The Virginia Tech – U.S. Forest Service June 2018 Housing Commentary: Section I

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

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

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Opening Remarks

There is no sugar coating June's housing data – it was ugly. Total permits and starts, including single-family permits were negative on a monthly and year-over-year basis. Single-family monthly start data was barely positive. Housing under construction was negative on a monthly basis. Housing completions indicated no change, but single-family completions were negative on a month-over-month basis. New single-family sales improved month-over-month and were fairly robust on a year-over-year basis. Existing sales continued their declining trend. New single-family construction spending indicated minimal positive change on a monthly basis. The August 9th Atlanta Fed GDPNow™ residential investment spending model projects an aggregate -2.3% decline for Quarter Three 2018. New private permanent site expenditures were projected for a -7.9% decrease; the improvement spending forecast was a 4.9% increase; and the manufactured/mobile housing projection was a -11.1% decline (all: quarterly log change and seasonally adjusted annual rate)[1].

This month's housing quotation regards findings from the *The State of United States Housing 2018* report: "The average number of single-family homes for sale during 2017 was lower than at any point since 1982; One in three homeowners is age 65 or over; Only one in three renters has more than $10,000 in assets; Only 11 percent of the population moved in 2017; Households headed by immigrants accounted for 47 percent of household growth between 2010 and 2016; In 2017, the homeownership rate for 35-44 year olds was 8 percentage points below the 1988 rate; The black/white homeownership rate gap was 29.2 percentage points in 2017; Between 1990 and 2016, the number of units renting for $800 (in real terms) declined by 2.5 million units; The real median income of renter households rose by less than one percent since 1990; and More than 38.1 million households – roughly one-third of all households – are cost-burdened."[2] – Daniel McCue, Senior Research Associate, Joint Center for Housing Studies, Harvard University.

This month's commentary also contains applicable housing data, home ownership, building products; and economic information. Section I contains data and commentary and Section II includes regional Federal Reserve analysis, private indicators, and demographic and economic commentary.

Sources: [1] https://www.frbatlanta.org/cqer/research/gdpnow.aspx; 8/9/18;
[2] http://www.jchs.harvard.edu/blog/digging-deeper-ten-striking-findings-from-our-latest-state-of-the-nations-housing-report/; 8/8/18

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June 2018
Housing Scorecard

	M/M	Y/Y
Housing Starts	▽ 12.3%	▽ 4.2%
Single-Family Starts	▽ 9.1%	▽ 0.2%
Housing Permits	▽ 2.2%	▽ 3.0%
Single-Family Permits	△ 0.8%	△ 4.6%
Housing Under Construction	▽ 0.5%	△ 4.9%
Single-Family Under Construction	▽ 0.2%	△ 11.5%
Housing Completions	NC 0.0%	△ 2.2%
Single-Family Completions	▽ 2.3%	△ 5.3%
New Single-Family House Sales	▽ 5.3%	△ 2.4%
Private Residential Construction Spending	▽ 0.5%	△ 8.8%
Single-Family Construction Spending	▽ 0.4%	△ 6.8%
Existing House Sales[1]	▽ 0.6%	▽ 2.2%

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

Sources: U.S. Department of Commerce-Construction; [1] FRED: Federal Reserve Bank of St. Louis

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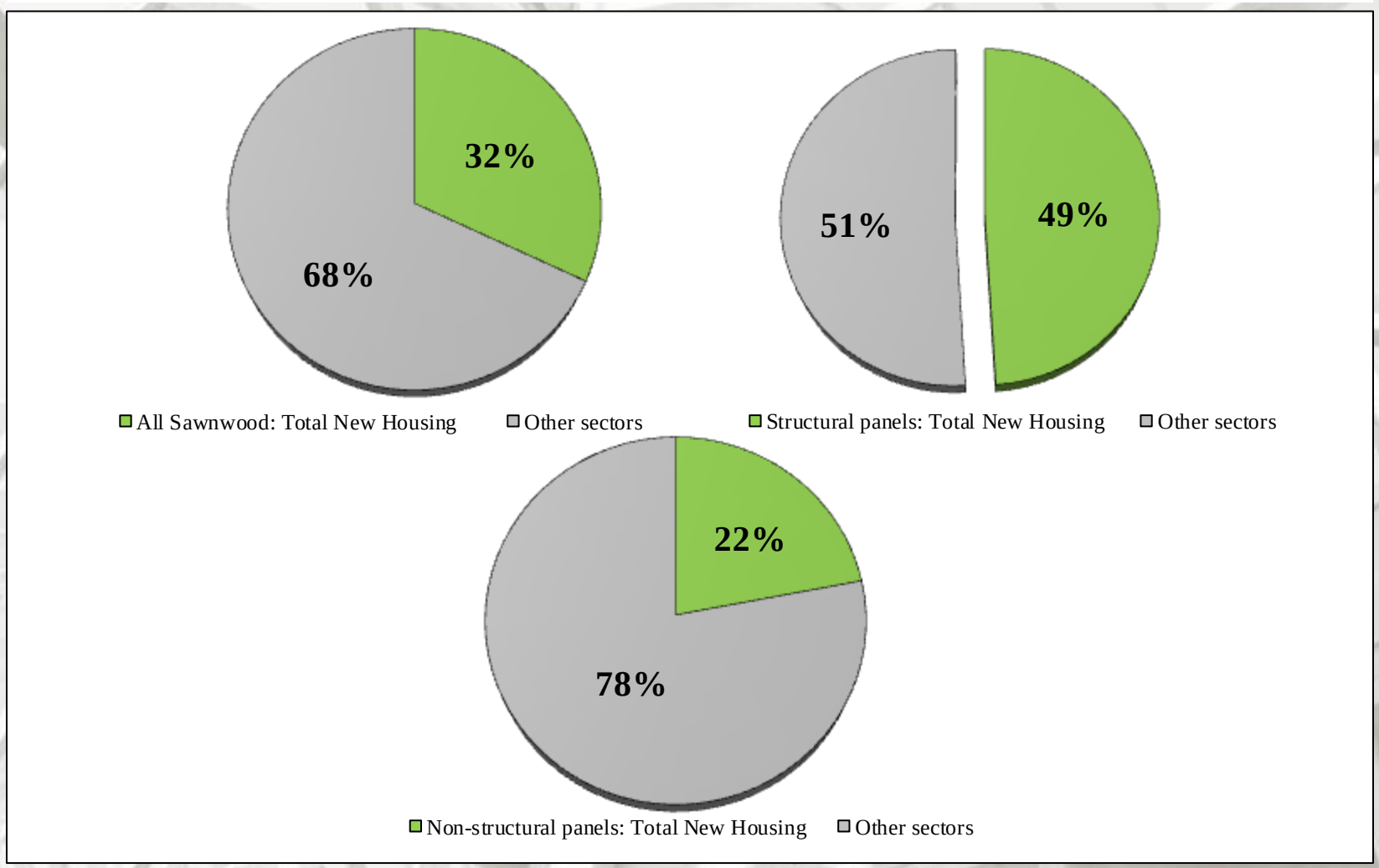
New Construction Percentage of Wood Products Consumption



Source: U.S. Forest Service. Howard, J. and D. McKeever. 2017. U.S. Forest Products Annual Market Review and Prospects, 2013-2017

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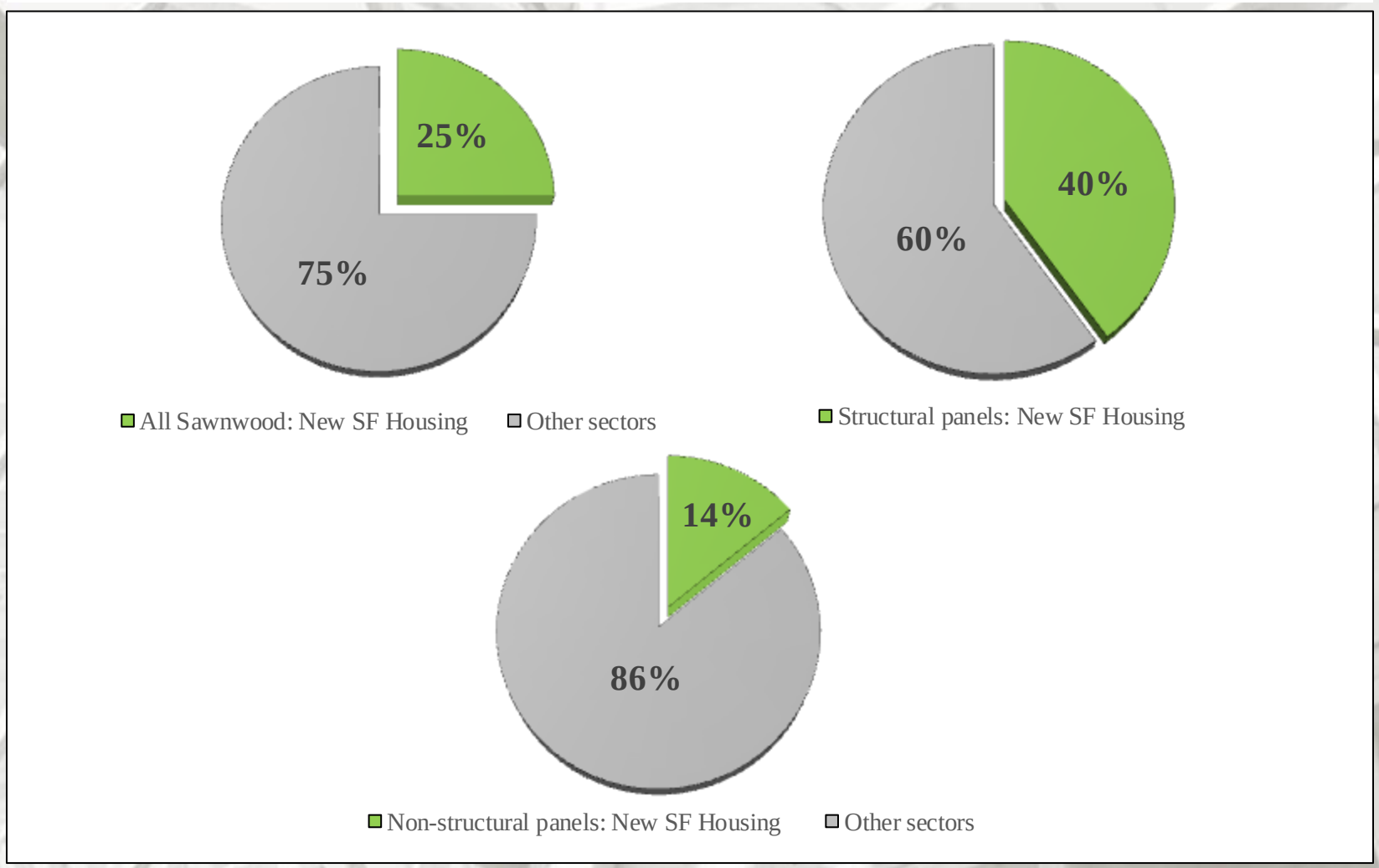
New SF Construction Percentage of Wood Products Consumption



Source: U.S. Forest Service. Howard, J. and D. McKeever. 2017. U.S. Forest Products Annual Market Review and Prospects, 2013-2017

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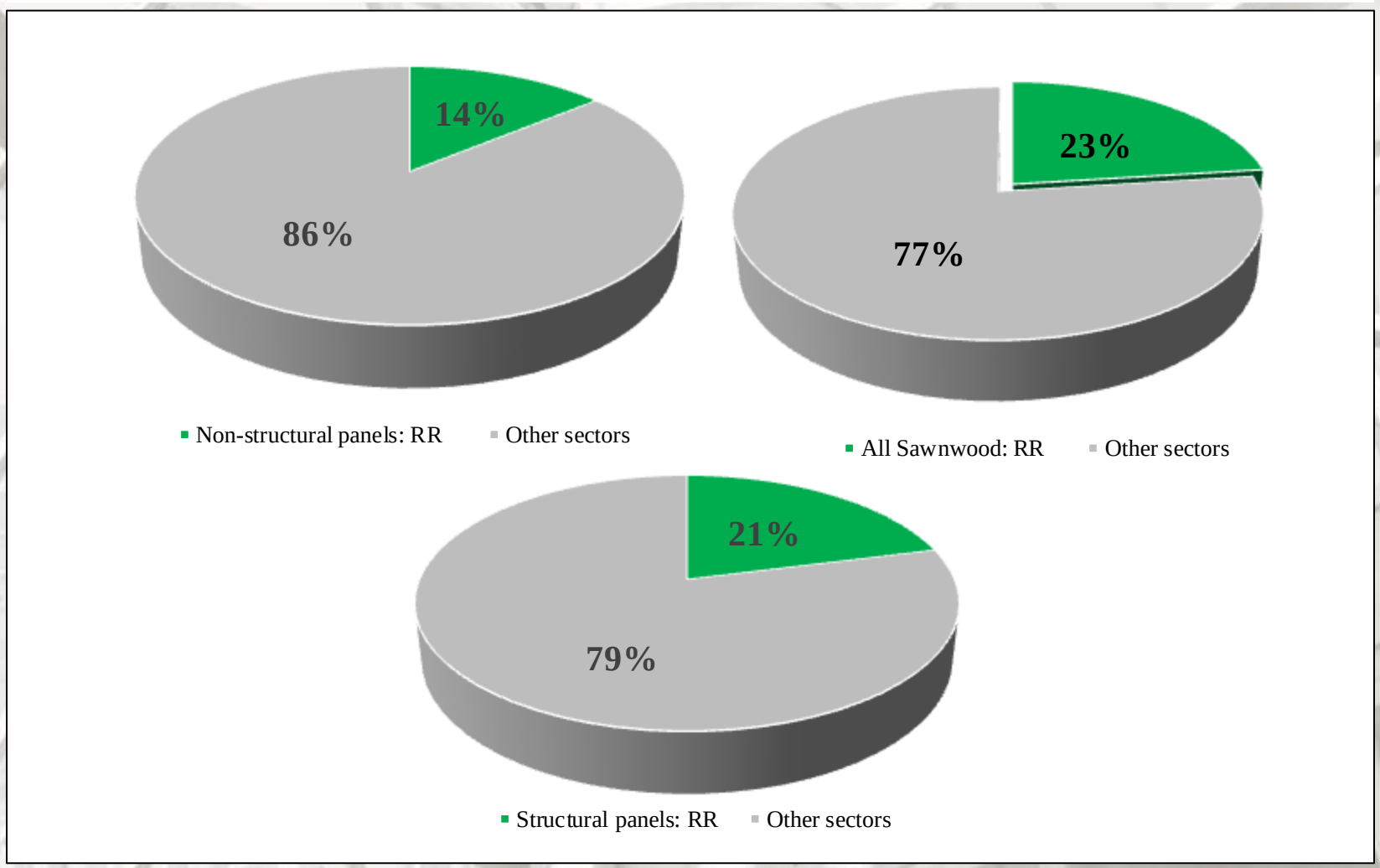
Repair and Remodeling's Percentage of Wood Products Consumption



Source: U.S. Forest Service. Howard, J. and D. McKeever. 2017. U.S. Forest Products Annual Market Review and Prospects, 2013-2017

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New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
June	1,173,000	858,000	11,000	304,000
May	1,337,000	944,000	12,000	381,000
2017	1,225,000	860,000	6,000	359,000
M/M change	-12.3	-9.1	-8.3	-20.2
Y/Y change	-4.2	-0.2	83.3	-15.3

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

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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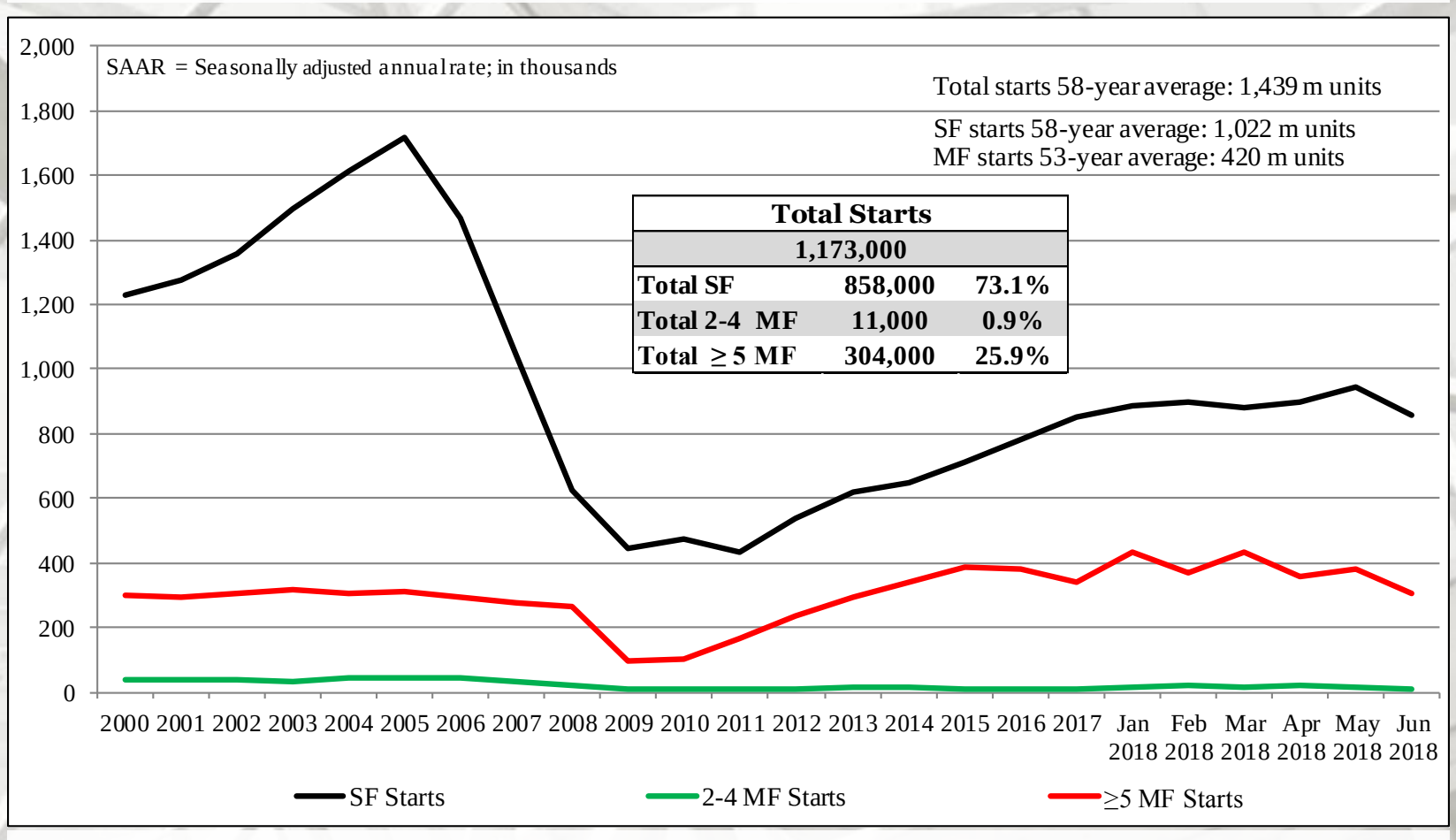
Total Housing Starts



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

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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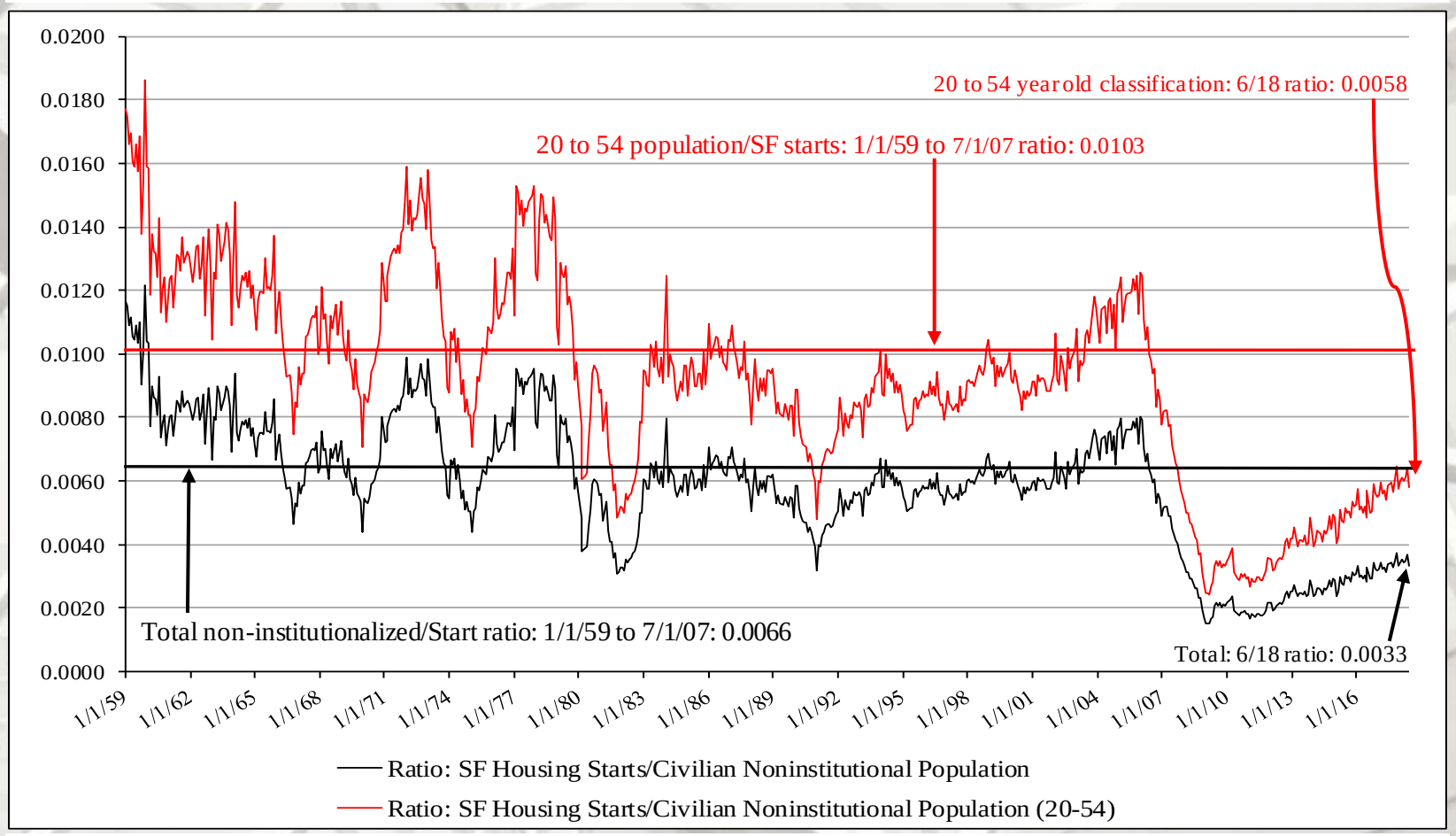
New SF Starts



New SF starts adjusted for the US population

From June 1959 to July 2007, the long-term ratio of new SF starts to the total US non-institutionalized population was 0.0066; in June 2018 it was 0.0033 – a sizeable decrease from May (0.0037). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in June 2018 was 0.0058 – also a substantial increase change from May (0.0064). From a population worldview, new SF construction is less than what is necessary for changes in population (i.e., under-building).

Sources: http://www.census.gov/construction/nrc/pdf/newresconst.pdff and The Federal Reserve Bank of St. Louis; 7/18/18

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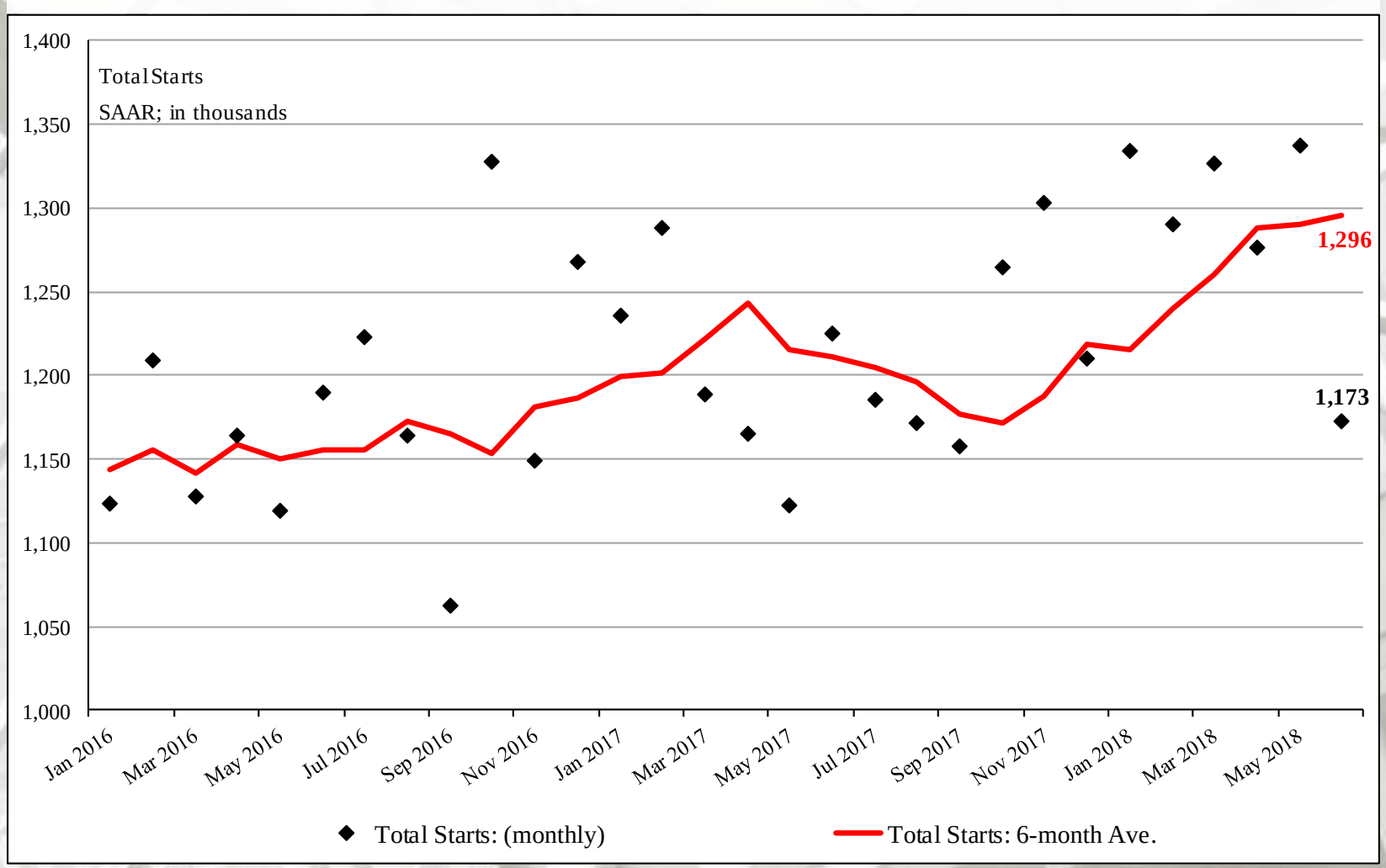
Total Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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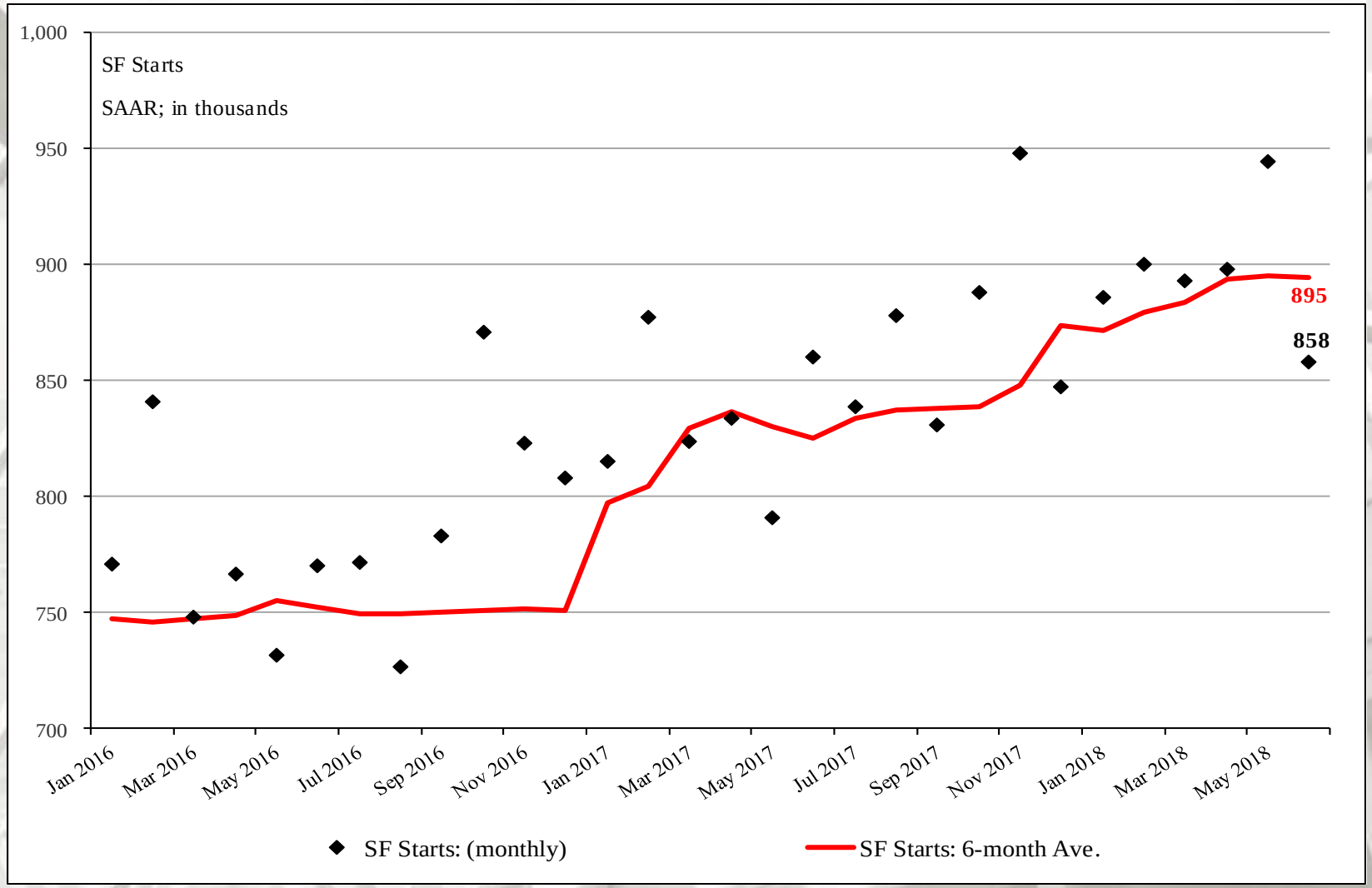
SF Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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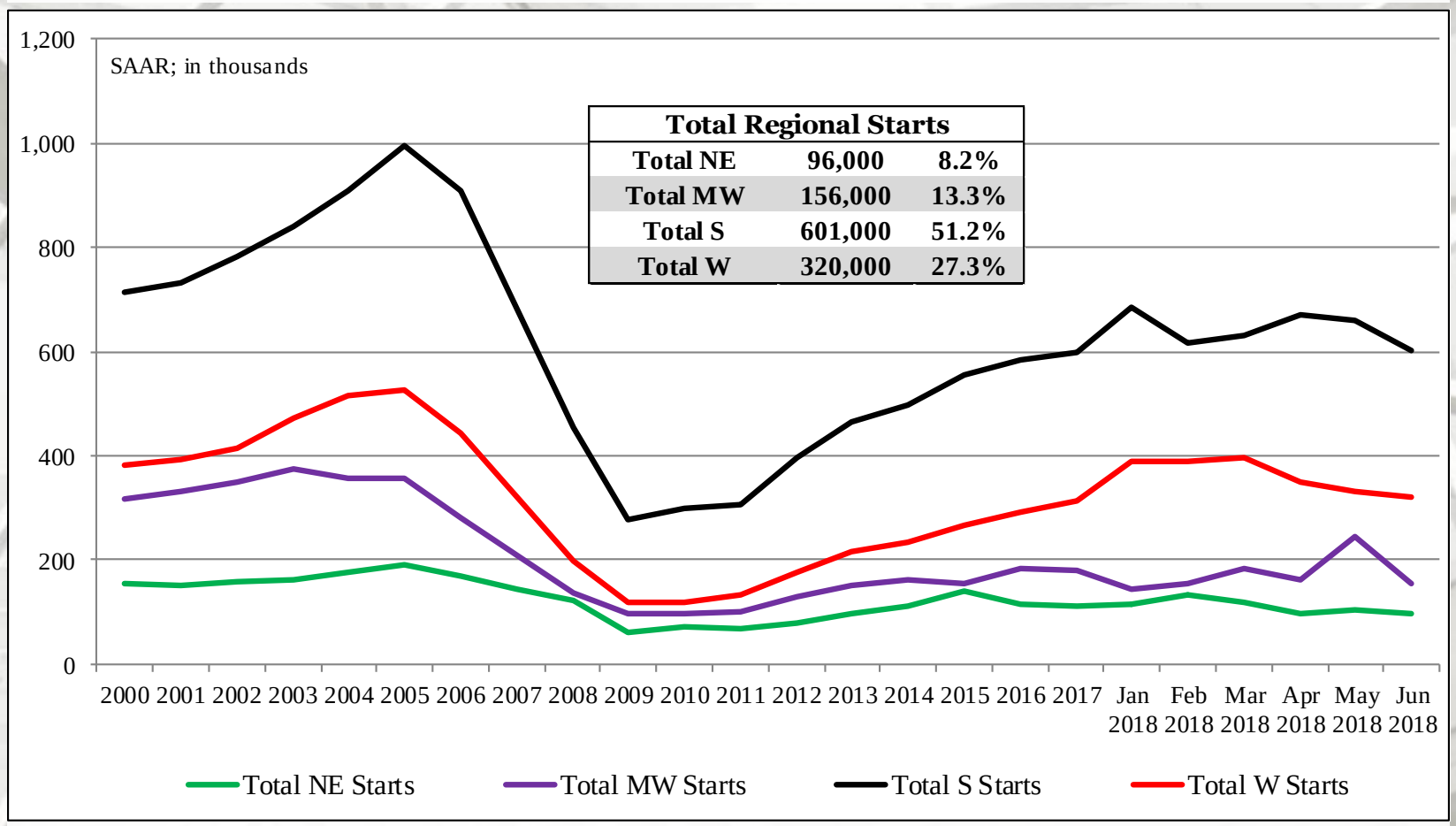
New Housing Starts by Region



NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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New Housing Starts by Region

	NE Total	NE SF	NE MF**
June	96,000	67,000	29,000
May	103,000	65,000	38,000
2017	160,000	63,000	97,000
M/M change	-6.8	3.1	-23.7
Y/Y change	-40.0	6.3	-70.1

	MW Total	MW SF	MW MF
June	156,000	112,000	44,000
May	243,000	158,000	85,000
2017	204,000	135,000	69,000
M/M change	-35.8	-29.1	-48.2
Y/Y change	-23.5	-17.0	-36.2

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; 7/18/18

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New Housing Starts by Region

	S Total	S SF	S MF**
June	601,000	466,000	135,000
May	661,000	500,000	161,000
2017	530,000	452,000	78,000
M/M change	-9.1	-6.8	-16.1
Y/Y change	13.4	3.1	73.1

	W Total	W SF	W MF
June	320,000	213,000	107,000
May	330,000	221,000	109,000
2017	331,000	210,000	121,000
M/M change	-3.0	-3.6	-1.8
Y/Y change	-3.3	1.4	-11.6

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).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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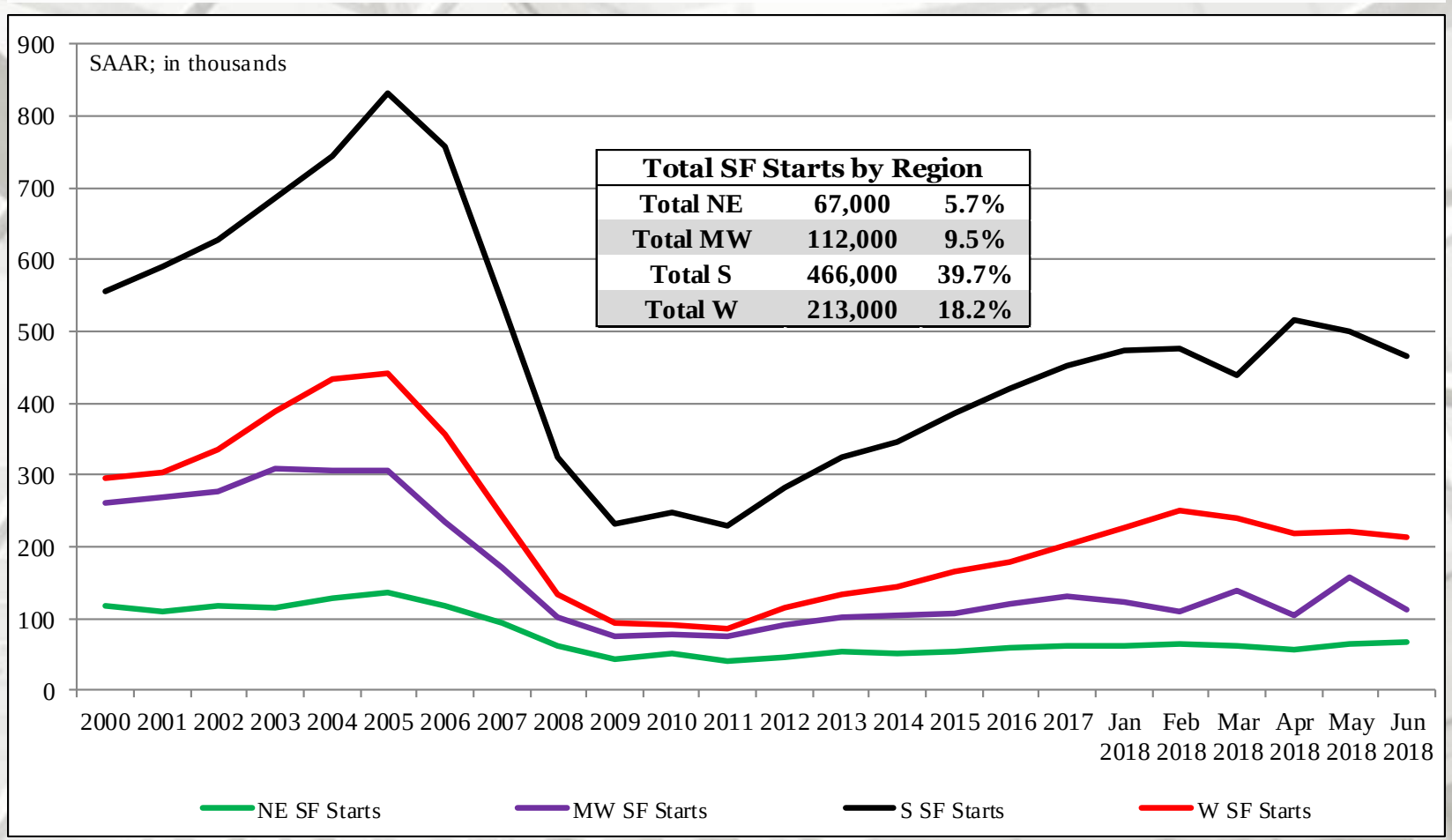
Total SF Housing Starts by Region



Total SF Starts by Region		
Total NE	67,000	5.7%
Total MW	112,000	9.5%
Total S	466,000	39.7%
Total W	213,000	18.2%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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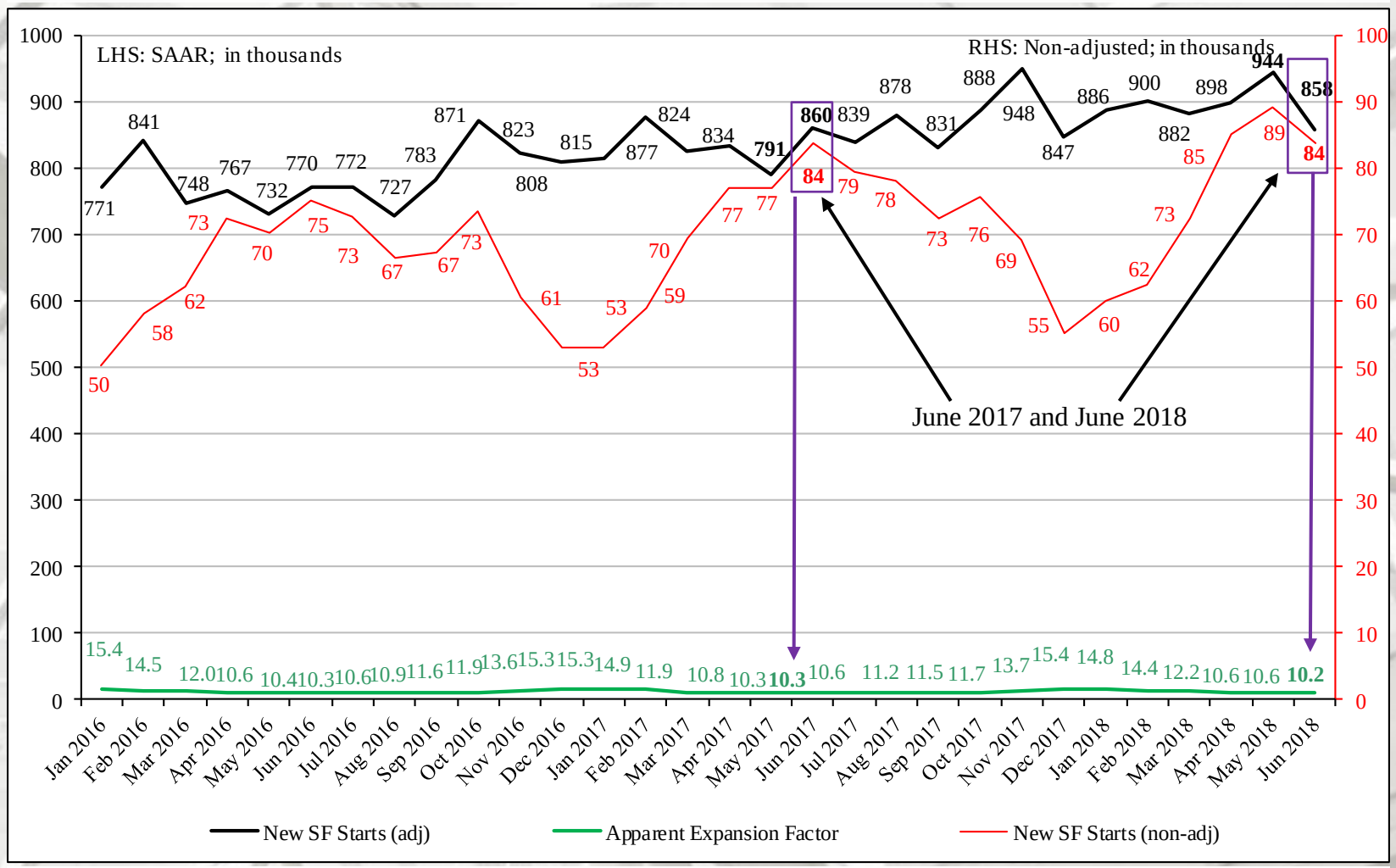
Nominal & SAAR SF Starts



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; 7/18/18

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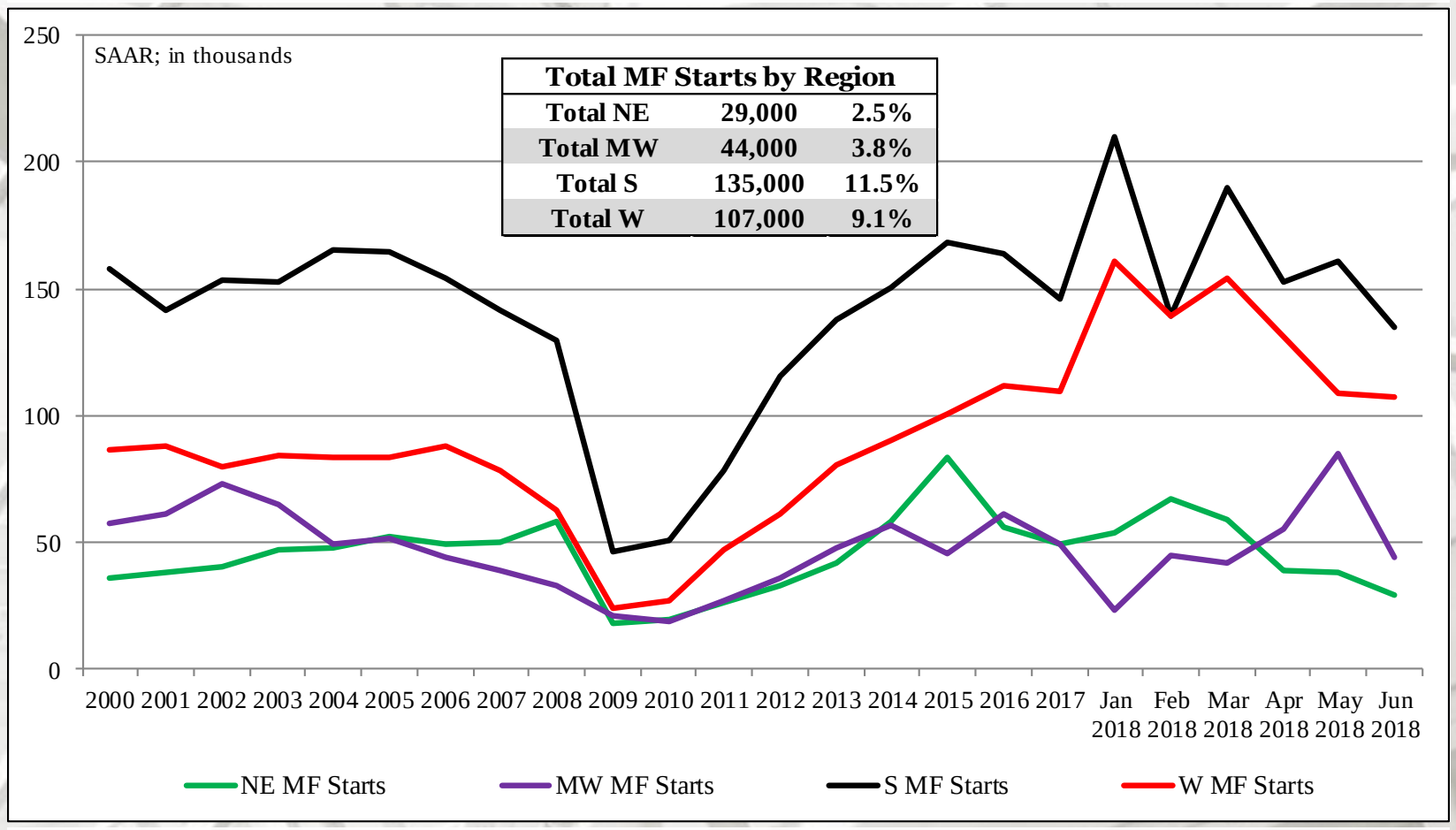
MF Housing Starts by Region



NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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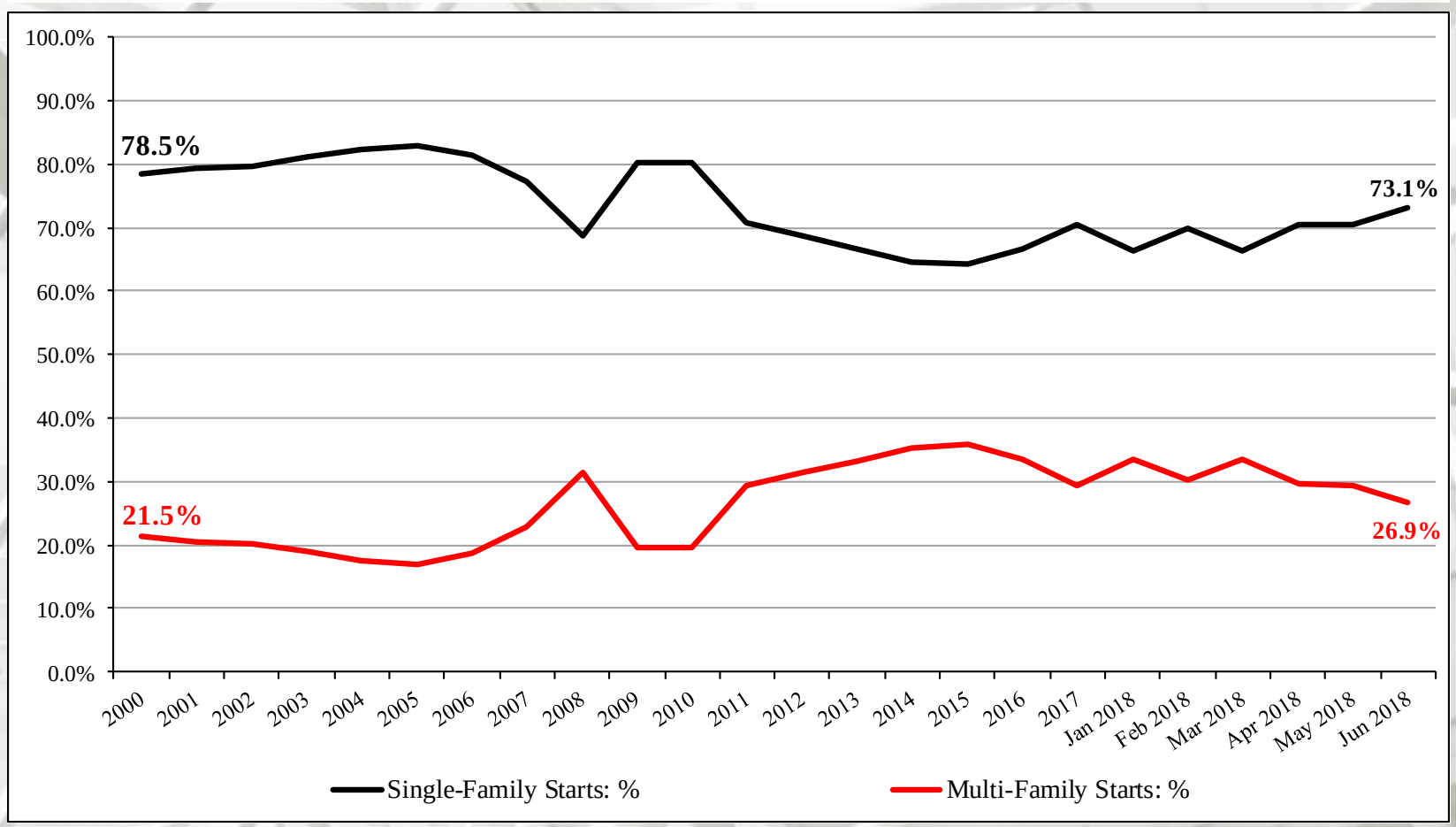
SF & MF Housing Starts (%)



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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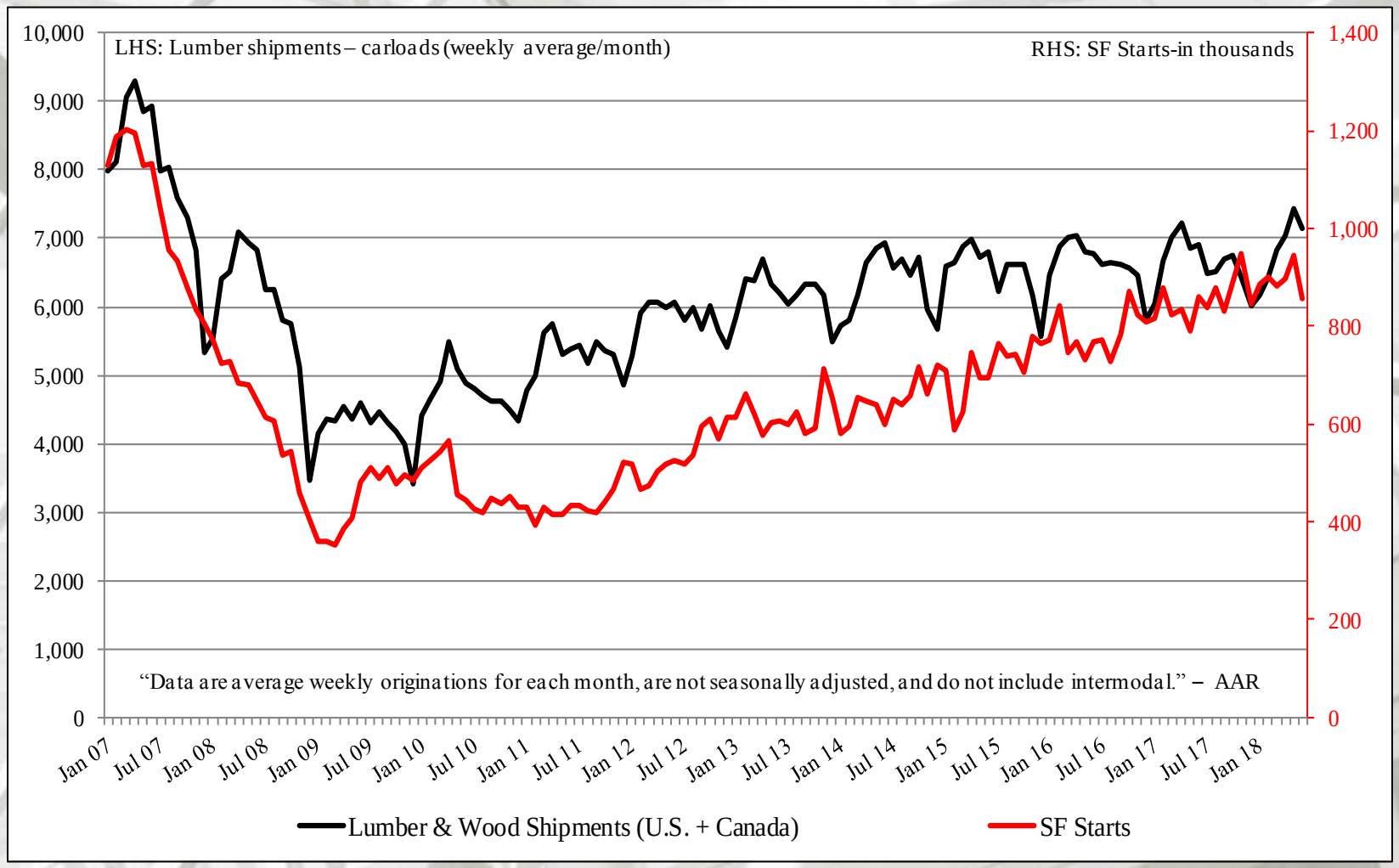
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 7/6/18; U.S. DOC-Construction; 7/18/18

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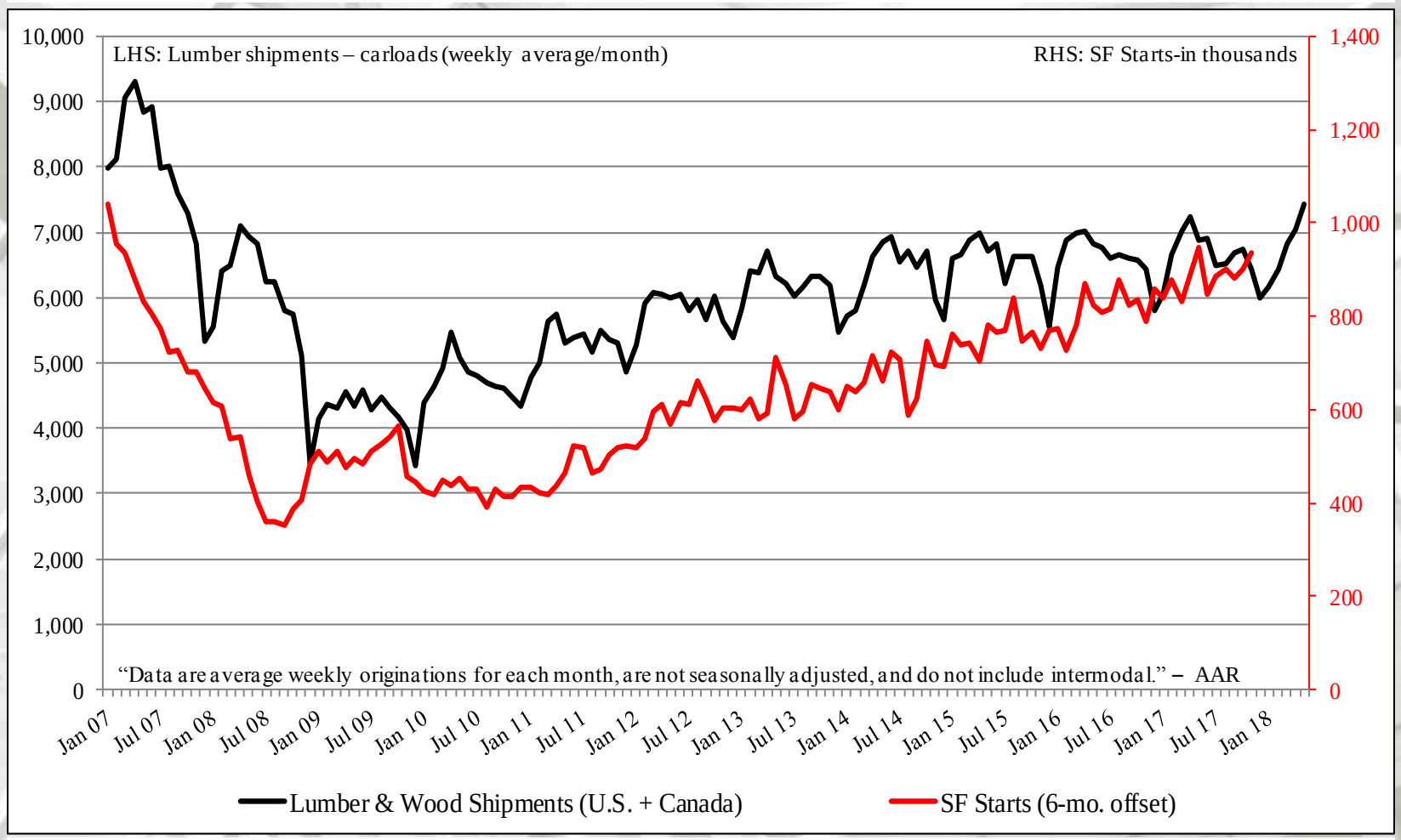
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Starts: 6-month Offset



