The Virginia Tech – U.S. Forest Service August 2017 Housing Commentary: Section I

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2017 Virginia Polytechnic Institute and State University VCE-ANR 296NP

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This report is a free monthly service of Virginia Tech. Past issues can be found at: http://woodproducts.sbio.vt.edu/housing-report. To request the report, please email: buehlmann@gmail.com

Opening Remarks

Housing starts and new single-family sales appear to appear to have stalled on a monthly and year-over-year basis. The bright spot in August were single-family starts and aggregate housing permits. Regionally, data were mixed across all sectors. New construction spending's contribution to United States gross domestic product decreased on a quarterly basis. The October 6th Atlanta Fed GDPNow™ model projects aggregate residential investment spending decreasing -5.0% in Quarter 3 2017. New private construction expenditures are projected to decline -2.1% and the improvement spending forecast is a 2.9% increase in Quarter 3 (all: seasonally adjusted annual rate).[1]

"New home sales ended the summer on a very weak note, and it's time we stopped sugarcoating the truth with this data – the simple fact is that we are severely under-producing housing in this country, relative both to basic demographics and currently high demand from buyers. Inventory is stuck at roughly mid-1990s levels, but the country has grown by more than 60 million people since then. Buying conditions, in theory, are great right now: Jobs and incomes are growing, and rock-bottom mortgage interest rates are helping keep financing costs low, even for more expensive homes. What's missing from the equation is a lack of homes actually available to buy at a price point that's reasonable for most buyers, even with today's bump in inventory. We've been hovering roughly at or below the 600,000 annual sales level for more than a year now, when the market could seemingly easily accommodate sales levels of 750,000 or even much more. While Hurricane Harvey likely held down sales in Texas, its adverse effect on August sales was probably pretty modest at around 6,000 units. It will be worth watching how new home construction and sales activity does or doesn't pick up in the South in coming months after Hurricanes Harvey and Irma, especially given the region's traditionally outsized role in the national new construction market. A surge in activity could set the tone for the rest of the country to follow; a lull will only mean the prolonged new home sales slump we've been enduring will continue."[2] – Svenja Gudel, Chief Economist, Zillow

This month's commentary also contains applicable housing data; new single-family and multifamily analysis; construction firms, employment, and payrolls; 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; 10/6/17;
[2] https://www.zillow.com/research/august-new-home-sales-reaction-16695/; 9/26/17

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August 2017
Housing Scorecard

	M/M		Y/Y	
Housing Starts	▽	0.8%	△	1.4%
Single-Family Starts	△	1.6%	△	17.1%
Housing Permits	△	5.7%	△	8.3%
Single-Family Permits	▽	1.5%	△	7.7%
Housing Completions	▽	10.2%	△	3.4%
Single-Family Completions	▽	13.3%	▽	2.7%
New Single-Family House Sales	▽	3.4%	▽	1.2%
Private Residential Construction Spending	△	0.4%	△	11.6%
Single-Family Construction Spending	△	0.3%	△	11.1%
Existing House Sales[1]	▽	1.7%	△	0.2%

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

Sources: U.S. Department of Commerce-Construction; [1]National Association of Realtors® (NAR®)

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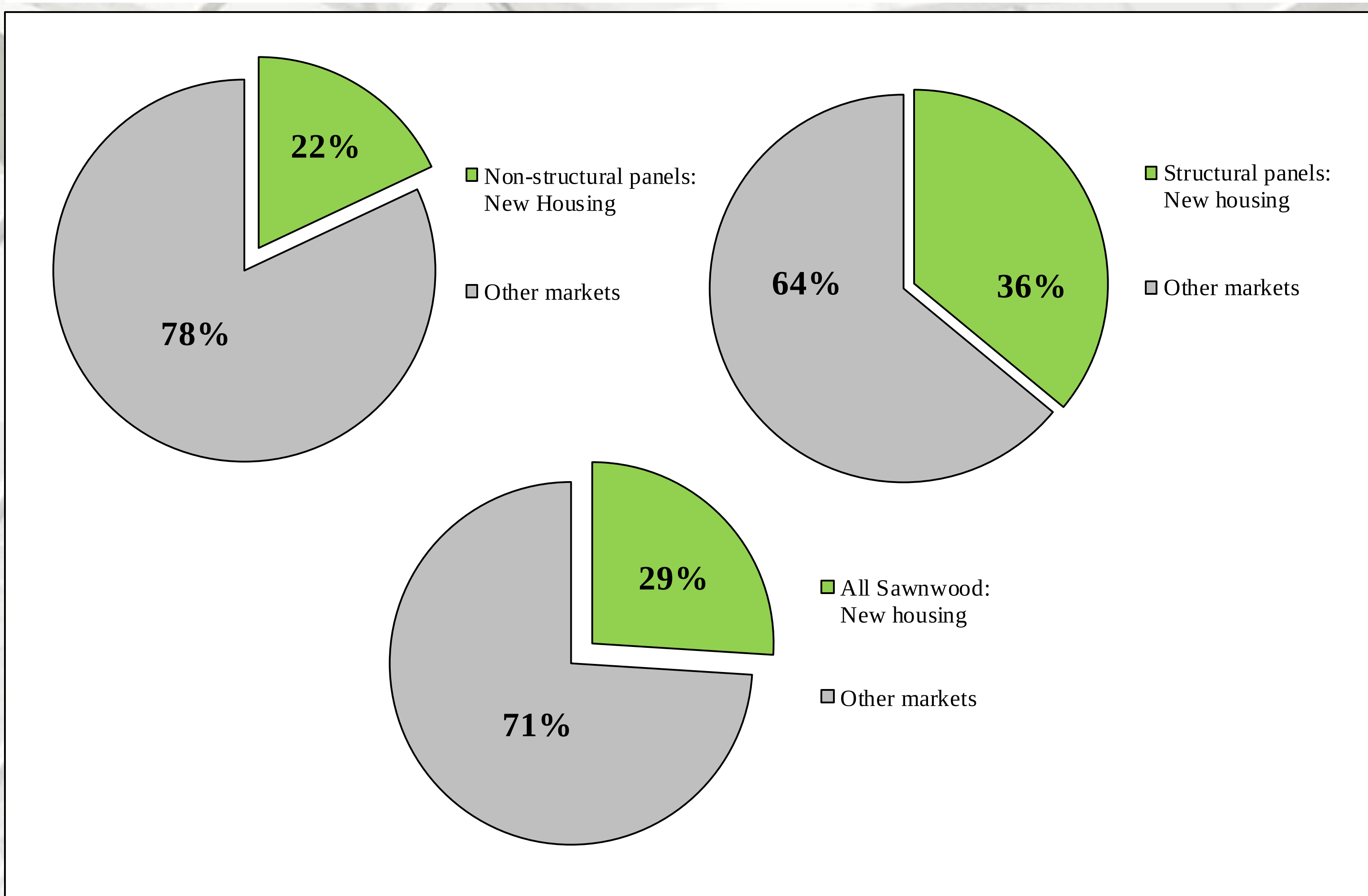
New Construction's Percentage of Wood Products Consumption



Source: U.S. Forest Service. Howard, J. and D. McKeever. 2015. U.S. Forest Products Annual Market Review and Prospects, 2010-2015

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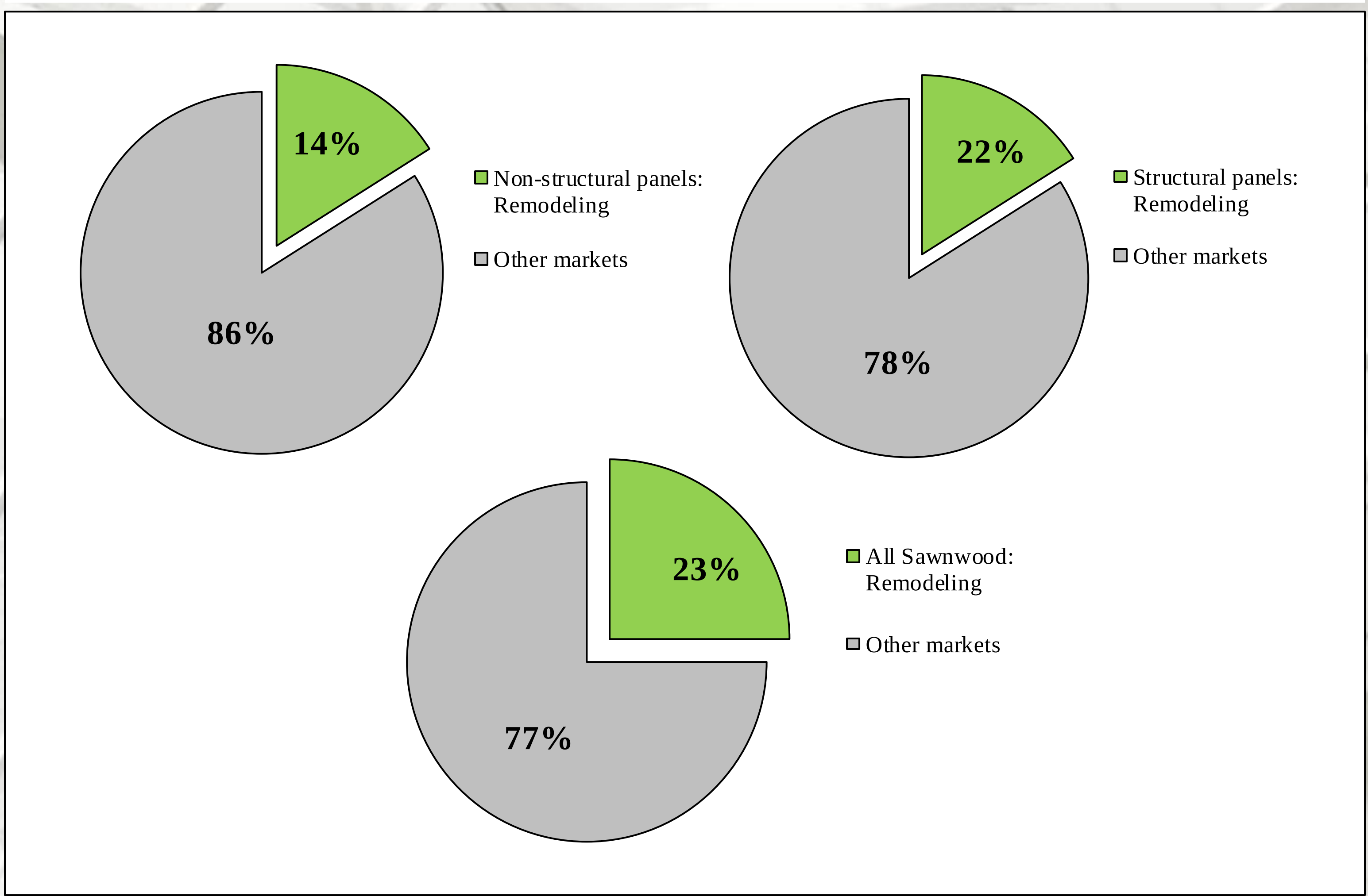
Repair and Remodeling's Percentage of Wood Products Consumption



Source: U.S. Forest Service. Howard, J. and D. McKeever. 2015. U.S. Forest Products Annual Market Review and Prospects, 2010-2015

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New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
August	1,180,000	851,000	6,000	323,000
July	1,190,000	838,000	9,000	343,000
2016	1,164,000	727,000	17,000	420,000
M/M change	-0.8%	1.6%	-33.3%	-5.8%
Y/Y change	1.4%	17.1%	-64.7%	-23.1%

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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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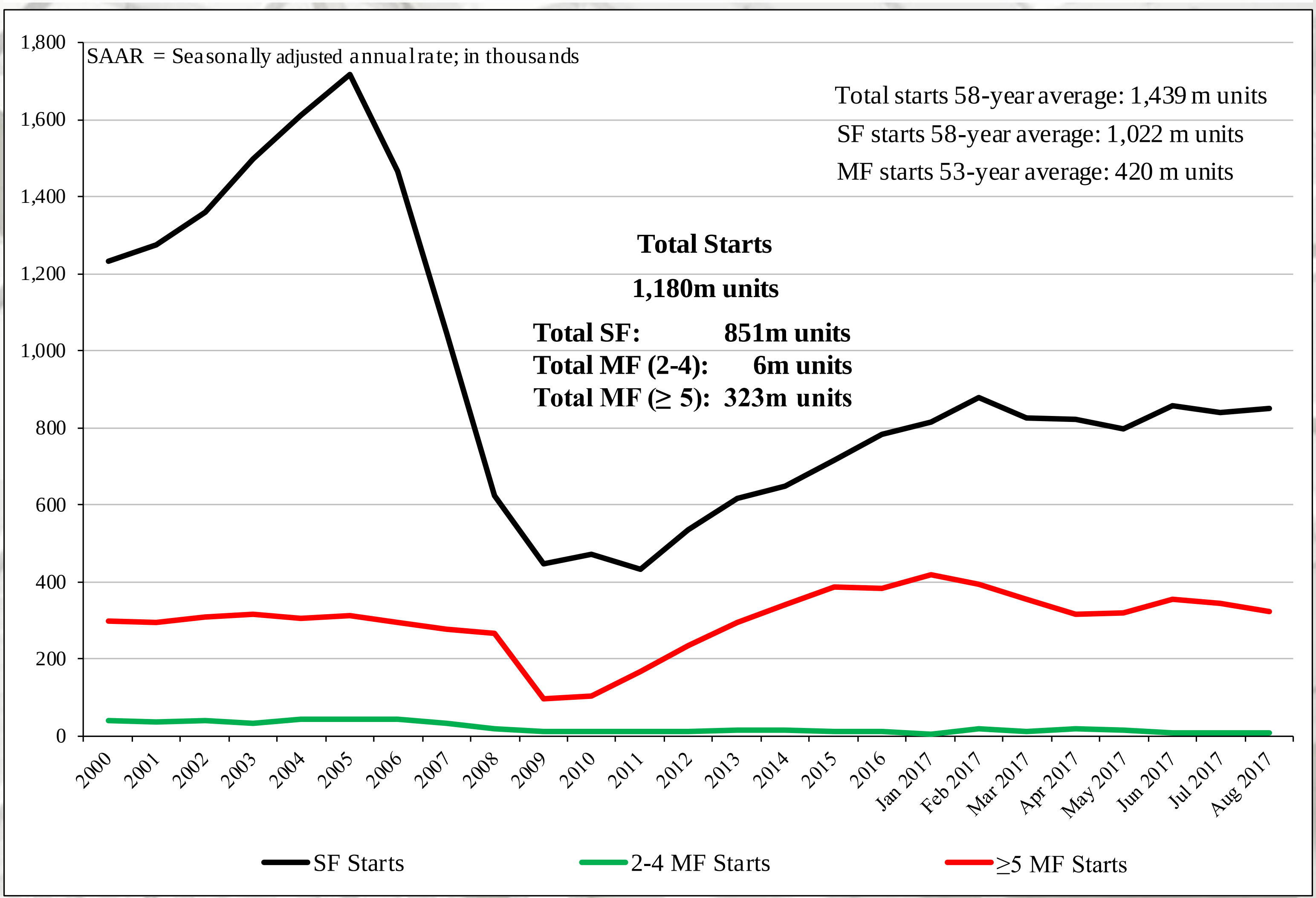
Total Housing Starts



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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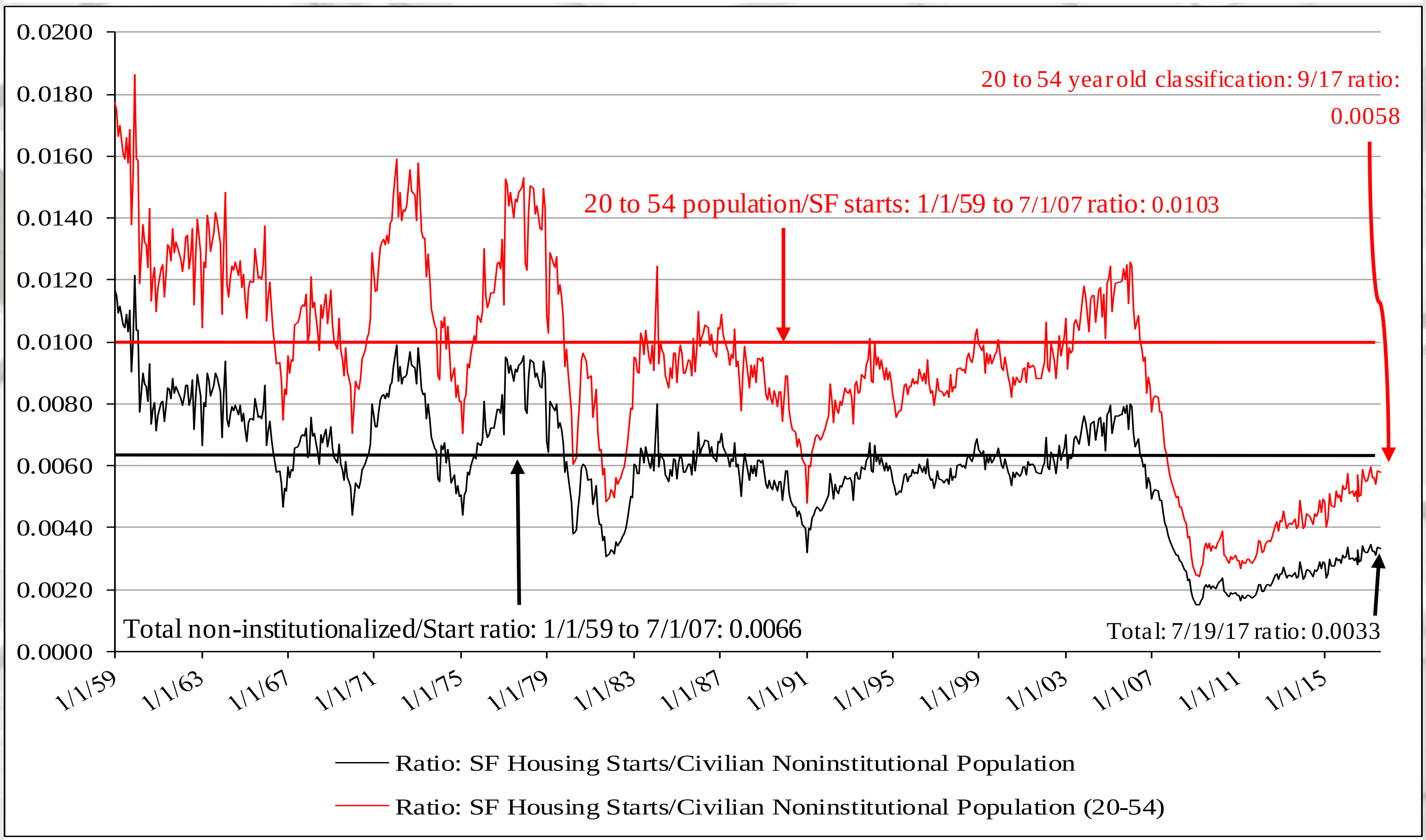
New SF Starts



New SF starts adjusted for the US population

From January 1959 to August 2007, the long-term ratio of new SF starts to the total US non-institutionalized population was 0.0066; in August 2017 it was 0.0033 – no change from July. The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in August 2017 it was 0.0058 – a slight increase from June. From a population worldview, construction is less than what is necessary for changes in population (i.e., under-building).

Sources: http://www.census.gov/construction/nrs/xls/newressales.xls and The Federal Reserve Bank of St. Louis; 9/19/17

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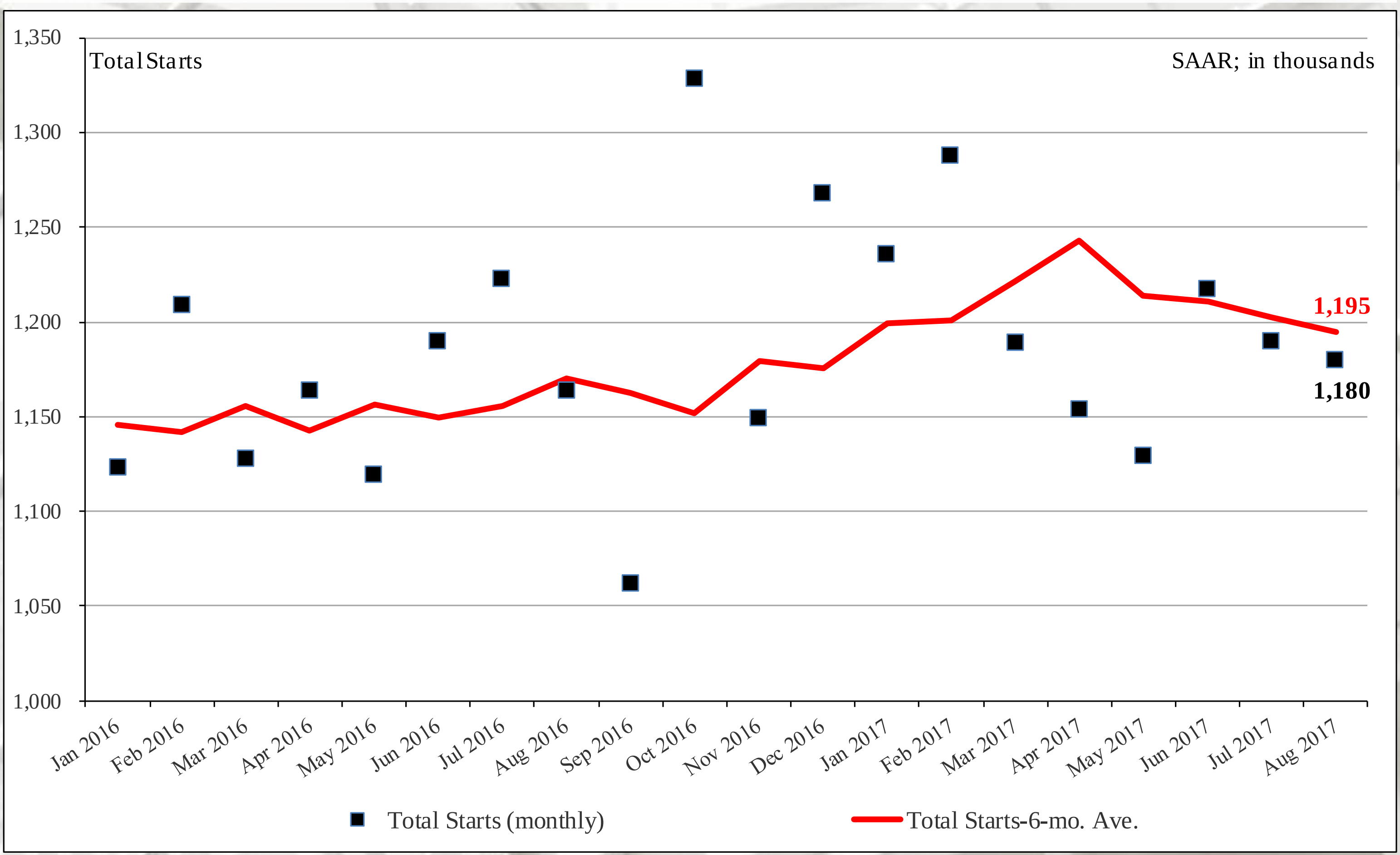
Total Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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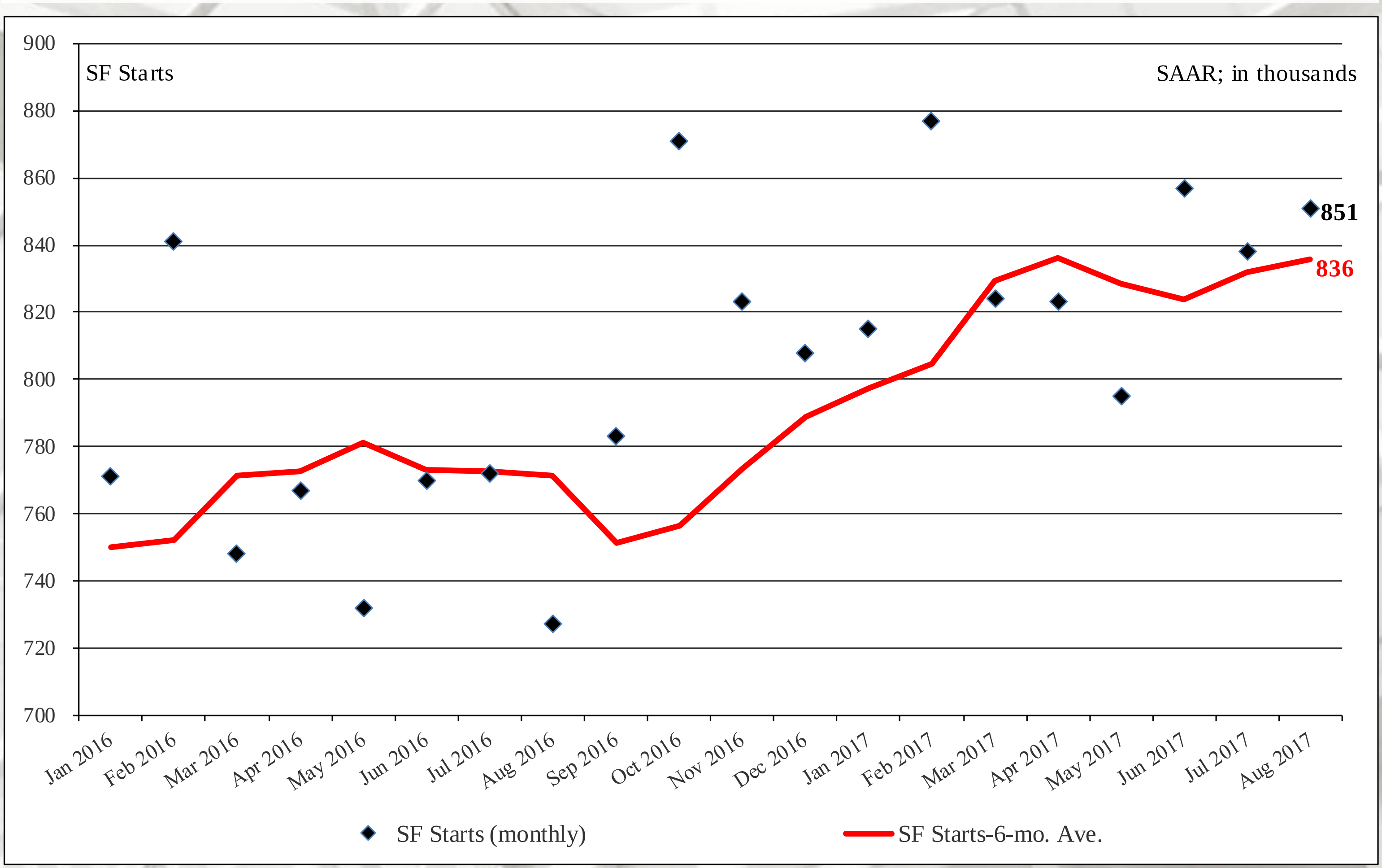
SF Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

New Housing Starts by Region

	NE Total	NE SF	NE MF**
August	105,000	66,000	39,000
July	115,000	67,000	48,000
2016	133,000	52,000	81,000
M/M change	-8.7%	-1.5%	-18.8%
Y/Y change	-21.1%	26.9%	-51.9%

	MW Total	MW SF	MW MF
August	200,000	110,000	90,000
July	164,000	115,000	49,000
2016	170,000	113,000	57,000
M/M change	22.0%	-4.3%	83.7%
Y/Y change	17.6%	-2.7%	57.9%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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New Housing Starts by Region

	S Total	S SF	S MF**
August	563,000	463,000	100,000
July	611,000	457,000	154,000
2016	562,000	377,000	185,000
M/M change	-7.9%	1.3%	-35.1%
Y/Y change	0.2%	22.8%	-45.9%

