

# The Virginia Tech – U.S. Forest Service

## November 2017

### Housing Commentary: Section I



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<http://woodproducts.sbio.vt.edu/housing-report>. To request the report, please email: [buehlmann@gmail.com](mailto:buehlmann@gmail.com)

# Opening Remarks

November's housing data remain tepid – with the exception being new single-family sales and single-family starts. Both data series increased remarkably on a month-to-month basis. Regionally, data were mixed across all sectors. The January 12th Atlanta Fed GDPNow™ model projects aggregate residential investment spending increased 9.9% in Quarter Four 2017. New private permanent site expenditures were estimated at a 5.1% rise; the improvement spending forecast was a 4.1% increase; and the manufactured/mobile housing forecast was a 38.8% rise (all: seasonally adjusted annual rate).<sup>1</sup> The 2018 starts and new sales forecasts suggest continued improvement – primarily in new single-family starts (an increase of 57,000 from 2017 forecasts – median basis) and single-family sales (increasing of 36,000 from 2017 estimates).

“...New residential housing (the key driver of North American lumber consumption) remains on a slow but steady upward trajectory and should reach between 1.20-1.22 million units in 2017. Stocks of both new and existing homes have retreated to historical levels, but prices for new homes continue to move up in many markets (and in some cases are higher than those seen before the 2006 crash). With a shortage of building lots and workers, as well as strong credit ratings required for new-home purchases, a number of factors have contributed to a tight housing inventory, fostering price increases. The five-year WOOD MARKETS 2018 housing forecast is still very conservative, and we do not foresee U.S. housing starts reaching 1.5 million units until 2022 at the earliest. Even with a slow rate of growth in U.S. housing starts in 2017 and given what is expected from 2018 to 2022, supply-side impacts have already led to some major imbalances; overall demand and market activity is anticipated to remain active and volatile again in 2018 and beyond.”<sup>2</sup> – Russ Taylor, Managing Director, FEACanada (WOOD MARKETS)

This month's commentary also contains 2018 forecasts, applicable housing data; new single-family and multifamily analysis; construction firms, housing occupancy and vacancy; remodeling projections; and economic and demographic information. Section I contains data and commentary and Section II includes Federal Reserve analysis, private indicators, and demographic commentary.

Sources: <sup>1</sup> <https://www.frbatlanta.org/-/media/Documents/cqer/researchcq/gdpnow/GDPTrackingModelDataAndForecasts.xlsx>; 1/12/18;

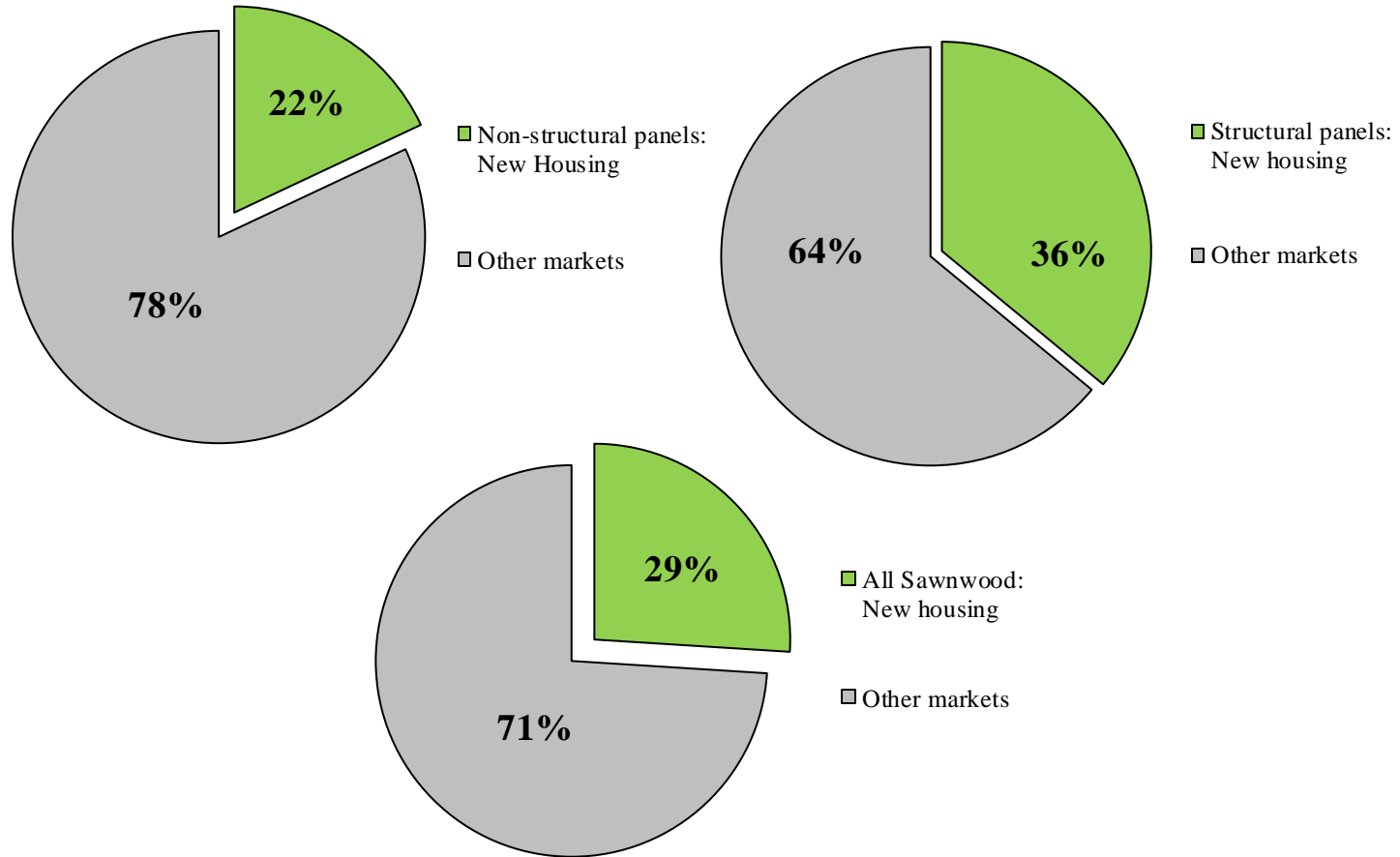
<sup>2</sup> <https://www.woodbusiness.ca/industry-news/markets/2018-lumber-outlook-4684?> 1/3/18

# November 2017 Housing Scorecard

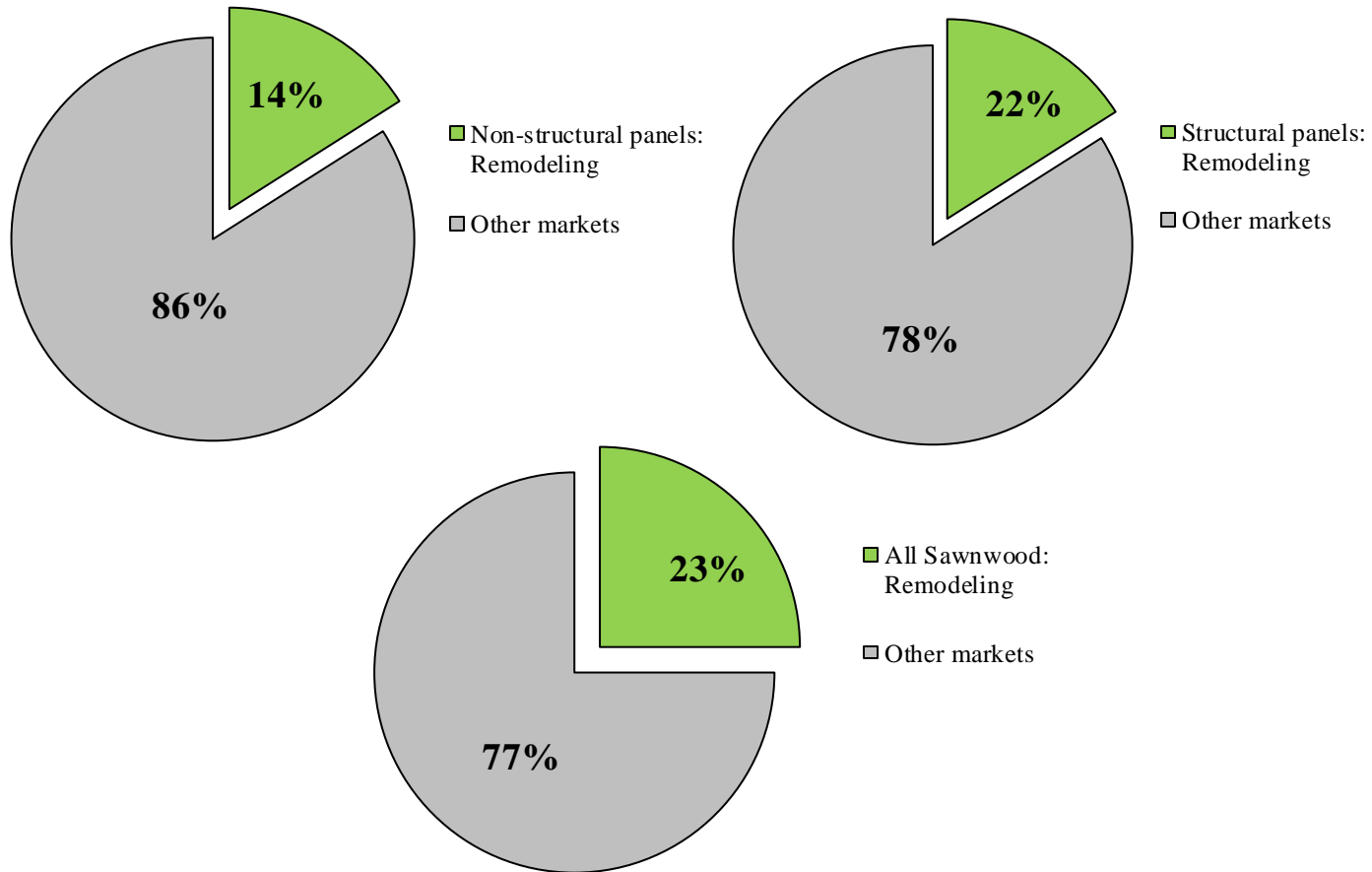
	M/M	Y/Y
Housing Starts	△ 3.3%	△ 12.9%
Single-Family Starts	△ 5.3%	△ 13.0%
Housing Permits	▽ 1.4%	△ 3.4%
Single-Family Permits	△ 1.4%	△ 9.7%
Housing Completions	▽ 6.1%	▽ 7.2%
Single-Family Completions	▽ 4.6%	▽ 1.8%
New Single-Family House Sales	△ 17.5%	△ 26.6%
Private Residential Construction Spending	△ 1.0%	△ 7.9%
Single-Family Construction Spending	△ 1.9%	△ 8.9%
Existing House Sales <sup>1</sup>	△ 5.6%	△ 3.8%

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

# New Construction's Percentage of Wood Products Consumption



# Repair and Remodeling's Percentage of Wood Products Consumption



# 2018 Housing Forecasts\*

<b>Total starts, range:</b>	<b>1,248 to 1,320</b>	<b>Median: 1,280</b>
<b>Single-family starts, range:</b>	<b>850 to 981</b>	<b>Median: 912</b>
<b>New house sales, range:</b>	<b>653 to 703</b>	<b>Median: 680</b>

<b>Organization</b>	<b>Total Starts</b>	<b>Single-Family Starts</b>	<b>New House Sales</b>
APA - The Engineered Wood Association <sup>a</sup>	1,248	896	
Bank of Montreal <sup>b</sup>	1,280		
Deloitte <sup>c</sup>	1,300		
Dodge Data & Analytics <sup>d</sup>		850	
Fannie Mae <sup>e</sup>	1,255	910	703
Freddie Mac <sup>f</sup>	1,300		
Forest Economic Advisors <sup>g</sup>	1,311	931	
Forest2Market <sup>h</sup>	1,260		
Home Advisor <sup>i</sup>	1,320	981	653

\* All in thousands of units

# 2018 Housing Forecasts\*

Organization	Total Starts	Single-Family Starts	New House Sales
Merrill Lynch <sup>j</sup>	1,275		680
Metrostudy <sup>k</sup>	1,278		
Mortgage Bankers Association <sup>l</sup>	1,289	914	695
National Association of Homebuilders <sup>m</sup>	1,248	896	653
National Association of Realtors <sup>n</sup>			700
Old Castle <sup>o</sup>	1,309	926	
Royal Bank of Canada <sup>p</sup>	1,294		
Scotia Bank <sup>q</sup>	1,300		
TD Economics <sup>r</sup>	1,280		
The Federal Reserve Bank of Chicago <sup>s</sup>	1,260		
Urban Institute <sup>t</sup>	1,300		
Wells Fargo <sup>u</sup>	1,280	930	675

\* All in thousands of units



## References

a-*Random Lengths*, Volume 73, Issue 49 (11/29/17)

b-<https://economics.bmocapitalmarkets.com/economics/outlook/20180103/nao.pdf>

c-<https://www2.deloitte.com/insights/us/en/economy/us-economic-forecast/2017-q4.html>

d-<https://www.construction.com/news/new-construction-starts-2018-increase-3-percent-765-billion-dollars-nov-2017>

e-[http://www.fanniemae.com/resources/file/research/emma/pdf/Housing\\_Forecast\\_121817.pdf](http://www.fanniemae.com/resources/file/research/emma/pdf/Housing_Forecast_121817.pdf)

f-<http://www.freddiemac.com/research/pdf/201711-Outlook.pdf>

g-*Random Lengths*, Volume 73, Issue 49 (11/29/17)

h-<http://conta.cc/2qqV1rU>

i-<http://www.calculatedriskblog.com/2017/12/2018-housing-forecasts.html>

j-<http://www.calculatedriskblog.com/2017/12/2018-housing-forecasts.html>

k-<http://www.metrostudy.com/go/webinarq42017>

l-<https://www.mba.org/news-research-and-resources/research-and-economics/forecasts-and-commentary>

m-<https://www.nahb.org/en/research/housing-economics/economic-and-housing-forecasts.aspx>

n-<https://www.nar.realtor/presentations/november-2017-economic-housing-outlook-lawrence-yuns-presentation-slides>

o-<https://info.buildingsolutions.com/hubfs/2018%20North%20American%20Construction%20Forecast%20Report.pdf>

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q-<http://www.gbm.scotiabank.com/scpt/gbm/scotiaeconomics63/forecast.pdf>

r-<https://economics.td.com/us-long-term-forecast>

s- <https://www.chicagofed.org/~media/others/...outlook.../eos-press-release-pdf>

u-<https://www.urban.org/sites/all/libraries/pdf.js/web/viewer.html>

v-<https://www08.wellsfargomedia.com/assets/pdf/commercial/insights/economics/real-estate-and-housing/housing-chartbook-20171214.pdf>

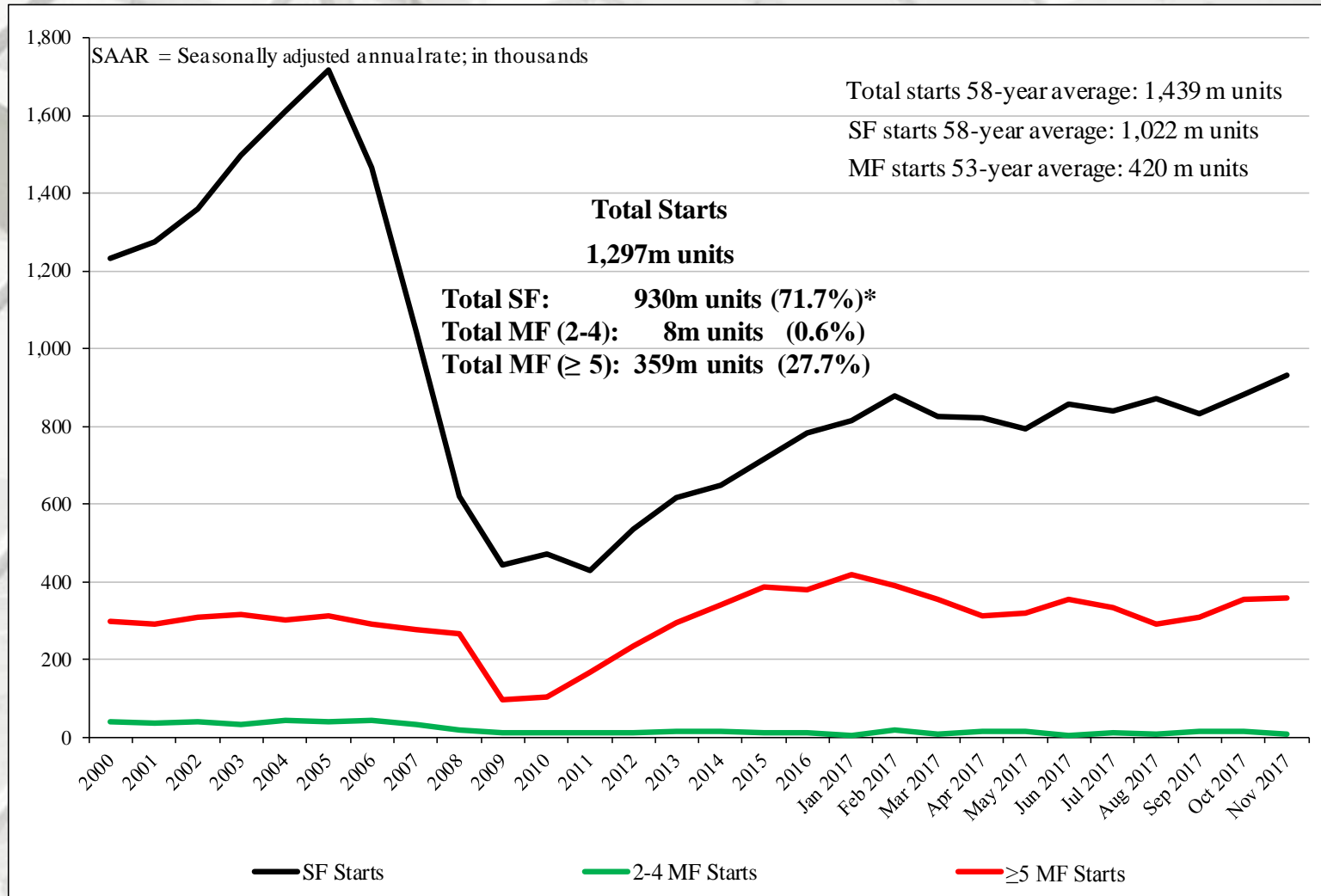
# New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
November	1,297,000	930,000	8,000	359,000
October	1,256,000	883,000	17,000	356,000
2016	1,149,000	823,000	3,000	323,000
M/M change	3.3%	5.3%	-52.9%	0.8%
Y/Y change	12.9%	13.0%	166.7%	11.1%

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

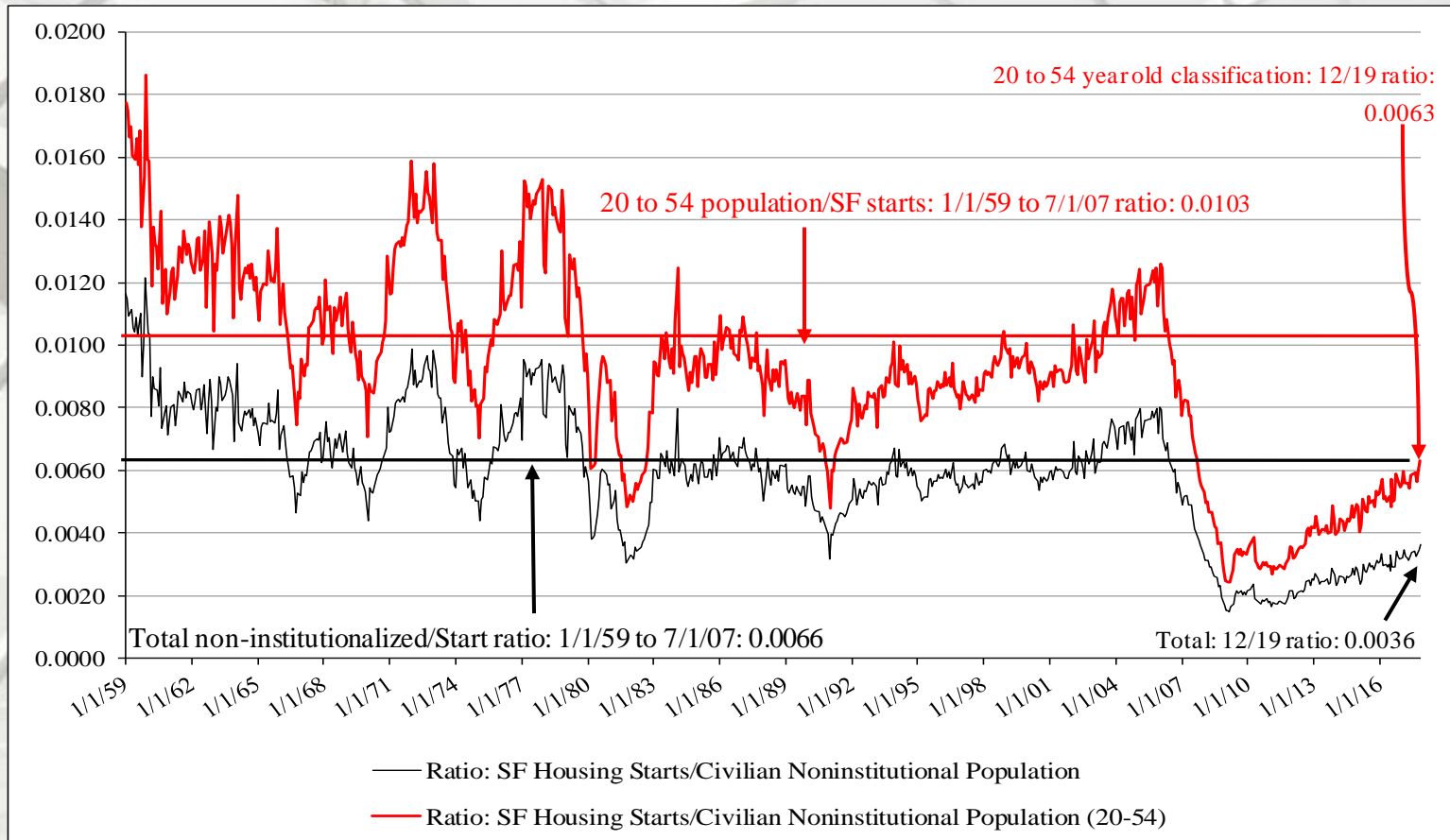
\*\* US DOC does not report 2 to 4 multifamily starts directly, this is an estimation ((Total starts – (SF + 5 unit MF)).

# Total Housing Starts



\* Percentage of total starts.

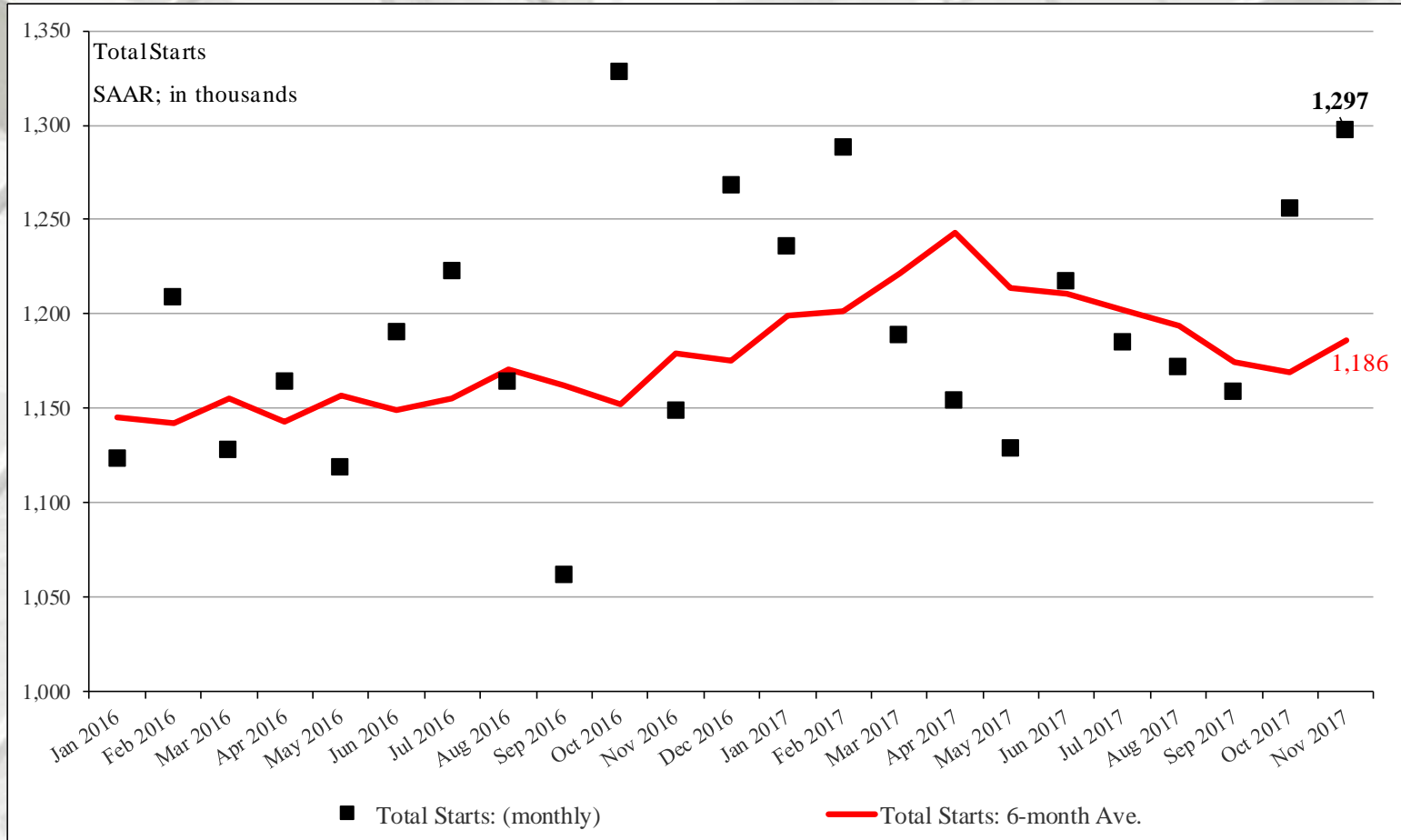
# New SF Starts



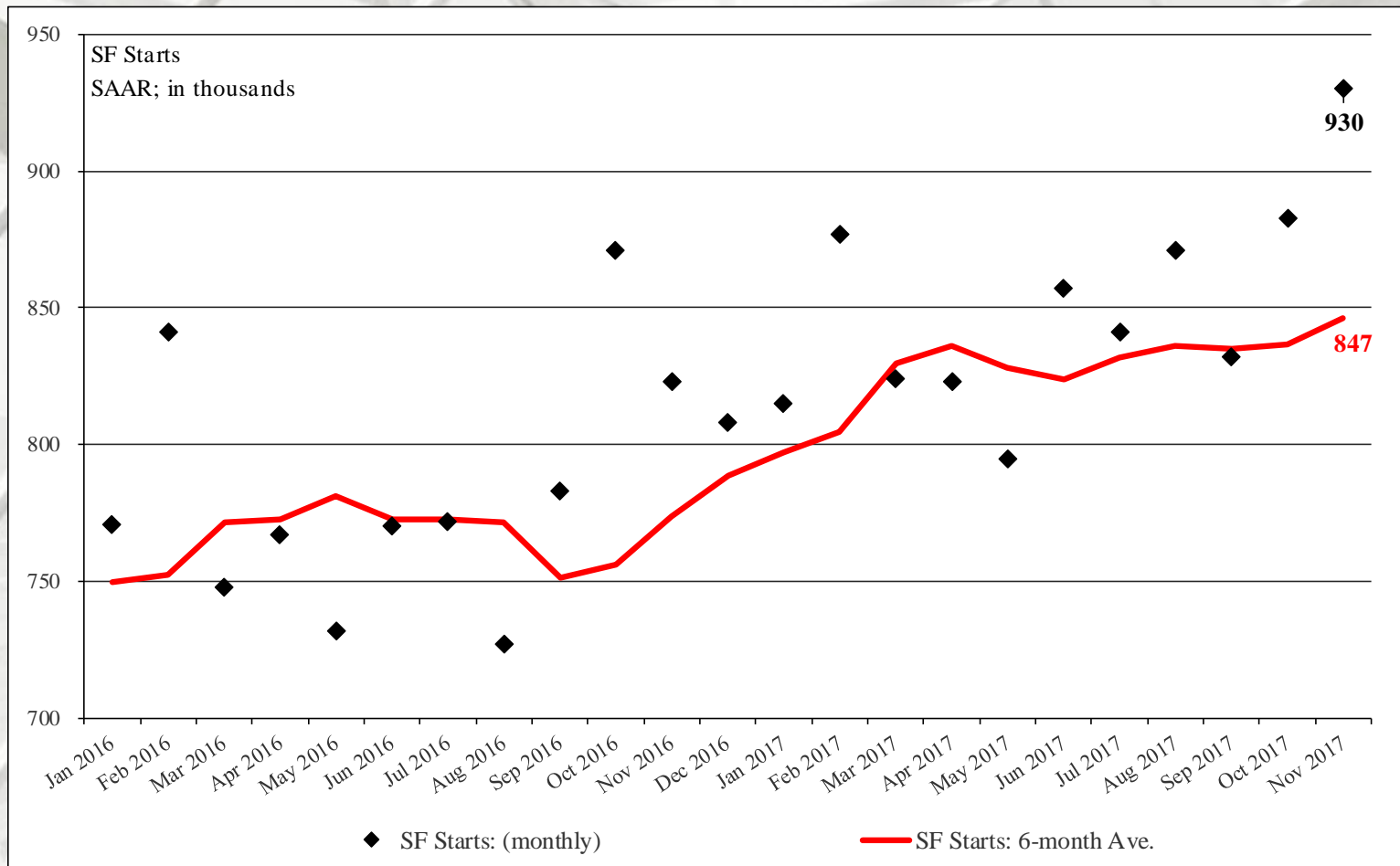
## New SF starts adjusted for the US population

