The Virginia Tech – U.S. Forest Service February 2020 Housing Commentary: Section I

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To request the commentary, please email: buehlmann@gmail.com or Delton.R.Alderman@usda.gov

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Opening remarks

The global COVID19 crisis has certainly hit us all like a ton of bricks. Yet, the ramifications arising from this global crisis are going to affect the housing markets for some time to come.

In February, total starts, permits, completions, new sales, and residential spending declined on a month-over-month basis. The silver lining – permits were the greatest since March 2007. On a year-over-year basis, the majority of the data indicated robust improvement, except for the decline in multi-family permits and total completions. Single-family under construction also decreased year-over-year. New single-family house sales decreased, but on a yearly basis were much greater than in 2019. Existing sales also improved. Single-family construction expenditures improved on a monthly and yearly basis.

The April 9th Atlanta Fed GDPNow™ model forecasts an aggregate 20.0% quarterly log change increase for residential investment spending (18.3% for March). New private permanent site expenditures were projected at a 24.1% increase; the improvement spending forecast was a 7.3% increase; and the manufactured/mobile housing projection was a 14.6% increase (all: quarterly log change and seasonally adjusted annual rate).[1]

"Our outlook for the US Homebuilding Industry is negative. This outlook reflects our expectations for the fundamental business conditions in the industry over the next 12 to 18 months. Homebuilders' 2020 results will be dampened by a meaningful slowdown in home selling during the second quarter 2020, with an improved, but still weaker environment, in Q3 and Q4 2020 – compared to 2019. This is reflective of Moody's Macroeconomic forecast for real GDP in the US to decline 2.0% in 2020, composed of a 4.3% decline in Q2 with improvement in the second half, once fiscal and monetary stimulus efforts take hold. Given the likely near-term pause in the US economy, we forecast homebuilders' revenue will decline by 10% or more in 2020. We also expect industry gross margins will weaken to 19%. These figures compare to a 3% growth in aggregate revenue and a 20% average gross margin generated by US home-builders in 2019."[2] – Natalia Gluschuk, AVP-Analyst, Dean Diaz, Associate Managing Director, Lana Kulikova, Associate Analyst, and Griselda Bisono, VP-Senior Analyst, Moody's Investors Service

This month's commentary contains applicable housing data, with information regarding COVID19. Section I contains updated housing forecasts, data, and commentary. Section II includes regional Federal Reserve analysis, private firm indicators, and private economic analysis. The effects of Covid 19 and information changes rapidly; one should access discrete websites periodically for up-to-date-news.

Sources: [1] www.frbatlanta.org/cqer/research/gdpnow.aspx; 4/9/20;
[2] https://cdn.forconstructionpros.com/files/base/acbm/fcp/document/2020/03/Outlook___Homebuilding_US___27Mar20.5e7e1d86e2a94.pdf; 3/27/20

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February 2020
Housing Scorecard

	M/M	Y/Y
Housing Starts	▼ 1.5%	▲ 39.2%
Single-Family (SF) Starts	▲ 6.7%	▲ 35.4%
Multi-Family (MF) Starts*	▼ 14.9%	▲ 47.6%
Housing Permits	▼ 5.5%	▲ 13.8%
SF Permits	▲ 1.7%	▲ 23.3%
MF Permits*	▼ 18.3%	▼ 2.7%
Housing Under Construction	▲ 1.4%	▲ 6.3%
SF Under Construction	▲ 0.6%	▼ 0.4%
Housing Completions	▼ 0.2%	▼ 1.2%
SF Completions	▲ 14.1%	▲ 22.4%
New SF House Sales	▼ 4.4%	▲ 14.3%
Private Residential Construction Spending	▼ 0.6%	▲ 11.3%
SF Construction Spending	▲ 3.9%	▲ 16.1%
Existing House Sales[1]	▲ 6.5%	▲ 7.2%

* All multi-family (2 to 4 + ≥ 5-units)

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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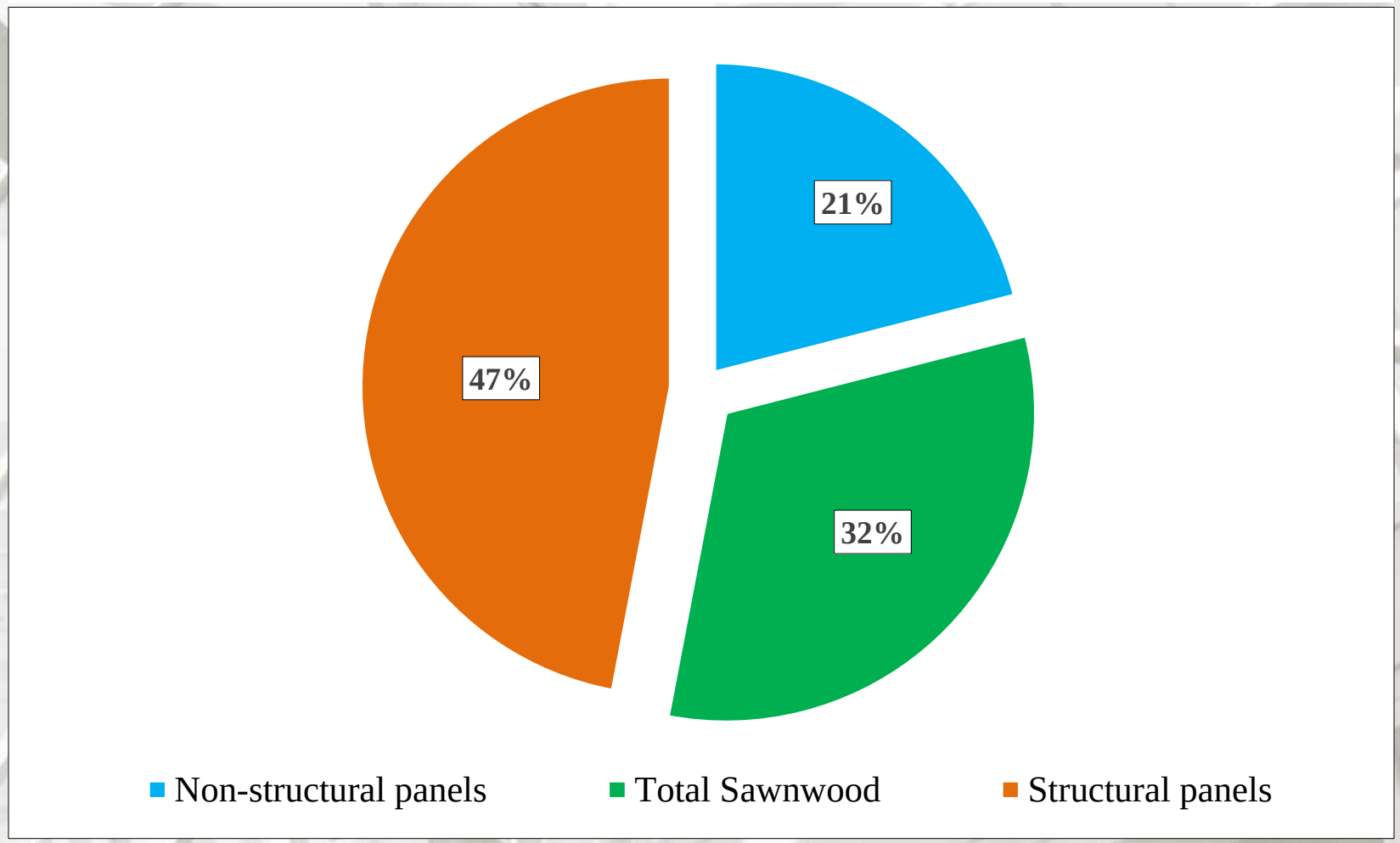
New Construction's Percentage of Wood Products Consumption



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

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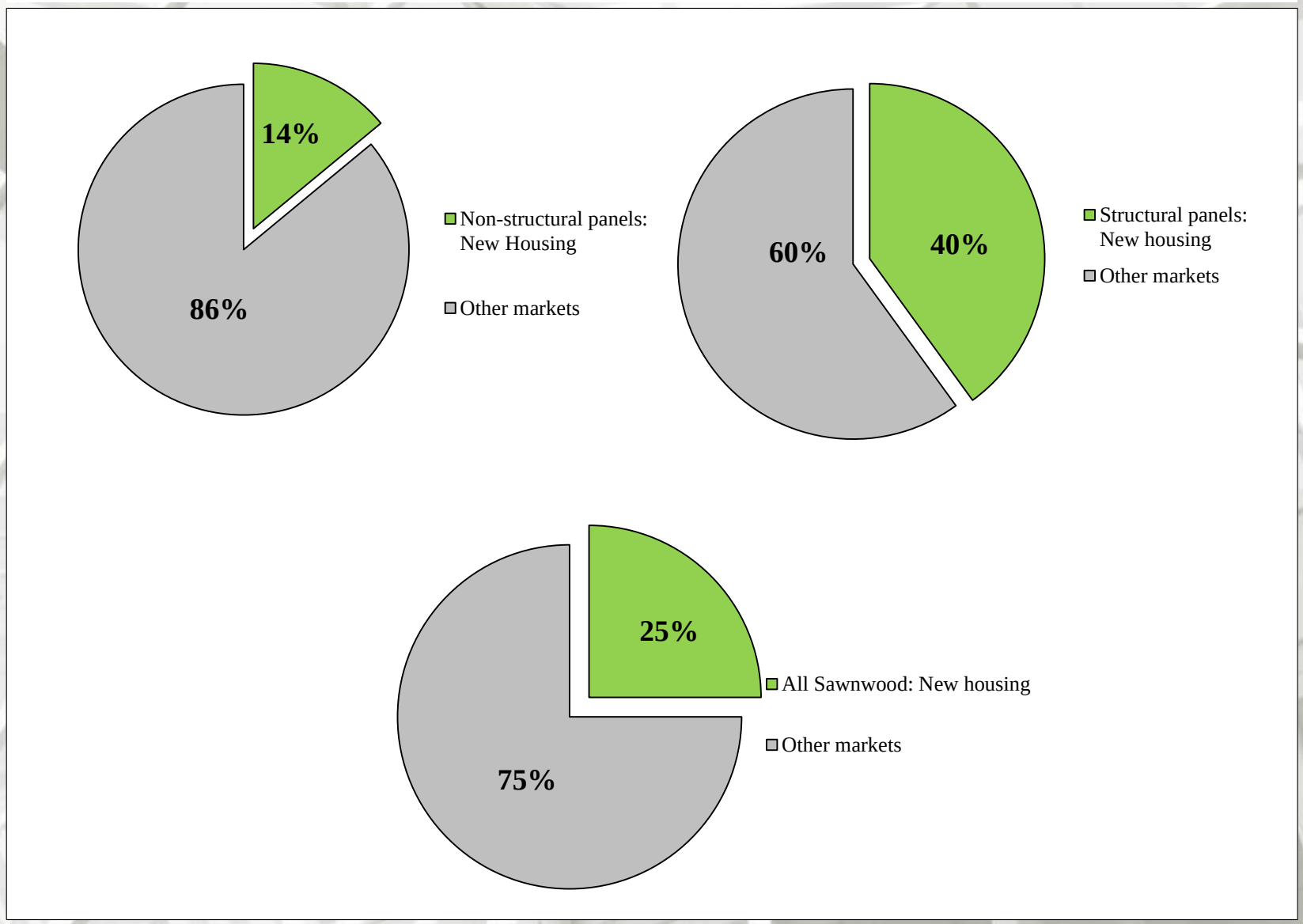
New SF Construction Percentage of Wood Products Consumption



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

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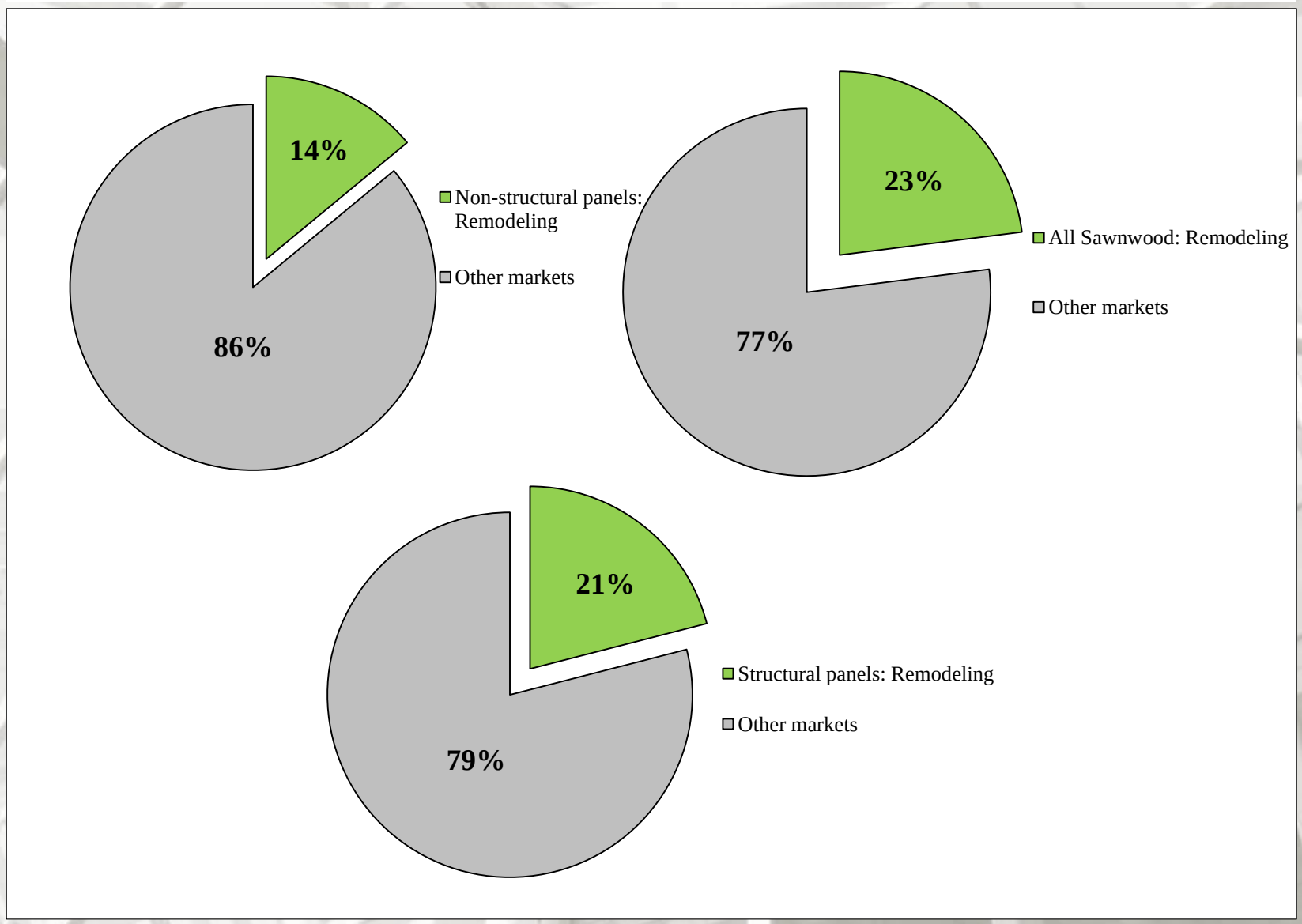
Repair and Remodeling's Percentage of Wood Products Consumption



Source: USDA 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
February	1,599,000	1,072,000	19,000	508,000
January	1,624,000	1,005,000	7,000	612,000
2019	1,149,000	792,000	5,000	352,000
M/M change	-1.5%	6.7%	171.4%	-17.0%
Y/Y change	39.2%	35.4%	280.0%	44.3%

* 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; 3/18/20

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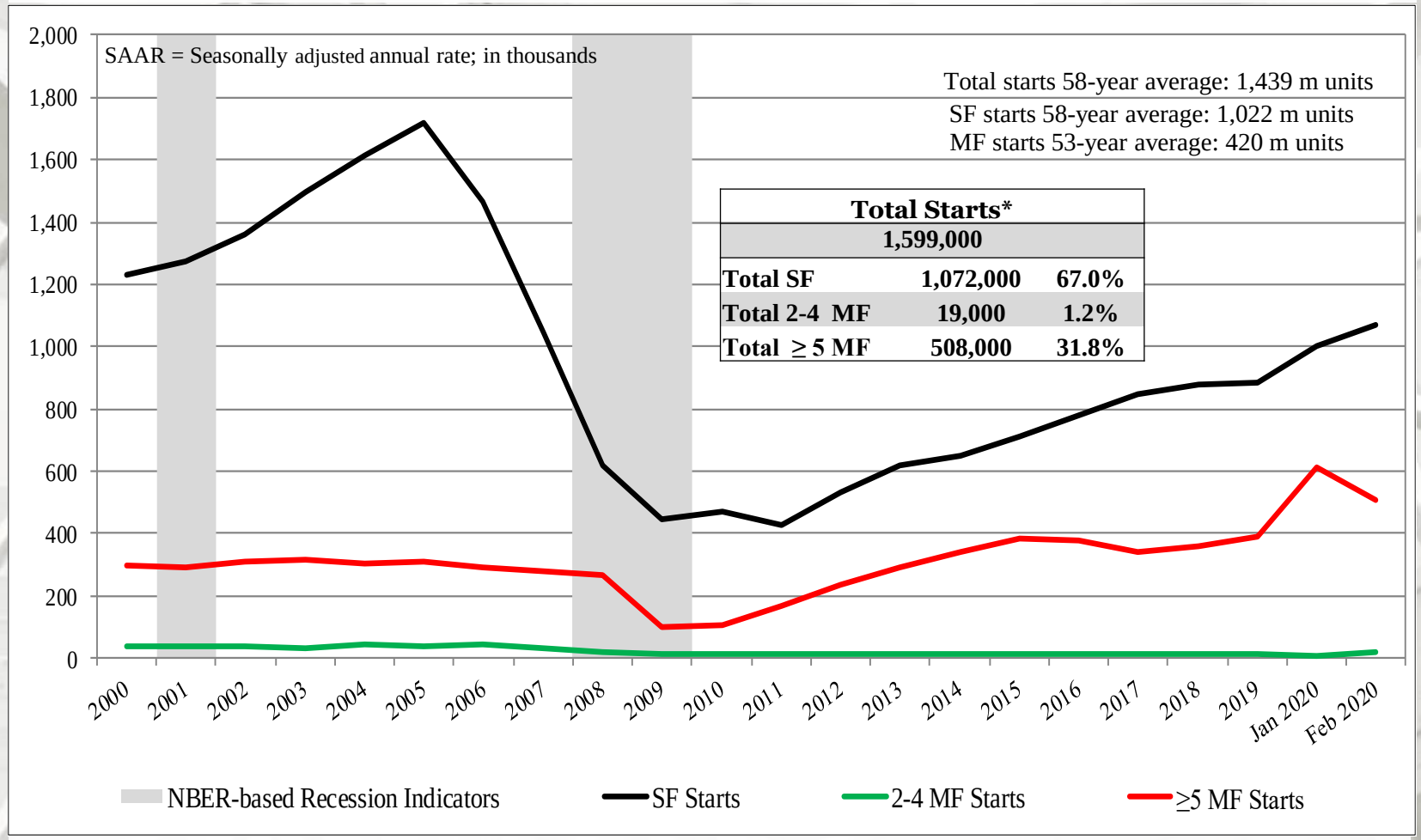
Total Housing Starts



* Percentage of total starts.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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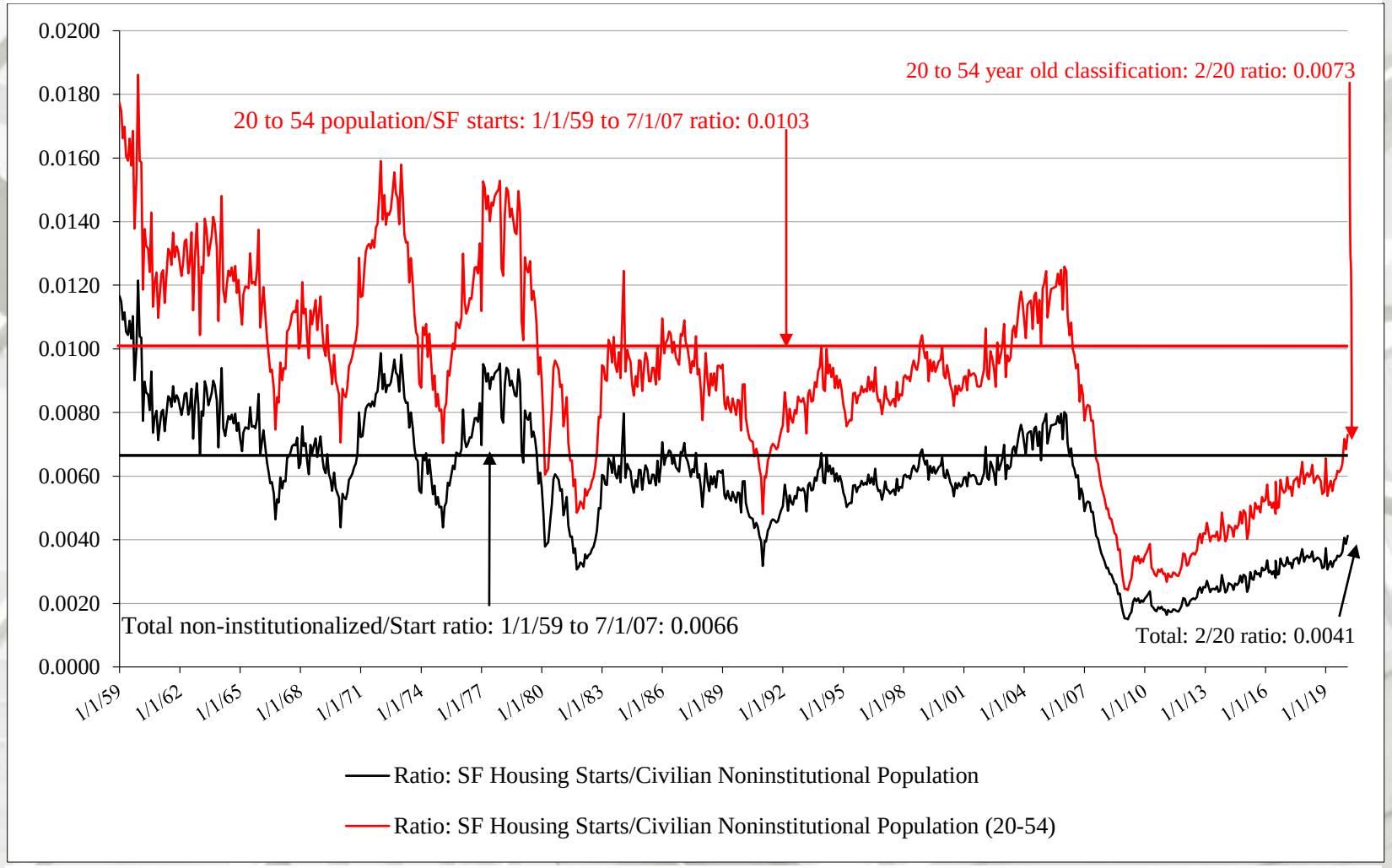
New SF Starts



New SF starts adjusted for the US population

From January 1959 to February 2007, the long-term ratio of new SF starts to the total US non-institutionalized population was 0.0066; in February 2020 it was 0.0041 – an increase from January (0.0039). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in February 2020 was 0.0073 – also an increase from January (0.0068). 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; 3/18/20

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Total Housing Starts: Six-Month Average

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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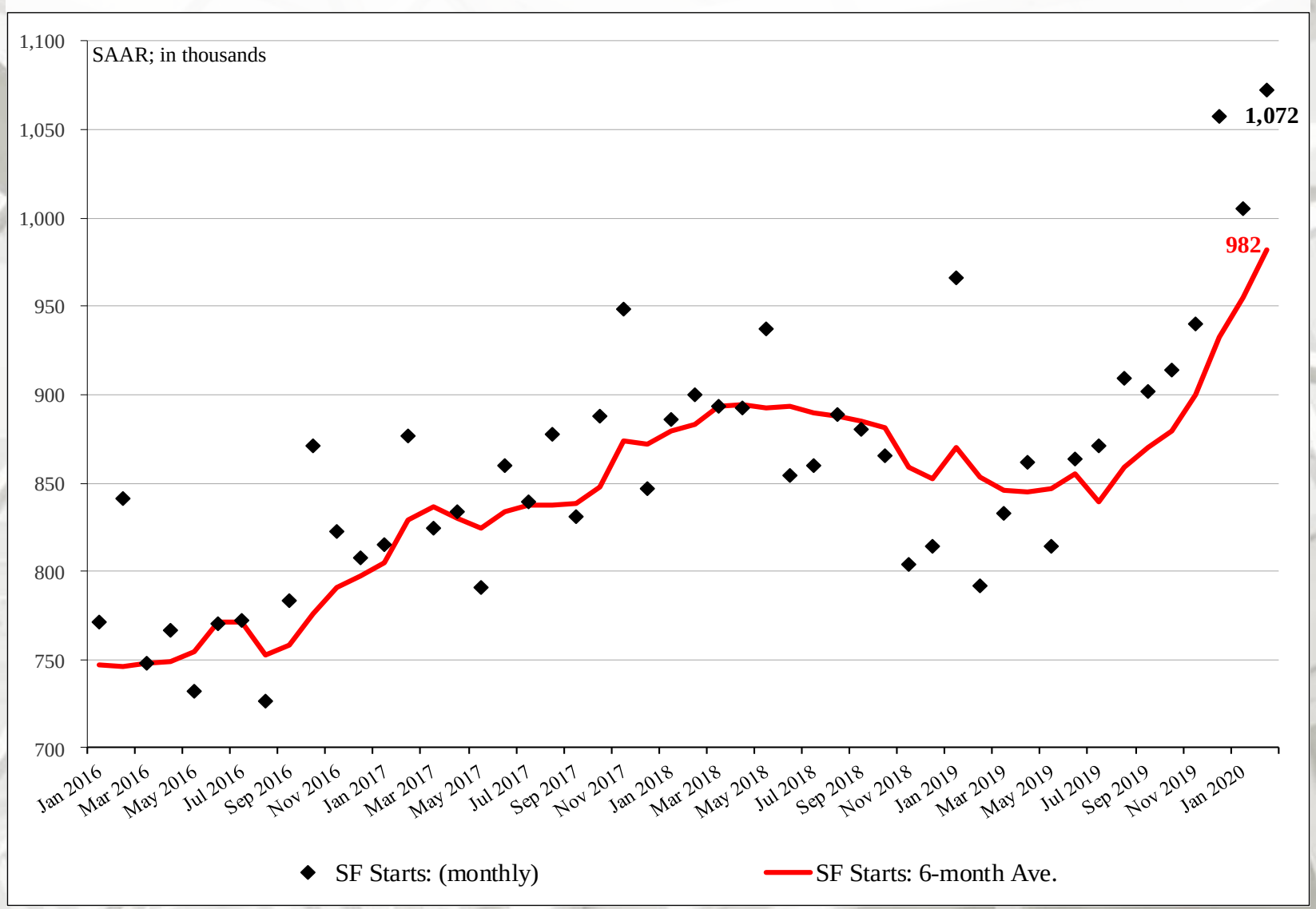
SF Housing Starts: Six-Month Average



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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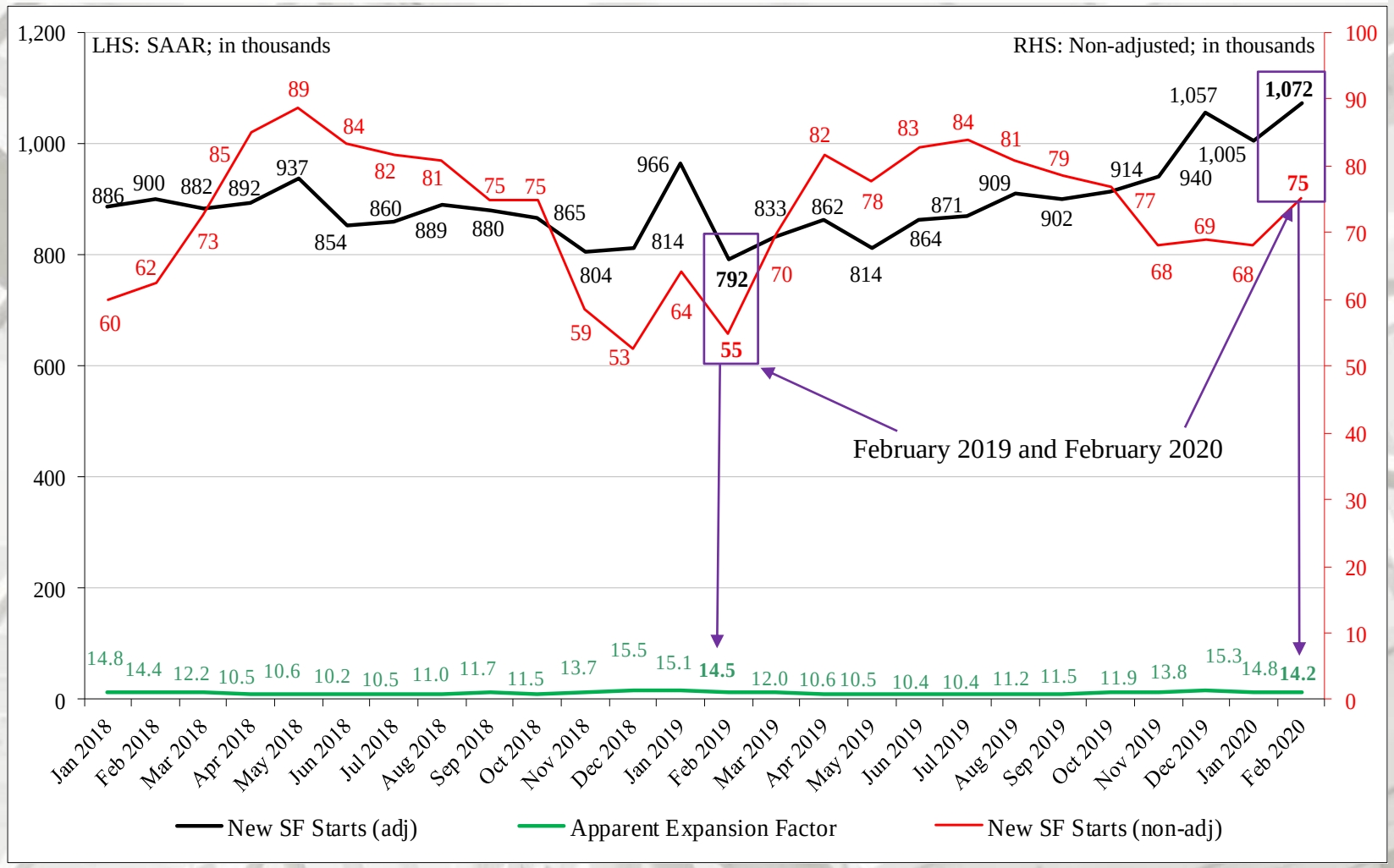
Nominal & SAAR SF Starts



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; 3/18/20

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New Housing Starts by Region