	W Total	W SF	W MF
August	312,000	212,000	100,000
July	300,000	199,000	101,000
2016	299,000	185,000	114,000
M/M change	4.0%	6.5%	-1.0%
Y/Y change	4.3%	14.6%	-12.3%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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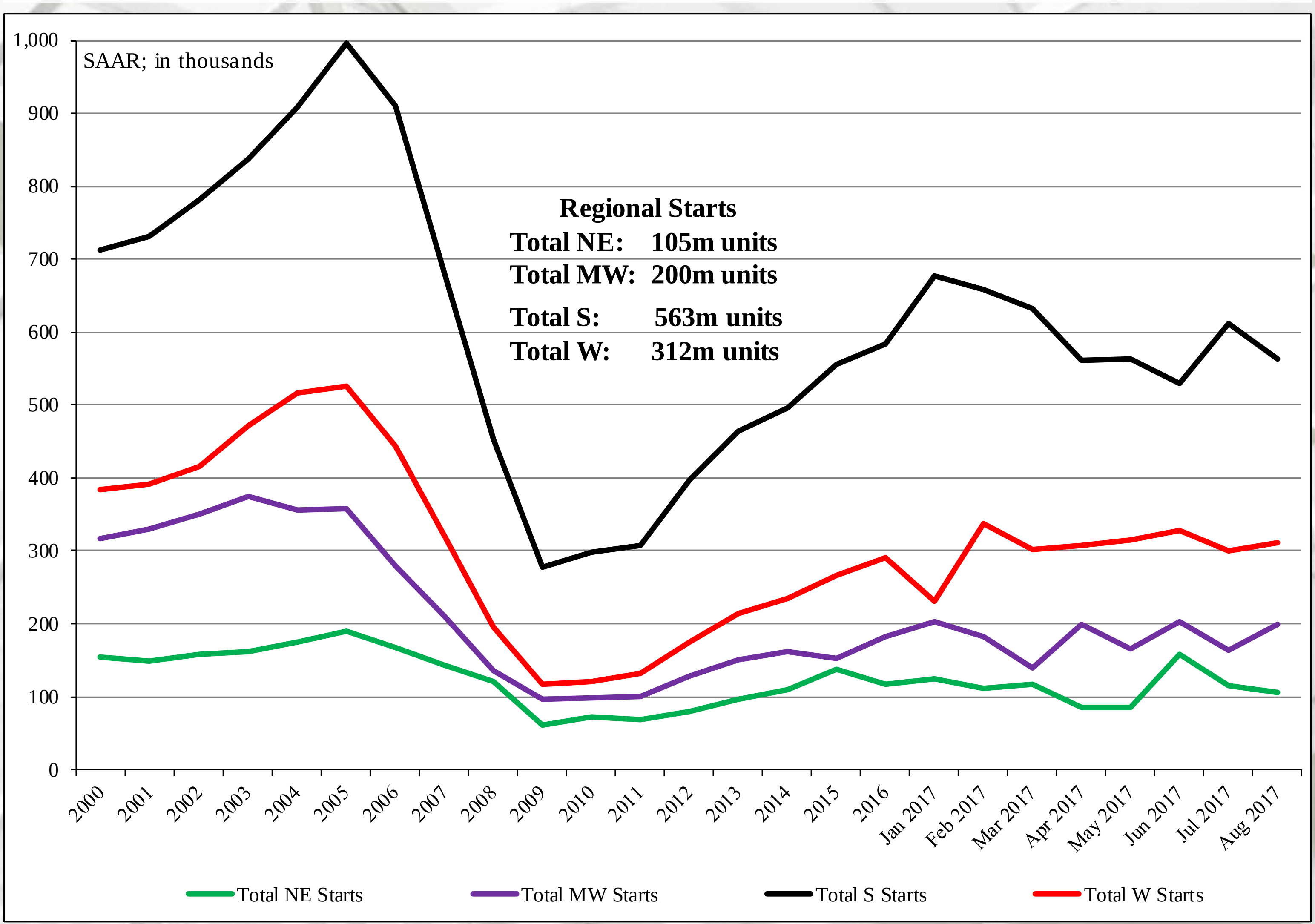
Total Housing Starts by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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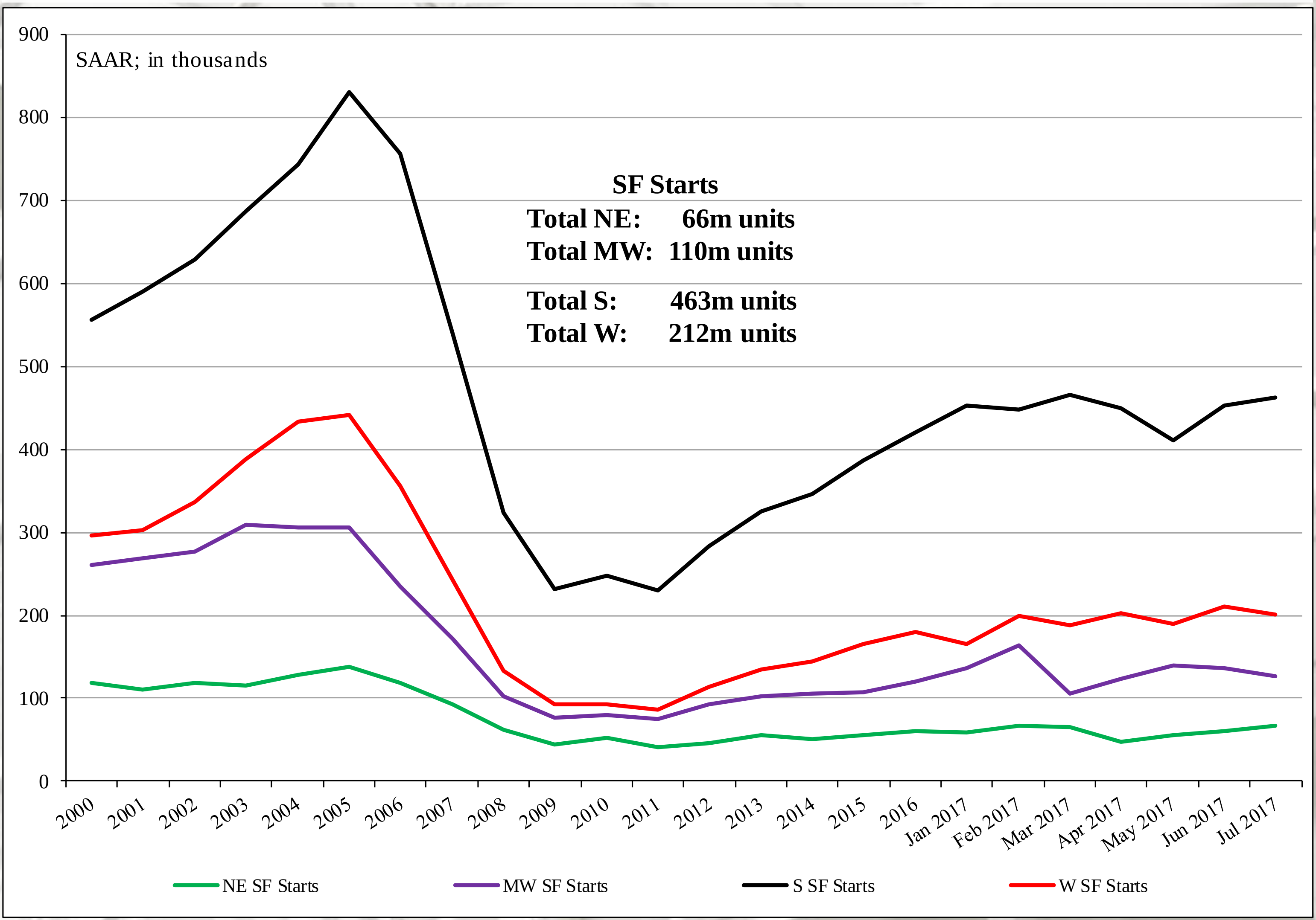
SF Housing Starts by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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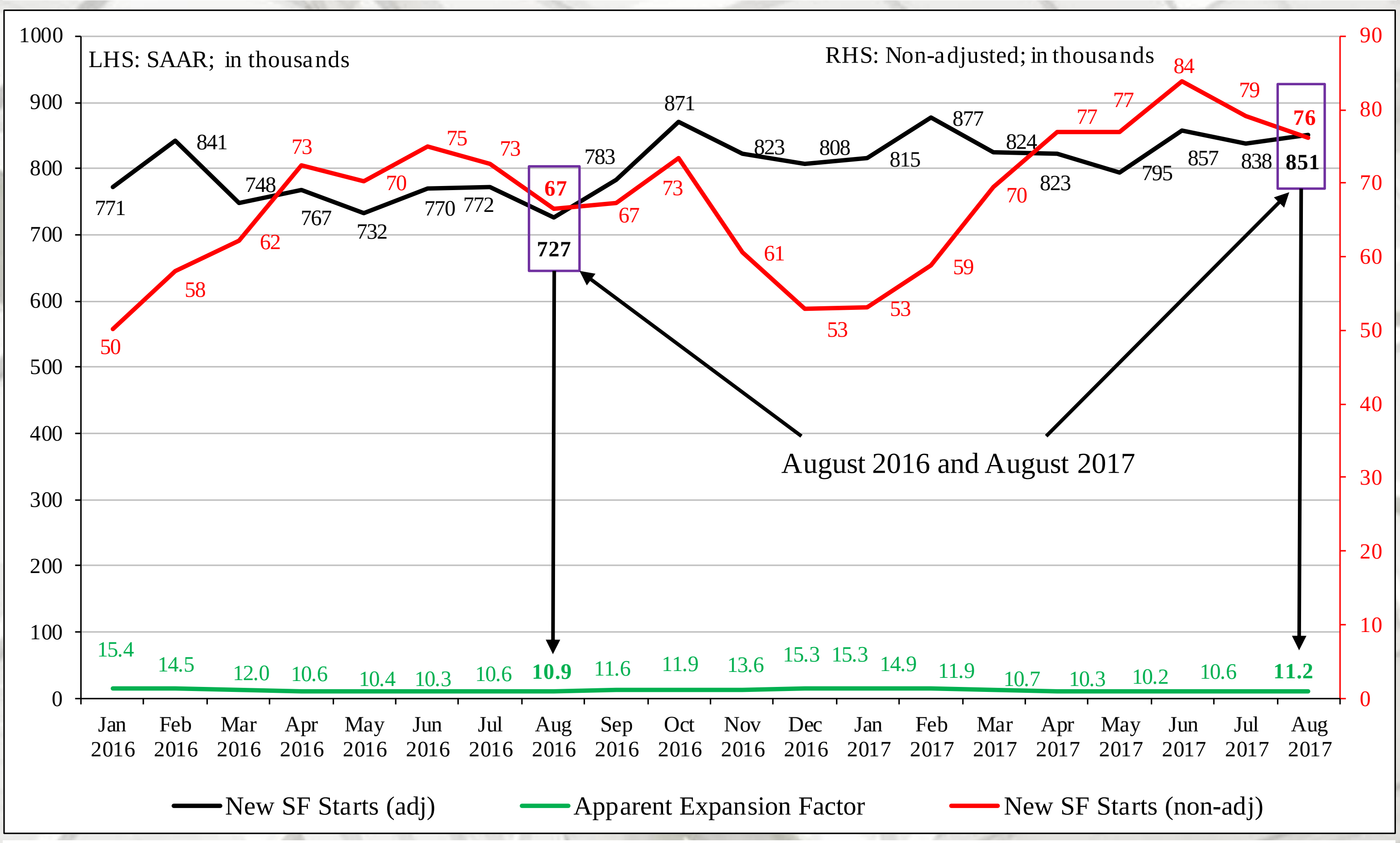
Nominal & SAAR SF Starts



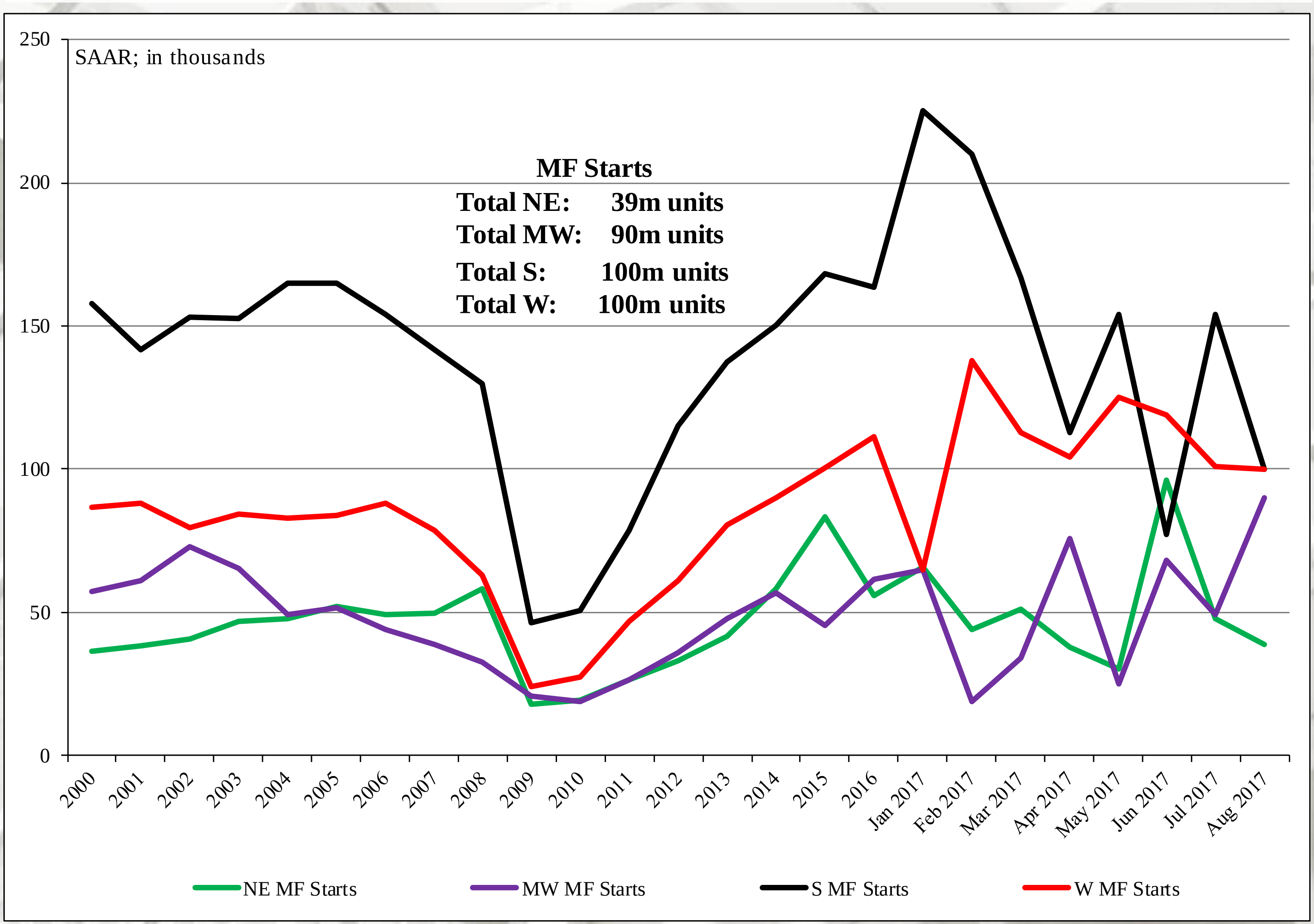
Nominal and Adjusted New SF Monthly Starts

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

MF Housing Starts by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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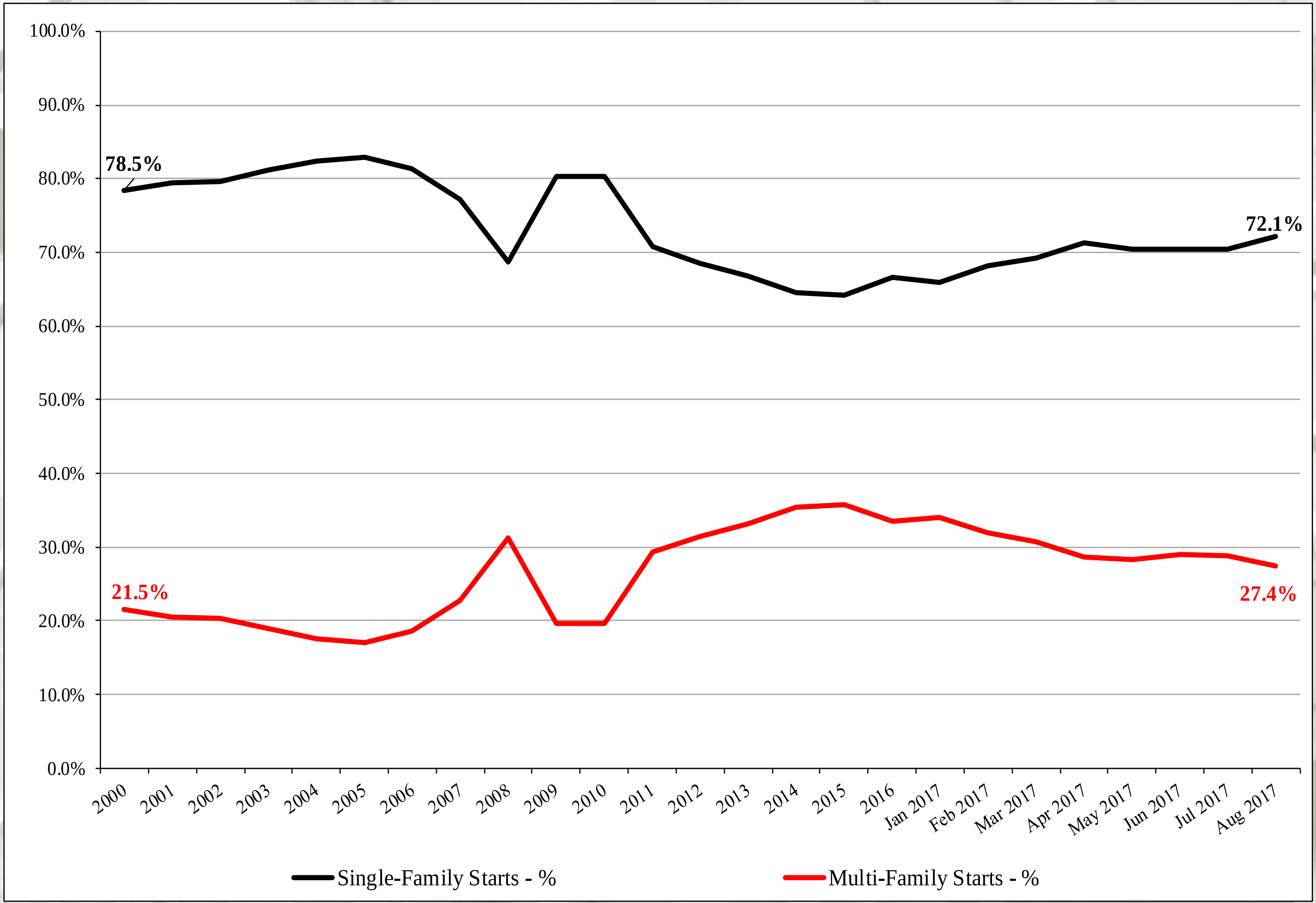
SF & MF Housing Starts (%)



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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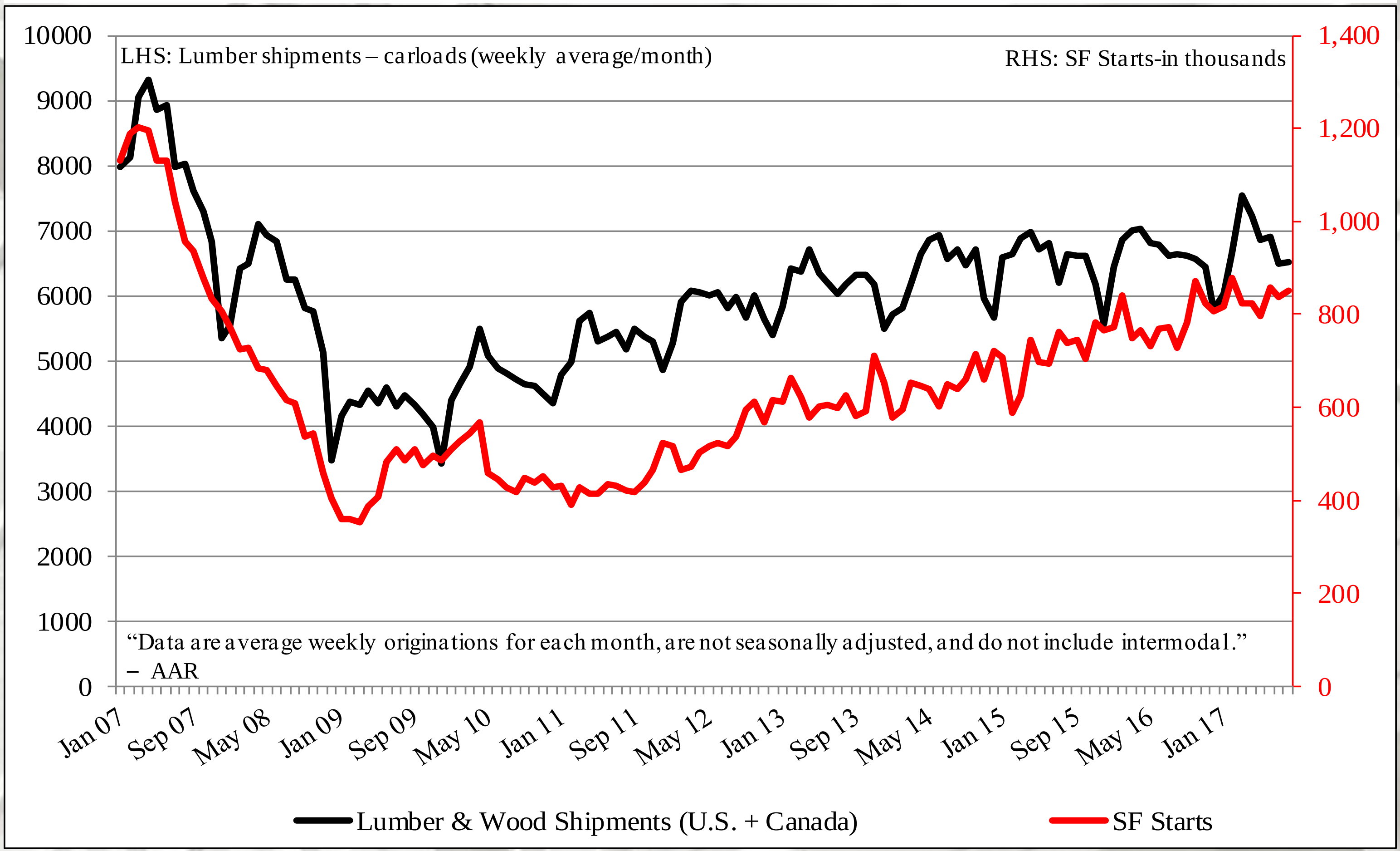
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 9/7/17; U.S. DOC-Construction; 9/19/17

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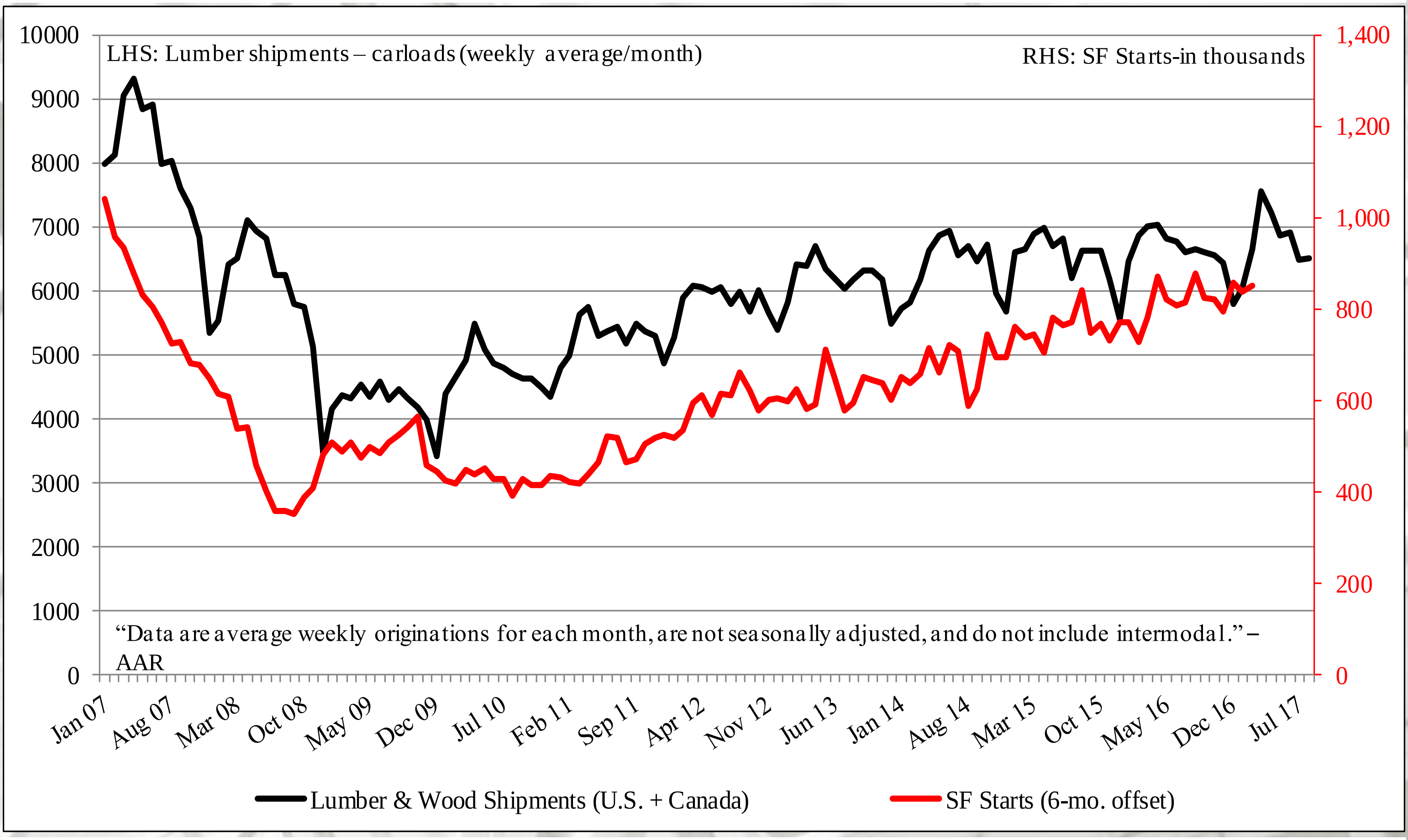
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts: 6-month Offset



In this graph, January 2007 lumber shipments are contrasted with August 2007 SF starts, and continuing through August 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.

Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 9/7/17; U.S. DOC-Construction; 9/19/17

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New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
August	1,300,000	800,000	36,000	464,000
July	1,230,000	812,000	40,000	378,000
2016	1,200,000	743,000	36,000	421,000
M/M change	5.7%	-1.5%	-10.0%	22.8%
Y/Y change	8.3%	7.7%	0.0%	10.2%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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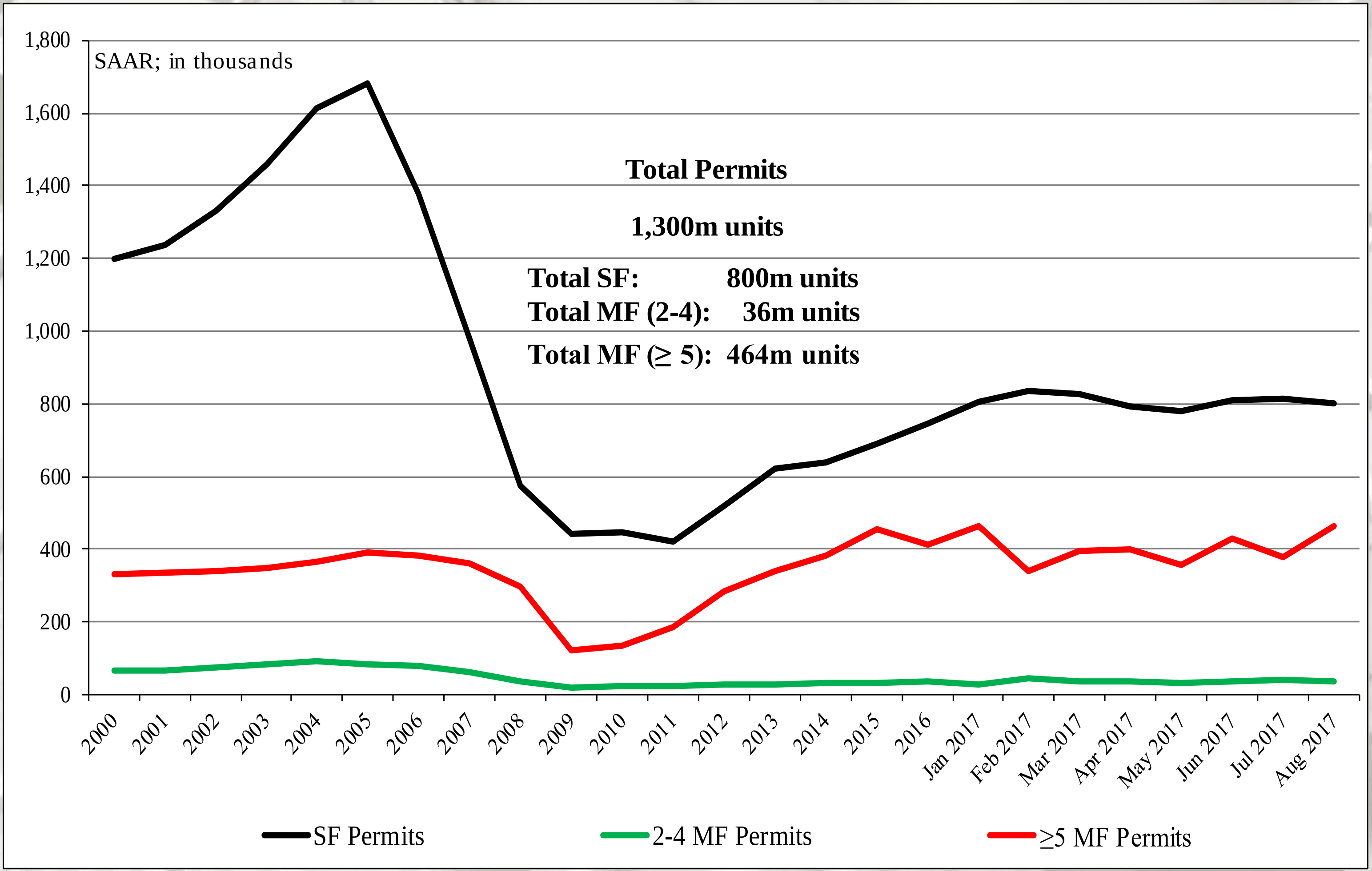
Total New Housing Permits



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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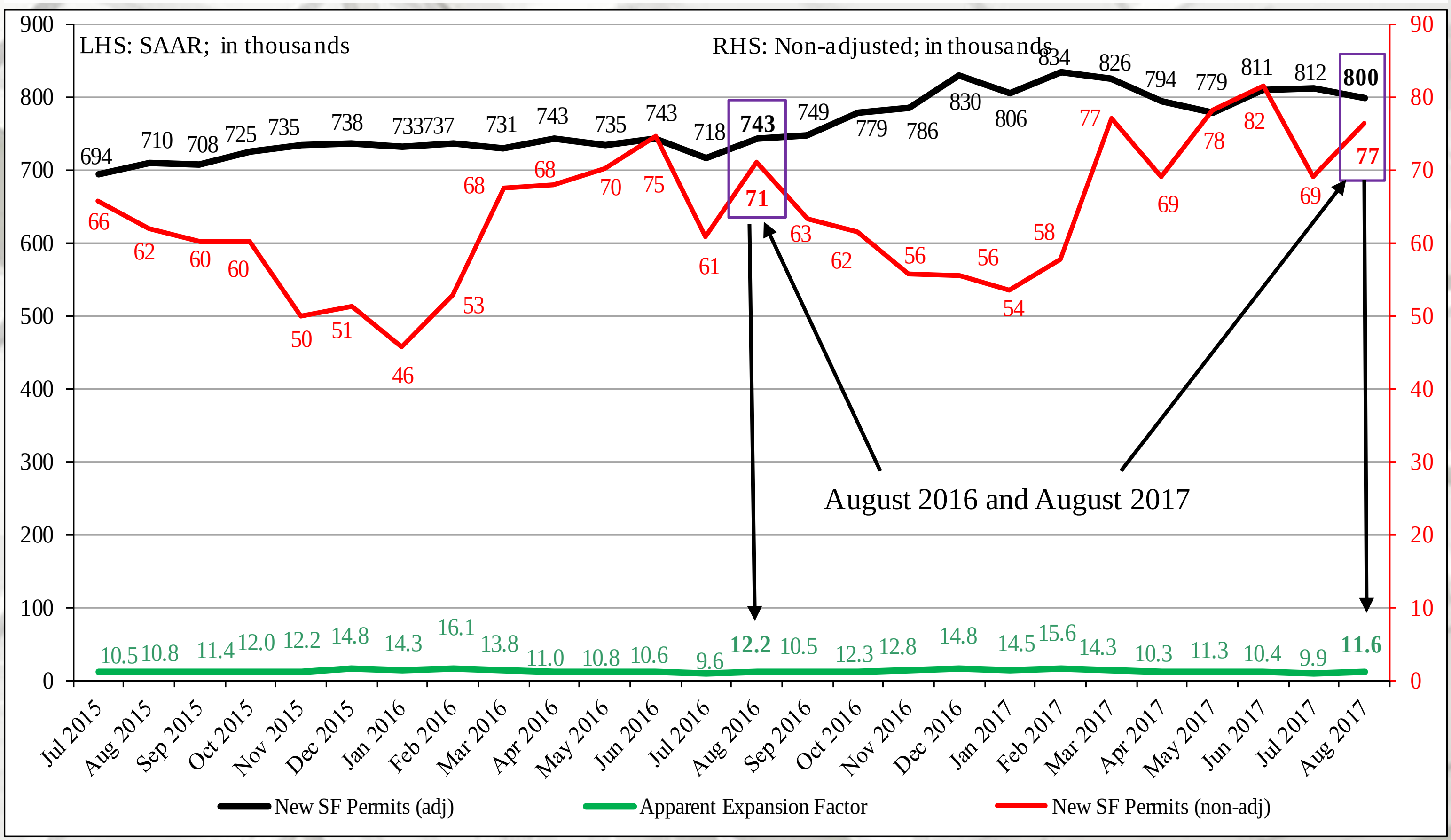
Nominal & SAAR SF Permits



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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
August	107,000	58,000	49,000
July	123,000	57,000	66,000
2016	117,000	53,000	64,000
M/M change	-13.0%	1.8%	-25.8%
Y/Y change	-8.5%	9.4%	-23.4%

	MW Total*	MW SF	MW MF**
August	185,000	112,000	73,000
July	170,000	117,000	53,000
2016	192,000	112,000	80,000
M/M change	8.8%	-4.3%	37.7%
Y/Y change	-3.6%	0.0%	-8.8%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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New Housing Permits by Region

