

Burns US Housing Analysis and Forecast

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JOHN BURNS
REAL ESTATE CONSULTING



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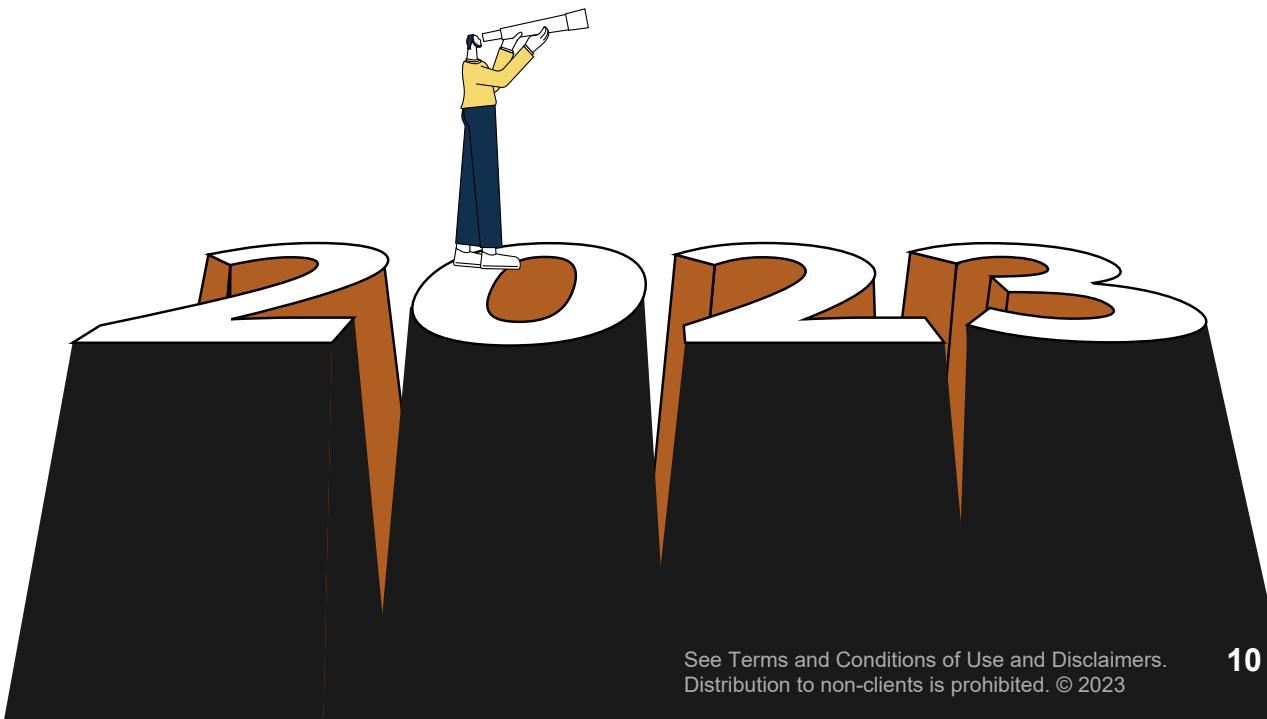
Executive summary

Rate relief provides a welcome start to 2023.

The New Year is starting out on a much-needed positive note for housing, with consistent signs of easing inflation across every key indicator (wages, rent, consumer inflation expectations, CPI, and PCE). As result, **mortgage rates are declining**, mirroring the bond market's now more **subdued inflationary expectations**, a sharp reversal from just a few months ago.

For the first time since September 2022, the rate on a 30-year fixed rate mortgage sits at 6%, down from November 2022's 7.3% peak.

- Purely due to falling rates, buyers have 13% more purchasing power today compared to November.
- As a rule of thumb, every 1% (100 basis points) rise/fall in mortgage rates impacts a buyer's mortgage payment up/down 10%.



Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

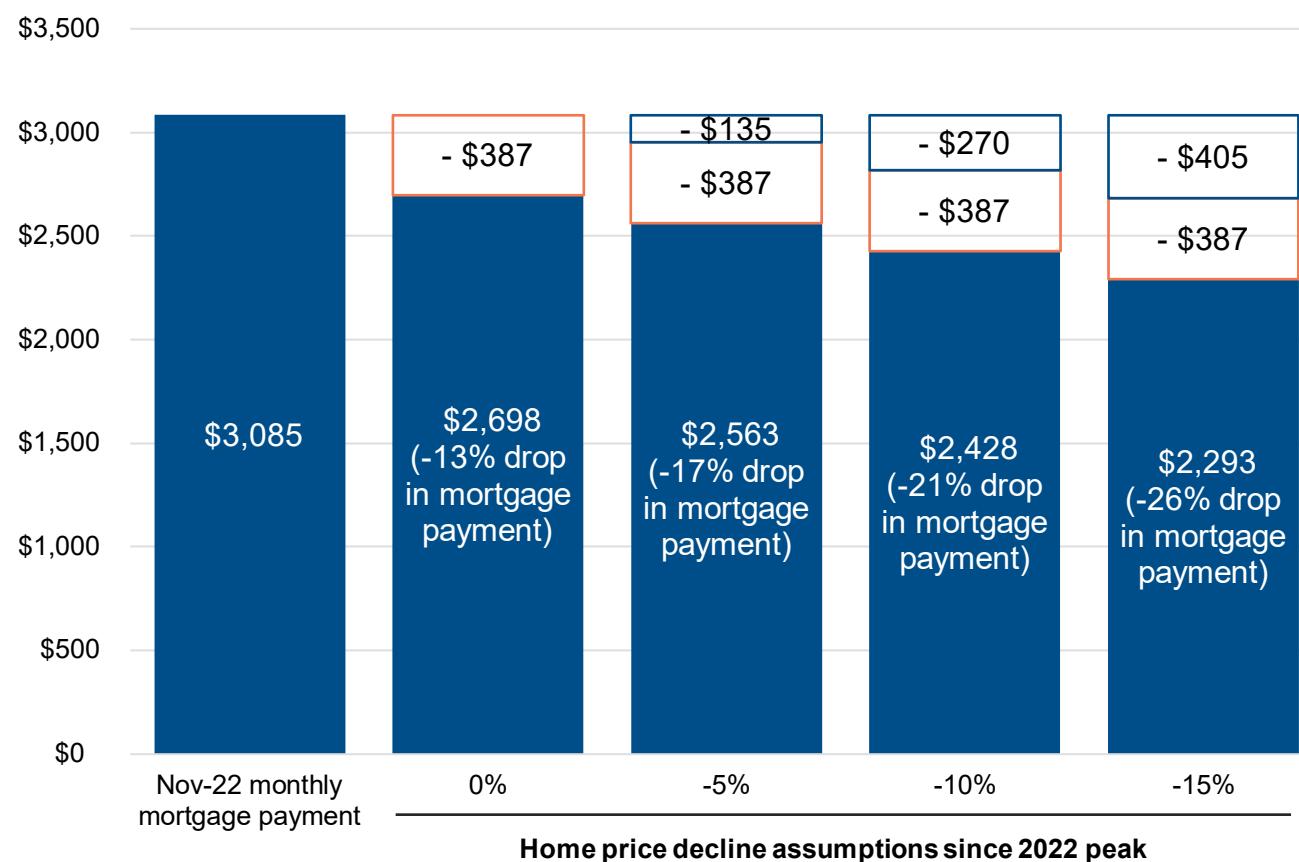
Home prices have been falling in many markets.

Home prices have also been falling in many markets, amplifying the purchasing power boost already spurred by mortgage rates dropping from 7.3% to 6% in just two months.

Impact of Combined Rate and Home Price Decline Assumptions on Monthly Payments

Assumes \$475K home purchase as starting point in Nov-22 at 7.3% peak mortgage rates, with 5% down payment

- Change in monthly mortgage payment due to home price decline assumptions since 2022 peak
- Change in monthly mortgage payment due to rates declining from 7.3% in Nov-22 to 6% in Jan-23
- Monthly mortgage payment



- Between the improvement from lower mortgage rates and an assumed **-5%** drop in asking price from peak, a buyer's mortgage payment has fallen **-17%** (as shown to the left). Assuming a **-10%** price decline, their mortgage payment has dropped **-21%**.
- Builders have already reduced prices by double digits from last spring/summer across many markets, which combined with the drop in rates is providing much needed relief for serious buyers out in the market as 2023 kicks off.

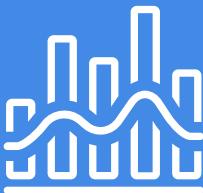
Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Lower rates are welcome news, namely for home buyers that don't need to sell their home into a falling price environment.

However, for the time being we are sticking with our negative 2023 outlook on both the economy and housing.

On the economy:

- Both the manufacturing and services sectors of the economy recently flipped into contraction territory, something that precedes every recession going back to 2000. Job growth remains healthy for the time being but will likely cool.
 - Note that monthly employment figures are a lagging indicator (tied to job postings and hiring decisions made 3–4 months prior typically).
 - We believe employers optimism on the economy has moderated in the last 1 to 2 months, which may show up in the government's early 2023 reported job figures. Planned job cuts have jumped 172% year over year, another signal of less robust job growth ahead in 2023.
- Temporary staffing employment growth has cooled quickly in recent months, dropping negative year over year for the first time since the brief 2020 Covid-triggered mini-recession.
 - Employers historically reduce part-time staffing at the first signs of slowing until additional deterioration in the economy warrants full-time employee reductions.





On the housing market (for-sale and for-rent):

- Despite improving recently, housing affordability remains near its all-time worst.
 - The bond market assumes mortgage rates will average ~6% for all of 2023. In this scenario, home prices need to keep falling for more buyers to restart their purchase decision.
- For 2023, we expect a -16% drop in new home prices (net of incentives) and -12% drop in resale prices.
 - Sales volumes will also suffer until affordability improves materially, dropping -20% this year for home builders and -19% for resale.
- Housing construction should fall further in 2023, with single-family starts declining -25% and multifamily starts declining -30%, as the entire housing landscape (for-sale and apartments) retracts on weak demand fundamentals.
 - Unsold single-family homes *under construction* along with *not started* are finally declining as builders reduce future supply where possible. Unfortunately, *completed* unsold homes are rising, which will likely continue for the foreseeable future, placing downward pressure on prices.
- Within the rental segment, single-family should outperform apartments in terms of rent growth and overall demand/supply fundamentals.
 - Apartments face multi-decade high completions coming to market as demand simultaneously contracts quickly. Single-family rentals on the other hand are unlikely to face a huge supply shock, especially since we don't envision waves of distressed sales / foreclosures, which typically push inventory to single-family rentals.