	NE Total	NE SF	NE MF**
February	126,000	68,000	58,000
January	215,000	66,000	149,000
2019	89,000	44,000	45,000
M/M change	-41.4%	3.0%	-61.1%
Y/Y change	41.6%	54.5%	28.9%
	MW Total	**MW SF**	**MW MF**
February	210,000	151,000	59,000
January	180,000	144,000	36,000
2019	159,000	111,000	48,000
M/M change	16.7%	4.9%	63.9%
Y/Y change	32.1%	36.0%	22.9%

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; 3/18/20

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New Housing Starts by Region

	S Total	S SF	S MF**
February	889,000	616,000	273,000
January	772,000	520,000	252,000
2019	650,000	465,000	185,000
M/M change	15.2%	18.5%	8.3%
Y/Y change	36.8%	32.5%	47.6%
	W Total	**W SF**	**W MF**
February	374,000	237,000	137,000
January	457,000	275,000	182,000
2019	251,000	172,000	79,000
M/M change	-18.2%	-13.8%	-24.7%
Y/Y change	49.0%	37.8%	73.4%

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; 3/18/20

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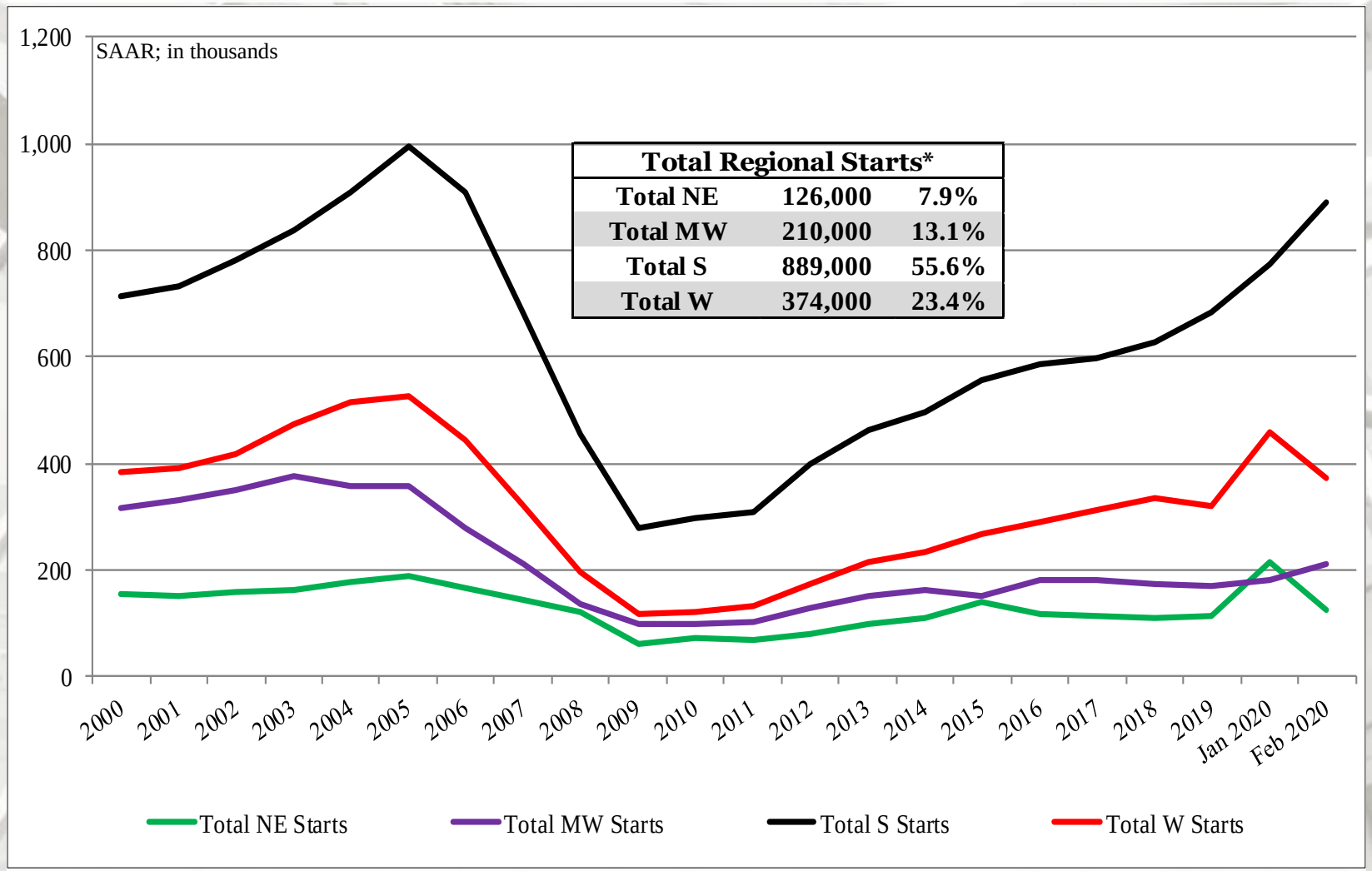
New Housing Starts by Region



Total Regional Starts*		
Total NE	126,000	7.9%
Total MW	210,000	13.1%
Total S	889,000	55.6%
Total W	374,000	23.4%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly, this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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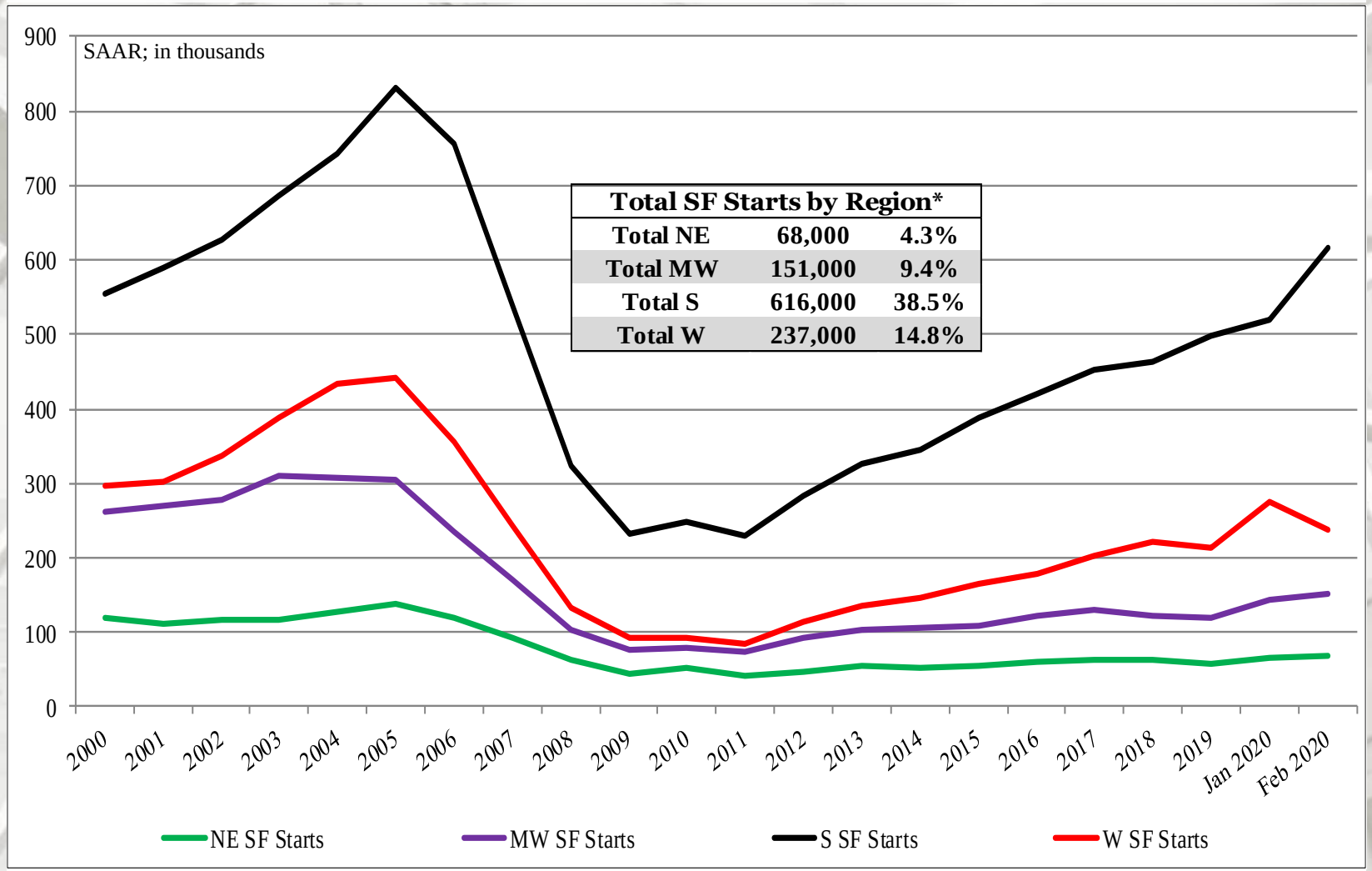
Total SF Housing Starts by Region



Total SF Starts by Region*		
Total NE	68,000	4.3%
Total MW	151,000	9.4%
Total S	616,000	38.5%
Total W	237,000	14.8%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly, this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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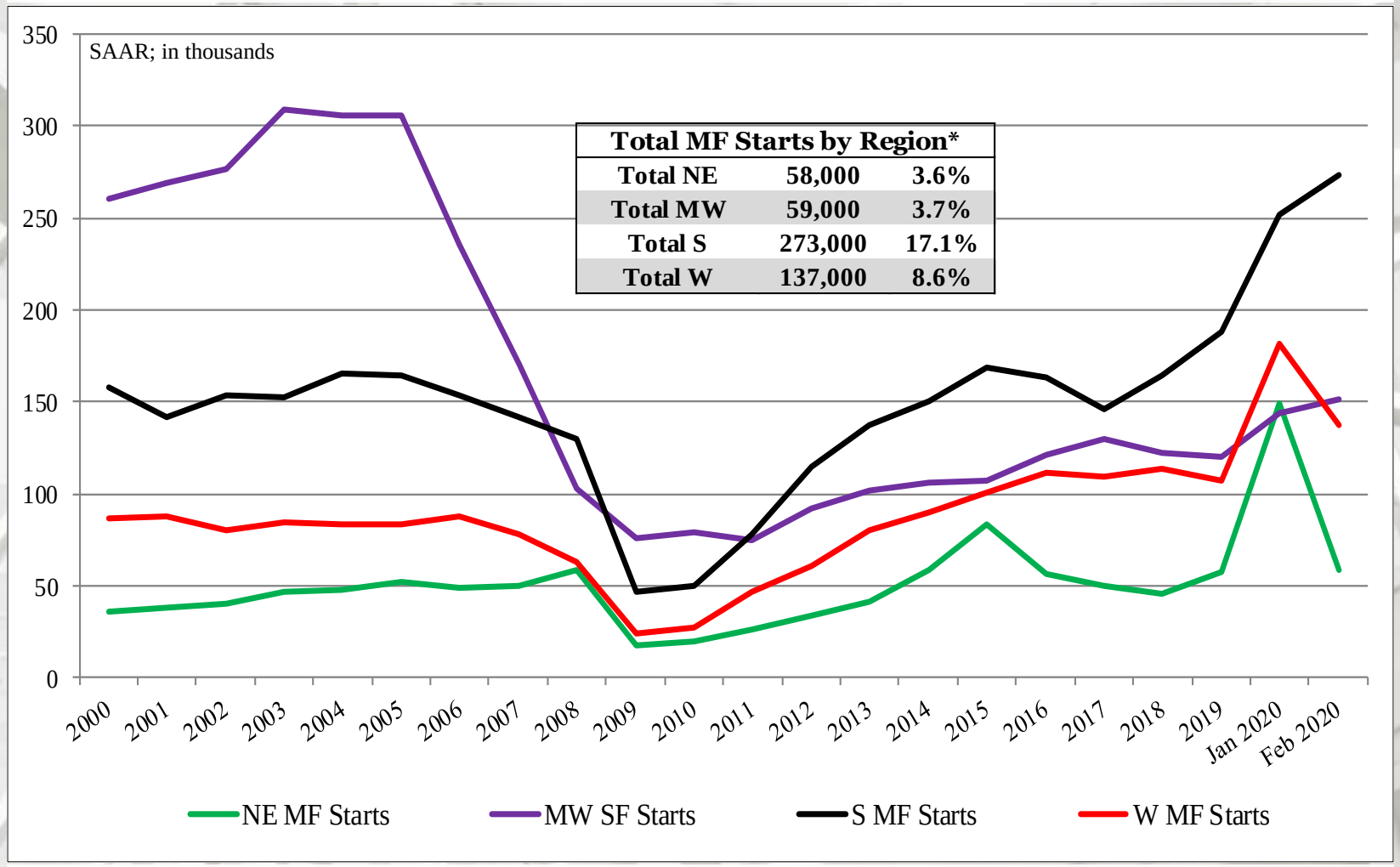
MF Housing Starts by Region



Total MF Starts by Region*		
Total NE	58,000	3.6%
Total MW	59,000	3.7%
Total S	273,000	17.1%
Total W	137,000	8.6%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly, this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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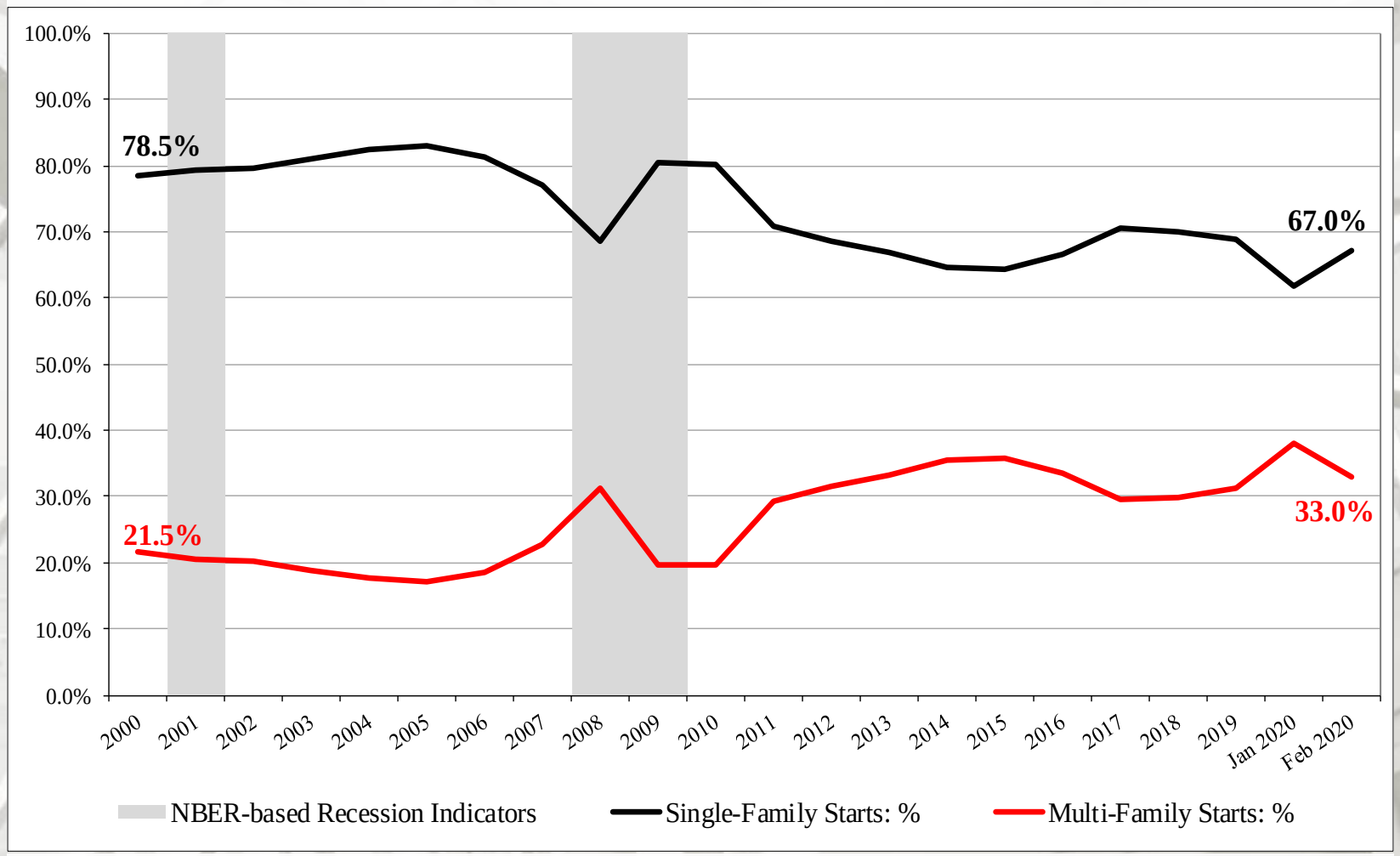
SF vs. MF Housing Starts (%)



NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
February	1,464,000	1,004,000	45,000	415,000
January	1,550,000	987,000	43,000	520,000
2019	1,287,000	814,000	36,000	437,000
M/M change	-5.5%	1.7%	4.7%	-20.2%
Y/Y change	13.8%	23.3%	25.0%	-5.0%

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

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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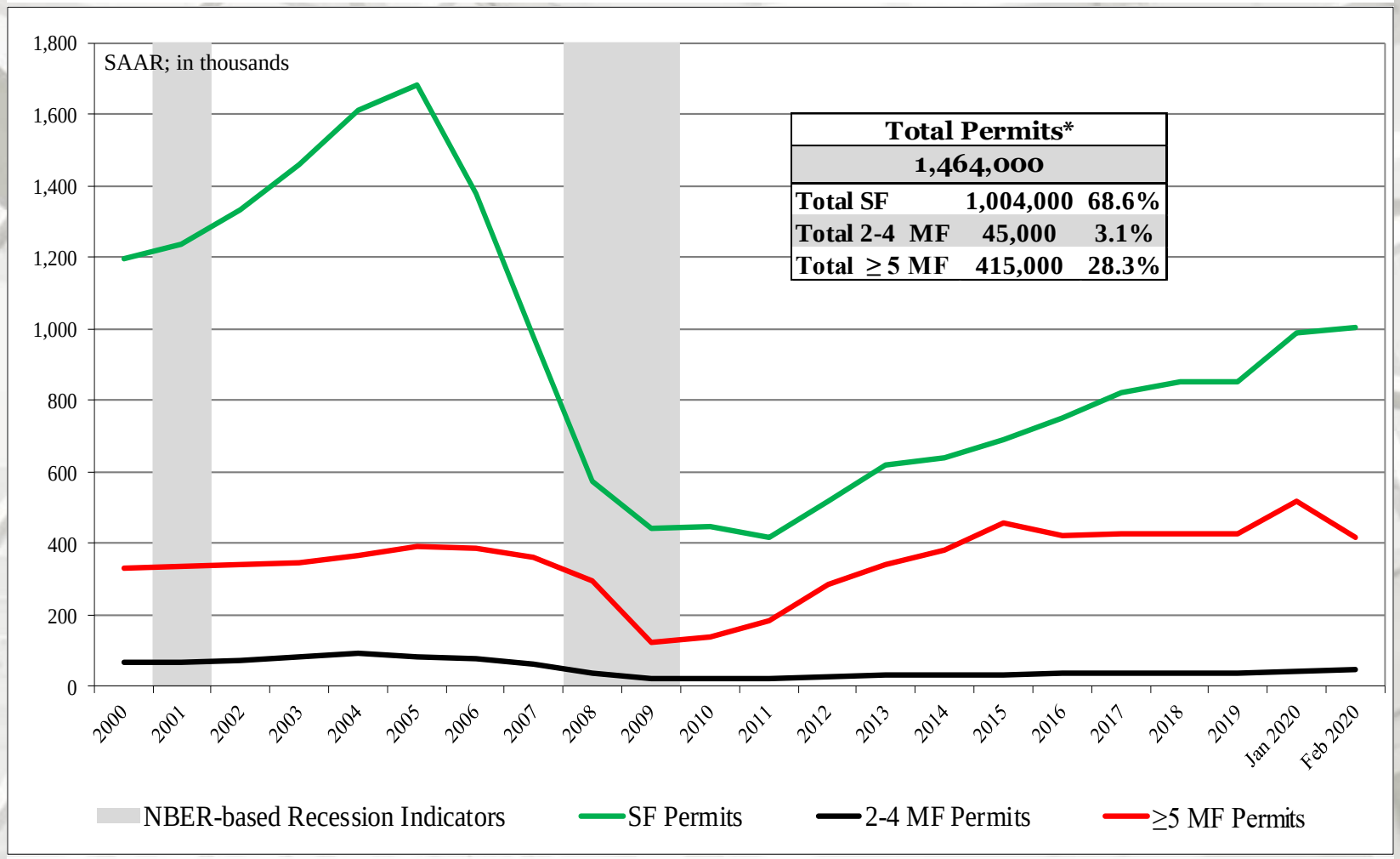
Total New Housing Permits



* Percentage of total permits.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 4/3/20; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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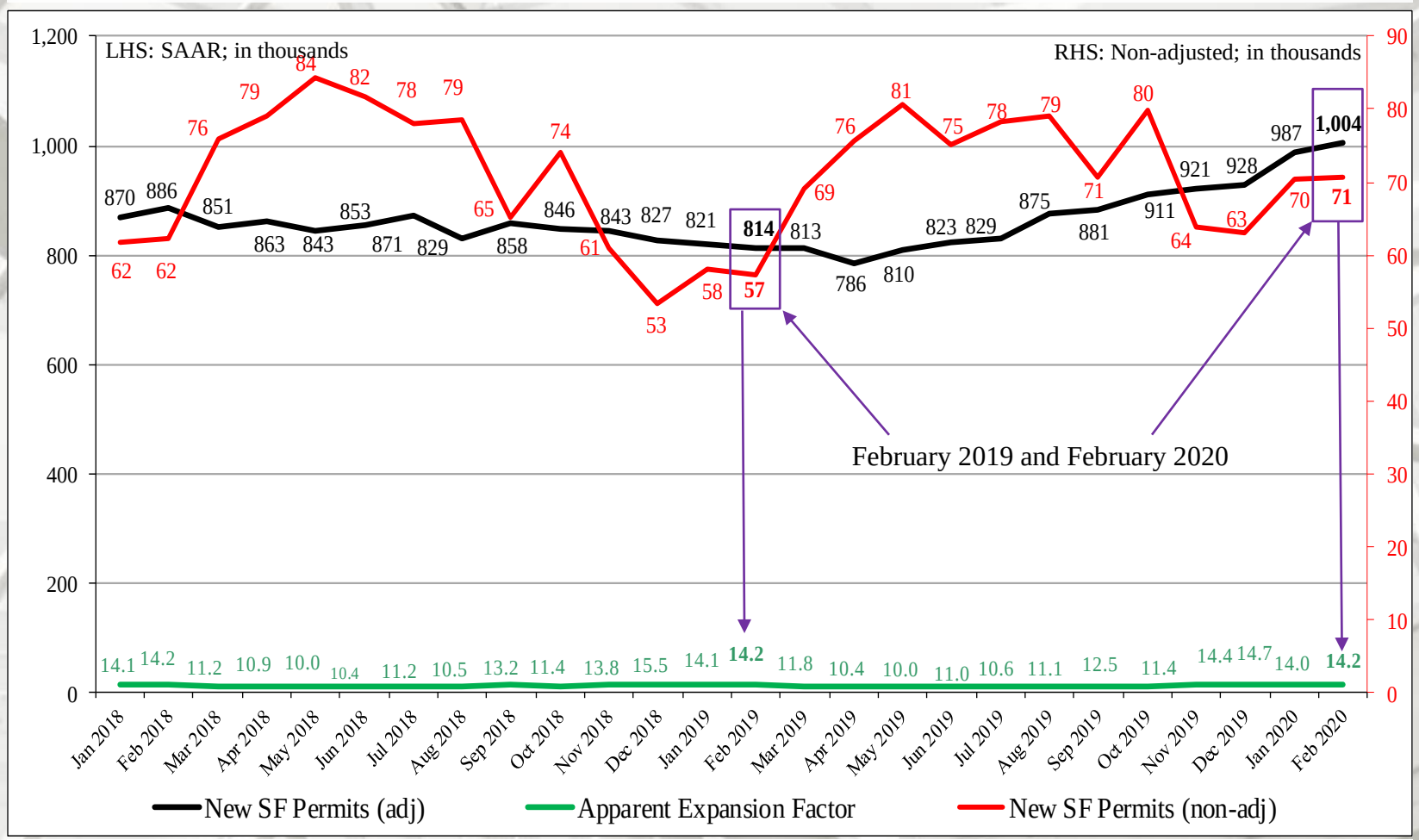
Nominal & SAAR SF Permits



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; 3/18/20

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New Housing Permits by Region

	NE Total*	NE SF	NE MF**
February	137,000	72,000	65,000
January	183,000	68,000	115,000
2019	135,000	62,000	73,000
M/M change	-25.1%	5.9%	-43.5%
Y/Y change	1.5%	16.1%	-11.0%
	MW Total*	**MW SF**	**MW MF****
February	202,000	135,000	67,000
January	220,000	136,000	84,000
2019	192,000	106,000	86,000
M/M change	-8.2%	-0.7%	-20.2%
Y/Y change	5.2%	27.4%	-22.1%

NE = Northeast; ME = Midwest
* All data are SAAR
** US DOC does not report multifamily permits directly, this is an estimation (Total permits – SF permits).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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New Housing Permits by Region

	S Total*	S SF	S MF**
February	741,000	540,000	201,000
January	753,000	543,000	210,000
2019	674,000	454,000	220,000
M/M change	-1.6%	-0.6%	-4.3%
Y/Y change	9.9%	18.9%	-8.6%

	W Total*	W SF	W MF**
February	384,000	257,000	127,000
January	394,000	240,000	154,000
2019	286,000	192,000	94,000
M/M change	-2.5%	7.1%	-17.5%
Y/Y change	34.3%	33.9%	35.1%

S = South; W = West
* All data are SAAR
** US DOC does not report multifamily permits directly, this is an estimation (Total permits – SF permits).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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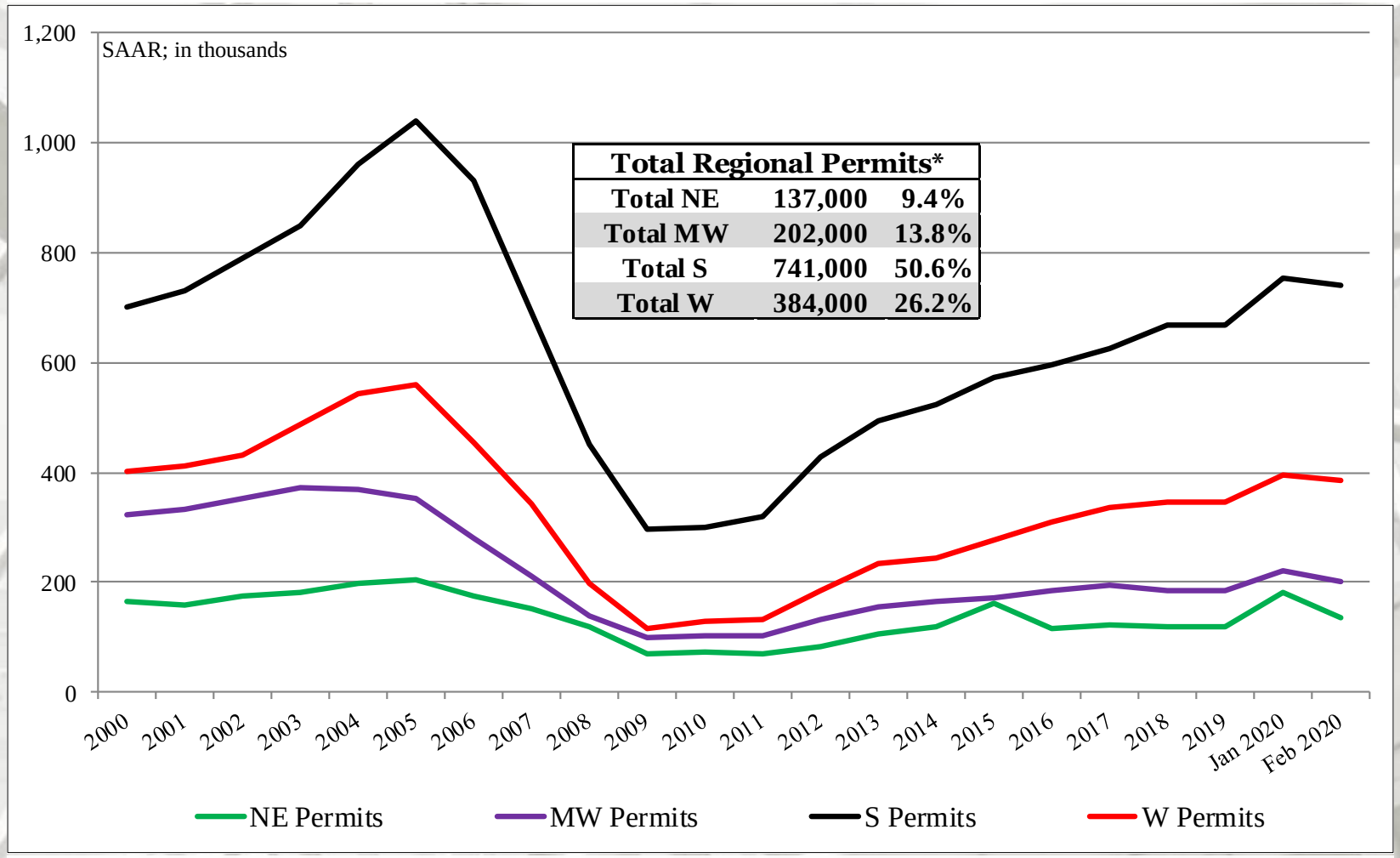
Total Housing Permits by Region



Total Regional Permits*		
Total NE	137,000	9.4%
Total MW	202,000	13.8%
Total S	741,000	50.6%
Total W	384,000	26.2%

