

# The Virginia Tech – U.S. Forest Service

## December 2016

### 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)

# Summary

In December 2016, aggregate monthly housing data were mixed. Overall permits declined month-over-month and increased minimally year-over-year. Single-family permits declined month-over-month. New single-family house construction spending improved minimally on a month-over-month basis and year-over-year basis. The February 9th Atlanta Fed GDPNow™ model projects aggregate residential investment spending to increase at a 5.3 percent seasonally adjusted annual rate in Quarter 1; new residential investment spending was estimated at 10.2 percent; and improvements were projected 3.3 percent.<sup>1</sup> Regionally, data were mixed across all sectors.

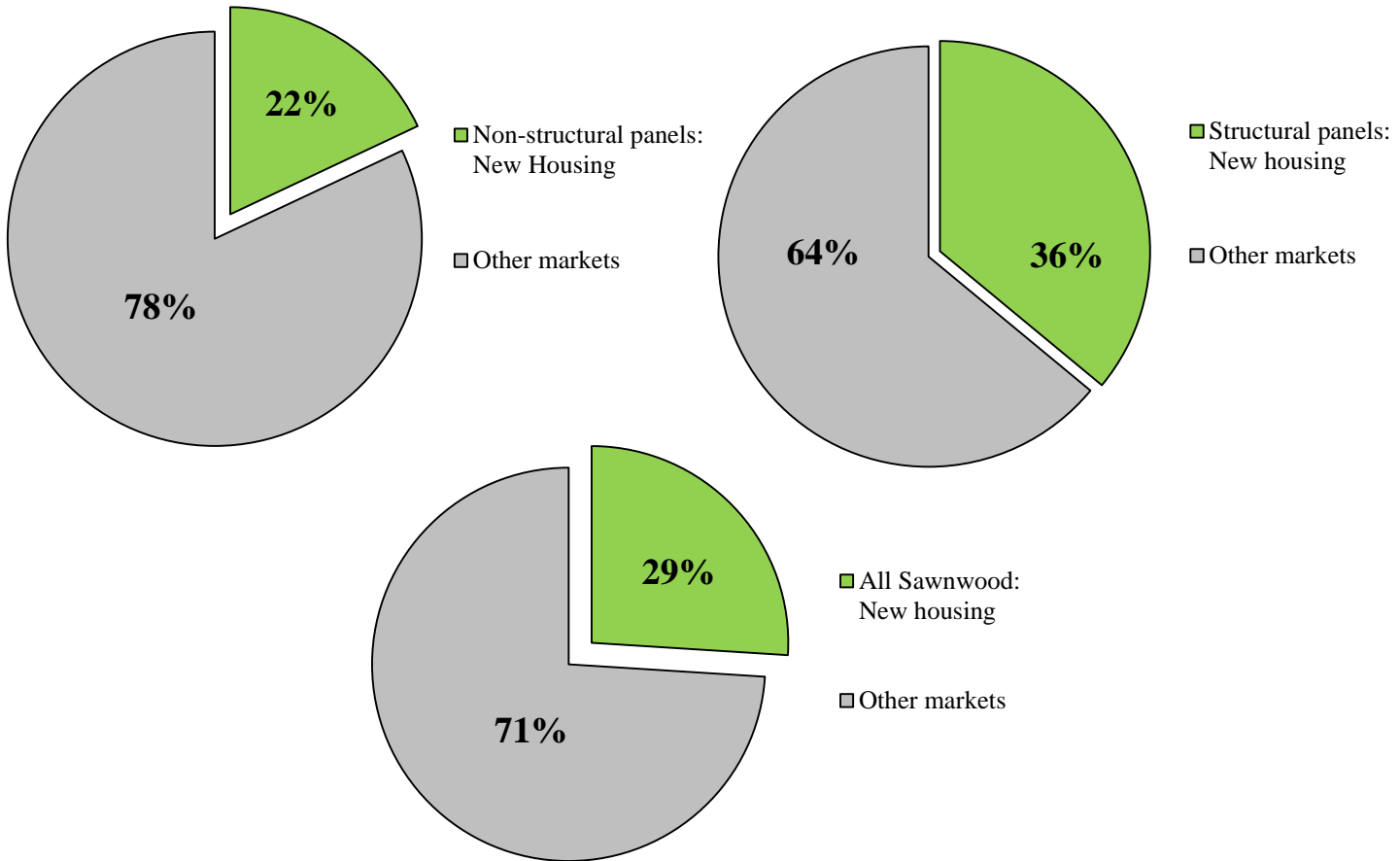
In this month's issue, we present several 2017 new housing forecasts. In aggregate, these projections have decreased slightly from the 2016 forecasts. This month's commentary also contains relevant housing data; data exploration; new single- and multifamily and existing housing data; economic information; and demographics. Section I contains data and commentary and Section II includes Federal Reserve analysis; private indicators; and demographic commentary. We hope you find this commentary beneficial.

# December 2016 Housing Scorecard

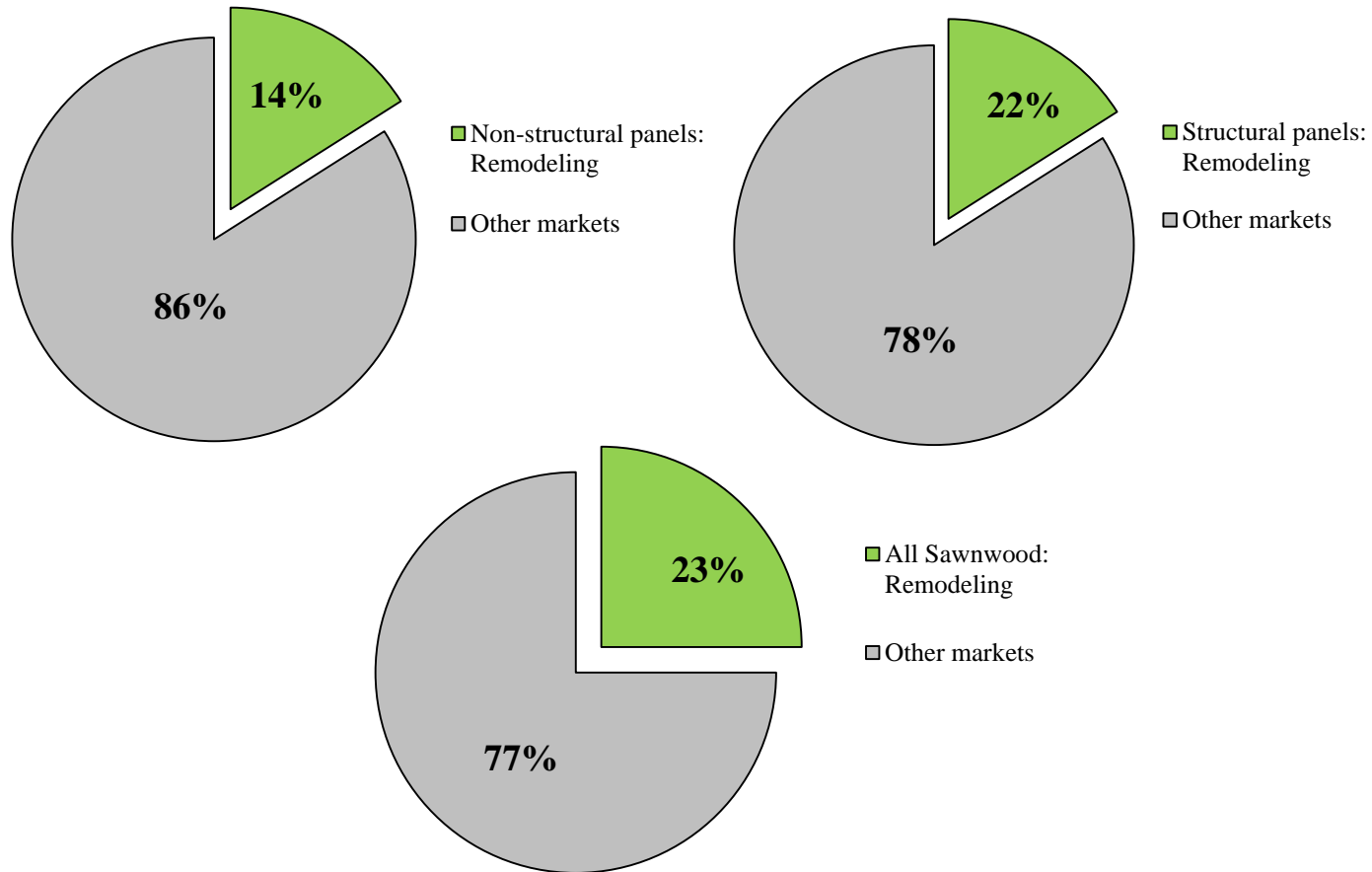
	M/M	Y/Y
Housing Starts	△ 11.3%	△ 5.7%
Single-Family Starts	▽ 4.0%	△ 3.9%
Housing Permits	▽ 0.2%	△ 0.7%
Single-Family Permits	△ 4.7%	△ 10.7%
Housing Completions	▽ 7.9%	△ 8.7%
New Single-Family House Sales	▽ 10.4%	▽ 0.4%
Private Residential Construction Spending	△ 0.5%	△ 3.7%
Single-Family Construction Spending	△ 0.5%	△ 0.3%
Existing House Sales <sup>1</sup>	▽ 2.8%	△ 0.7%

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



# 2017 Housing Forecasts\*

<b>Total starts, range:</b>	<b>1,170 to 1,360</b>	<b>Median: 1,262</b>
<b>Single-family starts, range:</b>	<b>795 to 893</b>	<b>Median: 856</b>
<b>New house sales, range:</b>	<b>610 to 680</b>	<b>Median: 642</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>	1,285	835	
Bank of Montreal <sup>b</sup>	1,320		
Bloomberg <sup>c</sup>	1,250		
Blue Chip <sup>d</sup>	1,260		
The Conference Board <sup>e</sup>	1,280		
Deloitte <sup>f</sup>	1,270		
Dodge Data & Analytics <sup>g</sup>	1,230	795	
Export Development Canada <sup>h</sup>	+13 %		
Fannie Mae <sup>i</sup>	1,308	883	671
Freddie Mac <sup>j</sup>	1,360		
Forest Economic Advisors <sup>k</sup>	1,285	855	

\* All in thousands of units

# 2017 Housing Forecasts\*

Organization	Total Starts	Single-Family Starts	New House Sales
Forisk <sup>l</sup>	1,250		
Home Advisor <sup>m</sup>	1,236	893	614
Goldman Sachs <sup>n</sup>	1,333	893	648
Merrill Lynch <sup>o</sup>	1,225	825	625
Metrostudy <sup>p</sup>	1,256		
Mortgage Bankers Association <sup>q</sup>	1,265	860	644
National Association of Homebuilders <sup>r</sup>	1,256	863	
National Association of Realtors <sup>s</sup>	1,220		620
PiperJaffray <sup>t</sup>	1,242	855	630
Royal Bank of Canada (RBC) <sup>u</sup>	1,212		
Scotia Bank <sup>v</sup>	1,300		
TD Economics <sup>w</sup>	1,240		
The Federal Reserve Bank of Chicago <sup>x</sup>	1,200		
UCLA Ziman Center for Real Estate <sup>y</sup>	1,200 to 1,250		
Wells Fargo <sup>z</sup>	1,240	860	680

\* All in thousands of units



# 2017 Housing Forecasts

## References

a-Random Lengths, Volume 73, Issue 1 (1/6/17)

b-<http://economics.bmocapitalmarkets.com/economics/outlook/20170104/nao.pdf>

c-<http://www.calculatedriskblog.com/2016/12/2017-housing-forecasts.html>

d-<http://www.calculatedriskblog.com/2016/12/2017-housing-forecasts.html>

e-[https://www.conference-board.org/pdf\\_free/economics/2017\\_01\\_11.pdf](https://www.conference-board.org/pdf_free/economics/2017_01_11.pdf)

f-<https://dupress.deloitte.com/dup-us-en/economy/us-economic-forecast/2016-q4.html>

g-<http://www.constructiondive.com/news/inside-the-dodge-2017-construction-outlook-commercial-and-residential-pred/428821/>

h-<http://www.edc.ca/EN/Knowledge-Centre/Economic-Analysis-and-Research/Documents/gef-fall-2016.pdf>

i-[http://www.fanniemae.com/resources/file/research/emma/pdf/Housing\\_Forecast\\_122016.pdf](http://www.fanniemae.com/resources/file/research/emma/pdf/Housing_Forecast_122016.pdf)

j-<http://www.freddiemac.com/finance/pdf/201612-Outlook-12%2021%2016.pdf>

k-Random Lengths, Volume 73, Issue 1 (1/6/17)

l-<http://forisk.com/blog/2017/01/23/forisk-forecast-us-housing-starts-outlook-q1-2017-update/>

m-<http://image.mail1.wf.com/lib/fe8d13727664027a7c/m/1/housing-chartbook-20170214.pdf>

# 2017 Housing Forecasts

## References

n-<http://www.goldmansachs.com/our-thinking/pages/outlook-2017/?videoId=147308>

o-<http://www.calculatedriskblog.com/2016/12/2017-housing-forecasts.html>

p-<http://www.metrostudy.com/go/webinarq42016>

q-<https://www.mba.org/news-research-and-resources/research-and-economics/forecasts-and-commentary/mortgage-finance-forecast-archives>

r-<http://hbapdx.org/wp-content/uploads/2016/10/Robert-Dietz-v-2.pdf>

s-<http://narnewslines.blogs.realtor.org/2016/11/04/nars-2017-housing-forecast-sales-first-time-buyers-on-the-rise/>

t-[http://www.piperjaffray.com/private/pdf/November\\_2016\\_Building\\_Products\\_Newsletter.pdf](http://www.piperjaffray.com/private/pdf/November_2016_Building_Products_Newsletter.pdf)

u-<http://www.rbc.com/economics/economic-reports/pdf/other-reports/Econoscope.pdf>

v-<http://www.gbm.scotiabank.com/scpt/gbm/scotiaeconomics63/retrends.pdf>

w-[https://www.td.com/document/PDF/economics/qef/long\\_term\\_dec2016.pdf](https://www.td.com/document/PDF/economics/qef/long_term_dec2016.pdf)

x-<http://app.frbcommunications.org/e/es.aspx>

y-[http://www.anderson.ucla.edu/Documents/areas/ctr/ziman/UCLA\\_Economic\\_Letter\\_Shulman\\_12.06.16.pdf](http://www.anderson.ucla.edu/Documents/areas/ctr/ziman/UCLA_Economic_Letter_Shulman_12.06.16.pdf)

z-<http://image.mail1.wf.com/lib/fe8d13727664027a7c/m/1/five-housing-questions-20170104.pdf>

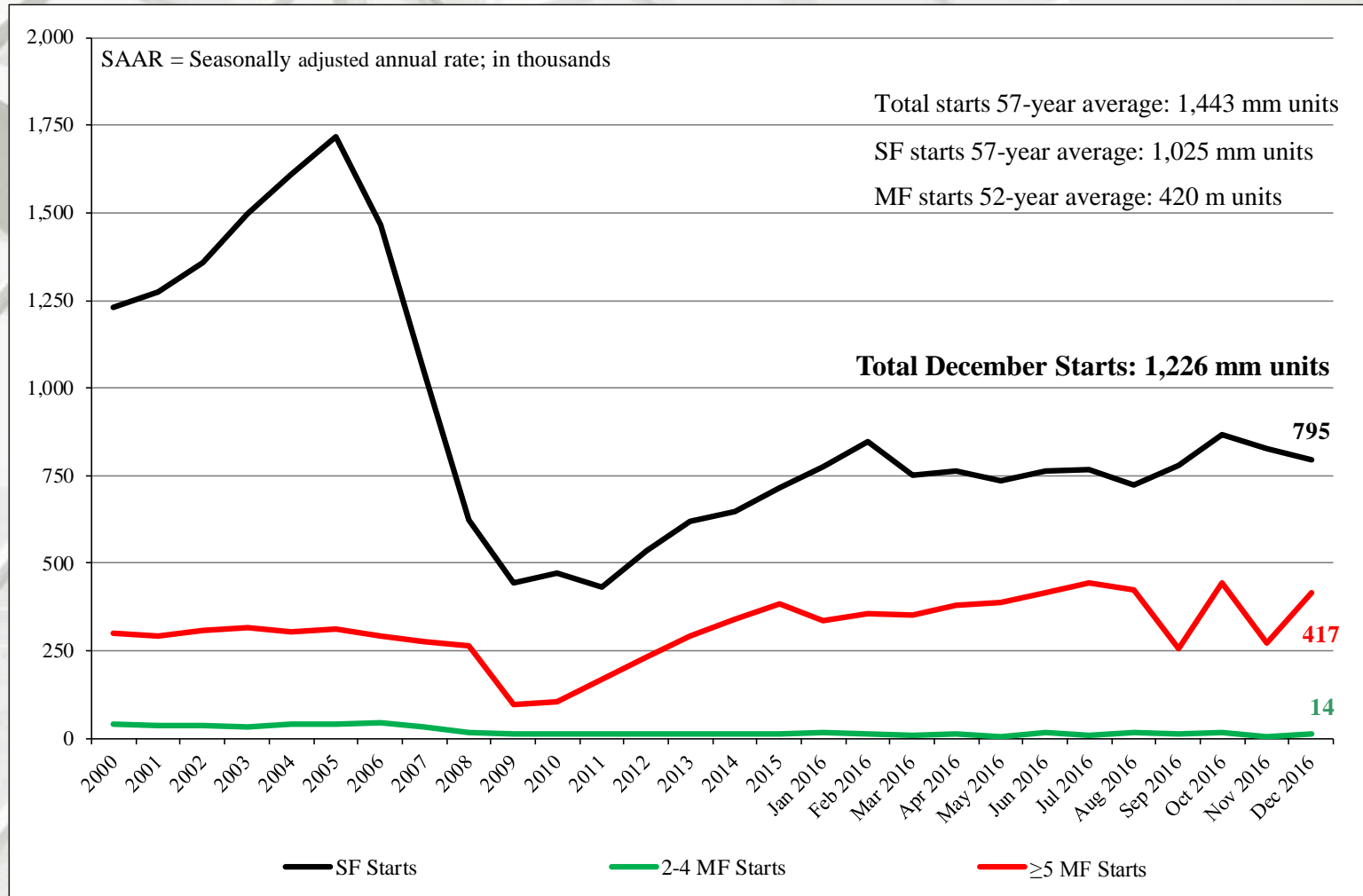
# New Housing Starts

	Total Starts	SF Starts	MF 2-4 Starts	MF ≥5 Starts
December	1,226,000	795,000	14,000	417,000
November	1,102,000	828,000	3,000	271,000
2015	1,160,000	765,000	16,000	378,000
M/M	11.3%	-4.0%	366.7%	53.9%
Y/Y change	5.7%	3.9%	-12.5%	10.3%

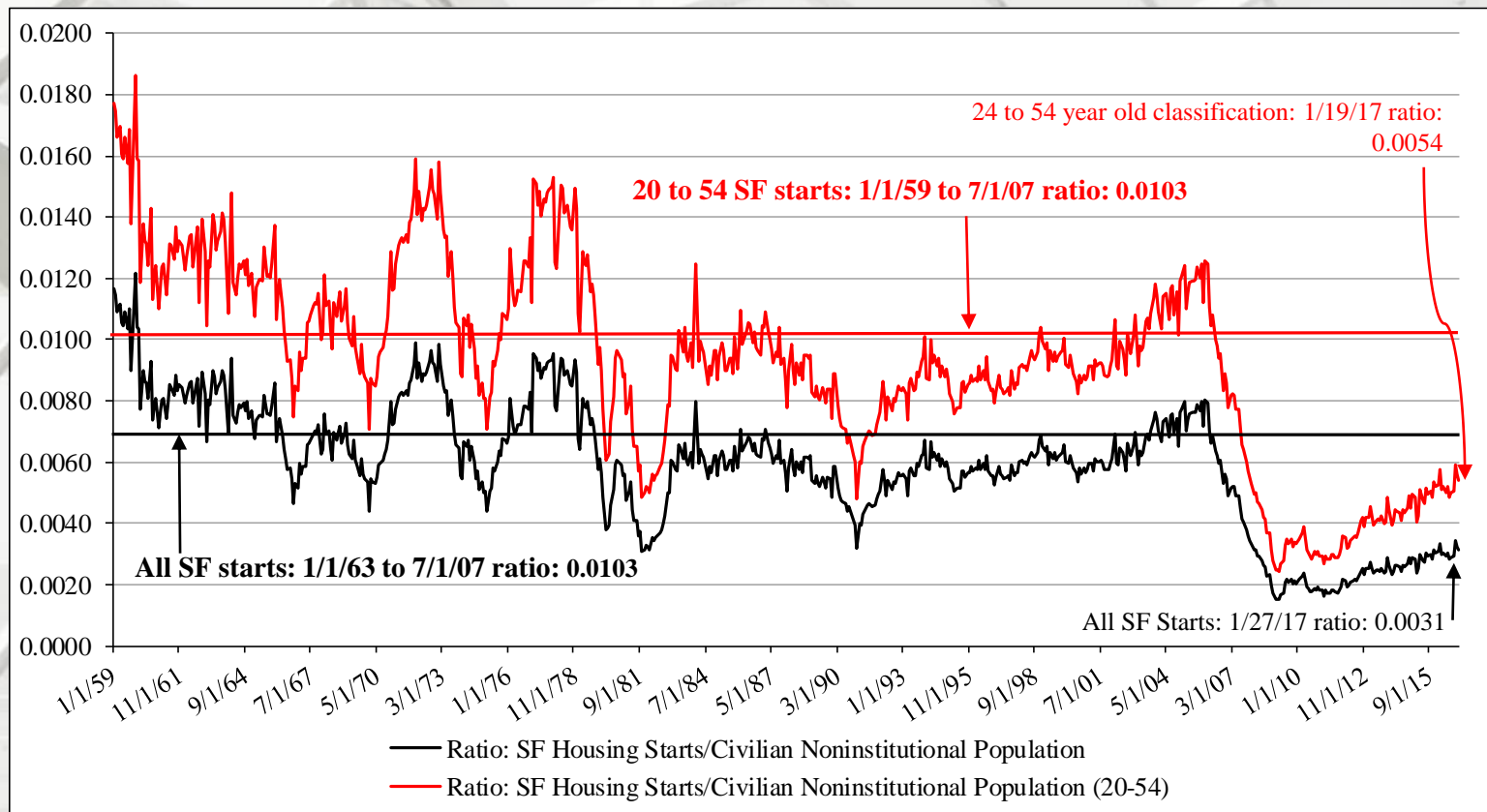
\* All start data are presented at a seasonally adjusted annual rate (SAAR).

