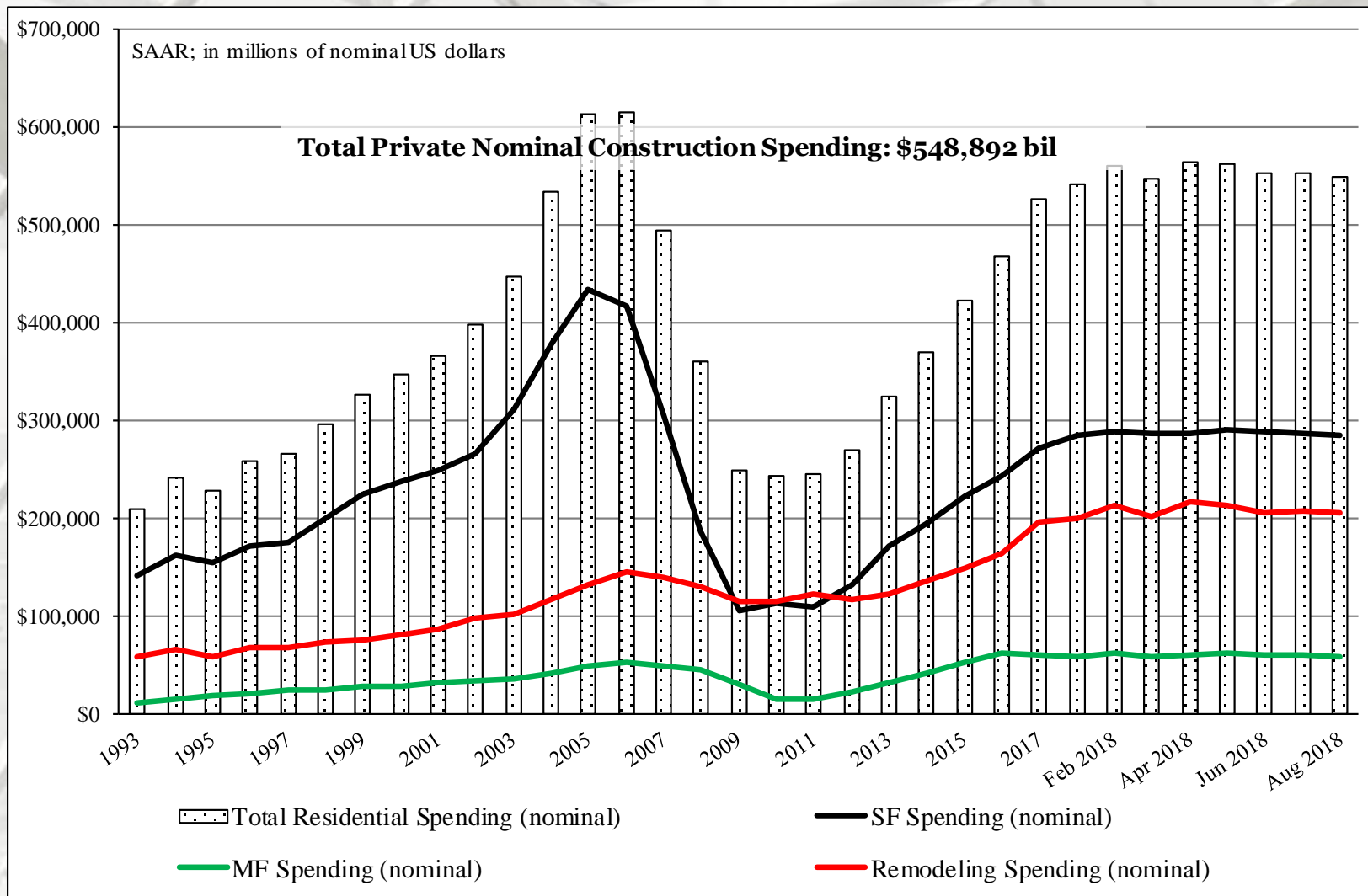
* Millions

** The US DOC does not report improvement spending directly, this is a monthly estimation for 2017:

((Total Private Spending – (SF spending + MF spending)).

All data are SAARs and reported in nominal US\$.

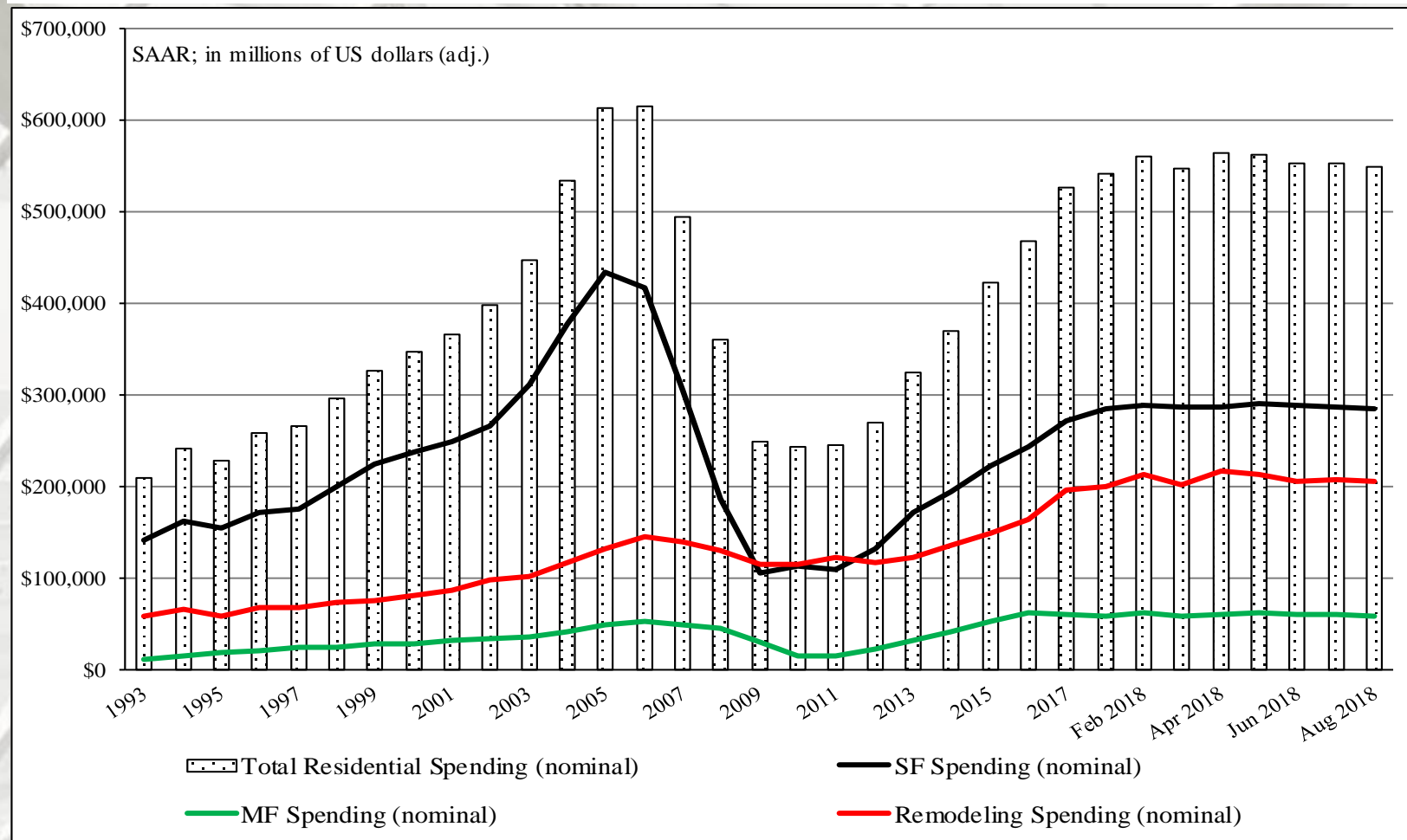
Total Construction Spending (nominal): 1993 – August 2018