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

Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 7/6/18; U.S. DOC-Construction; 7/18/18

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New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
June	1,273,000	850,000	36,000	387,000
May	1,301,000	843,000	34,000	424,000
2017	1,312,000	813,000	37,000	462,000
M/M change	-2.2	0.8	5.9	-8.7
Y/Y change	-3.0	4.6	-2.7	-16.2

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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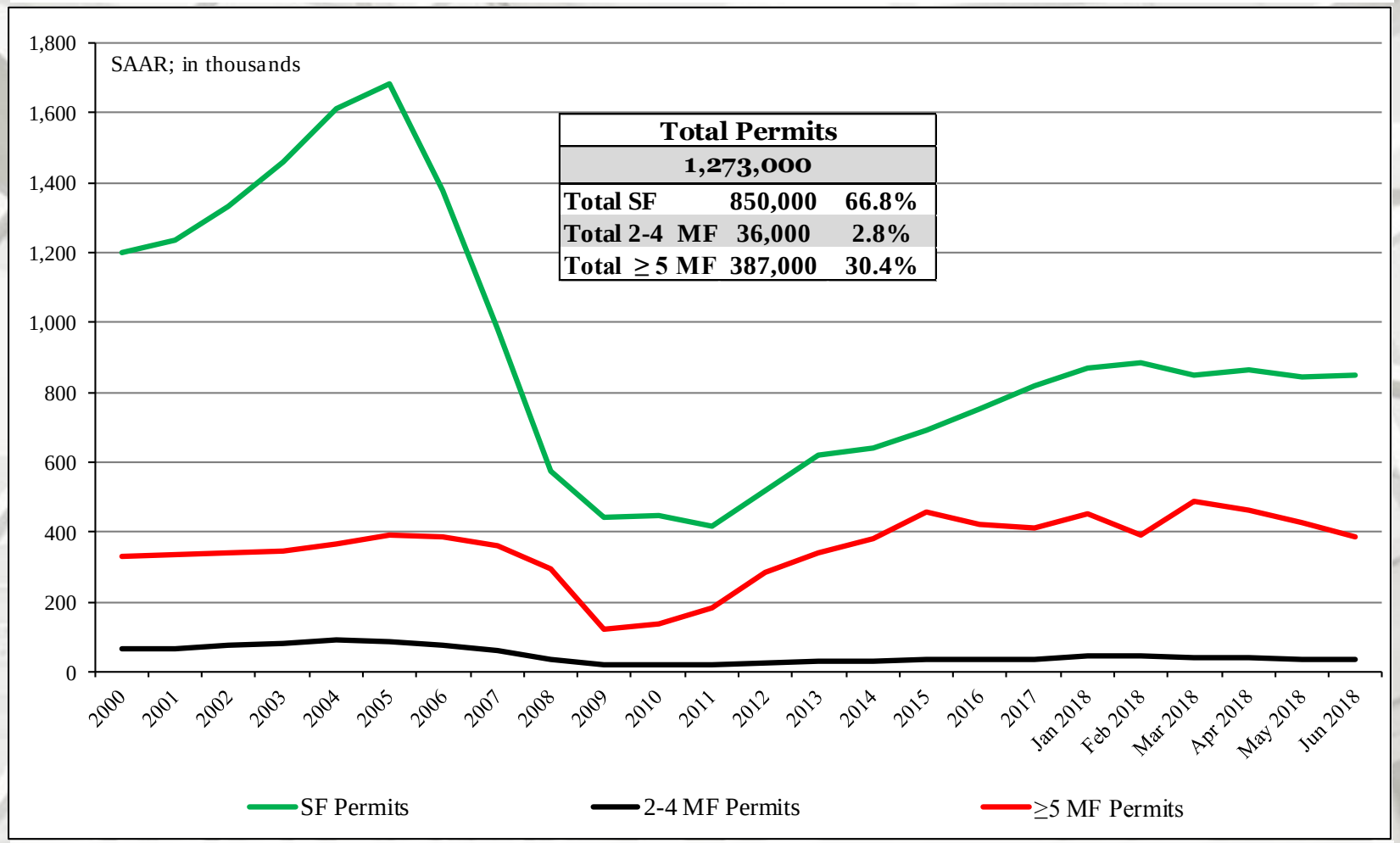
Total New Housing Permits



Total Permits		
1,273,000		
Total SF	850,000	66.8%
Total 2-4 MF	36,000	2.8%
Total ≥ 5 MF	387,000	30.4%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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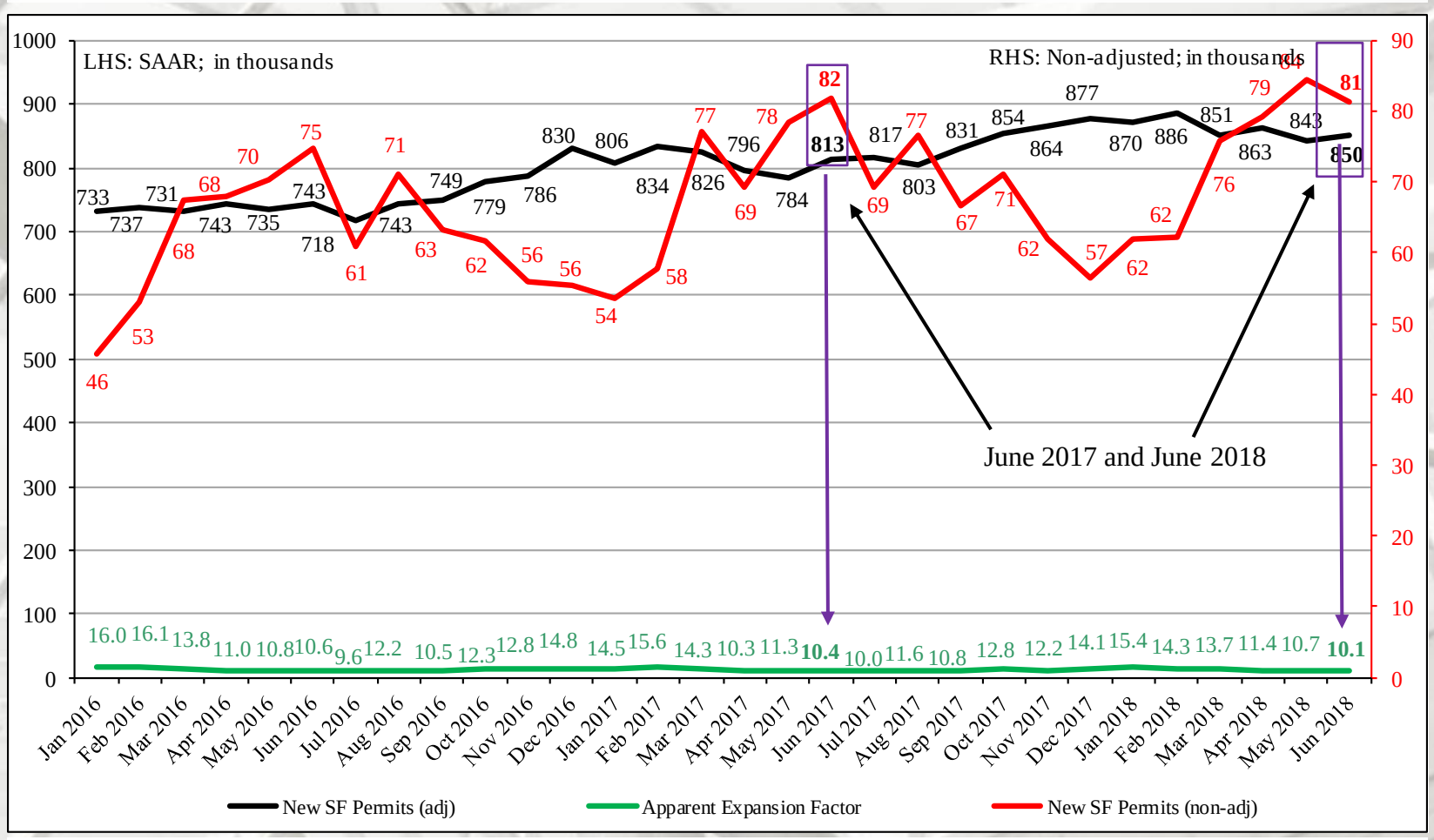
Nominal & SAAR SF Permits



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; 7/18/18

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New Housing Permits by Region

	NE Total*	NE SF	NE MF**
June	112,000	54,000	58,000
May	134,000	57,000	77,000
2017	105,000	55,000	50,000
M/M change	-16.4	-5.3	-24.7
Y/Y change	6.7	-1.8	16.0
	MW Total*	**MW SF**	**MW MF****
June	170,000	117,000	53,000
May	209,000	122,000	87,000
2017	212,000	120,000	92,000
M/M change	-18.7	-4.1	-39.1
Y/Y change	-19.8	-2.5	-42.4

* 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; 7/18/18

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New Housing Permits by Region

	S Total*	S SF	S MF**
June	664,000	477,000	187,000
May	625,000	458,000	167,000
2017	643,000	447,000	196,000
M/M change	6.2	4.1	12.0
Y/Y change	3.3	6.7	-4.6

	W Total*	W SF	W MF**
June	327,000	202,000	125,000
May	333,000	206,000	127,000
2017	352,000	191,000	161,000
M/M change	-1.8	-1.9	-1.6
Y/Y change	-7.1	5.8	-22.4

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; 7/18/18

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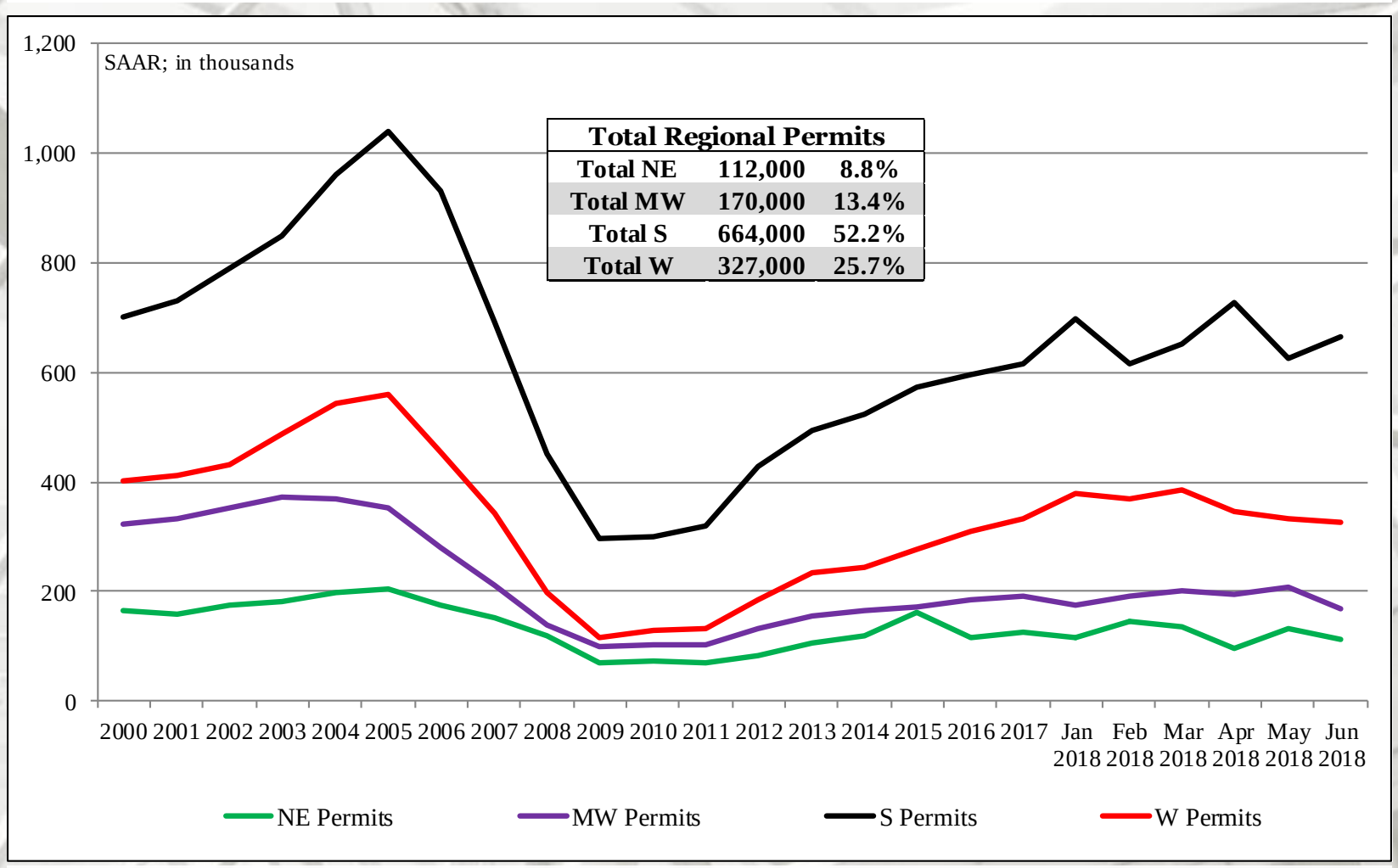
Total Housing Permits by Region



NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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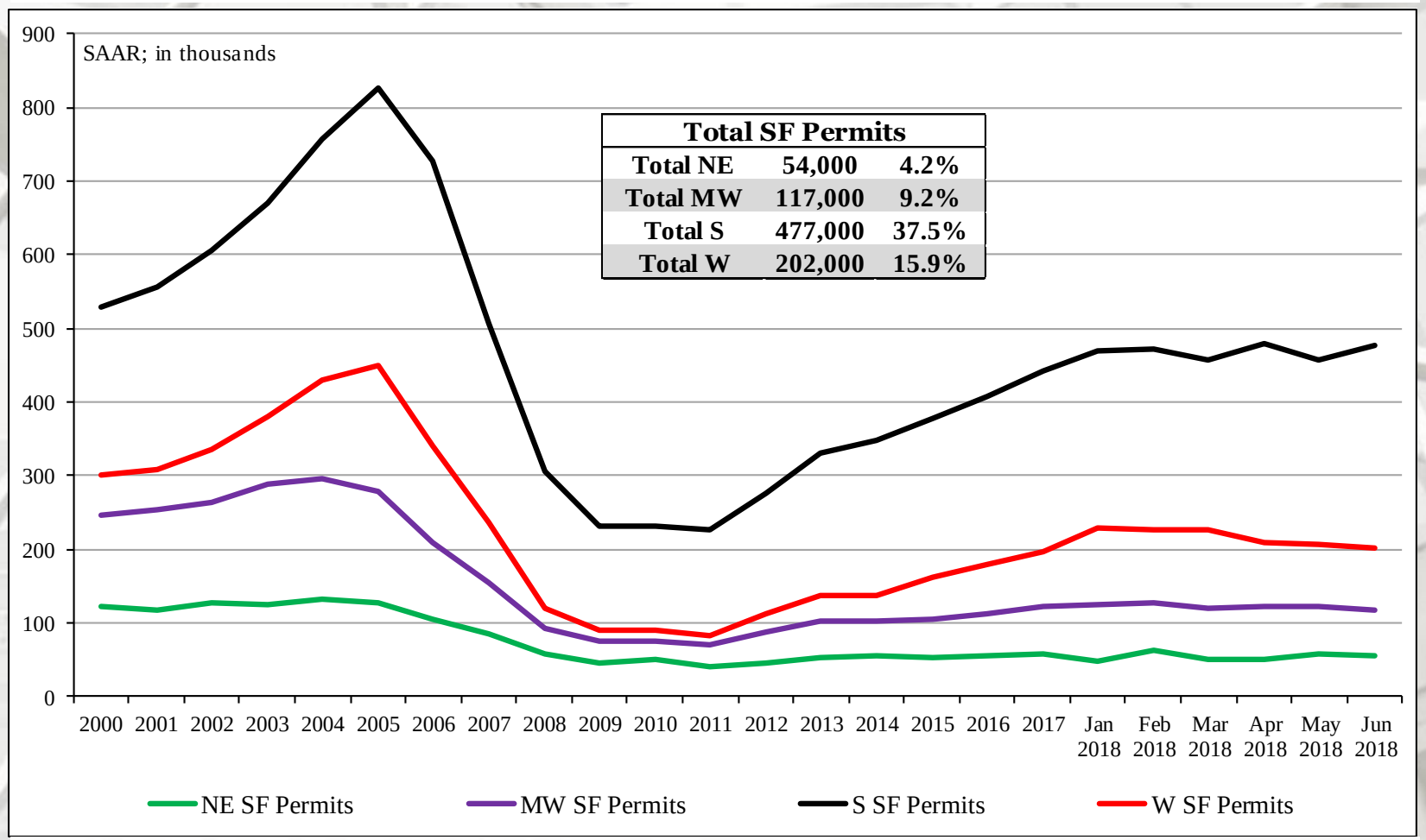
SF Housing Permits by Region



Total SF Permits		
Total NE	54,000	4.2%
Total MW	117,000	9.2%
Total S	477,000	37.5%
Total W	202,000	15.9%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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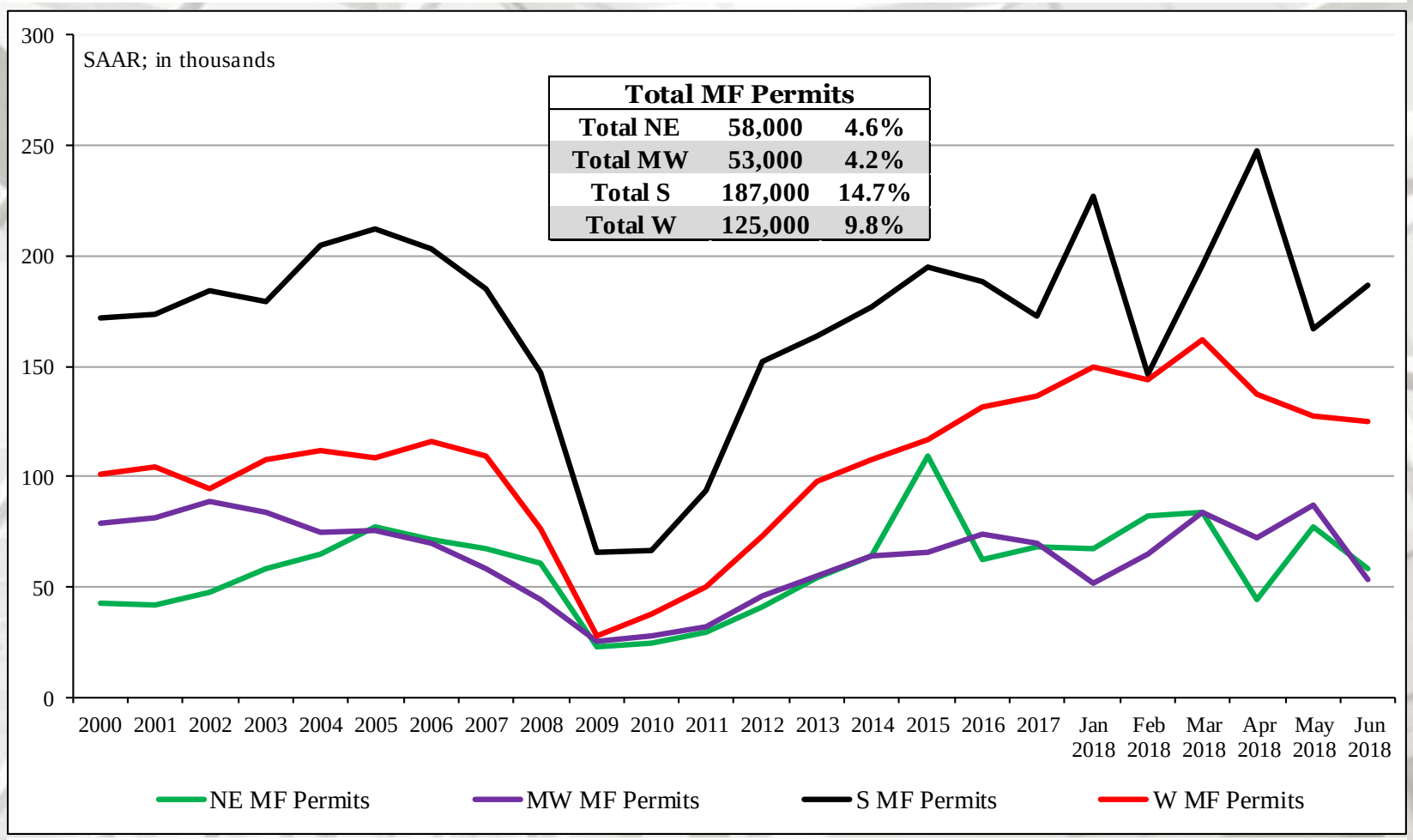
MF Housing Permits by Region



NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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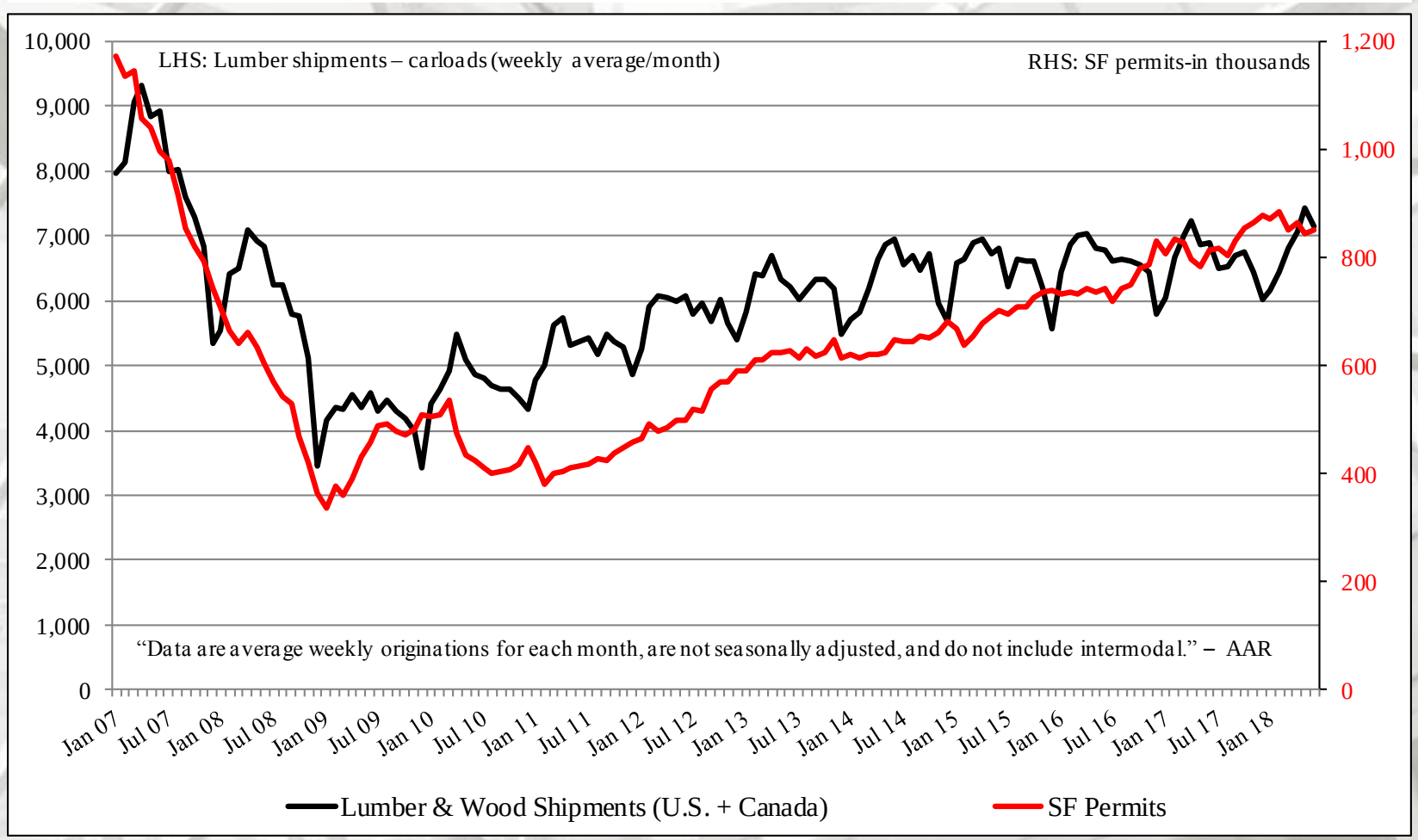
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 7/6/18; U.S. DOC-Construction; 7/18/18

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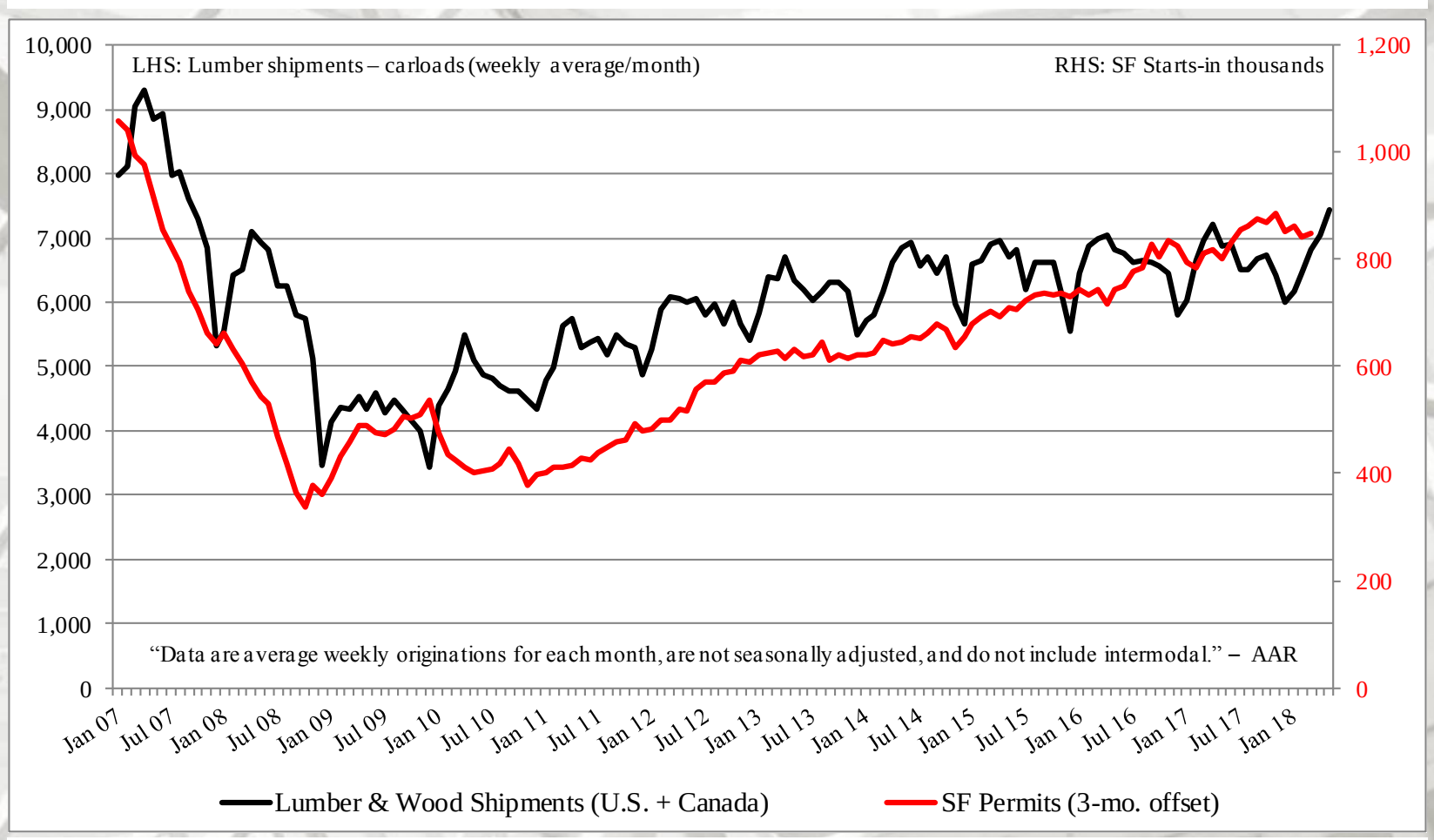
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Permits: 3-month Offset



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

Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 7/6/18; U.S. DOC-Construction; 7/18/18

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New Housing Under Construction (HUC)

	Total Under Construction*	SF Under Construction	Under Construction	MF ≥ 5 unit Under Construction
June	1,121,000	515,000	12,000	594,000
May	1,127,000	516,000	12,000	599,000
2017	1,069,000	462,000	9,000	598,000
M/M change	-0.5	-0.2	0.0	-0.8
Y/Y change	4.9	11.5	33.3	-0.7