	S Total*	S SF	S MF**
August	646,000	431,000	215,000
July	623,000	452,000	171,000
2016	606,000	407,000	199,000
M/M change	3.7%	-4.6%	25.7%
Y/Y change	6.6%	5.9%	8.0%

	W Total*	W SF	W MF**
August	362,000	199,000	163,000
July	314,000	186,000	128,000
2016	285,000	171,000	114,000
M/M change	15.3%	7.0%	27.3%
Y/Y change	27.0%	16.4%	43.0%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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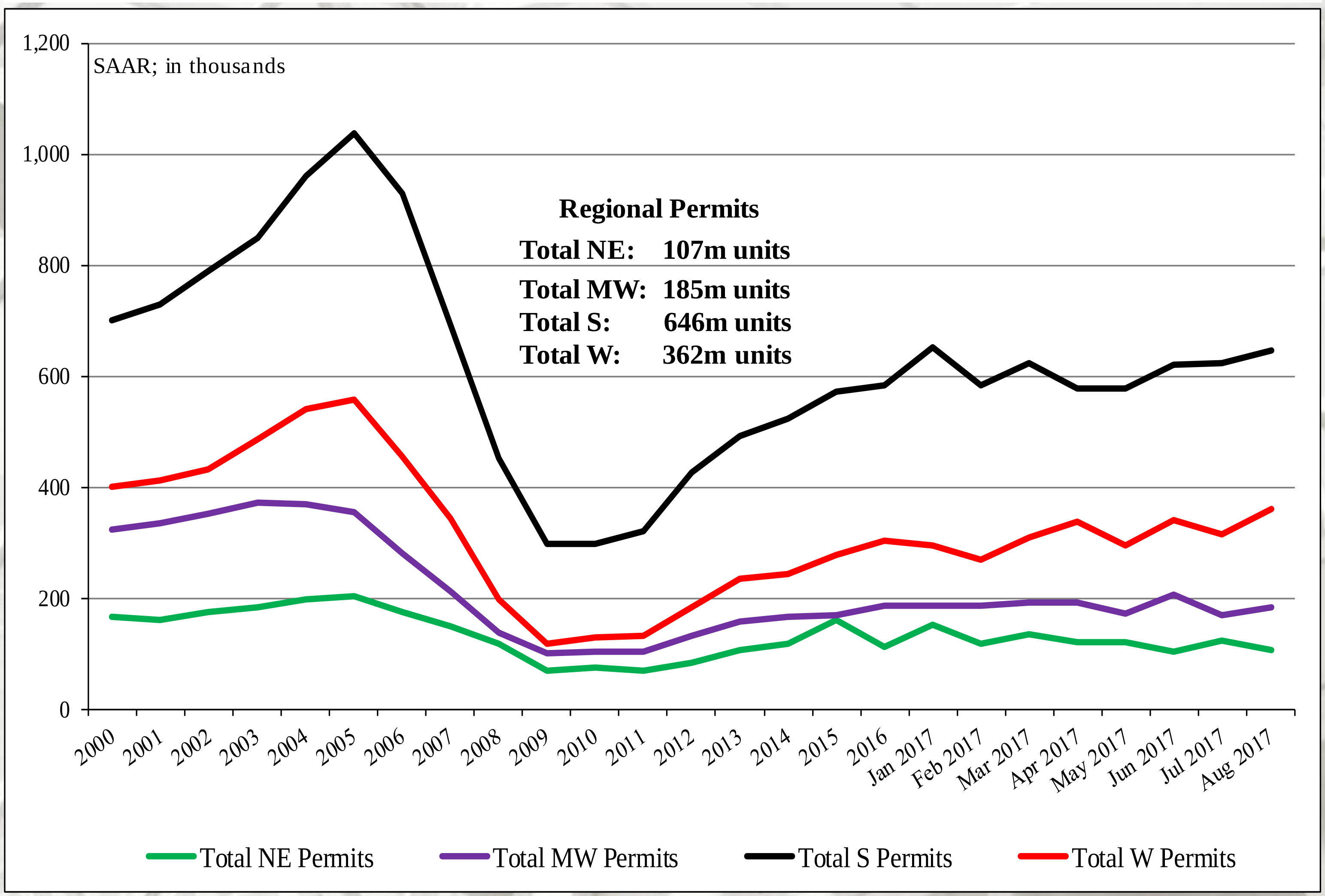
Total Housing Permits by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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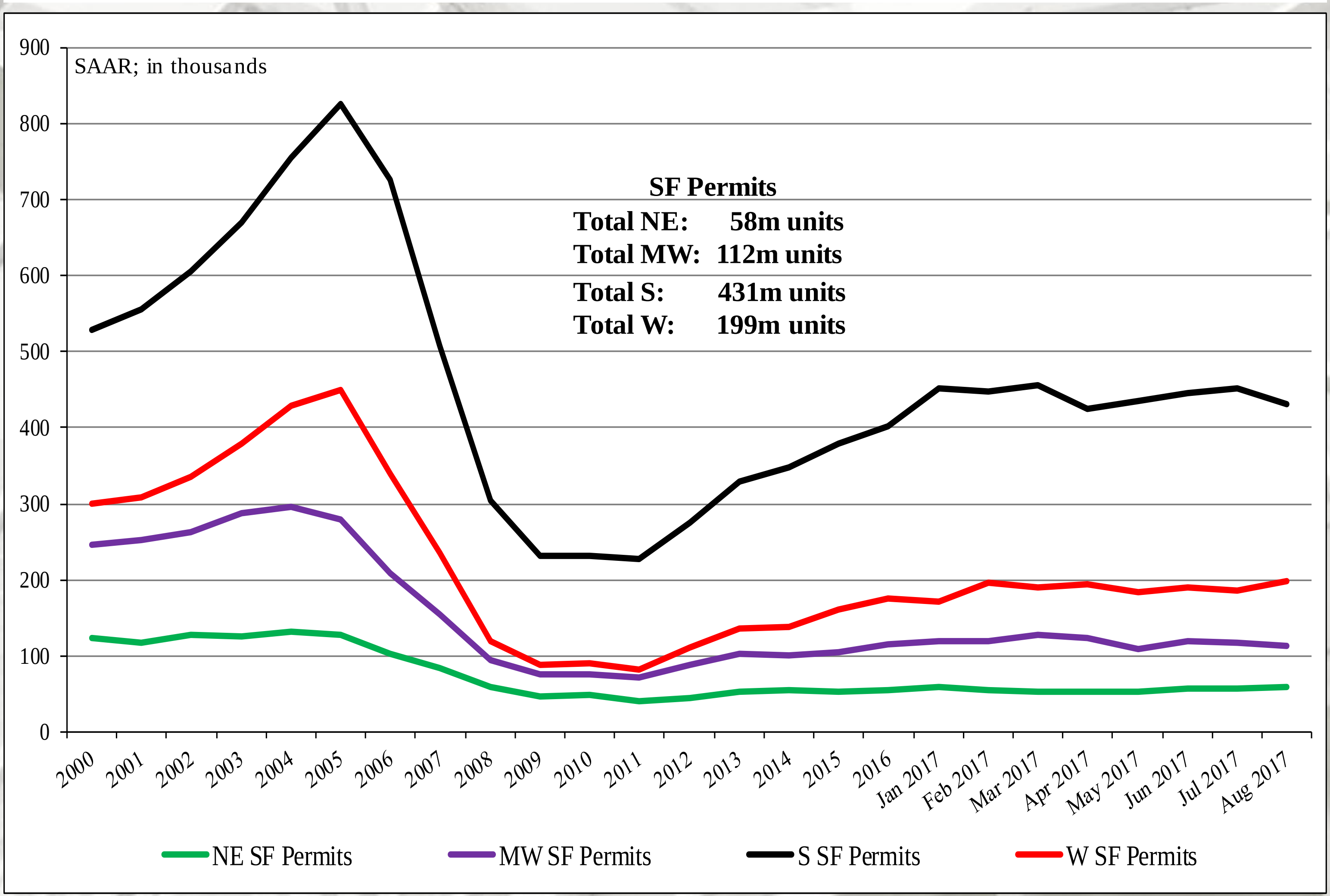
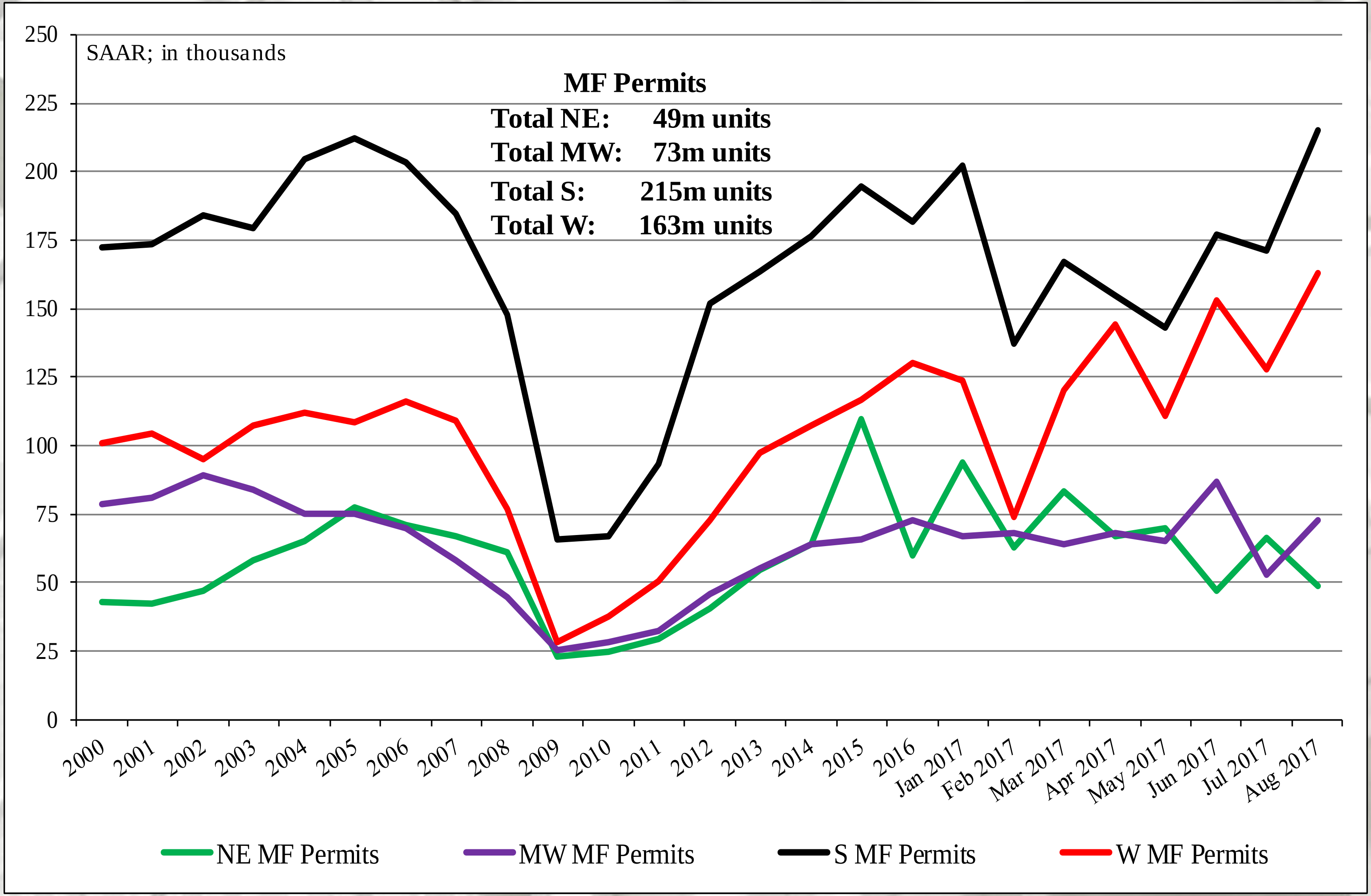
SF Housing Permits by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

MF Housing Permits by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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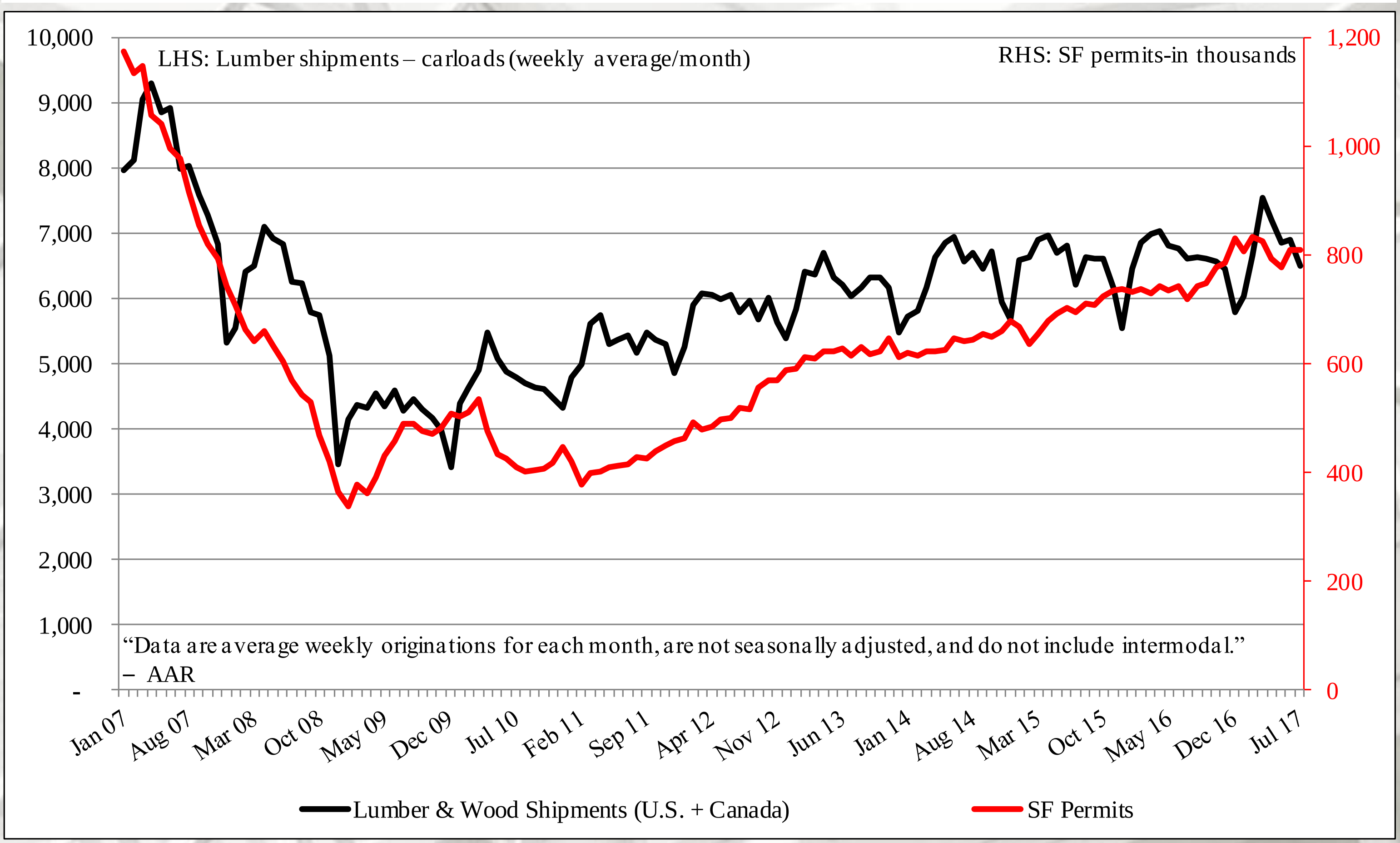
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 9/7/17; U.S. DOC-Construction; 9/19/17

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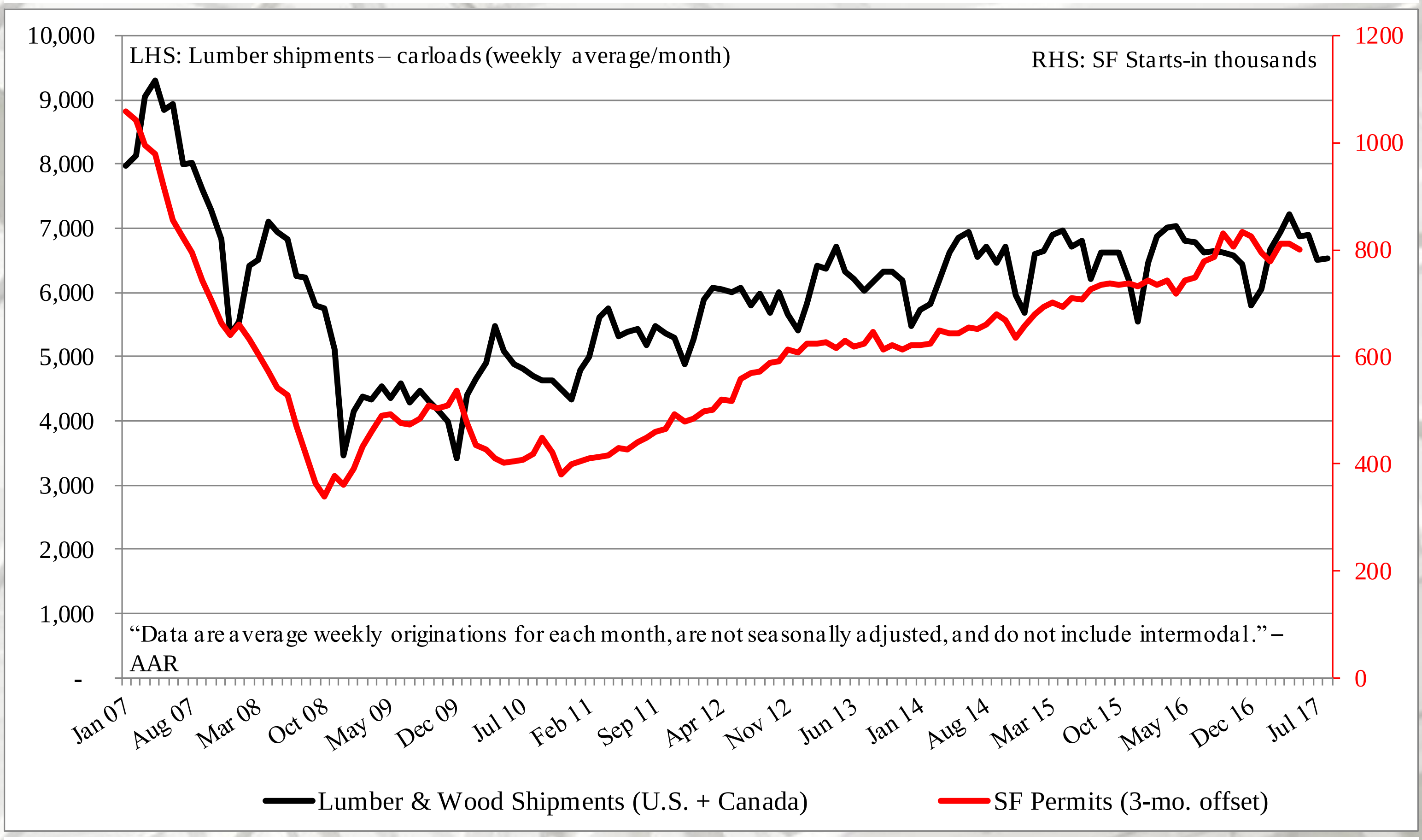
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits: 3-month Offset



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

Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 9/7/17; U.S. DOC-Construction; 9/19/17

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New Housing Under Construction

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
August	1,082,000	472,000	9,000	601,000
July	1,068,000	462,000	9,000	597,000
2016	1,034,000	427,000	11,000	596,000
M/M change	1.3%	2.2%	0.0%	0.7%
Y/Y change	4.6%	10.5%	-18.2%	0.8%

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)).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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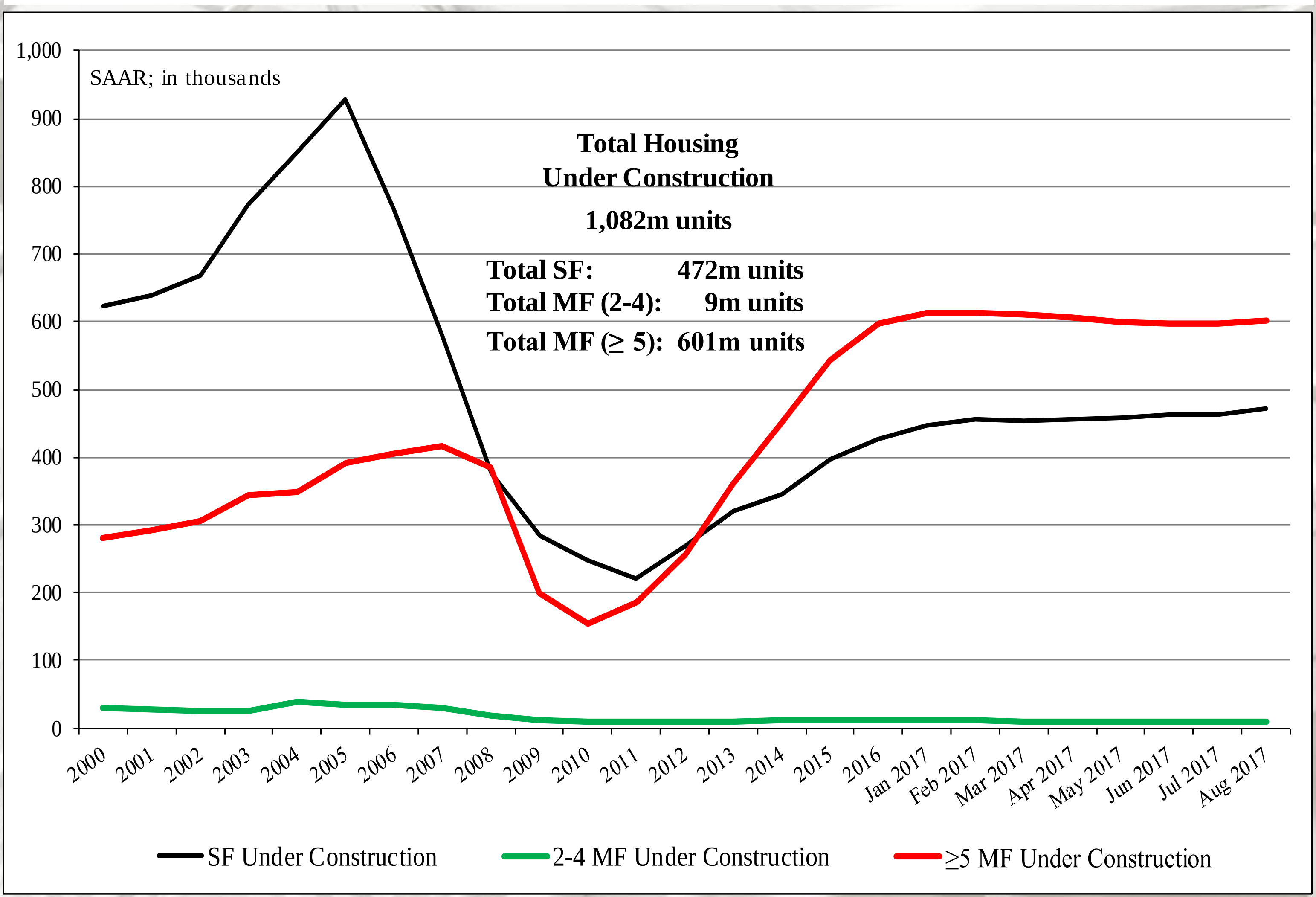
Total Housing Under Construction



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
August	187,000	50,000	137,000
July	186,000	50,000	136,000
2016	192,000	49,000	143,000
M/M change	0.5%	0.0%	0.7%
Y/Y change	-2.6%	2.0%	-4.2%

	MW Total	MW SF	MW MF
August	153,000	77,000	76,000
July	150,000	77,000	73,000
2016	136,000	70,000	66,000
M/M change	2.0%	0.0%	4.1%
Y/Y change	12.5%	10.0%	15.2%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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New Housing Under Construction by Region

	S Total	S SF	S MF**
August	448,000	228,000	220,000
July	441,000	221,000	220,000
2016	446,000	208,000	238,000
M/M change	1.6%	3.2%	0.0%
Y/Y change	0.4%	9.6%	-7.6%
	W Total	**W SF**	**W MF**
August	294,000	117,000	177,000
July	291,000	114,000	177,000
2016	260,000	100,000	160,000
M/M change	1.0%	2.6%	0.0%
Y/Y change	13.1%	17.0%	10.6%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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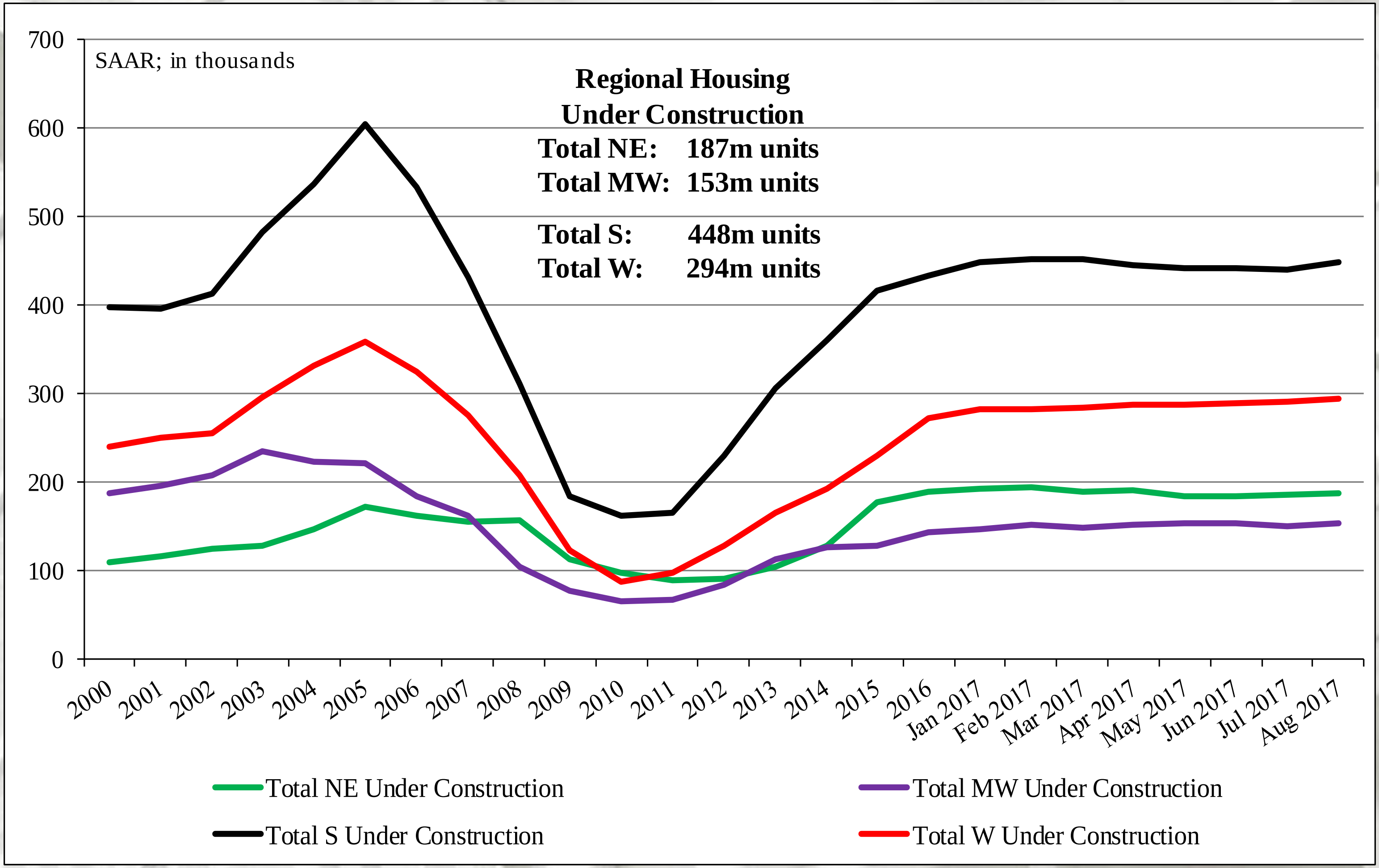
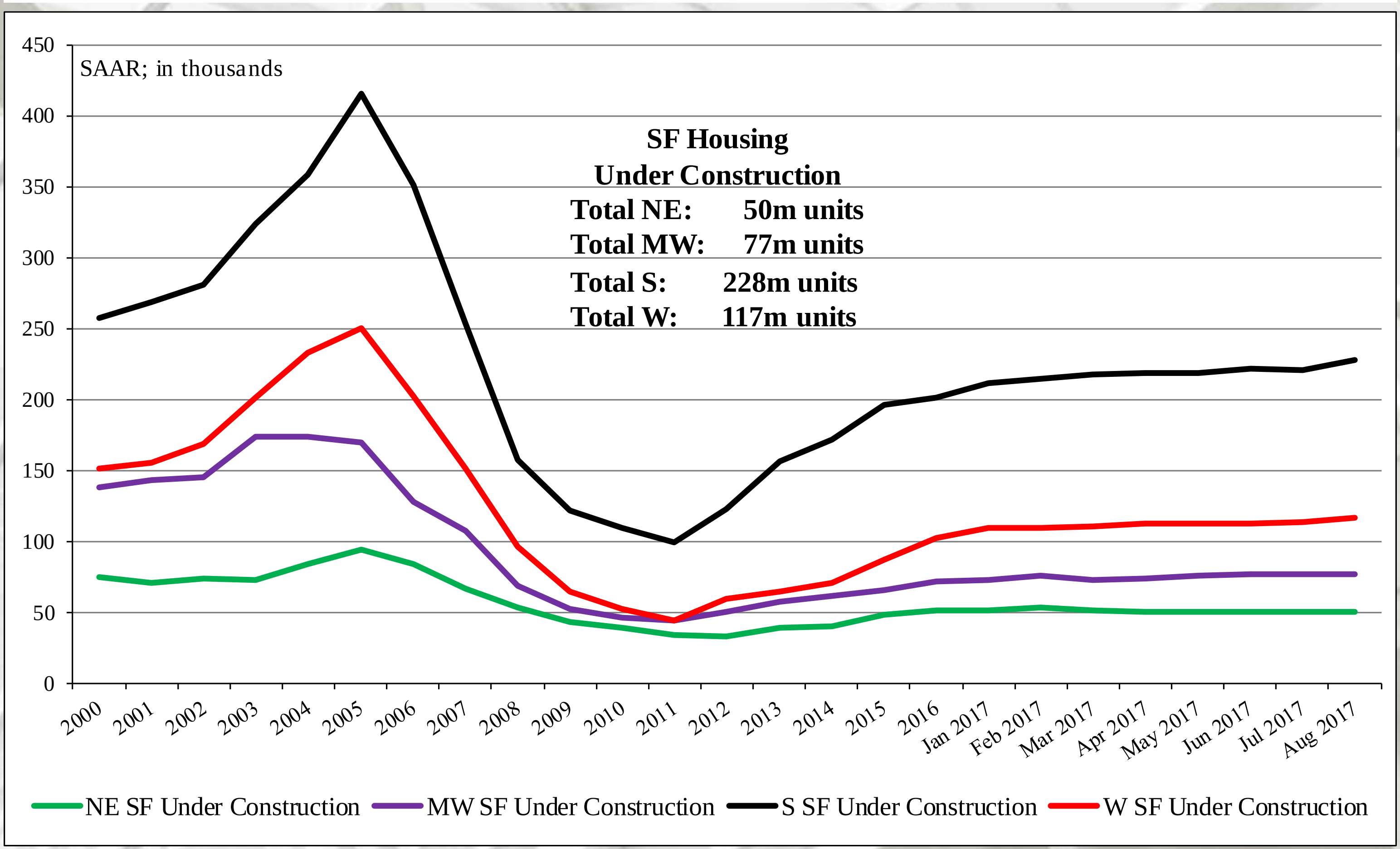
Total Housing Under Construction by Region



