

The Virginia Tech–USDA Forest Service Housing Commentary: Section I July 2025



Delton Alderman

Forest Products Laboratory

USDA Forest Service

Madison, WI

608.259.6076



delton.r.alderman@usda.gov



Urs Buehlmann

Department of Sustainable
Biomaterials

College of Natural Resources &
Environment

Virginia Tech
Blacksburg, VA

540.231.9759

buehlmann@gmail.com

2025

Virginia Polytechnic Institute and State University

VCE-ANR

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; Jewel E. Hairston, Administrator, 1890 Extension Program, Virginia State, Petersburg.

Table of Contents

Slide 3: <u>Opening Remarks</u>	Slide 41: <u>New Single-Family House Sales</u>
Slide 4: <u>Housing Scorecard</u>	Slide 43: <u>Region SF House Sales & Price</u>
Slide 5: <u>New Housing Starts</u>	Slide 46: <u>New SF House Sales x Category</u>
Slide 12: <u>Regional Housing Starts</u>	Slide 57: <u>Construction Spending</u>
Slide 18: <u>New Housing Permits</u>	Slide 60: <u>Construction Spending Shares</u>
Slide 20: <u>Regional New Housing Permits</u>	Slide 63: <u>Existing House Sales</u>
Slide 25: <u>Housing Under Construction</u>	Slide 66: <u>U.S. Housing Prices & Finance</u>
Slide 27: <u>Regional Under Construction</u>	Slide 75: <u>Mortgage Finance & Outlook</u>
Slide 32: <u>Housing Completions</u>	Slide 80: <u>Summary</u>
Slide 34: <u>Regional Housing Completions</u>	Slide 81: <u>Virginia Tech Disclaimer</u>
Slide 40: <u>New Housing Sales</u>	Slide 82: <u>USDA Disclaimer</u>
Slide 41: <u>New Single-Family House Sales</u>	

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 delton.r.alderman@usda.gov

Opening Remarks

Housing data month-over-month were mixed. Year-over-year, total, single-family, multi-family starts, and existing house sales were positive. The influence of mortgage rates is evident, as aggregate costs have decreased affordability.

The September 10th Atlanta Fed GDPNow™ total residential investment spending forecast is -4.9% for Quarter 3 2025. Quarterly log change for new private permanent site expenditures were projected at -8.1%; the improvement spending forecast was -0.3%; and the manufactured/mobile home expenditures projection was -2.7% (all: quarterly log change and at a seasonally adjusted annual rate).¹

“Affordability is beginning to shift – gradually and unevenly – but the momentum is turning. The most likely path forward is a slow rebalancing, driven by income growth outpacing home price appreciation, some moderation in prices as inventory improves, and eventual downward pressure on mortgage rates, if economic conditions soften. While this process will take time, likely years, the balance of power is no longer as one-sided as it was during the pandemic frenzy. For those prospective buyers who have been waiting on the sidelines, the housing market is finally starting to listen.”² – Mark Fleming, Chief Economist, First American Financial Corporation

This month’s commentary contains 2025 housing forecasts, applicable housing data, remodeling commentary, and United States housing market observations. Section I contains relevant data, remodeling, and housing finance commentary. Section II includes regional Federal Reserve analysis, private firm indicators, and demographic/economic information.

Sources: ¹ www.frbatlanta.org/cqer/research/gdpnow.aspx; 9/10/25

² <https://blog.firstam.com/economics/affordabilitys-slow-comeback/>; 8/29/25

July 2025

Housing Scorecard

		M/M		Y/Y
Housing Starts	▲	5.2%	▲	12.9%
Single-Family (SF) Starts	▲	2.8%	▲	7.8%
Multi-Family (MF) Starts*	▲	9.9%	▲	24.1%
Housing Permits	▼	2.2%	▼	5.2%
SF Permits	▲	1.0%	▼	7.4%
MF Permits*	▼	7.6%	▼	0.8%
Housing Under Construction	▲	0.1%	▼	12.4%
SF Under Construction	▼	1.0%	▼	3.7%
Housing Completions	▲	6.0%	▼	13.5%
SF Completions	▲	11.6%	▼	6.1%
New SF House Sales	▼	0.6%	▼	8.2%
Private Residential Construction Spending	▲	0.1%	▼	5.3%
SF Construction Spending	▲	0.1%	▼	2.3%
Existing House Sales ¹	▲	2.0%	▲	0.8%

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

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

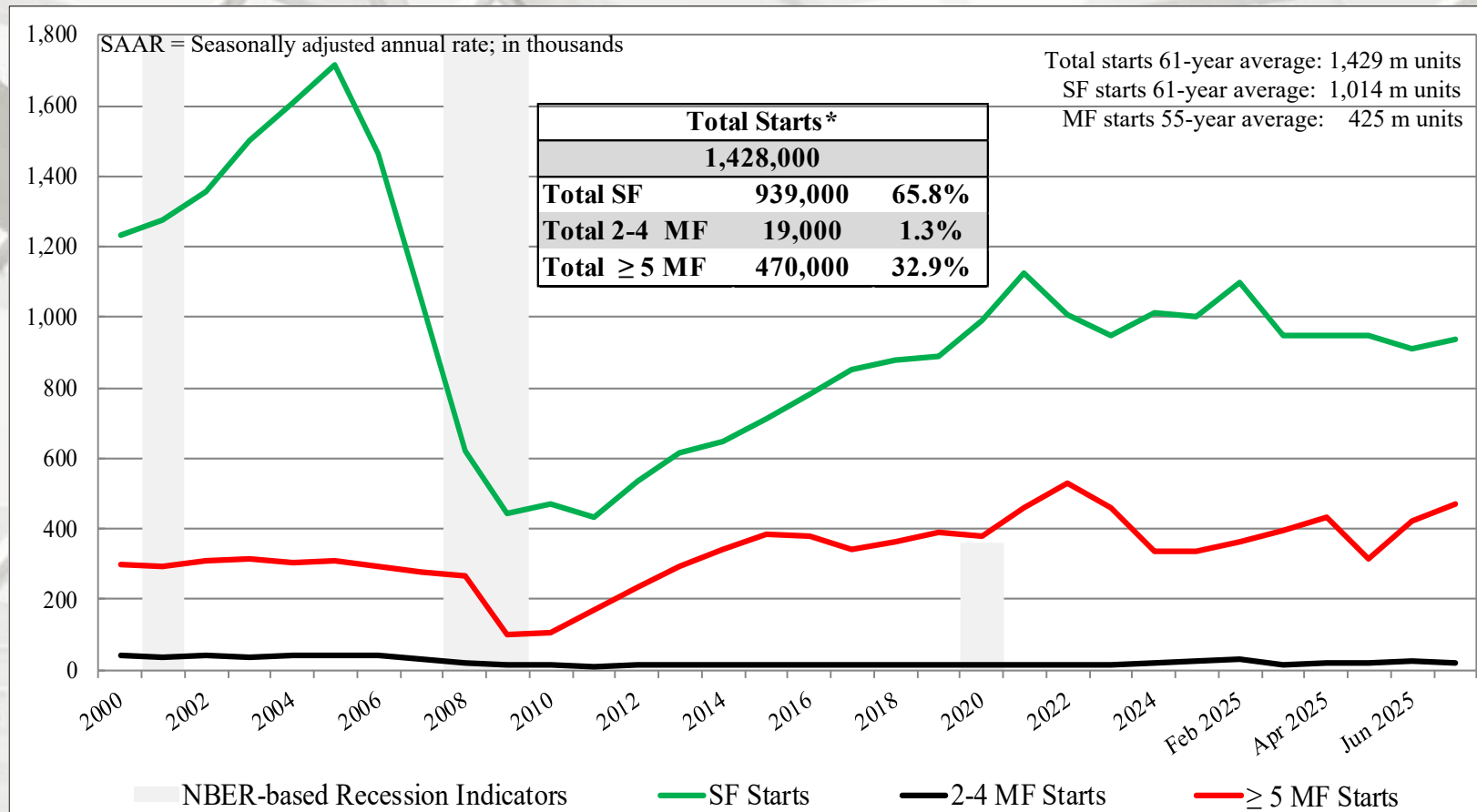
New Housing Starts

	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
July	1,428,000	939,000	19,000	470,000
June	1,358,000	913,000	24,000	421,000
2024	1,265,000	871,000	25,000	369,000
M/M change	5.2%	2.8%	-20.8%	11.6%
Y/Y change	12.9%	7.8%	-24.0%	27.4%

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

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

Total Housing Starts

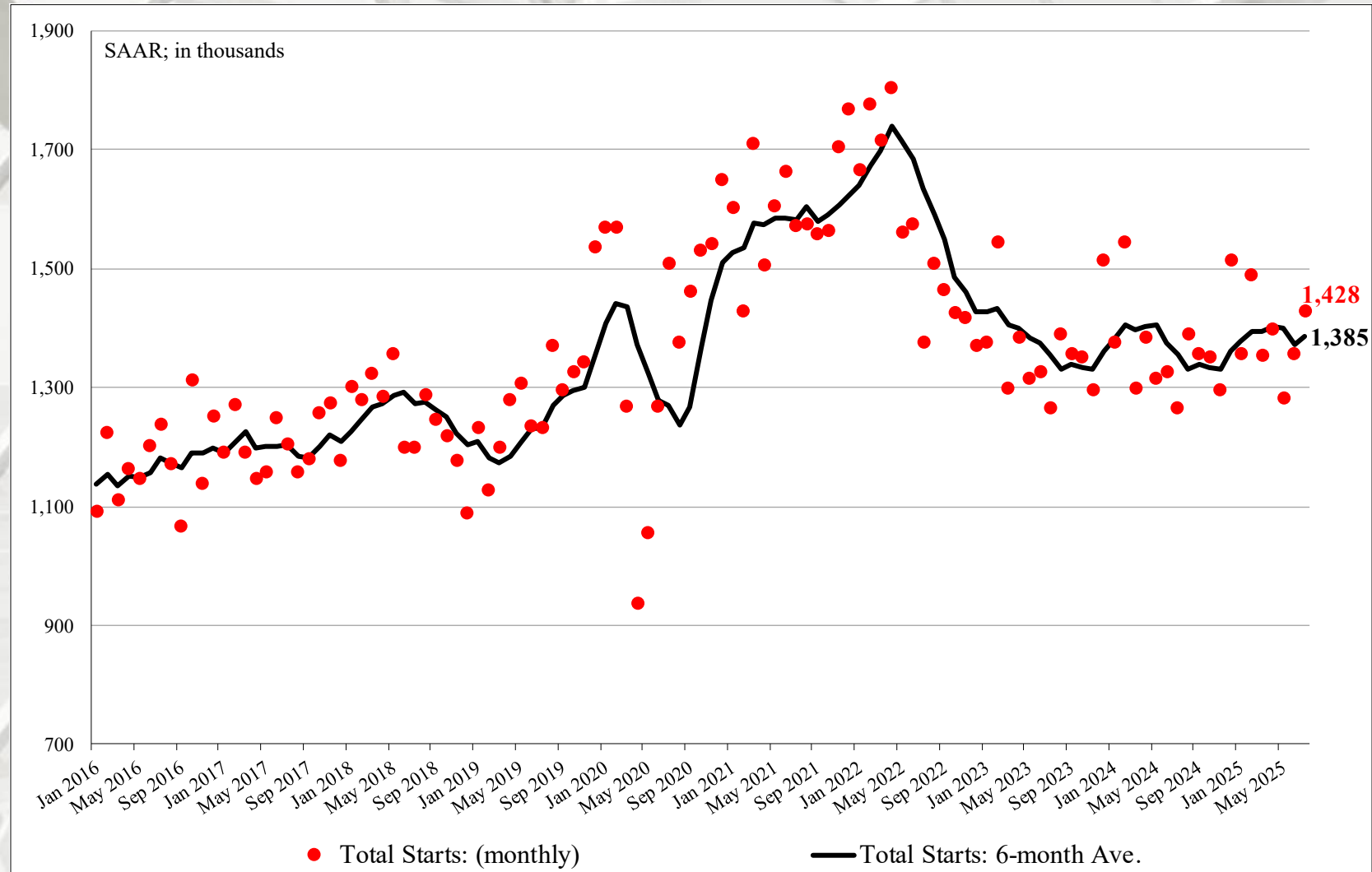


The US DOC does not report 2 to 4 multi-family starts directly; this is an estimation: (Total starts – (SF + 5-unit MF)).

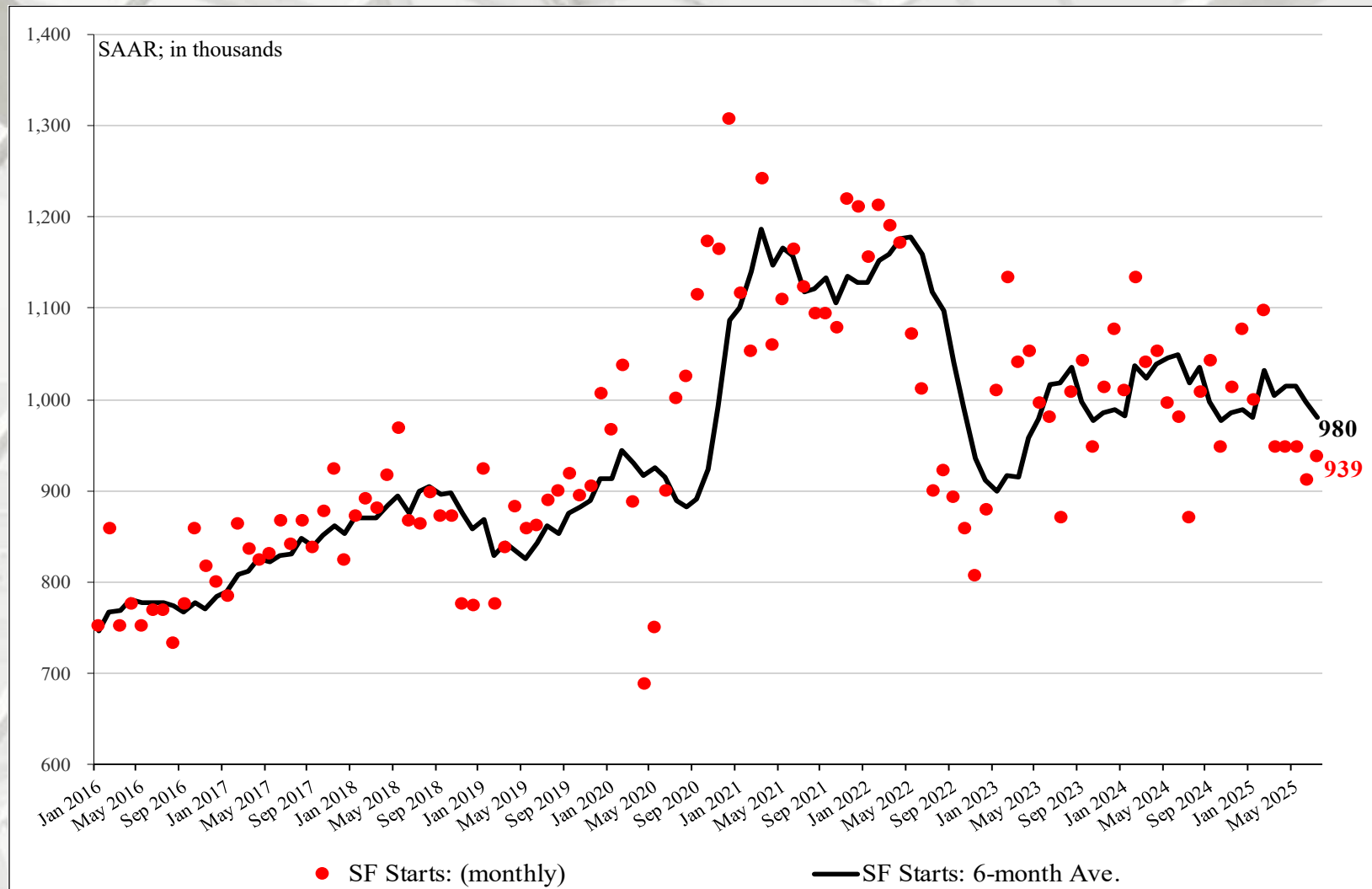
* Percentage of total starts.

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

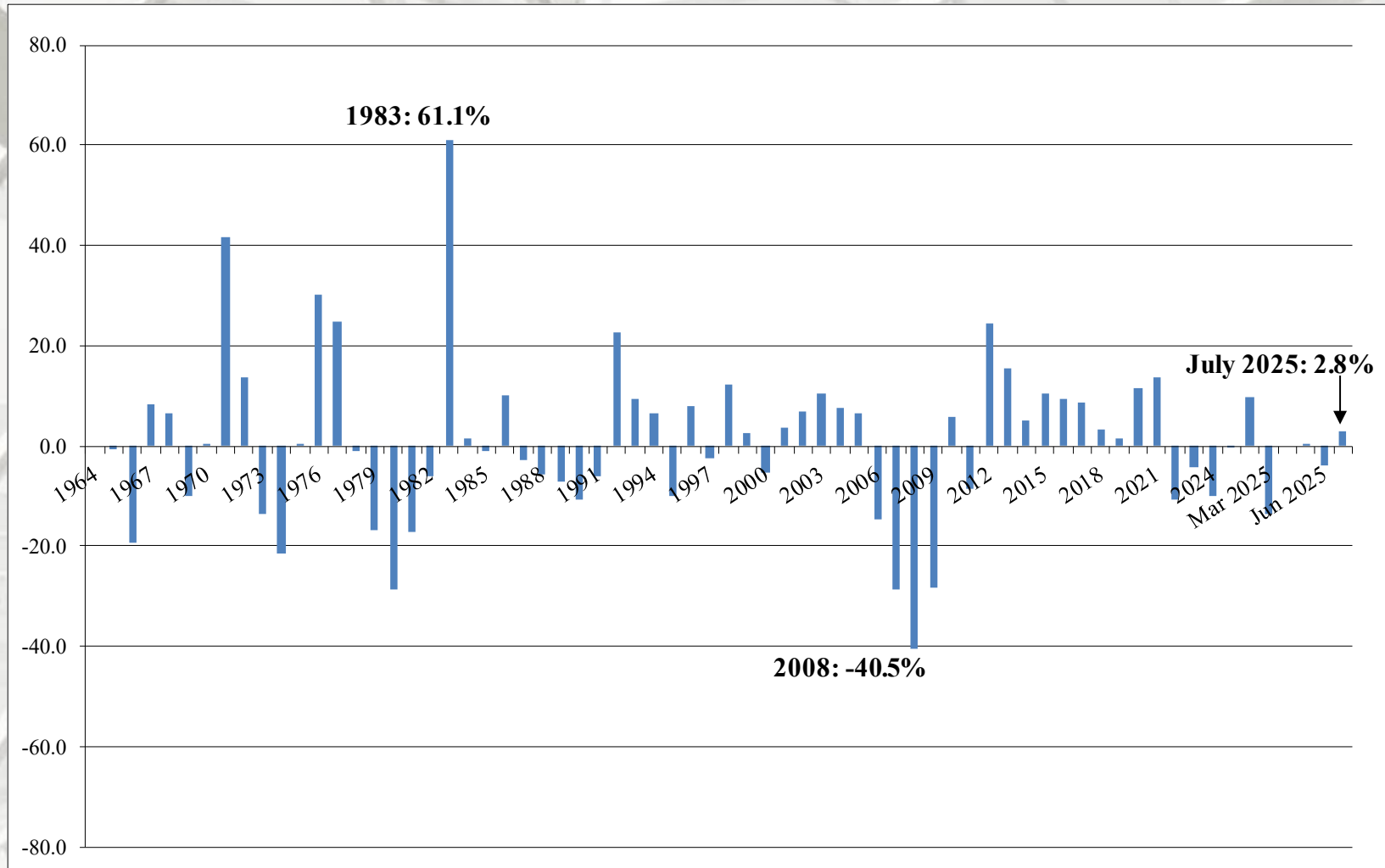
Total Housing Starts: Six-Month Moving Average



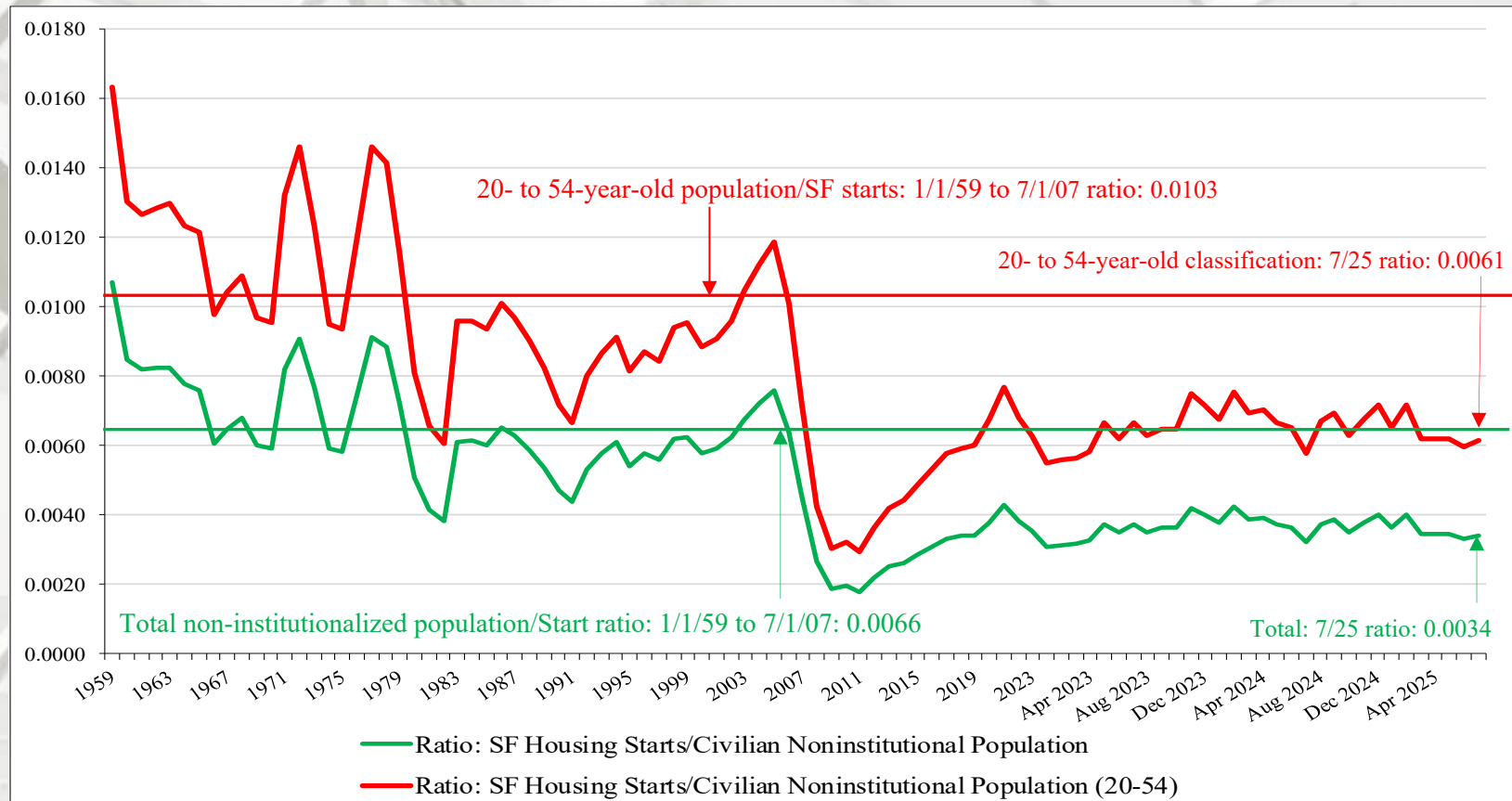
SF Housing Starts: Six-Month Moving Average



SF Housing Starts: Year-over-Year Change (%)



New SF Starts

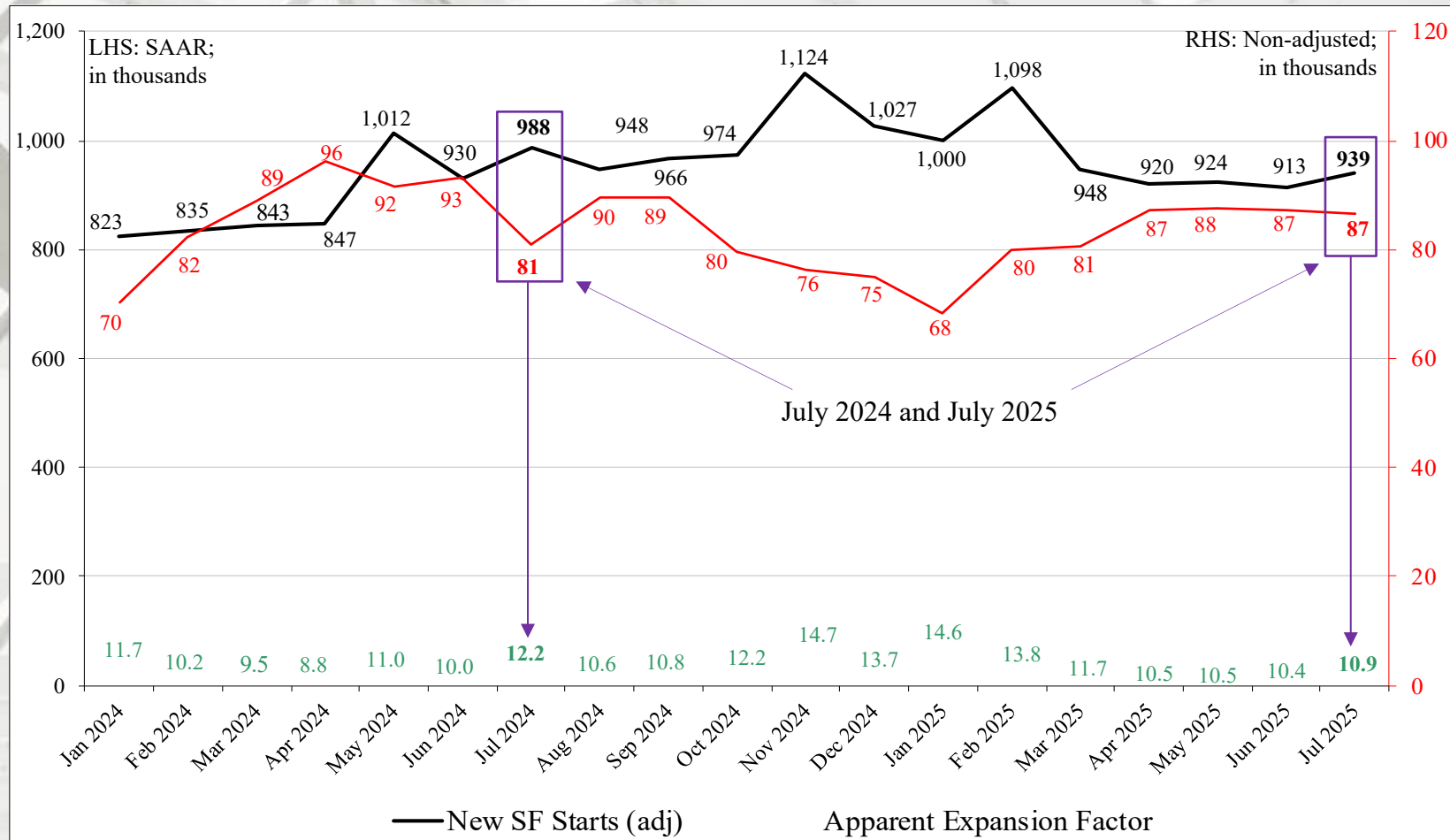


New SF starts adjusted for the US population

From July 1959 to July 2007, the long-term ratio of new SF starts to the total US non-institutionalized population is 0.0066. In July 2025 it was 0.0034 – increasing from July (0.0033). The long-term ratio of non-institutionalized population, aged 20 to 54 is 0.0103; in July 2025 it was 0.0061 – also an increase from July (0.0060). New SF construction in both age categories is less than what is necessary for changes in the population (i.e., under-building).

