

The Virginia Tech – U.S. Forest Service

July 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

Opening Remarks

Mediocris incrementum, or mediocre housing market progress, is the story line for 2017. With that written, it does appear that the housing construction market was pulled forward by the unusually warm winter in many sections of the United States that resulted in construction activity to proceed earlier in the year. Housing starts and new single-family sales appear to have “turned over” on a monthly and year-over-year basis. The bright spots in July data are single-family permits and construction spending – both have increased robustly year-over-year. Regionally, data were mixed across all sectors. The September 15th Atlanta Fed GDPNow™ model projected that aggregate residential investment spending decreased -2.7% in Quarter 3 2017. New private construction expenditures declined -1.7% and improvement spending increased 2.8% in Quarter 3 (all seasonally adjusted annual rate).¹

“As noted in the *Wall Street Journal* when the deal was announced [Blackstone Invitation Homes and Starwood-Waypoint Homes merger], with this deal, the bet is that near-term, home-building will continue to lag behind demand and that bad credit, a lack of savings and tight lending will keep many people renting. Long-term, they are wagering that home ownership will no longer be an essential component of the American dream and that more people will chose to rent. When the single-family rental gig emerged, I was skeptical that it was not a sustainable trend, but I now believe that we are witnessing, yet again, another seismic demographic change.”² – Anthony LoPinto, Global Sector Head, Real Estate, Korn/Ferry International

This month’s commentary also contains applicable housing data; new single-family and multifamily analysis; 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: ¹ <https://www.frbatlanta.org/-/media/Documents/cqer/researchcq/gdpnow/GDPTrackingModelDataAndForecasts.xlsx>; 9/15/17;

² <http://www.globest.com/sites/anthonylopinto/2017/08/22/the-american-dream/>; 8/23/17

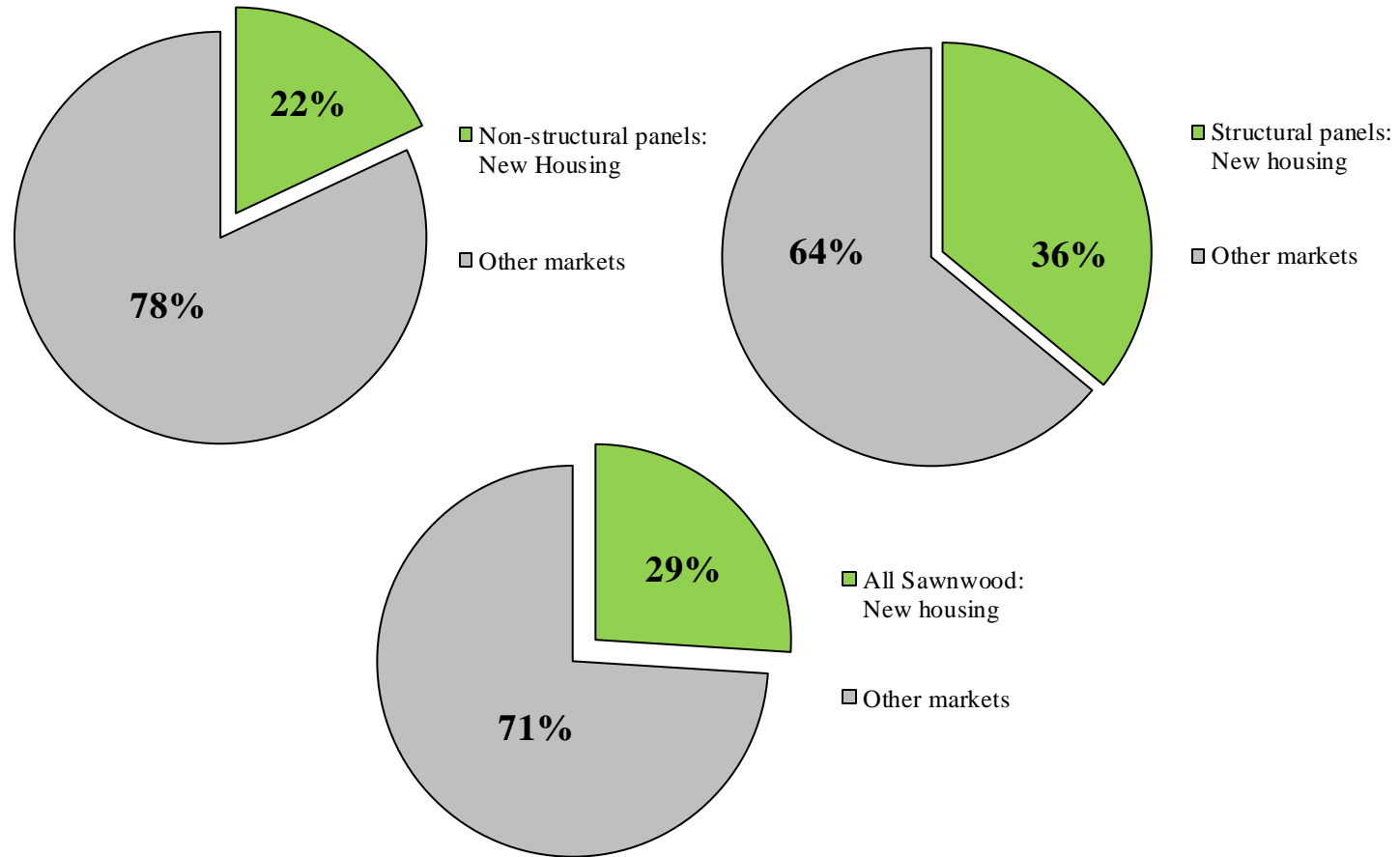
July 2017

Housing Scorecard

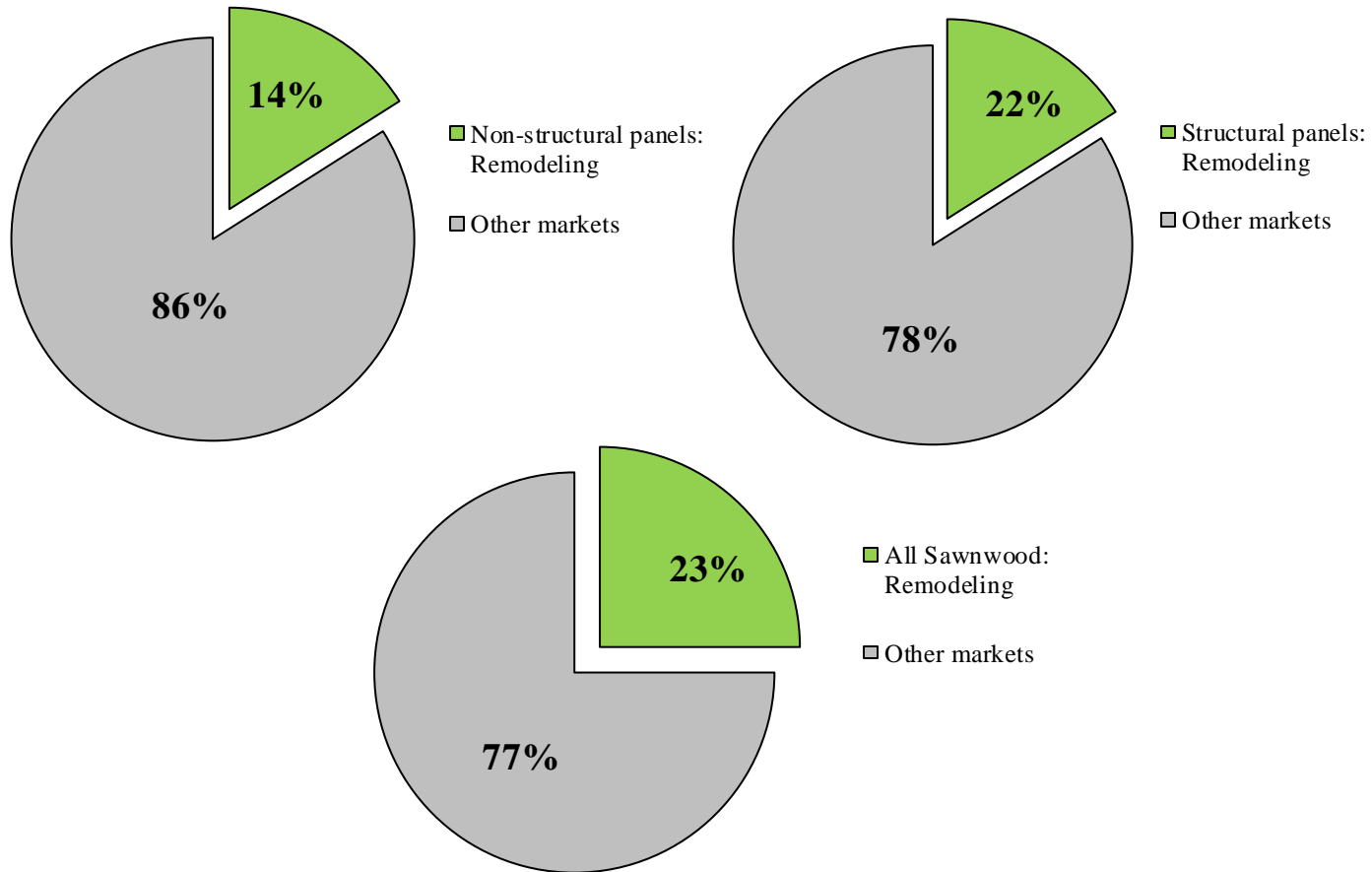
	M/M	Y/Y
Housing Starts	▽ 4.8%	▽ 5.6%
Single-Family Starts	▽ 0.5%	▽ 10.9%
Housing Permits	▽ 4.1%	△ 4.1%
Single-Family Permits	NC 0.0%	△ 13.0%
Housing Completions	▽ 6.2%	△ 8.2%
Single-Family Completions	▽ 1.6%	△ 8.2%
New Single-Family House Sales	▽ 9.4%	▽ 8.9%
Private Residential Construction Spending	△ 0.8%	△ 11.6%
Single-Family Construction Spending	△ 0.8%	△ 10.4%
Existing House Sales ¹	▽ 1.3%	△ 2.1%

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



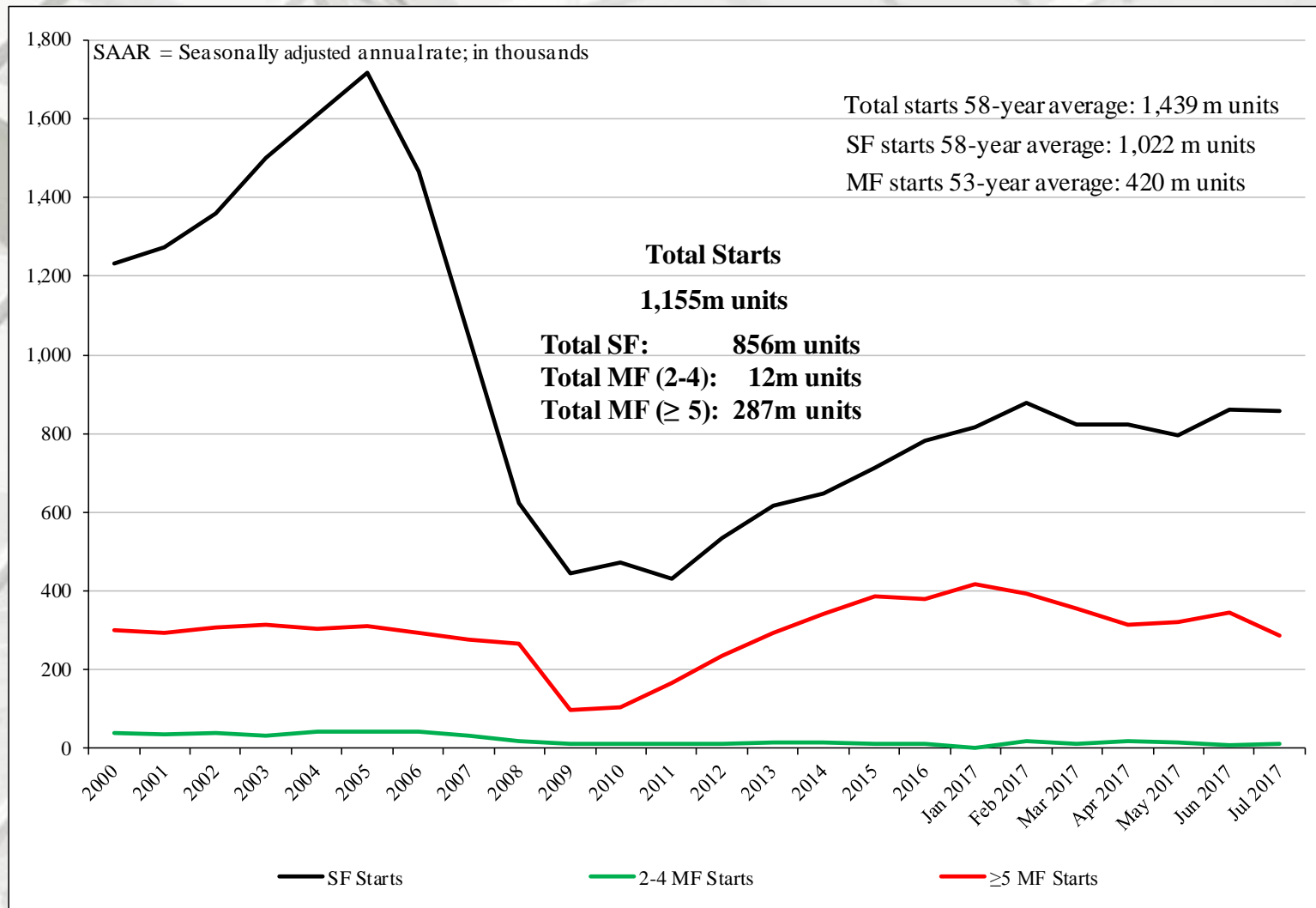
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
July	1,155,000	856,000	12,000	287,000
June	1,213,000	860,000	7,000	346,000
2016	1,223,000	772,000	8,000	443,000
M/M change	-4.8%	-0.5%	71.4%	-17.1%
Y/Y change	-5.6%	10.9%	50.0%	-35.2%

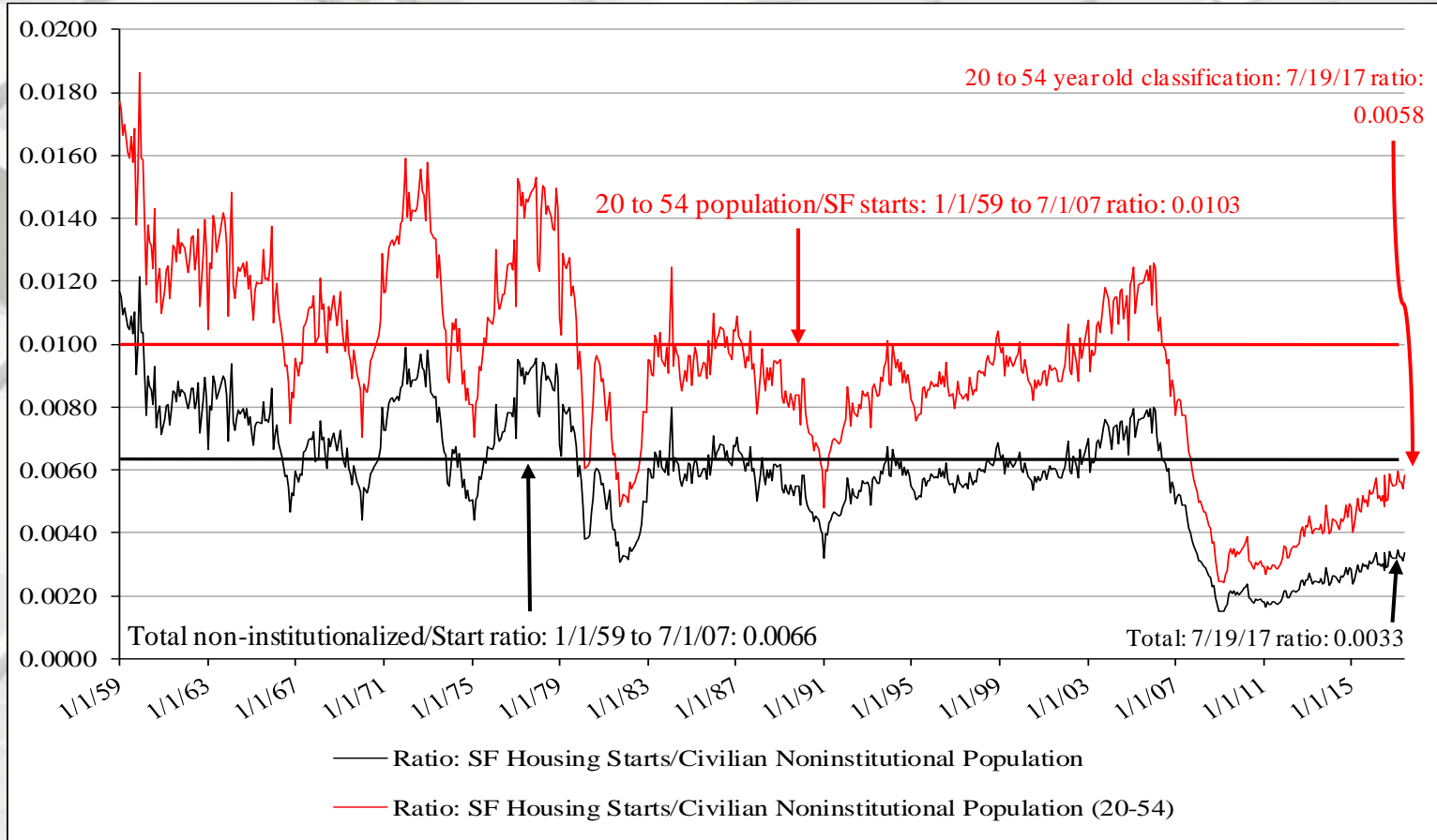
* All start data are presented at a seasonally adjusted annual rate (SAAR).

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

Total Housing Starts



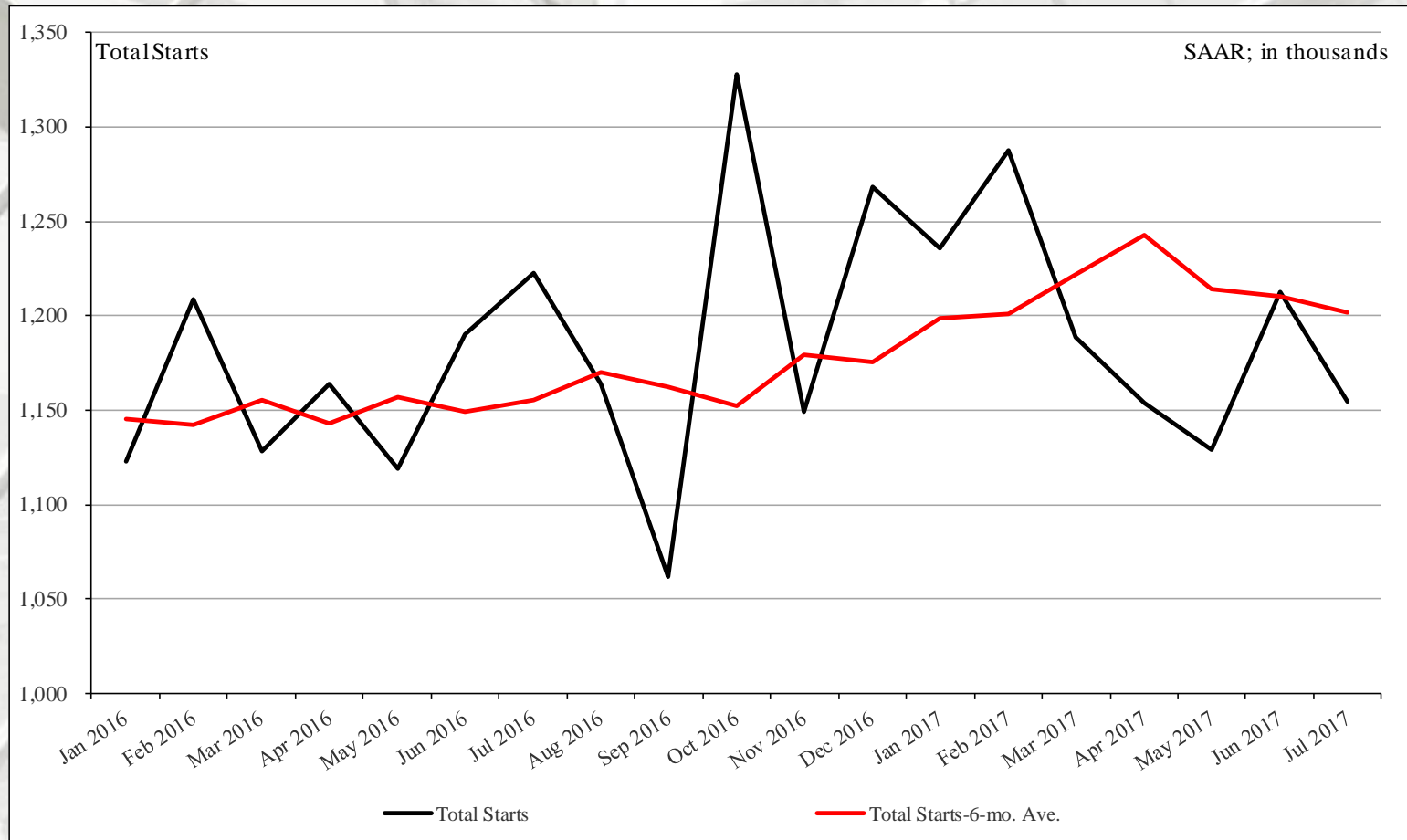
New SF Starts



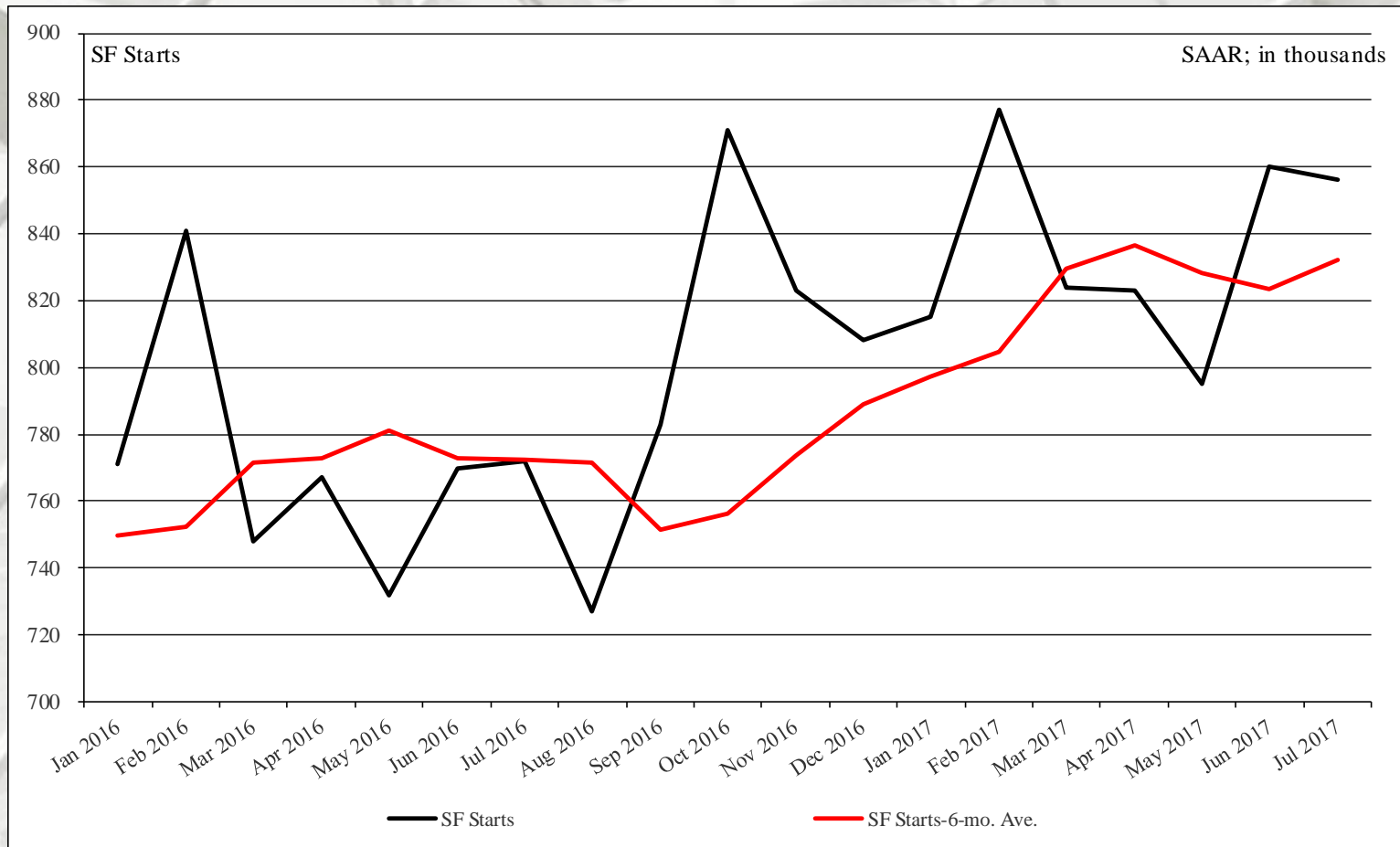
New SF starts adjusted for the US population

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 July 2017 it was 0.0034 – no change from June. The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in July 2017 it was 0.0058 – no change from June. 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

	NE Total	NE SF	NE MF**
July	129,000	67,000	62,000
June	153,000	61,000	92,000
2016	134,000	59,000	75,000
M/M change	-15.7%	9.8%	-32.6%
Y/Y change	-3.7%	13.6%	-17.3%

	MW Total	MW SF	MW MF
July	179,000	126,000	53,000
June	211,000	136,000	75,000
2016	157,000	108,000	49,000
M/M change	-15.2%	-7.4%	-29.3%
Y/Y change	14.0%	16.7%	8.2%

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

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

New Housing Starts by Region

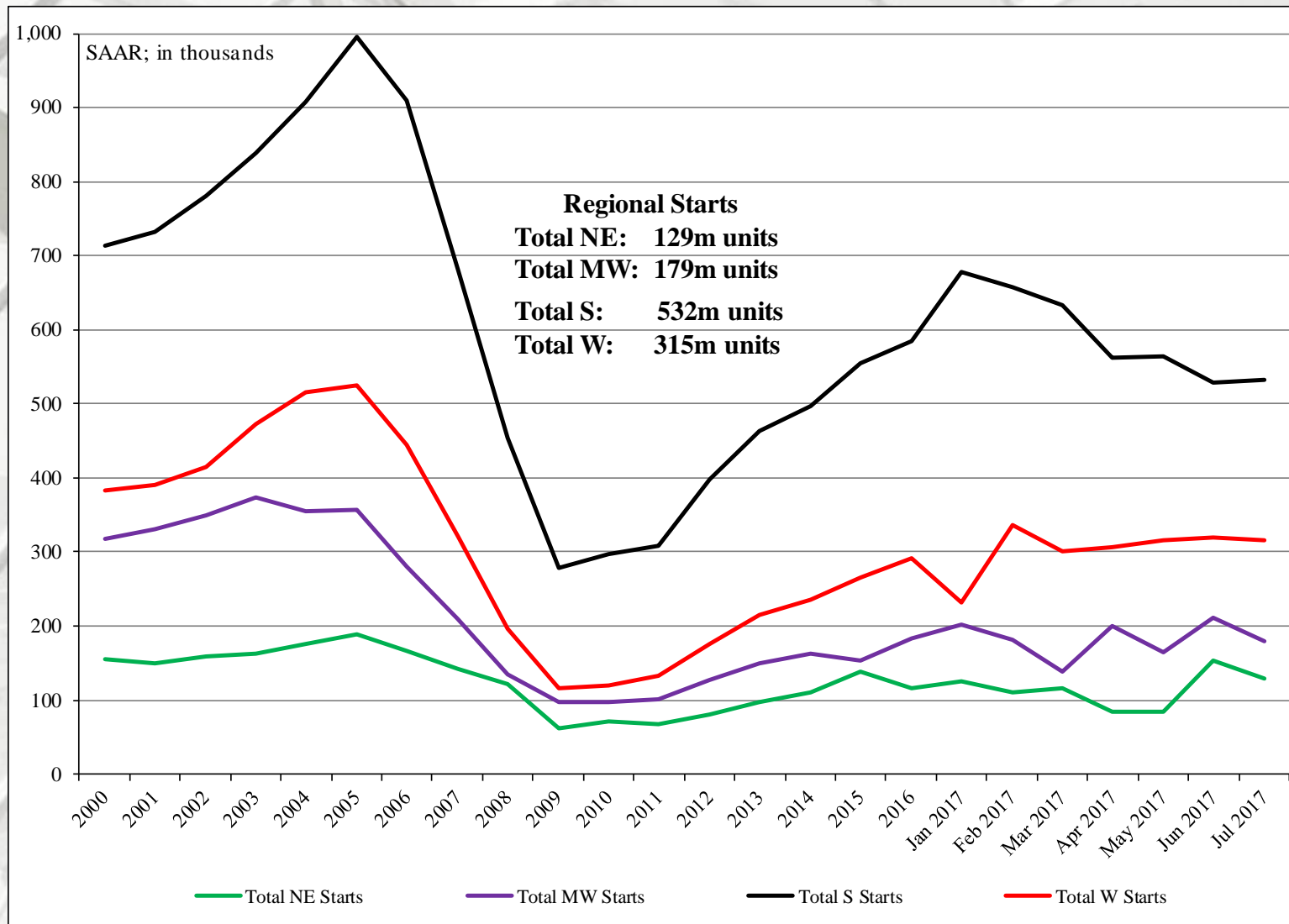
	S Total	S SF	S MF**
July	532,000	462,000	70,000
June	529,000	453,000	76,000
2016	637,000	427,000	210,000
M/M change	0.6%	2.0%	-7.9%
Y/Y change	-16.5%	8.2%	-66.7%

	W Total	W SF	W MF
July	315,000	201,000	114,000
June	320,000	210,000	110,000
2016	295,000	178,000	117,000
M/M change	-1.6%	-4.3%	3.6%
Y/Y change	6.8%	12.9%	-2.6%

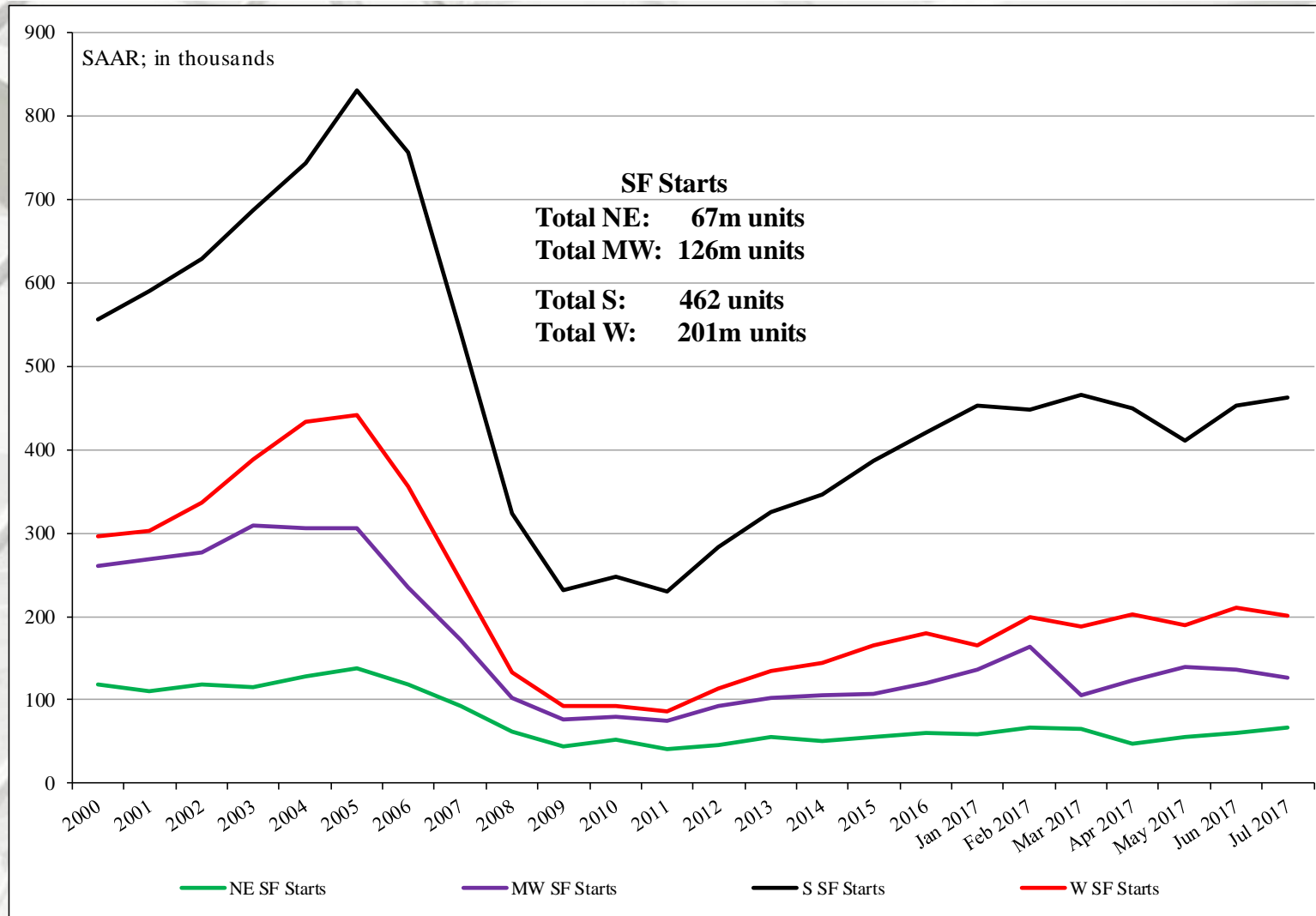
All data are SAAR; S = South and W = West.