From January 1959 to July 2007, the long-term ratio of new SF starts to the total US non-institutionalized population was 0.0066; in November 2017 it was 0.0036 – an increase from October (0.0035). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in November 2017 it was 0.0063 – an increase from October (0.0060). From a population worldview, 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

	<b>NE Total</b>	<b>NE SF</b>	<b>NE MF**</b>
November	87,000	63,000	24,000
October	144,000	63,000	81,000
2016	83,000	59,000	24,000
M/M change	-39.6%	0.0%	-70.4%
Y/Y change	4.8%	6.8%	0.0%

	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
November	175,000	128,000	47,000
October	201,000	144,000	57,000
2016	216,000	142,000	74,000
M/M change	-12.9%	-11.1%	-17.5%
Y/Y change	-19.0%	-9.9%	-36.5%

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

	<b>S Total</b>	<b>S SF</b>	<b>S MF**</b>
November	691,000	515,000	176,000
October	622,000	475,000	147,000
2016	581,000	442,000	139,000
M/M change	11.1%	8.4%	19.7%
Y/Y change	18.9%	16.5%	26.6%

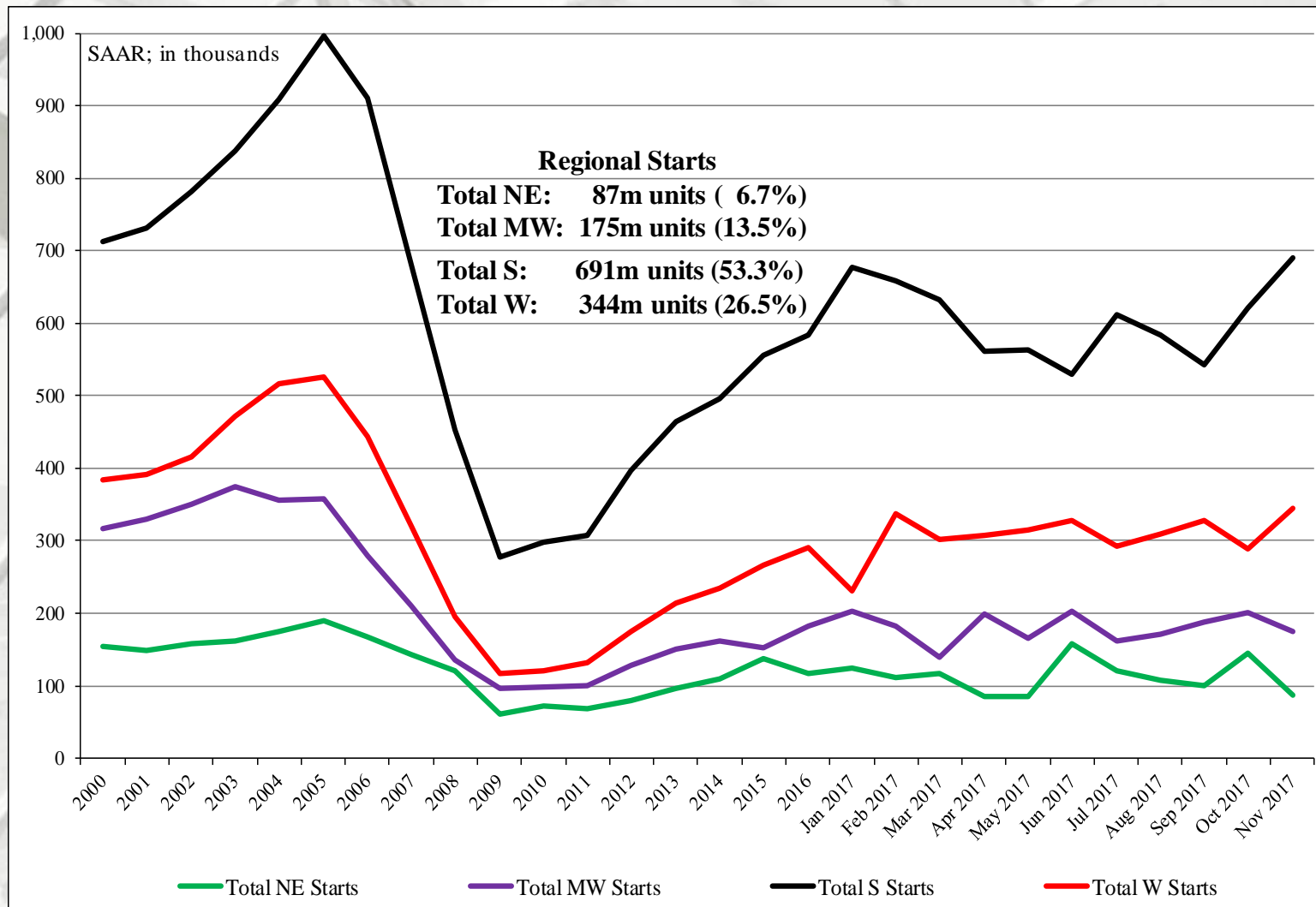
	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
November	344,000	224,000	120,000
October	289,000	201,000	88,000
2016	269,000	180,000	89,000
M/M change	19.0%	11.4%	36.4%
Y/Y change	27.9%	24.4%	34.8%

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).

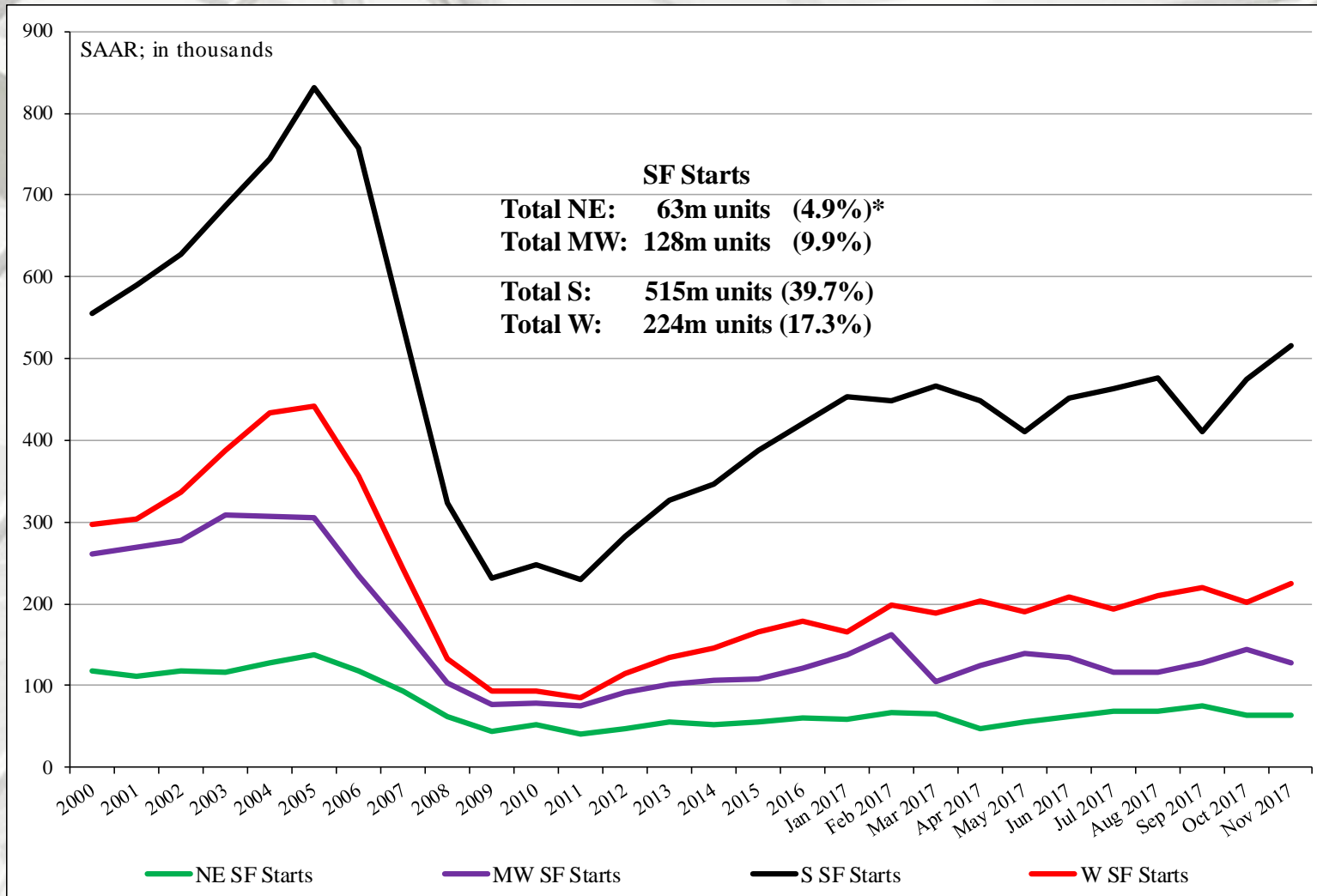


# Total Housing Starts by Region



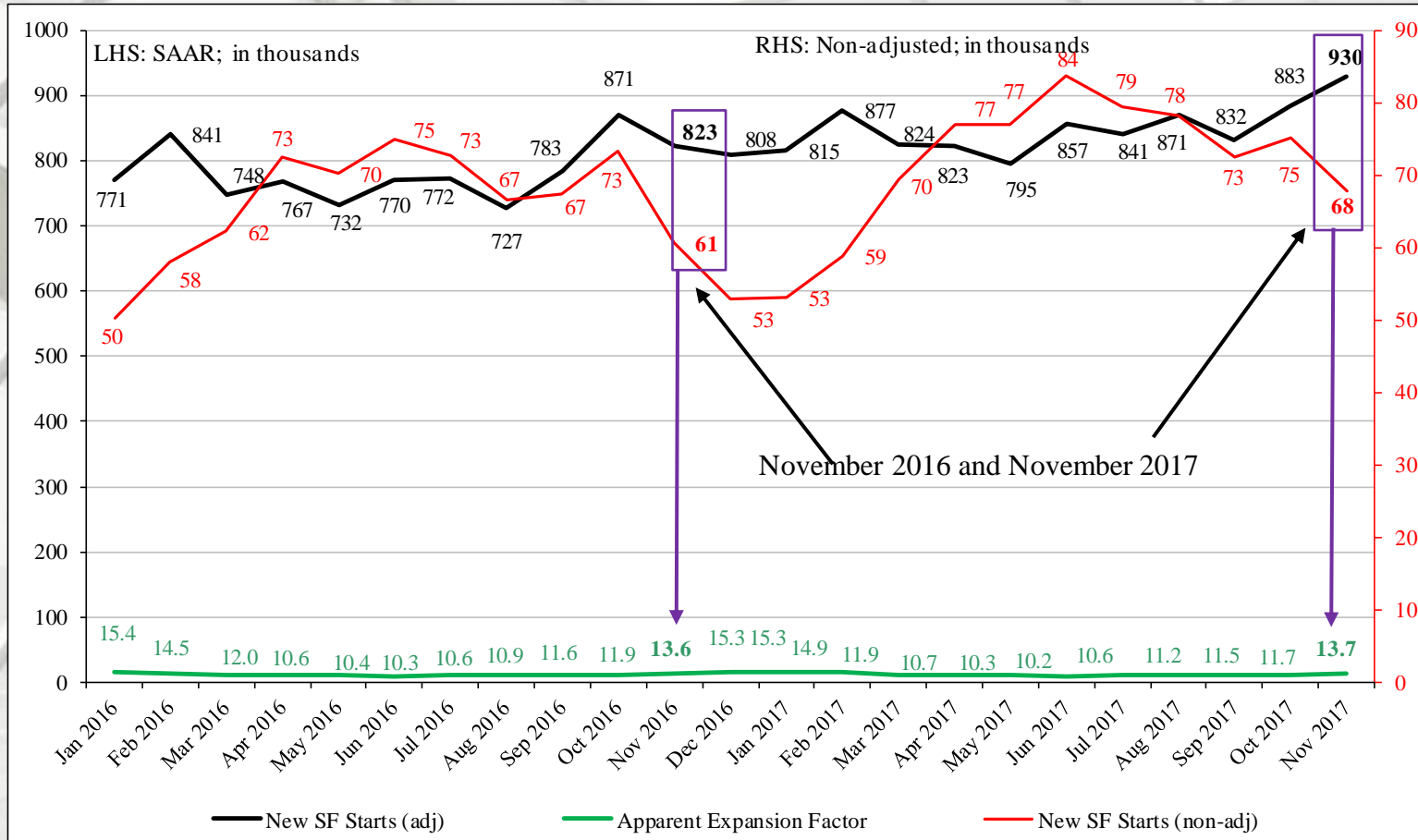
\* Percentage of total starts.

# SF Housing Starts by Region



\* Percentage of total starts.

# Nominal & SAAR SF Starts

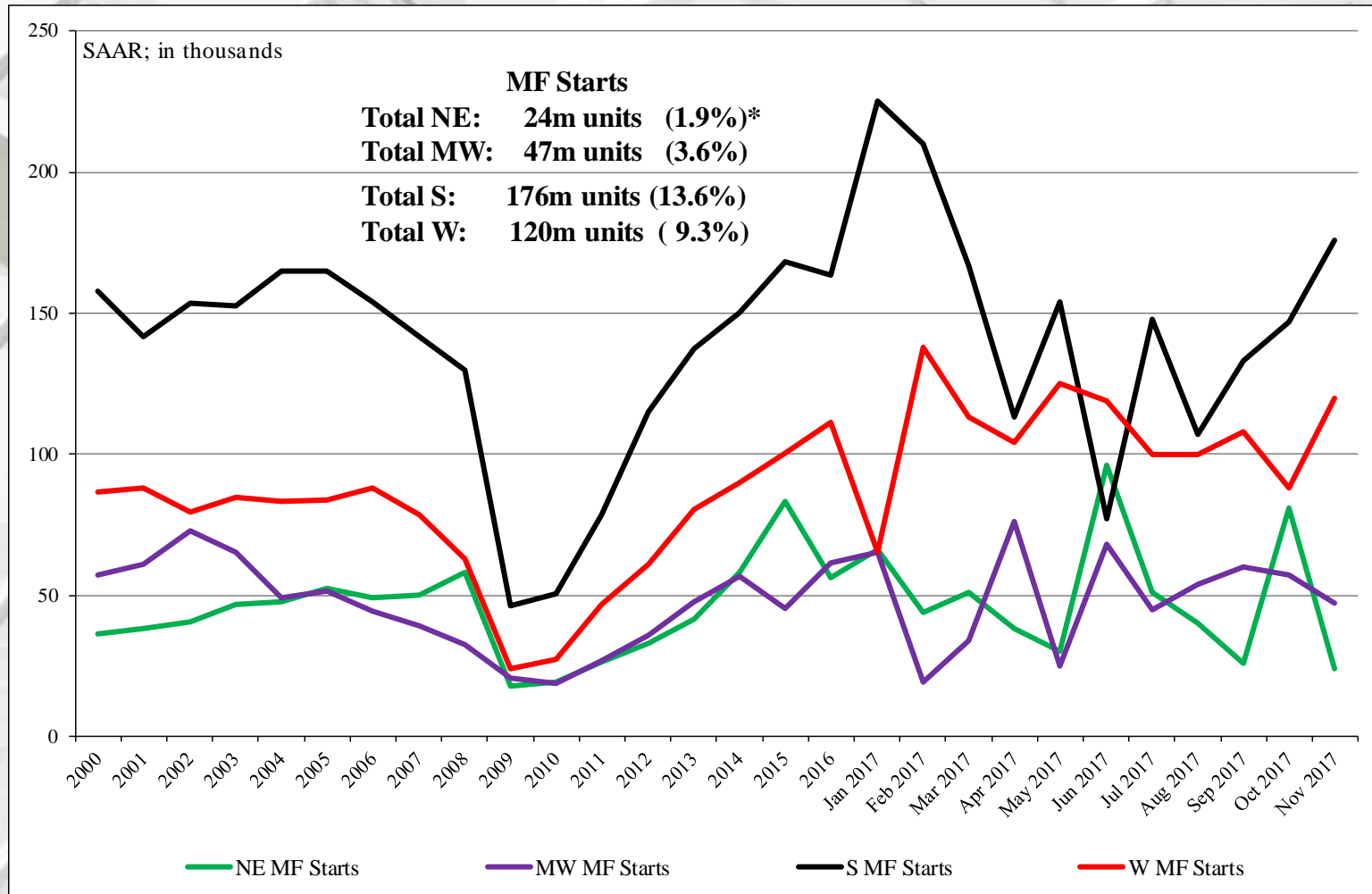


## Nominal and Adjusted New SF Monthly Starts

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

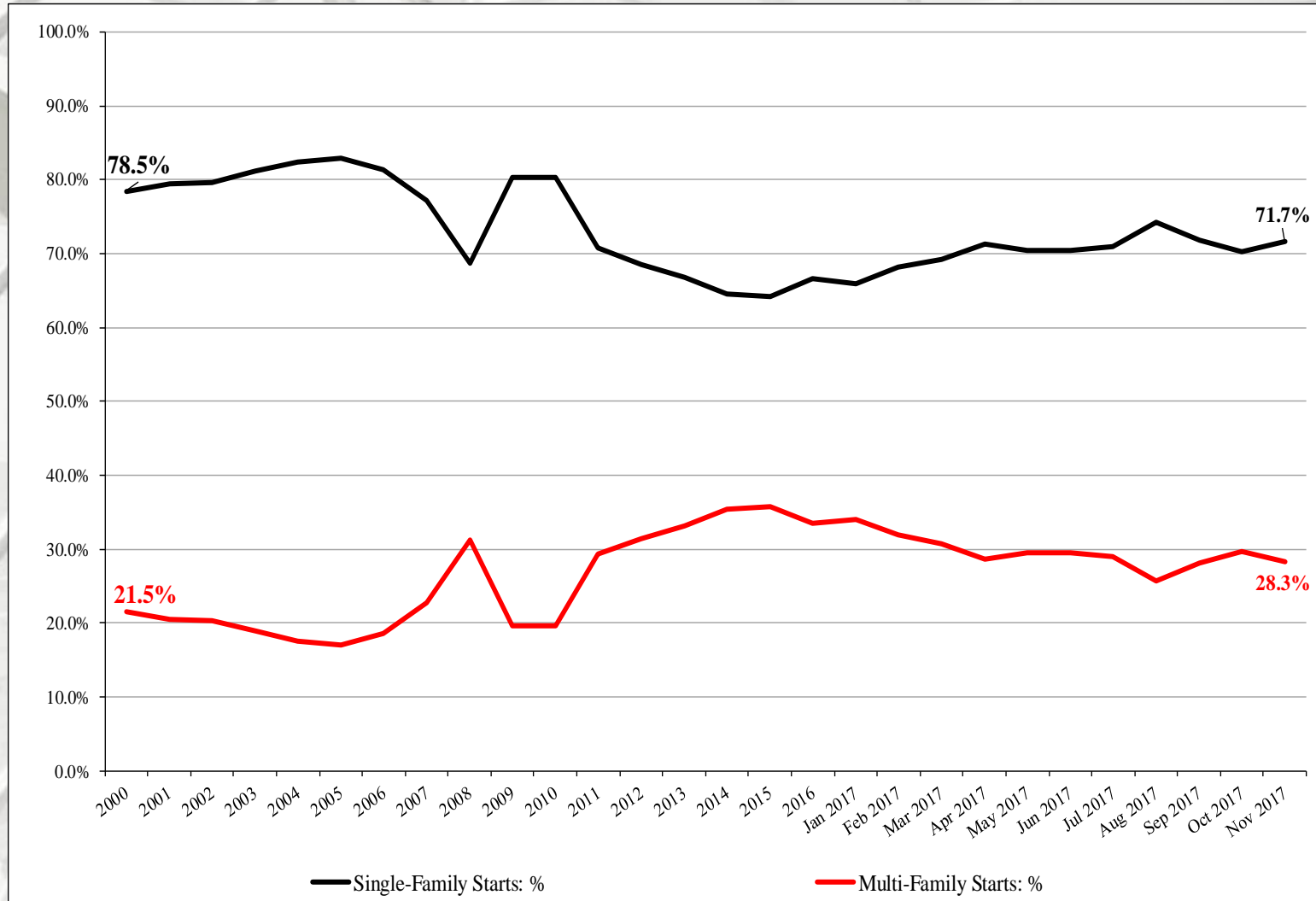
The apparent expansion factor "... is the ratio of the unadjusted number of houses started in the US to the seasonally adjusted number of houses started in the US (i.e., to the sum of the seasonally adjusted values for the four regions)." – U.S. DOC-Construction

# MF Housing Starts by Region

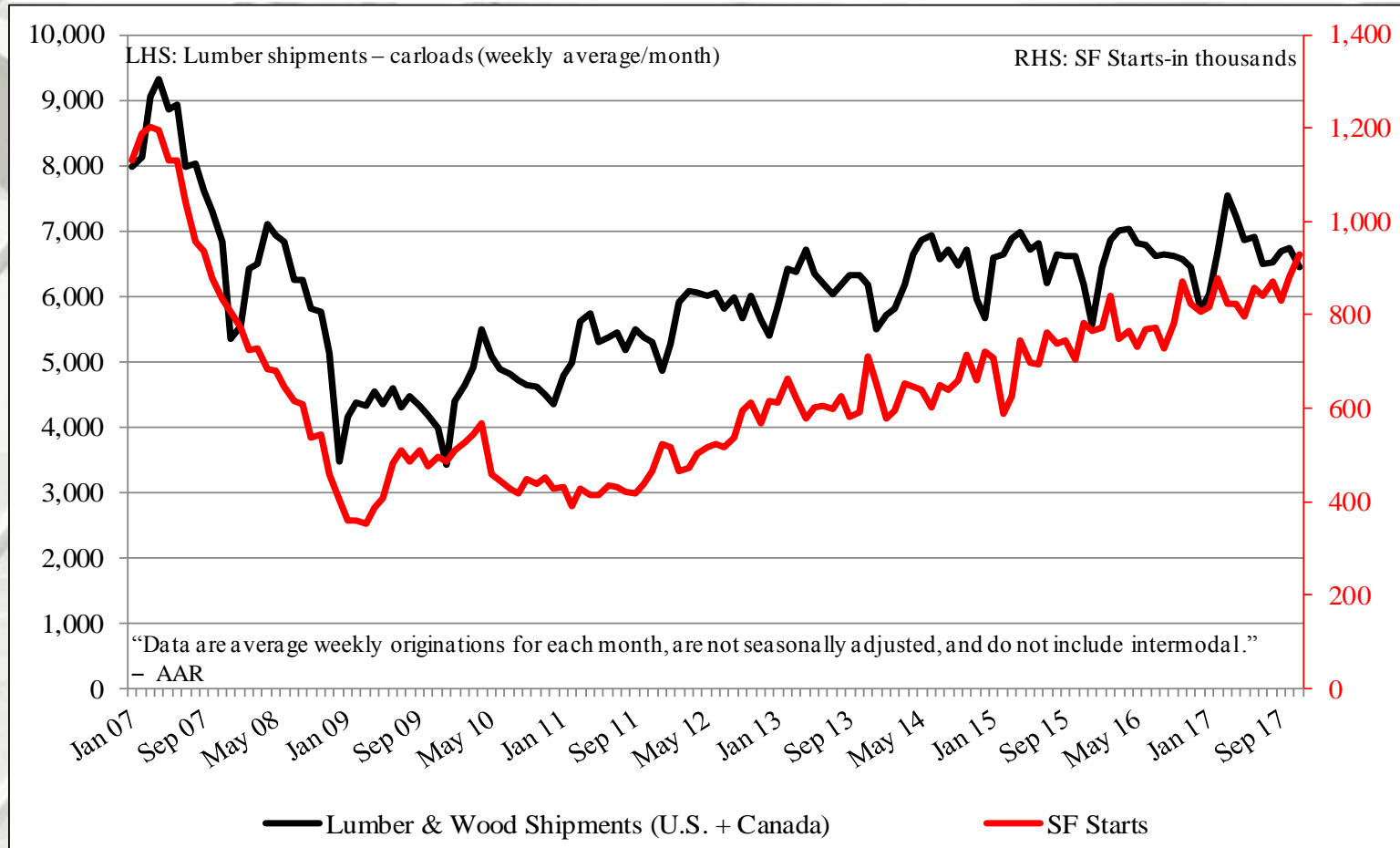


\* Percentage of total starts.

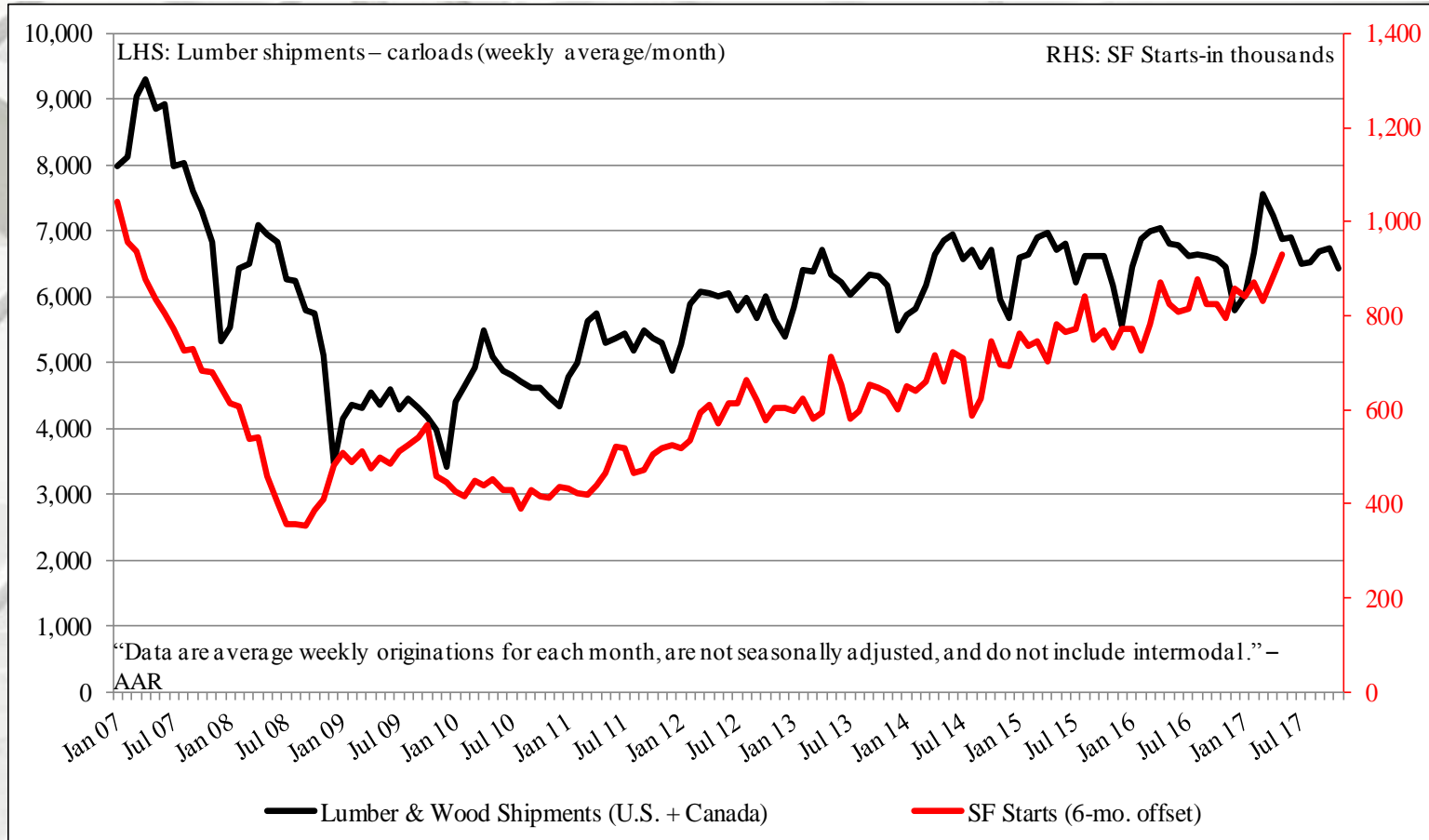
# SF & MF Housing Starts (%)



# 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 November 2007 SF starts, and continuing through November 2017 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.