Note some studies report normalized long-term demand at 900,000 to 1,000,000 new SF house starts per year – beginning in 2025 through 2050.

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

New Housing Starts by Region

	NE Total	NE SF	NE MF**
July	111,000	55,000	56,000
June	150,000	60,000	90,000
2024	172,000	58,000	114,000
M/M change	-26.0%	-8.3%	-37.8%
Y/Y change	-35.5%	-5.2%	-50.9%
	MW Total	MW SF	MW MF
July	252,000	125,000	127,000
June	189,000	147,000	42,000
2024	179,000	128,000	51,000
M/M change	33.3%	-15.0%	202.4%
Y/Y change	40.8%	-2.3%	149.0%

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

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

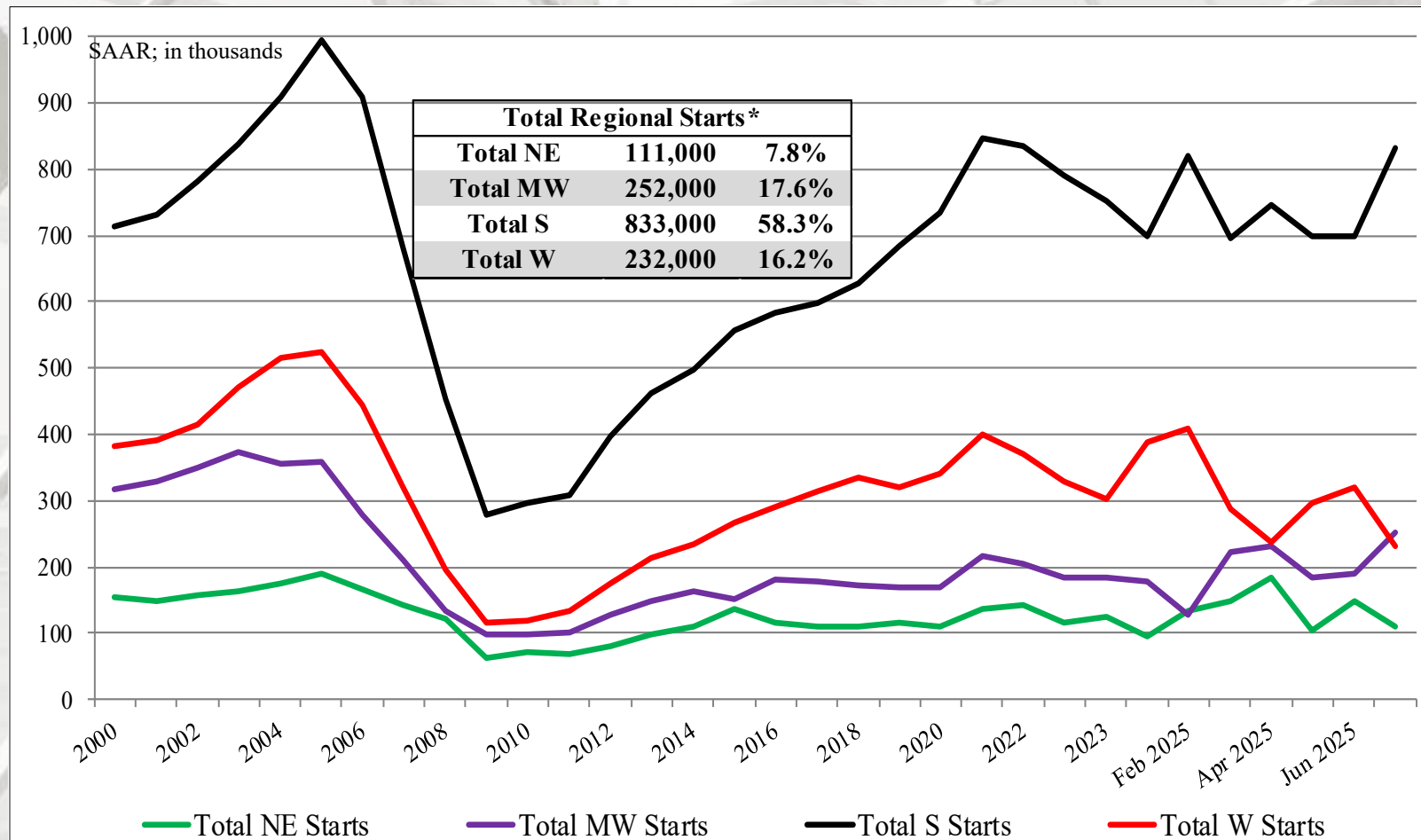
New Housing Starts by Region

	S Total	S SF	S MF**
July	833,000	576,000	257,000
June	699,000	509,000	190,000
2024	643,000	473,000	170,000
M/M change	19.2%	13.2%	35.3%
Y/Y change	29.5%	21.8%	51.2%
	W Total	W SF	W MF
July	232,000	183,000	49,000
June	320,000	197,000	123,000
2024	271,000	212,000	59,000
M/M change	-27.5%	-7.1%	-60.2%
Y/Y change	-14.4%	-13.7%	-16.9%

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

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

New Housing Starts by Region

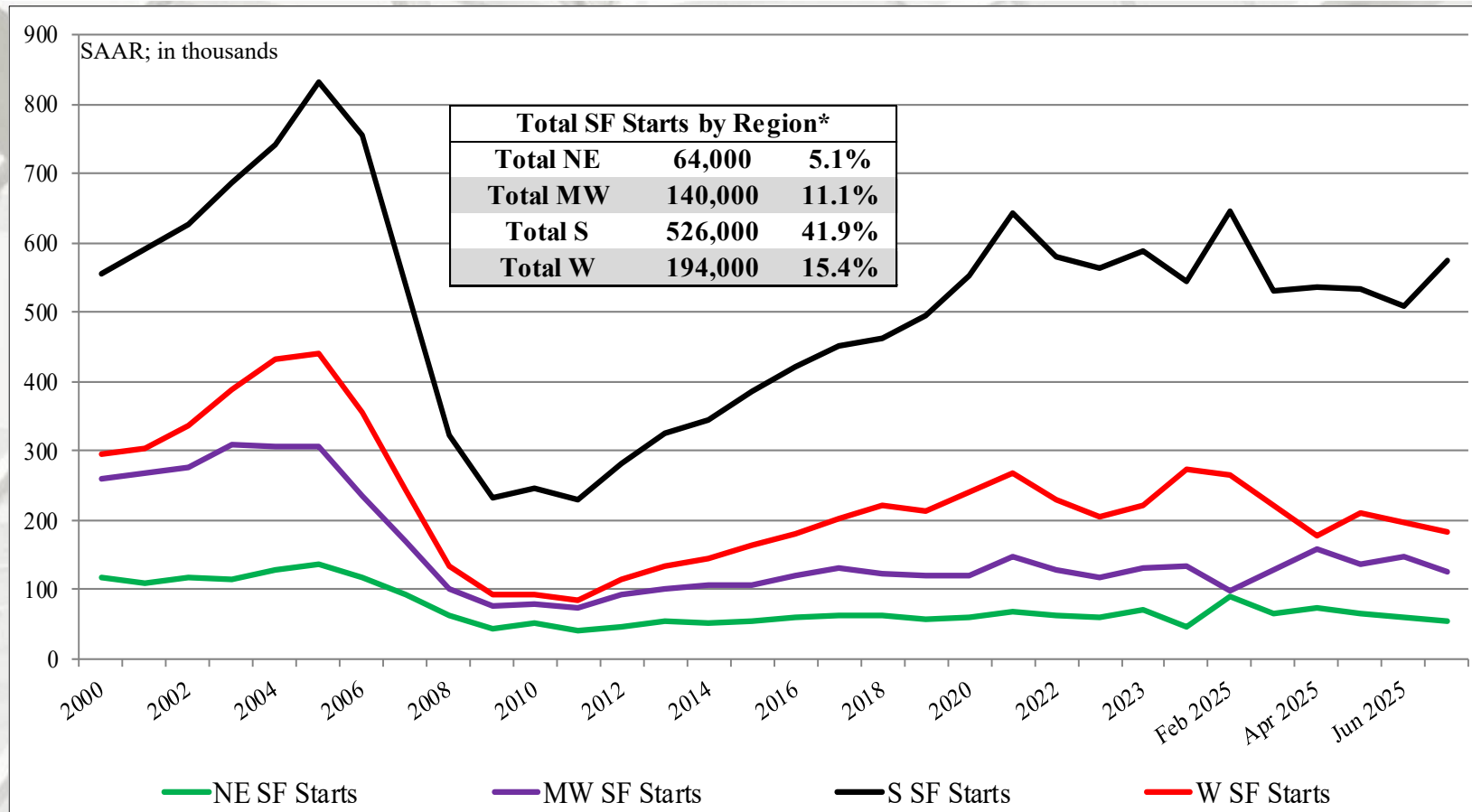


NE = Northeast, MW = Midwest, S = South, W = West

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.

Total SF Housing Starts by Region

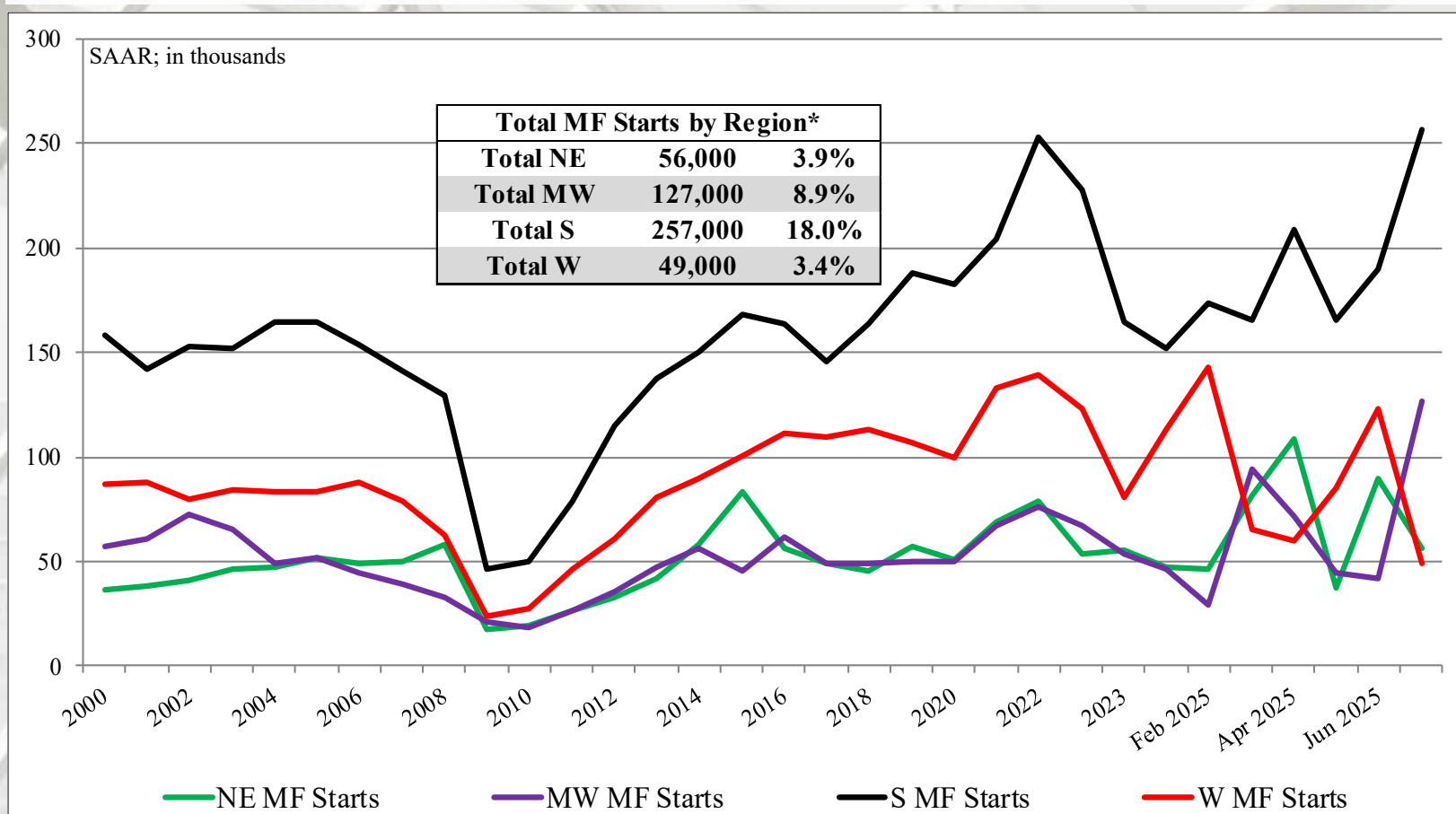


NE = Northeast, MW = Midwest, S = South, W = West

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.

MF Housing Starts by Region

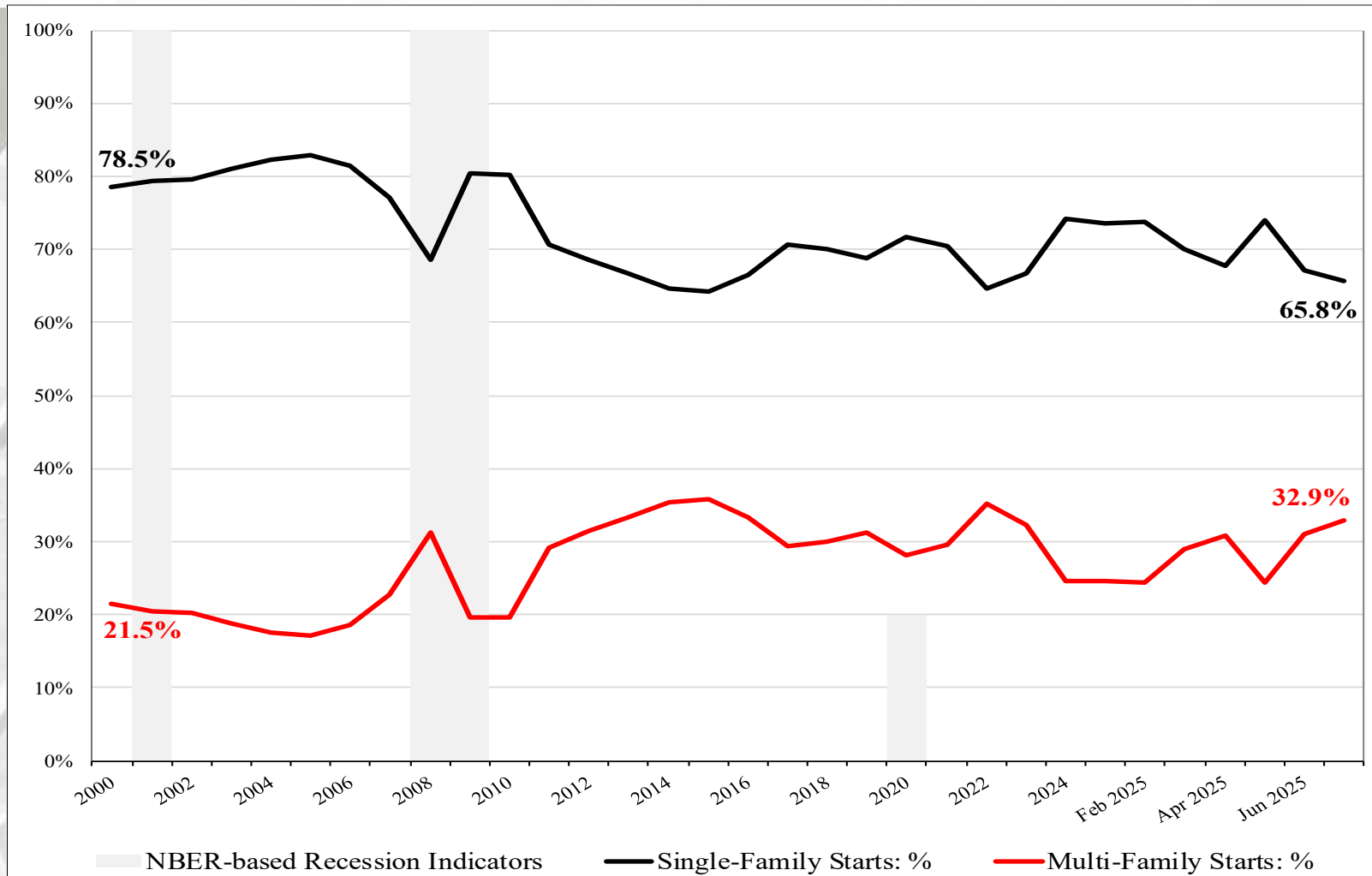


NE = Northeast, MW = Midwest, S = South, W = West

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.

SF vs. MF Housing Starts (%)



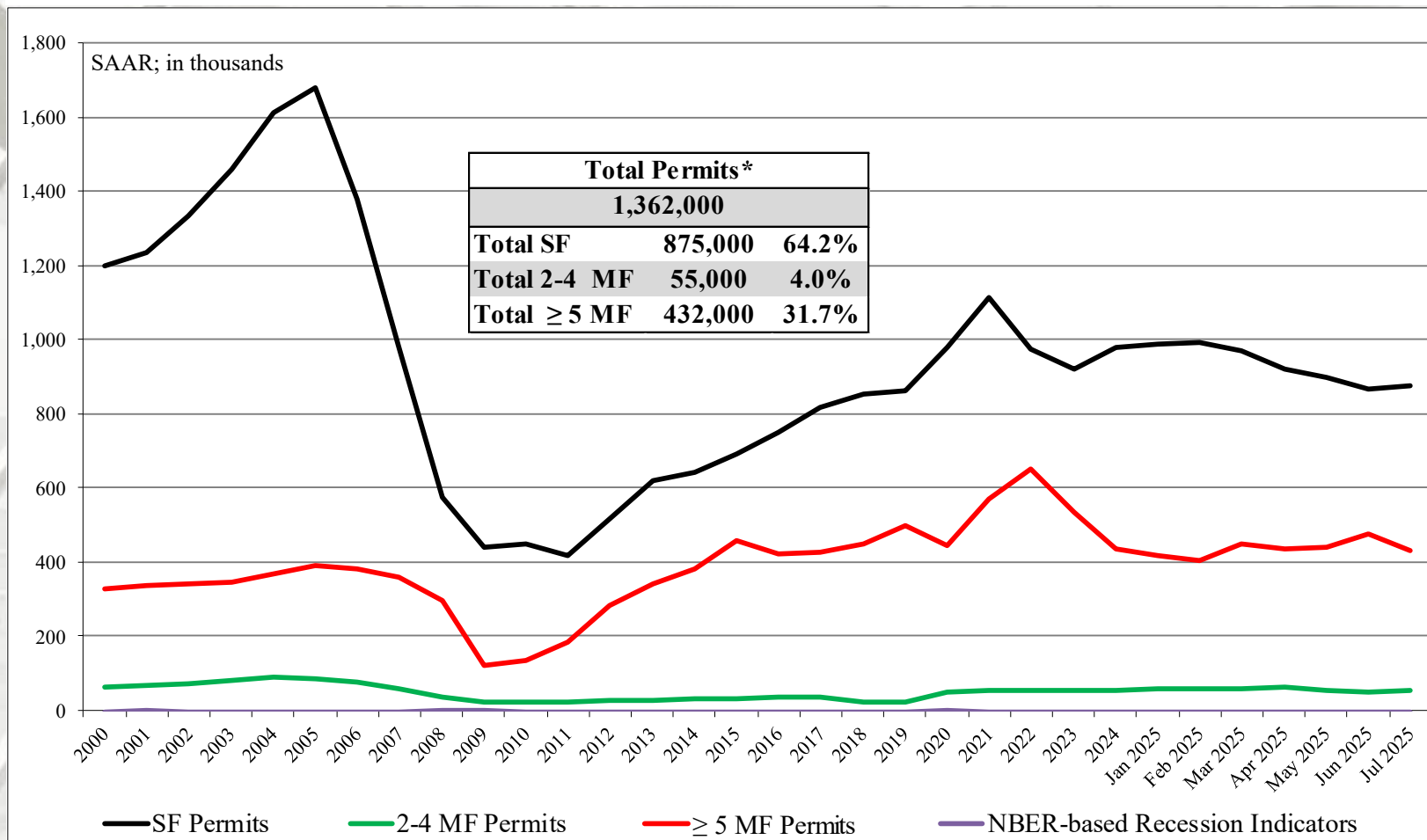
NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New Housing Permits

	Total Permits*	SF Permits	MF 2-4 unit Permits	MF ≥ 5 unit Permits
July	1,362,000	875,000	55,000	432,000
June	1,393,000	866,000	50,000	477,000
2024	1,436,000	945,000	53,000	438,000
M/M change	-2.2%	1.0%	10.0%	-9.4%
Y/Y change	-5.2%	-7.4%	3.8%	-1.4%

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

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).

New Housing Permits by Region

	NE Total*	NE SF	NE MF**
July	125,000	56,000	69,000
June	103,000	55,000	48,000
2024	140,000	58,000	82,000
M/M change	21.4%	1.8%	43.8%
Y/Y change	-10.7%	-3.4%	-15.9%
	MW Total*	MW SF	MW MF**
July	221,000	123,000	98,000
June	218,000	122,000	96,000
2024	194,000	118,000	76,000
M/M change	1.4%	0.8%	2.1%
Y/Y change	13.9%	4.2%	28.9%

NE = Northeast; MW = Midwest

* All data are SAAR

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

Source: <https://www.census.gov/construction/bps/>; 8/25/25

[Return TOC](#)

New Housing Permits by Region

	S Total*	S SF	S MF**
July	742,000	521,000	221,000
June	775,000	517,000	258,000
2024	787,000	567,000	220,000
M/M change	-4.3%	0.8%	-14.3%
Y/Y change	-5.7%	-8.1%	0.5%
	W Total*	W SF	W MF**
July	274,000	175,000	99,000
June	297,000	172,000	125,000
2024	315,000	202,000	113,000
M/M change	-7.7%	1.7%	-20.8%
Y/Y change	-13.0%	-13.4%	-12.4%

S = South; W = West

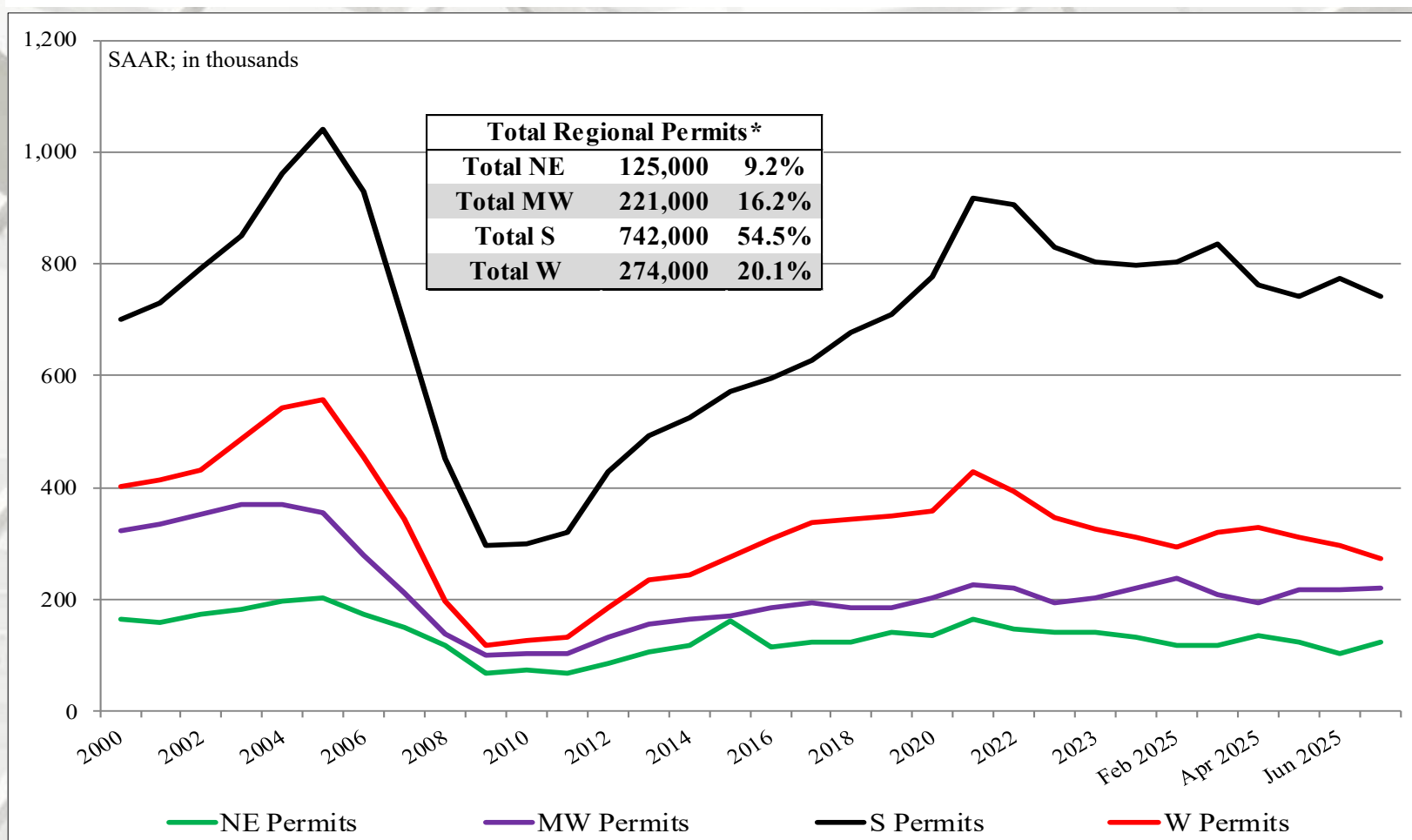
* All data are SAAR

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

Source: <https://www.census.gov/construction/bps/>; 8/25/25

[Return TOC](#)

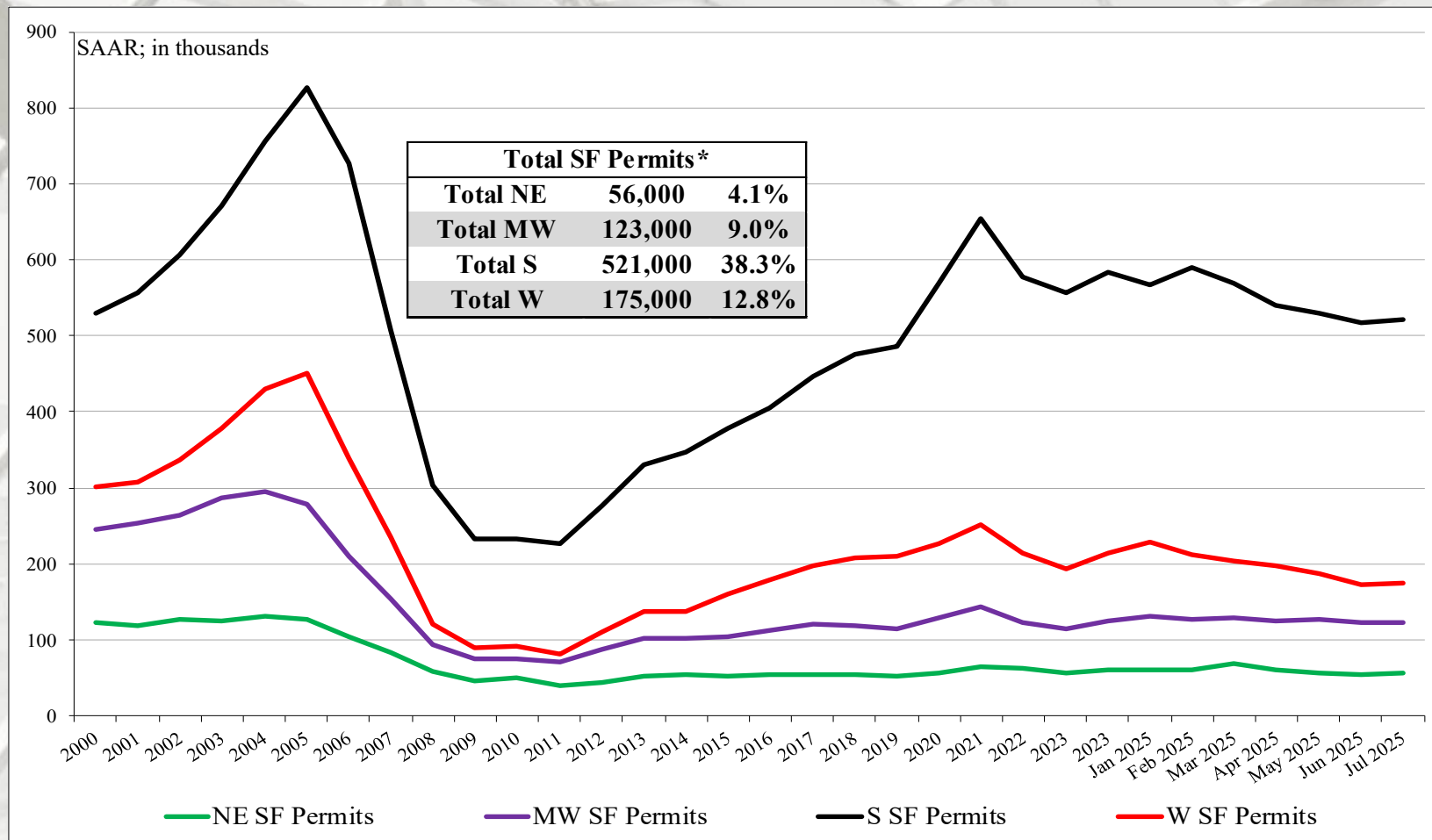
Total Housing Permits by Region



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

* Percentage of total permits.