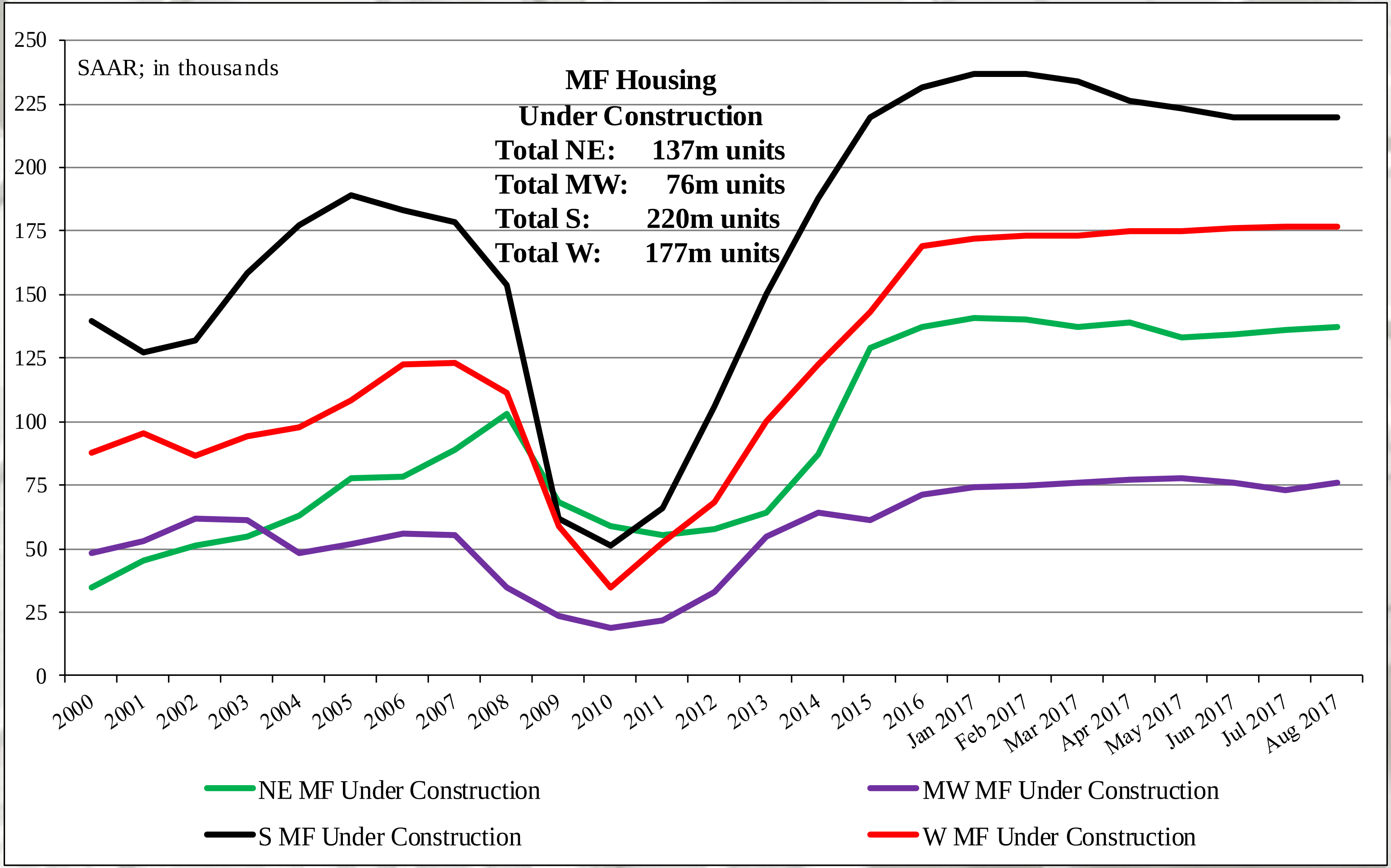
Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

SF Housing Under Construction by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

MF Housing Under Construction by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
August	1,075,000	724,000	3,000	348,000
July	1,197,000	835,000	7,000	355,000
2016	1,040,000	744,000	8,000	288,000
M/M change	-10.2%	-13.3%	-57.1%	-2.0%
Y/Y change	3.4%	-2.7%	-62.5%	20.8%

* 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)).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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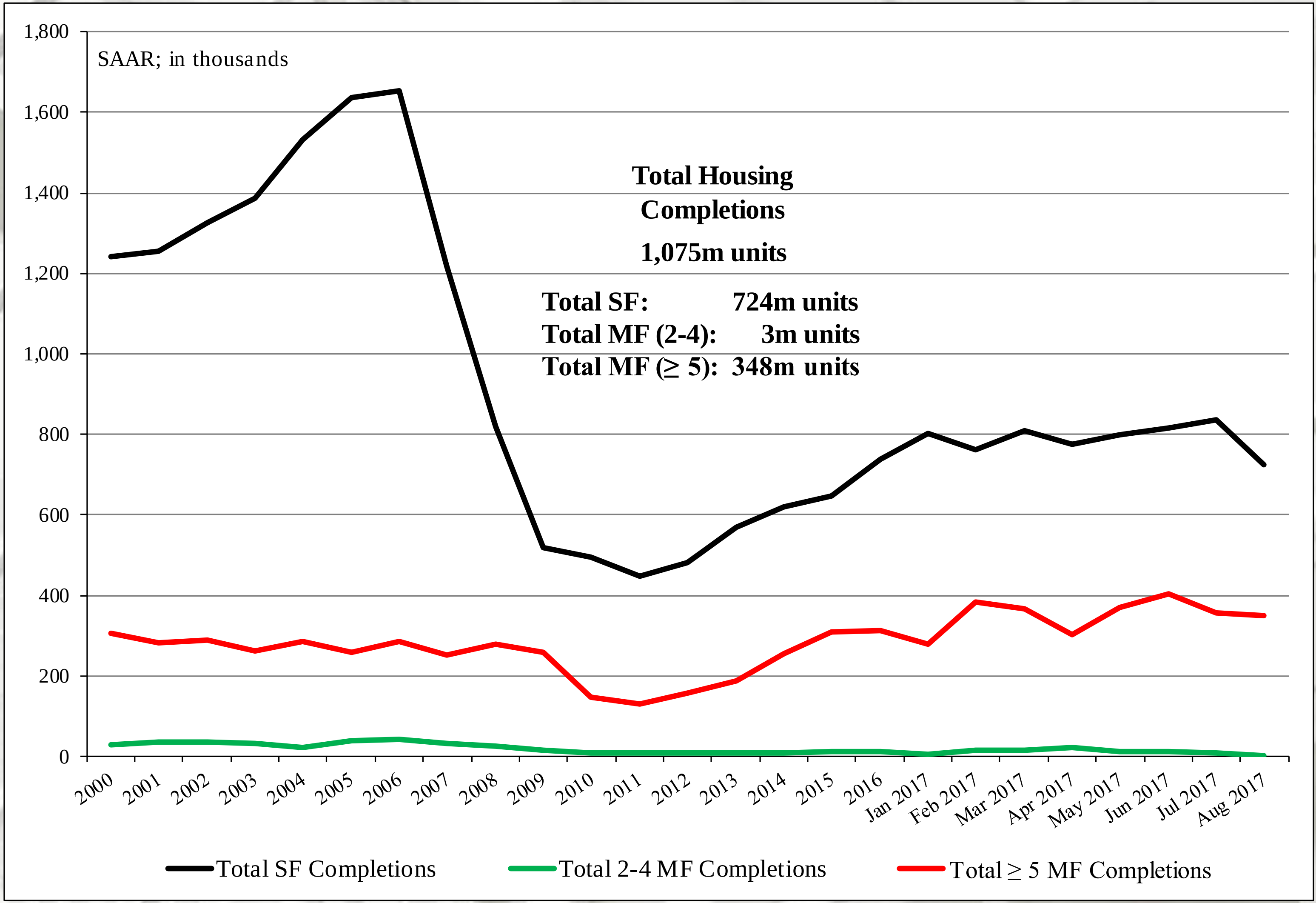
Total Housing Completions



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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Total Housing Completions by Region

	NE Total	NE SF	NE MF**
August	141,000	60,000	81,000
July	109,000	76,000	33,000
2016	130,000	63,000	67,000
M/M change	29.4%	-21.1%	145.5%
Y/Y change	8.5%	-4.8%	20.9%
	MW Total	**MW SF**	**MW MF**
August	173,000	121,000	52,000
July	175,000	108,000	67,000
2016	150,000	100,000	50,000
M/M change	-1.1%	12.0%	-22.4%
Y/Y change	15.3%	21.0%	4.0%

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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Total Housing Completions by Region

	S Total	S SF	S MF**
August	491,000	366,000	125,000
July	631,000	462,000	169,000
2016	541,000	420,000	121,000
M/M change	-22.2%	-20.8%	-26.0%
Y/Y change	-9.2%	-12.9%	3.3%

	W Total	W SF	W MF
August	270,000	177,000	93,000
July	282,000	189,000	93,000
2016	219,000	161,000	58,000
M/M change	-4.3%	-6.3%	0.0%
Y/Y change	23.3%	9.9%	60.3%

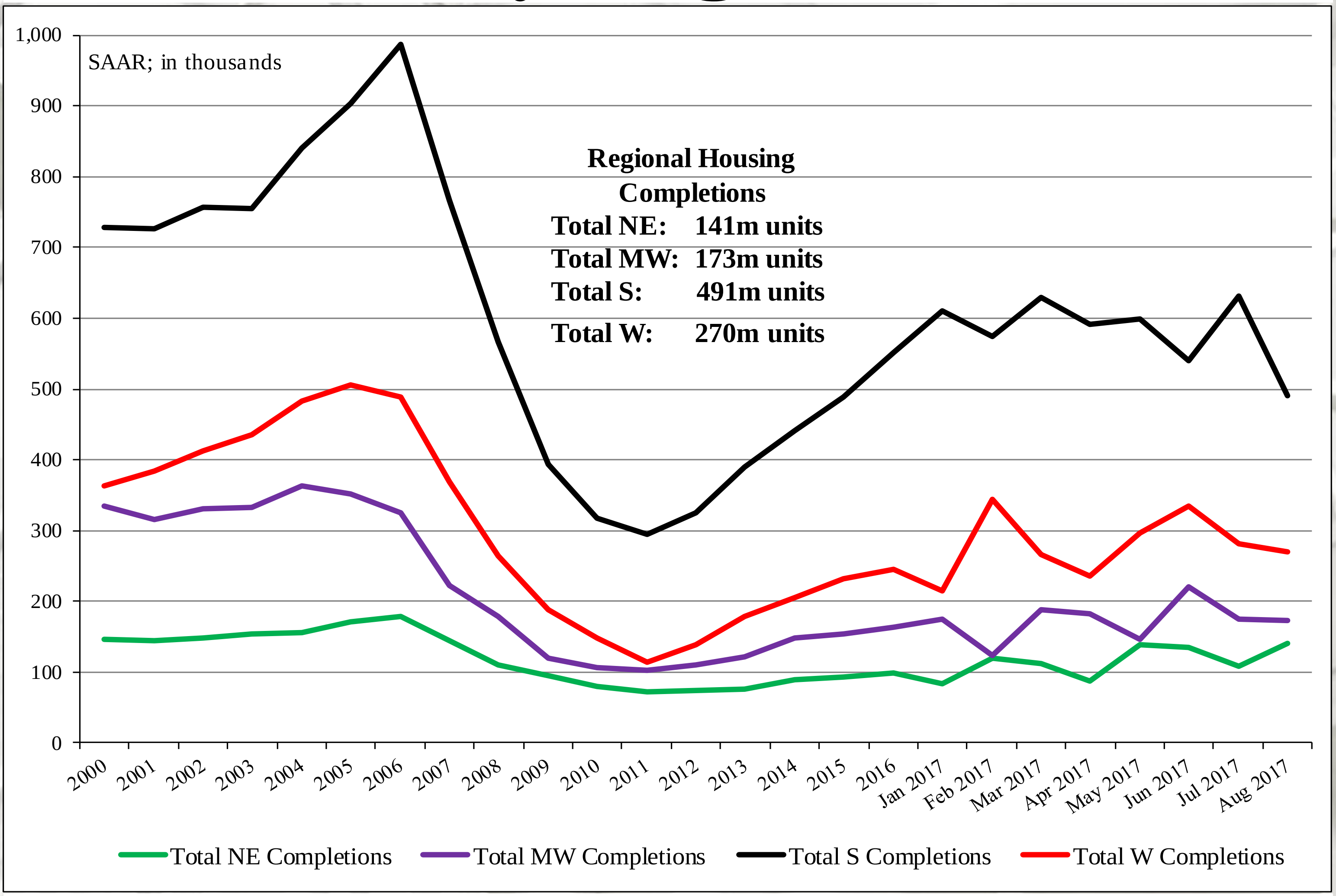
All data are SAAR; S = South and W = West.

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

Return TOC

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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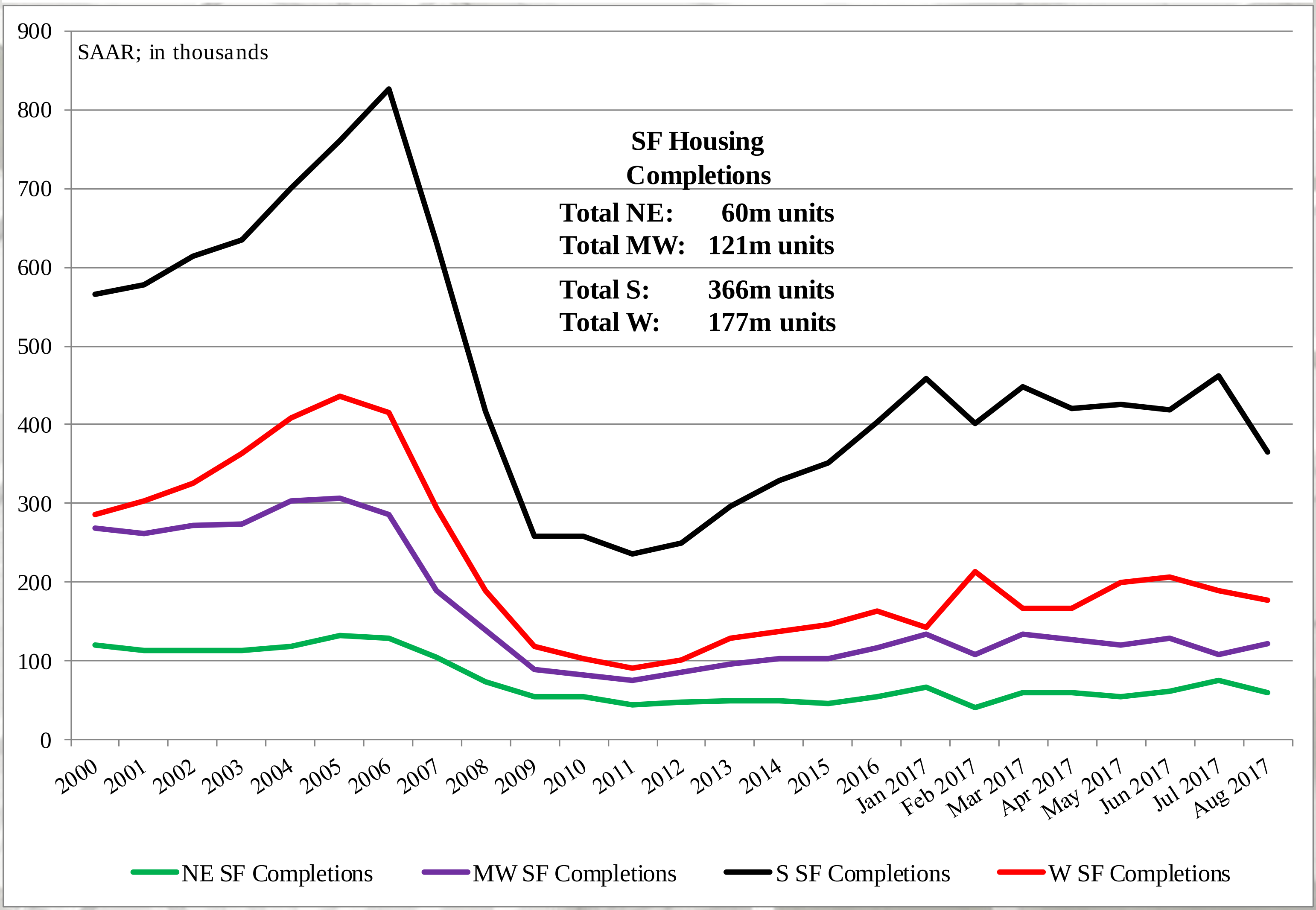
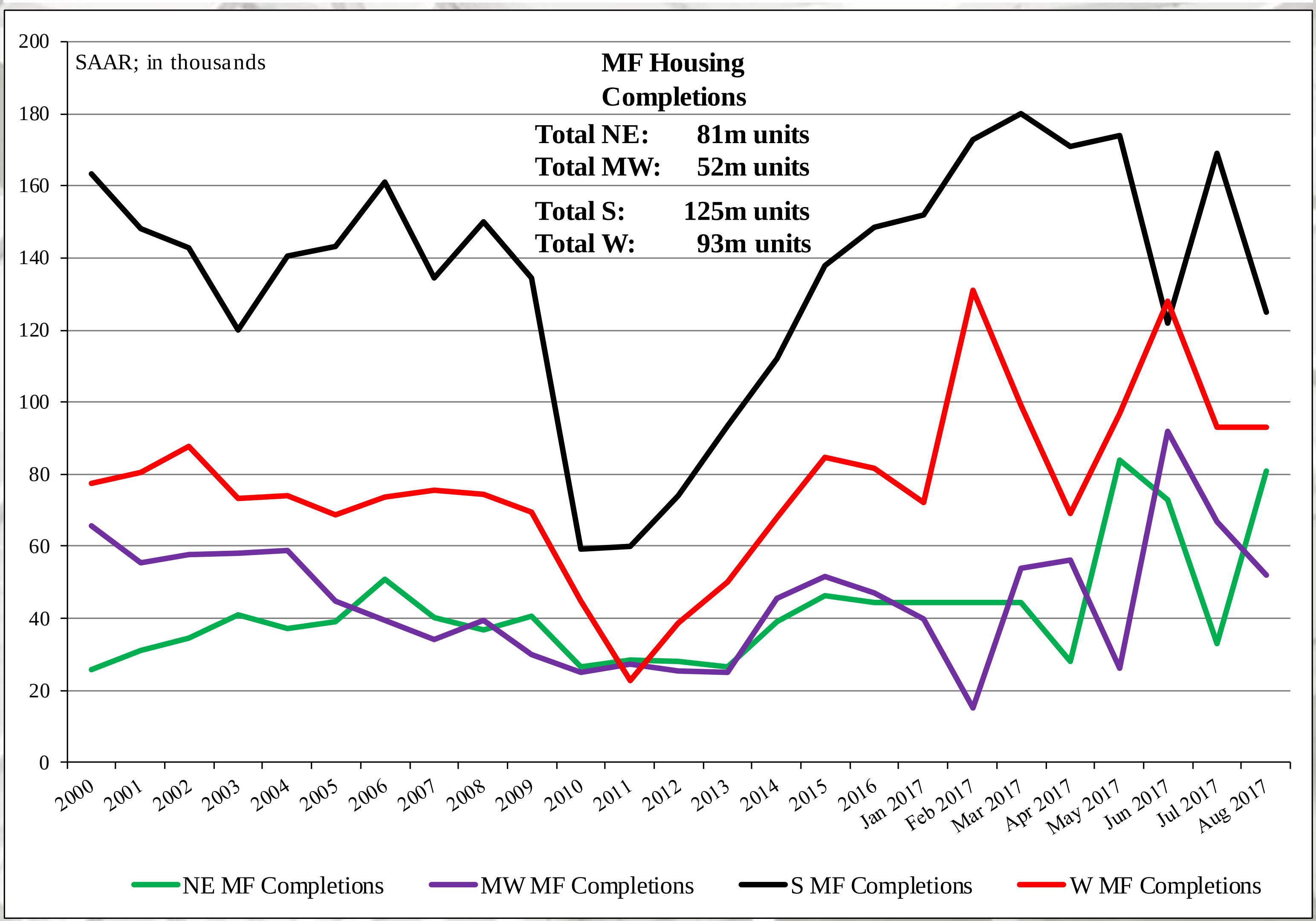
SF Housing Completions by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

Return TOC

MF Housing Completions by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/19/17

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New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
August	560,000	$300,200	$368,100	6.1
July	580,000	$319,900	$371,300	5.7
2016	567,000	$298,900	$355,100	5.1
M/M change	-3.4%	-6.2%	-0.9%	7.0%
Y/Y change	-1.2%	0.4%	3.7%	19.6%

* All new sales data are presented at a seasonally adjusted annual rate (SAAR)[1] and housing prices are adjusted at irregular intervals[2].

New SF sales were much less than the consensus forecast (583 m)[3]. The past three month's new SF sales data were revised:

May initial: 618 m revised to 606 m;
June initial: 630 m revised to 614 m;
July initial: 571 m revised to 580 m.

Sources: [1]http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf
[3] http://mam.econoday.com/byshoweventfull.asp; 9/26/17

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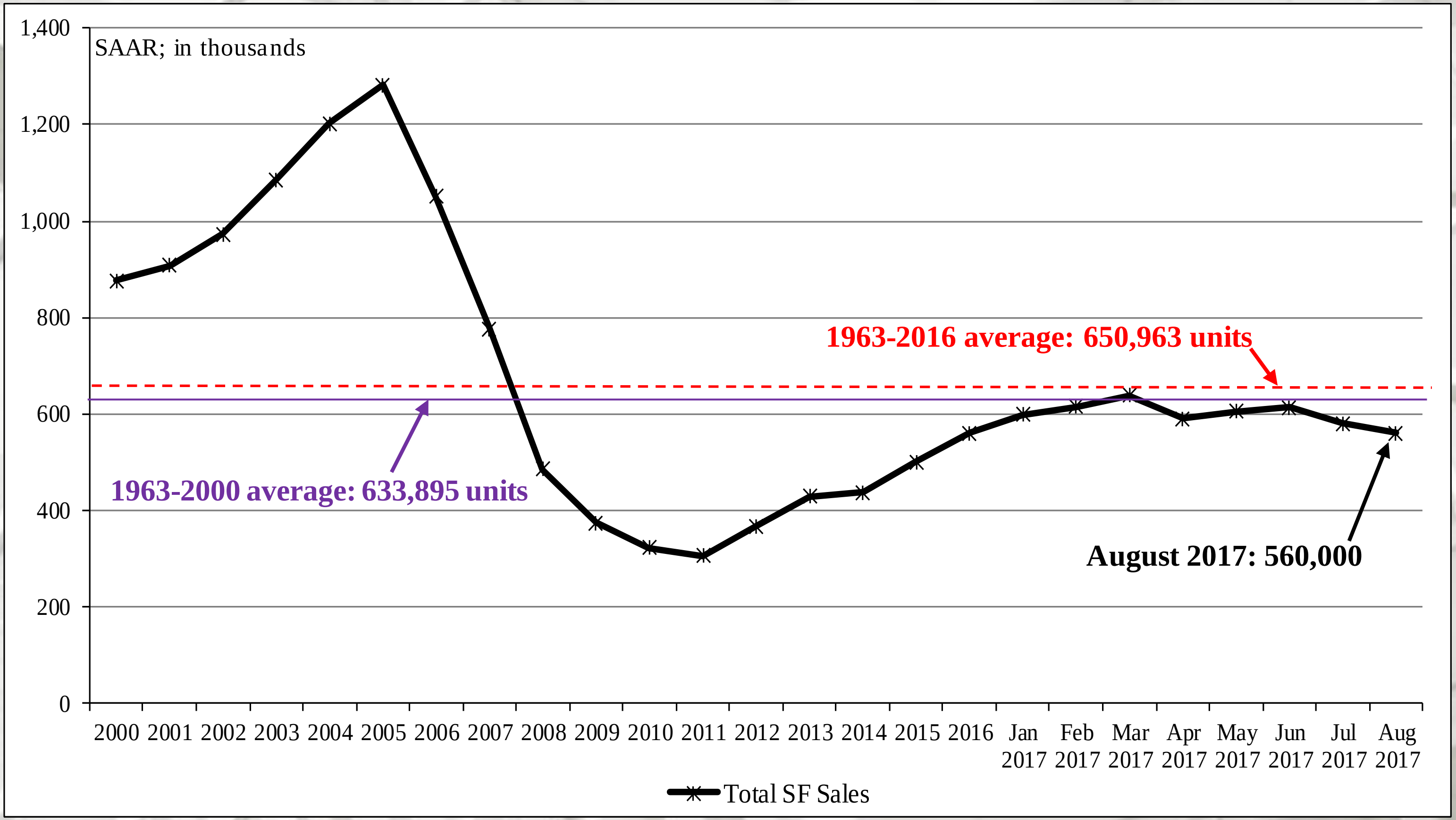
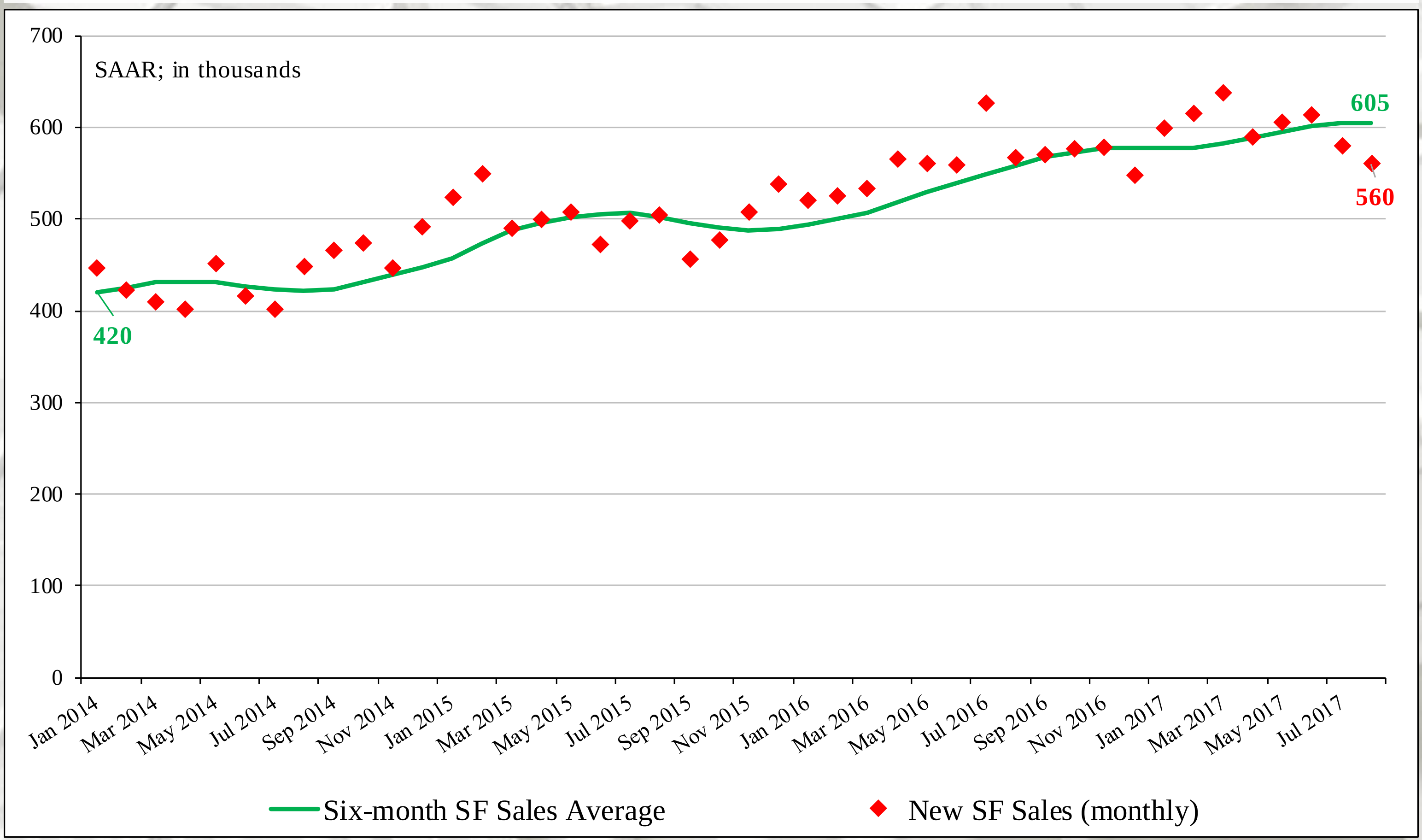
New SF House Sales



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17

Return TOC

New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17

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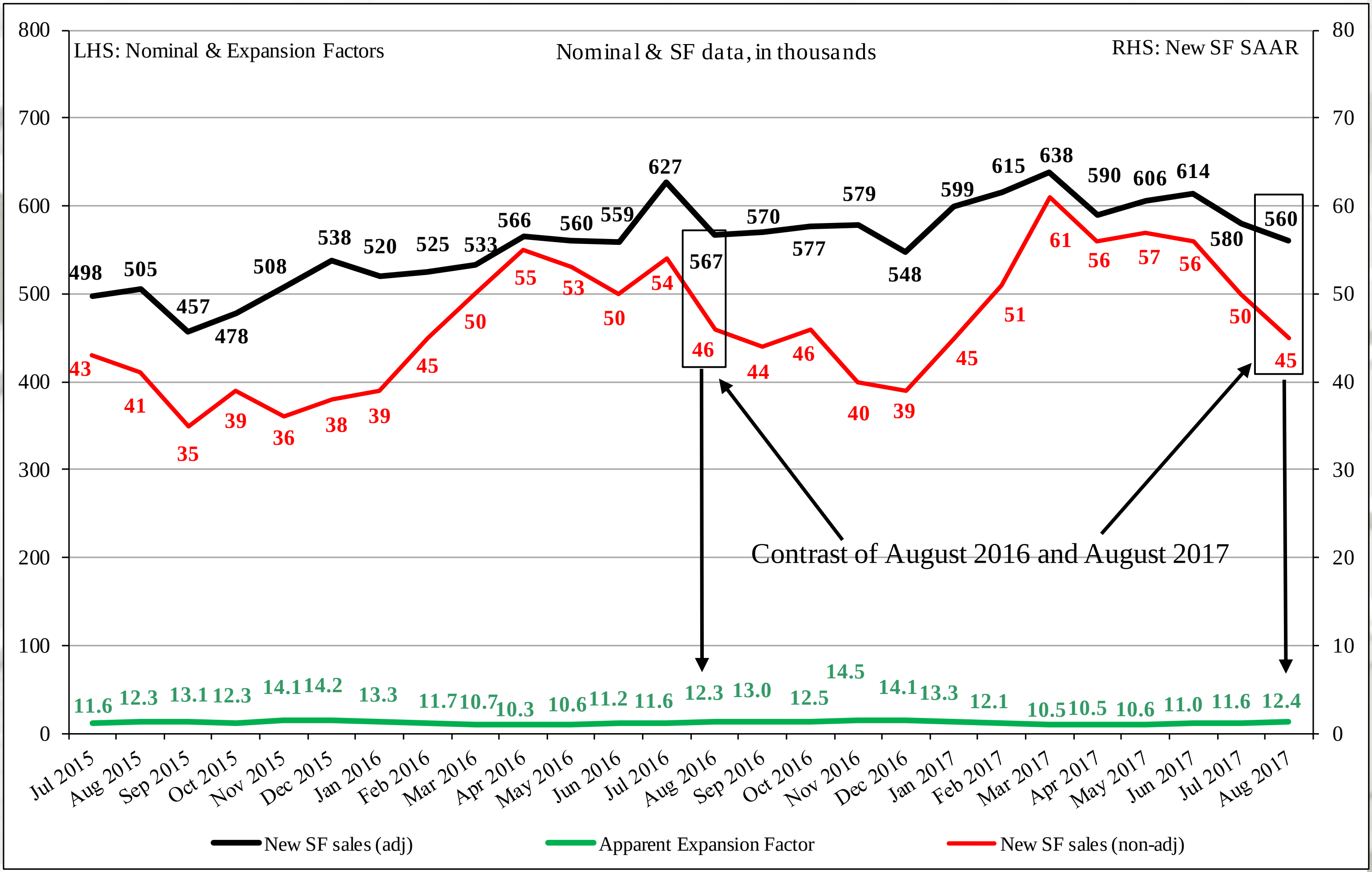
Nominal vs. SAAR New SF House Sales