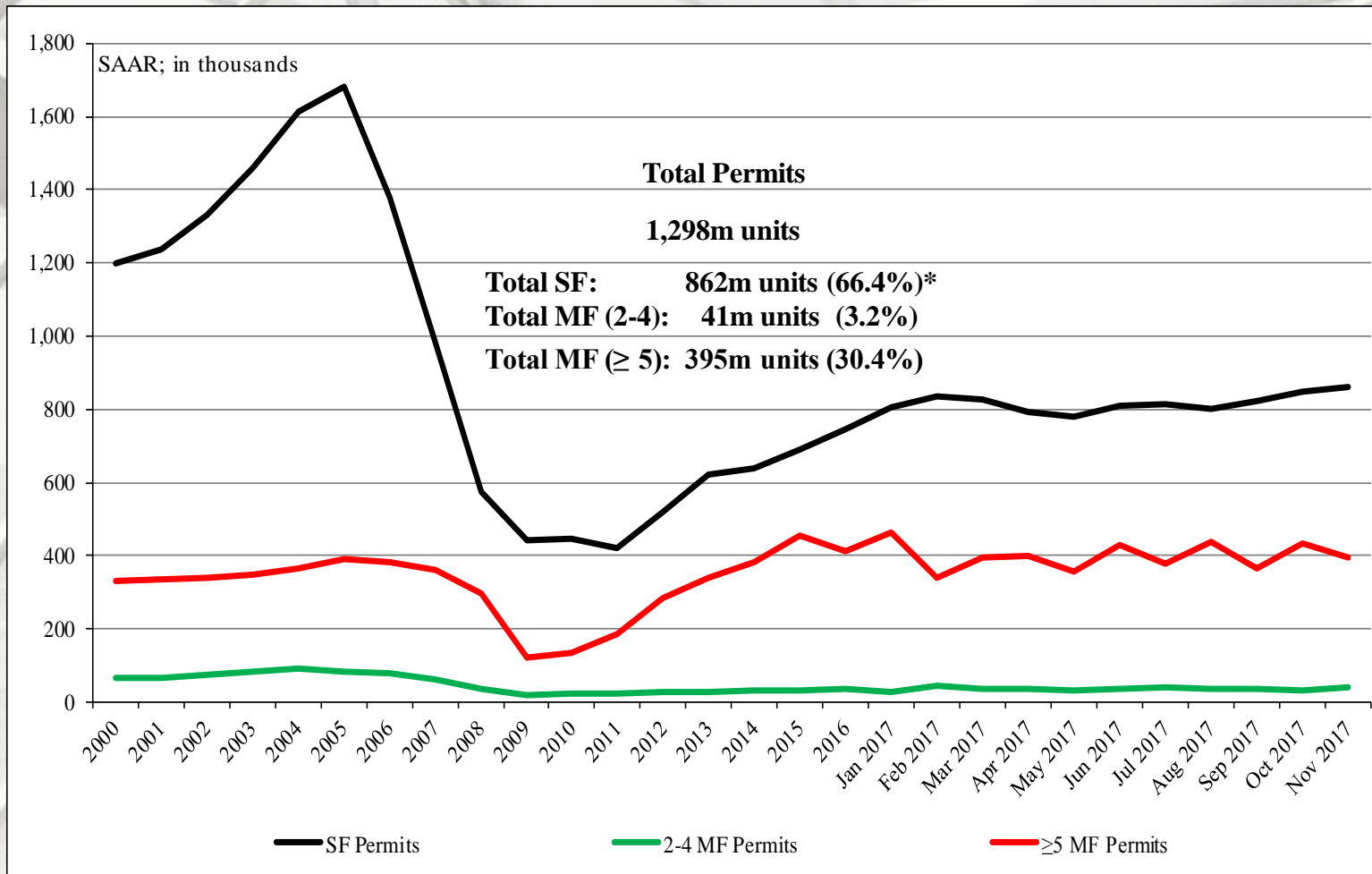
# New Housing Permits

	<b>Total Permits*</b>	<b>SF Permits</b>	<b>MF 2-4 unit Permits</b>	<b>MF ≥ 5 unit Permits</b>
November	1,298,000	862,000	41,000	395,000
October	1,316,000	850,000	33,000	433,000
2016	1,255,000	786,000	41,000	428,000
M/M change	-1.4%	1.4%	24.2%	-8.8%
Y/Y change	3.4%	9.7%	0.0%	-7.7%

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

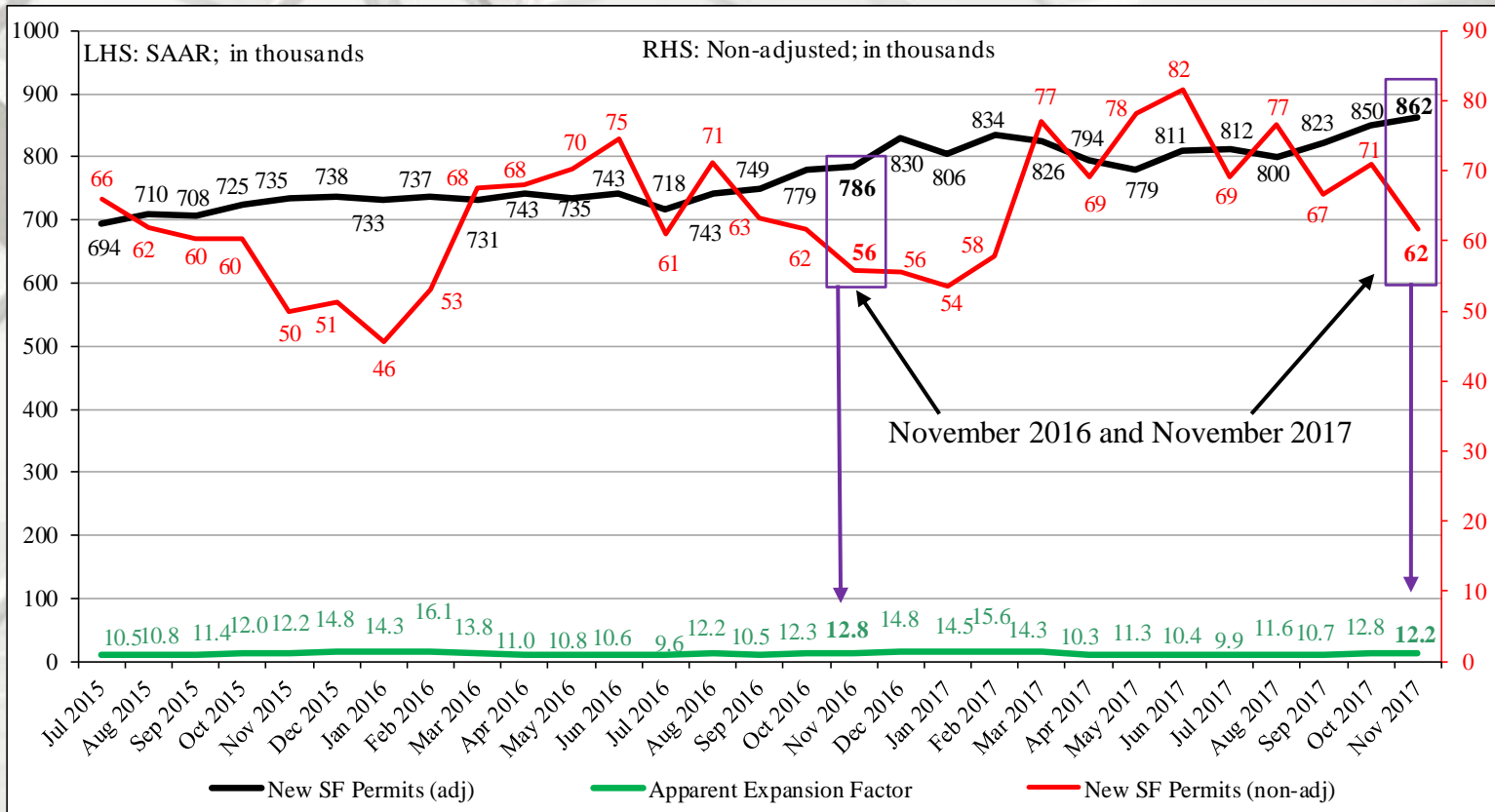


# Total New Housing Permits



\* 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

	<b>NE Total*</b>	<b>NE SF</b>	<b>NE MF**</b>
November	115,000	55,000	60,000
October	122,000	53,000	69,000
2016	119,000	55,000	64,000
M/M change	-5.7%	3.8%	-13.0%
Y/Y change	-3.4%	0.0%	-6.3%

	<b>MW Total*</b>	<b>MW SF</b>	<b>MW MF**</b>
November	184,000	131,000	53,000
October	193,000	127,000	66,000
2016	187,000	120,000	67,000
M/M change	-4.7%	3.1%	-19.7%
Y/Y change	-1.6%	9.2%	-20.9%

- 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

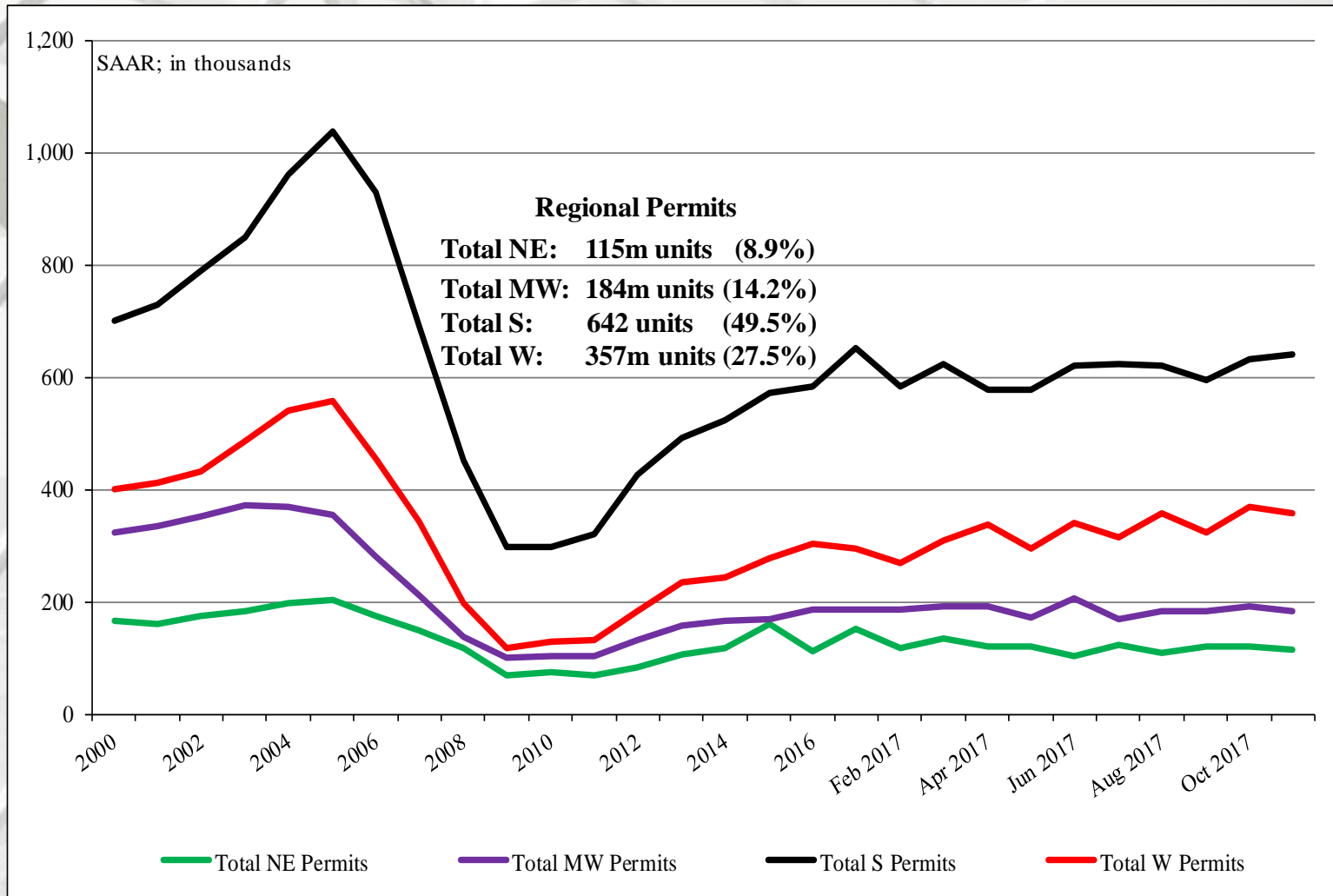
	<b>S Total*</b>	<b>S SF</b>	<b>S MF**</b>
November	642,000	467,000	175,000
October	633,000	456,000	177,000
2016	608,000	419,000	189,000
M/M change	1.4%	2.4%	-1.1%
Y/Y change	5.6%	11.5%	-7.4%

	<b>W Total*</b>	<b>W SF</b>	<b>W MF**</b>
November	357,000	209,000	148,000
October	368,000	214,000	154,000
2016	341,000	192,000	149,000
M/M change	-3.0%	-2.3%	-3.9%
Y/Y change	4.7%	8.9%	-0.7%

• All data are SAAR

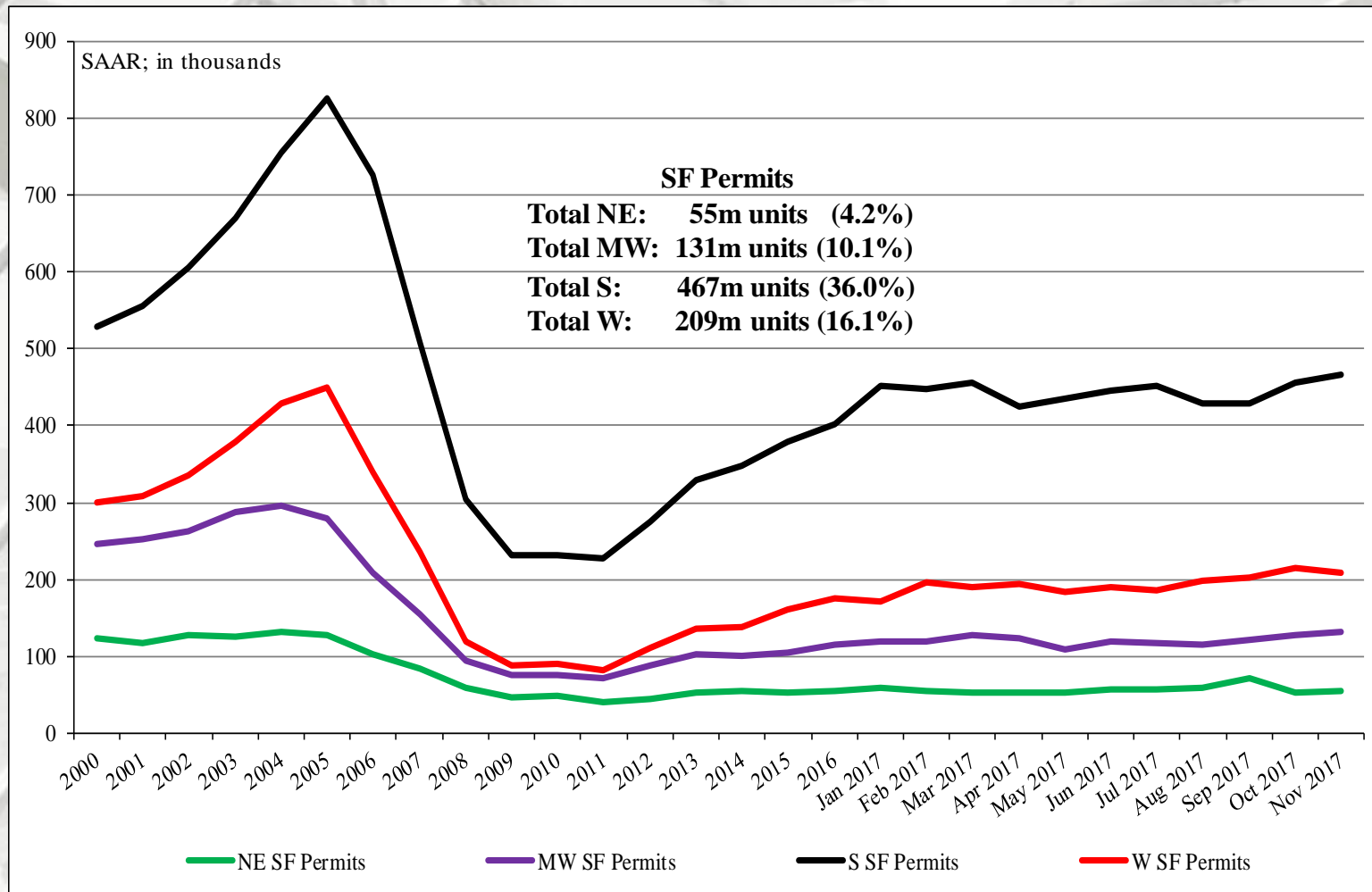
• \*\* US DOC does not report multifamily starts directly, this is an estimation (Total starts – SF starts).

# Total Housing Permits by Region



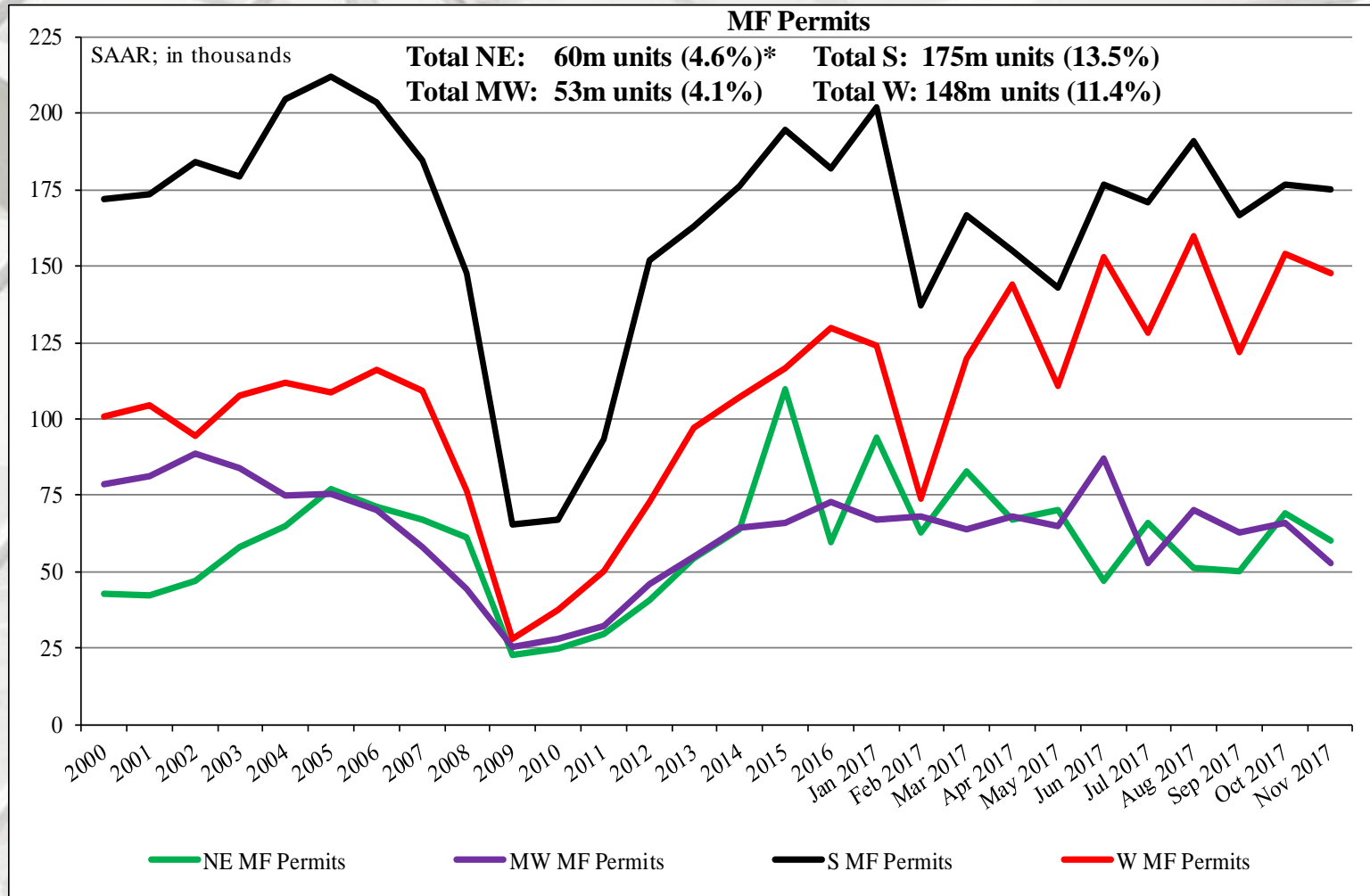
\* Percentage of total permits.

# SF Housing Permits by Region



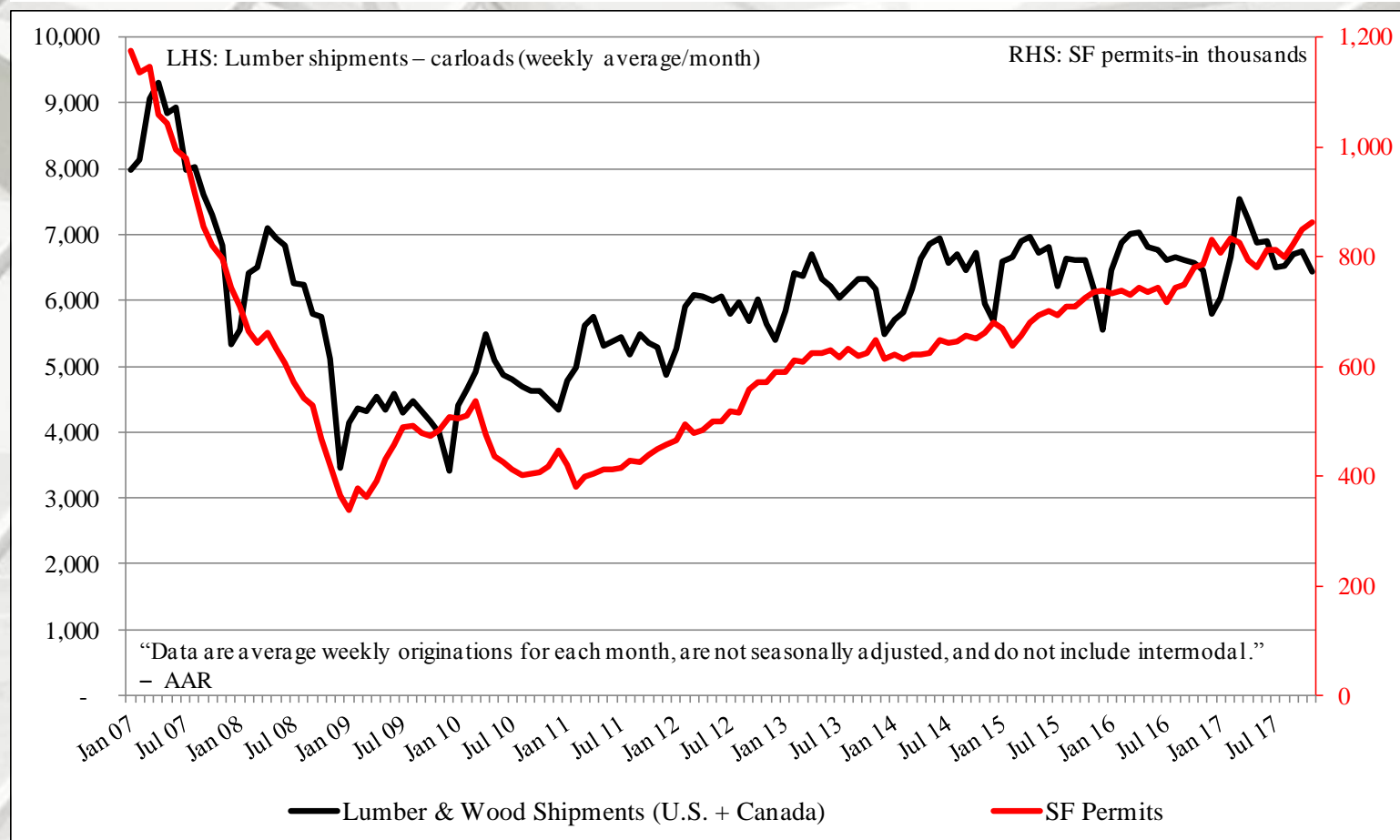
\* Percentage of total permits.

# MF Housing Permits by Region



\* Percentage of total permits.

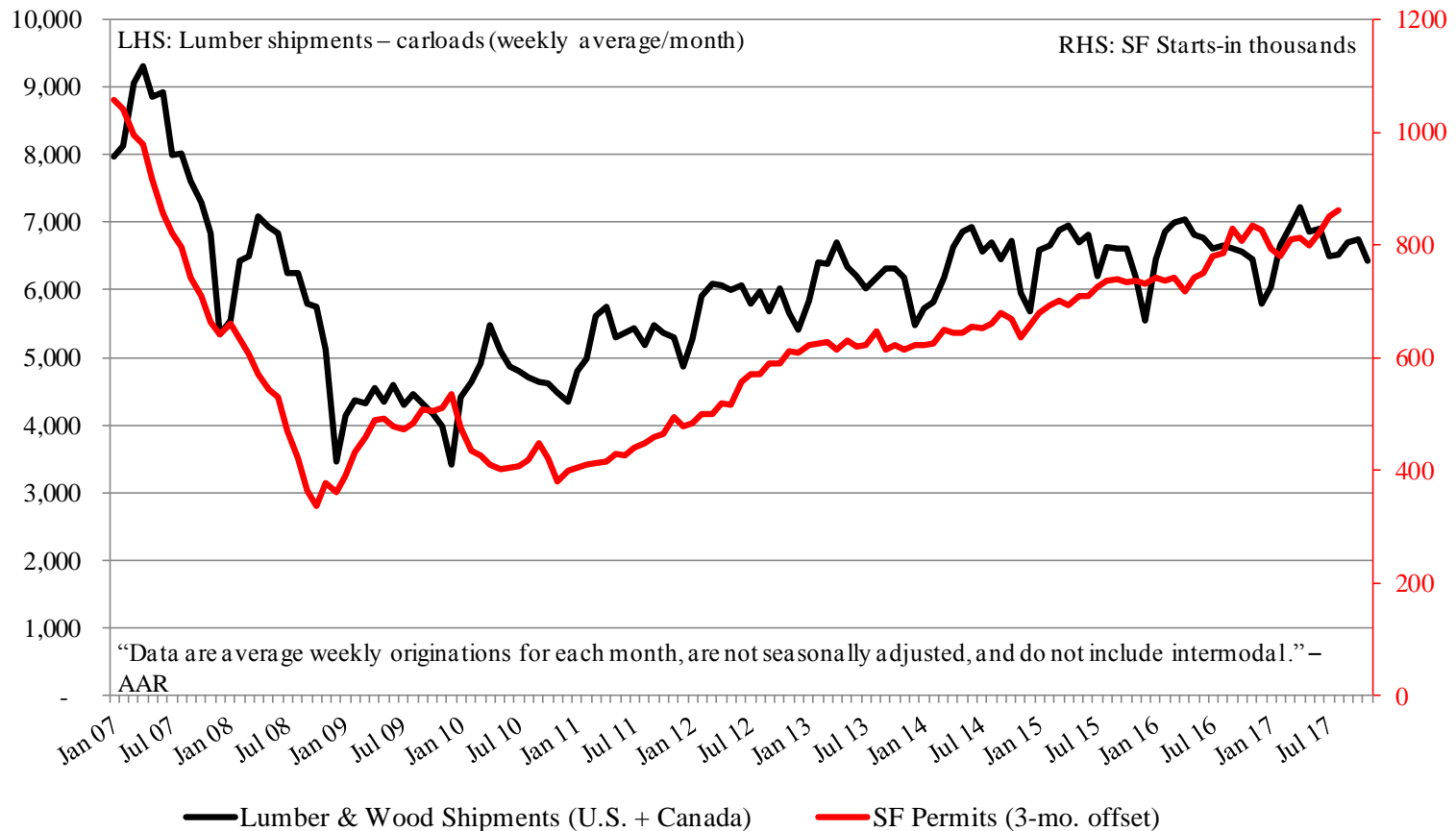
# Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 12/8/17; U.S. DOC-Construction; 12/19/17



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



In this graph, January 2007 lumber shipments are contrasted with April 2007 SF permits, continuing through November 2017. 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.