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; 7/18/18

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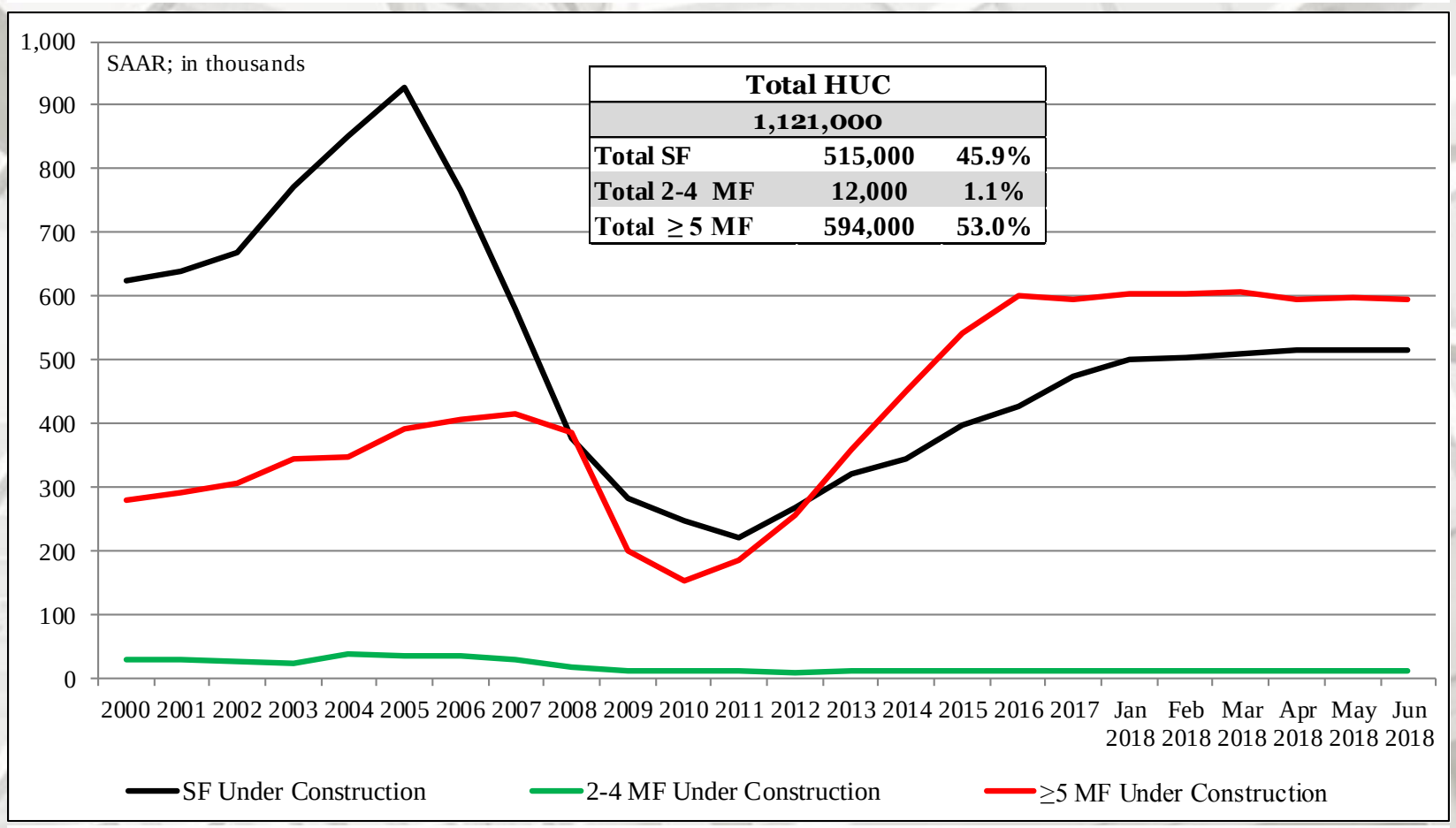
Total Housing Under Construction



Total HUC		
1,121,000		
Total SF	515,000	45.9%
Total 2-4 MF	12,000	1.1%
Total ≥ 5 MF	594,000	53.0%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

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New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
June	185,000	55,000	130,000
May	184,000	54,000	130,000
2017	185,000	51,000	134,000
M/M change	0.5	1.9	0.0
Y/Y change	0.0	7.8	-3.0

	MW Total	MW SF	MW MF
June	155,000	82,000	73,000
May	155,000	82,000	73,000
2017	153,000	77,000	76,000
M/M change	0.0	0.0	0.0
Y/Y change	1.3	6.5	-3.9

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; 7/18/18

Return TOC

New Housing Under Construction by Region

	S Total	S SF	S MF**
June	452,000	242,000	210,000
May	454,000	241,000	213,000
2017	441,000	221,000	220,000
M/M change	-0.4	0.4	-1.4
Y/Y change	2.5	9.5	-4.5

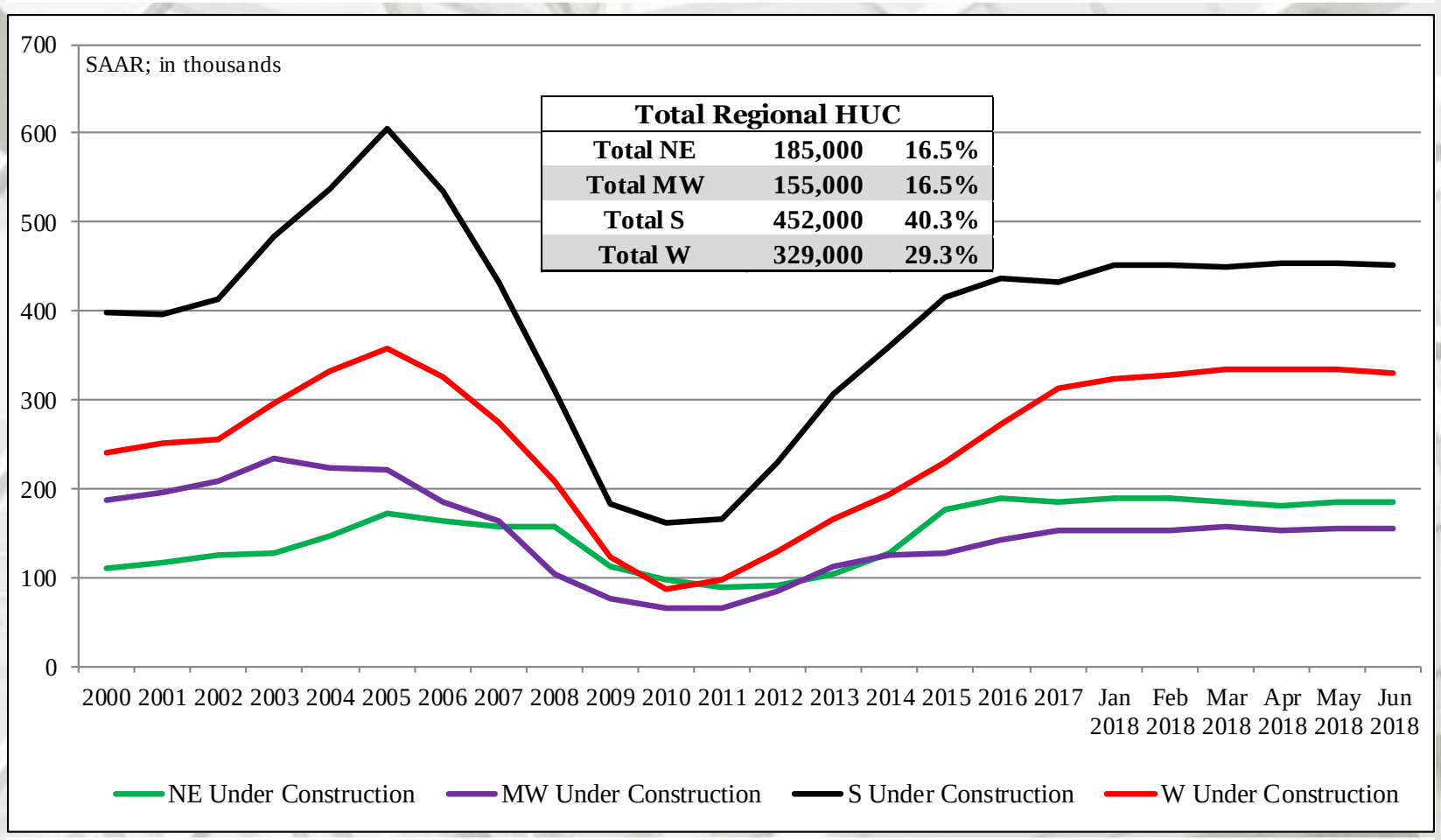
	W Total	W SF	W MF
June	329,000	136,000	193,000
May	334,000	139,000	195,000
2017	290,000	113,000	177,000
M/M change	-1.5	-2.2	-1.0
Y/Y change	13.4	20.4	9.0

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; 7/18/18

Return TOC

Total Housing Under Construction by Region



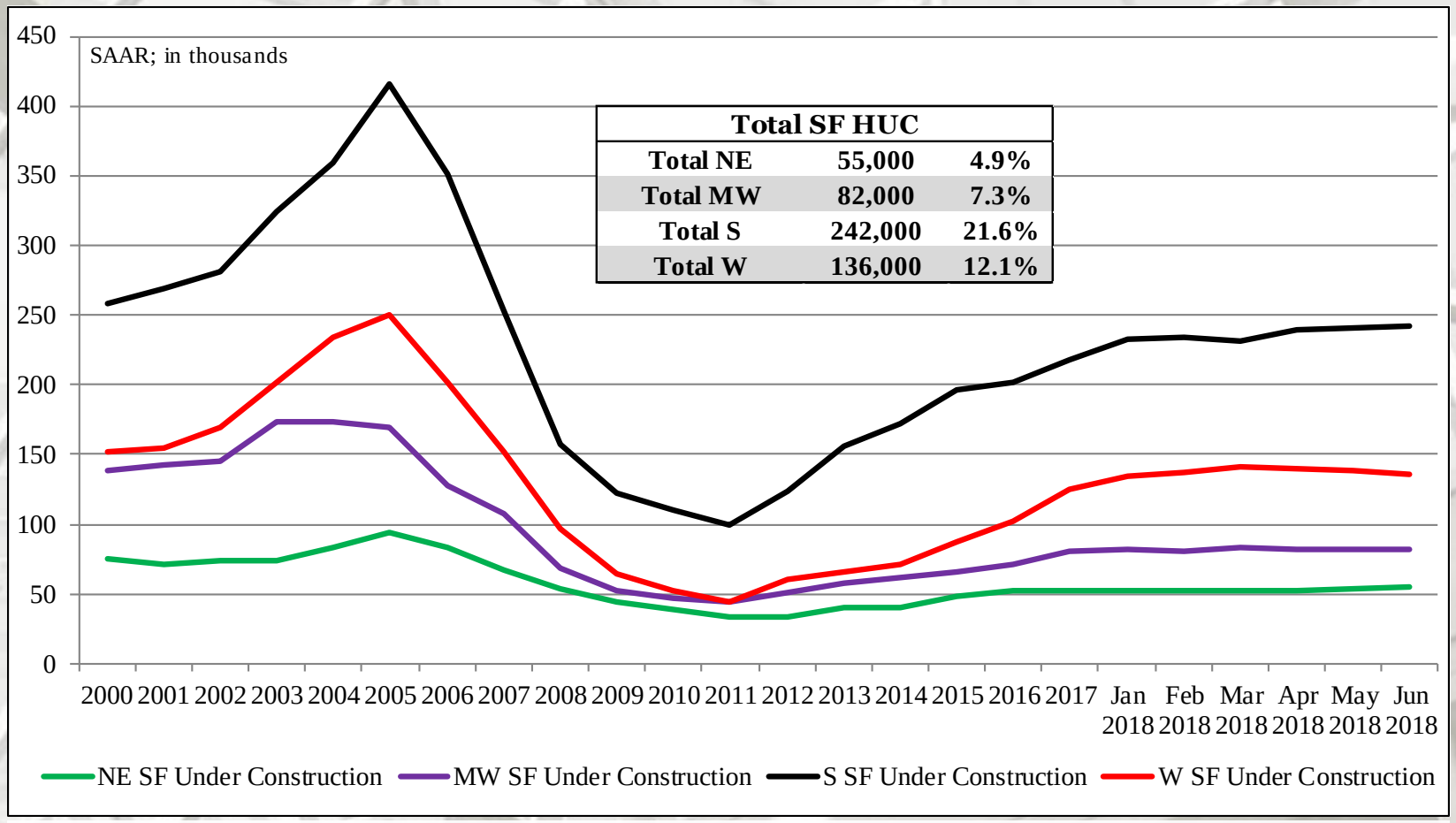
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

SF Housing Under Construction by Region



Total SF HUC		
Total NE	55,000	4.9%
Total MW	82,000	7.3%
Total S	242,000	21.6%
Total W	136,000	12.1%

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

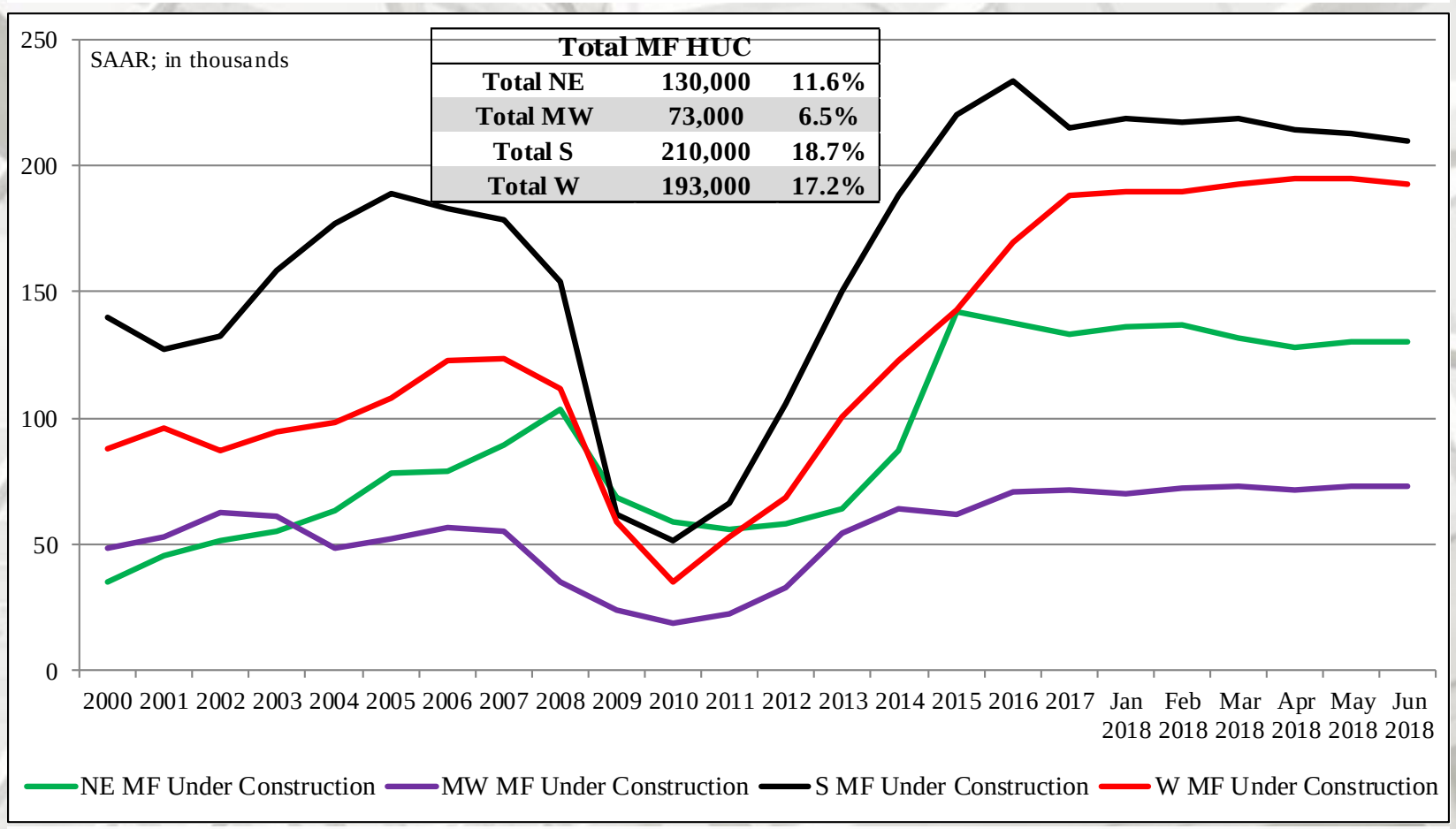
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

MF Housing Under Construction by Region



Total MF HUC		
Total NE	130,000	11.6%
Total MW	73,000	6.5%
Total S	210,000	18.7%
Total W	193,000	17.2%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
June	1,261,000	862,000	6,000	393,000
May	1,261,000	882,000	12,000	367,000
2017	1,234,000	819,000	11,000	404,000
M/M change	0.0%	-2.3%	-50.0%	7.1%
Y/Y change	2.2%	5.3%	-45.5%	-2.7%

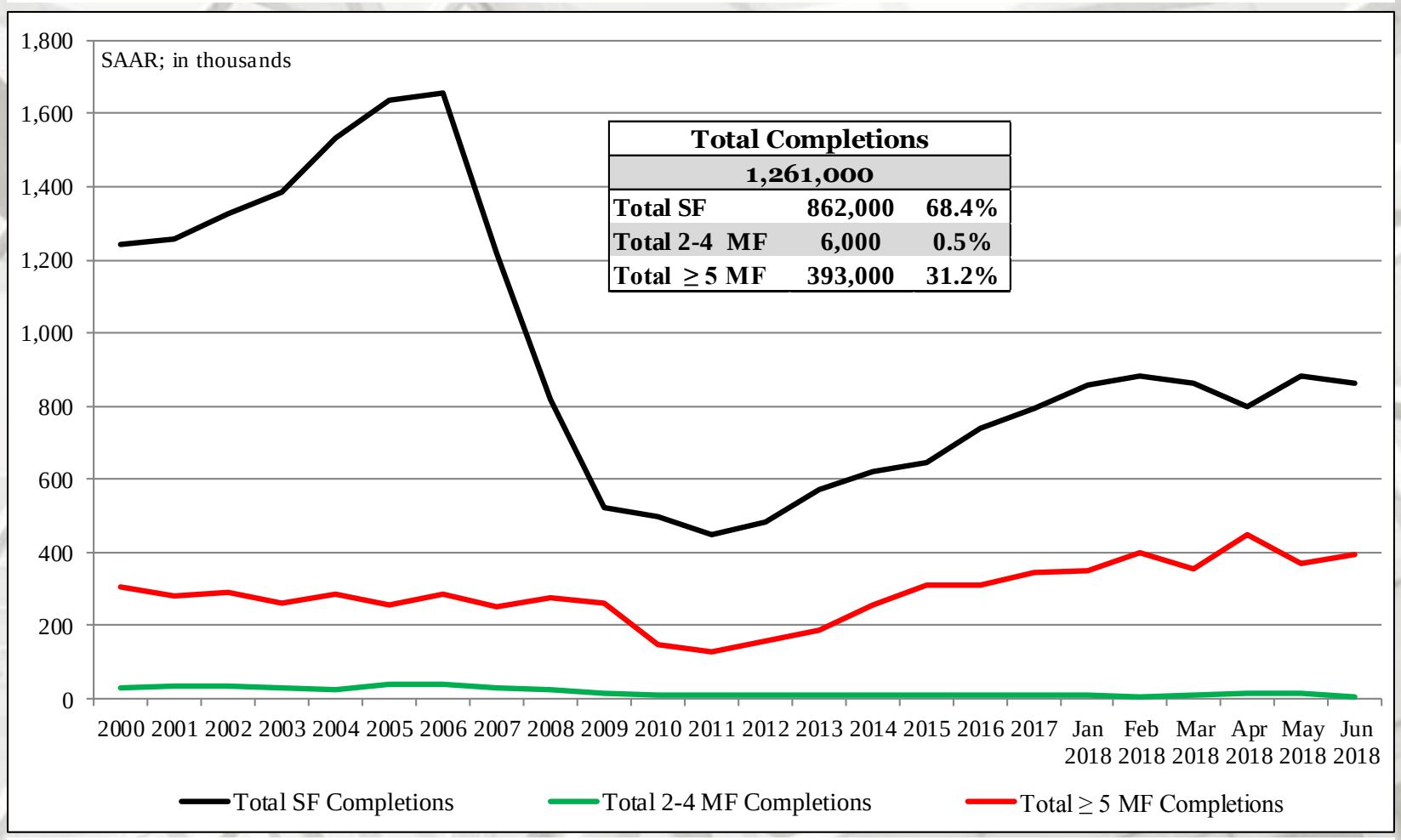
* All completion data are presented at a seasonally adjusted annual rate (SAAR).

** 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; 7/18/18

Return TOC

Total Housing Completions



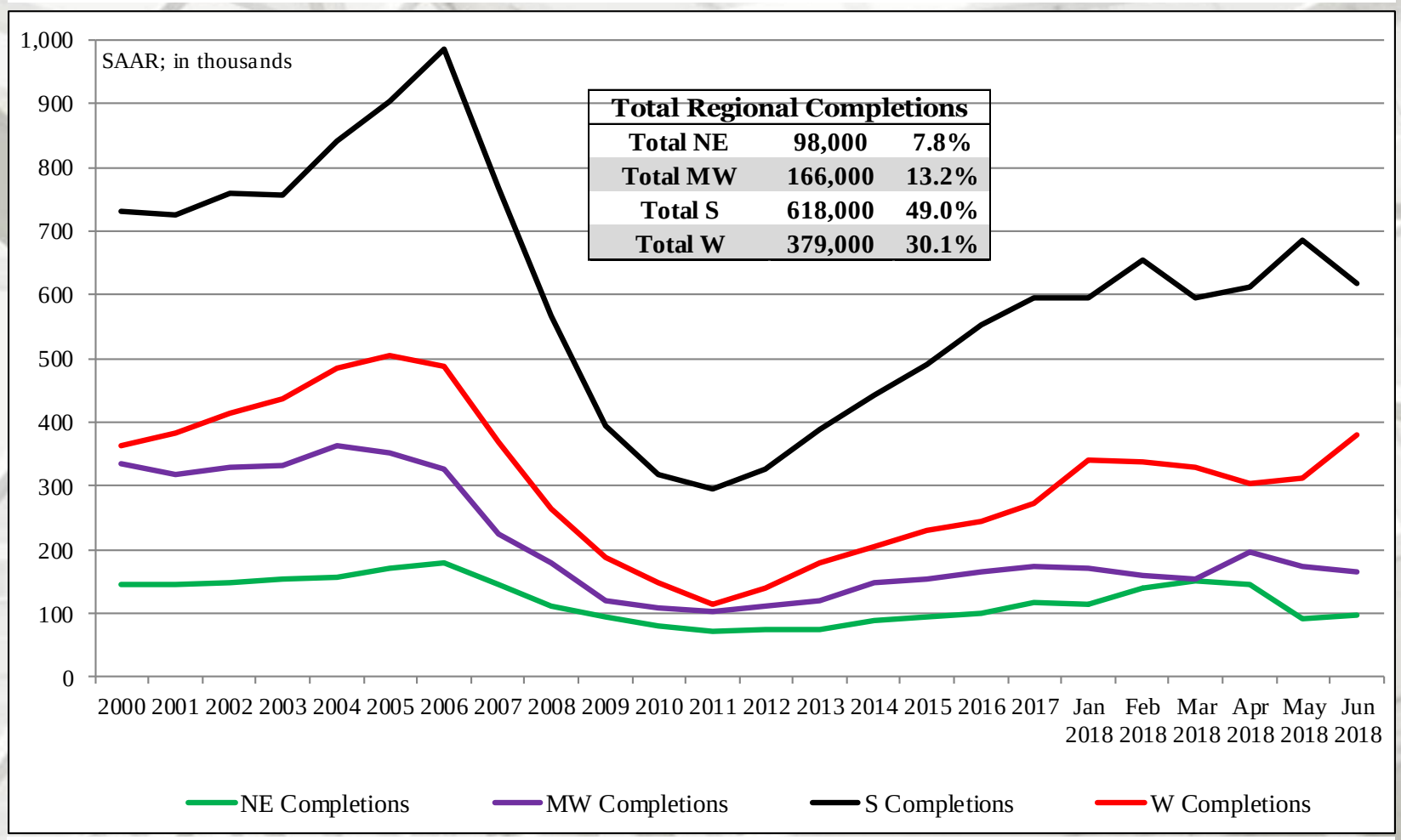
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

Total Housing Completions by Region



Total Regional Completions		
Total NE	98,000	7.8%
Total MW	166,000	13.2%
Total S	618,000	49.0%
Total W	379,000	30.1%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

New Housing Completions by Region

	NE Total	NE SF	NE MF**
June	98,000	51,000	47,000
May	92,000	49,000	43,000
2017	134,000	61,000	73,000
M/M change	6.5%	4.1%	9.3%
Y/Y change	-26.9%	-16.4%	-35.6%

	MW Total	MW SF	MW MF
June	166,000	114,000	52,000
May	172,000	143,000	29,000
2017	219,000	127,000	92,000
M/M change	-3.5%	-20.3%	79.3%
Y/Y change	-24.2%	-10.2%	-43.5%

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; 7/18/18

Return TOC

New Housing Completions by Region

	S Total	S SF	S MF**
June	618,000	444,000	174,000
May	684,000	478,000	206,000
2017	547,000	425,000	122,000
M/M change	-9.6%	-7.1%	-15.5%
Y/Y change	13.0%	4.5%	42.6%

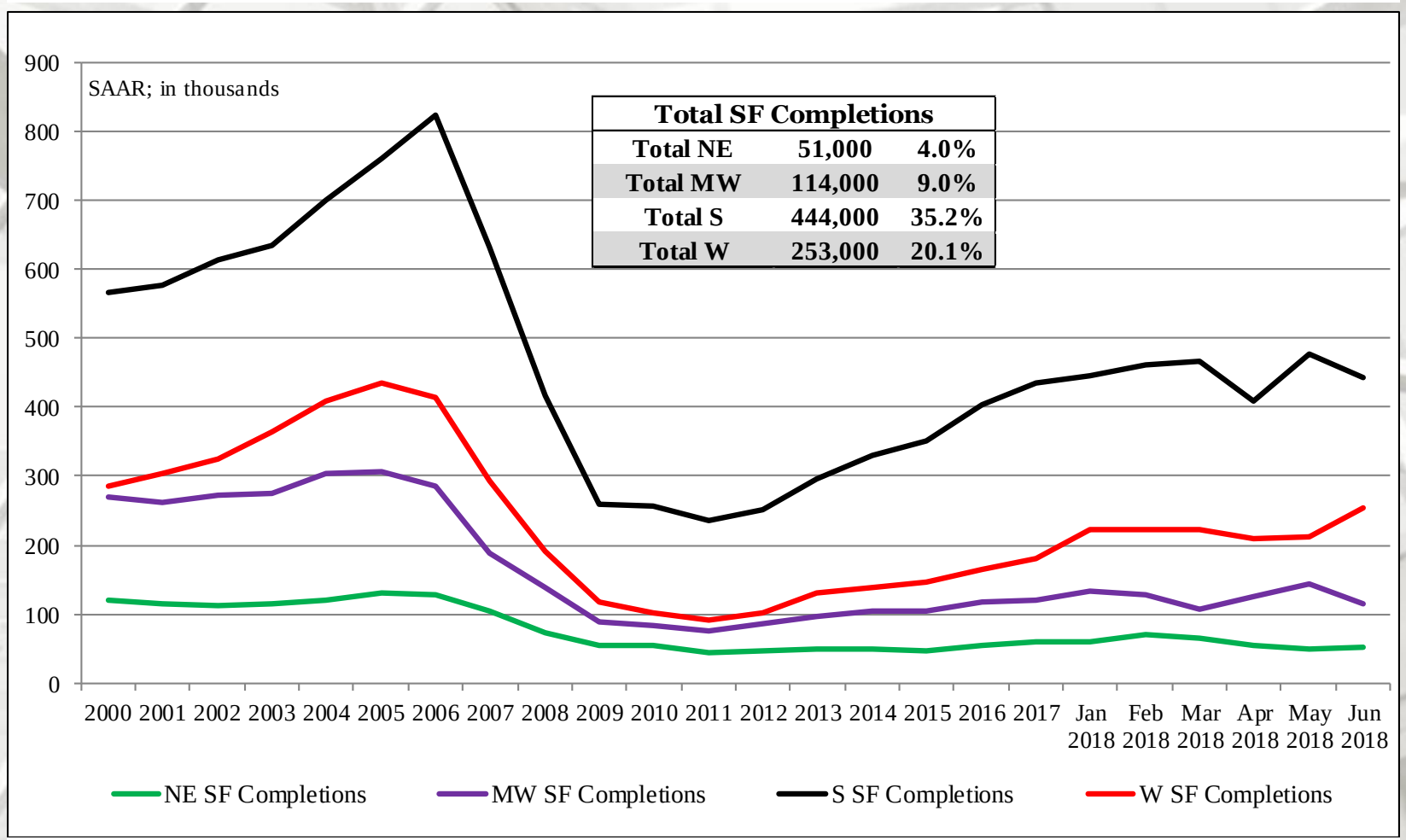
	W Total	W SF	W MF
June	379,000	253,000	126,000
May	313,000	212,000	253,000
2017	334,000	206,000	128,000
M/M change	21.1%	19.3%	-50.2%
Y/Y change	13.5%	22.8%	-1.6%

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; 7/18/18

Return TOC

Total Housing SF Completions by Region



Total SF Completions		
Total NE	51,000	4.0%
Total MW	114,000	9.0%
Total S	444,000	35.2%
Total W	253,000	20.1%