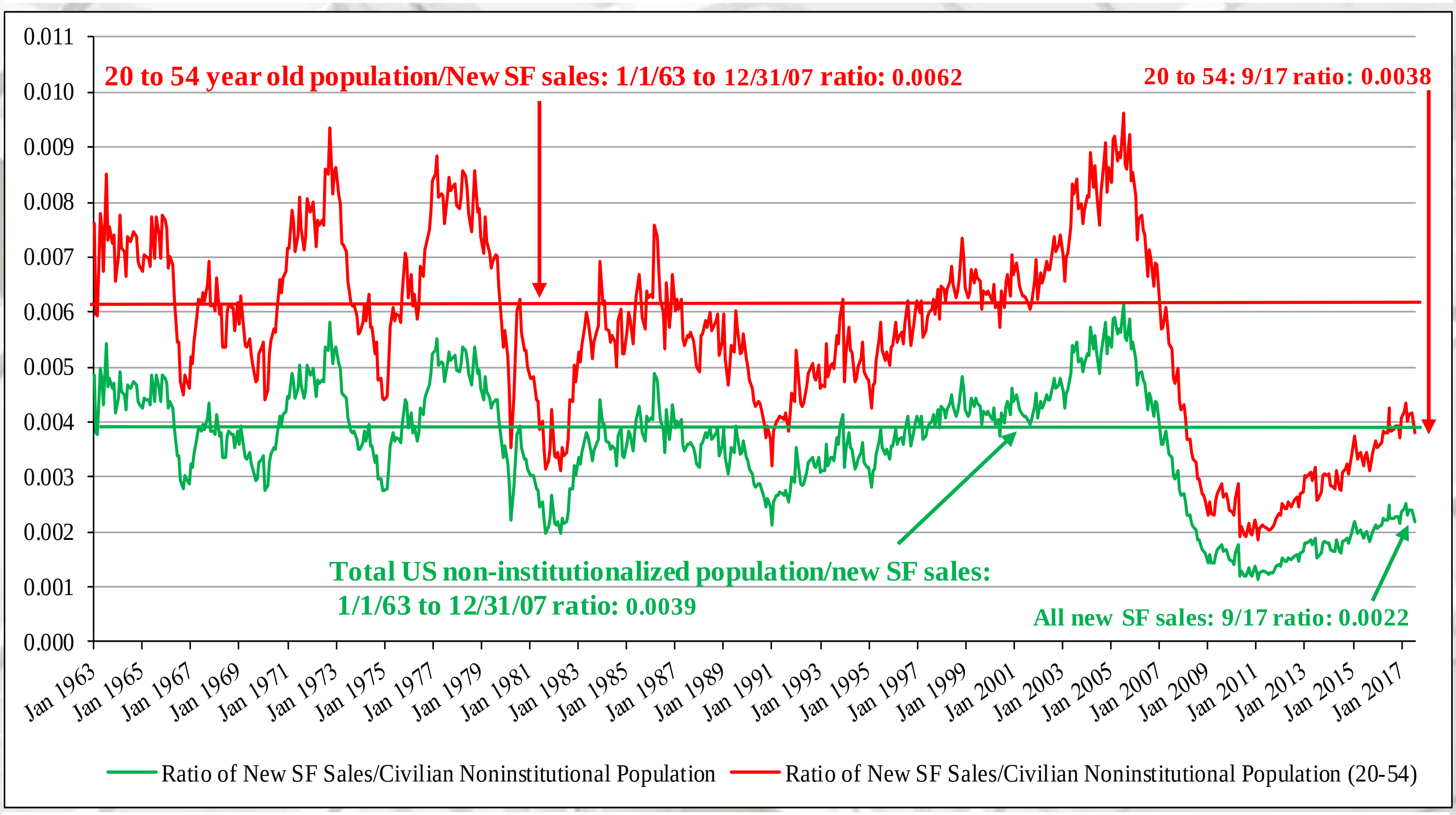
Nominal and Adjusted New SF Monthly Sales

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17

New SF House Sales



New SF sales adjusted for the US population

From January 1963 to August 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in August 2017 it was 0.0022 – a decline from July (0.0023). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in August 2017 it was 0.0038 – also a decrease from June (0.0039). All are non-adjusted data. From a population viewpoint, construction is less than what is necessary for changes in population (i.e., under-building).

Sources: http://www.census.gov/construction/nrs/xls/newressales.xls and The Federal Reserve Bank of St. Louis; 9/26/17

New SF House Sales by Region and Price Category

	NE SF Sales	MW SF Sales	S SF Sales	W SF Sales
August	38,000	69,000	307,000	146,000
July	39,000	69,000	322,000	150,000
2016	23,000	66,000	338,000	140,000
M/M change	-2.6%	0.0%	-4.7%	-2.7%
Y/Y change	65.2%	4.5%	-9.2%	4.3%

	≤ $150m	$150 - $199.9m	$200 - 299.9m	$300 - $399.9m	$400 - $499.9m	$500 - $749.9m	≥ $750m
August[1,2]	2,000	4,000	16,000	10,000	6,000	4,000	3,000
July	1,000	6,000	15,000	13,000	7,000	5,000	3,000
2016	2,000	6,000	15,000	11,000	5,000	5,000	2,000
M/M change	100.0%	-33.3%	6.7%	-23.1%	-14.3%	-20.0%	0.0%
Y/Y change	0.0%	-33.3%	6.7%	-9.1%	20.0%	-20.0%	50.0%

[1] All data are SAAR

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

[3] Detail may not add to total because of rounding.

[4] Housing prices are adjusted at irregular intervals.

Sources: [1,2,3] http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17; [4] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

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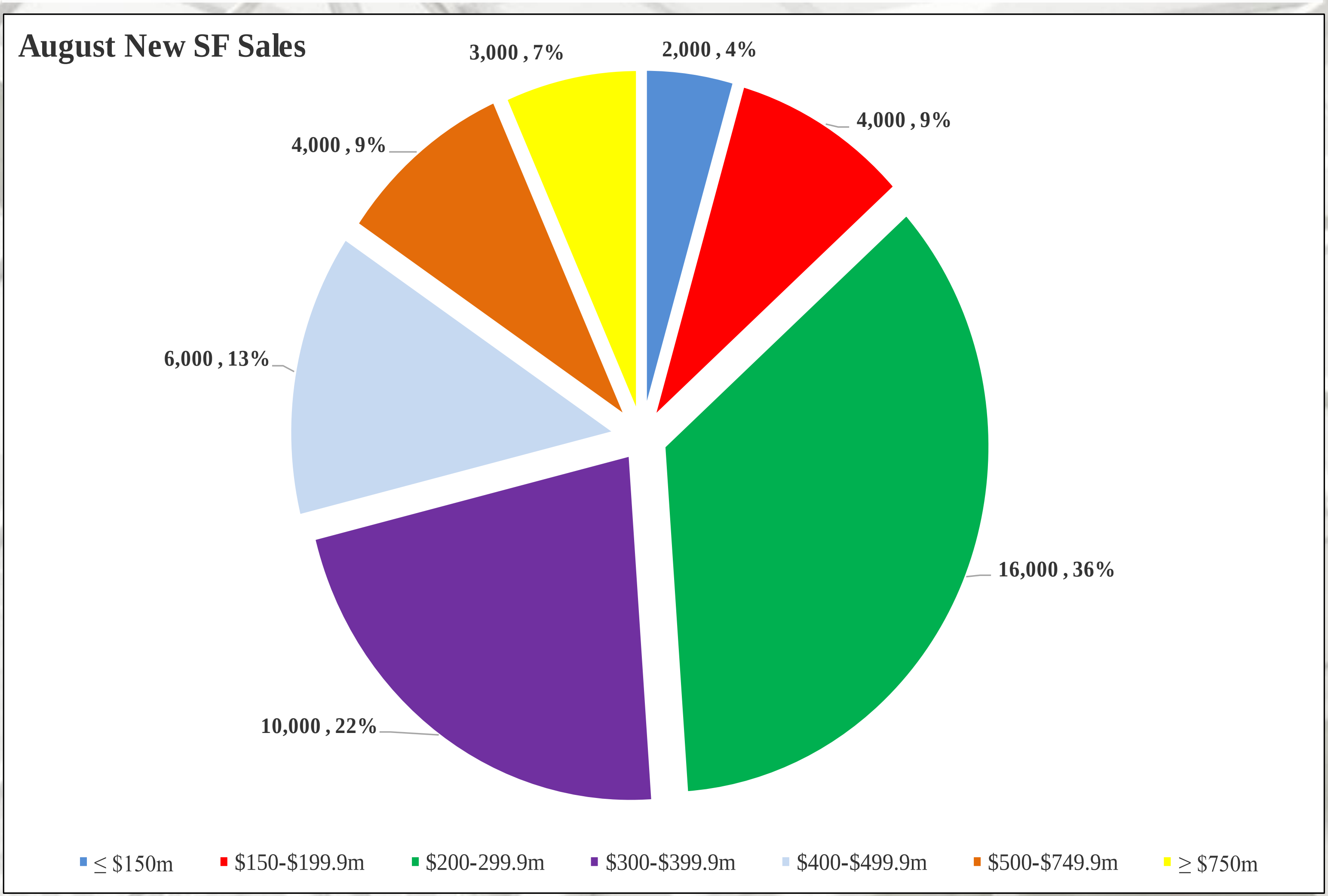
New SF House Sales



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17

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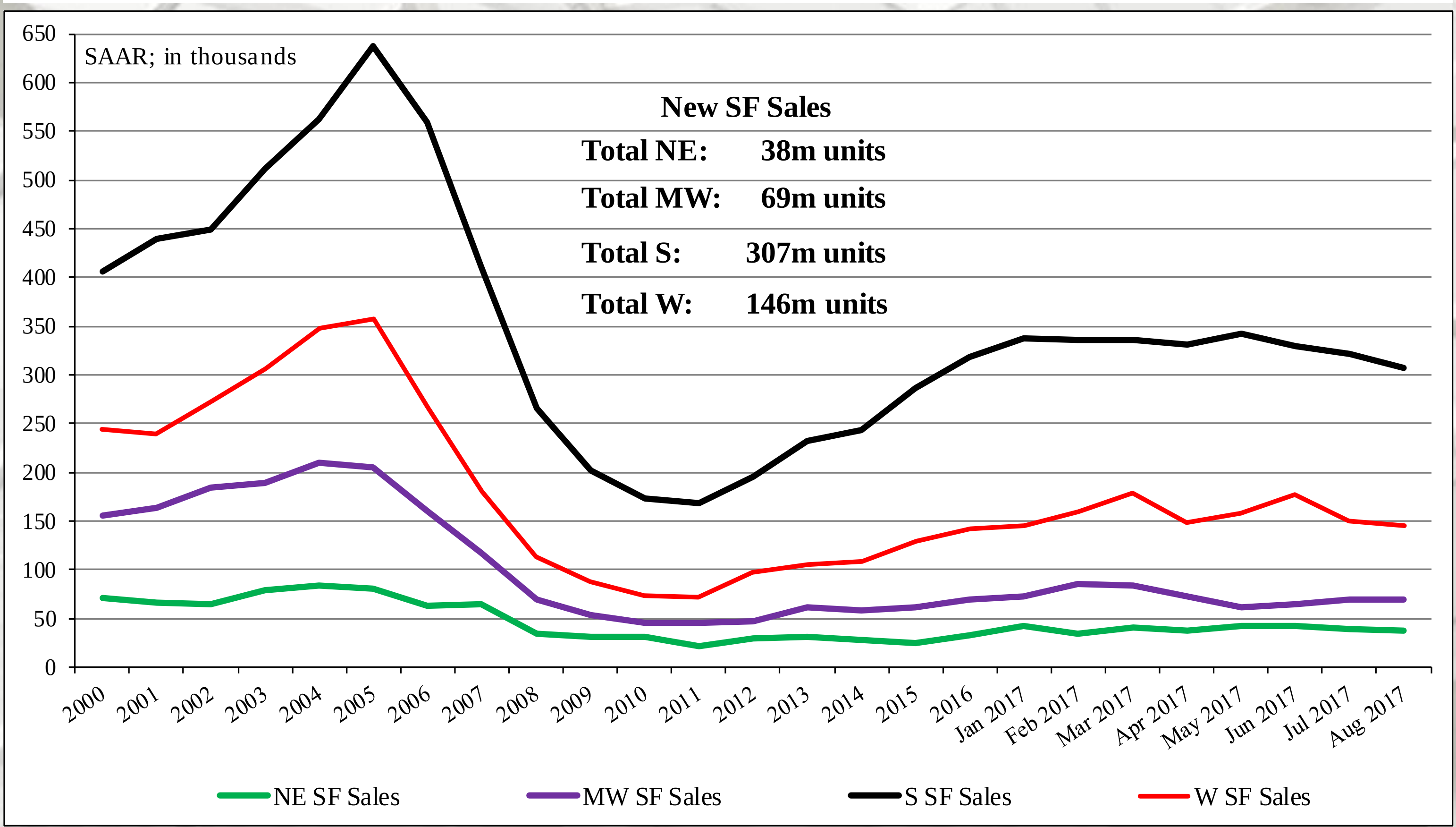
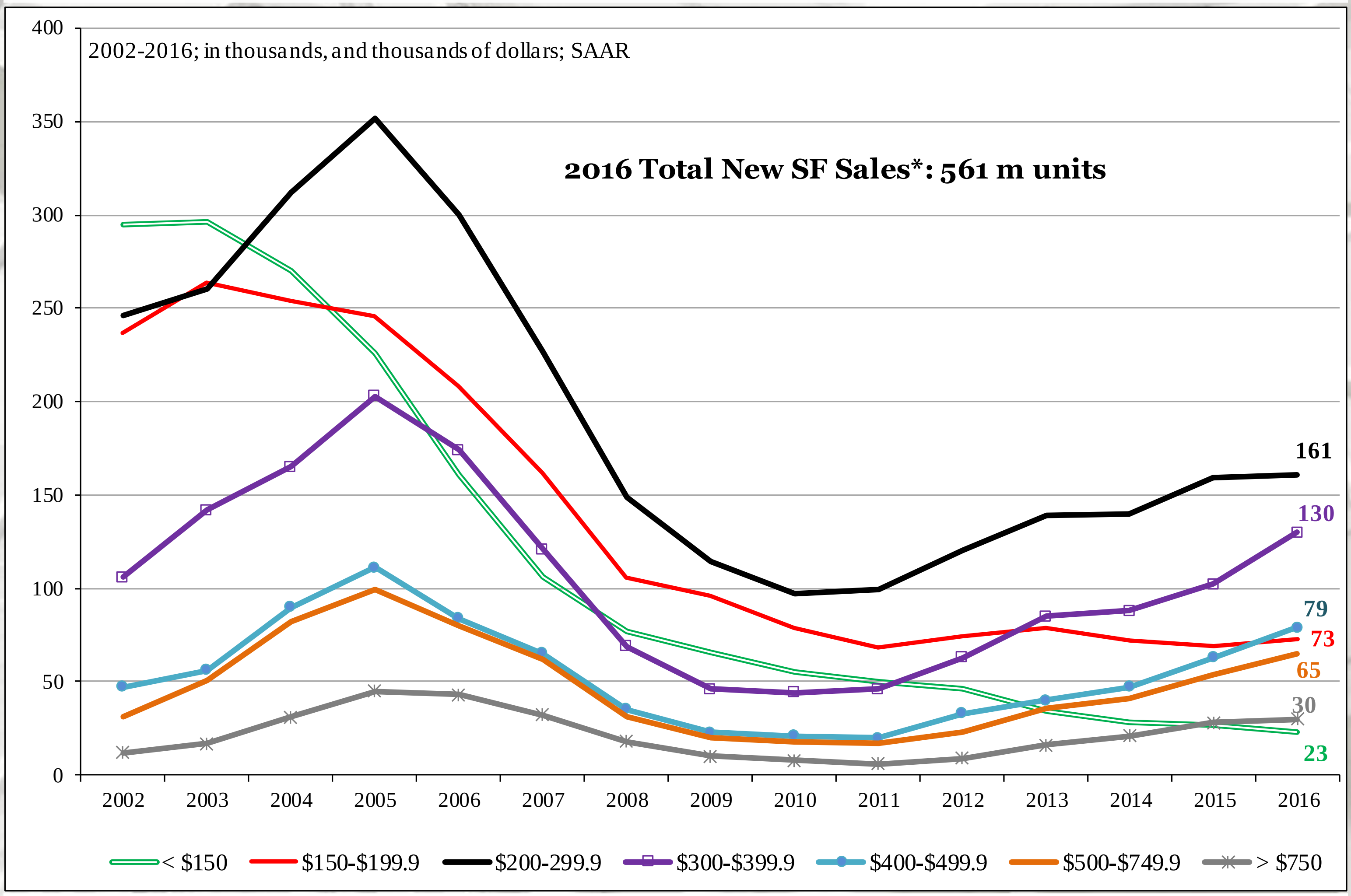
New SF House Sales by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 9/26/17

New SF House Sales by Price Category



* Sales tallied by price category.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/26/17

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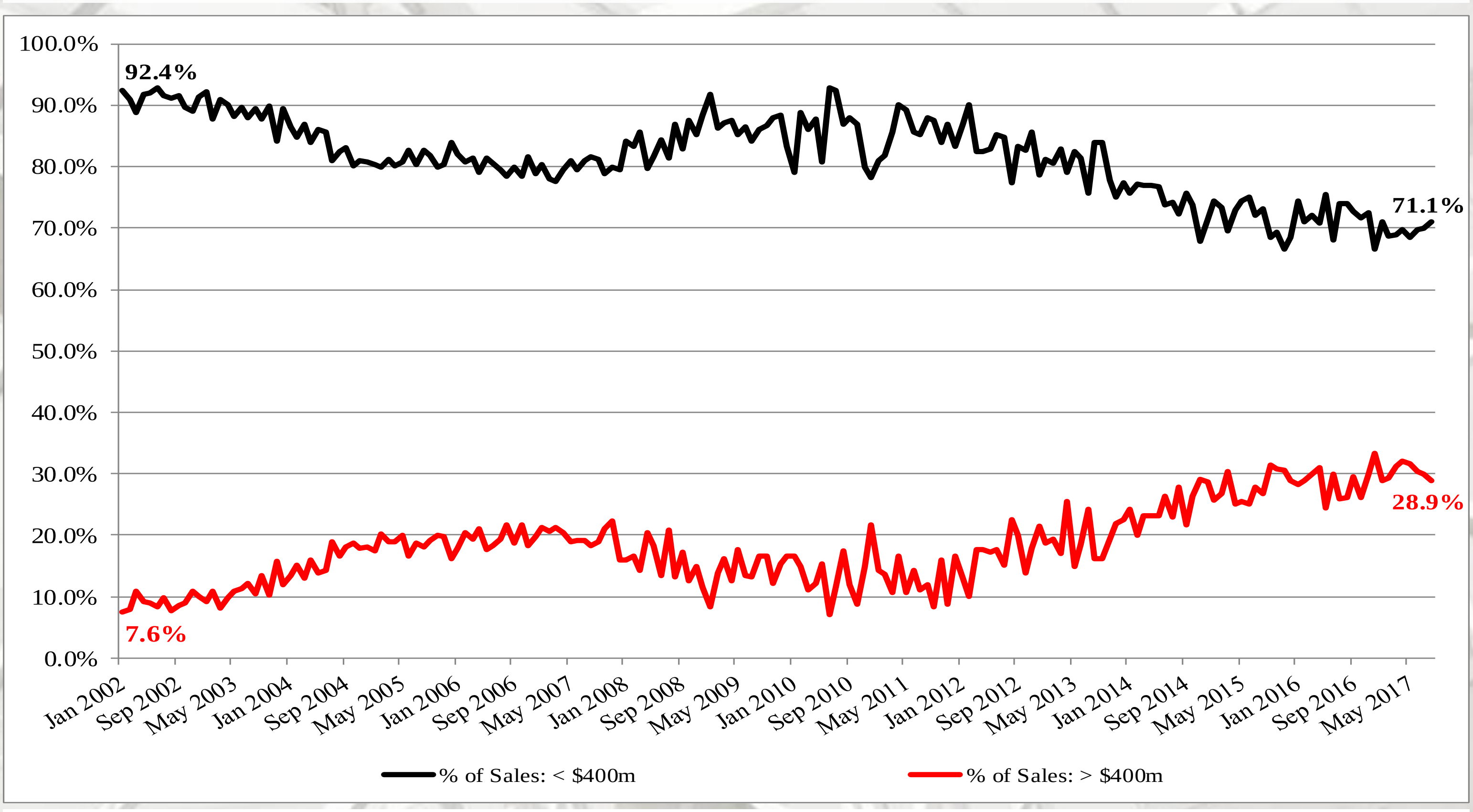
New SF House Sales



New SF Sales: 2002 – August 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.

Source: [1] http://www.census.gov/construction/nrc/pdf/newresconst.pdf; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 9/26/17

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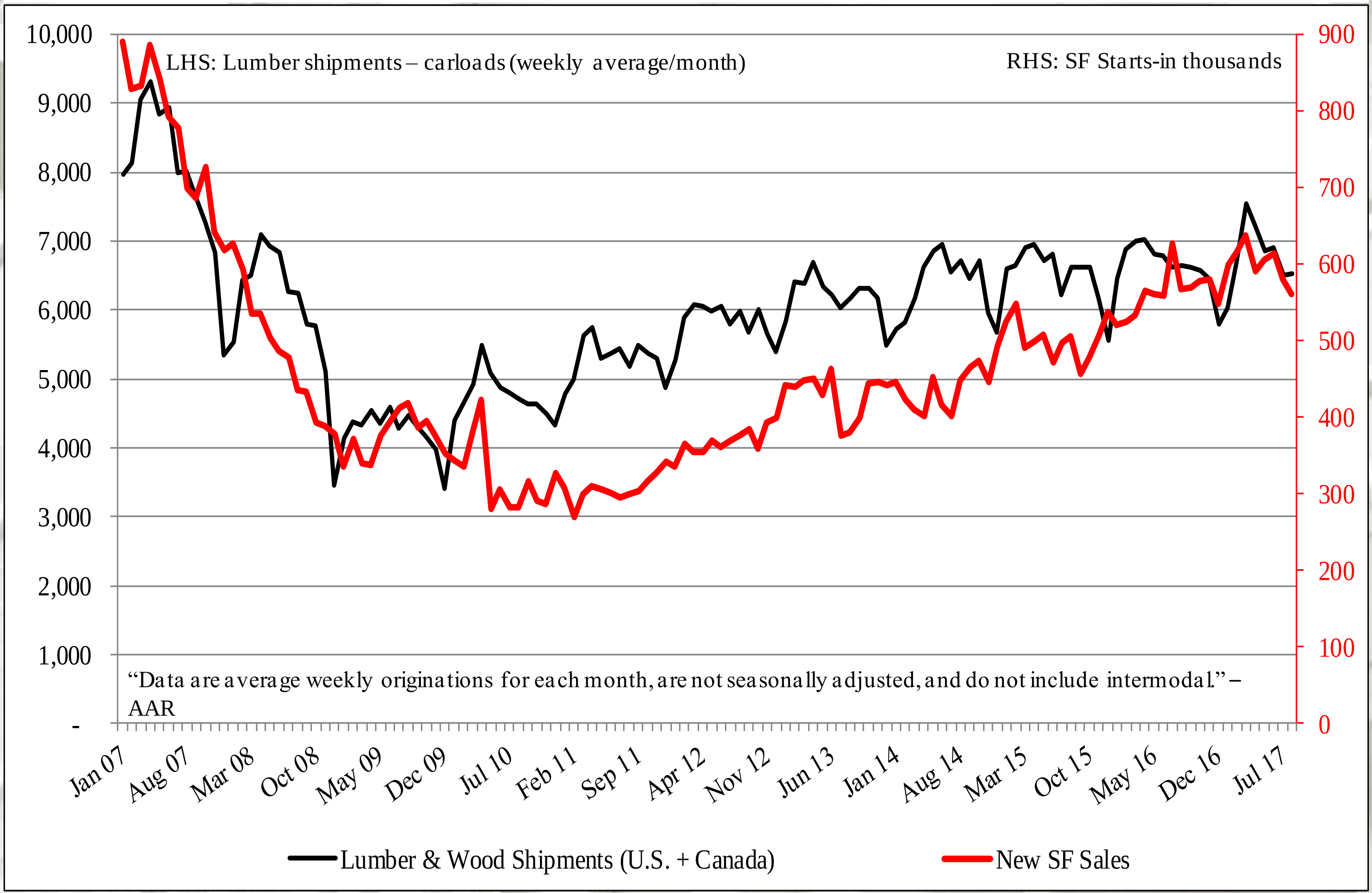
Railroad Lumber & Wood Shipments vs. U.S. New SF House Sales



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 9/7/17; U.S. DOC-Construction; 9/26/17

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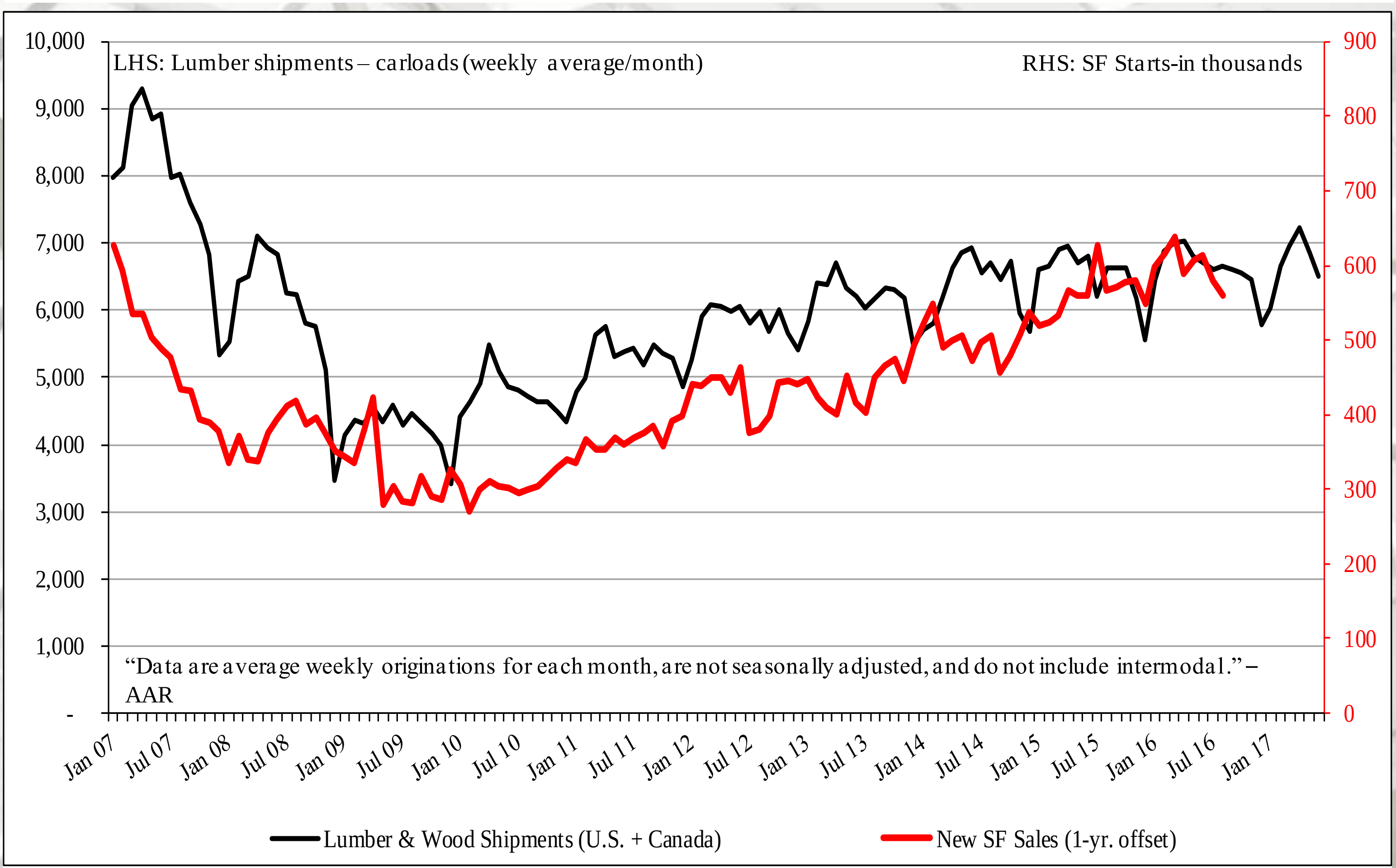
Railroad Lumber & Wood Shipments vs. U.S. New SF House Sales: 1-year offset



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

Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 9/7/17; U.S. DOC-Construction; 9/26/17

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August 2017 Construction Spending

	Total Private Residential*	SF	MF	Improvement**
August	$520,912	$263,732	$62,343	$194,837
July	$518,591	$262,951	$61,784	$193,856
2016	$466,559	$237,288	$60,965	$168,306
M/M change	0.4%	0.3%	0.9%	0.5%
Y/Y change	11.6%	11.1%	2.3%	15.8%

* Millions

** The US DOC does not report improvement spending directly, this is a monthly estimation for 2017: ((Total Private Spending – (SF spending + MF spending)).
All data are SAARs and reported in nominal US$.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 102/17