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

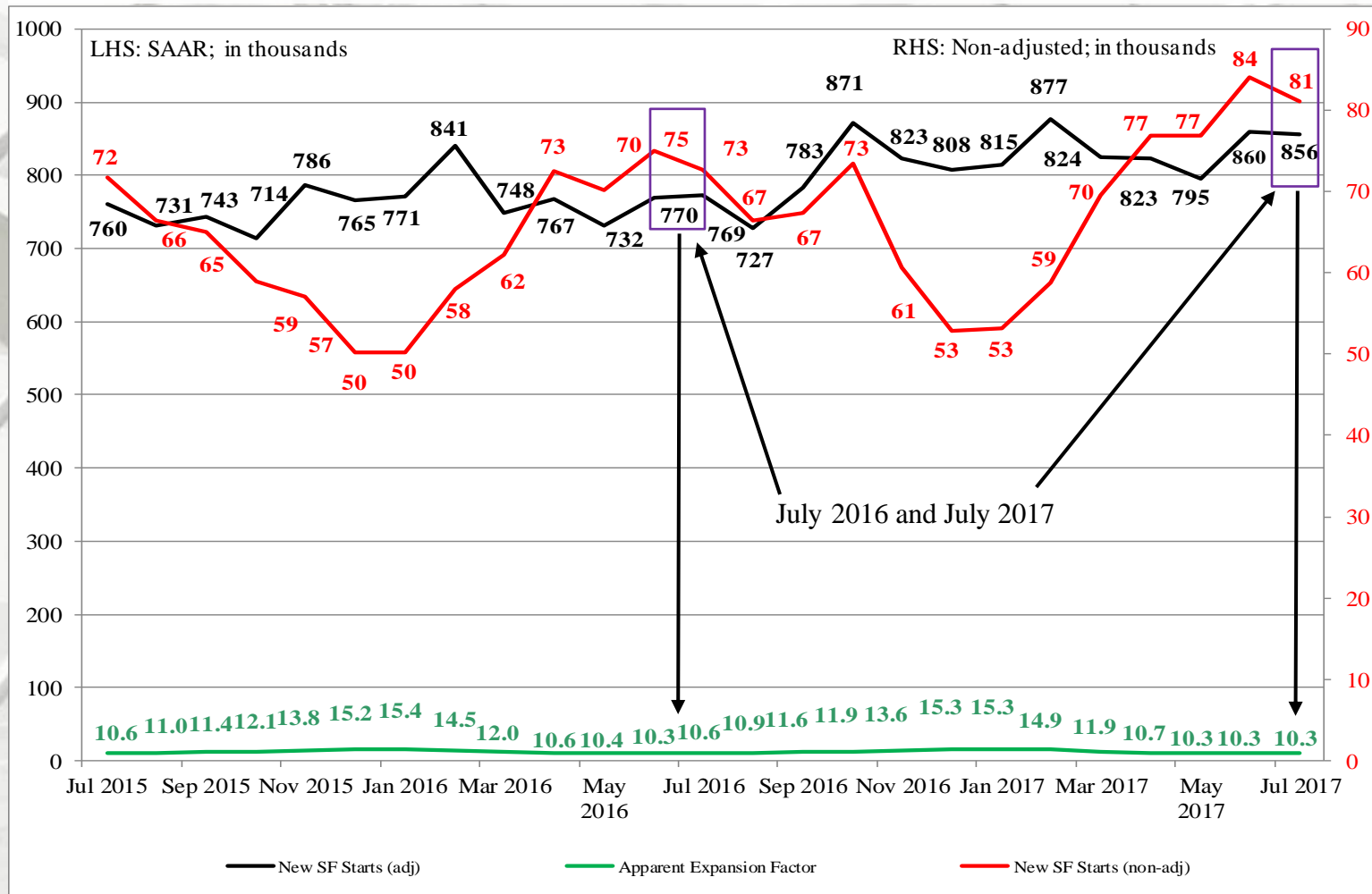
Total Housing Starts by Region



SF Housing Starts by Region



Nominal & SAAR SF Starts

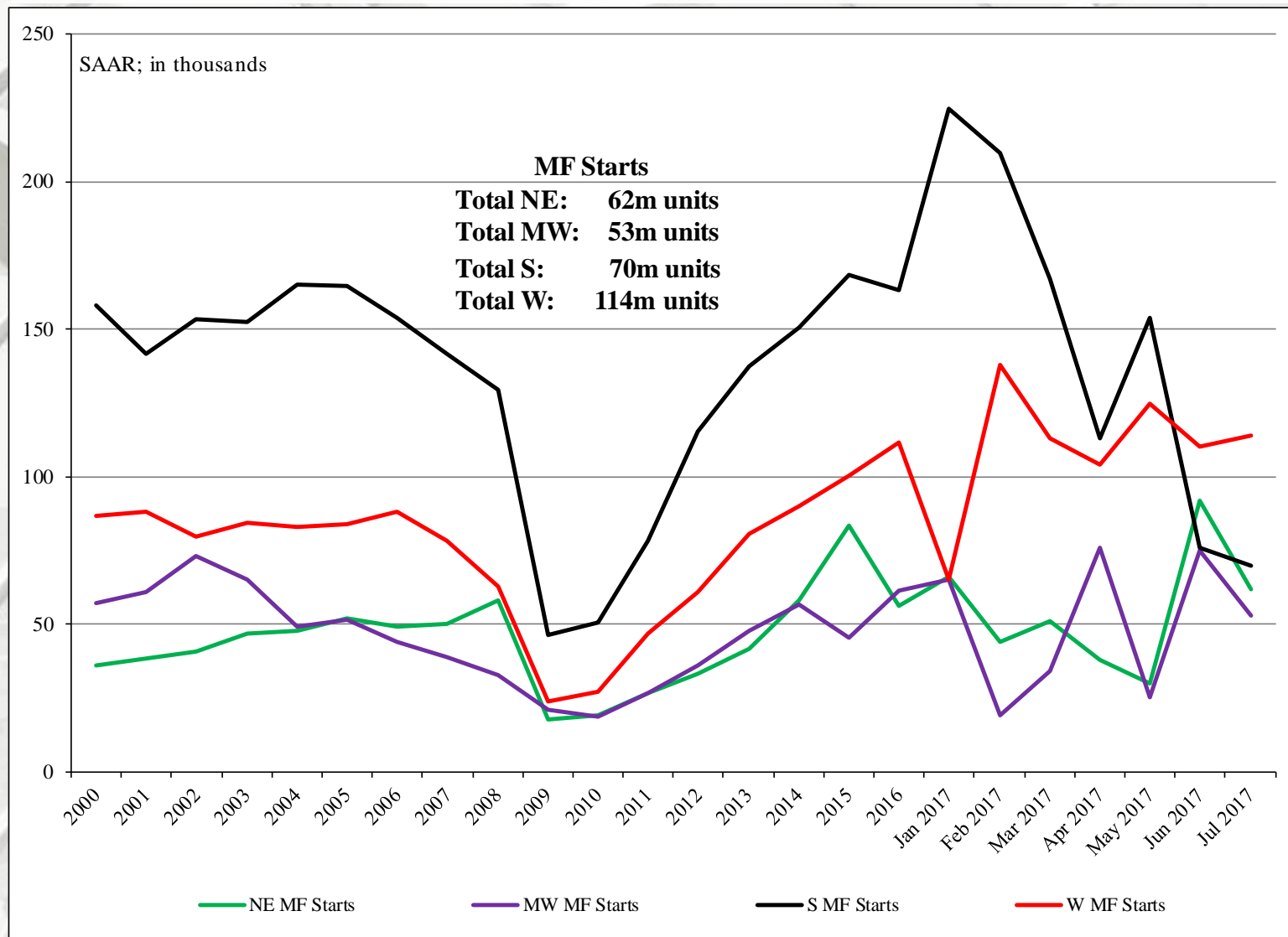


Nominal and Adjusted New SF Monthly Starts

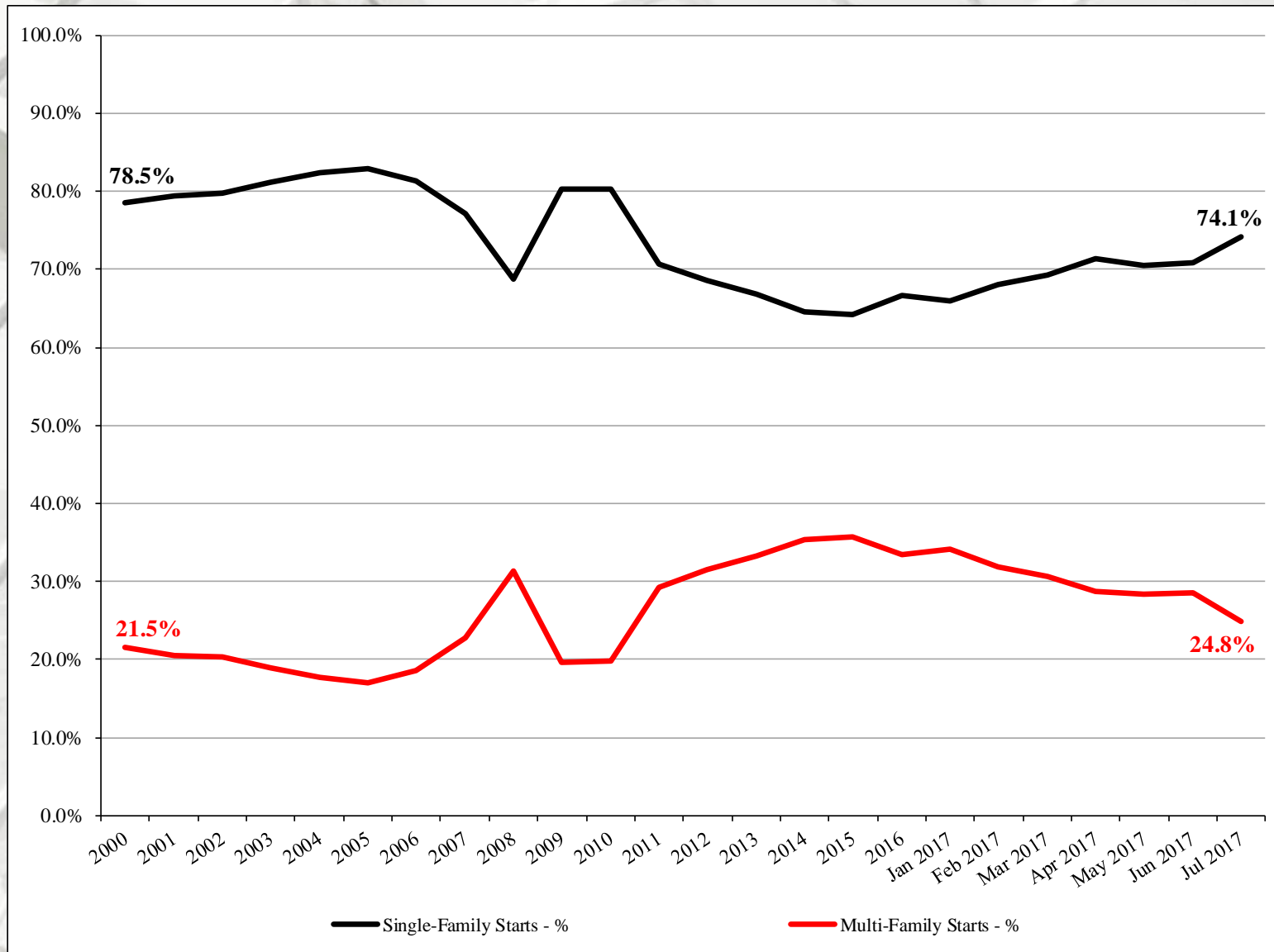
Presented above is nominal (non-adjusted) new SF start data contrasted against SAAR data.

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

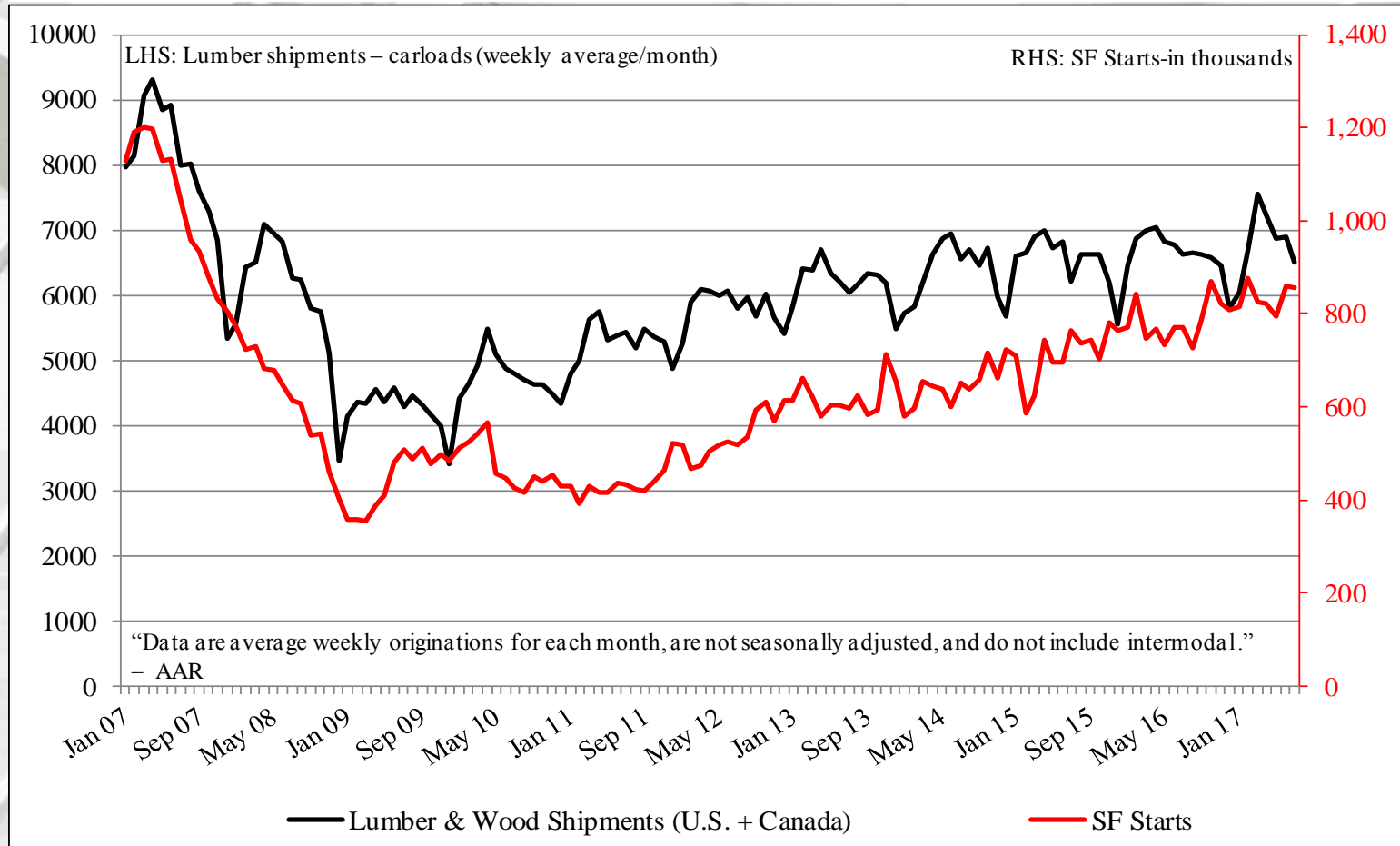
MF Housing Starts by Region



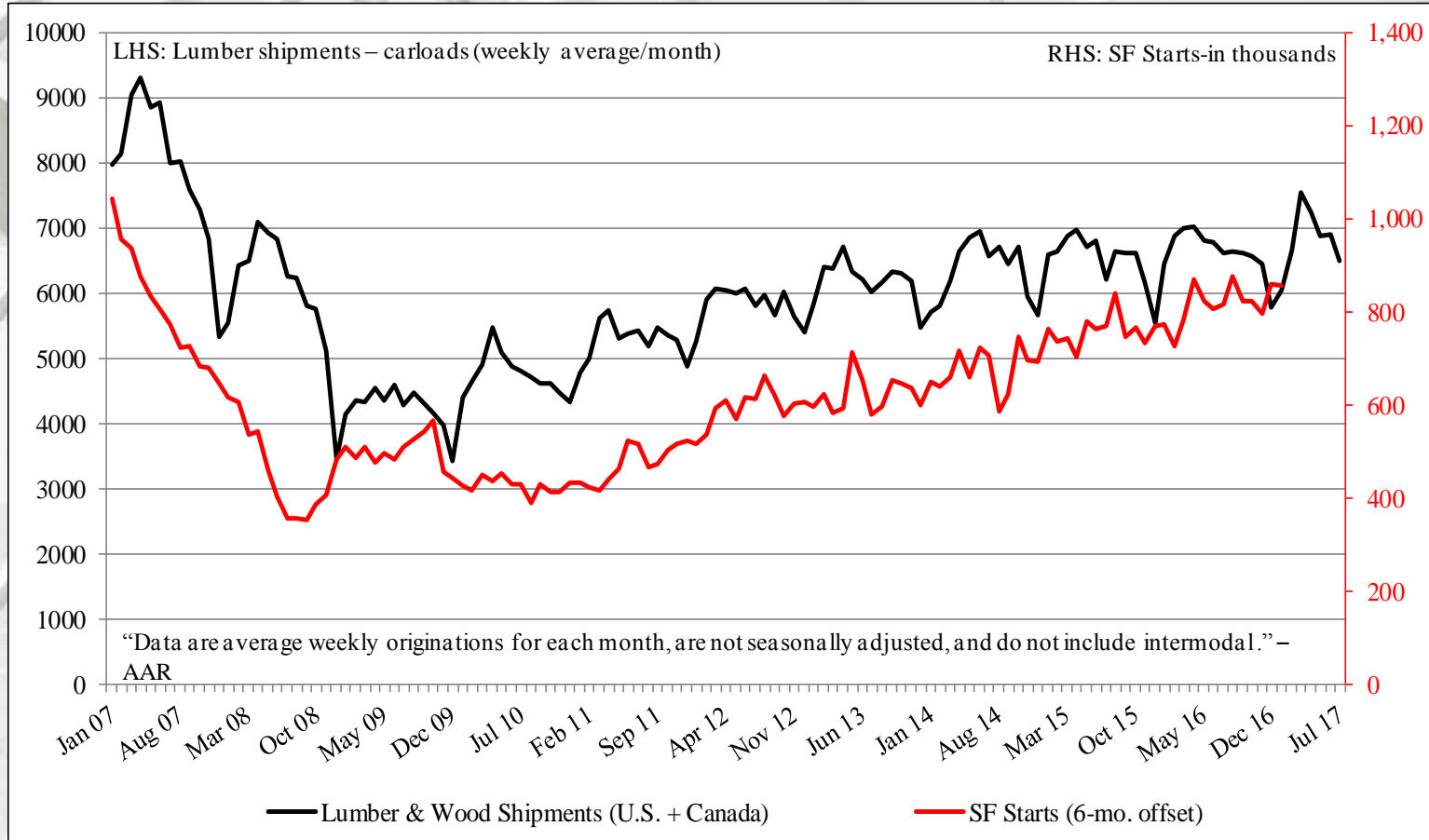
SF & MF Housing Starts (%)



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



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



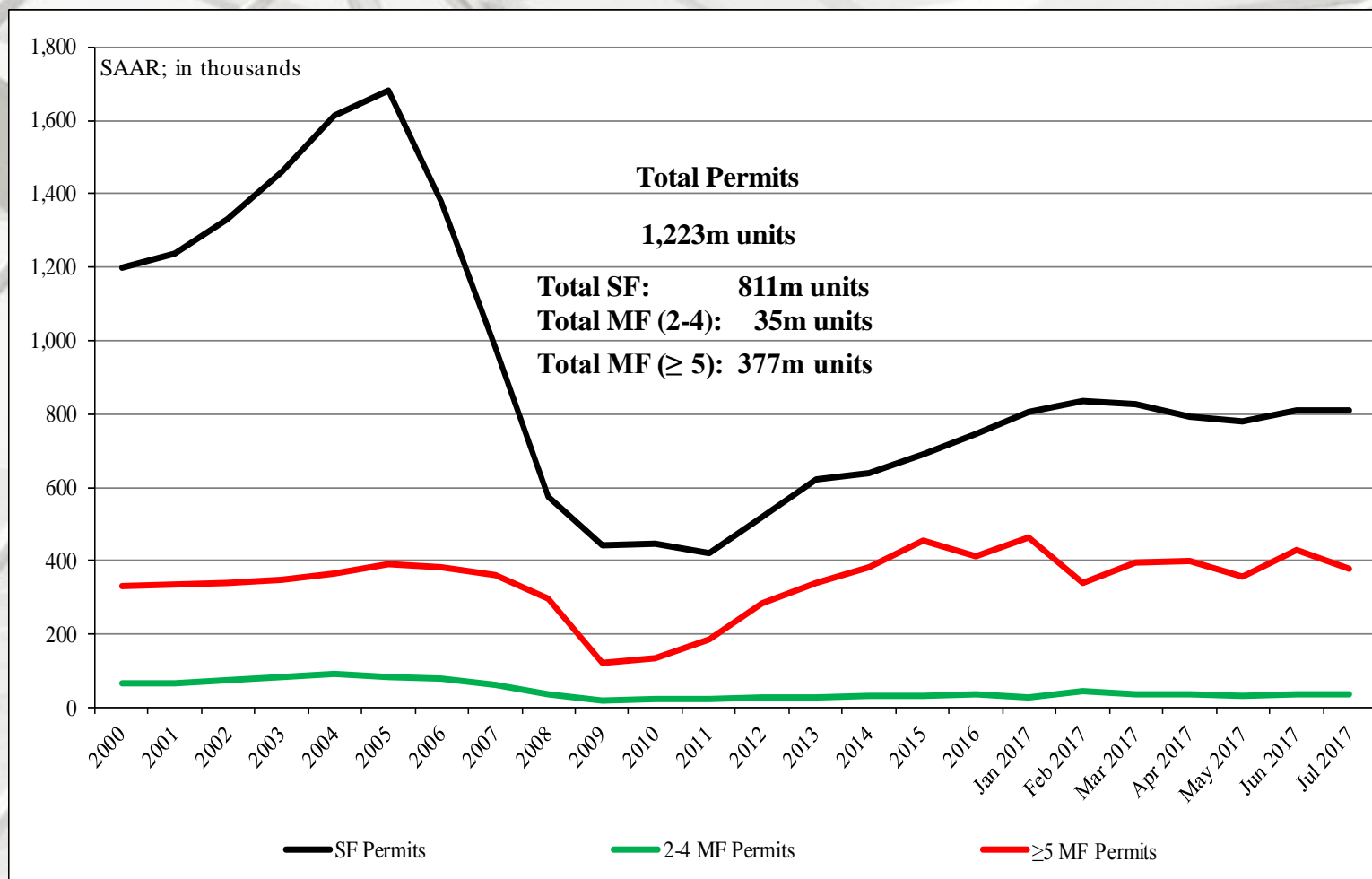
In this graph, January 2007 lumber shipments are contrasted with July 2007 SF starts, and continuing through July 2017 SF starts. The purpose is to discover if lumber shipments relate to future single-family starts. Also, it is realized that lumber and wood products are trucked; however, to our knowledge comprehensive trucking data is not available.