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

# Total Housing Starts



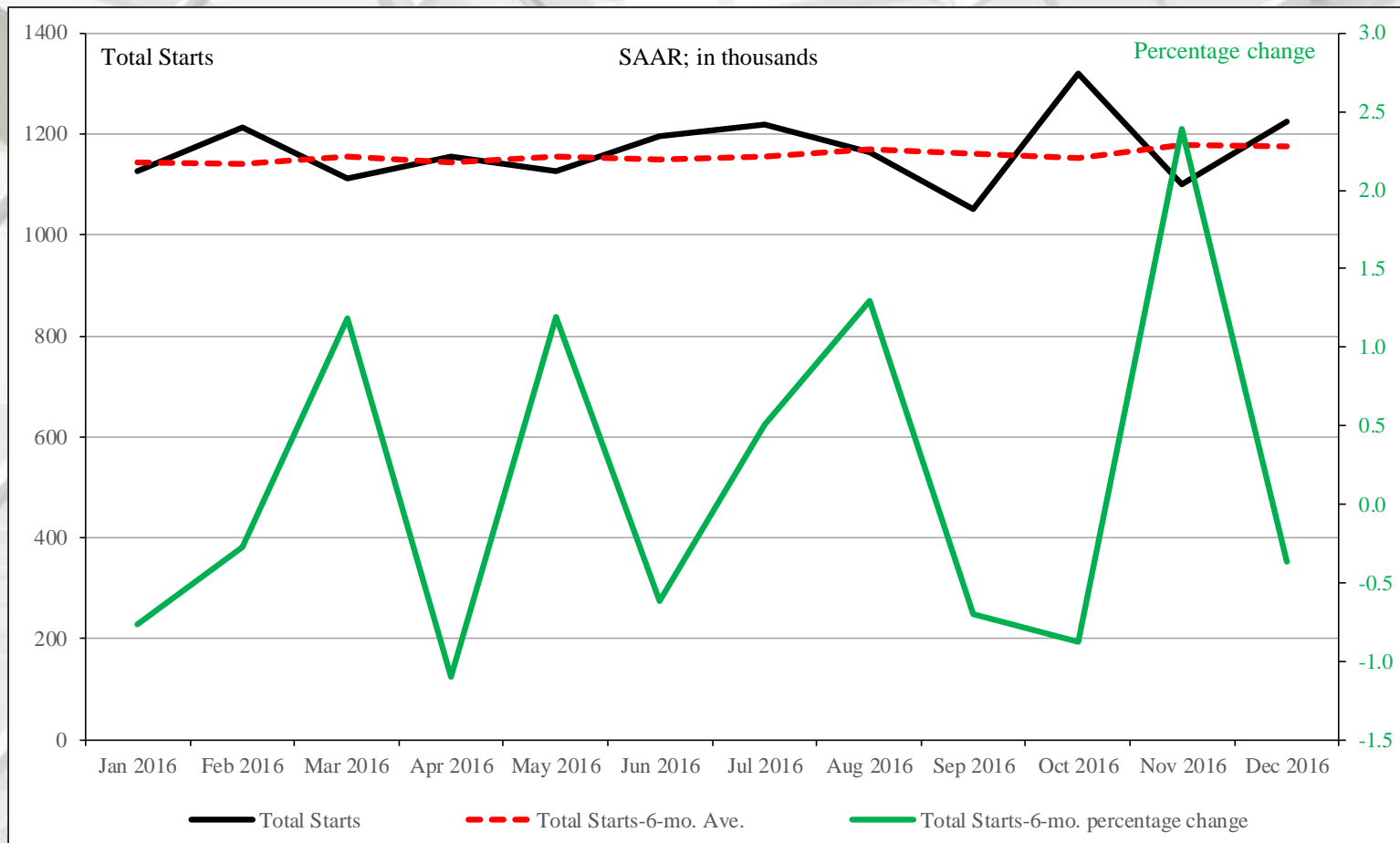
# New SF Starts



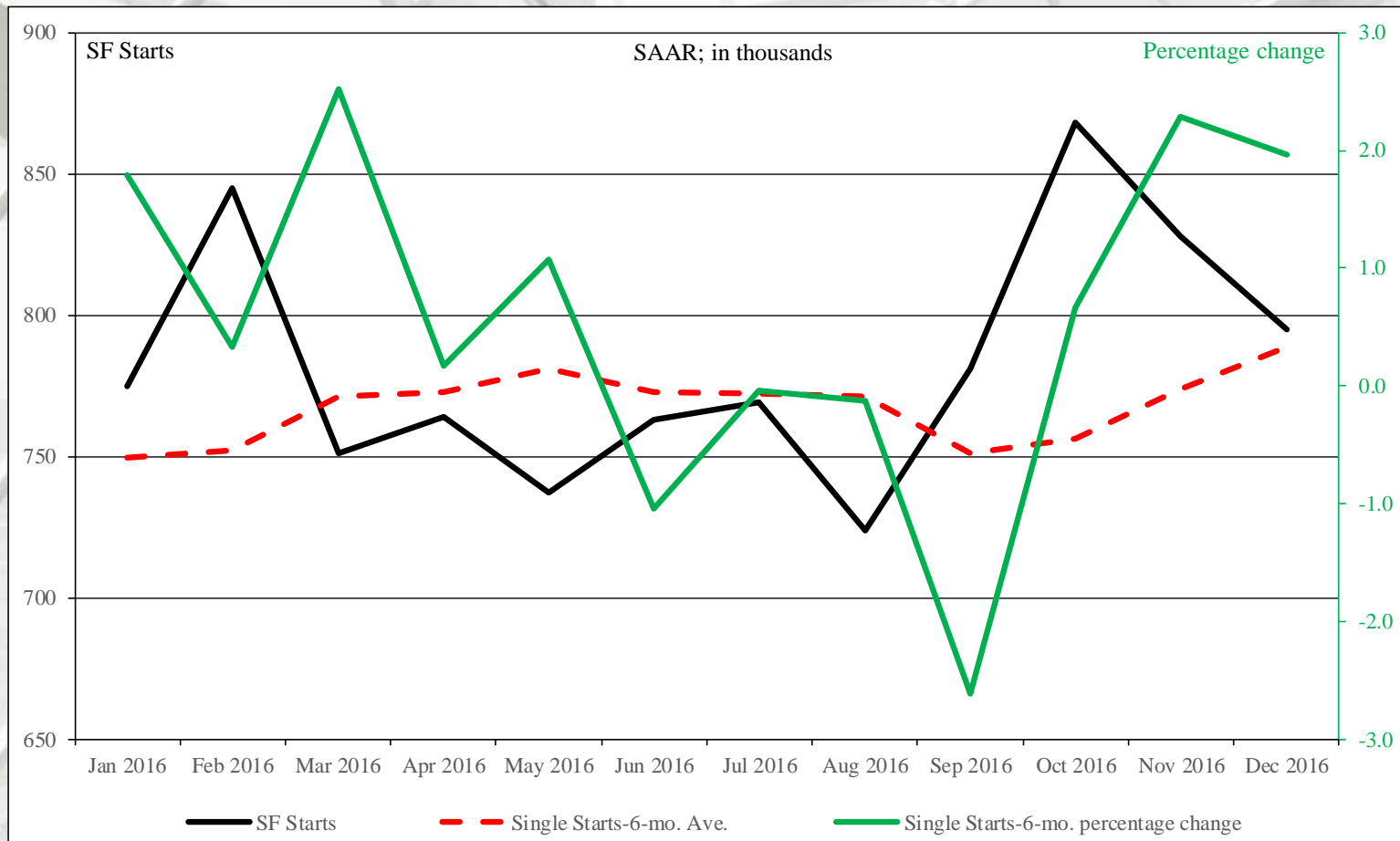
## New SF starts adjusted for the US population

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 December 2016 it was 0.0031 – a minimal decrease from November (0.0033). The ratio of non-institutionalized population, aged 24 to 54 (long-term ratio) is 0.0103; in December 2016 it was 0.0054 – a decrease from November (0.0056). From a population viewpoint, 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>
December	96,000	62,000	34,000
November	81,000	59,000	22,000
2015	156,000	63,000	93,000
M/M change	18.5%	5.1%	54.5%
Y/Y change	-38.5%	-1.6%	-63.4%

	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
December	227,000	127,000	100,000
November	173,000	141,000	32,000
2015	164,000	112,000	52,000
M/M change	31.2%	-9.9%	212.5%
Y/Y change	38.4%	13.4%	92.3%

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

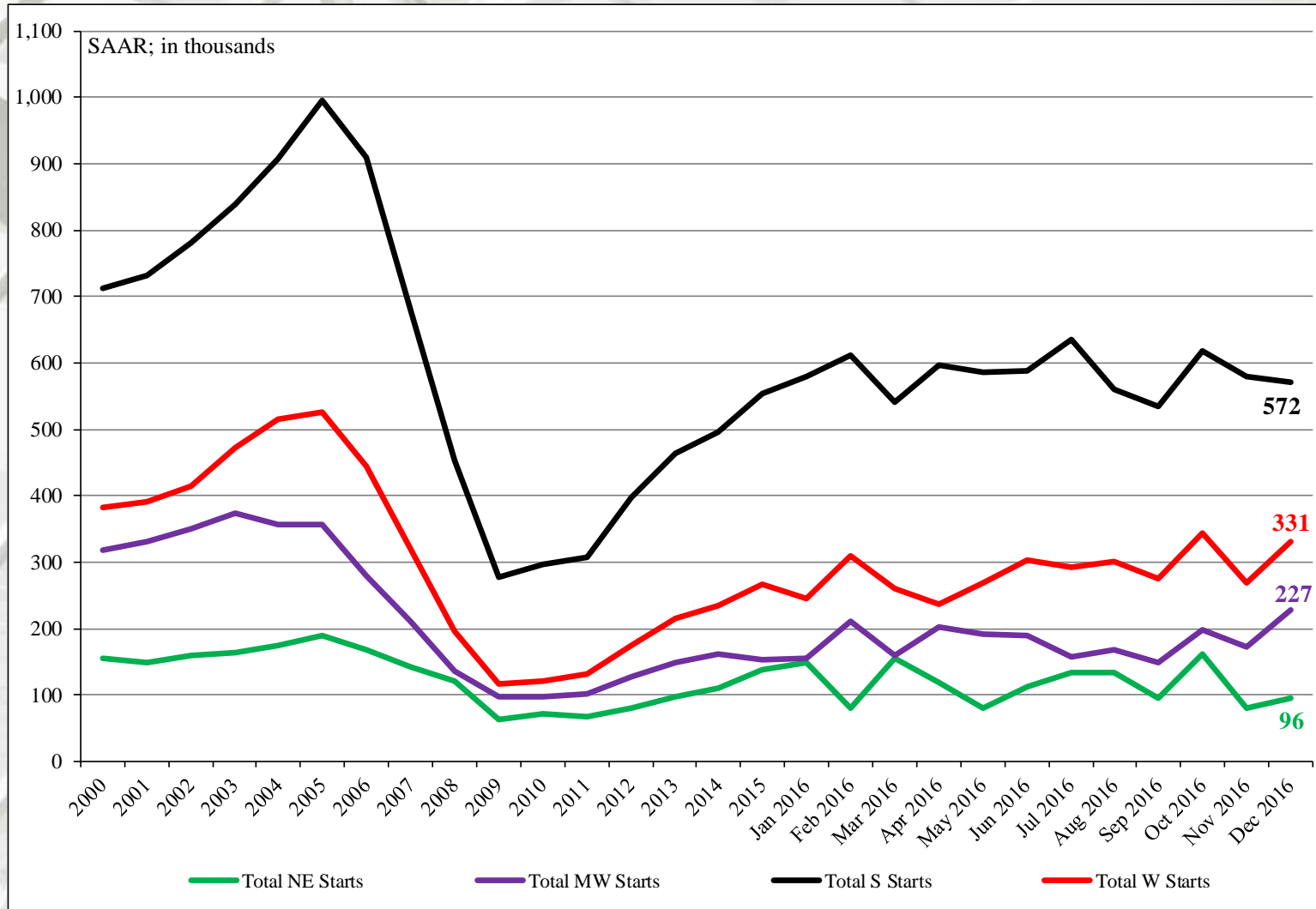
	<b>S Total</b>	<b>S SF</b>	<b>S MF**</b>
December	572,000	413,000	159,000
November	580,000	446,000	134,000
2015	591,000	420,000	171,000
M/M change	-1.4%	-7.4%	18.7%
Y/Y change	-3.2%	-1.7%	-7.0%

	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
December	331,000	193,000	138,000
November	268,000	182,000	86,000
2015	249,000	170,000	79,000
M/M change	23.5%	6.0%	60.5%
Y/Y change	32.9%	13.5%	74.7%

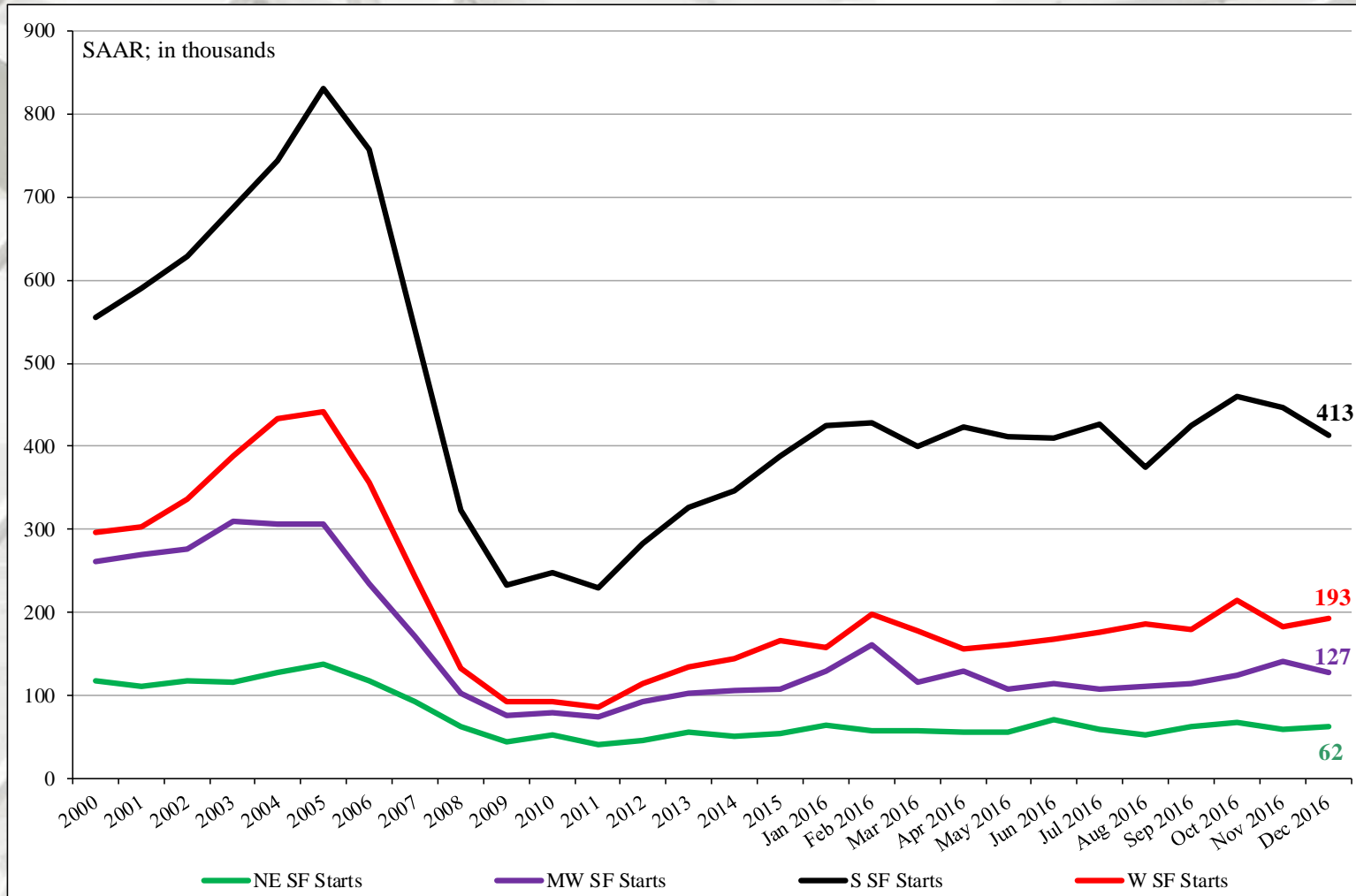
All data are SAAR; S = South and W = West.

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

# Total Housing Starts by Region

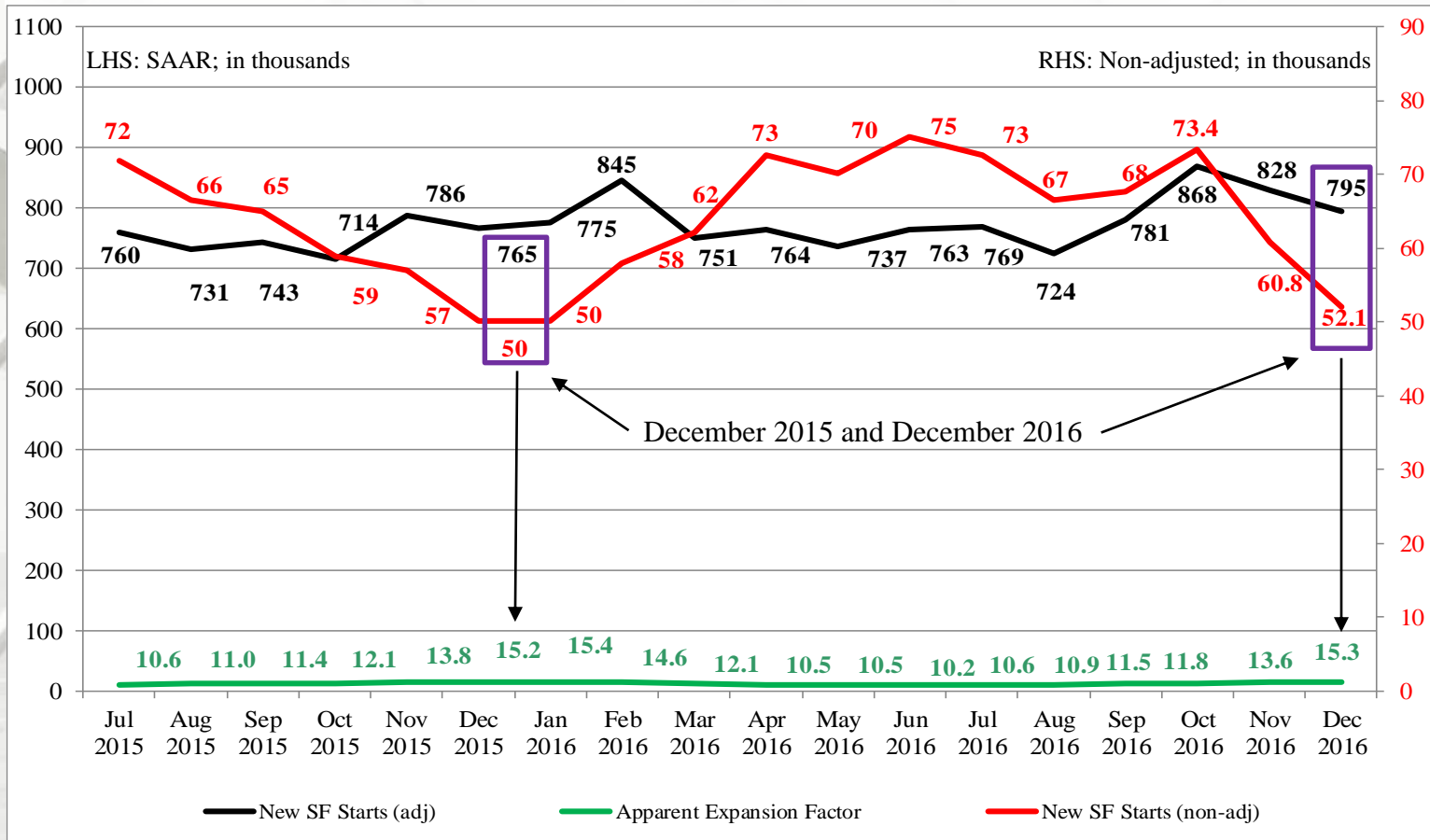


# SF Housing Starts by Region



Source: <http://www.census.gov/construction/nrc/pdf/newresconst.pdf>; 1/19/17

# Nominal & SAAR SF Housing Starts

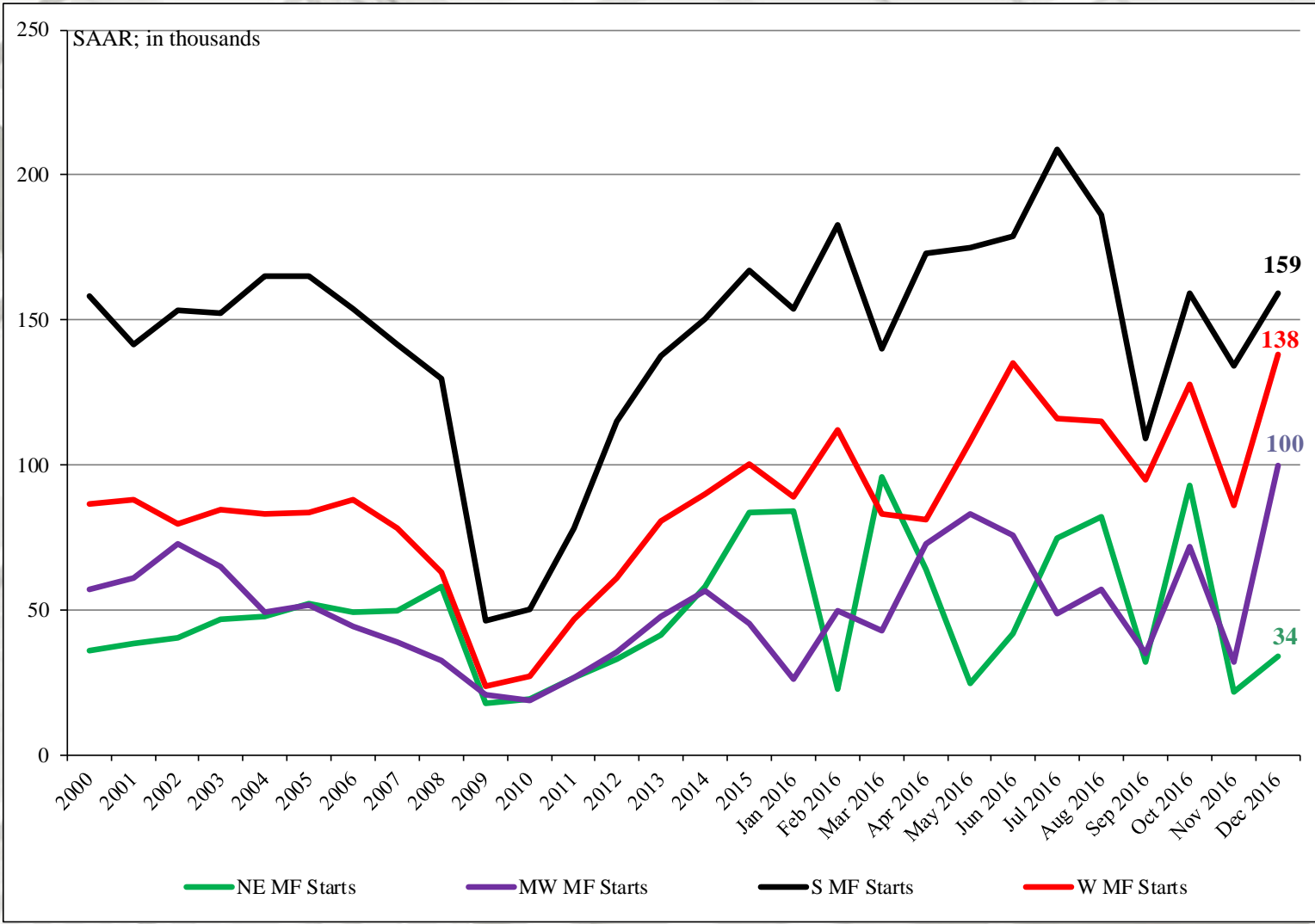


## Nominal and Adjusted New SF Monthly Sales

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



Source: <http://www.census.gov/construction/nrc/pdf/newresconst.pdf>; 1/19/17

# MF 2017 Forecast

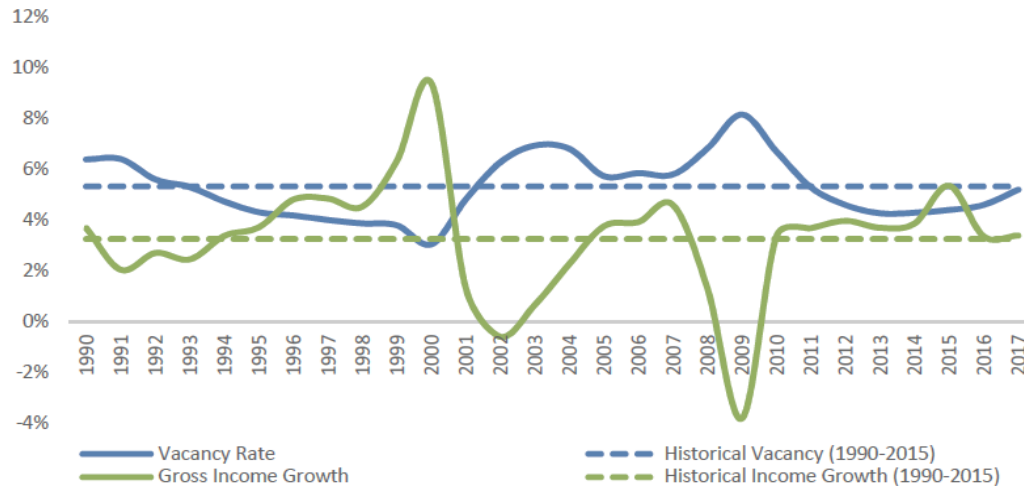
## Multifamily 2017 Outlook: Positioned for Further Growth

“The multifamily market has enjoyed several years of rapid growth and seems poised to continue to grow in 2017, although at a more moderate pace.