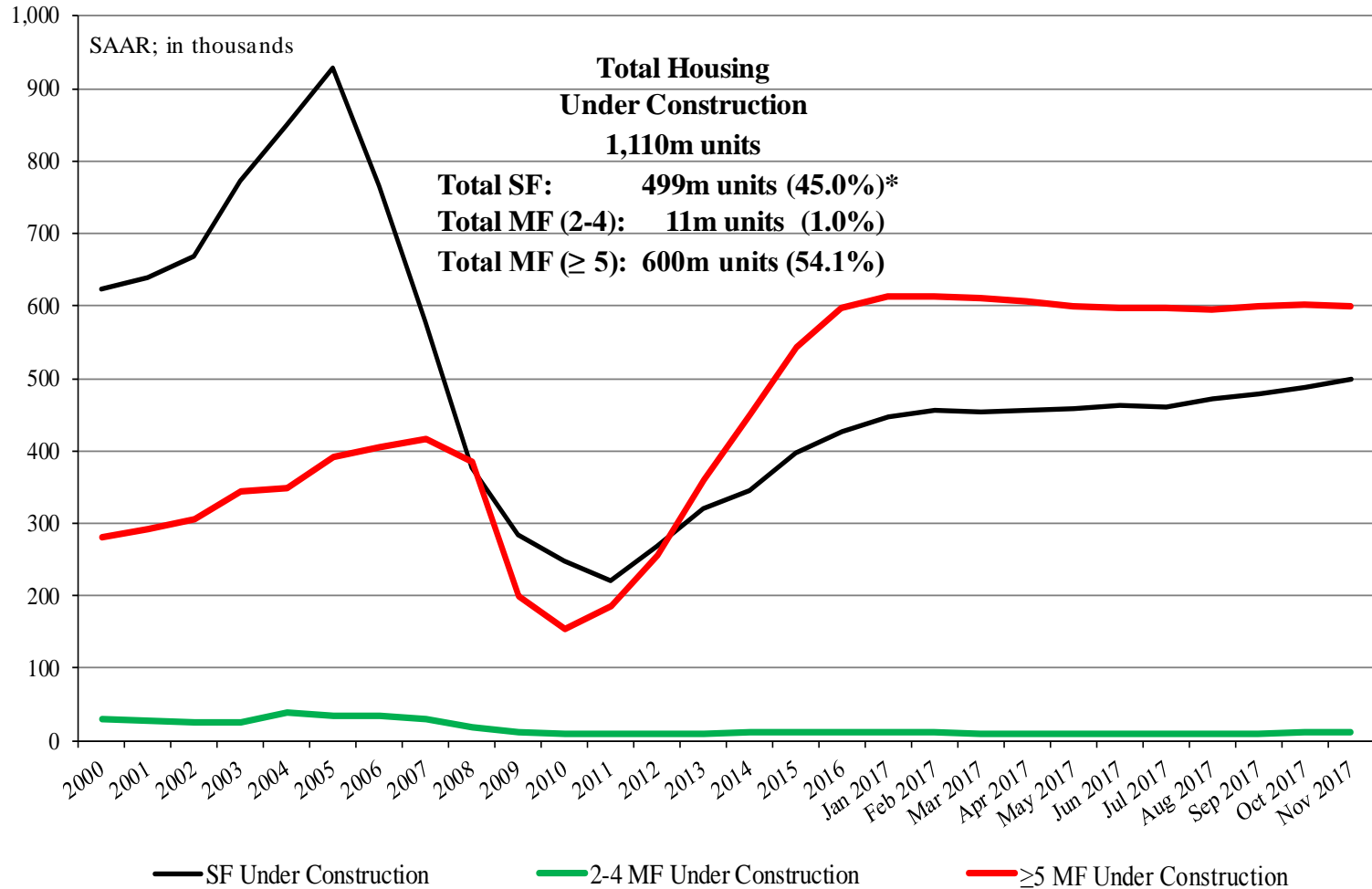
# New Housing Under Construction

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
November	1,110,000	499,000	11,000	600,000
October	1,099,000	487,000	11,000	601,000
2016	1,046,000	447,000	11,000	588,000
M/M change	1.0%	2.5%	0.0%	-0.2%
Y/Y change	6.1%	11.6%	0.0%	2.0%

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



\* Percentage of total housing under construction units.

# New Housing Under Construction by Region

	<b>NE Total</b>	<b>NE SF</b>	<b>NE MF**</b>
November	186,000	54,000	132,000
October	191,000	53,000	138,000
2016	192,000	52,000	140,000
M/M change	-2.6%	1.9%	-4.3%
Y/Y change	-3.1%	3.8%	-5.7%
	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
November	156,000	81,000	75,000
October	156,000	80,000	76,000
2016	144,000	74,000	70,000
M/M change	0.0%	1.3%	-1.3%
Y/Y change	8.3%	9.5%	7.1%

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).

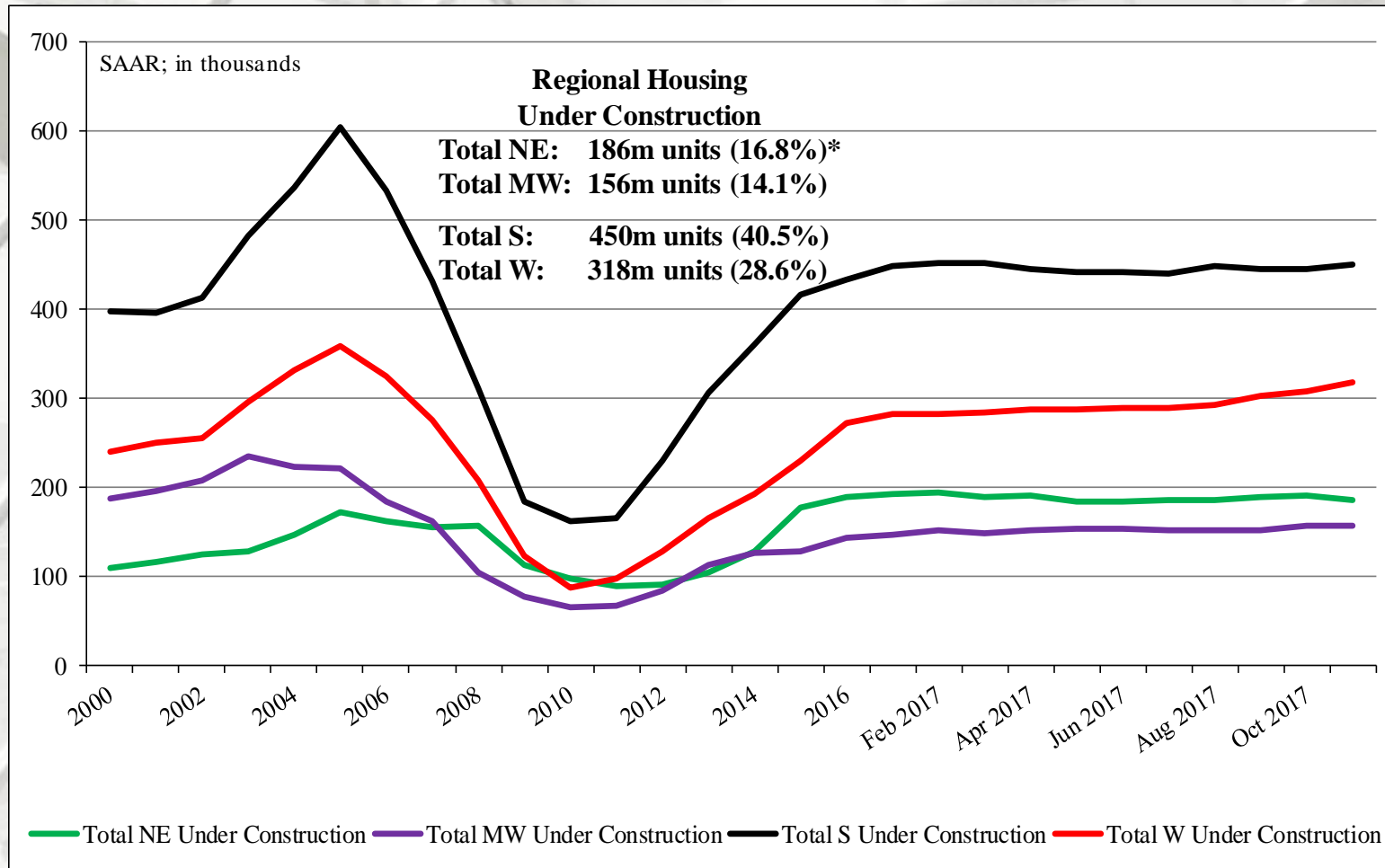
# New Housing Under Construction by Region

	<b>S Total</b>	<b>S SF</b>	<b>S MF**</b>
November	450,000	234,000	216,000
October	445,000	231,000	214,000
2016	442,000	214,000	228,000
M/M change	1.1%	1.3%	0.9%
Y/Y change	1.8%	9.3%	-5.3%
	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
November	318,000	130,000	188,000
October	307,000	123,000	184,000
2016	268,000	107,000	161,000
M/M change	3.6%	5.7%	2.2%
Y/Y change	18.7%	21.5%	16.8%

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

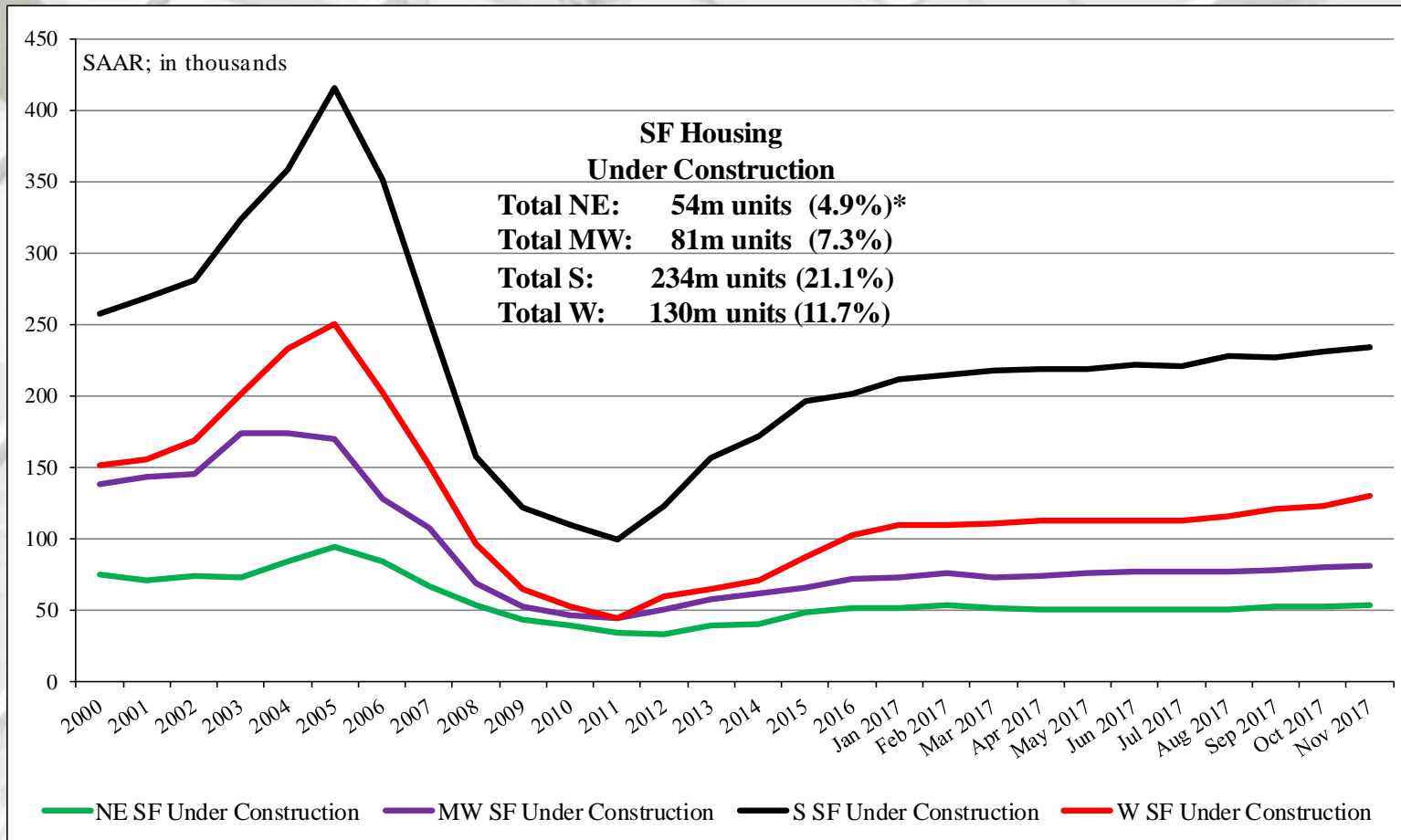
\*\* US DOC does not report multifamily units under construction directly, this is an estimation  
(Total under construction – SF under construction).

# Total Housing Under Construction by Region



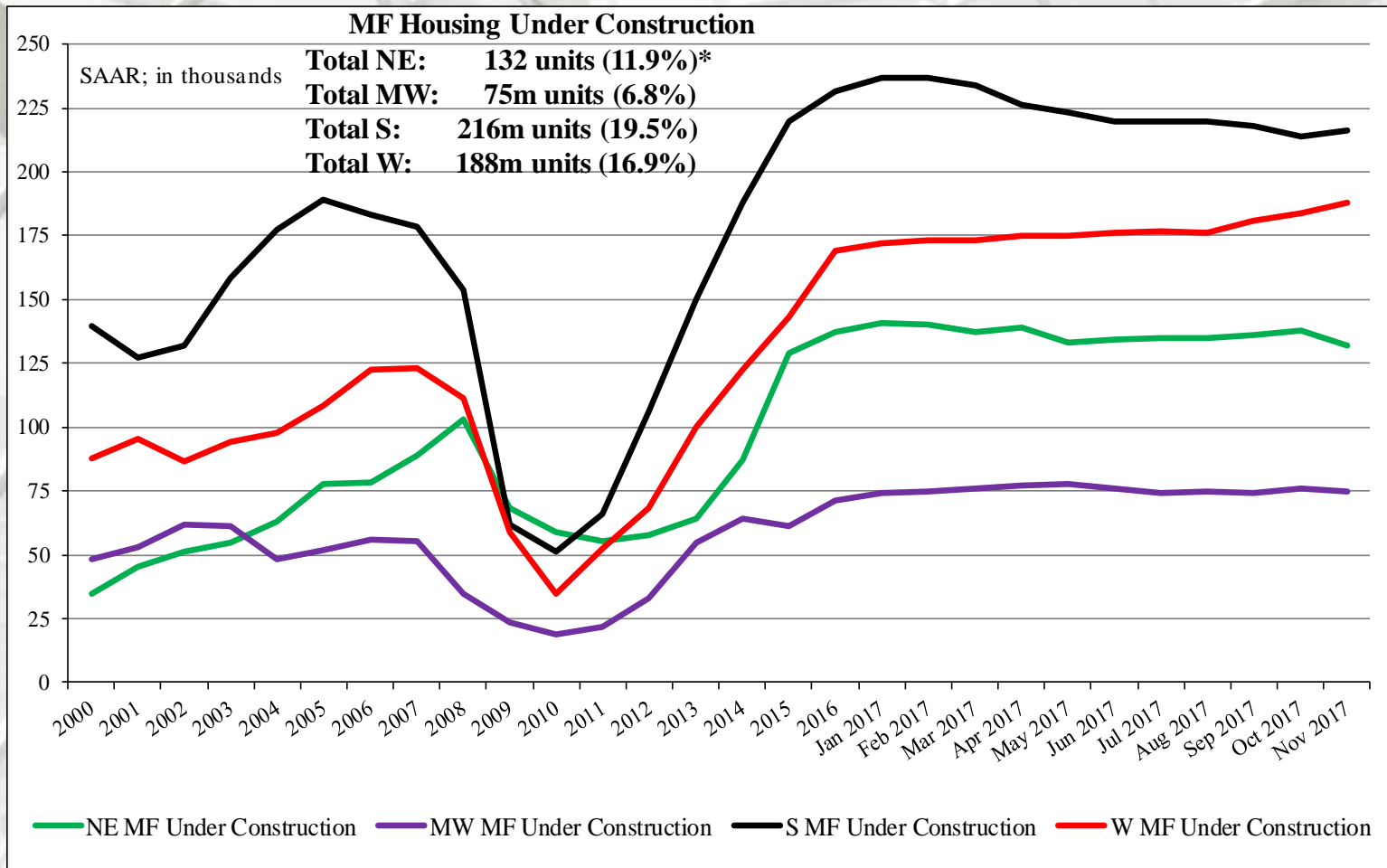
\* Percentage of total housing under construction units.

# SF Housing Under Construction by Region



\* Percentage of total housing under construction units.

# MF Housing Under Construction by Region



\* Percentage of total housing under construction units.



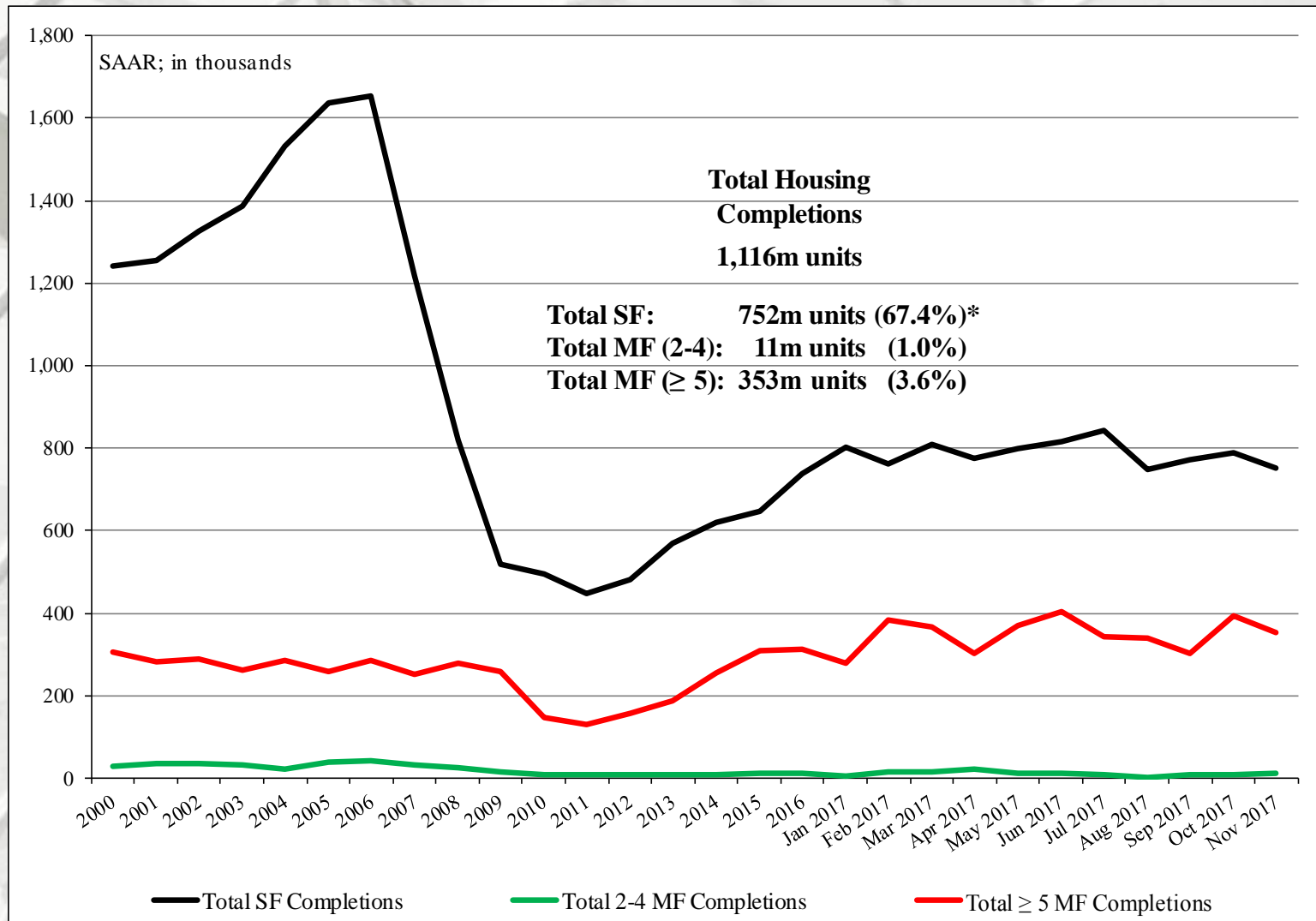
# New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
November	1,116,000	752,000	11,000	353,000
October	1,189,000	788,000	7,000	394,000
2016	1,203,000	766,000	11,000	426,000
M/M change	-6.1%	-4.6%	57.1%	-10.4%
Y/Y change	-7.2%	-1.8%	0.0%	-17.1%

\* 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



\* Percentage of total housing completions

# Total Housing Completions by Region

	<b>NE Total</b>	<b>NE SF</b>	<b>NE MF**</b>
November	153,000	48,000	105,000
October	141,000	60,000	81,000
2016	110,000	48,000	62,000
M/M change	8.5%	-20.0%	29.6%
Y/Y change	39.1%	0.0%	69.4%
	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
November	174,000	114,000	60,000
October	148,000	129,000	19,000
2016	180,000	126,000	54,000
M/M change	17.6%	-11.6%	215.8%
Y/Y change	-3.3%	-9.5%	11.1%

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

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

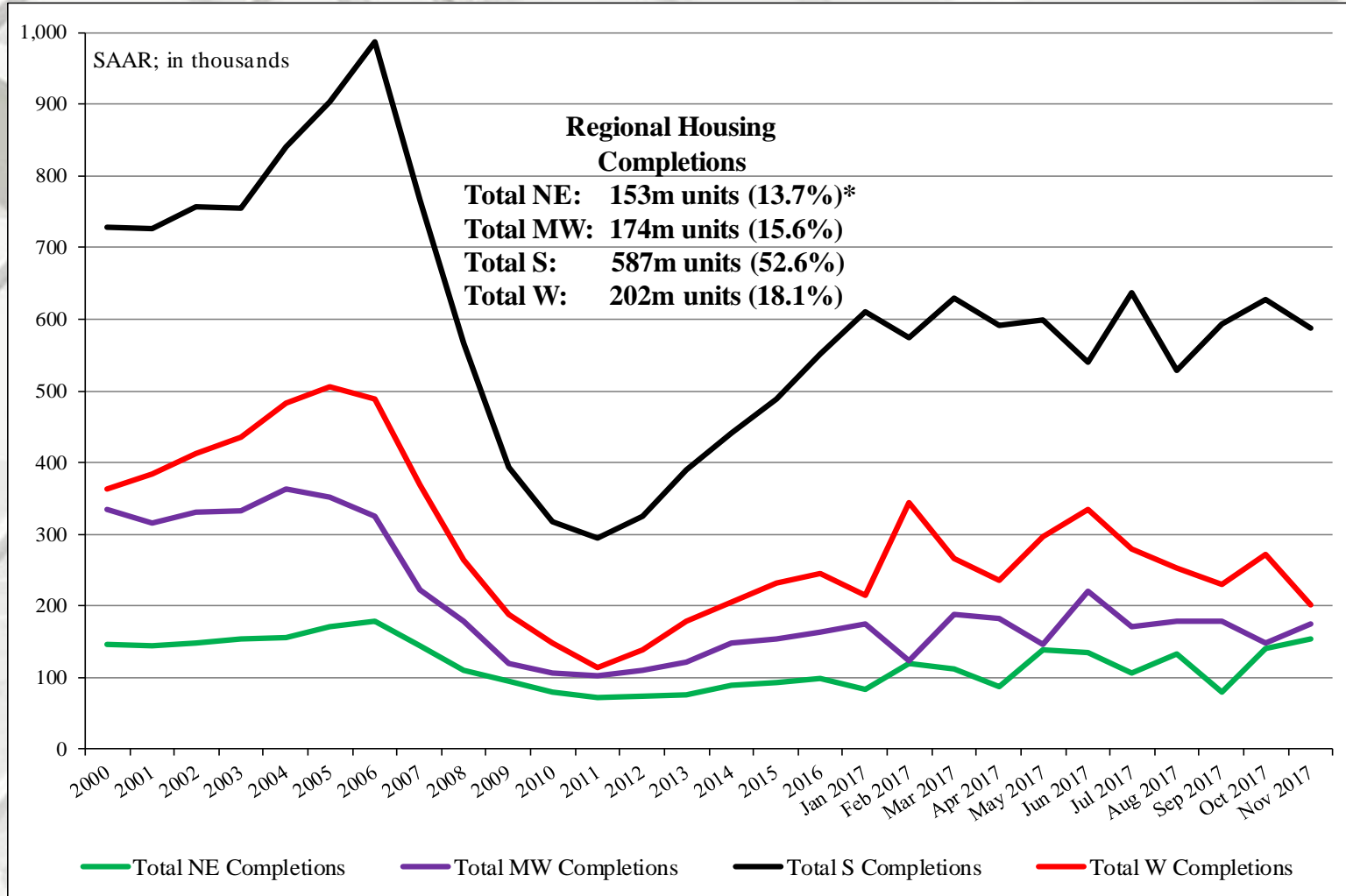
# Total Housing Completions by Region

	<b>S Total</b>	<b>S SF</b>	<b>S MF**</b>
November	587,000	453,000	134,000
October	628,000	423,000	205,000
2016	693,000	432,000	261,000
M/M change	-6.5%	7.1%	-34.6%
Y/Y change	-15.3%	4.9%	-48.7%
	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
November	202,000	137,000	65,000
October	272,000	176,000	96,000
2016	220,000	160,000	60,000
M/M change	-25.7%	-22.2%	-32.3%
Y/Y change	-8.2%	-14.4%	8.3%

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

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

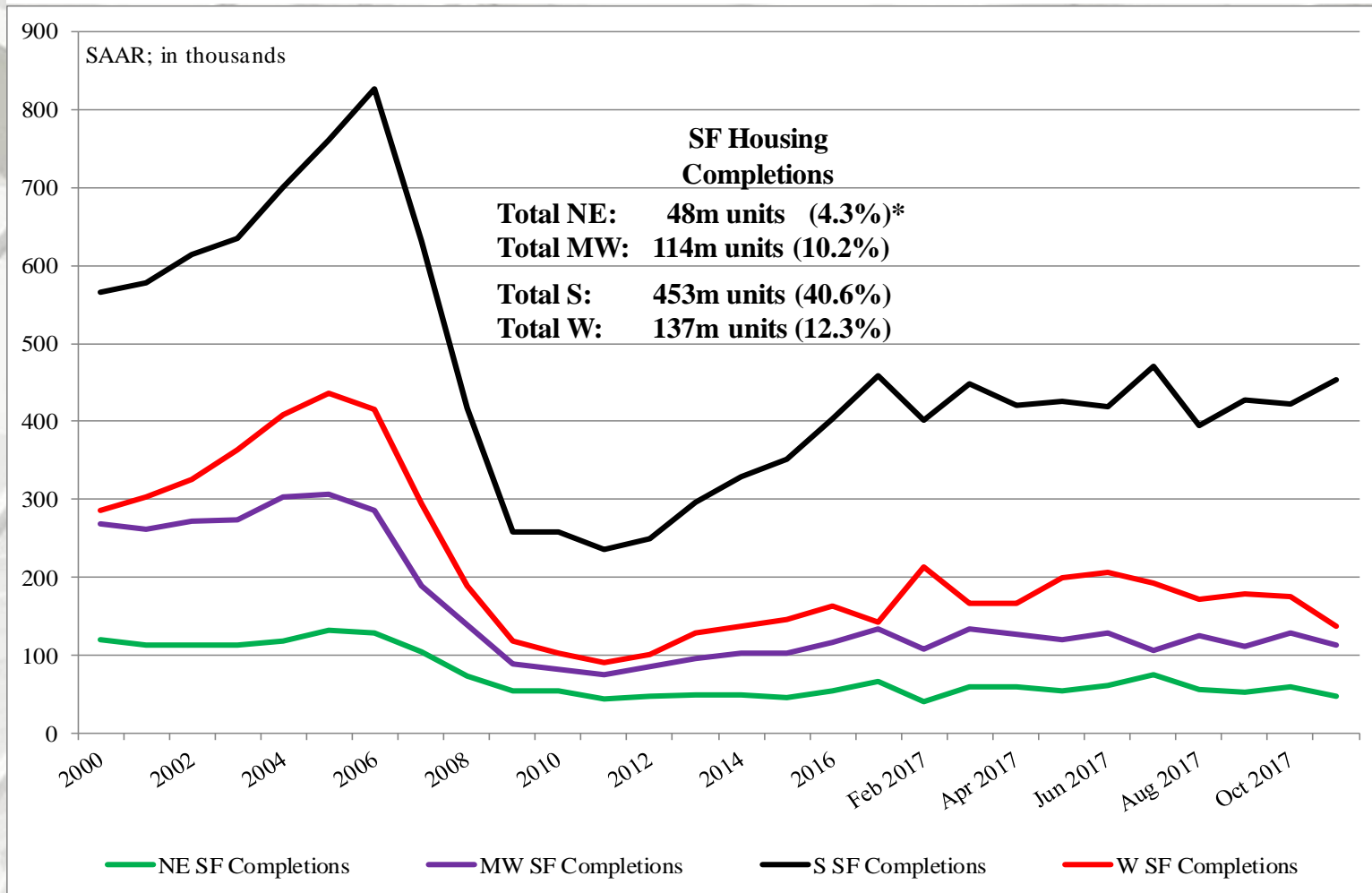
# New Housing Completions by Region



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

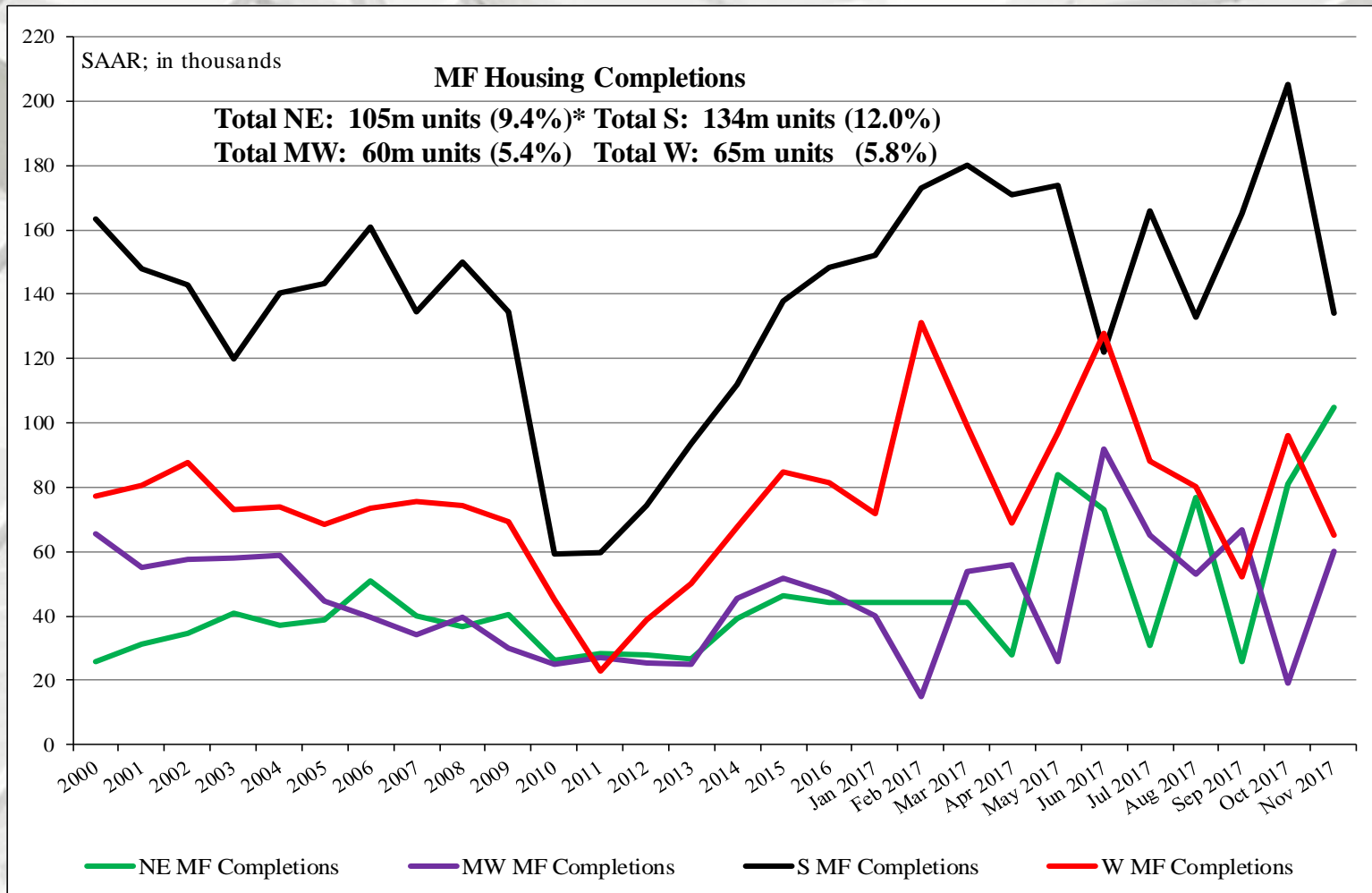
\*\* US DOC does not report multifamily completions directly, this is an estimation (Total completions – SF completions).