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Forecasts

Our Key Housing Forecasts: January 2023

	2017	2018	2019	2020	2021	Current*	2022P	2023P	2024P	2025P
New home sales (single-family) ¹	613K	617K	683K	822K	771K	640K	650K	520K	500K	570K
% GROWTH =	+9%	+1%	+11%	+20%	-6%	-15%	-16%	-20%	-4%	+14%
New Home Price Appreciation, Net	--	--	--	--	--	--	-2.2%	-15.6%	-5.7%	+2.4%
Single-family permits ¹	820K	855K	862K	979K	1.12M	781K	960K	730K	700K	780K
% GROWTH =	+9%	+4%	+1%	+14%	+14%	-30%	-14%	-24%	-4%	+11%
Multifamily permits ¹	462K	473K	524K	492K	622K	570K	660K	450K	350K	390K
% GROWTH =	+1%	+2%	+11%	-6%	+26%	-8%	+6%	-32%	-22%	+11%
TOTAL PERMITS ¹	1.28M	1.33M	1.39M	1.47M	1.74M	1.35M	1.62M	1.18M	1.05M	1.17M
% GROWTH =	+6%	+4%	+4%	+6%	+18%	-22%	-7%	-27%	-11%	+11%
Single-family housing starts ¹	849K	876K	888K	991K	1.13M	828K	1.0M	750K	710K	780K
% GROWTH =	+9%	+3%	+1%	+12%	+14%	-32%	-11%	-25%	-5%	+10%
Multifamily housing starts ¹	354K	374K	402K	389K	474K	599K	560K	390K	260K	280K
% GROWTH =	-10%	+6%	+8%	-3%	+22%	+23%	+18%	-30%	-33%	+8%
Manufactured Housing Starts ¹	93K	97K	95K	94K	106K	98K	94K	71K	67K	74K
% GROWTH =	+14%	+4%	-2%	0%	+12%	-12%	-11%	-24%	-6%	+10%
TOTAL HOUSING STARTS ¹	1.30M	1.35M	1.38M	1.47M	1.71M	1.53M	1.65M	1.21M	1.04M	1.13M
% GROWTH =	+3%	+4%	+3%	+6%	+16%	-11%	-3%	-27%	-14%	+9%
Existing home sales closings ¹	5.51M	5.34M	5.34M	5.64M	6.12M	4.09M	5.05M	4.10M	4.40M	4.60M
% GROWTH =	+1%	-3%	0%	+6%	+9%	-35%	-17%	-19%	+7%	+5%
Resale home appreciation (Burns Home Value Index™) Dec. vs. Dec.	+7.1%	+4.5%	+4.5%	+11.3%	+19.5%	+4.3%	+4.3%	-12.1%	-5.8%	+2.3%
Burns Under/Overpriced Market Index™	-2.2%	2.7%	-5.1%	-5.5%	11.4%	42.7%	42.7%	11.3%	1.7%	1.0%
Burns Apartment Rent Index (Dec. vs. Dec.)	+2.4%	+3.4%	+2.7%	-2.3%	+12.8%	+6.4%	+4.0%	-2.0%	-0.8%	+3.0%
Single-family rent growth (Burns Single-Family Rent Index™) Dec. vs. Dec.	+3.3%	+3.3%	+4.3%	+5.4%	+4.6%	+6.7%	+6.1%	+2.3%	+3.2%	+4.2%
Key Assumptions	2017	2018	2019	2020	2021	Current*	2022P	2023P	2024P	2025P
30-yr. conforming FRM (Annual Avg.)	4.0%	4.5%	3.9%	3.1%	3.0%	6.4%	5.3%	5.8%	5.2%	5.2%
Job growth	+1.6%	+1.6%	+1.3%	-5.8%	+2.8%	+3.0%	+3.5%	-1.3%	-0.3%	+2.3%
Income growth	+3.6%	+3.3%	+8.7%	-1.0%	+4.1%	+4.2%	+4.5%	+4.0%	+2.5%	+3.0%

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

*Most recent data available as of publishing date.
Data sources that have updated after cutoff date
will be reflected in Burns Interactive Dashboard.

1. Current value is seasonally adjusted annual rate.

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Our Housing Thesis (January 2023)

Our 2023 forecast: -20% new home sales and -16% price appreciation.

- The rapid rise of mortgage rates has shrunk the pool of potential new home buyers considerably.
 - Rates impact all for-sale housing segments. First-time buyers are the most sensitive to rates, but even move-up buyers often need a first-time buyer to sell to before they can move.
 - Sales and pricing conditions are slowing rapidly in most markets.

We expect job losses in 2023-2024, driven mainly by the Fed's actions to aggressively curb inflation via rate tightening.

- The labor market is only just beginning to show signs of slack. Employment growth remains strong, but layoffs in rate-sensitive sectors (tech, finance, housing) are spreading.
- The Fed has a poor track record of increasing rates without triggering a recession down the line, typically within 9 months of its rate hike cycle peak, which in this case would be Q1-2023.
- The Fed is now forecasting 4.6% unemployment by Dec-23, a 90bps increase from their Dec-22 forecast. Historically, there has never been a 90bps increase in unemployment without a recession.

Inflation will drag on economic growth in 2023 and beyond, and the risks of a recession are elevated given Fed rate hikes, geopolitical volatility, and recent stock market corrections.

- Inflation remains elevated and broad based, exacerbated by supply chain chaos and geopolitical conflict, albeit improving across the board quicker than most economists expected.
- The Fed increased rates by another 50bps in December and is expected to continue hikes into 2023 at a more modest pace.

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Scenarios Most Likely to Play Out for Housing Industries

New homes

- **Single-family permits** will fall **-24%** in 2023. The Fed is set to raise rates further at its next several meetings, which historically raise the odds of an impending recession.
 - Builders will be reluctant to start projects that may come to market during a recession, and as mortgage rates remain elevated, especially in a falling home price backdrop.
- **We expect -16% price declines in 2023**—a major correction from 2022 as inventory rises, demand cools, and affordability remains stretched due to high rates. Builders across the country are cutting prices directly or indirectly through incentives.

Resale market

- Resale sales will fall **-23%** in 2023 to 3.9M. Despite demographic tailwinds, 5%+ rates will discourage buying for some households and price others out of the for-sale market entirely.
- Prices will decline through 2024 as buyers and sellers adjust to higher mortgage rates and navigate a likely recession, which we've priced into our forecasts.

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Scenarios Most Likely to Play Out for Housing Industries

Apartments

- **Apartment rents will fall **-2%** in 2023 and fall another **-1%** in 2024.**
- Strong demand (due to demographics) and low vacancy rates, especially in suburbs and Sunbelt markets, pushed apartment rent growth to record levels in 2021 and early 2022.
 - We expect the economy to lose jobs in 2023–2024, which historically impacts rent growth.
- **Multifamily construction will decline **-30%** in 2023 and **-33%** in 2024 to less than half current levels.**
 - The apartment market has seen an influx of capital chasing yield, which will slow over the next few years.
 - Markets where apartment construction has boomed this cycle are at risk, given high supply levels and more competition, and we anticipate a pullback in our outer year forecasts.

Single-family rental (SFR)

- **SF rents will continue to grow nationally. We forecast rents will accelerate 2% in 2023 and 3% 2024.**
 - Rapid monthly payment growth in the for-sale market has pushed some apartment renters into SFR and is keeping some current SFR tenants in place who can no longer afford to buy.
 - There are concerns about possible supply shocks coming from busted fix-and-flip deals, short-term rentals flipping to long-term, and builders pushing more homes to rentals.
 - Capital seeking safety, yield, and inflation hedge may also help support SFR relative to for-sale housing.
- **Build-to-rent (BTR) construction will increase over the long-term, but possibly pullback during impending recession and rising cost of capital.**
 - Low supply (for now) of newly built rental homes favors this sector as do steady demand trends in SFR.
 - Builders may turn their for-sale communities into rentals rather than sell into a high-rate, low-demand market.

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Our Key Assumptions for 2023: We Are Below All Forecasters on Job Growth

2023 Nonfarm Payroll YOY % Growth

2%

1%

0%

-1%

-2%



-1.1%

1.4%

1.4%

-1.3%

JBREC

Fannie Mae

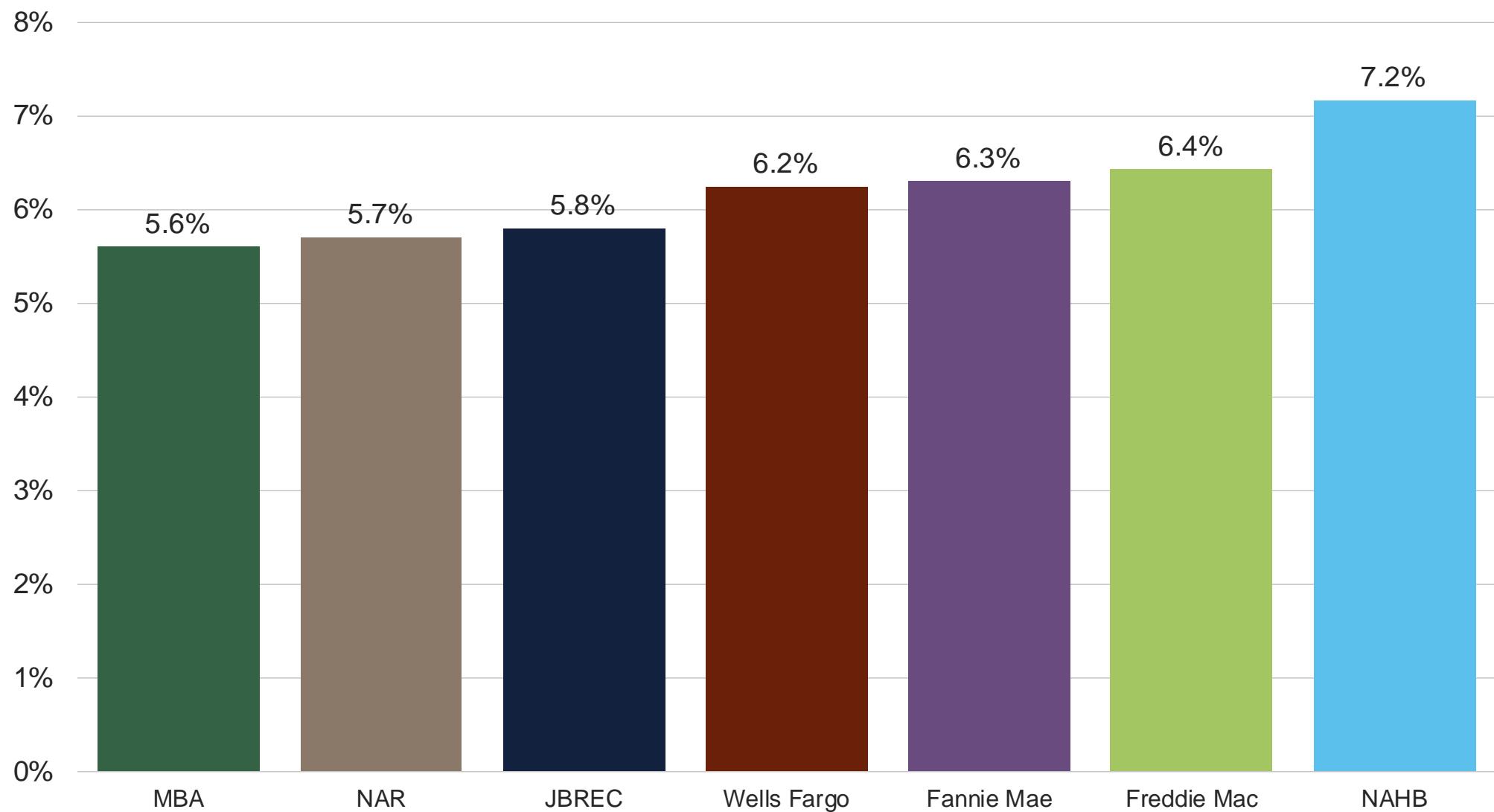
Moody's

NAR

Fannie Mae (Dec-22); Moody's (Jan-23); NAR (Dec-22); John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Our Key Assumptions for 2023: We Are Below Most Forecasters on Mortgage Rates