- Slow-but-steady economic growth continued in 2016, which supported strong demand for multifamily rental units. Despite high levels of construction permits and starts, vacancy rates remained flat, while strong demand pushed up rents and gross-income growth above the historical norm.
- A greater amount of new supply will be delivered to the market in 2017 but most of it will be absorbed, given continued economic growth and strong multifamily fundamentals. Vacancy rates will increase slightly, but still leave room for rent and gross-income growth.
- The top 10 list of fastest-growing metropolitan areas will see some jockeying for position in 2017, with smaller, more affordable markets making a showing.” – Multifamily Investments, Research & Modeling Team, FreddieMac Multifamily

# MF 2017 Forecast

Exhibit 2: Vacancy Rate and Gross Income Growth, History and Forecast

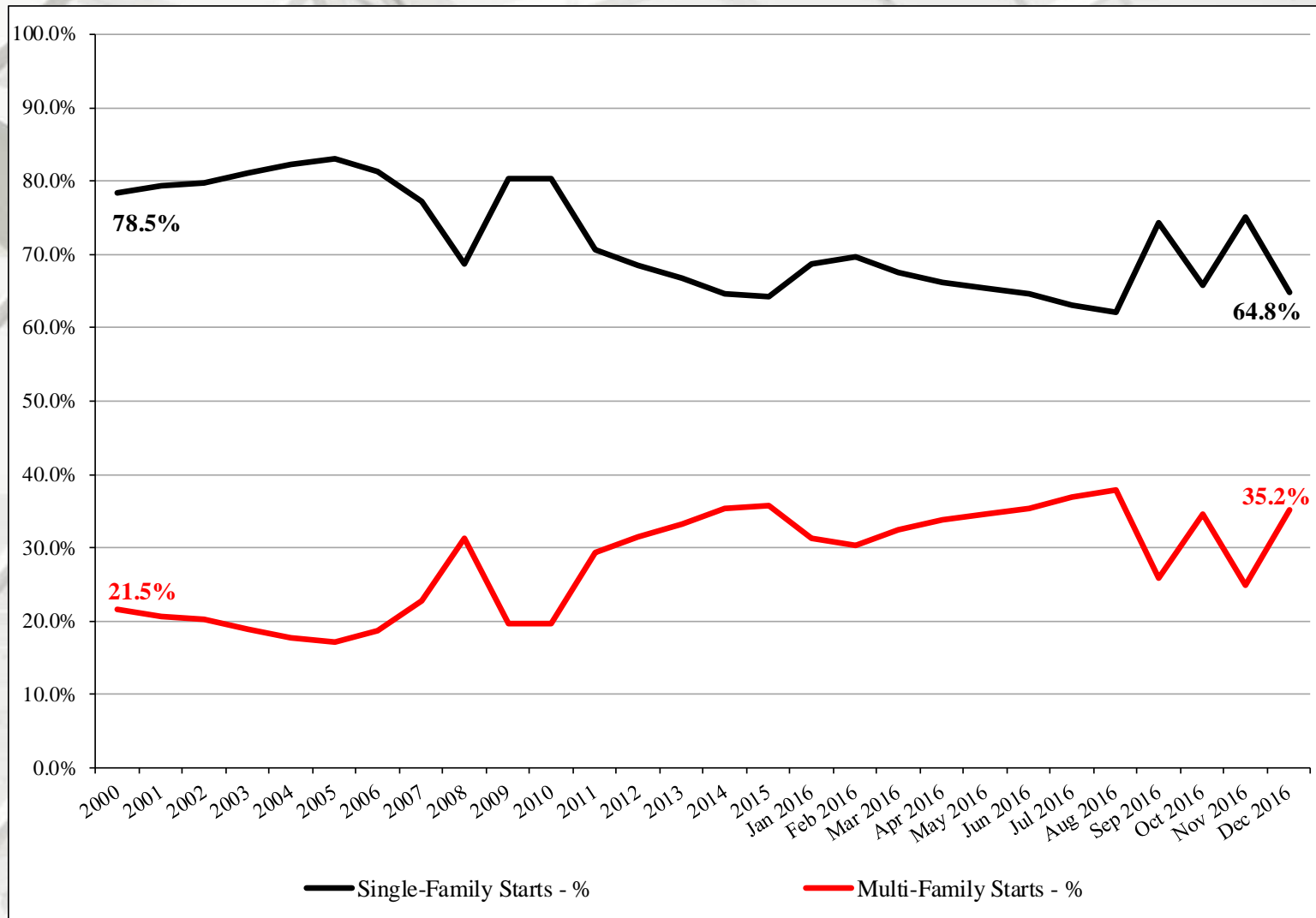


Sources: REIS, Freddie Mac projections

## 2017: “Moderation” Is the Word

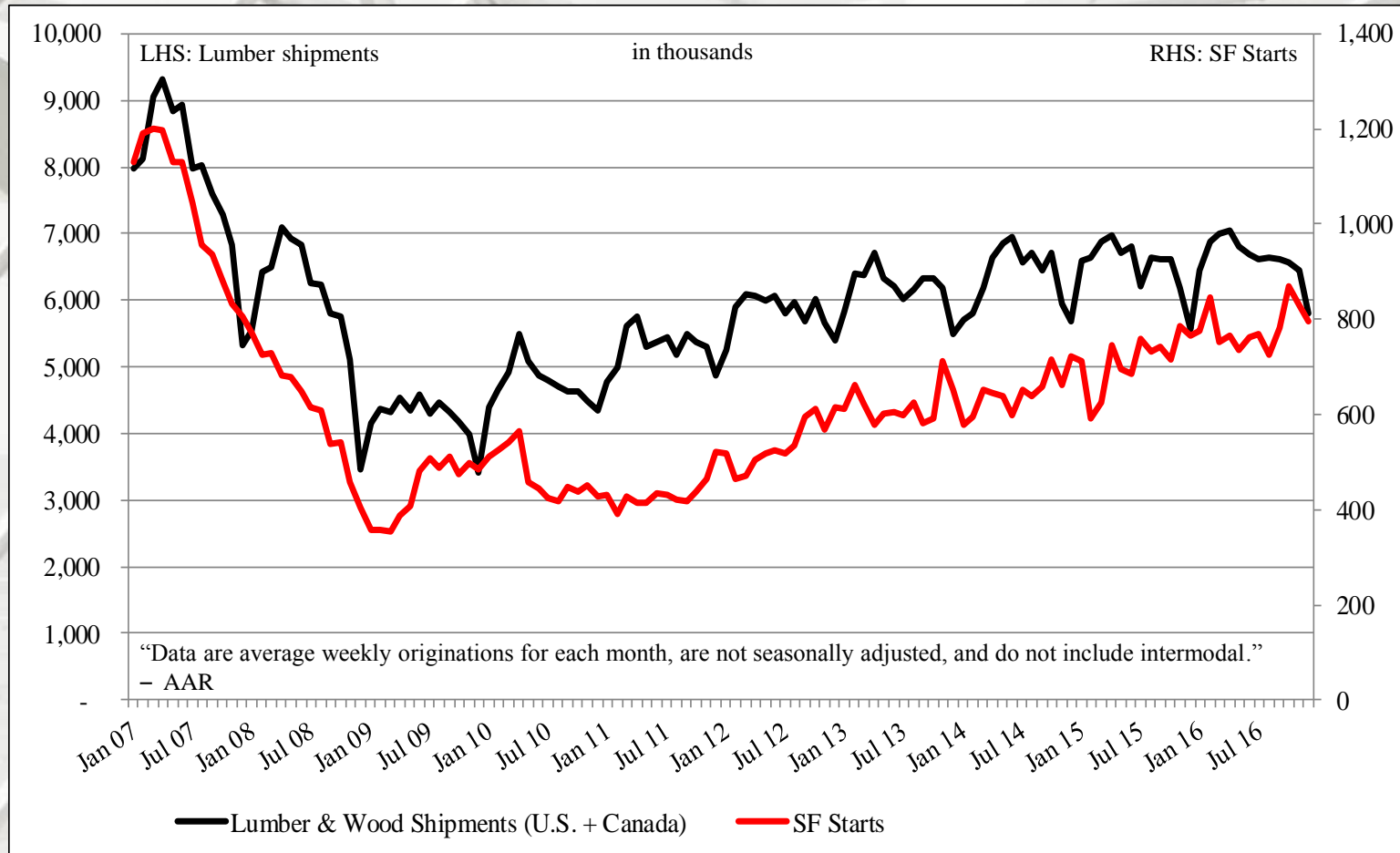
“The multifamily market will continue to grow in line with the historical average in 2017. Employment growth is expected to remain near 2016 growth levels and demand for multifamily units to stay strong due to lifestyle preferences and demographic trends. At a national level, multifamily completions are expected to be higher in 2017 than in 2016 but will continue to enter the market at a disciplined rate. As a result, vacancy rates will increase modestly in 2017 and are expected to breach 5 percent for the first time since 2011, although remain below the historical average. With employment growth higher than population growth and wages rising, demand for multifamily units will remain robust. Rents will grow at a pace in line with 2016’s rate and remain above the historical average in 2017, as shown in Exhibit 2.” – Multifamily Investments, Research & Modeling Team, FreddieMac Multifamily

# Housing Starts by Percent

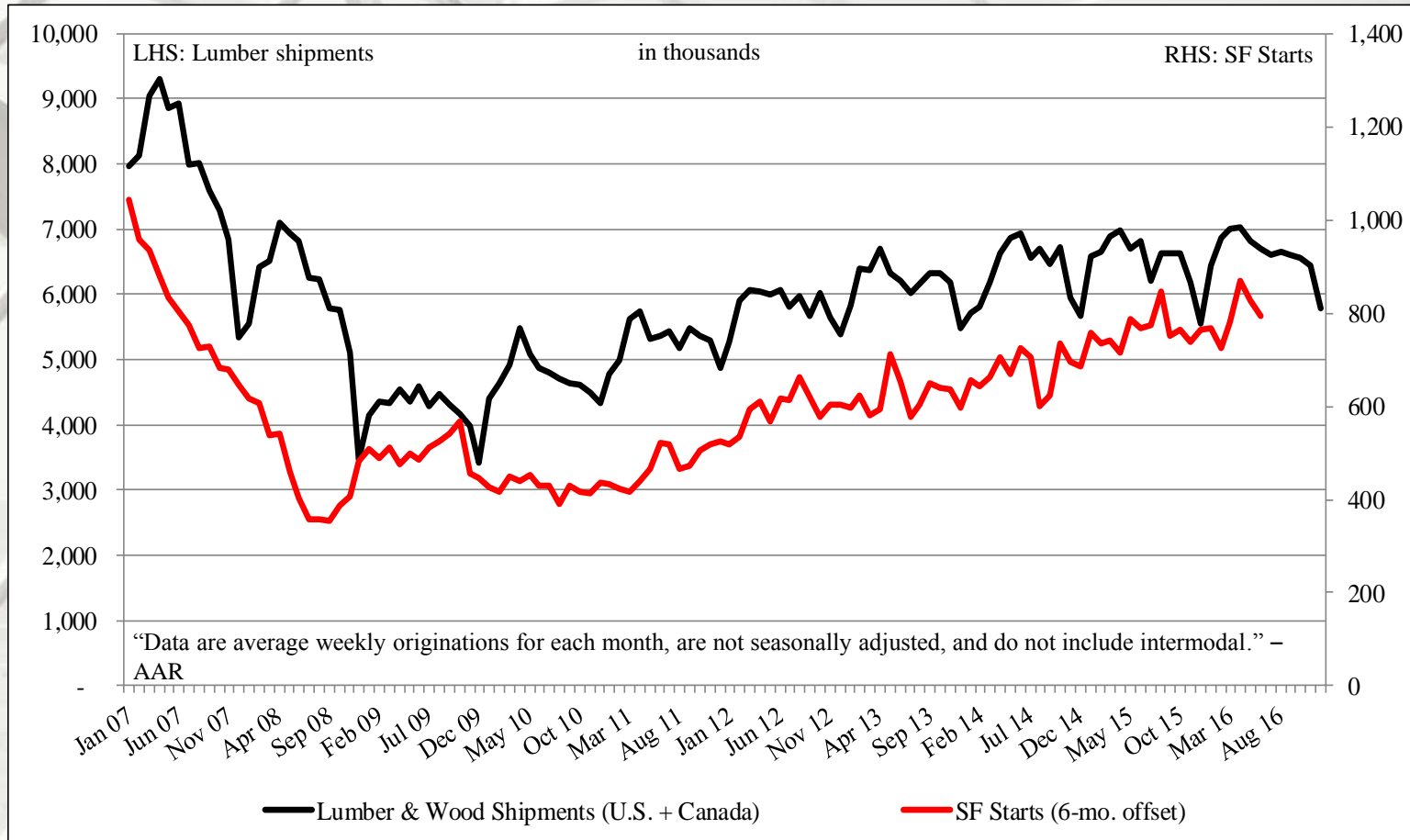




# Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts



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



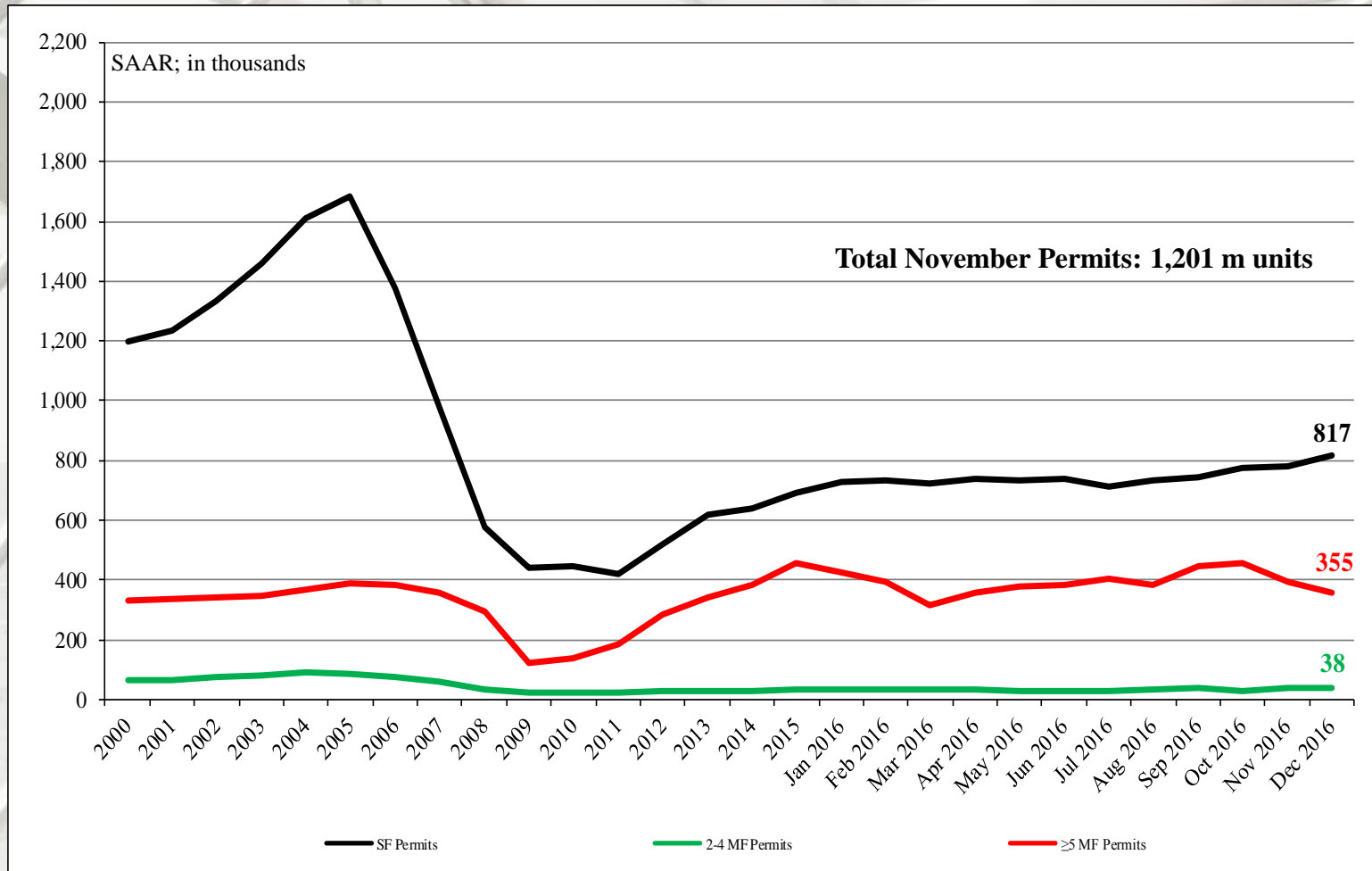
In this graph, January 2007 lumber shipments are contrasted with July 2007 SF starts, and continuing through November 2016 SF starts. The purpose is to discover if lumber shipments relate to future single-family starts. Also, it is realized that lumber and wood products are trucked; however, to our knowledge 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>
December	1,210,000	817,000	38,000	355,000
November	1,212,000	780,000	37,000	395,000
2015	1,201,000	738,000	35,000	428,000
M/M change	-0.2	4.7	2.7	-10.1
Y/Y change	0.7	10.7	8.6	-17.1

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

# Total New Housing Permits



# New Housing Permits by Region

	<b>NE Total</b>	<b>NE SF</b>	<b>NE MF</b>
December	113,000	55,000	58,000
November	110,000	55,000	55,000
2015	180,000	58,000	122,000
M/M change	2.7	0.0	5.5
Y/Y change	-37.2	-5.2	-52.5
	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
December	189,000	121,000	68,000
November	188,000	122,000	66,000
2015	167,000	112,000	55,000
M/M change	0.5	-0.8	3.0
Y/Y change	13.2	8.0	23.6

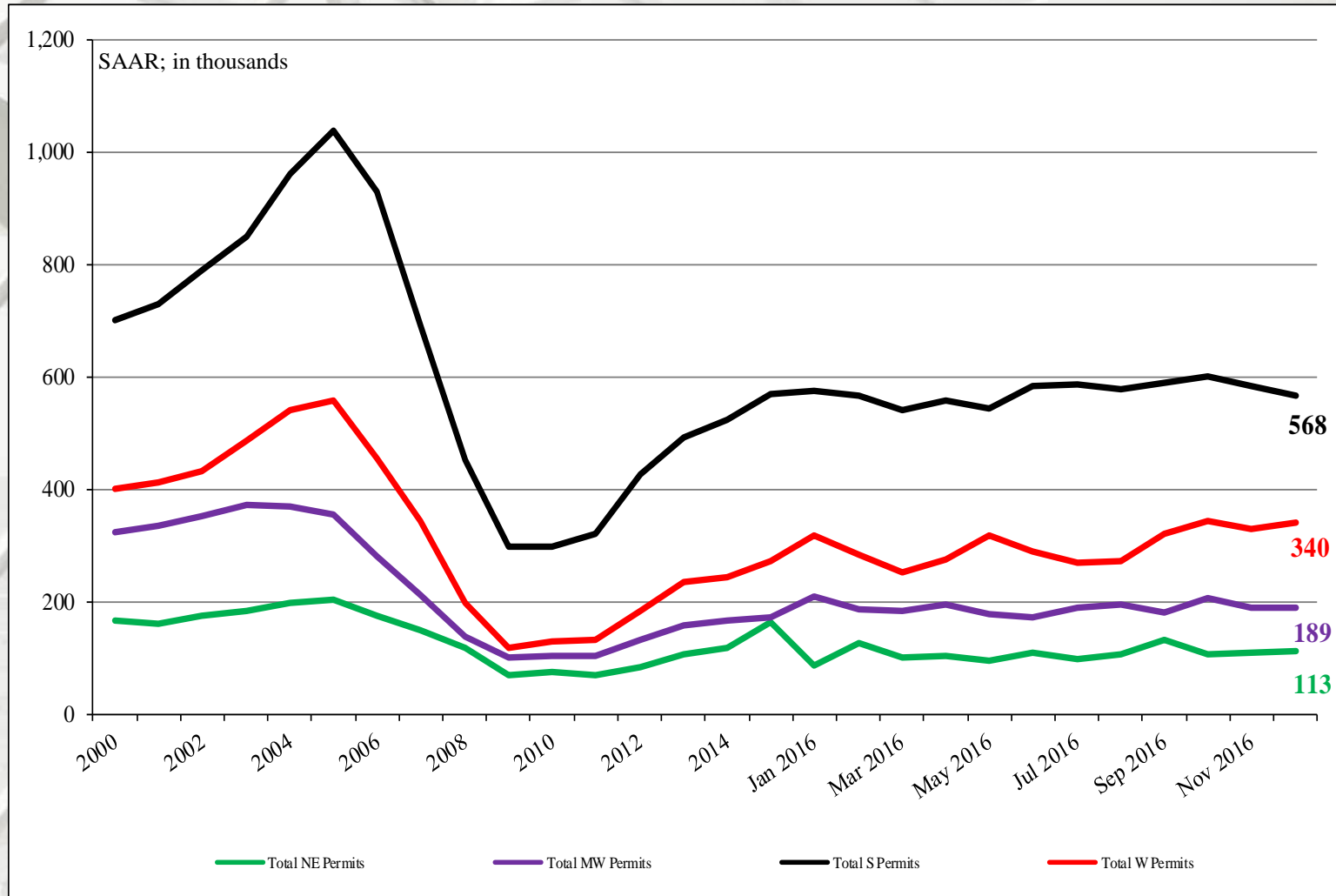
\* All data are SAAR.

# New Housing Permits by Region

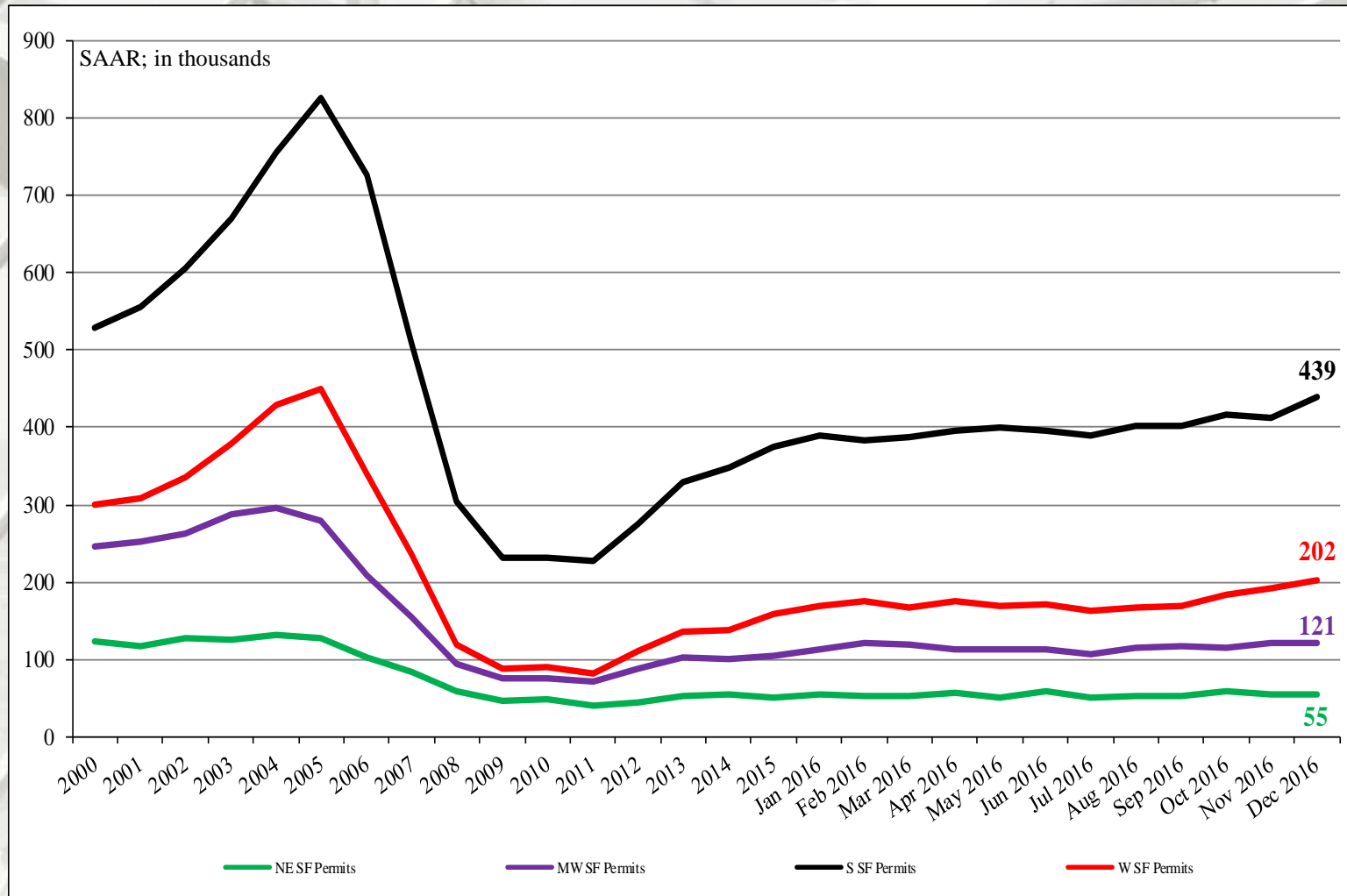
	<b>S Total</b>	<b>S SF</b>	<b>S MF</b>
December	568,000	439,000	129,000
November	585,000	412,000	173,000
2015	582,000	399,000	183,000
M/M change	-2.9	6.6	-25.4
Y/Y change	-2.4	10.0	-29.5
	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
December	340,000	202,000	138,000
November	329,000	191,000	138,000
2015	272,000	169,000	103,000
M/M change	3.3	5.8	0.0
Y/Y change	25.0	19.5	34.0

\* All data are SAAR.