New Housing Permits

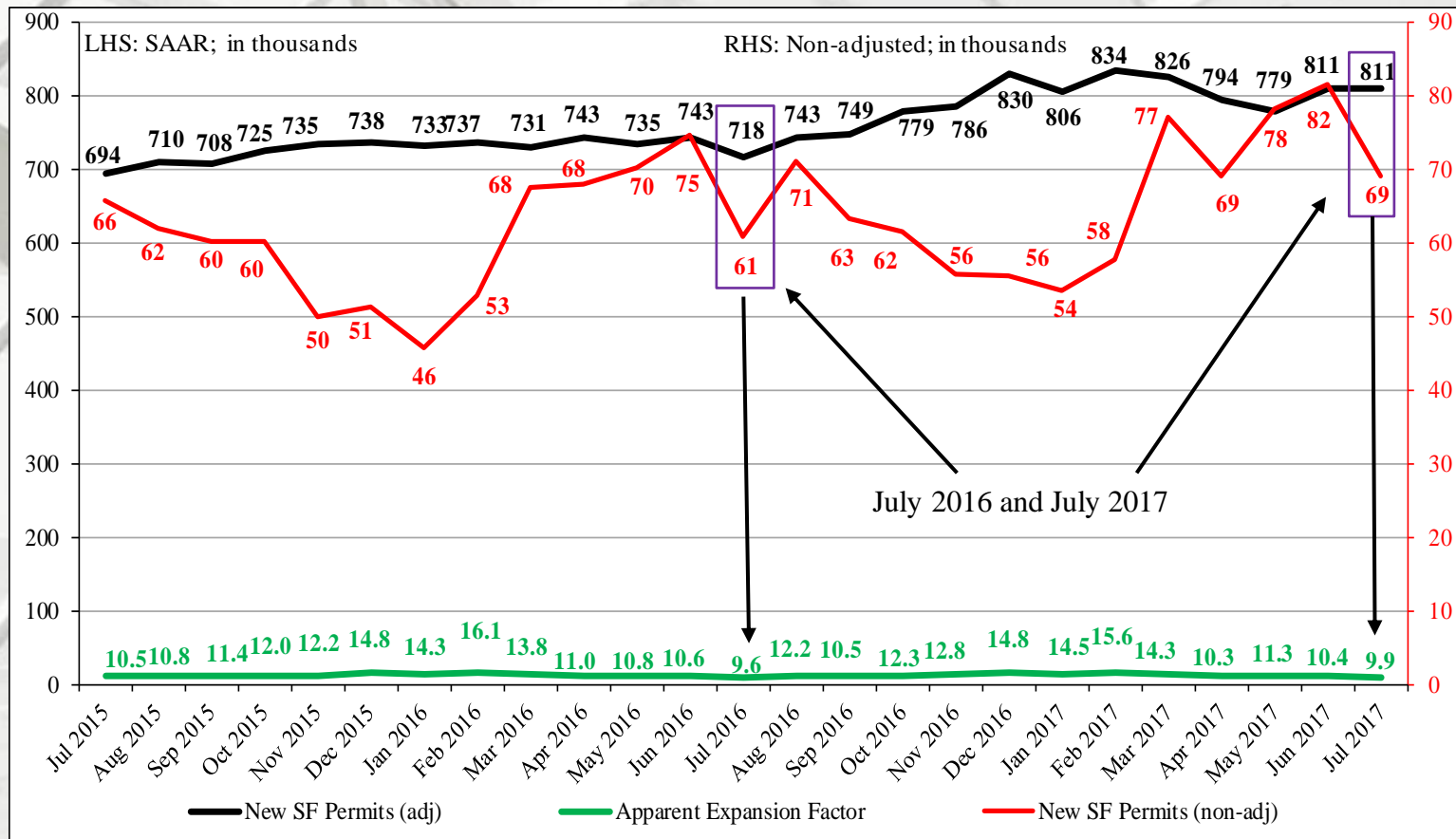
	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
July	1,223,000	811,000	35,000	377,000
June	1,275,000	811,000	35,000	429,000
2016	1,175,000	718,000	30,000	427,000
M/M change	-4.1%	0.0%	0.0%	-12.1%
Y/Y change	4.1%	13.0%	16.7%	-11.7%

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

Total New Housing Permits



Nominal & SAAR SF Permits



Nominal and Adjusted New SF Monthly Permits

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

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

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
July	124,000	56,000	68,000
June	104,000	57,000	47,000
2016	106,000	51,000	55,000
M/M change	19.2%	-1.8%	44.7%
Y/Y change	17.0%	9.8%	23.6%
	MW Total*	MW SF	MW MF**
July	171,000	116,000	55,000
June	207,000	120,000	87,000
2016	188,000	106,000	82,000
M/M change	-17.4%	-3.3%	-36.8%
Y/Y change	-9.0%	9.4%	-32.9%

• 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

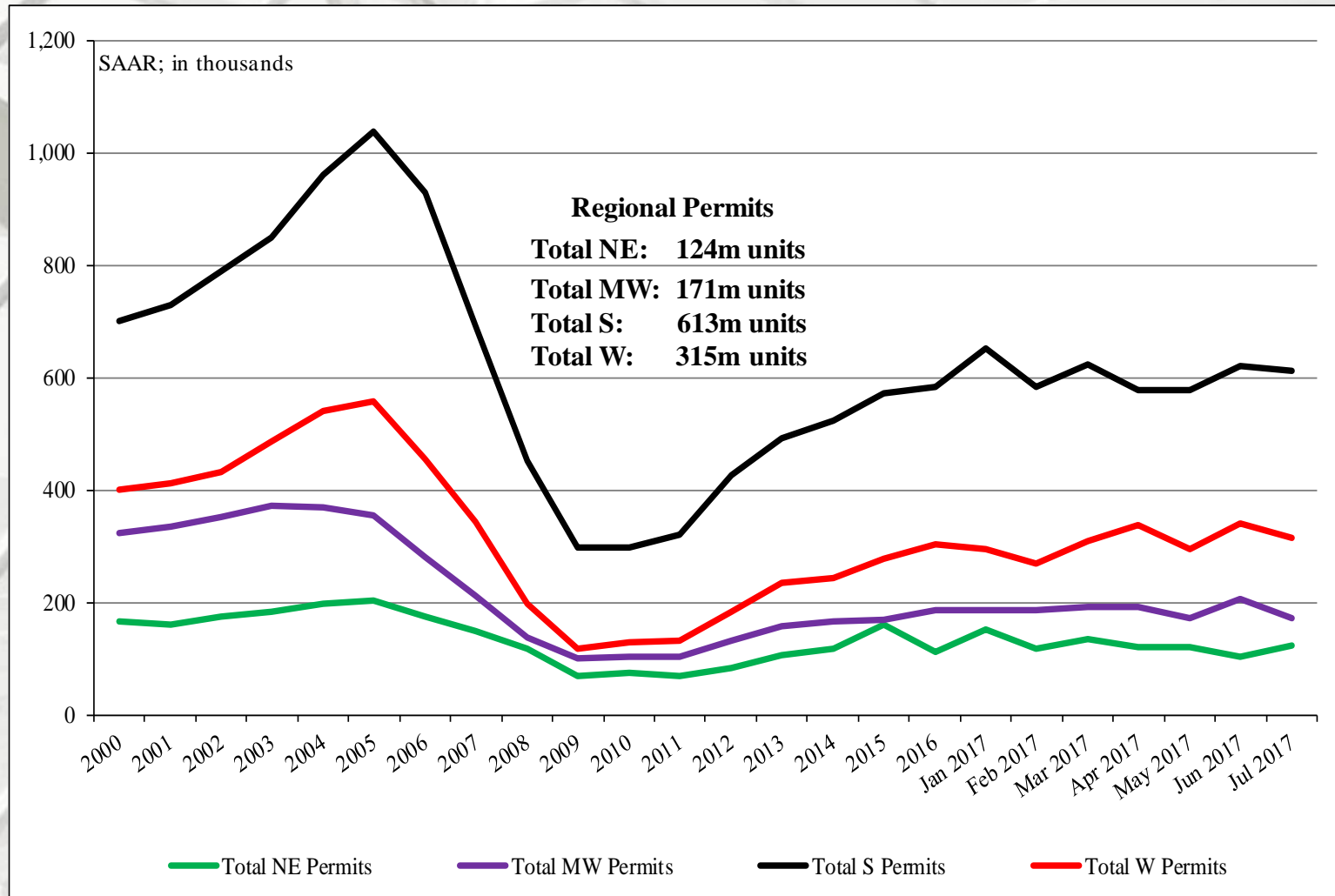
	S Total*	S SF	S MF**
July	613,000	452,000	161,000
June	622,000	445,000	177,000
2016	605,000	395,000	210,000
M/M change	-1.4%	1.6%	-9.0%
Y/Y change	1.3%	14.4%	-23.3%

	W Total*	W SF	W MF**
July	315,000	187,000	128,000
June	342,000	189,000	153,000
2016	276,000	166,000	110,000
M/M change	-7.9%	-1.1%	-16.3%
Y/Y change	14.1%	12.7%	16.4%

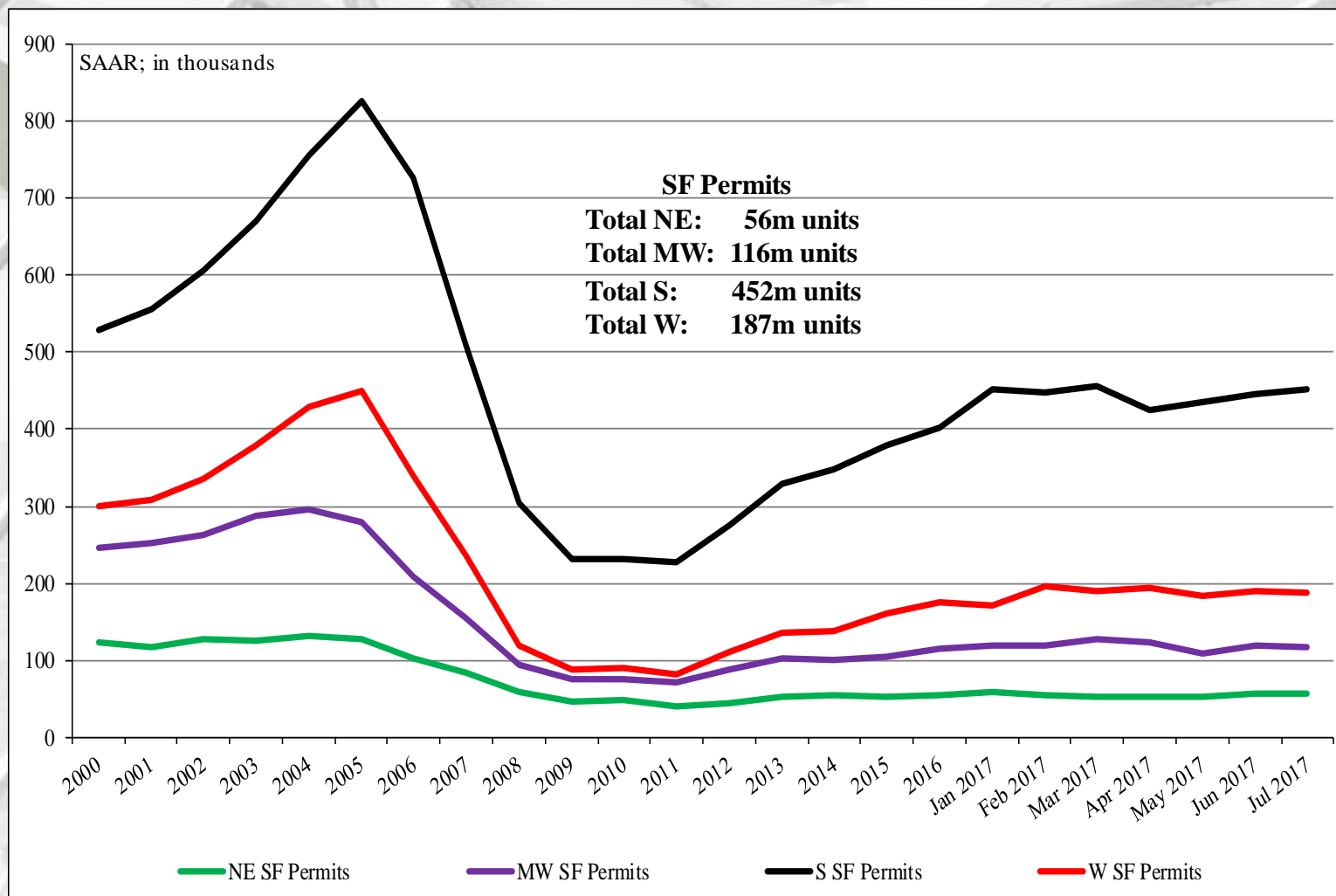
• All data are SAAR

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

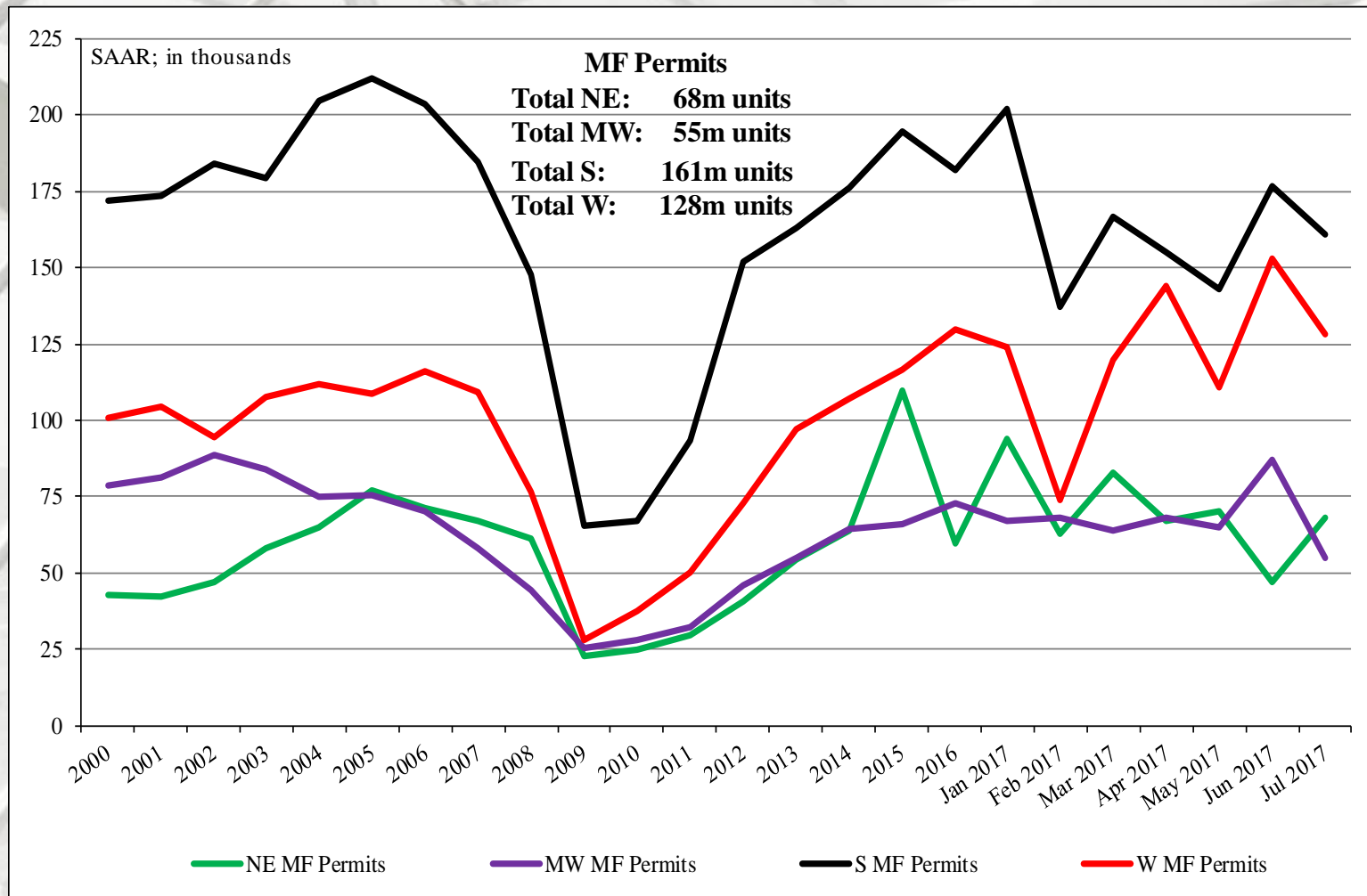
Total Housing Permits by Region



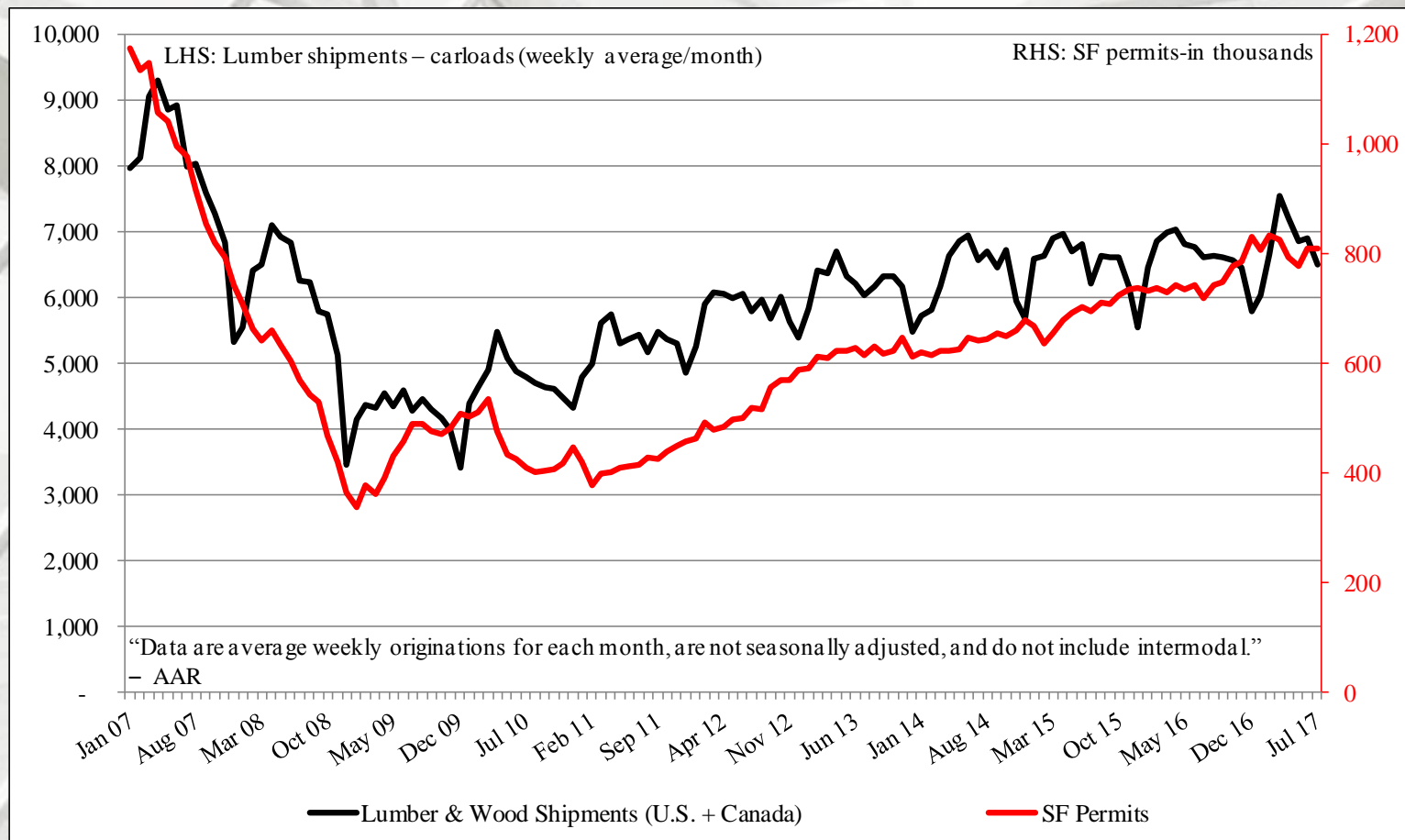
SF Housing Permits by Region



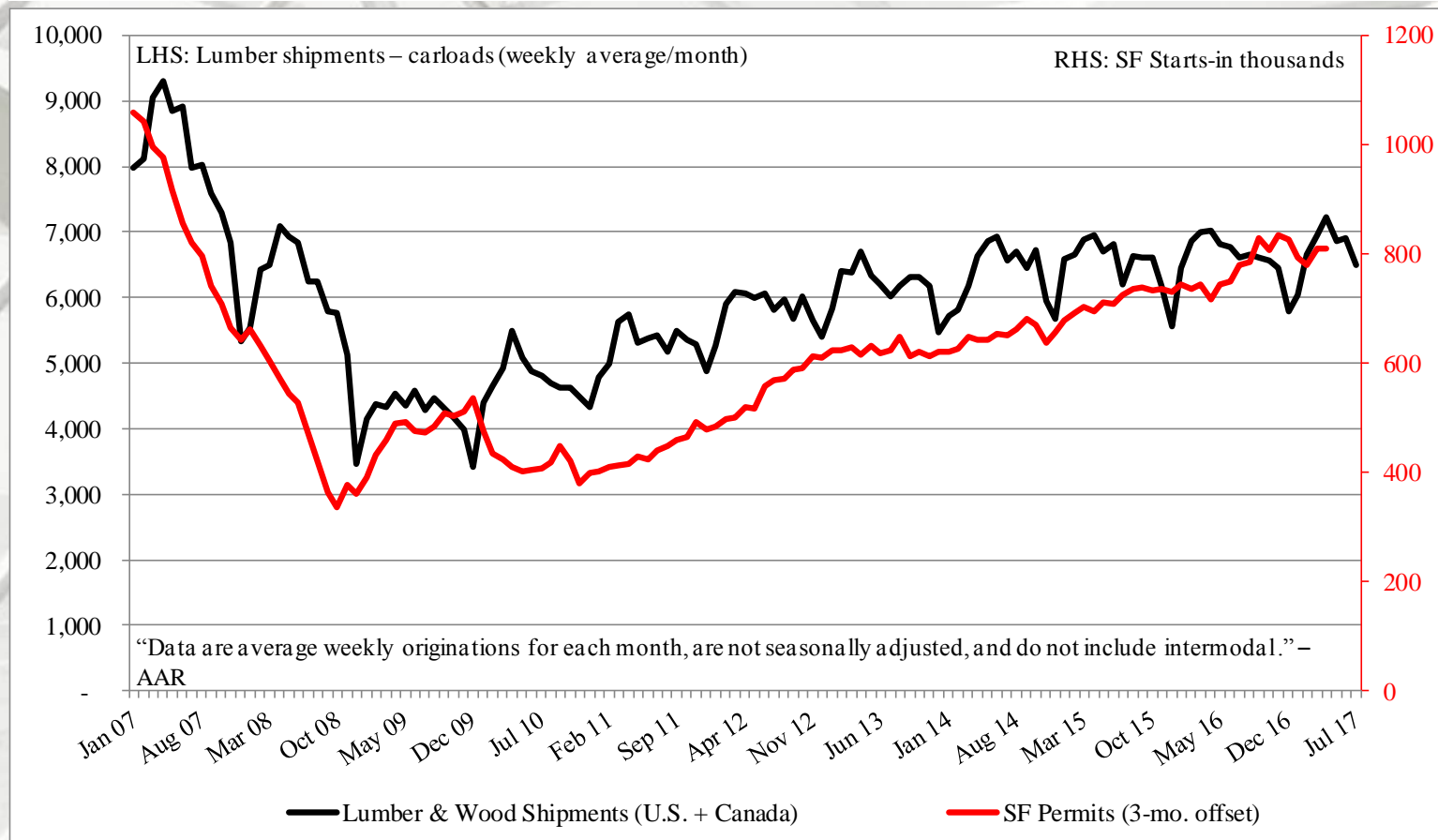
MF Housing Permits by Region



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



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



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

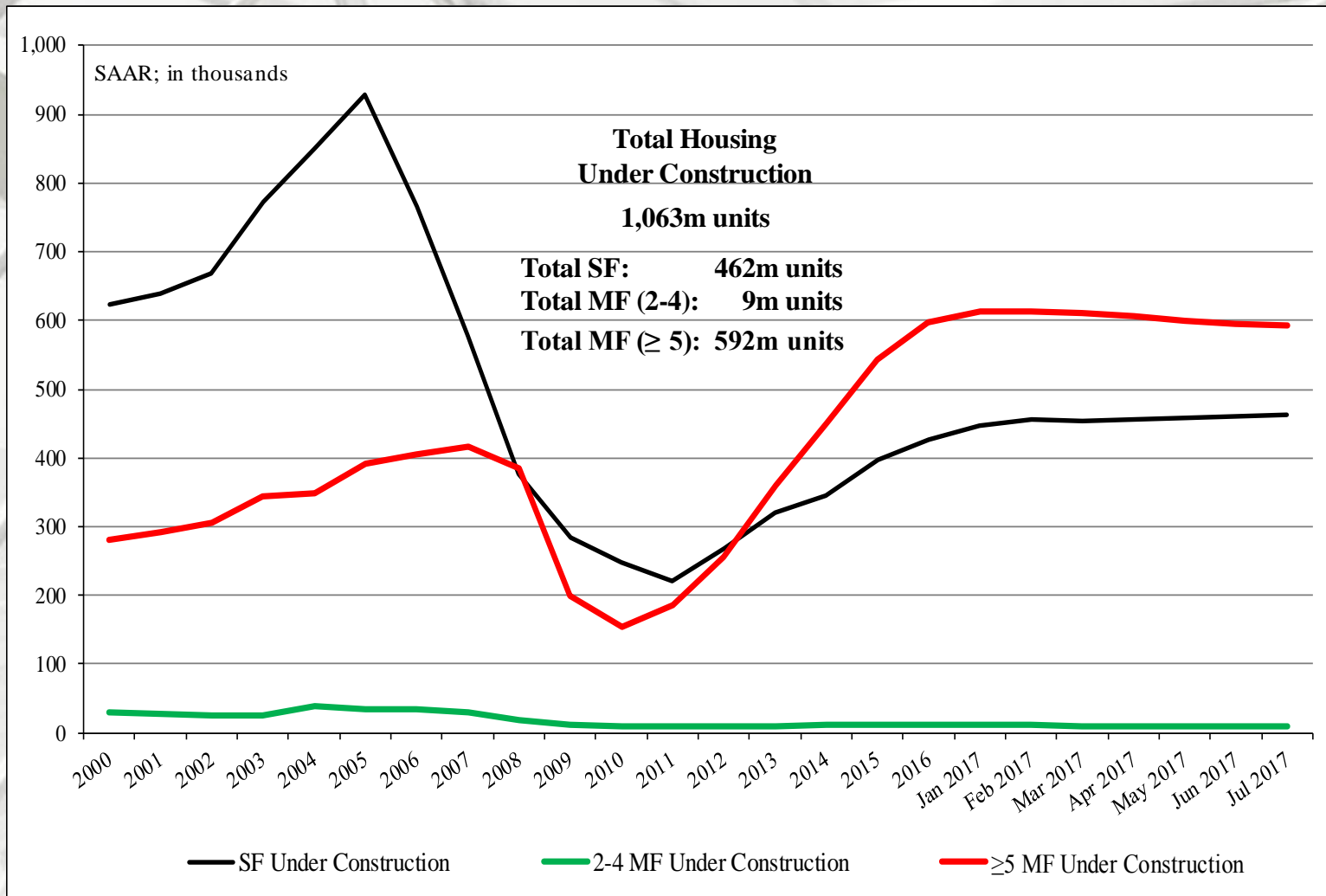
New Housing Under Construction

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
July	1,063,000	462,000	9,000	592,000
June	1,065,000	460,000	9,000	596,000
2016	1,028,000	431,000	11,000	586,000
M/M change	-0.2%	0.4%	0.0%	-0.7%
Y/Y change	3.4%	7.2%	-18.2%	1.0%

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



New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
June	186,000	49,000	137,000
July	184,000	50,000	134,000
2016	192,000	51,000	141,000
M/M change	1.1%	-2.0%	2.2%
Y/Y change	-3.1%	-3.9%	-2.8%
	MW Total	MW SF	MW MF
June	152,000	77,000	75,000
July	152,000	76,000	76,000
2016	135,000	70,000	65,000
M/M change	0.0%	1.3%	-1.3%
Y/Y change	12.6%	10.0%	15.4%

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

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

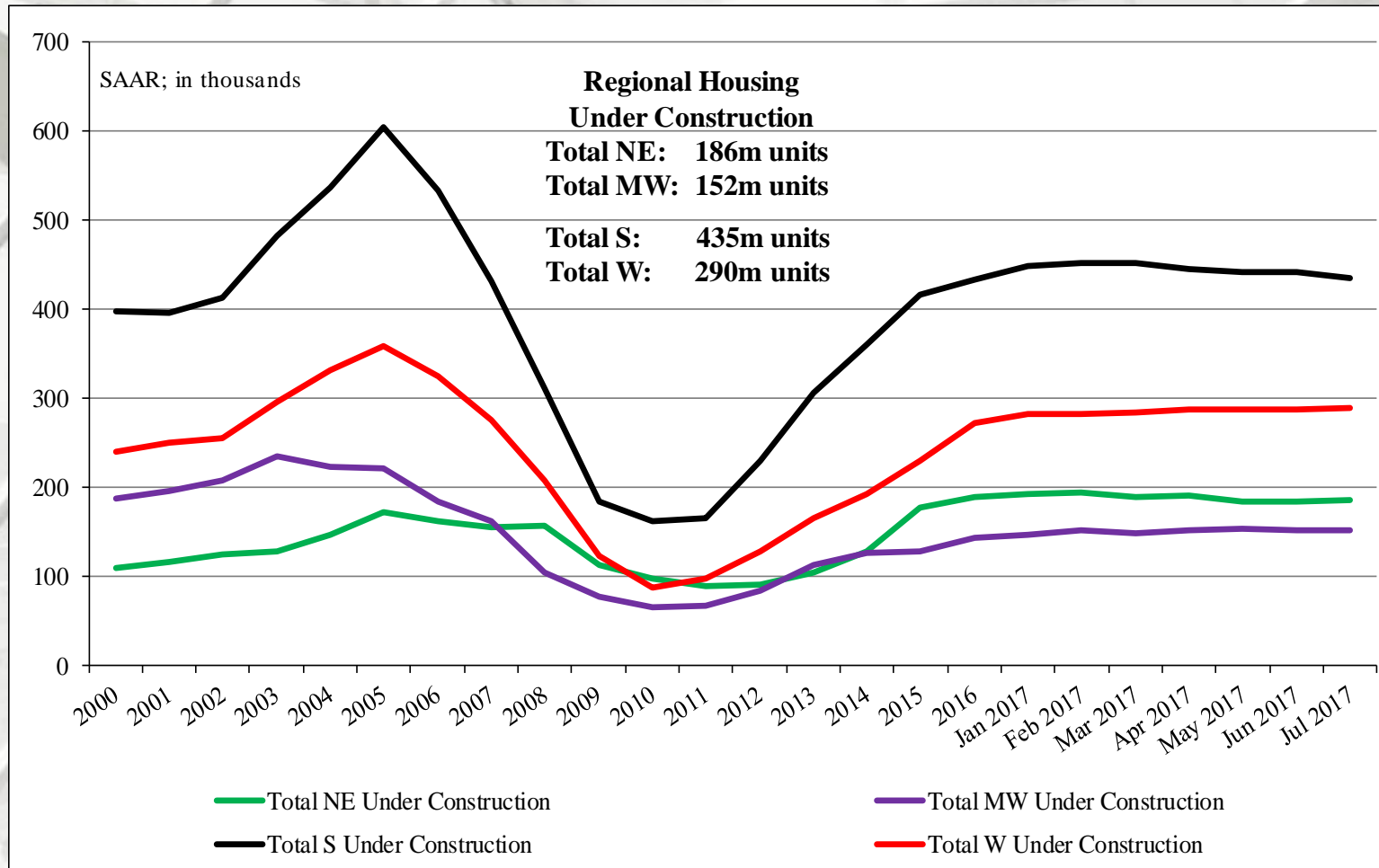
New Housing Under Construction by Region

	S Total	S SF	S MF**
June	435,000	221,000	214,000
July	442,000	221,000	221,000
2016	446,000	212,000	234,000
M/M change	-1.6%	0.0%	-3.2%
Y/Y change	-2.5%	4.2%	-8.5%
	W Total	W SF	W MF
June	290,000	115,000	175,000
July	287,000	113,000	174,000
2016	255,000	98,000	157,000
M/M change	1.0%	1.8%	0.6%
Y/Y change	13.7%	17.3%	11.5%

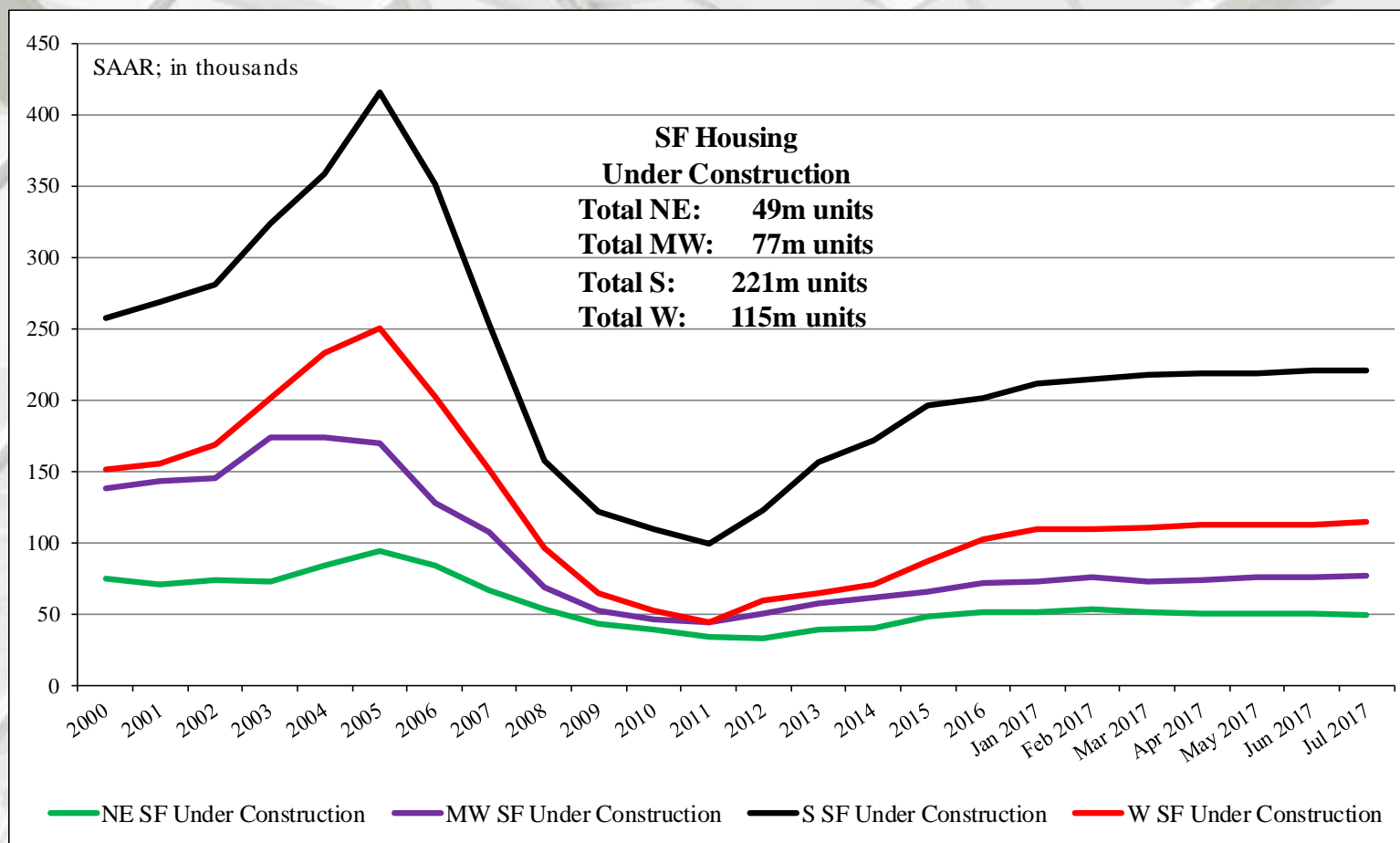
All data are SAAR; S = South and W = West.