2023 Annual Average 30-Year Fixed Mortgage Rates



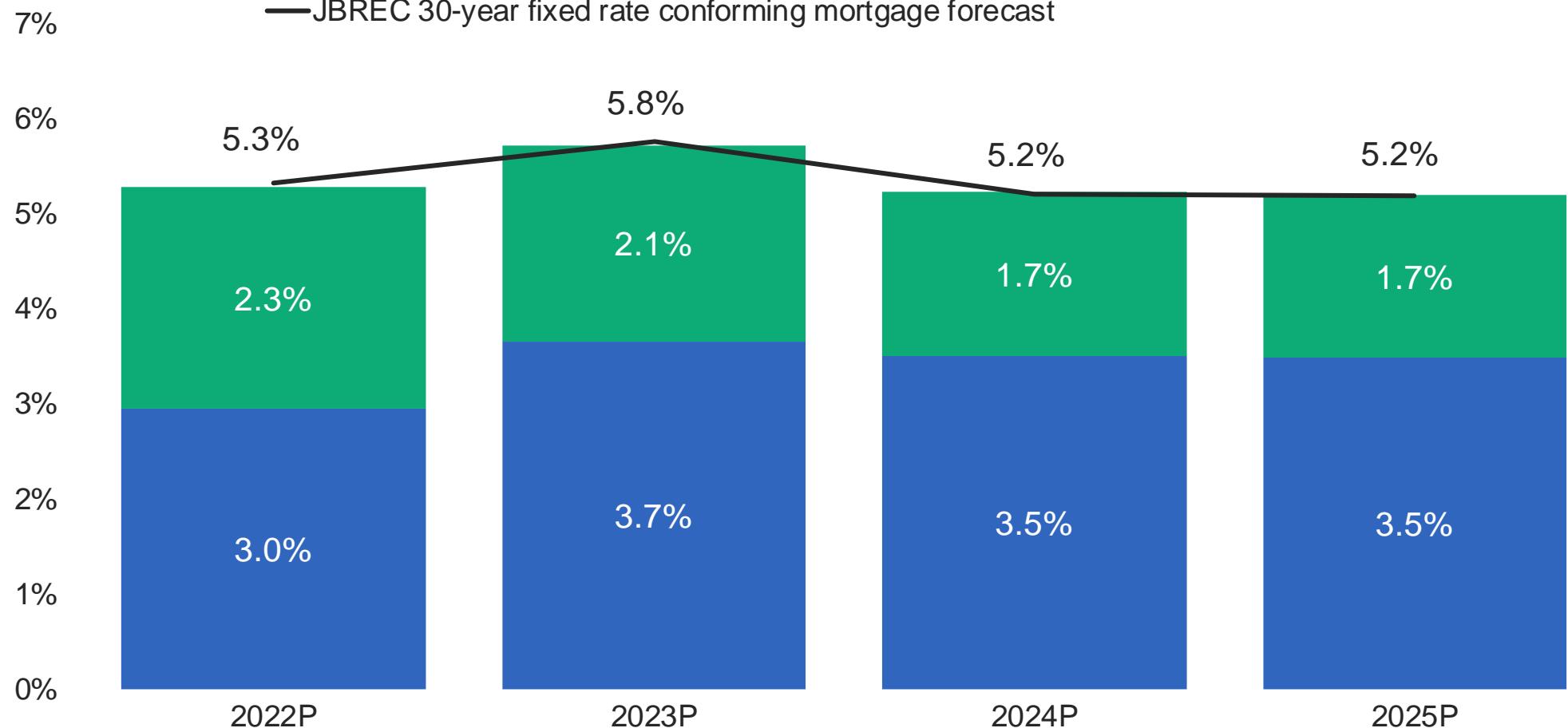
MBA (Dec-22); NAR (Dec-22); Wells Fargo (Dec-22); Fannie Mae (Dec-22); Freddie Mac (Oct-22); NAHB (Jan-23);

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

We Base Our Mortgage Rate Forecast on Market Pricing for 10-Year Treasuries and Our View of the Mortgage Premium

Annual Average 30-Year Fixed Conforming Mortgage Rate Forecast

12-month average ■ 30-year fixed rate conforming mortgage spread
 ■ Bond market 10-year Treasury expectations (Bloomberg: FWCM)
 — JBREC 30-year fixed rate conforming mortgage forecast



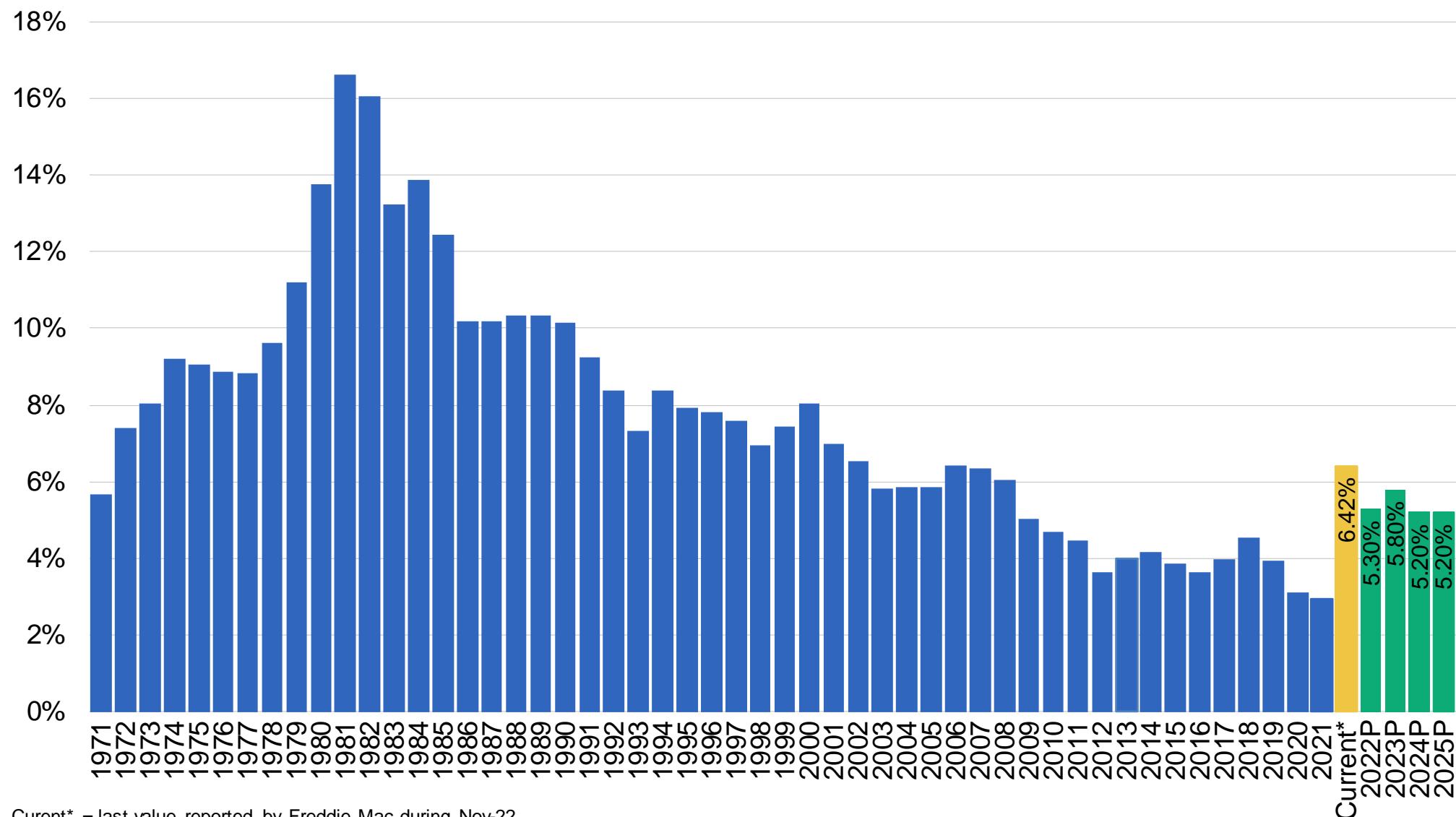
Note: The future spread for mortgage rates over 10-year Treasuries should be ~20–30 basis points higher than the historical 170 basis point spread for 3 reasons: 1) mortgage servicing compliance costs have risen ~25bps per year, 2) GSE mortgage fees have increased ~25 bps per year, 3) mortgage investing risk has increased as some liability shifts to mortgage owners, but has also decreased due to better documentation and an explicit government guarantee, so assume a negligible net effect. We are calling for slowing economic growth going forward, which should gradually drive premiums higher. The spread can vary widely over time for other reasons.

Sources: Bloomberg; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Mortgage Rates

The bond market expects mortgage rates will average in 5.8% in 2023.

Annual Average 30-Year Fixed Mortgage Rates



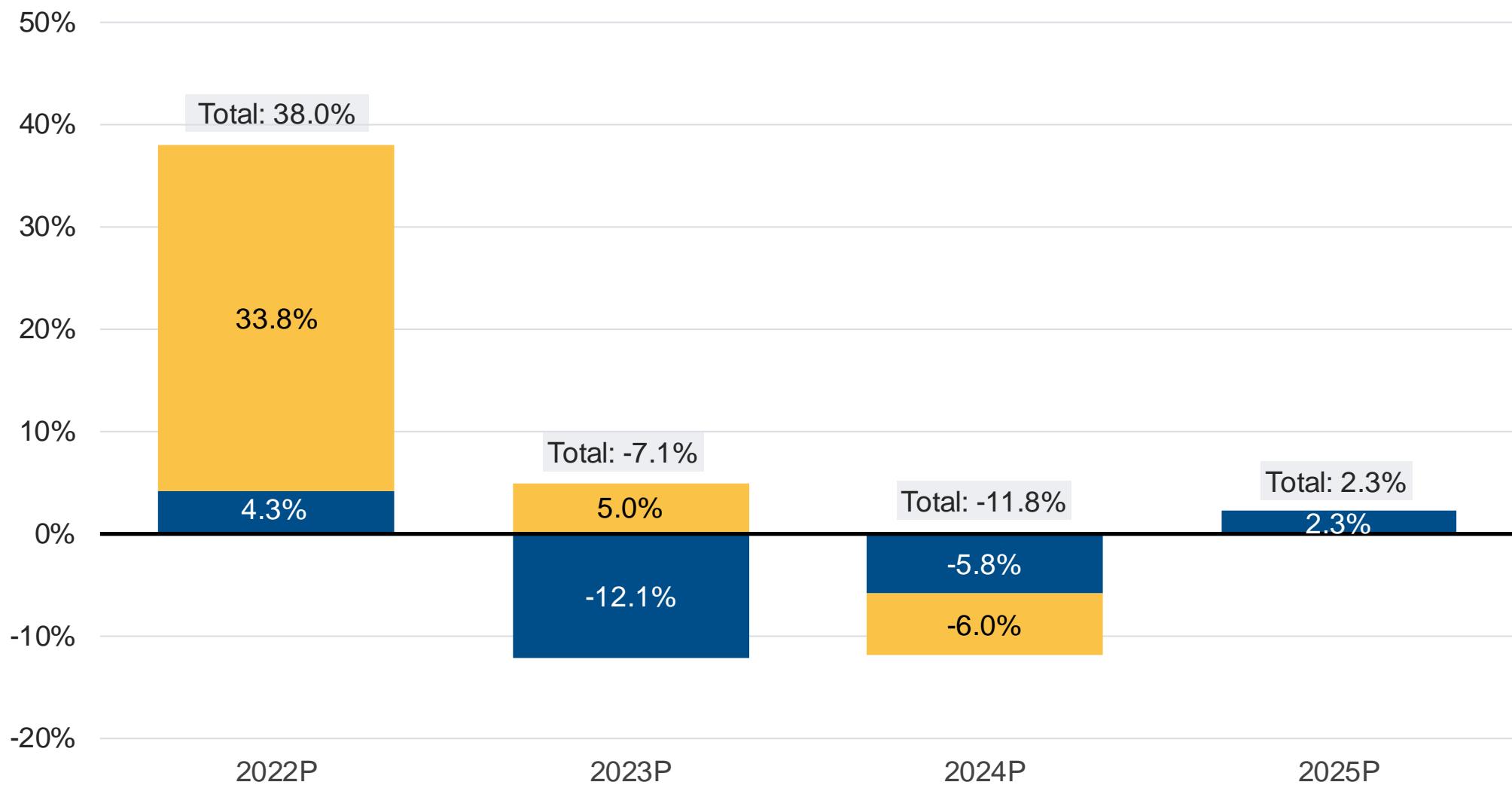
Current* = last value reported by Freddie Mac during Nov-22

Sources: Freddie Mac; John Burns Real Estate Consulting, LLC forecasts (Data: Dec-22, Pub: Jan-23)

Payments Will Fall -7% in 2023 Due to Falling Home Prices

Year-over-Year Mortgage Payment Change

Median existing home value* ■ Change attributed to price ■ Change attributed to interest rate