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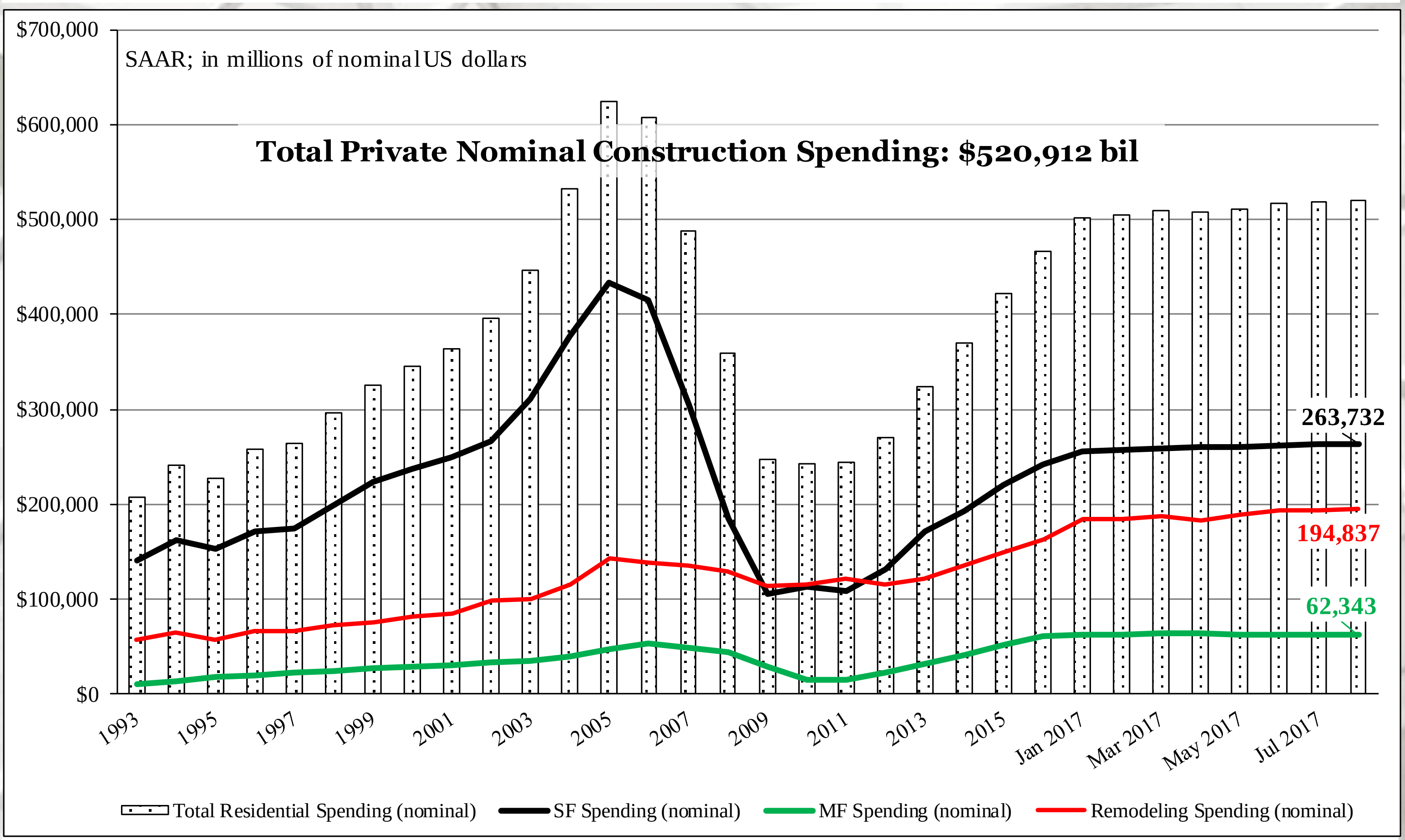
Total Construction Spending (nominal): 1993 – August 2017



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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 10/2/17

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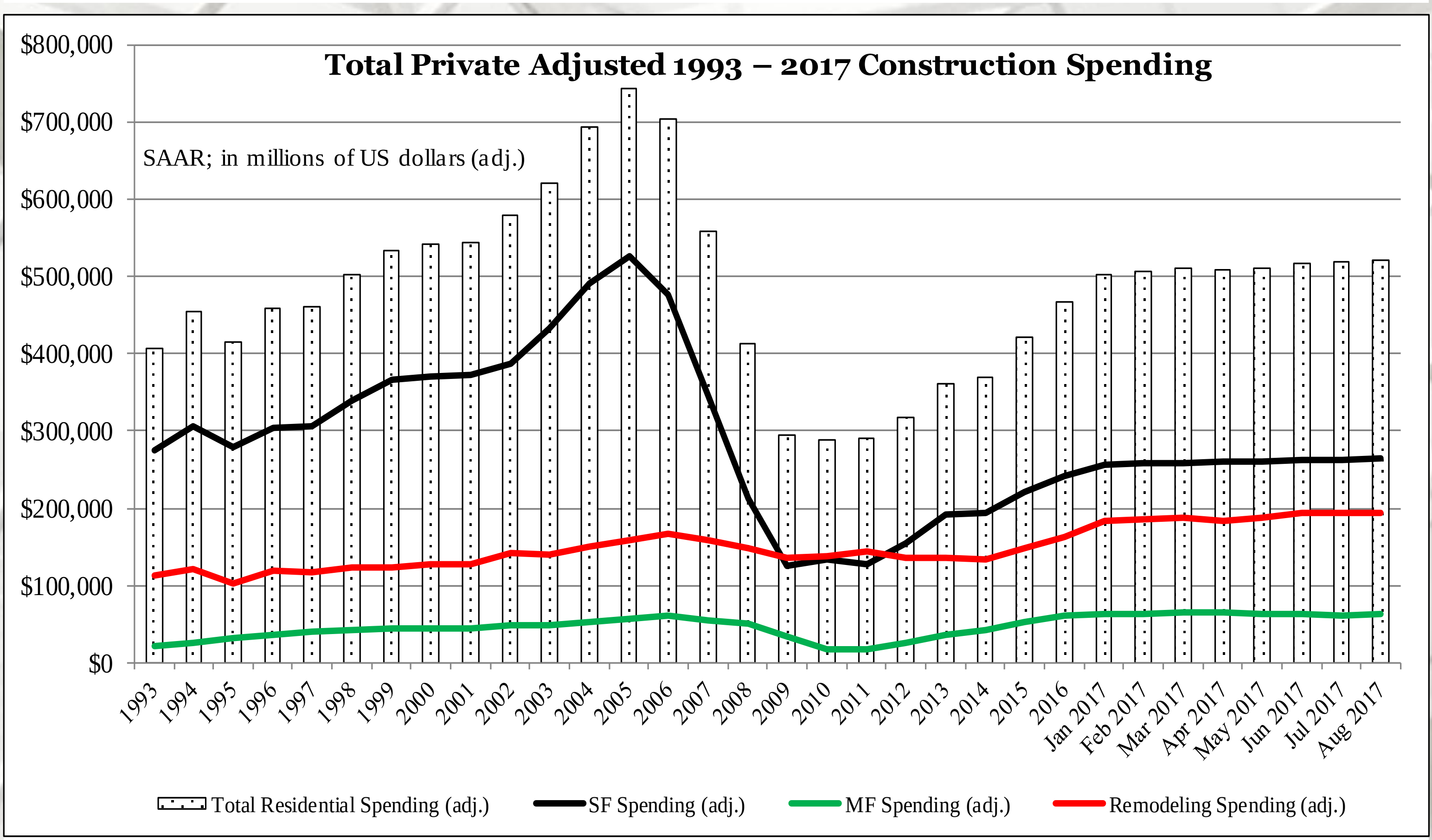
Total Construction Spending (adjusted): 1993-2017*



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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 10/2/17

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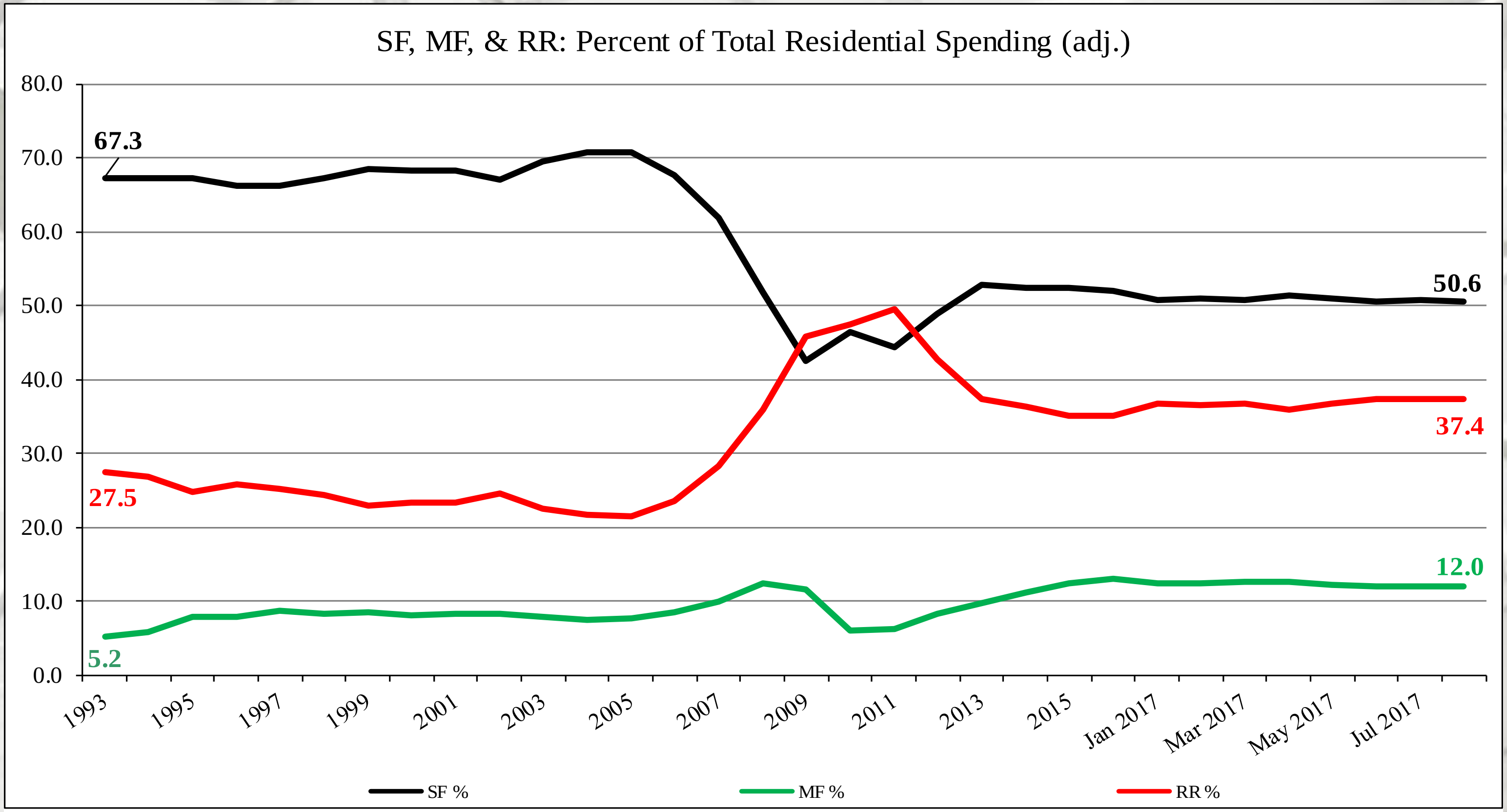
Construction Spending Shares: 1993 to August 2017



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-August 2017 reported in nominal US$.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf and http://www.bea.gov/iTable/iTable.cfm; 10/2/17

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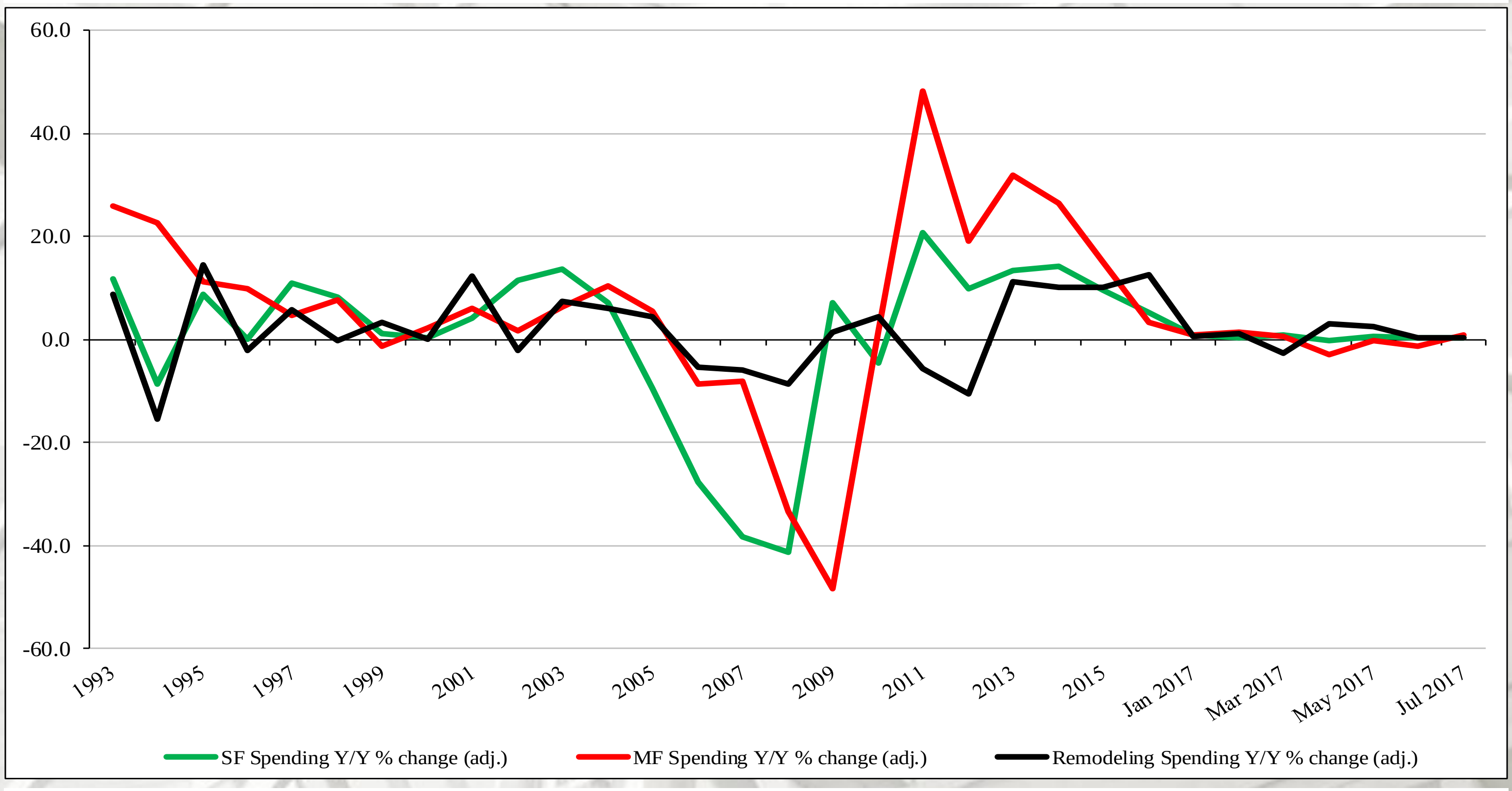
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to August 2017



Residential Construction Spending: Percentage Change, 1993 to August 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.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 10/2/17

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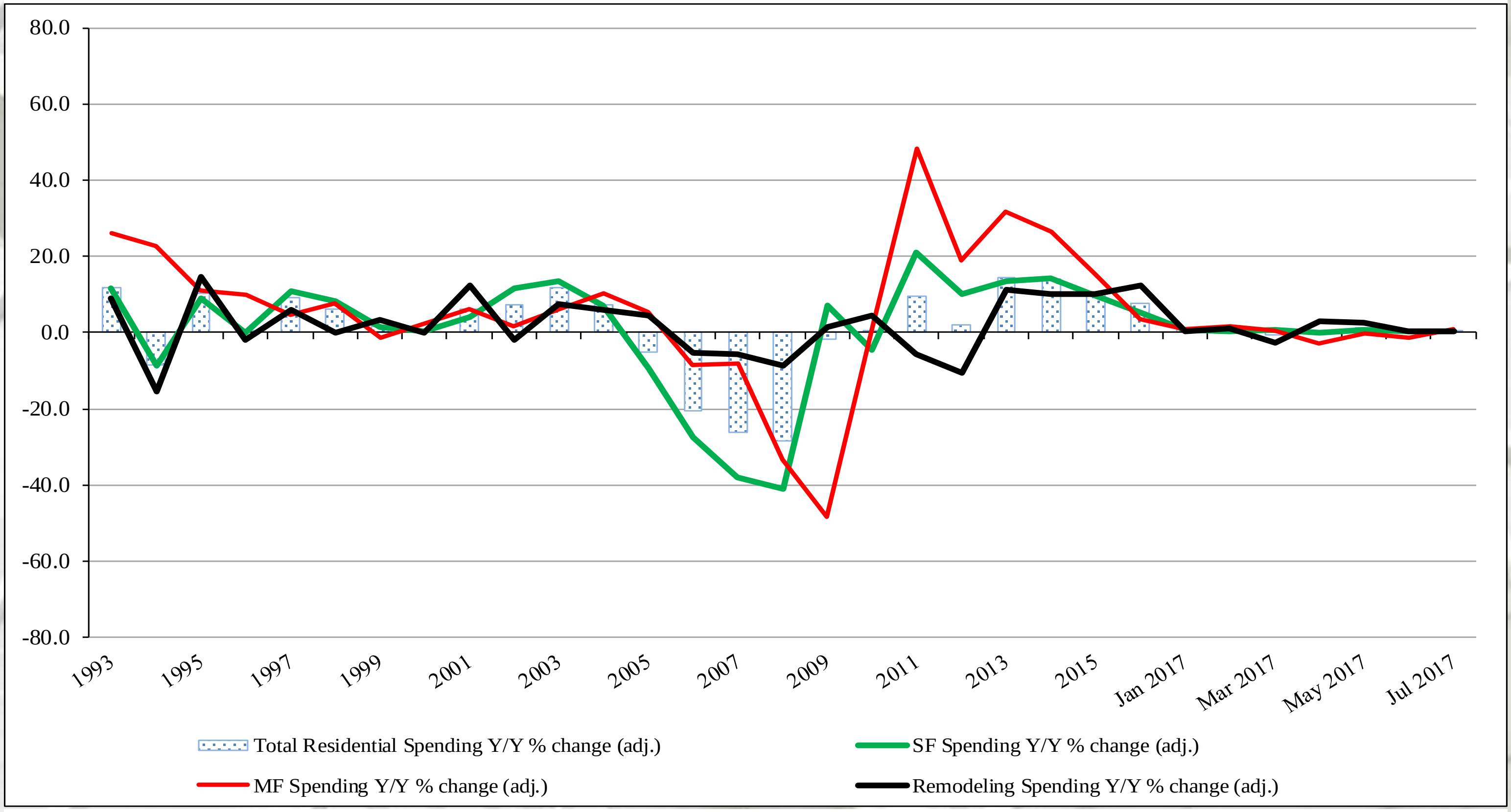
Total Adjusted Construction Spending: Y/Y Percentage Change, 1993 to August 2017



Residential Construction Spending: Percentage Change, 1993 to August 2017

The questions remain: Is construction spending normalizing? Has housing stalled? 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.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf and http://www.bea.gov/iTable/iTable.cfm; 10/2/17

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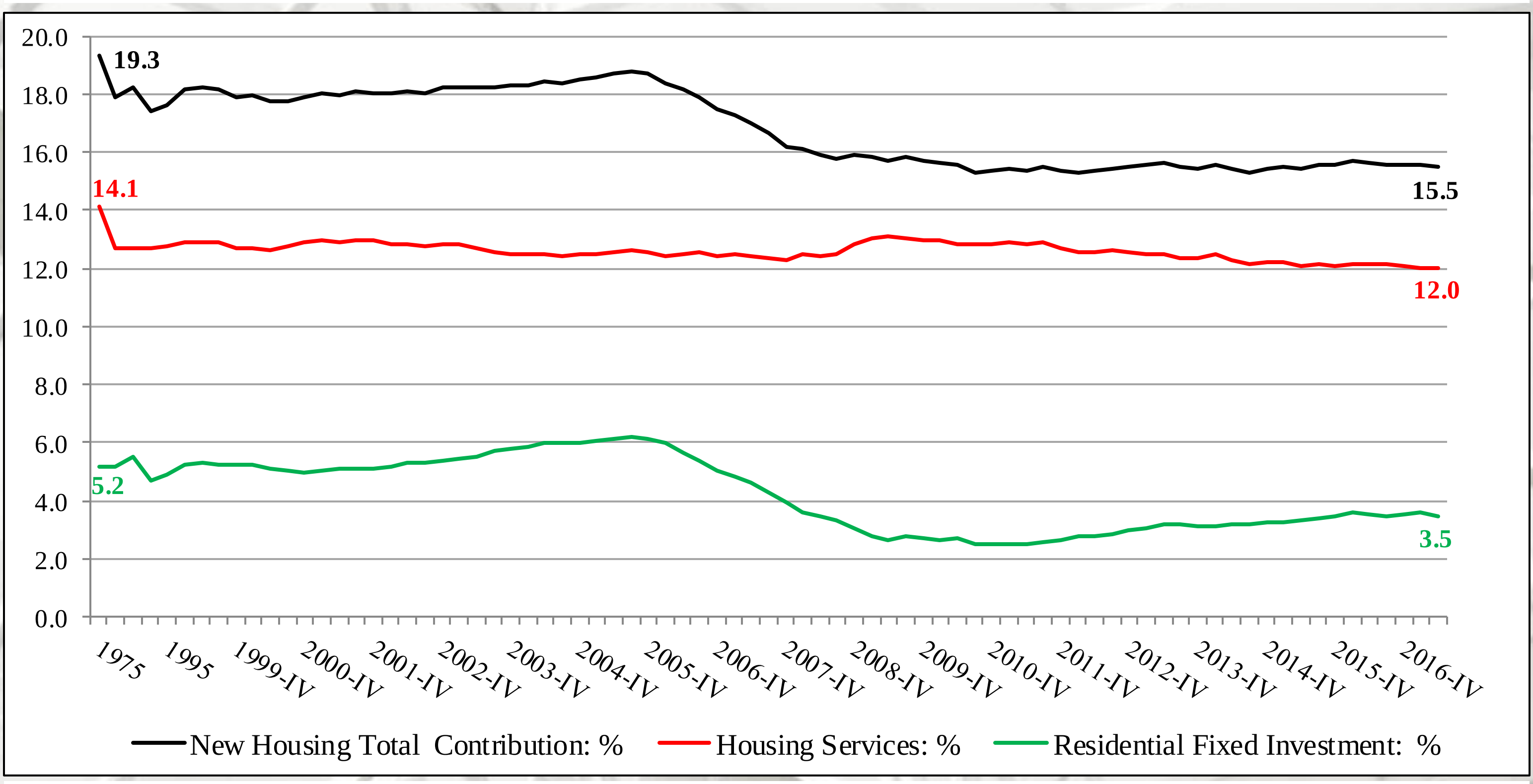
New Housing's Contribution to GDP: 1975 to Q2 2017



New housing's total contribution to aggregate GDP was 15.5% – a decrease of 0.1% from Q1; housing services was unchanged at 12.0%; and residential fixed investment (RFI) was 3.5% – a decline of 0.1% (Bureau of Economic Analysis: Tables 1.1.6 & 2.3.6).[1] RFI is of critical importance to the wood products industry.

Housing services: The rental value of tenant-occupied housing and the imputed rental value of owner-occupied housing are both part of PCE housing services that encompass rents (owners' imputed rent and gross rents paid by renters (includes utilities)), depreciation, maintenance and repairs, property taxes, and mortgage interest; etc.[2]

Residential fixed investment: includes capital expenditures for the acquisition of new residential structures and for improvements to existing residential structures by households in their capacity as owner-occupants.[3]

Sources: [1] https://www.bea.gov; [2] https://www.bea.gov/papers/pdf/RIPfactsheet.pdf; [3] https://www.bea.gov/national/pdf/NIPAhandbookch6.pdf; 10/2/17

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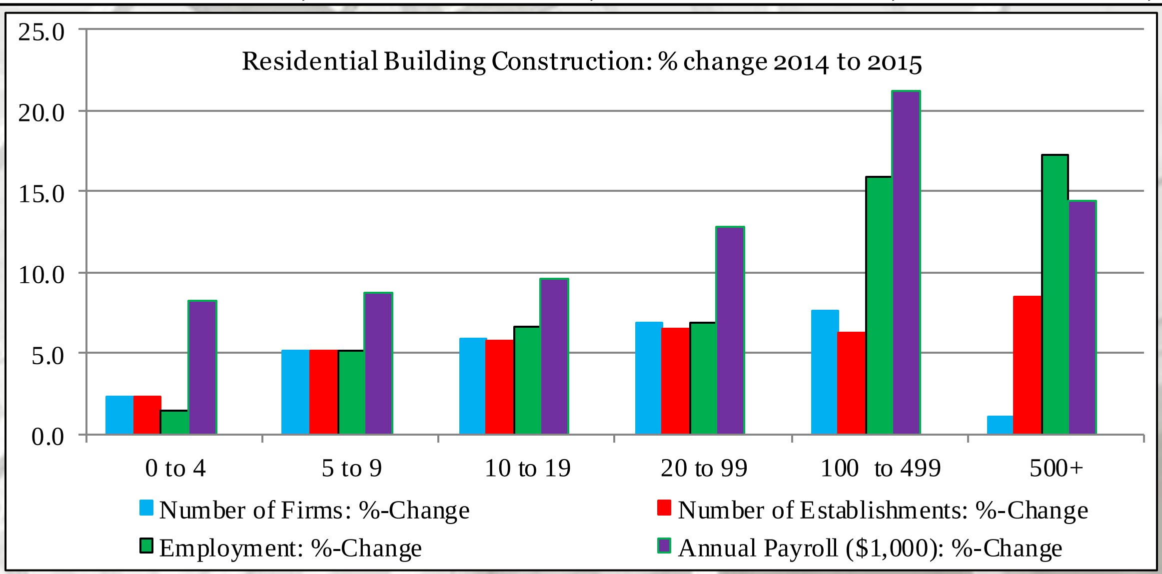
Residential Building Construction: Firms, Establishments, Employment, & Payroll

Table 1. Residential Building Construction: 2015

Enterprise Employment Size	Number of Firms	Number of Establishments	Employment	Annual Payroll ($1,000)
0 to 4	131,675	131,678	185,111	$7,606,205
5 to 9	19,600	19,607	125,728	$4,993,370
10 to 19	7,740	7,758	101,525	$4,665,151
20 to 99	3,696	3,826	125,800	$7,087,593
100 to 499	340	719	42,995	$3,084,152
500+	99	931	54,180	$4,843,852
Total	163,150	164,519	635,339	$32,280,323



Source: https://www.census.gov/programs-surveys/susb.html; 9/7/17

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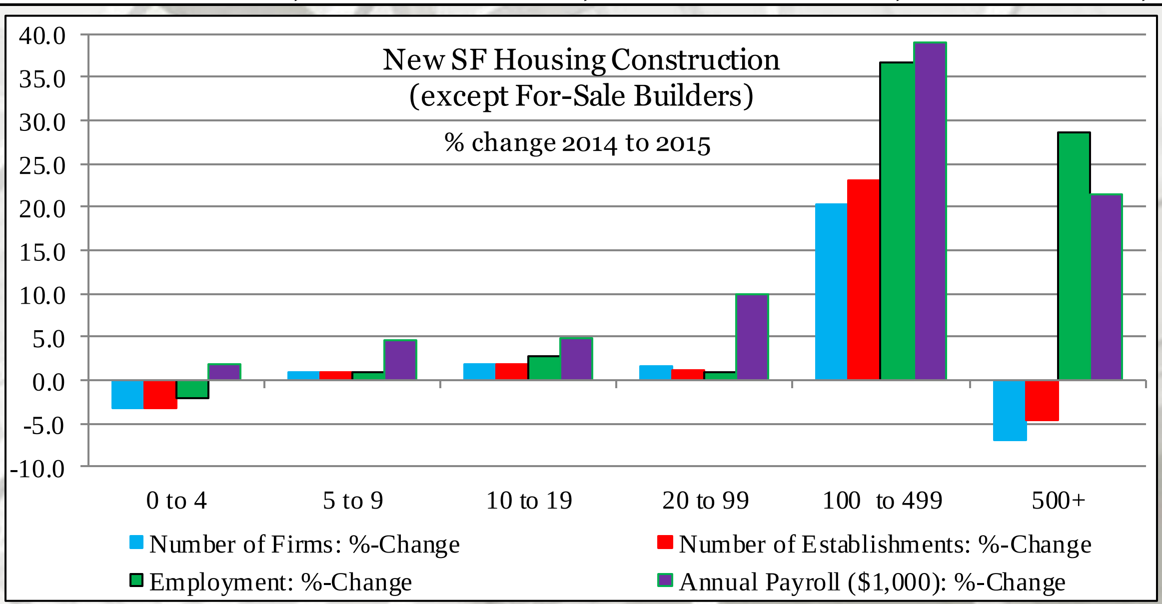
SF Building Construction: Firms, Establishments, Employment, & Payroll

Table 2. New SF Housing Construction (except For-Sale Builders): 2015

Enterprise Employment Size	Number of Firms	Number of Establishments	Employment	Annual Payroll ($1,000)
0 to 4	39,785	39,786	59,633	$2,548,557
5 to 9	6,775	6,778	43,448	$1,743,654
10 to 19	2,447	2,457	31,707	$1,482,438
20 to 99	999	1,023	31,978	$1,793,110
100 to 499	83	155	8,752	$571,108
500+	27	63	3,865	$320,132
Total	50,116	50,262	179,383	$8,458,999



Source: https://www.census.gov/programs-surveys/susb.html; 9/7/17

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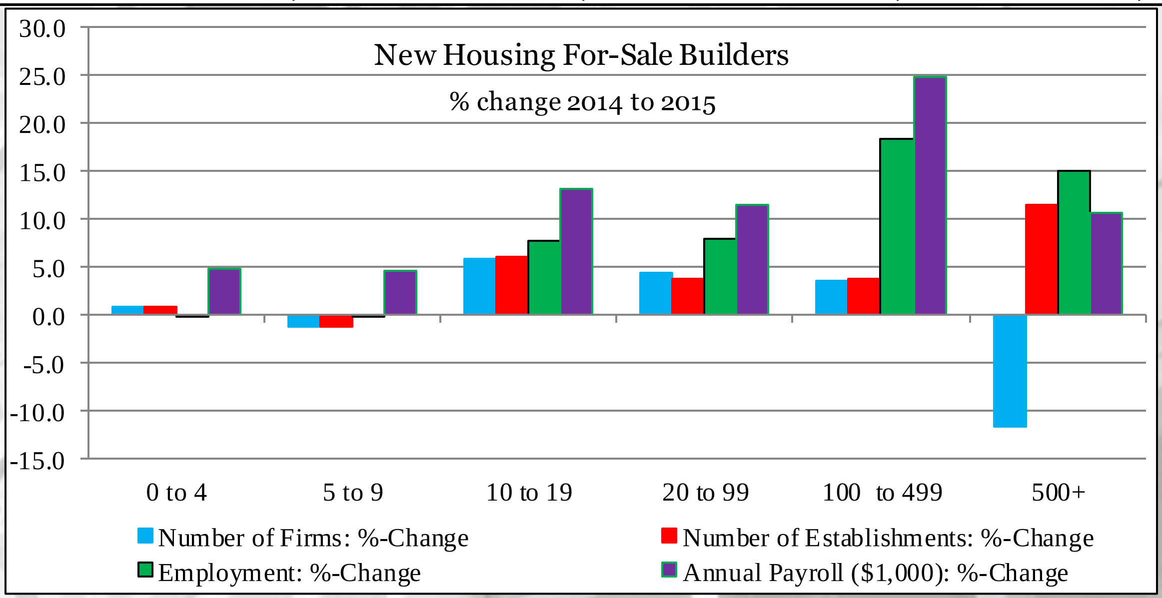
Residential Building Construction: Firms, Establishments, Employment, & Payroll