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

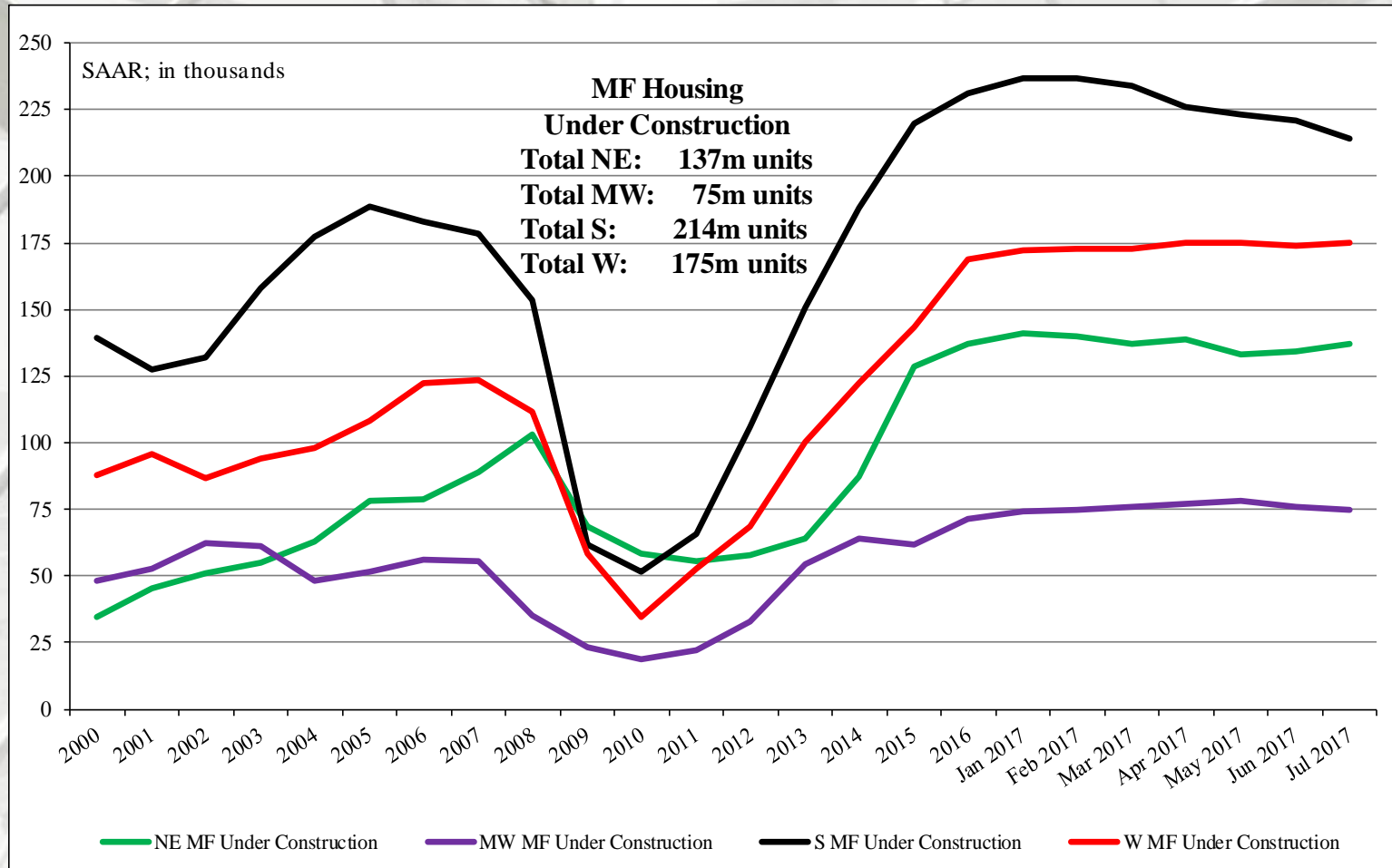
Total Housing Under Construction by Region



SF Housing Under Construction by Region



MF Housing Under Construction by Region



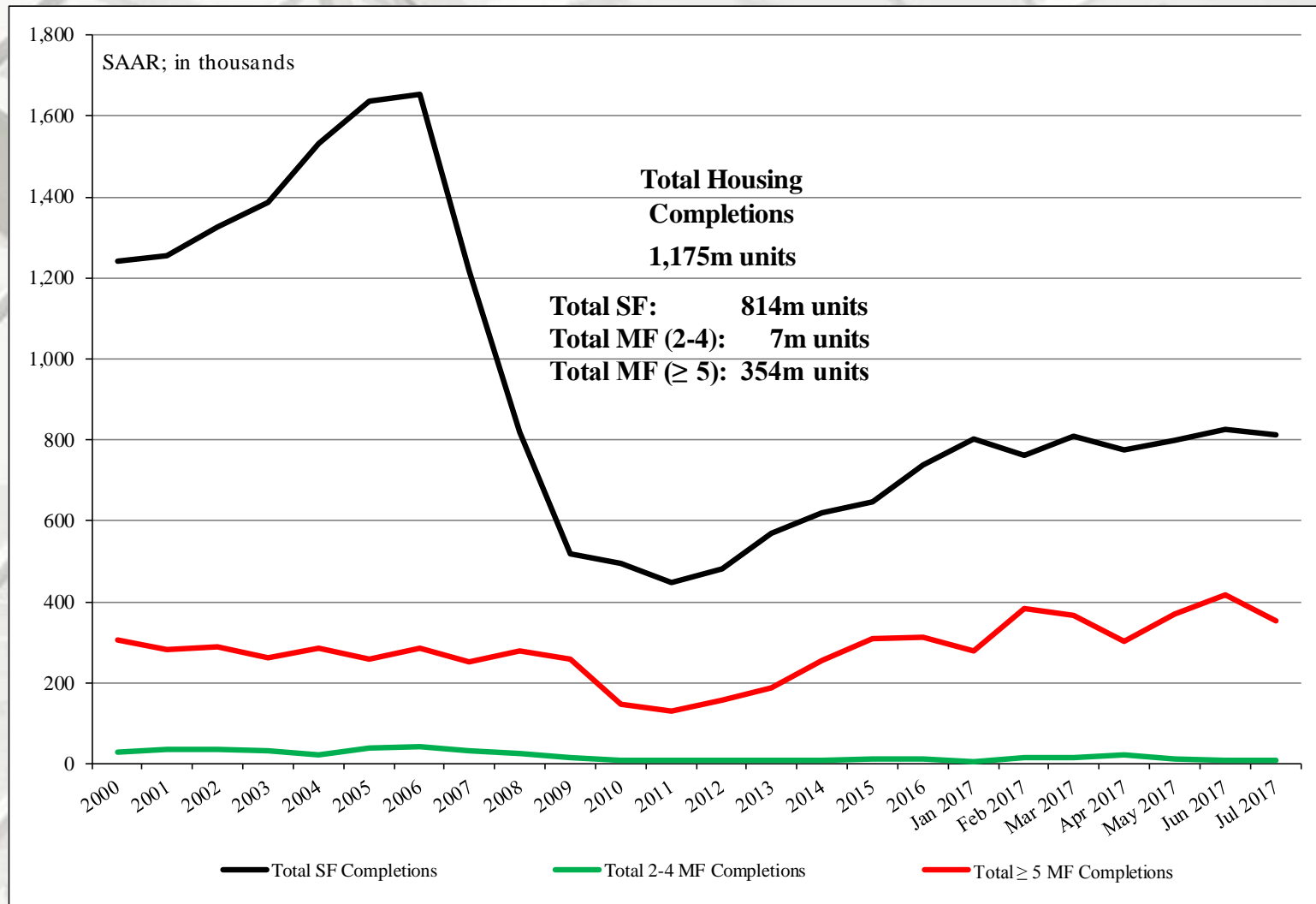
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
July	1,175,000	814,000	7,000	354,000
June	1,252,000	827,000	9,000	416,000
2016	1,086,000	748,000	7,000	331,000
M/M change	-6.2%	-1.6%	-22.2%	-14.9%
Y/Y change	8.2%	8.8%	0.0%	6.9%

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

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

Total Housing Completions



Total Housing Completions by Region

	NE Total	NE SF	NE MF**
July	109,000	78,000	31,000
June	144,000	63,000	81,000
2016	96,000	49,000	47,000
M/M change	-24.3%	23.8%	-61.7%
Y/Y change	13.5%	59.2%	-34.0%
	MW Total	MW SF	MW MF
July	176,000	112,000	64,000
June	215,000	129,000	86,000
2016	174,000	123,000	51,000
M/M change	-18.1%	-13.2%	-25.6%
Y/Y change	1.1%	-8.9%	25.5%

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).

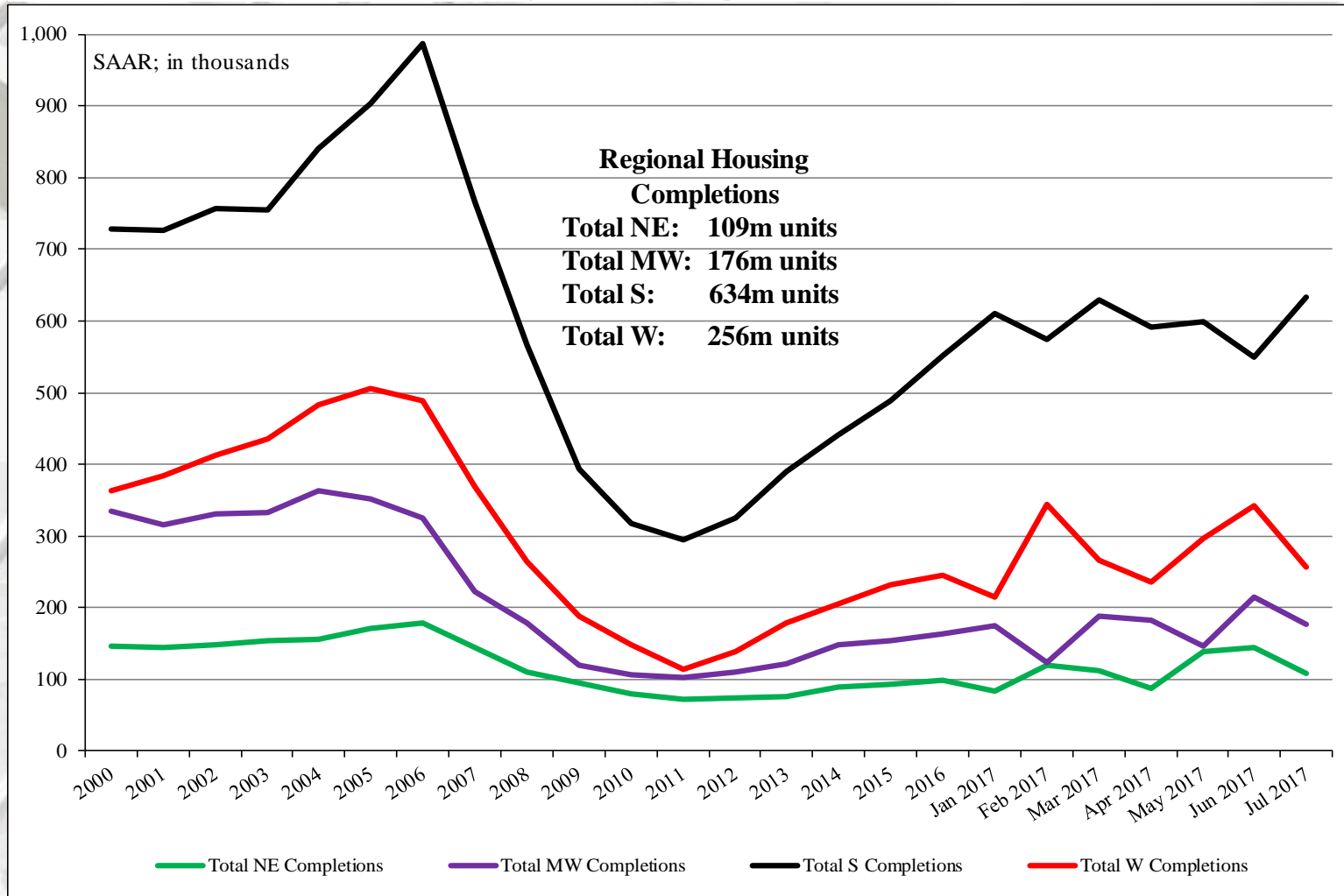
Total Housing Completions by Region

	S Total	S SF	S MF**
July	634,000	461,000	173,000
June	550,000	424,000	126,000
2016	535,000	414,000	121,000
M/M change	15.3%	8.7%	37.3%
Y/Y change	18.5%	11.4%	43.0%
	W Total	W SF	W MF
July	256,000	163,000	93,000
June	343,000	211,000	132,000
2016	281,000	162,000	119,000
M/M change	-25.4%	-22.7%	-29.5%
Y/Y change	-8.9%	0.6%	-21.8%

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).

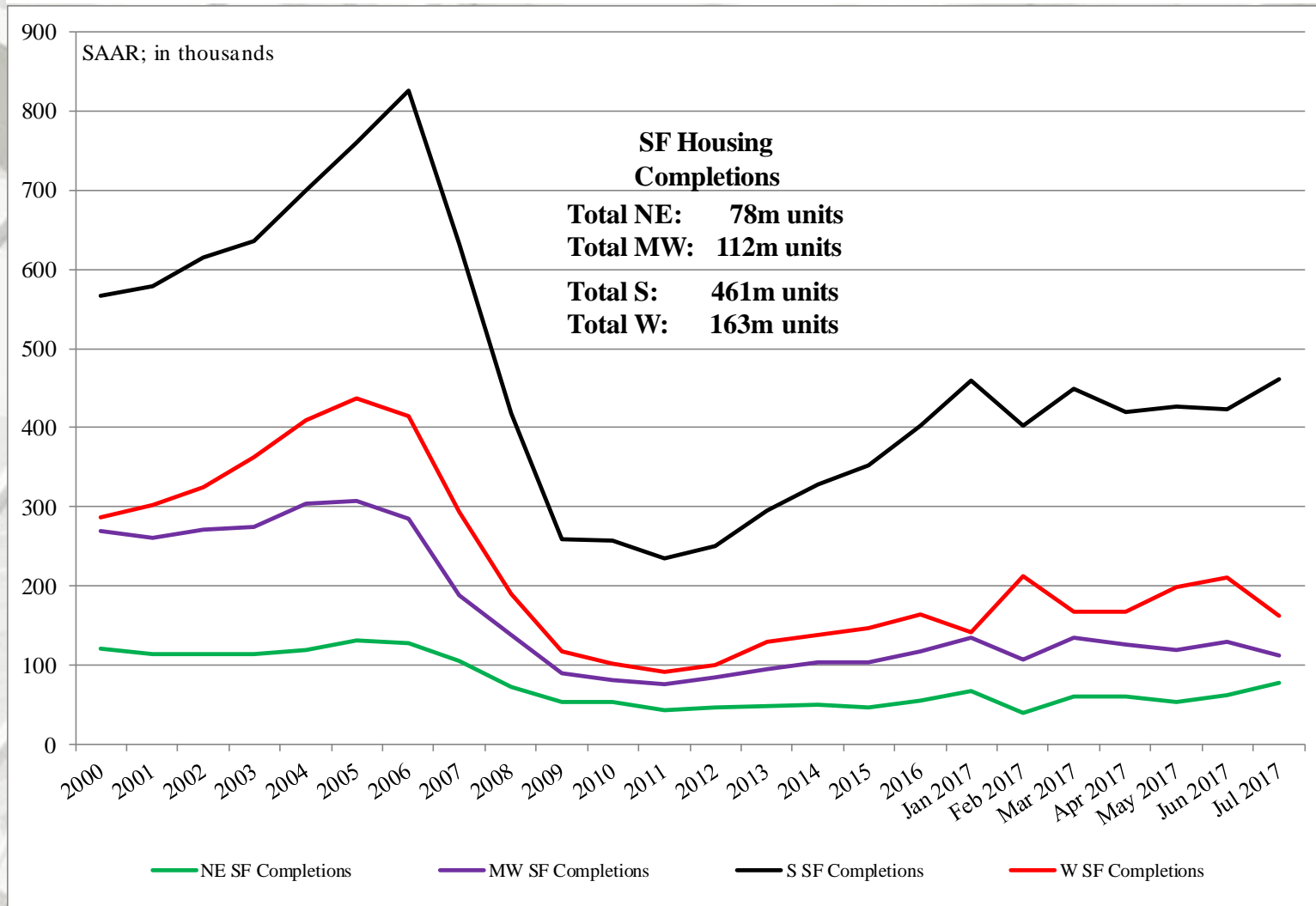
New Housing Completions by Region



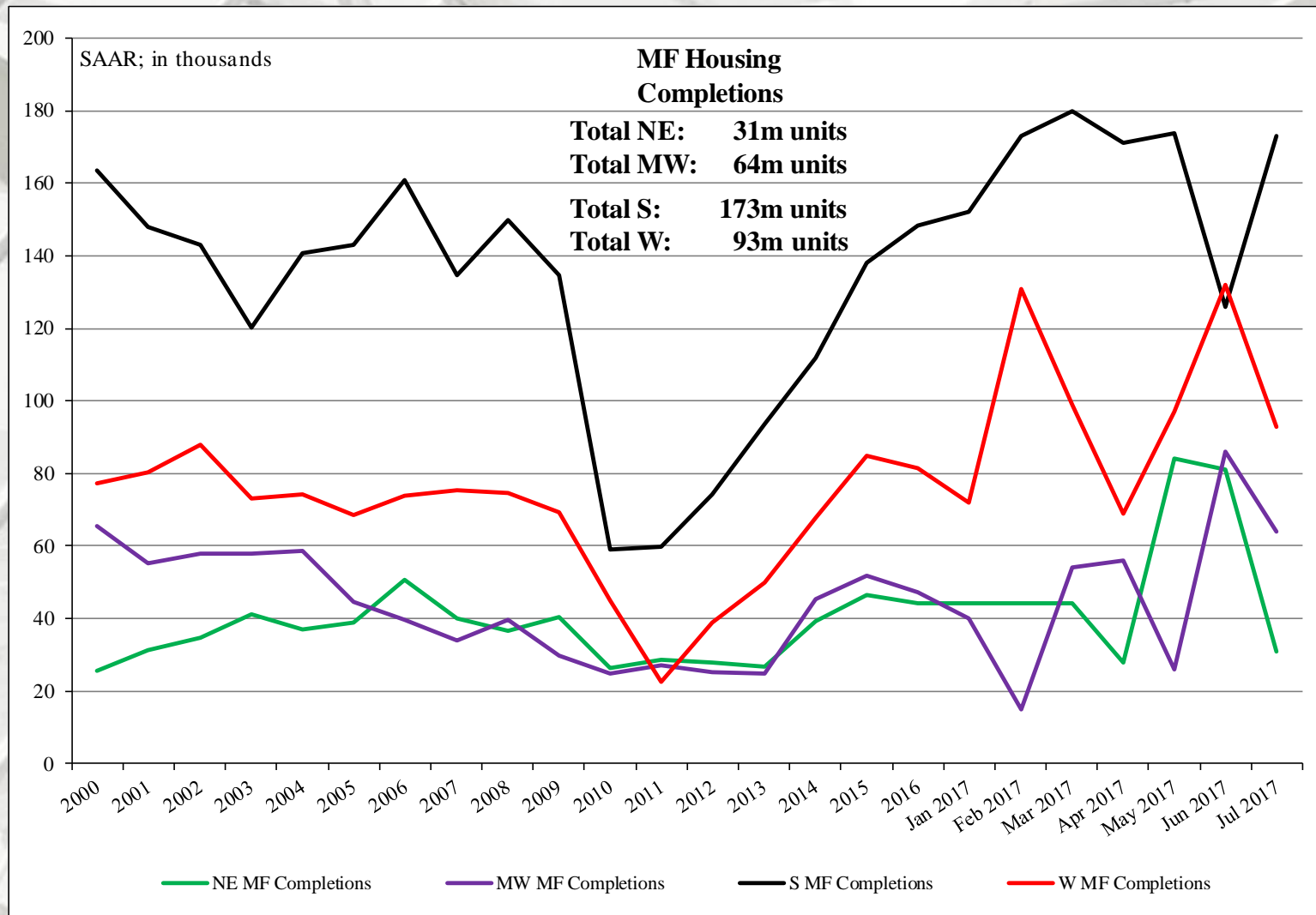
All data are SAAR; NE = Northeast and MW = Midwest.

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SF Housing Completions by Region



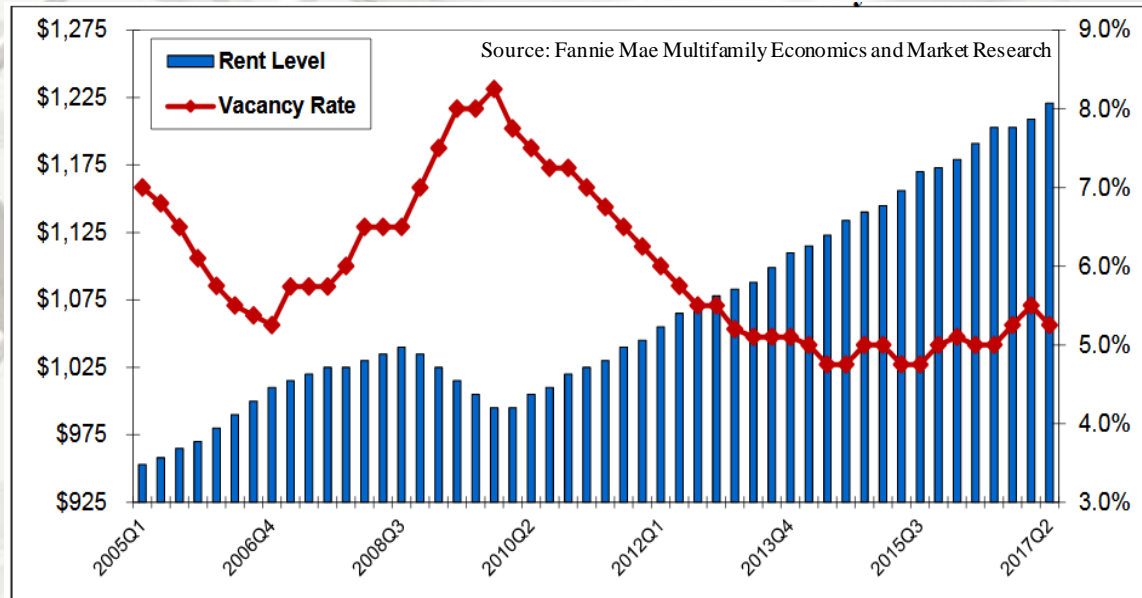
MF Housing Completions by Region



Multifamily Market Commentary

– August 2017

Estimated National Rent Level and Vacancy Rate



Second Half of 2017 Multifamily Outlook: Moderating but Positive Demand

“During the first half of 2017, the multifamily sector started out slow but gained some momentum in the second quarter, bringing the estimated national vacancy level back down to year-end 2016 levels and increasing asking rents. The estimated national vacancy level fell to 5.25 percent as of the second quarter of 2017, down from 5.5 percent in the first quarter and back to where it was as of the fourth quarter of 2016, as illustrated in the chart below.” – Kim Betancourt, Director of Economics, Multifamily Economics and Market Research, Fannie Mae

Multifamily Market Commentary

– August 2017

Second Half of 2017 Multifamily Outlook

“Estimated effective rents appear to have increased by 1.5 percent during the first six months of the year after stagnating during the fourth quarter of 2016. Still, more new apartment units are coming online in a number of submarkets across the country, which is impacting national demand levels and resulting in positive yet moderating fundamentals.

Rent Growth Outpacing Wage Growth

National estimated multifamily rents appear to have increased during the second quarter of 2017 by 1.0 percent to an estimated asking rent level of \$1,221, as shown in the chart above. This is on top of the more modest 0.5 percent increase during the first quarter, bringing the national asking rent increase in the first half of 2017 to an estimated 1.5 percent, the same as in the first half of 2016.

The estimated annualized pace of a 3.0 percent multifamily asking rent increase is slightly higher than originally anticipated but could slow in the fourth quarter of 2017. If rent growth continues at this pace, national rent growth would end the year above both the rate of inflation and wage growth, which as of June 2017 were at 1.6 percent and 2.5 percent, respectively.” – Kim Betancourt, Director of Economics, Multifamily Economics and Market Research, Fannie Mae

Multifamily Market Commentary

– August 2017

Second Half of 2017 Multifamily Outlook

Net Absorption Positive but Down

“Net absorption estimates – the net change in occupied rental units – were positive for the first half of 2017 but down year-over-year. Reis, Inc. estimates nearly 65,000 units of net absorption for this time period, down significantly from the first half of 2016’s estimated 108,000 units.

In fact, multifamily rental demand has been slowing since the second half of 2016, and there are still about 422,000 new units expected to come online this year, according to Dodge Data & Analytics construction pipeline data. This will likely exceed the expected level of demand in many metros.

Vacancy Rates Still Declining in Some Metros but Rising in Others

While multifamily demand improved during the latter part of the first half of 2017, it was still down year-over-year in many metros. According to preliminary data from CBRE Econometric Advisors, a data and research vendor, 46 out of 66 metros saw their year-over-year vacancy levels rise, but another 16 experienced a decline. CBRE Econometric Advisors estimated that only four metros had no change in their vacancy levels: New York, San Francisco, Omaha, and Oxnard, California.” – Kim Betancourt, Director of Economics, Multifamily Economics and Market Research, Fannie Mae

Multifamily Market Commentary

– August 2017

Second Half of 2017 Multifamily Outlook

Vacancy Rates Still Declining in Some Metros but Rising in Others

“Twenty-eight metros had vacancy rates below CBRE Econometric Advisors’ national average of 4.6 percent, including Boston, Charlotte, Cleveland, Columbus, Los Angeles, Louisville, New York, Oakland, Omaha, Philadelphia, Salt Lake City, Seattle, and Washington, DC. Metros CBRE Econometric Advisors estimated had the biggest declines in year-over-year second quarter vacancy rates included Albuquerque, Colorado Springs, El Paso, and Honolulu.

The metros that CBRE Econometric Advisors believes had the most significant increases in vacancy this past quarter include some of the nation’s energy metros, including Houston, Oklahoma City, and Tulsa, as well as Nashville and Fort Lauderdale, all of which had year-over-year vacancy increases of 100 basis points or higher.

Multifamily Demand Should Remain Positive in the Second Half of 2017

The national multifamily vacancy rate is expected to stay in the 5.25 to 5.75 percent range for the remainder of 2017, primarily due to the onslaught of new supply expected to become available over the next 12 to 24 months. Since most of this new supply is concentrated in a limited number of submarkets contained within 12 metros, supply could outpace demand, enticing property owners to increase concessions to keep the national vacancy rate from spiking. Keep in mind that despite this mild fluctuation in anticipated vacancy levels, the national vacancy rate is still expected to be below its 12-year average rate of about 6.0 percent. The ongoing question is whether there will be enough demand – and concessions – to keep rent growth positive in many of the newer Class A buildings that are expected to come online later this year.” – Kim Betancourt, Director of Economics, Multifamily Economics and Market Research, Fannie Mae

Multifamily Developing Trends

Apartment Construction

“Apartment construction appears likely to peak this year as more than 370,000 units are slated for delivery, up from 290,000 apartments in 2016. The majority of new supply is concentrated in luxury, Class A properties, and some markets could experience softening vacancy as these units come online and are stabilized. The construction pipeline is beginning to thin in many metros, and strong housing demand should return balance.

With apartment absorption in the second quarter at a 30-year high and vacancy hovering below 4.0 percent, apartment rent growth strengthened. The release of pent-up housing demand to fill the thousands of new units coming online is supporting a healthy pace of rent gains, with the average rising 4.3 percent annually in June.