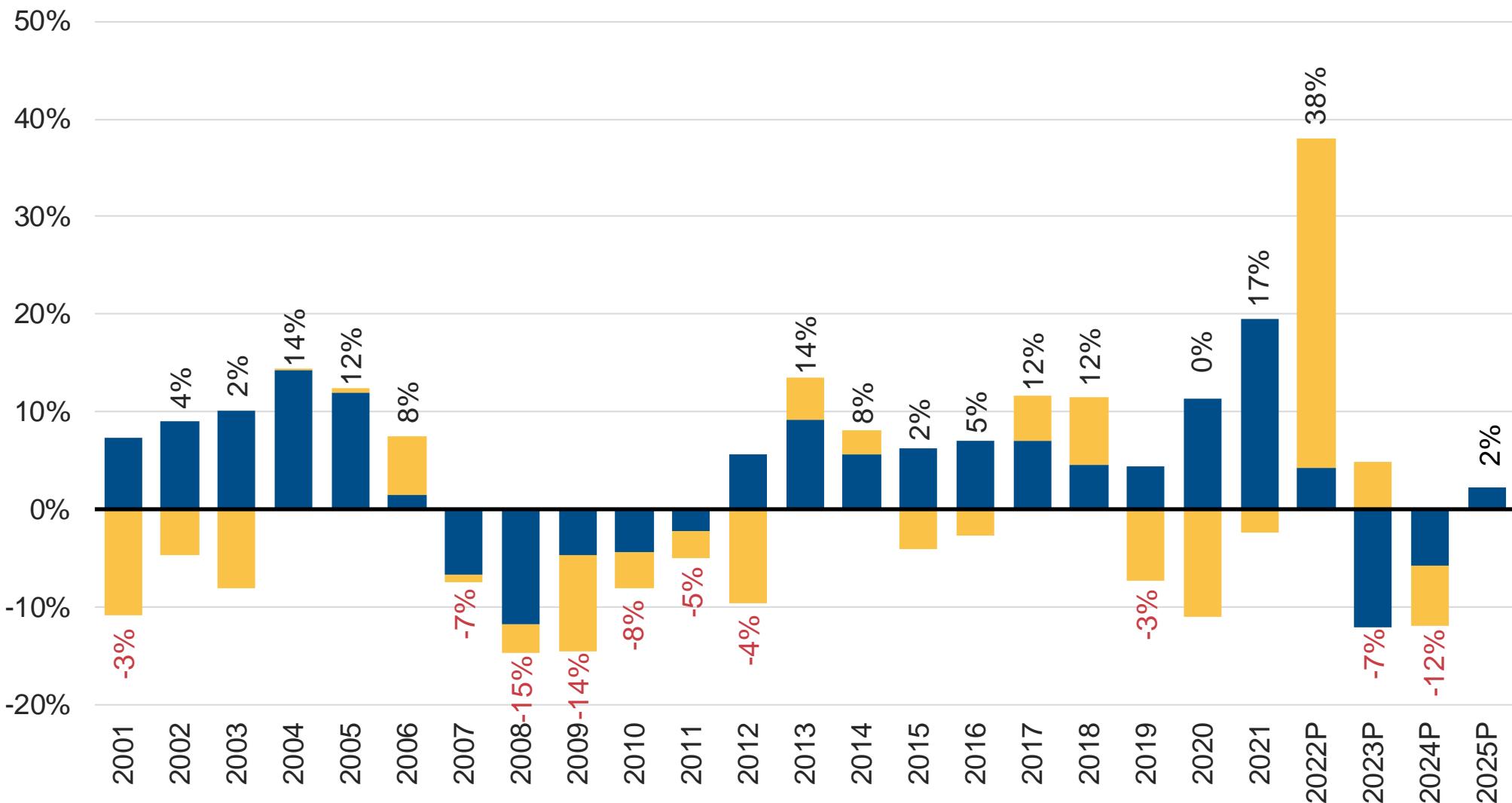
*Principal and interest payments only, based on Burns Home Value Index appreciation rates (indexed to median existing home value in 2000) and forecasted mortgage rates.

Sources: Freddie Mac; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Mortgage Payments Will Fall -7% YOY in 2023, Following the Largest 1-Year Payment Shock in History in 2022

Year-over-Year Mortgage Payment Change

Median existing home value* ■ Change attributed to price ■ Change attributed to interest rate



*Principal and interest payments only, based on Burns Home Value Index appreciation rates (indexed to median existing home value in 2000) and forecasted mortgage rates.

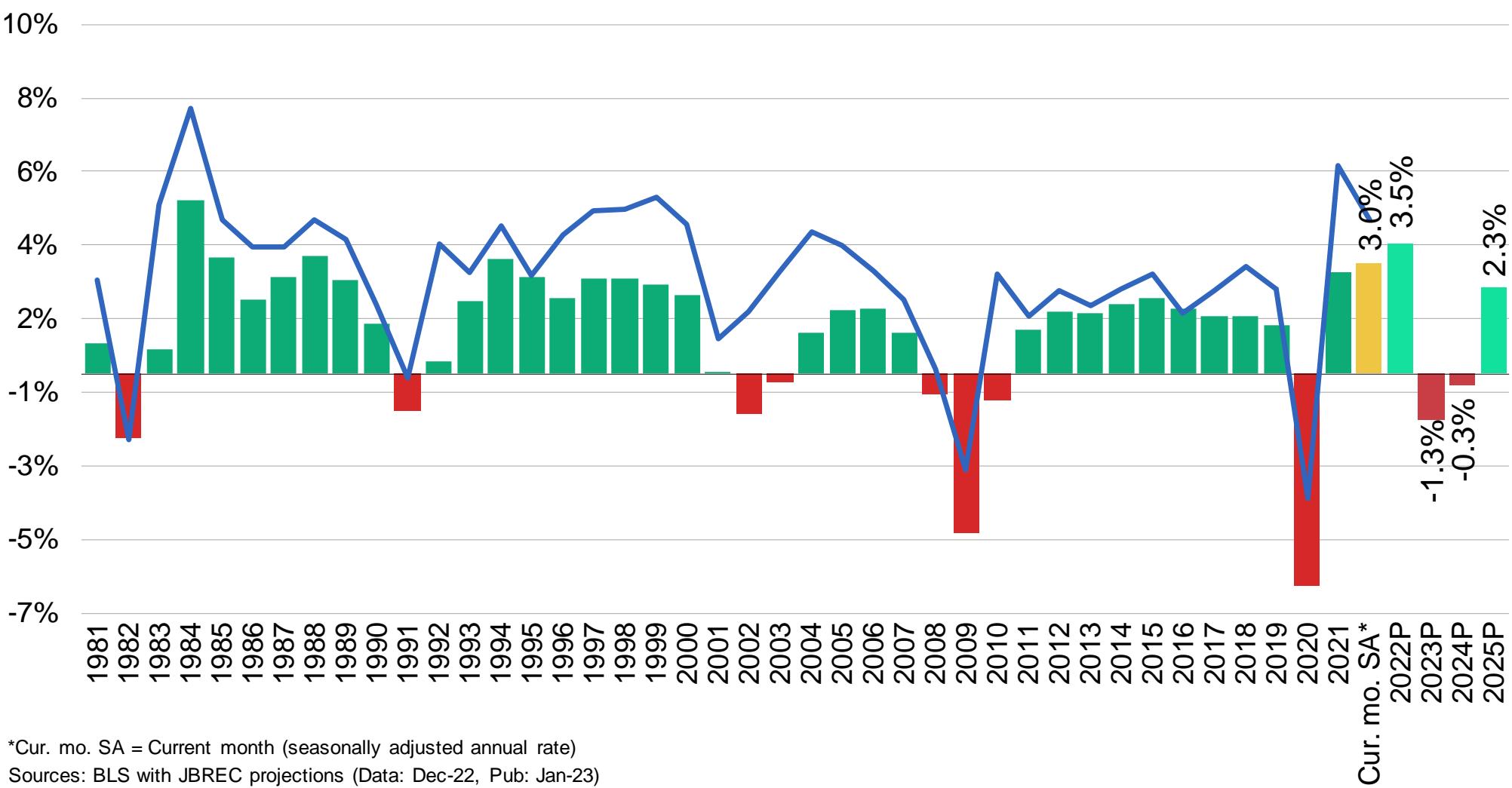
Sources: Freddie Mac; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

US Employment Growth Rates

We expect employment to fall -1.3% YOY in 2023 and -0.3% in 2024 as the Fed attempts to tame inflation and likely tips the economy into recession.

US Employment Annual Growth Rates

■ Employment (NSA) — Real GDP growth (2021) = 5.7%



*Cur. mo. SA = Current month (seasonally adjusted annual rate)

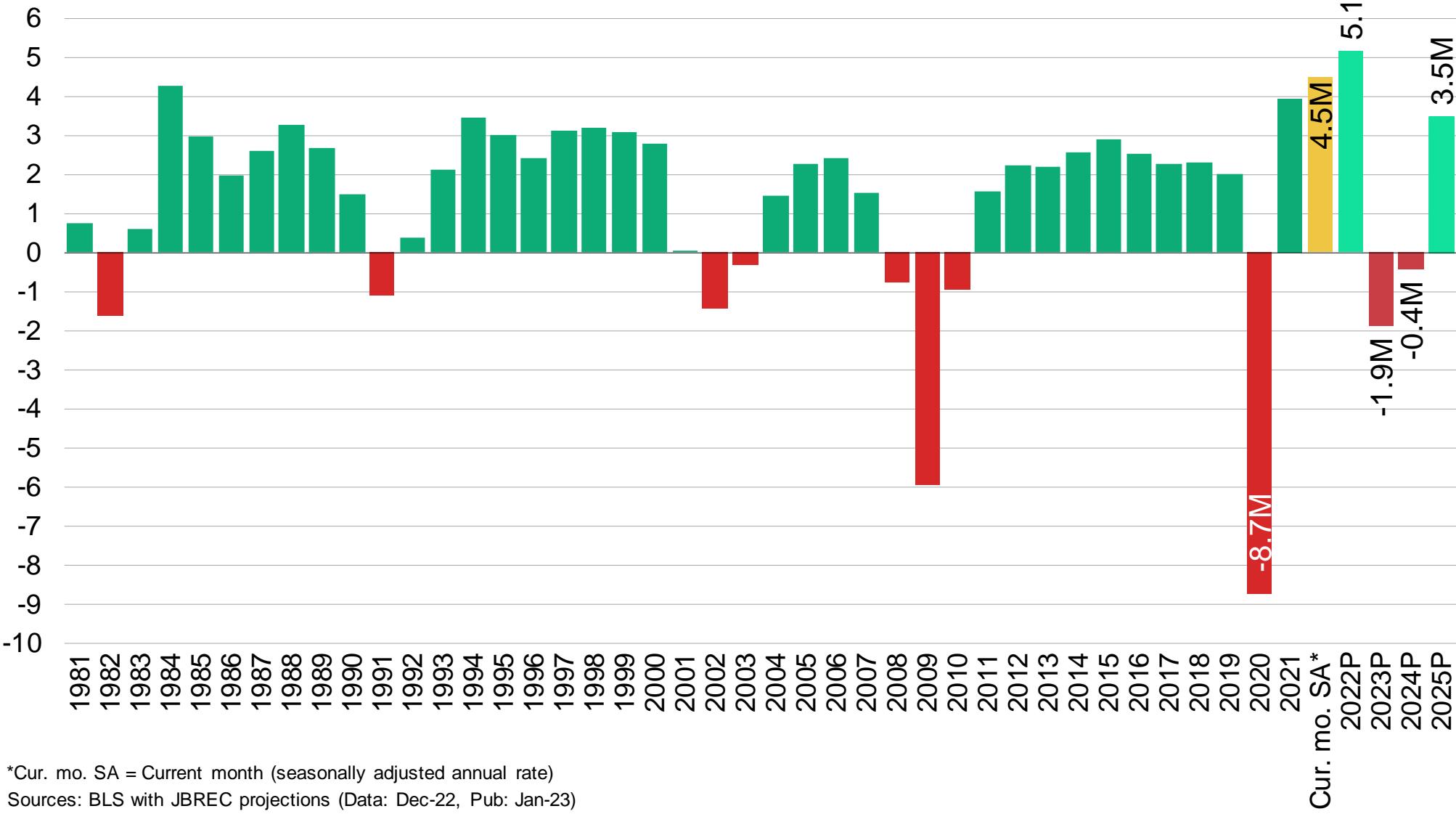
Sources: BLS with JBREC projections (Data: Dec-22, Pub: Jan-23)

US Employment Growth

We expect the economy lose 2.3M jobs in 2023–2024 as the Fed attempts to tame inflation and likely tips the economy into recession.

US Employment Annual Growth

Millions



*Cur. mo. SA = Current month (seasonally adjusted annual rate)

Sources: BLS with JBREC projections (Data: Dec-22, Pub: Jan-23)

Our 2023 Total Permits Forecast Is below NAR and Moody's

We forecast permits at the metro level using both qualitative and quantitative inputs. Our national forecasts are a roll-up of our metro forecasts, which gives us added confidence.