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

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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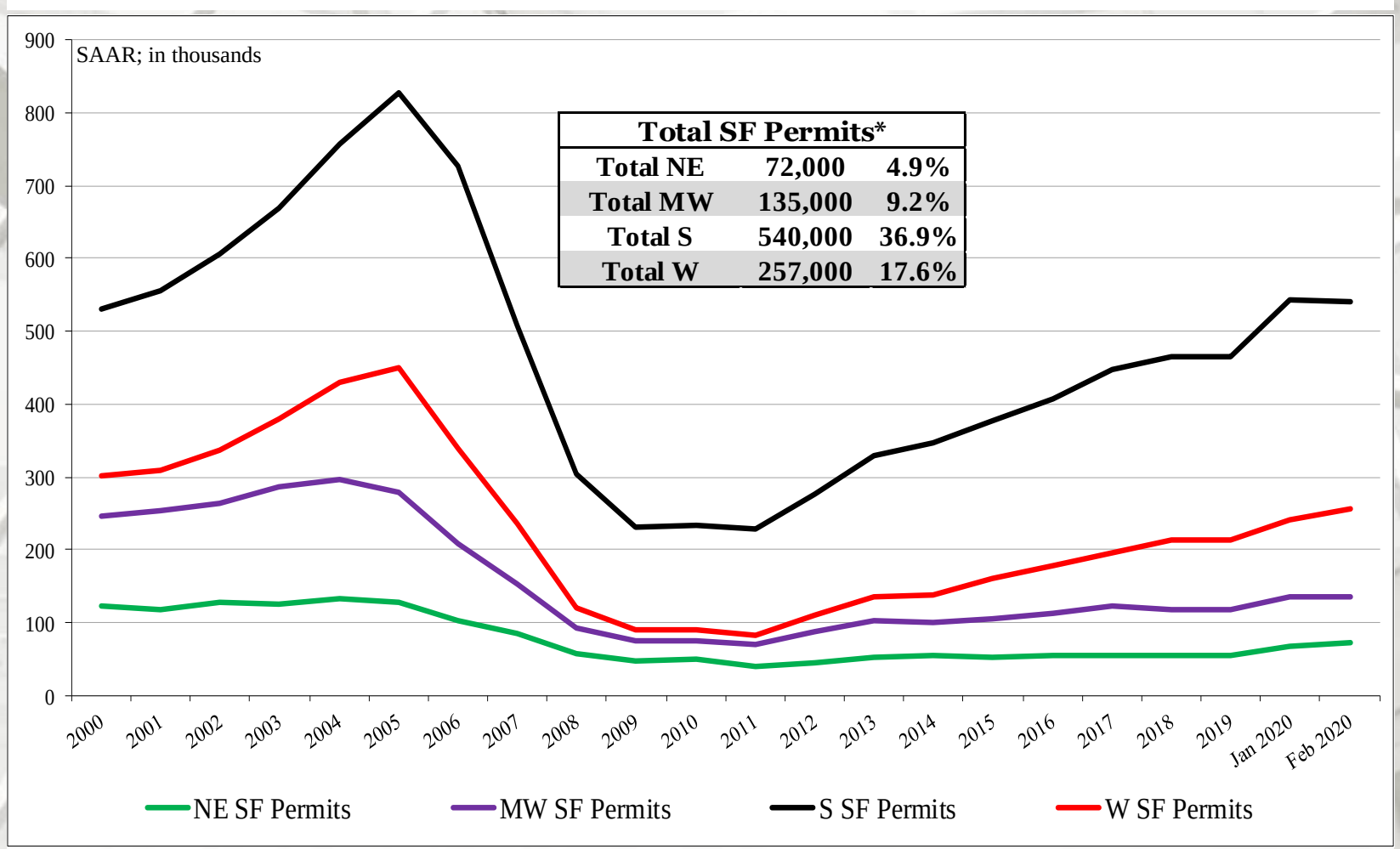
SF Housing Permits by Region



Total SF Permits*		
Total NE	72,000	4.9%
Total MW	135,000	9.2%
Total S	540,000	36.9%
Total W	257,000	17.6%

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

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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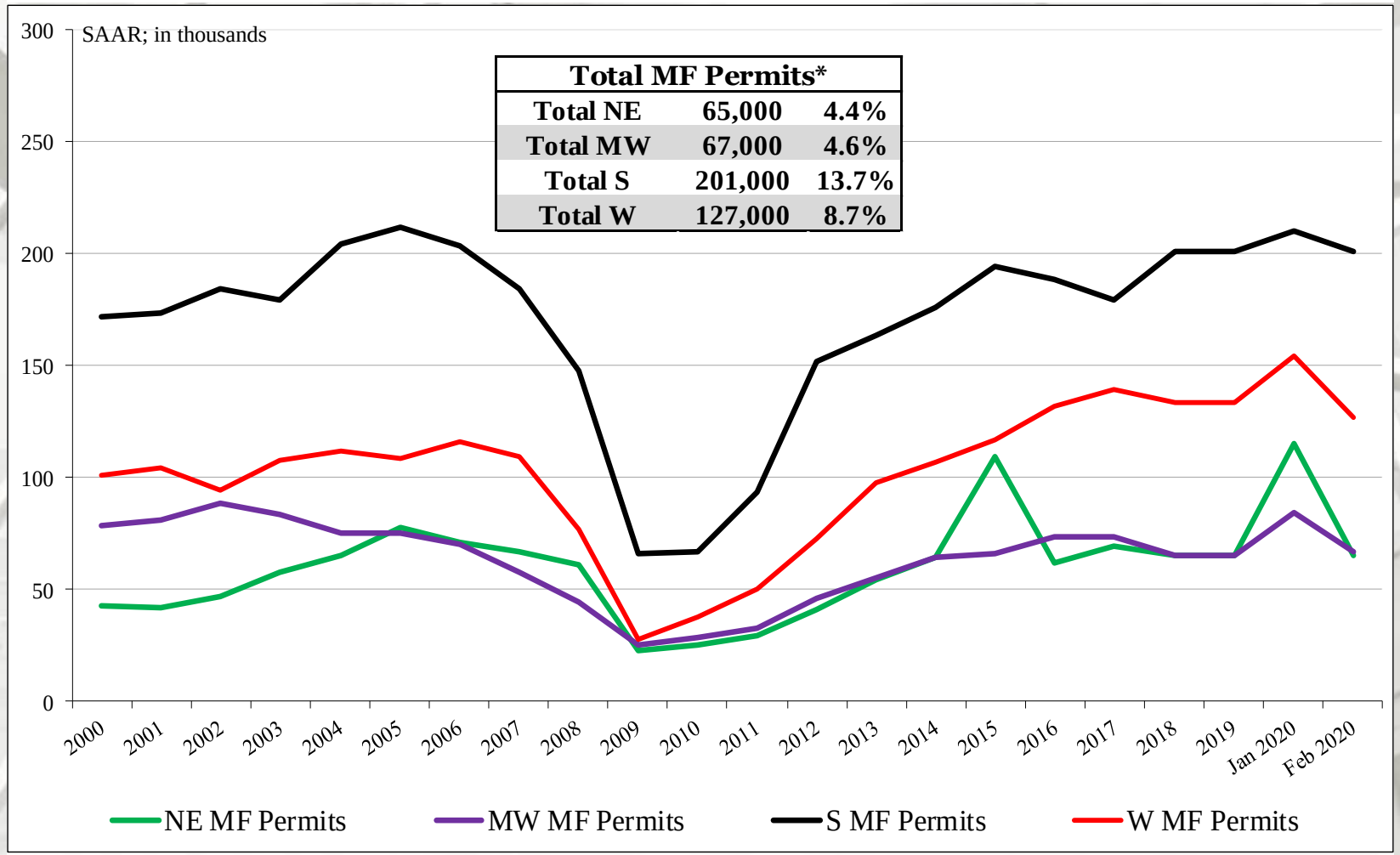
MF Housing Permits by Region



Total MF Permits*		
Total NE	65,000	4.4%
Total MW	67,000	4.6%
Total S	201,000	13.7%
Total W	127,000	8.7%

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

* Percentage of total permits.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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New Housing Under Construction (HUC)

	Total Under Construction*	SF Under Construction	MF 2-4 unit** Under Construction	MF ≥ 5 unit Under Construction
February	1,222,000	539,000	12,000	671,000
January	1,205,000	536,000	12,000	657,000
2019	1,150,000	541,000	12,000	597,000
M/M change	1.4	0.6	0.0	2.1
Y/Y change	6.3	-0.4	0.0	12.4

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; 3/18/20

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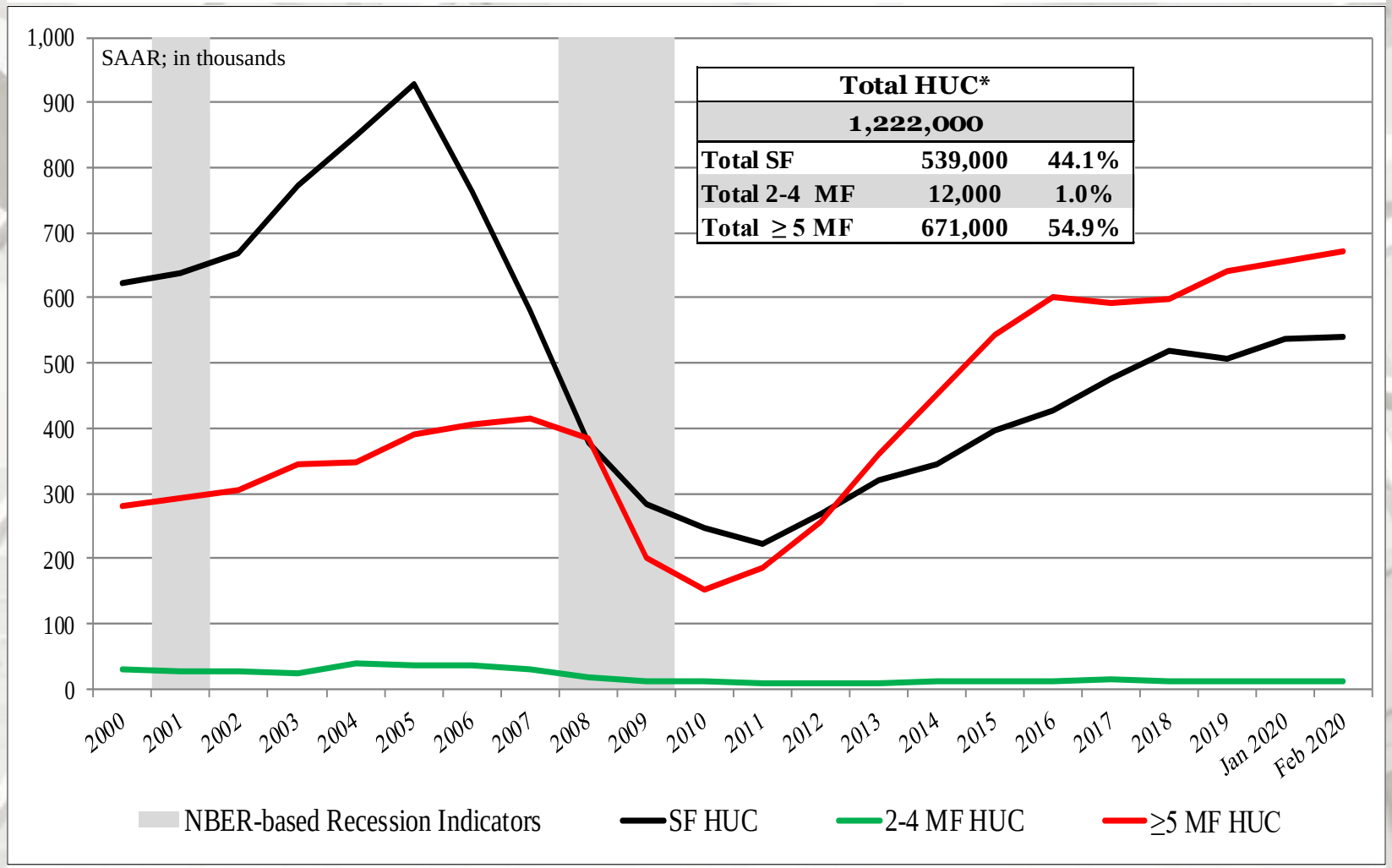
Total Housing Under Construction



Total HUC*		
1,222,000		
Total SF	539,000	44.1%
Total 2-4 MF	12,000	1.0%
Total ≥ 5 MF	671,000	54.9%

US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
February	179,000	54,000	125,000
January	178,000	55,000	123,000
2019	190,000	65,000	125,000
M/M change	0.6	-1.8	1.6
Y/Y change	-5.8	-16.9	0.0
	MW Total	**MW SF**	**MW MF**
February	155,000	79,000	76,000
January	156,000	80,000	76,000
2019	154,000	81,000	73,000
M/M change	-0.6	-1.3	0.0
Y/Y change	0.6	-2.5	4.1

All data are SAAR; NE = Northeast and MW = Midwest.
** US DOC does not report multifamily units under construction directly, this is an estimation (Total under construction – SF under construction).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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New Housing Under Construction by Region

	S Total	S SF	S MF**
February	540,000	262,000	278,000
January	525,000	256,000	269,000
2019	483,000	254,000	229,000
M/M change	2.9	2.3	3.3
Y/Y change	11.8	3.1	21.4
	W Total	**W SF**	**W MF**
February	348,000	144,000	204,000
January	346,000	145,000	201,000
2019	323,000	141,000	182,000
M/M change	0.6	-0.7	1.5
Y/Y change	7.7	2.1	12.1

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; 3/18/20

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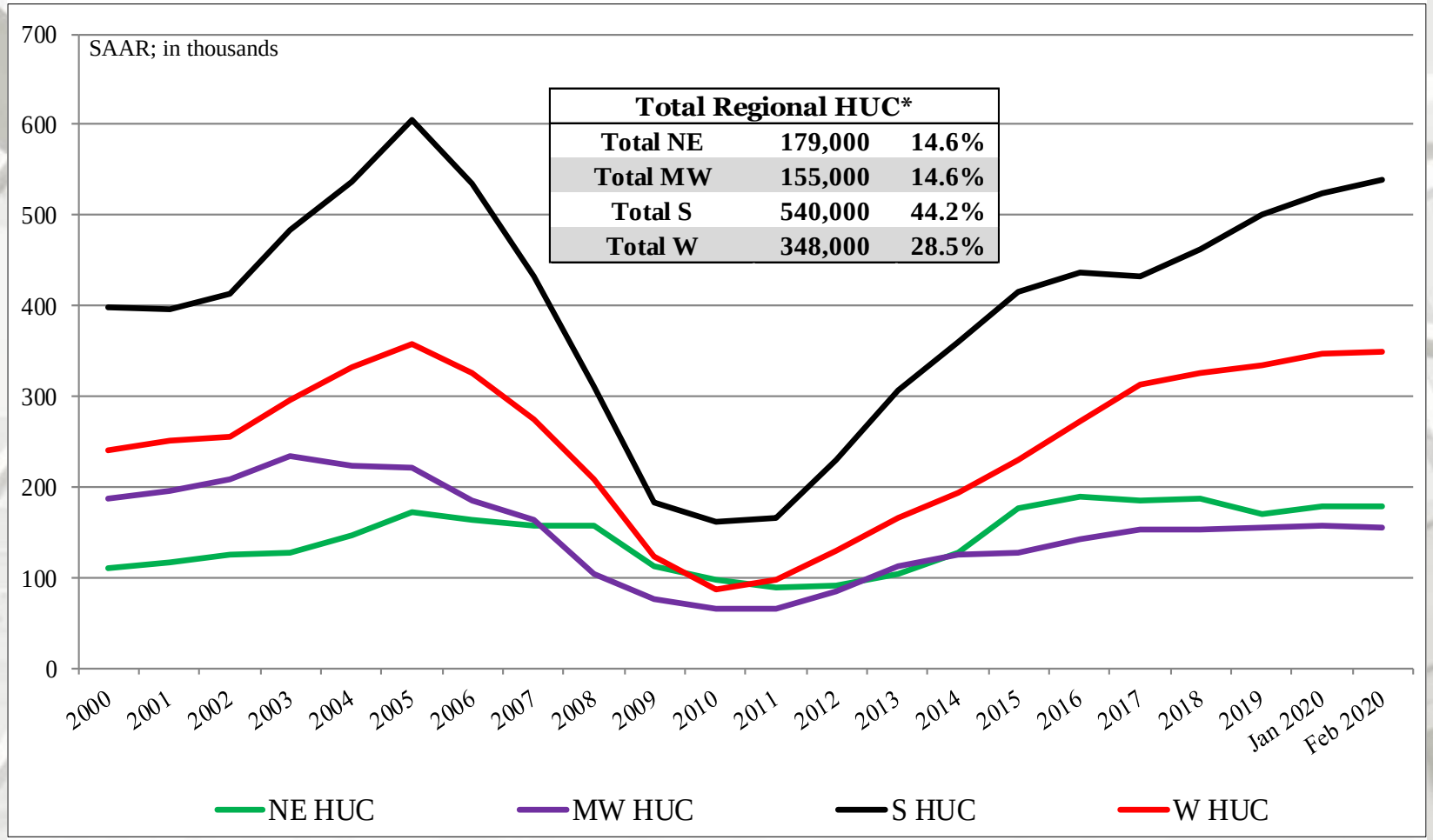
Total Housing Under Construction by Region



Total Regional HUC*		
Total NE	179,000	14.6%
Total MW	155,000	14.6%
Total S	540,000	44.2%
Total W	348,000	28.5%

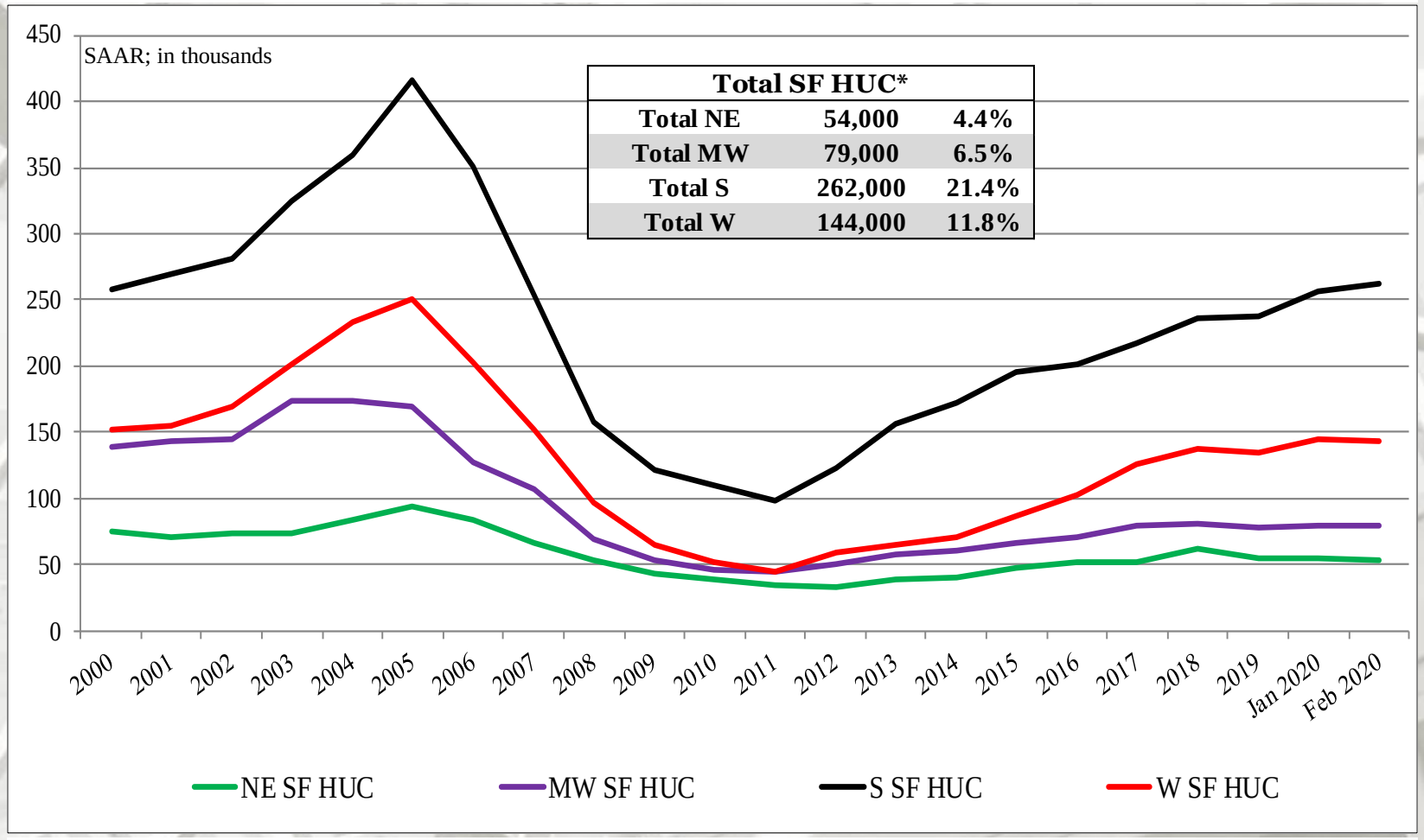
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

SF Housing Under Construction by Region



Total SF HUC*		
Total NE	54,000	4.4%
Total MW	79,000	6.5%
Total S	262,000	21.4%
Total W	144,000	11.8%

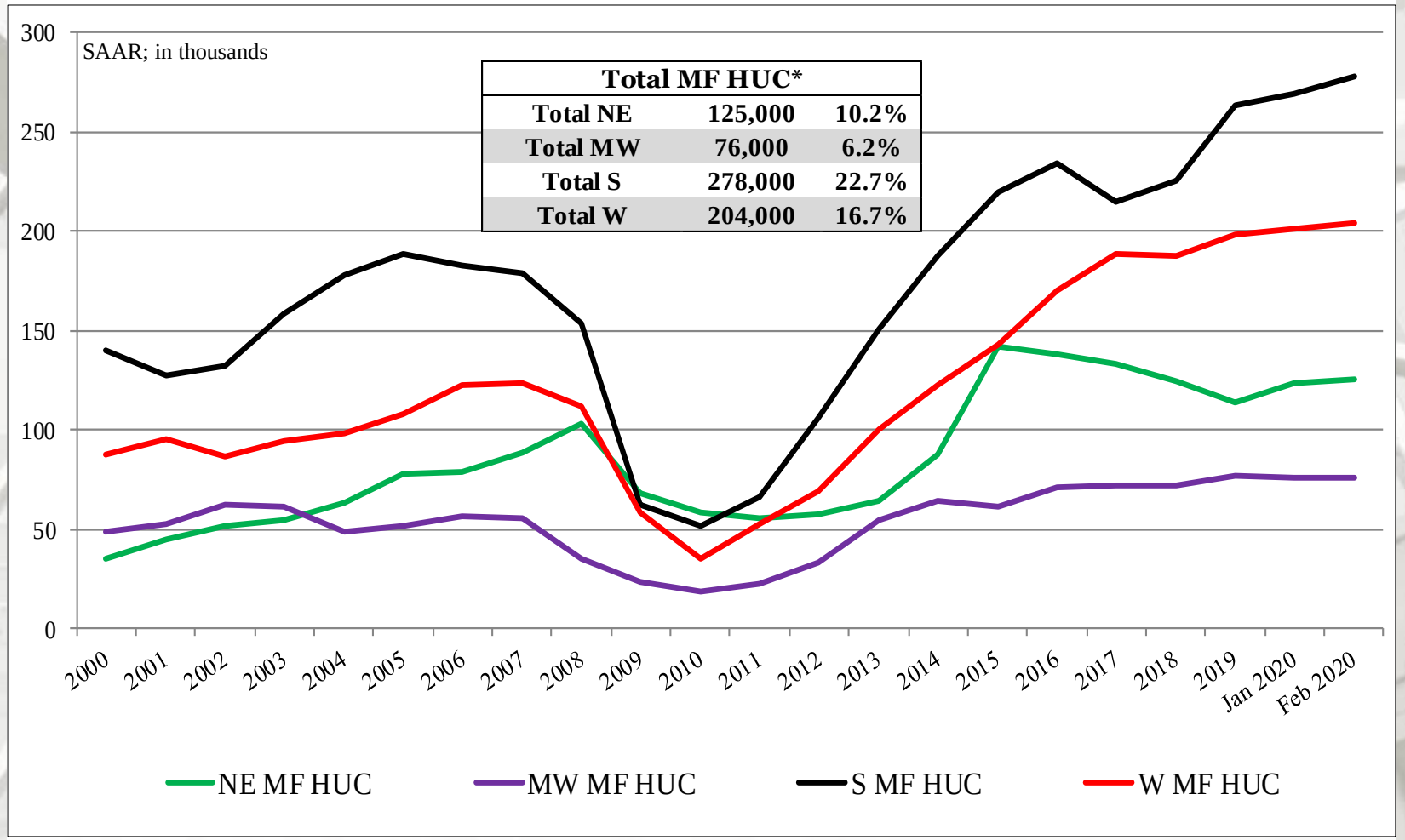
NE = Northeast, MW = Midwest, S = South, W = West.
US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

MF Housing Under Construction by Region



Total MF HUC*		
Total NE	125,000	10.2%
Total MW	76,000	6.2%
Total S	278,000	22.7%
Total W	204,000	16.7%

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

US DOC does not report 2 to 4 multi-family under construction directly, this is an estimation (Total under constructions – (SF + ≥ 5 MF under construction).

* Percentage of total housing under construction units.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit** Completions	MF ≥ 5 unit Completions
February	1,316,000	1,027,000	9,000	280,000
January	1,319,000	900,000	11,000	408,000
2019	1,332,000	839,000	17,000	476,000
M/M change	-0.2%	14.1%	-18.2%	-31.4%
Y/Y change	-1.2%	22.4%	-47.1%	-41.2%

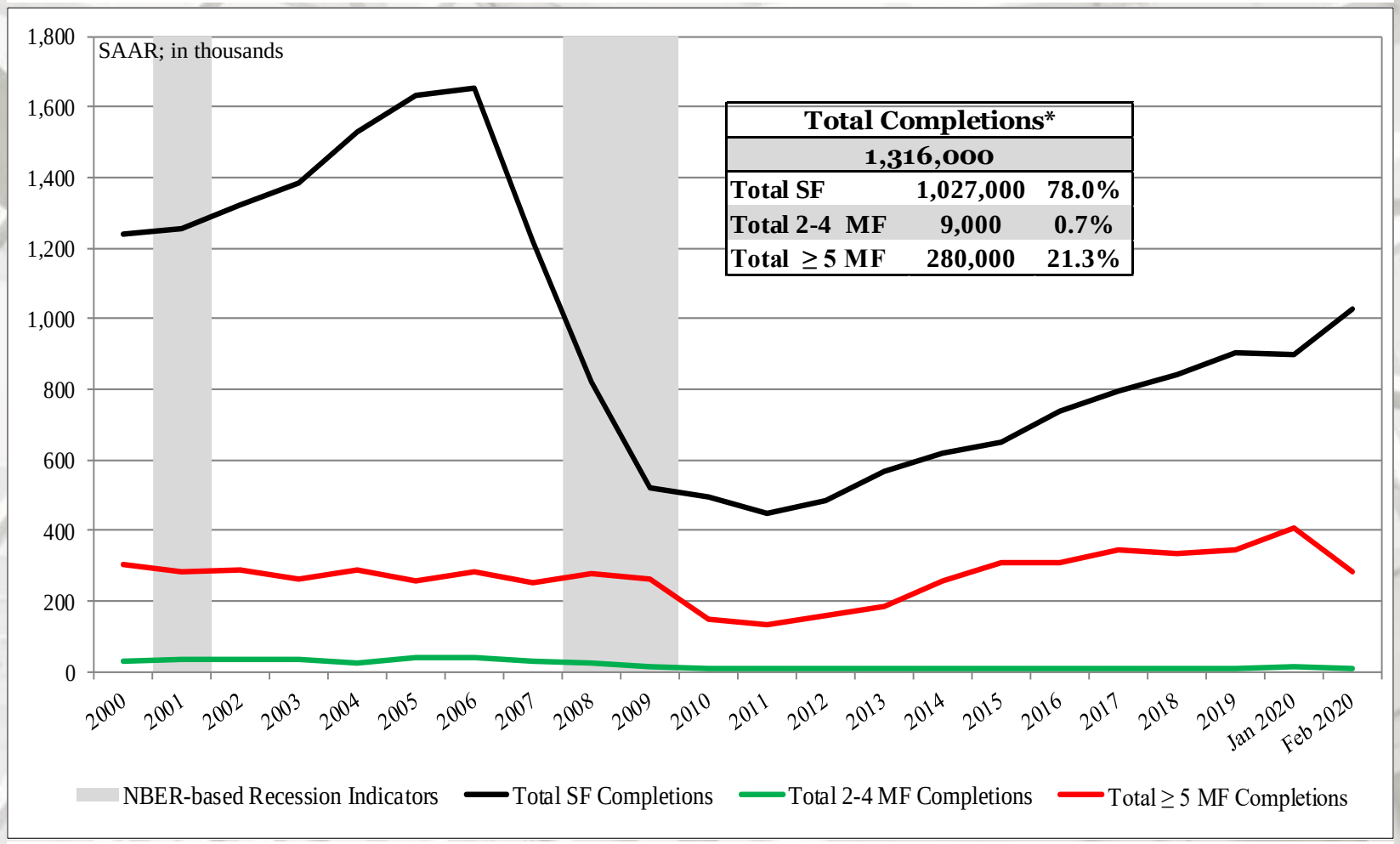
* All completion data are presented at a seasonally adjusted annual rate (SAAR).