Reported in nominal US\$.

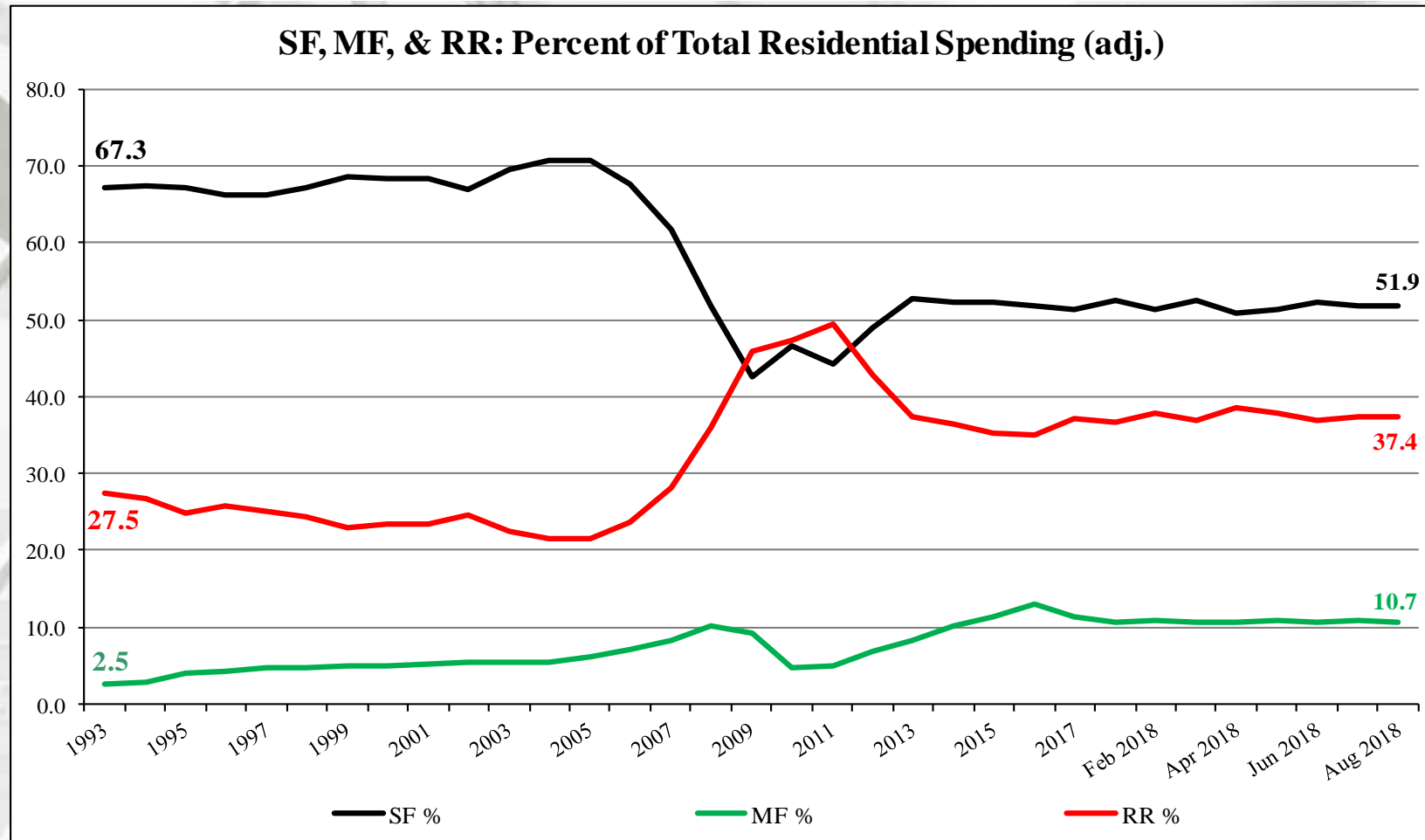
The US DOC does not report improvement spending directly, this is a monthly estimation for 2018.

Total Construction Spending (adjusted): 1993-2018*



Reported in adjusted US\$: 1993 – 2017 (adjusted for inflation, BEA Table 1.1.9); *January 2018 to August 2018 reported in nominal US\$.