2023 Total Permits Forecast*

Millions

2.0

1.5

1.0

0.5

0.0

1.18 mil

1.44 mil

1.47 mil



JBREC

NAR

Moody's

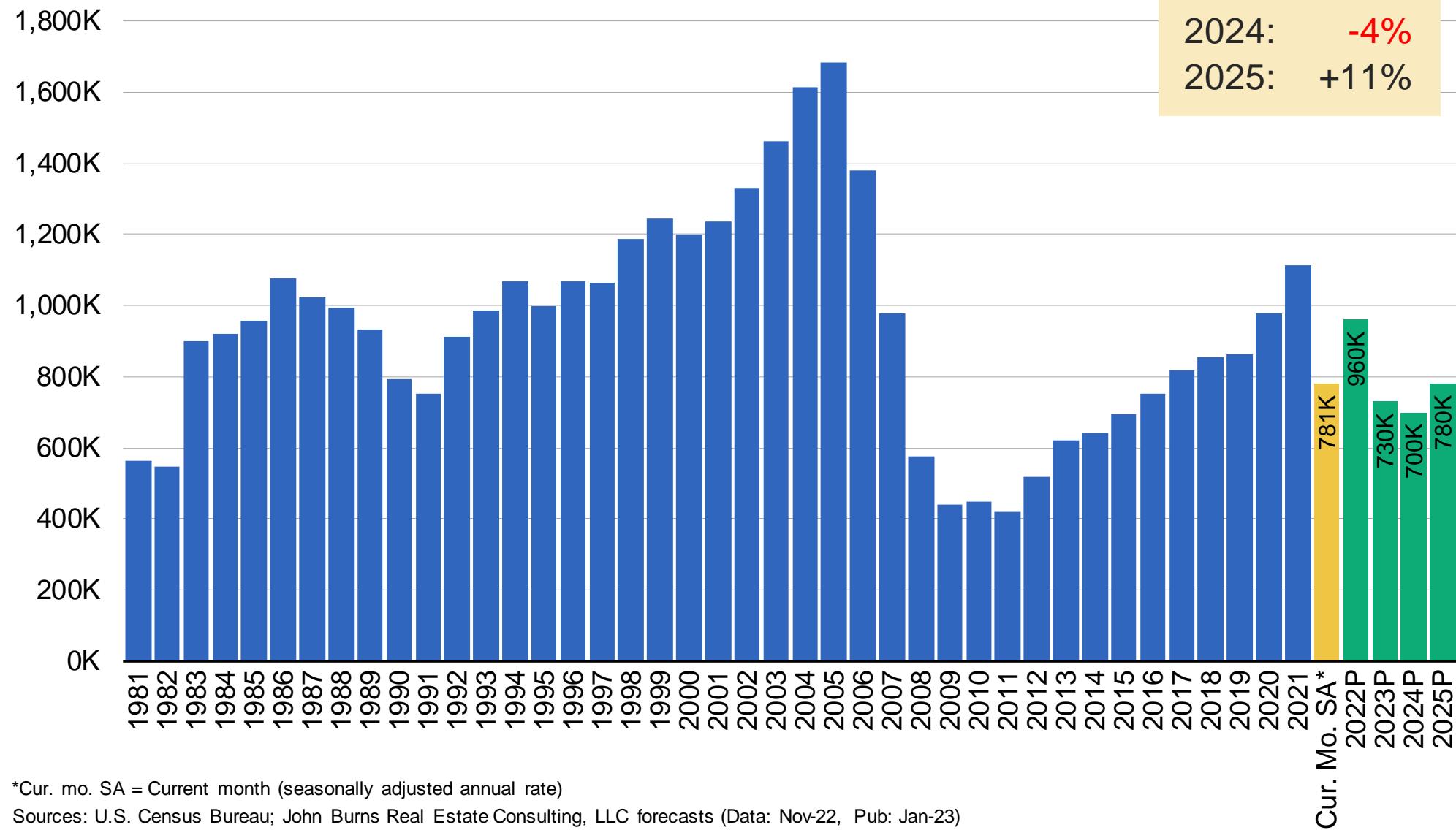
*NAR is forecasted starts. The difference between starts and permits is minimal and is primarily a timing issue. Starts are not available at the MSA level.

NAR (Dec-22); Moody's (Jan-23); John Burns Real Estate Consulting, LLC (Pub: Jan-23)

US National Single-Family Housing Permits

We forecast single-family permits will fall to 730K in 2023 and continue falling through 2024.

US Single-Family Residential Permits



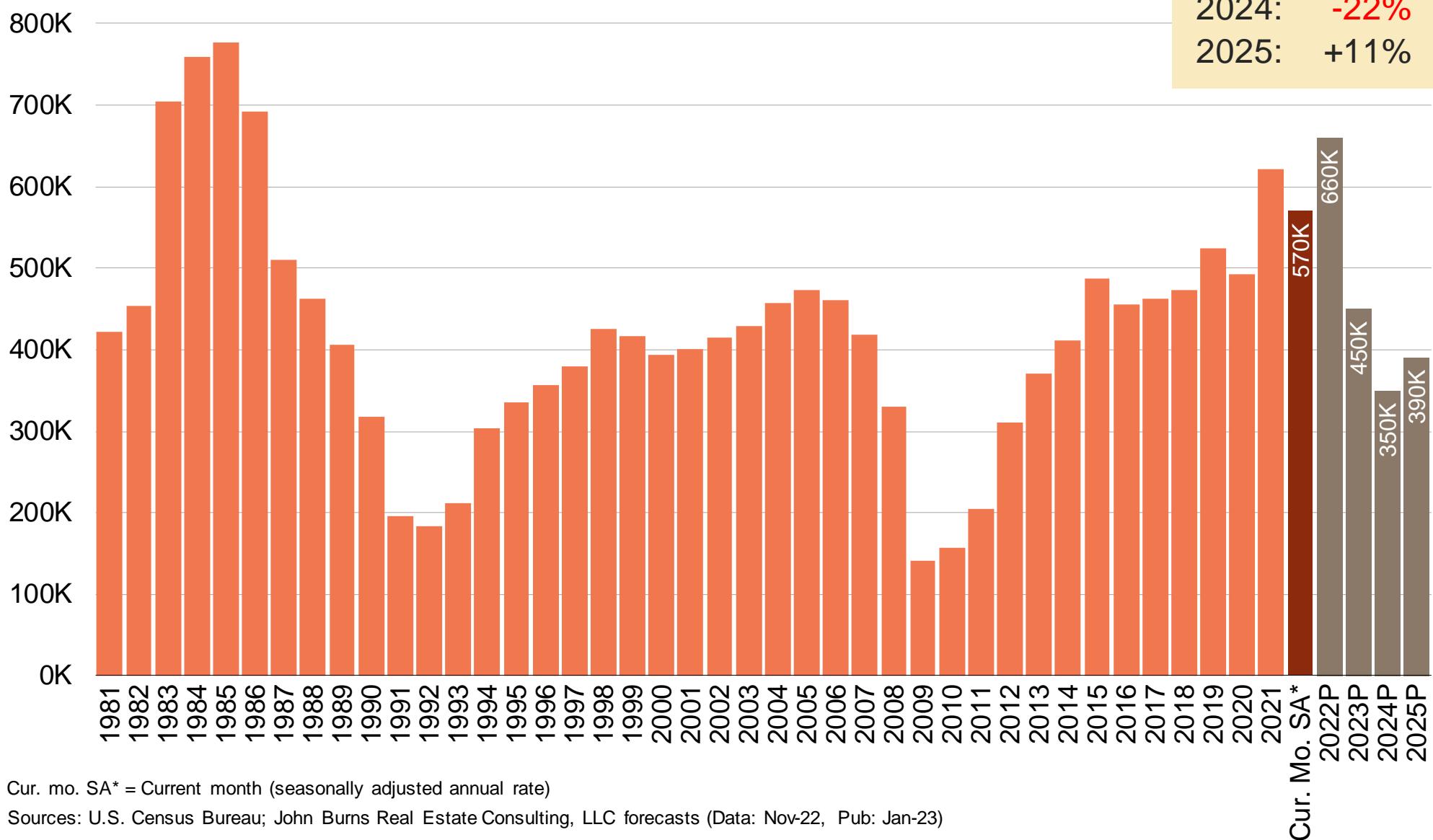
*Cur. mo. SA = Current month (seasonally adjusted annual rate)

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

US National Multifamily Housing Permits

We forecast multifamily permits will fall to 450K in 2023 and continue falling through 2024.

US Multifamily Residential Permits



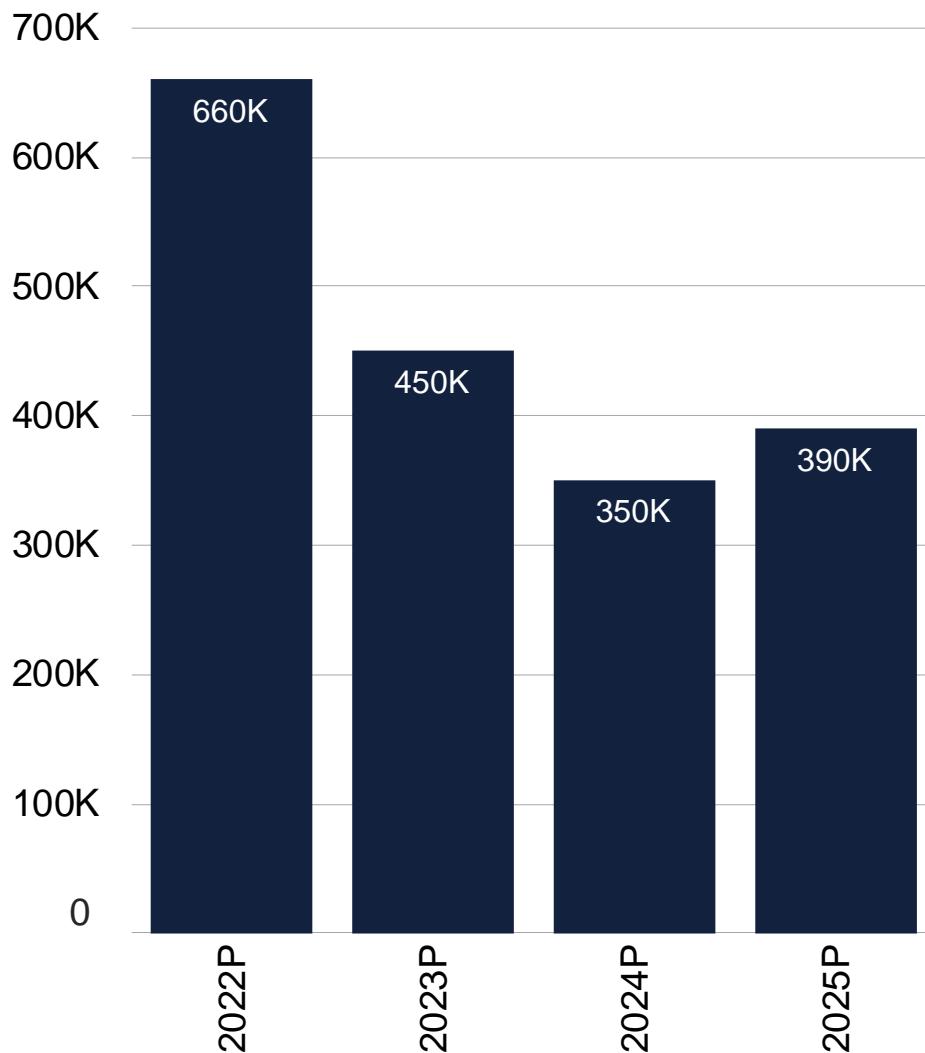
Cur. mo. SA* = Current month (seasonally adjusted annual rate)