Table 3. New Housing For-Sale Builders: 2015

Enterprise Employment Size	Number of Firms	Number of Establishments	Employment	Annual Payroll ($1,000)
0 to 4	8,862	8,862	14,263	$695,528
5 to 9	1,790	1,793	11,697	$564,067
10 to 19	852	855	11,442	$659,653
20 to 99	569	599	20,415	$1,428,552
100 to 499	88	226	11,511	$1,112,291
500+	38	543	34,788	$3,533,797
Total	12,199	12,878	104,116	$7,993,888



Source: https://www.census.gov/programs-surveys/susb.html; 9/7/17

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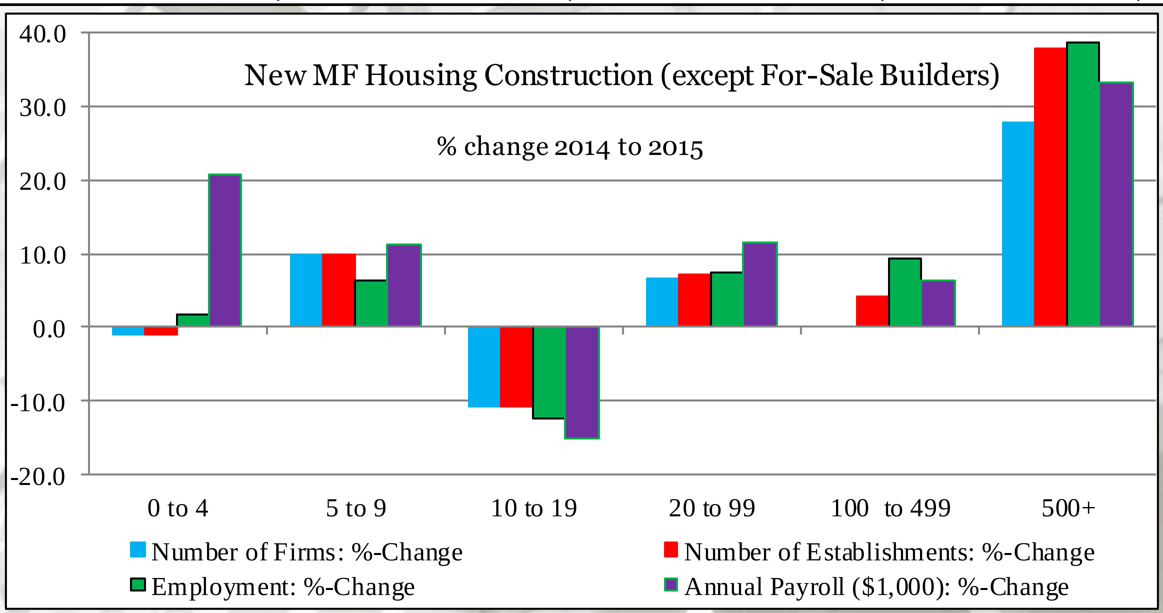
MF Building Construction: Firms, Establishments, Employment, & Payroll

Table 4. New MF Housing Construction (except For-Sale Builders): 2015

Enterprise Employment Size	Number of Firms	Number of Establishments	Employment	Annual Payroll ($1,000)
0 to 4	1,661	1,661	2,626	$156,432
5 to 9	452	452	2,910	$146,014
10 to 19	258	258	3,474	$200,049
20 to 99	319	332	12,078	$946,917
100 to 499	60	75	7,767	$621,033
500+	23	40	4,218	$359,176
Total	2,773	2,818	33,073	$2,429,621



Source: https://www.census.gov/programs-surveys/susb.html; 9/7/17

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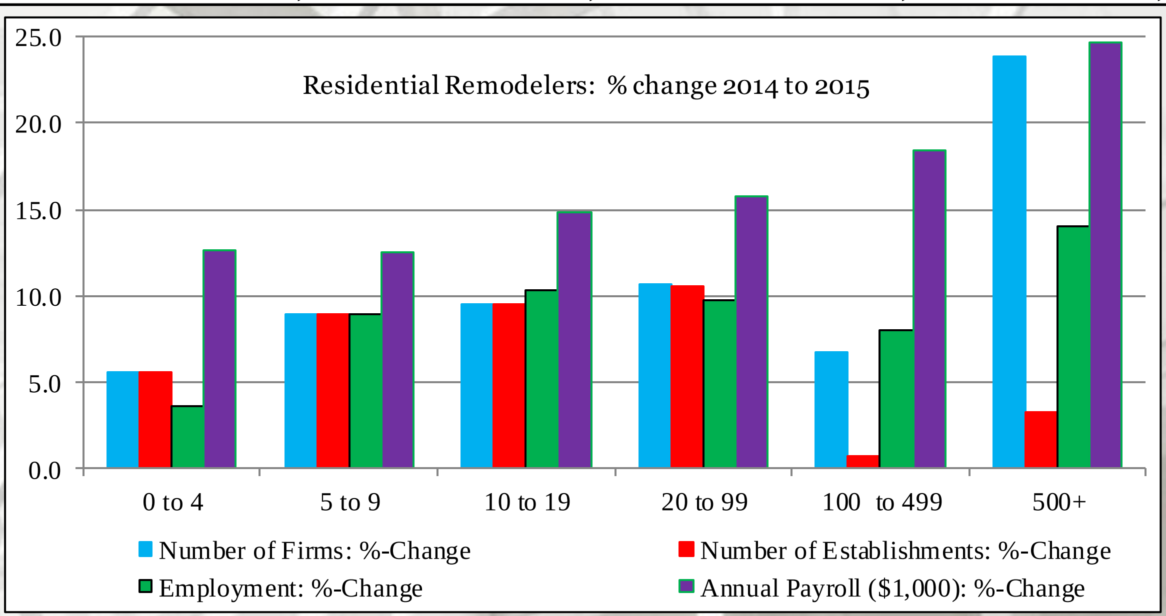
Remodeling Building Construction: Firms, Establishments, Employment, & Payroll

Table 5. Residential Remodelers: 2015

Enterprise Employment Size	Number of Firms	Number of Establishments	Employment	Annual Payroll ($1,000)
0 to 4	81,367	81,369	108,589	$4,205,688
5 to 9	10,584	10,584	67,673	$2,539,635
10 to 19	4,183	4,188	54,902	$2,323,011
20 to 99	1,818	1,872	61,329	$2,919,014
100 to 499	126	263	14,965	$779,720
500+	26	285	11,309	$630,747
Total	98,104	98,561	318,767	$13,397,815



Source: https://www.census.gov/programs-surveys/susb.html; 9/7/17

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Residential Building Construction

Glossary

Enterprise
An enterprise (or "company") is a business organization consisting of one or more domestic establishments that were specified under common ownership or control. The enterprise and the establishment are the same for single-establishment firms. Each multi-establishment company forms one enterprise – the enterprise employment and annual payroll are summed from the associated establishments.

Enterprise Size
Enterprise size designations are determined by the summed employment of all associated establishments. Employer enterprises with zero employees are enterprises for which no associated establishments reported paid employees in the mid-March pay period but paid employees at some time during the year.

Establishment
An establishment is a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. When two or more activities are carried on at a single location under a single ownership, all activities generally are grouped together as a single establishment. The entire establishment is classified on the basis of its major activity and all data are included in that classification. Establishment counts represent the number of locations with paid employees any time during the year.

Source: https://www.census.gov/programs-surveys/susb/about/glossary.html; 9/7/17

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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*

Sources: http://www.remodeling.hw.net/benchmarks/economic-outlook-rri/remodeling-activity-hits-new-high-latest-rri-shows_o/; 8/15/17

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Existing House Sales

National Association of Realtors (NAR®)

August 2017 sales: 5.350 million (SAAR)

	Existing Sales*	Median Price	Mean Price	Month's Supply
August	5,350,000	$253,500	$294,600	4.2
July	5,440,000	$258,100	$298,800	4.2
2016	5,340,000	$240,000	$282,000	4.5
M/M change	-1.7%	-1.8%	-1.4%	0.0%
Y/Y change	0.2%	5.6%	4.5%	-6.7%

* All sales data: SAAR

Source: NAR® https://www.nar.realtor/news-releases/2017/09/existing-home-sales-subside-17-percent-in-august; 9/20/17

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Existing House Sales

	NE Sales	MW Sales	S Sales	W Sales
August	720,000	1,280,000	2,150,000	1,200,000
July	650,000	1,250,000	2,280,000	1,260,000
2016	710,000	1,270,000	2,170,000	1,190,000
M/M change	10.8%	2.4%	-5.7%	-4.8%
Y/Y change	1.4%	0.8%	-0.9%	0.8%

	Distressed House Sales	Foreclosures	Short-Sales	All-Cash Sales	Individual Investor Purchases*
August	4%	3%	1%	20%	15%
July	5%	4%	1%	19%	13%
2016	5%	4%	1%	22%	12%

Source: NAR® https://www.nar.realtor/news-releases/2017/09/existing-home-sales-subside-17-percent-in-august; 9/20/17

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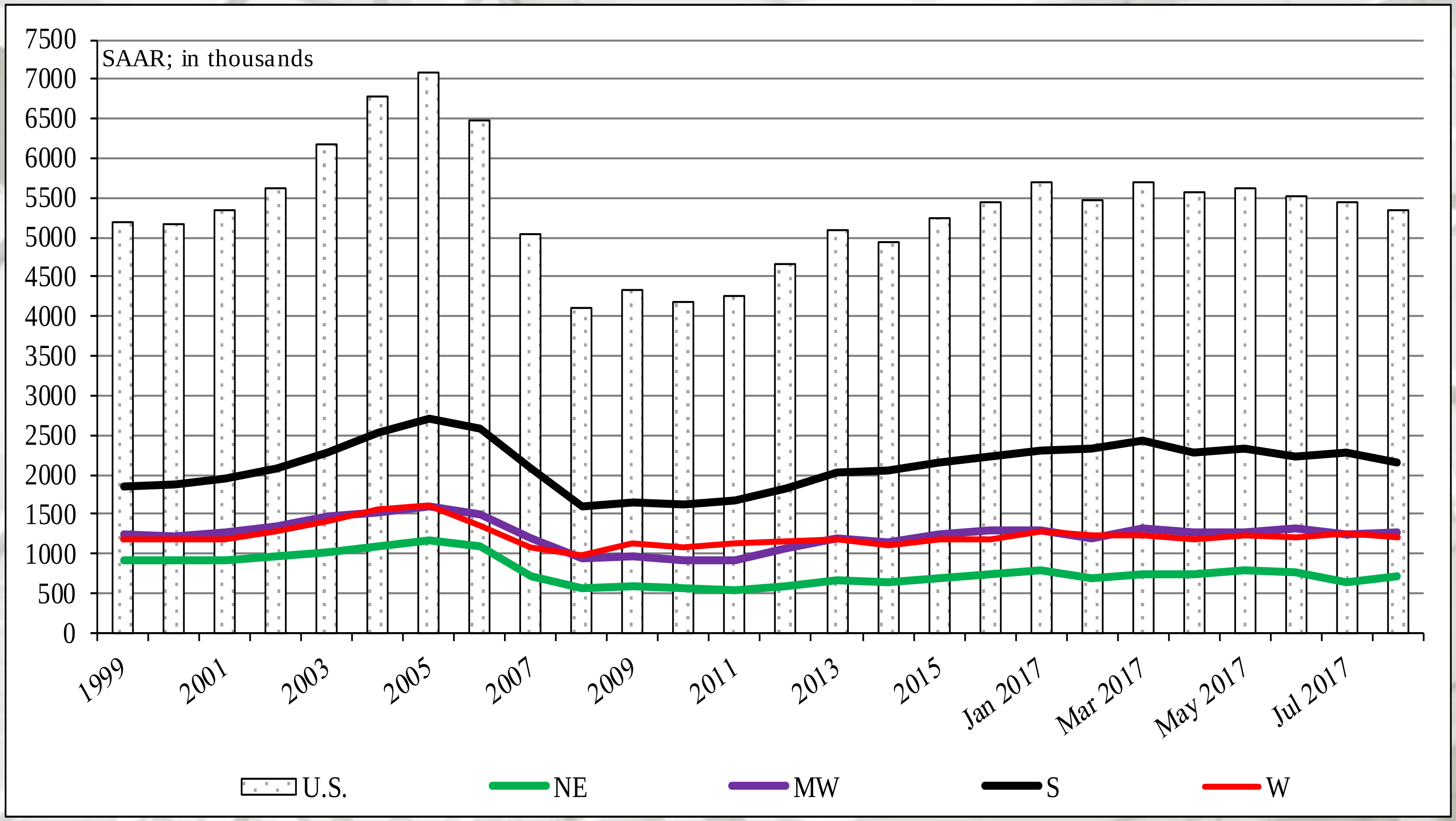
Total Existing House Sales



Source: NAR® https://www.nar.realtor/news-releases/2017/09/existing-home-sales-subside-17-percent-in-august; 9/20/17

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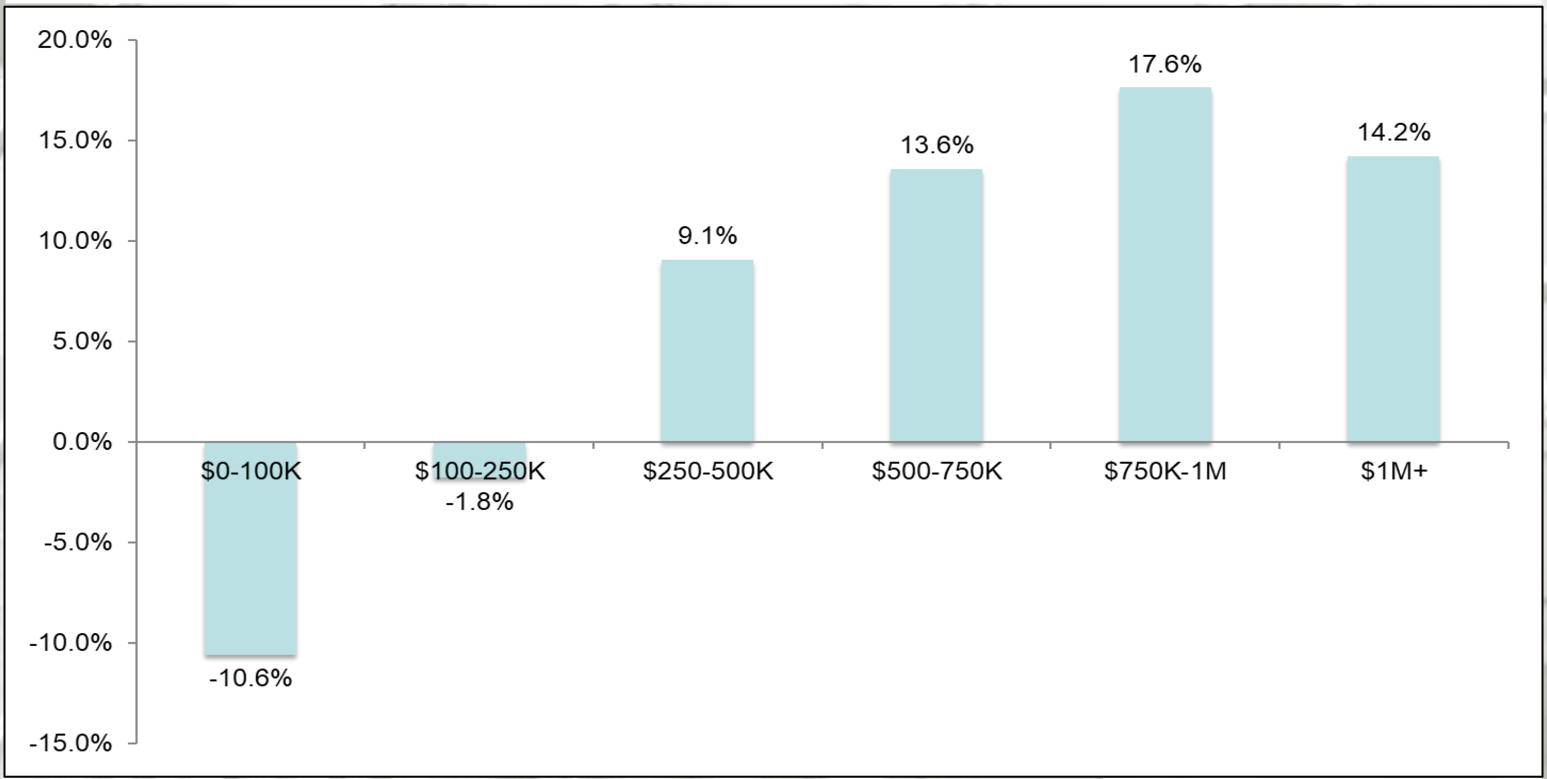
Changes in Existing House Sales

Percent Change in Sales From a Year Ago by Price Range



NATIONAL ASSOCIATION of REALTORS®

Source: NAR® https://www.nar.realtor/news-releases/2017/09/existing-home-sales-subside-17-percent-in-august; 9/20/17

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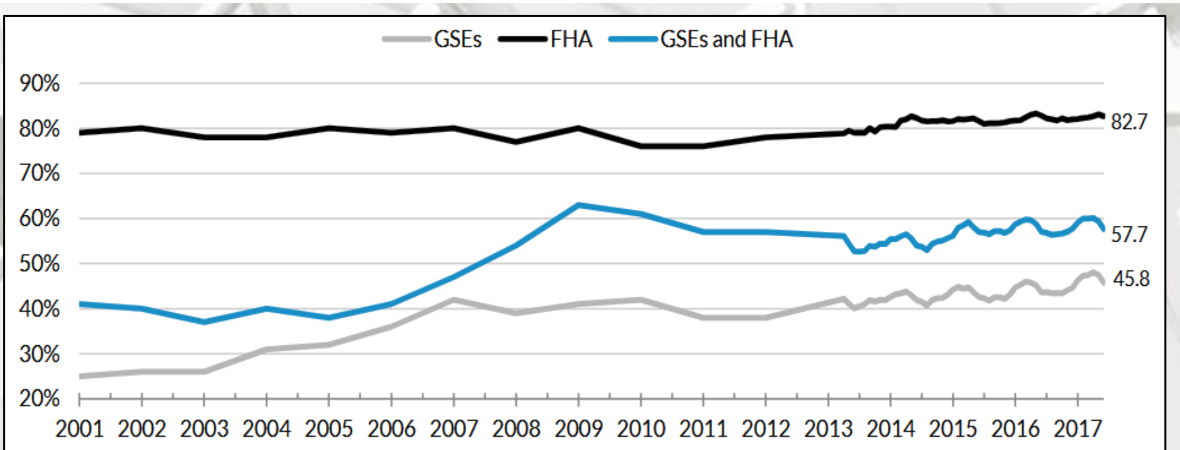
First-Time Purchasers

National Association of Realtors (NAR®)

31% of sales in August 2017 – 33% in June 2017, and 31% in August 2016[1]



Sources: eMBS, Federal Housing Administration (FHA) and Urban Institute.
Note: All series measure the first-time homebuyer share of purchase loans for principal residences.

Urban Institute

"In June 2017, the first-time homebuyer share of GSE purchase loans fell for the second consecutive month to 45.8 percent, after hitting the highest level in recent history in April (48.1 percent). The FHA has always been more focused on first-time homebuyers, with its first-time homebuyer share hovering around 80 percent and stood at 82.7 percent in June 2017. The bottom table shows that based on mortgages originated in June 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/2017/09/existing-home-sales-subside-17-percent-in-august, 9/20/17;
[2] https://www.urban.org/sites/default/files/publication/93516/sep_chartbook_final_0.pdf; 10/2/17

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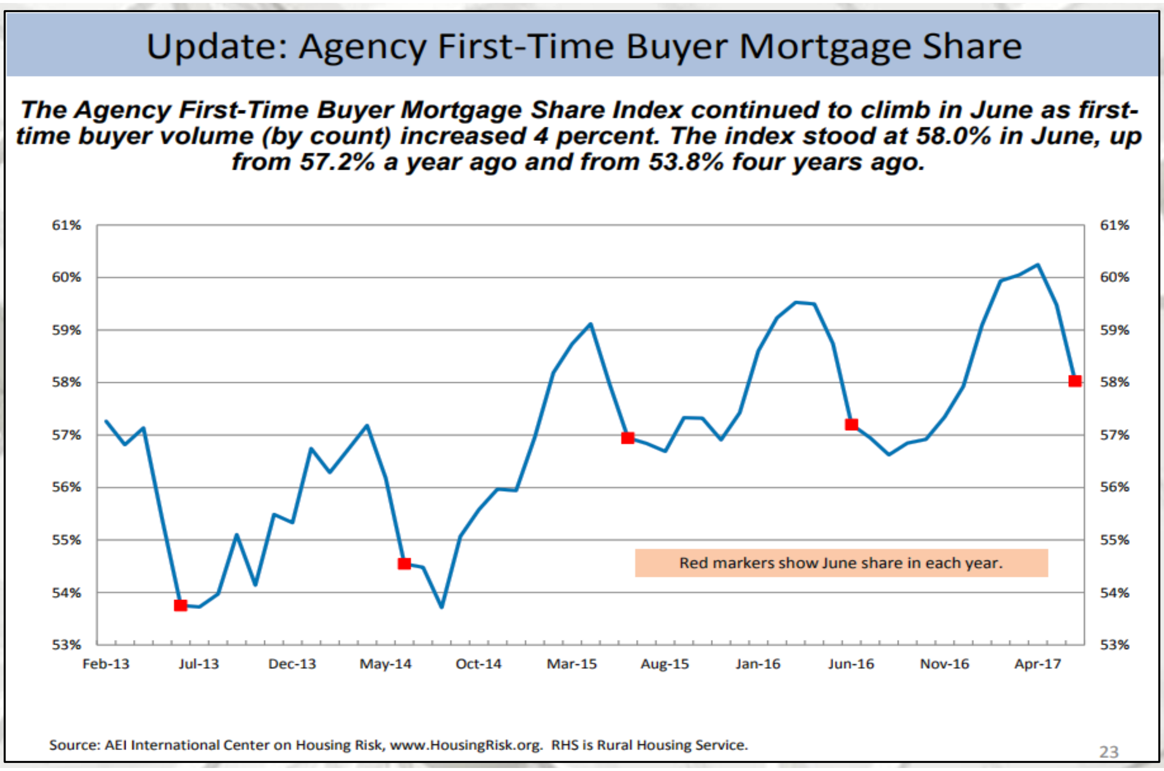
First-Time Purchasers



AEI International Center on Housing Risk
Housing Market Index Release for Second Quarter 2017

"Composite NMRI for purchase increased from already elevated levels a year ago. Index higher for first-time buyers and FHA and lower for repeat buyers. First-time buyers are alive but highly-leveraged.

The Agency First-Time Buyer Mortgage Share Index continued to climb in June as first-time buyer volume (by count) increased 4 percent. The index stood at 58.0% in June, up from 57.2% a year ago and from 53.8% four years ago." – Edward Pinto, AEI International Center on Housing Risk

Source: https://www.housingrisk.org/housing-market-index-release-for-second-quarter-2017/, 10/2/17

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First-Time Purchasers

Comparing First-Time Buyers Now and Then (mid 1970s)

Today's first-time home buyer is more than three years older and typically rents longer before making the jump into homeownership compared to previous generations.

	1975-1979	2010-2013
Average age	29 years old	32.5 years old
Household size	2.6 people	2 people
Years renting before buying	4.6 years	6 years
Home value in today's dollars	$99K	$140K
Income in today's dollars	$55K	$54K

Source: Zillow analysis of University of Michigan Panel Survey of Income Dynamics, 1970-2013.

Source: https://wp.zillowstatic.com/3/Chartbook-2017-Q2-9c1d41.pdf?; 9/27/17

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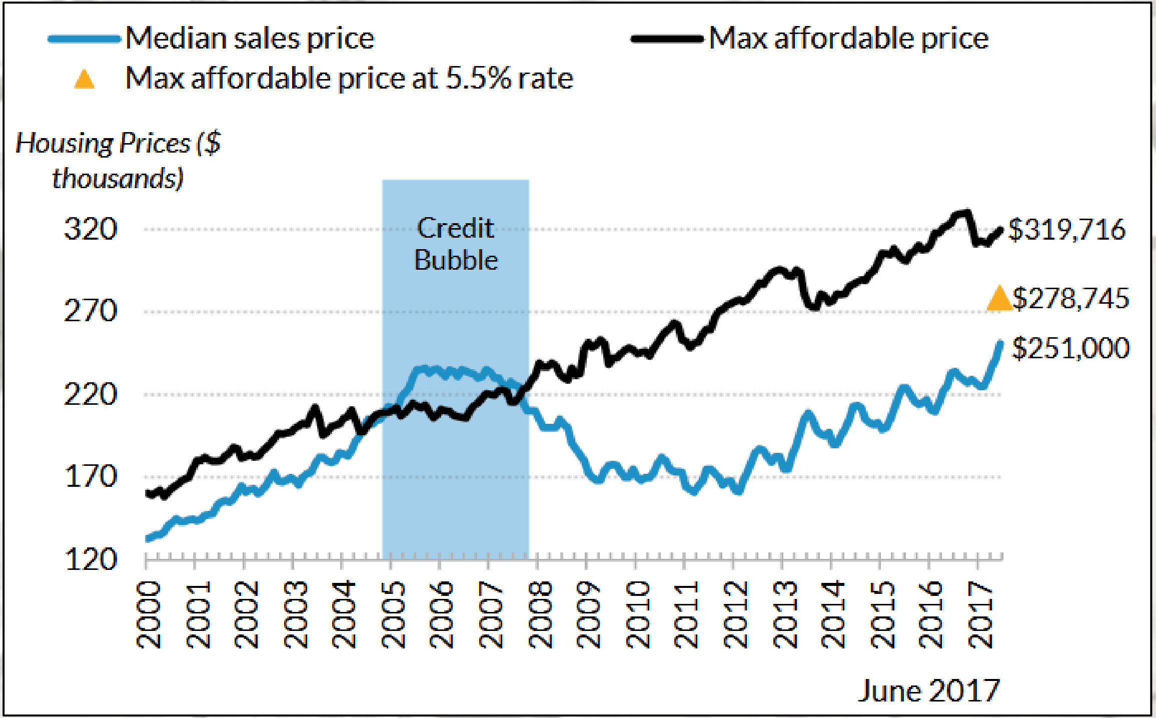
Housing Affordability



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

Source: https://www.urban.org/sites/default/files/publication/93516/sep_chartbook_final_0.pdf; 10/2/17

Housing Affordability

Mortgage and Rent Affordability

- "Overall, mortgage affordability – the share of income necessary to afford a typical mortgage payment – looks reasonable in most markets. But affordability is suffering, especially at the bottom end of the market, as home values rise and incomes fail to keep pace.
- As mortgage interest rates rise, mortgage affordability will also suffer, although there's some headroom for rates to rise before this really becomes problematic.
- Unlike mortgage affordability, rental affordability is much worse today than it was historically, though the recent slowdown in rent growth has helped somewhat.
- Poor rent affordability is worrisome, as more money devoted to rent makes it more difficult to save for homeownership." – Bing Lai, Research Associate, Housing Finance Policy Center

Source: https://wp.zillowstatic.com/3/Chartbook-2017-Q2-9c1d41.pdf?; 9/27/17

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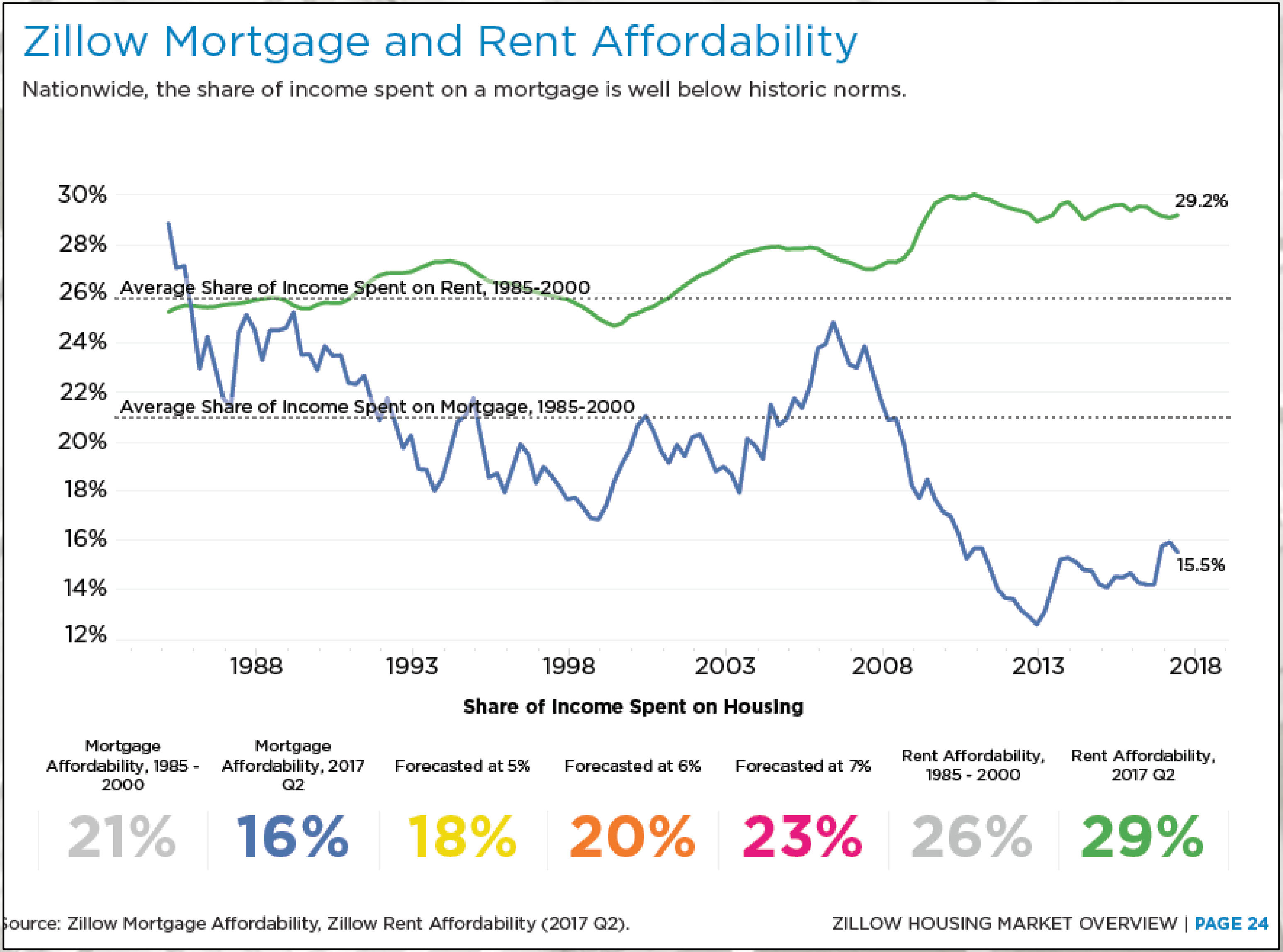
Housing Affordability



Source: https://wp.zillowstatic.com/3/Chartbook-2017-Q2-9c1d41.pdf?; 9/27/17

Mortgage Credit Availability

Mortgage Credit Availability

“After starting at a benchmark of 100 in March 2012, the total MCAI saw an increase of 0.7 percent to 181.4 percent in September. The MCAI looks at four component indices; Conforming, Conventional, Government and Jumbo which all experienced an increase. The Conforming and Conventional MCAI had an equal increase of 1.5 percent, while Government and Jumbo experienced an increase of 0.2 percent and 1.4 percent respectively.