# Total Housing Permits by Region



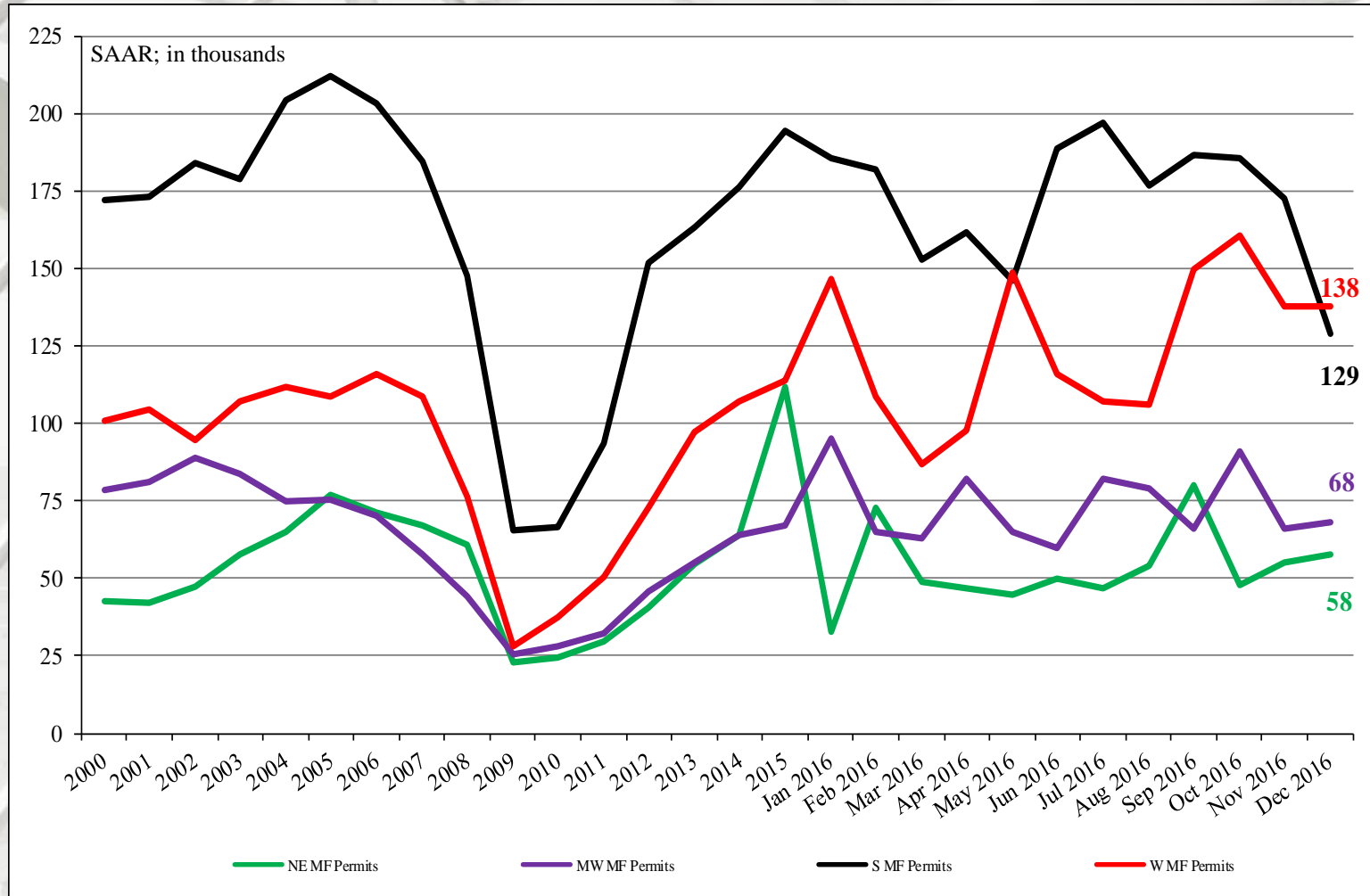
# SF Housing Permits by Region



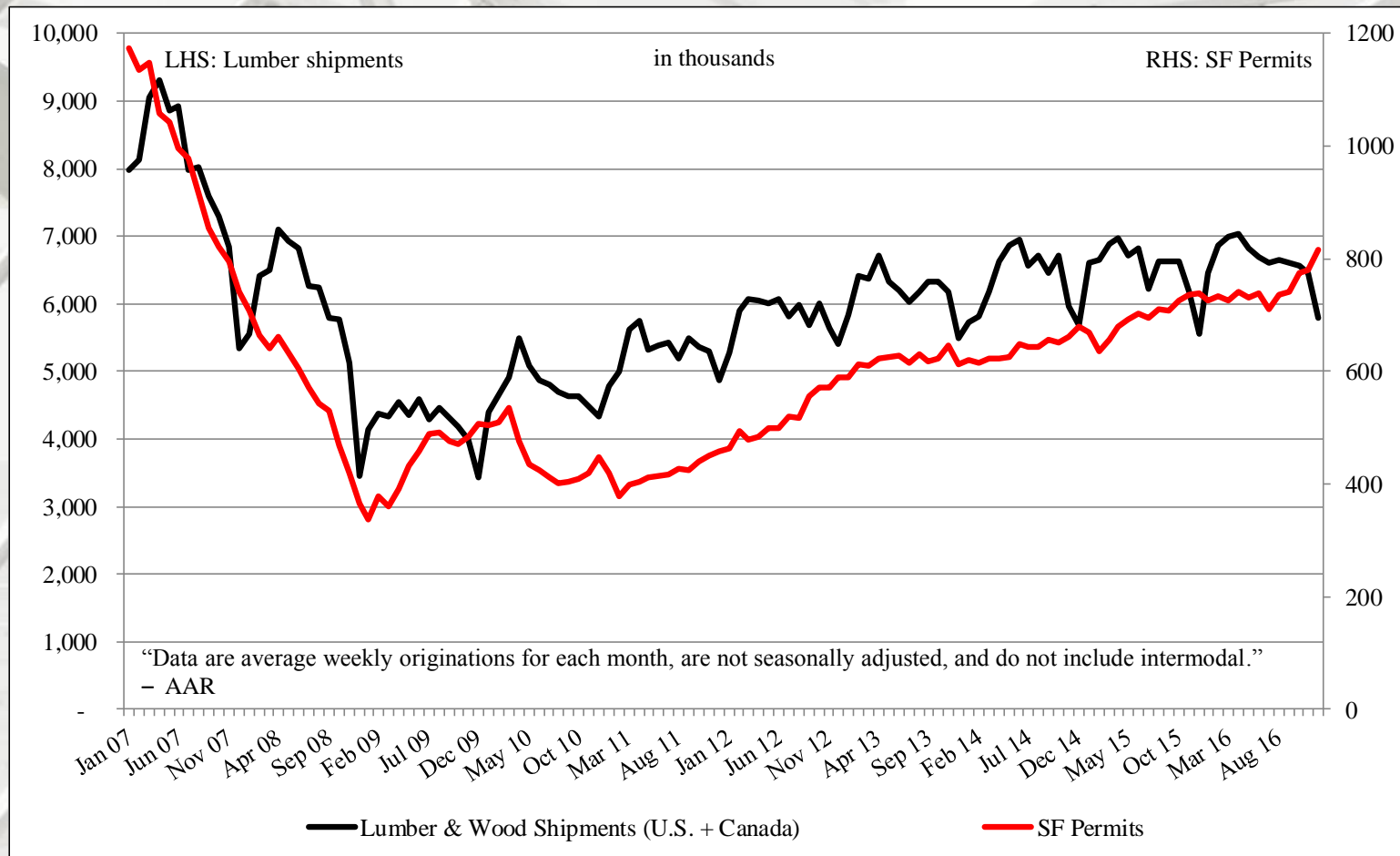
Source: <http://www.census.gov/construction/nrc/pdf/newresconst.pdf>; 1/19/17



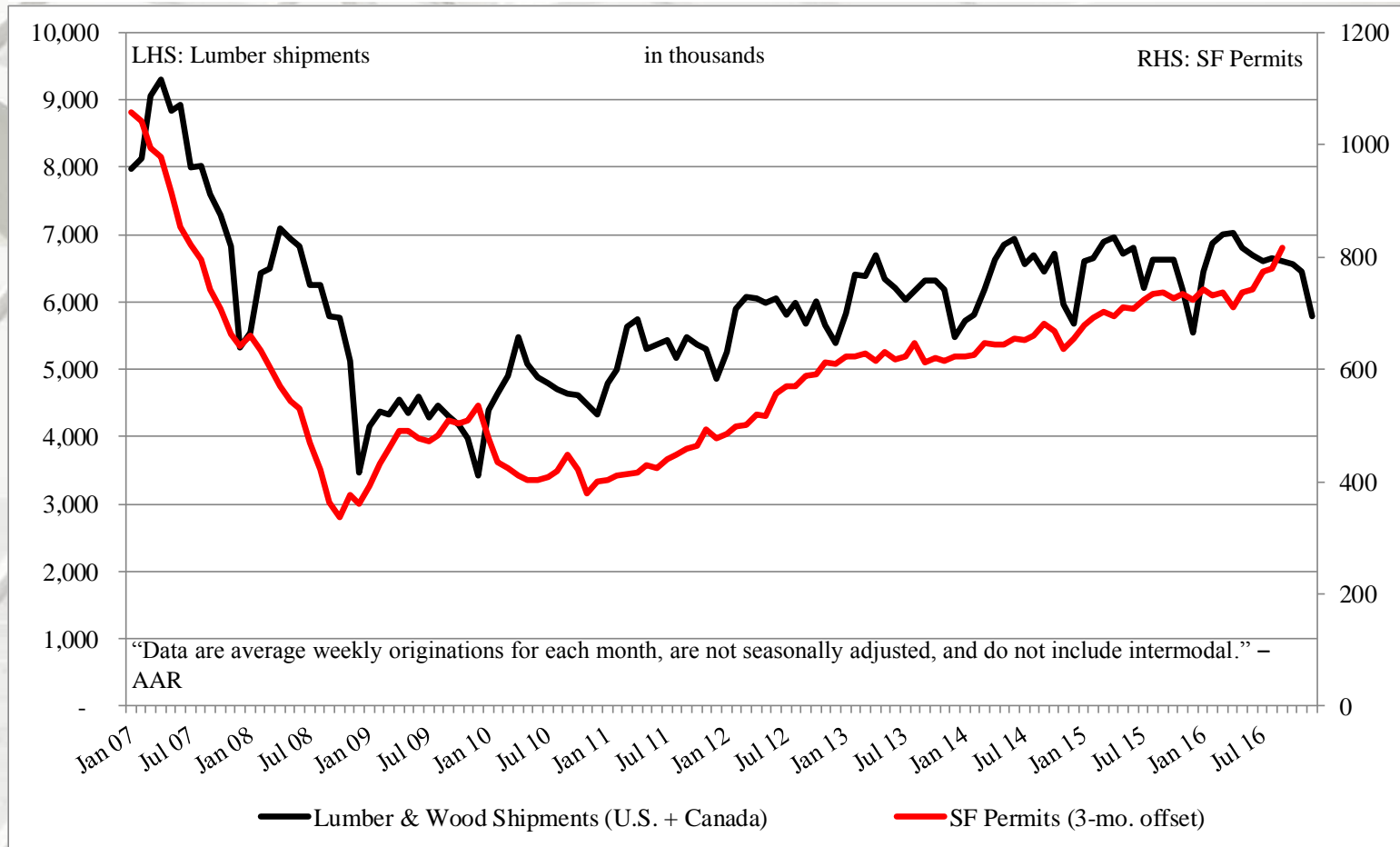
# MF Housing Permits by Region



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



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



In this graph, January 2007 lumber shipments are contrasted with April 2007 SF permits, and continuing through November 2016 SF permits. 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.

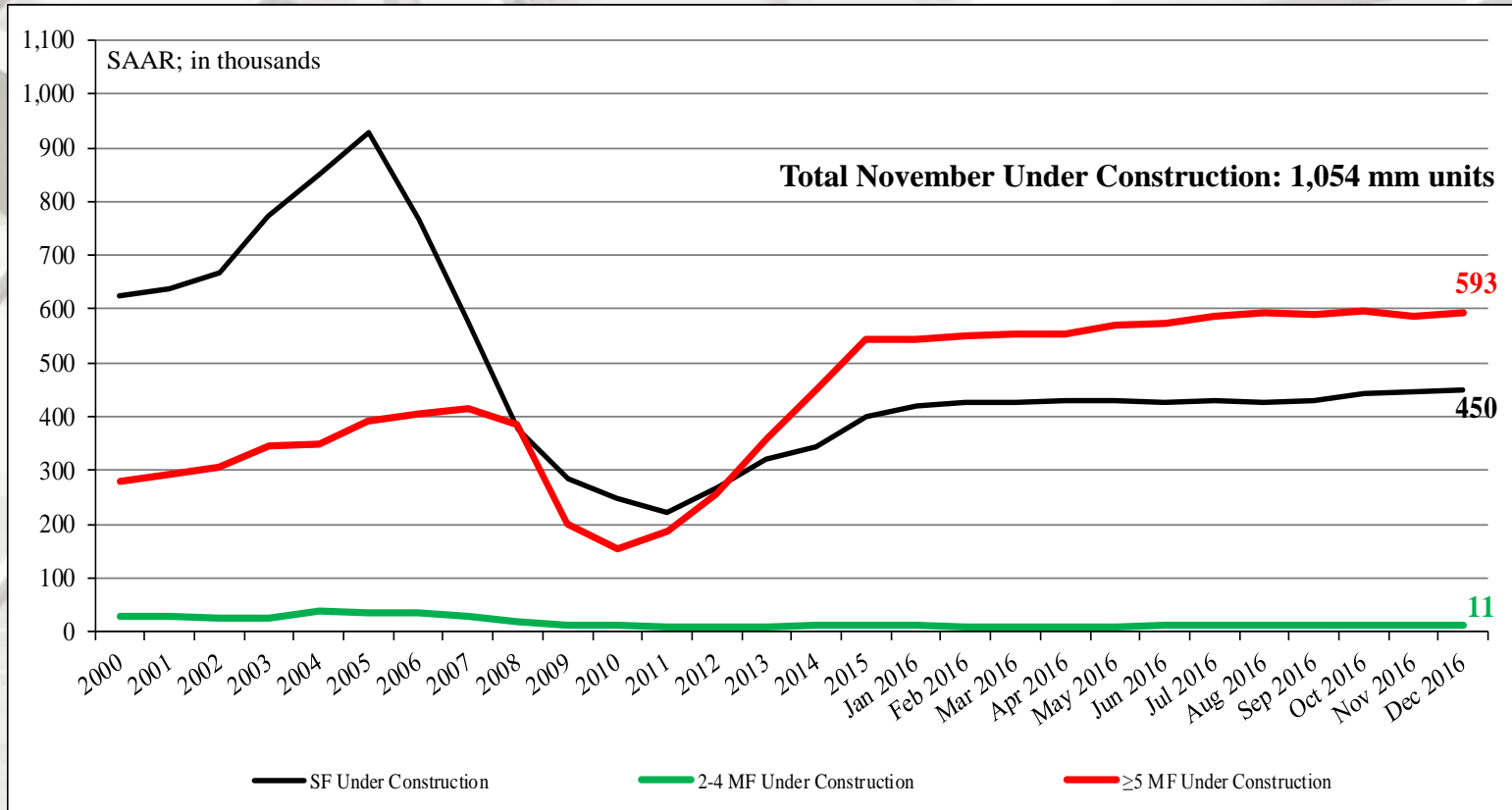
# New Housing Under Construction

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
December	1,054,000	450,000	11,000	593,000
November	1,043,000	446,000	11,000	586,000
2015	976,000	419,000	11,000	546,000
M/M change	1.1%	0.9%	0.0%	1.2%
Y/Y change	8.0%	7.4%	0.0%	8.6%

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



# New Housing Under Construction by Region

	<b>NE Total</b>	<b>NE SF</b>	<b>NE MF**</b>
December	189,000	53,000	136,000
November	191,000	52,000	139,000
2015	179,000	49,000	130,000
M/M change	-1.0%	1.9%	-2.2%
Y/Y change	5.6%	8.2%	4.6%
	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
December	143,000	75,000	68,000
November	142,000	74,000	68,000
2015	130,000	68,000	62,000
M/M change	0.7%	1.4%	0.0%
Y/Y change	10.0%	10.3%	9.7%

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).

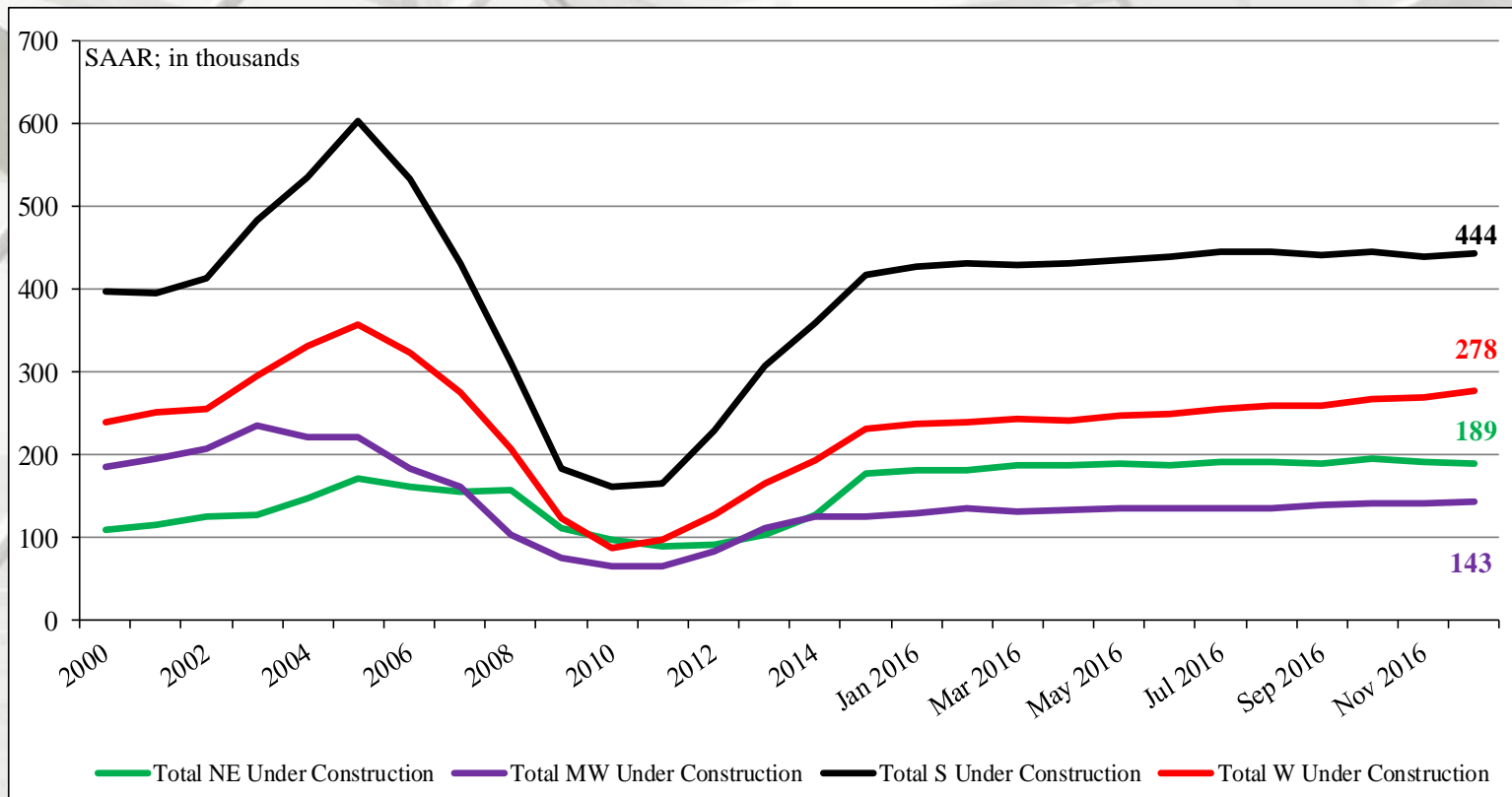
# New Housing Under Construction by Region

	<b>S Total</b>	<b>S SF</b>	<b>S MF**</b>
December	444,000	212,000	232,000
November	440,000	213,000	227,000
2015	429,000	208,000	221,000
M/M change	0.9%	-0.5%	2.2%
Y/Y change	3.5%	1.9%	5.0%
	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
December	278,000	110,000	168,000
November	270,000	107,000	163,000
2015	238,000	94,000	144,000
M/M change	3.0%	2.8%	3.1%
Y/Y change	16.8%	17.0%	16.7%

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

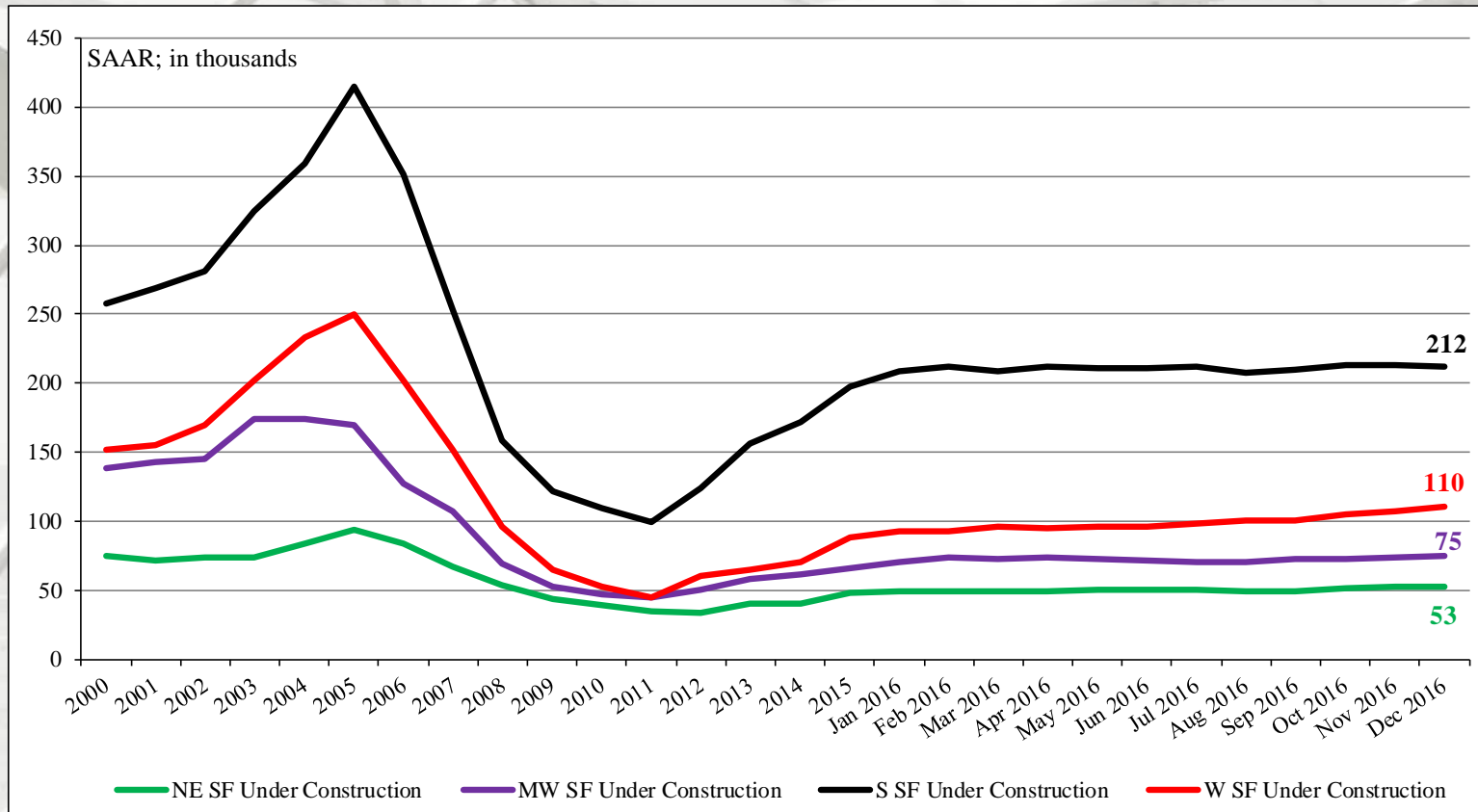
\*\* US DOC does not report multifamily units under construction directly, this is an estimation  
(Total under construction – SF under construction).