Construction Spending Shares: 1993 to August 2018



Total Residential Spending: 1993 through 2006

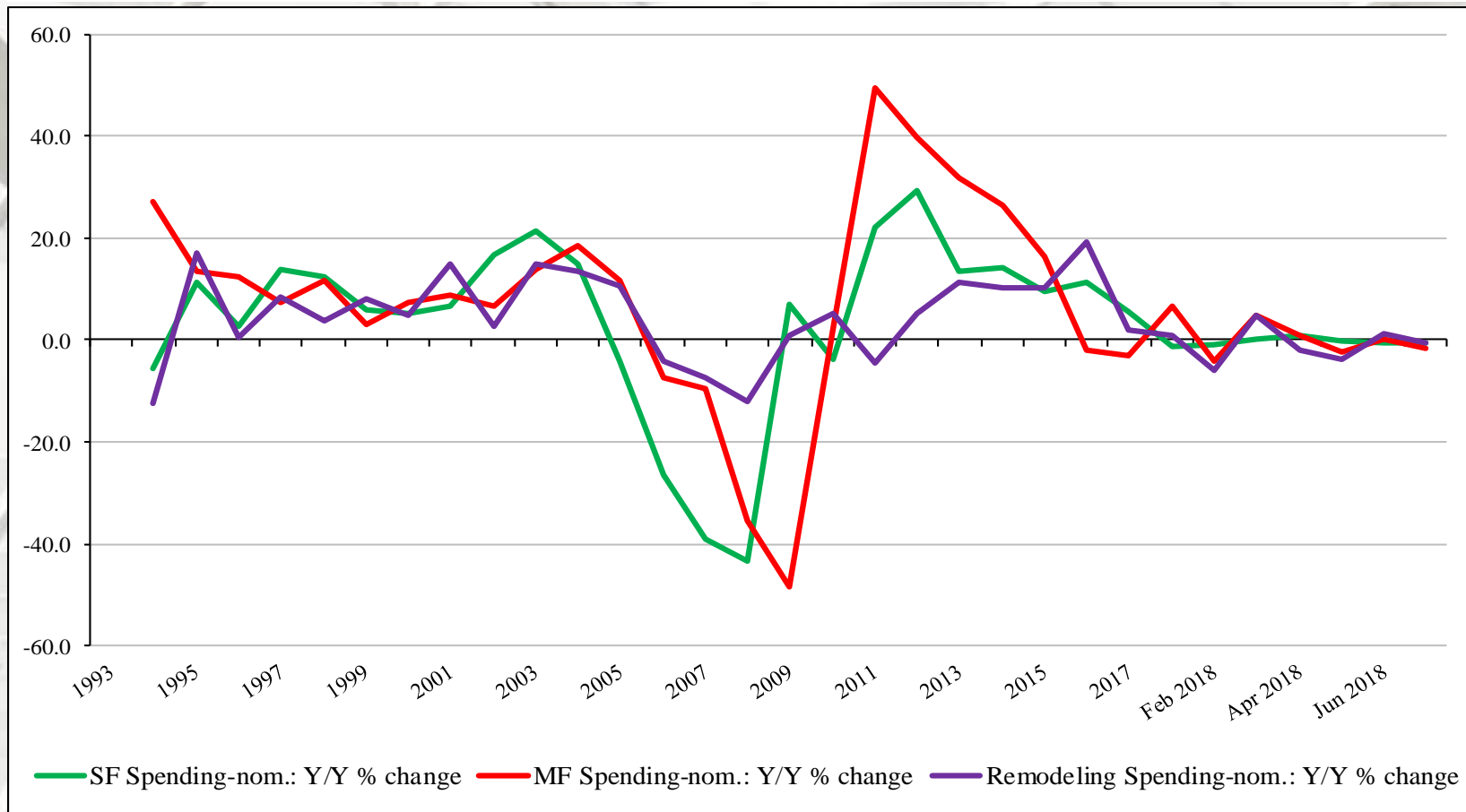
SF spending average: 69.2%

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-August 2018 reported in nominal US\$.

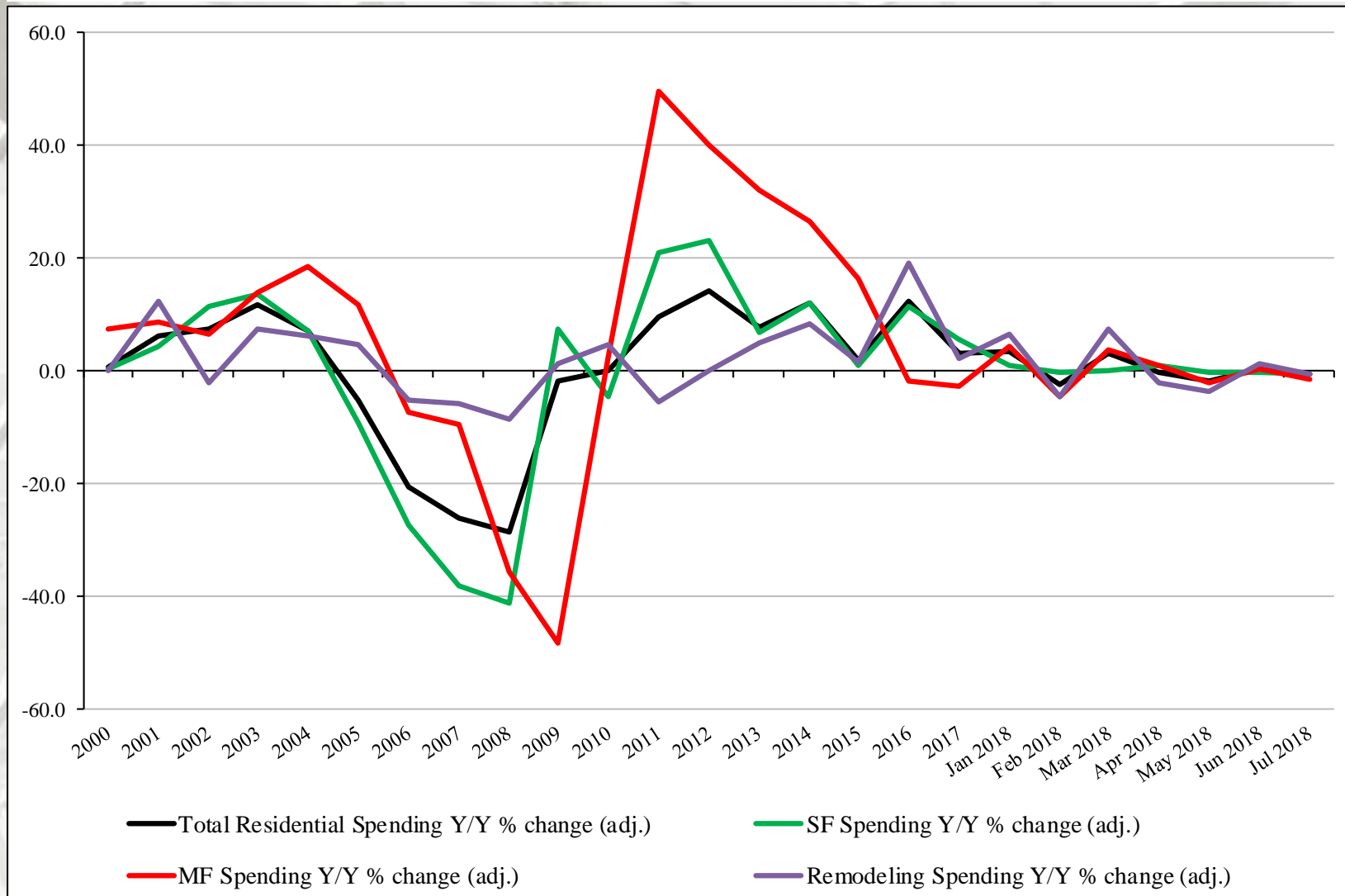
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to August 2018