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

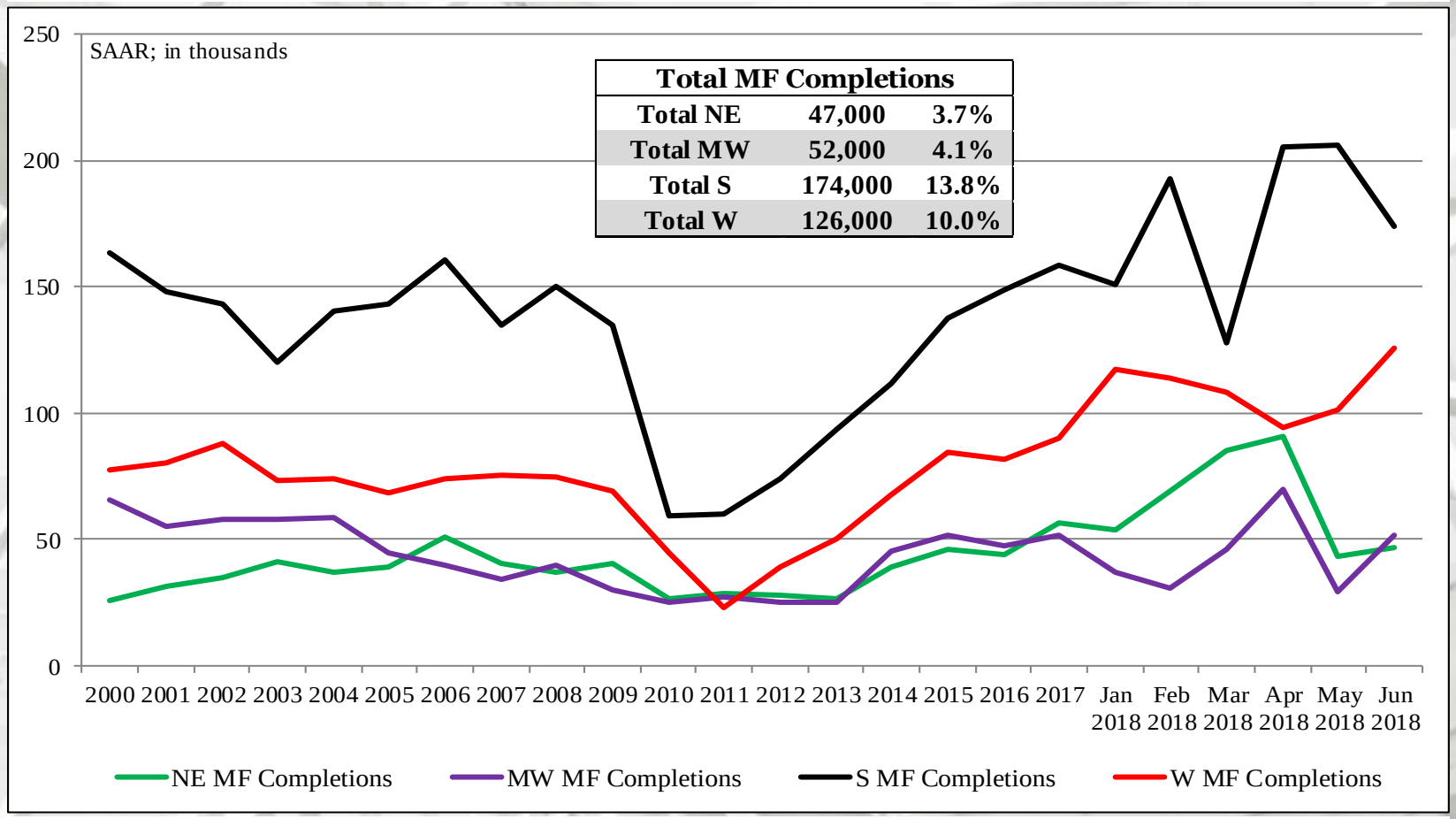
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

New Housing MF Completions by Region



Total MF Completions		
Total NE	47,000	3.7%
Total MW	52,000	4.1%
Total S	174,000	13.8%
Total W	126,000	10.0%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/18/18

Return TOC

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
June	631,000	$302,100	$363,300	5.7
May	666,000	$309,700	$365,100	5.3
2017	616,000	$315,200	$370,600	5.3
M/M change	-5.3%	-2.5%	-0.5%	7.5%
Y/Y change	2.4%	-4.2%	-2.0%	7.5%

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

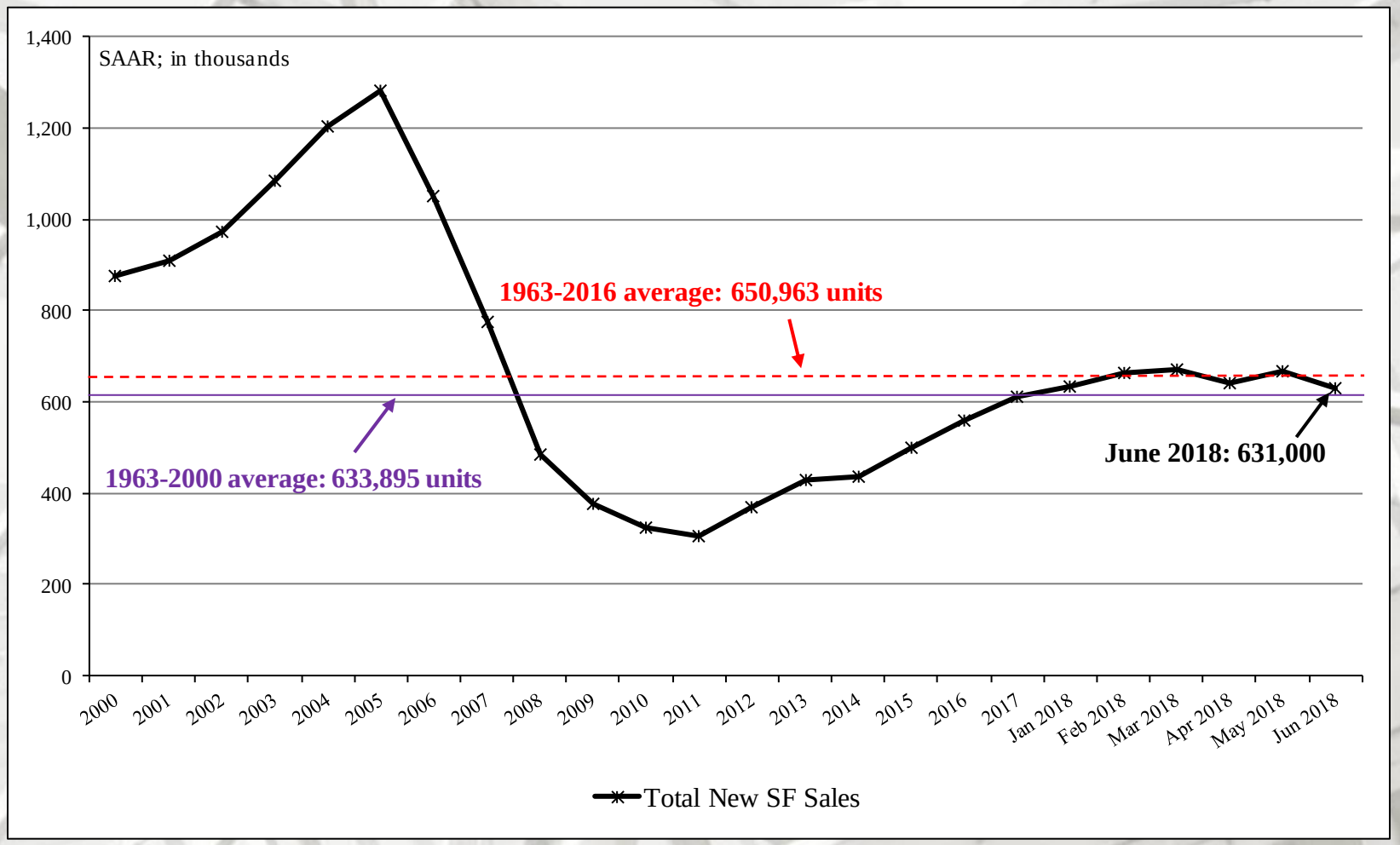
New SF sales were much less than the consensus forecast of 668 m[3]. The past three month's new SF sales data were revised:

March initial:	694 m revised to 672 m;
April initial:	662 m revised to 641 m.
May initial:	689 m revised to 666 m

Sources: [1]http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf
[3] http://mam.econoday.com/byshoweventfull.asp; 7/25/18

Return TOC

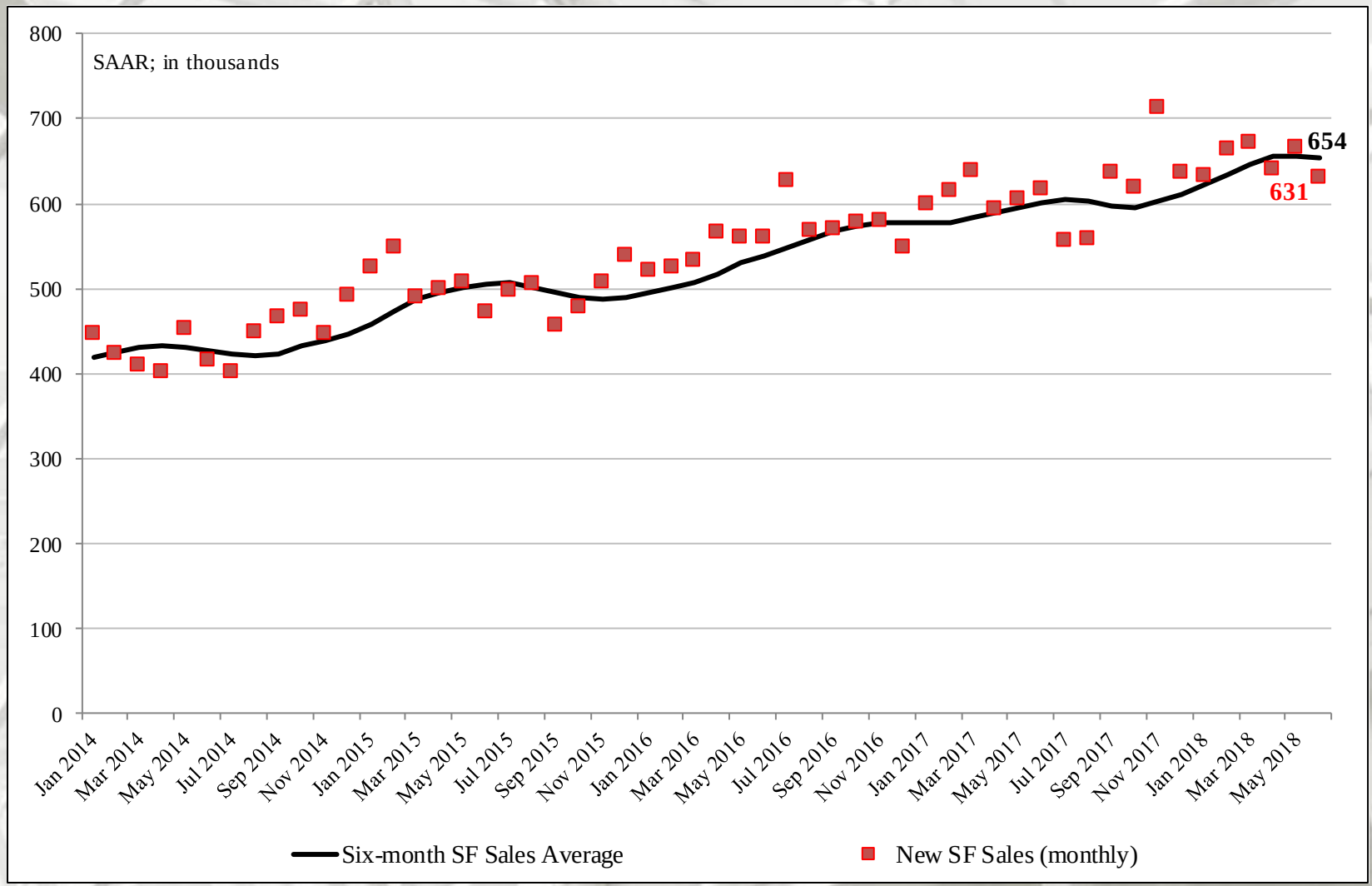
New SF House Sales



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales by Region and Price Category

	≤ $150m	$150 - $199.9m	$200 - 299.9m	$300 - $399.9m	$400 - $499.9m	$500 - $749.9m	≥ $750m
June[1,2,3,4]	2,000	7,000	20,000	13,000	6,000	7,000	3,000
May	2,000	9,000	19,000	15,000	7,000	7,000	4,000
2017	2,000	5,000	19,000	14,000	7,000	8,000	2,000
M/M change	0.0%	-22.2%	5.3%	-13.3%	-14.3%	0.0%	-25.0%
Y/Y change	0.0%	40.0%	5.3%	-7.1%	-14.3%	-12.5%	50.0%
New SF sales: %	3.5%	12.3%	35.1%	22.8%	10.5%	12.3%	5.3%

	NE SF Sales	MW SF Sales	S SF Sales	W SF Sales
June	52,000	71,000	361,000	147,000
May	38,000	82,000	391,000	155,000
2017	43,000	66,000	334,000	173,000
M/M change	36.8%	-13.4%	-7.7%	-5.2%
Y/Y change	20.9%	7.6%	8.1%	-15.0%

[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; 7/25/18;
[4]https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

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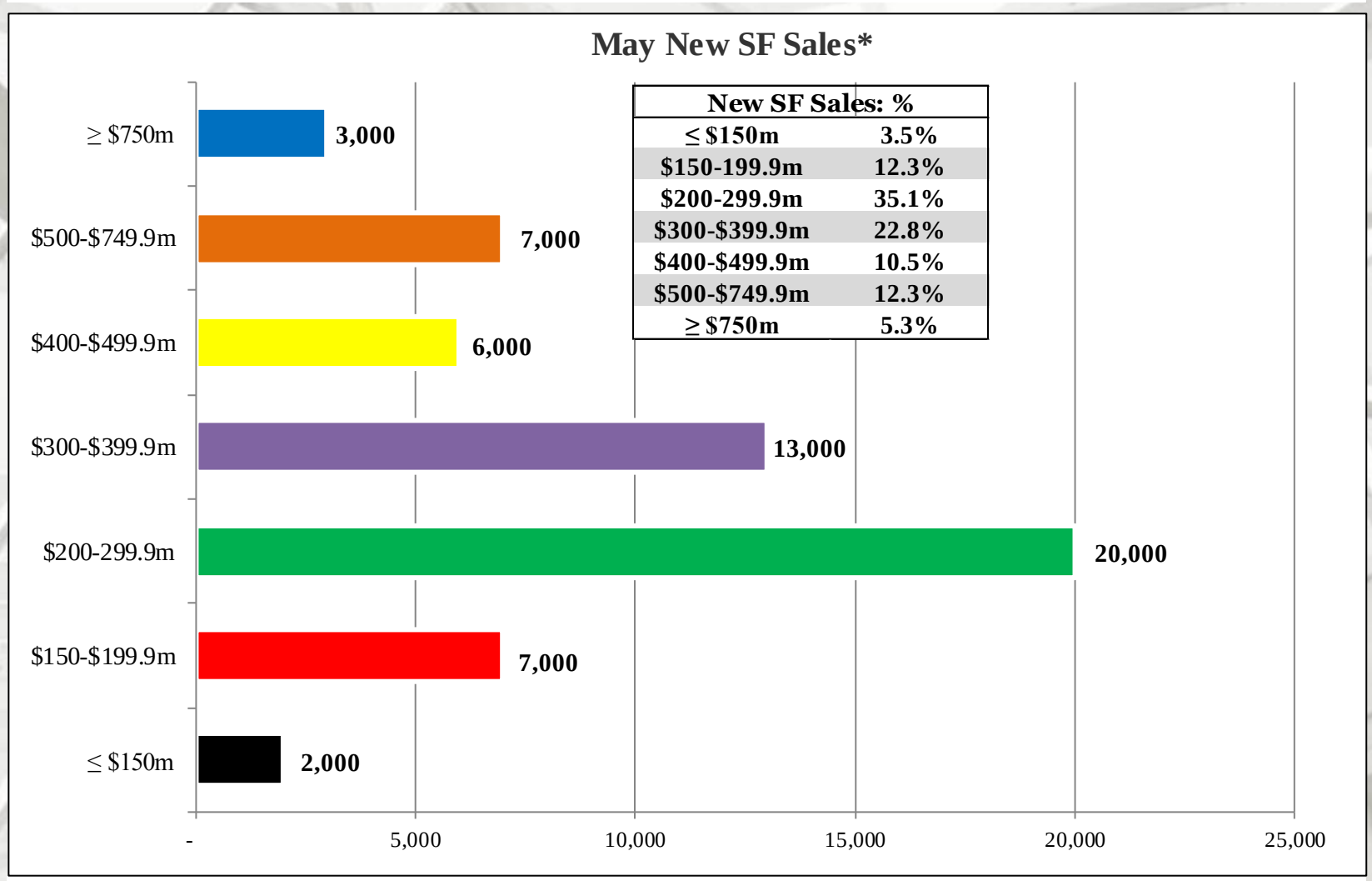
New SF House Sales

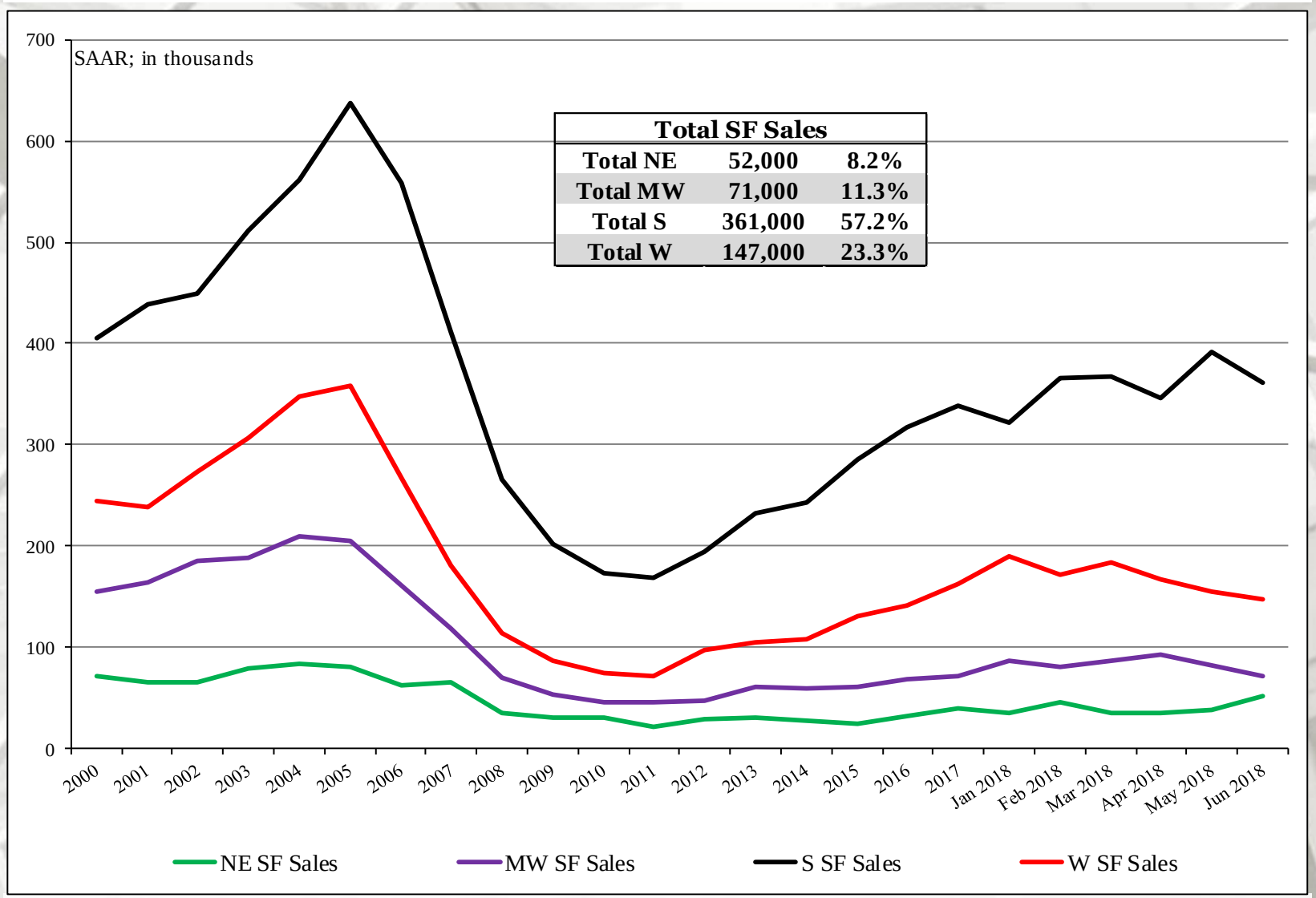


* Total new sales by price category and percent.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales by Region



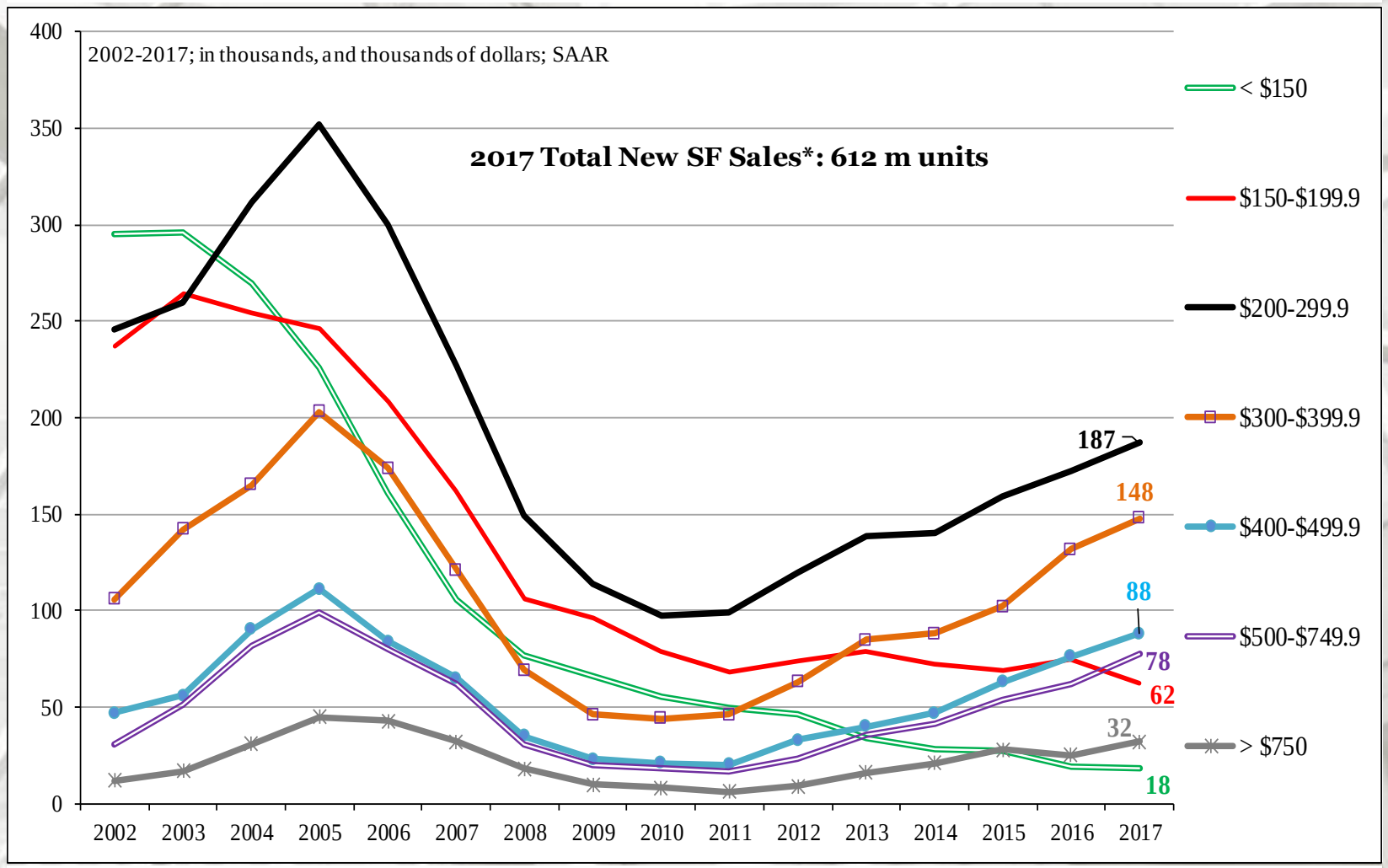
Total SF Sales		
Total NE	52,000	8.2%
Total MW	71,000	11.3%
Total S	361,000	57.2%
Total W	147,000	23.3%

* Percentage of total new sales.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales by Price Category



* Sales tallied by price category.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 6/25/18

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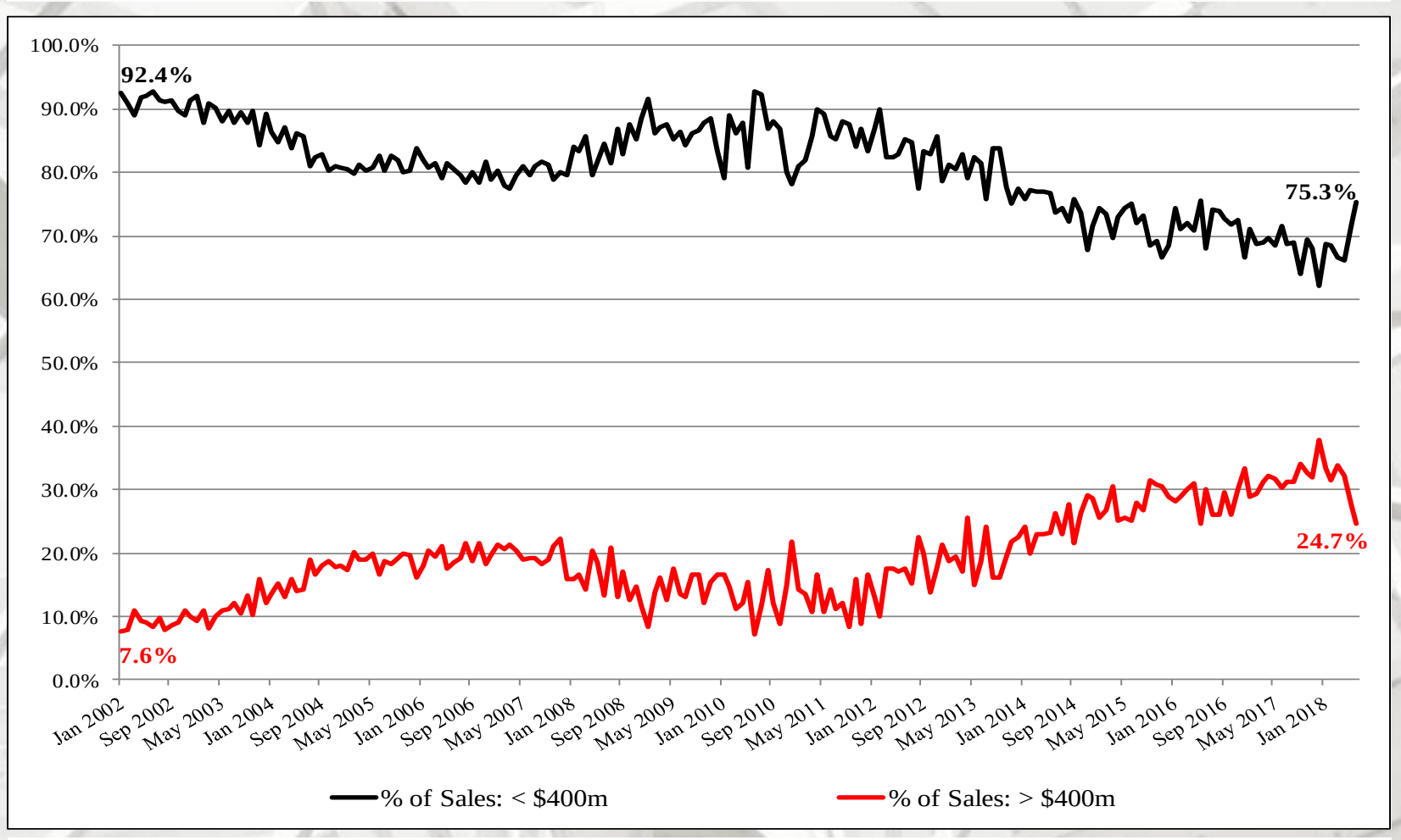
New SF House Sales



New SF Sales $400m houses: 2002 – June 2018

The sales share of $400 thousand plus SF houses is presented above[1, 2]. Since the beginning of 2012, the upper priced houses have and are garnering a greater percentage of sales. A decreasing spread indicates that more high-end luxury homes are being sold. Several reasons are offered by industry analysts; 1) builders can realize a profit on higher priced houses; 2) historically low interest rates have indirectly resulted in increasing house prices; and 3) purchasers of upper end houses fared better financially coming out of the Great Recession.