** 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; 3/18/20

Return TOC

Total Housing Completions



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

* Percentage of total housing completions

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

New Housing Completions by Region

	NE Total	NE SF	NE MF**
February	101,000	74,000	27,000
January	107,000	81,000	26,000
2019	103,000	52,000	51,000
M/M change	-5.6%	-8.6%	3.8%
Y/Y change	-1.9%	42.3%	-47.1%
	MW Total	**MW SF**	**MW MF**
February	194,000	160,000	34,000
January	188,000	125,000	63,000
2019	202,000	132,000	70,000
M/M change	3.2%	28.0%	-46.0%
Y/Y change	-4.0%	21.2%	-51.4%

All data are SAAR; NE = Northeast and MW = Midwest.
** US DOC does not report multifamily units completions directly, this is an estimation (Total completions – SF completions).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

New Housing Completions by Region

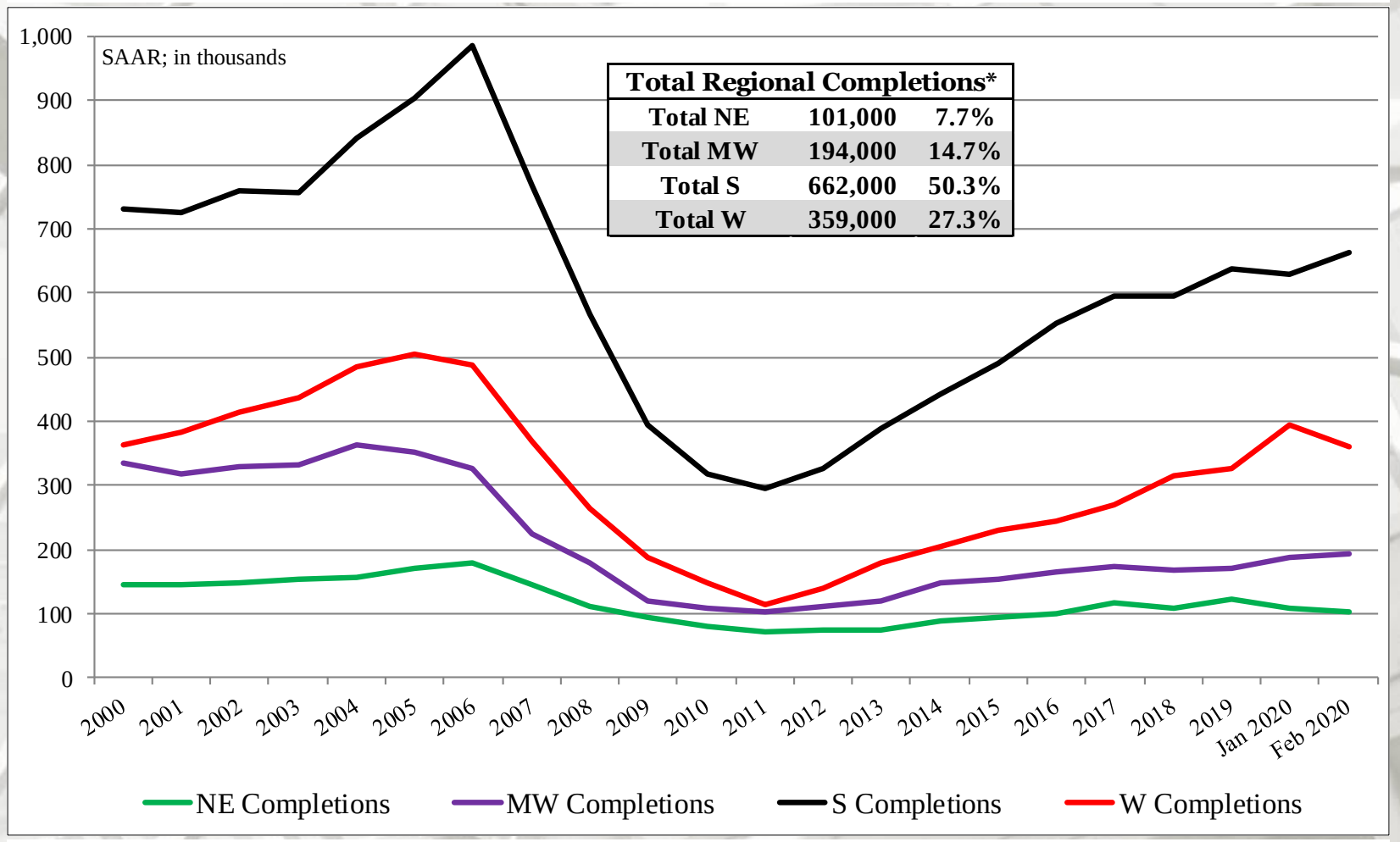
	S Total	S SF	S MF**
February	662,000	543,000	119,000
January	630,000	456,000	174,000
2019	675,000	453,000	222,000
M/M change	5.1%	19.1%	-31.6%
Y/Y change	-1.9%	19.9%	-46.4%
	W Total	**W SF**	**W MF**
February	359,000	250,000	109,000
January	394,000	238,000	156,000
2019	352,000	202,000	150,000
M/M change	-8.9%	5.0%	-30.1%
Y/Y change	2.0%	23.8%	-27.3%

All data are SAAR; S = South and W = West.
** US DOC does not report multifamily units completions directly, this is an estimation (Total completions – SF completions).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

Total Housing Completions by Region



Total Regional Completions*		
Total NE	101,000	7.7%
Total MW	194,000	14.7%
Total S	662,000	50.3%
Total W	359,000	27.3%

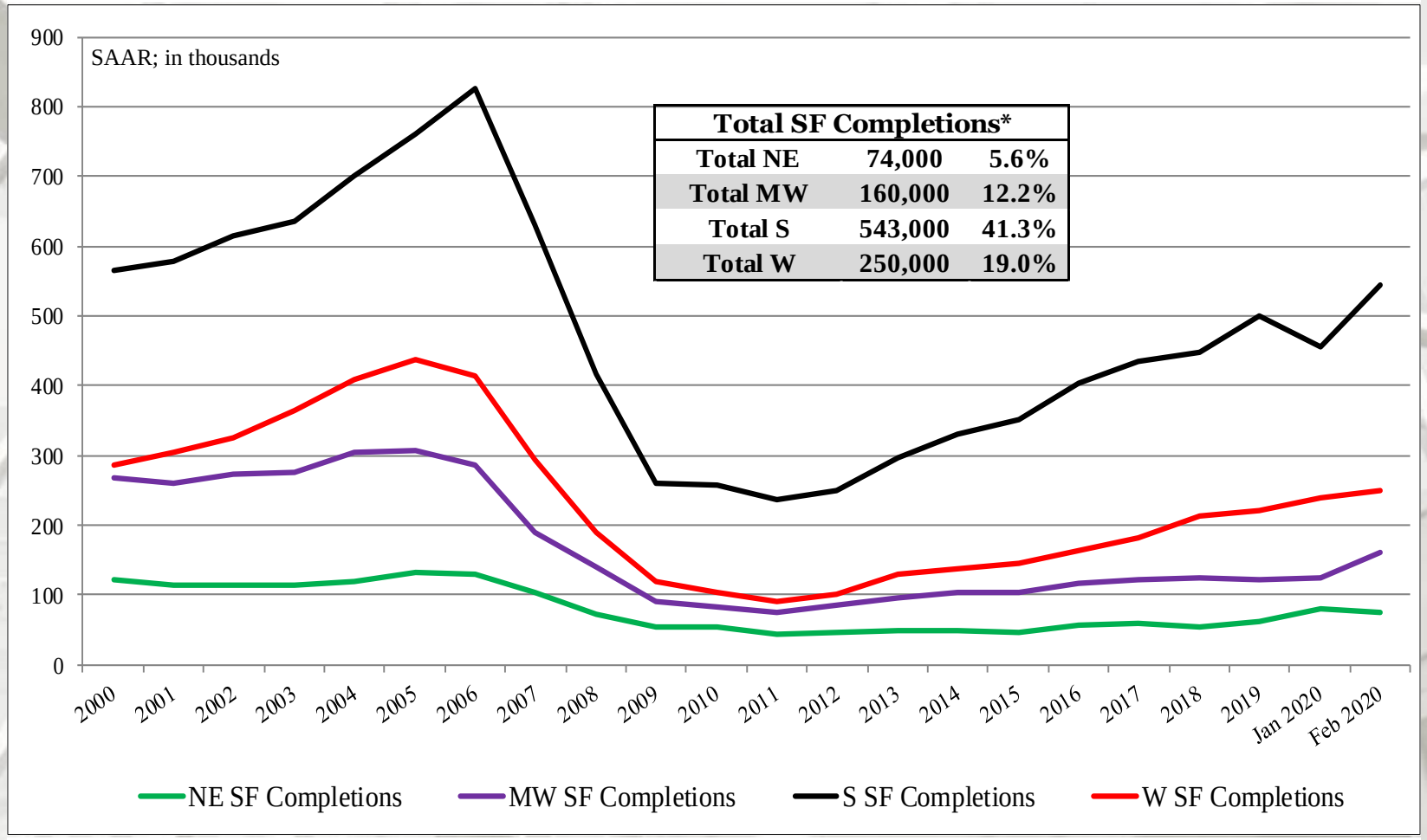
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

SF Housing Completions by Region



Total SF Completions*		
Total NE	74,000	5.6%
Total MW	160,000	12.2%
Total S	543,000	41.3%
Total W	250,000	19.0%

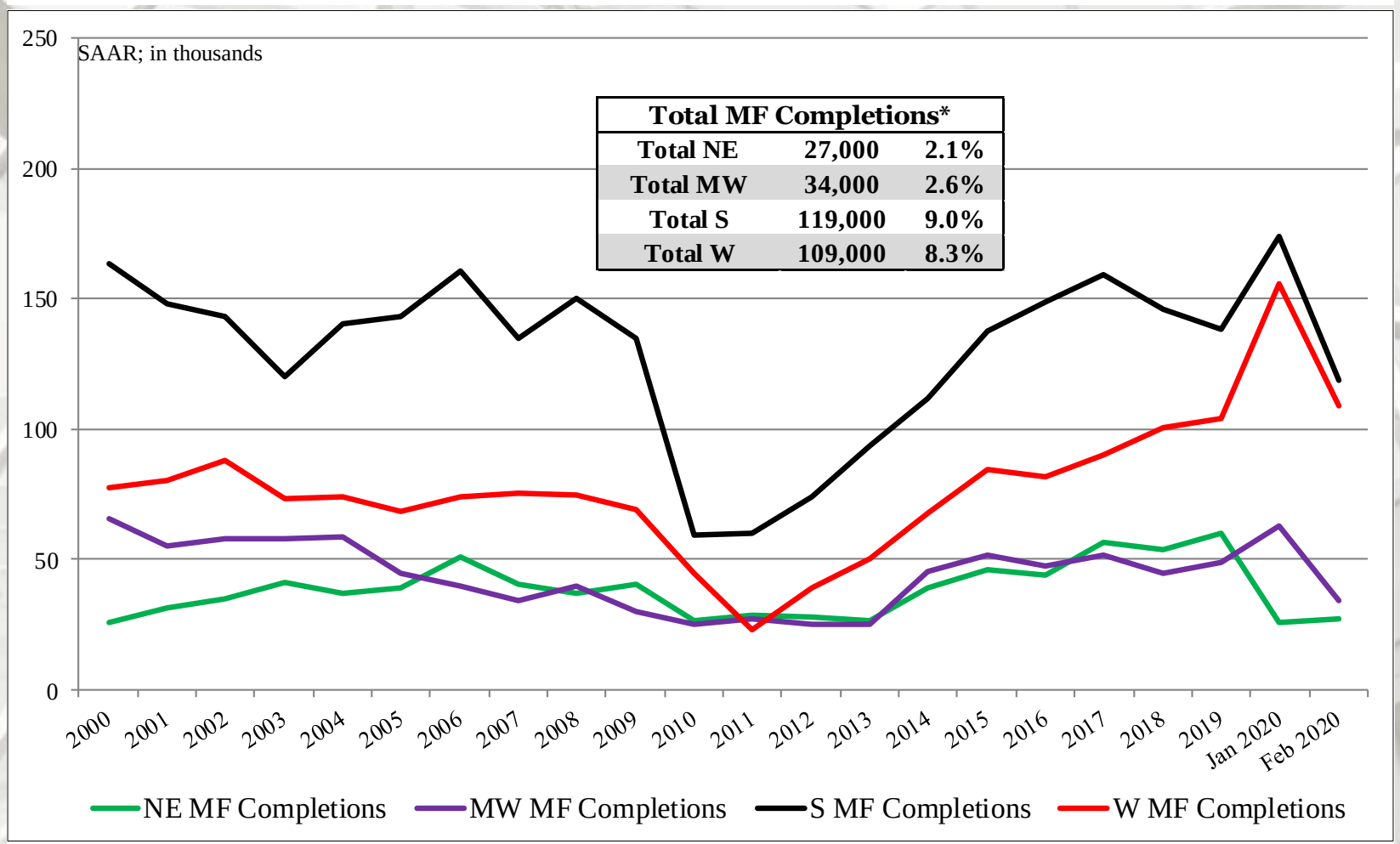
NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family completions directly, this is an estimation (Total completions – SF completions).

* Percentage of total housing completions

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

Return TOC

MF Housing Completions by Region



Total MF Completions*		
Total NE	27,000	2.1%
Total MW	34,000	2.6%
Total S	119,000	9.0%
Total W	109,000	8.3%

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; 3/18/20

Return TOC

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
February	765,000	345,900	403,800	5.0
January	800,000	325,300	384,000	4.8
2019	669,000	320,800	383,600	6.1
M/M change	-4.4%	6.3%	5.2%	4.2%
Y/Y change	14.3%	7.8%	5.3%	-18.0%

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

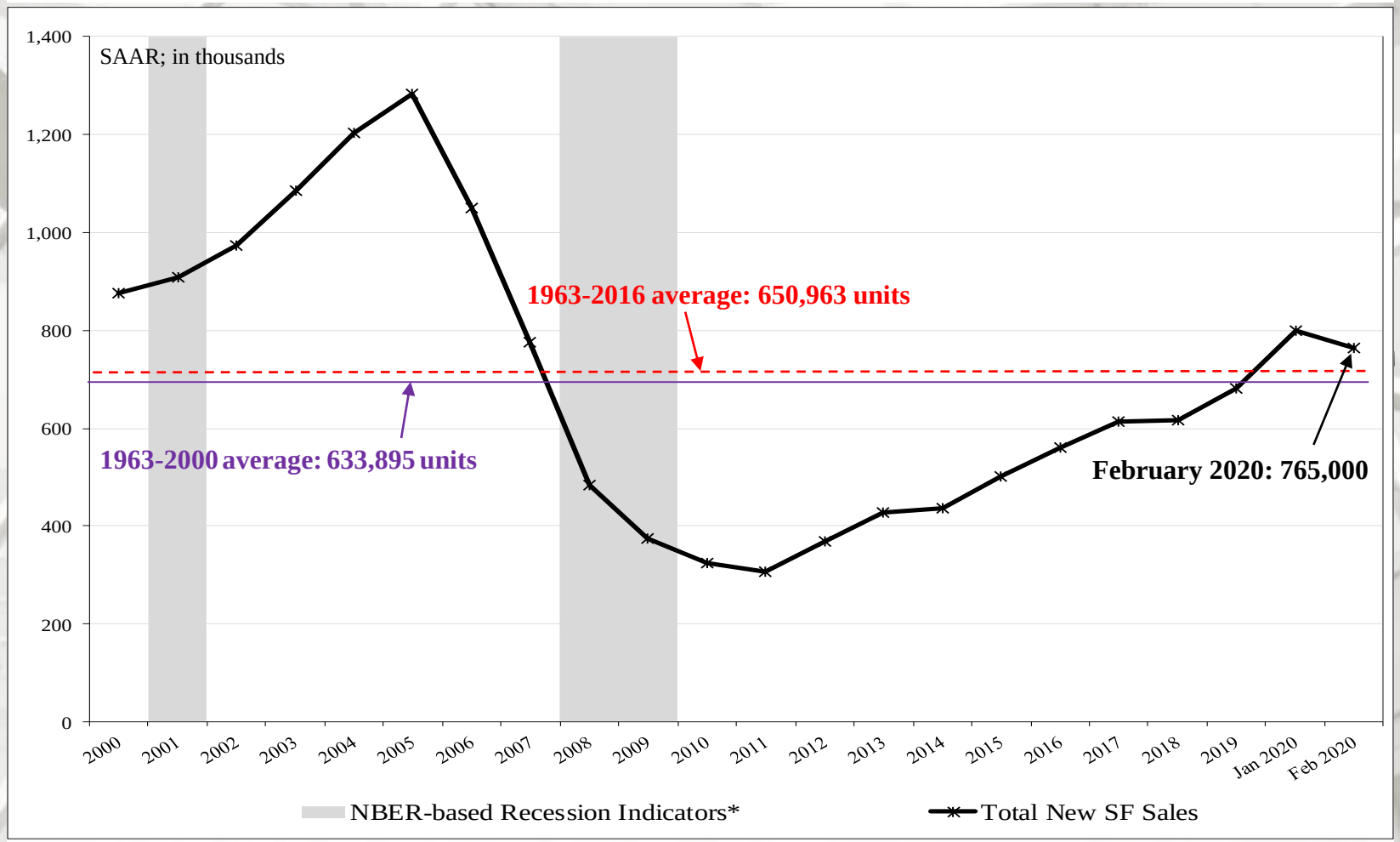
New SF sales were far greater than the consensus forecast[3] of 743 m (range: 690 m to 764 m). The past three month's new SF sales data also were revised:

November initial:	719 m revised to 700 m;
December initial:	694 m revised to 724 m;
January initial:	764 m revised to 800 m.

Sources: [1] https://www.census.gov/construction/nrs/index.html; 3/24/20; [2] https://www.census.gov/construction/nrs/pdf/newressales.pdf
[3] http://us.econoday.com/; 3/24/20

Return TOC

New SF House Sales

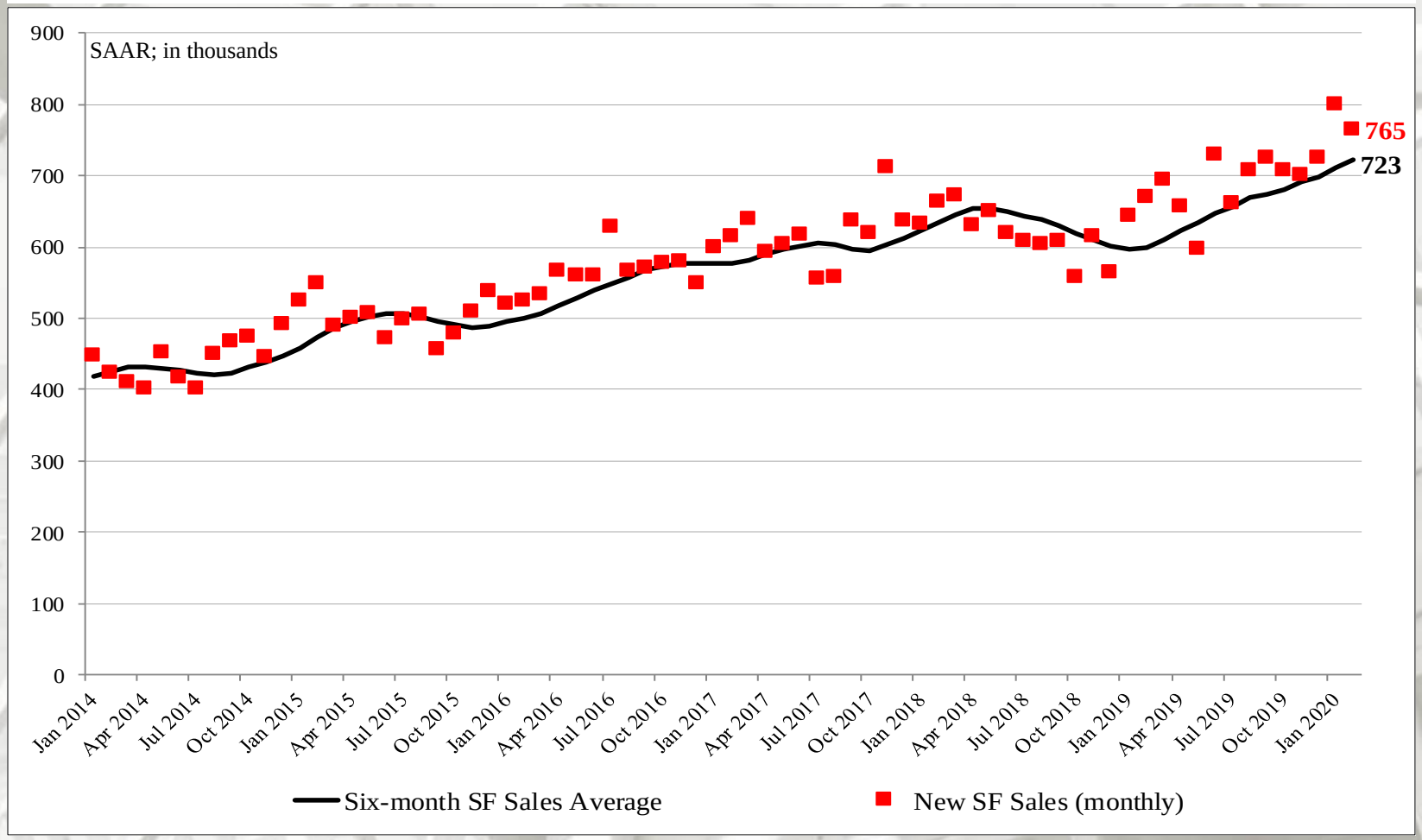


* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: https://fred.stlouisfed.org/series/USREC, 3/3/20; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF Housing Sales: Six-month average & monthly



Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF House Sales by Region and Price Category

	NE	MW	S	W
February	50,000	89,000	404,000	222,000
January	36,000	96,000	400,000	268,000
2019	34,000	77,000	380,000	178,000
M/M change	38.9%	-7.3%	1.0%	-17.2%
Y/Y change	47.1%	15.6%	6.3%	24.7%

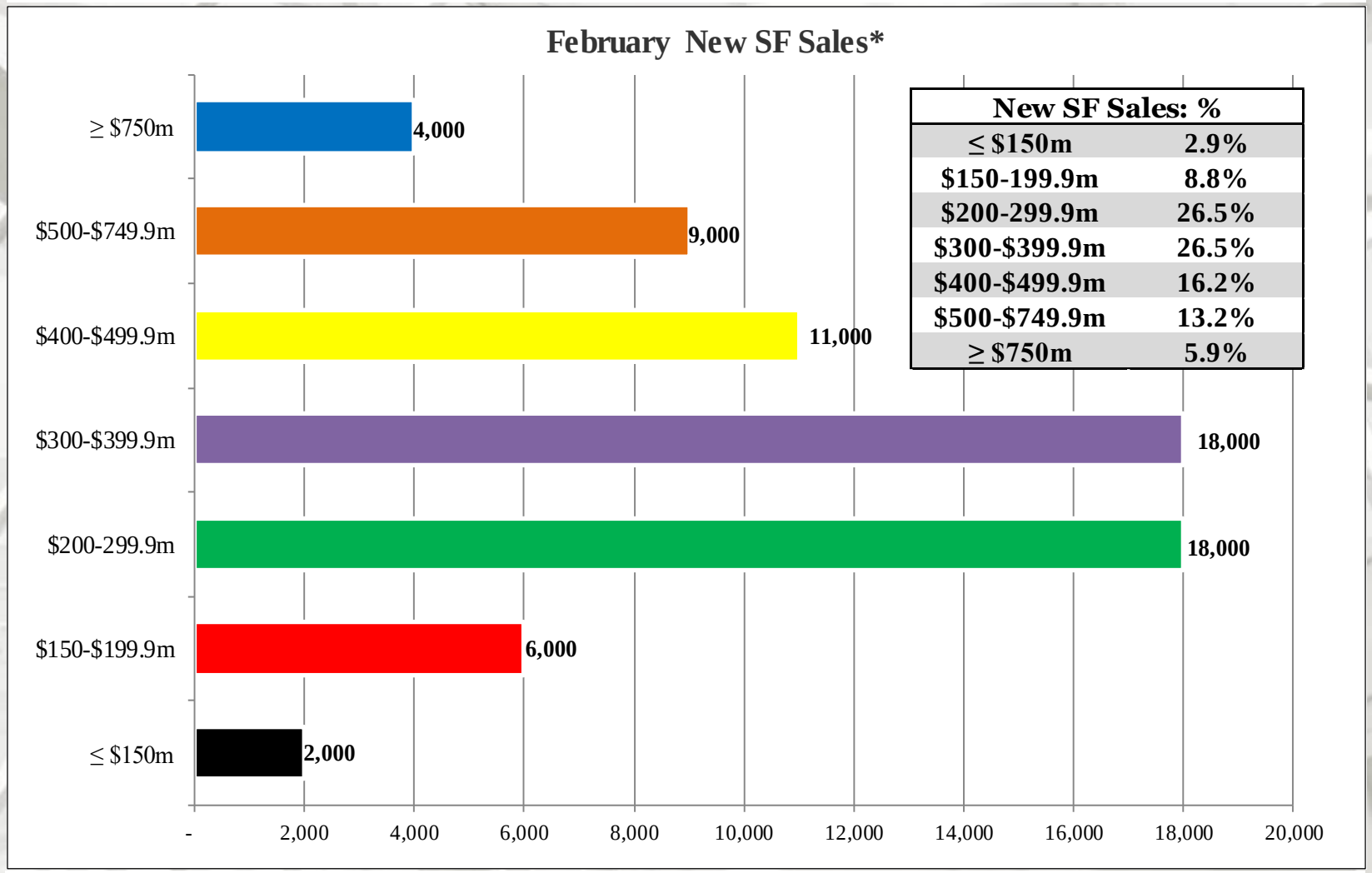
	≤ $150m	$150 - $199.9m	$200 - 299.9m	$300 - $399.9m	$400 - $499.9m	$500 - $749.9m	≥ $750m
February[1,2,3,4]	2,000	6,000	18,000	18,000	11,000	9,000	4,000
January	1,000	4,000	21,000	14,000	9,000	8,000	3,000
2019	1,000	4,000	19,000	15,000	8,000	8,000	2,000
M/M change	100.0%	50.0%	-14.3%	28.6%	22.2%	12.5%	33.3%
Y/Y change	100.0%	50.0%	-5.3%	20.0%	37.5%	12.5%	100.0%
New SF sales: %	2.9%	8.8%	26.5%	26.5%	16.2%	13.2%	5.9%

NE = Northeast; MW = Midwest; S = South; W = West
[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 February not add to total because of rounding.
[4] Housing prices are adjusted at irregular intervals.
[5] Z = Less than 500 units or less than 0.5 percent

Sources: [1,2,3] https://www.census.gov/construction/nrs/index.html; 3/24/20;
[4]https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

Return TOC

New SF House Sales



New SF Sales: %	
≤ $150m	2.9%
$150-199.9m	8.8%
$200-299.9m	26.5%
$300-$399.9m	26.5%
$400-$499.9m	16.2%
$500-$749.9m	13.2%
≥ $750m	5.9%

- Total new sales by price category and percent.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

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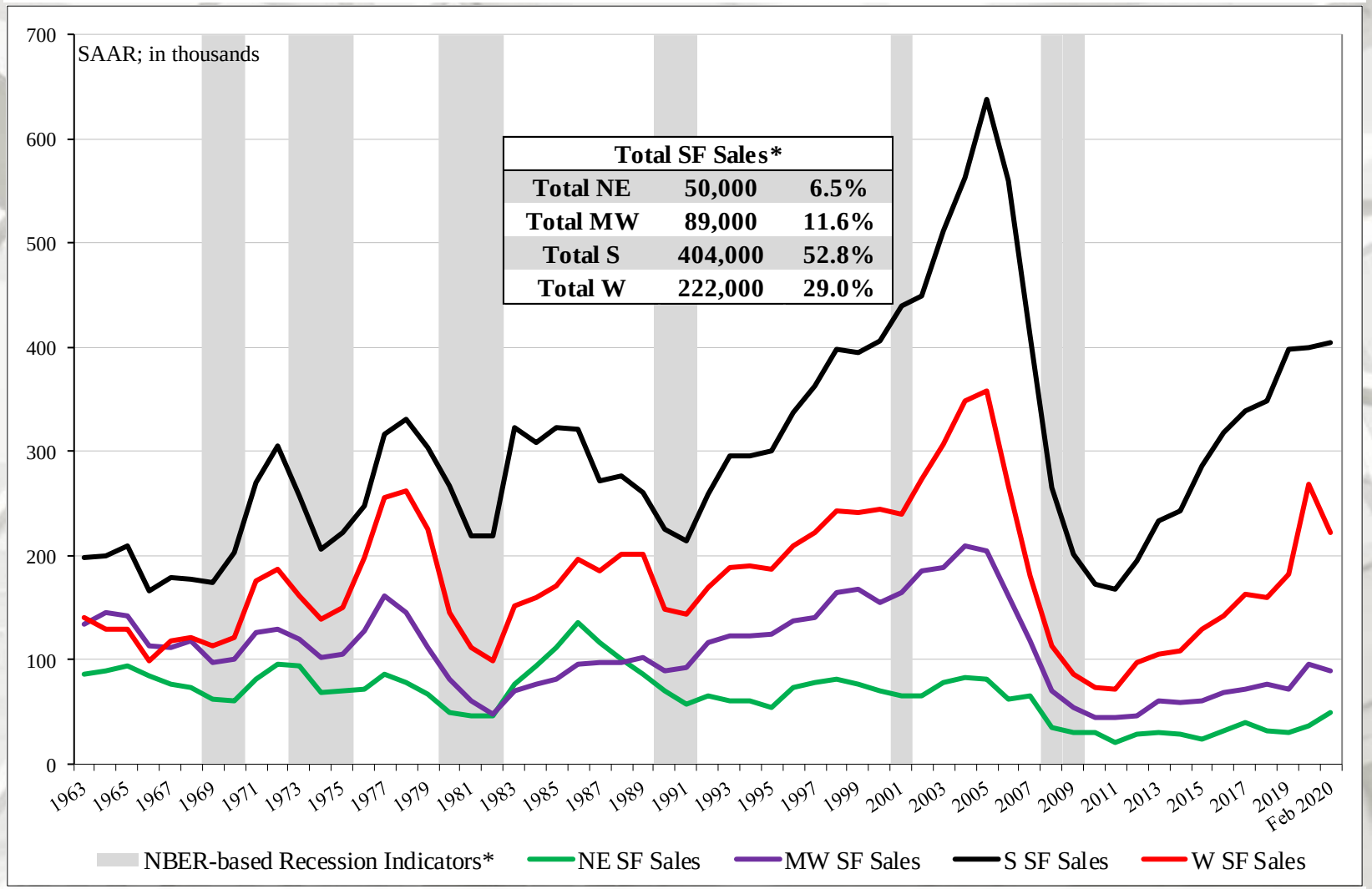
New SF House Sales by Region



NE = Northeast; MW = Midwest; S = South; W = West
* Percentage of total new sales.

* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

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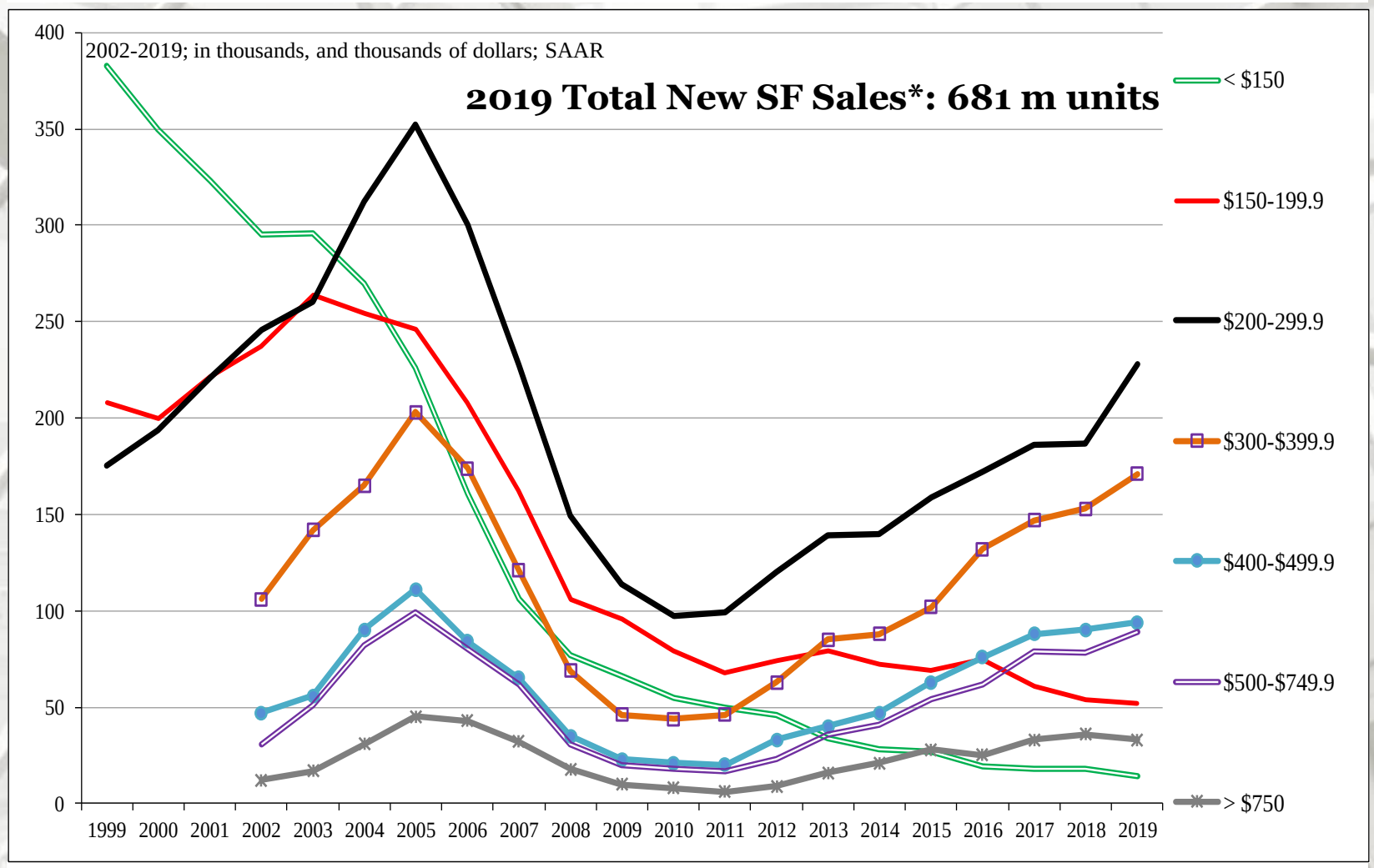
New SF House Sales by Price Category



* Sales tallied by price category.