# Total Housing Under Construction by Region

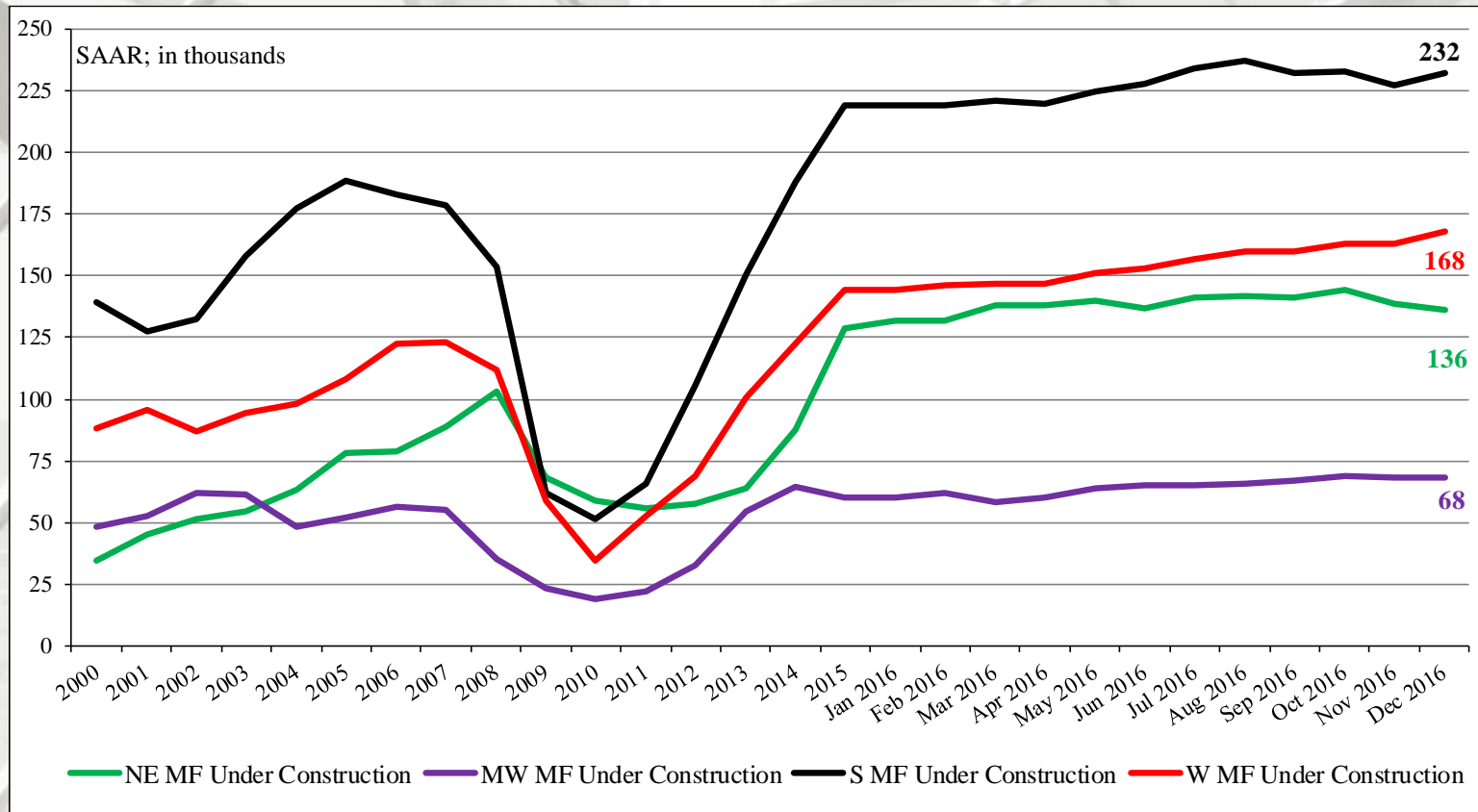




# SF Housing Under Construction by Region



# MF Housing Under Construction by Region



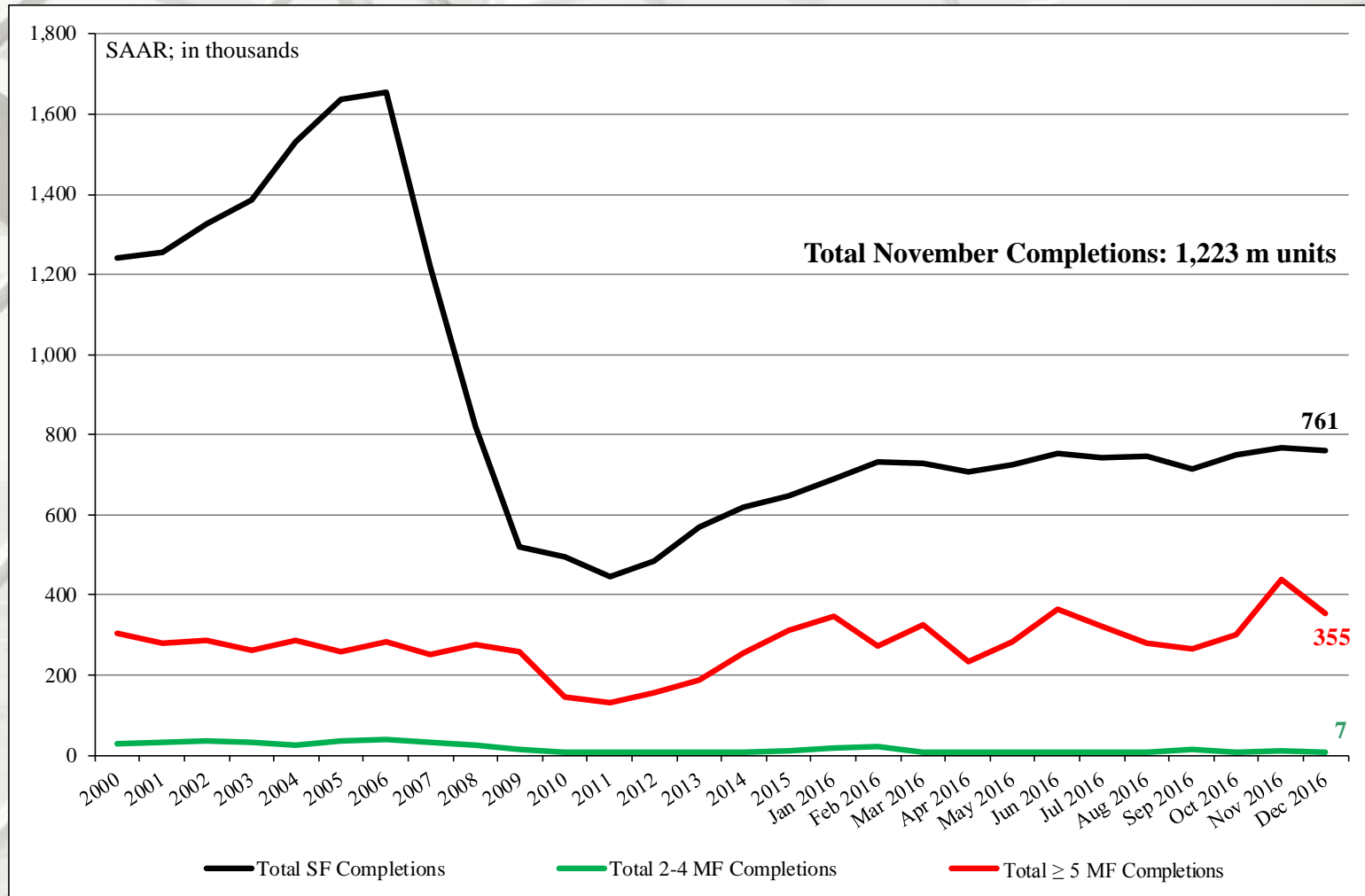
# New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
December	1,123,000	761,000	7,000	355,000
November	1,219,000	768,000	11,000	440,000
2015	1,033,000	708,000	9,000	316,000
M/M change	-7.9%	-0.9%	-36.4%	-19.3%
Y/Y change	8.7%	7.5%	-22.2%	12.3%

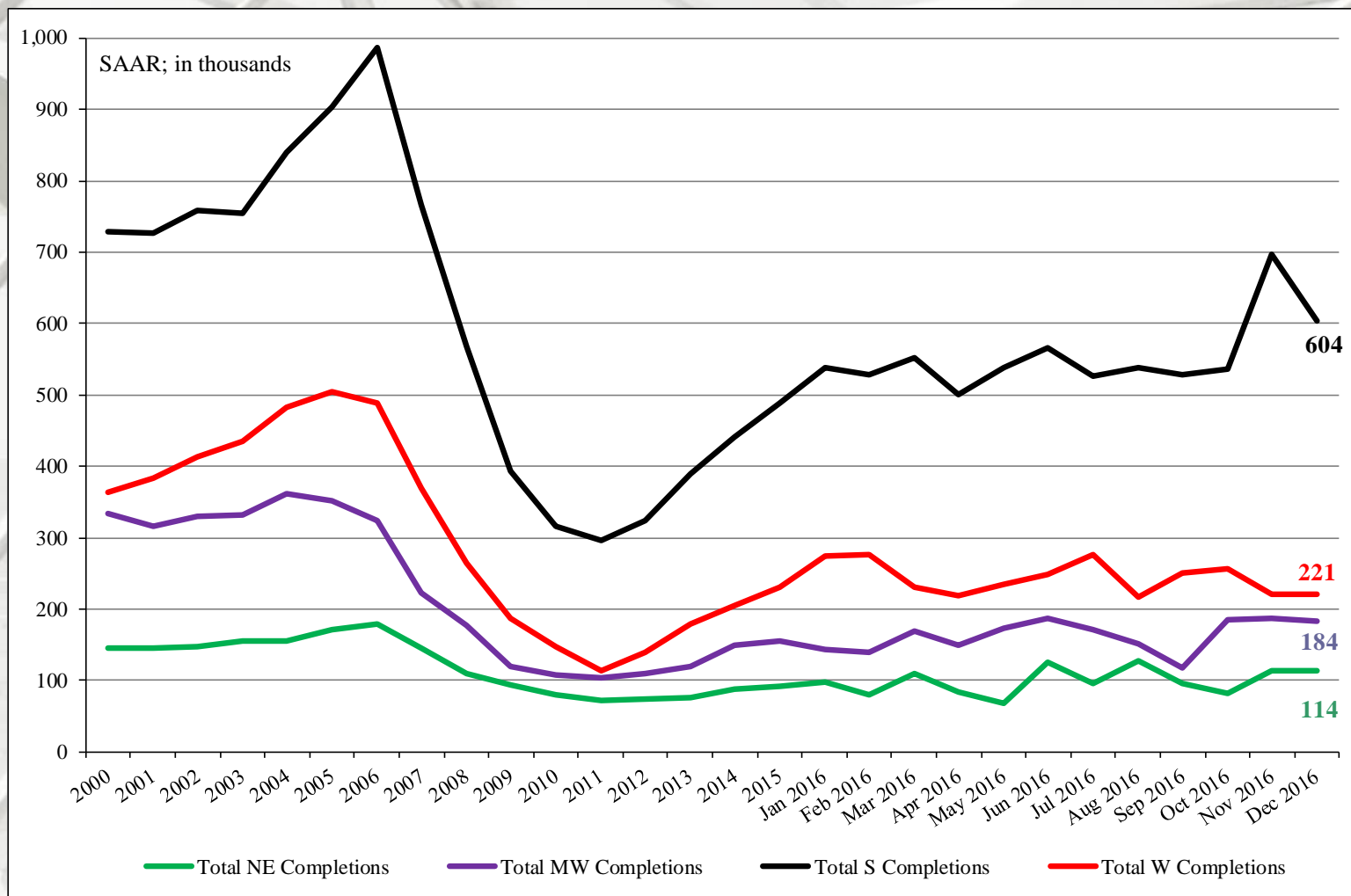
All completion data are presented at a seasonally adjusted annual rate (SAAR).

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

# Total Housing Completions



# New Housing Completions by Region



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

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

# Total Housing Completions by Region

	<b>NE Total</b>	<b>NE SF</b>	<b>NE MF**</b>
December	114,000	51,000	63,000
November	113,000	48,000	65,000
2015	90,000	49,000	41,000
M/M change	0.9%	6.3%	-3.1%
Y/Y change	26.7%	4.1%	53.7%
	<b>MW Total</b>	<b>MW SF</b>	<b>MW MF</b>
December	184,000	113,000	71,000
November	187,000	128,000	59,000
2015	153,000	115,000	38,000
M/M change	-1.6%	-11.7%	20.3%
Y/Y change	20.3%	-1.7%	86.8%

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).

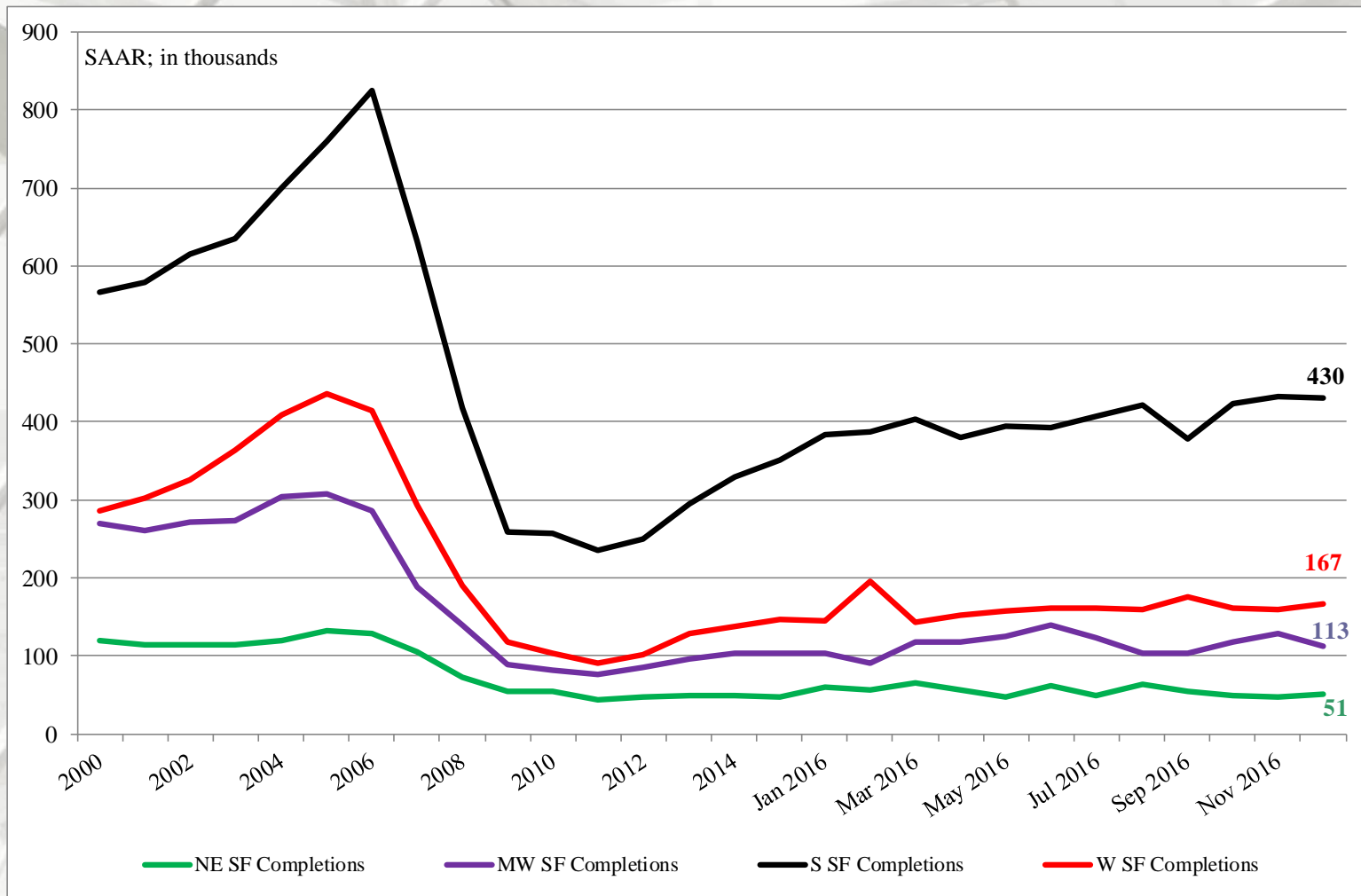
# Total Housing Completions by Region

	<b>S Total</b>	<b>S SF</b>	<b>S MF**</b>
December	604,000	430,000	174,000
November	698,000	433,000	265,000
2015	504,000	381,000	123,000
M/M change	-13.5%	-0.7%	-34.3%
Y/Y change	19.8%	12.9%	41.5%
	<b>W Total</b>	<b>W SF</b>	<b>W MF</b>
December	221,000	167,000	54,000
November	221,000	159,000	62,000
2015	286,000	163,000	123,000
M/M change	0.0%	5.0%	-12.9%
Y/Y change	-22.7%	2.5%	-56.1%

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).

# SF Housing Completions by Region



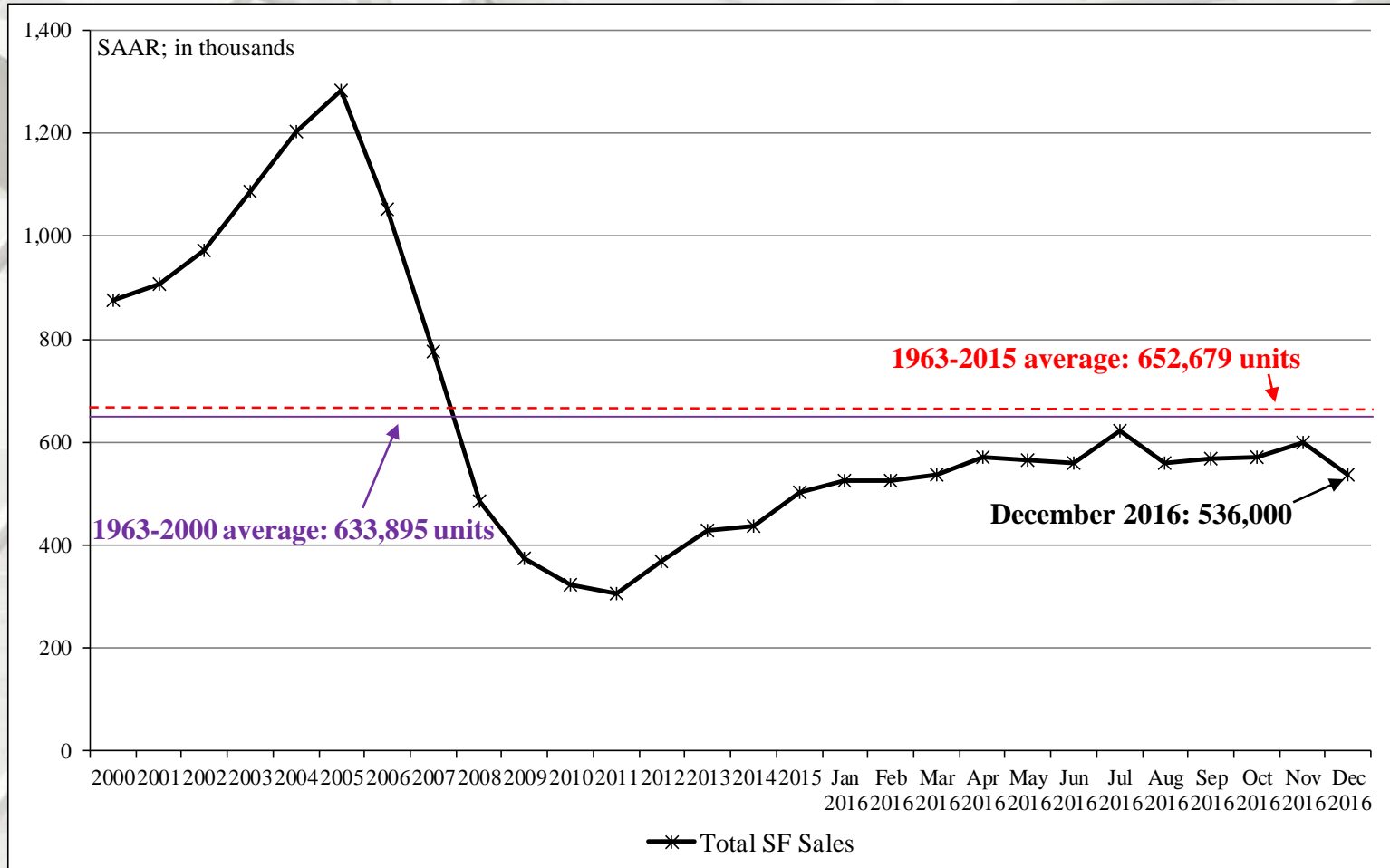


# New Single-Family House Sales

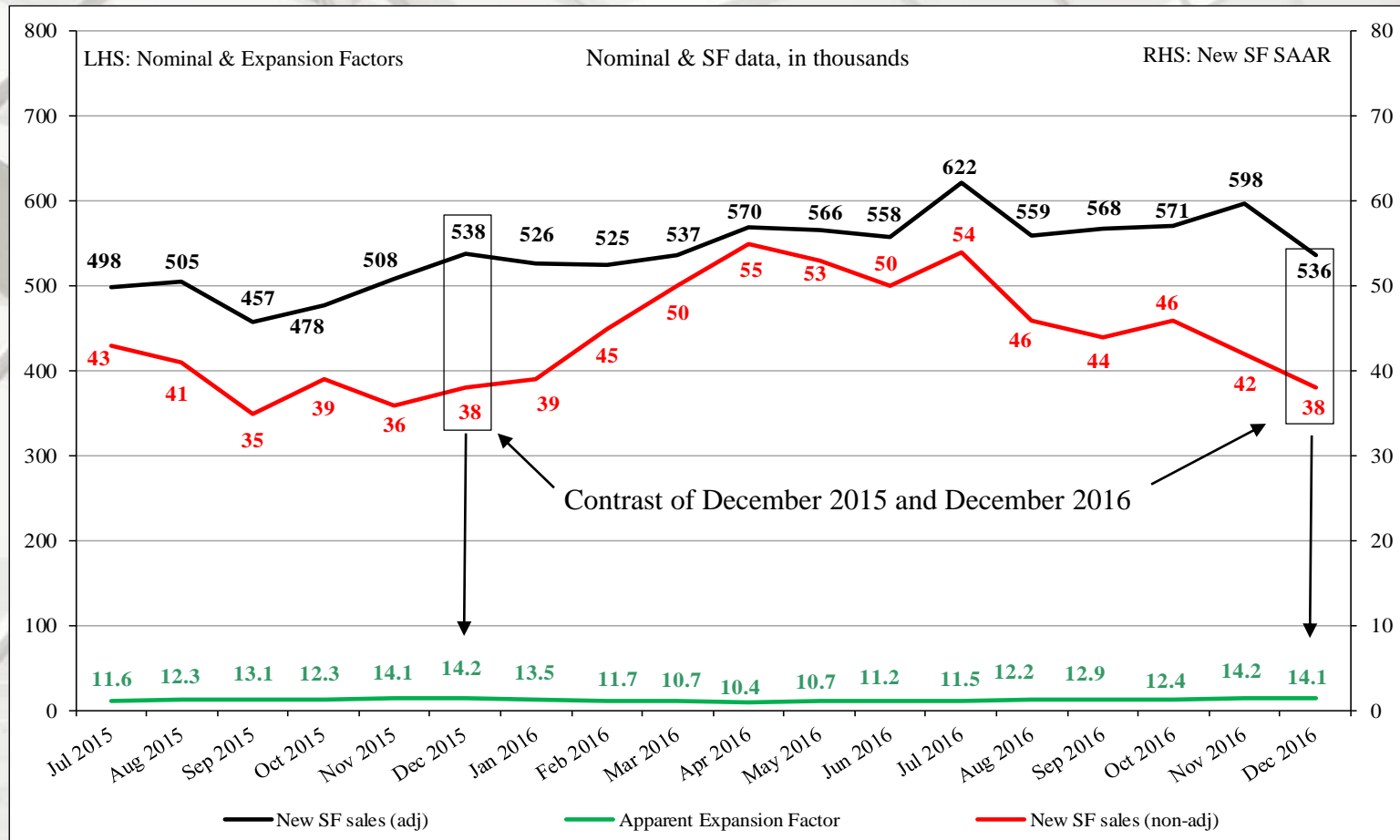
	<b>New SF Sales*</b>	<b>Median Price</b>	<b>Mean Price</b>	<b>Month's Supply</b>
December	536,000	322,500	384,000	5.8
November	598,000	309,200	365,200	5.0
2015	538,000	299,000	358,100	5.2
M/M change	-10.4%	4.3%	5.1%	16.0%
Y/Y change	-0.4%	7.9%	7.2%	11.5%

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

# New SF House Sales



# New SF House Sales

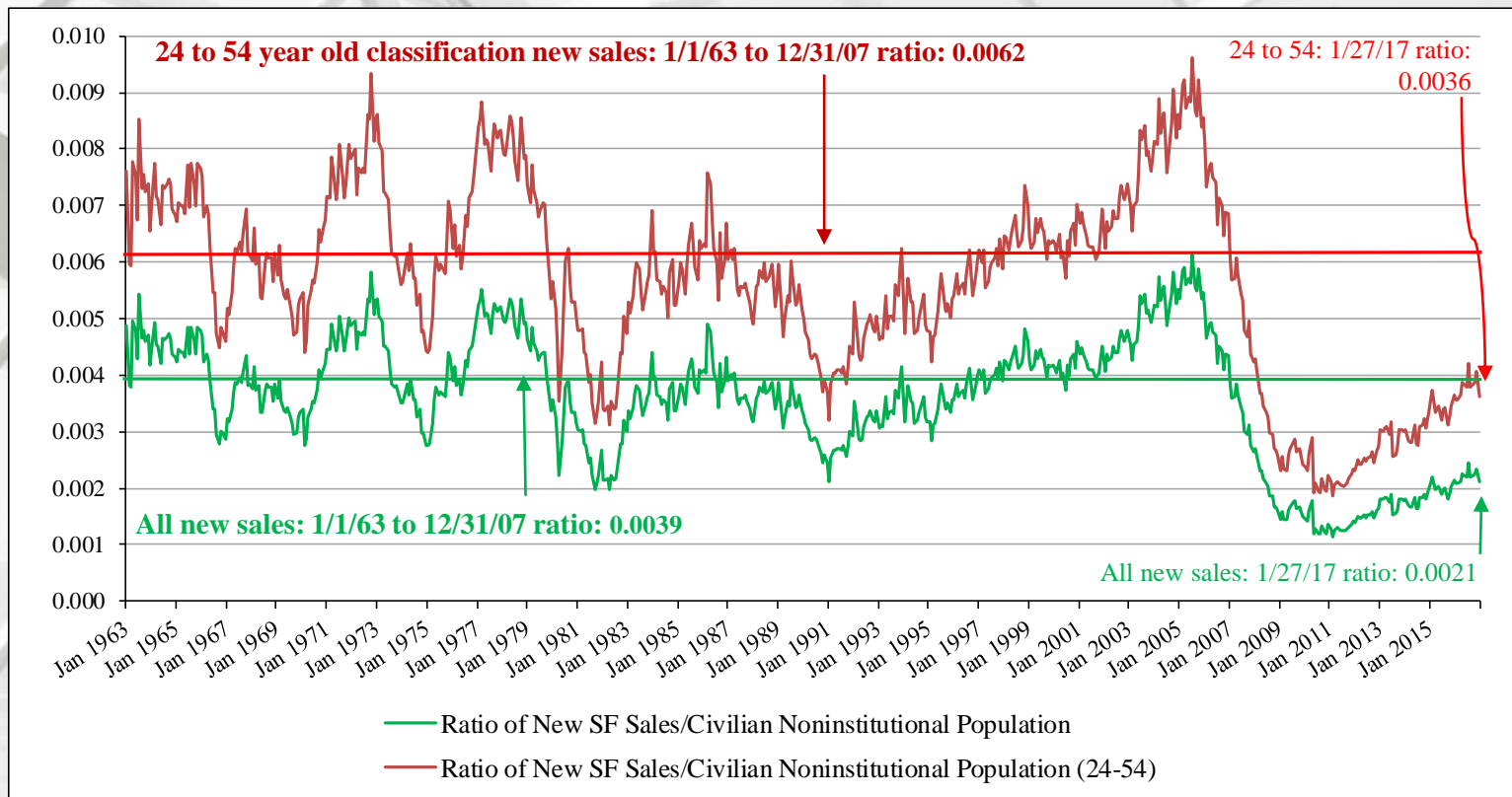


## Nominal and Adjusted New SF Monthly Sales

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 December 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in December 2016 it was 0.0021 – a minimal decrease from November (0.0023). The ratio of non-institutionalized population, aged 24 to 54 (long-term ratio ) is 0.0062; in December 2016 it was 0.0036 – a decrease from November (0.0041). 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	49,000	285,000	156,000
November	31,000	83,000	326,000	158,000
2015	31,000	69,000	285,000	153,000
M/M change	48.4%	-41.0%	-12.6%	-1.3%
Y/Y change	48.4%	-29.0%	0.0%	2.0%