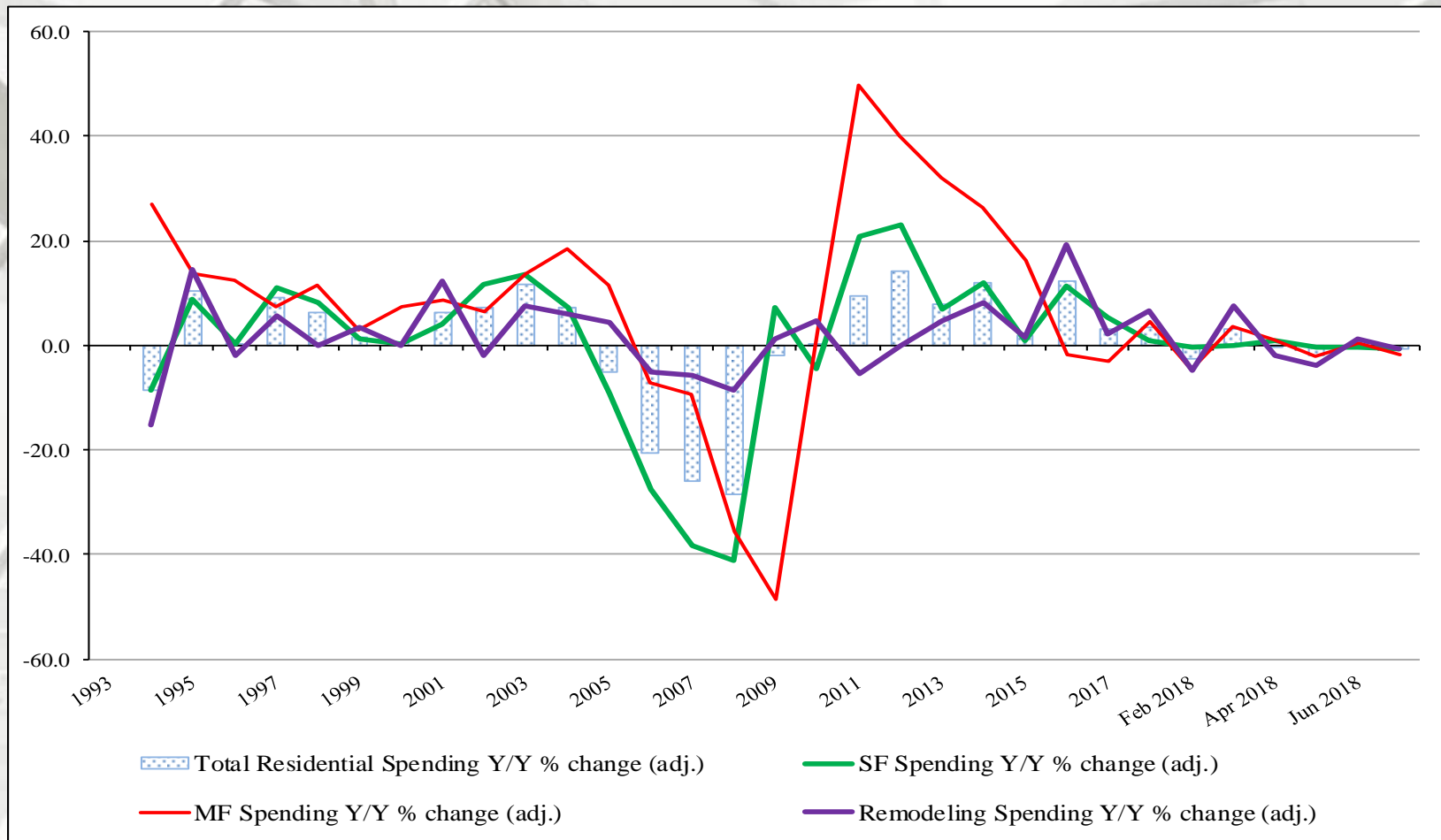
Residential Construction Spending: Percentage Change, 1993 to August 2018

Presented above is the percentage change of inflation adjusted Y/Y construction spending. All spending measures declined, on a percentage basis, year-over-year.

Adjusted Construction Spending: Y/Y Percentage Change, 2000 to August 2018



Total Adjusted Construction Spending: Y/Y Percentage Change, 1993 to August 2018



Residential Construction Spending: Percentage Change, 1993 to August 2018

All spending data categories indicated slight declines in expenditures.