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

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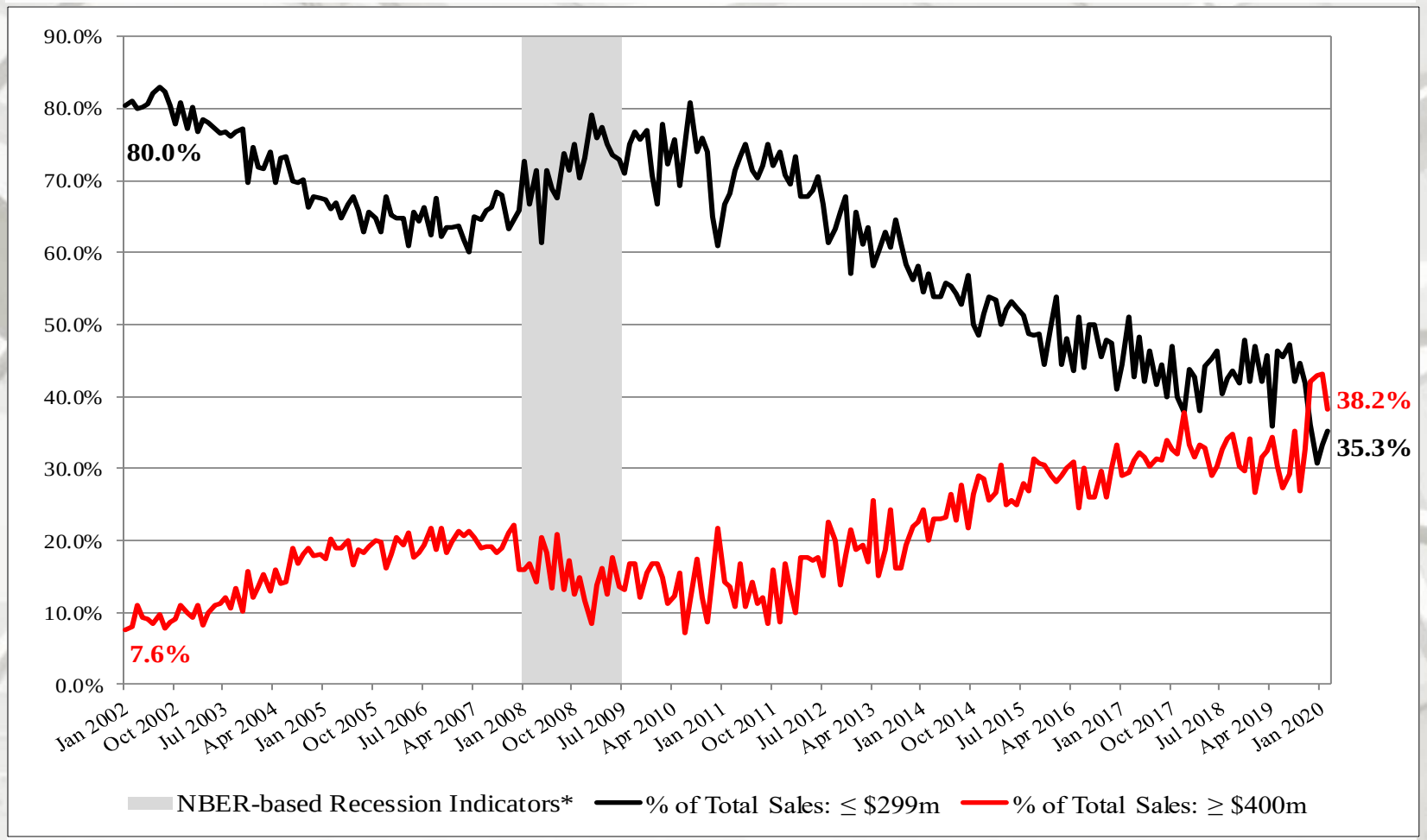
New SF House Sales



* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

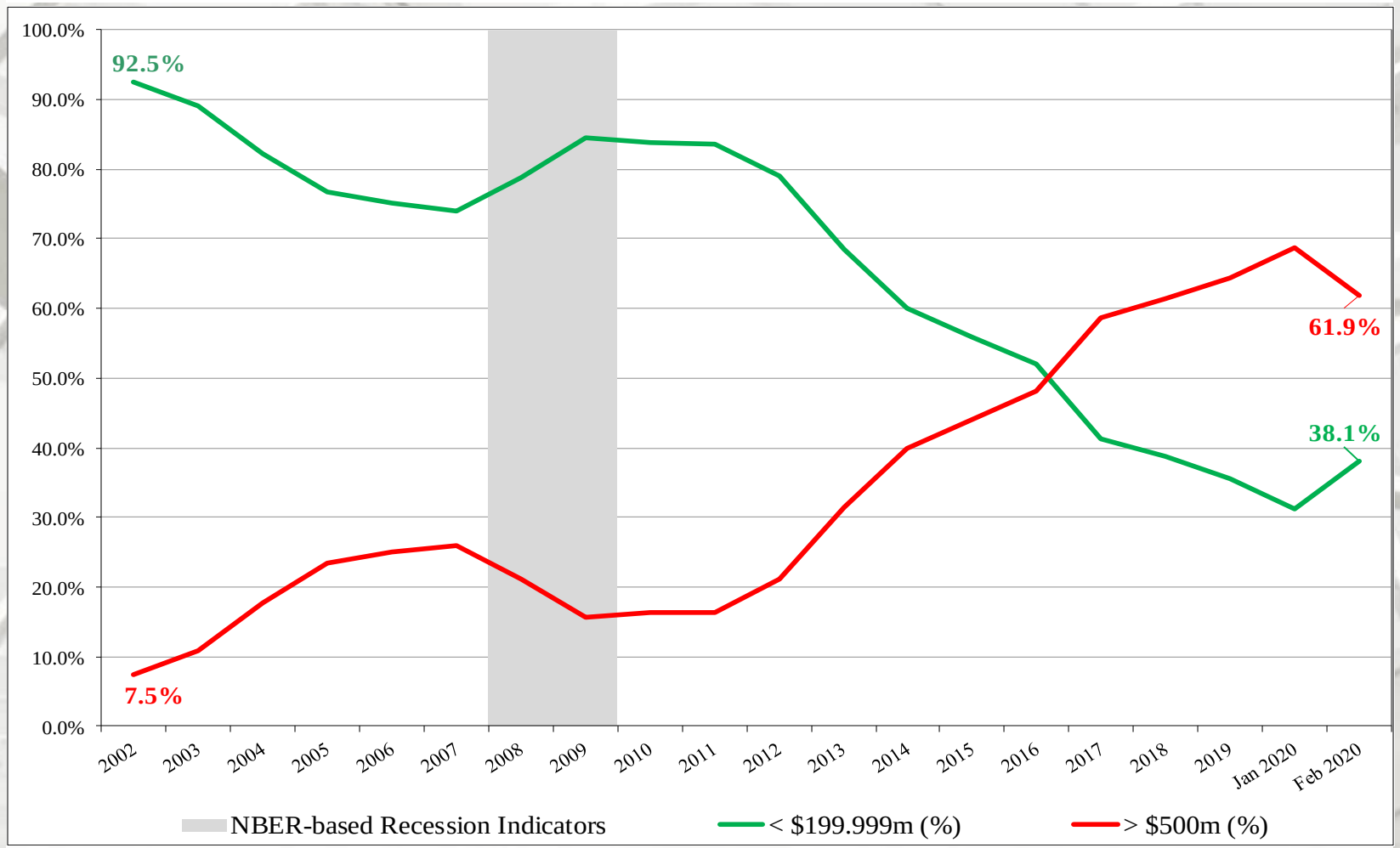
New SF Sales $400m houses: 2002 – February 2020

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] https://www.census.gov/construction/nrs/index.html; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 3/24/20

Return TOC

New SF House Sales



* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Sales: ≤ $ 200m and ≥ $500m: 2002 to February 2020

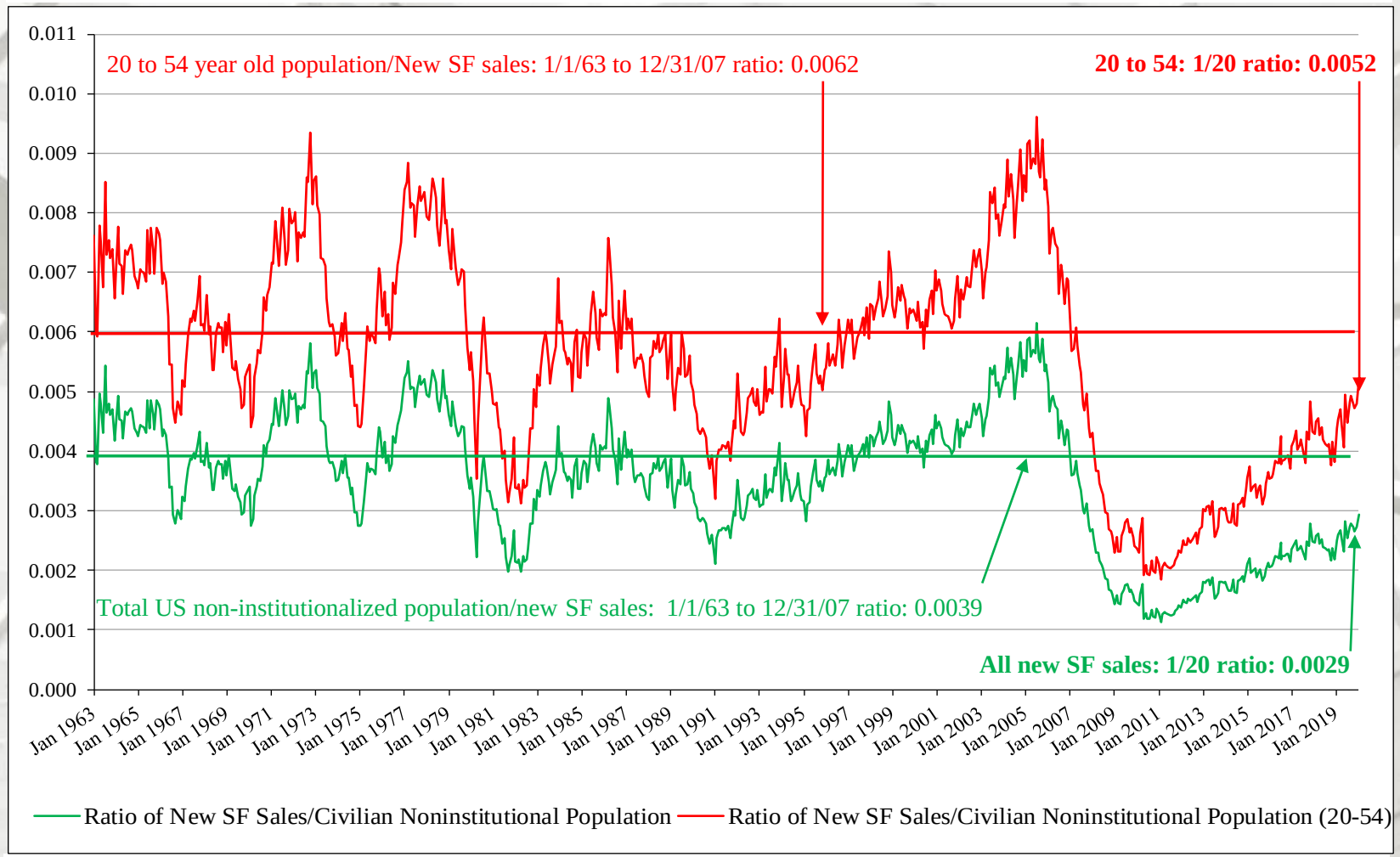
The number of ≤ $200 thousand SF houses has declined dramatically since 2002[1, 2]. Subsequently, from 2012 onward, the ≥ $500 thousand class has soared (on a percentage basis) in contrast to the ≤ $200m class. One of the most oft mentioned reasons for this occurrence is builder net margins.

Note: Sales values are not adjusted for inflation.

Source: [1] https://www.census.gov/construction/nrs/index.html; [2] https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 3/24/20

Return TOC

New SF House Sales



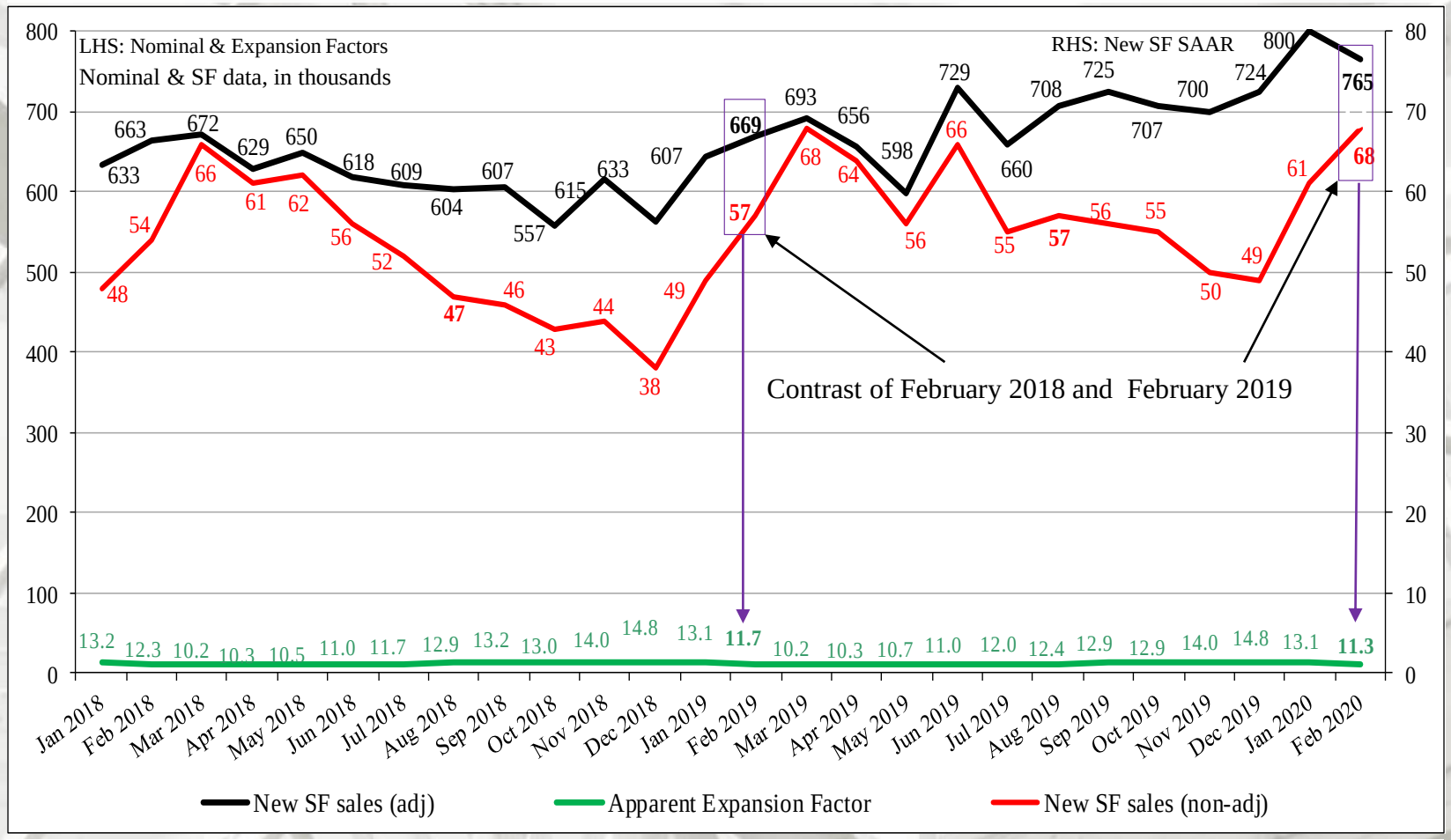
New SF sales adjusted for the US population

From February 1963 to February 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in February 2020 it was 0.0029 – an increase from December (0.0027). The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in February 2020 it was 0.0052 – also an increase from December (0.0048). 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: https://www.census.gov/construction/nrs/index.html and The Federal Reserve Bank of St. Louis; 3/24/20

Return TOC

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; 3/24/20

Return TOC

New SF House Sales

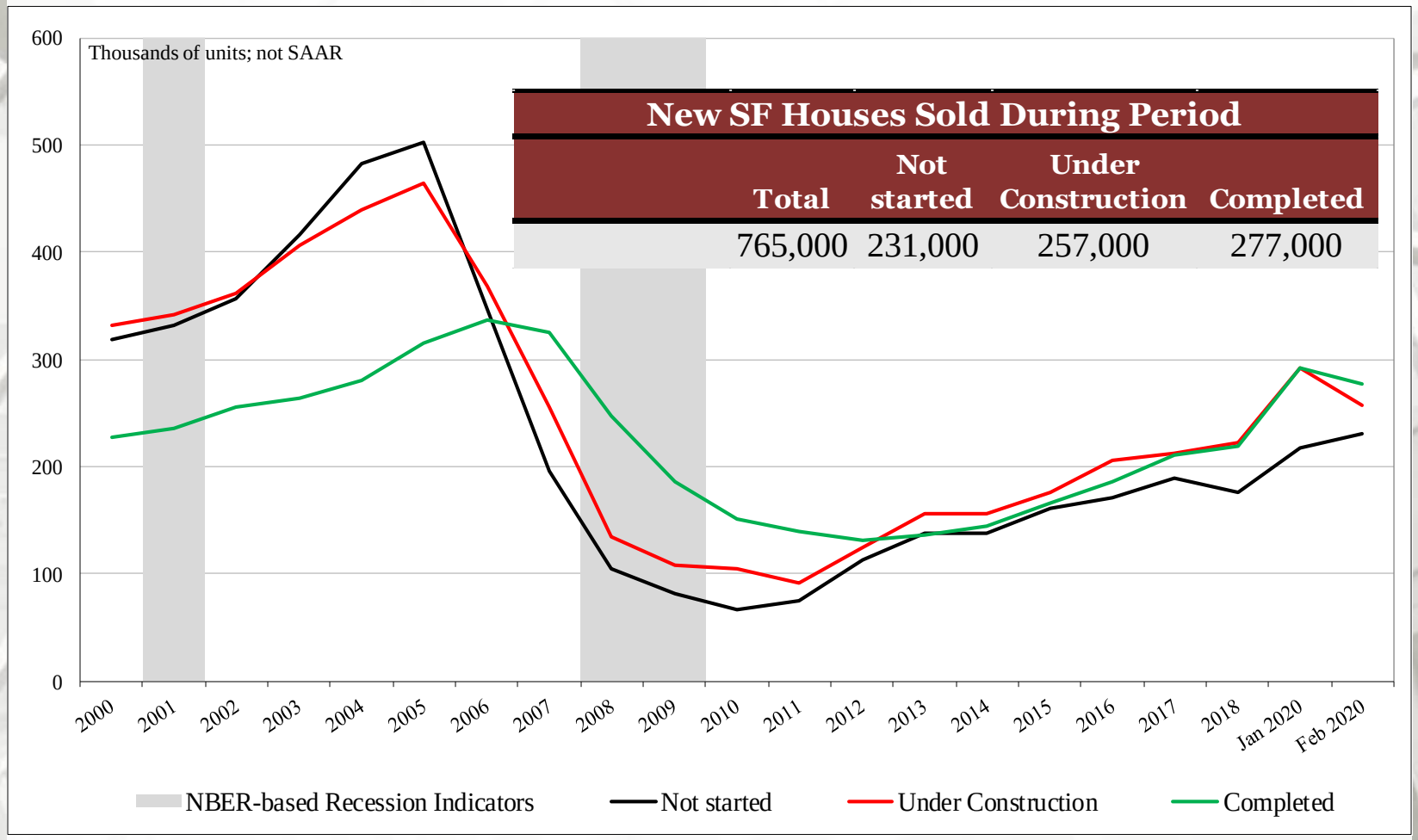
New SF Houses Sold During Period				
	Total	Not started	Under Construction	Completed
February	765,000	231,000	257,000	277,000
January	800,000	217,000	291,000	292,000
2019	669,000	188,000	214,000	267,000
M/M change	-4.4%	6.5%	-11.7%	-5.1%
Y/Y change	14.3%	22.9%	20.1%	3.7%
Total percentage		30.2%	33.6%	36.2%

Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF House Sales: Sold During Period



New SF Houses Sold During Period

Total	Not started	Under Construction	Completed
765,000	231,000	257,000	277,000

Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF House Sales: For Sale at End of Period

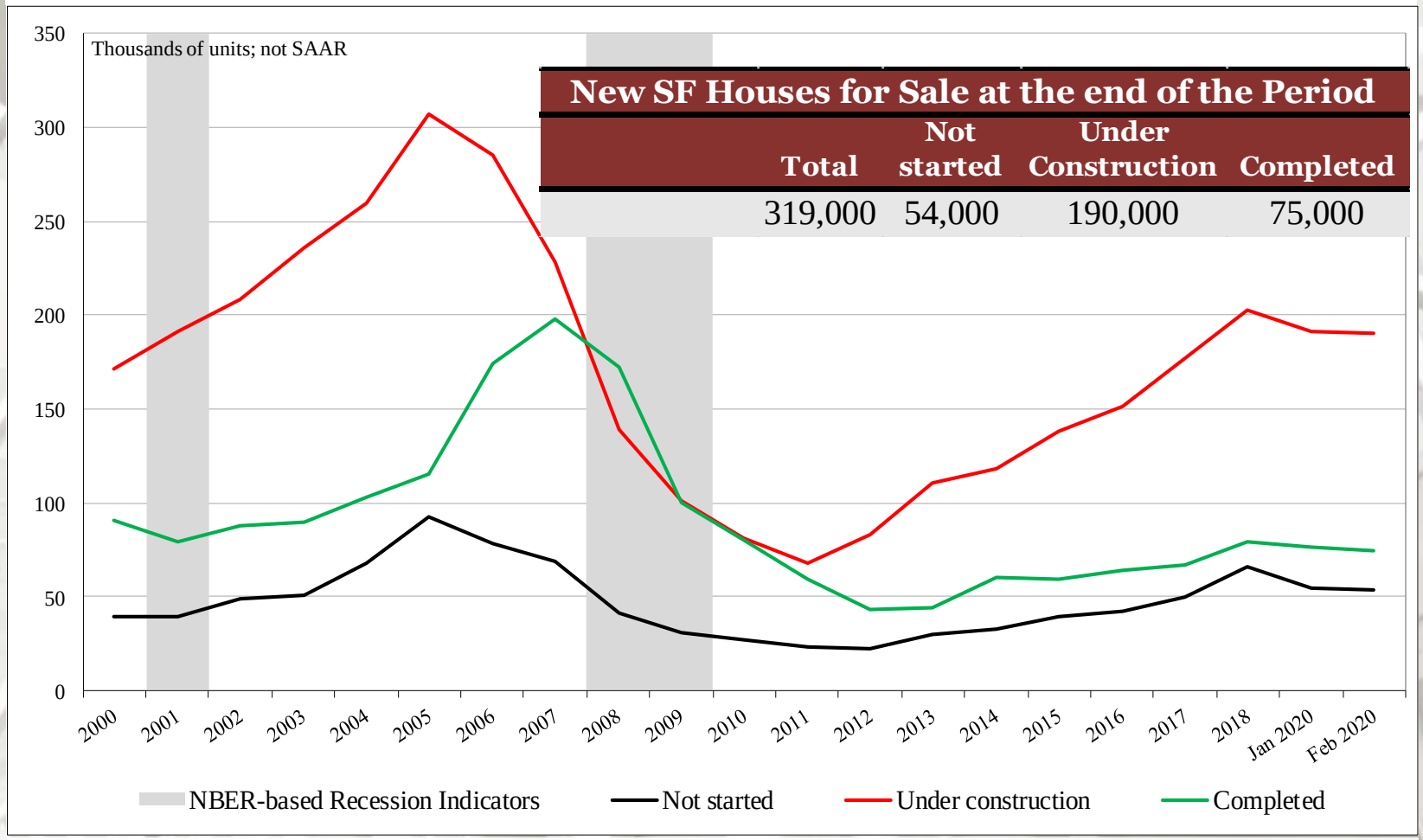
New SF Houses for Sale at the end of the Period				
	Total	Not started	Under Construction	Completed
February	319,000	54,000	190,000	75,000
January	322,000	55,000	191,000	76,000
2019	342,000	58,000	210,000	74,000
M/M change	-0.9%	-1.8%	-0.5%	-1.3%
Y/Y change	-6.7%	-6.9%	-9.5%	1.4%
Total percentage		16.9%	59.6%	23.5%

Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF Houses for Sale at End of Period



New SF Houses for Sale at the end of the Period			
Total	Not started	Under Construction	Completed
319,000	54,000	190,000	75,000

* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF House Sales

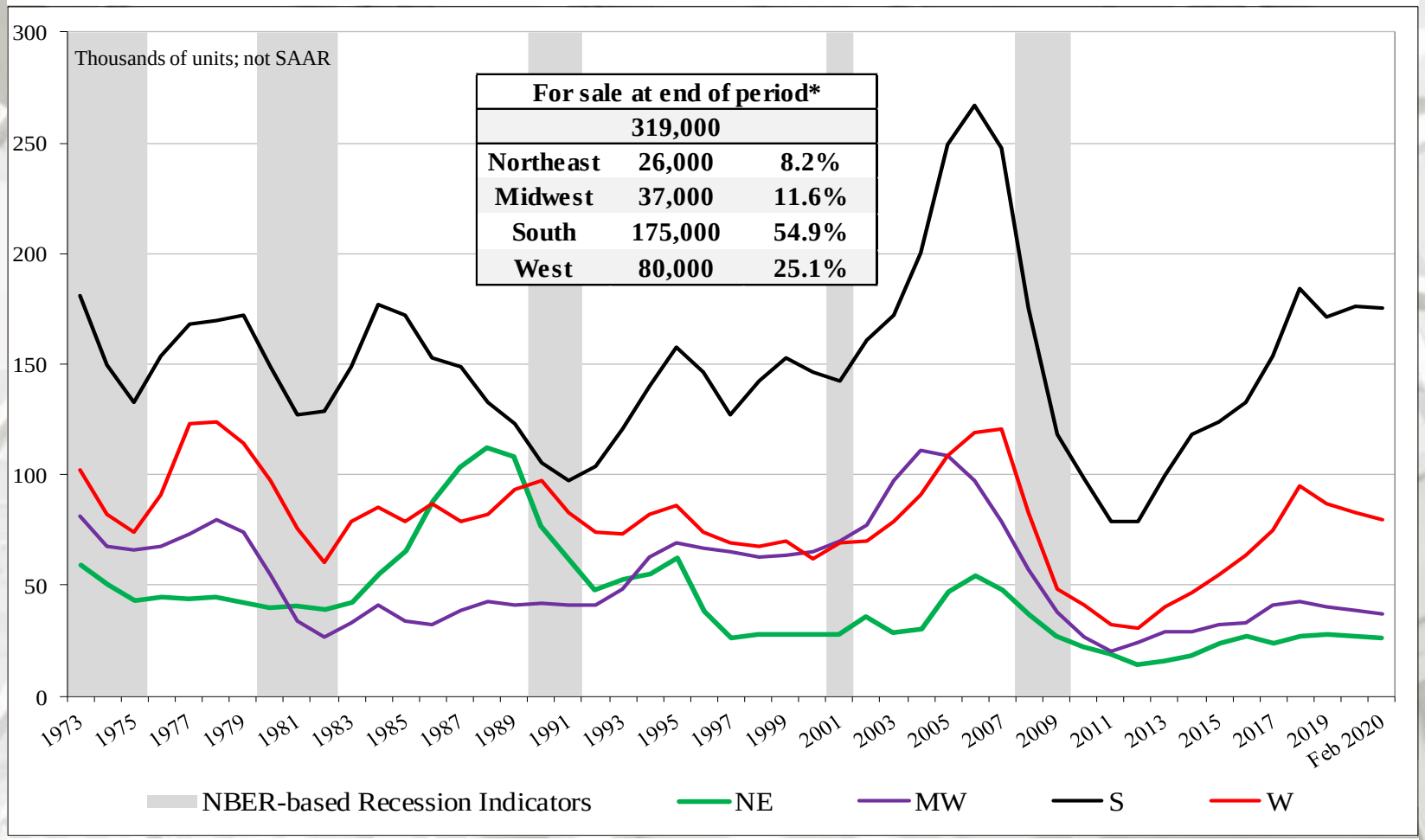
New SF Houses for Sale at the end of the Period by Region*					
	Total	NE	MW	S	W
February	319,000	26,000	37,000	175,000	80,000
January	325,000	27,000	39,000	176,000	83,000
2019	340,000	28,000	41,000	182,000	89,000
M/M change	-1.8%	-3.7%	-5.1%	-0.6%	-3.6%
Y/Y change	-6.2%	-7.1%	-9.8%	-3.8%	-10.1%

Not SAAR

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

New SF Houses for Sale at End of Period by Region



* Percentage of new SF sales.

* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/24/20

Return TOC

February 2019
Construction Spending

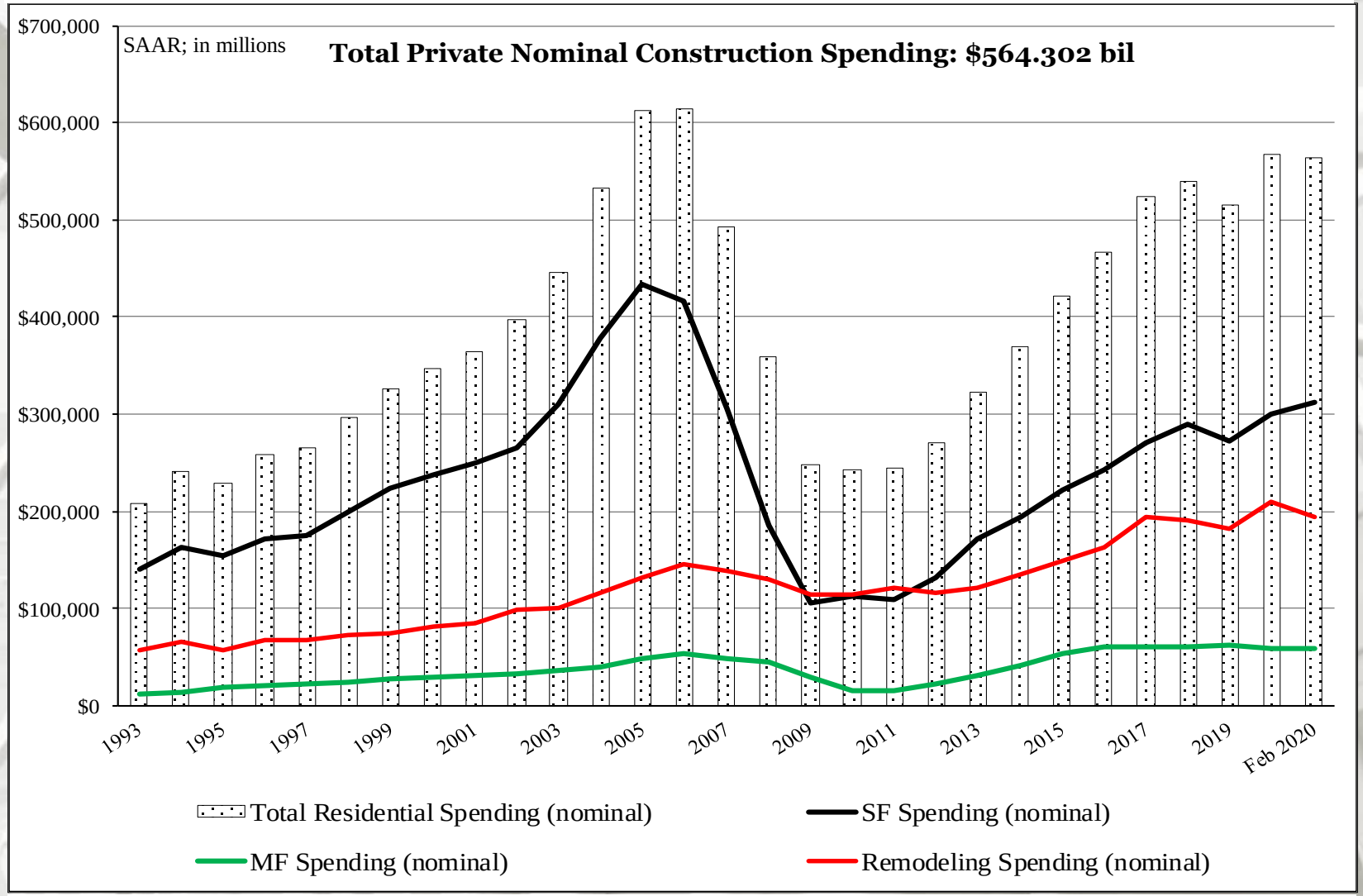
	Total Private Residential*	SF	MF	Improvement**
February	$564,302	$311,679	$58,276	$194,347
January	$567,555	$299,904	$58,200	$209,451
2019	$506,996	$268,563	$61,797	$176,636
M/M change	-0.6%	3.9%	0.1%	-7.2%
Y/Y change	11.3%	16.1%	-5.7%	10.0%

* billion.
** The US DOC does not report improvement spending directly, this is a monthly estimation: ((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; 4/1/20

Return TOC

Total Construction Spending (nominal): 1993 – February 2020

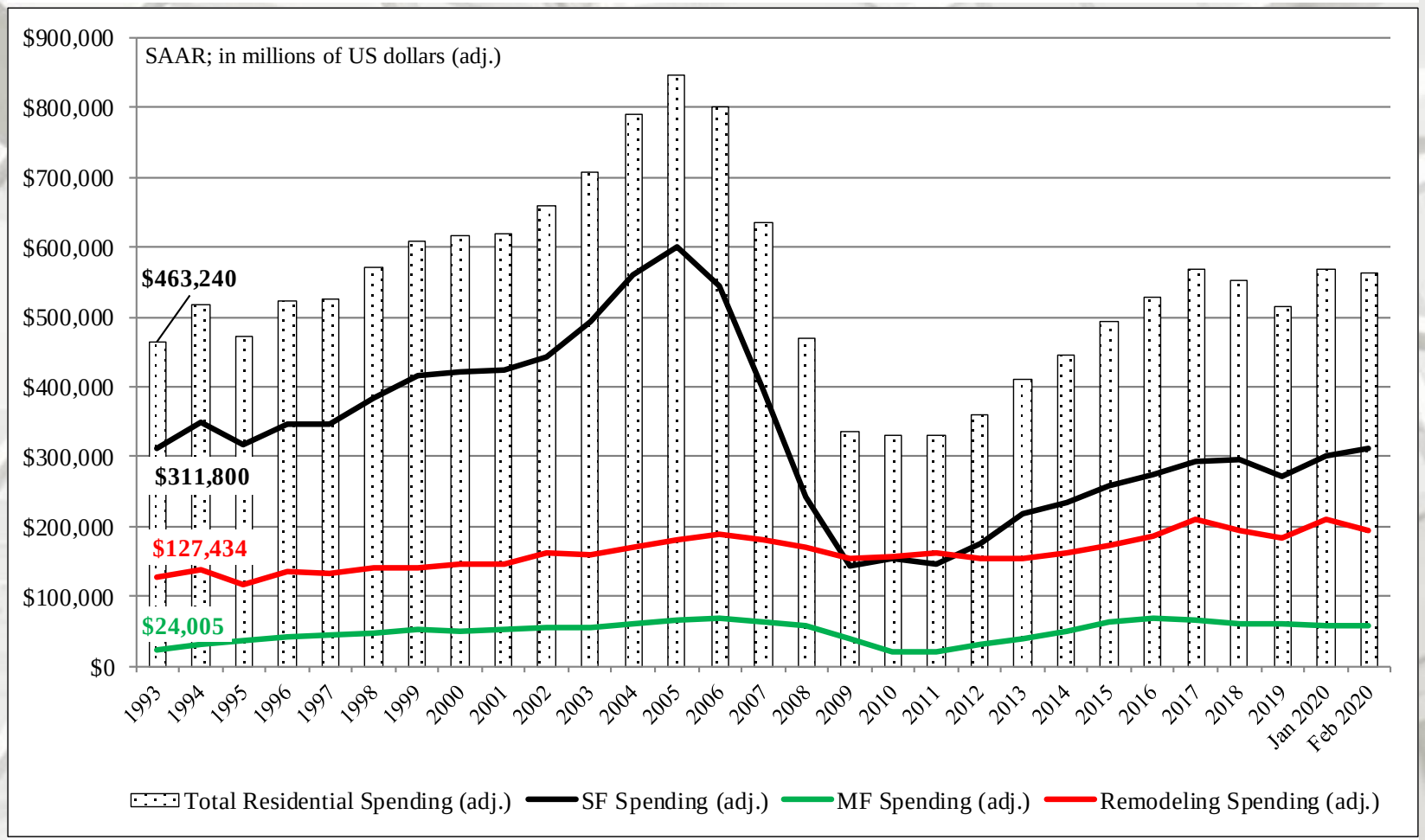


Reported in nominal US$.
The US DOC does not report improvement spending directly, this is a monthly estimation for 2020.

Source: http://www.census.gov/construction/c30/pdf/privsa.pdf; 4/1/20

Return TOC

Total Construction Spending (adjusted): 1993-February 2020



Reported in adjusted US$: 1993 – 2018 (adjusted for inflation, BEA Table 1.1.9); ^January to February 2020 reported in nominal US$.

Sources: * https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/c30/pdf/privsa.pdf; 4/1/20

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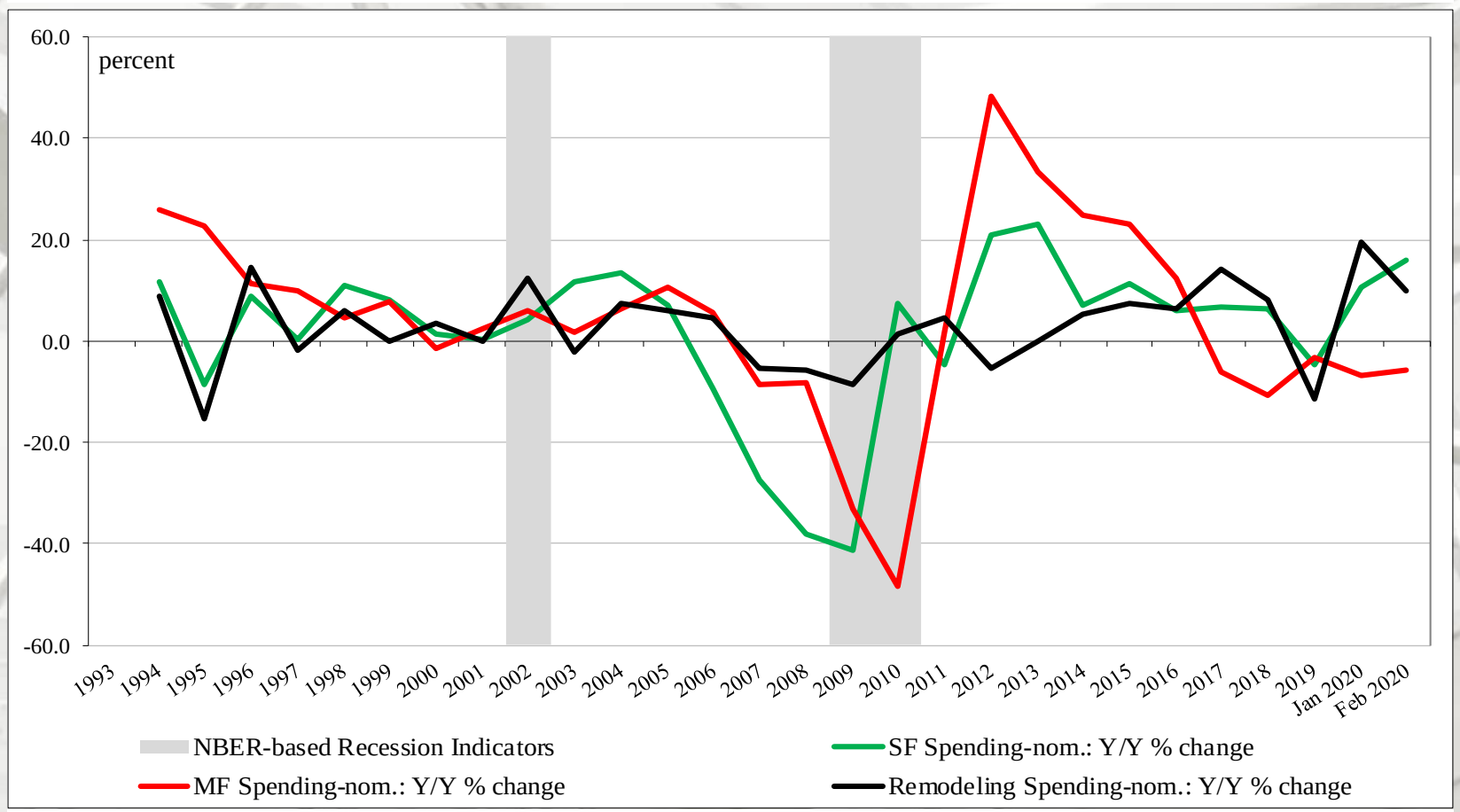
Construction Spending Shares: 1993 to February 2020



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 2019 (adjusted for inflation, BEA Table 1.1.9); January-February 2020 reported in nominal US$.

* NBER based Recession Indicator Bar s for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: * https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/c30/pdf/privsa.pdf and http://www.bea.gov/iTable/iTable.cfm; 3/2/20

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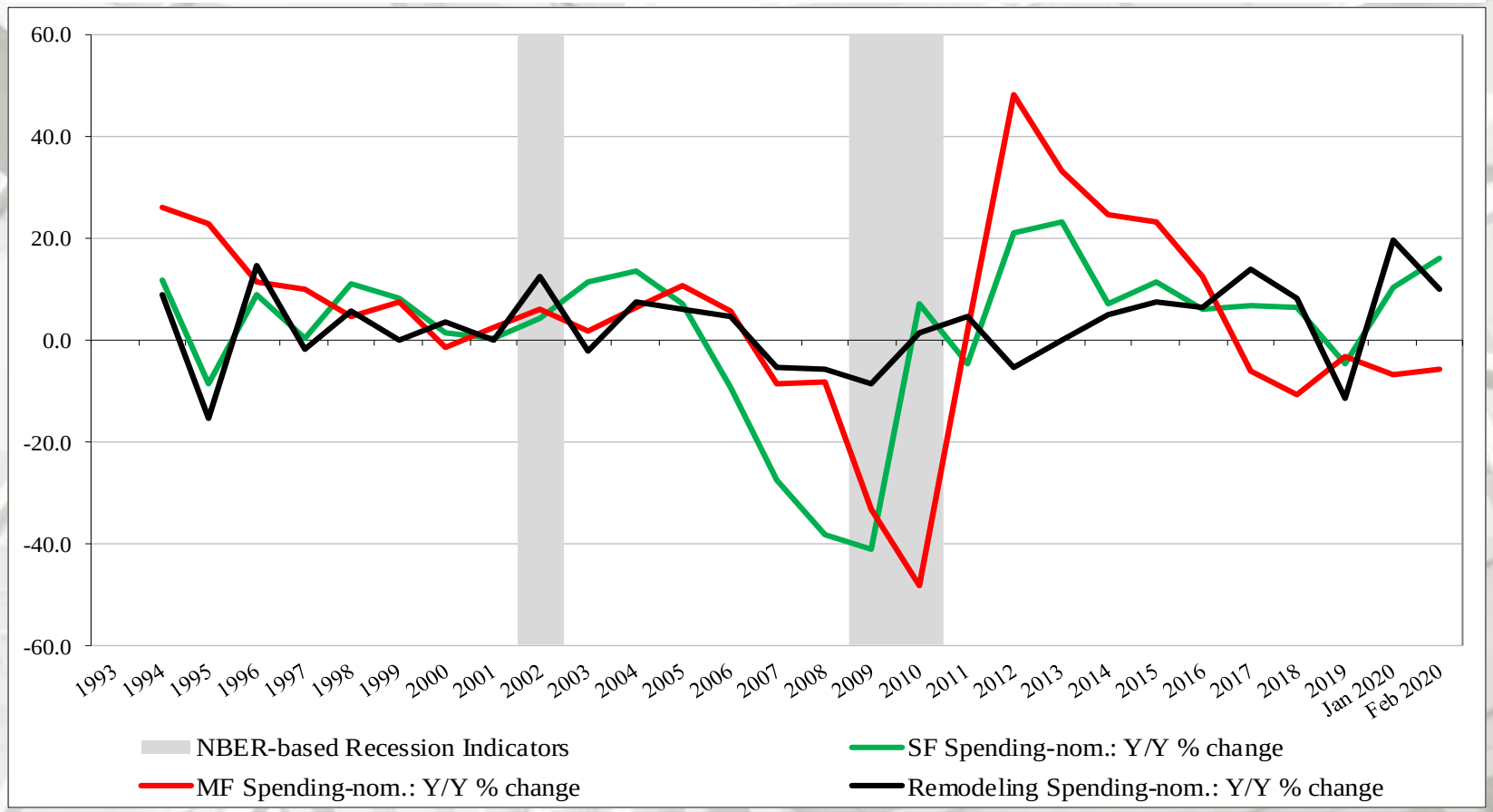
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to February 2020



Nominal Residential Construction Spending: Y/Y percentage change, 1993 to February 2019

Presented above is the percentage change of inflation adjusted Y/Y construction spending. SF and RR expenditures were positive on a percentage basis, year-over-year (2020 data reported in nominal dollars).

* NBER based Recession Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Sources: * https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/c30/pdf/privsa.pdf; 4/1/20

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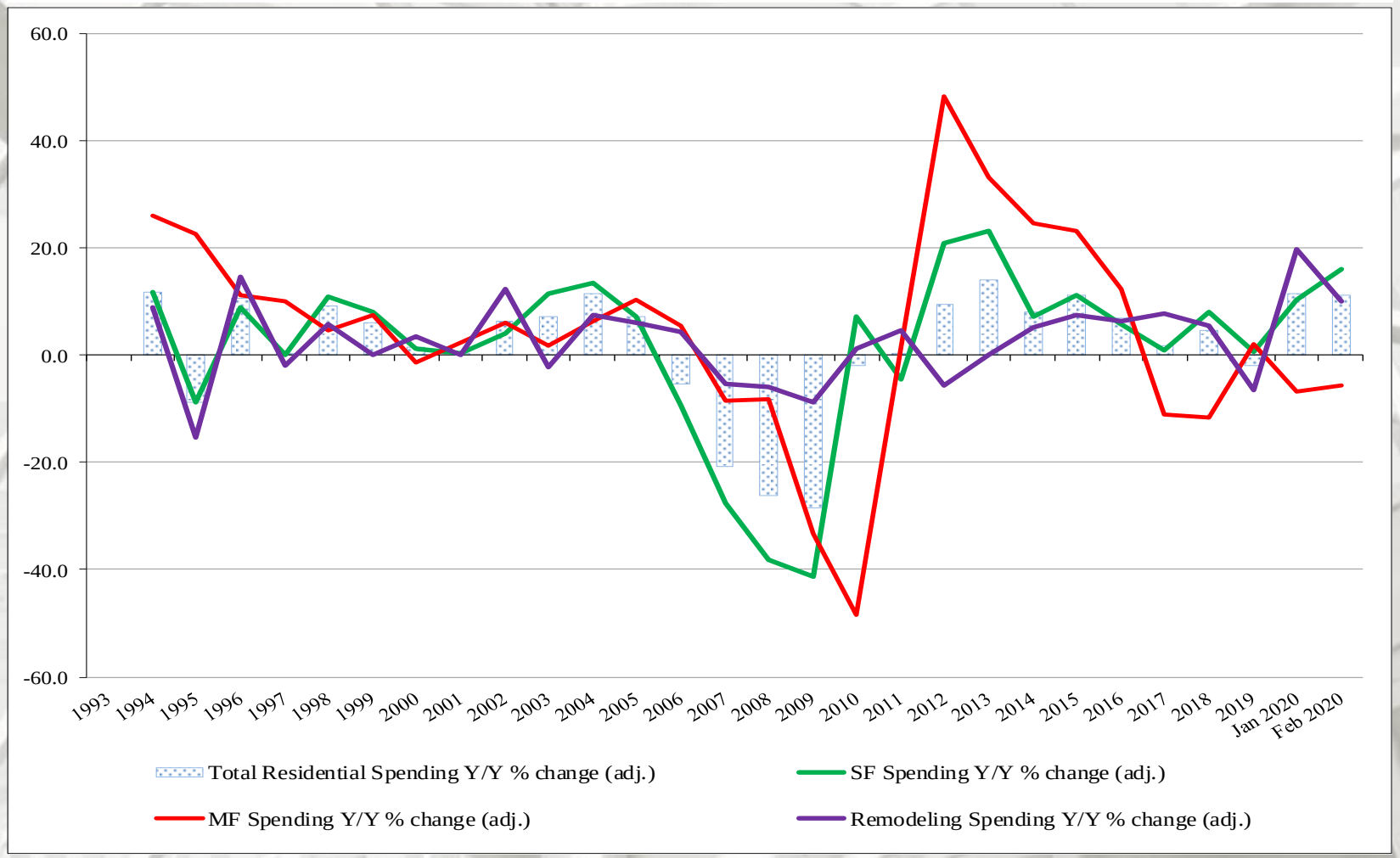
Adjusted Construction Spending: Y/Y Percentage Change, 1993 to February 2020



Sources: * https://fred.stlouisfed.org/series/USREC, 2/3/20; http://www.census.gov/construction/c30/pdf/privsa.pdf; 4/1/20

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Total US Housing Starts & Residential Investment

Total US Housing Starts & Construction Spending

Given recent events, a topical question is the relationship between a decline in housing starts and residential construction spending.

Generally, if total starts decline from about 4 to 8%, the following year spending decreases by $25.9 billion (on average; residential GDP* adjusted for inflation);

a decrease in starts of 13 to 18% yields a $41.2 billon dollar decline;
a decline in starts of 25 to 26% results in a $148.5 billon dollar decrease; and
a decrease in starts of 33 to 39% yields a $163.1 billon dollar decline.

Notes: Table 1.1.5 National Income and Product Accounts, Table 1.1.9. Implicit Price Deflators for Gross Domestic Product, [Index numbers, 2012=100], both tables-Gross private domestic residential investment, and author's calculations.

Sources: * https://apps.bea.gov/iTable/iTable.cfm; http://www.census.gov/construction/nrc/pdf/newresconst.pdf; 3/18/20

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Existing House Sales

National Association of Realtors

February 2019 sales: 5.770 thousand

	Existing Sales	Median Price	Mean Price	Month's Supply
February	5,770,000	$270,100	$305,800	3.1
January	5,420,000	$266,200	$302,900	3.1
2019	5,380,000	$250,100	$288,500	3.0
M/M change	6.5%	1.5%	1.0%	0.0%
Y/Y change	7.2%	8.0%	6.0%	3.3%

All sales data: SAAR

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 3/20/20

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Existing House Sales

	Existing SF Sales	SF Median Price	SF Mean Price
February	5,170,000	270,100	305,800
January	4,820,000	272,400	307,000
2019	4,820,000	252,000	289,300
M/M change	7.3%	1.5%	-0.4%
Y/Y change	7.3%	7.2%	5.7%

	NE	MW	S	W
February	700,000	1,290,000	2,520,000	1,260,000
January	730,000	1,280,000	2,350,000	1,060,000
2019	680,000	1,240,000	2,330,000	1,130,000
M/M change	-4.1%	0.8%	7.2%	18.9%
Y/Y change	2.9%	4.0%	8.2%	11.5%

All sales data: SAAR.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 3/20/20

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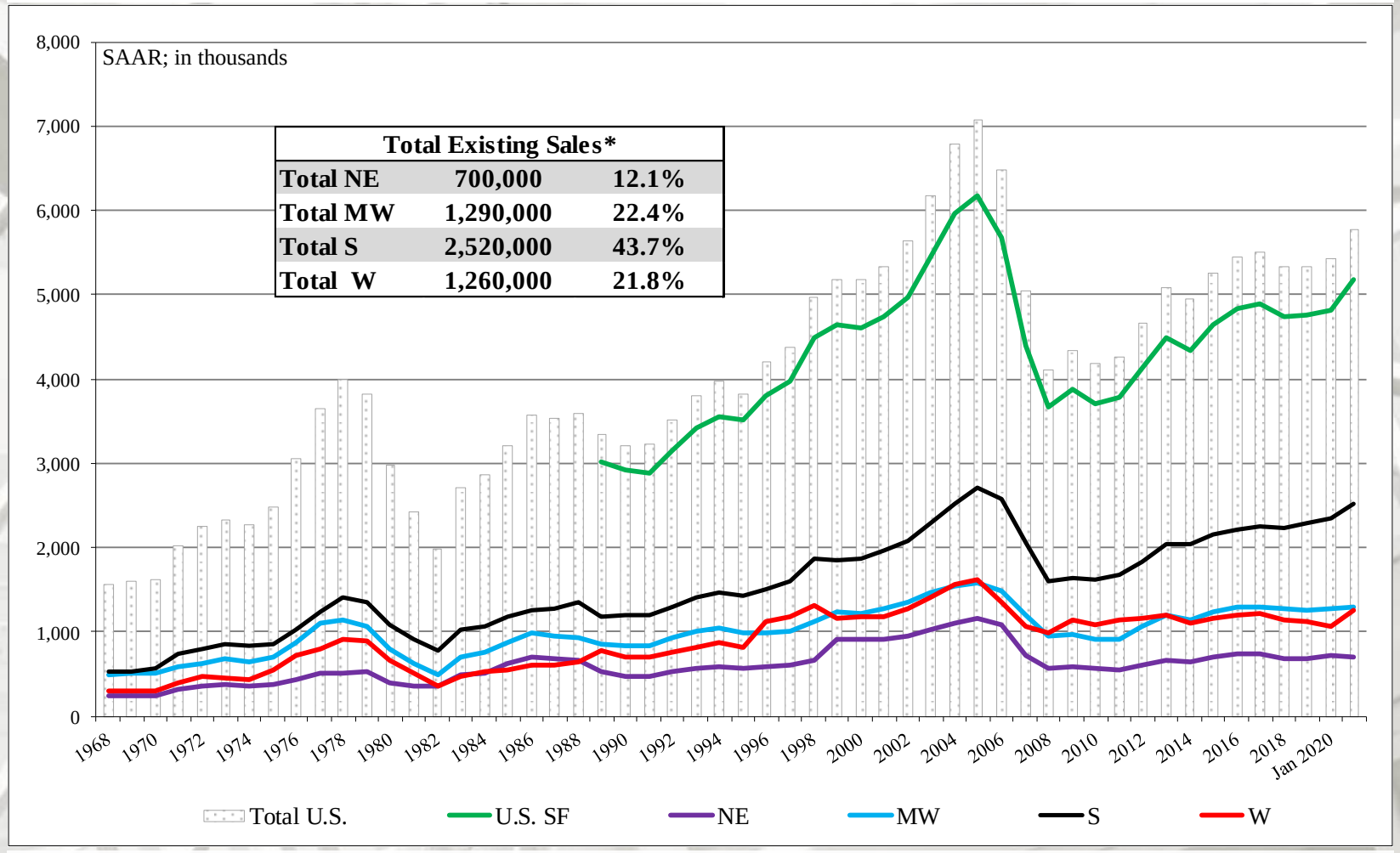
Existing House Sales



Total Existing Sales*		
Total NE	700,000	12.1%
Total MW	1,290,000	22.4%
Total S	2,520,000	43.7%
Total W	1,260,000	21.8%

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

* Percentage of existing sales.

Source: https://fred.stlouisfed.org/series/EXHOSLUSM495S; 3/20/20

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U.S. Housing Prices

Federal Housing Finance Agency

U.S. House Price Index Report – January 2020

"U.S. house prices rose in January, up **0.3 percent** from the previous month, according to the Federal Housing Finance Agency (FHFA) House Price Index (HPI). House prices rose **5.2 percent** from January 2019 to January 2020. The previously reported 0.6 percent increase for December 2019 was revised upward to 0.7 percent. For the nine census divisions, seasonally adjusted monthly house price changes from December 2019 to January 2020 ranged from **-0.2 percent** in the Mountain division to **+0.7 percent** in the South Atlantic divisions. The 12-month changes were all positive, ranging from **+4.1 percent** in the Middle Atlantic division to **+6.4 percent** in the South Atlantic division." **–** Cynthia Adcock and Raffi Williams, FHFA

U.S. house prices continued to increase at a moderate pace in January. Transactions in January were unlikely to reflect much, if any, influence from the COVID-19 outbreak. House prices in the Pacific and South Atlantic regions grew somewhat faster over the year ending in January 2020 than observed the same time a year ago." **–** Dr. Lynn Fisher, Deputy Director of the Division of Research and Statistics, FHFA

Source: https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/HPI-monthly-3252020.pdf; 3/25/20

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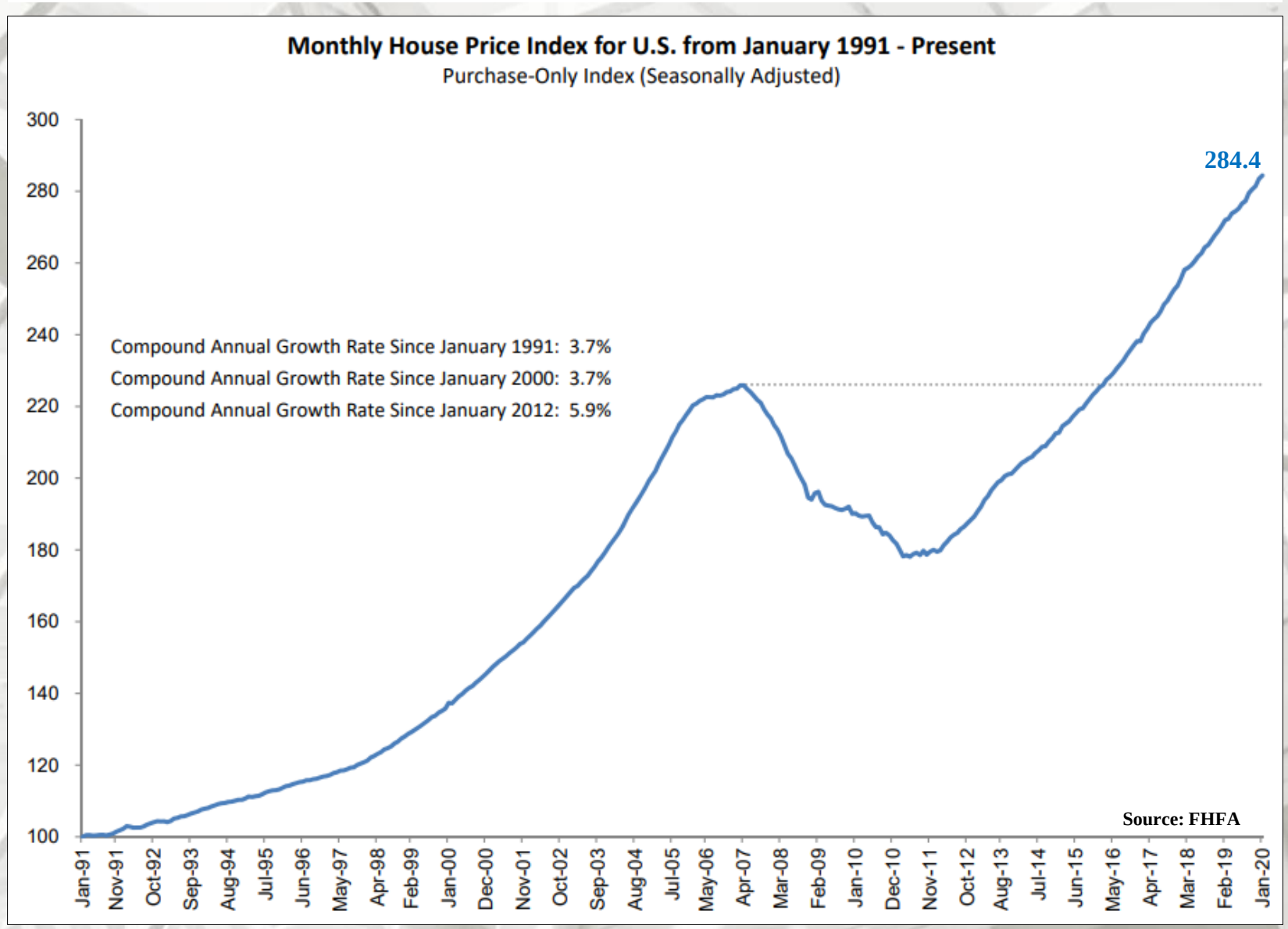
U.S. Housing Prices



Source: https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/HPI-monthly-3252020.pdf; 3/25/20

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U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Continues Shows Continued Growth In Annual Home Price Gains To Start 2020

"January 2020 data show that home prices continue to increase at a modest rate across the U.S. The S&P CoreLogic Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 3.9% annual gain in January, up from 3.7% in the previous month. The 10-City Composite annual increase came in at 2.6%, up from 2.3% in the previous month. The 20-City Composite posted a 3.1% year-over-year gain, up from 2.8% in the previous month.