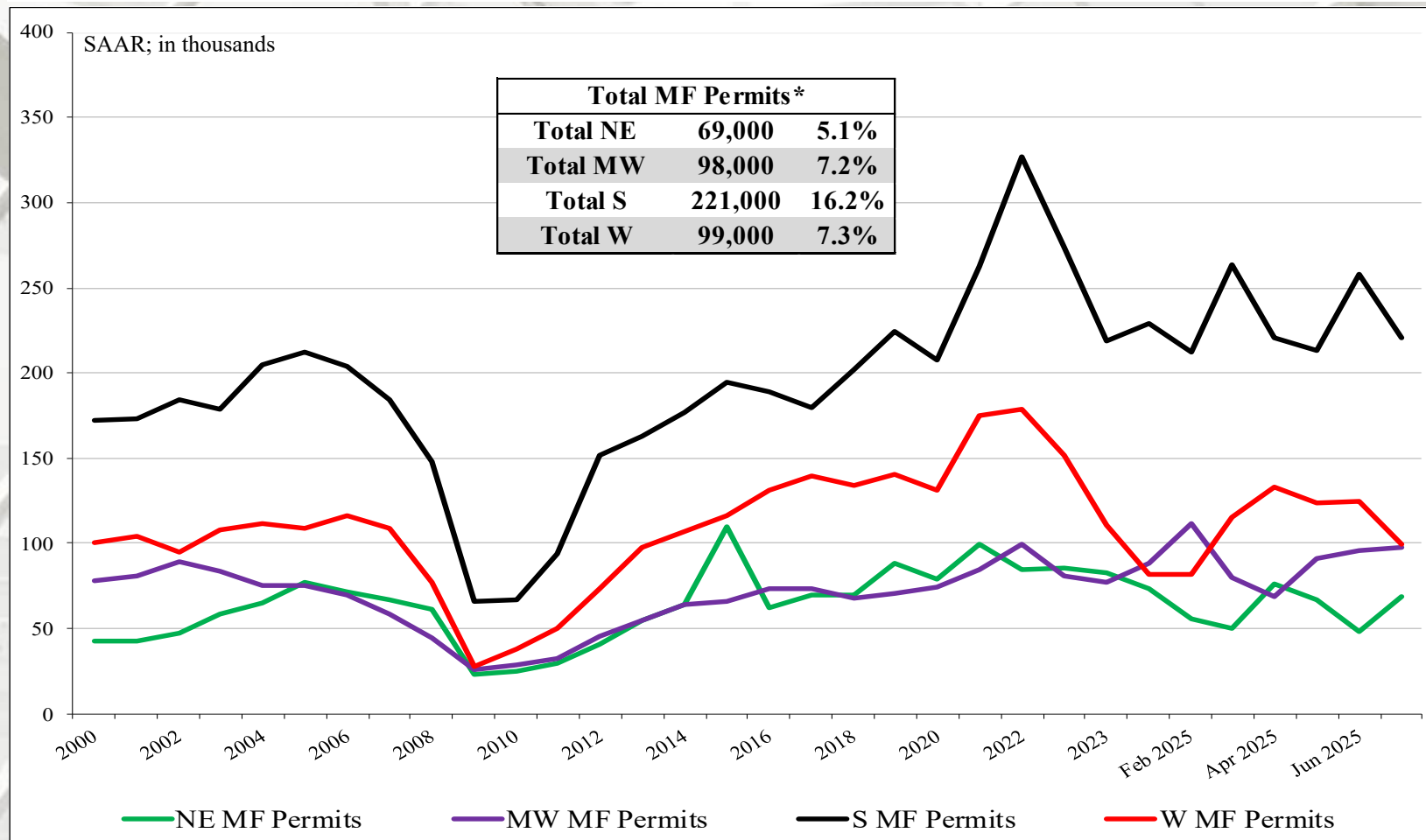
SF Housing Permits by Region



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

* Percentage of total permits.

MF Housing Permits by Region



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

* Percentage of total permits.

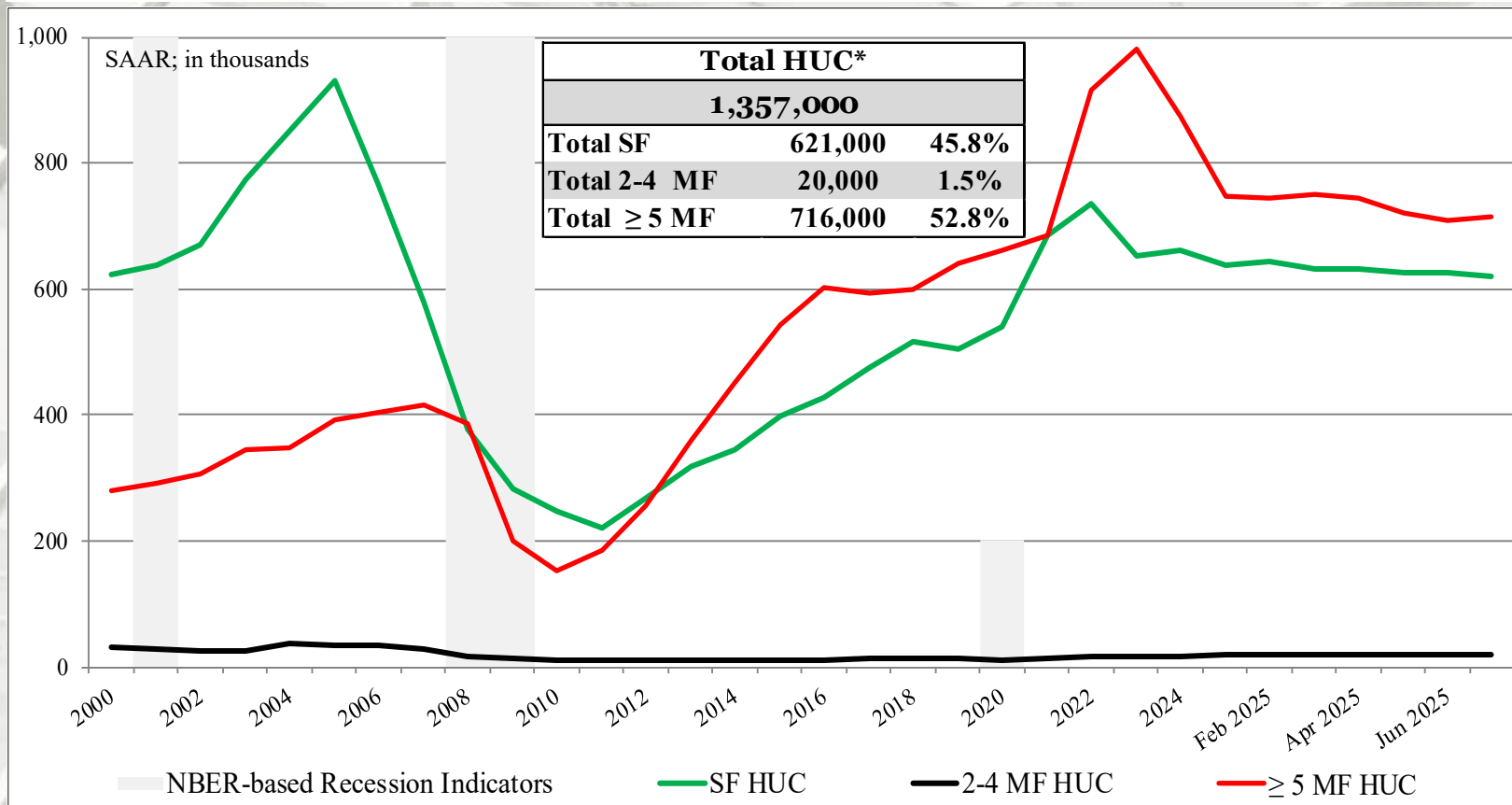
New Housing Under Construction (HUC)

	Total HUC	SF HUC	MF 2-4 unit** HUC	MF ≥ 5 unit HUC
July	1,357,000	621,000	20,000	716,000
June	1,356,000	627,000	19,000	710,000
2024	1,549,000	645,000	16,000	888,000
M/M change	0.1%	-1.0%	5.3%	0.8%
Y/Y change	-12.4%	-3.7%	25.0%	-19.4%

All housing under construction (HUC) data are presented at a seasonally adjusted annual rate (SAAR).

** US DOC does not report 2-4 multi-family units under construction directly; this is an estimation: ((Total under construction – (SF + 5-unit MF)).

Total Housing Under Construction



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

* 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).

New Housing Under Construction by Region

	NE Total	NE SF	NE MF**
July	209,000	63,000	146,000
June	211,000	64,000	147,000
2024	222,000	64,000	158,000
M/M change	-0.9%	-1.6%	-0.7%
Y/Y change	-5.9%	-1.6%	-7.6%
	MW Total	MW SF	MW MF
July	190,000	90,000	100,000
June	187,000	91,000	96,000
2024	179,000	85,000	94,000
M/M change	1.6%	-1.1%	4.2%
Y/Y change	6.1%	5.9%	6.4%

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

** US DOC does not report multi-family units under construction directly; this is an estimation
(Total under construction – SF under construction).

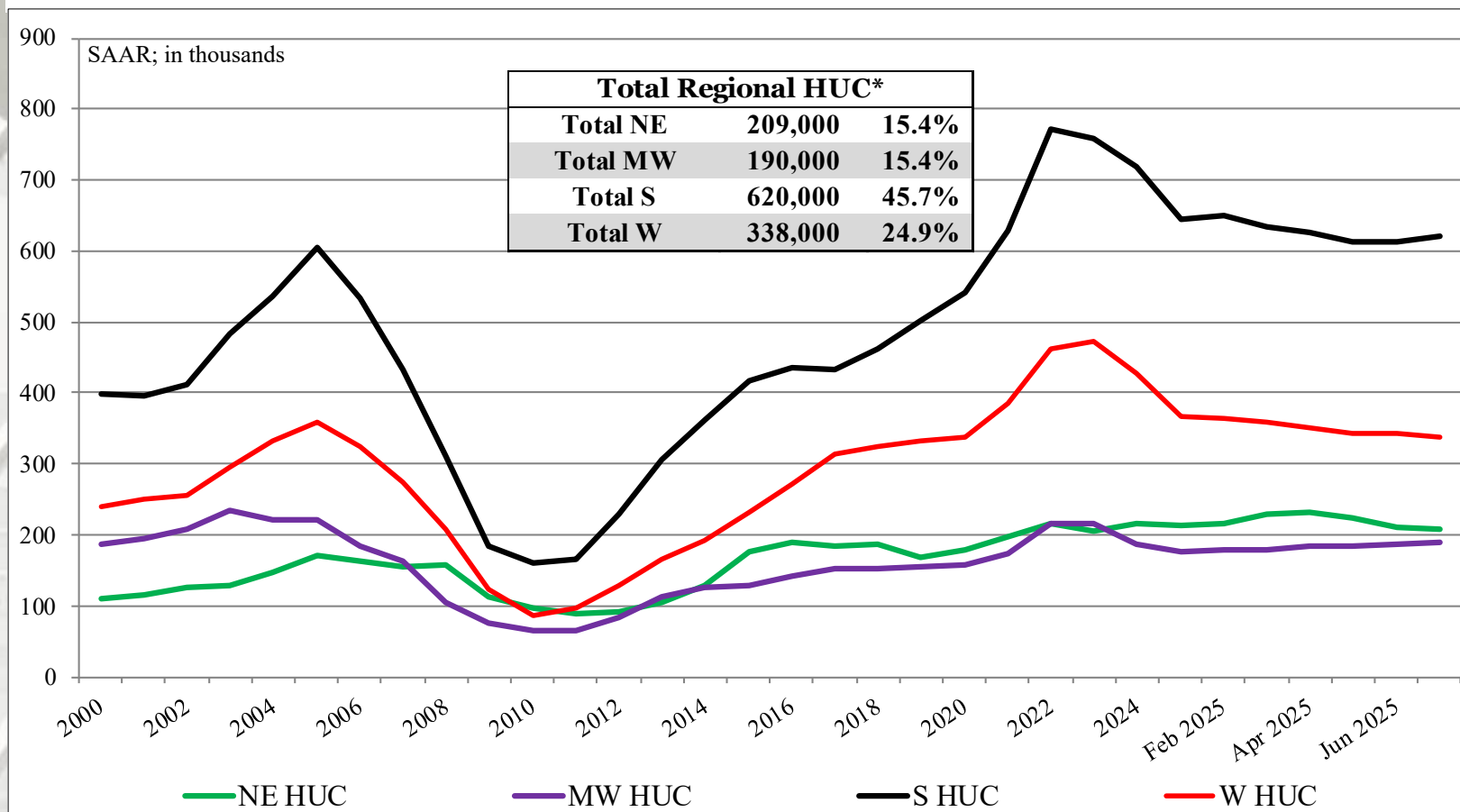
New Housing Under Construction by Region

	S Total	S SF	S MF**
July	620,000	313,000	307,000
June	614,000	315,000	299,000
2024	721,000	329,000	392,000
M/M change	1.0%	-0.6%	2.7%
Y/Y change	-14.0%	-4.9%	-21.7%
	W Total	W SF	W MF
July	338,000	155,000	183,000
June	344,000	157,000	187,000
2024	427,000	167,000	260,000
M/M change	-1.7%	-1.3%	-2.1%
Y/Y change	-20.8%	-7.2%	-29.6%

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

** US DOC does not report multi-family units under construction directly; this is an estimation
(Total under construction – SF under construction).

Total Housing Under Construction by Region

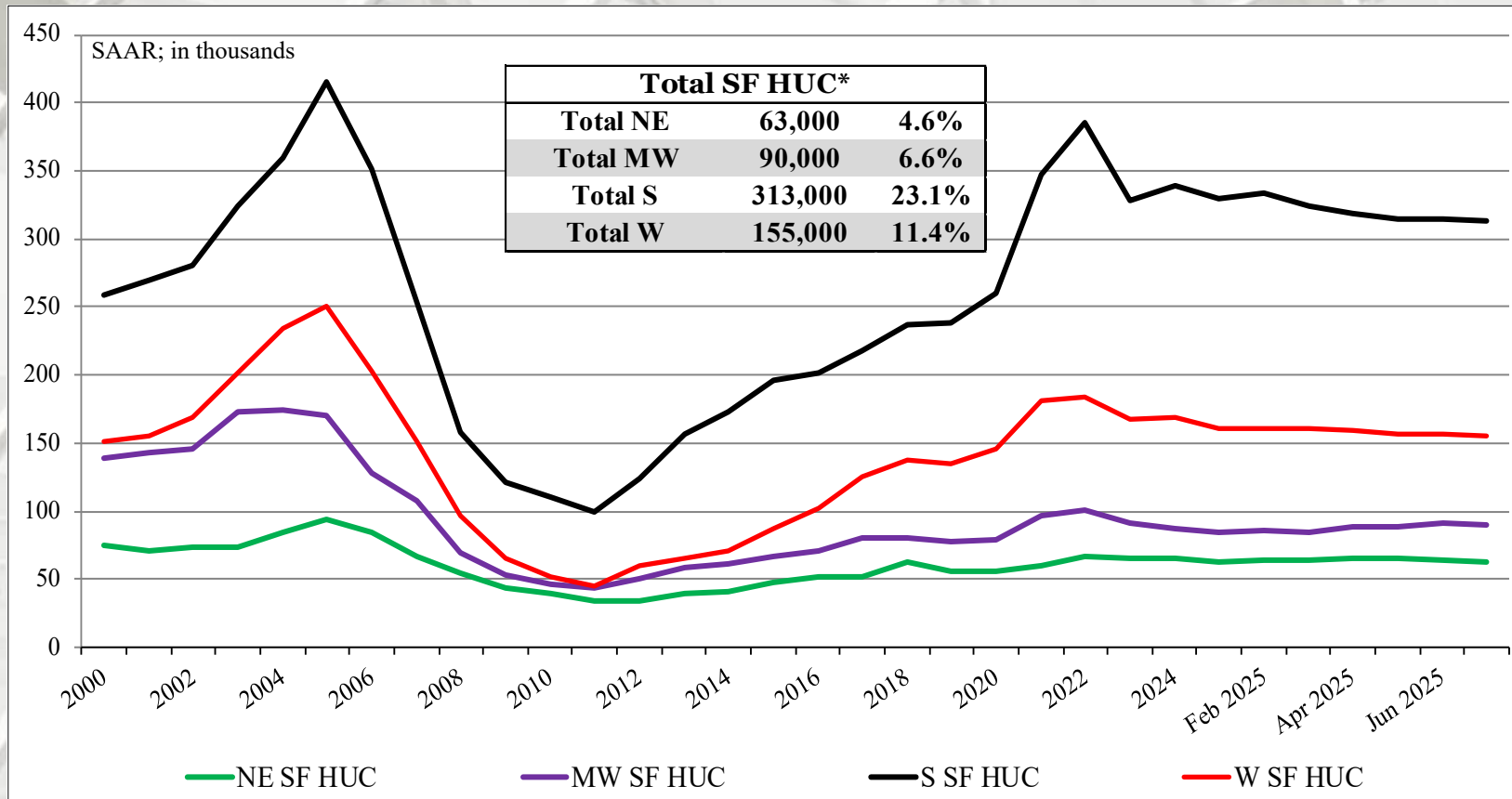


NE = Northeast, MW = Midwest, S = South, W = West

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

* Percentage of total housing under construction units.

SF Housing Under Construction by Region

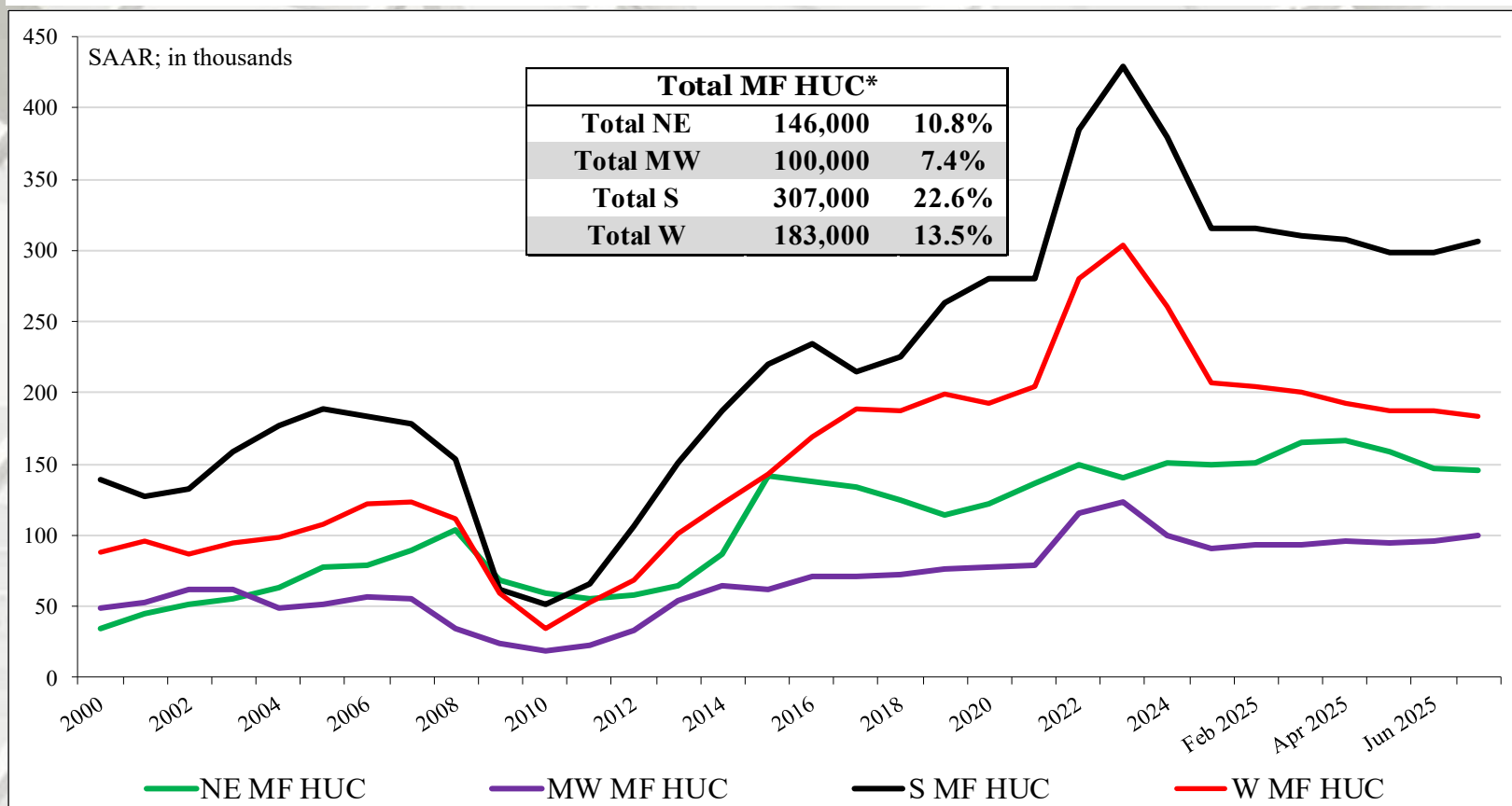


NE = Northeast, MW = Midwest, S = South, W = West.

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

* Percentage of total housing under construction units.

MF Housing Under Construction by Region



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 construction – (SF + 5-unit MF under construction)).

* Percentage of total housing under construction units.