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

US National Multifamily Housing Permit Forecasts

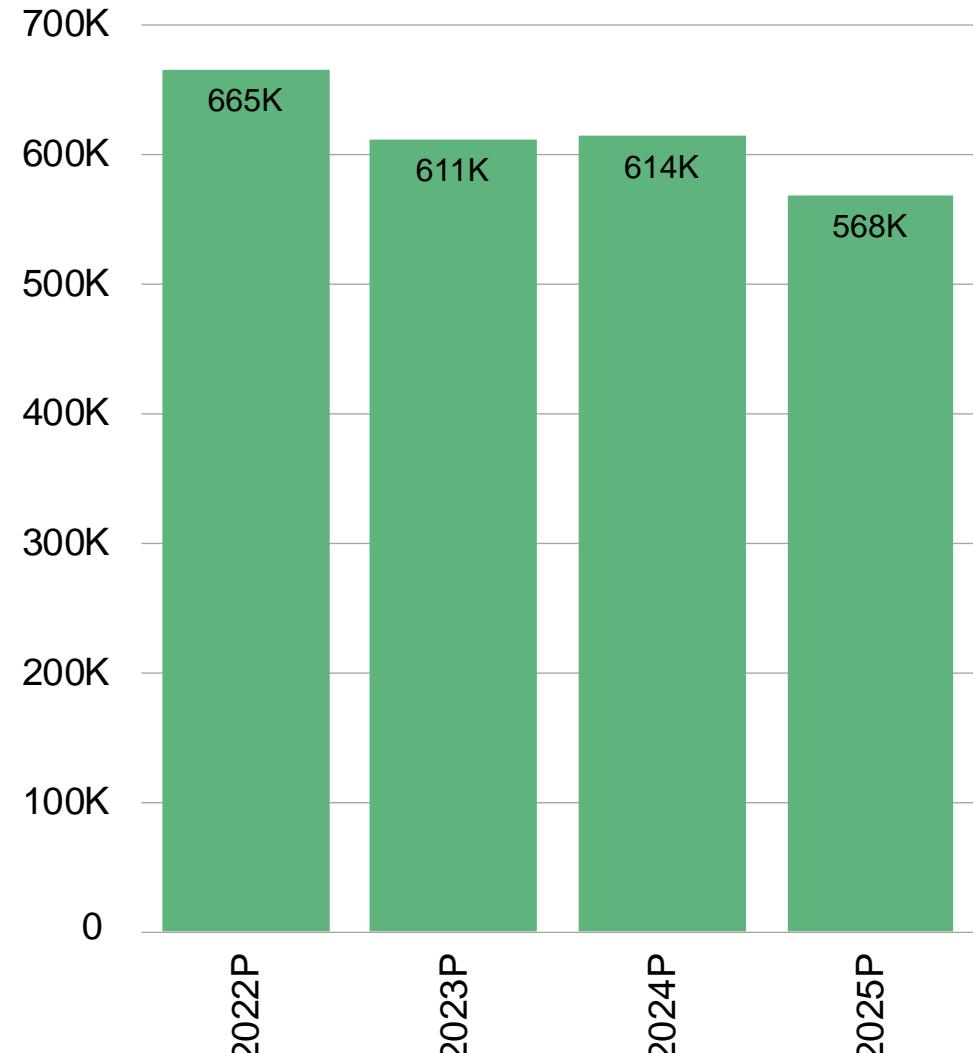
We are more bearish than other forecasters on multifamily permits through 2025. In 2023, we project multifamily permits will fall to 450K.

JBREC US Multifamily Residential Permit Forecast



Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Moody's US Multifamily Residential Permit Forecast



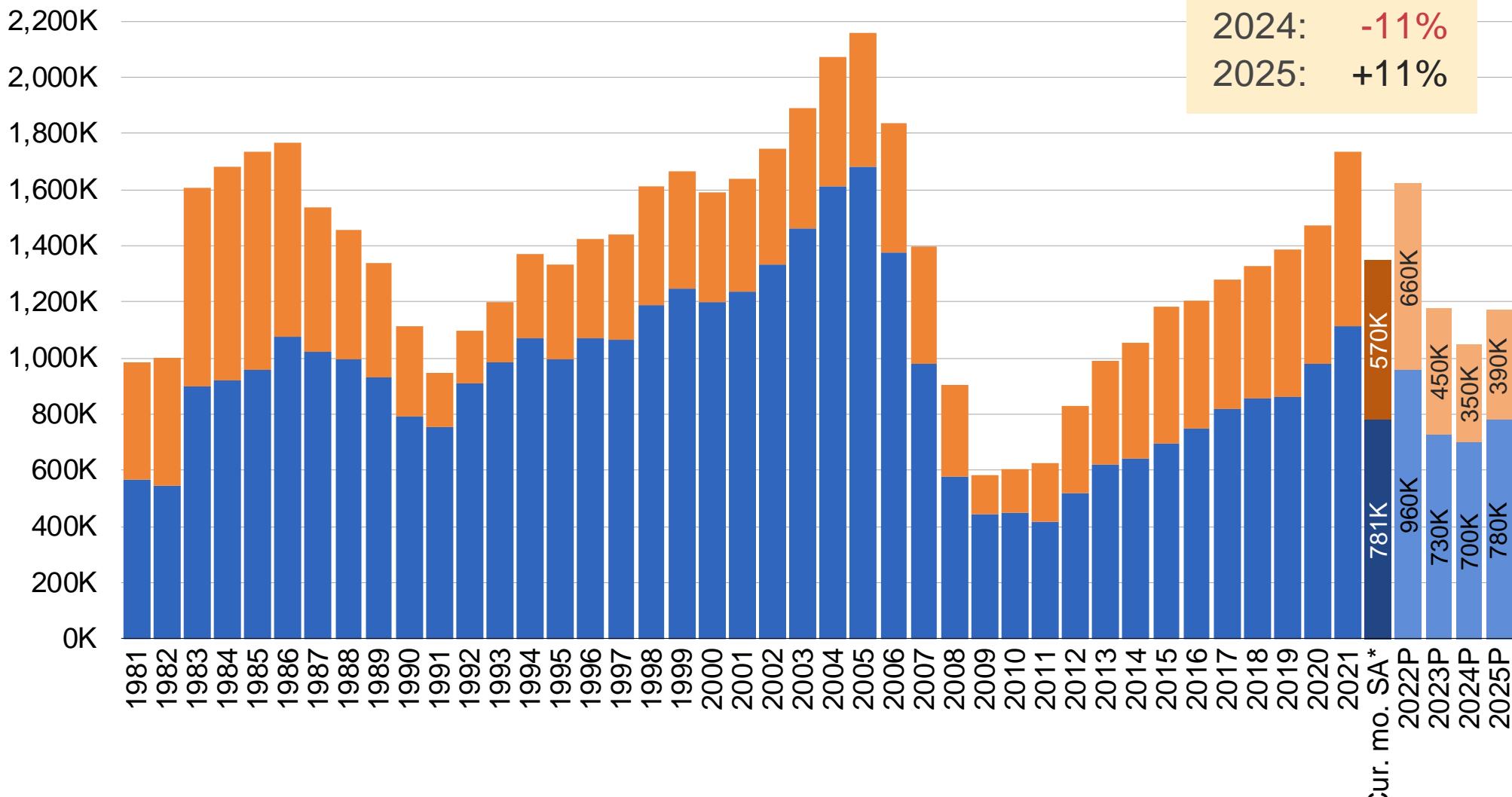
Source: Moody's Analytics

US National Housing Permits

We forecast total permits will fall to 1.18 million in 2023 and continue to fall through 2024.

US Residential Permits

■ Single-family ■ Multifamily



Cur. mo. SA* = Current month (seasonally adjusted annual rate)

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

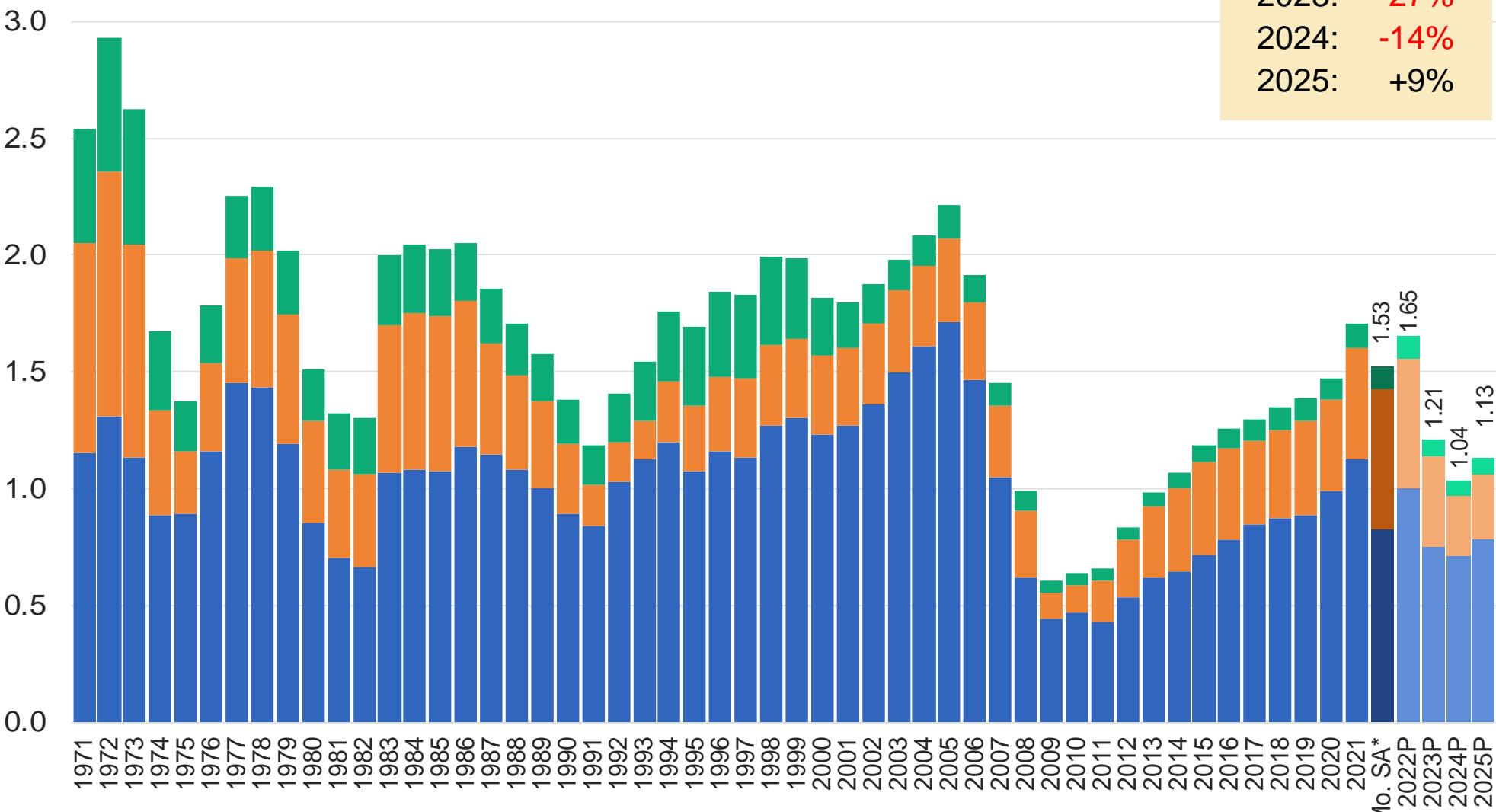
US National Housing Starts

We expect total starts to fall in 2023 to 1.21 million and continue falling through 2024.