Phoenix, Seattle and Tampa reported the highest year-over-year gains among the 20 cities. In January, Phoenix led the way with a 6.9% year-over-year price increase, followed by 5.1% increases in Seattle and Tampa. Fourteen of the 20 cities reported higher price increases in the year ending January 2020 versus the year ending December 2019.

The National Index and 20-City Composite were flat month-over-month, while the 10-City Composite posted a 0.1% decrease before seasonal adjustment in January. After seasonal adjustment, the National Index posted a month-over-month increase of 0.5%, while the 10-City and 20-City Composites both posted 0.3% increases. In January, 10 of 20 cities reported increases before seasonal adjustment while 18 of 20 cities reported increases after seasonal adjustment." – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

Source: https://us.spindices.com/documents/indexnews/announcements/20200331-1118159/1118159_cshomeprice-release-0331.pdf; 3 /31/20

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U.S. Housing Prices

S&P CoreLogic Case-Shiller Index Continues Shows Continued Growth In Annual Home Price Gains To Start 2020

"The trend of stable growth established in 2019 continued into the first month of the new year. The National Composite Index rose by 3.9% in January 2020, and the 10- and 20-City Composites also advanced (by 2.6% and 3.1% respectively). Results for the month were broad-based, with gains in every city in our 20-City Composite; 14 of the 20 cities saw accelerating prices. As has been the case since mid-2019, after a long period of decelerating price increases, the National, 10-City, and 20-City Composites all rose at a faster rate in January than they had done in December.

At a regional level, Phoenix retains the top spot for the eighth consecutive month, with a gain of 6.9% for January. Seattle, Tampa, and San Diego all rose by 5.1%. Housing prices were particularly strong in the West and South, and comparatively weak in the Midwest and Northeast.

It is important to bear in mind that today's report covers real estate transactions closed during the month of January. The COVID-19 pandemic did not begin to take hold in the U.S. until late February, and thus whatever impact it will have on housing prices is not reflected in today's data." – Craig J. Lazzara, Managing Director and Global Head of Index Investment Strategy, S&P Dow Jones Indices

Source: https://us.spindices.com/documents/indexnews/announcements/20200331-1118159/1118159_cshomeprice-release-0331.pdf; 3 /31/20

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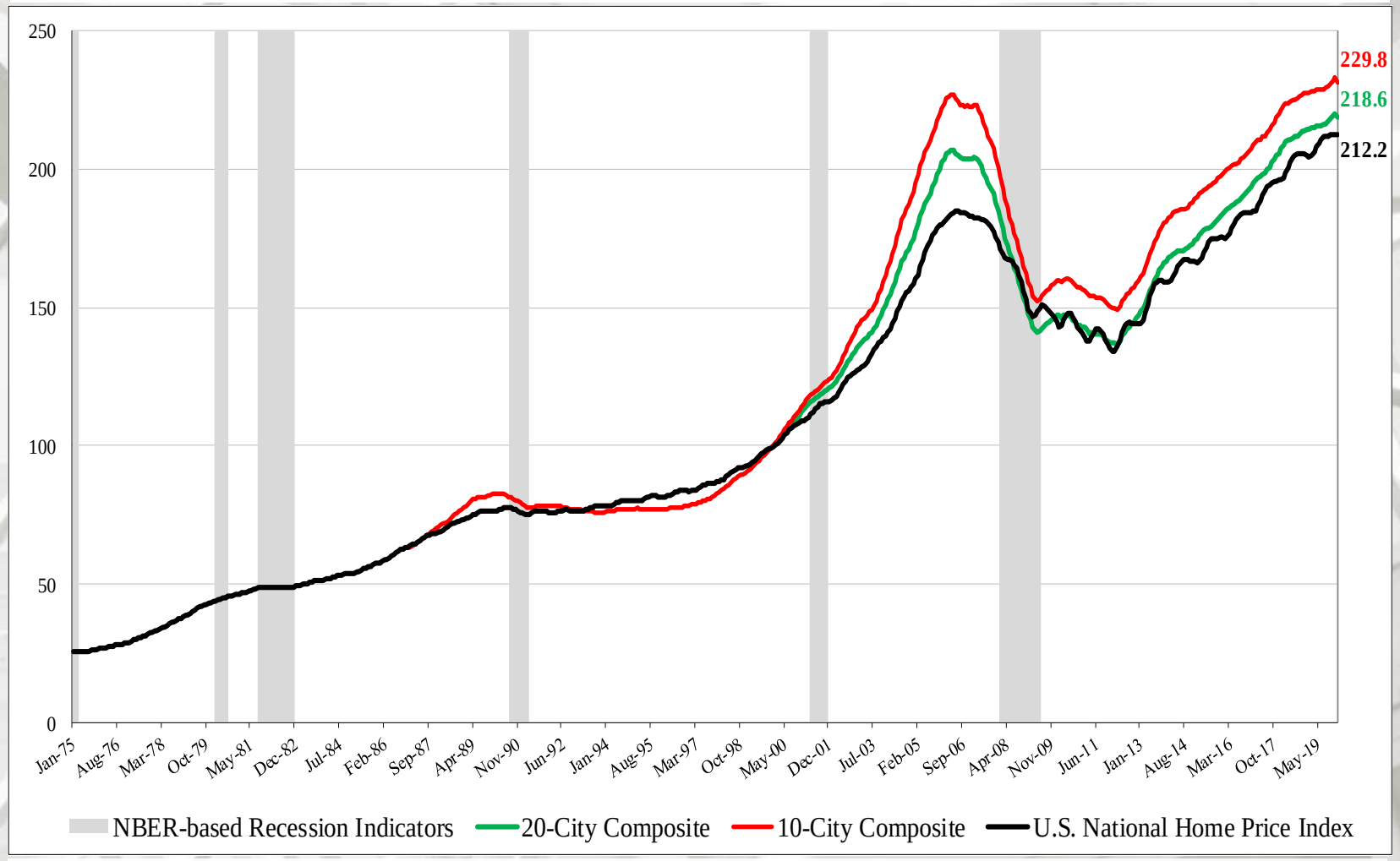
S&P/Case-Shiller Home Price Indices



* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: https://us.spindices.com/documents/indexnews/announcements/20200331-1118159/1118159_cshomeprice-release-0331.pdf; 3 /31/20

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AEI Housing Center

AEI Flash Housing Market Indicators

Week of April 6th-April 10th, 2020

Home Price Trends:

"Optimal Blue data indicate that the rate of home price appreciation (HPA) has started to decelerate with the onset of the coronavirus pandemic.

- Based on purchase price estimates from rate lock data and their geographic location, we construct a weekly home price appreciation index (see next chart).
- The index shows HPA accelerating on a year-over-year (yoy) basis starting with the week of January 27, 2019 (week 5), which is consistent with mortgage rates having fallen from their peaks of nearly 5% in late 2018.
- Throughout 2019 and 2020 (until early March), the rate of HPA continued to strengthen and reached a high of 5.6% yoy for the week of March 1, 2020 (week 10).
- Then the index reverses and quickly decelerates and is now at 4.3% yoy for the week of April 6, 2020 (week 15). This decline is found to be statistically significant and therefore represents a real decline rather than normal noise in the series.
- California, which was among the first states affected by the virus, shows that a further deceleration of HPA is likely." – Edward Pinto and Tobias Peter, AEI Housing Center

Source: https://www.aei.org/housing; 4 /13/20

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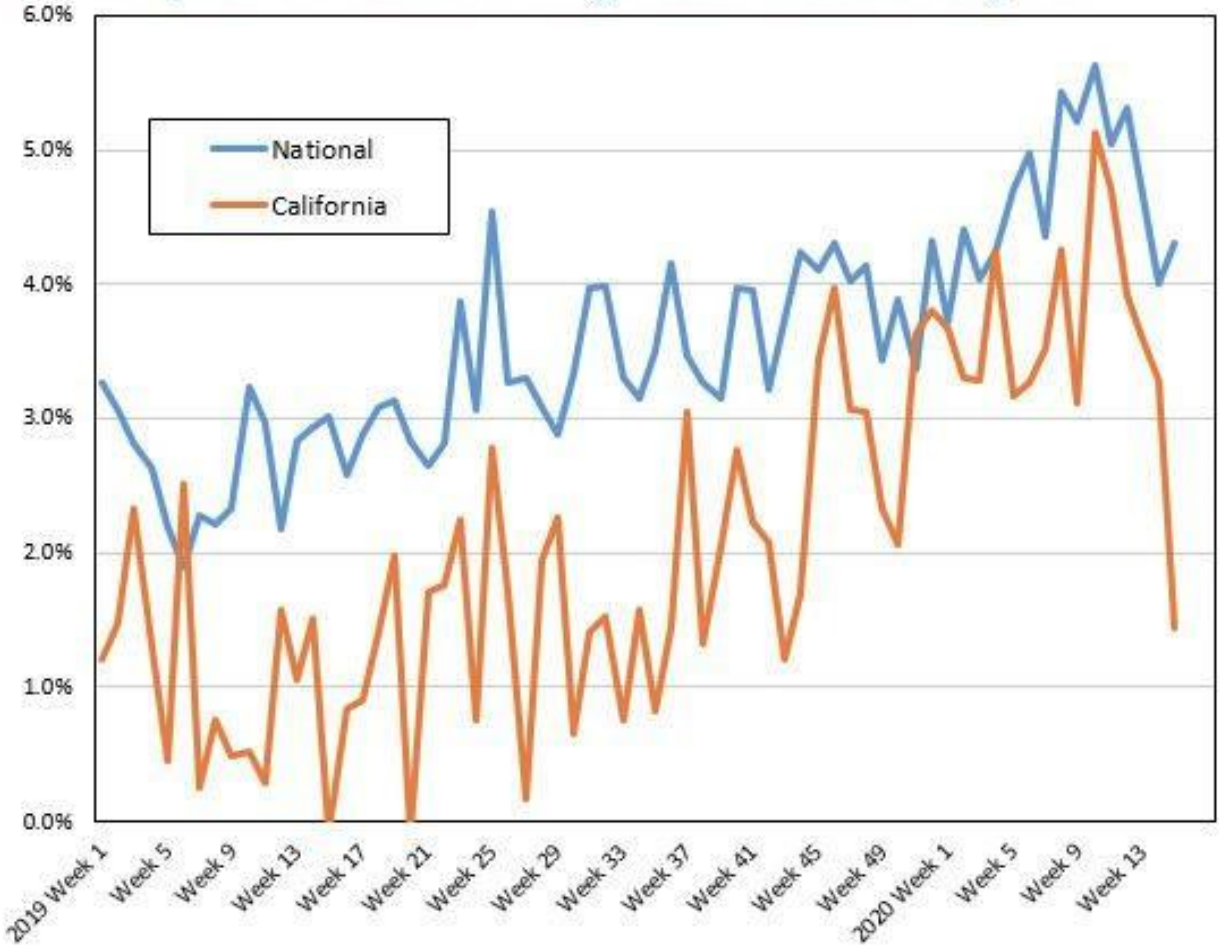
AEI Housing Center

AEI Flash Housing Market Indicators
Week of April 6th-April 10th, 2020

Chart 5: Weekly Year-over-Year Home Price Appreciation: National and California



Note: The index estimates an average weekly sale price controlling for location at the ZIP code level. The sale price is based on home purchase prices as reported on rate lock data. Also, note that these numbers are slightly different from last week's report due to improvements in our methodology. Specifically, after extensive analysis of ZIP code reporting in the Optimal Blue data, we were able to refine our screening process for miscoded or unreported ZIP codes, making the location fixed effects control more accurate.

Source: AEI Housing Center, www.aei.org/housing

Source: https://www.aei.org/housing; 4 /13/20

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U.S. Housing Market

LBM Journal

Principia analysis shows COVID-19's impact on residential construction

"Principia Consulting has initiated COVID-19 coverage to track and calibrate the impact of the coronavirus on residential construction down to the zip code level. In a recent update, Principia provided interactive views of the rapidly changing market for new home construction. Future updates will also include remodeling and repair and specific building product category impacts from the coronavirus. This analysis is fluid, Principia says, and will continue to evolve as COVID-19 progresses throughout the country and government restrictions are added or lifted.

Cities and states throughout the country are issuing stay-at-home (SAH) and shelter-in-place (SIP) ordinances specifying which businesses, including construction, are essential and non-essential. These ordinances are having an ongoing effect on construction activity and building products demand.

The United States was projected to build 2.7 billion square feet of new residential construction in 2020 prior to the impact of COVID-19. A complete review of the ordinances enacted to date shows the impact on construction activity by geography and the potential influence on building product demand and distribution. A few major takeaways include:

- 51% of projected construction activity in municipalities is not currently under any legal restriction
- 12% of projected construction is currently under SAH/SIP restrictions with no exempt
- 65% of multifamily housing falls within the most affected areas

Currently the United States' top three Census divisions South Atlantic, West South Central and Mountain by volume are relatively less affected. 65% of projected new construction in these divisions is in municipalities with no current ordinance." – LBM Journal

Source:; https://lbmjournal.com/principia-analysis-shows-covid-19s-impact-on-residential-construction; 3/27/20

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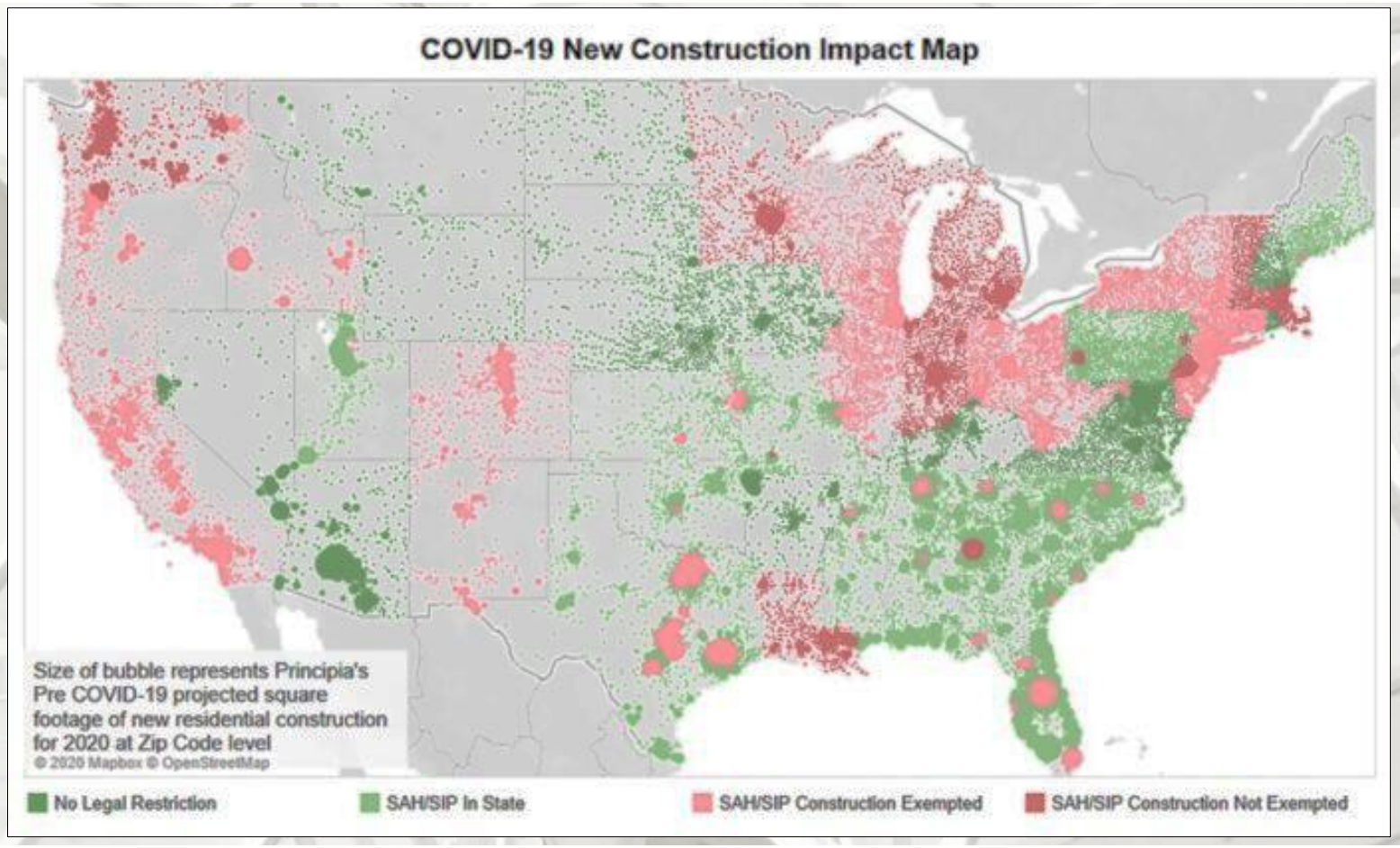
U.S. Housing Market



LBM Journal

"Major areas of the projected new construction in the United States fall within municipalities that are not affected by SAH/SIP ordinances. Clusters of unaffected high-volume areas can be found on Mid-Atlantic Coast (Carolinas and Virginia), and Desert (Arizona and Utah). Most affected areas are currently along the Pacific Coast, North Atlantic Coast, and Great Lakes regions." – LBM Journal

Source:; https://lbmjournal.com/principia-analysis-shows-covid-19s-impact-on-residential-construction; 3/27/20

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U.S. Housing Market

Consigli Construction Co., Inc.

COVID-19 Impact to Construction Materials

"While COVID-19 has created uncertainty around the world, one thing that remains constant is the health and wellness of our employees, clients, suppliers, subcontractors and partners. We are also paying close attention to how COVID-19 affects our business more broadly and how it impacts our vendors and subcontractor partners.

Overview

On an ongoing basis, we continue to work closely with all our supply chain partners to better understand any current or potential impacts from COVID-19 on materials used in our projects. We have already seen some early signs of potential impacts to our supply chain but truthfully, it is too early to tell the broader extent of these impacts. The hardest hit countries that supply materials for our industry are: China, Italy, South Korea, Germany, Spain and France. So far, we've found that select components used in electrical fixtures and equipment, mechanical equipment and elevator equipment are of the largest concern due to a mix of manufacturing shutdowns and port of call export restrictions. Consigli felt it was judicious to offer insight as to how the virus has already impacted, and may continue to impact, the supply chain of materials. Consigli's Director of Purchasing Peter Capone offers some current thoughts as to what we're seeing in the marketplace now, and we'll continue to monitor the situation.

Scale of Impact

Global

Over the past few weeks (and likely weeks to come), global shipping has been one of the biggest casualties. More tonnage of container ships is idled around the world now than during the global financial crisis, according to Alphaliner, a shipping data service. China's manufacturing sector has been hampered by efforts to contain the spread of the illness, and earlier this month, the Italian prime minister instituted a nationwide lockdown. Already, some lighting fixture components sourced from China that were ordered prior to the outbreak are back ordered. There are also longer lead times on finishing materials like glass office fronts and stone coming from Italy." – Consigli

Source:; https://www.consigli.com/covid-19-impact-to-construction-materials/; 3/27/20

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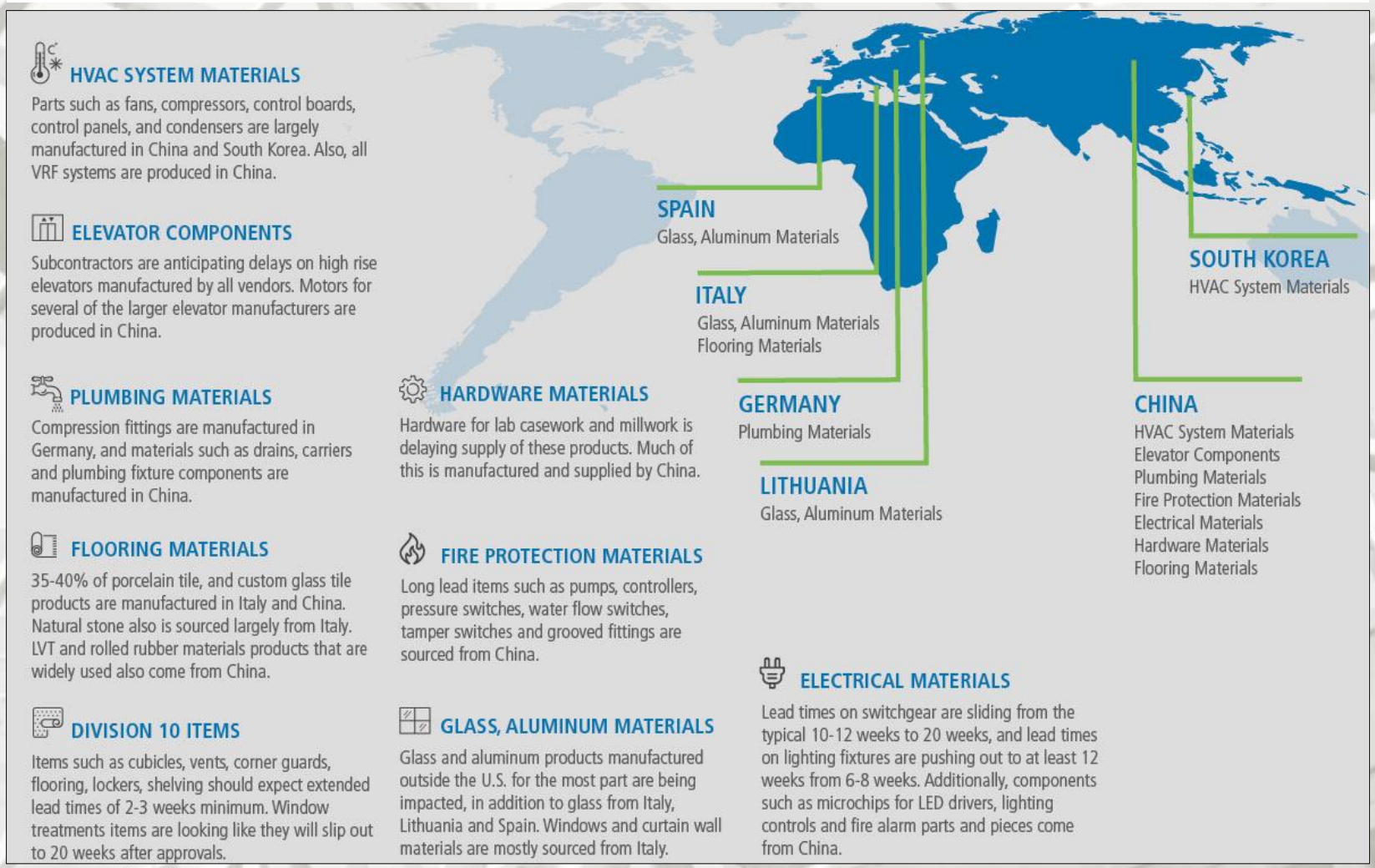
U.S. Housing Market



Source:; https://www.consigli.com/covid-19-impact-to-construction-materials/; 3/27/20

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U.S. Housing Market

Consigli Construction Co., Inc.

COVID-19 Impact to Construction Materials

"**Scale of Impact**

National

About 30% of building materials imported to the U.S. come from China, making the country the biggest single supplier, according to Dodge Data. U.S. contractors are already seeing the impacts of the coronavirus on supply chains for building material — from shipping delays to a need to re-source products domestically. And the country is faced with uncertainties over how long countries will be on lockdown, how crews will be impacted and whether project deadlines will have to be pushed out. The American Association of Port Authorities also announced earlier this month that first quarter cargo volumes at U.S. ports could drop 20% or more from 2019 levels because of supply chain disruptions caused by the coronavirus.

Regional

Supply of materials in the Northeast mirror what we're seeing nationally with the exception of imports from Canada; however, of materials sourced from Canada (such as structural steel and HVAC equipment) are also starting to become concerning. Newly implemented travel restrictions have not blocked the import of materials, but Canada is ramping up its precautionary measures daily which will eventually affect manufacturing output.

Potential Delays

Manufacturing Shutdowns | While factories in China are continuing to come back online as the spread of the virus subsides and materials will begin to flow again, there are still issues affecting cargo movement and back up delays.

Port of Call Export Restrictions | COVID-19 is expected to create "a longer and larger impact" on imports flowing into major U.S. container ports than previously believed due to factory shutdowns and travel restrictions in China that continue to affect production, according to the National Retail Federation (NRF). There is still a lot of uncertainty as to the long-term impact on the supply chain." – Consigli

Source:; https://www.consigli.com/covid-19-impact-to-construction-materials/; 3/27/20

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U.S. Housing Market

Consigli Construction Co., Inc.

COVID-19 Impact to Construction Materials

"**Precautionary Measures**

Within the last several weeks, all of our project teams have, and will continue to, take the following precautions:

- Identify project specific "long lead time/high-risk" materials sourced abroad;
- Communicate daily with subcontractors to track these materials as they move through the process;
- Discuss contingency plans for sourcing "alternate" manufacturers, when prudent;
- Work with design teams, during design development, to avoid sourcing materials from high-risk manufacturers;
- Collect and share information daily through a centralized tracking portal;
- Expedite remaining buyout to avoid domestic material demand issues.

Looking Ahead

To continue moving projects along both on time and safely, Consigli recommends teams evaluate their contracts and communicate with all project teams, subcontractors and vendors. Consigli is also now looking at sourcing materials earlier than it normally would and possibly looking to rely more heavily on domestic suppliers. More positively, we are seeing that Chinese manufacturers are back online and slowly returning to full capacity. We anticipate a portion of these potential supply delays will resolve in the coming weeks, and we will maintain open communication in the coming weeks as supply logistics play out and circumstances evolve. Stay safe and healthy, and rest assured we are all in this together.

To access a full PDF of this information, click here:

COVID-19 Impact to Construction." – Consigli

Source:; https://www.consigli.com/covid-19-impact-to-construction-materials/; 3/27/20

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U.S. Housing Market

First American

Why the Housing Market May Weather Coronavirus Impact Better Than the Great Recession

"This time, housing is a casualty of a public health crisis turned economic, not the cause of an economic crisis."

"As we are all too aware, the coronavirus outbreak has taken hold of the domestic and global economy. The housing market is not immune to its impact but may be in a better position than many believe. Recent data shows that weekly unemployment claims soared to a record, which will, in turn, work to depress household incomes and consumer confidence. While mortgage rates have fallen due to the economic uncertainty, potential home buyers that are confined to their homes cannot necessarily take advantage of the affordability boost. Many still bear scars from the Great Recession and may expect the housing market to follow a similar trajectory in response to the coronavirus outbreak. But, there are distinct differences that indicate the housing market may follow a much different path. While housing led the recession in 2008-2009, this time it may be poised to bring us out of it.

The Housing Market Then Versus Now

Let's examine several differences between the pre-Great Recession housing market and the housing market at the cusp of the coronavirus outbreak.

- **Housing Market is Not Overvalued**: The graphic below compares house-buying power and the median sale price of a home from the year 2000 through January 2020. If housing is appropriately valued, house-buying power should equal or outpace the median sale price of a home. The only time period when the median sale price was greater than house-buying power was from 2005 through 2007, indicating an overvaluation of housing, or a "housing bubble." Today, house-buying power is nearly twice as high as the median sale price of home, implying that housing is not overvalued, and is in fact in a much better position entering this potential recession than it was ahead of the last." – Mark Fleming, Chief Economist, First American

Source: https://blog.firstam.com/economics/why-the-housing-market-may-weather-coronavirus-impact-better-than-the-great-recession; 3/31/20

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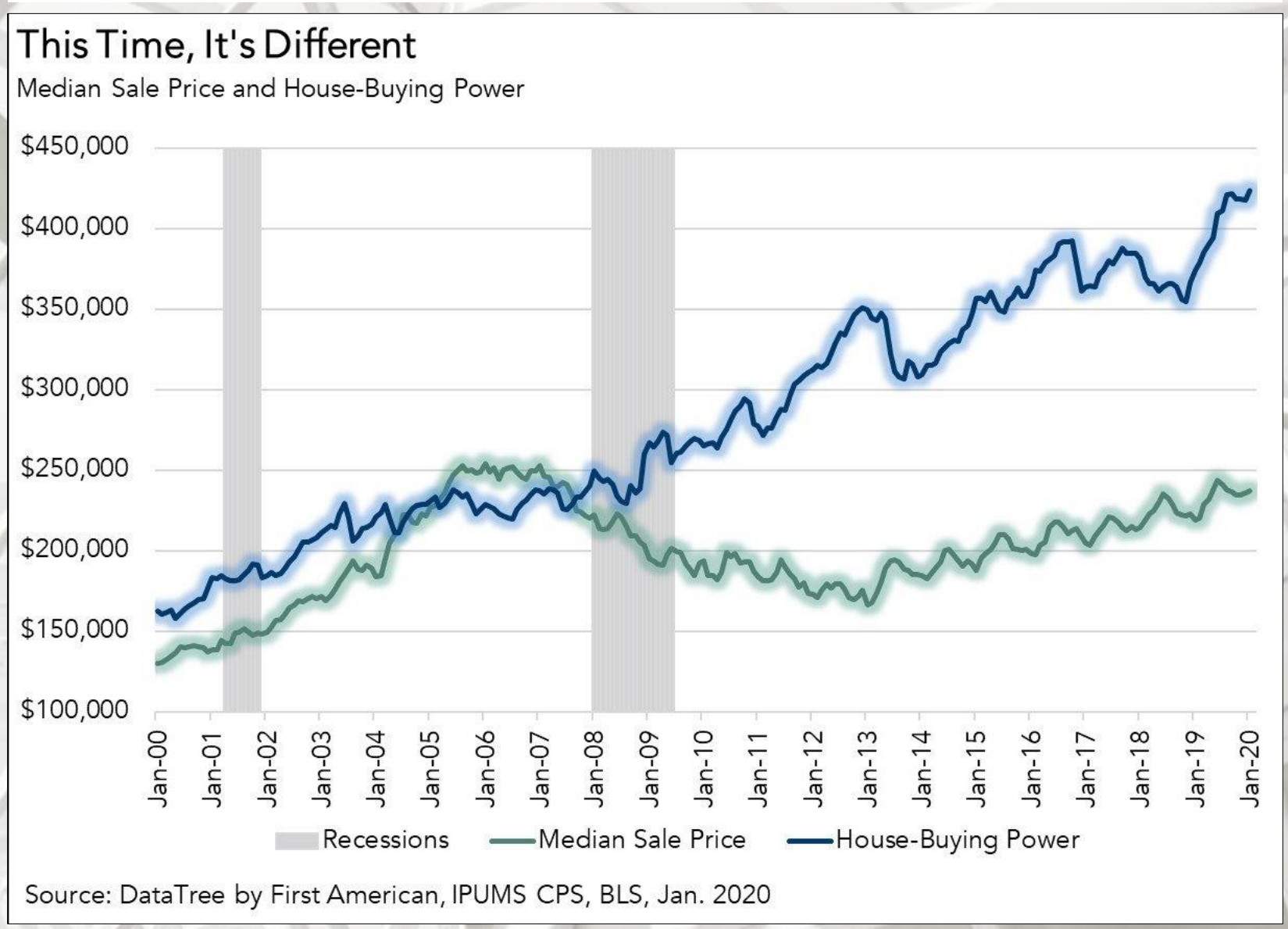
U.S. Housing Market



Source: https://blog.firstam.com/economics/why-the-housing-market-may-weather-coronavirus-impact-better-than-the-great-recession; 3/31/20

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U.S. Housing Market

First American

Why the Housing Market May Weather Coronavirus Impact Better Than the Great Recession

- "**The Housing Market is Underbuilt**: Housing enters this potential recession underbuilt rather than overbuilt, a significant difference compared with the pre-Great Recession housing market. In fact, since 2009, housing demand has outstripped housing supply. In 2018 – the latest full year for which we have comprehensive data – 1.2 million households were formed, while only 860,000 units were produced, resulting in a shortage of 340,000 units. Prior to 2009, the opposite was true, as housing supply significantly outpaced demand. The limited supply of homes positions the housing market to lead the recovery, once the impact from the coronavirus outbreak fades. In fact, it's important to remember that the housing market has traditionally aided the economy in recovering from a recession. Consumers who are less affected by a downturn are willing to buy and sell, which can help get other parts of the economy moving.
- **Equity is at Historical Highs**: The housing market today is not driven by liberal lending standards, sub-prime mortgages, and highly leveraged homeowners, as shown by the fact that the household debt-to-income ratio is at a four-decade low. The housing crisis during the Great Recession was fueled heavily by the fact that job losses were paired with a significant share of homeowners who had little, if any, equity in their homes. Homeowners today have very high levels of tappable home equity, providing a cushion to withstand potential price declines.