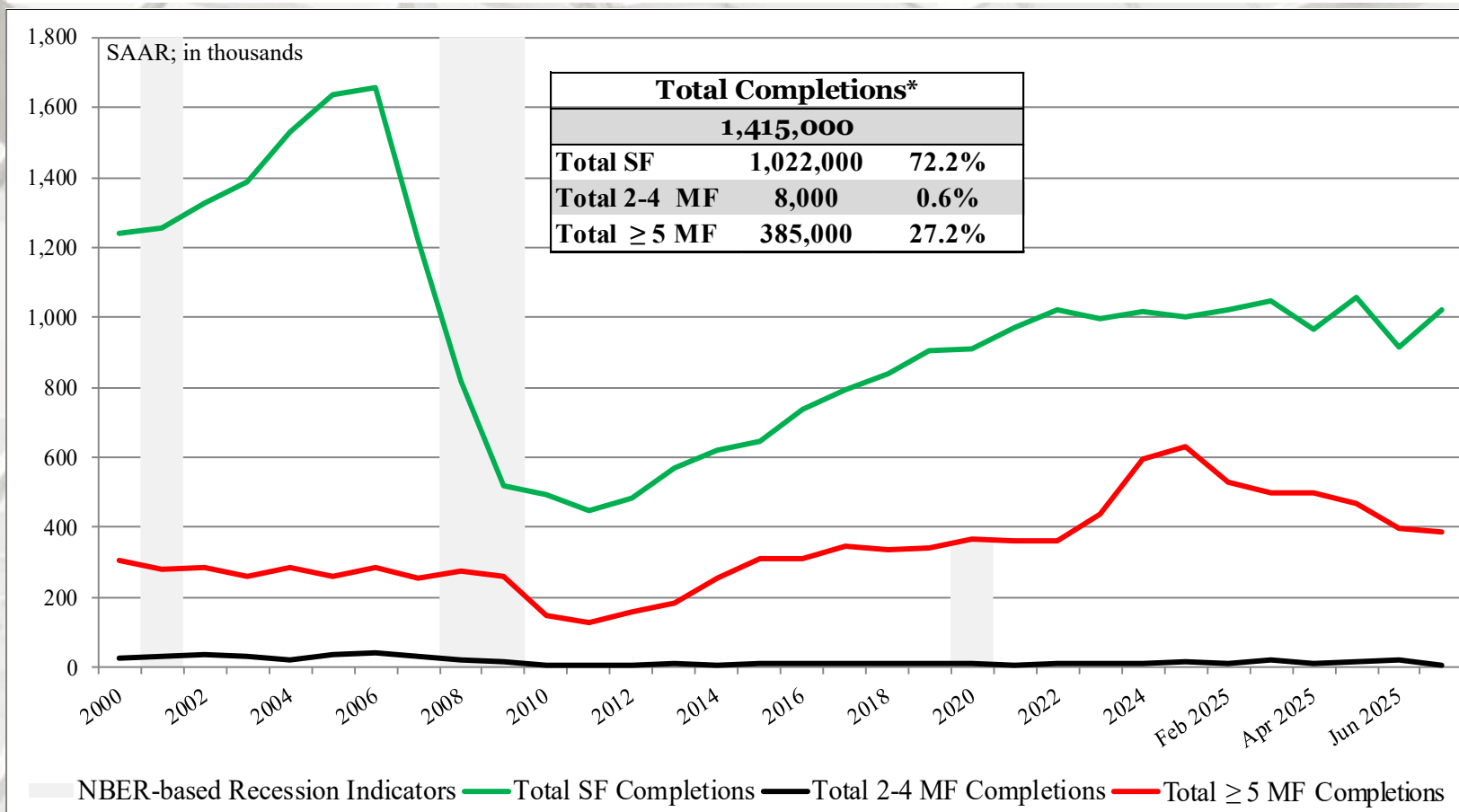
New Housing Completions

	Total Completions*	SF Completions	MF 2-4 unit**	MF ≥ 5 unit Completions
July	1,415,000	1,022,000	8,000	385,000
June	1,335,000	916,000	23,000	396,000
2024	1,635,000	1,088,000	6,000	541,000
M/M change	6.0%	11.6%	-65.2%	-2.8%
Y/Y change	-13.5%	-6.1%	33.3%	-28.8%

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

** US DOC does not report multi-family completions directly; this is an estimation ((Total completions – (SF + ≥ 5-unit MF)).

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).

New Housing Completions by Region

	NE Total	NE SF	NE MF**
July	129,000	61,000	68,000
June	154,000	66,000	88,000
2024	109,000	63,000	46,000
M/M change	-16.2%	-7.6%	-22.7%
Y/Y change	18.3%	-3.2%	47.8%
	MW Total	MW SF	MW MF**
July	190,000	141,000	49,000
June	193,000	125,000	68,000
2024	219,000	130,000	89,000
M/M change	-1.6%	12.8%	-27.9%
Y/Y change	-13.2%	8.5%	-44.9%

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).

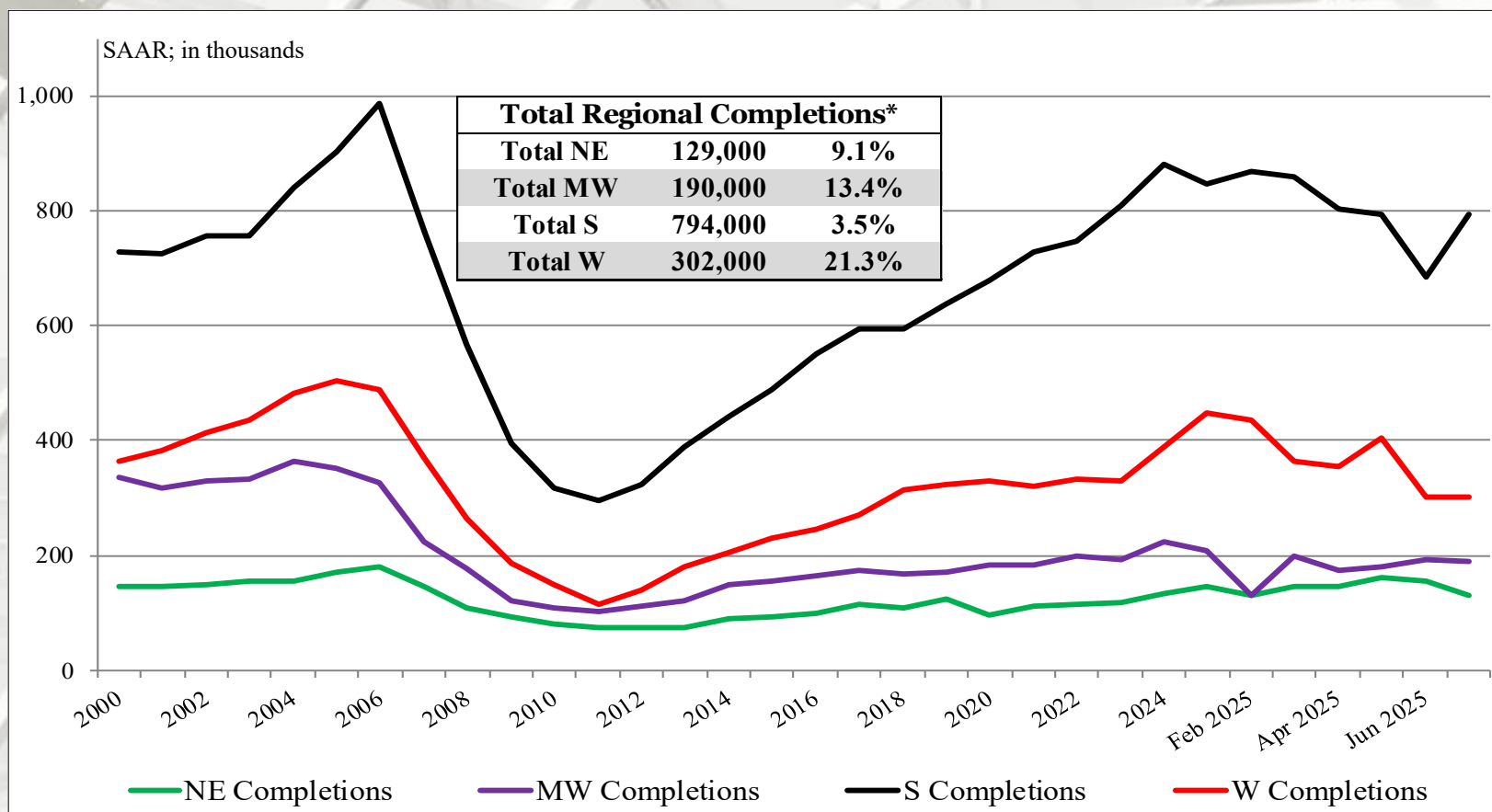
New Housing Completions by Region

	S Total	S SF	S MF**
July	794,000	616,000	178,000
June	686,000	515,000	171,000
2024	901,000	640,000	261,000
M/M change	15.7%	19.6%	4.1%
Y/Y change	-11.9%	-3.8%	-31.8%
	W Total	W SF	W MF**
July	302,000	204,000	98,000
June	302,000	210,000	92,000
2024	406,000	255,000	151,000
M/M change	0.0%	-2.9%	6.5%
Y/Y change	-25.6%	-20.0%	-35.1%

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).

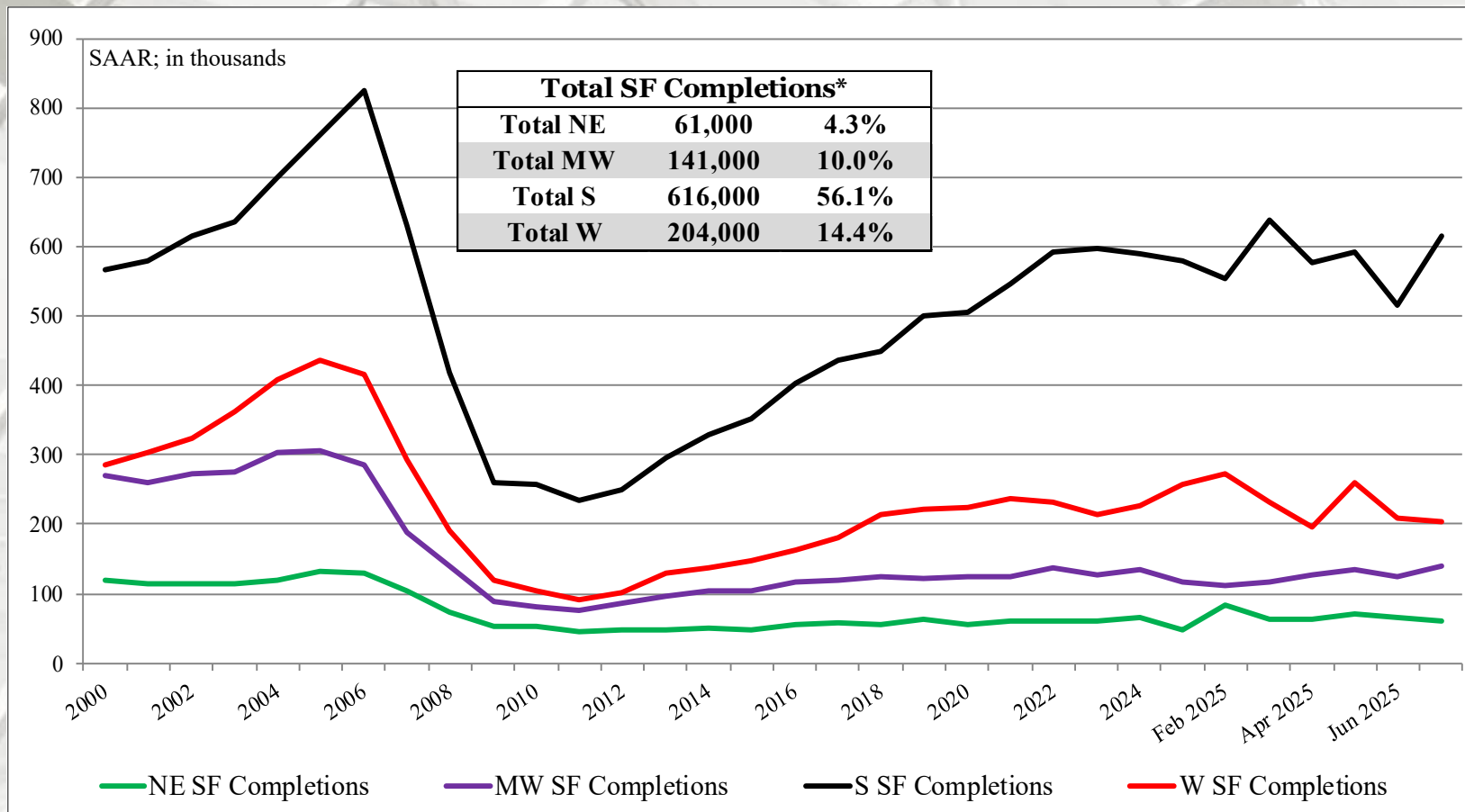
Total Housing Completions by Region



All data are SAAR; NE = Northeast and MW = Midwest; S = South, W = West

* Percentage of total housing completions.

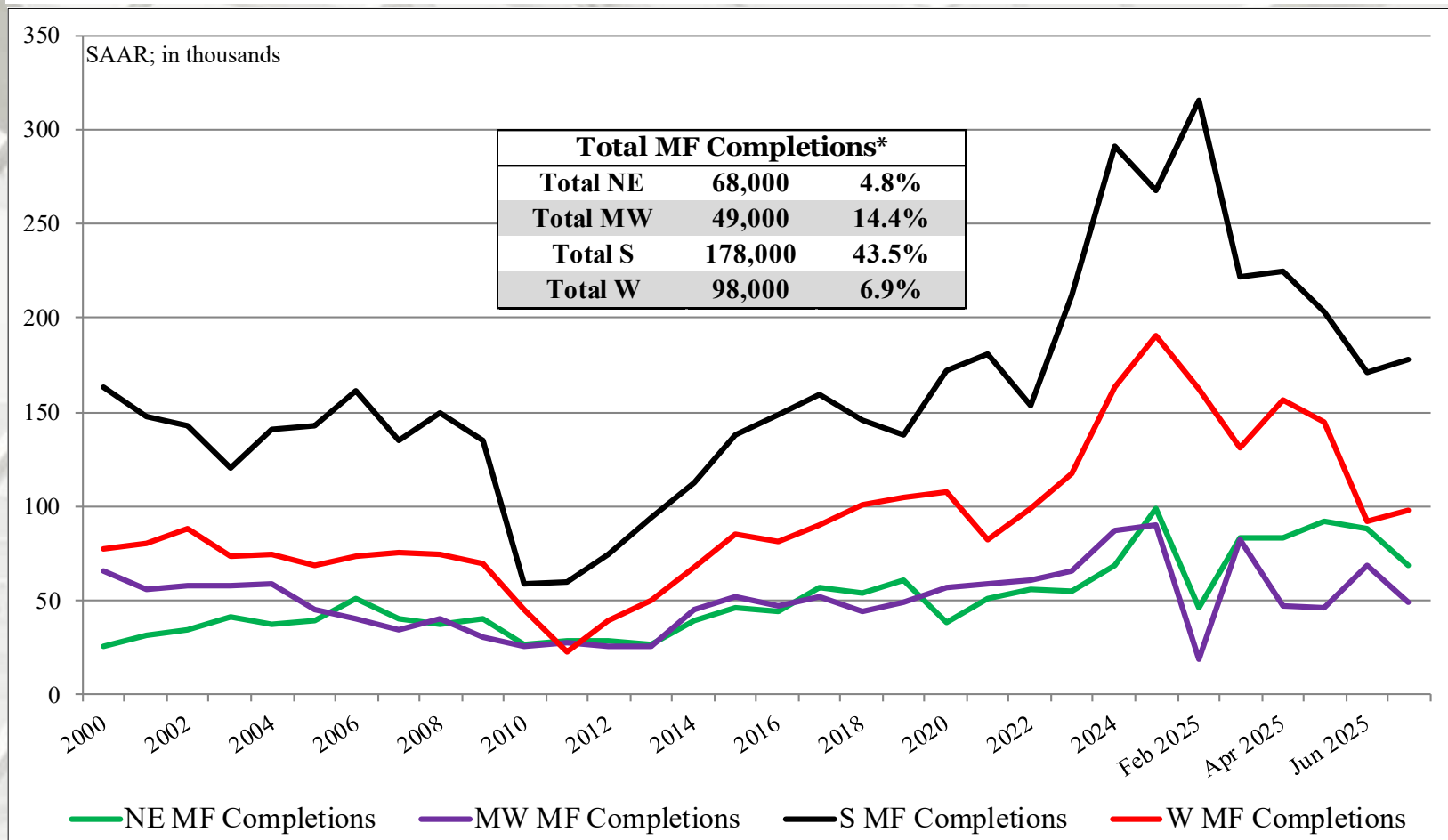
SF Housing Completions by Region



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

* Percentage of total housing completions

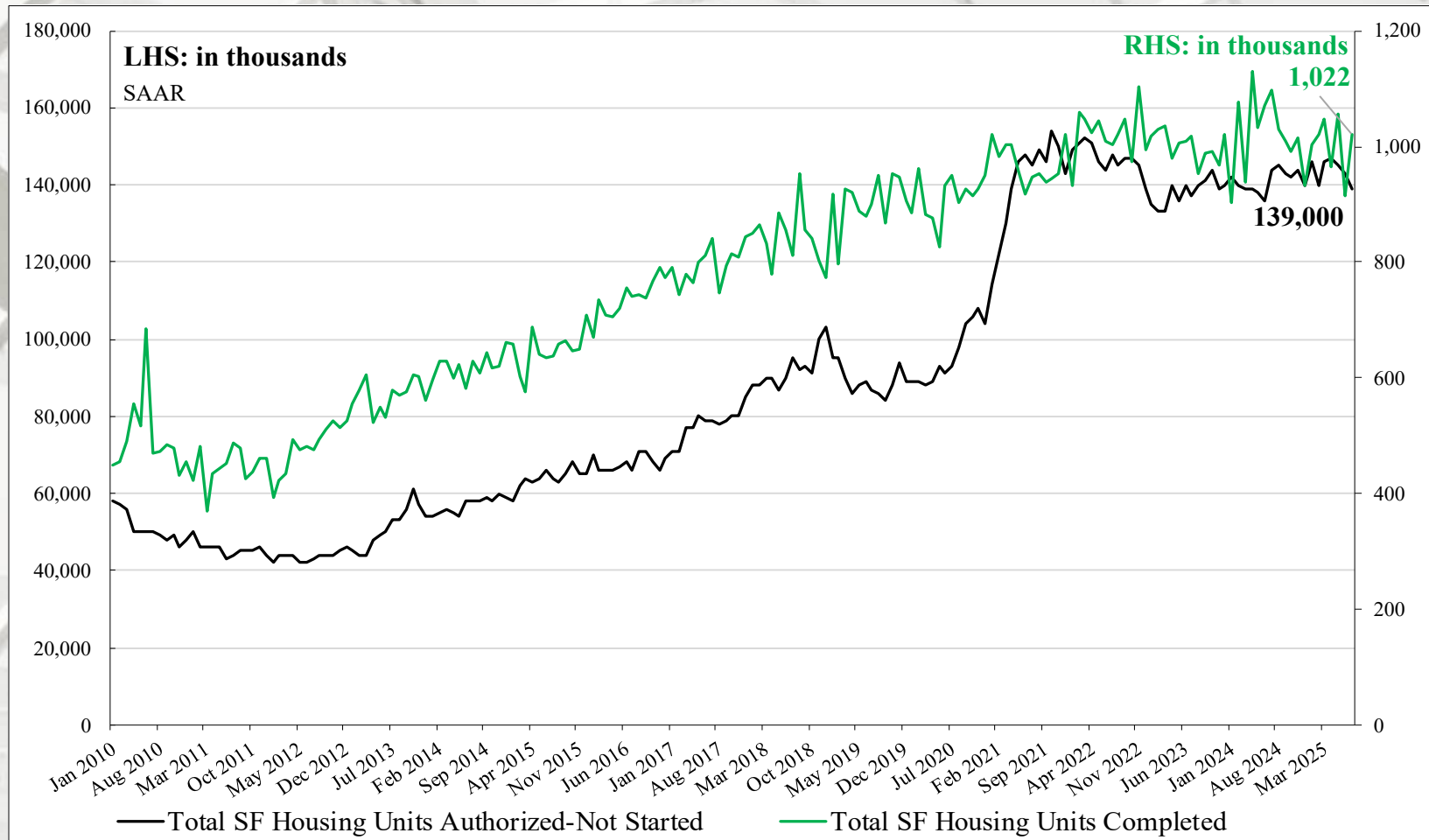
MF Housing Completions by Region



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

* Percentage of total housing completions

Comparison of SF Units Authorized & Not Started to SF Housing Units Completed



Authorized, Not Started vs. Housing Completions

Total authorized units “not” started was 263,000 in July, a decrease from July (270,000), and SF authorized units “not” started were 139,000 units in July, also a decline from July. Total completions and SF unit completions decreased M/M.

The primary reason currently is reduced demand, and in combination with lingering manufacturing supply chain disruptions –ranging from appliances to windows; labor, logistics, and local building regulations – and elevated interest rates..

New Single-Family House Sales

	New SF Sales*	Median Price	Mean Price	Month's Supply
July	652,000	\$403,800	\$487,300	9.2
June	656,000	\$407,200	\$505,300	9.2
2024	710,000	\$429,000	\$513,200	7.9
M/M change	-0.6%	-0.8%	-3.6%	0.0%
Y/Y change	-8.2%	-5.9%	-5.0%	16.5%

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

New SF sales were substantially more than the consensus forecast³ of 628 m; range 615 to 650. The past three month's new SF sales data also were revised:

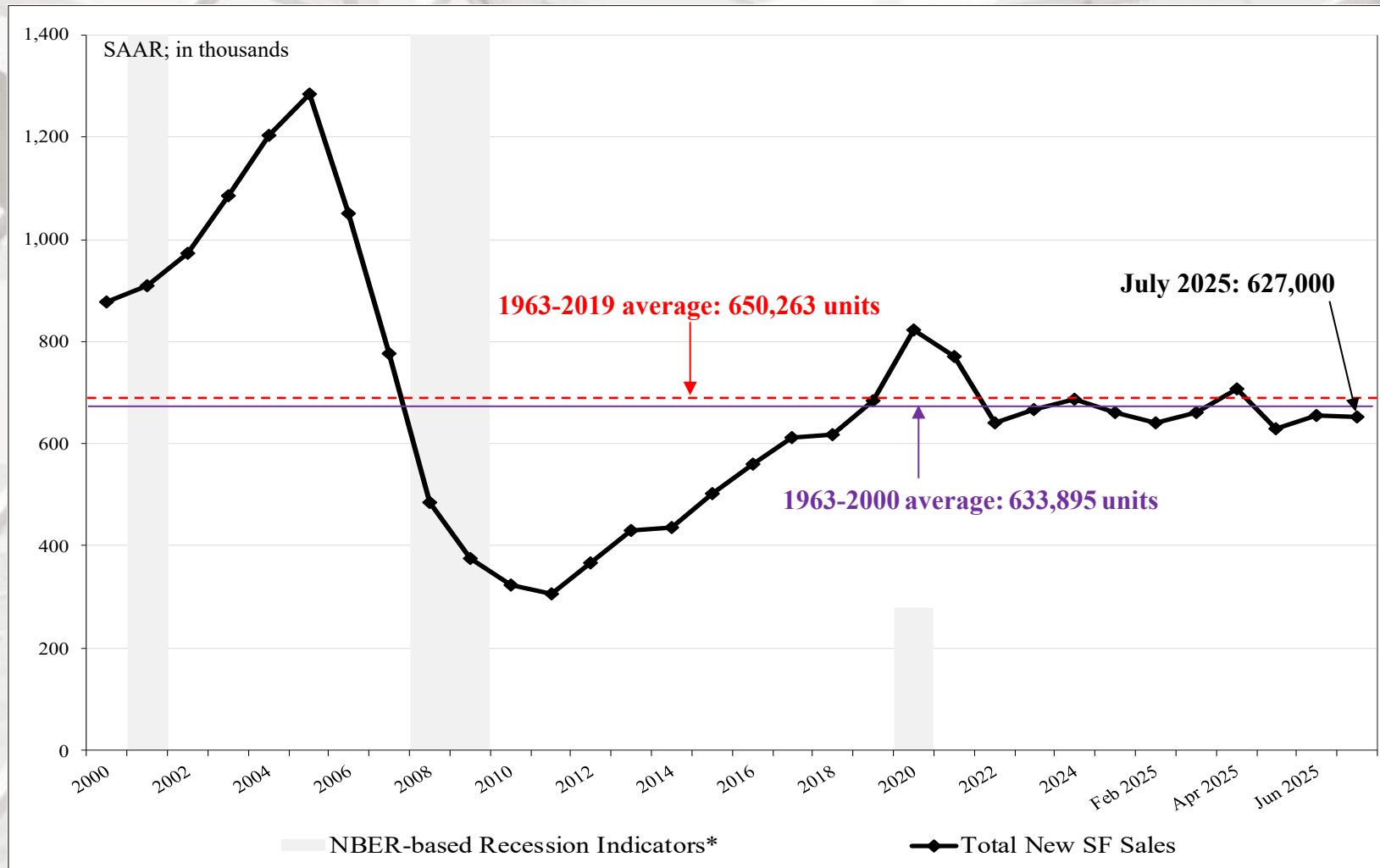
April initial: 743 m, revised to 706 m.

May initial: 623 m, revised to 630 m.

June initial: 627 m, revised to 656 m.

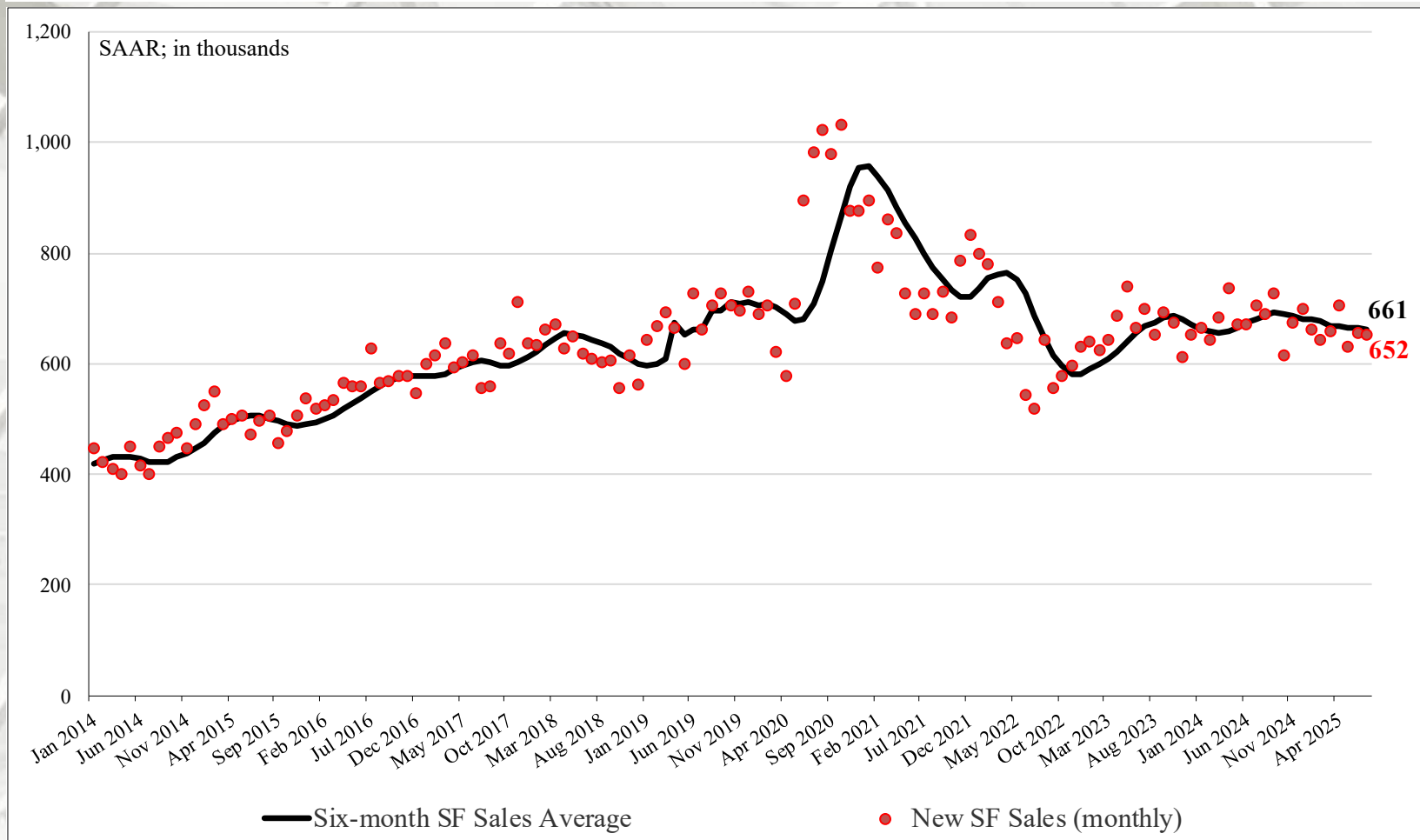
Sources: ¹ <https://www.census.gov/construction/nrs/index.html>; 6/24/21; ² <https://www.census.gov/construction/nrs/pdf/newressales.pdf>; 8/25/25
³ <http://us.econoday.com>; 8/25/25

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 Housing Sales: Six-month average & monthly



New SF House Sales by Region and Price Category

	NE	MW		S		W	
July	26,000	85,000		388,000		153,000	
June	26,000	91,000		402,000		137,000	
2024	34,000	81,000		404,000		191,000	
M/M change	0.0%	-6.6%		-3.5%		11.7%	
Y/Y change	-23.5%	4.9%		-4.0%		-19.9%	
	< \$300m	\$300m- \$399m	\$400m- \$499m	\$500m- \$599m	\$600m- \$799m	\$800m- \$999m	≥ \$1mm
July ^{1,2,3,4}	9,000	18,000	12,000	7,000	7,000	1,000	2,000
June ^{1,2,3,4}	9,000	19,000	11,000	7,000	7,000	1,000	3,000
2024	10,000	17,000	7,000	16,000	16,000	14,000	6,000
M/M change	0.0%	-5.3%	9.1%	0.0%	0.0%	0.0%	-33.3%
Y/Y change	-10.0%	5.9%	71.4%	-56.3%	-56.3%	-92.9%	-66.7%
% of New SF sales	16.1%	32.1%	21.4%	12.5%	12.5%	1.8%	3.6%

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 July not add to total because of rounding.