Existing House Sales

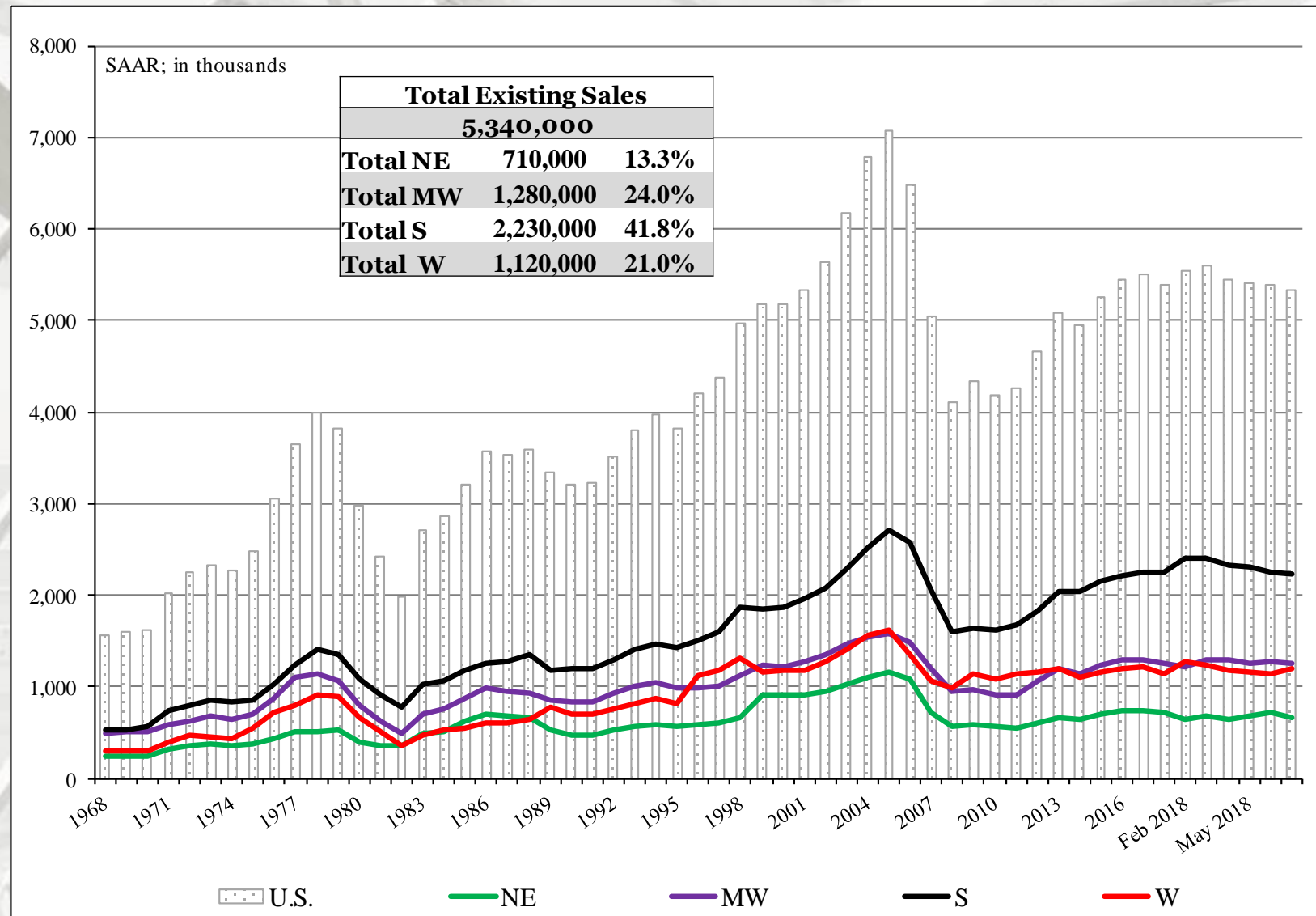
National Association of Realtors

August 2018 sales: 5.340 thousand

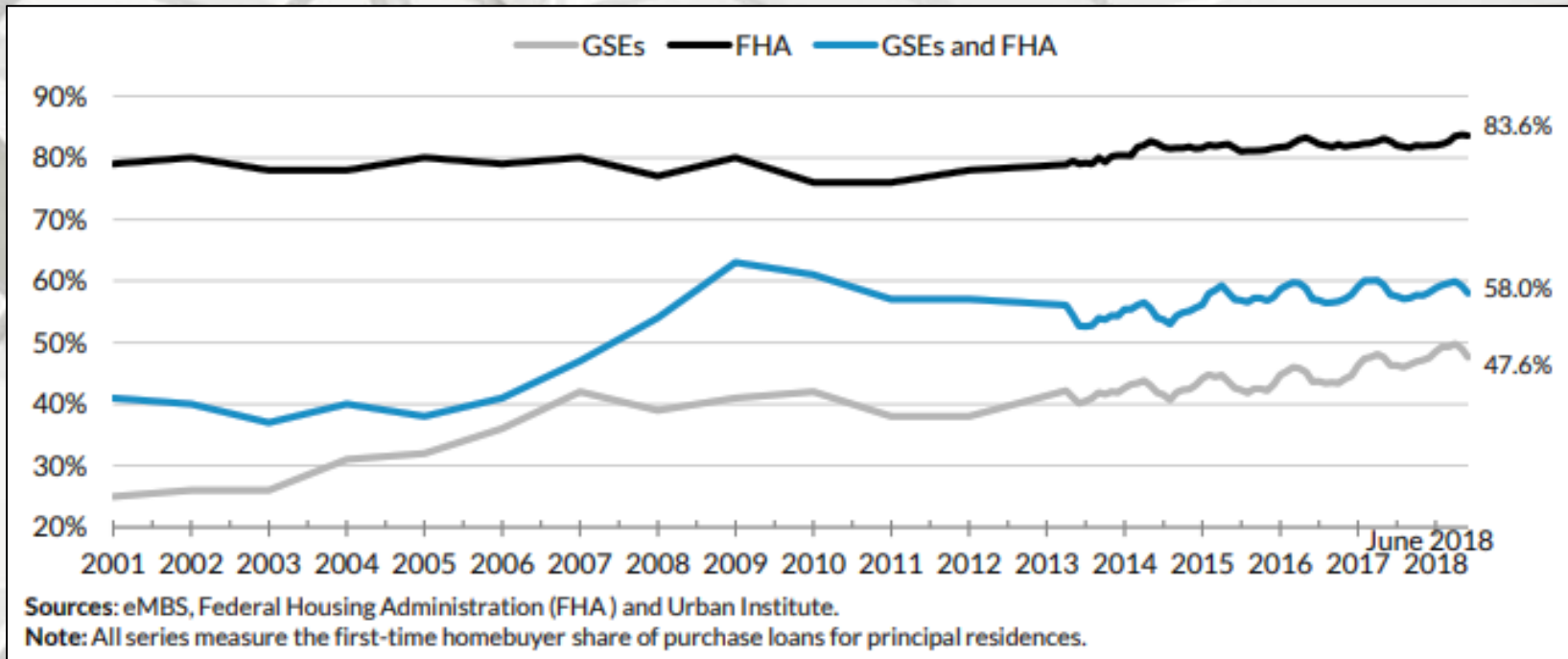
	Existing Sales*	Median Price	Mean Price	Month's Supply
August	5,340,000	\$264,800	\$303,200	4.3
July	5,340,000	\$269,300	\$307,600	4.3
2017	5,420,000	\$253,100	\$294,400	4.1
M/M change	0.0%	-1.7%	-1.4%	0.0%
Y/Y change	-1.5%	4.6%	3.0%	4.9%
	NE Sales	MW Sales	S Sales	W Sales
August	710,000	1,280,000	2,230,000	1,120,000
July	660,000	1,250,000	2,240,000	1,190,000
2017	730,000	1,290,000	2,190,000	1,210,000
M/M change	7.6%	2.4%	-0.4%	-5.9%
Y/Y change	-2.7%	-0.8%	1.8%	-7.4%