# SF Housing Completions by Region



\* Percentage of total housing completions.

# MF Housing Completions by Region



\* Percentage of total housing completions.

# New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
November	733,000	\$318,700	\$377,100	4.6
October	624,000	\$319,600	\$394,700	5.4
2016	548,000	\$315,000	\$363,400	5.1
M/M change	17.5%	-0.3%	-4.5%	-14.8%
Y/Y change	26.6%	1.2%	3.8%	-9.8%

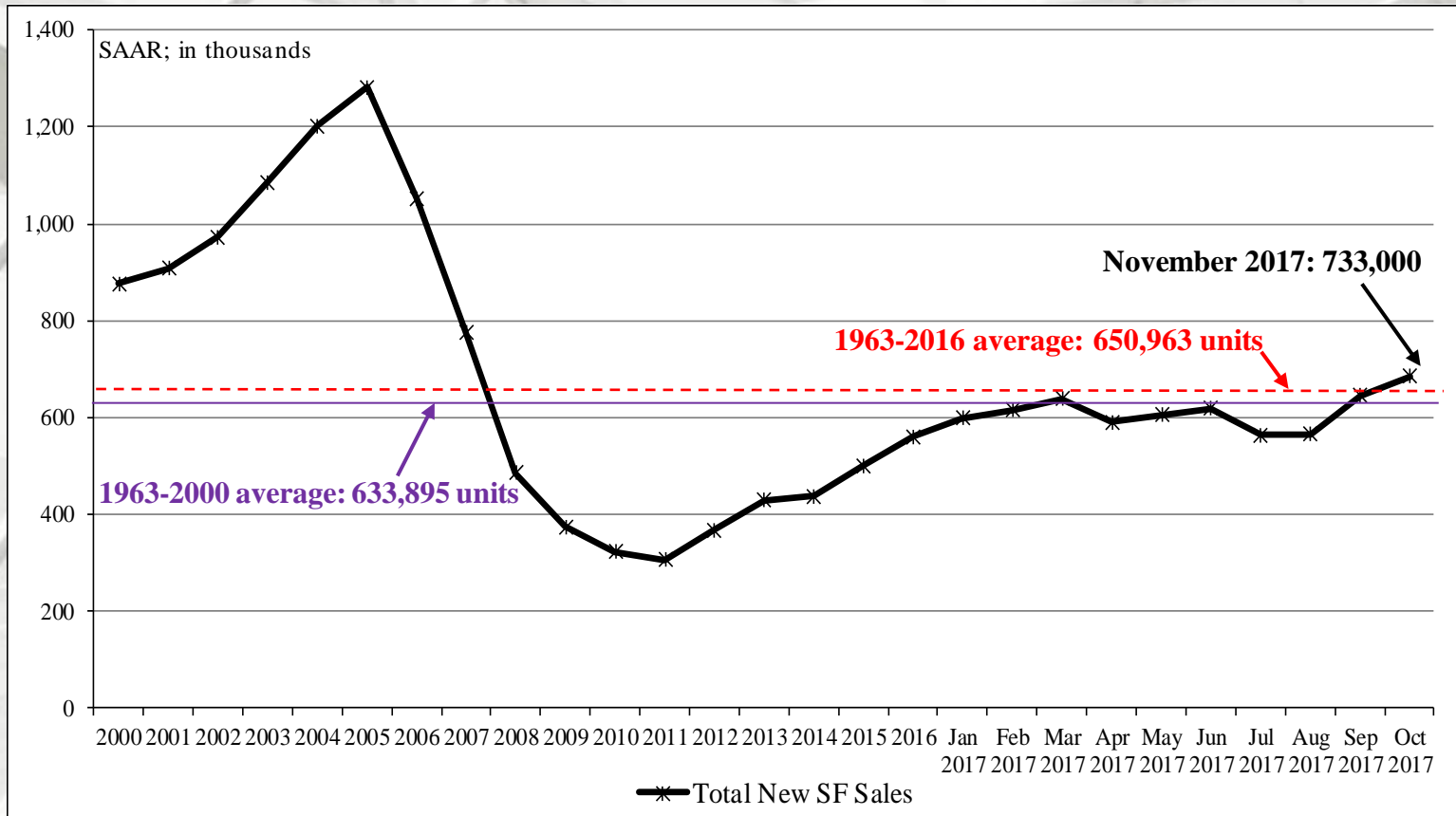
\* All new sales data are presented at a seasonally adjusted annual rate (SAAR)<sup>1</sup> and housing prices are adjusted at irregular intervals<sup>2</sup>.

New SF sales were considerably greater than the consensus forecast (650 m)<sup>3</sup>, primarily due to robust sales in the S and W. The past three month's new SF sales data were revised:

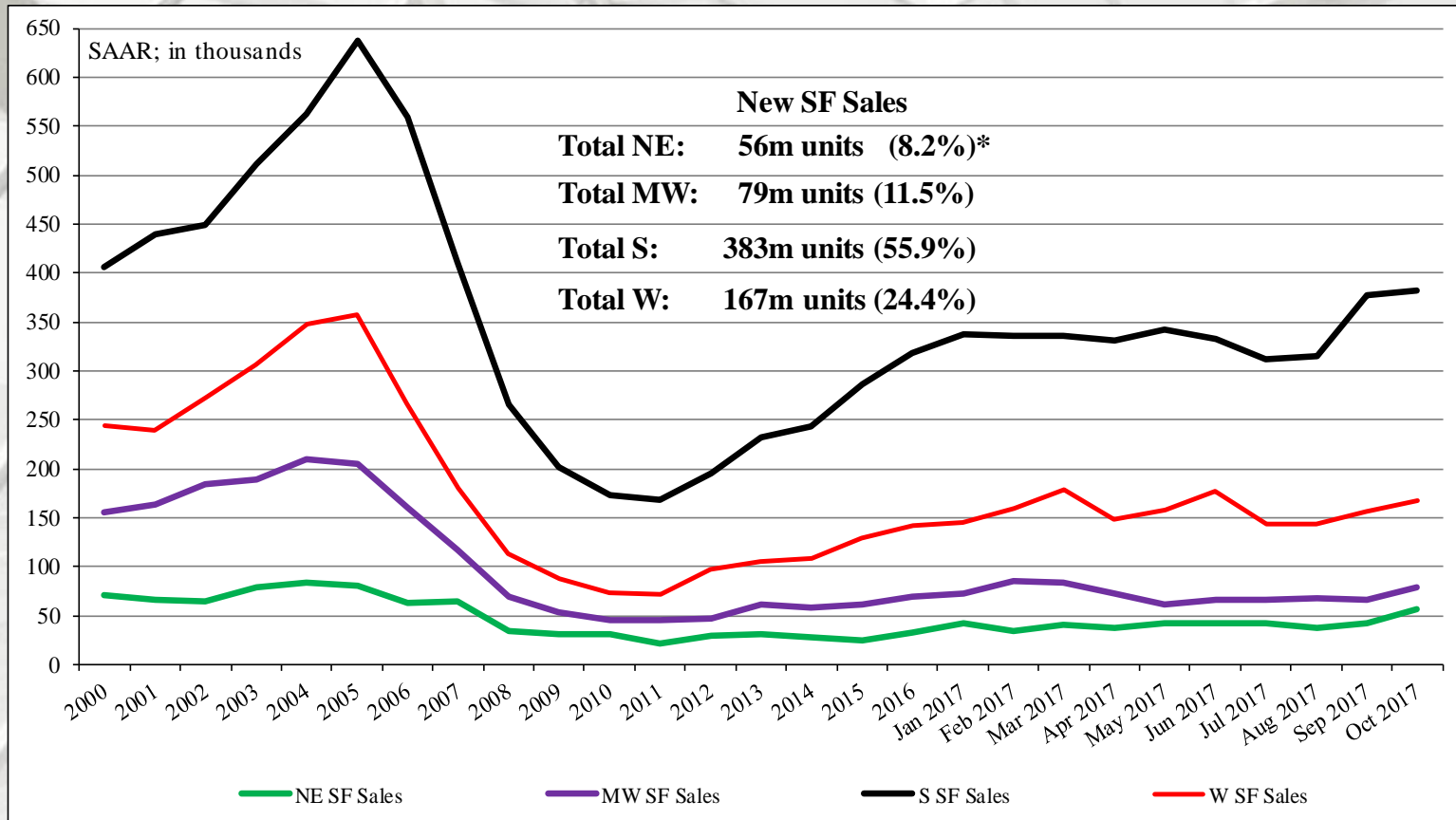
August initial: 560 m revised to 559 m;  
 September initial: 667 m revised to 635 m;  
 October initial: 685 m revised to 624 m.



# New SF House Sales

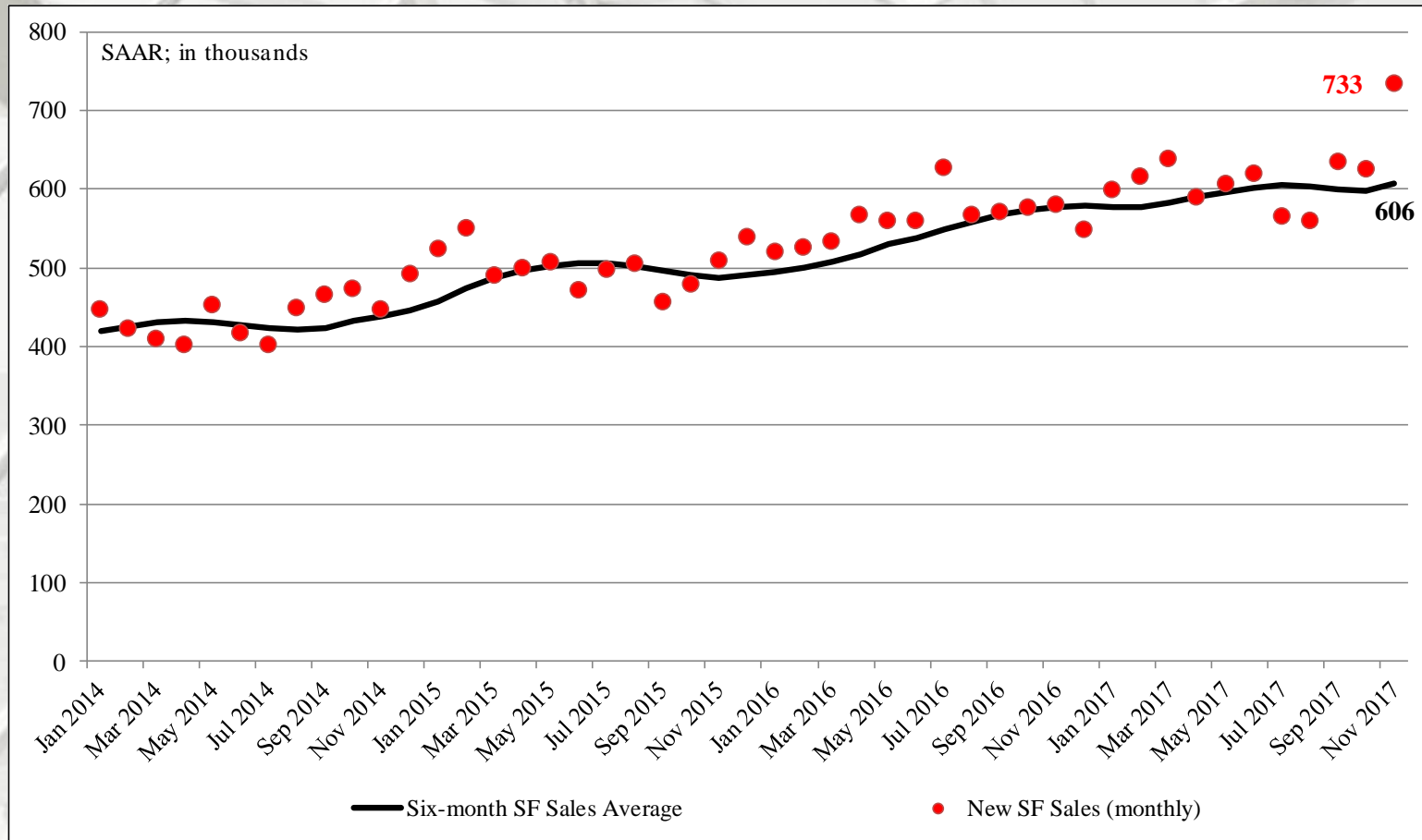


# New SF House Sales by Region

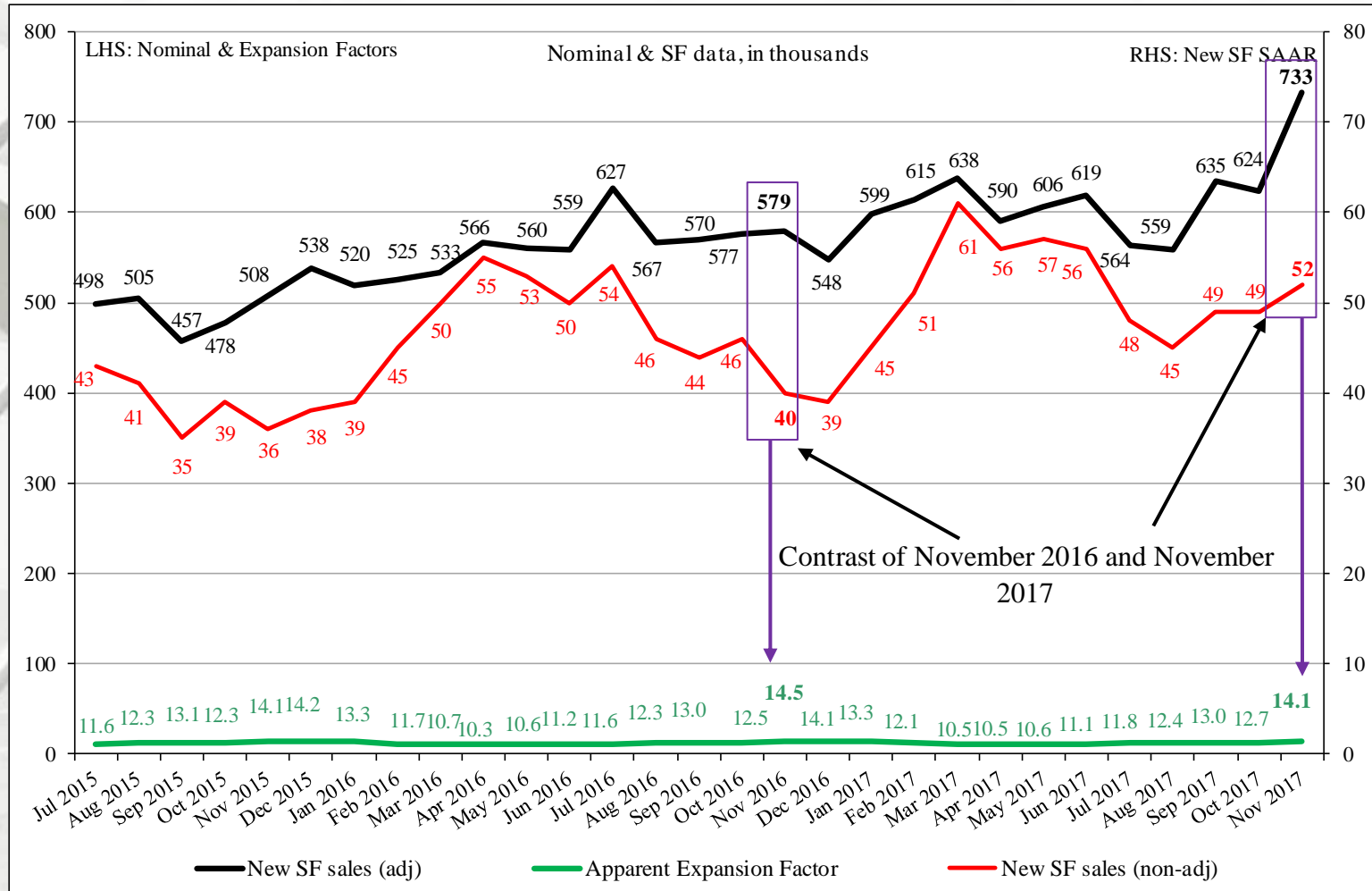


\* Percentage of total new sales.

# New SF Housing Sales: Six-month average & monthly



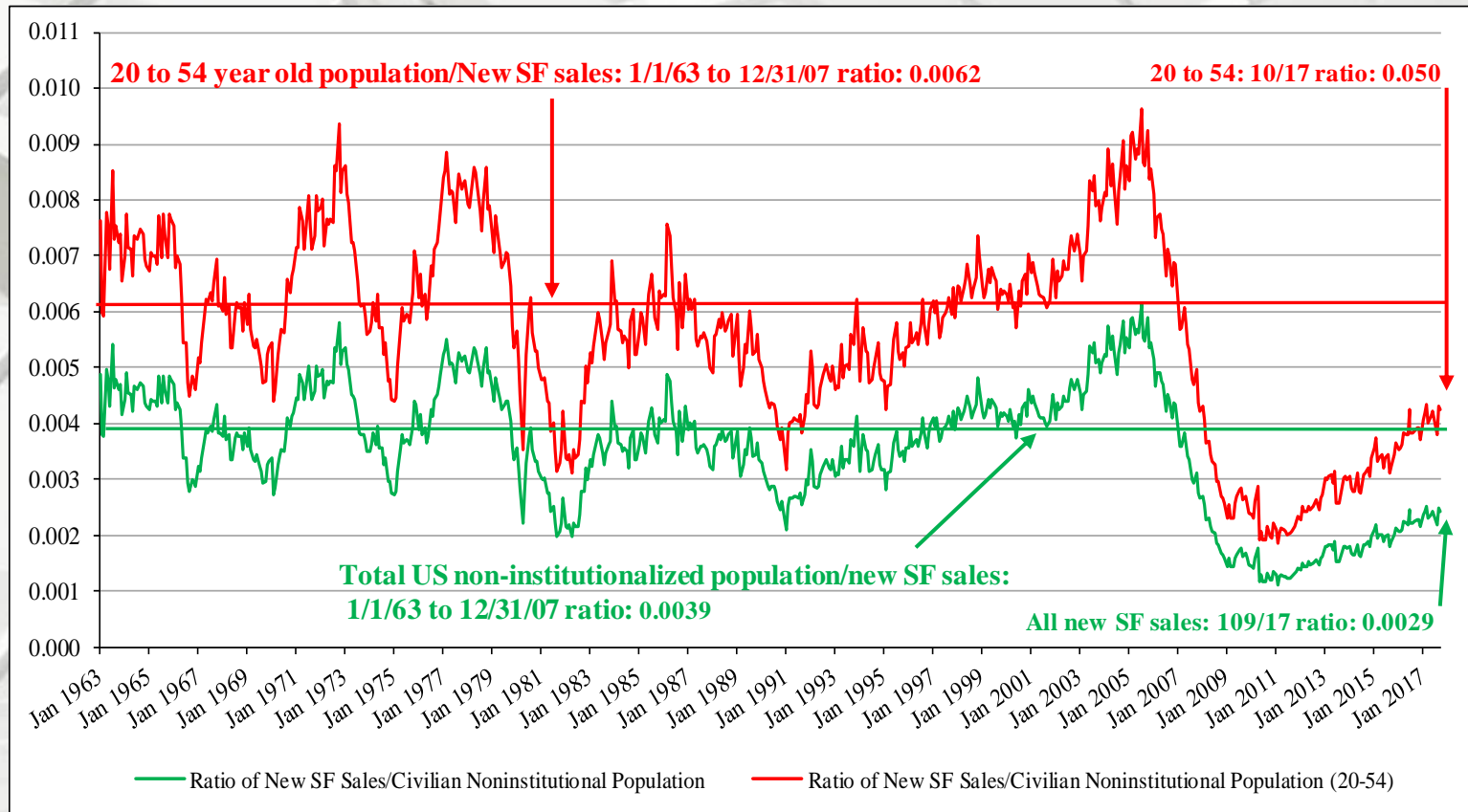
# Nominal vs. SAAR New SF House Sales



## 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 sales adjusted for the US population

From January 1963 to November 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in November 2017 it was 0.0029 – an increase from October (0.0024). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in November 2017 it was 0.0050 – also an increase from October (0.0042). All are non-adjusted data. From a population viewpoint, construction is less than what is necessary for changes in population (i.e., under-building).

# New SF House Sales by Region and Price Category

	NE SF Sales	MW SF Sales	S SF Sales	W SF Sales
December	46,000	77,000	416,000	194,000
November	42,000	72,000	362,000	148,000
2016	30,000	77,000	314,000	158,000
M/M change	9.5%	6.9%	14.9%	31.1%
Y/Y change	53.3%	0.0%	32.5%	22.8%

	\$150 - ≤ \$150m	\$200 - \$199.9m - 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥ \$750m	
December <sup>1,2,3,4</sup>	1,000	5,000	17,000	13,000	7,000	5,000	3,000
November	2,000	4,000	17,000	11,000	8,000	5,000	3,000
2016	1,000	5,000	13,000	10,000	5,000	5,000	2,000
M/M change	-50.0%	25.0%	0.0%	18.2%	-12.5%	0.0%	0.0%
Y/Y change	0.0%	0.0%	30.8%	30.0%	40.0%	0.0%	50.0%

<sup>1</sup> All data are SAAR

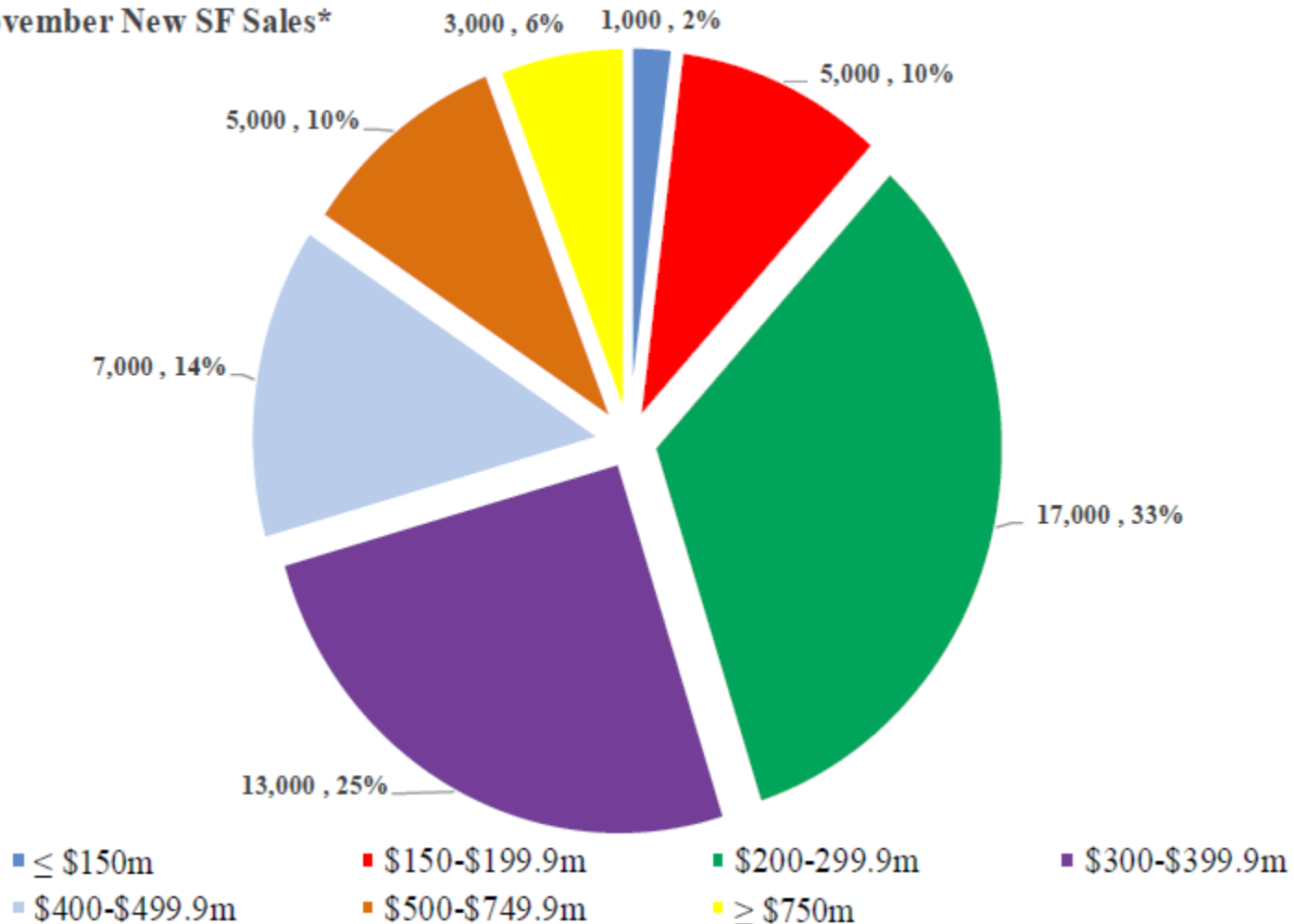
<sup>2</sup> Houses for which sales price were not reported have been distributed proportionally to those for which sales price was reported;

<sup>3</sup> Detail may not add to total because of rounding.