Lifestyle changes and low savings rates, as many millennials are burdened with high student-loan debt, will also contribute to the largest share of those under age 35 remaining renters. These factors will keep demand for apartments healthy and steadily push up effective rents.”
– Marcus & Millichap, The Research Brief Blog

New Single-Family House Sales

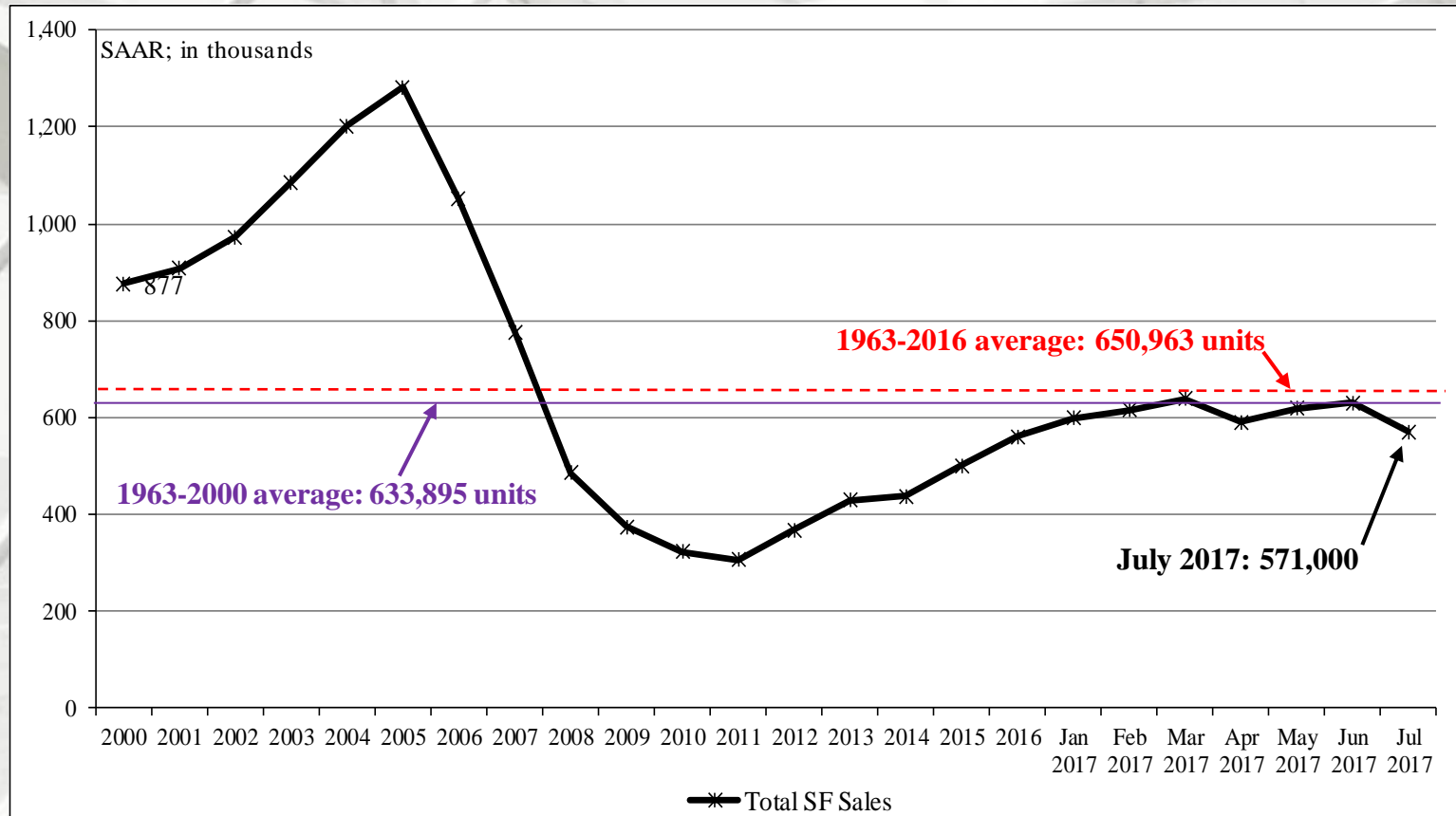
	New SF Sales*	Median Price	Mean Price	Month's Supply
July	571,000	\$313,700	\$371,200	5.8
June	630,000	\$311,600	\$370,000	5.2
2016	627,000	\$295,000	\$355,000	4.5
M/M change	-9.4%	0.7%	0.3%	11.5%
Y/Y change	-8.9%	6.3%	4.6%	28.9%

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

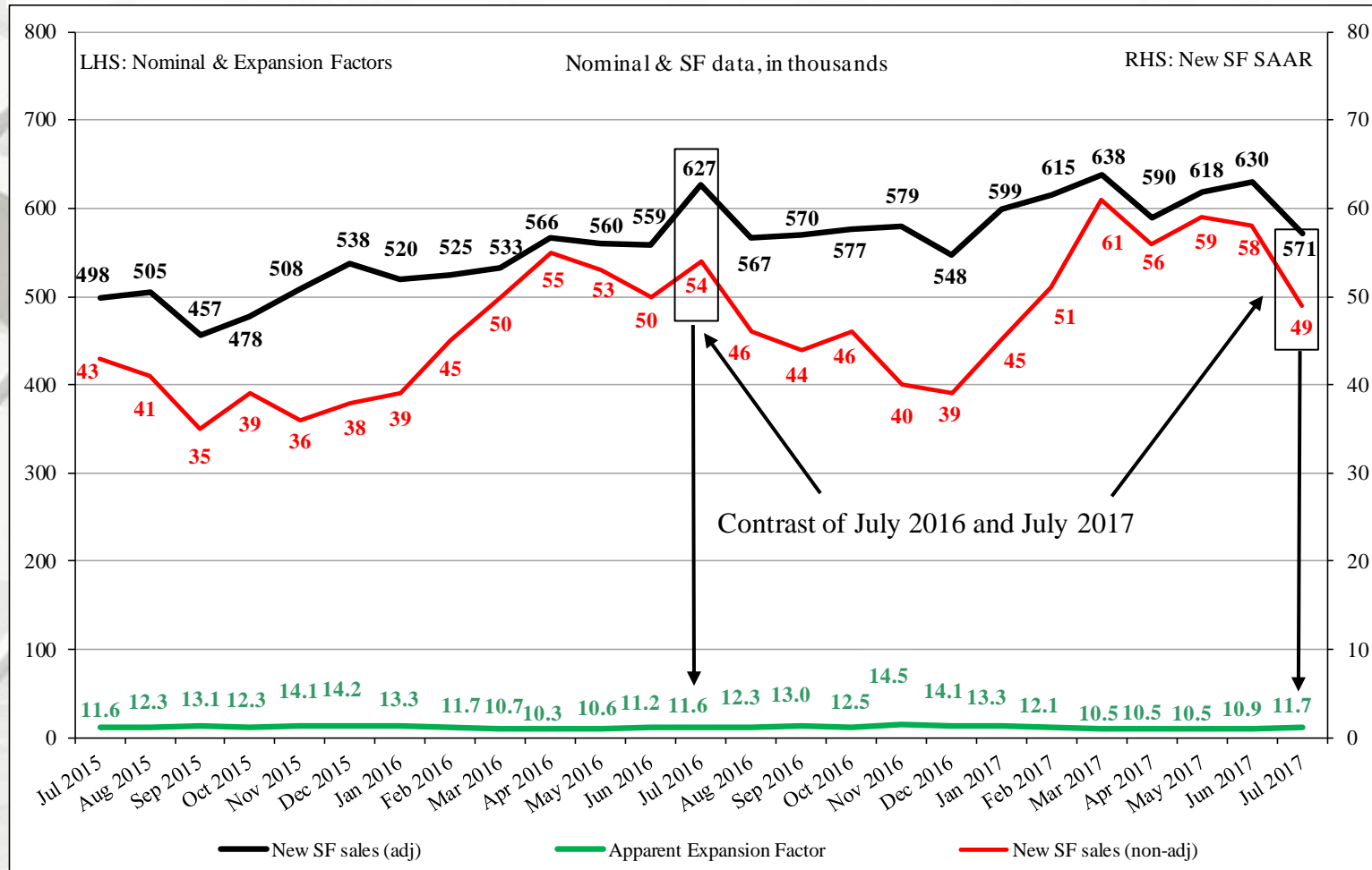
New SF sales were decidedly less than the consensus forecast (610 m)³. The past three month's new SF sales data were revised:

April initial: 577 m revised to 590 m;
 May initial: 605 m revised to 618 m;
 June initial: 610 m revised to 630 m.

New SF House Sales



Nominal vs. SAAR New SF House Sales

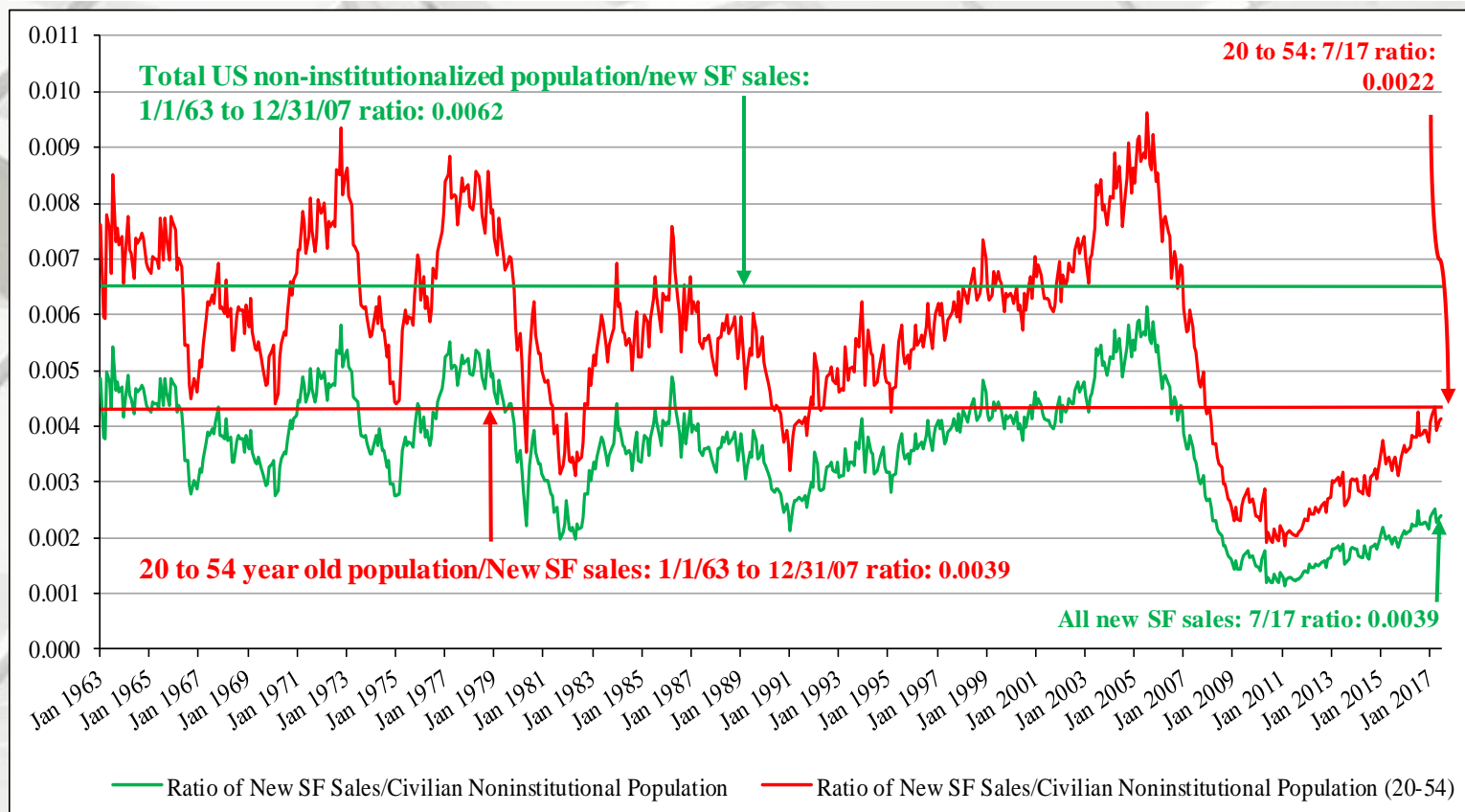


Nominal and Adjusted New SF Monthly Sales

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 July 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in July 2017 it was 0.0022 – a decline from June (0.0025). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in July 2017 it was 0.0039 – also a decrease from June (0.0043). 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
July	32,000	69,000	326,000	144,000
June	42,000	65,000	340,000	183,000
2016	37,000	79,000	369,000	142,000
M/M change	-23.8%	6.2%	-4.1%	-21.3%
Y/Y change	-13.5%	-12.7%	-11.7%	1.4%

	≤ \$150m	\$150 - \$199.9m	\$200 - 299.9m	\$300 - \$399.9m	\$400 - \$499.9m	\$500 - \$749.9m	≥ \$750m
July ^{1,2}	1,000	7,000	15,000	11,000	7,000	6,000	3,000
June	2,000	5,000	21,000	13,000	7,000	8,000	2,000
2016	2,000	8,000	17,000	13,000	7,000	4,000	3,000
M/M change	-50.0%	40.0%	-28.6%	-15.4%	0.0%	-25.0%	50.0%
Y/Y change	-50.0%	-12.5%	-11.8%	-15.4%	0.0%	50.0%	0.0%

¹ All data are SAAR

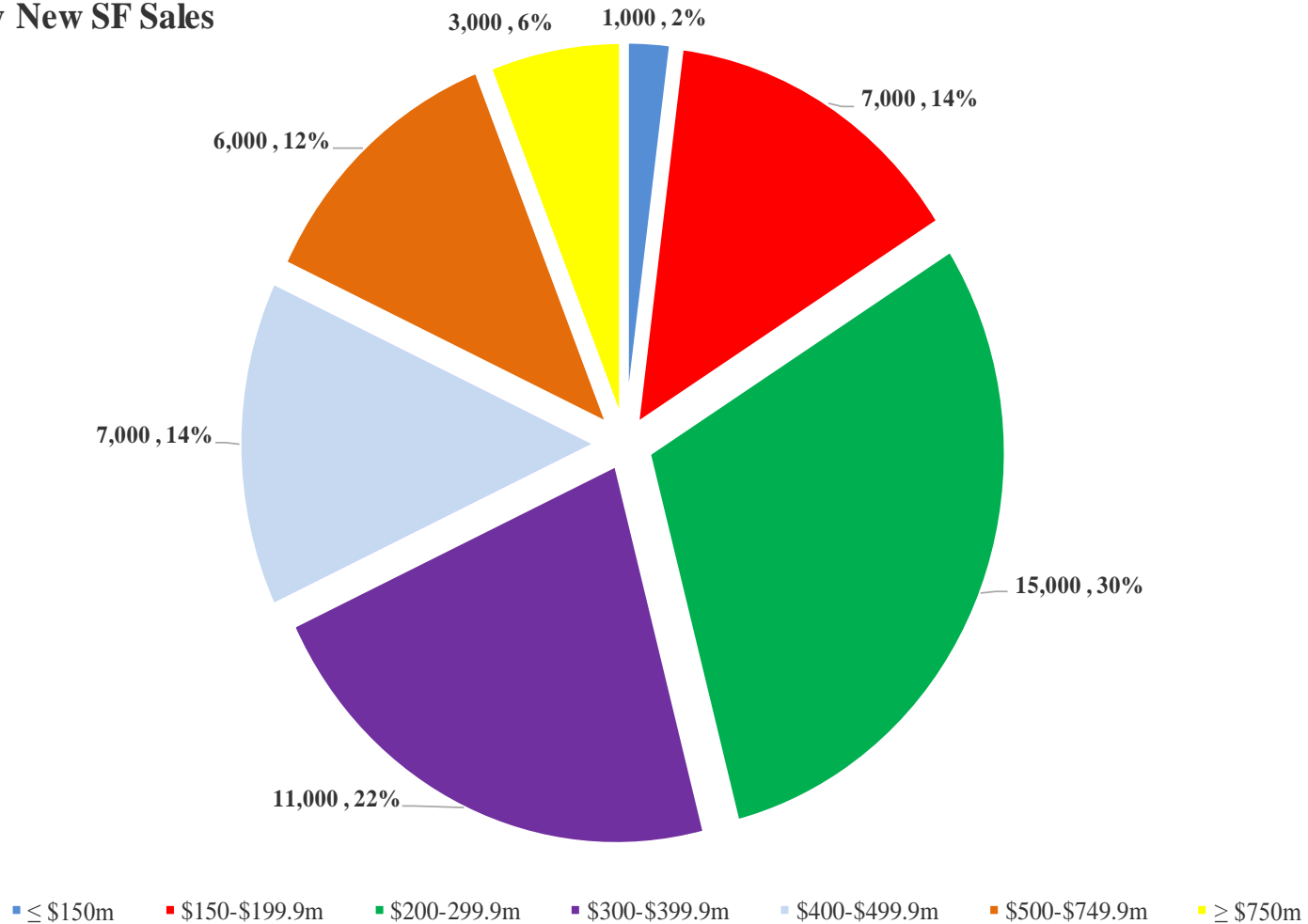
² Houses for which sales price were not reported have been distributed proportionally to those for which sales price was reported;

³ Detail may not add to total because of rounding.

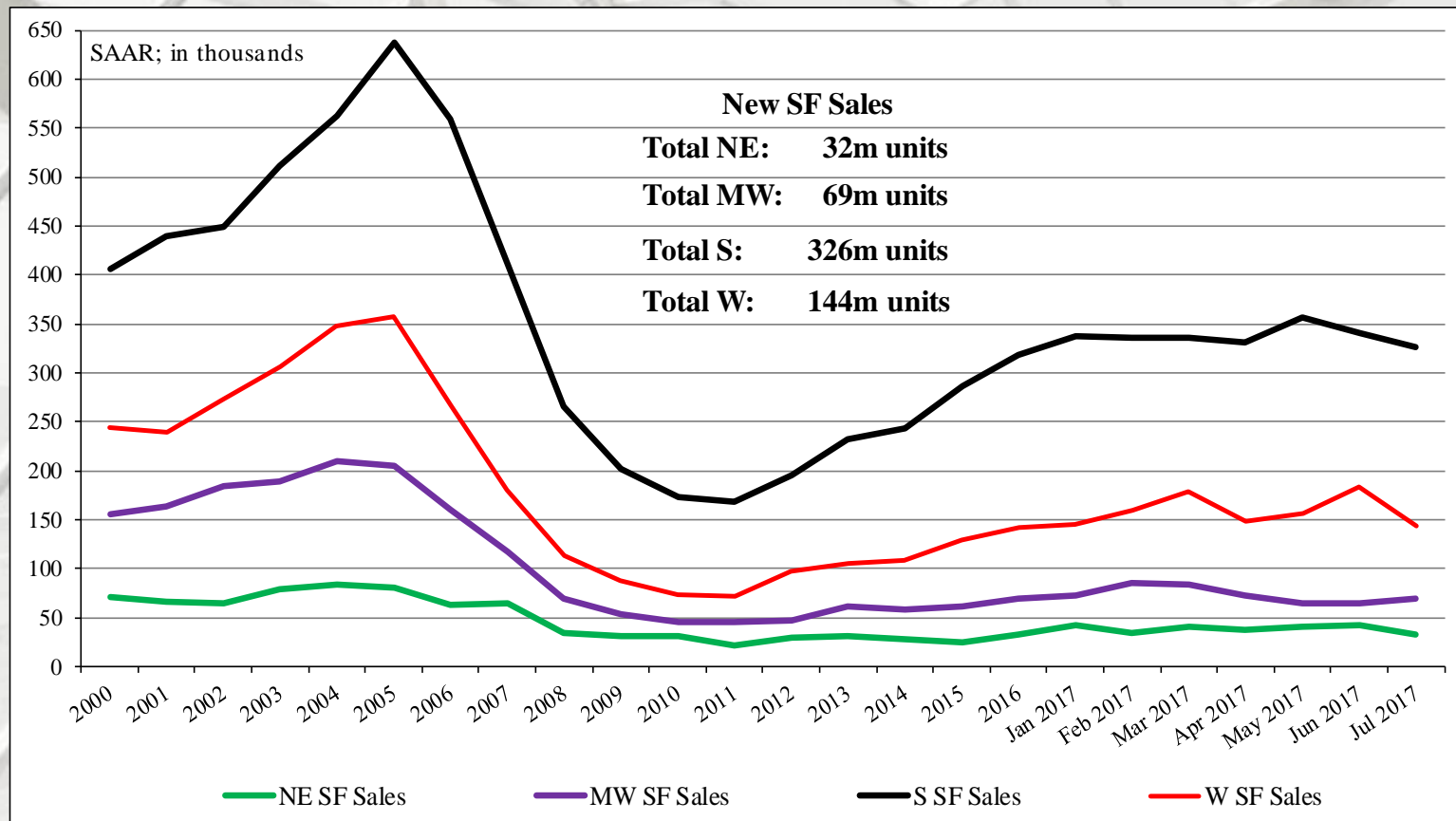
⁴ Housing prices are adjusted at irregular intervals.

New SF House Sales

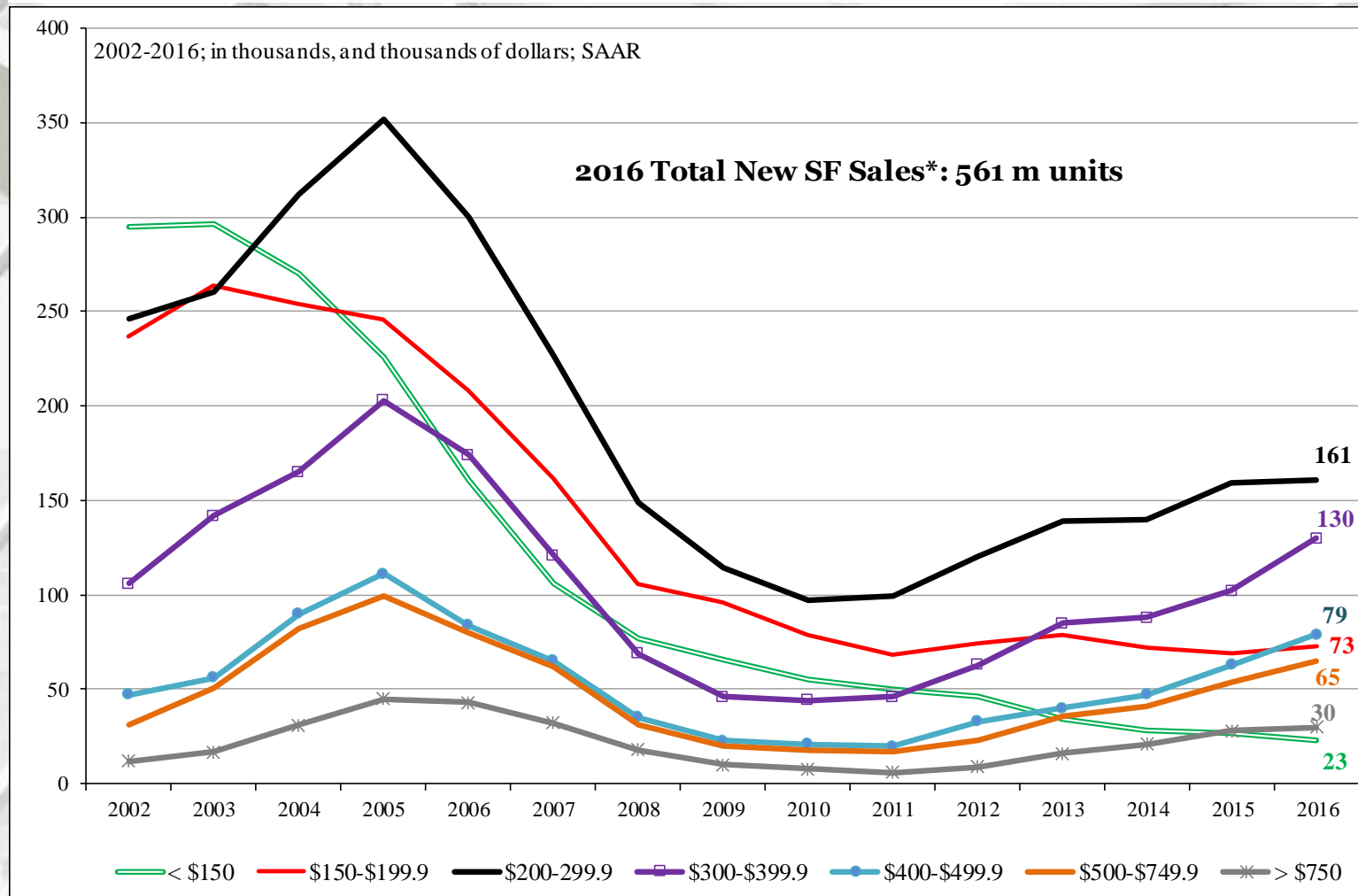
July New SF Sales



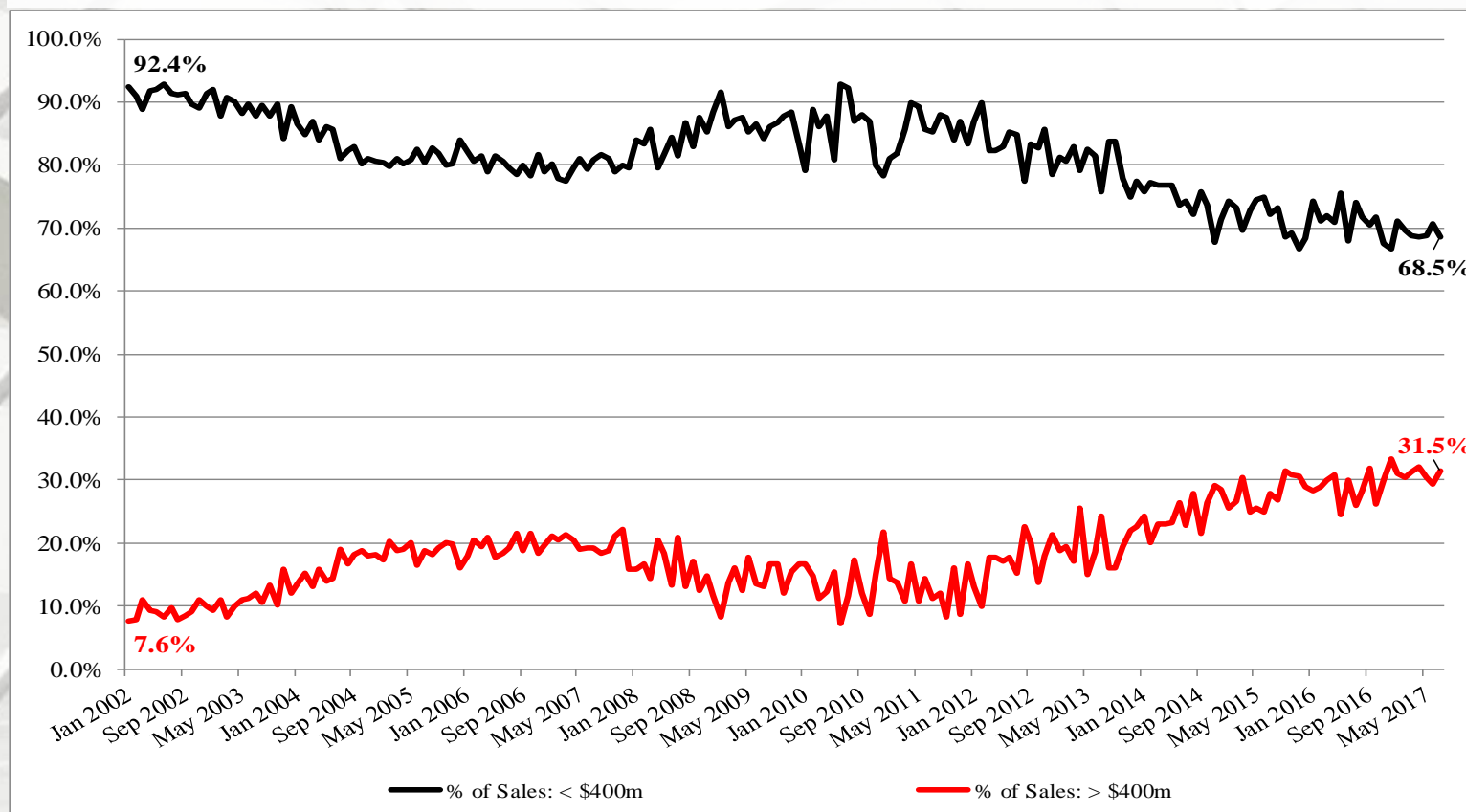
New SF House Sales by Region



New SF House Sales by Price Category



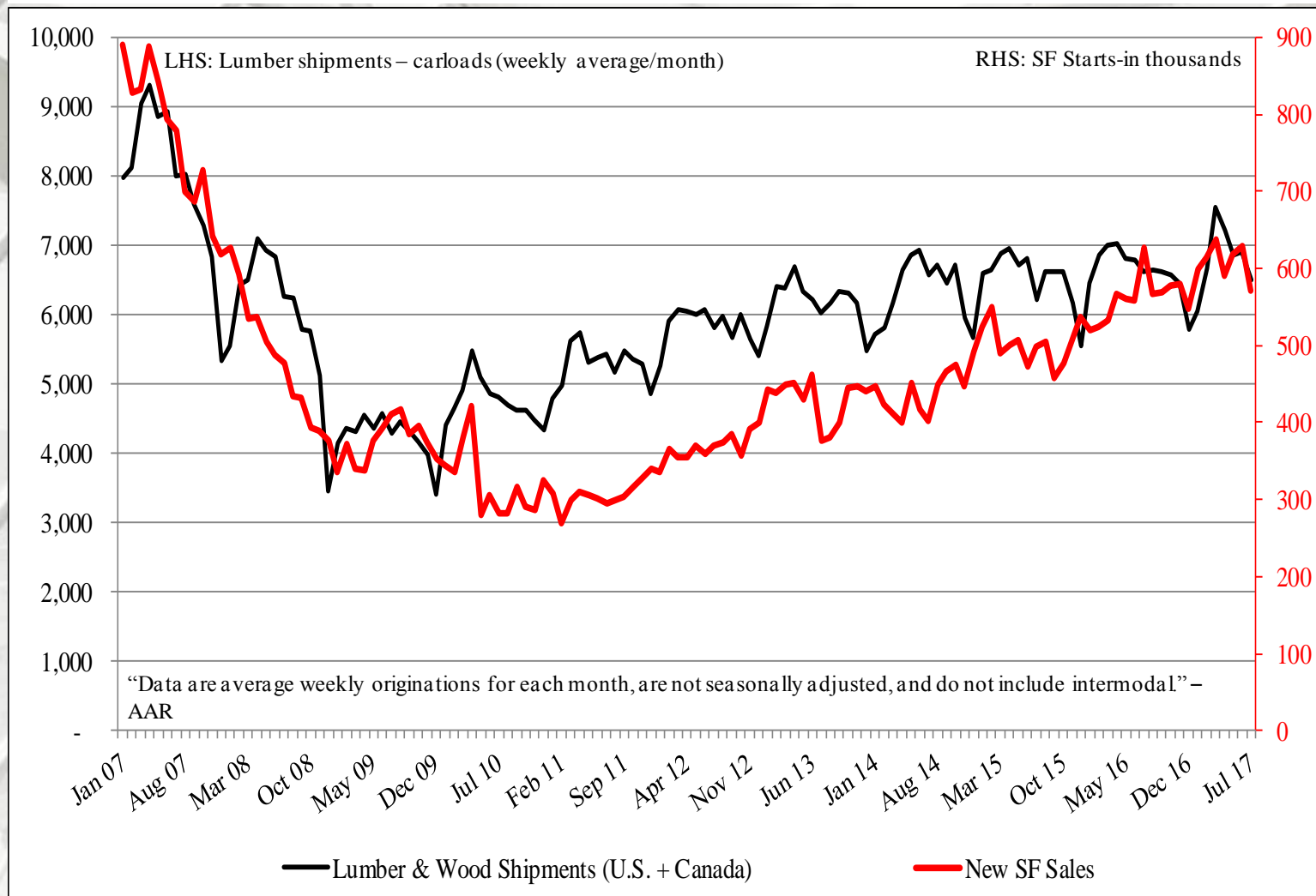
New SF House Sales



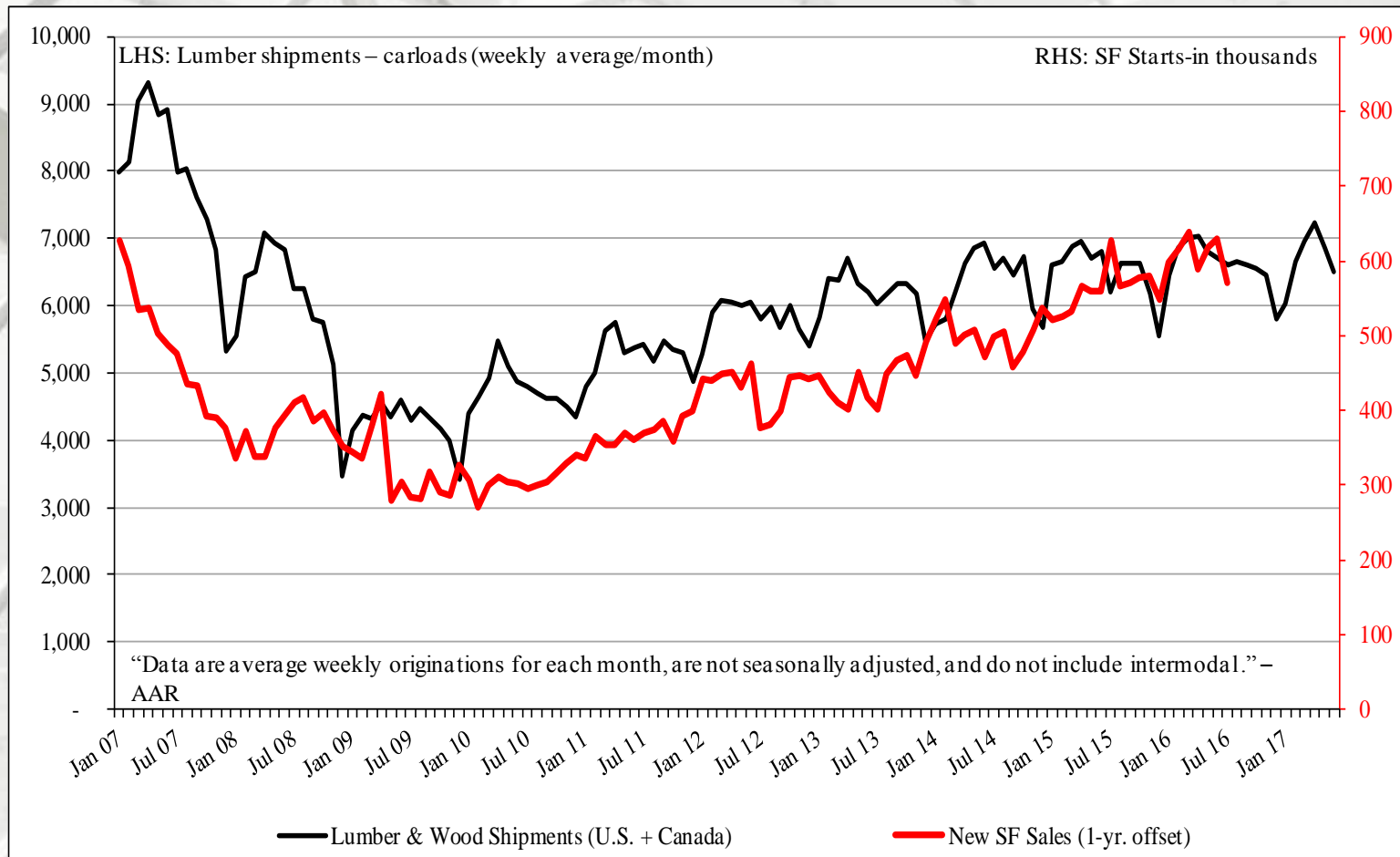
New SF Sales: 2002 – July 2017

The sales share of \$400 thousand plus SF houses is presented above^{1,2}. Since the beginning of 2012, the upper priced houses have and are garnering a greater percentage of sales. The wider the spread, the more high-end luxury homes were 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