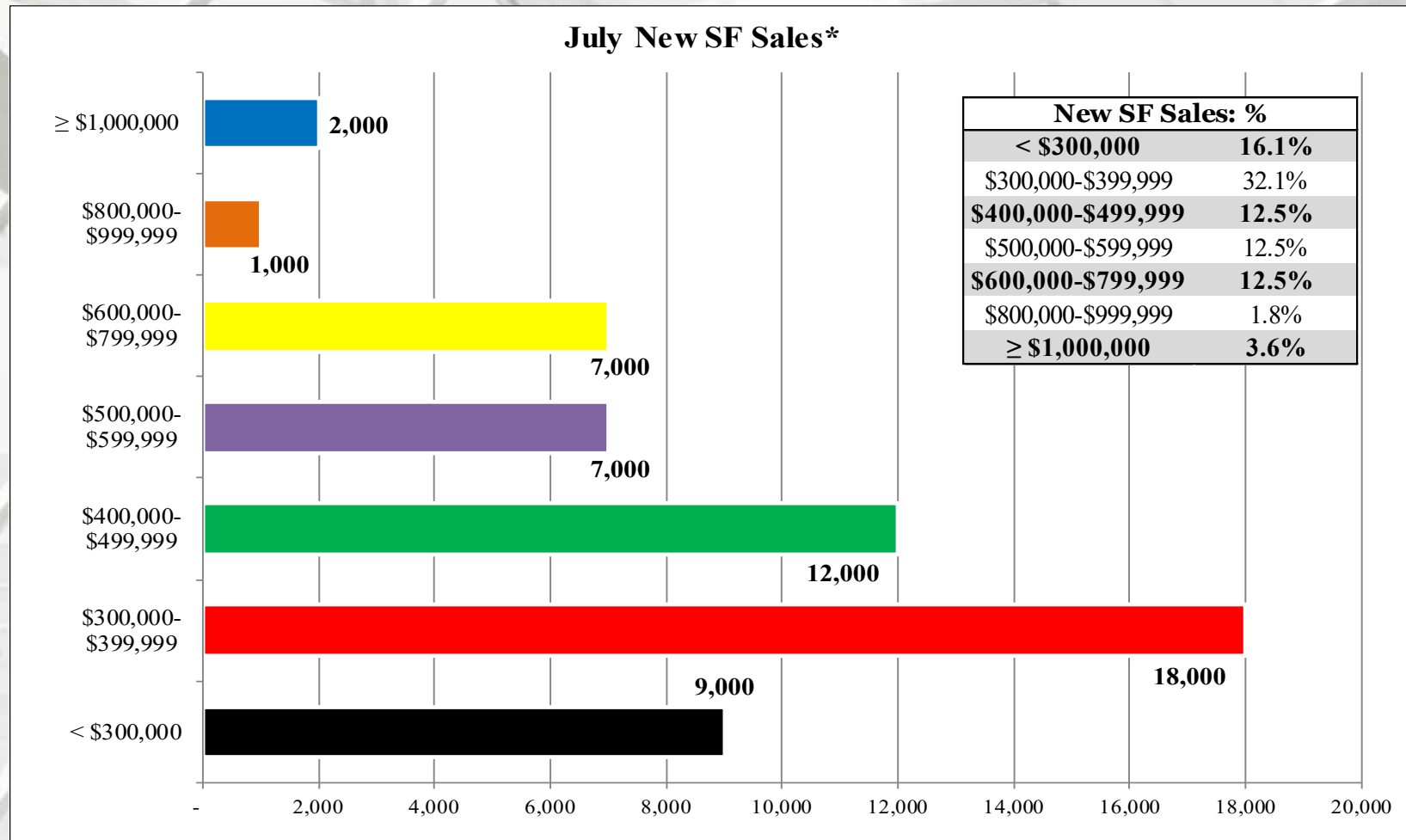
⁴ Housing prices are adjusted at irregular intervals.

⁵ Z = Less than 500 units or less than 0.5 percent

Sources: ^{1,2,3} <https://www.census.gov/construction/nrs/index.html>; 8/25/25;

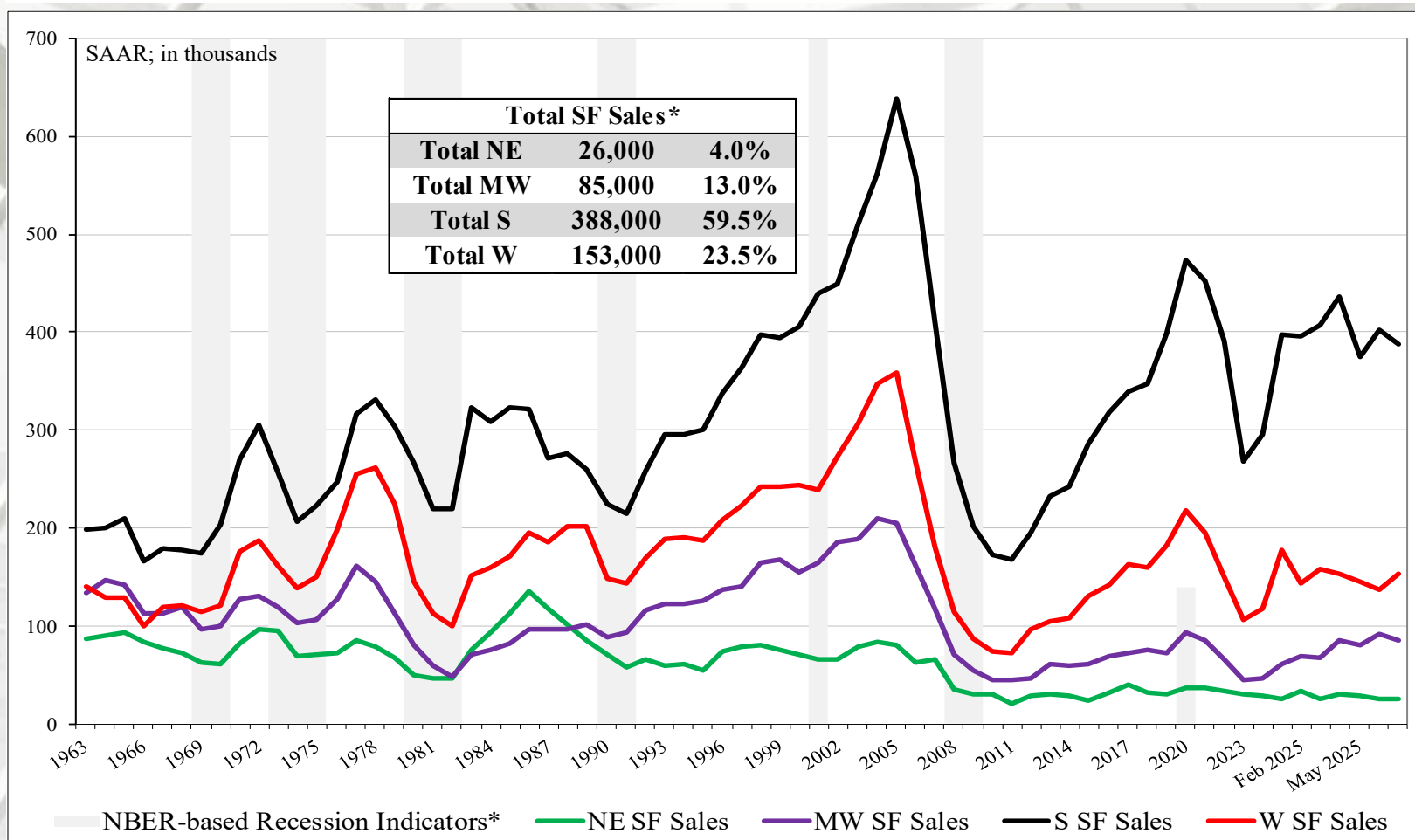
⁴ https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf

New SF House Sales



* Total new sales by price category and percent.

New SF House Sales by Region

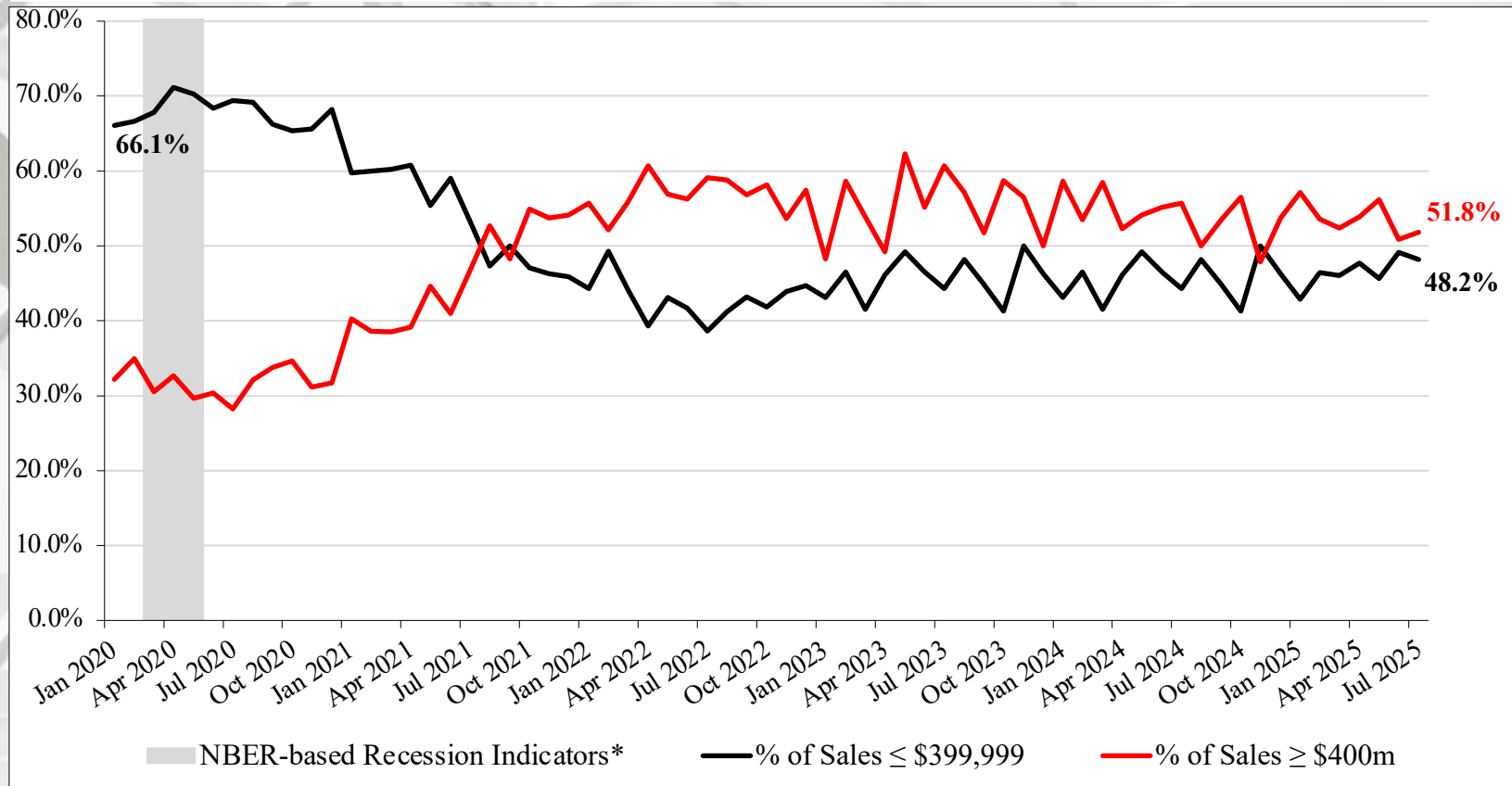


NE = Northeast; MW = Midwest; S = South; W = West

* 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).

New SF House Sales



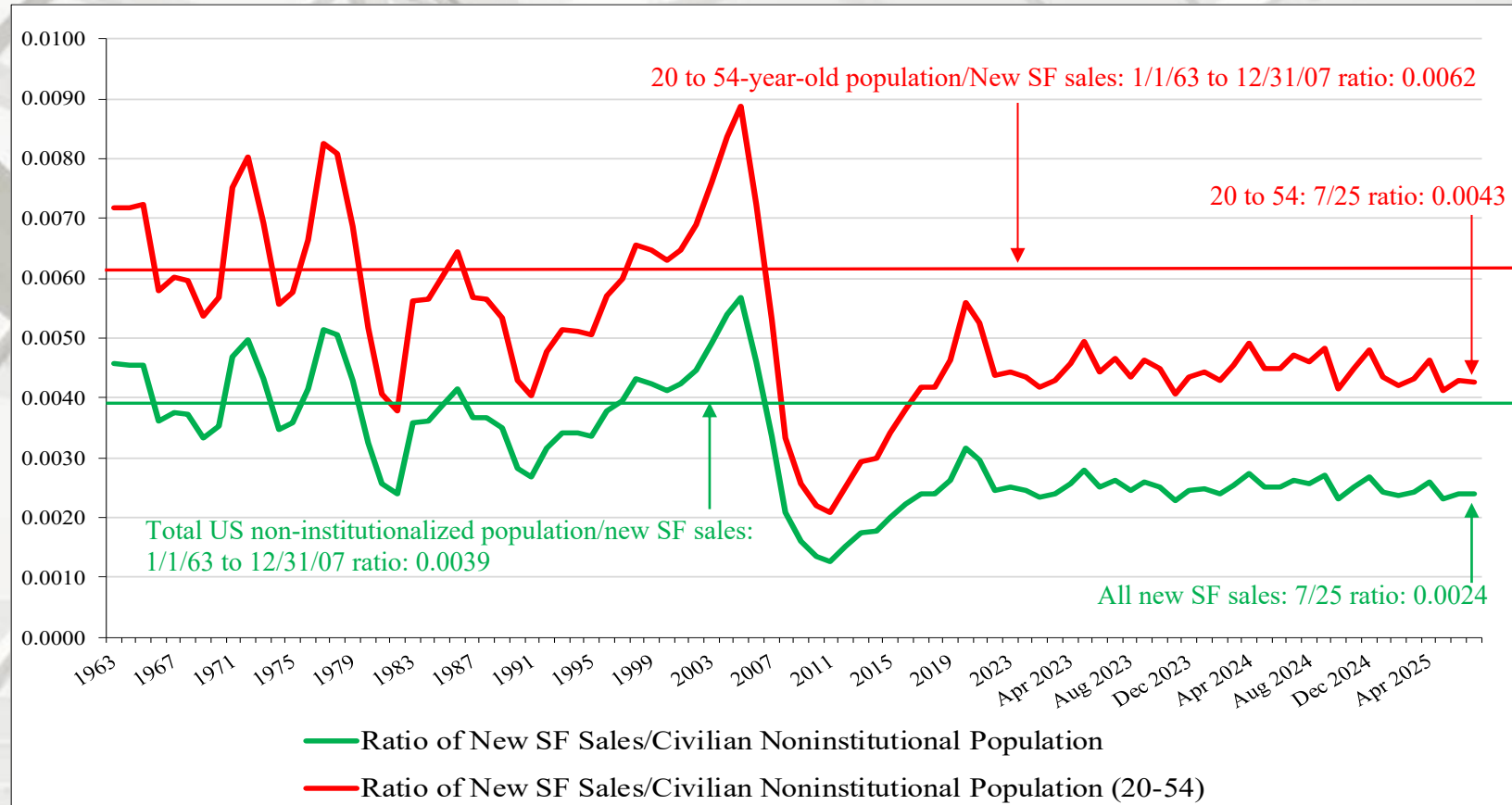
* NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

New SF Sales: < \$399.9 m and > \$400 m: 2020 – July 2024

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.

Sources: <https://fred.stlouisfed.org/series/USREC>, 6/1/21; ¹ <https://www.census.gov/construction/nrs/index.html>; ² https://www.census.gov/construction/cpi/pdf/descpi_sold.pdf 8/25/25

New SF House Sales



New SF sales adjusted for the US population

From July 1963 to July 2007, the long-term ratio of new house sales to the total US non-institutionalized population was 0.0039; in July 2025 it was 0.0024 – no change from June. The non-institutionalized population, aged 20 to 54 long-term ratio is 0.0062; in July 2025 it was 0.0043 – no change from June. All are non-adjusted data. From a non-institutionalized population world view, new sales remain less than the long-term average.

On a long-term basis, some studies peg normalized long-term demand at 900,000 to 1,000,000 new SF house sales per year beginning in 2025 through 2050.

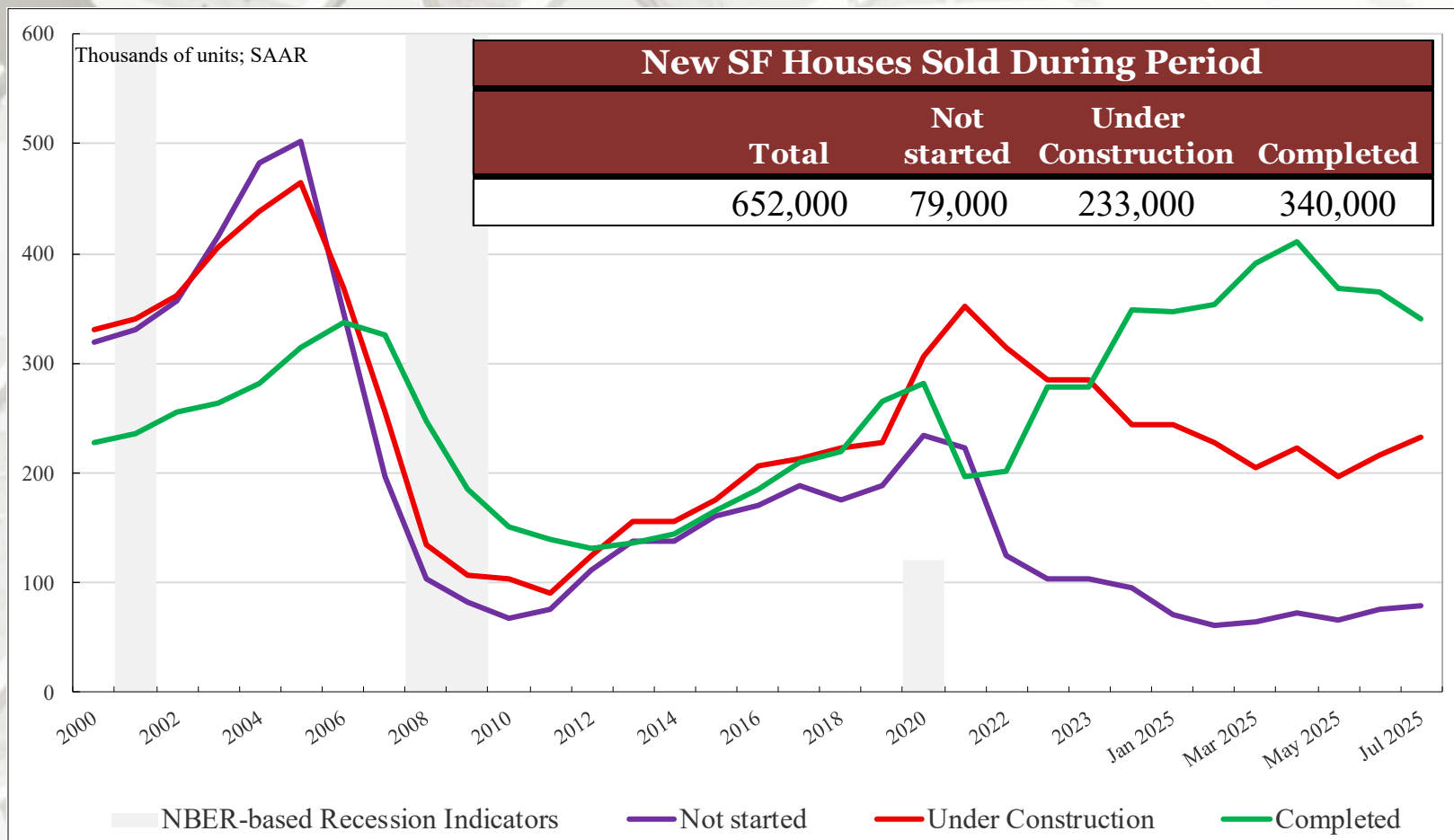
New SF House Sales

New SF Houses Sold During Period

	Total	Not started	Under Construction	Completed
July	652,000	79,000	233,000	340,000
June	656,000	75,000	216,000	365,000
2024	465,000	92,000	270,000	103,000
M/M change	-0.6%	5.3%	7.9%	-6.8%
Y/Y change	40.2%	-14.1%	-13.7%	230.1%
Total percentage		12.1%	35.7%	52.1%

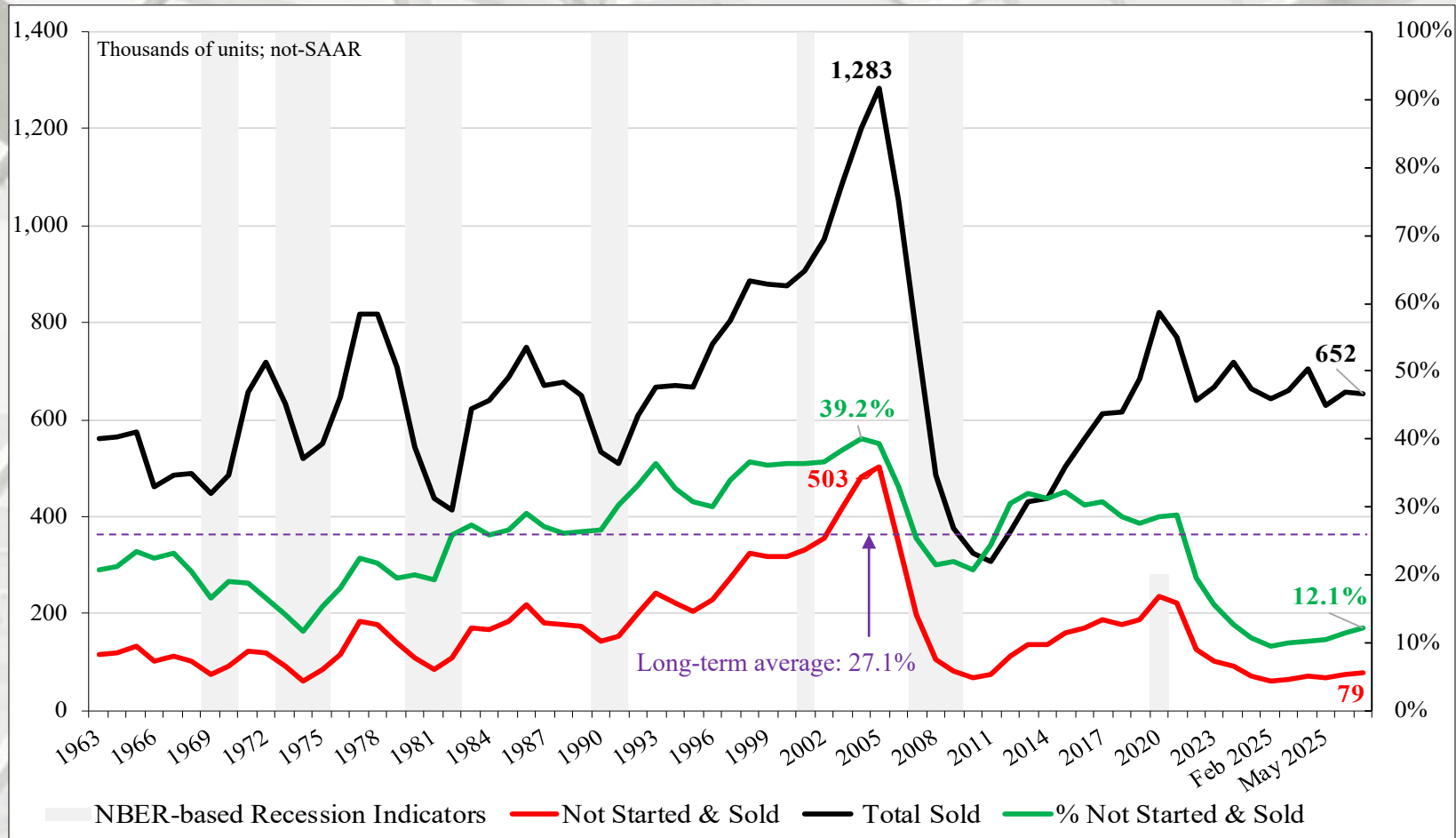
All data is SAAR

New SF House Sales: Sold During Period



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

New SF House Sales: Percentage Not Started & Sold During Period



Of the new houses sold in July (652 m), 12.0% (79 m) had not been started and sold. The long-term average is 27.1%.