US National Housing Starts

Millions ■ Single-family Starts ■ Multifamily Starts ■ Manufactured Housing Starts

2022:	-3%
2023:	-27%
2024:	-14%
2025:	+9%



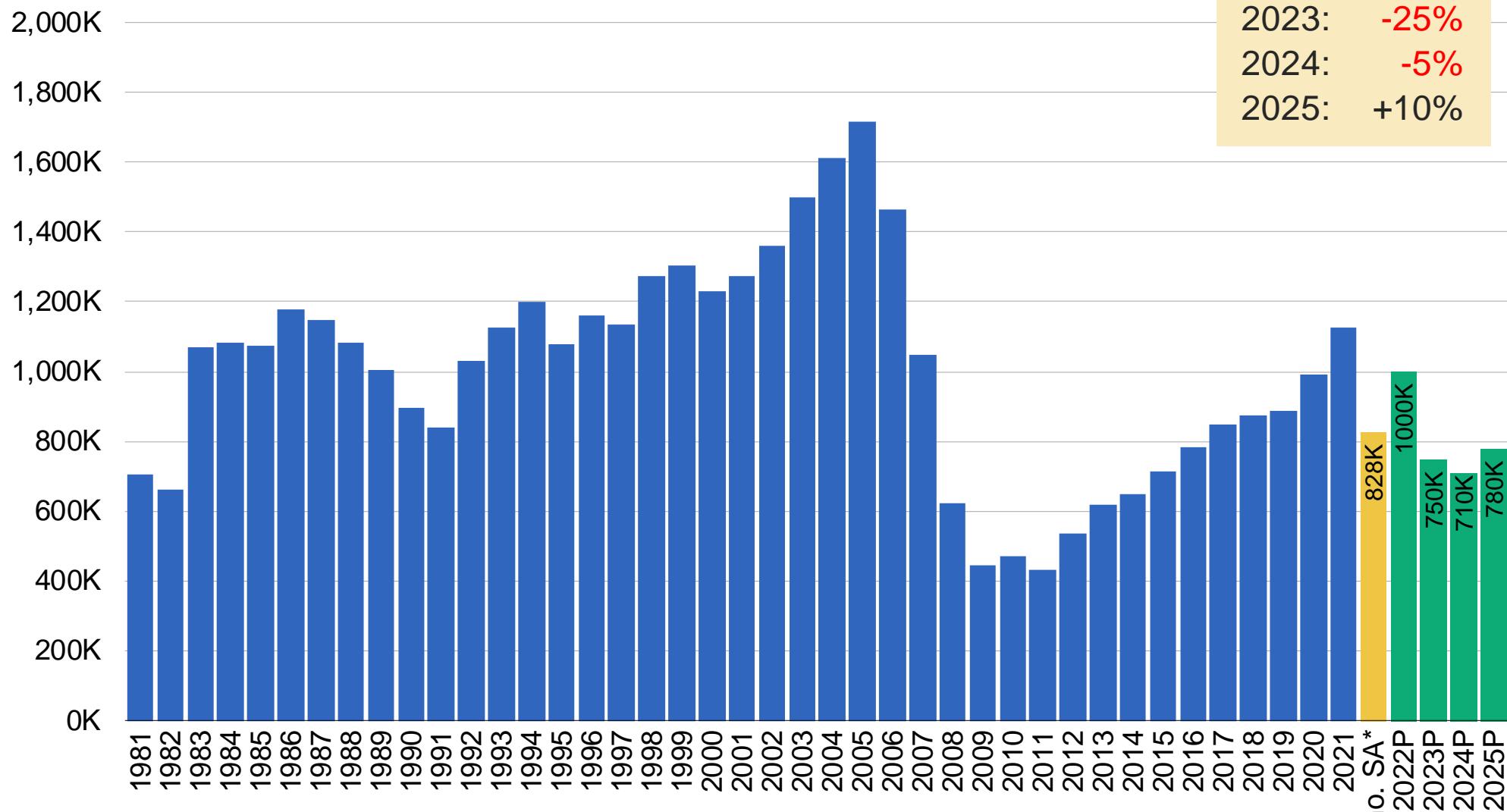
Cur. mo. SA* = Current month (seasonally adjusted annual rate)

Source: John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

US National Single-Family Housing Starts

We forecast single-family starts will fall to 750K in 2023 and continue to fall through 2024.

US Single-Family Residential Starts



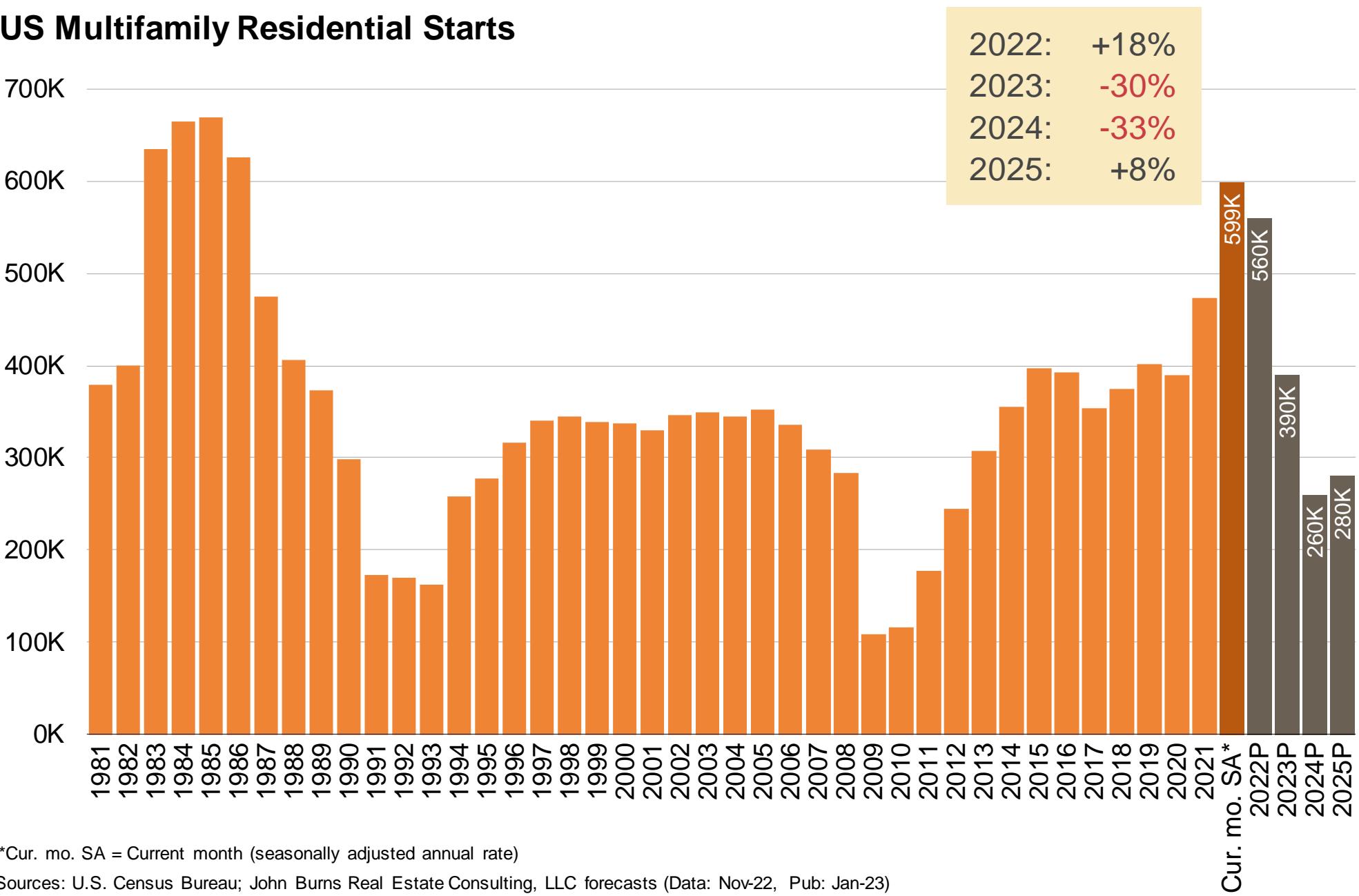
*Cur. mo. SA = Current month (seasonally adjusted annual rate)

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

US National Multifamily Housing Starts

We forecast multifamily starts will fall to 390K in 2023 and continue to fall through 2024.

US Multifamily Residential Starts



*Cur. mo. SA = Current month (seasonally adjusted annual rate)

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

US New Single-Family Home Sales

We forecast new single-family home sales will fall to 520K in 2023 and continue to decline through 2024.

US New Single-Family Home Sales

Millions

1.4

1.2

1.0

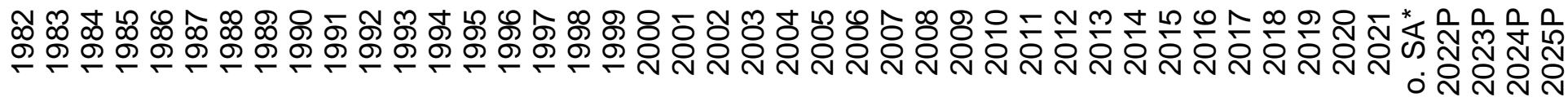
0.8

0.6

0.4

0.2

0.0



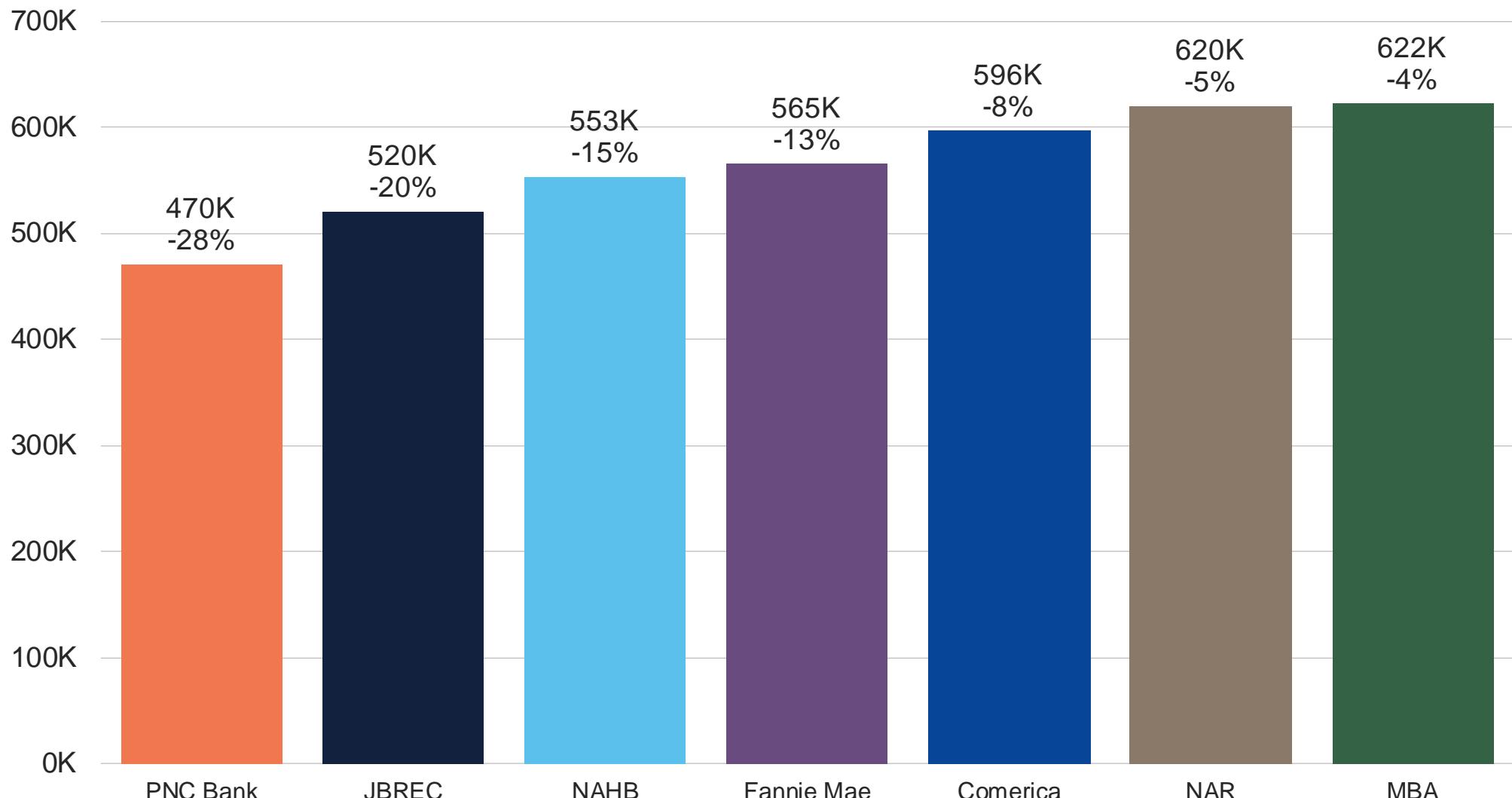
*Cur. mo. SA = Current month (seasonally adjusted annual rate)

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

2022: -16%
2023: -20%
2024: -4%
2025: +14%

We Expect New Home Sales Will Fall -20% YOY in 2023; We Are More Bearish Than Most Forecasters