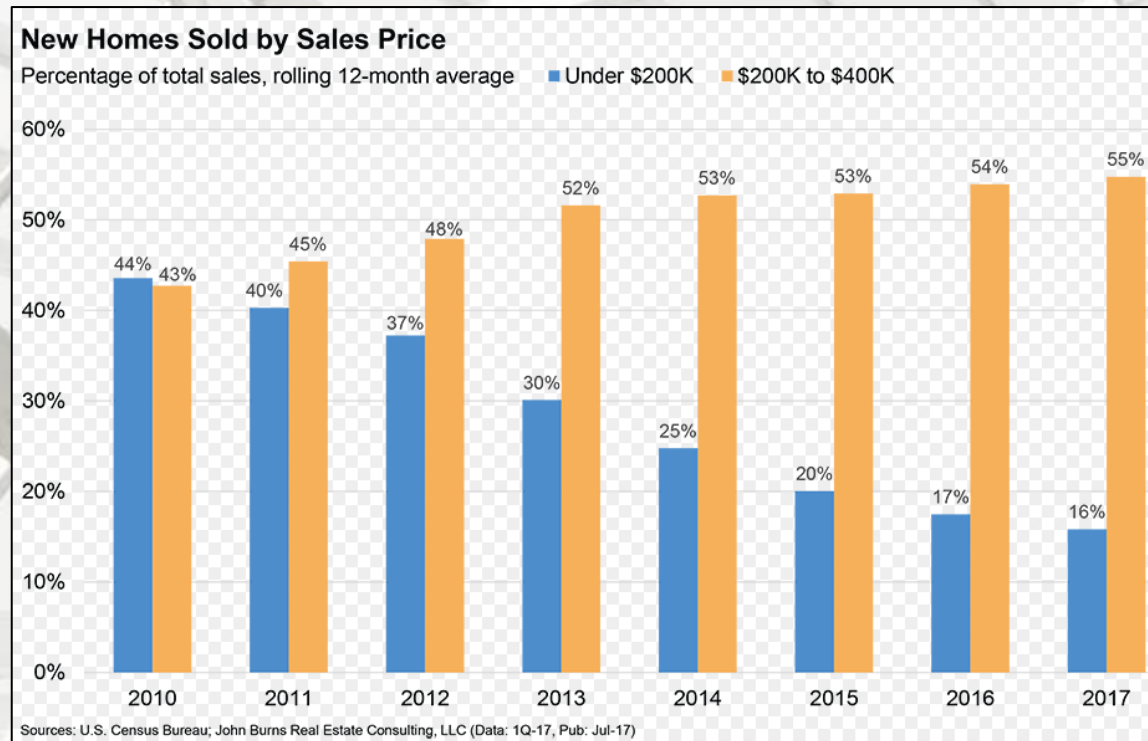


Railroad Lumber & Wood Shipments vs. U.S. New SF House Sales: 1-year offset



In this graph, initially January 2007 lumber shipments are contrasted with January 2008 new SF sales through July 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.

New SF House Sales

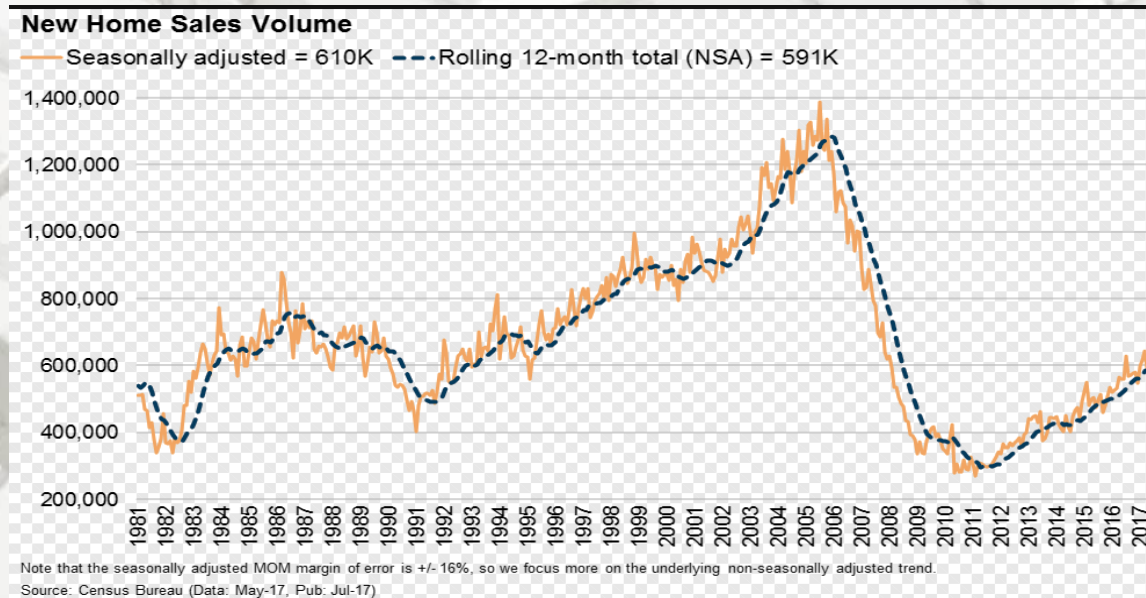


New Home Prices Are Holding Back Home Sales

“Rising new home prices across the nation have eroded new home sales under \$200K and contributed to lackluster new home sales volumes.

As shown above, new homes priced under \$200K comprised nearly half of the market (44%) in 2010, compared to only 16% of the market today. During the same period, the share of new homes priced from \$200K to \$400K has grown from 43% to 55%, and the share of new homes priced above \$400K has risen from 13% of the market to 29%.” – David Jarvis, Senior Vice President, and Matt Farris, Associate, John Burns Real Estate Consulting LLC

New SF House Sales



New Home Prices Are Holding Back Home Sales

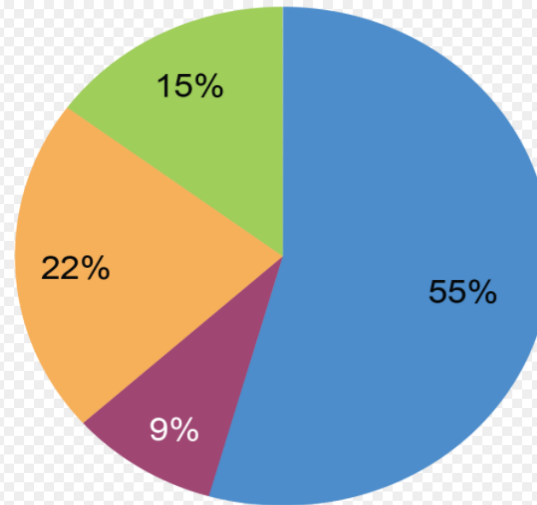
“Partially due to very high new home pricing, both in absolute numbers and in relation to comparably sized resale homes, new home sales volumes remain well below previous peaks in the mid-1980s, late 1990s, and mid-2000s.

Nationally, there is strong unmet demand for new, entry-level, affordable homes. I recently experienced this in Houston, where Matt Farris, Dustin Moudy, and I live and consult for our team. Despite new home prices rising a whopping 40% between 2011 and 2015 and oil prices subsequently plummeting, home builders who focus on sub-\$300K new homes (such as LGI Homes, K. Hovnanian Homes, Centex Homes [by Pulte], and Long Lake LTD.) continued to sell well and gained significant market share. Throughout the period of falling oil prices, demand for new homes priced under \$300K has remained strong.” – David Jarvis, Senior Vice President, and Matt Farris, Associate, John Burns Real Estate Consulting LLC

New SF House Sales

Main Reason Non-Owners Do Not Currently Own

- Cannot afford to buy a home
- Do not want the responsibility of owning
- Currently need the flexibility of renting rather than owning
- Other



Sources: NAR; John Burns Real Estate Consulting, LLC (Data: 4Q16, Pub: Jul-17)

New Home Prices Are Holding Back Home Sales

“More than half (55%) of non-home owning adults cite affordability as the main reason they do not currently own a home, compared to only 22% who cite the need for flexibility as the main reason they do not own. Even with historically low mortgage rates, affordability has become a huge problem.” – David Jarvis, Senior Vice President, and Matt Farris, Associate, John Burns Real Estate Consulting LLC

July 2017

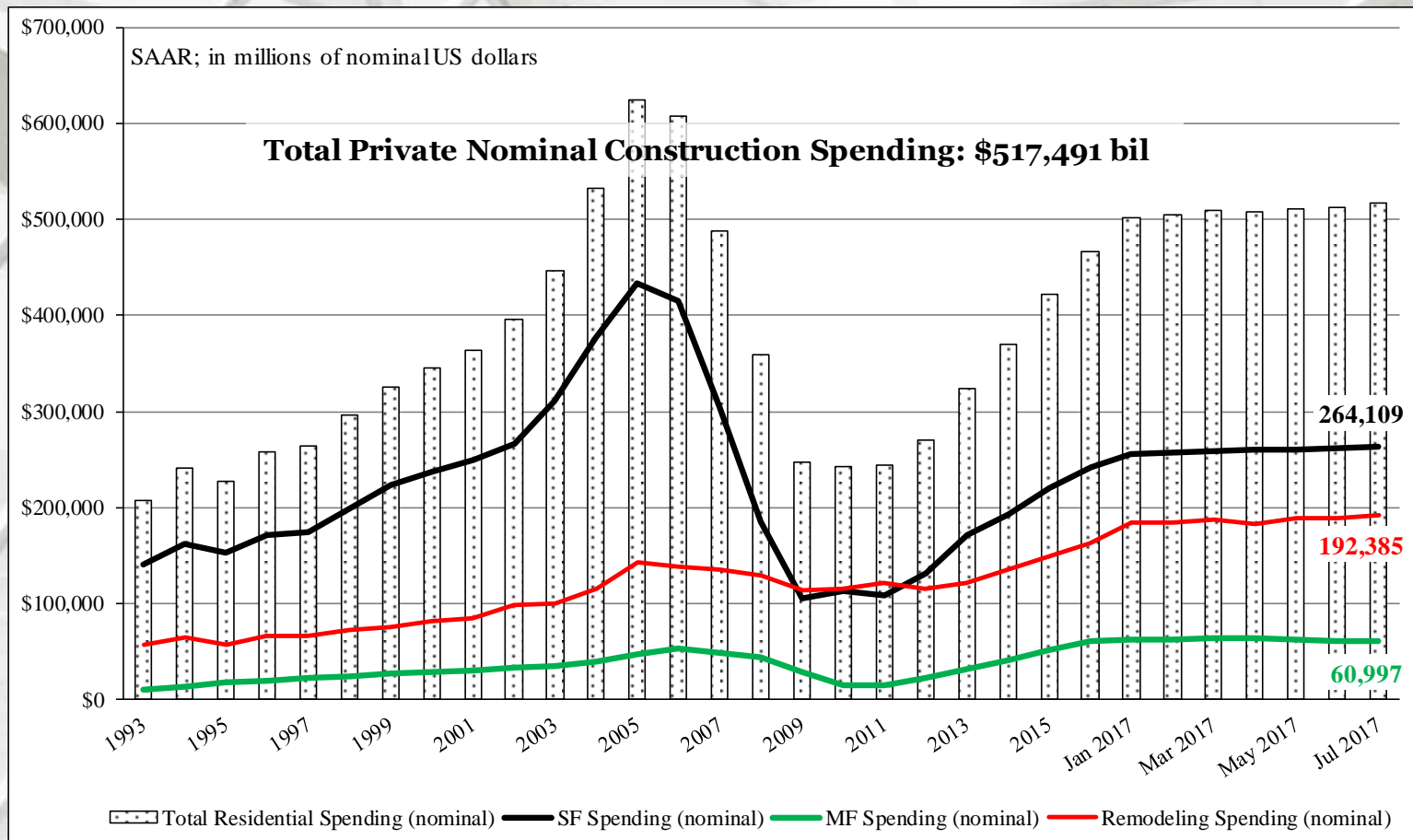
Construction Spending

	Total Private Residential*	SF	MF	Improvement**
July	\$517,491	\$264,109	\$60,997	\$192,385
June	\$513,232	\$262,012	\$61,508	\$189,712
2016	\$463,836	\$239,207	\$59,470	\$165,159
M/M change	0.8%	0.8%	-0.8%	1.4%
Y/Y change	11.6%	10.4%	2.6%	16.5%

* 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\$.

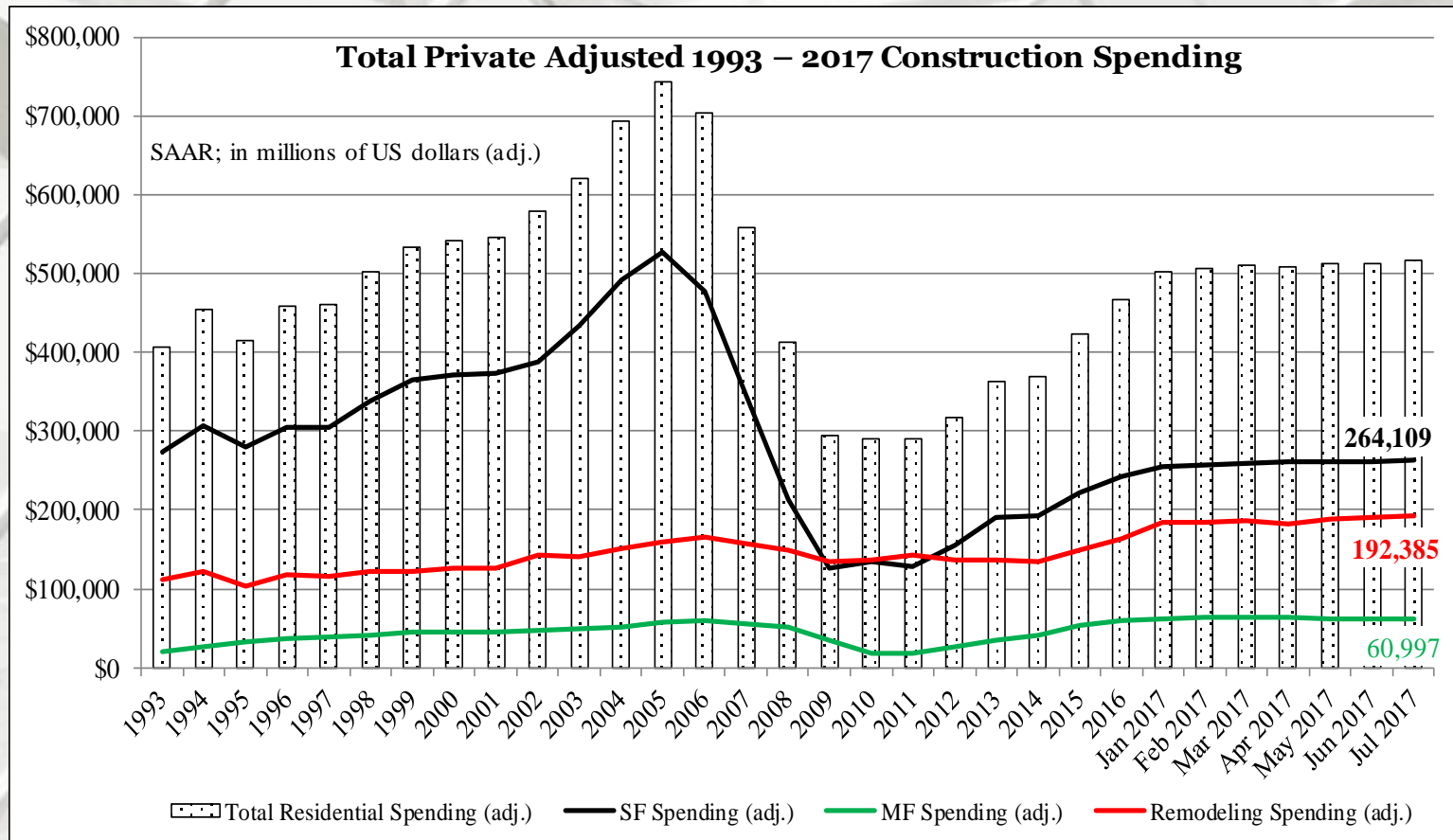
Total Construction Spending (nominal): 1993 – July 2017



Reported in nominal US\$.

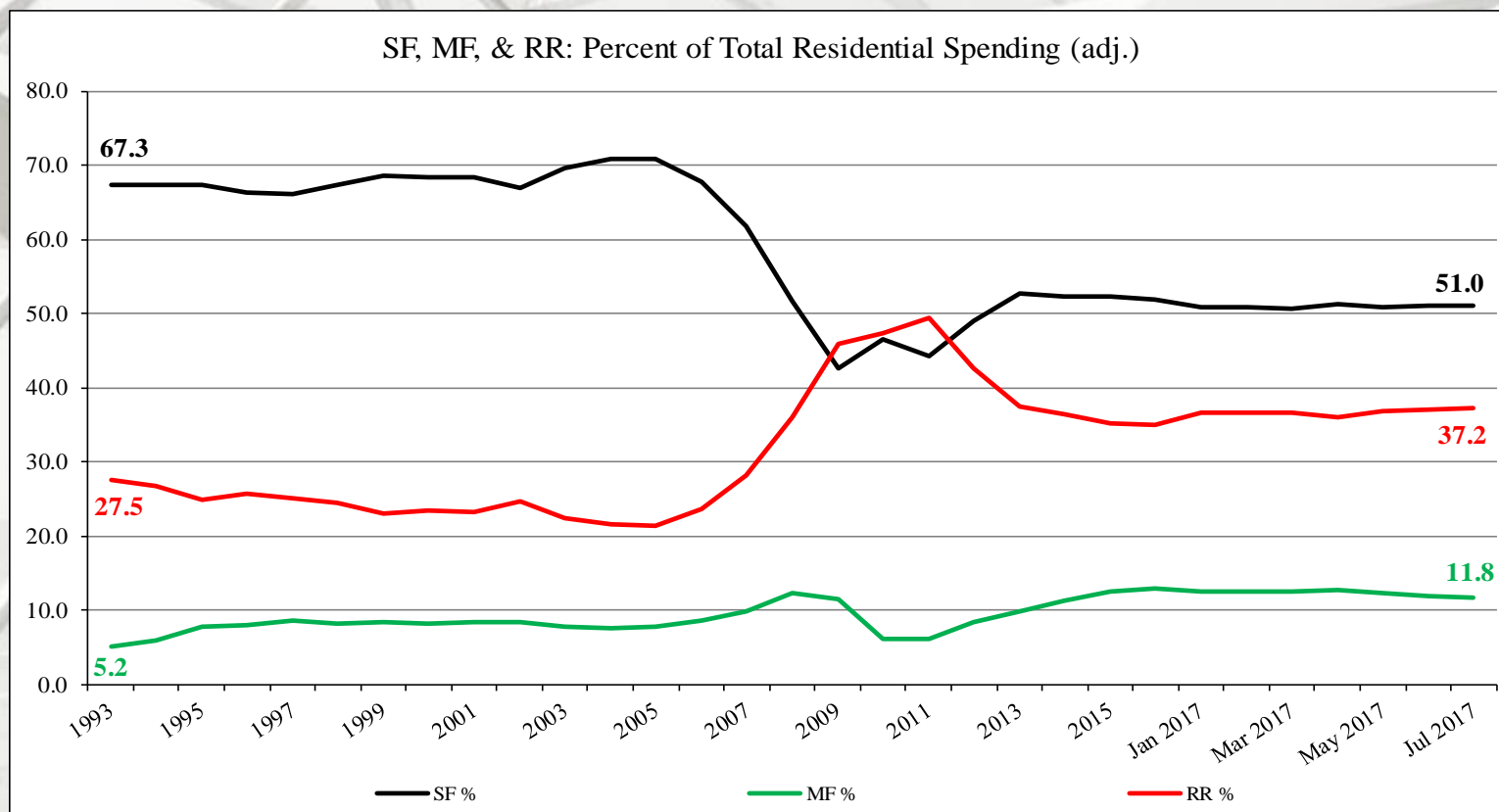
The US DOC does not report improvement spending directly, this is a monthly estimation for 2017.

Total Construction Spending (adjusted): 1993-2017*



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

Construction Spending Shares: 1993 to July 2017



Total Residential Spending: 1993 through 2006

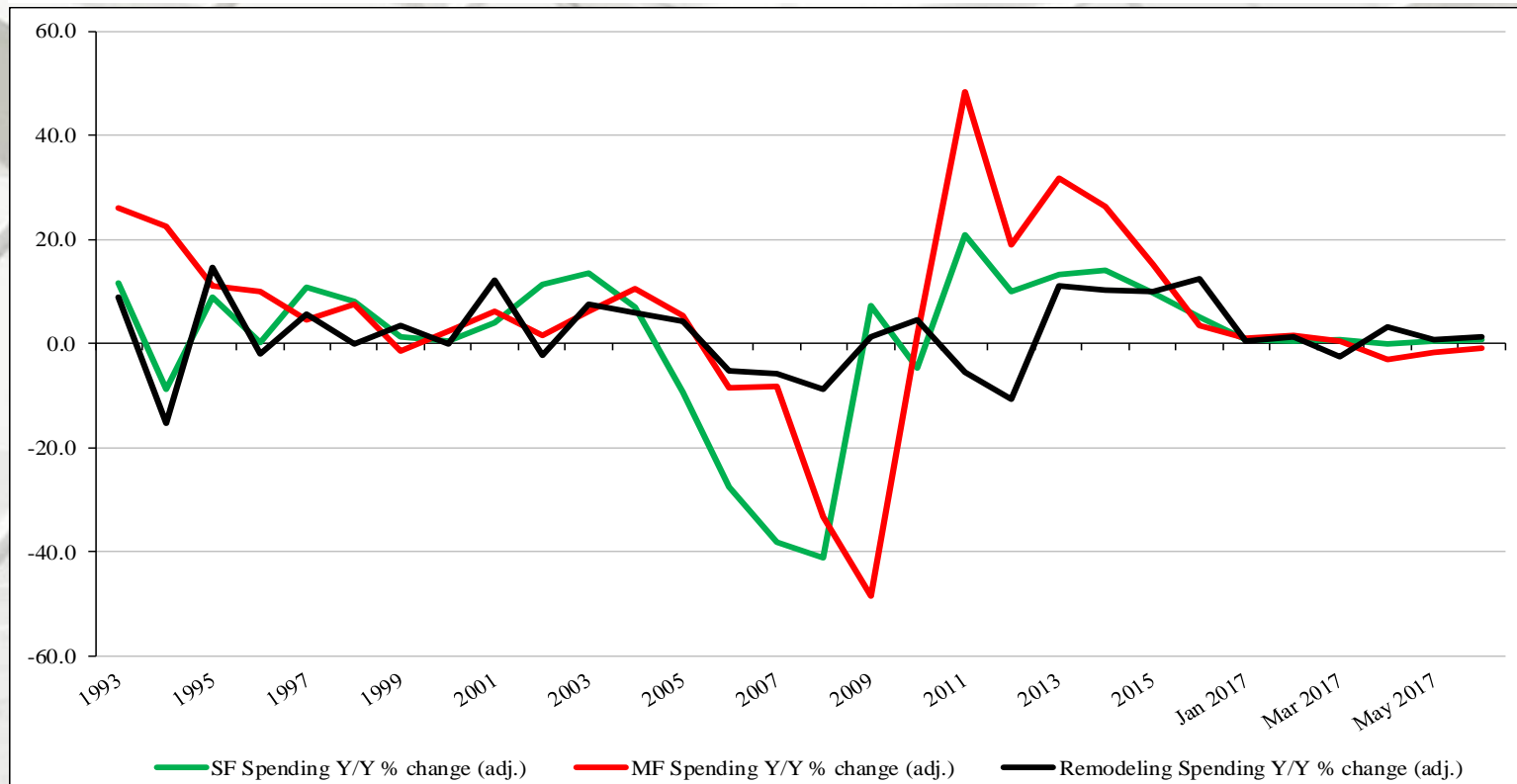
SF spending average: 69.2%

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-July 2017 reported in nominal US\$.

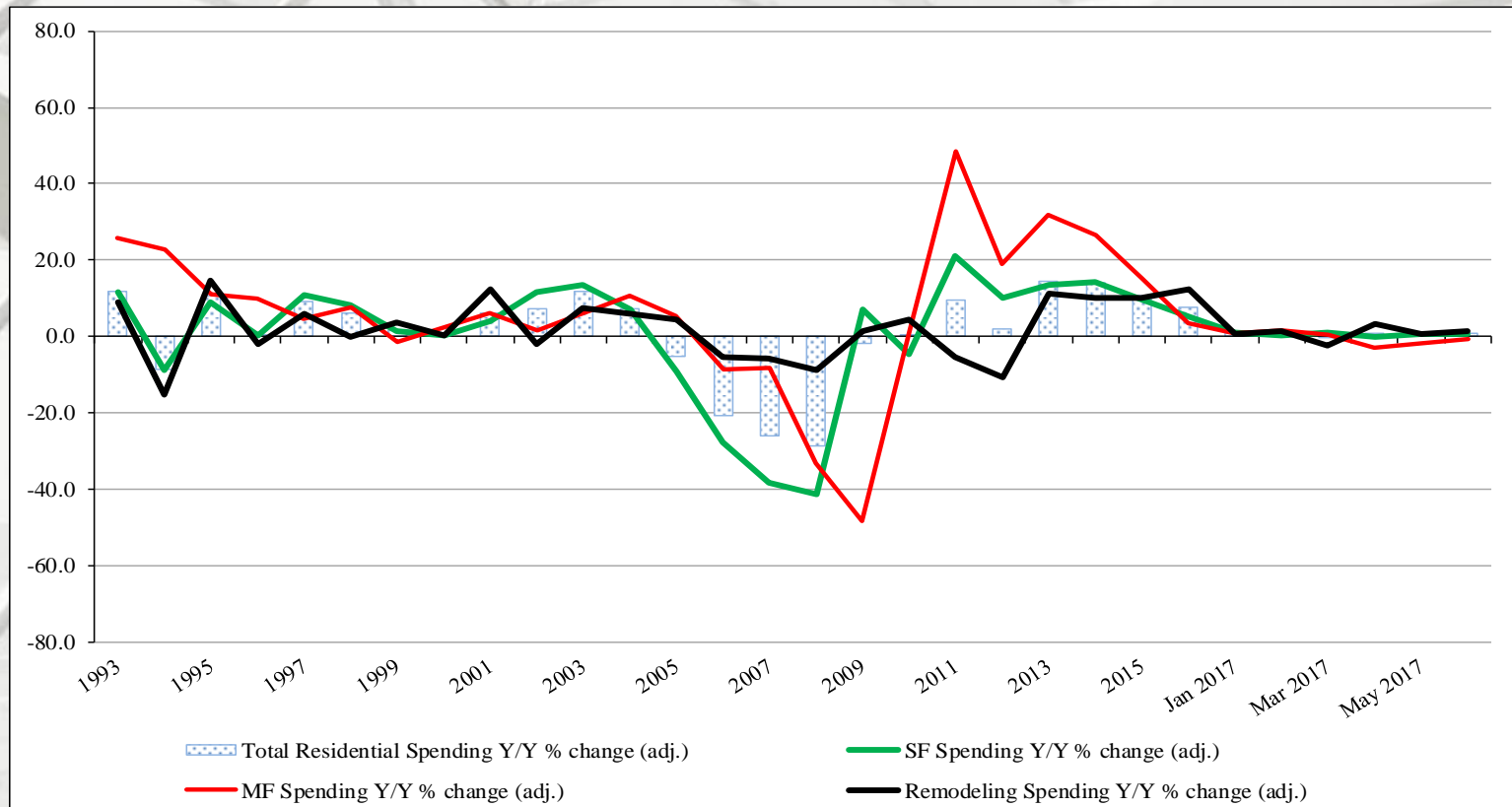
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to July 2017



Residential Construction Spending: Percentage Change, 1993 to July 2017

Presented above is the percentage change of inflation adjusted Y/Y construction spending (1993-2016). Since mid-2015 – SF, MF, and RR spending are in an apparent decreasing trend.