What's the Prognosis for Housing?

Unfortunately, the service industry – hospitality, retail and leisure specifically – will likely feel the sharpest and most immediate economic pain from the coronavirus outbreak. There are over 130 million workers in the overall service sector, which accounts for 86 percent of total nonfarm employment, so job losses are expected to be high in this labor-intensive sector. Of course, the housing market will not go unscathed, as consumer confidence and a strong labor market are essential in the decision to purchase a home. Yet, this time, housing is a casualty of a public health crisis turned economic, not the cause of an economic crisis." – Mark Fleming, Chief Economist, First American

Source: https://blog.firstam.com/economics/why-the-housing-market-may-weather-coronavirus-impact-better-than-the-great-recession; 3/31/20

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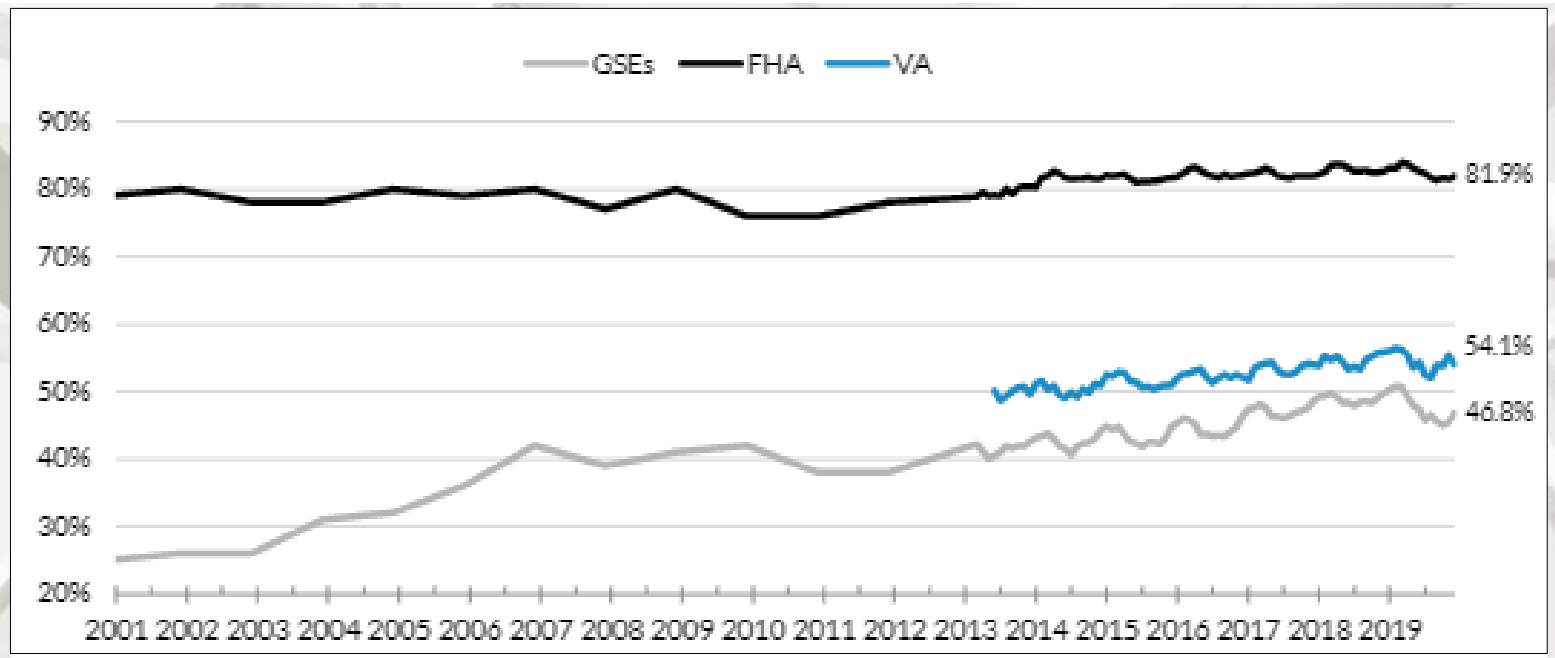
First-Time House Buyers



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 January 2020, the FTHB share for FHA, which has always been more focused on first time homebuyers, rose very slightly to 81.9 percent. The FTHB share of VA lending decreased in January, to 54.1 percent. The GSE FTHB share in January was 46.8 percent. …based on mortgages originated in January 2020, the average FTHB was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, and higher LTV, thus paying a higher interest rate." – Bing Lai, Research Associate, Housing Finance Policy Center

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-march-2020; 3/26/20

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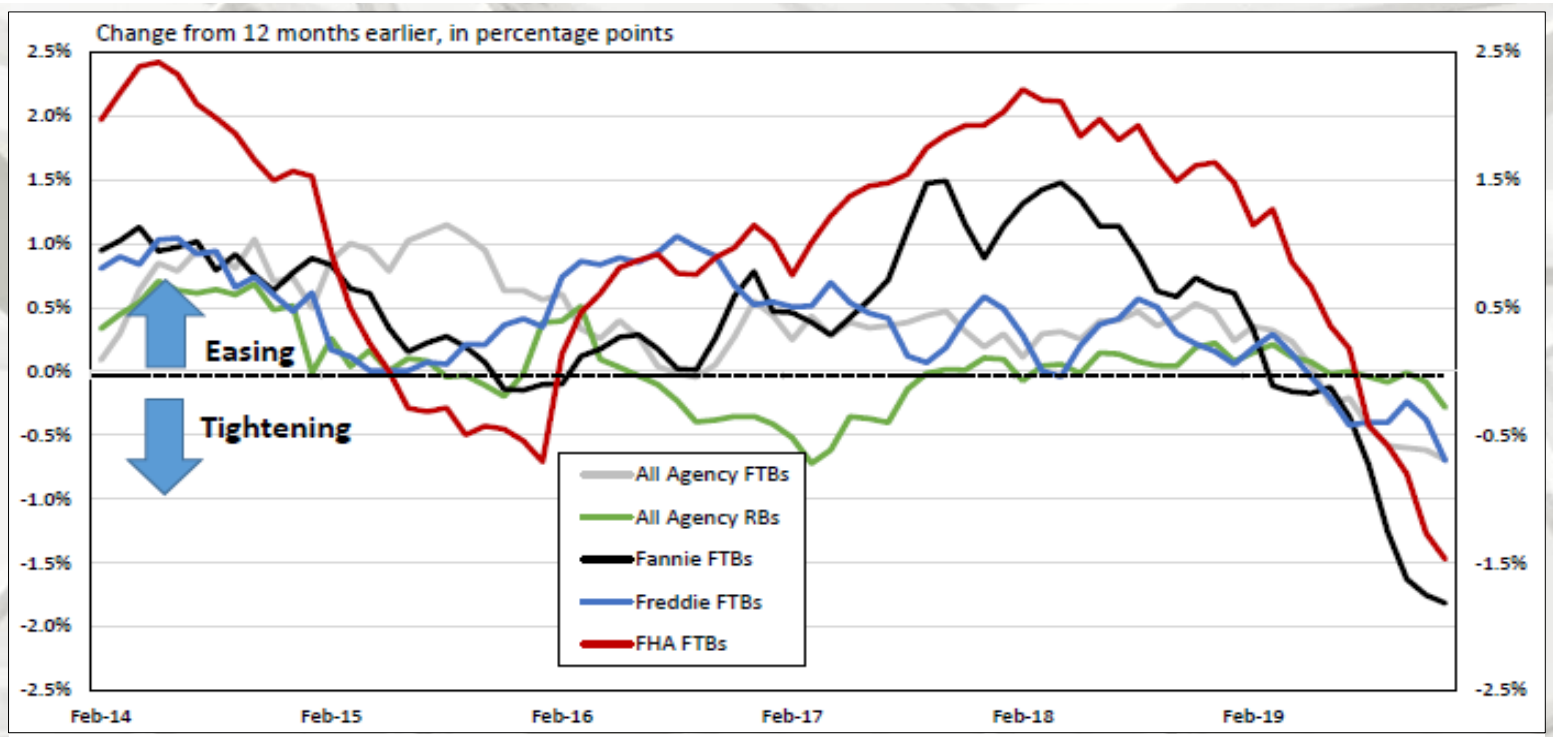
First-Time House Buyers



Note: Includes all types of NMRI purchase loans (primary owner-occupied, second home, and investor loans).

AEI Housing Center

FTB Purchase Loan NMRI: Credit Tightening Continues for FTBs

"The First time Buyer (FTB) MRI continued to decrease (y-o-y) led by Fannie, which has been tightening since March 2019. FHA's First time Buyer MRI stood at 27.5% in December , down 1.5 ppt from a year earlier. While this change is encouraging, the decrease is coming off of very high risk levels and more needs to be done. The Repeat Buyer (RB) MRI has been fairly unchanged for quite some time. It is unclear what impact the coronavirus will have in the coming months." – Edward Pinto and Tobias Peter, AEI Housing Center

Source: https://hello.aei.org/; 3/30/20

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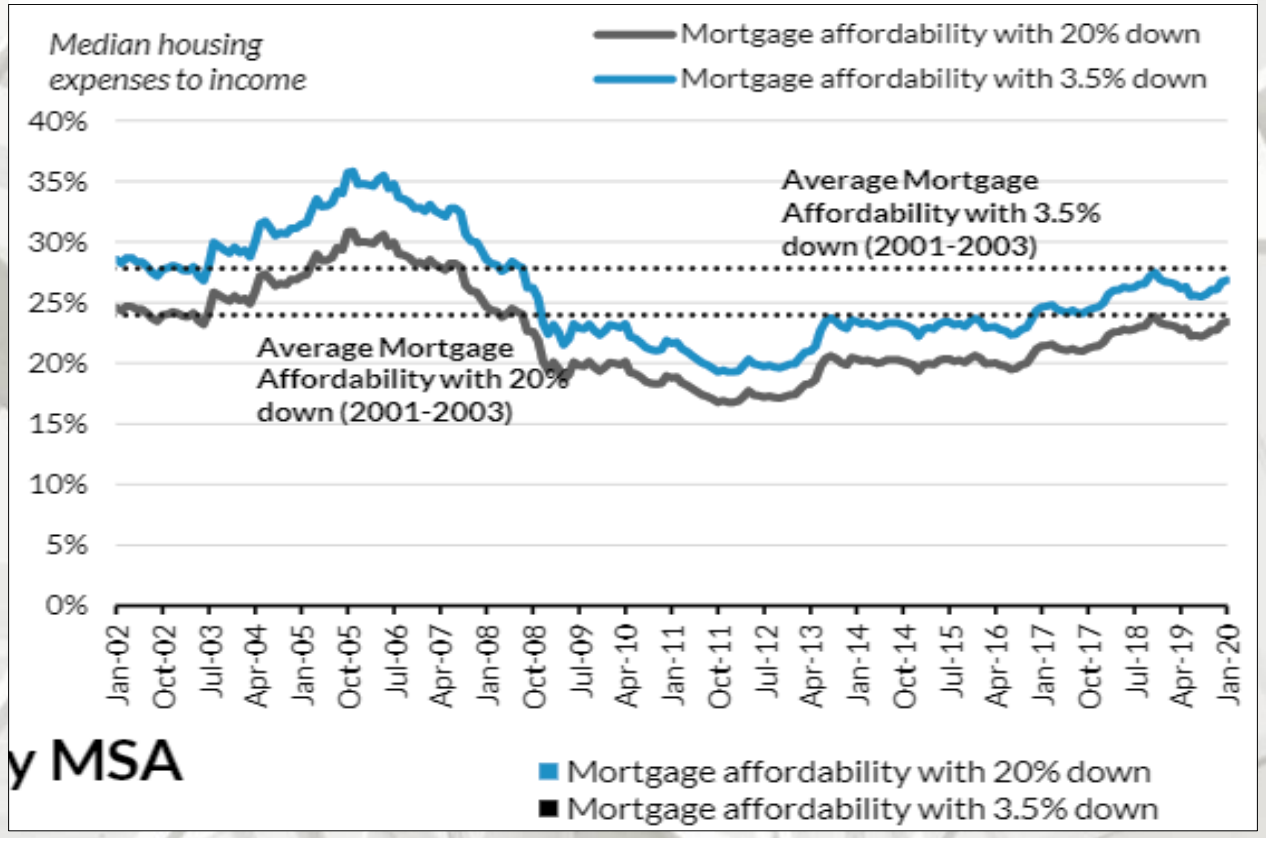
Housing Affordability

National Housing Affordability Over Time



Urban Institute

"Home prices remain affordable by historic standards, despite price increases over the last 7 years, as interest rates remain relatively low in an historic context. As of January 2020, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 23.4 percent; with 3.5 down, it is 26.9 percent. Since February 2019, the median housing expenses to income ratio has been slightly lower than the 2001-2003 average." – Laurie Goodman, VP, Housing Finance Policy Center

Source: https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-march-2020; 3/26/20

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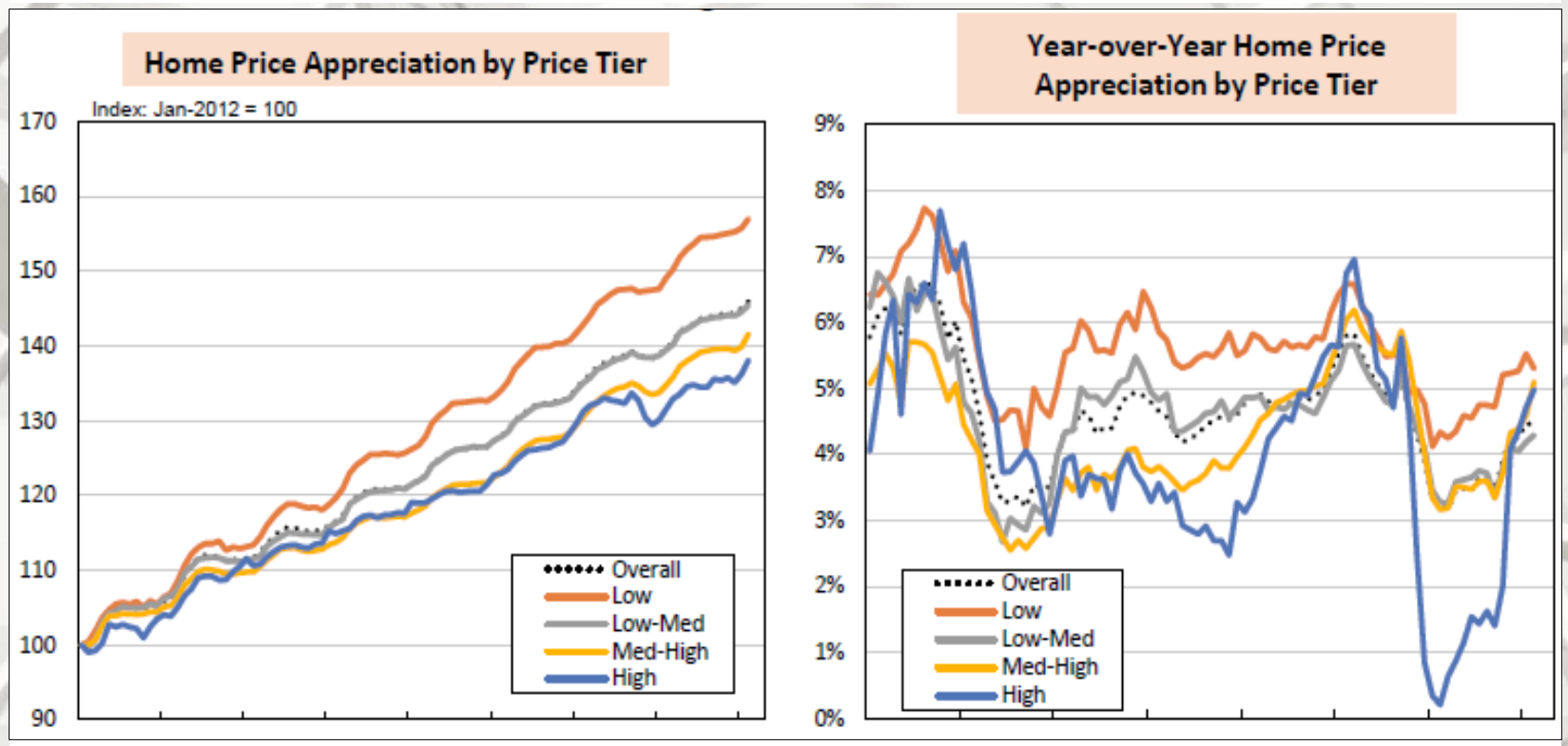
Housing Affordability



Note: Data for February 2020 are preliminary. Price tiers are set at the metro level and are defined as follows: Low: all sales at or below the 40th percentile of FHA sales prices; Low-Medium: all sales at or below the 80th percentile of FHA sales prices; Medium-High: all sales at or below the 125% of the GSE loan limit; and High: all other sales. HPAs are smoothed around the times of FHFA loan limit changes.

AEI Housing Center

National House Price Appreciation (HPA) by Price Tier

"In February 2020, overheating of the low price tier continued (right panel). HPA in the low price tier was 5.3% year-over-year. HPA in the high tier (about 7% share) increased significantly to 5.0% compared to a year ago. This tier was first hit by the Fed's tightening and is now buoyed by the Fed's loosening. Looking ahead, the low tier with its disproportionate share of "canary" ZIP codes may experience a larger price correction than the low-medium and medium-high tiers due to the virus." – Edward Pinto and Tobias Peter, AEI Housing Center

Source: https://hello.aei.org/; 3/30/20

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Mortgage Credit Availability

Mortgage Credit Availability Decreased in March

"Mortgage credit availability decreased in March 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 fell by 16.1 percent to 152.1 in March. 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 decreased 24.2 percent, while the Government MCAI decreased by 6.6 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI decreased by 36.9 percent, and the Conforming MCAI fell by 2.7 percent.

Mortgage credit supply decreased 16 percent in March to the lowest level since June 2015, with declines in availability across all loan types. There was a reduction in the availability of loans with lower credit scores and higher LTV ratios, and the largest pullback came from the jumbo and non-QM space. This month's release highlights the large retreat from jumbo and non-QM investors due to a sharp drop in liquidity. Lenders are making credit criteria changes to account for the increased likelihood of forbearance and defaults, as well as higher costs.

There was also a significant drop in availability of LIBOR-indexed ARMs, as lenders acted on the GSEs' announcement to halt purchases of those loan products." – Joel Kan, Associate Vice President of Economic and Industry Forecasting, MBA

Source: https://www.mba.org/2020-press-releases/march/mortgage-credit-availability-decreased-in-march; 4/9/20

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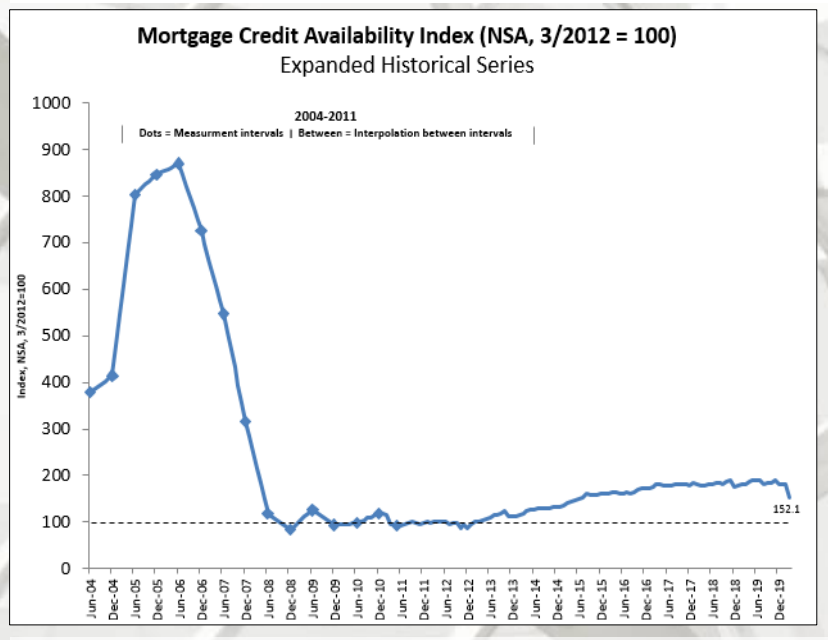
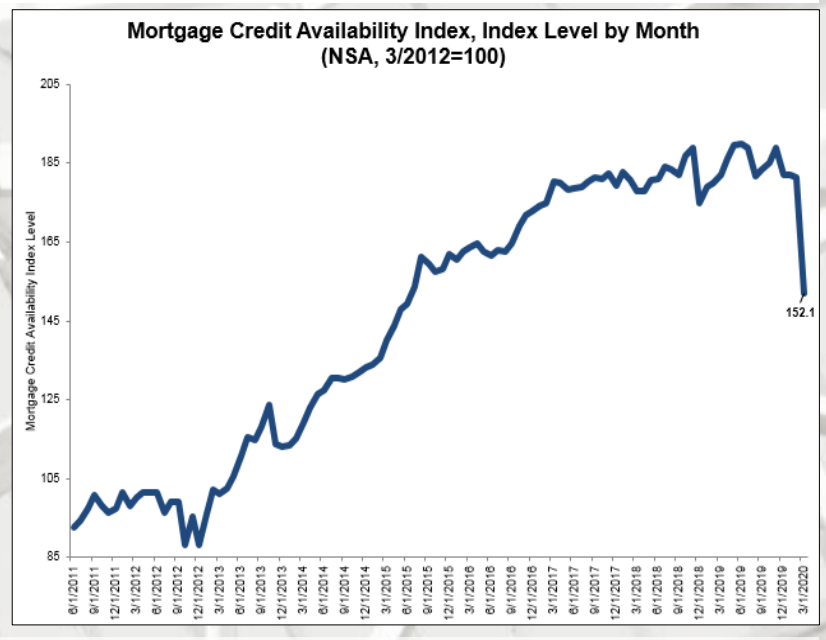
Mortgage Credit Availability





Source: *Mortgage Bankers Association; Powered by Ellie Mae's AllRegs® Market Clarity®*

Source: https://www.mba.org/2020-press-releases/march/mortgage-credit-availability-decreased-in-march; 4/9/20

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MBA Mortgage Finance Forecast

	2019				2020				2021							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021	2022
Housing Measures																
Housing Starts (SAAR, Thous)	1,213	1,256	1,282	1,441	1,428	1,000	1,050	1,310	1,350	1,380	1,390	1,400	1,298	1,197	1,380	1,465
Single-Family	864	847	894	970	950	810	850	930	960	980	990	1,000	894	885	983	1,050
Two or More	349	409	388	470	478	190	200	380	390	400	400	400	404	312	398	415
Home Sales (SAAR, Thous)																
Total Existing Homes	5,207	5,287	5,427	5,414	5,416	4,853	5,095	5,559	5,686	5,741	5,790	5,869	5,334	5,231	5,772	5,974
New Homes	669	661	699	723	765	689	701	747	764	770	774	785	688	725	773	806
FHFA US House Price Index (YOY % Change)	5.5	5.1	4.8	5.1	5.0	2.9	2.6	4.3	4.6	4.3	4.0	3.8	5.1	4.3	3.8	2.8
Median Price of Total Existing Homes (Thous $)	253.0	276.8	276.9	272.3	271.5	287.2	291.9	288.9	289.2	288.3	286.8	287.7	269.7	284.9	288.0	287.3
Median Price of New Homes (Thous $)	312.3	321.2	317.0	325.2	325.3	309.1	305.5	304.4	314.5	319.9	325.3	329.5	318.9	311.1	322.3	335.2
Interest Rates																
30-Year Fixed Rate Mortgage (%)	4.4	4.0	3.7	3.7	3.5	3.6	3.6	3.5	3.5	3.5	3.6	3.7	3.7	3.5	3.7	3.8
10-Year Treasury Yield (%)	2.7	2.3	1.8	1.8	1.4	1.0	1.2	1.3	1.5	1.5	1.7	1.8	1.8	1.3	1.8	2.0
Mortgage Originations																
Total 1- to 4-Family (Bil $)	325	501	651	696	563	768	600	495	420	505	507	467	2,173	2,426	1,899	1,907
Purchase	228	355	375	314	257	350	300	335	290	380	380	347	1,272	1,242	1,397	1,478
Refinance	97	146	276	382	306	418	300	160	130	125	127	120	901	1,184	502	429
Refinance Share (%)	30	29	42	55	54	54	50	32	31	25	25	26	41	49	26	22
Mortgage Debt Outstanding																
1- to 4-Family (Bil $)	10,362	10,446	10,574	10,677	10,780	10,884	10,993	11,095	11,196	11,314	11,436	11,556	10,677	11,095	11,556	12,058

Notes:
12.7% -1.4% -20.0% 6.7% 12.8% 8.6% 26.7% 3.7%
Housing starts and home sales are seasonally adjusted 4.4% 4.2% 6.2% 5.7%
Total existing home sales include condos and co-ops.
Mortgage rate forecast is based on Freddie Mac's 30-Yr fixed rate which is based on predominantly home purchase transactions.
The 10-Year Treasury Yield and 30-Yr mortgage rate are the average for the quarter, but annual columns show Q4 values.
Total 1-to-4-family originations and refinance share are MBA estimates. These exclude second mortgages and home equity loans.
The FHFA US House Price Index is the forecasted year over year percent change of the FHFA All Transactions House Price Index.
The mortgage debt outstanding forecast is for 1-4 unit mortgage debt and excludes home equity loans. Annual MDO numbers reflect EOP values.
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Source: http://mba-erm.informz.net/mba-erm/data/images/Mortgage%20Finance%20Forecast%20Apr%202020.pdf; 4/2/20

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MBA Economic Forecast

April 2, 2020

	2019				2020				2021							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021	2022
Percent Change, SAAR																
Real Gross Domestic Product	3.1	2.0	2.1	2.1	-1.2	-12.9	-1.9	5.4	8.8	5.9	3.1	2.0	2.3	-2.9	4.9	2.2
Personal Consumption Expenditures	1.1	4.6	3.2	1.8	-1.9	-16.4	0.7	7.8	5.5	3.4	1.9	2.2	2.7	-2.9	3.2	1.9
Business Fixed Investment	4.4	-1.0	-2.3	-2.4	-0.3	-22.8	-10.3	1.3	11.3	9.1	5.4	3.1	-0.4	-8.6	7.2	3.0
Residential Investment	-1.0	-3.0	4.6	6.5	9.7	-15.2	-17.4	2.4	12.3	7.4	5.0	9.3	1.7	-5.8	8.5	5.6
Govt. Consumption & Investment	2.9	4.8	1.7	2.5	2.1	1.4	1.0	1.1	2.2	1.4	1.2	0.7	3.0	1.4	1.4	0.2
Net Exports (Bil. Chain 2012$)	-787.0	-819.9	-828.1	-749.2	-746.1	-671.3	-507.7	-469.2	-479.4	-515.9	-546.2	-570.5	-796.0	-598.6	-528.0	-540.0
Inventory Investment (Bil. Chain 2012$)	98.6	59.0	59.0	11.1	-21.0	9.4	-153.8	-204.2	-79.4	33.9	90.2	95.7	56.9	-92.4	35.1	91.0
Consumer Prices (YOY)	1.6	1.8	1.8	2.0	2.1	-0.2	0.4	0.7	1.0	3.1	2.5	2.1	1.8	0.7	2.2	2.4
Percent																
Unemployment Rate	3.9	3.6	3.6	3.5	3.6	7.6	8.7	9.1	7.8	6.6	5.7	5.0	3.7	7.2	6.3	4.1
Federal Funds Rate	2.375	2.375	1.875	1.625	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	1.625	0.125	0.125	0.875
10-Year Treasury Yield	2.7	2.3	1.8	1.8	1.4	1.0	1.2	1.3	1.5	1.5	1.7	1.8	1.8	1.3	1.8	2.0

Notes:
The Fed Funds Rate forecast is shown as the mid point of the Fed Funds range at the end of the period.
All data except interest rates are seasonally adjusted
The 10-Year Treasury Yield is the average for the quarter, while the annual value is the Q4 value
Forecast produced with the assistance of the Macroeconomic Advisers' model
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Source: http://mba-erm.informz.net/mba-erm/data/images/Economic%20Forecast%20Apr%202020.pdf; 4/2/20

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Summary

In conclusion:

In February, total starts, permits, completions, new sales, and residential spending declined on a month-over-month basis. The silver lining – permits were the greatest since March 2007. On a year-over-year basis, the majority of the data indicated robust improvement, except for the decline in multi-family permits and total completions. Single-family under construction also decreased. New single-family house sales decreased; yet, on a yearly basis, were much greater than in 2019. Existing sales also improved. Single-family construction expenditures improved on a monthly and yearly basis.

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

Pros:

1) Historically low interest rates are still in place;
2) Select builders are beginning to focus on entry-level houses;
3) Housing affordability indicates improvement;

Cons:

1) Coronavirus19 (Covid19);
2) Lot availability and building regulations (according to several sources);
3) Laborer shortages;
4) Household formations still lag historical averages;
5) Changing attitudes towards SF ownership;
6) Job creation is improving and consistent but some economists question the quantity and types of jobs being created;
7) Debt: Corporate, personal, government – United States and globally;
8) Other global uncertainties.

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