Source: [1] http://www.census.gov/construction/nrc/pdf/newresconst.pdf; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 7/25/18

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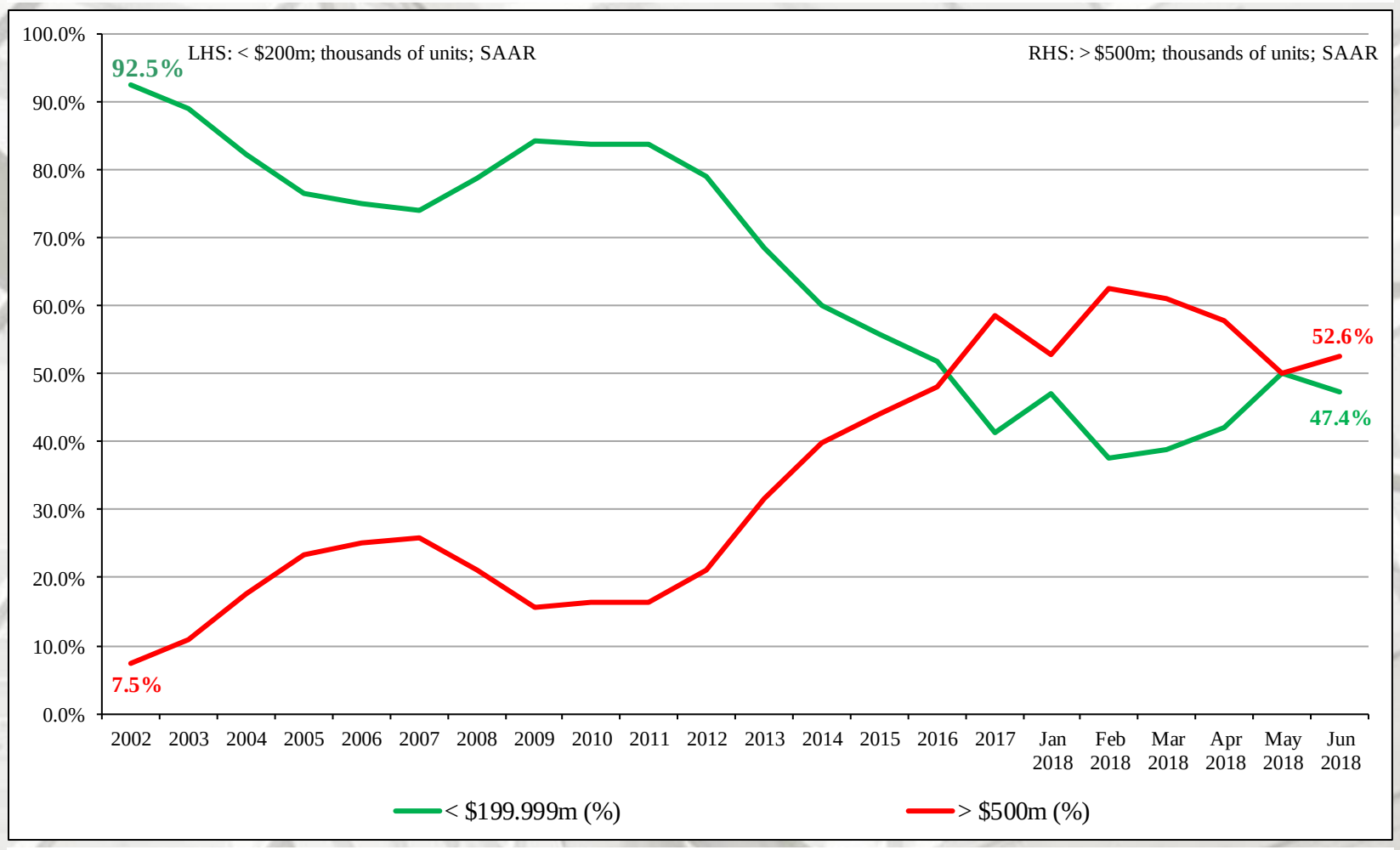
New SF House Sales



New SF Sales: < $ 200m and > $500m: 2002 to June 2018

The number of < $200 thousand plus SF houses has declined dramatically since 2002 [1, 2]. Subsequently, from 2012 onward, the > $500 thousand class has soared (on a percentage basis) in contrast to the < $200m class. One of the most oft mentioned reasons for this occurrence is builder margins. Note: Sales values not adjusted for inflation.

Source: [1] http://www.census.gov/construction/nrc/pdf/newresconst.pdf; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 7/25/18

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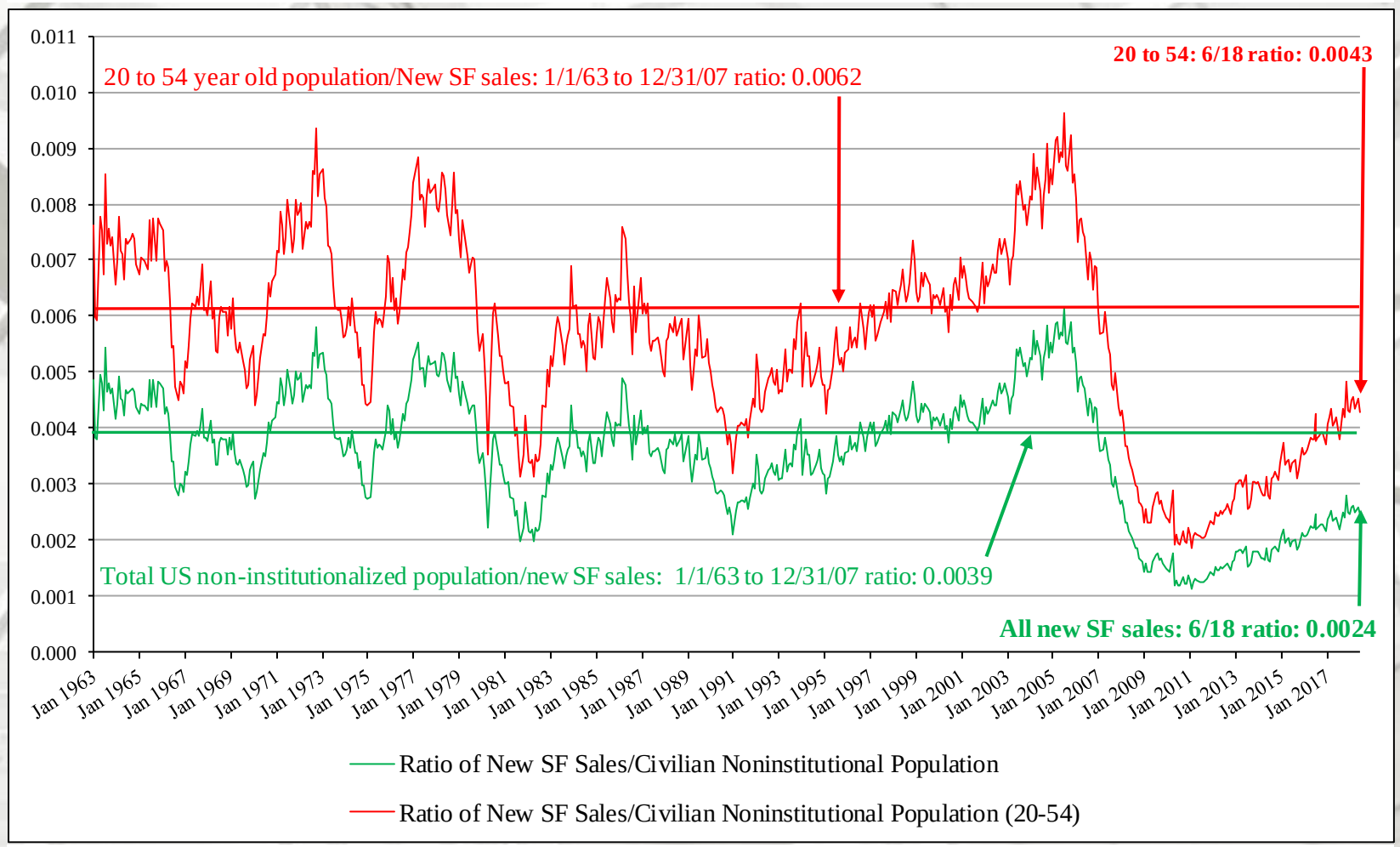
New SF House Sales



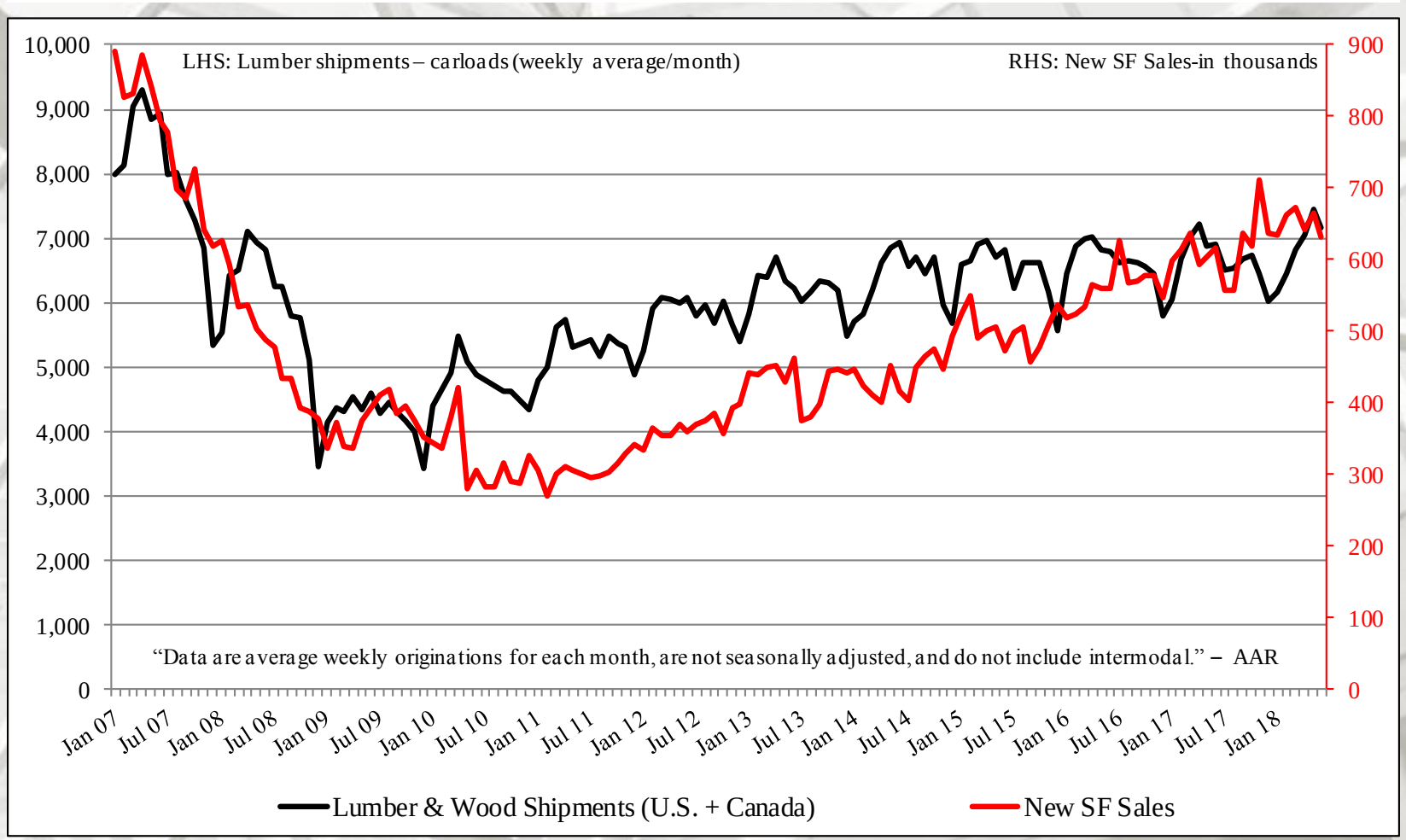
New SF sales adjusted for the US population

From June 1963 to November 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in June 2018 it was 0.0024 – an decrease from May (0.0026). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in June 2018 it was 0.0043 – also a decline from May (0.0045). All are non-adjusted data. From a population viewpoint, construction is less than what is necessary for changes in the population (i.e., under-building).

Sources: http://www.census.gov/construction/nrs/xls/newressales.xls and The Federal Reserve Bank of St. Louis; 7/25/18

Return TOC

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



Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 7/6/18; U.S. DOC-Construction; 7/25/18

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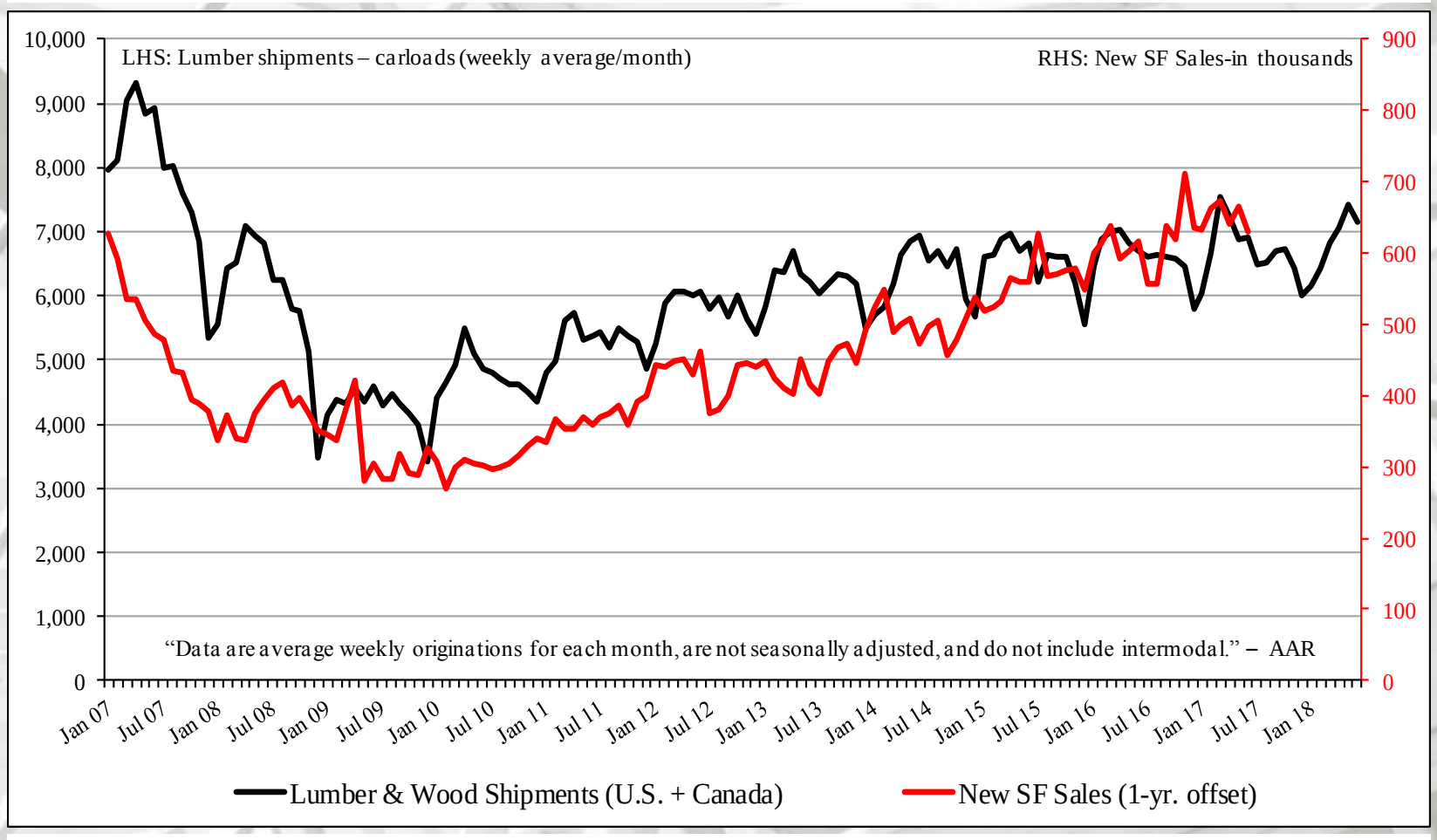
Railroad Lumber & Wood Shipments vs. U.S. SF Housing Sales: 1-year Offset

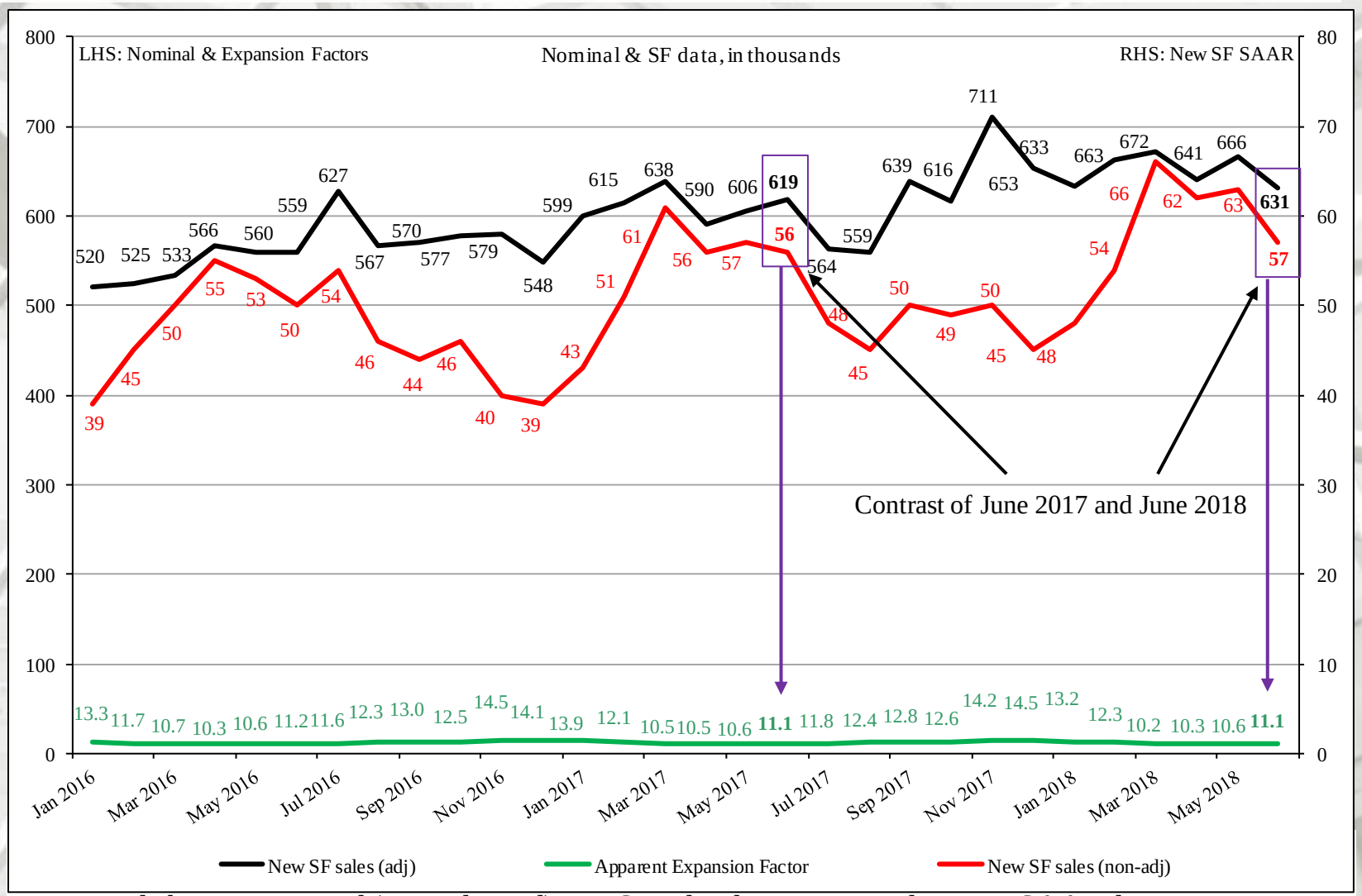


In this graph, January 2007 lumber shipments are contrasted with January 2008 SF sales, and continuing through June 2018. The purpose is to discover if lumber shipments relate to future single-family sales. Also, it is realized that lumber and wood products are trucked; however, to our knowledge comprehensive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

Sources: Association of American Railroads (AAR), *Rail Time Indicators* report 7/6/18; U.S. DOC-Construction; 7/25/18

Return TOC

Nominal vs. SAAR New SF House 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; 7/25/18

Return TOC

New SF House Sales

New SF Houses Sold During Period				
	Total	Not started	Under Construction	Completed
May	631,000	195,000	225,000	211,000
April	666,000	180,000	242,000	244,000
2017	616,000	199,000	212,000	205,000
M/M change	-5.3%	8.3%	-7.0%	-13.5%
Y/Y change	2.4%	-2.0%	6.1%	2.9%
Total percentage		30.9%	35.7%	33.4%

New SF Houses Sold During Period

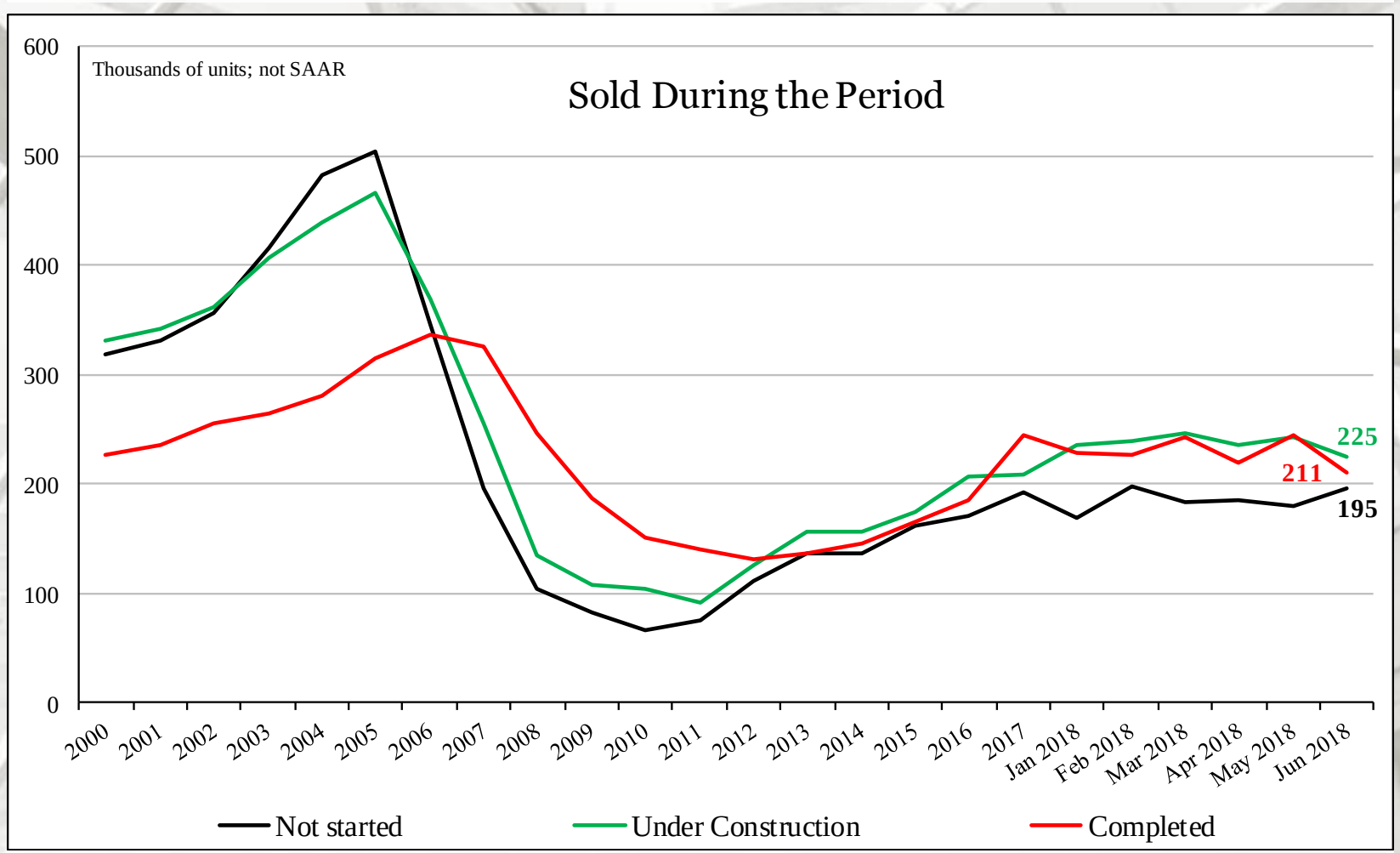
In June 2018, a substantial portion of new sales – 30.9% – have not been started.

* Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales



Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales

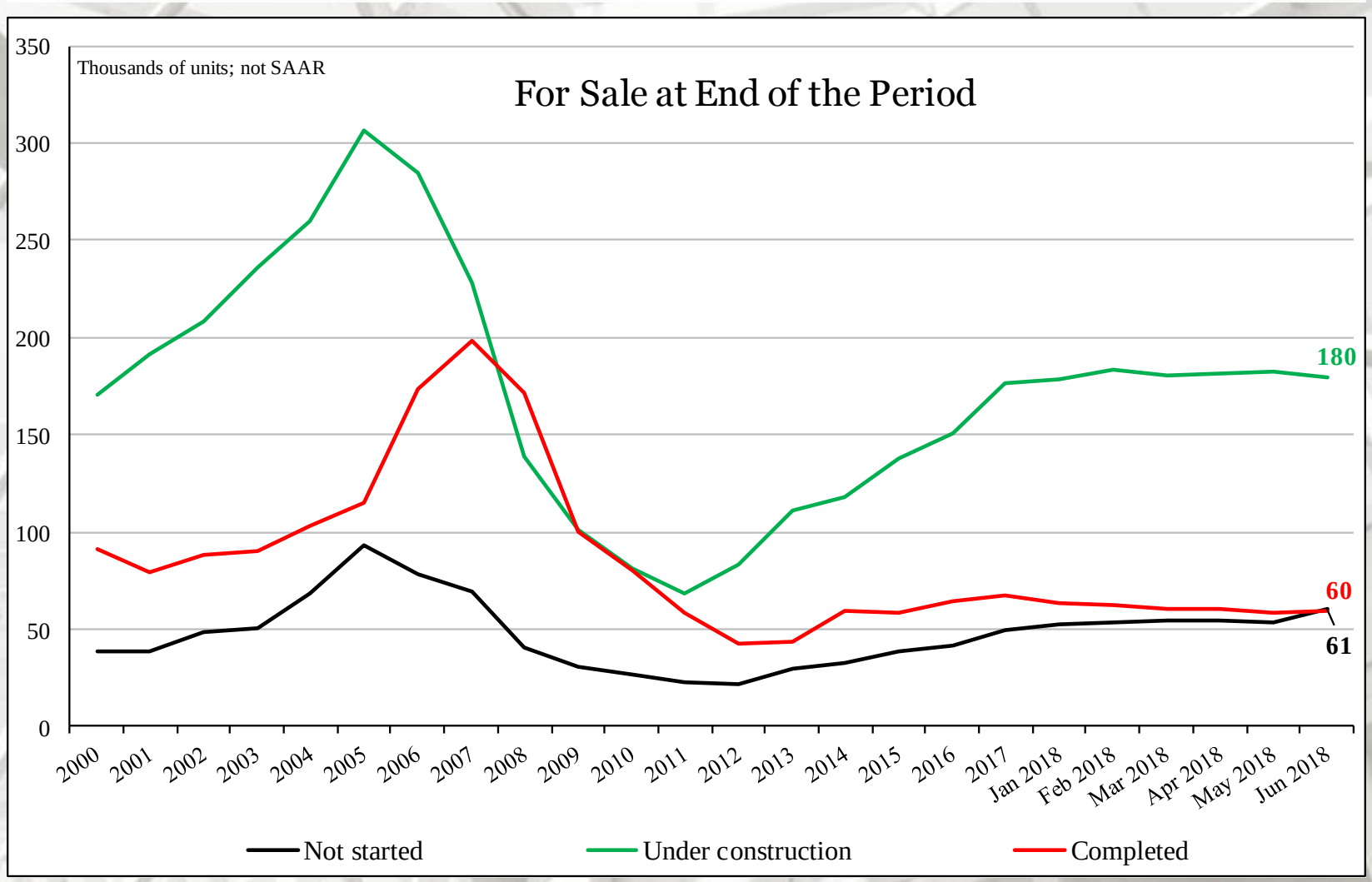
New SF Houses for Sale at the end of the Period				
	Total	Not started	Under Construction	Completed
May	301,000	61,000	180,000	60,000
April	296,000	54,000	183,000	59,000
2017	274,000	50,000	164,000	61,000
M/M change	1.7%	13.0%	-1.6%	1.7%
Y/Y change	9.9%	22.0%	9.8%	-1.6%
Total percentage		20.3%	59.8%	19.9%

Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales



Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF House Sales

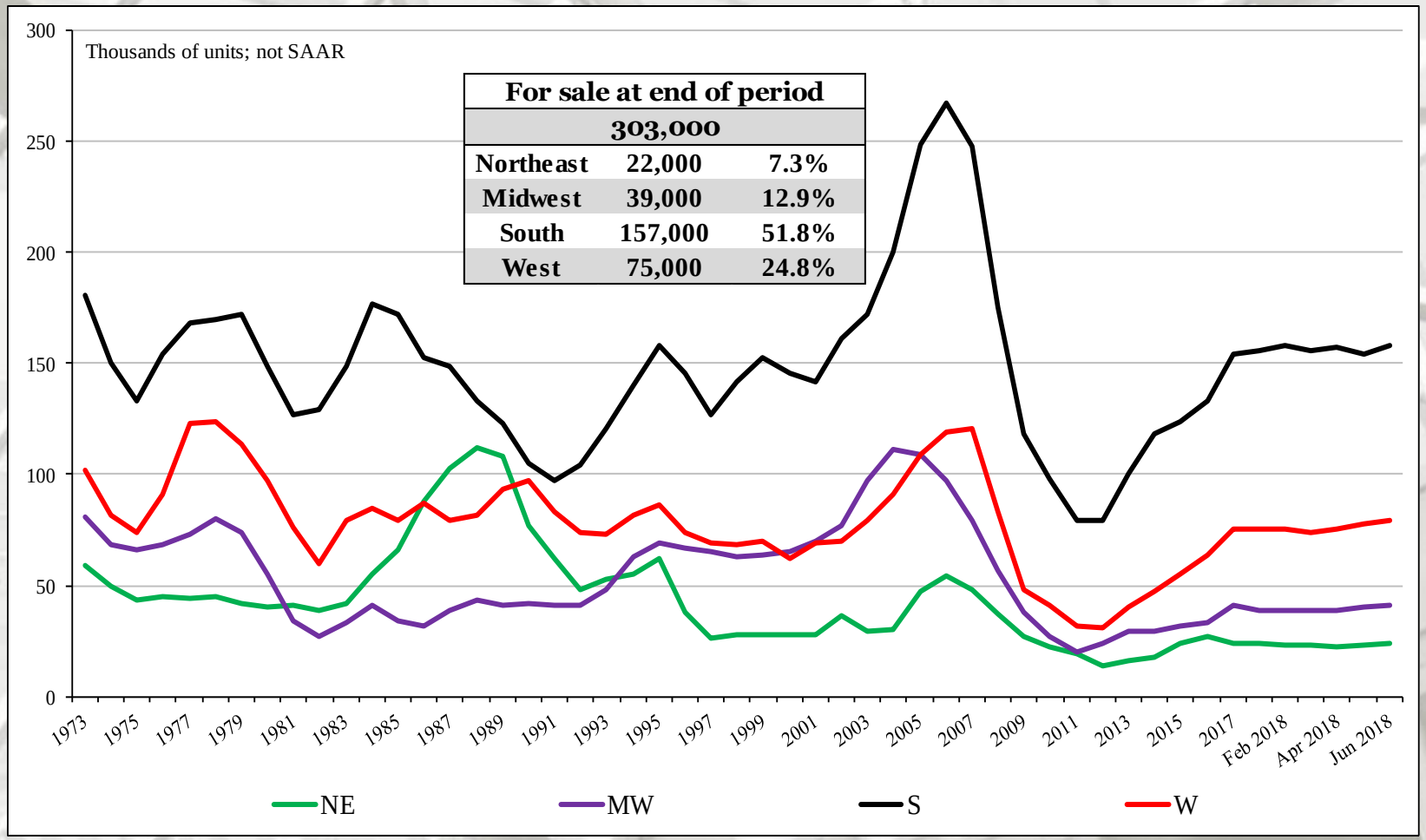
New SF Houses for Sale at the end of the Period by Region*					
	Total	NE	MW	S	W
May	303,000	22,000	39,000	157,000	75,000
April	295,000	23,000	39,000	156,000	74,000
2017	274,000	25,000	35,000	139,000	63,000
M/M change	2.7%	-4.3%	0.0%	0.6%	1.4%
Y/Y change	10.6%	-12.0%	11.4%	12.9%	19.0%

* Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

New SF Houses Sale at End of Period by Region



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 7/25/18

Return TOC

June 2018
Construction Spending

	Total Private Residential*	SF	MF	Improvement**
June	$568,295	$287,416	$59,884	$220,995
May	$570,919	$288,573	$61,612	$220,734
2017	$522,118	$269,085	$58,837	$194,196
M/M change	-0.5%	-0.4%	-2.8%	0.1%
Y/Y change	8.8%	6.8%	1.8%	13.8%

* Millions

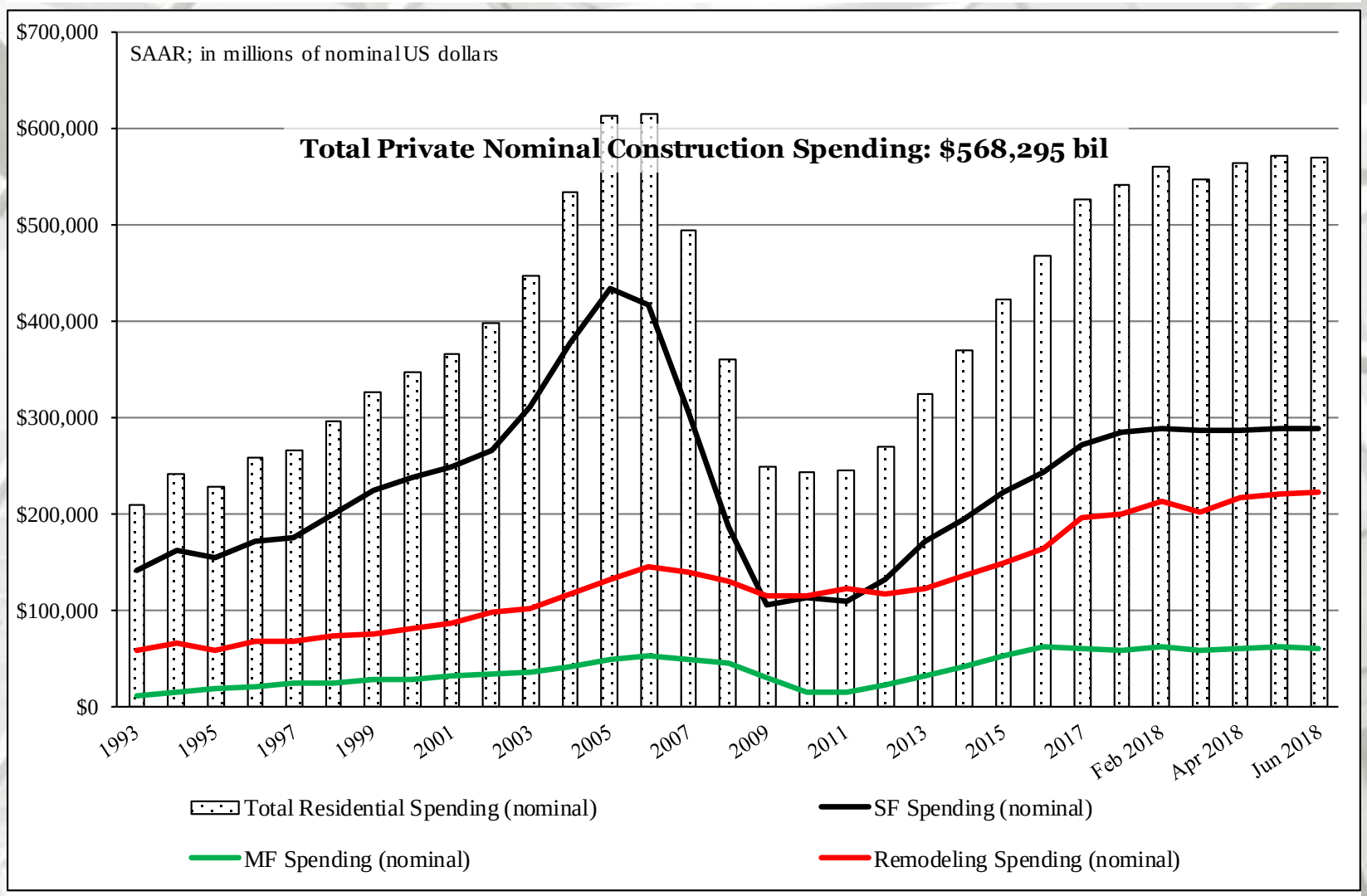
** The US DOC does not report improvement spending directly, this is a monthly estimation for 2017: ((Total Private Spending – (SF spending + MF spending)).

All data are SAARs and reported in nominal US$.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/1/18

Return TOC

Total Construction Spending (nominal): 1993 – June 2018



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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/1/18

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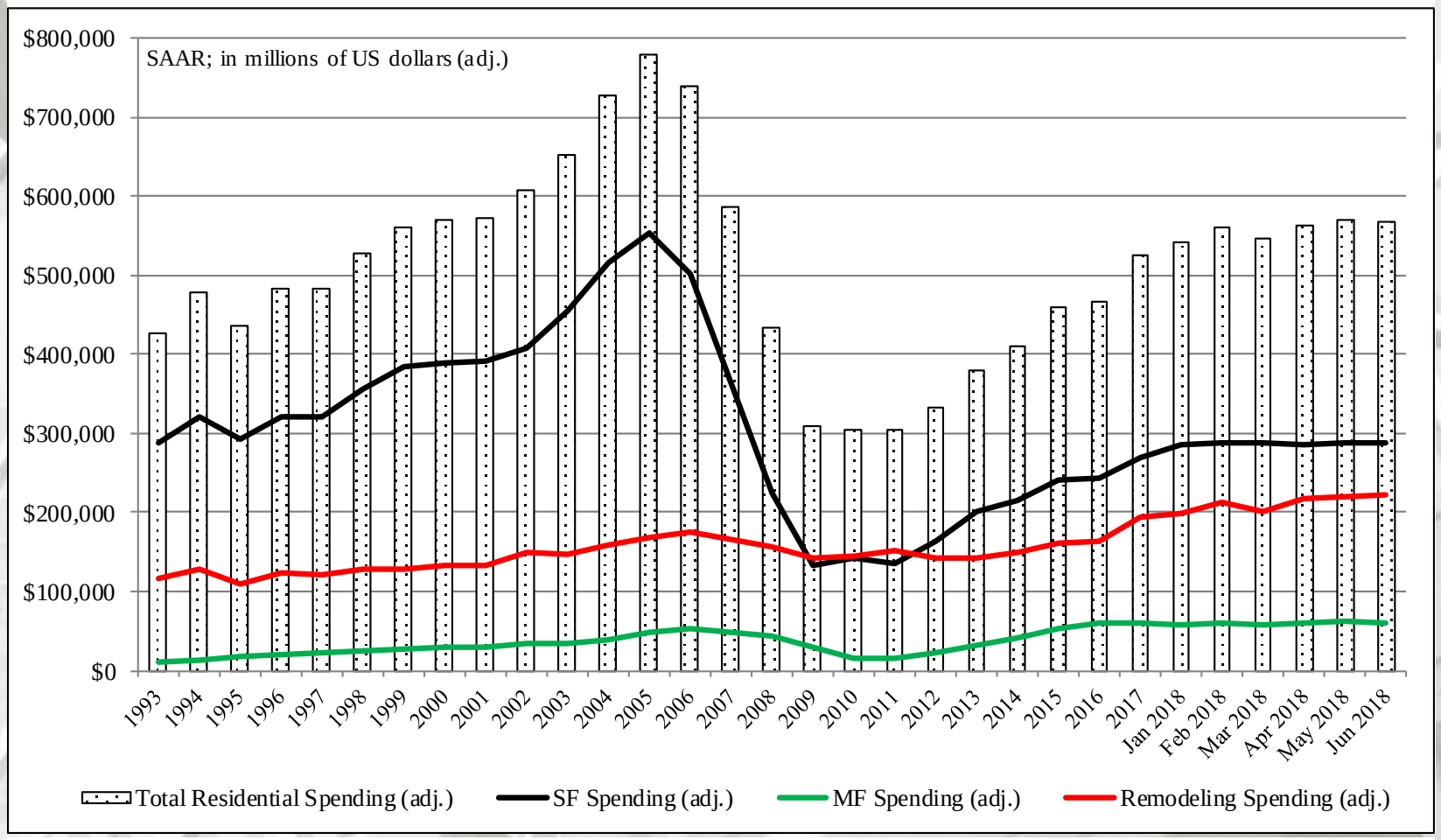
Total Construction Spending (adjusted): 1993-2018*



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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/1/18

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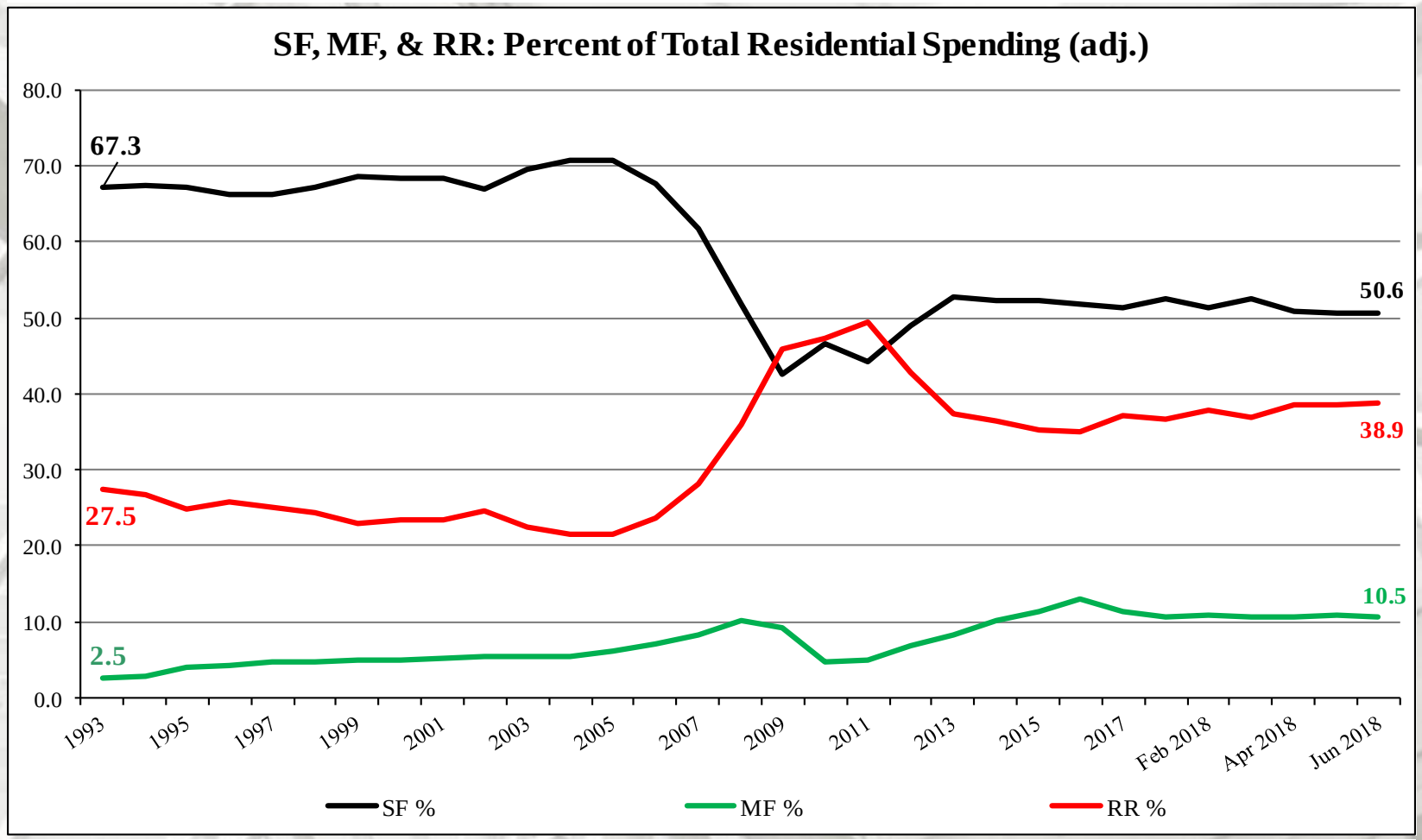
Construction Spending Shares: 1993 to June 2018



Total Residential Spending: 1993 through 2006

SF spending average: 69.2%

MF spending average: 7.5%

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

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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf and http://www.bea.gov/iTable/iTable.cfm; 71/18

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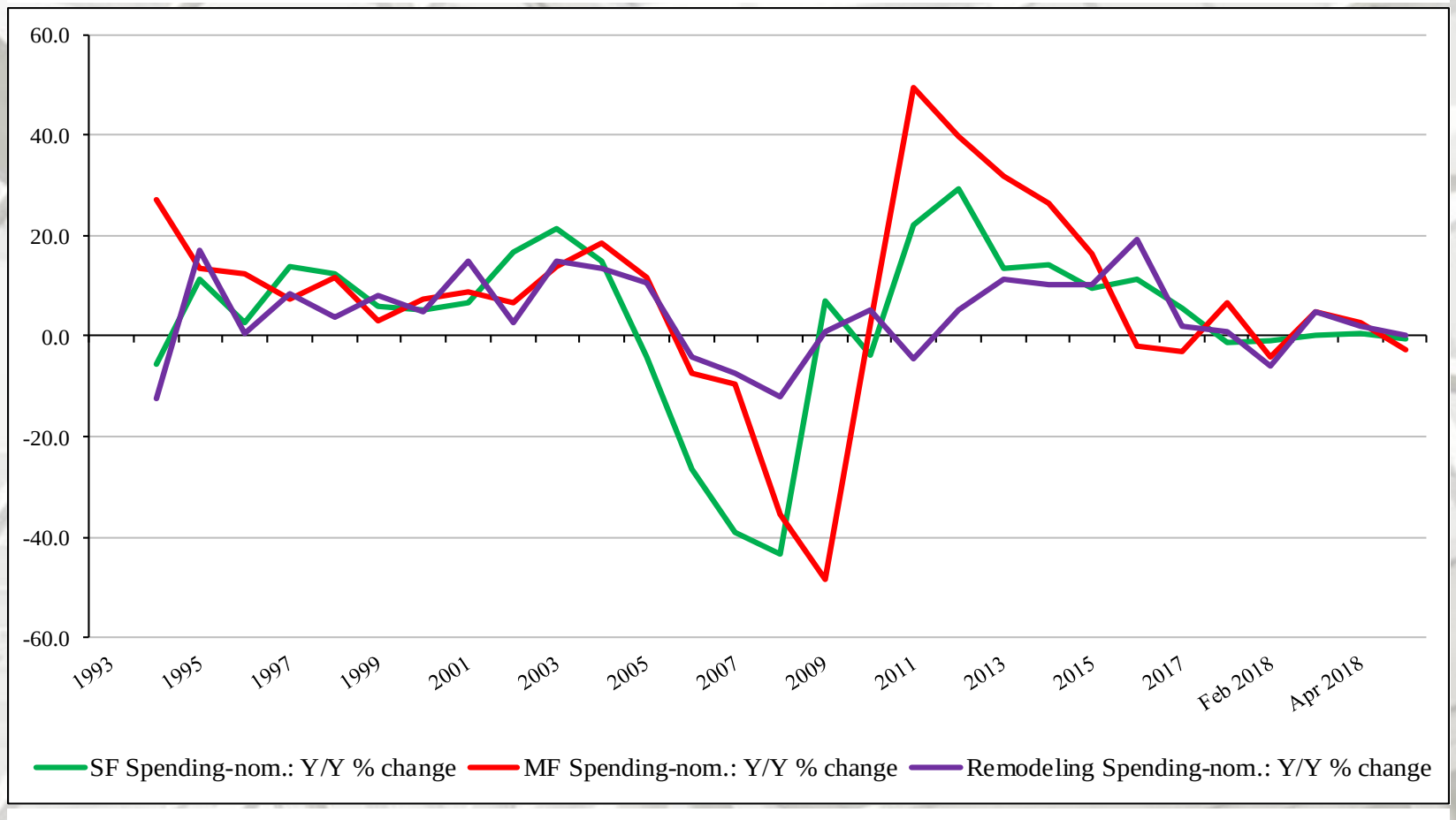
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to June 2018



Residential Construction Spending: Percentage Change, 1993 to June 2018

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

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/1/18

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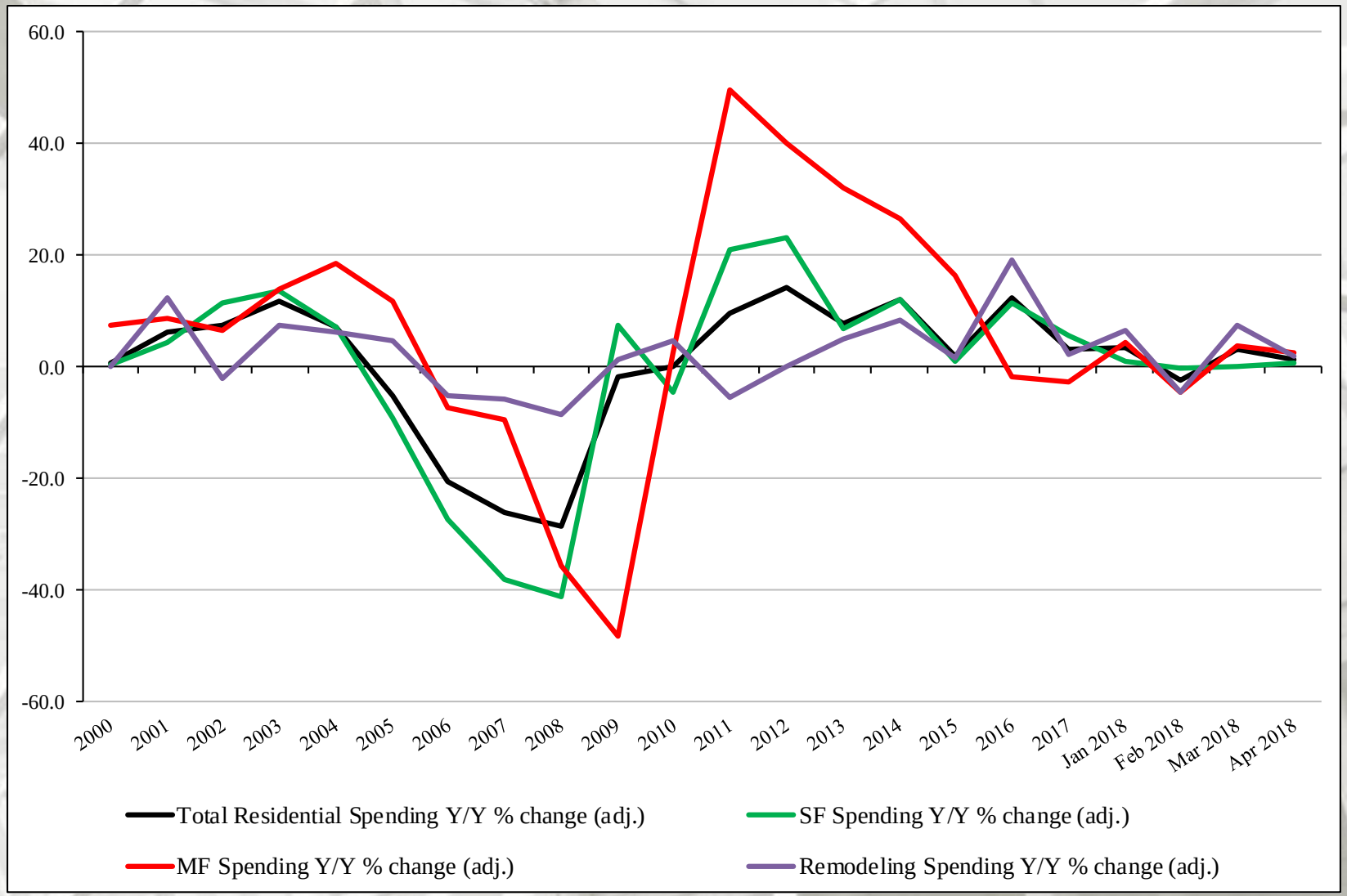
Adjusted Construction Spending: Y/Y Percentage Change, 2000 to June 2018



Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 7/1/18

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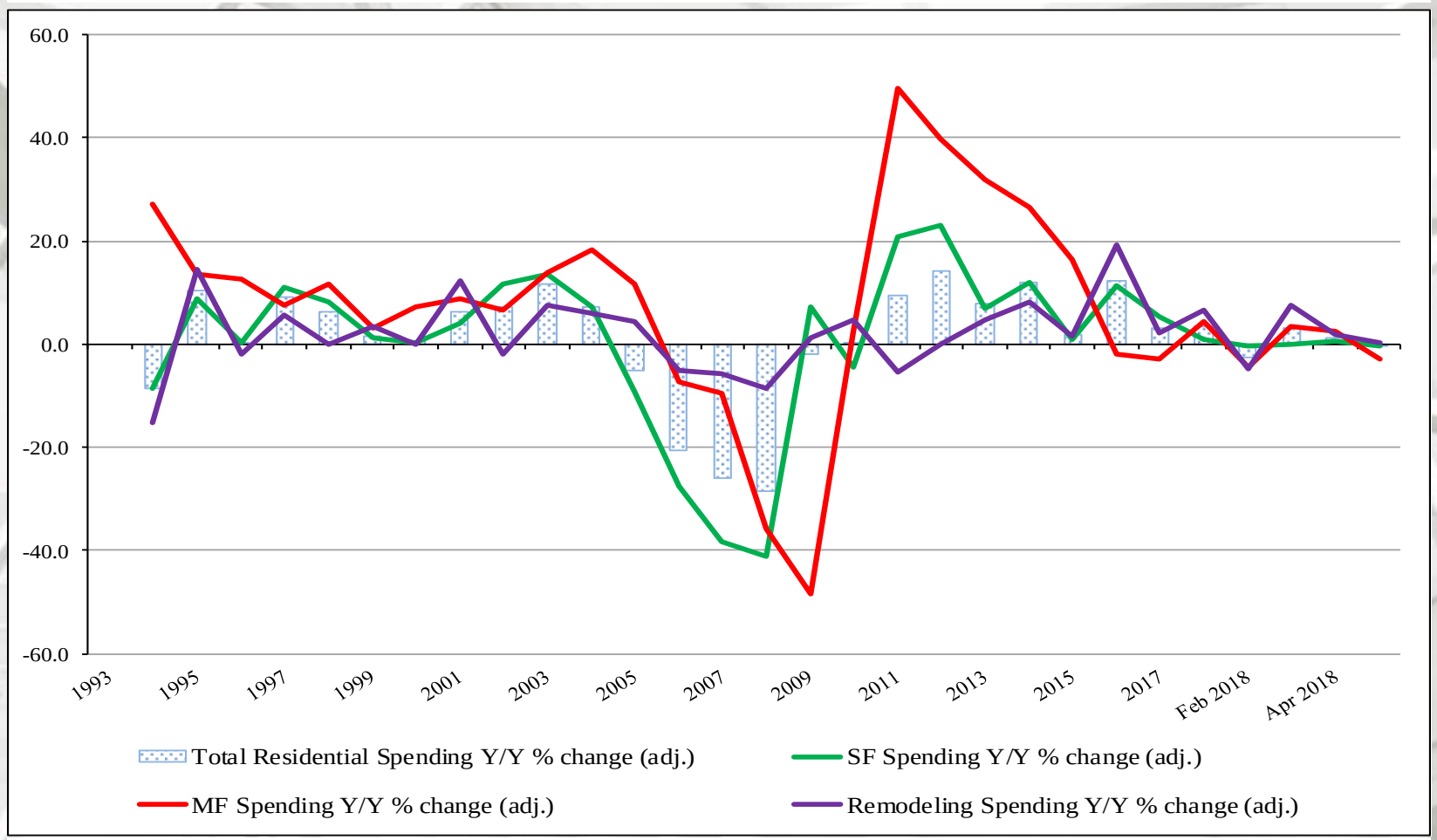
Total Adjusted Construction Spending: Y/Y Percentage Change, 1993 to June 2018



Residential Construction Spending:

Percentage Change, 1993 to June 2018

Total, MF, and remodeling spending rebounded strongly – however, SF appears to have leveled-off.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf and http://www.bea.gov/iTable/iTable.cfm; 71/18

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Remodeling

Metrostudy

Robust Outlook For Residential Remodeling Through Mid-Year 2019

"Homeowners are expected to increase spending on improvements and repairs at a solid clip over the coming year, according to our latest **Leading Indicator of Remodeling Activity (LIRA)**. The LIRA projects that annual growth in homeowner remodeling expenditure will taper somewhat in the first half of 2019, but still remain around 7 percent.

A growing economy and stronger job market are boosting owners' willingness to invest in home improvements. Rising home values and increased home equity levels are also encouraging more owners to do larger upgrade and replacement projects.