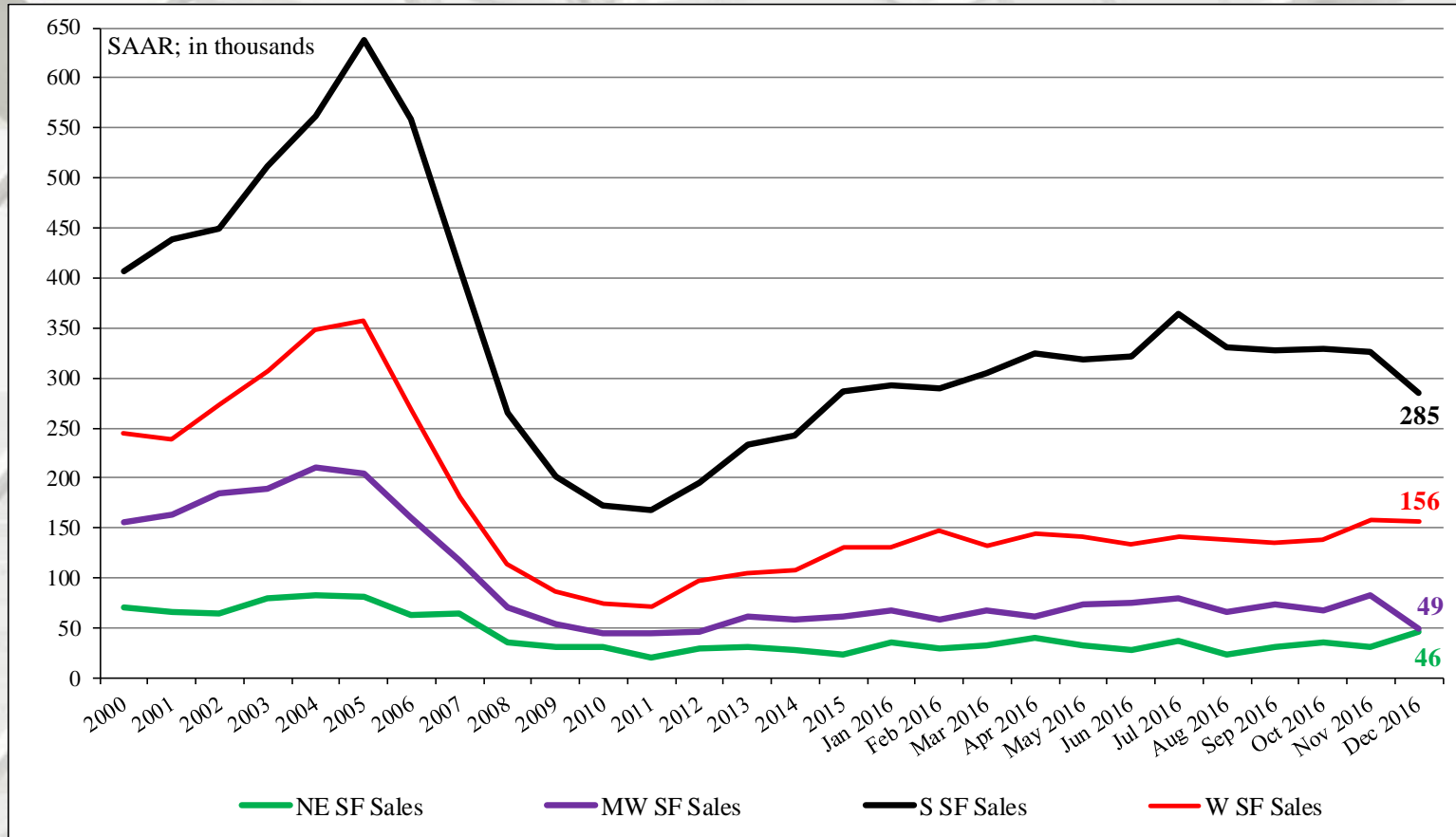
	≤ \$150m	\$150 - \$199.9m	\$200 - 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥ \$750m
December <sup>1,2</sup>	1,000	4,000	11,000	9,000	5,000	5,000	3,000
November	1,000	4,000	14,000	11,000	5,000	5,000	2,000
2015	2,000	5,000	12,000	7,000	5,000	4,000	2,000
M/M change	0.0%	0.0%	-21.4%	-18.2%	0.0%	0.0%	50.0%
Y/Y change	-50.0%	-20.0%	-8.3%	28.6%	0.0%	25.0%	50.0%

All data are SAAR.

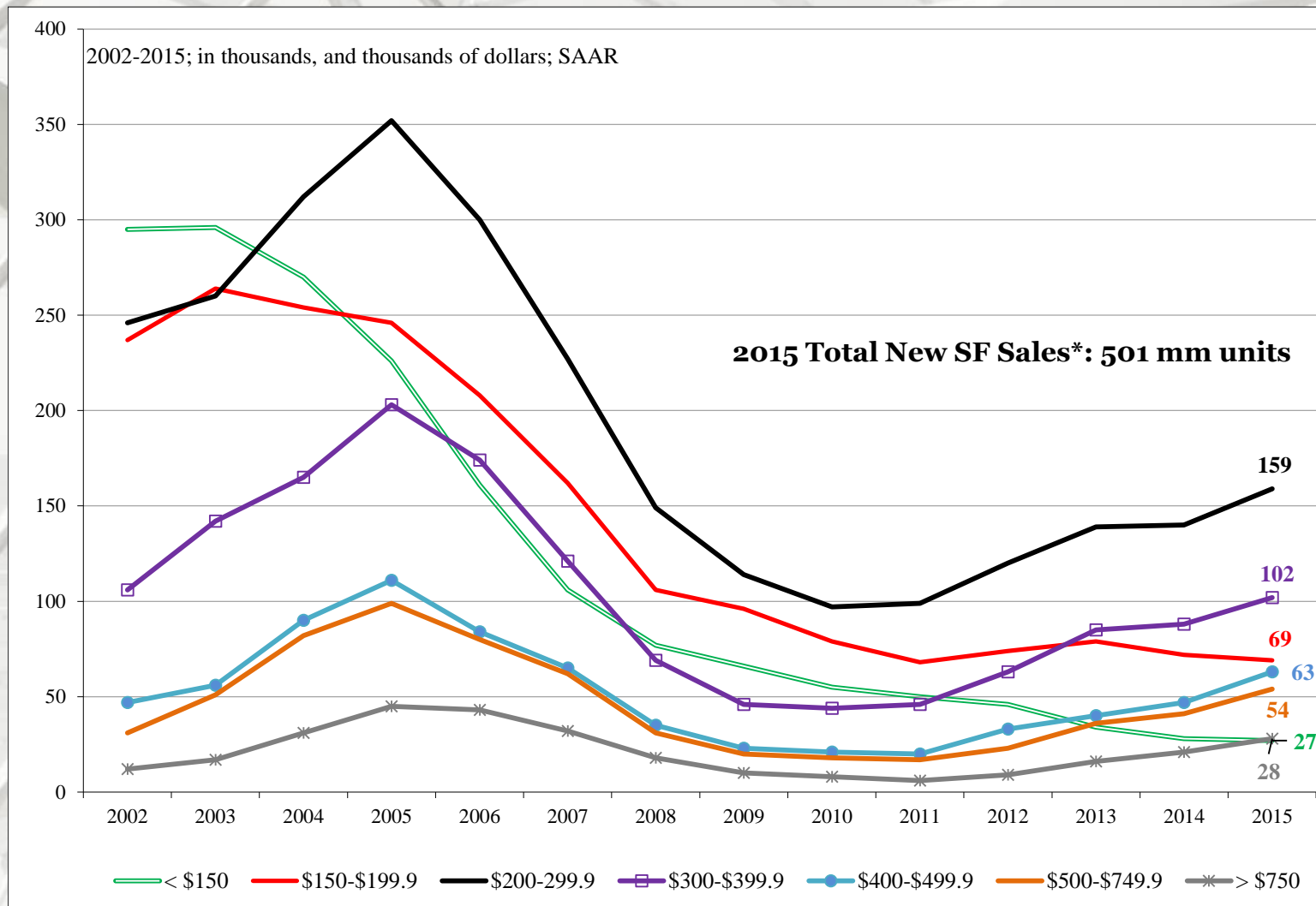
<sup>1</sup> Houses for which sales price were not reported have been distributed proportionally to those for which sales price was reported;

<sup>2</sup> Detail June not add to total because of rounding.

# New SF House Sales by Region

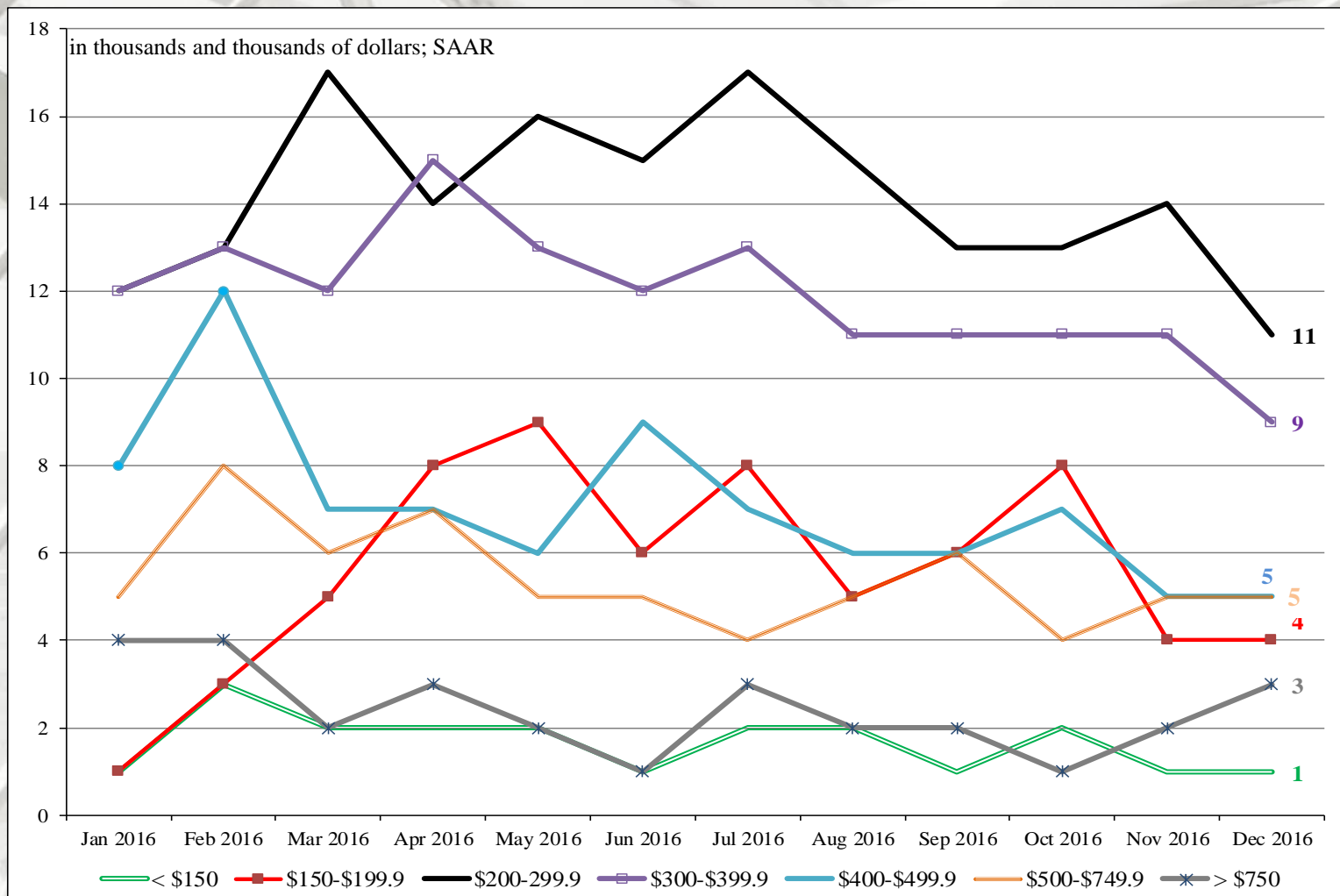


# New SF House Sales by Price Category



\* Sales tallied by price category.

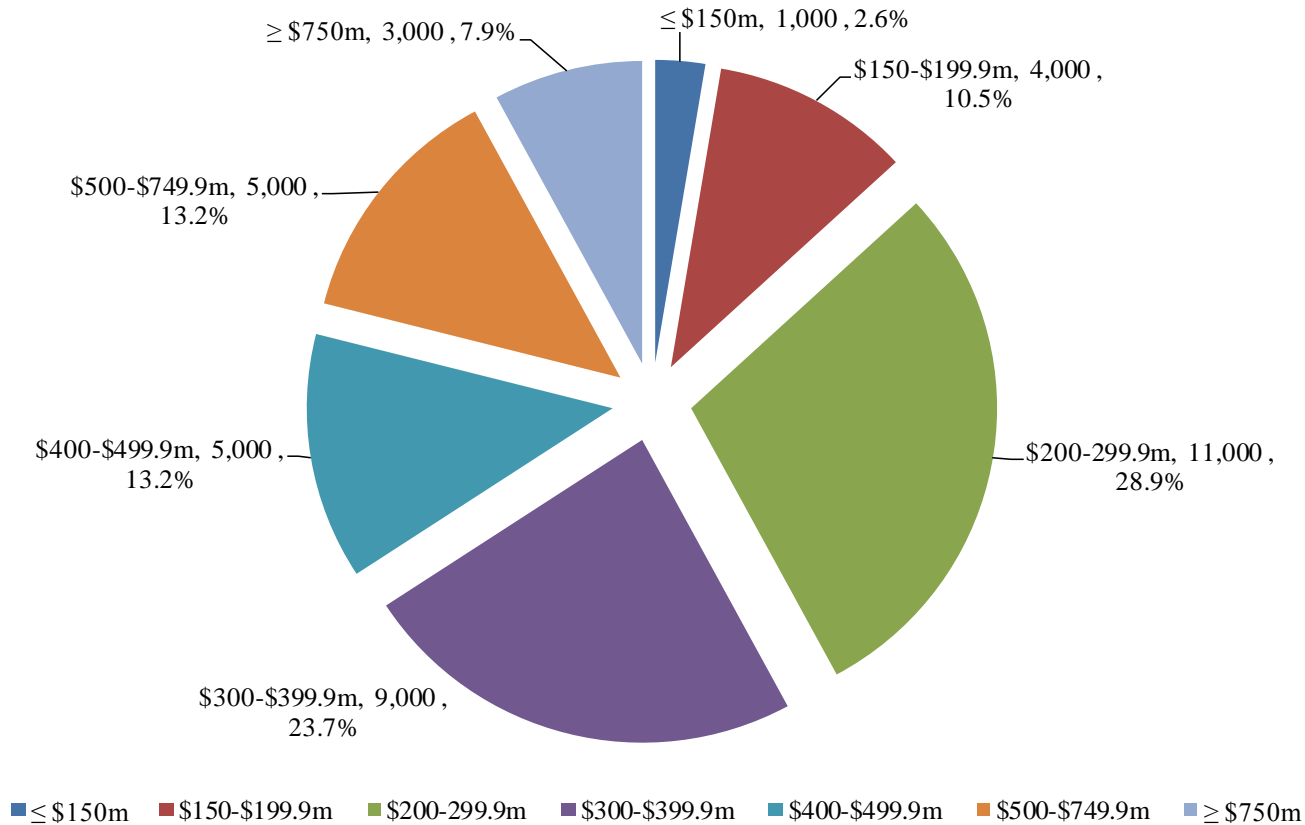
# New SF House Sales by Price Category



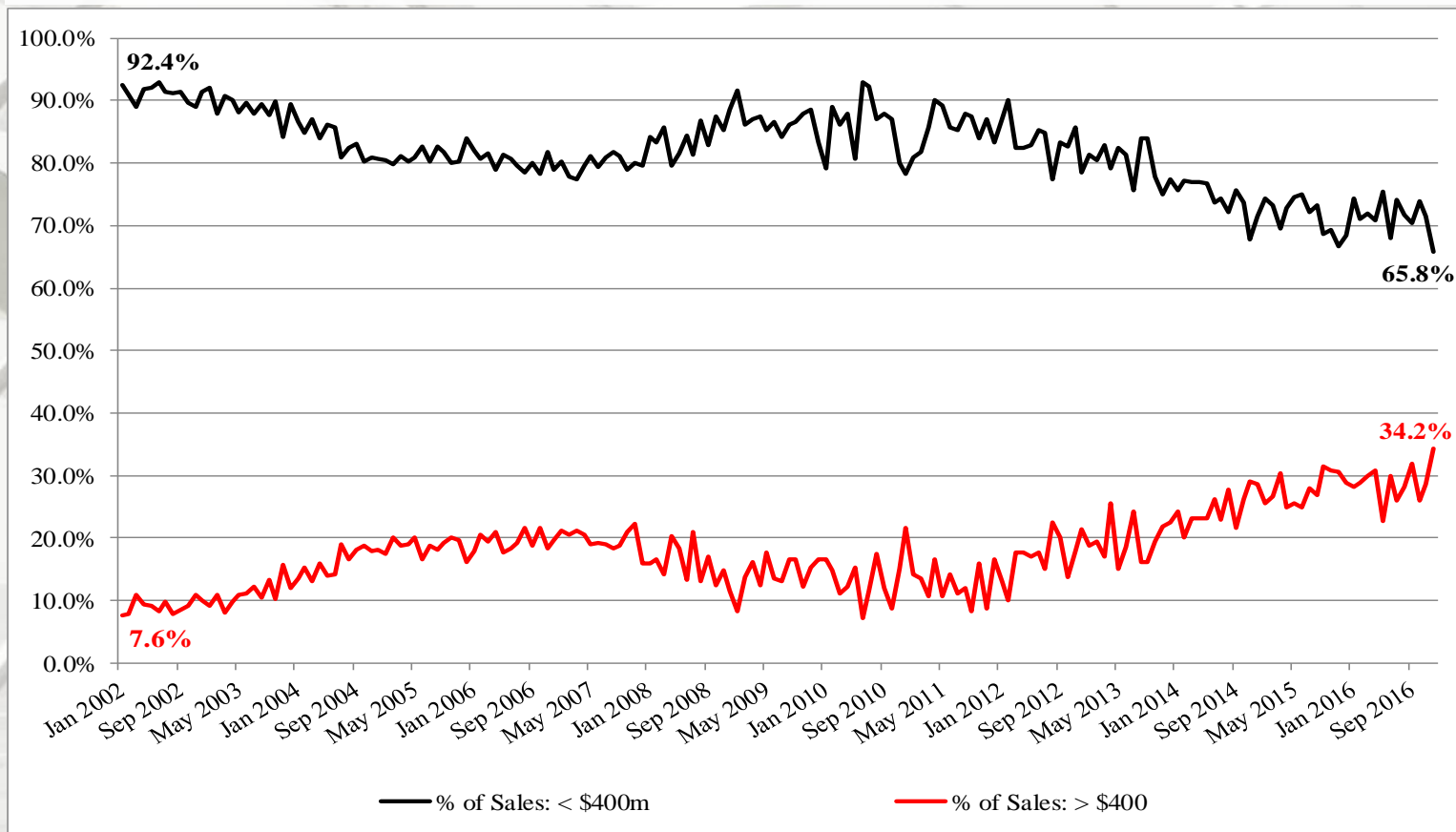


# New SF House Sales

## December New Sales



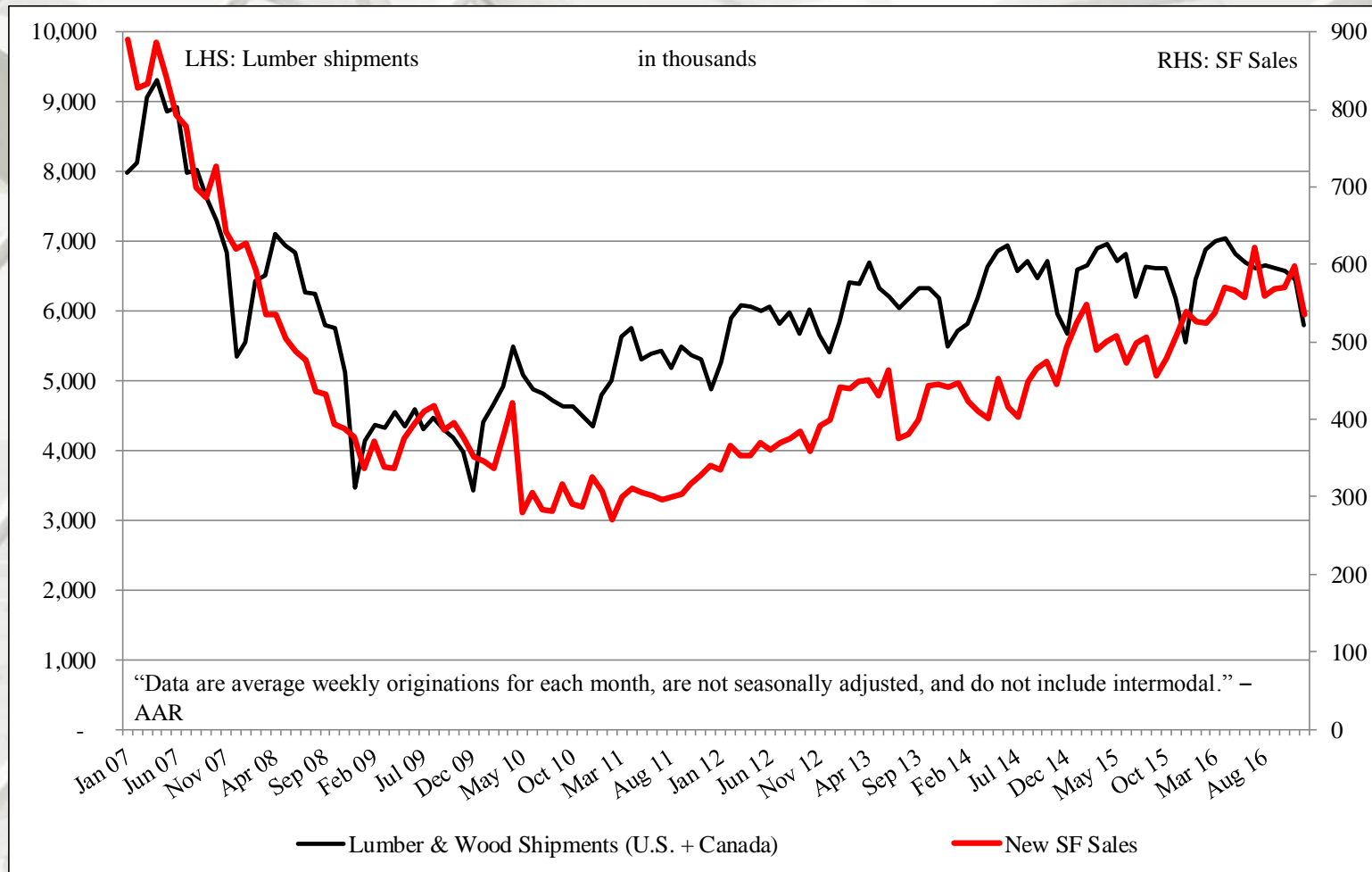
# New SF House Sales



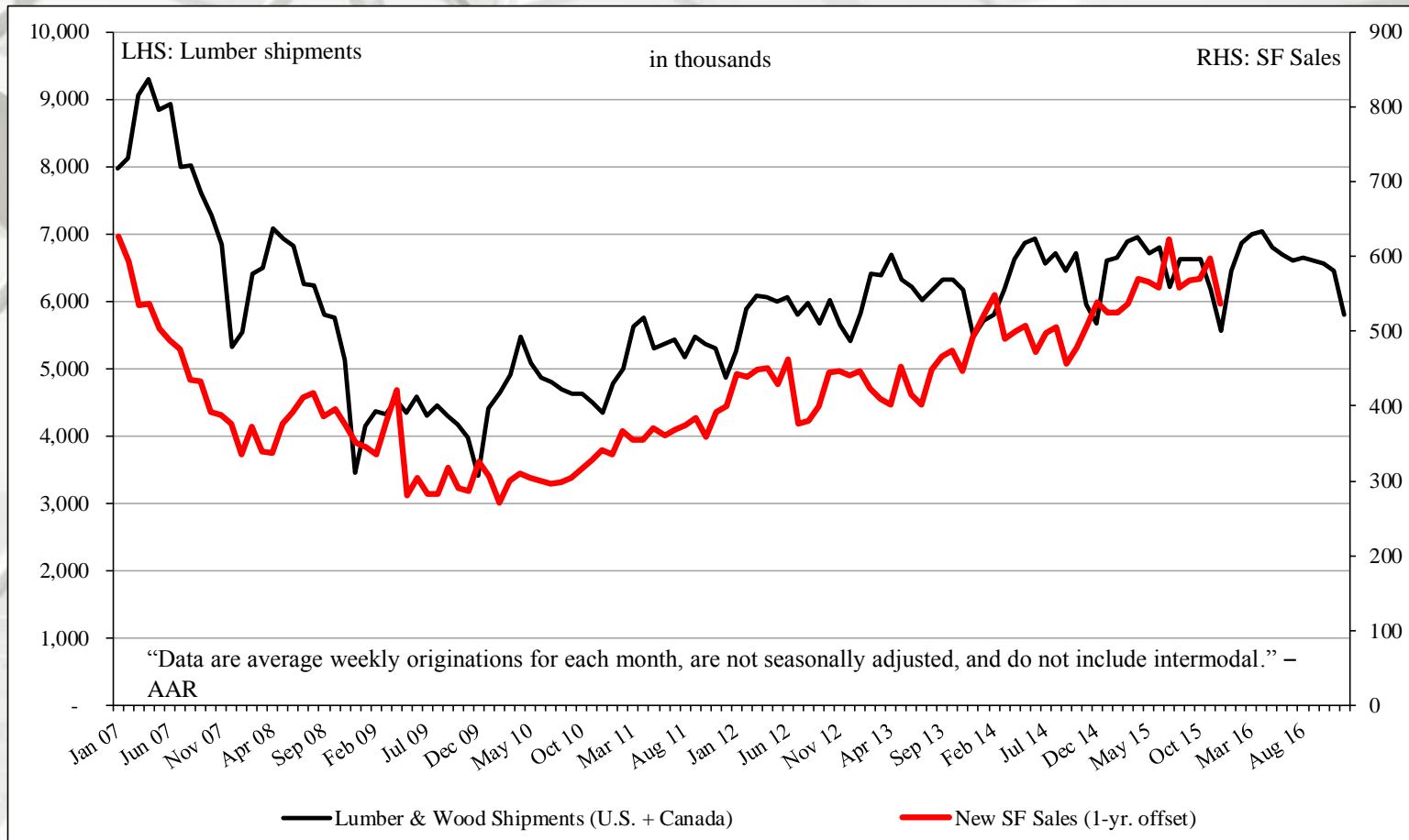
## New SF Sales: 2002 – December 2016

The sales share of \$400 thousand plus SF houses is presented above. Since the beginning of 2012, the upper priced houses have and are garnering a greater percentage of sales. 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 December 2016 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.