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



Residential Construction Spending: Percentage Change, 1993 to July 2017

The questions are: Is construction spending normalizing? Has housing turned over? Or, are there alternative explanations? The percentage change in construction spending has been flat and/or declining since the beginning of 2017. One thing to consider, SF permits and starts have improved (albeit marginally) since the fourth quarter of 2016. Thus, improvement may be reflected in future construction spending data.

Remodeling

Remodeling Activity Hits New High, Latest RRI Shows

Conditions have increased 8.7% since the previous peak in 2007
and show no signs of stopping

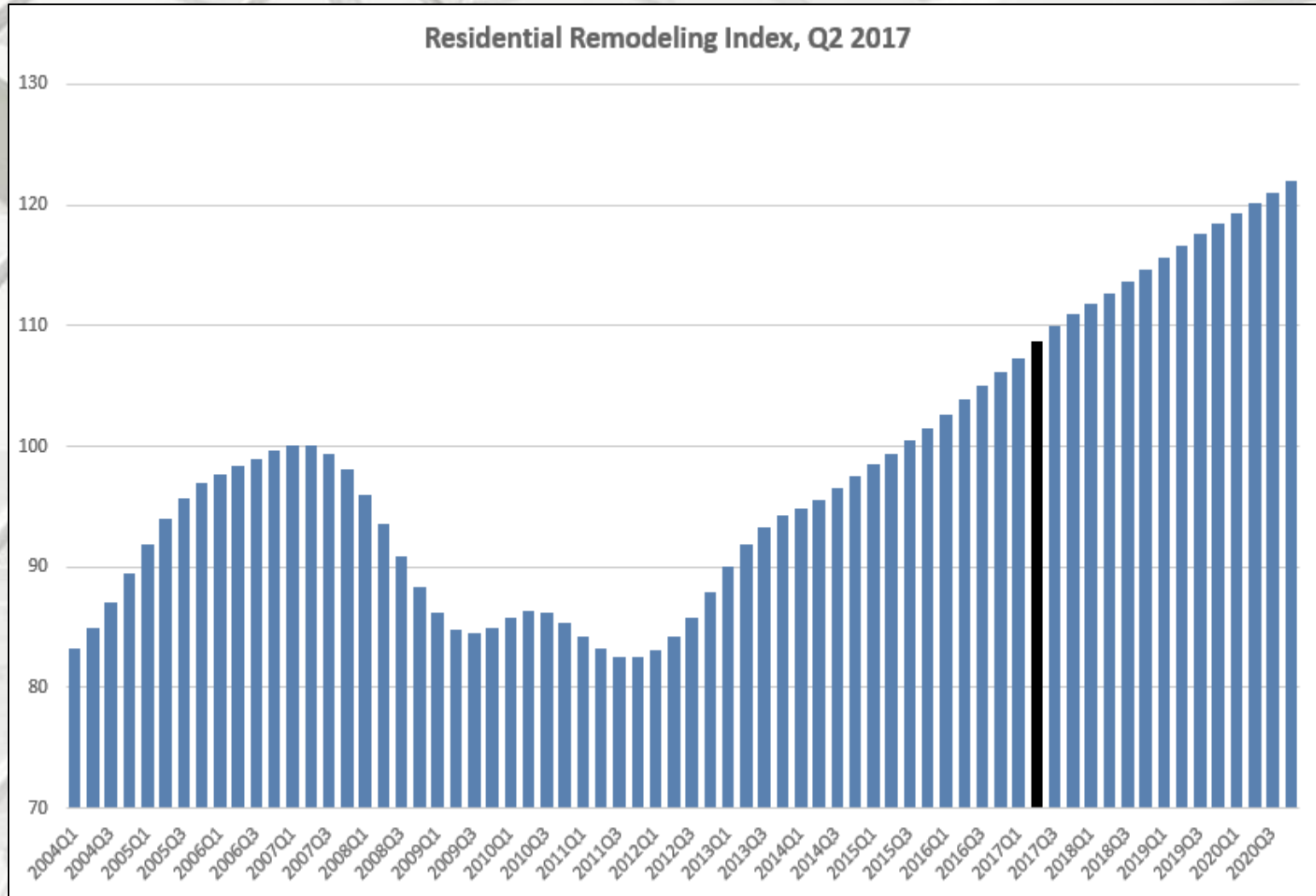
“Continued improvements in the U.S. economy drove the latest Residential Remodeling Index ([RRI](#)) to its 21st consecutive period of year-over-year quarterly gains since 2011 and an all-time record high of 108.7, according to [Metrostudy's](#) second-quarter report.

The increase to 108.7 indicates remodeling conditions are 8.7% better than the previous peak in spring 2007, 4.7% better than the 103.9 reading in the April-to-June period last year, and 1.3% better than the [first quarter's reading](#) of 107.3.

“Current demand for home-improvement is healthy as U.S. economic growth accelerated in second quarter 2017, boosted in part by a resurgence in consumer spending. Additionally, current shortages of new homes are forcing many would-be homebuyers to choose renovation over purchase. We expect the Residential Remodeling Index to continue increasing this year and through the three-year forecast. Any easing in project activity would more likely be due to limitations caused by labor shortages in the construction industry and a tight supply of existing homes for sale, rather than any deterioration in consumer-driven demand for home renovation.” – Mark Boud, Chief Economist, Metrostudy.

Looking to the future, the outlook still remains positive. By the end of the year, the RRI is predicted to see a 4.6% year-over-year increase, while predictions beyond 2017 indicate average year-over-year increases of 3.4% and quarter-to-quarter increases of 0.8%.” – Symone Garvett, Content Producer, *Remodeling*

Remodeling



Existing House Sales

National Association of Realtors (NAR®)

July 2017 sales: 5.440 million (SAAR)

	Existing Sales*	Median Price	Mean Price	Month's Supply
July	5,440,000	\$258,300	\$298,800	4.2
June	5,510,000	\$263,300	\$303,500	4.2
2016	5,330,000	\$243,200	\$284,900	4.8
M/M change	-1.3%	-1.9%	-1.5%	0.0%
Y/Y change	2.1%	6.2%	4.9%	-12.5%

* All sales data: SAAR

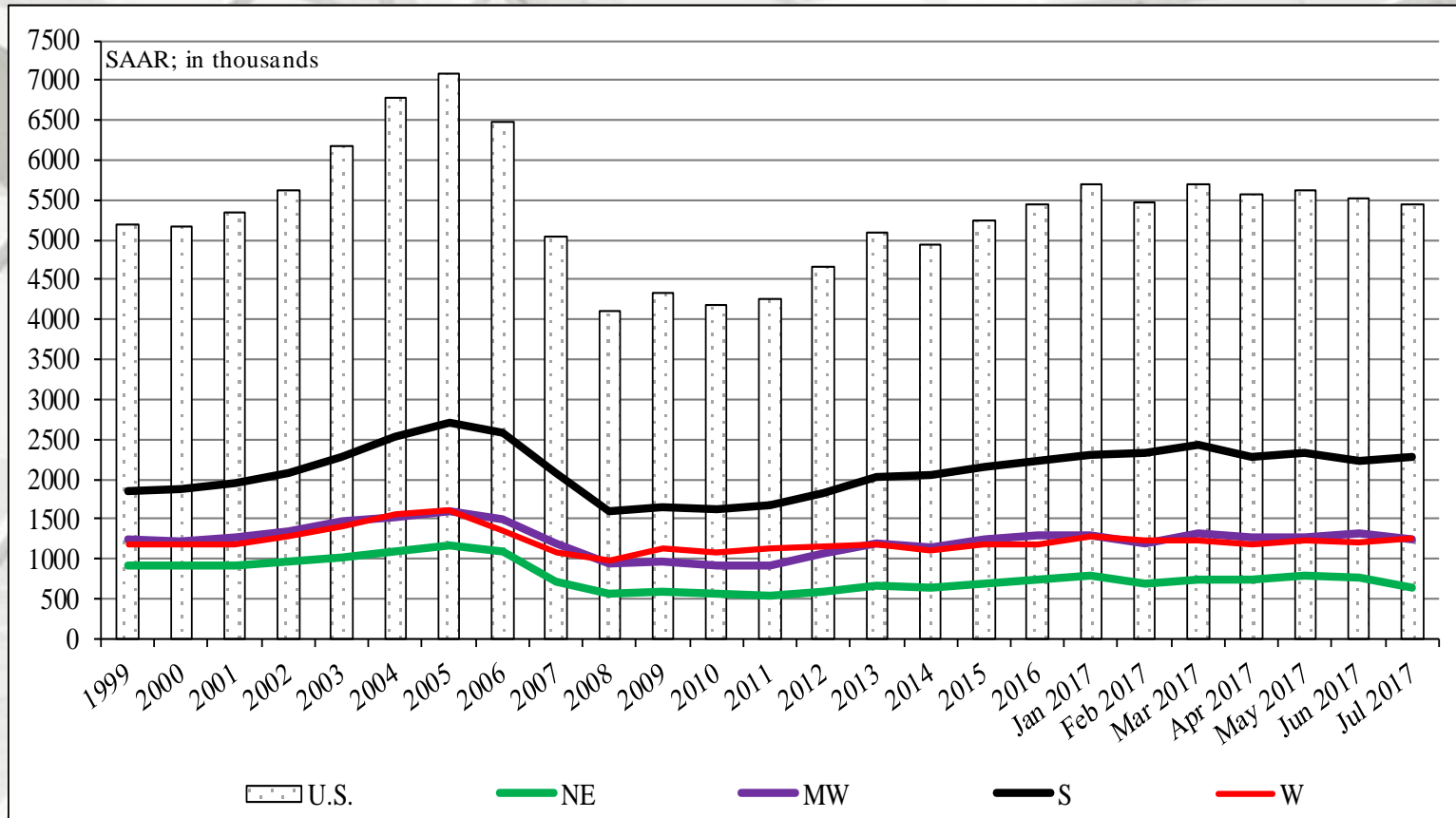
Existing House Sales

	NE Sales	MW Sales	S Sales	W Sales
July	650,000	1,250,000	2,280,000	1,260,000
June	760,000	1,320,000	2,230,000	1,200,000
2016	660,000	1,270,000	2,200,000	1,200,000
M/M change	-14.5%	-5.3%	2.2%	5.0%
Y/Y change	-1.5%	-1.6%	3.6%	5.0%

	Distressed House Sales	Foreclosures	Short-Sales	All-Cash Sales	Individual Investor Purchases*
July	5%	4%	1%	19%	13%
June	4%	3%	1%	18%	13%
2016	5%	4%	1%	21%	11%

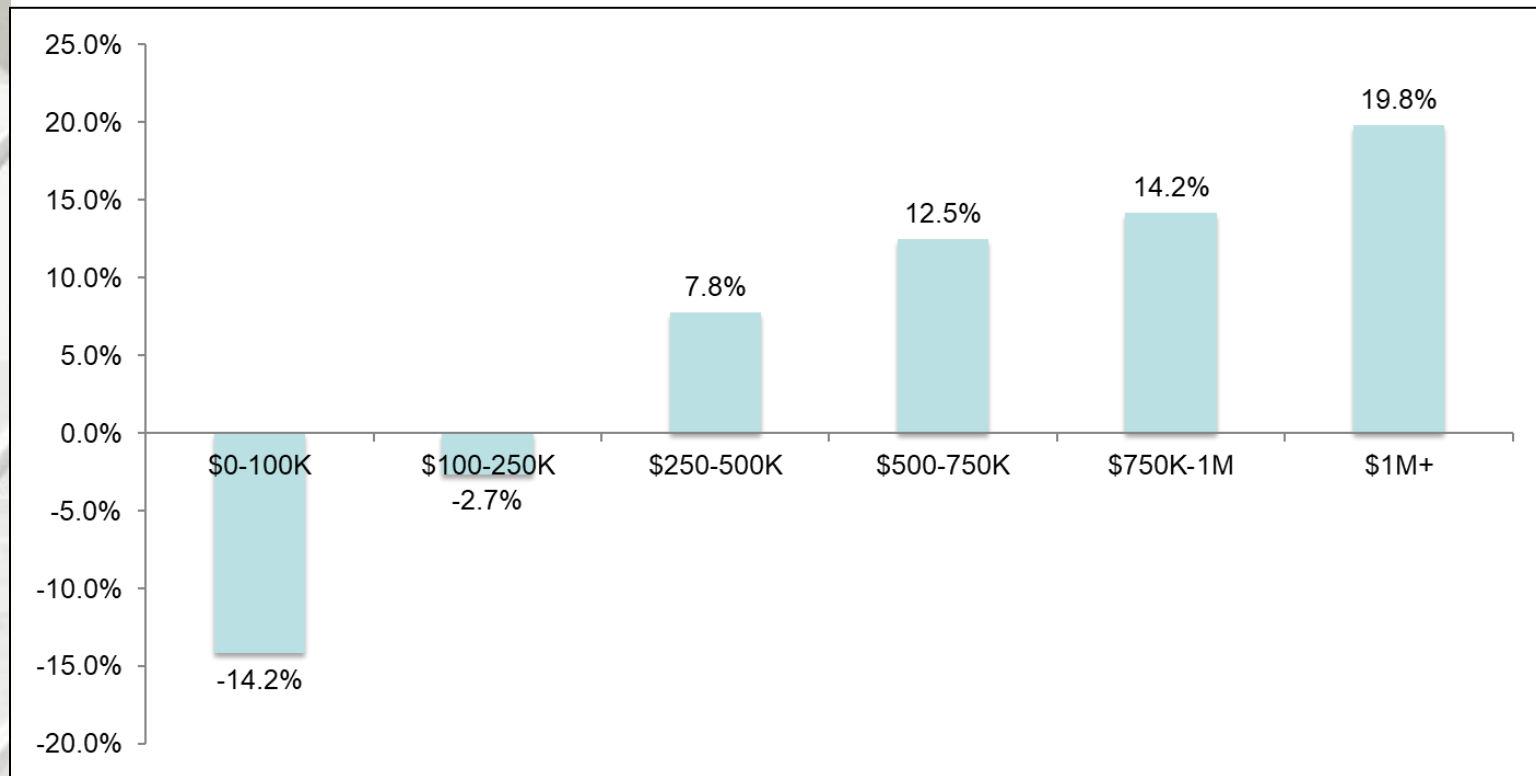
* Next column reports percentage of cash purchases.

Total Existing House Sales

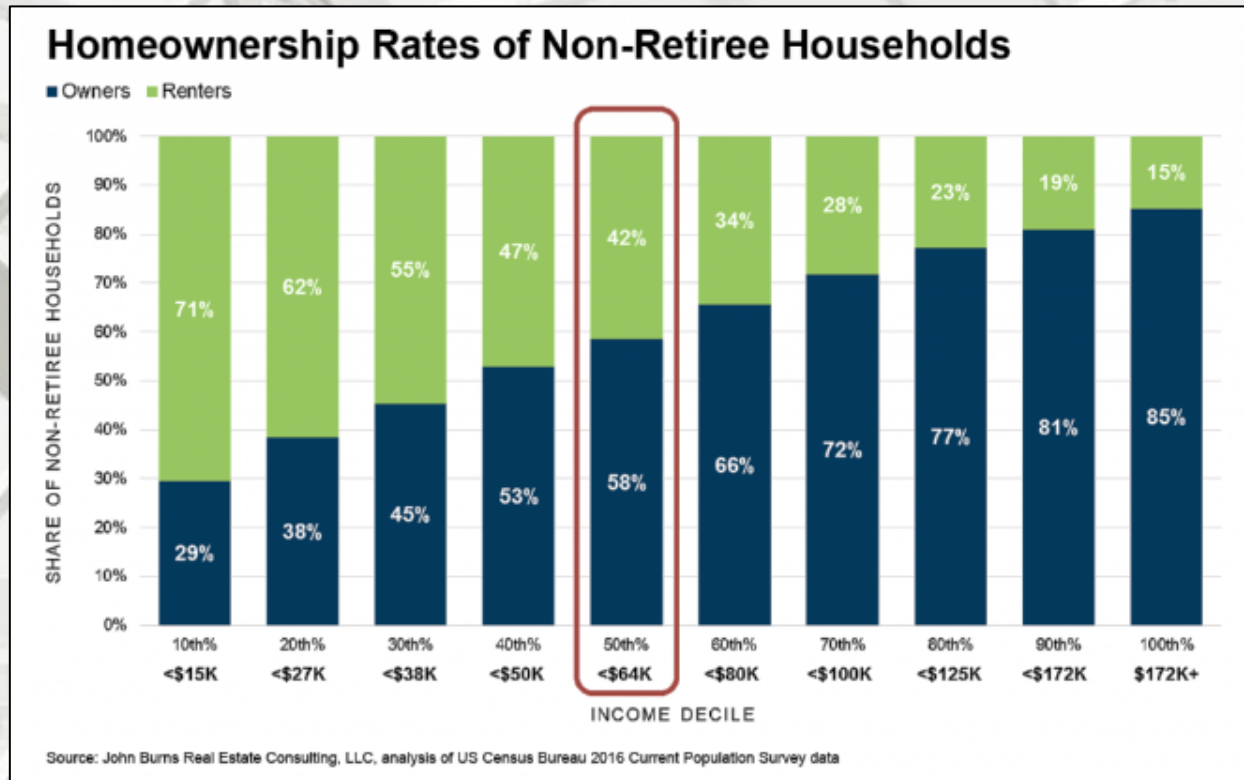


Changes in Existing House Sales

Percent Change in Sales From a Year Ago by Price Range



Home Ownership



Falling Homeownership

“Today’s 63.7% US homeownership rate* (down from 69.1% 12 years ago) is propped up by a very high homeownership rate for those aged 65+ who bought their homes many years ago. They benefited from a strong economy, more affordable housing during their working years (even adjusting for mortgage rates and inflation), and 100% down payment programs for veterans.” – John Burns, CEO, John Burns Real Estate LLC

Home Ownership

Falling Homeownership

“Not surprisingly, the percentage of households who own their home rises as incomes rise, as shown in the chart. For those executives who have to forecast housing demand, and homeownership demand in particular, note that the median-income household (after taking out retirees) makes about \$64,000 per year, and only 58% of those households own a home. This will drive homeownership down over time.

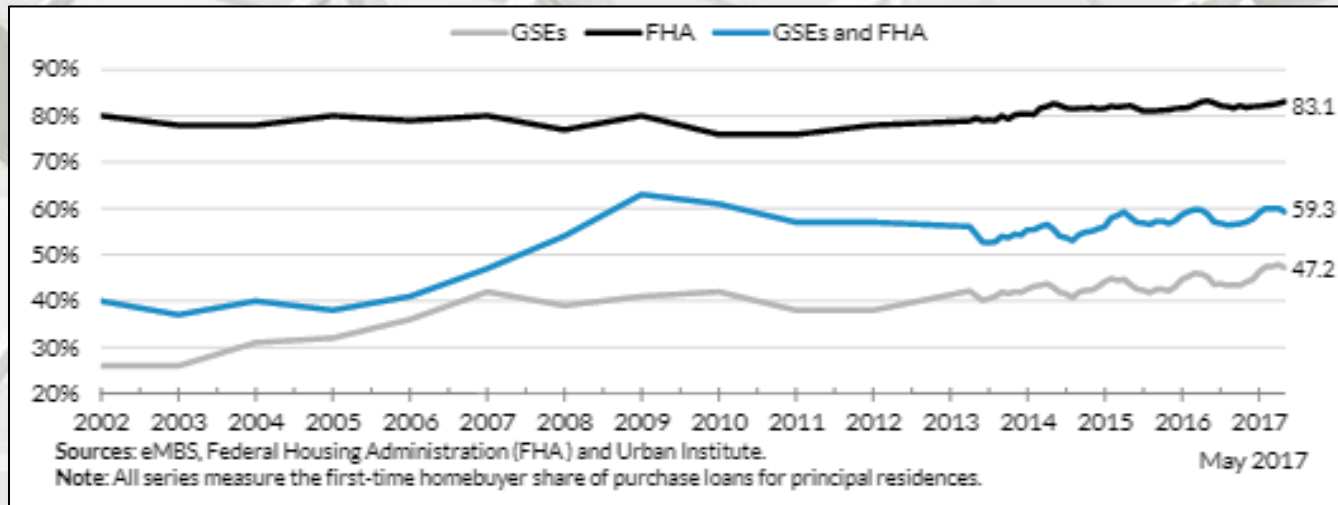
Low incomes are just one of many reasons why we [forecast homeownership to fall below 61%](#) by 2025. The 80% +/- homeownership rate of those who pass away over the next eight years will be the biggest drag on homeownership. As we note in [our book](#), the [Four Big Influencers](#) (government policies, the economy, new technologies, and shifts in societal preferences) could impact this forecast positively or negatively. We monitor all four influencers very carefully to help executives plan their business decisions.” – John Burns, CEO, John Burns Real Estate LLC

** Homeownership rates as reported by the U.S. Census Bureau’s Housing Vacancies and Homeownership Survey. We do not believe that the recent rise in the homeownership rate is correct, as it was driven partially by the Census Bureau reporting an increase of only 558,000 occupied housing units in the last year, which is far too low.*

First-Time Purchasers

National Association of Realtors (NAR®)

33% of sales in July 2017 – 32% in June 2017, and 32% in July 2016¹



Urban Institute

“In May 2017, the first-time homebuyer share of GSE purchase loans decreased slightly to 47.2%, after hitting the highest level in recent history in April (47.9%). The FHA has always been more focused on first-time homebuyers, with its first-time homebuyer share hovering around 80 percent and stood at 83.1 percent in May 2017, a hair away from the May 2016 peak of 83.3 percent. The bottom table shows that based on mortgages originated in May 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., Co-director, Housing Finance Policy Center

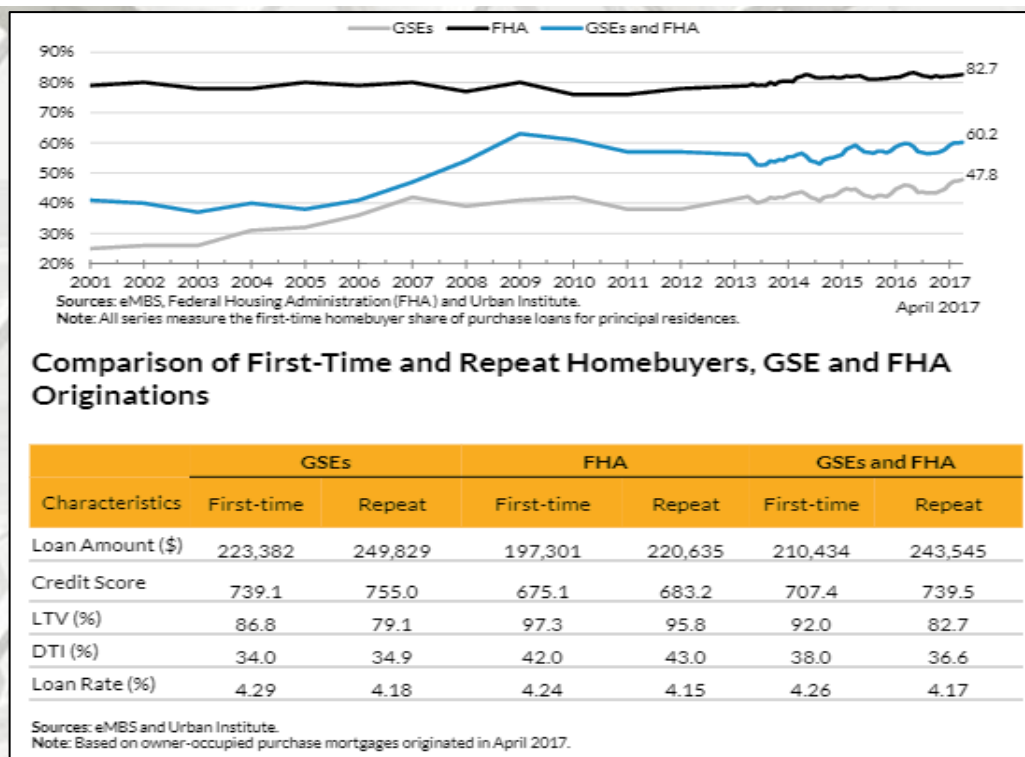
Sources: ¹ <https://www.nar.realtor/news-releases/2017/08/existing-home-sales-slide-13-percent-in-july>, 8/24/17;

² <https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-august-2017>, 8/28/17

First-Time Purchasers

Urban Institute

“In April 2017, the first-time homebuyer share of GSE purchase loans edged up to 47.8%, the highest level in recent history. The FHA has always been more focused on first-time homebuyers, with its first-time homebuyer share hovering around 80 percent and stood at 82.7 percent in April 2017, moving closer to the peak of 83.3 percent in May 2016. The bottom table shows that based on mortgages originated in April 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., Co-director, Housing Finance Policy Center



First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

“Based on data from the first half, we believe that 2017 is shaping up as one of the biggest years for first-time homebuyers in the housing market, and significantly higher than the historical average of 1.8 million units between 1994 and 2016. Some of the three million missing first-time homebuyers who delayed home purchases are returning to the housing market, while members of the millennial generation are reaching their primary home-buying age. The combination of pent-up demand and demographic tailwinds have led to the surge in the first-time homebuyer market over the past two and half years, and are having a profound impact on the housing market.

1. In the second quarter, first-time homebuyers purchased 570,000 single-family homes, accounting for 36 percent of all single-family homes sold, and 57 percent of the purchase mortgages originated. Only 1999 had more first-time homebuyers during the second quarter.
2. Growth in the first-time homebuyer market outstripped the rest of the housing market in the second quarter, continuing a trend that started in the third quarter of 2013. The first-time homebuyer market was up eight percent year over year during the second quarter, exceeding the two percent growth rate reported for overall single-family home sales. Measured in units, the growth in the number of homes sold to first-time homebuyers (42,000 units) exceeded the growth in the entire single-family housing market (32,000 units), suggesting first-time homebuyers are expanding while repeat buyers are contracting.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

3. “Homebuilders reported faster sales growth in the “low” end of the market, reflecting their increased focus on the first-time homebuyer market. But the volume of new construction remained insufficient relative to first-time homebuyer demand. New single-family homes priced between \$200,000 and \$250,000, the segment most popular with first-time homebuyers, was the fastest-growing segment for homebuilders, reporting year-over-year growth of 33 percent during the first half. But the volume increase remained modest at 13,000 units for the first half. The insufficient supply of new starter homes has led to a sharp decline in the number of vacant homes for sale, driving the homeowner vacancy rate to its lowest level since 1994.
4. The lack of housing supplies has led to accelerating home prices. Year to date, home price appreciation as measured by the Federal Housing Finance Agency (FHFA) home price index for purchase loans accelerated to 6.6 percent growth, up from 6.1 percent growth a year ago.
5. Since first-time homebuyers represent the transition of housing demand from rental to owner-occupied housing, strong first-time homebuyer demand in the past two and a half years is beginning to lift the homeownership rate, especially for households headed by younger adults. In the second quarter, the homeownership rate among households headed by people under 35 years of age was 35.3 percent, which is 1.2 points higher than a year ago, but still well below its 2004 peak of 43.6 percent. This suggests further improvement in the first-time homebuyer market is likely even though the market is already very large by historical standards.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

6. “In the mortgage market, growing demand from first-time homebuyers is driving faster purchase origination market growth. The purchase mortgage loan count was up five percent from a year ago during the second quarter, beating the two percent growth in the number of single-family homes sold.
7. Since first-time homebuyers typically rely on mortgages to finance their purchases, rising first-time homebuyer demand has reduced the percentage of home sales paid for by cash. During the second quarter, all-cash sales were down three percent year over year. As home sales growth slowed during the second quarter, this has become a bigger source of growth for the mortgage market.
8. Within the mortgage market, first-time homebuyers have always relied on mortgage products with lower down payments, defined as those with a combined loan-to-value ratio (LTV) of 80 percent or higher (higher LTV means lower down payment). The first-time homebuyer mix moves inversely with down payment requirements. During the second quarter, 68 percent of all homebuyers using low down payment mortgages were first-time buyers, but only 36 percent of those using high down payment purchase loans were. Low down payment mortgages represented 78 percent of all first-time homebuyer purchases in the second quarter versus 22 percent for high down payment mortgages.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

9. “The number of first-time homebuyers increased across the down payment spectrum during the second quarter. Low down payment mortgage products financed 448,000 home sales to first-time homebuyers, up eight percent from a year ago. High down payment mortgage products financed 123,000 home sales to first-time homebuyers, up eight percent from a year ago. This means that growth in the first-time homebuyer market is driving mortgage credit expansion, not the other way around.
10. Among low down payment mortgage products, private mortgage insurance saw significantly higher growth during the second quarter, as lenders and borrowers embraced the 97 LTV products. The private mortgage insurance industry helped 163,000 first-time homebuyers during the second quarter, which is an increase of 17 percent from a year ago. Around 58 percent of the growth in the first-time homebuyer market during the second quarter came from the private mortgage insurance market, while nine percent of the growth came from the Federal Housing Administration (FHA).
11. Government lending programs remained very large in the first-time homebuyer market. During the second quarter, government lending programs helped 272,000 first-time homebuyers, up three percent from a year ago. Their footprint in the purchase market and in the first-time homebuyer market segment were over three times the size 10 years ago. Because of their low down payment focus, the footprint of government lending programs will likely grow relative to the overall mortgage market with the first-time homebuyer market.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

12. “As first-time homebuyers enter the housing market and take on mortgage debt, household mortgage debt growth has accelerated. We estimate that the amount of mortgage debt outstanding at the end of the second quarter was four-five percent higher compared to a year ago versus growth rates of one-two percent during 2015 and 2016. Growth was faster among low down payment mortgage segments during the second quarter. Ginnie Mae and the mortgage insurance industry reported year-over-year growth rates of nine percent and 13 percent for their respective mortgage portfolio.