Although the projected growth for remodeling activity remains strong, the low inventory of existing homes for sale is holding back even larger gains, since significant remodeling and repair often occurs around the time of a sale. Even so, annual spending on residential improvements and repairs by homeowners is expected to reach nearly $350 billion by the middle of next year." – Abbe Will, Research Associate & Associate Project Director, Remodeling Futures, Harvard Joint Center for Housing Studies

Source: http://www.jchs.harvard.edu/blog/robust-outlook-for-residential-remodeling-through-mid-year-2019/; 7/19/18

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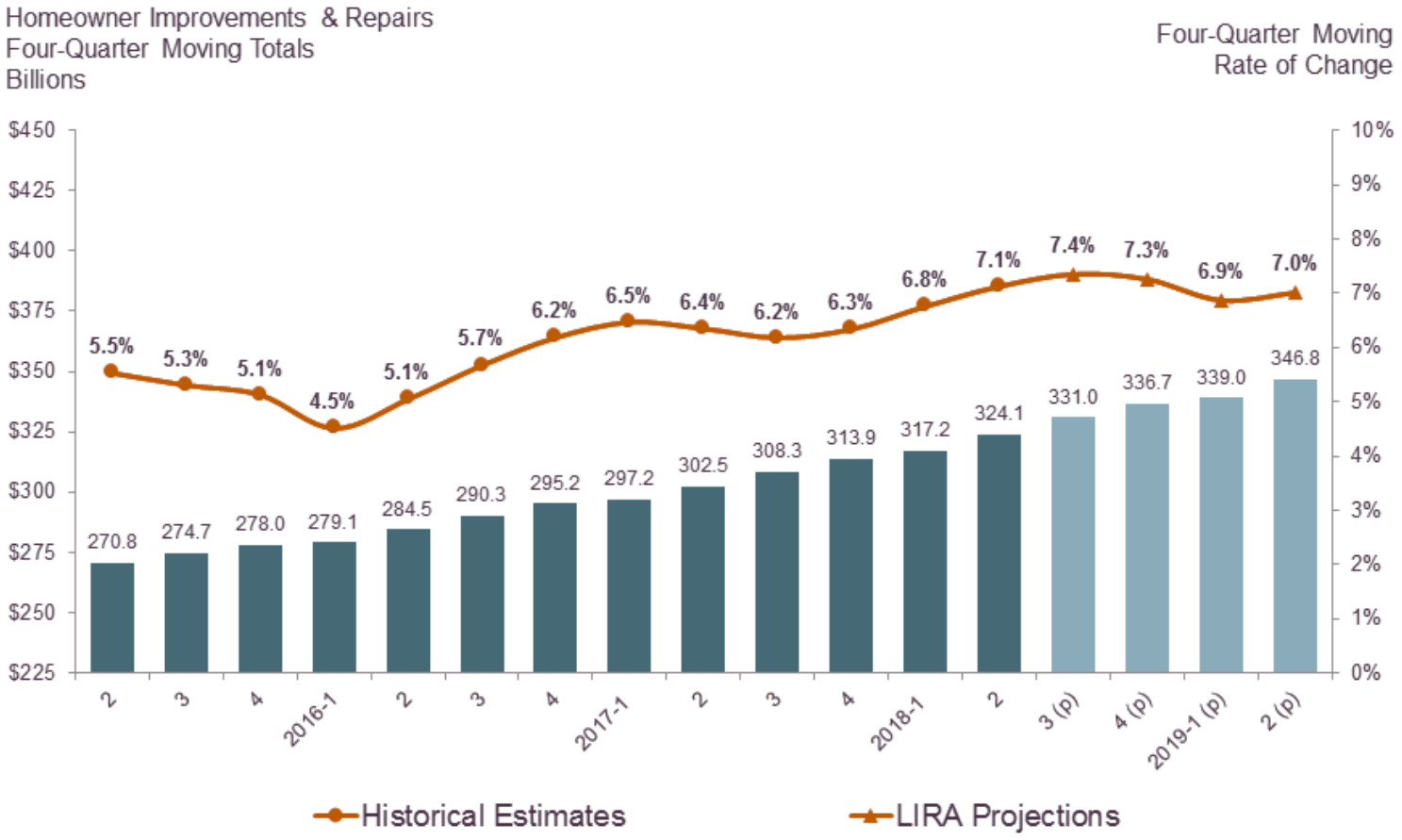
Remodeling

Leading Indicator of Remodeling Activity – Second Quarter 2018



Note: Historical estimates since 2015 are produced using the LIRA model until American Housing Survey data become available.
Source: Joint Center for Housing Studies.

Source: http://www.jchs.harvard.edu/blog/robust-outlook-for-residential-remodeling-through-mid-year-2019/; 7/19/18

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Remodeling

NAHB

Remodeling Confidence Increases Despite Rising Costs

"The Remodeling Market Index (RMI) rose one point to 58 in the second quarter of 2018, according to the National Association of Home Builders (NAHB). A RMI reading above 50 indicates that more remodelers report market activity is higher than report it is lower compared to the prior quarter. The RMI has been above 50 for 21 consecutive quarters (Figure 1).

The RMI is a composite measure of current market conditions and future market indicators. In the second quarter, current market conditions decreased one point to 57. Among its three major components, major additions and alterations waned one point to 55, minor additions and alterations decreased two points to 58, and the home maintenance and repair component rose two points to 59.

Meanwhile, future market indicators gained four points to 59 in the second quarter. Among its components, calls for bids fell two points to 55, amount of work committed for the next three months increased two points to 56, the backlog of remodeling jobs jumped nine points to 66 and appointments for proposals rose seven points to 61.

The increase in this quarter's RMI reflects a strong remodeling industry supported by continued economic growth. While the market is strong, remodelers are still facing supply-side challenges such as rising material costs and labor shortages." – Carmel Ford, Economist, NAHB

Source: http://eyeonhousing.org/2018/07/remodeling-confidence-increases-despite-rising-costs/; 7/19/18

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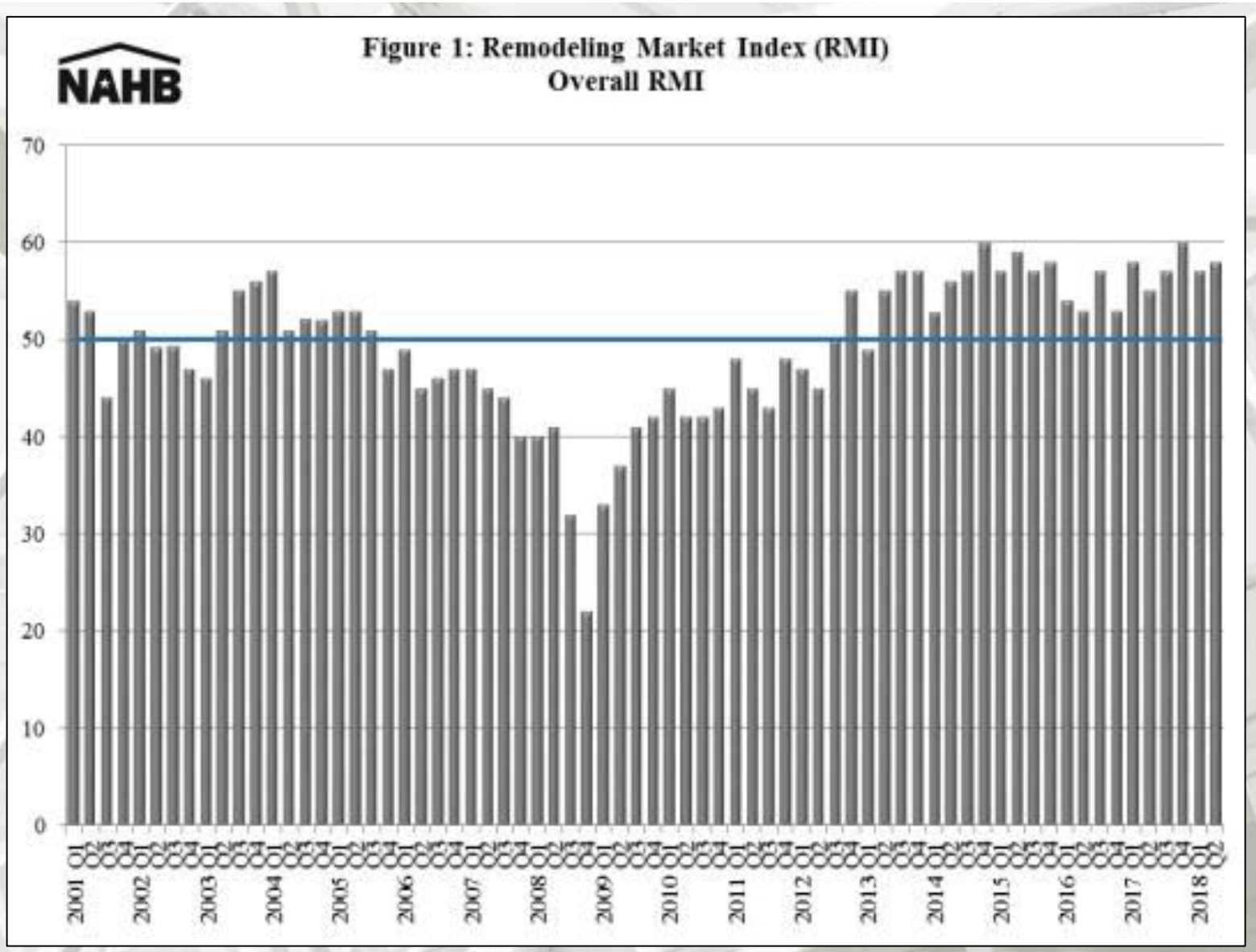
Remodeling



Source: http://eyeonhousing.org/2018/07/remodeling-confidence-increases-despite-rising-costs/; 7/19/18

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Existing House Sales

National Association of Realtors

June 2018 sales: 5.380 thousand

	Existing Sales*	Median Price	Mean Price	Month's Supply
June	5,380,000	$276,900	$314,900	4.3
May	5,410,000	$265,100	$303,700	4.1
2017	5,500,000	$263,300	$303,500	4.2
M/M	-0.6%	4.5%	3.7%	4.9%
Y/Y change	-2.2%	5.2%	3.8%	2.4%

	NE Sales	MW Sales	S Sales	W Sales
June	720,000	1,270,000	2,250,000	1,140,000
May	680,000	1,260,000	2,300,000	1,170,000
2017	750,000	1,310,000	2,240,000	1,200,000
M/M change	5.9%	0.8%	-2.2%	-2.6%
Y/Y change	-4.0%	-3.1%	0.4%	-5.0%

* All sales data: SAAR

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 7/24/18

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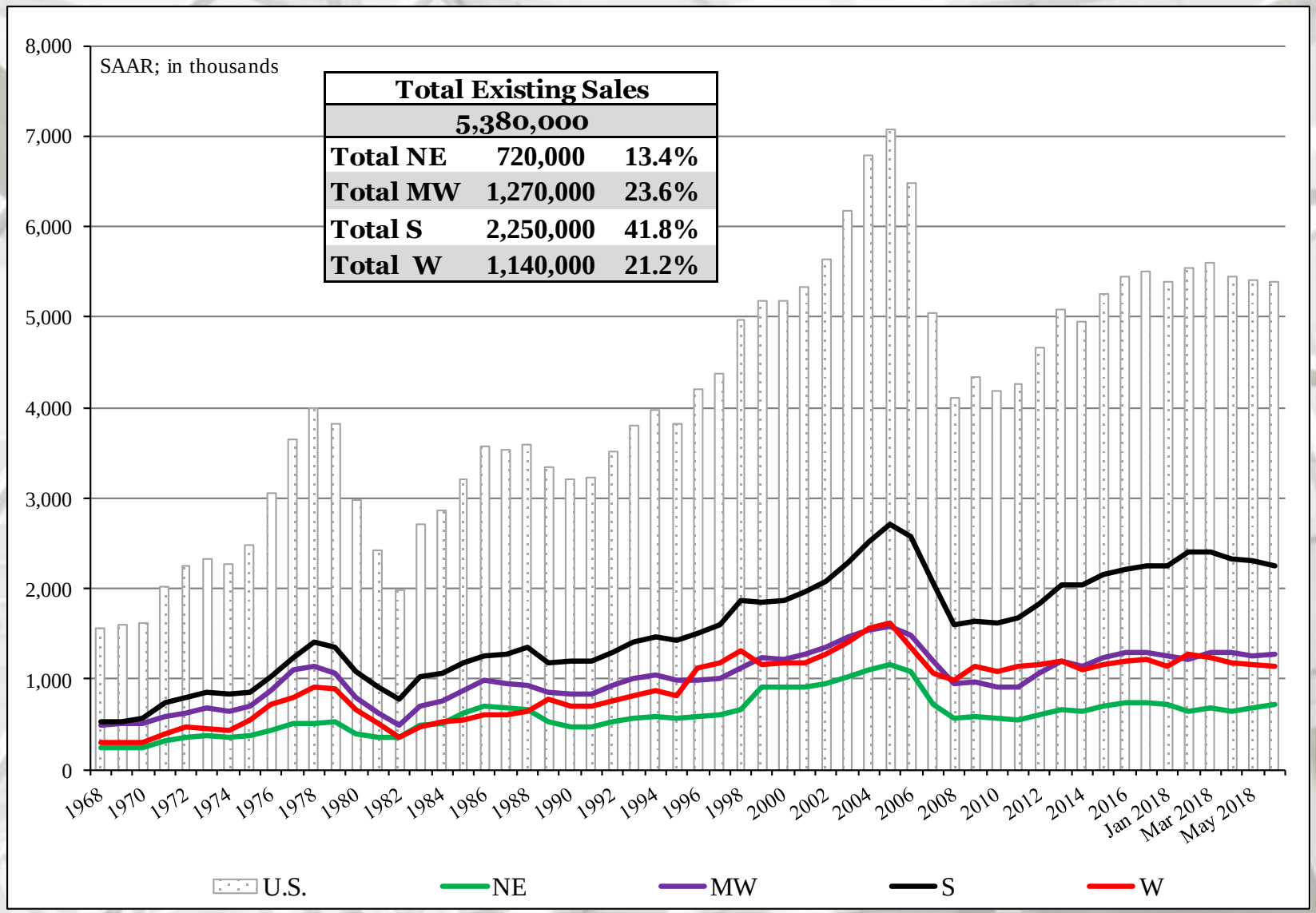
Total Existing House Sales



Sources: https://fred.stlouisfed.org/series/EXHOSLUSM495S & https://www.huduser.gov/portal/ushmc/ushmc_archive.html; 7/24/18

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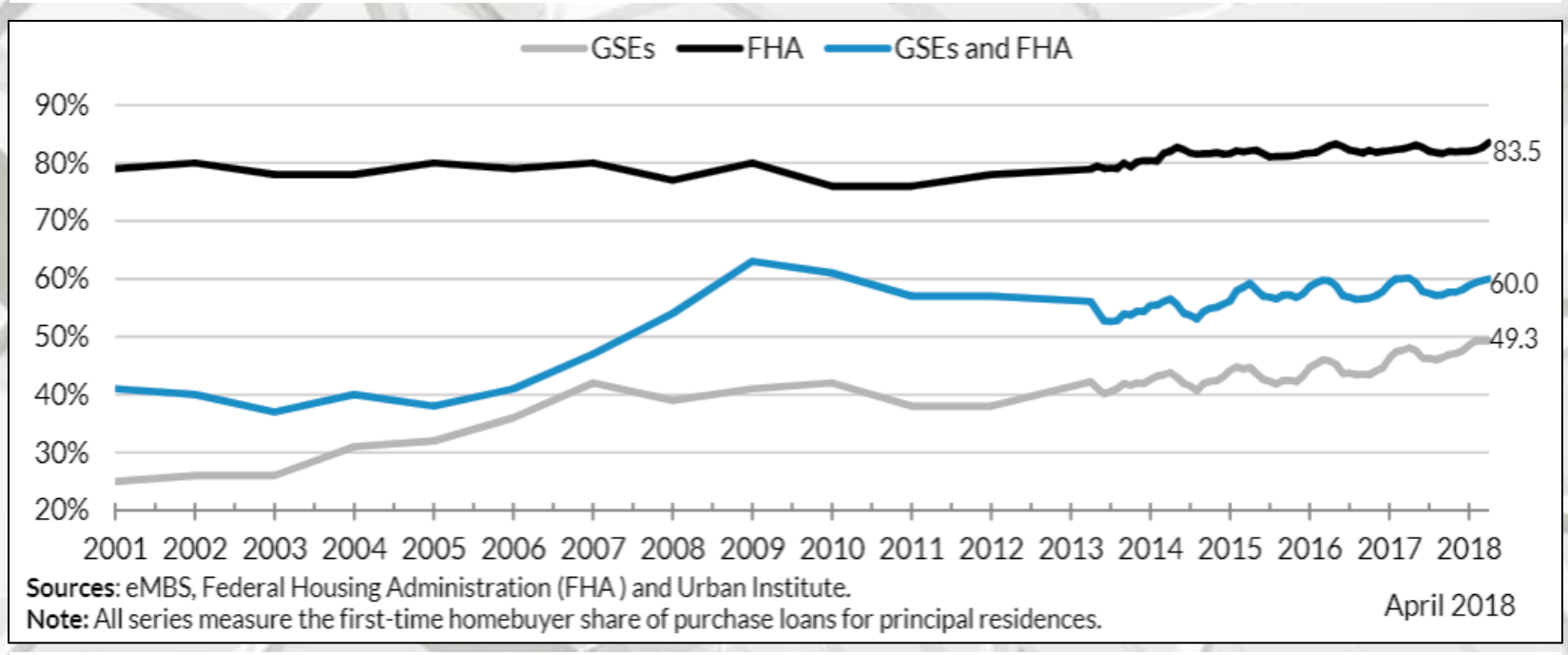
First-Time Purchasers



Urban Institute

"In April 2018, the first-time homebuyer share of GSE purchase loans was 49.3 percent, its 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; it stood at 83.5 percent in April 2018. The bottom table shows that based on mortgages originated in April 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score and higher LTV and DTI, thus requiring a higher interest rate." – Laurie Goodman, *et al*., Co-director, Housing Finance Policy Center

Sources: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-july-2018/view/full_report; 7/25/18

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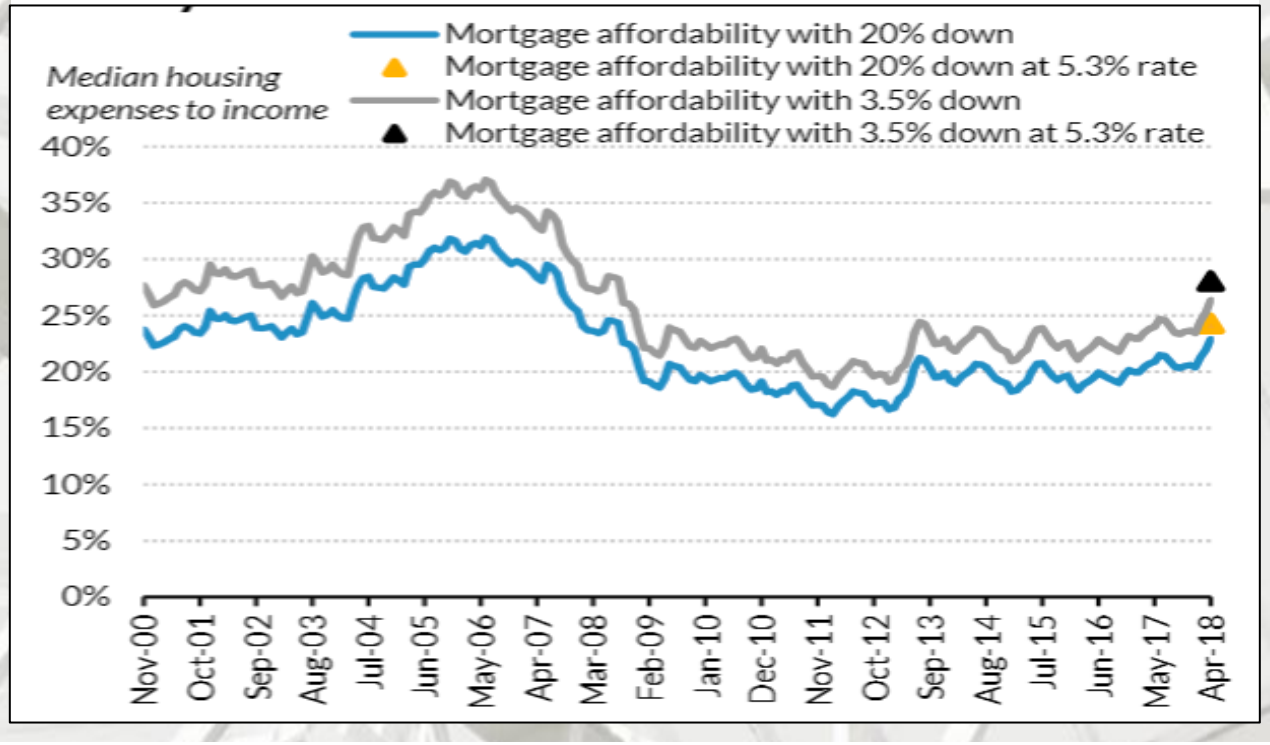
Housing Affordability

National Housing Affordability Over Time



Urban Institute

"Home prices remain affordable by historic standards, despite price increases over the last five years and the recent interest rate hikes. As of April 2018, with 20% down, the share of median income needed for the monthly mortgage payment stood at 23%; with 3.5% down, it is 26%. If interest rates rise to 5.3%, the housing expenses to income share with both a 20 percent and a 3.5 percent down payment would be the same as the 2001-03 averages (24 and 28 percent, respectively). ... ." – Bing Lai, Research Associate, Housing Finance Policy Center

Sources: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-july-2018/view/full_report; 7/25/18

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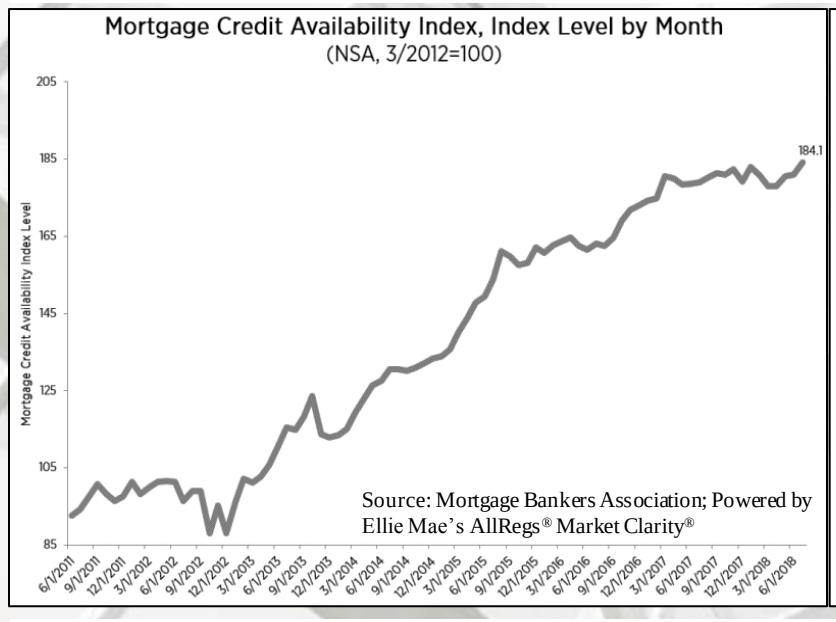
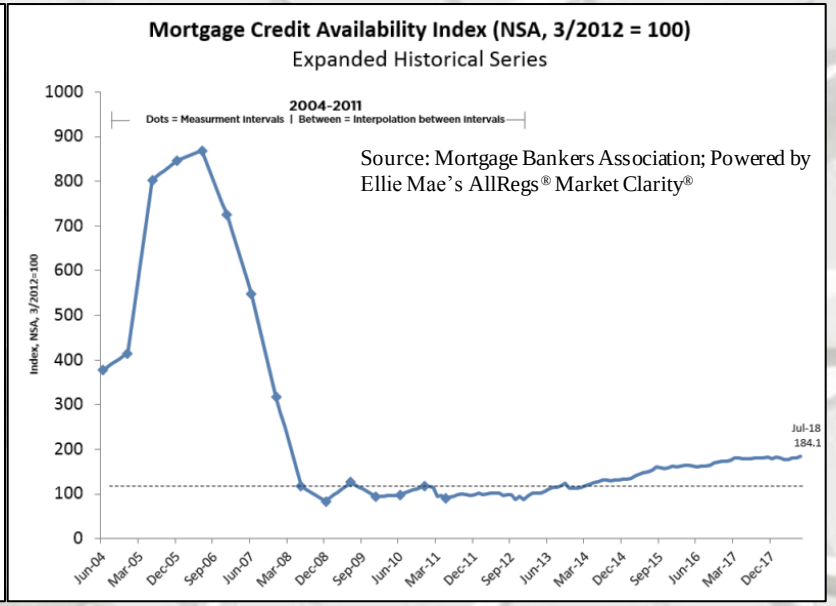
Mortgage Credit Availability





Mortgage Credit Availability Increased in July

"Mortgage credit availability increased in July according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) which analyzes data from Ellie Mae's AllRegs® Market Clarity® business information tool. The MCAI increased 1.7 percent to 184.1 in July. A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening credit. The index was benchmarked to 100 in March 2012. The Conventional MCAI increased (up 4.2 percent) and the Government MCAI decreased (down 0.4 percent). Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 5.8 percent while the Conforming MCAI increased by 2.0 percent. .

Credit availability continued to expand, driven by an increase in conventional credit supply. More than half of the programs added were for jumbo loans, pushing the jumbo index to its fourth straight increase, and to its highest level since we started collecting these data. There was also continued growth in the conforming non-jumbo space, which reached its highest level since October 2013." – Joel Kan, Vice President of Economic and Industry Forecasting, MBA

Source: https://www.mba.org/2018-press-releases/july/mortgage-credit-availability-index; 8/7/18

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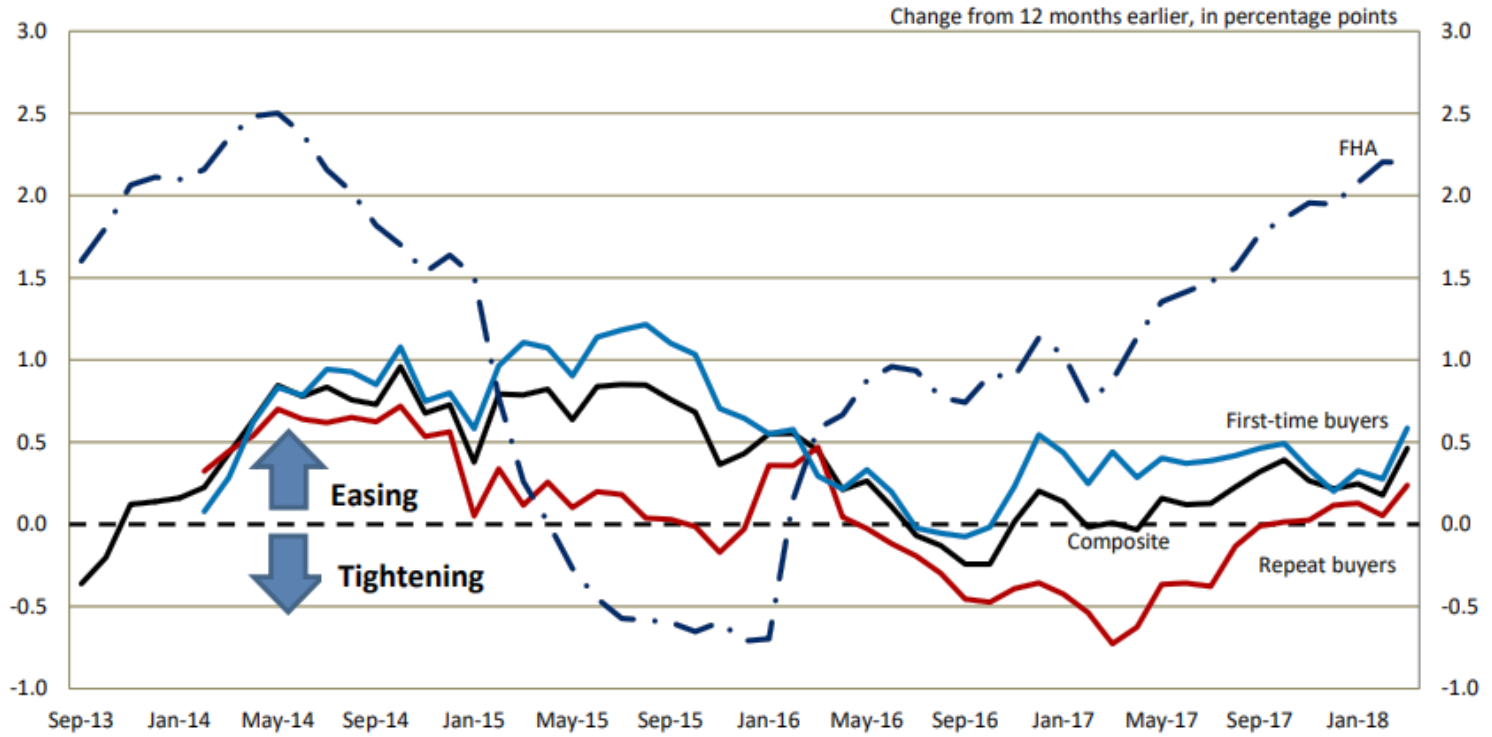
Mortgage Credit

Update: Credit Easing Trend Continues, Led by FHA

Composite NMRI for purchase increased from already elevated levels a year ago. The index now rising at over 2% year-over-year for FHA and was slightly higher for first-time buyers and repeat buyers. First-time buyers in particular have been taking on greater leverage. For 2018 we expect continued easing for first-time buyers and FHA, helping fuel accelerating house price growth for entry-level homes. Entry-level homes will be less affordable and first-time buyers will be faced with a higher risk of default.



Note: Includes all types of NMRI purchase loans (primary owner-occupied, second home, and investor loans).
Source: AEI, Center on Housing Markets and Finance, www.AEI.org/housing.

Source: https://www.aei.org/publication/national-housing-market-indicators-release-for-q1-2018, 7/2/18

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Summary

In summary:

The U.S. housing construction market was mostly anemic in June. Total and new SF starts, total and SF under construction, SF completions, and SF sales all were negative on a month-over-month basis. Total and new SF starts also were negative on a year-over-year basis. New single-family construction spending indicated a minimal positive change on a monthly basis. Regionally, data were mixed across all sectors. Once again, new SF lower-priced tier house sales were less than historical averages. The new SF construction market needs consistent improvement in this category to influence the housing construction market upward.

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

Pros:

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

Cons:

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

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