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

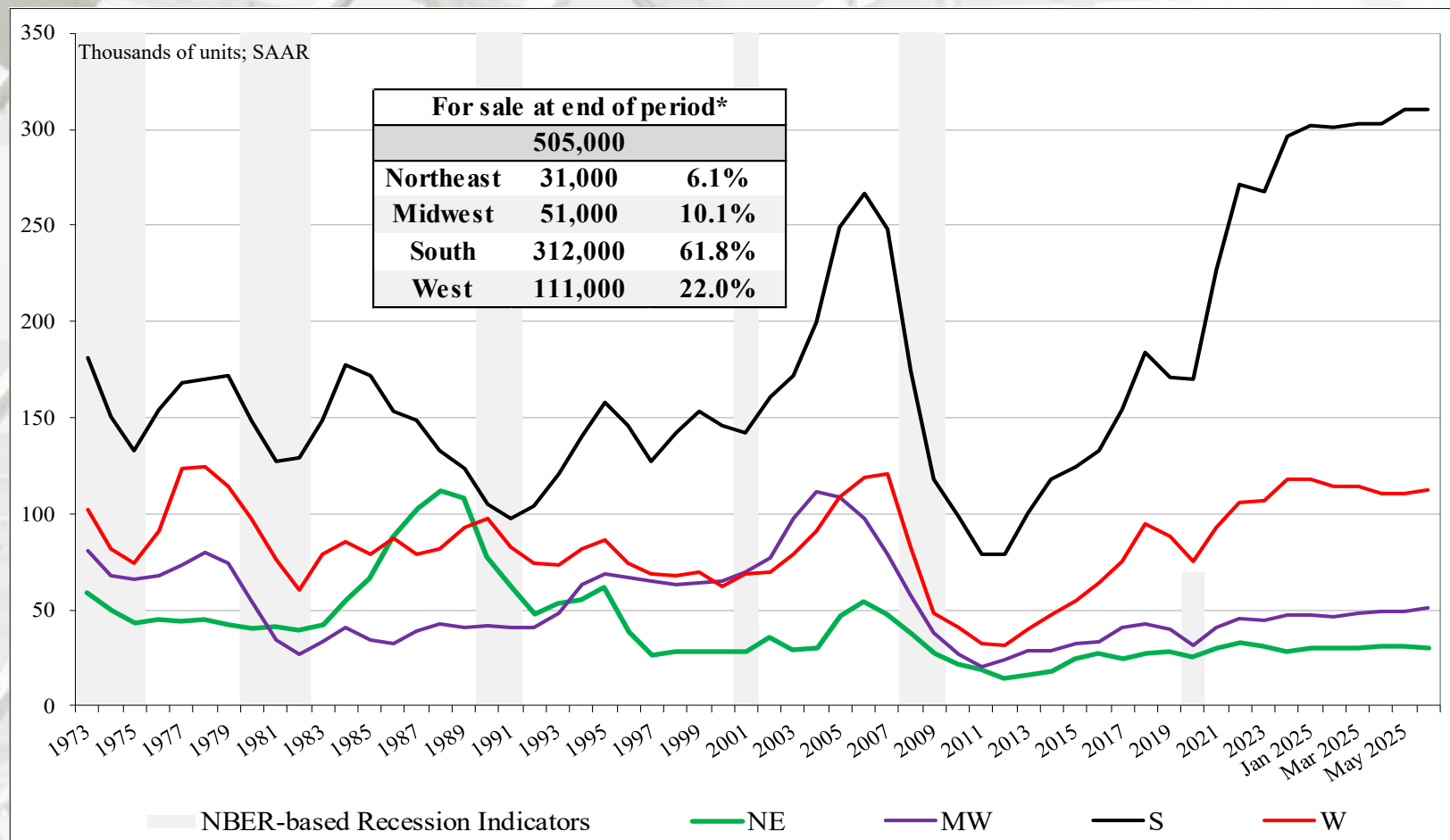
New SF Houses for Sale

New SF Houses for Sale at the end of the Period by Region*

	Total	NE	MW	S	W
July	505,000	31,000	51,000	312,000	111,000
June	503,000	30,000	51,000	310,000	112,000
2024	467,000	26,000	40,000	295,000	106,000
M/M change	0.4%	3.3%	0.0%	0.6%	-0.9%
Y/Y change	8.1%	19.2%	27.5%	5.8%	4.7%

* Not SAAR

New SF House Sales: For sale at end of period by Region



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

* Percentage of total for sale at end of period.

Sources: <https://fred.stlouisfed.org/series/USREC>, 6/1/21; <http://www.census.gov/construction/nrc/pdf/newresconst.pdf>; 8/25/25

[Return TOC](#)

New SF House Sales

New SF Houses Sold During Period

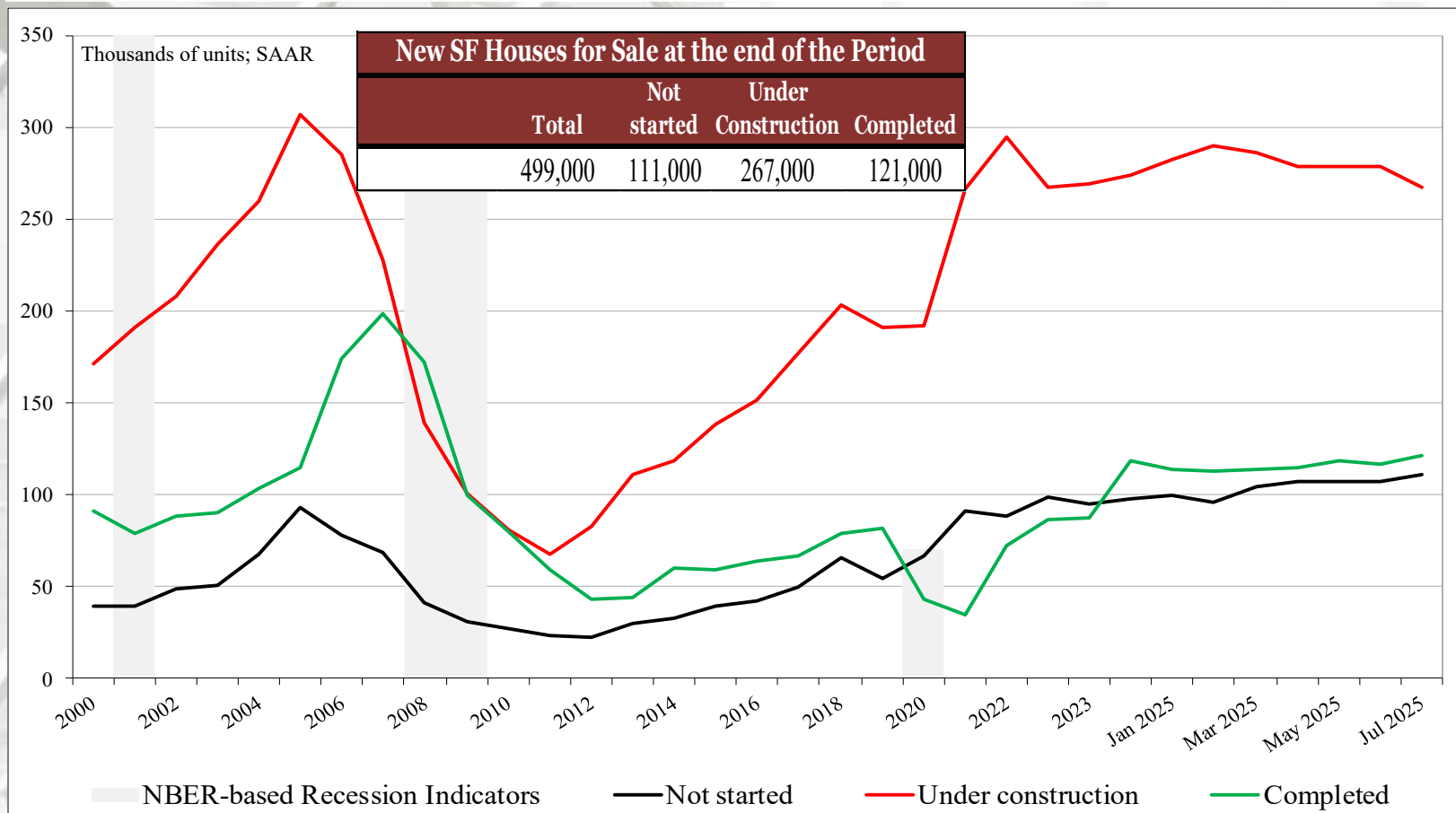
	Total	Not started	Under Construction	Completed
July	652,000	79,000	233,000	340,000
June	656,000	75,000	216,000	365,000
2024	465,000	92,000	270,000	103,000
M/M change	-0.6%	5.3%	7.9%	-6.8%
Y/Y change	40.2%	-14.1%	-13.7%	230.1%
Total percentage		12.1%	35.7%	52.1%

New SF House Sales

New SF Houses for Sale at the end of the Period

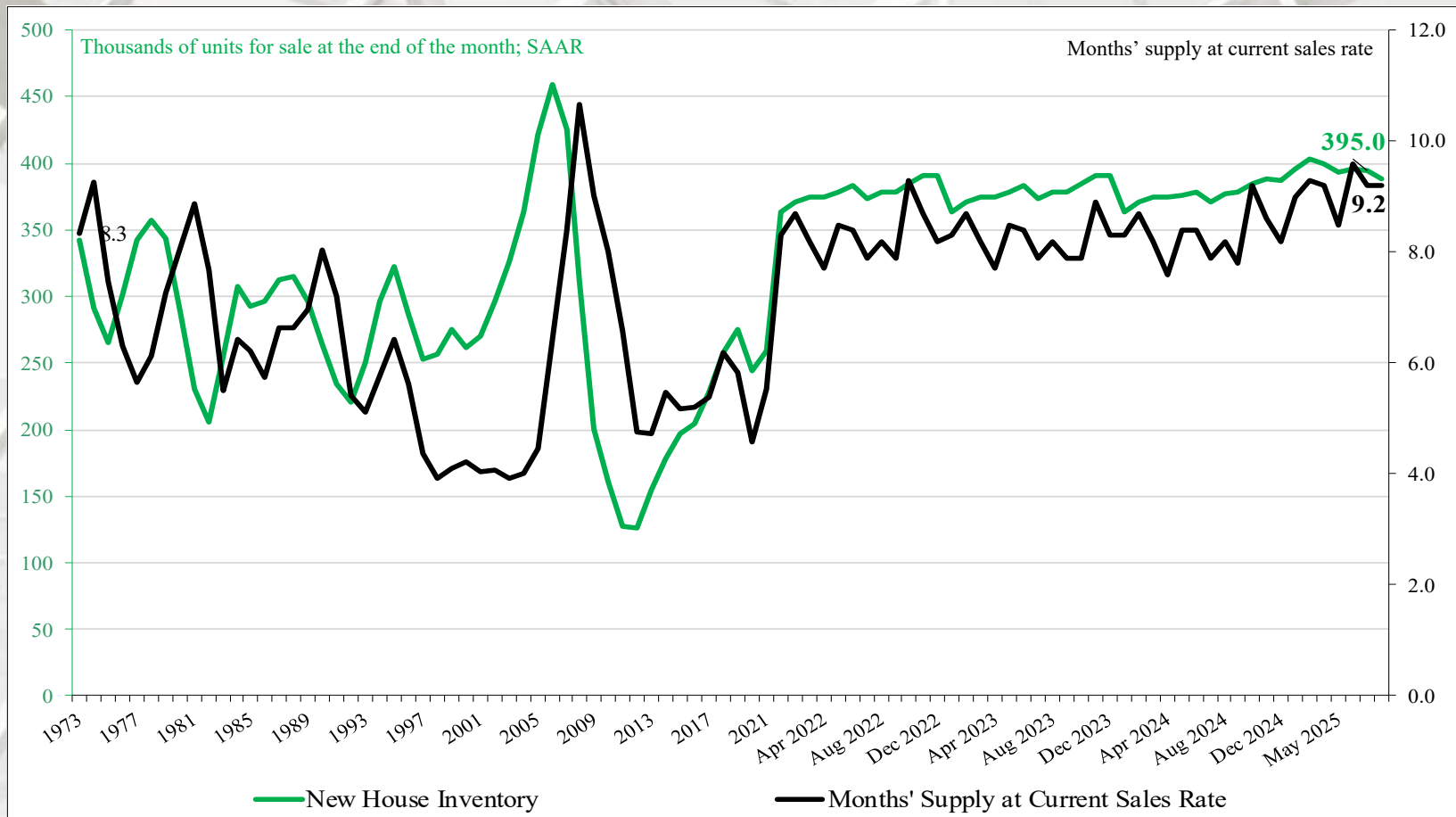
	Total	Not started	Under Construction	Completed
July	499,000	111,000	267,000	121,000
June	502,000	107,000	278,000	117,000
2024	465,000	92,000	270,000	103,000
M/M change	-0.6%	3.7%	-4.0%	3.4%
Y/Y change	7.3%	20.7%	-1.1%	17.5%
Total percentage		22.2%	53.5%	24.2%

New SF House Sales: For Sale at End of Period



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

Months' Supply and New House Inventory^a



^a New HUC + New House Completions (sales data only)

The months' supply of new houses at current sales rate at the end of July was 9.3, greater than the historically preferred number of five- to six-months (SAAR).

July 2025

Construction Spending

	Total Private Residential*	SF*	MF*	Improvement**
July	\$886,533	\$419,136	\$113,072	\$354,325
June	\$885,939	\$418,517	\$113,552	\$353,870
2024	\$936,627	\$428,255	\$124,861	\$383,511
M/M change	0.1%	0.1%	-0.4%	0.1%
Y/Y change	-5.3%	-2.1%	-9.4%	-7.6%

* Millions of dollars.

** 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\$.

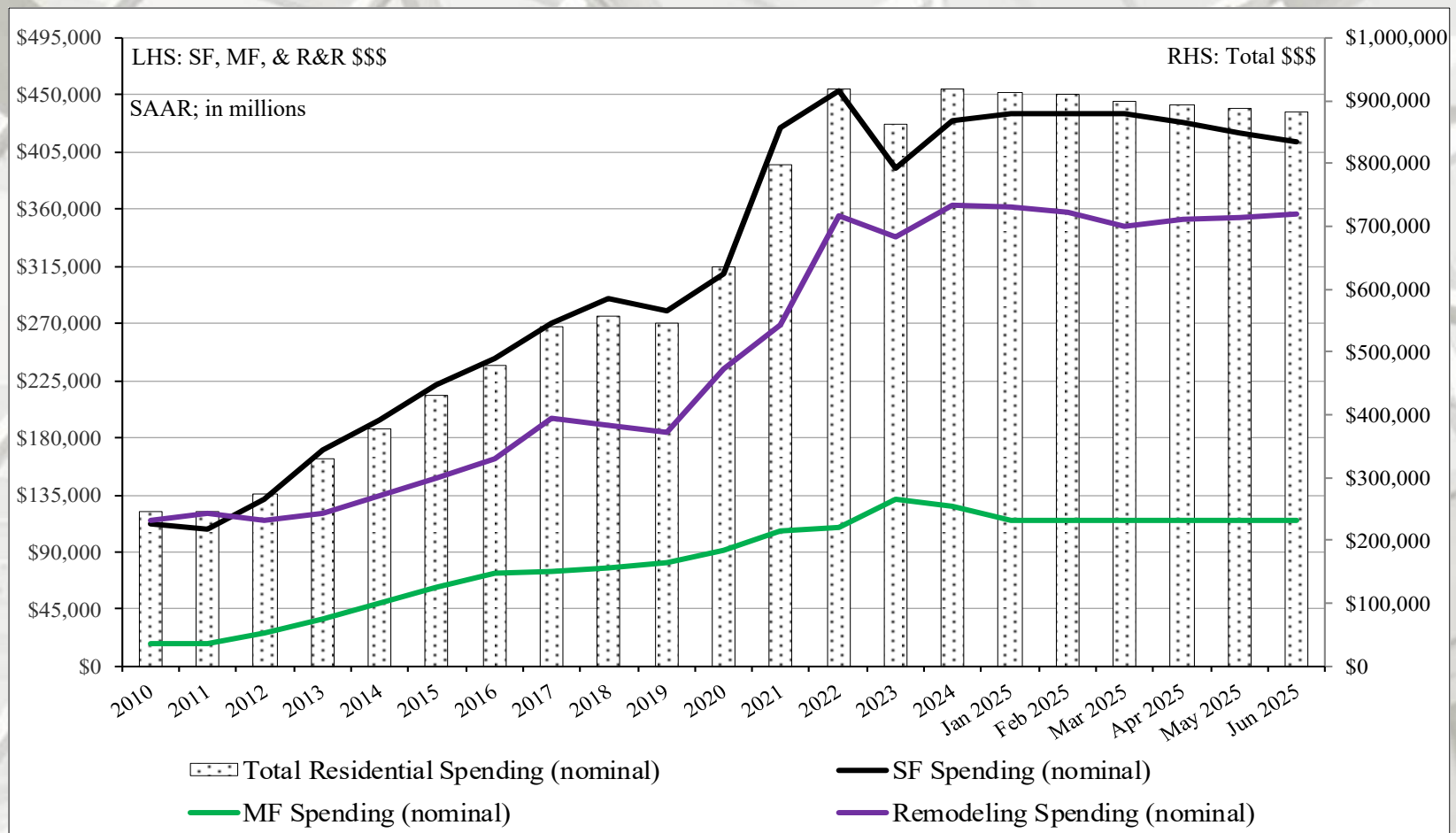
Total private residential construction spending includes new single-family, new multi-family, and improvement (AKA repair and remodeling) expenditures.

New single-family: new houses and town houses built to be sold or rented and units built by the owner or for the owner on contract. The classification excludes residential units in buildings that are primarily nonresidential. It also excludes manufactured housing and houseboats.

New multi-family includes new apartments and condominiums. The classification excludes residential units in buildings that are primarily nonresidential.

Improvements: Includes remodeling, additions, and major replacements to owner occupied properties subsequent to completion of original building. It includes construction of additional housing units in existing residential structures, finishing of basements and attics, modernization of kitchens, bathrooms, etc. Also included are improvements outside of residential structures, such as the addition of swimming pools and garages, and replacement of major equipment items such as water heaters, furnaces and central air-conditioners. Maintenance and repair work is not included.

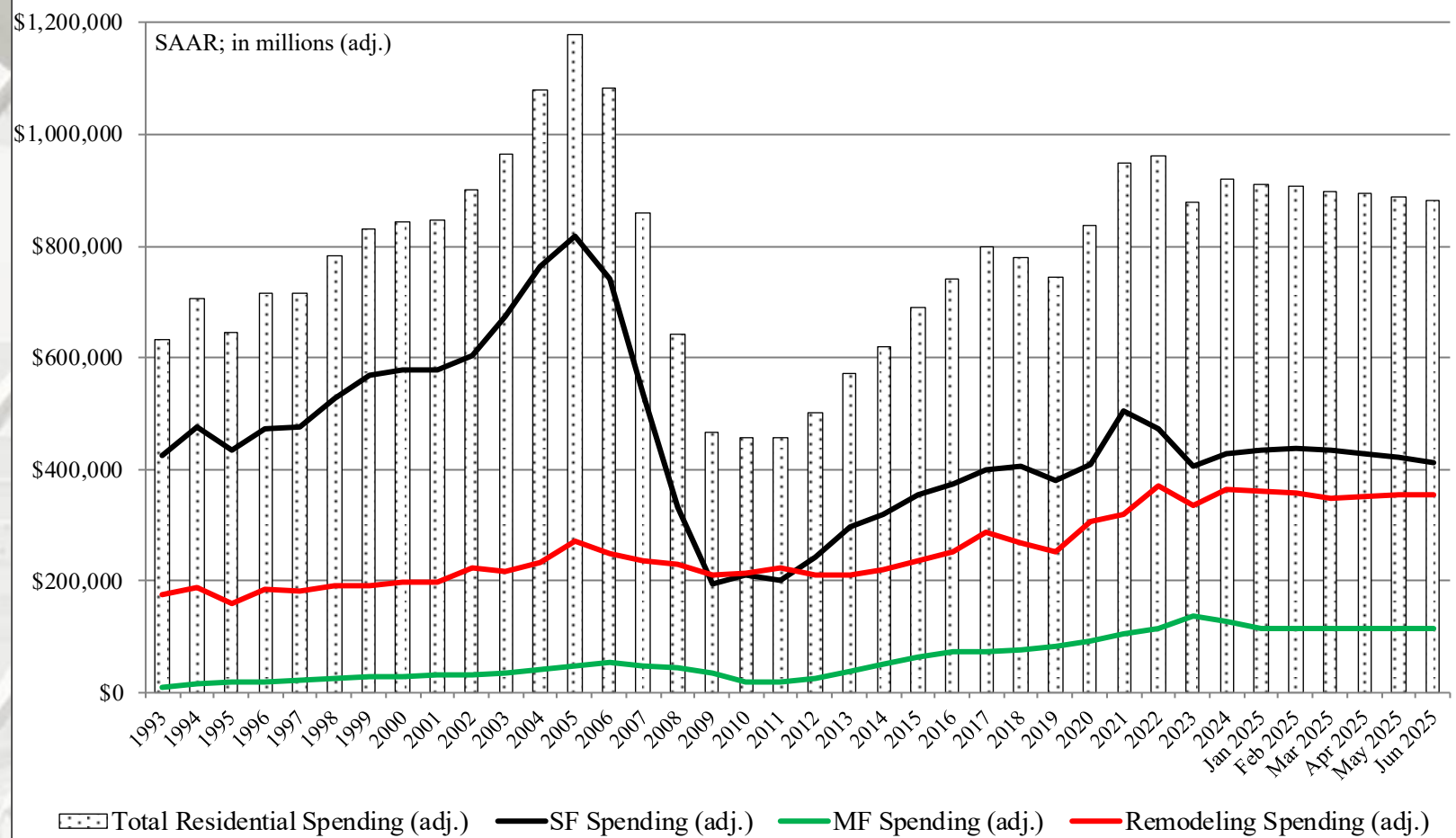
Total Construction Spending (nominal): 2000 – July 2025



Reported in nominal US\$.

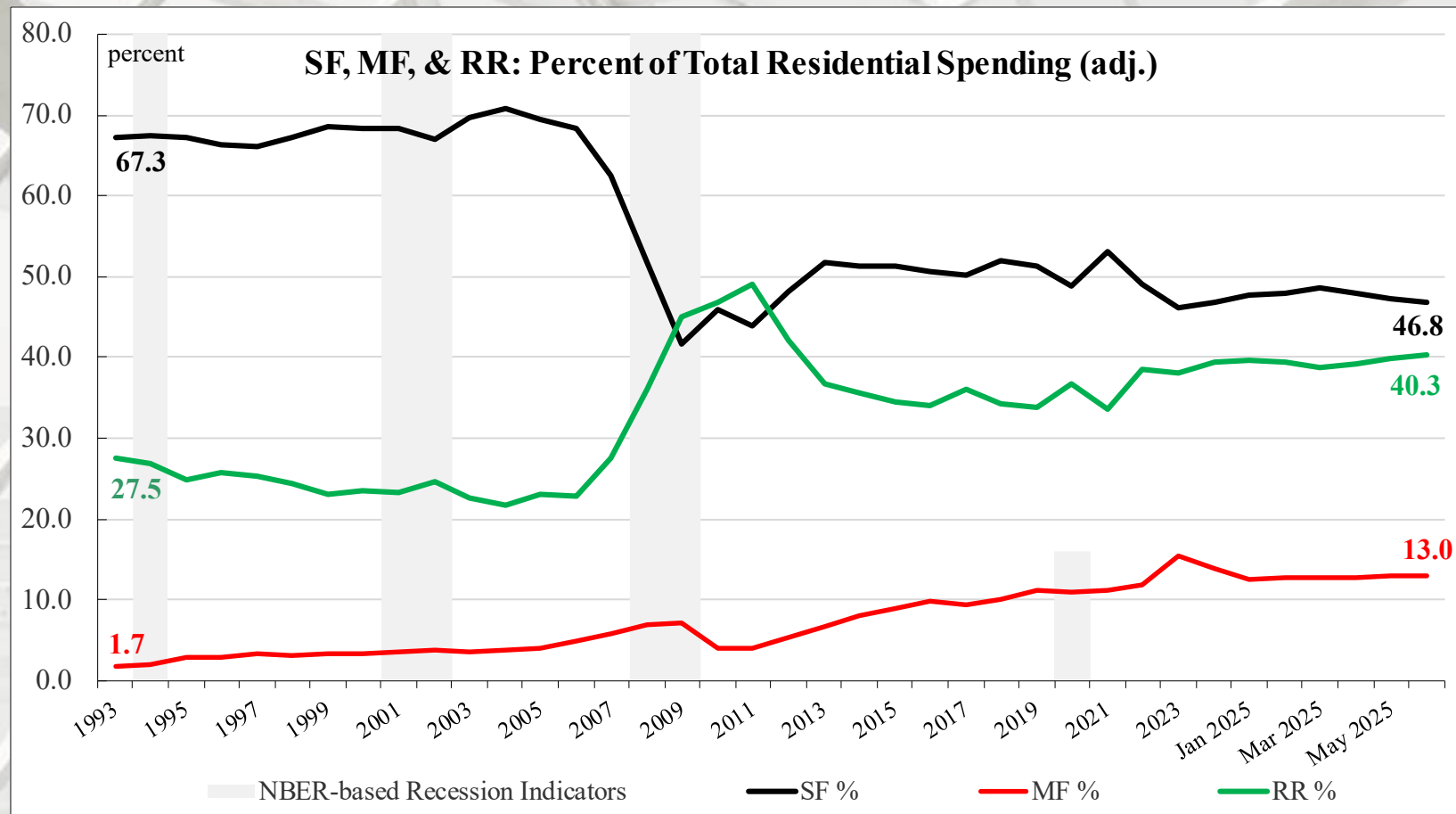
The US DOC does not report improvement spending directly, this is a monthly estimation for 2025.