<sup>4</sup> Housing prices are adjusted at irregular intervals.

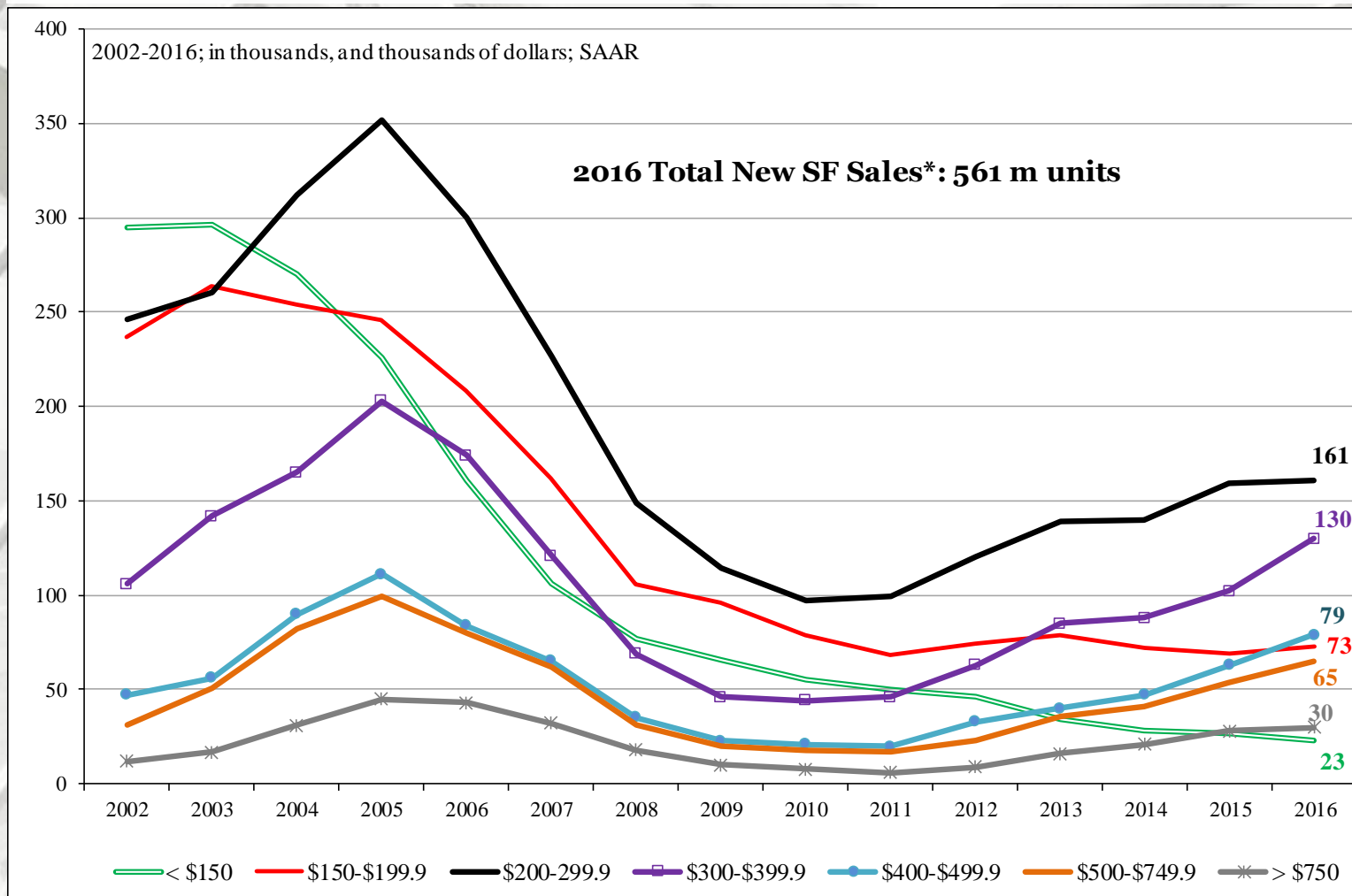
# New SF House Sales

November New SF Sales\*



\* Total and percent of new sales by price category.

# New SF House Sales by Price Category



\* Sales tallied by price category.



# New SF House Sales

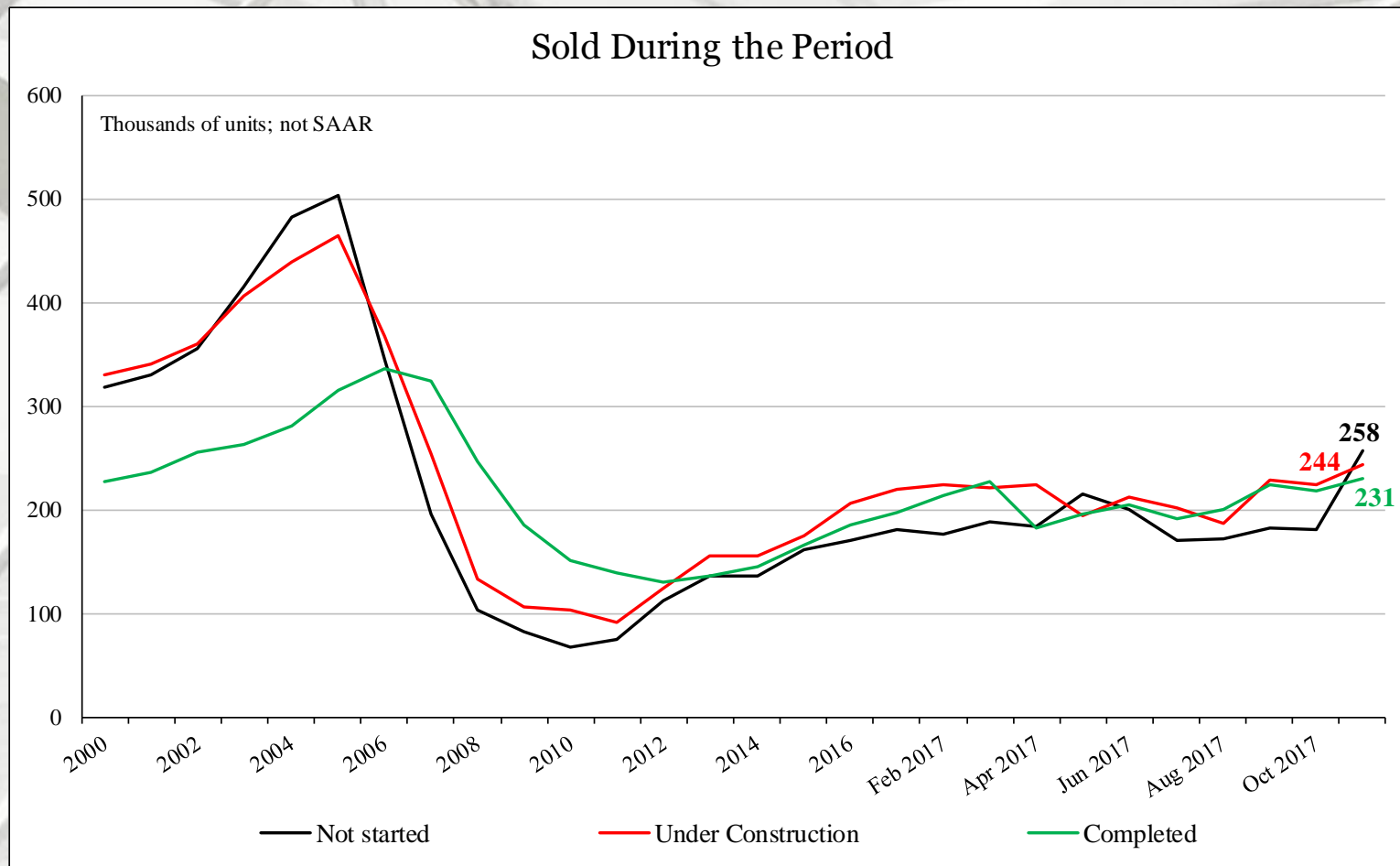
## New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
November	733,000	258,000	244,000	231,000
October	624,000	181,000	225,000	218,000
2016	579,000	156,000	221,000	202,000
M/M change	17.5%	42.5%	8.4%	6.0%
Y/Y change	26.6%	65.4%	10.4%	14.4%
Total percentage		35.2%	33.3%	31.5%

## New SF Houses Sold During Period

In November 2017, a substantial portion of new sales – 35.2% – had not been started. Viewing the graph on the following slide, one can see that November new SF sales appears to be an anomaly.

# New SF House Sales

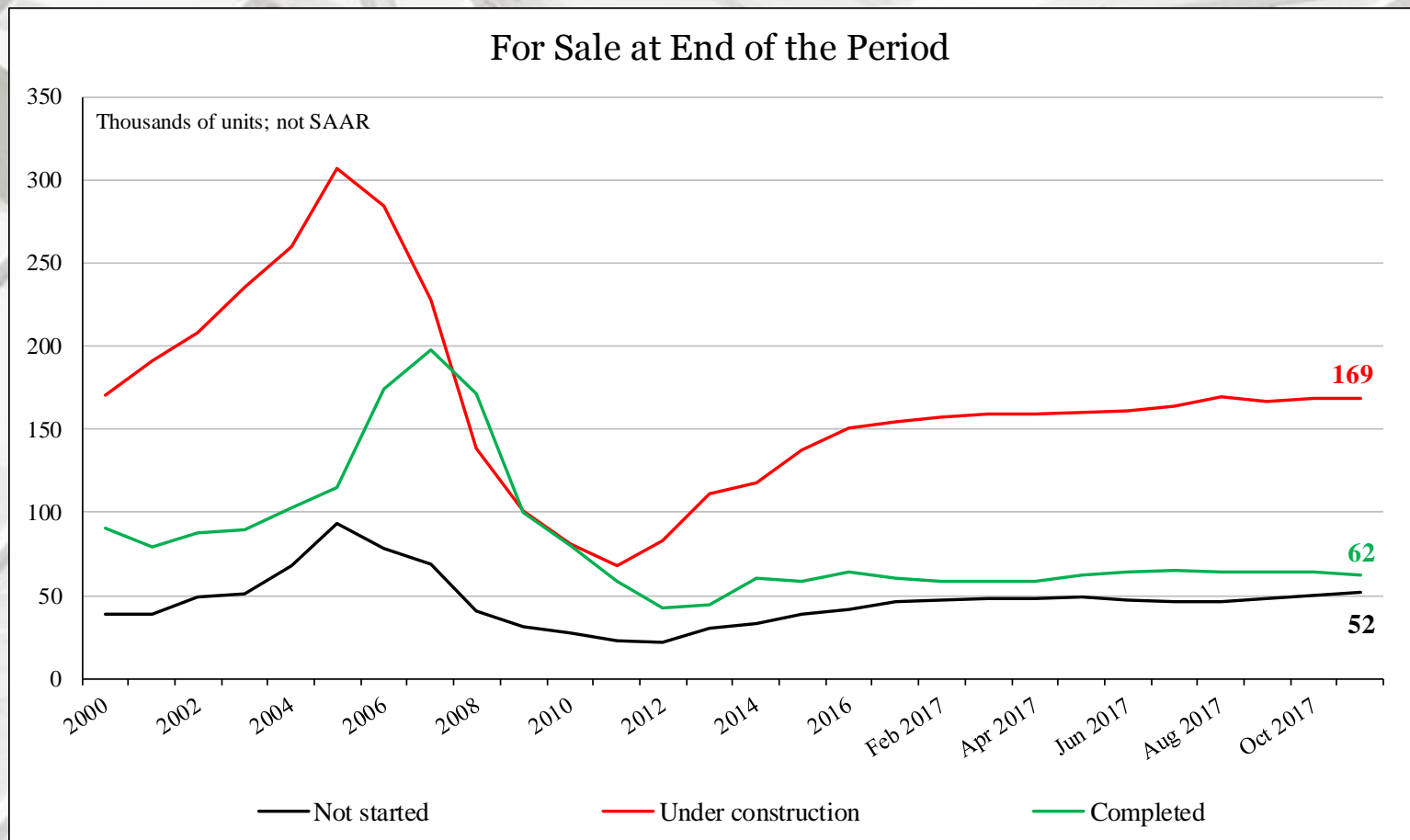


# New SF House Sales

## New SF Houses for Sale at the end of the Period

	Total	Not started	Under Construction	Completed
November	283,000	52,000	169,000	62,000
October	283,000	50,000	169,000	64,000
2016	248,000	37,000	152,000	59,000
M/M change	0.0%	4.0%	0.0%	-3.1%
Y/Y change	14.1%	40.5%	11.2%	5.1%
Total percentage		18.4%	59.7%	21.9%

# New SF House Sales

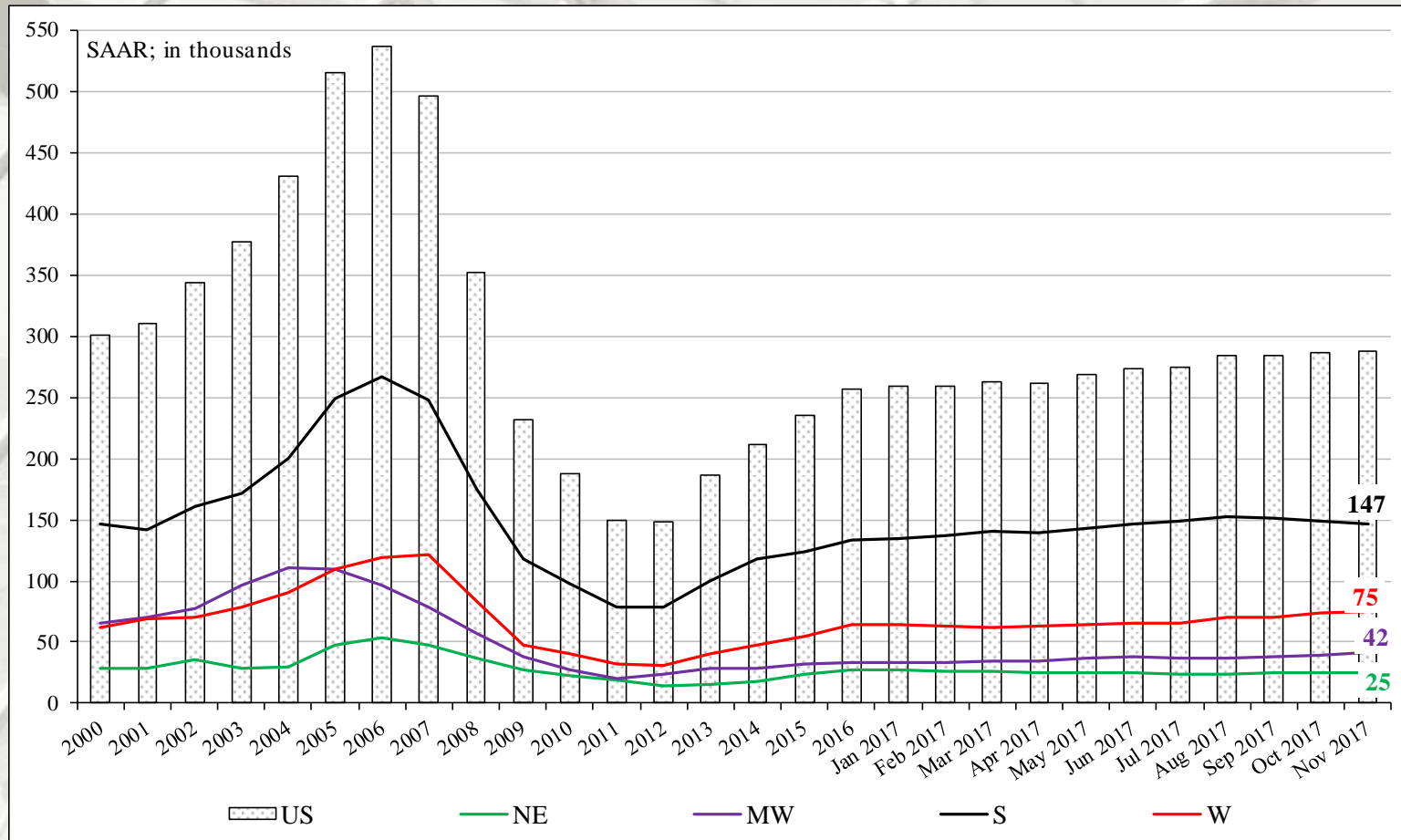


# New SF House Sales

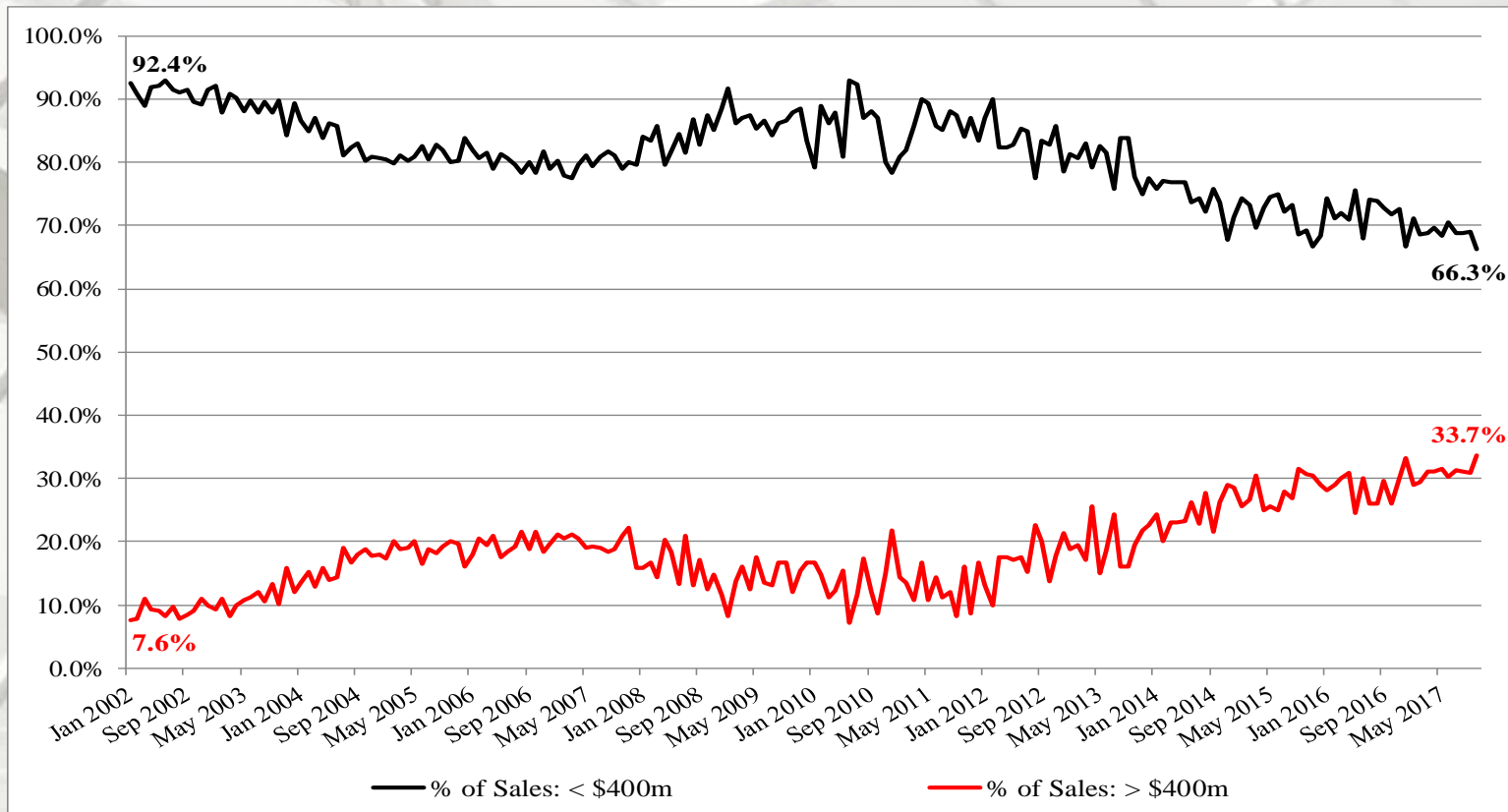
## New SF Houses for Sale at the end of the Period by Region\*

	Total	NE	MW	S	W
November	288,000	25,000	42,000	147,000	75,000
October	287,000	25,000	39,000	149,000	74,000
2016	252,000	27,000	33,000	131,000	62,000
M/M change	0.3%	0.0%	7.7%	-1.3%	1.4%
Y/Y change	14.3%	-7.4%	27.3%	12.2%	21.0%

# New SF Houses Sale at End of Period by Region



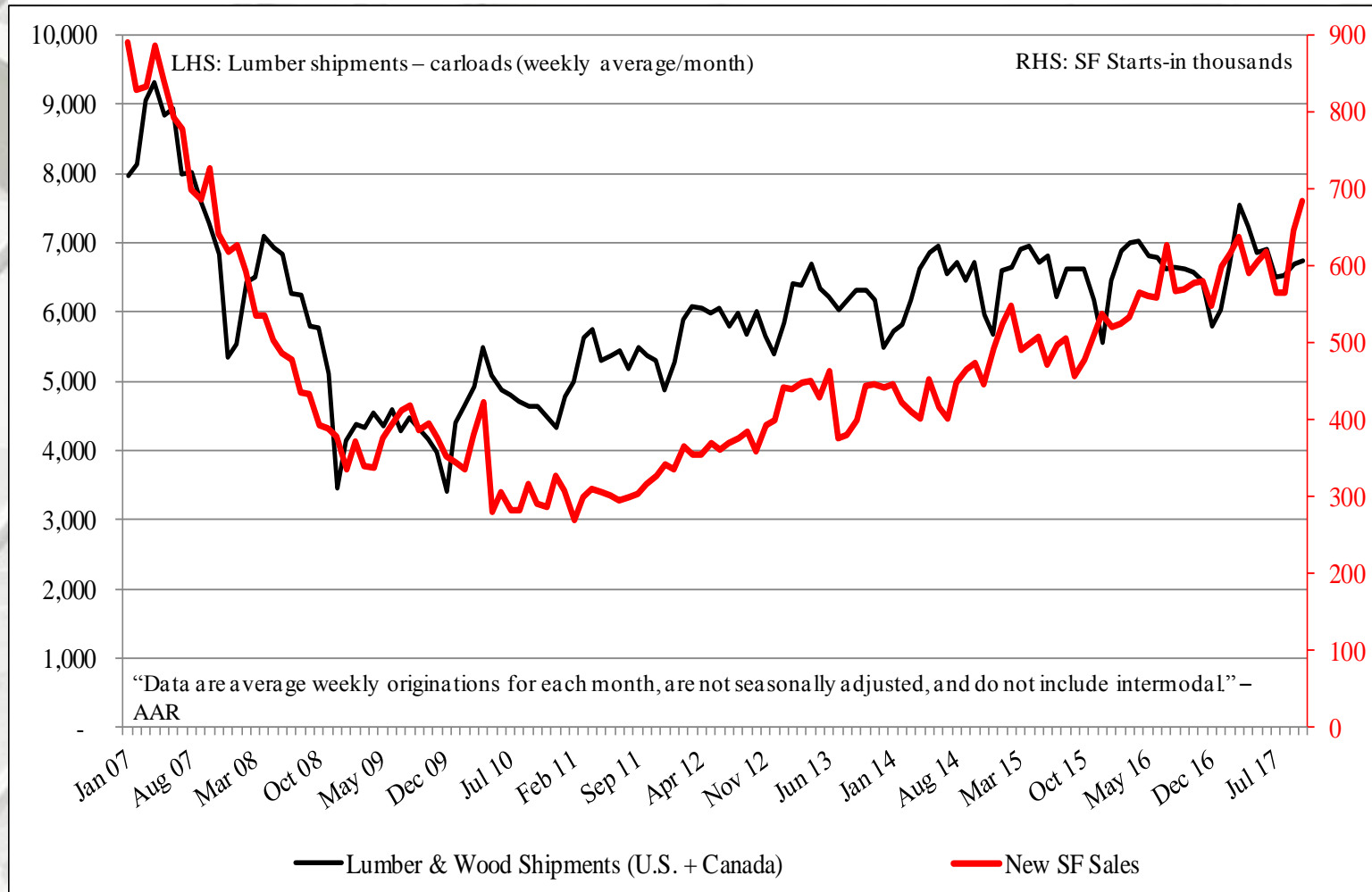
# New SF House Sales



## New SF Sales: 2002 – November 2017

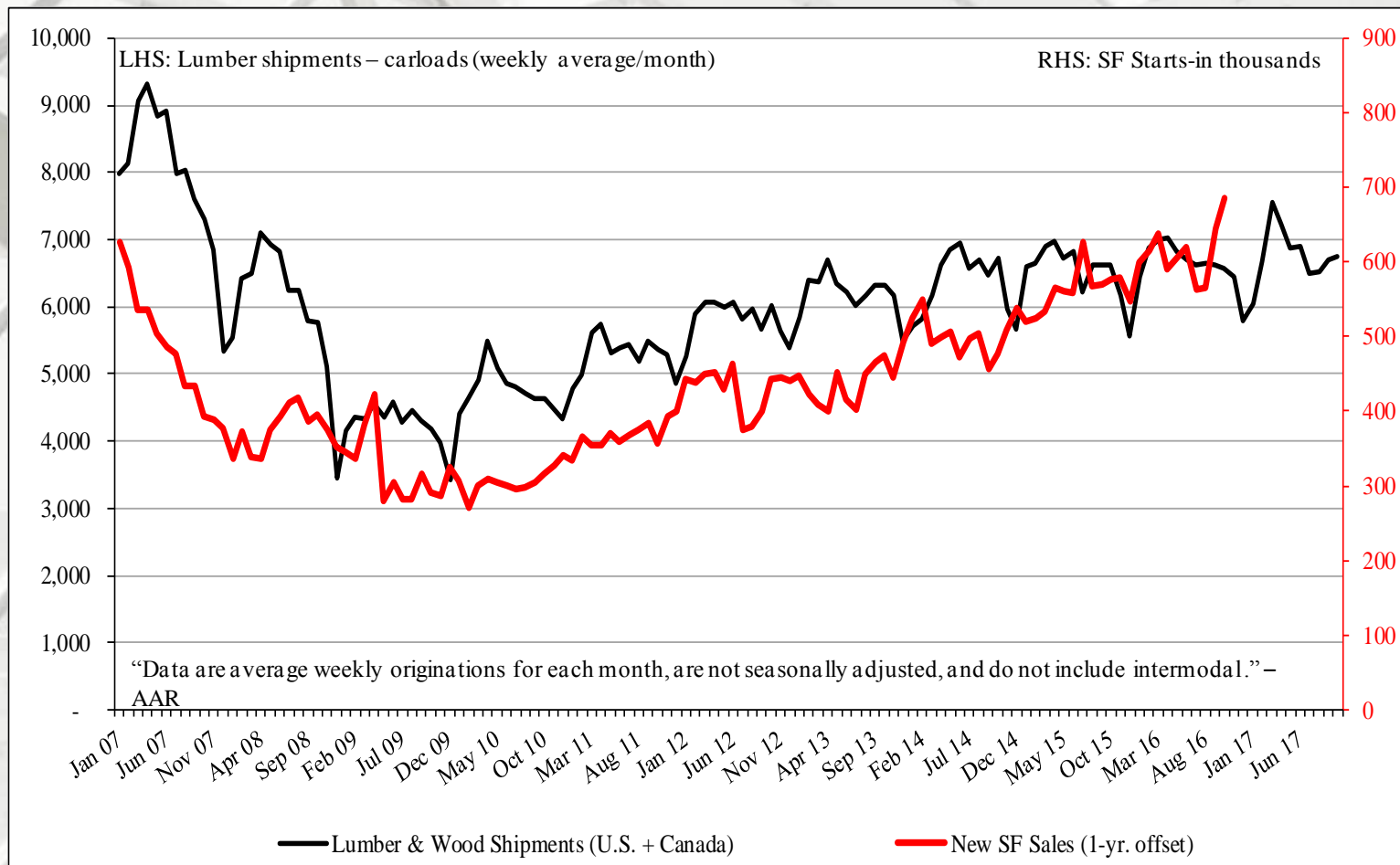
The sales share of \$400 thousand plus SF houses is presented above<sup>1,2</sup>. Since the beginning of 2012, the upper priced houses have and are garnering a greater percentage of sales. A decreasing spread indicates that more high-end luxury homes are being sold. Several reasons are offered by industry 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.

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





# Railroad Lumber & Wood Shipments vs. U.S. New SF House Sales: 1-year offset



In this graph, initially January 2007 lumber shipments are contrasted with January 2008 new SF sales through November 2017 new SF sales. The purpose is to discover if lumber shipments relate to future new SF house sales. Also, it is realized that lumber and wood products are trucked; however, to our knowledge comprehensive trucking data is not available.