* All sales data: SAAR

Existing House Sales



First-Time Purchasers

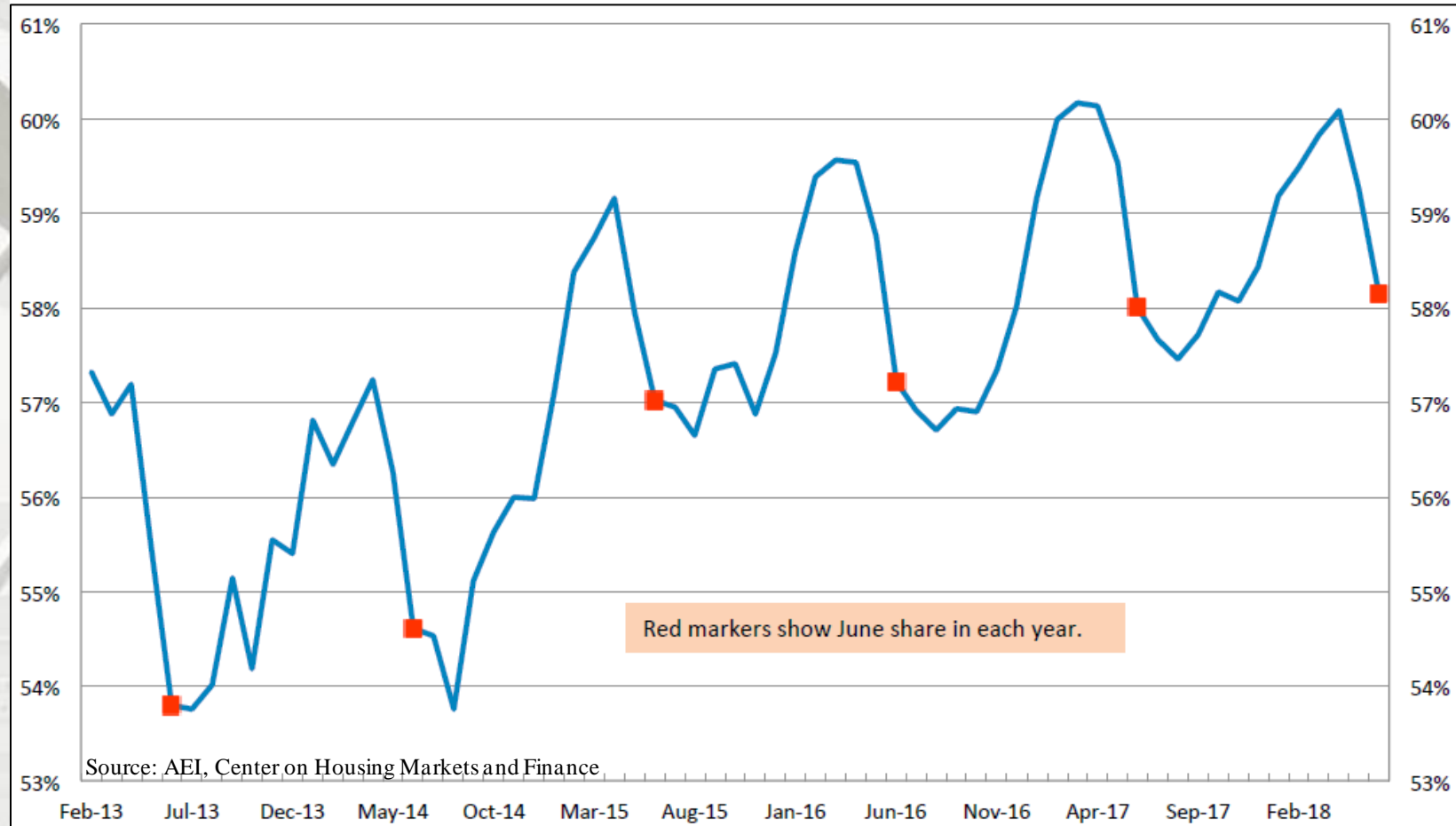


Urban Institute

“In June 2018, the first time homebuyer share of purchase loans was elevated for both FHA and conventional mortgages, reflecting the negative impact of higher interest rates on the “trade-up” buyer. FHA, which has always been more focused on first time homebuyers has a near record first time homebuyer share of 83.6 percent in June 2018, the share has traditionally been around 80 percent. The GSE share in June 2018 was 47.6 percent, just slightly off its highest level in recent history. The bottom table shows that based on mortgages originated in June 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score and higher LTV and DTI, thus requiring a higher interest rate.” – Laurie Goodman, *et al.*, Co-director, Housing Finance Policy Center

First-Time Purchasers

Agency First-Time Buyer Mortgage Share Flat at High Level

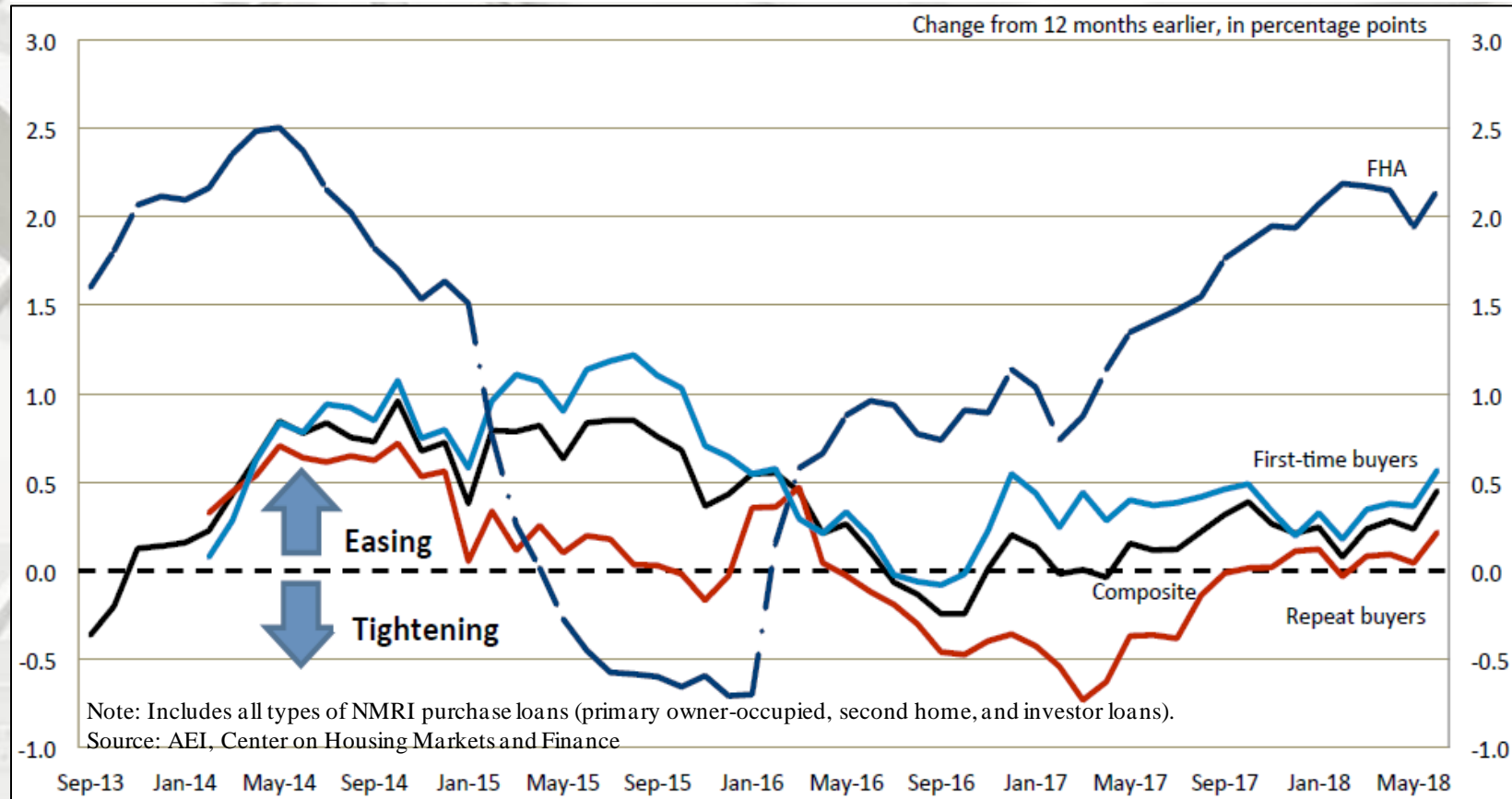


AEI, Center on Housing Markets and Finance

“The Agency First-Time Buyer Mortgage Share Index (FBMSI) for June 2018 stood at 58.1%, slightly higher than in June 2017 (58.0%). Compared to four years ago, the FBMSI is up 3.5 ppts. from 54.6%. As predicted, it appears that the index has plateaued at its high level.” – Edward Pinto and Tobias Peter; AEI, Center on Housing Markets and Finance