Total Construction Spending (adjusted): 1993 – July 2025



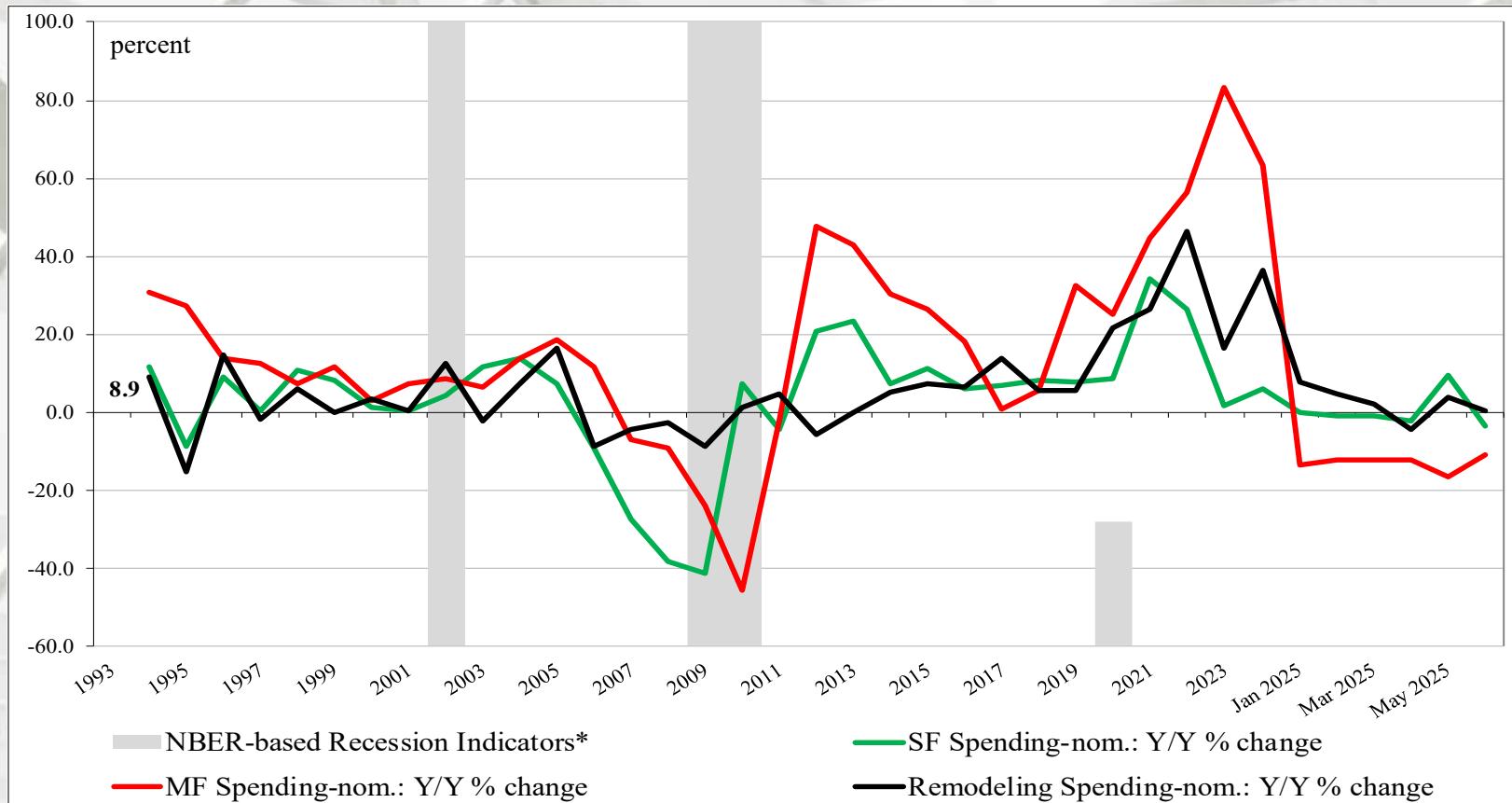
Reported in adjusted \$US: 1993 – 2024 (adjusted for inflation, BEA Table 1.1.9); July 2025 reported in nominal US\$.

Construction Spending Shares: 1993 – July 2025



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

Construction Spending: Y/Y Percentage Change



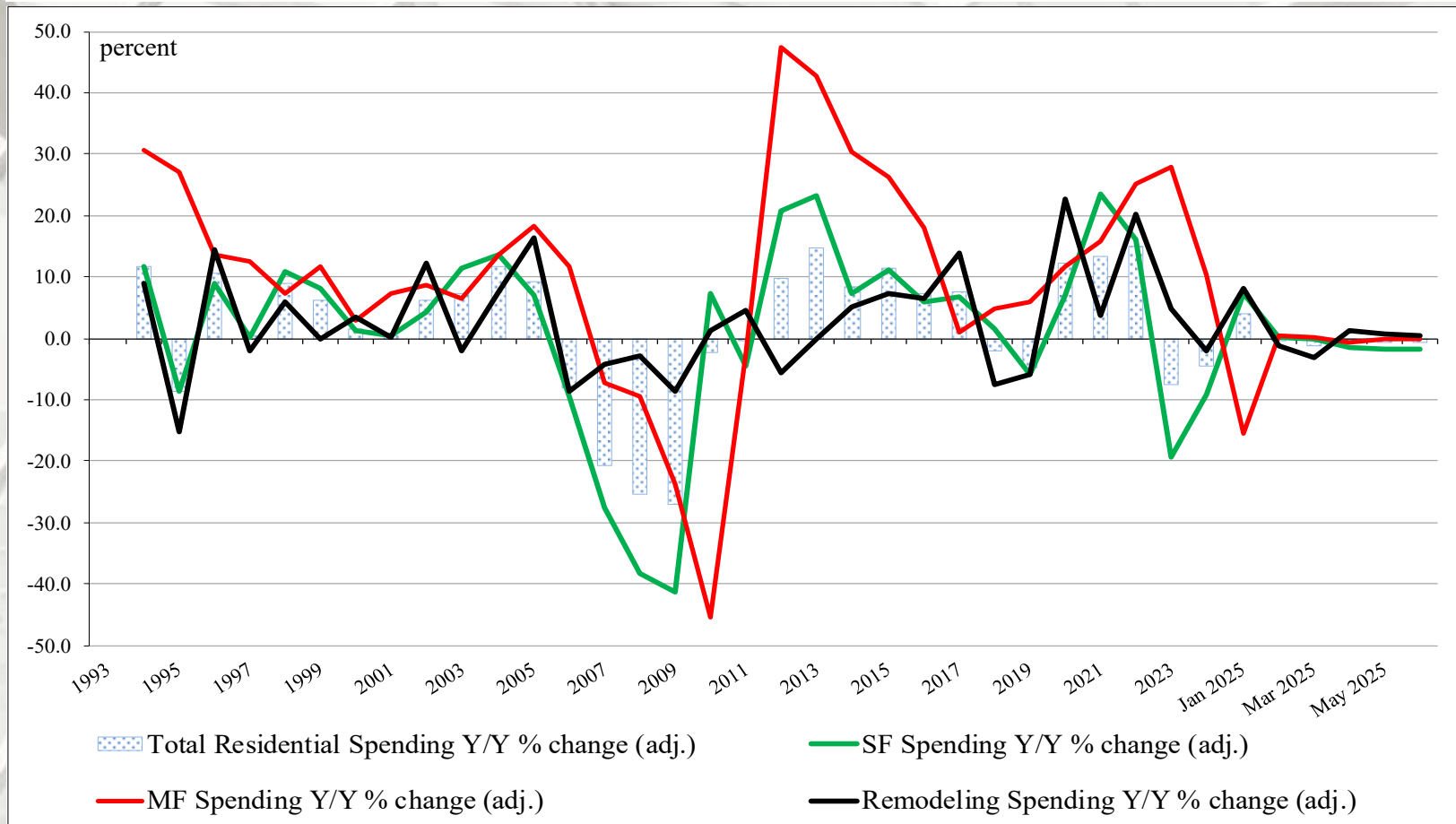
Nominal Residential Construction Spending: Y/Y percentage change, 1993 to July 2024

Presented above is the percentage change of Y/Y construction spending. RR expenditures were positive on a percentage basis, year-over-year (July 2025) data reported in nominal dollars) and SF and MF were negative.

* 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>, 6/21/21; <http://www.census.gov/construction/c30/pdf/privsa.pdf>; 9/2/25 and <http://www.bea.gov/iTable/iTable.cfm>; 9/3/24

Adjusted Construction Spending, Y/Y Percentage Change: 1993 to July 2025



Adjusted Residential Construction Spending: Y/Y percentage change, 1993 to July 2025

Existing House Sales

National Association of Realtors®

	Existing Sales	Median Price	Month's Supply
July	4,010,000	\$422,400	4.6
June	3,930,000	\$432,700	4.7
2024	3,980,000	\$421,400	4.0
M/M change	2.0%	-2.4%	-2.1%
Y/Y change	0.8%	0.2%	15.0%

All sales data: SAAR

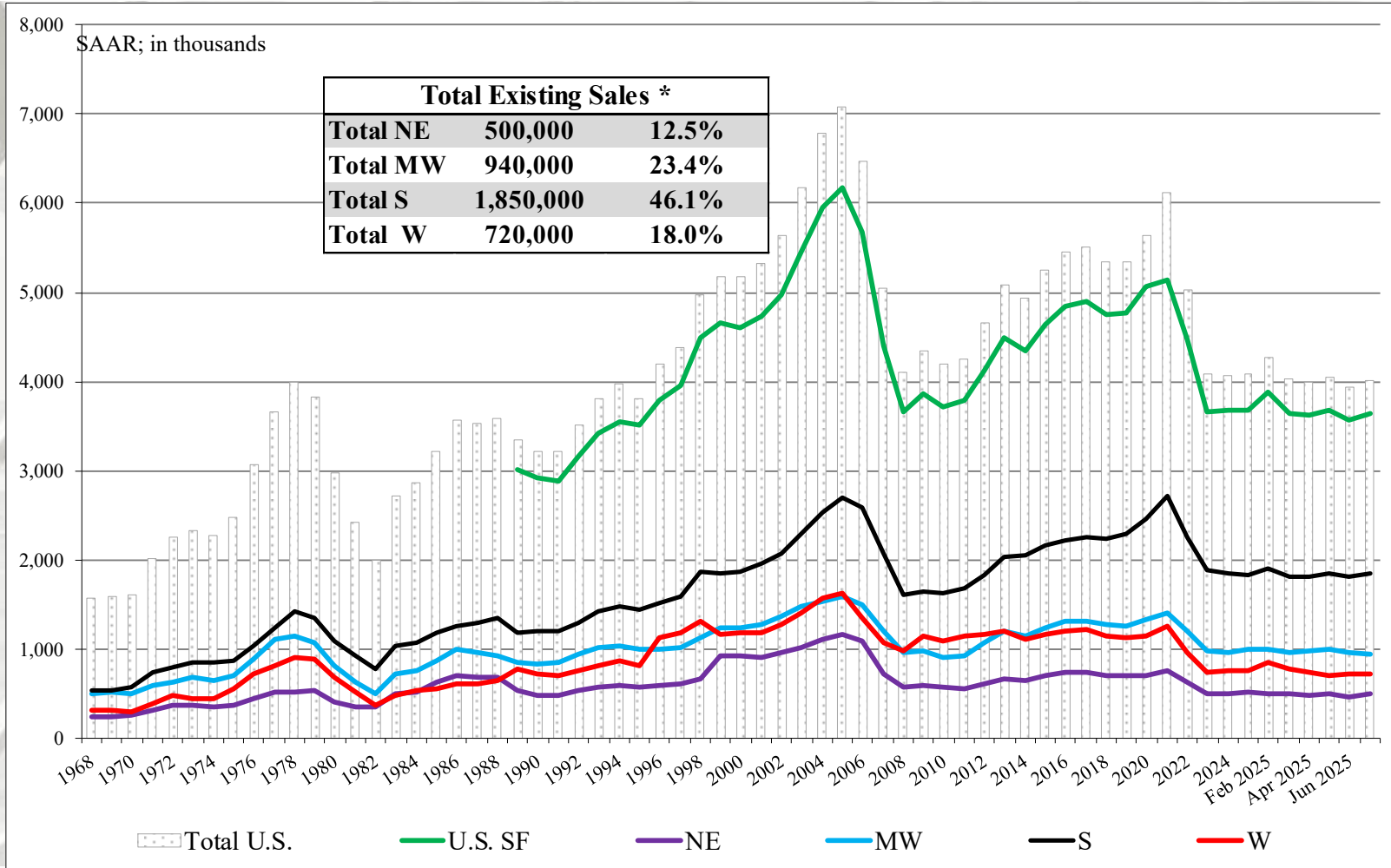
Existing House Sales

	NE	MW	S	W
July	500,000	940,000	1,850,000	720,000
June	460,000	950,000	1,810,000	710,000
2024	490,000	930,000	1,810,000	750,000
M/M change	8.7%	-1.1%	2.2%	1.4%
Y/Y change	2.0%	1.1%	2.2%	-4.0%

	Existing SF Sales	SF Median Price
July	3,640,000	\$428,500
June	3,570,000	\$438,600
2024	3,600,000	\$427,200
M/M change	2.0%	-2.4%
Y/Y change	1.1%	0.3%

All sales data: SAAR.

Existing House Sales



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

* Percentage of total existing sales.

U.S. Housing Prices

Federal Housing Finance Agency

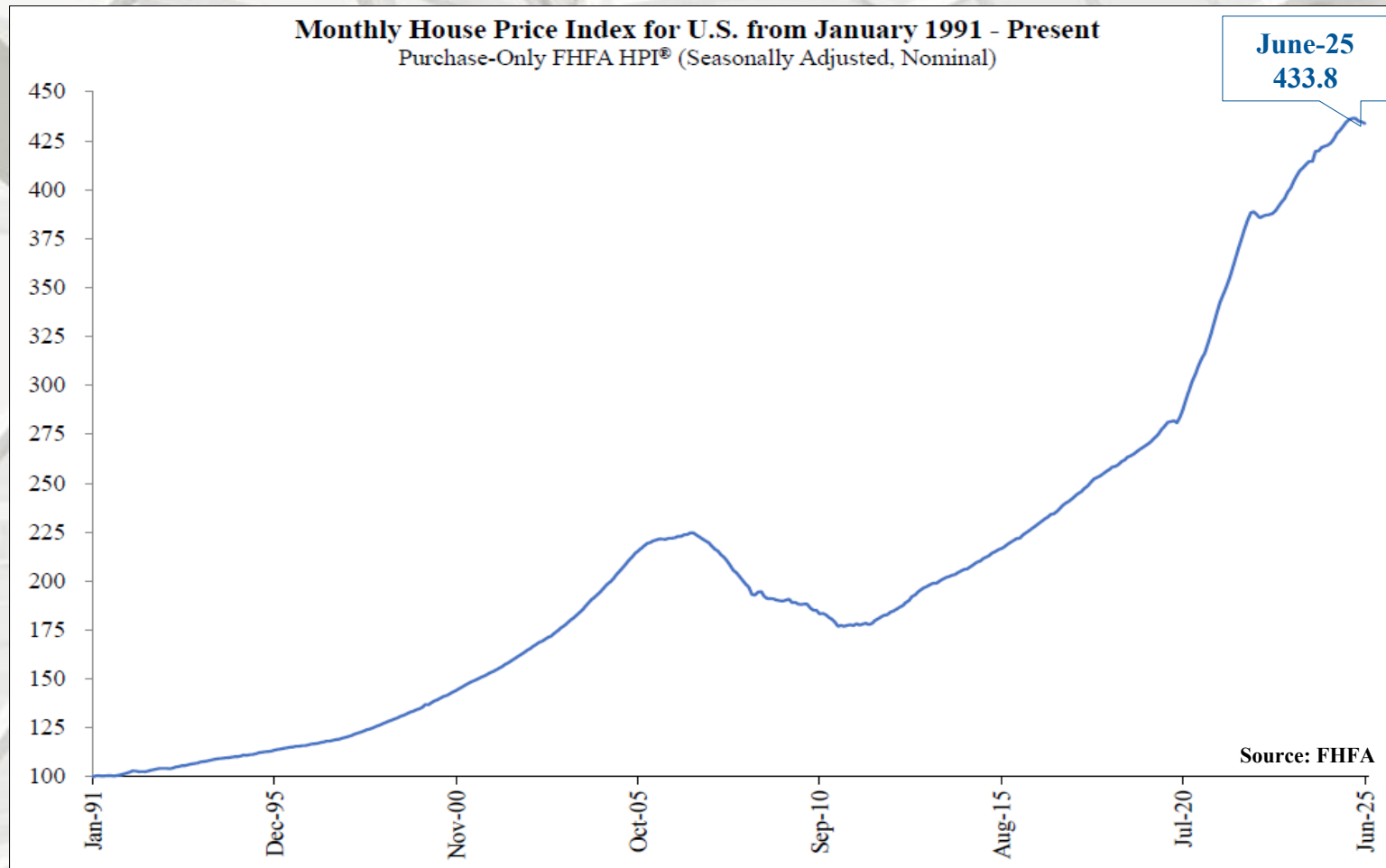
FHFA House Prices Rise 2.9 Percent Year over Year; Unchanged Quarter over Quarter

Significant Findings

“U.S. house prices rose **2.9 percent** between the second quarter of 2024 and the second quarter of 2025, according to the U.S. Federal Housing (FHFA) House Price Index (FHFA HPI®). House prices for the second quarter of 2025 remained unchanged compared to the first quarter of 2025. FHFA’s seasonally adjusted monthly index for June was down **0.2 percent** from May.

- Nationally, the U.S. housing market has experienced positive annual appreciation each quarter since the start of 2012.
- House prices rose in 46 states between the second quarter of 2024 and the second quarter of 2025. The five states with the highest annual appreciation were 1) New York, 8.0 percent; 2) Connecticut, 7.8 percent; 3) New Jersey, 7.5 percent; 4) Mississippi, 7.3 percent; and 5) Illinois, 6.7 percent. House prices were down in four states and District of Columbia. District of Columbia experienced the most significant price decline at 7.6 percent.
- House prices rose in 81 of the 100 largest metropolitan areas over the previous four quarters. The annual price increase was the greatest in Rochester, NY at 10.3 percent. The metropolitan area that experienced the most significant price decline was North Port-Bradenton-Sarasota, FL at 11.2 percent.
- All nine census divisions had positive house price changes year-over-year. The Middle Atlantic division recorded the strongest appreciation, posting a 6.7 percent increase from the second quarter of 2024 to the second quarter of 2025. The Pacific division recorded the smallest four-quarter appreciation, at 0.9 percent.
- Trends in the Top 100 Metropolitan Statistical Areas are available in our interactive dashboard: <https://www.fhfa.gov/data/dashboard/fhfa-hpi-top-100-metro-area-rankings>. The first tab displays rankings, and the second tab offers charts.” – Adam Russell, FHFA

U.S. Housing Prices



U.S. Housing Prices

S&P Cotality Case-Shiller Index Records Annual Gain in June 2025

“S&P Dow Jones Indices (S&P DJI) today released the June 2025 results for the S&P Cotality Case-Shiller Indices, formerly known as the S&P CoreLogic Case-Shiller Indices. More than 27 years of history are available for the data series and can be accessed in full by going to <https://www.spglobal.com/spdji/en/index-family/indicators/sp-cotality-case-shiller/>.

Year-Over-Year

The S&P Cotality Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 1.9% annual gain for June, down from a 2.3% rise in the previous month. The 10-City Composite increased 2.6%, down from a 3.4% rise in the previous month. The 20-City Composite posted a year-over-year gain of 2.1%, down from a 2.8% increase in the previous month.

New York again reported the highest annual gain among the 20 cities with a 7.0% increase in June, followed by Chicago and Cleveland with annual increases of 6.1% and 4.5%, respectively. Tampa posted the lowest return, falling 2.4%. The chart below compares year-over-year returns for different housing price ranges (tiers) in New York.

Month-Over-Month

The pre-seasonally adjusted U.S. National Index saw a slight upward trend, rising 0.1%. The 10-City Composite and 20-City Composite Indices posted drops of -0.1% and -0.04%, respectively.

After seasonal adjustment, the U.S. National Index posted a decrease of -0.3%. The 10-City Composite Index posted a -0.1% decrease and the 20-City Composite Index fell -0.3%.” – Nicholas Godec, CFA, CAIA, CIPM, Head of Fixed Income Tradables & Commodities, S&P DJI

U.S. Housing Prices

S&P Cotality Case-Shiller Index

Analysis

“June's results mark the continuation of a decisive shift in the housing market, with national home prices rising just 1.9% year-over-year – the slowest pace since the summer of 2023. What makes this deceleration particularly noteworthy is the underlying pattern: The modest 1.9% annual gain masks significant volatility, with the first half of the period showing declining prices (-0.6%) that were more than offset by a 2.5% surge in the most recent six months, suggesting the housing market experienced a meaningful inflection point around the start of 2025.

The geographic divergence has become the story's defining characteristic. New York's 7.0% annual gain stands as a stark outlier, leading all markets by a wide margin, followed by Chicago (6.1%) and Cleveland (4.5%). This represents a complete reversal of pandemic-era patterns, where traditional industrial centers now outpace former darlings like Phoenix (-0.1%), Tampa (-2.4%), and Dallas (-1.0%). Tampa's decline marks the worst performance among all tracked metros, while several Western markets including San Diego (-0.6%) and San Francisco (-2.0%) have joined the negative column – a remarkable transformation from their earlier boom years.” – Nicholas Godec, CFA, CAIA, CIPM, Head of Fixed Income Tradables & Commodities, S&P DJI

U.S. Housing Prices

S&P Cotality Case-Shiller Index

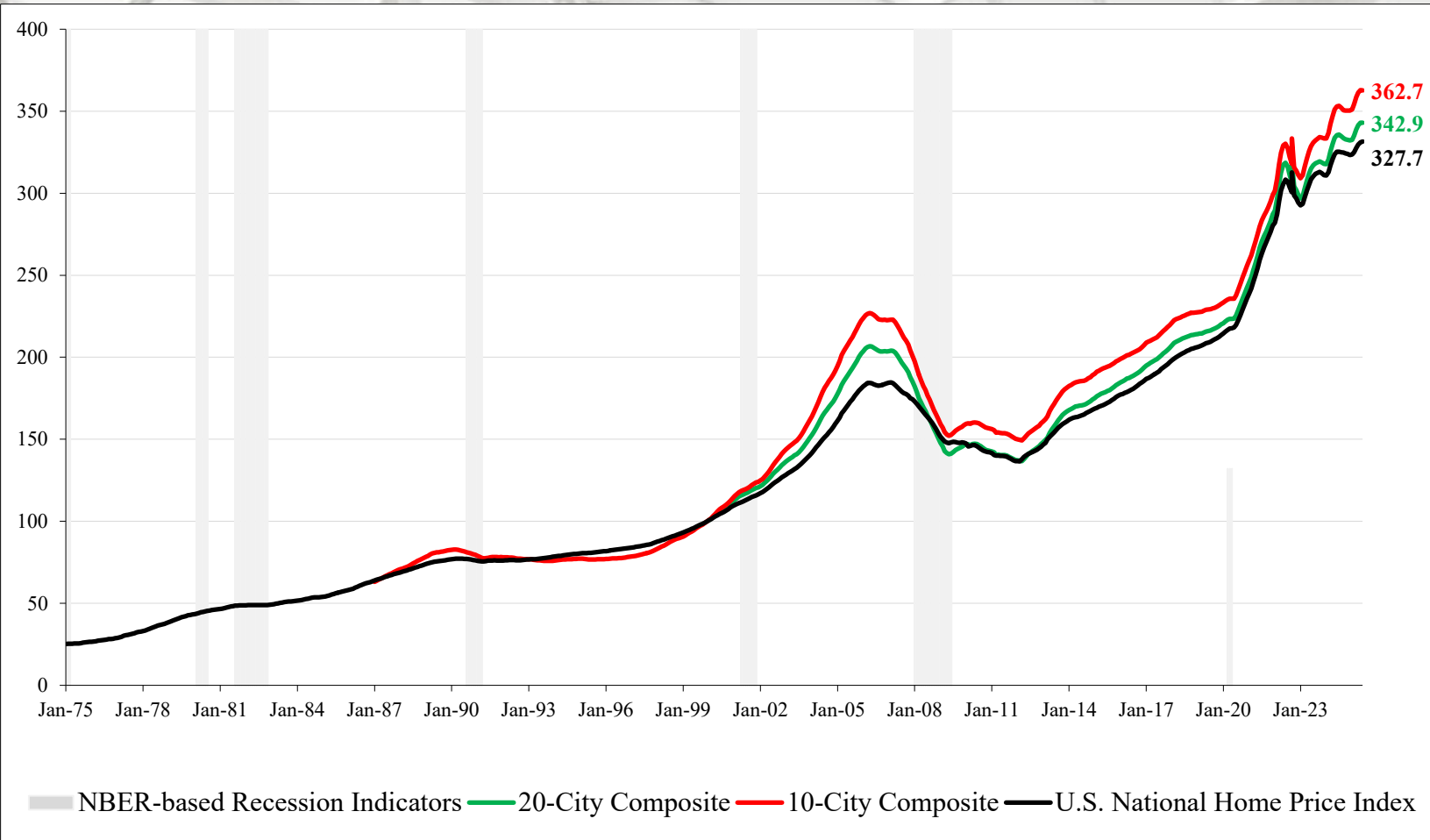
Analysis

“For the first time in years, home prices are failing to keep pace with broader inflation. From June 2024 to June 2025, the Consumer Price Index climbed 2.7%, substantially outpacing the 1.9% gain in national home prices. This reversal is historically significant: During the pandemic surge, home values were climbing at double-digit annual rates that far exceeded inflation, building substantial real wealth for homeowners. Now, American housing wealth has actually declined in inflation-adjusted terms over the past year – a notable erosion that reflects the market's new equilibrium.

The monthly patterns in June reveal a market caught between seasonal forces and underlying weakness. While 13 of 20 metros posted monthly gains before seasonal adjustment, the national index managed just 0.1% growth. After seasonal adjustment, all three headline composites declined, with the National Index falling 0.3%, suggesting that underlying housing demand remains weak despite normal seasonal buying patterns.