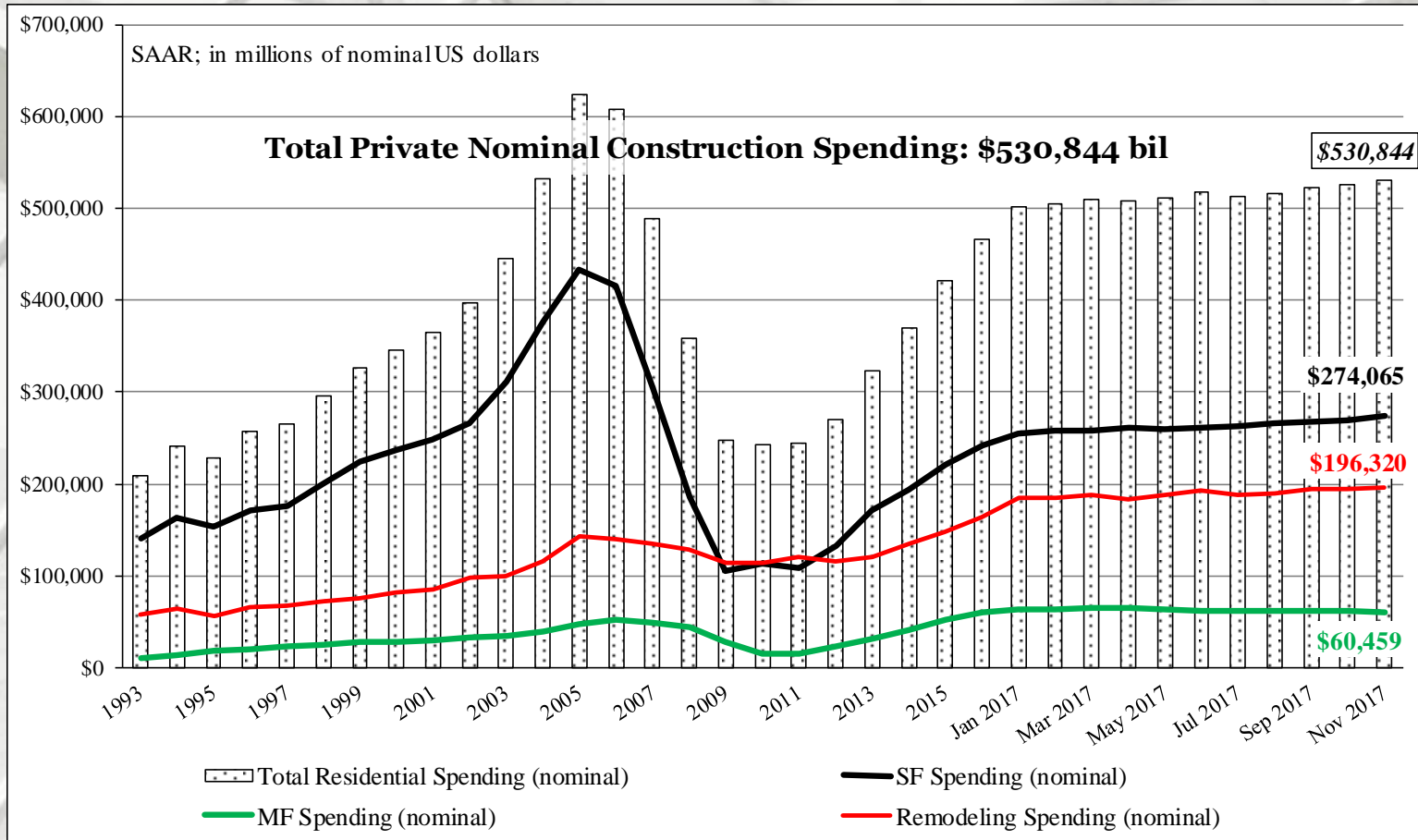
# November 2017 Construction Spending

	Total Private Residential*	SF	MF	Improvement**
November	\$530,844	\$274,065	\$60,459	\$196,320
October	\$525,346	\$269,059	\$61,275	\$195,012
2016	\$492,028	\$251,675	\$61,479	\$178,874
M/M change	1.0%	1.9%	-1.3%	0.7%
Y/Y change	7.9%	8.9%	-1.7%	9.8%

\* 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\$.

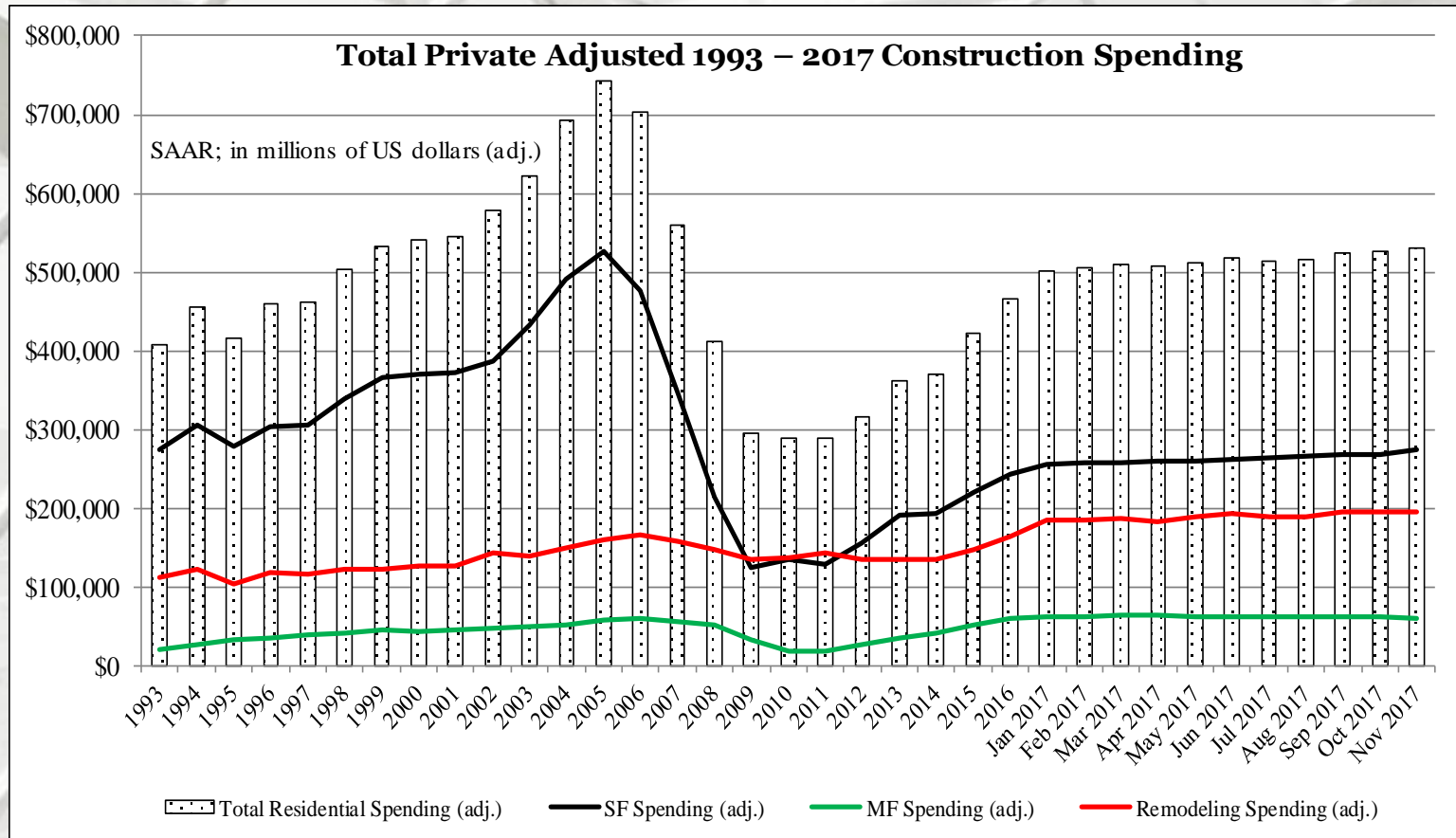
# Total Construction Spending (nominal): 1993 – November 2017



Reported in nominal US\$.

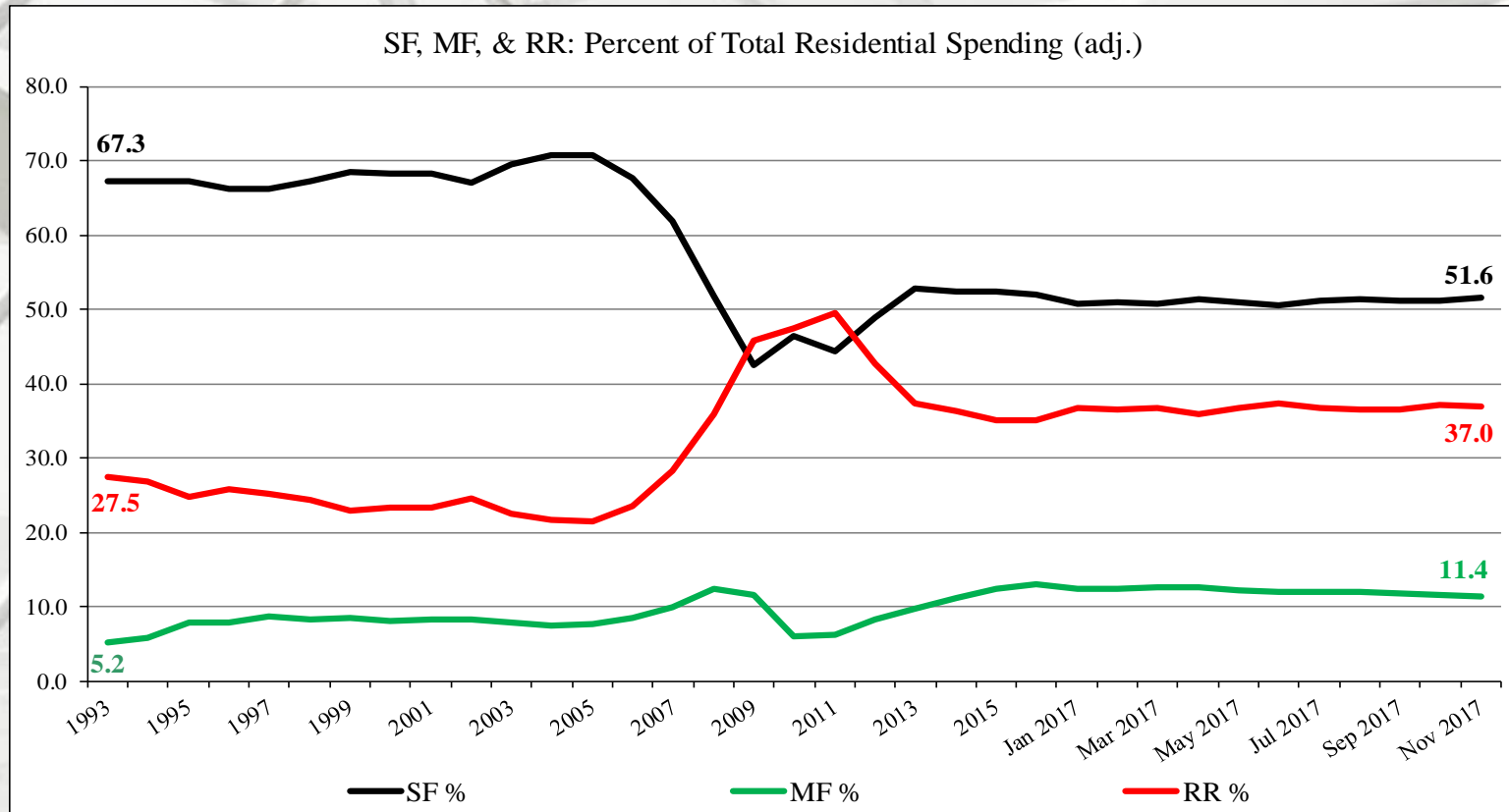
The US DOC does not report improvement spending directly, this is a monthly estimation for 2017.

# Total Construction Spending (adjusted): 1993-2017\*



Reported in adjusted US\$: 1993 – 2016 (adjusted for inflation, BEA Table 1.1.9); \*January-November 2017 reported in nominal US\$.

# Construction Spending Shares: 1993 to November 2017



## Total Residential Spending: 1993 through 2006

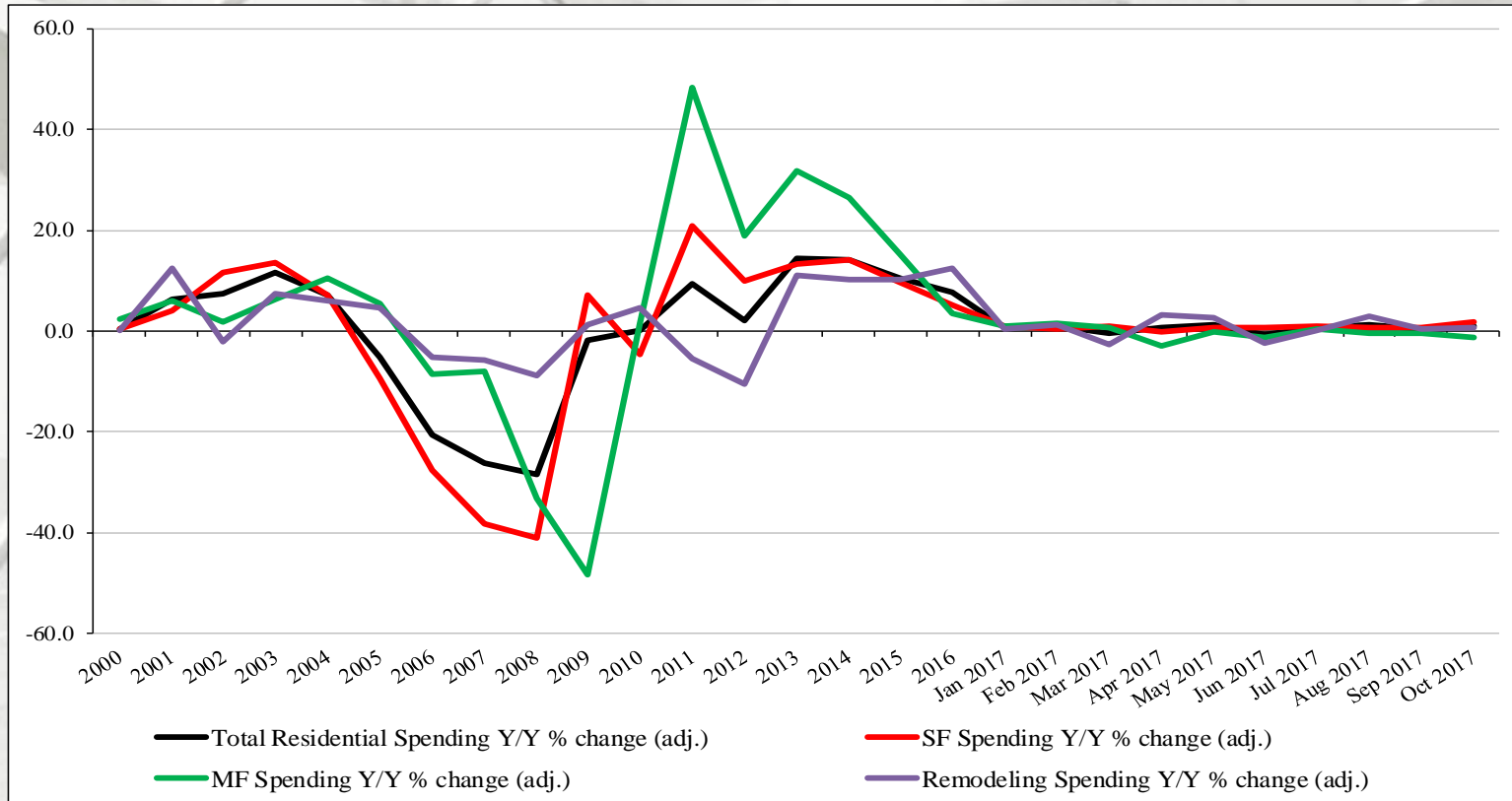
SF spending average: 69.2%

MF spending average: 7.5%

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

Note: 1993 to 2016 (adjusted for inflation, BEA Table 1.1.9); January-November 2017 reported in nominal US\$.

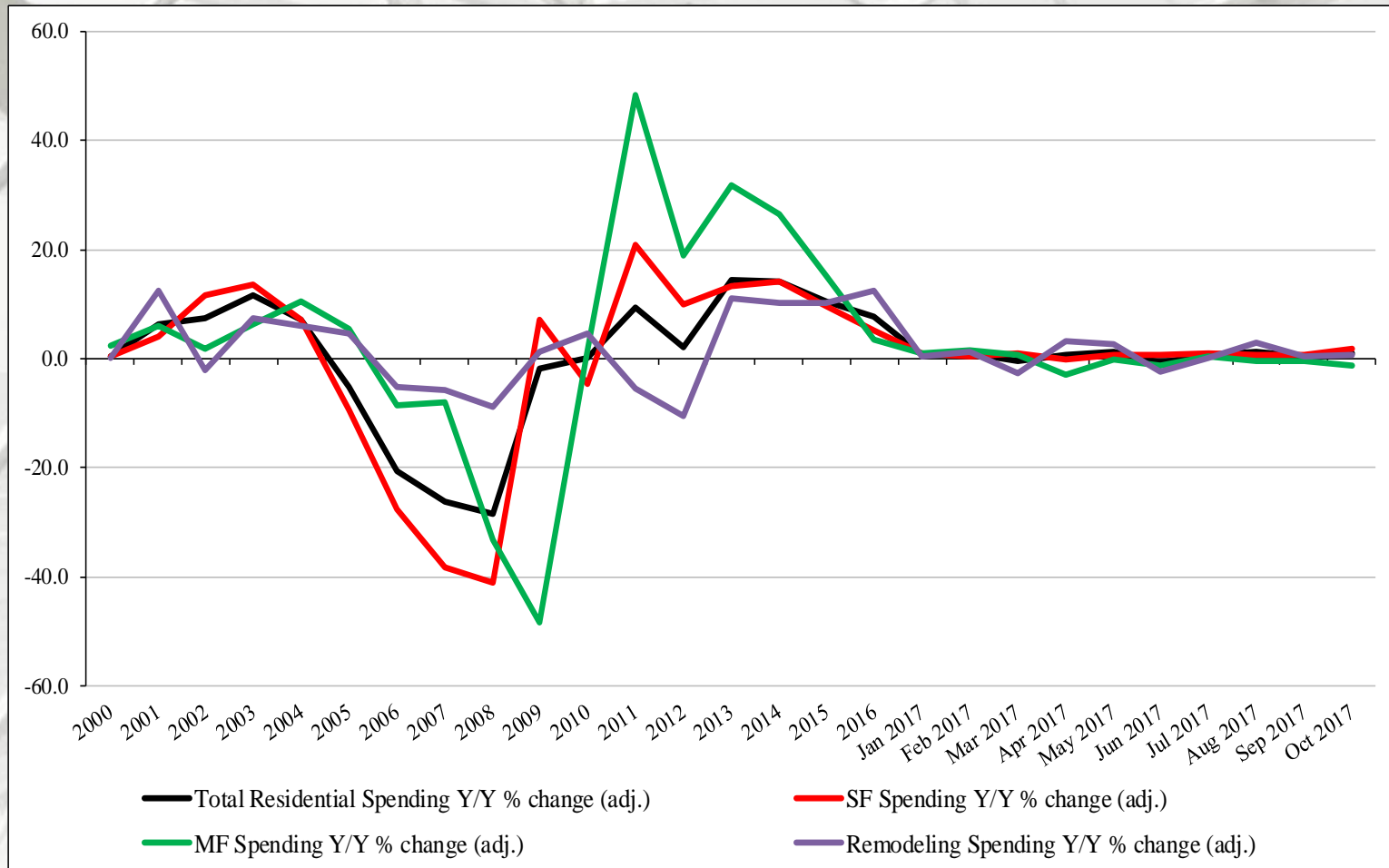
# Adjusted Construction Spending: Y/Y Percentage Change, 1993 to November 2017



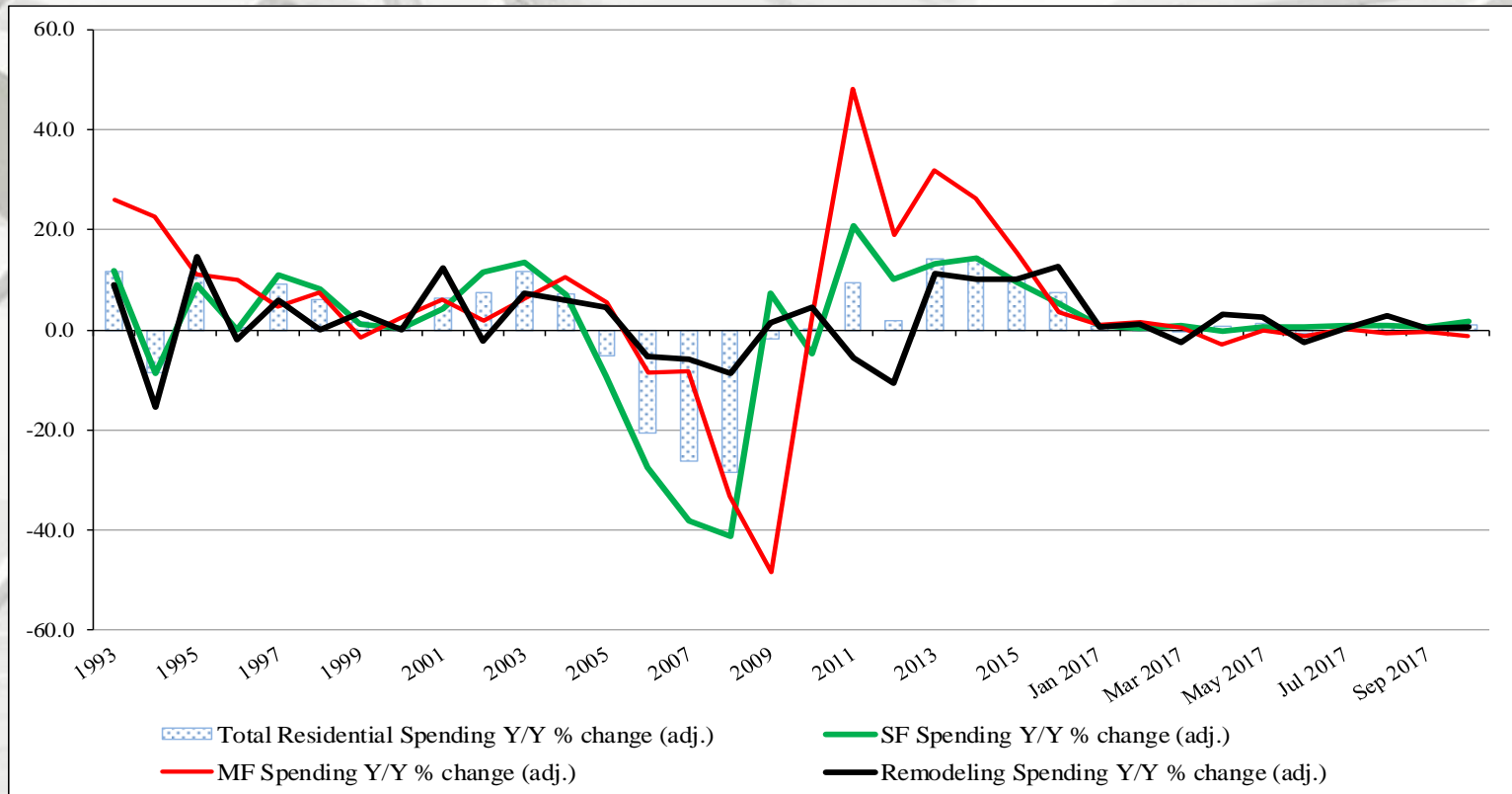
## Residential Construction Spending: Percentage Change, 1993 to November 2017

Presented above is the percentage change of inflation adjusted Y/Y construction spending (1993-2016). Since mid-2015 MF spending has been declining and RR expenditures are in an apparent flat-line trend.

# Adjusted Construction Spending: Y/Y Percentage Change, 2000 to November 2017



# Total Adjusted Construction Spending: Y/Y Percentage Change, 1993 to November 2017



## Residential Construction Spending: Percentage Change, 1993 to November 2017

The questions remain: Is construction spending normalizing? Has housing stalled? Or, are there alternative explanations? The percentage change in construction spending has been minimally positive since the beginning of 2017.



# Existing House Sales

## National Association of Realtors (NAR®)

November 2017 sales: 5.810 million (SAAR)

	Existing Sales*	Median Price	Mean Price	Month's Supply
November	5,810,000	\$248,000	\$289,900	3.4
October	5,500,000	\$246,000	\$287,600	3.9
2016	5,600,000	\$234,400	\$276,600	4.0
M/M change	5.6%	0.8%	0.8%	-12.8%
Y/Y change	3.8%	5.8%	4.8%	-15.0%

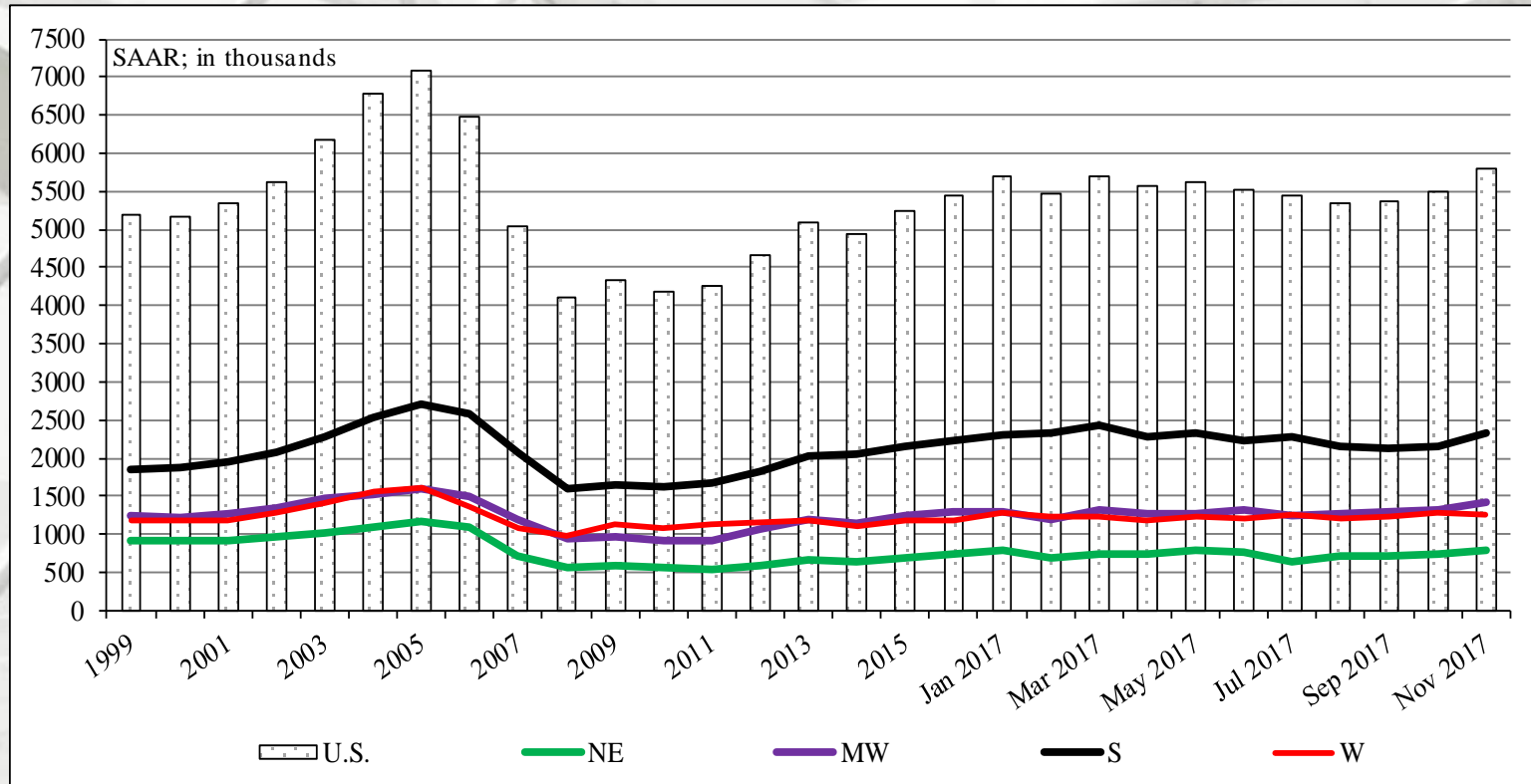
\* All sales data: SAAR

# Existing House Sales

	NE Sales	MW Sales	S Sales	W Sales
November	800,000	1,420,000	2,340,000	1,250,000
October	750,000	1,310,000	2,160,000	1,280,000
2016	800,000	1,330,000	2,250,000	1,220,000
M/M change	6.7%	8.4%	8.3%	-2.3%
Y/Y change	0.0%	6.8%	4.0%	2.5%