2017 Trends

First-time homebuyers continued to lead the housing recovery in 2017. In the second quarter, they purchased 570,000 single-family homes, an increase of eight percent from a year ago, exceeding the two percent growth rate reported for overall single-family home sales. It was the biggest second quarter for first-time homebuyers since 2000. This brings the total number of single-family homes sold to first-time homebuyers to 996,000 in the first half, an increase of 83,000 from the same period last year. Based on first half performance, 2017 is shaping up as one of the biggest years for the first-time homebuyer market. First-time homebuyers accounted for 36 percent of all single-family homes sold during the quarter, and 57 percent of the purchase mortgages originated. The first-time homebuyer market has reported faster growth compared to the overall market every quarter since the third quarter of 2013. During the second quarter, the year-over-year growth in home sales to first-time homebuyers (42,000 units) exceeded the growth in single-family home sales (32,000 units), which means that first-time homebuyers are driving growth in the housing market.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

2017 Trends

“As has been the case for the past two years, home sales growth during the first half of 2017 was in large part driven by growth in the first-time homebuyer market. Sales of single-family homes to first-time homebuyers was 83,000 units higher compared to a year ago, accounting for around 83 percent of the growth in single-family home sales.

While new construction aimed at first-time homebuyers has not seen any meaningful industry impact in the past few years, growth in the first-time homebuyer market is beginning to catch the attention of the homebuilding industry. During the first half, homebuilders reported faster sales growth in the “low” end of the market. New single-family homes priced between \$200,000 and \$250,000, the segment popular with first-time homebuyers, was the fastest-growing segment, reporting year-over-year growth of 33 percent during the first half. But the volume increase has remained modest at 13,000 units for this time period. For the full year, we believe that homebuilders will likely add 20,000 to 30,000 units in that price range. Given that sales to first-time homebuyers grew by over 80,000 units in the first half already, the market will likely remain under-supplied in the near term. However, we do think that the increase in production at the “low” end of the market will continue over the next few years and will be an important source of growth for the homebuilding industry.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

First-Time Homebuyer Market Report: August 2017

“The insufficient supply of new homes has led to further tightening in the housing market. In the market for previously-owned homes, inventory available for sale was down eight percent year over year during the second quarter, and the supply of homes for sale has come down to 4.2 months of sales during the second quarter, compared to 4.6 months a year ago.

Another way the housing market adjusts to insufficient supply is through the drawing down of vacant housing units so that the available housing stock is used more efficiently.

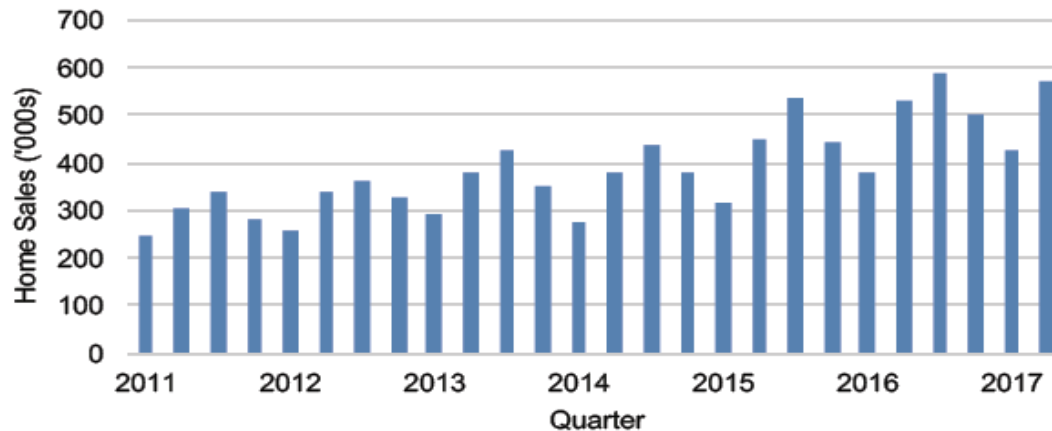
Compared to a year ago, the number of vacant housing units for sale was down by 100,000 units during the second quarter, reducing vacancy rates to 1.5 percent, which is their lowest level since 1994.

Finally, the tighter housing market has put further pressure on home price appreciation. Home price growth has accelerated since 2014. In the first two months of the second quarter, home prices were 6.9 percent above the level from a year ago, up from the six percent growth rate in 2016. Even though homebuilders are beginning to increase production at the “low” end of the market, the response so far seems insufficient to ease the pressure on inventory, or for home prices to moderate beginning later this year. In our view, strong first-time homebuyer demand and a lack of insufficient supply response from homebuilders means that growth in home prices will not likely slowdown in 2017 and 2018. The lack of supply is the biggest limiting factor facing first-time homebuyers in the housing market, and it is unlikely to be resolved in the near term. This puts us at odds with the consensus view among economists calling for slower home price growth starting this year. The argument goes that home price growth is outstripping income growth and the eroding affordability is not sustainable. While deteriorating affordability will price some first-time homebuyers out of the market, our view is that the large influx of first-time homebuyers will continue to push prices higher.” – Tian Liu, Chief Economist, Genworth Mortgage Insurance

First-Time Purchasers

Fig. 1

First-Time Homebuyer Market

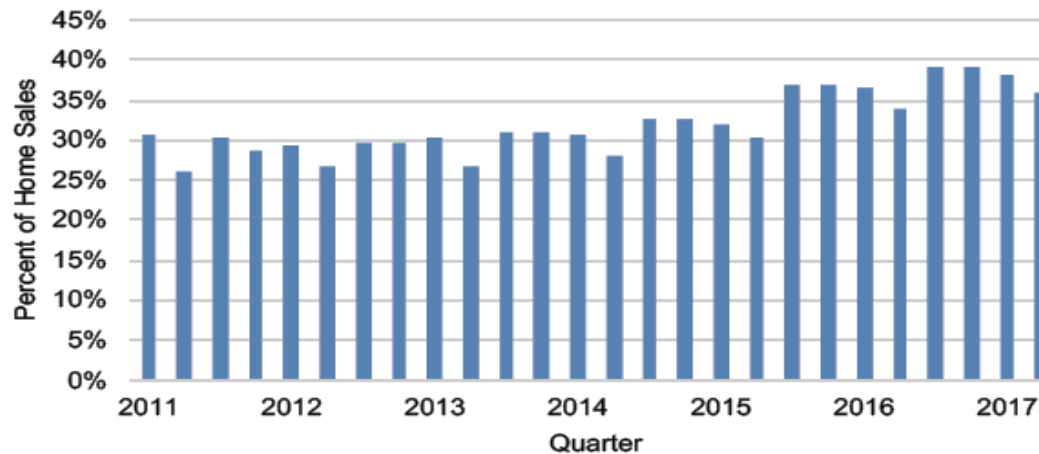


Source: Genworth Mortgage Insurance

The first-time homebuyer market follows a clear seasonal pattern, with more sales during the peak home selling season in Q2 and Q3.

Fig. 2

First-Time Homebuyer Mix



Source: Genworth Mortgage Insurance

The seasonal pattern for the first-time homebuyer market is different from the overall housing market, resulting in a higher mix in Q3 and Q4 compared to the first two quarters.

U.S. Housing Market

Blackstone, Starwood to Merge Rental-Home Businesses in Bet to be America's Biggest Home Landlord

Combination of Invitation Homes and Starwood Waypoint Homes is a wager that homeownership will continue to wane

“Two of the country’s largest rental-home owners have agreed to merge, one of the clearest signs that Wall Street is betting homeownership rates will remain low and that a growing number of U.S. families will rent.

Their near-term wager is that home-building will continue to lag behind demand and that bad credit, a lack of savings and tight lending will keep many people renting. Long-term, they are wagering that homeownership will no longer be an essential component of the American dream and that more people will chose to rent.

“The markets that we’re in are characterized with high population growth, high household formation growth and, most importantly, job growth,” said Fred Tuomi, who is Starwood’s chief executive and will lead the combined company. “These are markets that people are moving to for opportunity versus moving from.”

The homeownership rate is hovering around 50-year lows and home prices are rising, partly due to a shortage of new houses. That has driven rents higher in the markets where the companies operate. Invitation says its average monthly rent is \$1,683, while Starwood says its is \$1,629.

The firms’ executives note that on a per-square-foot basis, rents for single-family homes lag behind those charged for apartments. But their challenge will be to pace rent increases so as to not turn their tenants into house hunters who would compete with them for properties.” – Ryan Dezember, Reporter, *Wall Street Journal*

U.S. Housing Market

Blackstone, Starwood to Merge Rental-Home Businesses in Bet to be America's Biggest Home Landlord

“ ...

This turned out to be a business,” said Mr. Sternlicht. “When we started out I think there were a lot of people who didn’t think it was a business. They thought it was a trade.” Mr. Sternlicht merged his rental-home portfolio last year with that of fellow real-estate mogul Thomas J. Barrack Jr. to create Colony Starwood Homes. The company changed its name last month to Starwood Waypoint after Mr. Barrack sold his stake in the firm.

The investors targeted neighborhoods around fast-growing cities, with low crime rates and good schools, and bought homes that could accommodate families and were fairly new and thus easier and cheaper to maintain. After fixing them up, sometimes at significant expense, they rented them out. These days, they are buying houses at a slower pace, usually on the open market.

While many investors that followed similar strategies have sold out now that home prices in some markets have surpassed their 2006 peaks, Blackstone and Starwood’s founders have been among the few that decided to stick around in a bid to institutionalize single-family rental homes, as they did office towers, shopping centers and apartments before.

By some measures, U.S. homes are the biggest asset class in the world. Their collective value of nearly \$25 trillion is greater than that of all the shares on the U.S. stock market and about double the worth of marketable Treasuries, according to Amherst Capital Management. The rental-home business, which has existed for decades, is nearly as fragmented as homeownership itself, having long been dominated by mom-and-pop operations and local investors, most of whom own just a property or two.” – Ryan Dezember, Reporter, *Wall Street Journal*

U.S. Housing Market

Blackstone, Starwood to Merge Rental-Home Businesses in Bet to be America's Biggest Home Landlord

Combination of Invitation Homes and Starwood Waypoint Homes is a wager that homeownership will continue to wane

“Analysts estimate that institutional investors own about 200,000 houses throughout the U.S. That is less than 2% of the estimated total of rental homes, yet the merger will create in some markets a mega landlord. In Atlanta, the firm will own more than 12,000 houses. Around Miami, it will own more than 9,000, and 8,000 in Southern California suburbs and near Tampa Bay.

Market density is key to the business plan. The more homes owned in proximity, the more efficiently leasing agents, maintenance crews and contractors can work. The firms' combined holdings also should make for cheaper financing. And a larger company could mean inclusion in big stock indexes.

The companies believe they can achieve as much as \$50 million a year in so-called synergies by combining. They overlap in 10 of their combined 17 markets. Mr. Sternlicht said he proposed the merger after the two companies bid against each other for a batch of homes, with many in California.

“We realized this is silly,” he said. “Combining is better than competing with each other forever.” – Ryan Dezember, Reporter, *Wall Street Journal*

U.S. Housing Market

Hurricane Harvey's Business Impact

“Houstonians are resilient. The conversation here in Houston has already changed from “I hope your family is safe and dry” to “What does this mean for our business?” We did some meaningful research to help answer that question and concluded that we should expect the following:

1. 9% growth in national repair and remodeling spending in 2018, and that assumes minimal damage from Hurricane Irma that is currently pointing at our offices in Florida
2. Even greater construction cost increases
3. An immediate decline in the heavy apartment concessions that were occurring, as well as a decline in new home incentives
4. A boost in 2018 construction after a likely pullback for the remainder of this year
5. Below is what we learned in detail.

In the Wake of Hurricane Harvey

Damage is severe. Our best estimate from reading media reports is that at least 35,000 homes are destroyed, and another 150,000 homes will require substantial repair.” – David Jarvis, Senior Vice President; Todd Tomalak, Vice President; and Matt Farris, Senior Associate, Real Estate; John Burns Real Estate Consulting, LLC

U.S. Housing Market



185,149

Homes Damaged or Destroyed*

35,000

Housing Units Destroyed**

150,149

Housing Units in Need of Repair

*Texas Division of Emergency Management

**Per Comments from Harris County Homeland Security and Emergency Management

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U.S. Housing Market

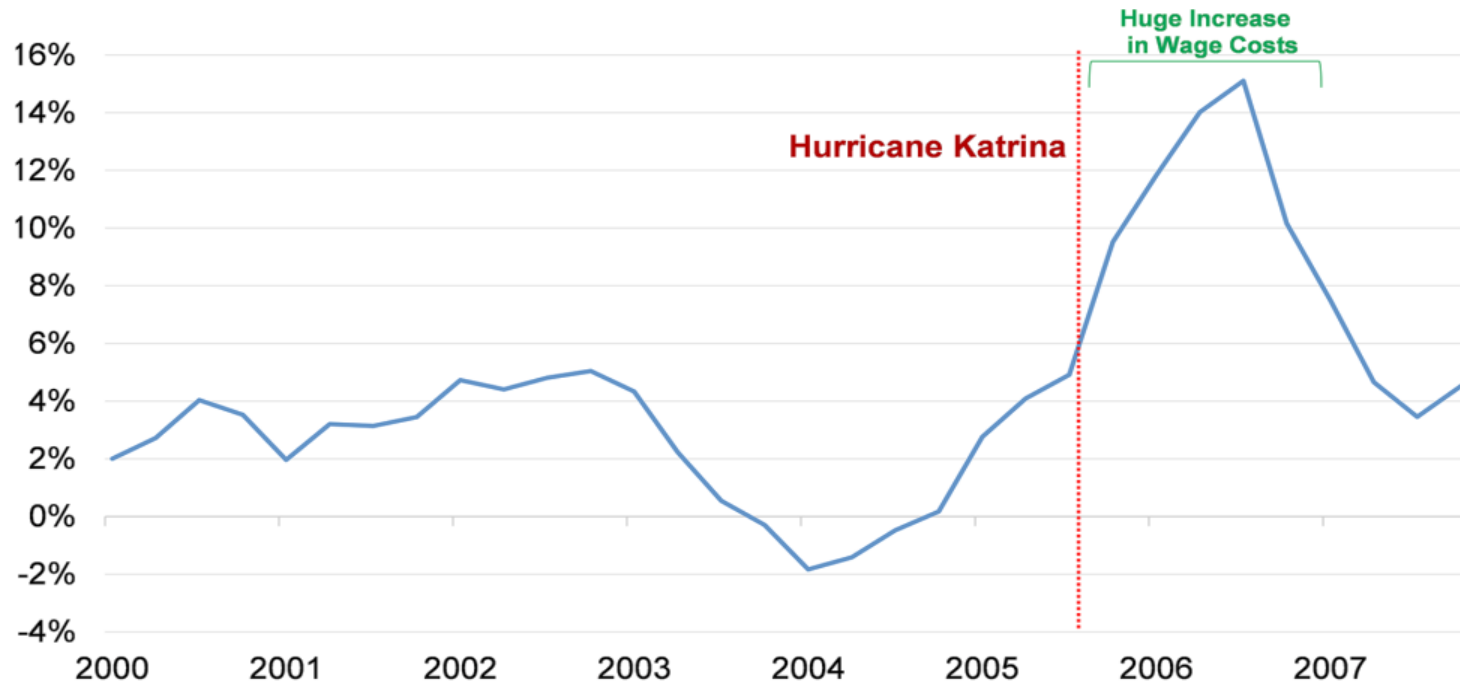
Hurricane Harvey's Business Impact

“We did some research on Hurricane Katrina and other floods to help our clients anticipate what they should expect. We thought we would share some of the numbers:

1. **Repair and remodeling spending will surge 9% nationally**, taking labor and material resources away from new home construction. Our VP Todd Tomalak expects total 2017 disaster repair spending to reach \$23 billion, which is more than double that of 2016. Those without flood insurance will tend to DIY.
2. **New home construction costs will rise for several years.**
 - **Government regulation and oversight will likely increase**, making home construction more expensive. After three major floods in less than three years, most Houstonians no longer believe flooding is a once-in-a-lifetime event.
 - **Labor costs will rise.** 8 of the 14 builders we spoke with last week expect new home permits to decline for the balance of the year, primarily due to short supply of labor. All builders expected labor prices to continue increasing. Construction worker compensation rose 14% in Mississippi after Hurricane Katrina. Our clients in Dallas expect to lose workers to Houston as well.
 - **Land prices likely to remain stable.** The shortage of land in good locations will likely continue to keep land prices high.
3. **Real estate discounts will disappear.** Prior to the hurricane, many new home sellers and apartment landlords were offering incentives to buyers and renters due to a slowly growing economy and an overbuilding of expensive apartments. Apartment Data Services, the Texas leader in apartment statistics and research, estimates approximately 10% of Houston-area apartments flooded from Hurricane Harvey, and believe most of the 70,000 vacant units will become occupied quickly. With housing vacancy certain to decline, we expect the incentives to disappear.
4. **Construction volumes will be higher than forecasted in 2018 and later.** It took about five years after Hurricane Katrina to rebuild the housing stock in Harrison and Hancock counties.”
– David Jarvis, Senior Vice President; Todd Tomalak, Vice President; and Matt Farris, Senior Associate, Real Estate; John Burns Real Estate Consulting, LLC

U.S. Housing Market

Rolling 12 Month Growth in Wages/Salaries per Construction Worker: Mississippi



Sources: John Burns Real Estate Consulting, LLC, calculations using BLS data (Data: 2007, Pub: Sep-17)

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Hurricane Harvey's Business Impact

History Lesson #1: Labor Costs Will Rise

“Following Hurricane Katrina, wages and salaries *per construction worker* jumped by over 14% in the state of Mississippi, as a shortage of workers drove up costs.” – David Jarvis, Senior Vice President; Todd Tomalak, Vice President; and Matt Farris, Senior Associate, Real Estate; John Burns Real Estate Consulting, LLC

U.S. Housing Market

Hurricane Katrina Impact on Housing Stock: Harrison and Hancock Counties, MS



Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 2010, Pub: Sep-17)

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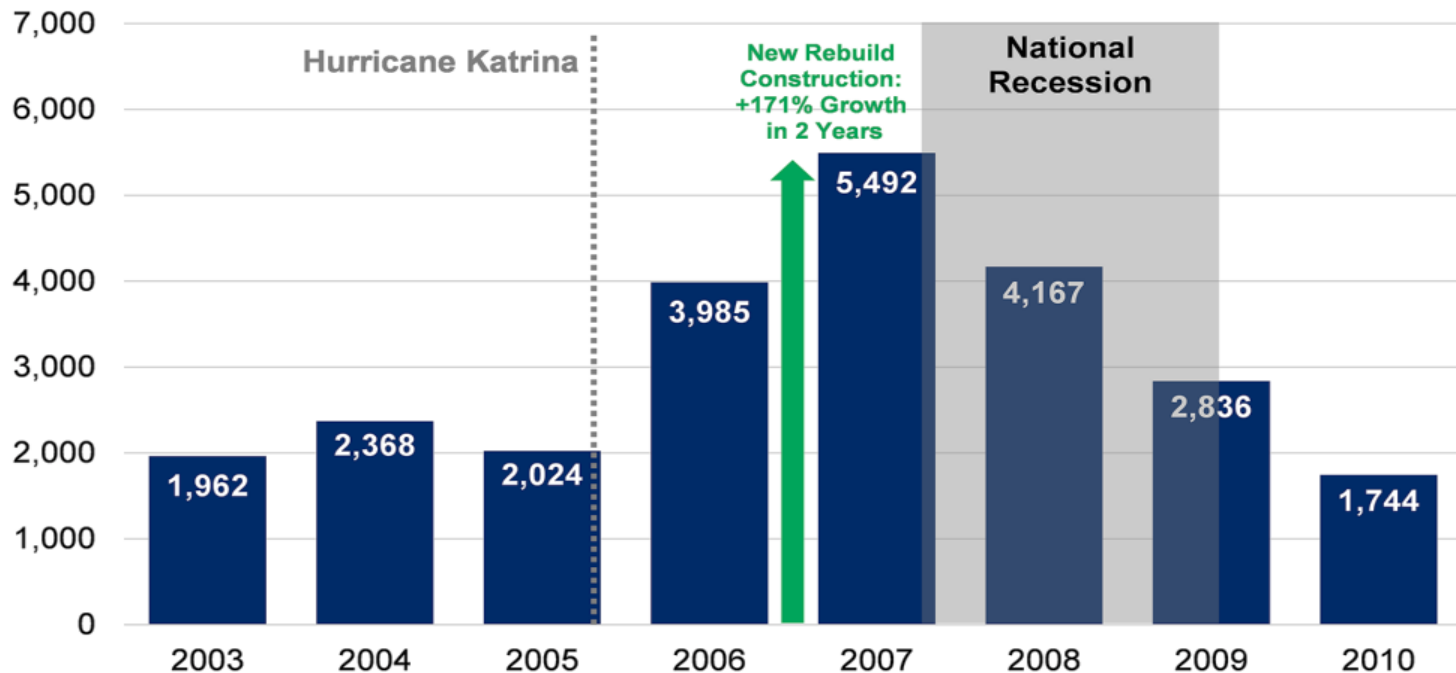
Hurricane Harvey's Business Impact

History Lesson #2: Five-Plus Years of Rebuilding for Hardest-Hit Areas

“It took five years of rebuilding for Harrison and Hancock counties after Hurricane Katrina. Initially, this was catastrophic for the housing stock, as nearly 20% of housing was destroyed. We expect 2017 US disaster repair and recovery spending to reach \$23 billion, which is at least double that of 2016. Overall, this will increase national R&R spending 4% in 2017 and 1% in 2018. We are raising our 2017 and 2018 forecasts to 10% and 6% increases, respectively, in repair and remodeling expenses.” – David Jarvis, Senior Vice President; Todd Tomalak, Vice President; and Matt Farris, Senior Associate, Real Estate; John Burns Real Estate Consulting, LLC

U.S. Housing Market

New Housing Permits: Gulfport-Biloxi-Pascagoula, MS



Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 2010, Pub: Sep-17)

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Hurricane Harvey's Business Impact

History Lesson #3: Short-Term Pain Immediately after Hurricane, Followed by 'Catch-Up' in Construction Volume

“Construction grew by 171% in the two years following Hurricane Katrina, as homes lost to hurricane damage had to be rebuilt — despite approximately 200,000 New Orleans residents permanently relocating.” – David Jarvis, Senior Vice President; Todd Tomalak, Vice President; and Matt Farris, Senior Associate, Real Estate; John Burns Real Estate Consulting, LLC

U.S. Housing Market

Hurricane Harvey's Business Impact

History Lesson #4: Resale Home Prices Take a 1-Year Hit after a Flood

“Floods are hard on home prices. We looked at the impact of flooding on resale home prices in Meyerland, a community within Houston. Meyerland has flooded four times since 2015, with a huge effect on median home prices compared to the rest of the city. Resale prices *declined by high single digits* for about a year after the flood, while prices in the rest of Houston increased.

Median resale prices fell for two reasons:

1. Meyerland became a less desirable neighborhood after repeated flooding.
2. Many resale transactions (up to 20% in periods immediately following a flood) were homes in need of repair. The chart below shows home sales excluding lot-only (distressed from storm) sales.

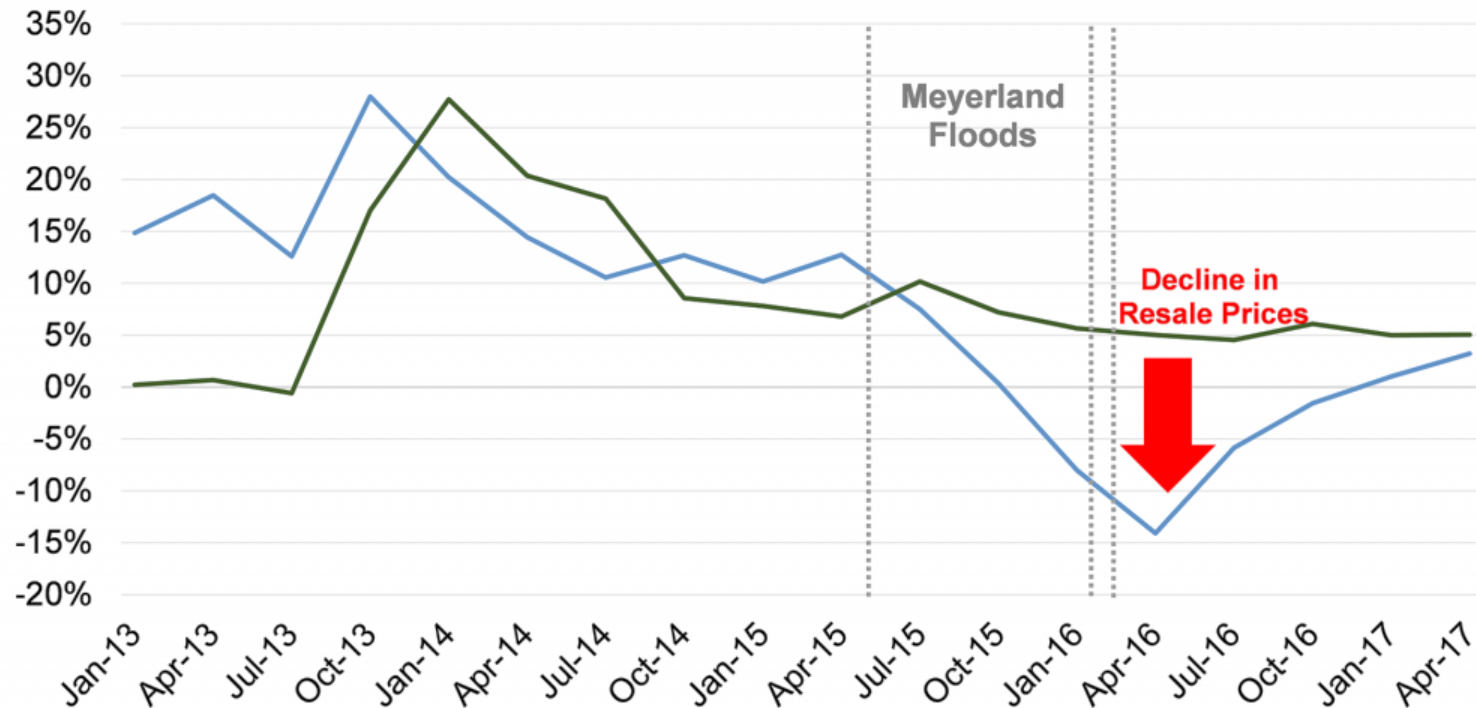
In summary, it will be a long time before Houston returns to normal. We believe new home construction will fall in the short term but rise in the long term. New home prices will have to go up because costs will go up. We believe Houstonians will work hard to rebuild the region we love.”

– David Jarvis, Senior Vice President; Todd Tomalak, Vice President; and Matt Farris, Senior Associate, Real Estate; John Burns Real Estate Consulting, LLC

U.S. Housing Market

Median Resale Home Sales Prices - % Change YOY

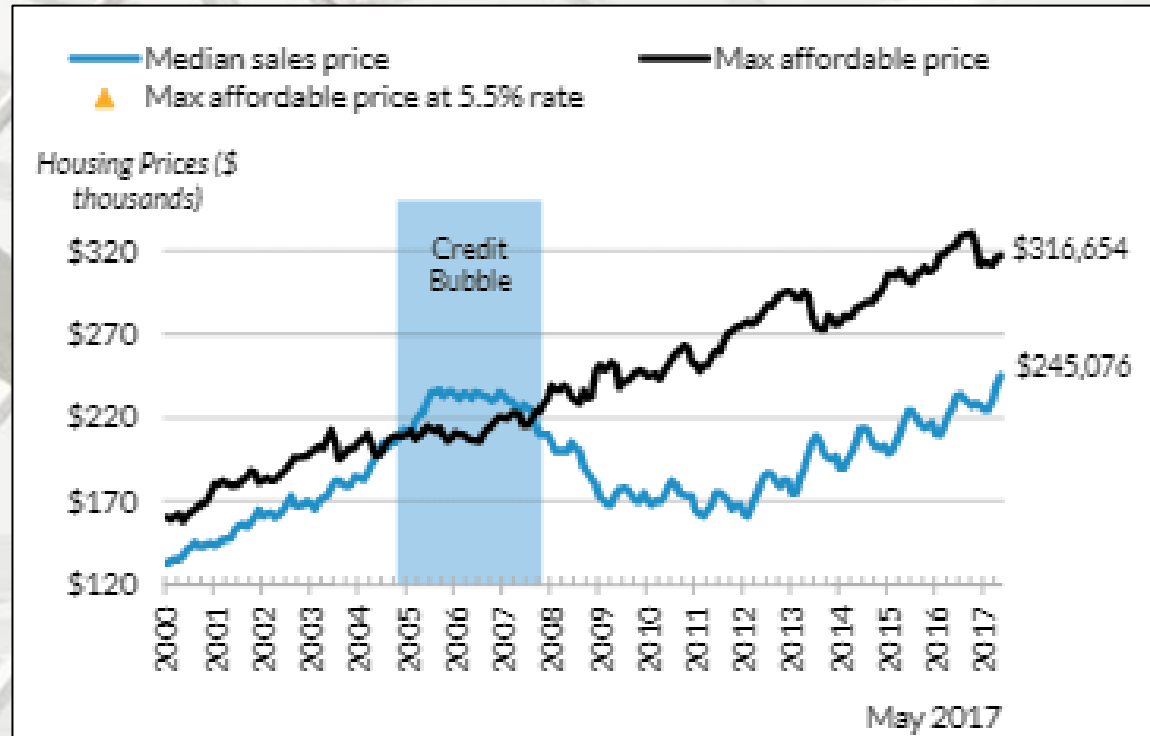
Excludes Lot-Only (Distressed) Sales — Meyerland — Houston



Sources: Houston Association of Realtors; MLS; John Burns Real Estate Consulting, LLC (Data: Apr-17, Pub: Sep-17)

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Housing Affordability



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 5.5 percent, affordability would still be at the long term historical average.” – Bing Lai, Research Associate, Housing Finance Policy Center

Summary

In summary:

The U.S. housing market regressed to the doldrums in July, as many monthly indicators were negative on a month-over-month basis. Somewhat surprisingly, total and SF starts turned negative on a monthly- and year-over-year basis. Monthly construction spending is problematic again, as single-family and improvement expenditures were only just positive on a month-over-month basis. These sub-sectors may portend a slowdown in the housing market if the continuation of this pattern continues. Once again, new SF lower-priced tier house sales struggled. 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;
- 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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