# December 2016 Construction Spending

**2016 December Total Private Residential Construction:  
\$466.9 billion (SAAR)**

0.5% more than the revised November estimate of \$464.8 billion (SAAR)  
3.7% greater than the December 2015 estimate of \$450.1 billion (SAAR)

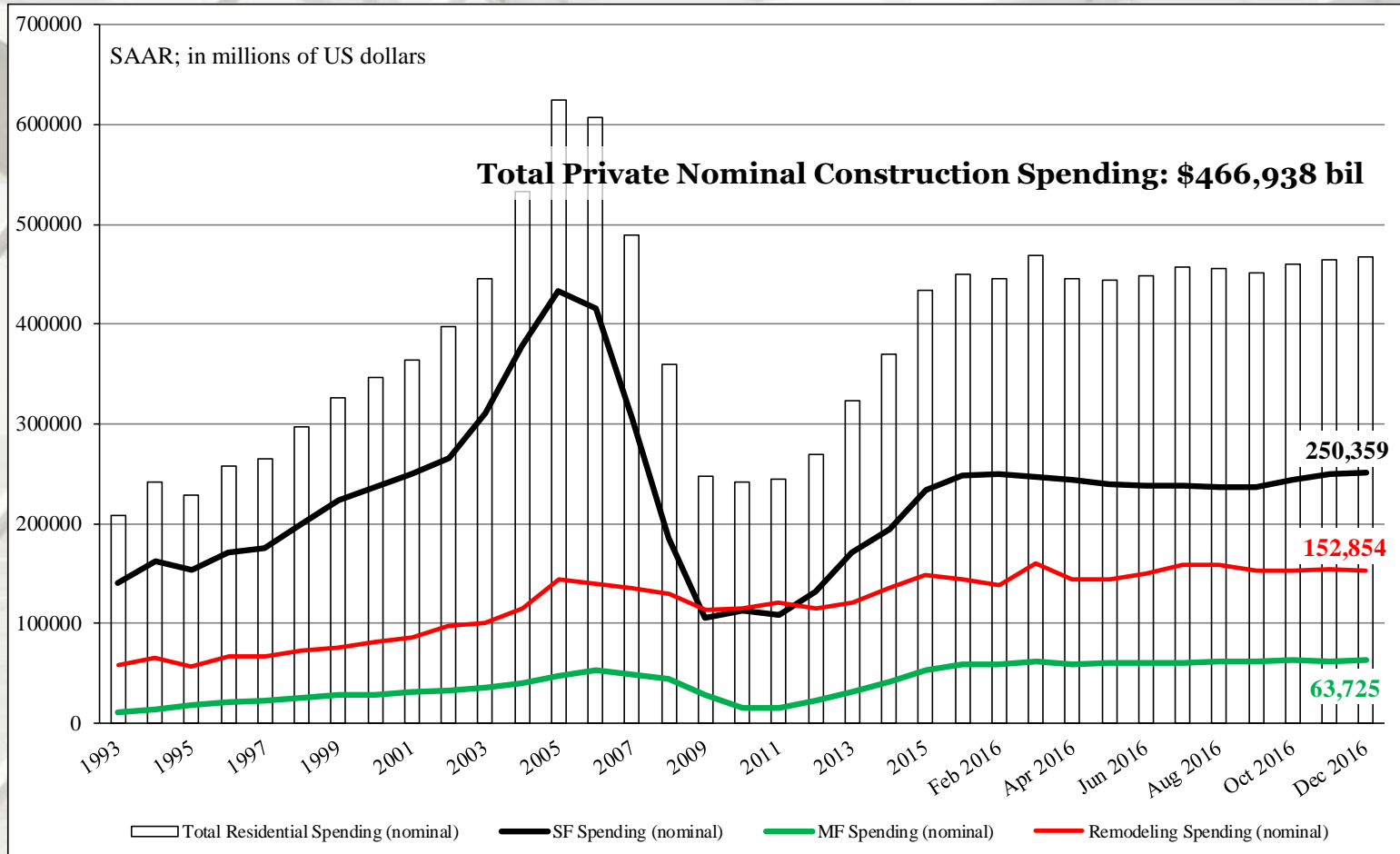
December SF construction: \$250.4 billion (SAAR)  
0.5% more than November: \$249.0 billion (SAAR)  
0.3% greater than December 2015: \$249.7 billion (SAAR)

December MF construction: \$63.7 billion (SAAR)  
2.8% more than November: \$61.9 billion (SAAR)  
11.7% greater than December 2015: \$57.1 billion (SAAR)

December Improvement<sup>C</sup> construction: \$152.8 billion (SAAR)  
-0.6% less than November: \$153.8 billion (SAAR)  
6.8% more than December 2015: \$143.4 billion (SAAR)

<sup>C</sup> The US DOC does not report improvement spending directly, this is a monthly estimation for 2016:  
(Total Private Spending – (SF spending + MF spending)).  
All data are SAARs and reported in nominal US\$.

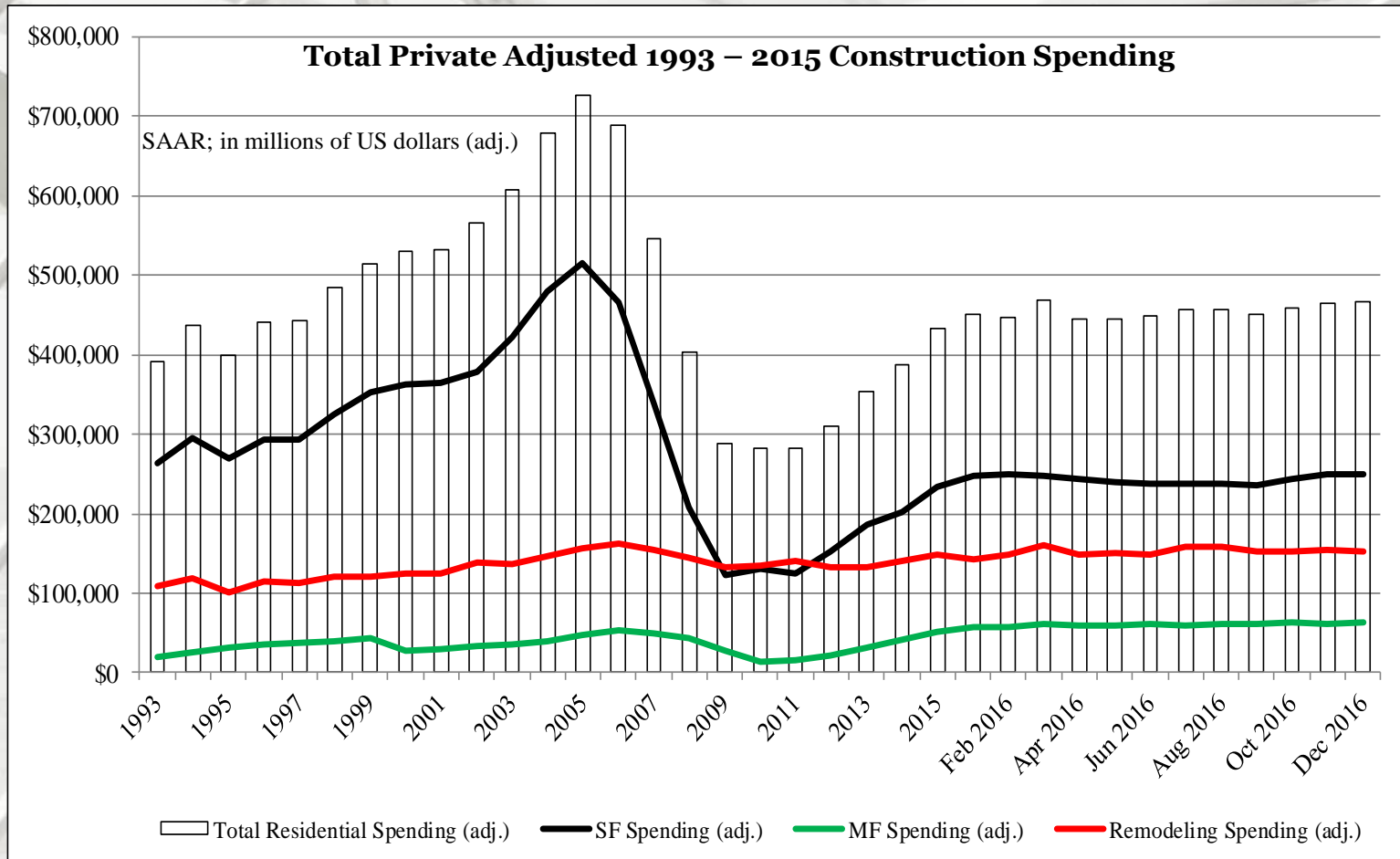
# Total Construction Spending (nominal): 1993 – December 2016



Reported in nominal US\$.

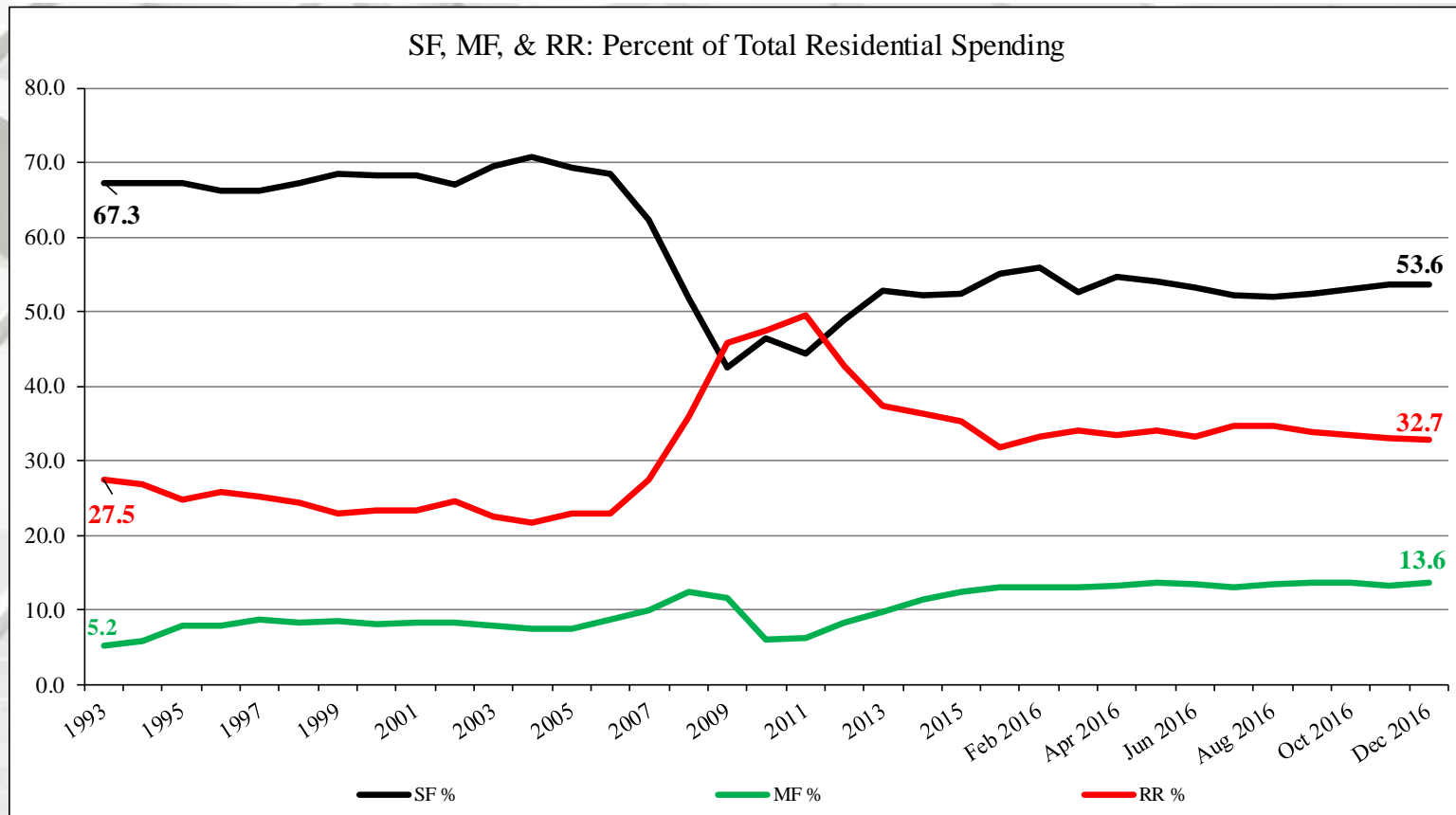
The US DOC does not report improvement spending directly, this is a monthly estimation for 2016.

# Total Construction Spending (adjusted): 1993-2016\*



Reported in adjusted US\$: 1993 – 2015 (adjusted for inflation, BEA Table 1.1.9); \*January-November 2016 reported in nominal US\$.

# Construction Spending Shares: 1993 to November 2016



## Total Residential Spending: 1993 through 2006

SF spending average: 69.2 %

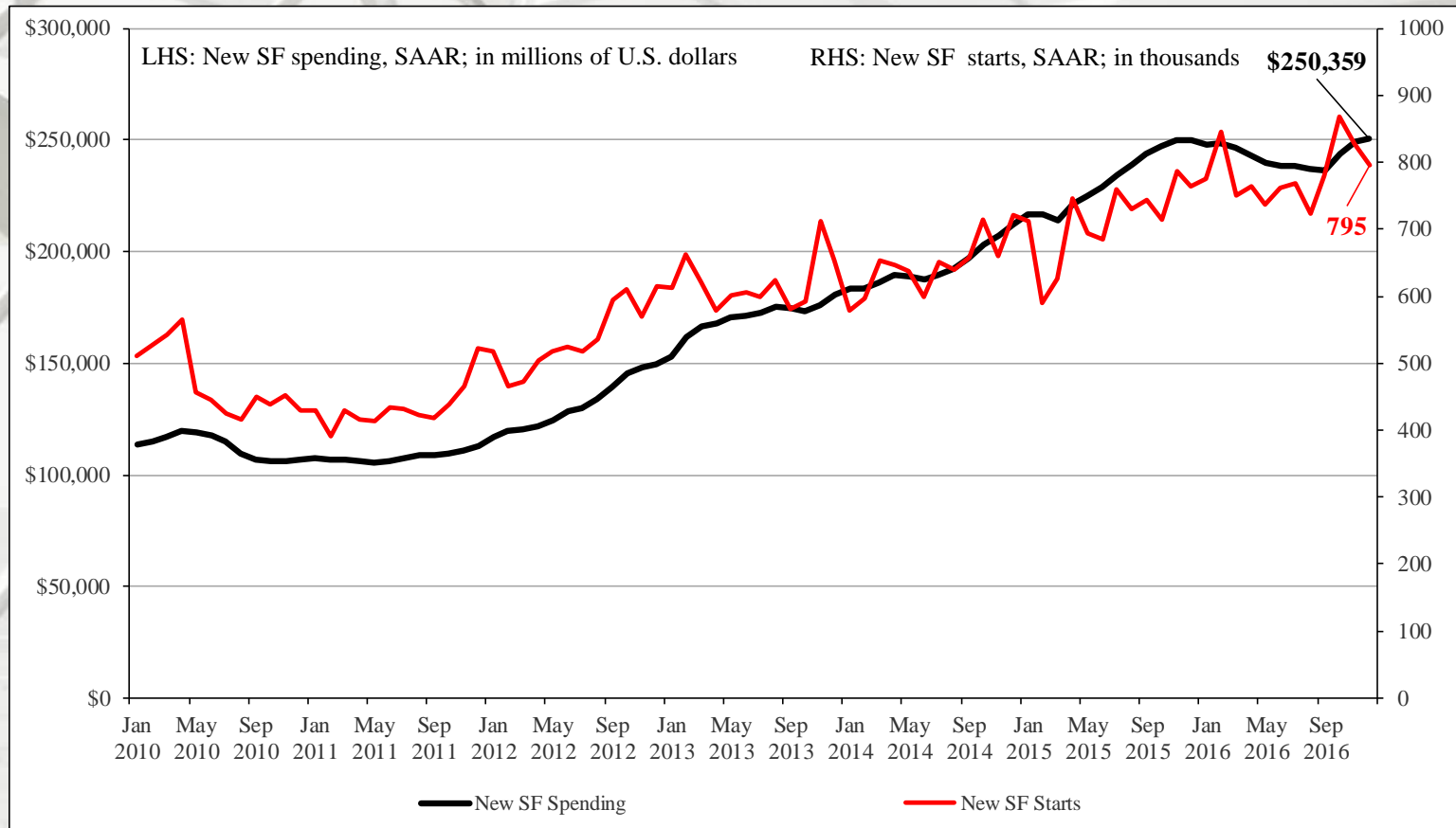
MF spending average: 7.5 %;

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

Note: 1993 to 2015 (adjusted for inflation, BEA Table 1.1.9); January-November 2016 reported in nominal US\$.



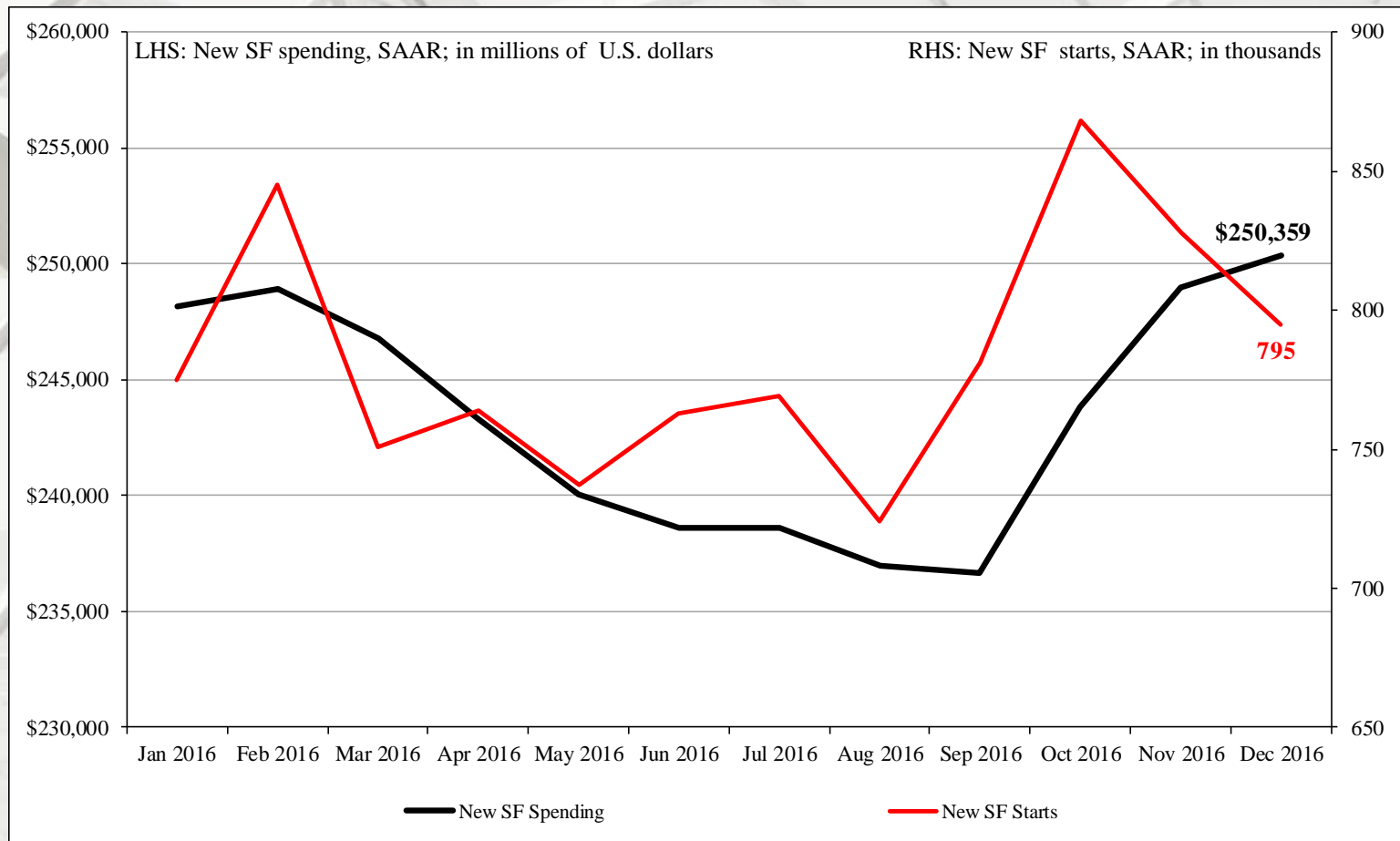
# Construction Spending & Starts: 2010 to December 2016



## New SF Residential contrasted against New SF Starts: 2010 through 2016

In the above graph, new SF construction spending is compared to new SF starts. Generally, as SF starts increase so does spending. However, there are other factors involved: house size, amenities, lot price, location, etc. Note that 2016 spending is reported in nominal dollars.

# Construction Spending & Starts: 2016



## New SF Residential contrasted against New SF Starts: 2016

As presented above, spending decoupled from starts in December. Given that it is one-month of data, we should pay attention to this relationship going forward. Note that 2016 spending is reported in nominal dollars.

# Remodeling

## **New Benchmark Data Modestly Lowers Remodeling Market Size Projections**

“The [latest LIRA release](#) projects national spending for home remodeling and repairs will grow to \$317 billion in 2017, an increase of 6.7 percent from last year.