First-Time Purchasers

Update: Credit Easing Trend Continues, Led by FHA

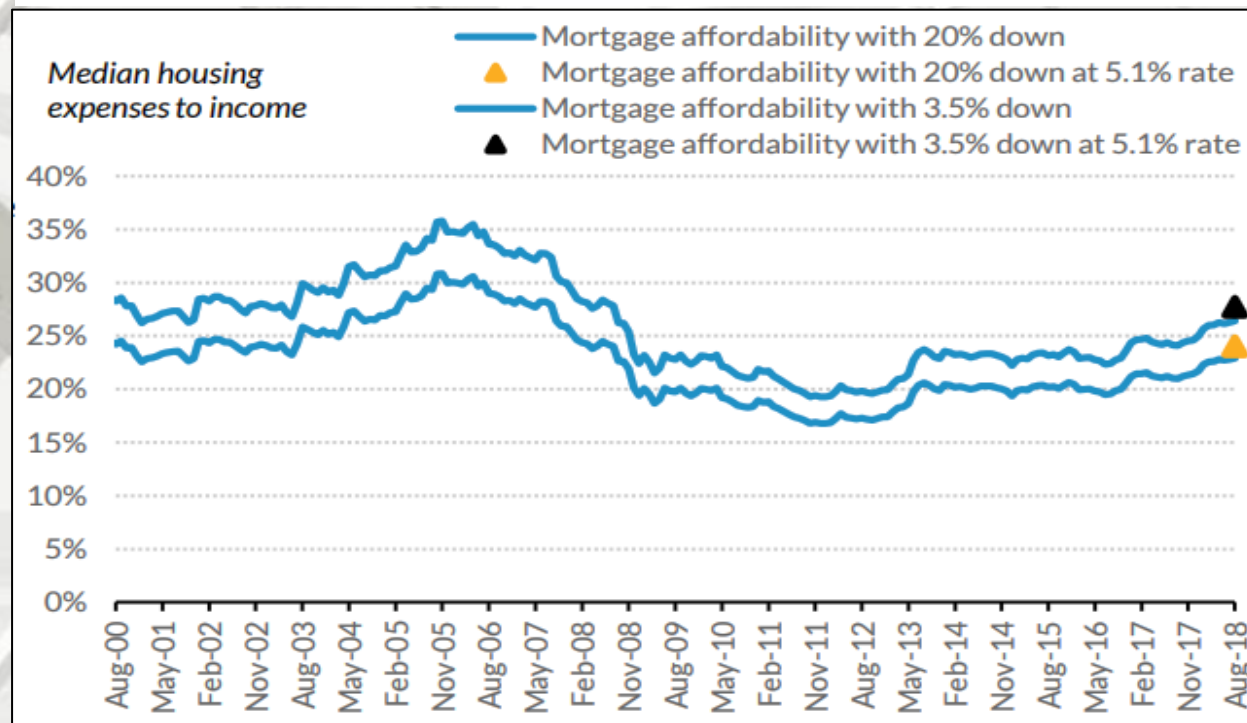


AEI, Center on Housing Markets and Finance

“Composite NMRI for purchase increased from already elevated levels a year ago. For FHA, the index continues to rise at over 2% year-over-year for FHA. First-time buyers have consistently been taking on greater leverage and default risk, which has helped fuel accelerating house price growth for entry-level homes. Higher default risk combined with unsustainable home price increase will lead to unnecessarily high default rates during the eventual market correction.” – Edward Pinto and Tobias Peter; AEI, Center on Housing Markets and Finance