	Distressed House Sales	Foreclosures	Short-Sales	All-Cash Sales	Individual Investor Purchases
November	4%	3%	1%	22%	14%
October	4%	3%	1%	20%	13%
2016	6%	4%	2%	21%	13%

# Total Existing House Sales



# Changes in Existing House Sales

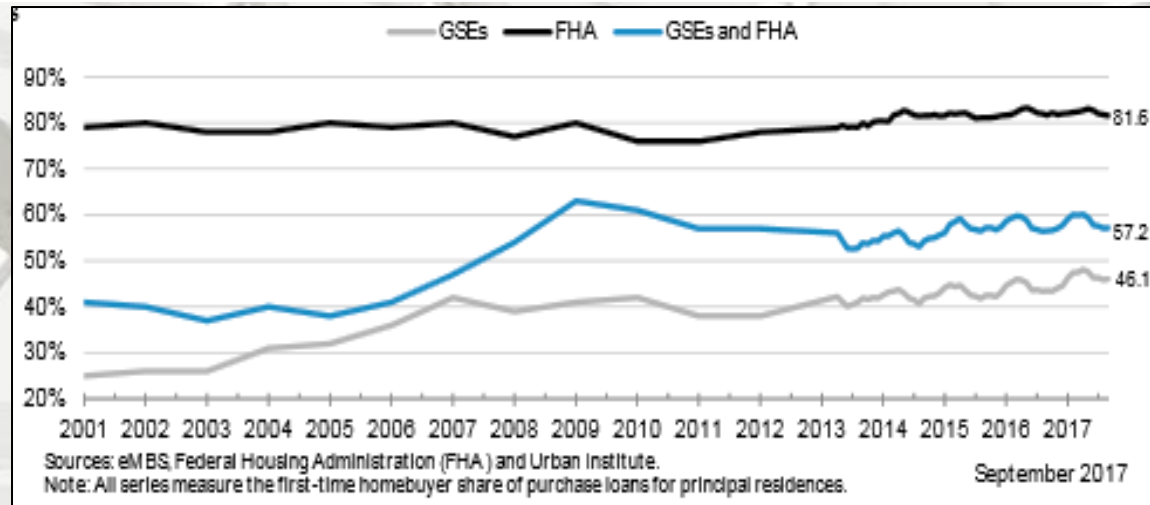
Percent Change in Sales From a Year Ago by Price Range



# First-Time Purchasers

## National Association of Realtors (NAR®)

29% of sales in November 2017 – 32% in October 2017, and 32% in November 2016<sup>1</sup>



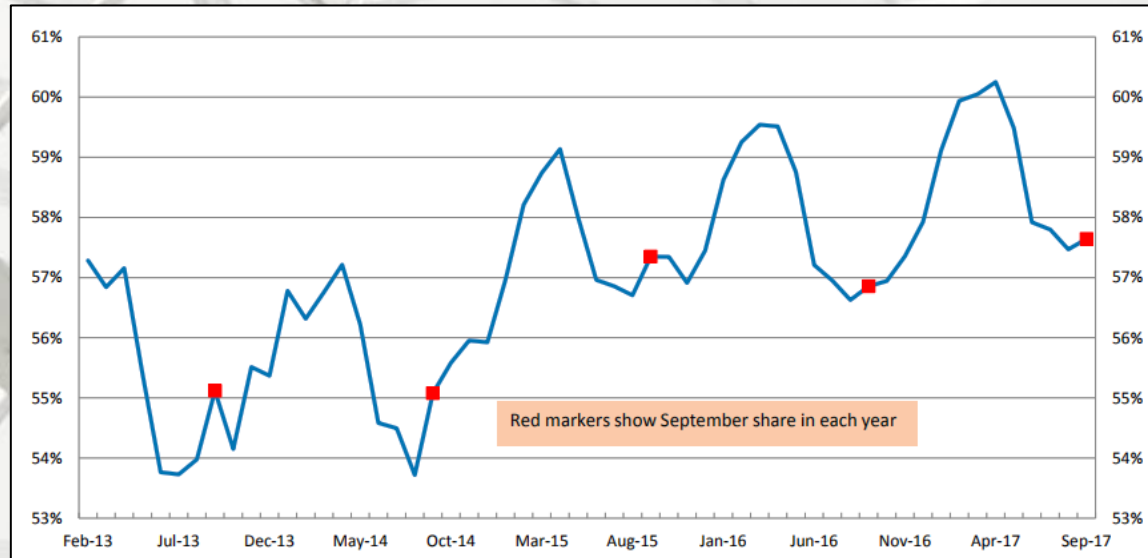
### Urban Institute

“In September 2017, the first-time homebuyer share of GSE purchase loans was 46.1 percent, breaking a four month decline after hitting the highest level in recent history in April (48.1 percent). The FHA has always been more focused on first-time homebuyers, with its first-time homebuyer share hovering around 80 percent; it stood at 81.6 percent in September 2017. The bottom table shows that based on mortgages originated in September 2017, 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.”<sup>2</sup> – Laurie Goodman, *et al.*, Co-director, Housing Finance Policy Center

Sources: <sup>1</sup> <https://www.nar.realtor/newsroom/existing-home-sales-soar-56-percent-in-november-to-strongest-pace-in-over-a-decade>; 12/20/17;

<sup>2</sup> [https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-december-2017/view/full\\_report](https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-december-2017/view/full_report); 12/19/17

# First-Time Purchasers

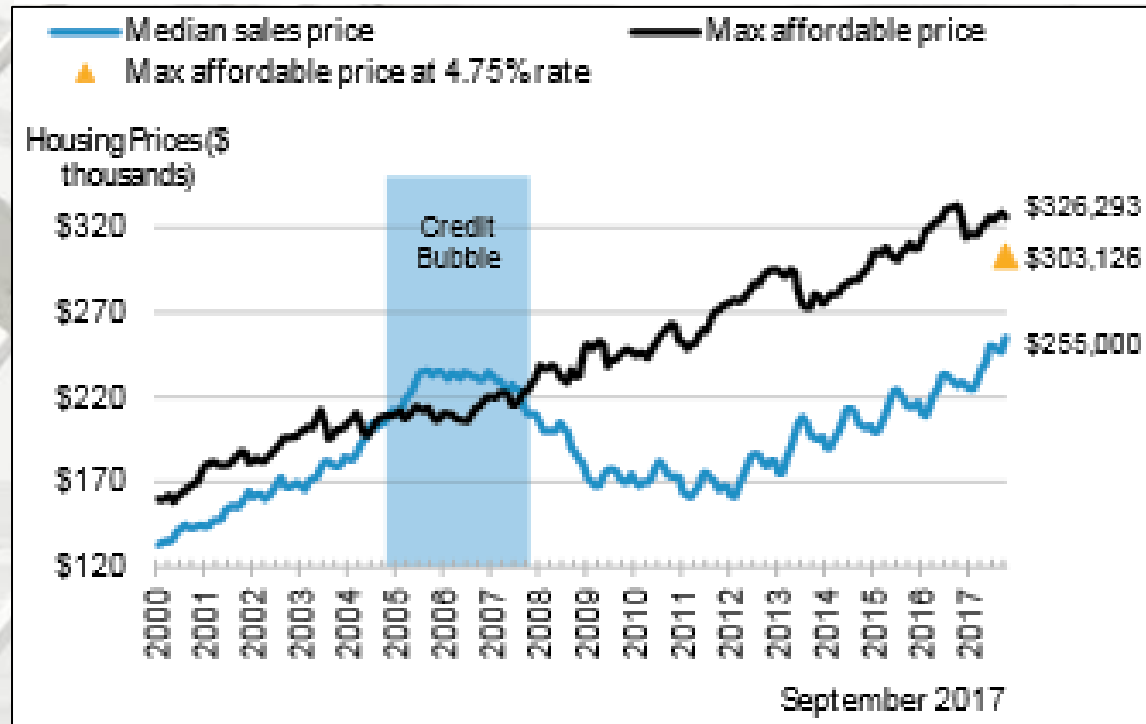


## AEI International Center on Housing Risk

“The Agency First-Time Buyer Mortgage Share Index in September set a new series high, coming in at 57.6%, up from 56.9% a year ago and from 55.1% four years ago. We expect this index to increase modestly in 2018.” – Edward Pinto and Tobias Peter, AEI International Center on Housing Risk

# Housing Affordability

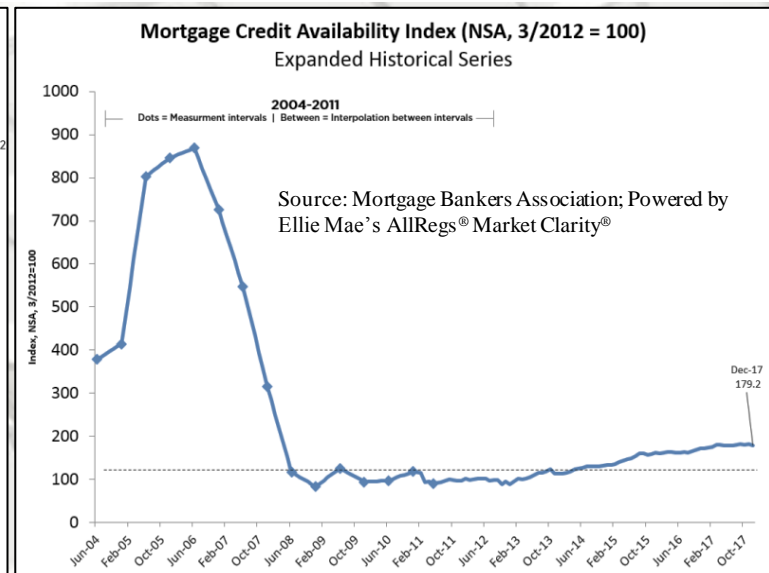
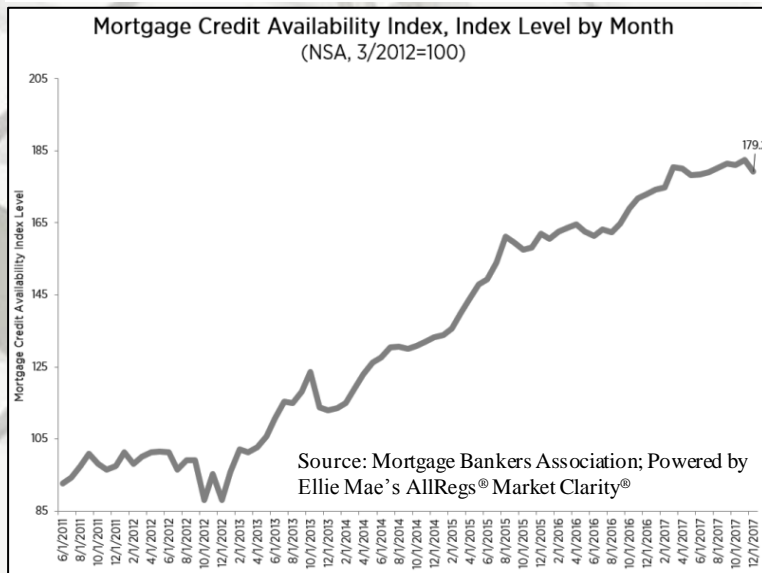
## National Housing Affordability Over Time



### Urban Institute

“Home prices are still very affordable by historic standards, despite increases over the last four years and the recent interest rate hike. Even if interest rates rise to 4.75 percent, affordability would still be at the long term historical average.” – Bing Lai, Research Associate, Housing Finance Policy Center

# Mortgage Credit Availability



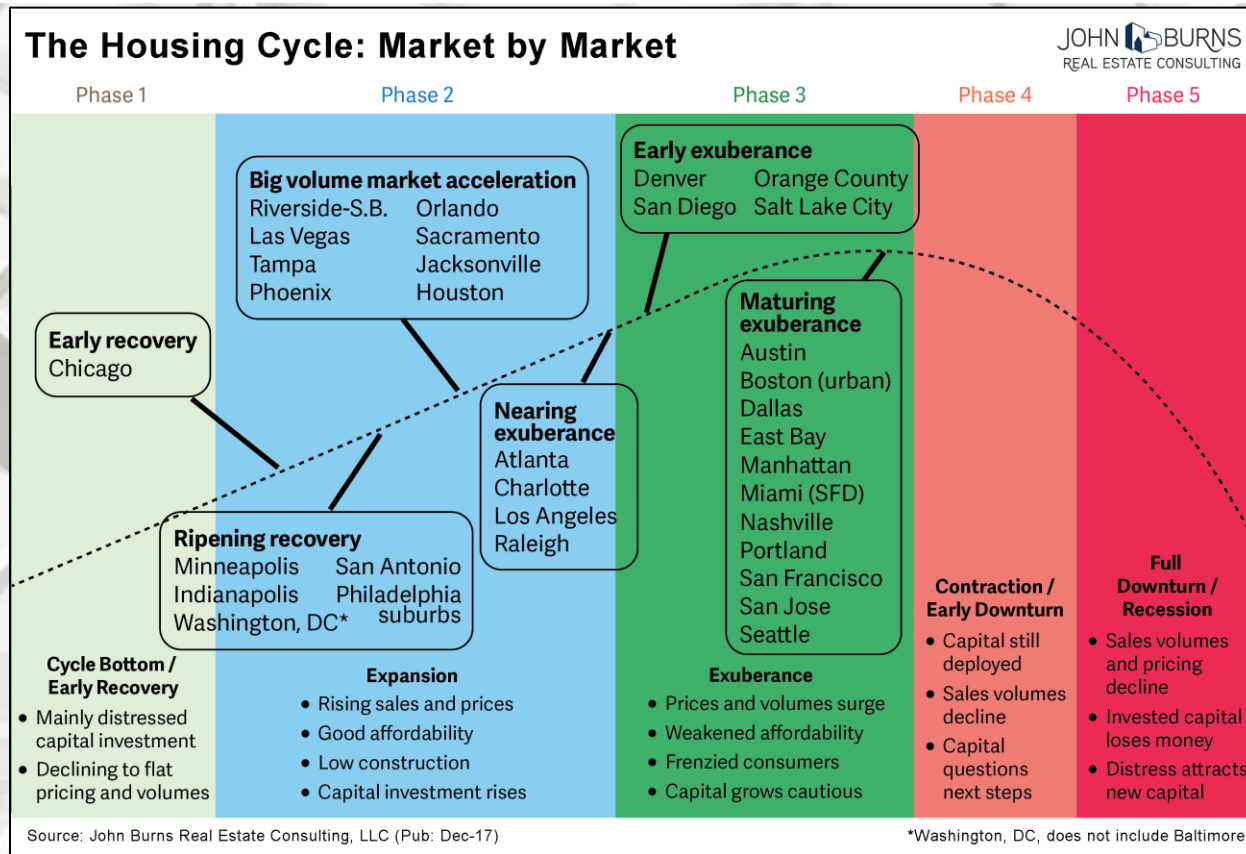
## Mortgage Credit Availability Decreases in December

“Mortgage credit availability decreased in December according to the Mortgage Credit Availability Index (MCAI). The MCAI decreased 1.8 percent to 179.2 in December. A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening credit. The index was benchmarked to 100 in March 2012. The Conventional MCAI fell less (down 0.7 percent) than the Government MCAI (down 2.6 percent). The component indices of the Conventional MCAI both fell from the month prior, with the Conforming MCAI falling less (down 0.1 percent) than the Jumbo MCAI (down 1.4 percent).

In December a handful of investors made end of the year adjustments to their menu of offerings. This resulted in a net decrease in credit availability for government backed programs (FHA/VA/USDA), and especially for lower credit score, higher loan-to-value loans, as well as streamline (requiring less documentation) refinances. Despite the decline in the jumbo credit availability over the month, the jumbo index was up nearly 20 percent from December a year ago, by far the largest gain among the component indices.” – Lynn Fisher, Vice President of Research and Economics, MBA



# Current Housing Market



## John Burns Real Estate Consulting LLC

### Where Are We in the Housing Cycle?

“Ten years ago today, our company published [Strategies to Navigate 5 Stages of the Housing Cycle](#) and followed that up with a [7-minute educational cartoon](#) on the housing market. To commemorate the 10-year anniversary of those analyses, we are sharing the graphic we produce each month that shows where 33 major markets are positioned in that cycle.” – Kate Seabaugh, Manager, and Danielle Nguyen, Research Analyst, John Burns Real Estate Consulting LLC

# Current Housing Market

## John Burns Real Estate Consulting LLC

### Where Are We in the Housing Cycle?

**“Early recovery.** Only one market, **Chicago**, remains in the early recovery phase of the cycle. Despite being one of the largest resale markets in the country, new home construction has struggled to take off. Builders must execute perfectly on price, location, product, and schools to achieve success. Chicago remains one of our only **Slow** markets, and we worry that looming state and local fiscal issues and population loss will continue to prohibit the Chicago recovery from gaining full momentum.

**Ripening recovery.** **Minneapolis, Indianapolis, Washington, DC, San Antonio, Philadelphia suburbs.** These early expansion phase metros warmed up and are exhibiting more normalized sales and pricing conditions. We upgraded many of these markets from **Slow** to **Normal** in the past year as their recoveries finally stabilized and gained traction. The large new home price premiums in Minneapolis, Indianapolis, and Philadelphia keep the sales pace moderate for builders.

**Big volume market acceleration.** **Riverside-San Bernardino, Las Vegas, Tampa, Phoenix, Orlando, Sacramento, Jacksonville, Houston.** These big volume markets recovered very slowly, partially because construction is such a big part of their economies. Single-family new home construction has recently accelerated at a very fast clip – rising over 12% YOY in several of these markets. Most of the markets in this group experience **Normal** market conditions, with **Riverside-San Bernardino** as one of our hottest current markets. We expect **Riverside, Las Vegas, Phoenix, and Tampa** to notch the highest new home revenue growth over the next two years.” – Kate Seabaugh, Manager, and Danielle Nguyen, Research Analyst, John Burns Real Estate Consulting LLC

# Current Housing Market

## John Burns Real Estate Consulting LLC

### Where Are We in the Housing Cycle?

“**Nearing exuberance.** **Atlanta, Charlotte, Los Angeles, Raleigh.** These expansion metros have moved closer to the exuberance phase. The nearing exuberance markets exhibit **Normal** current market conditions and have yet to reach the frenzied sales or pricing of the exuberance markets. Los Angeles’ current conditions are **Strong** at infill communities, but due to the patchiness of sales at projects in more outlying locations, the market is not experiencing buyer frenzy overall. In **Atlanta, Charlotte, and Raleigh**, certain submarkets and price points accelerated quickly following a delayed housing recovery. However, sales have cooled in A locations at the higher price points, and the entry segment is now enjoying a strong upswing.

**Early exuberance.** **Denver, Orange County, San Diego, Salt Lake City.** These markets reached the exuberance phase and display hotter housing market conditions through above average sales rates and price appreciation. Low resale supply paired with solid job growth are driving additional new home demand, particularly in the relatively affordable price points. **San Diego and Salt Lake City** are two of our hottest current markets. **Orange County**’s luxury segment may be closer to maturing exuberance, given significant supply +\$1MM, but more modestly priced product (especially in highly desirable submarkets) continues to sell very well.” – Kate Seabaugh, Manager, and Danielle Nguyen, Research Analyst, John Burns Real Estate Consulting LLC

# Current Housing Market

## John Burns Real Estate Consulting LLC

### Where Are We in the Housing Cycle?

“**Maturing exuberance.** Austin, Boston, Dallas, East Bay, Manhattan, Miami (single-family detached product), Nashville, Portland, San Francisco, San Jose, Seattle. Technology jobs drive most of these markets, and we expect a correction in some segments of the technology sector as indicated in our previous [newsletter](#). Many of these maturing exuberance markets were among the first to recover this housing cycle. Current employment is well above prior peak in all of these markets, with Austin, Nashville, and Dallas employment +20% above 2009 levels – the highest of the top 33 markets. Strong job growth in high-wage sectors has buoyed these markets, but now weakening affordability and decelerating job growth is cooling demand after a sustained run-up.

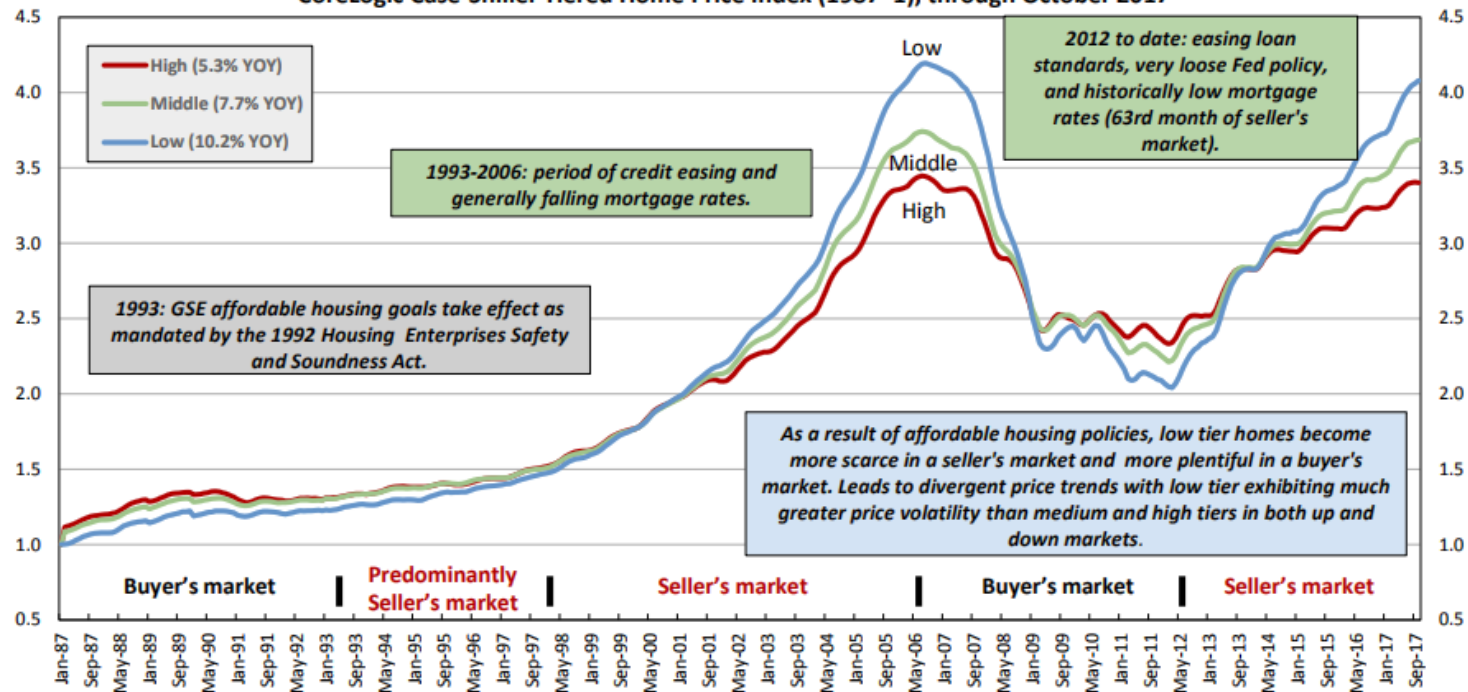
In summary, the housing markets around the country have recovered at different paces and have different outlooks.” – Kate Seabaugh, Manager, and Danielle Nguyen, Research Analyst, John Burns Real Estate Consulting LLC

# Current Housing Market

## Greater House Price Volatility at the Lower End

*The current seller's market is 63 months old. Prior to the Great Recession a seller's market lasted for 99 months. Since the advent of expanded "affordable housing" efforts, these trends have become stronger at the lower end of the market, as indicated by higher peaks and lower troughs. Increasing leverage fuels unsustainable house price trends. Low Price Tier is up 10.2% y-o-y and 100% since 2012 trough, while High Price Tier is up 5.3% y-o-y and 45% since 2012 trough. We expect price growth to accelerate in 2018, particularly at the Low Price Tier.*

CoreLogic Case-Shiller Tiered Home Price Index (1987=1), through October 2017



Tiers price breakouts are calculated by breaking up all sales for each period, so that there are the same number of sales, after accounting for exclusions, in each of the three tiers. These 16 metro areas are used to derive the Tiered HPI: Boston, NYC, DC, Chicago, Denver, Las Vegas, Los Angeles, San Diego, San Francisco, Miami, Atlanta, Minneapolis, Phoenix, Portland, Seattle, and Tampa. Only 8 metro areas included at beginning of series. This number grows until 1993, when 16 metro areas are consistently reported.

\* A seller's market: an economic situation in which goods are scarce and sellers can keep prices high. (Google.com)

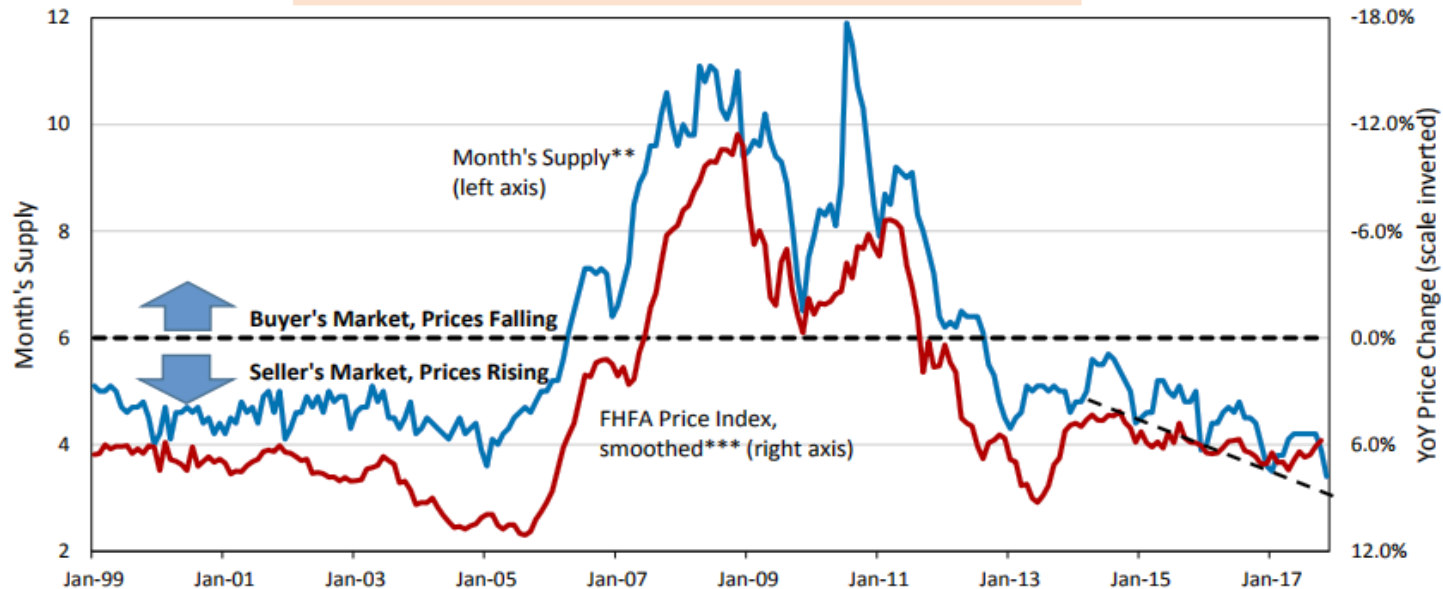
\*\*A buyer's market: an economic situation in which goods are plentiful and buyers can keep prices down. (Google.com)

# Current Housing Market

## Supply-Demand Imbalance in the Market Driving Prices Up

***The fundamental problem in the housing market today is 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, month inventory for November was at its lowest level (3.4) since they began tracking in 1999. Given the trend over the past 4 years, we expect 3 month's inventory in January.***

National Month's Inventory & Changes in Nominal House Prices\*



\*Month's supply updated through November 2017; FHFA House Price Index updated through October 2017.

\*\* The NAR defines a seller's market to exist when the inventory of existing homes for sale would be exhausted in six months or less at the current sales pace. Conversely, a buyer's market exists when the inventory of existing homes for sale exceeds six months at the current sales pace. (<http://www.realtor.org/news-releases/2013/04/march-existing-home-sales-slip-due-to-limited-inventory-prices-maintain-uptrend>).

\*\*\* FHFA Monthly Purchase-Only Seasonally Adjusted house price index. The series is a 6 month trailing average.

Source: National Association of Realtors, FHFA

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# Summary

## **In summary:**

In November, the U.S. housing market was neutral, as many indicators posted minimal increases on a month-over-month basis. New SF sales and starts were robust on a month-over-month basis. Monthly construction spending was lackluster, as SF and improvement expenditures were barely positive on a month-over-month basis. Once more, new SF lower-priced tier house sales were well less than historical averages. It warrants repeating, the market needs consistent improvement in this category to influence the housing construction market upward.

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 (future Fed actions may indirectly cause *i*-rates to rise);
- 2) As a result, housing affordability is good for many in the U.S. – but not all of 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) Household formations are still lagging historical averages;
- 3) Changing attitudes towards SF ownership;
- 4) Gentrification;
- 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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