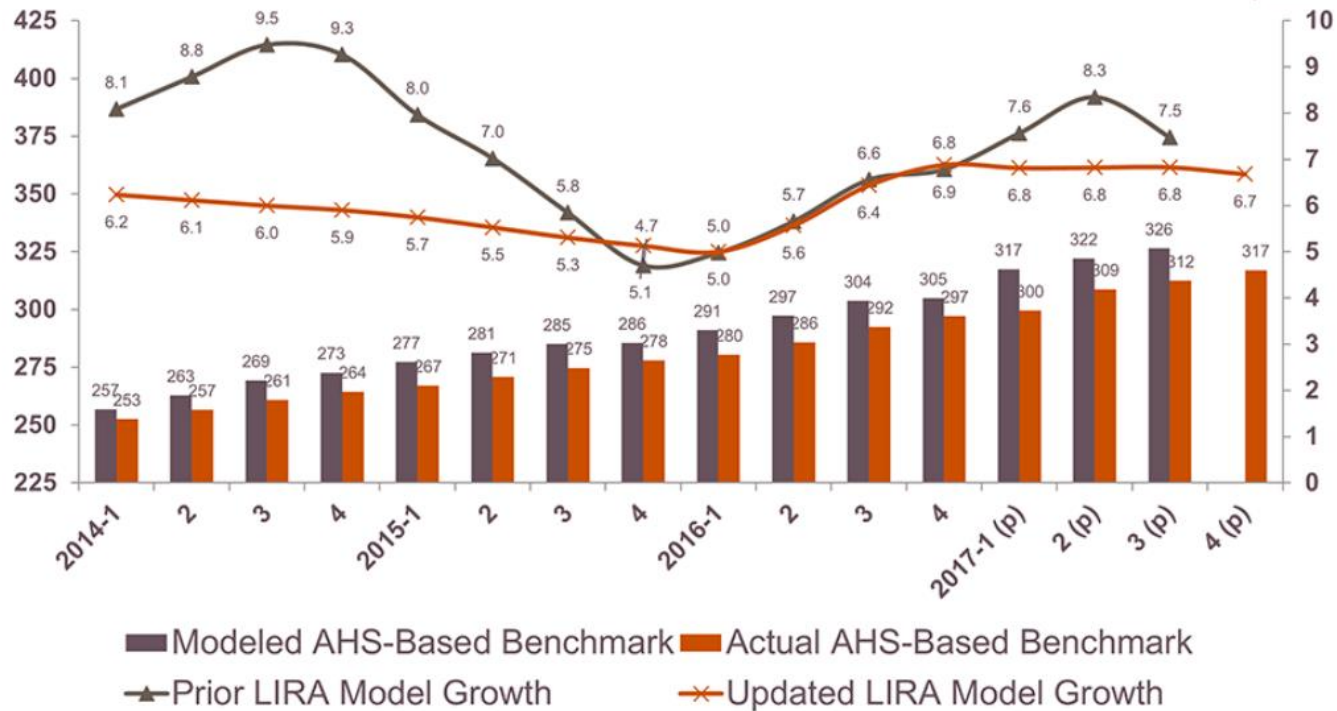
Compared to last quarter’s LIRA release, the updated LIRA now shows lower and less cyclical growth in homeowner improvement and repair spending in 2014 and 2015, a somewhat lower market size estimate, and also more modest projections for remodeling market growth in 2017. According to Joint Center tabulations of the AHS, spending in 2014 and 2015 was not quite as robust as the LIRA model predicted, growing 11.3 percent from \$250 billion in 2013 to \$278 billion in 2015 compared to LIRA estimated growth of 14.3 percent over this time period. As seen in Figure 1, the lower growth in remodeling spending in 2014 and 2015 has implications for the size of the market projected by the LIRA model for 2016 and 2017.

Previously, the LIRA estimated a homeowner improvement and repair market size of \$305 billion in 2016 and projected spending growing to \$326 billion by the third quarter of this year. Now with the replacement of AHS-based benchmark data for previously modeled benchmark estimates, the LIRA model indicates remodeling activity reached \$297 billion in 2016 and projects spending will reach \$317 billion this year. The implication of slightly slower growth in actual remodeling and repair spending is a reduction in market size projections for 2017 of 2.9 percent or \$9.5 billion. Incidentally, the more modest growth projected by the LIRA for 2017 compared to the prior release is not related to the addition of the new historical benchmark data. The LIRA projections revise routinely as the year-over-year trends in the LIRA inputs are updated or revised.” – Abbe Will, Research Analyst, JCHS

# Remodeling

Homeowner Improvements & Repairs  
Four-Quarter Moving Totals  
(Billions of \$)

Four-Quarter Moving  
Rate of Change  
(Percent)



# Existing House Sales

## National Association of Realtors (NAR®)

December 2016 sales: 5.490 million houses sold (SAAR)

Distressed house sales: 7% of total sales –  
(5% foreclosures and 2% short-sales);  
6% in November and 8% in December 2015.

All-cash sales: 21% and 21% in November,  
and 24% (December 2015).

Individual investors still purchase a considerable portion of  
“all cash” sale houses – 15% in December;  
12% in November and 15% in December 2015.

59% of investors paid cash in December.

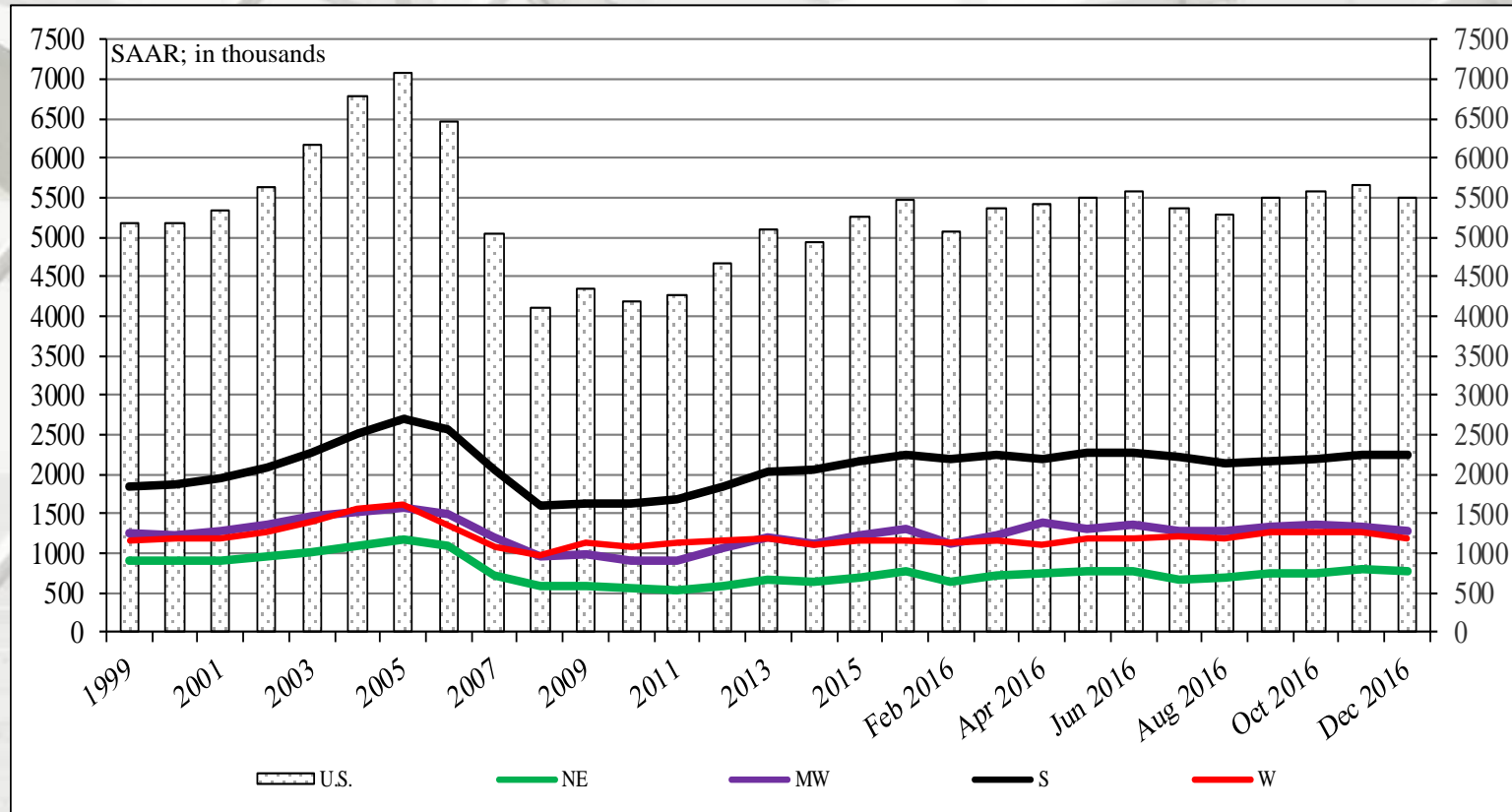
# Existing House Sales

	Existing Sales*	Median Price	Mean Price	Month's Supply
December	5,490,000	\$232,200	\$274,000	3.6
November	5,650,000	\$234,400	\$276,600	3.9
2015	5,450,000	\$223,200	\$266,100	3.9
M/M change	-2.8%	-0.9%	-0.9%	-7.7%
Y/Y change	0.7%	4.0%	3.0%	-7.7%

	NE Sales	MW Sales	S Sales	W Sales
December	760,000	1,280,000	2,250,000	1,200,000
November	810,000	1,330,000	2,250,000	1,260,000
2015	740,000	1,250,000	2,240,000	1,220,000
M/M change	-6.2%	-3.8%	0.0%	-4.8%
Y/Y change	2.7%	2.4%	0.4%	-1.6%

\* All sales data: SAAR

# Total Existing House Sales



# Changes in Existing House Sales





# First-Time Purchasers

## National Association of Realtors (NAR®)

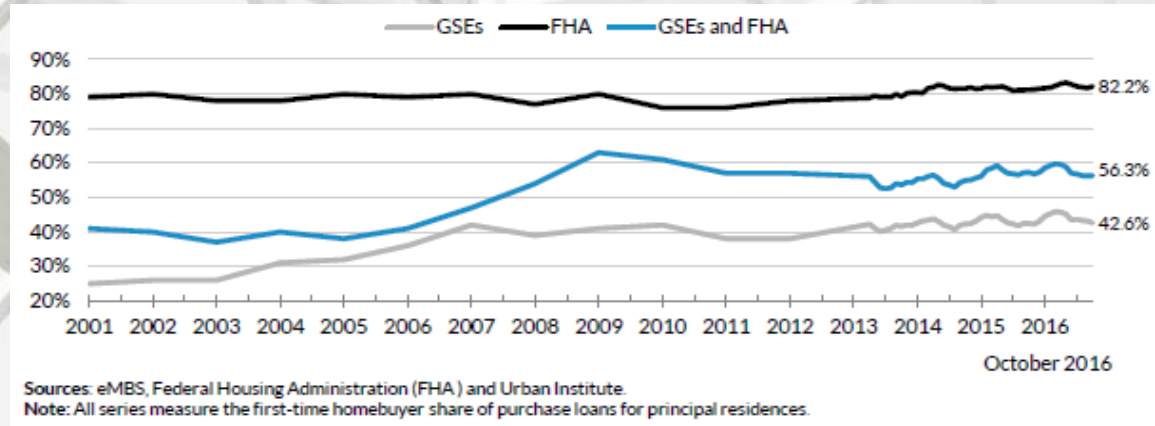
32% of sales in December 2016 – 32% in November 2016 and 32% in December 2015.

## American Enterprise Institute International Center on Housing Risk

- “Credit remains readily available for first-time buyers, as risk levels set new series’ highs in October. The first-time buyer NMRI stood at 15.9% in October, up 0.2 percentage point from a year earlier, and well above the Repeat Primary Homebuyer NMRI of 8.6%.
- Nonbanks continue to account for a rising share of the purchase market. The gap in riskiness between banks and nonbanks, which boosted overall risk due to high nonbank MRI, continues to widen.
- Fueled by solid job gains, low mortgage rates, and high and growing leverage, the national seller’s market is now in its 52nd month.

The FHA hit a dubious milestone this month as First-Time Buyers using FHA had a Mortgage Risk Index of 25 percent, up from 21 percent in 2013. Helping fuel this increase was the 47 percent of First-Time Buyers with a total pre-tax debt-to-income ratio in excess of 43 percent.” – Edward Pinto, Codirector, American Enterprise Institute’s (AEI’s) International Center on Housing Risk

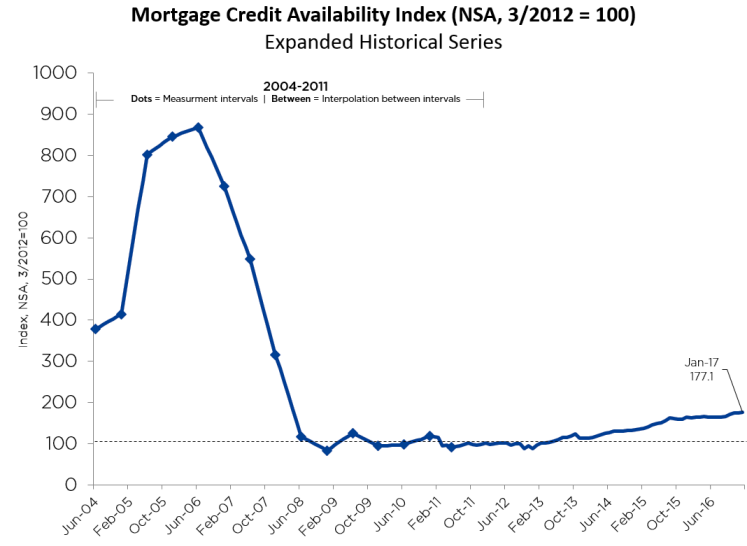
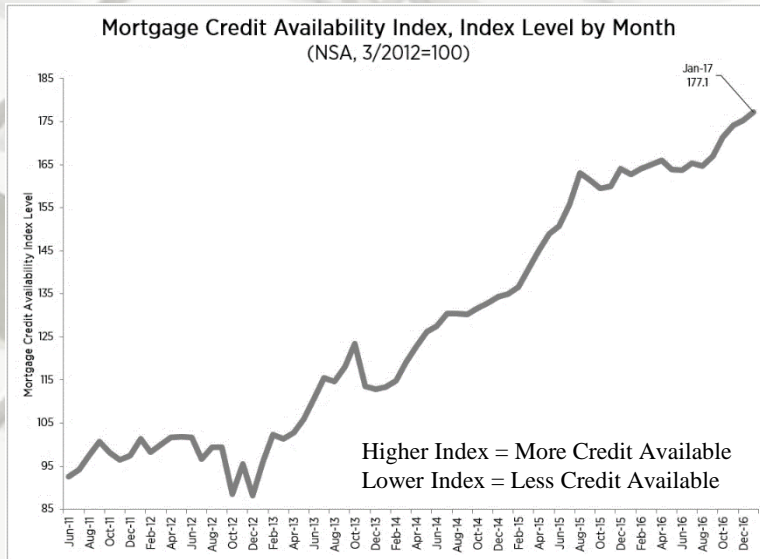
# First-Time Purchasers



## Urban Institute

“In October 2016, the first-time homebuyer share of GSE purchase loans continued to edge down slowly to 42.6 percent. The FHA has always been more focused on first-time homebuyers, with its first-time homebuyer share hovering around 80 percent and now stood at 82.2 percent in October 2016, down from the peak of 83.3 percent in May 2016. The table shows that based on mortgages originated in October 2016, 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., Codirector, Housing Finance Policy Center

# Mortgage Credit Availability

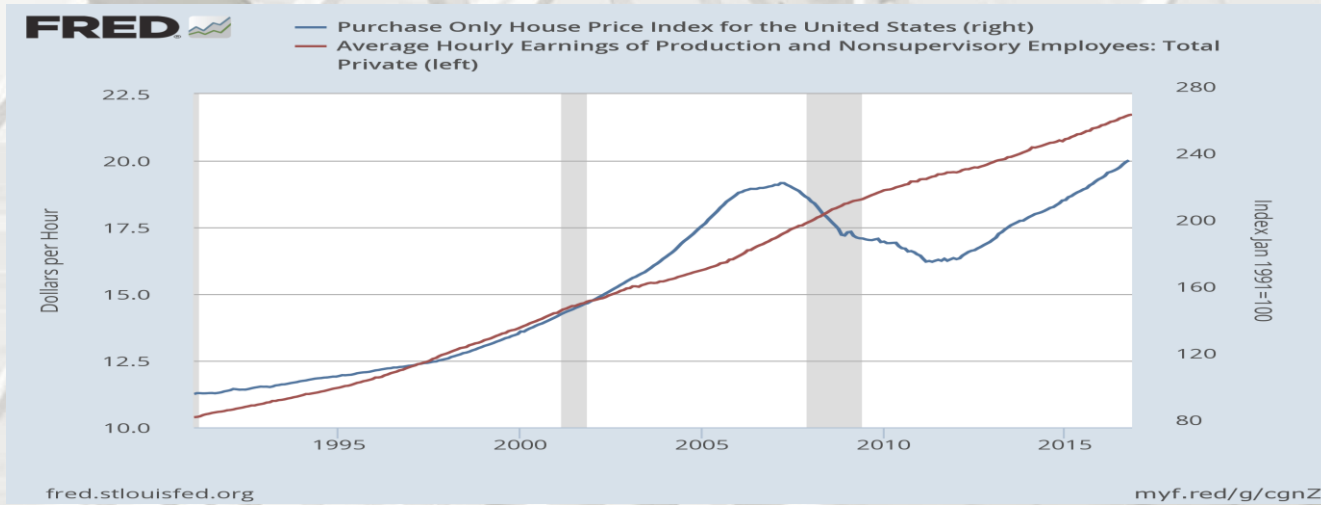
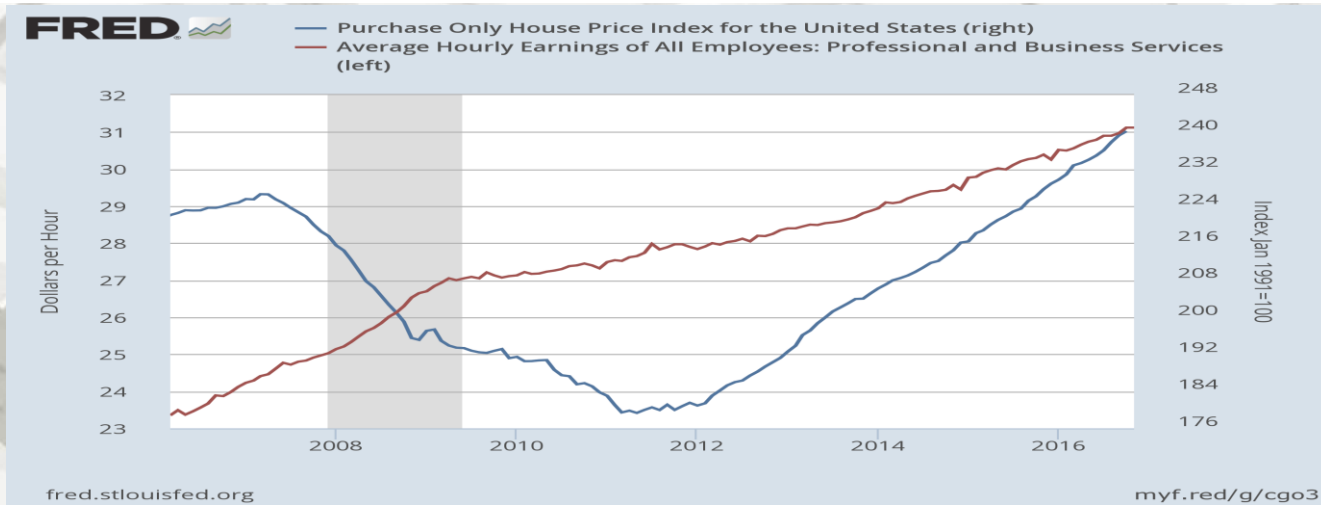


## Mortgage Credit Availability Increases in January

“The MCAI increased 1.1 percent to 177.1 in January. 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. Of the four component indices, the Jumbo MCAI saw the greatest increase in availability over the month (up 4.7 percent), followed by the Conventional MCAI (up 2.3 percent), and the Government MCAI (up 0.2 percent). The Conforming MCAI decreased over the month (down 0.1 percent).

Mortgage credit availability increased for the fifth consecutive month in January, driven by increased availability of jumbo loan programs. We saw a particular increase in agency jumbo programs that focus on loans in high cost areas that exceed the baseline conforming loan limit of \$424,000 but which are still eligible for purchase by the GSEs. While the change in GSE loan limits may have had an indirect impact on the jumbo MCAI, there were other factors at play as several investors rolled out new jumbo loan programs in January.” – Lynn Fisher, Vice President of Research and Economics, Mortgage Bankers Association (MBA)

# Housing Affordability



## Average Hourly Earnings & Purchase Only House Price Index

For the every day American, housing affordability is problematic. As presented above, affordability is much better for the professional – business sector (top) as compared to the production – non-supervisory sector (bottom).

# Housing Affordability

## **2017 Housing Forecast: Affordability Benefits South, Midwest while Western Growth Slows**

“Affordability will be the name of the game over the course of 2017, as the past few years of relatively impressive price growth have pushed home prices closer to the peak levels of 2006, with several markets reaching above and beyond to all time highs. The national housing market will continue to grow, albeit markedly slower than in past years, with national home prices moderately increasing to the tune of 2.4%. However, western growth will be greatly limited due to a widespread lack of affordability in almost all of the major markets in the region, a key reason for its tempered growth over the course of 2016.

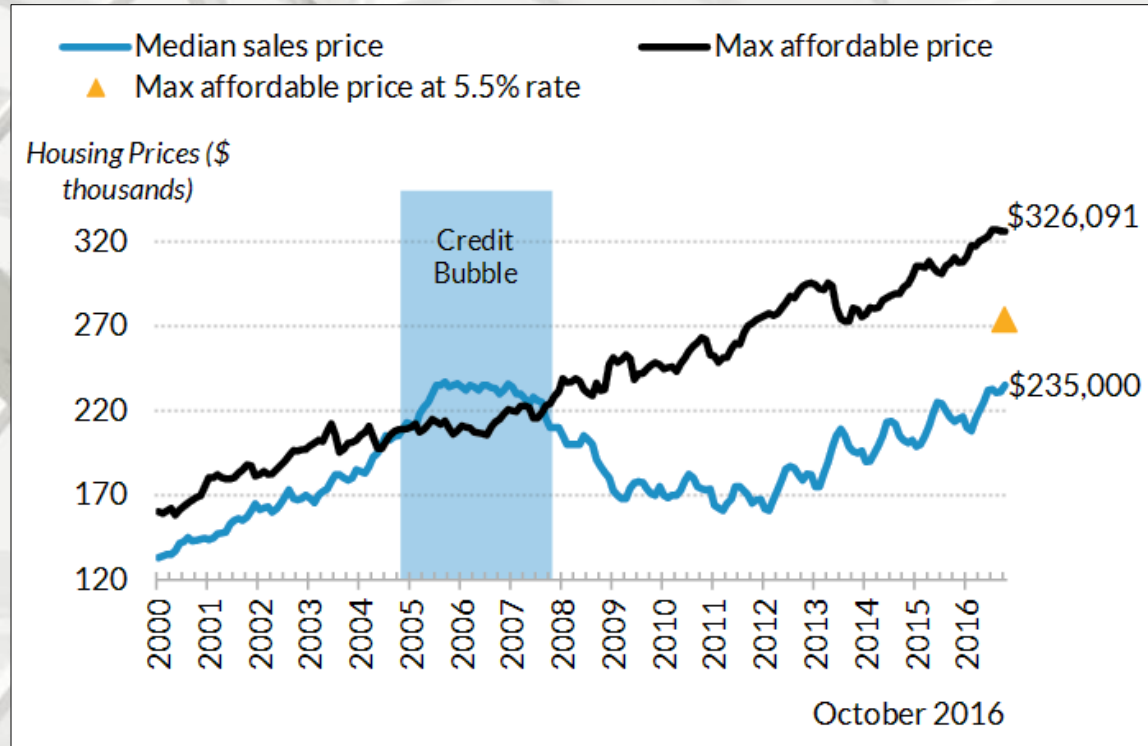
Contrastingly, the traditionally lower priced and more affordable regions of the South and Midwest will set the pace for growth over the next year, while the luxury markets of the Northeast will again struggle to make impressive gains. In combination with affordability concerns already plaguing demand in some markets, the potential for additional interest rate increases over the coming year, as well as any potential market shake-ups due to the new presidential administration, could further jeopardize the housing market’s now moderating recovery. We’ll be on deck throughout the next year monitoring housing markets across the nation, but for now, our models are predicting softer growth for 2017.” – Alex Villacorta, Ph.D., Vice President of Research and Analytics, Clear Capital

# Housing Affordability



Graph 1. National and Regional Annual Price Growth. Data through December 2016.  
Source: Clear Capital®

# Housing Affordability



## National Housing Affordability Over Time

“Home prices are still very affordable by historical standards, despite increases over the last four years. Even if interest rates rose to 5.5 percent, affordability would be at the long term historical average.” – Laurie Goodman et al., Codirector, Housing Finance Policy Center

Sources: CoreLogic, US Census, Freddie Mac, and Urban Institute

# Summary

## **In summary:**

December's housing data were mixed. New SF starts and permits were negative. New SF sales decreased substantially; yet, were barely less than one-year ago. The lower-price tier categories faltered once again; the market needs consistent improvement in these categories to drive the overall housing construction market upward. Existing sales declined and increased very slightly on a year-over-year basis. New housing forecasts are similar from 2016; however, SF starts are projected to be somewhat more than 2106's estimates.

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

## **Pros:**

- 1) Historically low interest rates are still in effect, though incrementally rising;
- 2) As a result, housing affordability is good for most of – 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) Changing attitudes towards SF ownership
- 3) Gentrification;
- 4) Job creation is improving and consistent but some economists question the quantity and types of jobs being created;
- 5) Debt: Corporate; personal; government – United States and globally.
- 6) Other global uncertainties.



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