Housing Affordability

National Housing Affordability Over Time

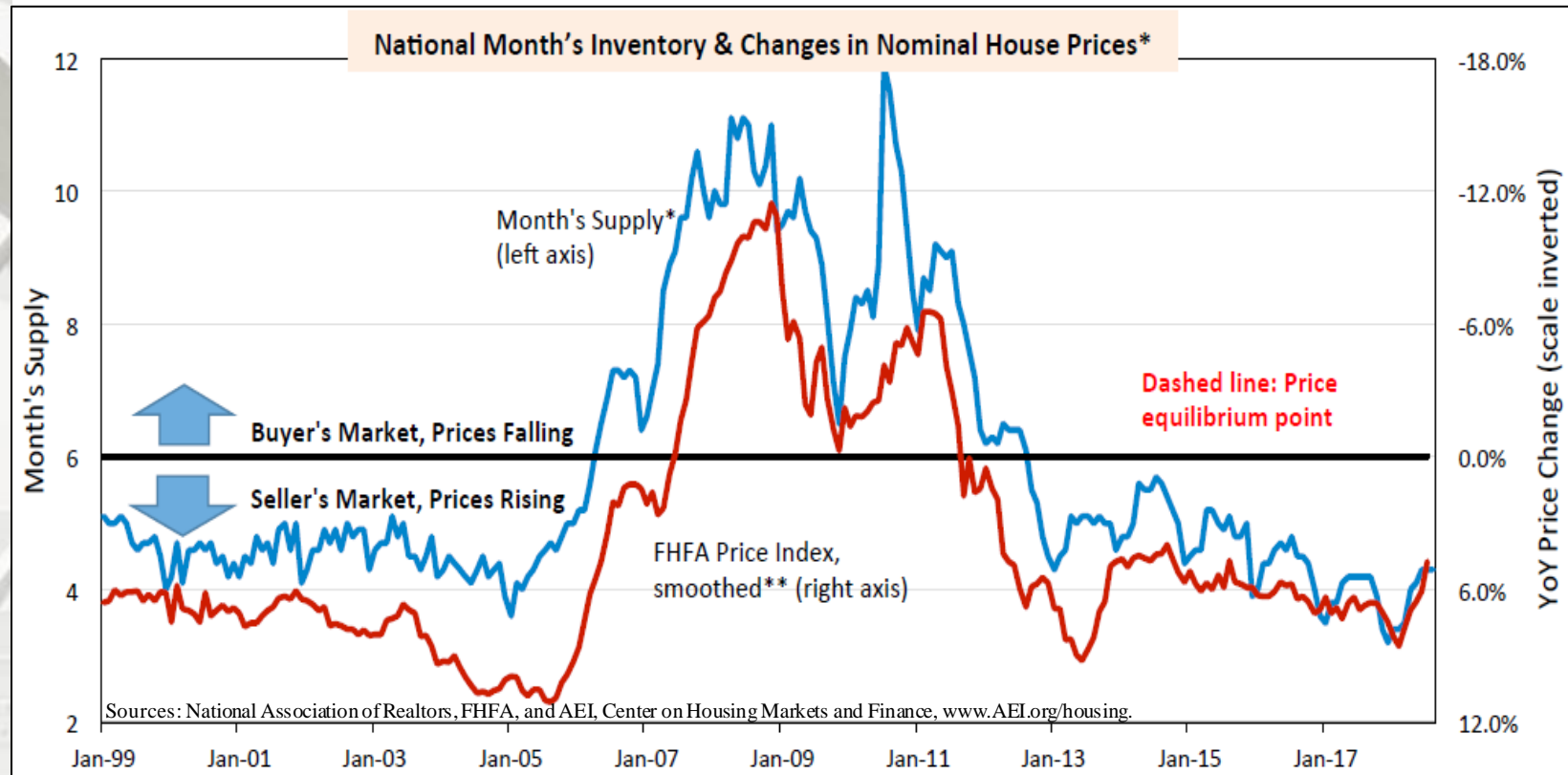


Urban Institute

“Home prices remain affordable by historic standards, despite price increases over the last five years and the recent interest rate hikes. As of August 2018, with 20% down, the share of median income needed for the monthly mortgage payment stood at 23%; with 3.5% down, it is 26%. If interest rates rise from 4.55% to 5.1%, the housing expenses to income share with both a 20 percent and a 3.5 percent down payment would be the same as the 2001-03 averages (24 and 28 percent, respectively). As shown, mortgage affordability varies widely across MSAs.” – Bing Lai, Research Associate, Housing Finance Policy Center

Housing Affordability

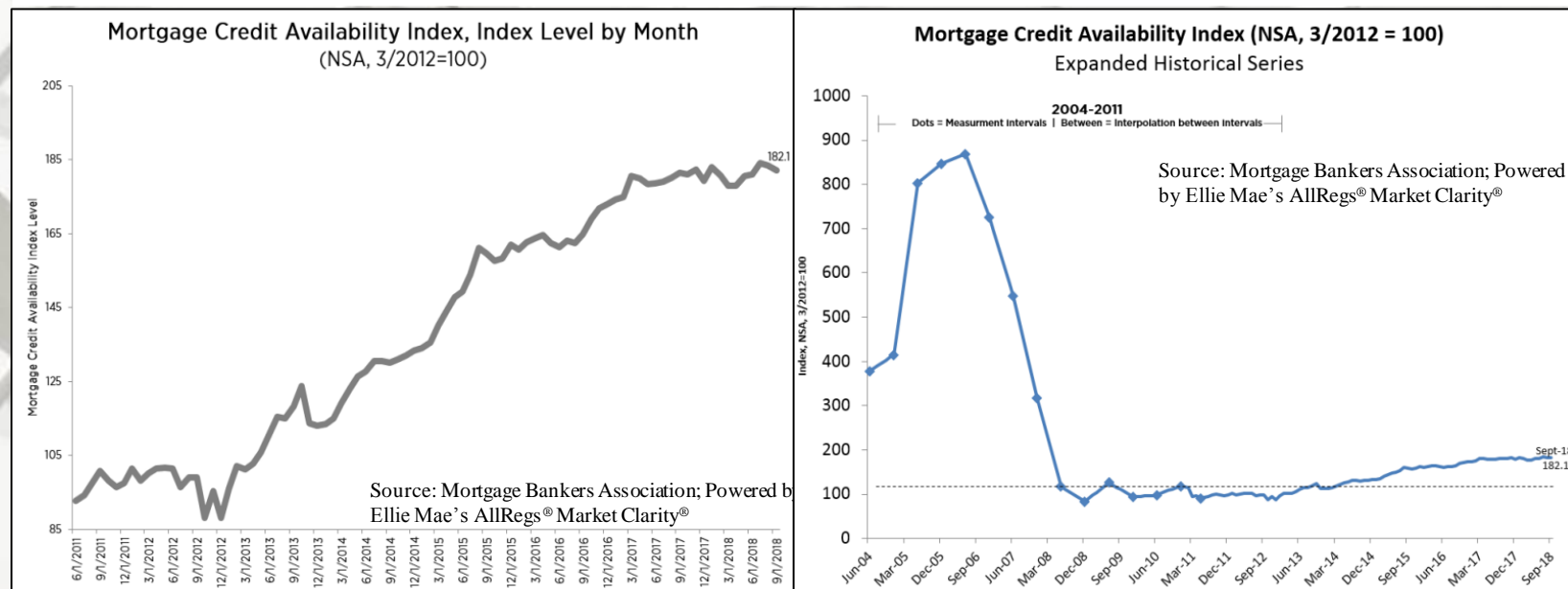
Supply-Demand Imbalance in the Market Driving Prices Up



AEI, Center on Housing Markets and Finance

“Today’s housing market has too much highly leveraged demand chasing too little supply. Historically, there is a strong relationship between the level of supply and price movements. According to the NAR, monthly inventory for August was at 4.3, slightly higher than last year’s reading. While house prices are appreciating at a rate slightly lower than a year ago, this rate is still much higher than the rate of wage and inflation growth. Therefore, it is probably too soon to speak of a market turnaround.” – Edward Pinto and Tobias Peter; AEI, Center on Housing Markets and Finance

Mortgage Credit Availability



Mortgage Credit Availability Decreased in September

“Mortgage credit availability decreased in September 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 decreased 0.8 percent to 182.1 in September. 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 (up 1.2 percent) and the Government MCAI decreased (down 2.5 percent). Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 2.7 percent while the Conforming MCAI decreased by 0.7 percent.

Credit availability moved lower in September, as tightening in the government index offset an increase in conventional credit availability. The decline in government credit was driven by fewer streamline offerings as well as a decline in loan programs with lower credit requirements. The government index is at its lowest level since July 2015. The jumbo subindex increased for the fifth time in six months and reached its highest level since we started tracking jumbo credit.” – Joel Kan, Vice President of Economic and Industry Forecasting, MBA

Summary

In summary:

August housing data was mixed, with several monthly increases due to revising past months data downward. Total, single-, and multi-family permits were negative on a monthly basis; further only single-family permits are positive on a year-over-year basis. All housing start data were positive, with the exception being single-family year-over-year starts. New single-family sales improved month-over-month and were robust on a year-over-year basis. Once again, new SF lower-priced tier house sales were less than historical averages. The new SF construction market needs consistent improvement in this category to influence the housing construction market upward. Overall, housing construction expenditures appear to be moribund. Existing sales continued their stagnating trend, monthly and yearly.

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

Pros:

- 1) Historically low interest rates are still in effect, though in aggregate rates are incrementally rising;
- 2) Housing affordability remains good – but is deteriorating in certain metros in the U.S.;
- 3) Select builders are beginning to focus on entry-level houses.

Cons:

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

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