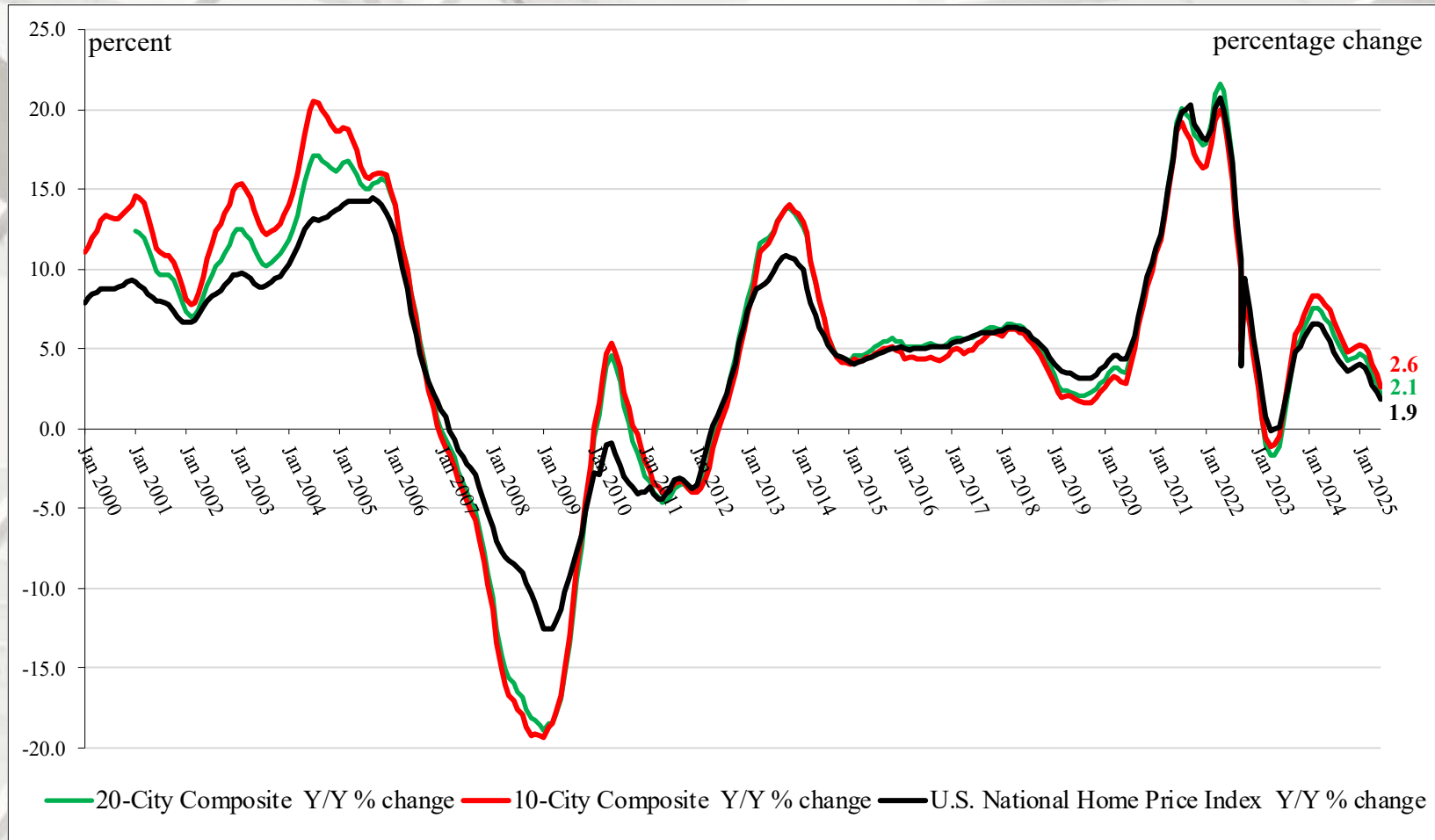
Looking ahead, this housing cycle's maturation appears to be settling around inflation-parity growth rather than the wealth-building engine of recent years. The regional rotation from Sun Belt to traditional industrial centers likely reflects more sustainable fundamentals – employment growth, relative affordability, and demographic shifts that favor established metros over speculative markets. While this represents a loss of the extraordinary gains homeowners enjoyed from 2020-2022, it may signal a healthier long-term trajectory where housing appreciation aligns more closely with broader economic fundamentals than speculative excess.” – Nicholas Godec, CFA, CAIA, CIPM, Head of Fixed Income Tradables & Commodities, S&P DJI

S&P Cotality Case-Shiller Index



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

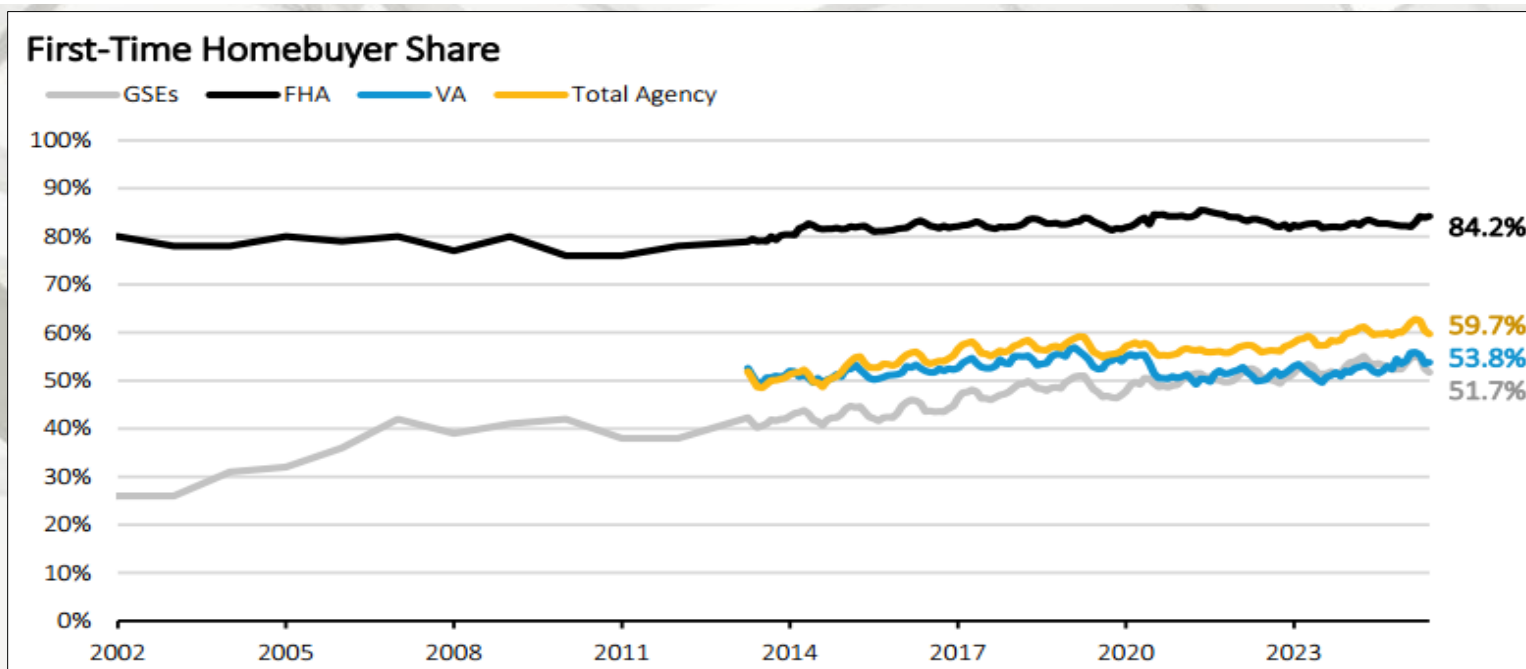
S&P Cotality Case-Shiller Index



Y/Y Price Change

From June 2024 to June 2025, the National Index indicated a 1.9% increase; the Ten-City increased by 2.6%, and the Twenty-City rose by 2.1%.

U.S. First-Time House Buyers



Sources: eMBS, Federal Housing Administration (FHA), and Urban Institute. Data as of June 2025.

Note: All series measure the first-time home buyer share of purchase loans for principal residences. FHA's FTHB share previously reflected the FHA's latest Production Report, however this report is currently lagging by two month. Current FHA FTHB uses the eMBS FTHB share for the month of March and April 2025.

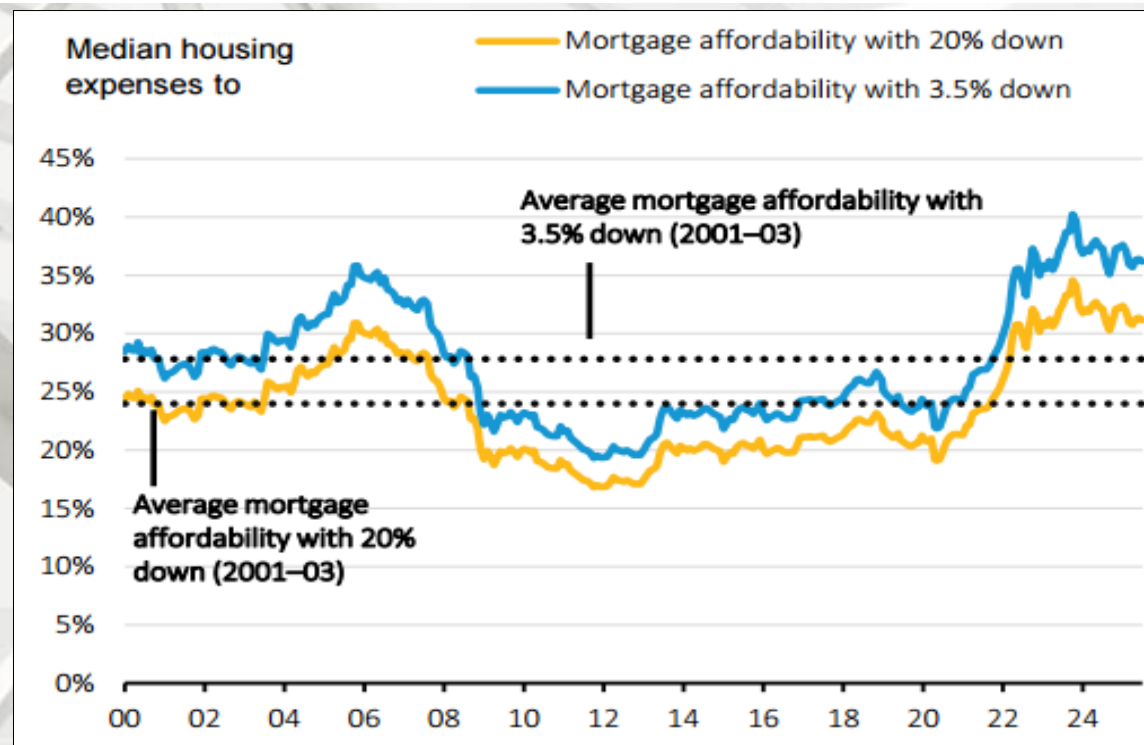
Urban Institute

First-time House Buyer Share

“Although the homeownership rate, which compares home owners and renters has declined modestly (page 27), the first-time home buyer share, which compares first-time home buyers with repeat buyers has increased. The increase in the first-time home buyer share reflects the fact that, in today's relatively high-interest rate environment, repeat home buyers are “locked into” their home through a low-rate mortgage, this impact is much stronger than impact of higher rates on first time home buyers, reducing home buying affordability and thereby slowing the shift from renting to homeownership. First time home buyers are traditionally more concentrated among FHA (84.2 percent). However, in June 2025, more than half of GSE and VA purchase originations are made to first-time home buyers as well (51.7 percent and 53.8 percent, respectively). ...” – Laurie Goodman *et. al*, Vice President, Urban Institute

Source: <https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-august-2025/>; 7/29/25

U.S. Housing Affordability



Urban Institute

National Mortgage Affordability Over Time

“Mortgage affordability remains close to the worst level since the inception of this series since 2000 due to high, but stable interest rates and high home values. But, in recent months, affordability has shown signs of improvement. As of July 2025, with a 20 percent down payment, the share of median income needed for the median monthly mortgage payment was 31.2 percent, slightly above the peak of the housing bubble in November 2005; and with 3.5 percent down, the housing cost burden is 36.2 percent, also just above the 35.8 percent peak in November 2005. Active listings have broadly increased since 2022 but remain lower than pre-pandemic levels. And the distribution of housing inventory has become increasingly unaffordable.” – Laurie Goodman *et. al*, Vice President, Urban Institute

U.S. Housing Finance

Mortgage Bankers Association

Mortgage Credit Availability Increased in July

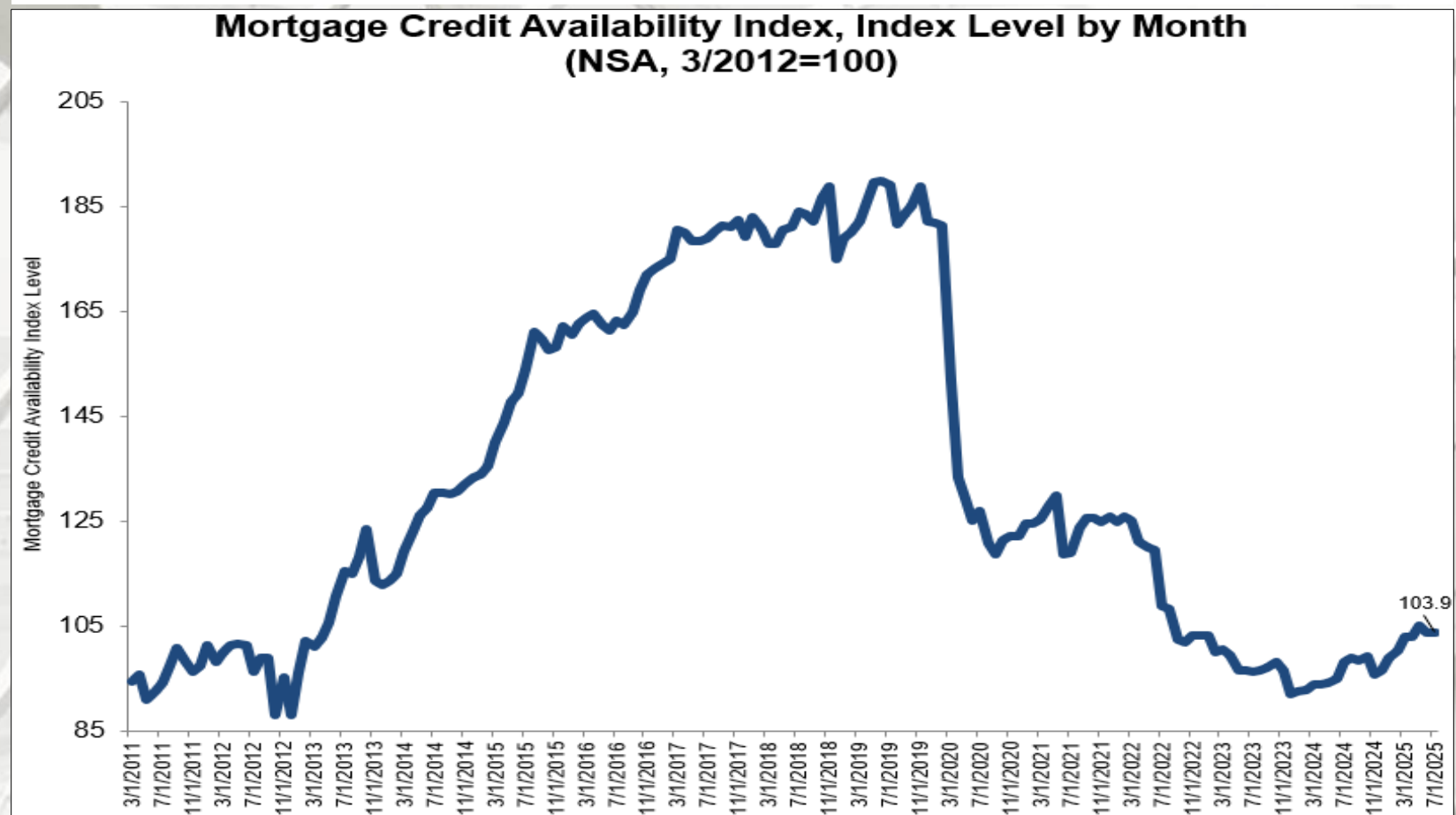
“Mortgage credit availability increased in July according to the Mortgage Credit Availability Index (MCAI), a report from the Mortgage Bankers Association (MBA) that analyzes data from ICE Mortgage Technology.

The MCAI rose by 0.2 percent to 103.9 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 0.5 percent, while the Government MCAI decreased by 0.2 percent. Of the component indices of the Conventional MCAI, the Jumbo MCAI increased by 0.9 percent, and the Conforming MCAI fell by 0.5 percent.

Credit availability edged slightly higher in July, driven by increased availability of ARM loans. This development was consistent with a steeper yield curve and the jumbo-conforming spread back in negative territory. The average jumbo rate was around 8 basis points lower than the average conforming rate in July. Additionally, data from a separate survey showed that ARMs loan applications have picked up in recent months, although activity is still muted compared to historical averages. Credit availability of conforming loans declined slightly over the month, mostly due to a pullback in renovation loans.” – Joel Kan, Vice President and Deputy Chief Economist; MBA

U.S. Housing Finance

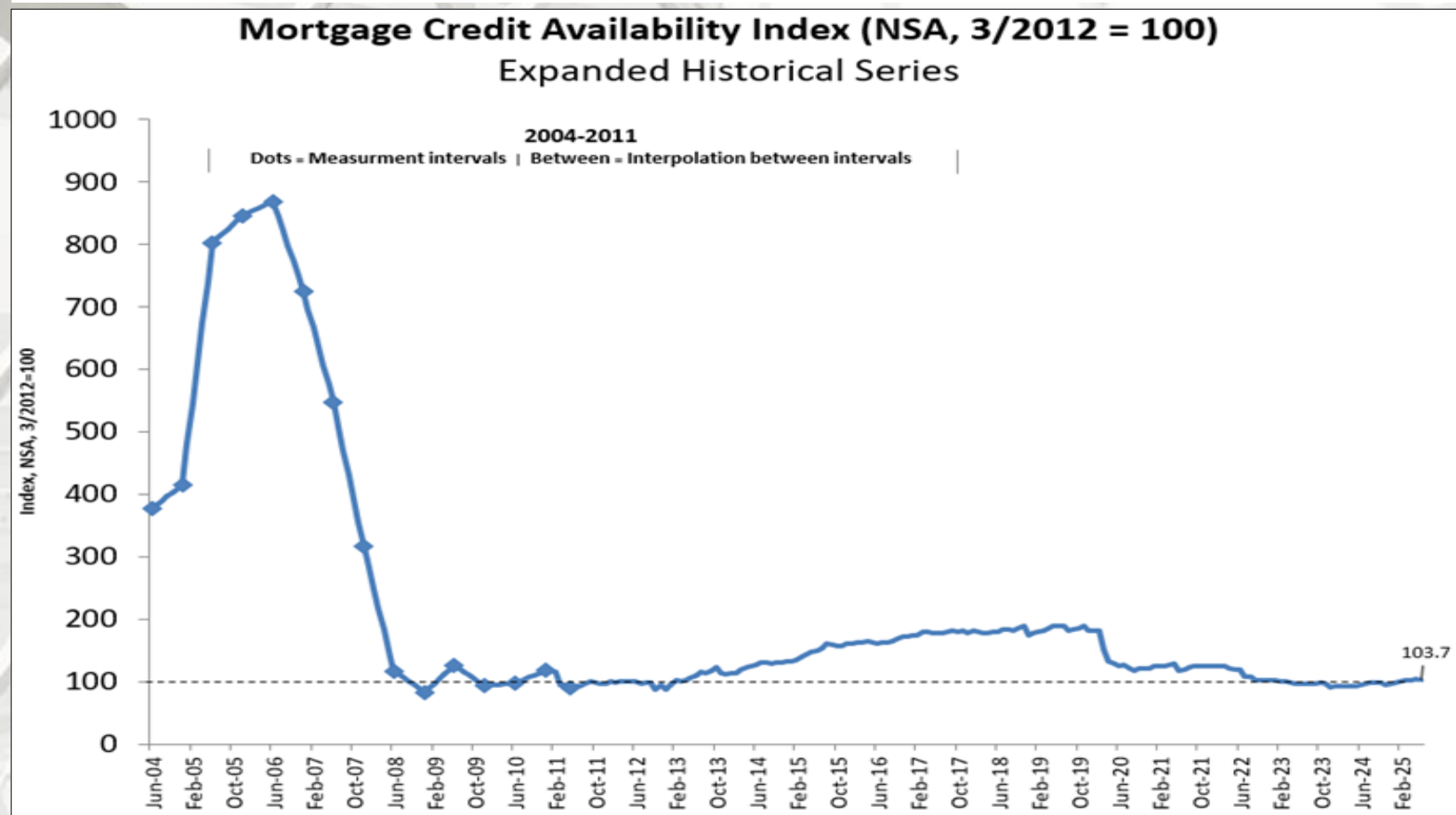
Mortgage Credit Availability (MBA)



Source: Mortgage Bankers Association; Powered by ICE Mortgage Technology

U.S. Housing Finance

Mortgage Credit Availability (MBA)



Source: Mortgage Bankers Association; Powered by ICE Mortgage Technology

MBA Mortgage Finance Forecast

MBA Mortgage Finance Forecast

August 20, 2025

	2024				2025				2026				2024	2025	2026	2027
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Housing Measures																
Housing Starts (SAAR, Thous)	1,407	1,340	1,332	1,387	1,401	1,327	1,401	1,360	1,330	1,320	1,331	1,327	1,367	1,372	1,327	1,308
Single-Family	1,062	1,004	971	1,013	1,015	937	936	948	952	958	972	985	1,013	959	967	985
Two or More	345	336	361	374	386	409	465	412	378	362	359	342	354	418	360	323
Home Sales (SAAR, Thous)																
Total Existing Homes	4,200	4,050	3,890	4,163	4,127	3,990	4,160	4,300	4,362	4,397	4,450	4,502	4,076	4,144	4,428	4,640
New Homes	663	693	712	671	655	652	695	719	749	758	761	769	685	680	759	772
FHFA US House Price Index (YOY % Change)	6.8	5.9	4.6	4.5	3.4	2.9	1.8	1.0	0.6	0.2	-0.2	-0.2	4.5	1.0	(0.2)	0.1
Median Price of Total Existing Homes (Thous \$)	385.1	416.9	414.1	405.0	397.8	424.3	423.0	419.7	417.2	412.8	408.1	405.3	405	416	411	406
Median Price of New Homes (Thous \$)	429.2	414.5	418.6	415.6	419.2	412.6	413.7	419.4	416.0	417.6	420.0	416.6	419	416	418	417
Interest Rates																
30-Year Fixed Rate Mortgage (%)	6.7	7.0	6.5	6.6	6.8	6.8	6.7	6.6	6.5	6.5	6.5	6.5	6.6	6.6	6.5	6.3
10-Year Treasury Yield (%)	4.2	4.4	3.9	4.3	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Mortgage Originations																
Total 1- to 4-Family (Bil \$)	363	415	457	450	384	549	547	535	541	584	581	536	1,685	2,015	2,242	2,287
Purchase	302	349	371	316	272	367	378	357	342	383	391	345	1,338	1,374	1,461	1,513
Refinance	61	66	86	135	112	182	168	178	199	201	190	191	348	640	781	774
Refinance Share (%)	17	16	19	30	29	33	31	33	37	34	33	36	21	32	35	34
FHA Originations (Bil \$)													194	205	229	211
Total 1- to 4-Family (000s loans)	980	1,118	1,237	1,237	1,068	1,533	1,511	1,486	1,515	1,623	1,608	1,497	4,572	5,598	6,244	6,353
Purchase	797	920	977	832	690	924	950	895	855	957	977	863	3,526	3,458	3,651	3,782
Refinance	183	198	260	405	378	609	562	591	660	667	631	635	1,047	2,139	2,593	2,570
Refinance Share (%)	19	18	21	33	35	40	37	40	44	41	39	42	23	38	42	40
Mortgage Debt Outstanding																
1- to 4-Family (Bil \$)	13,997	14,105	14,216	14,322	14,406	14,498	14,590	14,680	14,766	14,865	14,961	15,050	14,322	14,680	15,050	15,399

Notes:

As of the August 2025 forecast, 2024 origination volume was revised based on the 2024 Home Mortgage Disclosure Act data. Total 1-to-4-family originations and refinance share are MBA estimates. These exclude second mortgages and home equity loans. 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. The FHFA US House Price Index is the forecasted year over year percent change of the FHFA Purchase-Only House Price Index. Copyright 2025 Mortgage Bankers Association. All rights reserved. THE HISTORICAL DATA AND PROJECTIONS ARE PROVIDED "AS IS" WITH NO WARRANTIES OF ANY KIND.



MBA Economic Forecast

MBA Economic Forecast

August 20, 2025

	2024				2025				2026				2024	2025	2026	2027
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Percent Change, SAAR																
Real Gross Domestic Product	1.6	3.0	3.1	2.4	-0.5	3.0	0.8	0.8	1.3	1.4	1.5	1.5	2.5	1.0	1.4	1.7
Personal Consumption Expenditures	1.9	2.8	3.7	4.0	0.5	1.4	0.3	-0.9	0.3	0.2	1.0	1.9	3.1	0.3	0.9	2.6
Business Fixed Investment	4.5	3.9	4.0	-3.0	10.3	1.9	-3.3	-3.1	-1.7	0.6	0.3	0.3	2.4	1.5	-0.1	0.8
Residential Investment	13.7	-2.8	-4.3	5.5	-1.3	-4.6	-7.3	0.9	2.6	1.9	2.5	2.4	3.0	-3.1	2.3	1.6
Govt. Consumption & Investment	1.8	3.1	5.1	3.1	-0.6	0.4	-0.2	2.4	0.8	0.7	0.5	0.2	3.2	0.5	0.6	-0.1
Net Exports (Bil. Chain 2012\$)	-977.0	-1035.7	-1069.2	-1052.7	-1359.0	-1026.3	-1026.9	-953.5	-882.0	-838.6	-801.1	-792.7	-1033.6	-1091.4	-828.6	-820.7
Inventory Investment (Bil. Chain 2012\$)	17.7	71.7	57.9	8.9	160.5	-26.0	55.7	76.6	79.8	98.2	97.7	94.3	39.0	66.7	92.5	92.0
Consumer Prices (YOY)	3.2	3.2	2.7	2.7	2.7	2.5	3.0	3.2	3.2	3.4	3.1	3.0	2.7	3.2	3.0	2.3
Percent																
Unemployment Rate	3.8	4.0	4.2	4.2	4.1	4.2	4.4	4.7	4.8	4.8	4.7	4.7	4.0	4.3	4.7	4.5
Federal Funds Rate	5.375	5.375	4.875	4.375	4.375	4.375	4.125	3.875	3.625	3.625	3.625	3.625	4.375	3.875	3.625	3.625
10-Year Treasury Yield	4.2	4.4	3.9	4.3	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3

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 S&P ECONOSIM model

Copyright 2025 Mortgage Bankers Association. All rights reserved.

THE HISTORICAL DATA AND PROJECTIONS ARE PROVIDED "AS IS" WITH NO WARRANTIES OF ANY KIND.

MBA

MORTGAGE BANKERS ASSOCIATION

Summary

In conclusion:

Housing data month-over-month were mixed. Year-over-year, total, single-family, multi-family starts, and existing house sales were positive. The influence of mortgage rates is evident, as aggregate costs have decreased affordability.

Pros:

- 1) The desire to own a house remains positive.

Cons:

- 1) Mortgage interest rates and affordability;
- 2) Economic concerns and inflation;
- 3) The war in Ukraine and the Israel-Palestinian conflict, and other international concerns;
- 4) Lot availability and building regulations (according to several sources);
- 5) Labor shortages in many sectors;
- 6) Household formations still lag historical averages;
- 7) Job creation is improving and consistent, but some economists question the quantity and types of jobs being created;
- 8) Increasing debt: Corporate, personal, government – United States and globally;
- 9) Other global uncertainties.

Virginia Tech Disclaimer

Disclaimer of Non-endorsement

Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement, recommendation, or favoring by Virginia Tech. The views and opinions of authors expressed herein do not necessarily state or reflect those of Virginia Tech, and shall not be used for advertising or product endorsement purposes.

Disclaimer of Liability

With respect to documents sent out or made available from this server, neither Virginia Tech nor any of its employees, makes any warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Disclaimer for External Links

The appearance of external hyperlinks does not constitute endorsement by Virginia Tech of the linked web sites, or the information, products or services contained therein. Unless otherwise specified, Virginia Tech does not exercise any editorial control over the information you July find at these locations. All links are provided with the intent of meeting the mission of Virginia Tech's web site. Please let us know about existing external links you believe are inappropriate and about specific additional external links you believe ought to be included.

Nondiscrimination Notice

Virginia Tech prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact the author. Virginia Tech is an equal opportunity provider and employer.

U.S. Department of Agriculture Disclaimer

Disclaimer of Non-endorsement

Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government, and shall not be used for advertising or product endorsement purposes.

Disclaimer of Liability

With respect to documents available from this server, neither the United States Government nor any of its employees, makes any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Disclaimer for External Links

The appearance of external hyperlinks does not constitute endorsement by the U.S. Department of Agriculture of the linked web sites, or the information, products or services contained therein. Unless otherwise specified, the Department does not exercise any editorial control over the information you find at these locations. All links are provided with the intent of meeting the mission of the Department and the Forest Service web site. Please let us know about existing external links you believe are inappropriate and about specific additional external links you believe ought to be included.

Nondiscrimination Notice

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at 202.720.2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call 800.795.3272 (voice) or 202.720.6382 (TDD). The USDA is an equal opportunity provider and employer.