Mortgage credit availability increased in September due to continuing updates to conforming loan programs as well as agency jumbo programs that have been phased in over the last few months. A particular highlight of the report shows an increase in jumbo space, while non-jumbo space saw a more humble gain in recent months.

Both the total and component MCAIs are designed to show relative credit risk/availability, but the main difference lies in the population of loan programs they examine. The Government MCAI focuses on FHA/VA/USDA loan programs while the Conventional, Jumbo, and Conforming MCAI focuses on non-governmental programs.” – Lynn Fisher, Vice President of Research and Economics, Mortgage Bankers Association

Source: https://www.mba.org/news-research-and-resources/research-and-economics/single-family-research/mortgage-credit-availability-index; 10/10/17

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Aggregate Housing Market

Apartment Demand for the Next 15 Years: Can We Meet the Need?

The Current Nature of Housing Demand

"Shifting demographics have created new trends in housing needs and tenure choices. Panelist Paige Mueller, chief executive officer of Whitegate Real Estate Advisors, described two submarkets dominated by certain age groups: "boomer markets" and "Gen-Z markets." Boomer markets are characterized by a growing number of people aged 65 and over and significant outmigration of younger individuals. These markets, located primarily in the nation's Midwest and Northeast regions, typically have higher homeownership rates, a higher proportion of low-income renters, and an aging housing stock. These markets generally reflect the nationwide trend of an aging population that constitutes a significant portion of overall apartment demand; 65 percent of the rental population is older than 35.

Conversely, Gen-Z markets are high-growth markets in which residents under the age of 34 make up more than 30 percent of the population growth. These markets are located primarily in the Southeast and West, in areas with substantial developable land. The housing stock in these markets tends to be newer and more affordable. These markets typically have higher rentership rates because these younger residents overall are "getting older later," starting families later in life and therefore renting for longer periods.

The 2008 recession affected tenure choices nationwide. According to panelist Jamie Woodwell, vice president of the research and economics group at the Mortgage Bankers Association, the recession caused a "demand shock" in the housing market, in which many families switched from homeownership to renting. Mueller described the current market as suffering from a "hangover effect" — younger Americans who would normally be eligible to become first-time homebuyers have seen only slow recovery of their income and employment status, causing the homeownership rate to remain low and rental demand to remain high." – Housing & Urban Development, *PD&R EDGE*

Source: https://www.huduser.gov/portal/pdredge/pdr-edge-featd-article-092517.html/; 9/15/17

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Aggregate Housing Market

Apartment Demand for the Next 15 Years: Can We Meet the Need?

Future Trends in Housing Demand

"Looking forward, the panelists expect the need for new apartment units to grow. Mueller estimates that by 2030, 4.6 million new multifamily units will be needed. More than 1 million of these units will be needed in the top five housing markets of New York, Dallas-Fort Worth, Houston, Miami-Fort Lauderdale, and Atlanta. This demand can be attributed partly to trends in population growth. Based on Mueller's projection, 49 percent of this growth through 2030 will be from international immigration. Markets that depend on immigration for growth should expect higher demand for rental units, as rentership rates tend to be higher for immigrants than for other population sectors.

Supply Limitations

Several factors influence the market's ability to respond to demand for apartments. Woodwell described how housing production also suffered a "shock" from the recession, with new construction nearly coming to a halt. The market, however, has since responded to increasing rentership; although the overall multifamily vacancy rate is currently at its lowest point since the mid-1980s, the number of multifamily units under construction is at its highest point since the mid-1970s. Investors are experiencing historically low yields in the housing market, which has spurred apartment development at lower rents than would otherwise be possible. Woodwell noted, however, that housing market reactions only reach a portion of overall demand; the market itself fails to address the needs of lower-income households, whose housing cost burden is significantly higher than for other income groups." – Housing & Urban Development, *PD&R EDGE*

Source: https://www.huduser.gov/portal/pdredge/pdr-edge-featd-article-092517.html/; 9/15/17

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Aggregate Housing Market

Apartment Demand for the Next 15 Years: Can We Meet the Need?

"Because the market is unable to meet housing demand for all income levels, subsidies, a scarce resource, are needed. Panelist Priya Jayachandran, senior vice president for affordable housing development at Volunteers of America, discussed the continued loss of affordable housing despite increasing need. The federal government no longer funds any new rental assistance subsidies, and although the Low-Income Housing Tax Credit (LIHTC) program is by far the largest source of new affordable housing, it has not kept pace with population growth and demand. Tax credit pricing has dipped recently, and many LIHTC projects are currently stuck in the pipeline.

Housing developers may encounter another obstacle in the form of local regulations. Mueller described how extensive permitting processes and overly restrictive zoning can have a chilling effect on housing production, which inflates rent costs. According to Jayachandran, these regulatory restraints artificially reduce the amount of developable land. Jayachandran also raised the issue of NIMBYism. Because of the stigma surrounding affordable housing, many communities will either fight to prevent a low-income housing development or allow such projects to be built only "on the other side of the railroad tracks" — in areas with high concentrations of poverty.

Meeting Demand for the Future

To meet the demand for 4.6 million new multifamily units by 2030, policymakers must adopt new approaches to overcome some of the current barriers to new development. Jayachandran recommended that jurisdictions free up their air rights to add density by building up and loosen zoning restrictions, which would reduce land costs and expand opportunities for affordable housing. To overcome the stigma attached to labels such as "low income" and "subsidized," affordable housing projects could be rebranded as "workforce" housing, a term more palatable to the public. Finally, the housing market must innovate to keep up with changing demographics and consumer needs. The panelists spoke optimistically of future opportunities for innovation but stressed that the challenge would lie in finding the resources to leverage these opportunities." – Housing & Urban Development, *PD&R EDGE*

Source: https://www.huduser.gov/portal/pdredge/pdr-edge-featd-article-092517.html/; 9/15/17

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Aggregate Housing Market

National Apartment Market Outlook: Bearish for Now, Bullish for Later

- "Nationally, rents in multifamily structures have stagnated for the past year and will continue to do so as more new units become available in the coming months.
- Vacancy rates are still at historic lows after dropping every year since 2009 until recently, and landlords are offering rent concessions to keep it that way.
- In the longer term, we expect increased demand for rentals from three key demographics: Younger millennials entering prime renting age; older millennials that might typically buy homes but that are finding it harder to save a down payment; and an aging Baby Boomer population looking to downsize and potentially move to renting.

A recent surge in apartment construction could mean opportunities for renters to save some money over the next few years as more supply continues to come online and landlords compete to fill vacant units – especially at the higher end of the market. But looking farther out, that dynamic could reverse as a handful of demographic and economic trends take hold.

Younger millennials are just now entering prime renting ages, even as older millennials find it more challenging to save for a down payment and transition into homeownership – keeping them renting ever longer. Additionally, the large Baby Boomer generation is aging into a period of their lives in which selling their home, downsizing and/or renting is seemingly becoming more common. These shifts point to a significant growth in rental demand in the longer-term, with landlords poised to benefit." – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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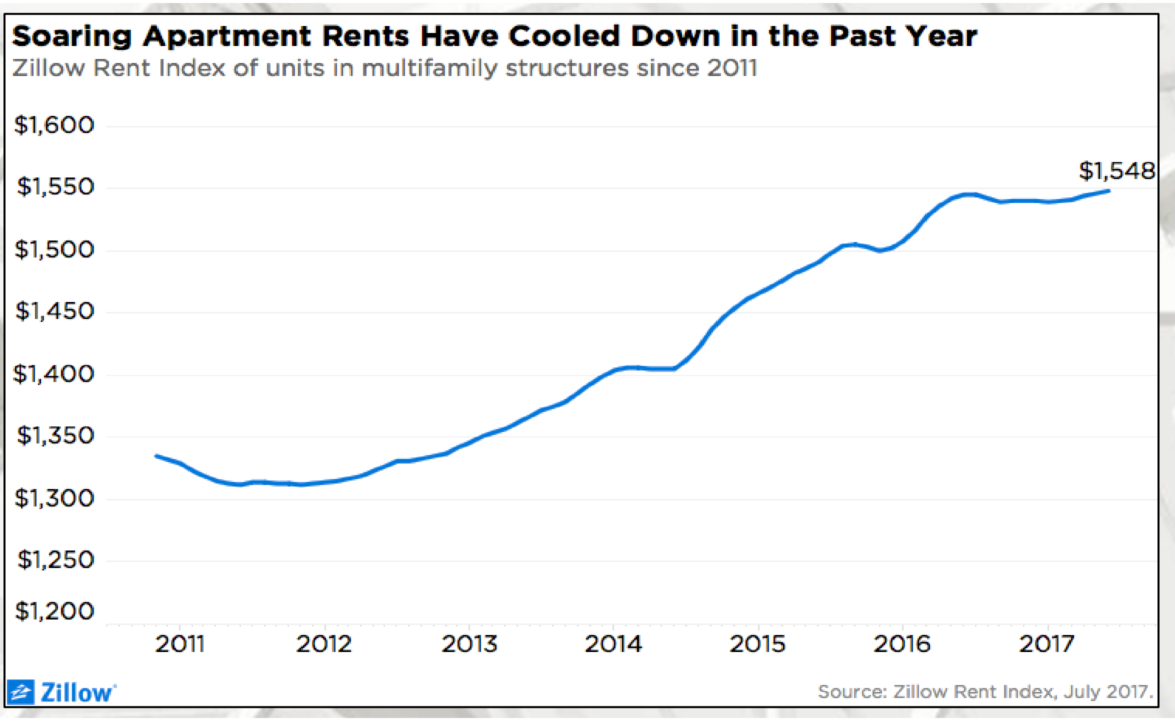

Bearish in the Short-Run

"Renters living in multifamily complexes have gotten a bit of a reprieve from relentlessly rising rents this year. Rents in multi-family structures have stayed roughly constant over the last year after showing consistent growth over the past five or so years.

It typically takes 18-24 months for multifamily housing developments to be completed after construction begins, which likely means the glut of units started in early 2015 are starting to open for occupancy today. The rate of completions looks set to reach a multi-decade high in 2017, and this added supply is a boon for renters looking for tempered rents – more supply means more vacancies and slower rent growth." – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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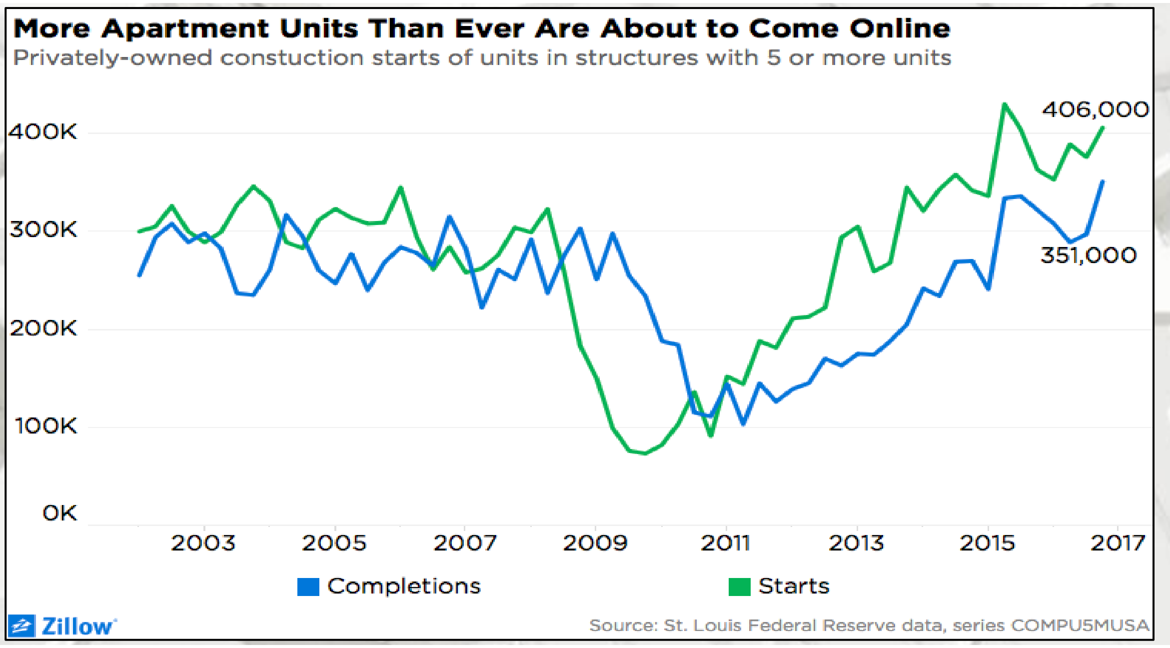

Bearish in the Short-Run

"According to the U.S. Census Bureau, vacancy rates are well below their 2009 high. As of Q2 2017, the national vacancy rate stood at 7.3 percent, down substantially from its recent peak of 11.1 percent in Q3 2009. The precipitous drop in vacancy rates can be explained at least in part as a reaction to the foreclosure crisis – one-time homeowners foreclosed upon during the Great Recession were forced to move into rental housing, driving vacancy rates down and rents themselves up.

But that has started to change more recently – likely because of the extra supply created by the flurry of multifamily construction activity. As of Q2 2017, the national rental vacancy rate has risen for five straight quarters, at the same time as rent growth has slowed." – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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Aggregate Housing Market

Bearish in the Short-Run

"The increasing rate of starts of multifamily structures (especially the spike in 2015) will lead to continued new rental supply over the short term. This means the trend of leveling vacancy rates and slower rent appreciation should continue. Zillow expects the U.S. median multifamily rent to appreciate just 2 percent over the next year (June 2017-June 2018), well below annual growth rates of more than 6 percent seen as recently as mid-2015 and below the historical average of 3.5 percent.

But there is a disconnect between the type of new rental units set to enter the market, and where rental demand is likely to come from. Last year, we found that rents for the cheapest apartments have been growing at a faster rate than the overall market. We largely attributed this to a lack of new supply at the lower end in the face of significant demand for cheaper apartments. Since 2014, apartment construction has skewed heavily towards the high end. In residential structures with five or more units, construction permit data shows that the value per unit being built has been steadily trending up.

Rental vacancy rates are low overall, but particularly low among the least-expensive rentals, according to the Census Bureau. For units costing less than $300/month, the vacancy rate is a stunningly low 2 percent, and in the $300-$349/month range, it is at 4.6 percent – both much lower than the overall national figure of 7 percent as of Q2 2017. But it's a totally different story at the high end: The vacancy rate for units renting for more than $1,500/month stands at 8.4 percent." – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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Aggregate Housing Market

Bearish in the Short-Run

"Because higher-end units rent for more money, vacancies in this segment cost landlords more in potentially lost revenue. One tactic landlords traditionally use to keep vacancies low is to offer a concession or special offer on signing – including a month of free or reduced rent, discounted or free parking and/or waived fees. If spread across a lease, a concession such as one month of free rent can go a long way, often enabling a tenant to effectively pay hundreds of dollars less per month. For example, a month of free rent on an apartment advertised at $2,400/month, spread across a 12-month lease, means effective rent can be reduced to $2,200/month, or savings of $200/month in actual rent paid. This strategy allows landlords to lower effective rent without lowering the advertised/actual rent as stated on their lease – which may upset current tenants paying higher rents.

A New York City-specific analysis by StreetEasy.com Senior Economist Grant Long showed that rent concessions in the city are trending up, and are far more common among newer apartment structures. And growth in the overall U.S. rental housing stock has skewed significantly towards the higher end in the past decade. Combined, this suggests concessions would be much more common among rentals at the higher end of their respective markets. Zillow's analysis of hundreds of thousands of listing descriptions nationwide shows this to be true.

Nationwide, listing descriptions for apartments at the higher end of the market are three times more likely to mention concessions than listings at the lower end. This might be explained by the variability in vacancy rates at the bottom, middle and top of the market. Super-low vacancy rates at the bottom give landlords little incentive to offer a concession, especially with rent so low to begin with. … " – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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Aggregate Housing Market

Bullish in the Long-Run

"But the overall rental market picture changes dramatically when broadening the horizon and looking beyond the short term. Longer-term demographic trends should prove to be a tremendous tailwind for landlords and the rental market in the coming decade. Two generations in particular – Millennials and Baby Boomers – likely represent a ready source of future rental demand.

Historically, Americans are more apt to rent in their 20's and early 30's, and the current cohort of people aged 20-to-34 is the largest in recent memory. This age group has grown from 58 million people in 2005 to 66 million in 2015, a 14 percent increase, according to the American Community Survey. In comparison, the overall population of the United States grew only 11 percent over the same time period. On top of this, the aforementioned rent affordability issues often keeps renters renting. Avocado toast-related comments aside, millennials have trouble saving for a competitive down payment when their rent burden is already so high.

But while we may tend to think of apartment hunting as a young person's game, we can't count out the potential silver boom in the rental market. Harvard's Joint Center for Housing Studies recently found that 44 percent of all renter household growth from 2005 to 2016 has come from households headed by someone over 55 years old, increasing their share in the market from 22 percent in 2005 to 27 percent.

This finding is also echoed in national homeownership rate statistics. If you don't own a home, you very likely rent one, and the homeownership rate among those aged 55-to-64 has fallen considerably over the past decade, from more than 80 percent in 2004 to roughly 75 percent by the end of 2015. Some of this decline is, again, likely attributable to the foreclosure crisis turning former homeowners into renters. And yes, three-quarters of Americans nearing retirement age do still own homes, a rate well above the overall national rate. But the fact that the decline in homeownership in this group both began prior to the Great Recession and has persisted well after it ended suggests at least the possibility that many of these older Americans are choosing to rent out of preference and maybe not out of necessity." – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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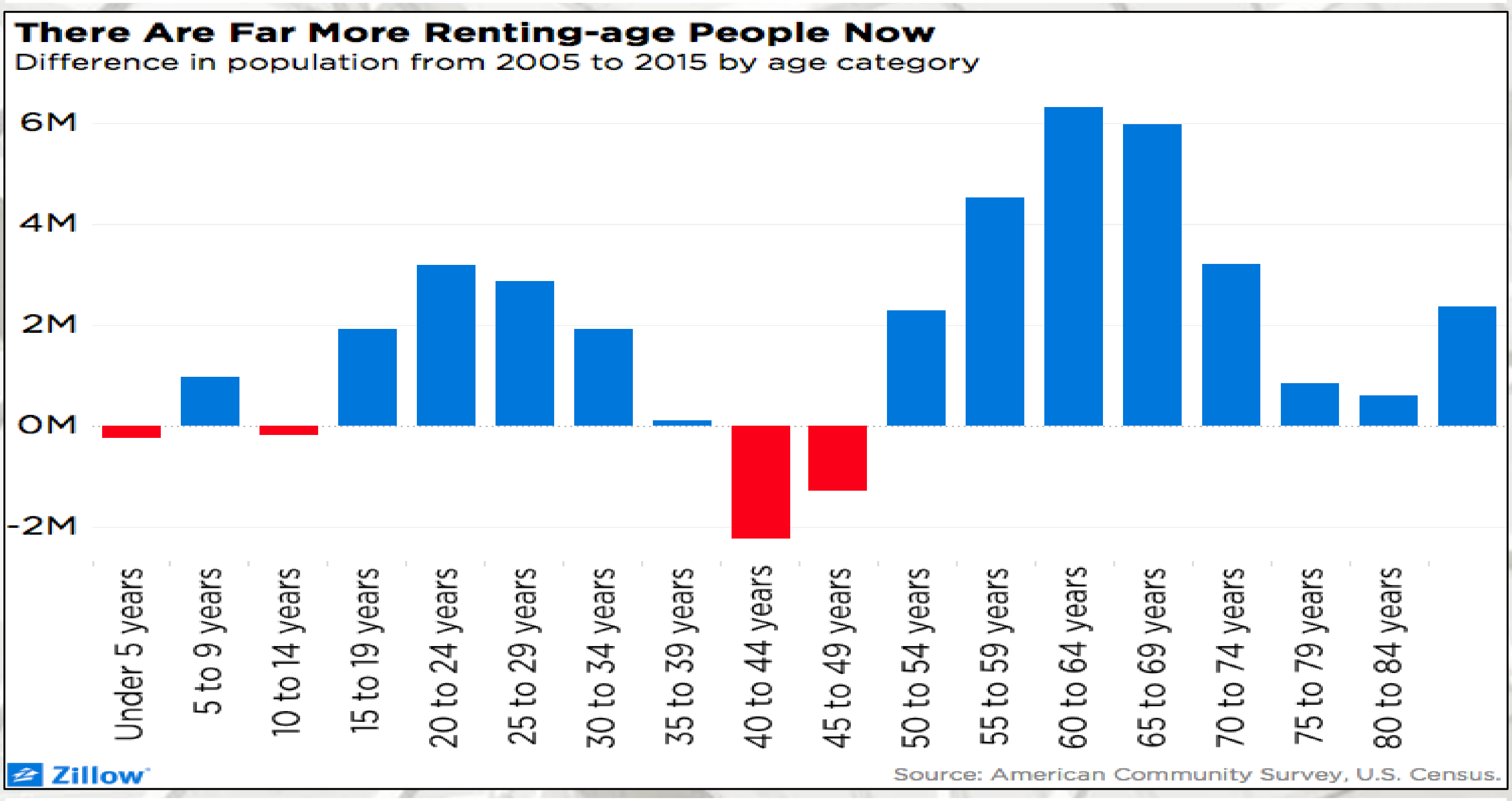

Bullish in the Long-Run

"These longer-term demographic trends will serve as big-time boons for landlords. Freddie Mac estimates that "several million" home-owning boomers will become renters by 2020, and the National Multifamily Housing Council, an apartment industry lobbying group, insists that there will be a shortage of over 1.5mm apartments by 2027. That said, in the short-term, renters can look forward to more moderate rent increases and opportunities for discounted rent as new supply peaks in the next one or two years." – Adhi Rajaprabhakaran, Economic Analyst, Zillow

Source: https://www.zillow.com/research/national-apartment-market-outlook-16575/; 9/15/17

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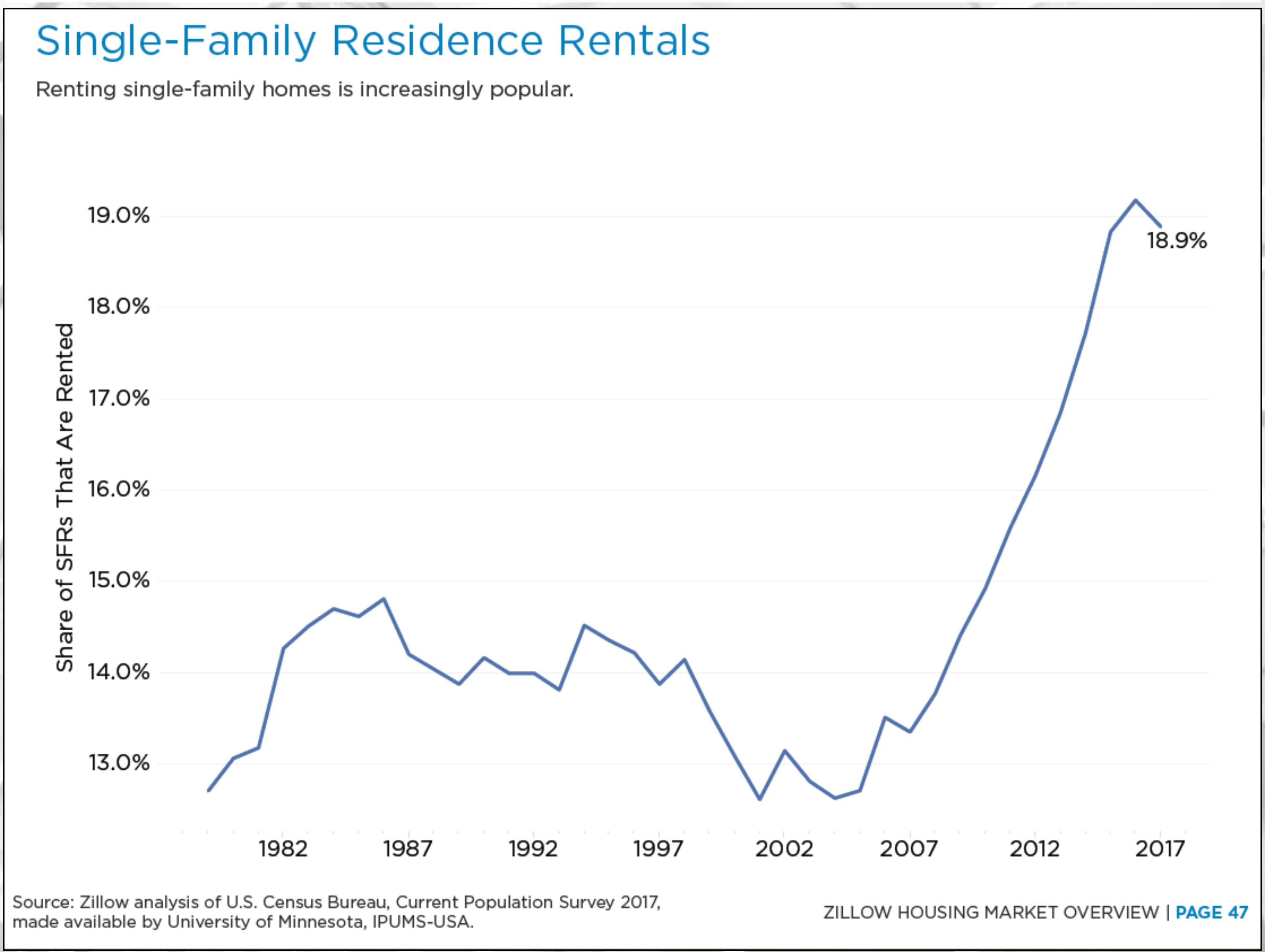

Source: https://wp.zillowstatic.com/3/Chartbook-2017-Q2-9c1d41.pdf?; 9/27/17

Aggregate Housing Market

Typical Buyer Profile

Existing Homes

Income
$70K

Marital Status
56.6% married

Have at least one child
40%

Millennial Share
30%

Typical Commute Time
20 minutes

New Construction

Income
$95K

Marital Status
75.5% married

Have at least one child
46.1%

Millennial Share
26.2%

Typical Commute Time
25 minutes

Source: Zillow analysis of U.S. Census Bureau, American Community Survey, 2014, made available by the University of Minnesota, IPUMS-USA.

Source: https://wp.zillowstatic.com/3/Chartbook-2017-Q2-9c1d41.pdf?; 9/27/17

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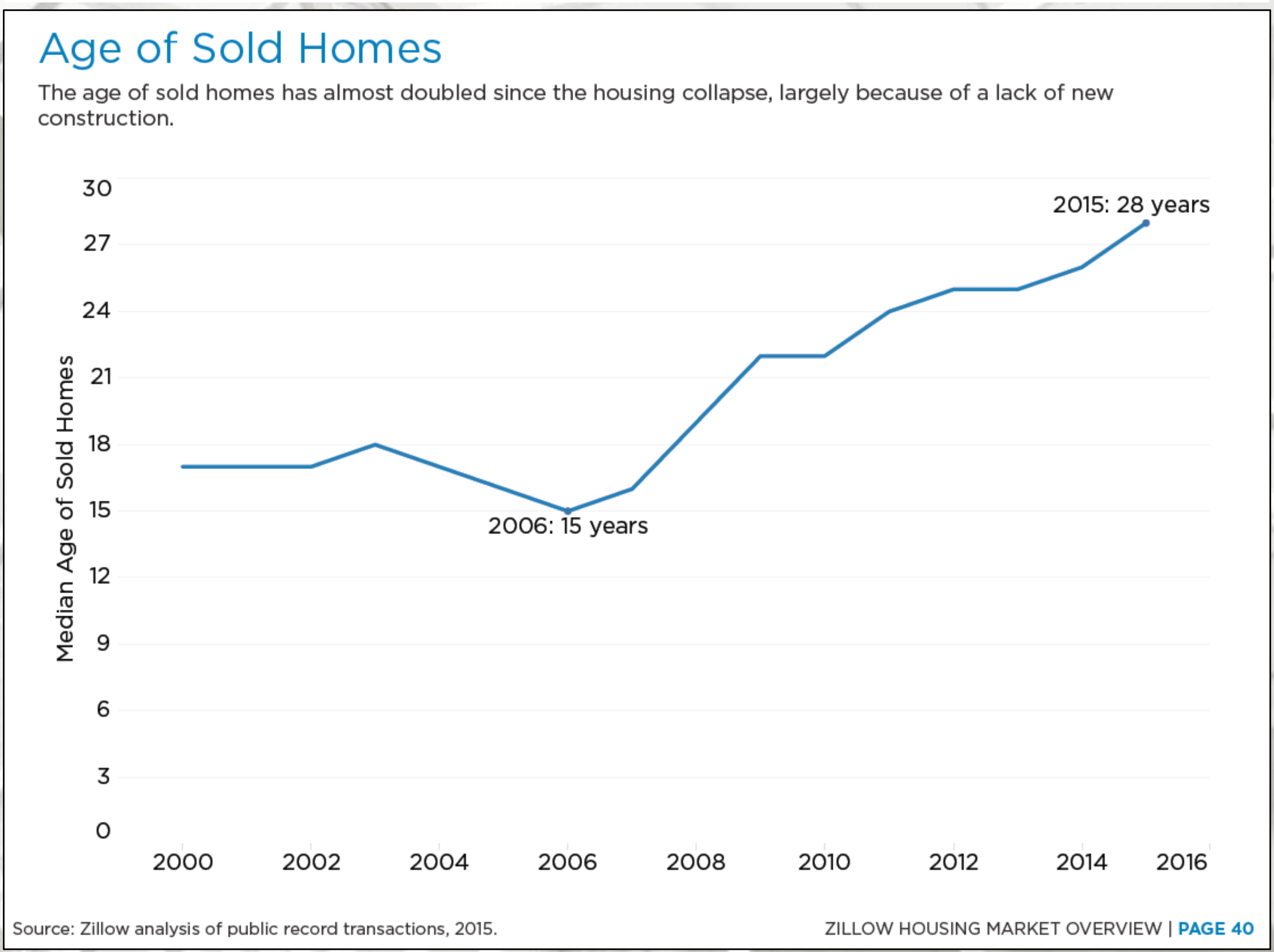

Source: https://wp.zillowstatic.com/3/Chartbook-2017-Q2-9c1d41.pdf?; 9/27/17

Summary

In summary:

In August, the U.S. housing market remained in the doldrums, as many monthly indicators were negative on a month-over-month basis. SF starts were positive; yet, SF permits were negative on a monthly-over-month basis. Monthly construction spending is anemic, as SF and improvement expenditures were barely positive on a month-over-month basis. Once again, new SF lower-priced tier house sales were well less than historical averages. It warrants repeating, the market needs consistent improvement in this category to influence the housing construction market upward.

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

Pros:

1) Historically low interest rates are still in effect, though in aggregate rates are incrementally rising (future Fed actions may indirectly cause *i*-rates to rise);
2) As a result, housing affordability is good for many in the U.S. – but not all of the U.S.;
3) Select builders are beginning to focus on entry-level houses.

Cons:

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

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