2023 New Home Sales Forecast Comparison

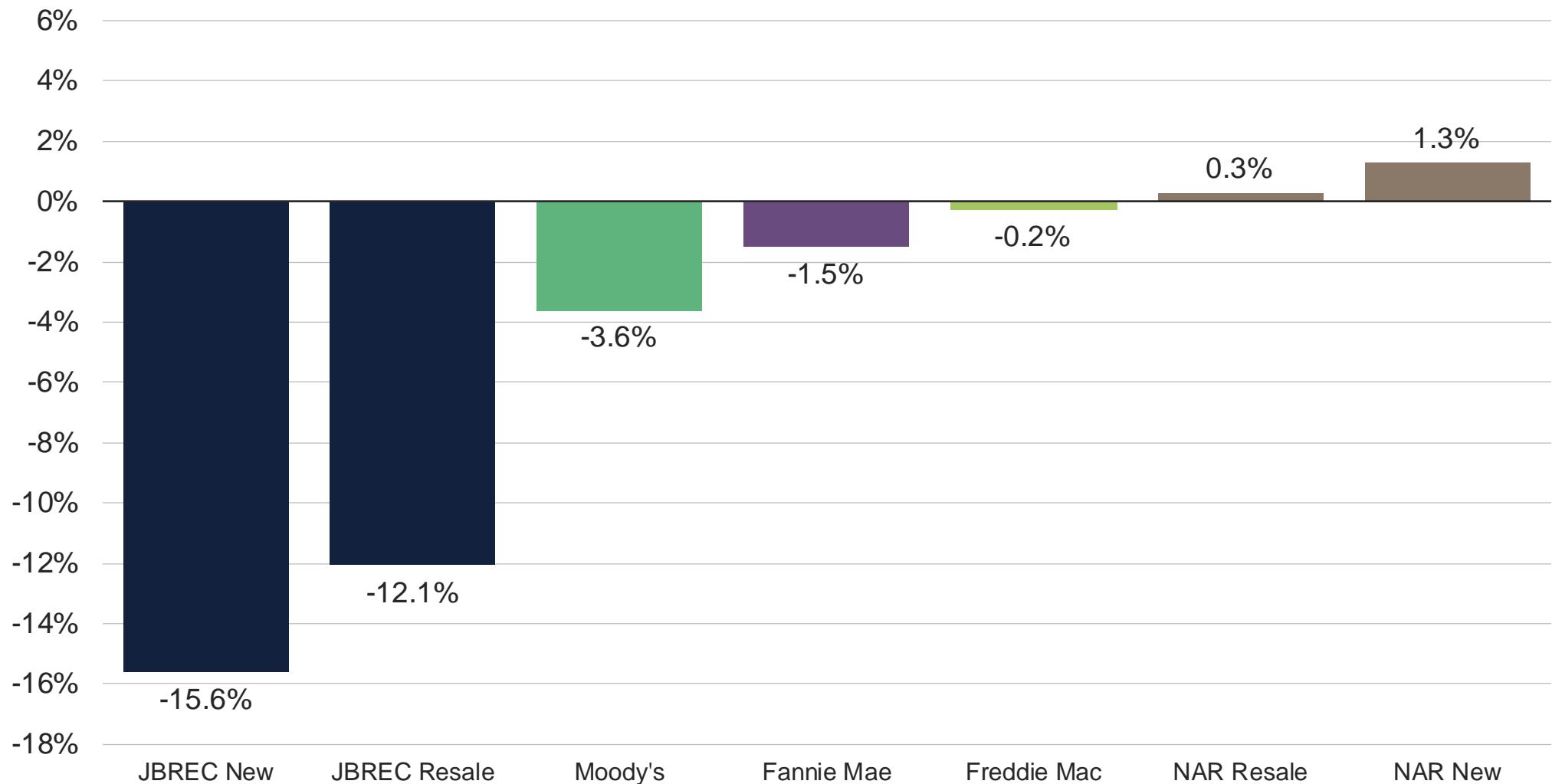


Note: All forecasts are standardized to 650K total for 2022.

Sources: PNC Bank (Dec-22); NAHB (Jan-23); Fannie Mae (Dec-22); Comerica (Dec-22); NAR (Dec-22); MBA (Dec-22); John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Our Price Appreciation Forecasts for 2023: -16% for New Homes and -12% for the Resale Market

2023 Price Appreciation



Note: Our new home price forecast is net of incentives

Sources: Moody's (Jan-23); Fannie Mae (Dec-22); Freddie Mac (Oct-22); NAR (Dec-22); NAR (Dec-22);

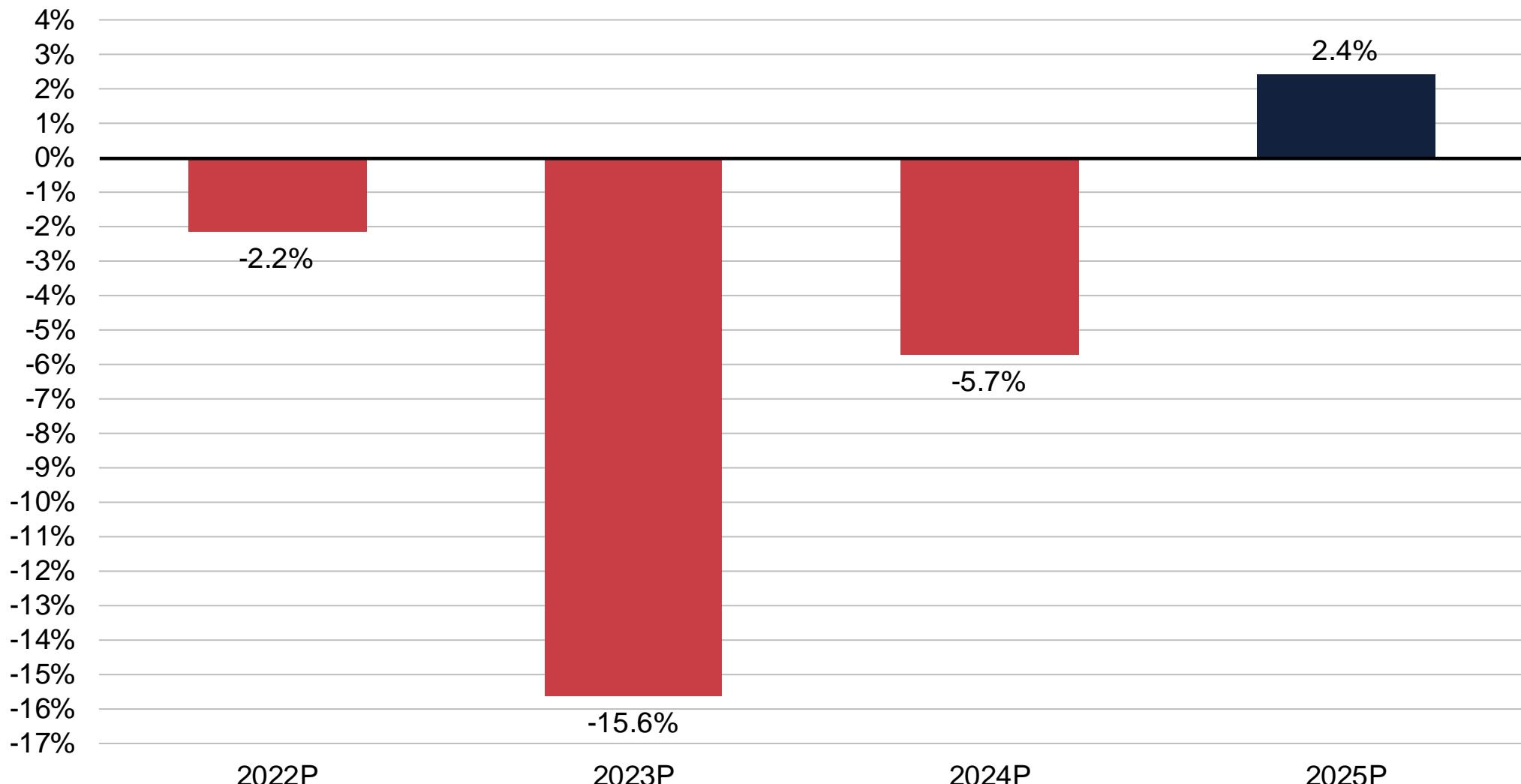
John Burns Real Estate Consulting, LLC (Pub: Jan-23)

US New Home Price Appreciation Forecast (Net of Incentives)

We project new home prices to fall -16% in 2023 and another -6% in 2024. Our national forecast is a roll-up of metros, and we expect price movements will vary significantly by market.

US New Home Price Appreciation Forecast

Per community, net of incentives



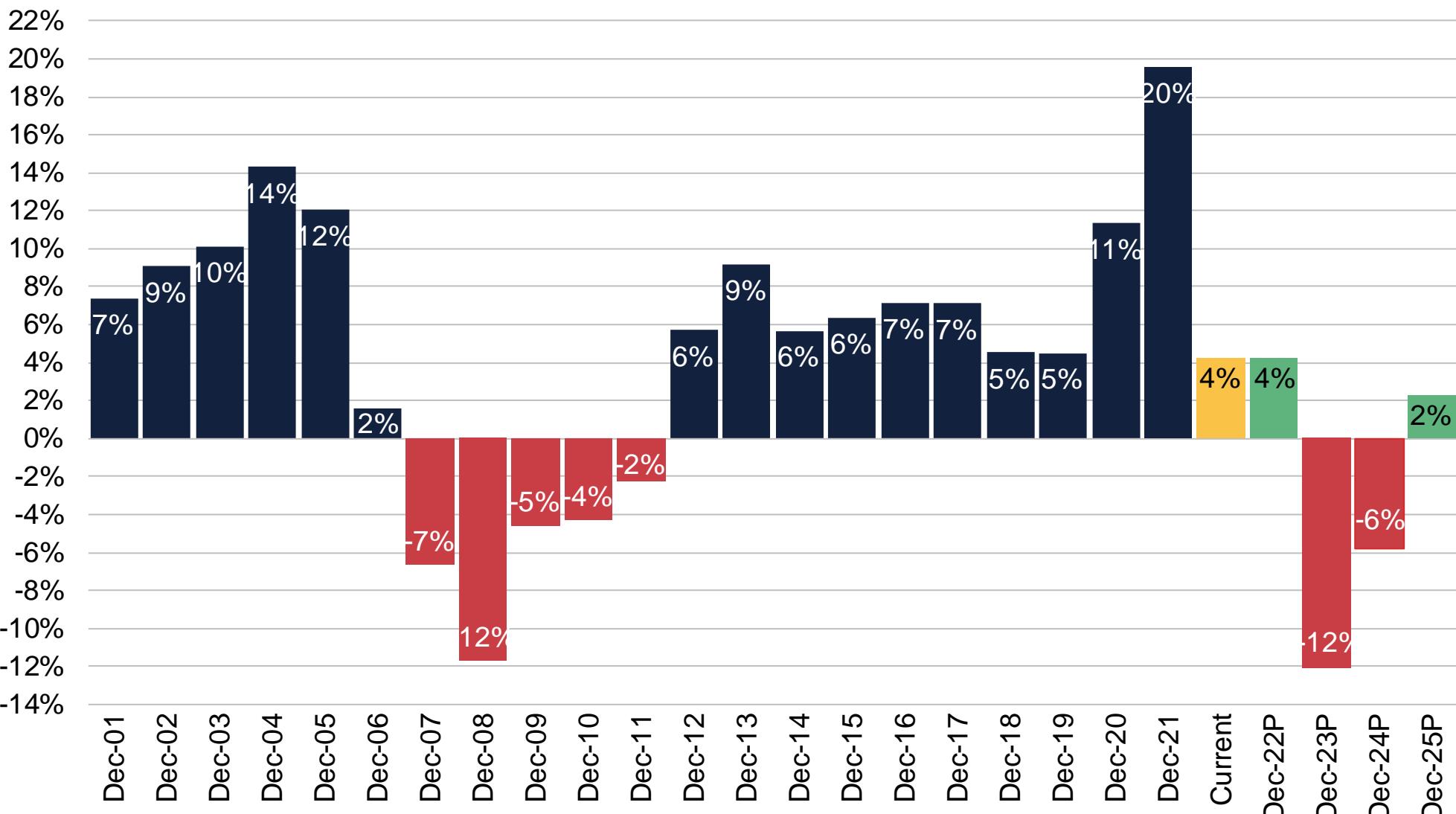
Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Burns Home Value Index

We forecast home prices to decline -12% in 2023 and -6% in 2024.

Burns Home Value Index™

Year-end YOY % change



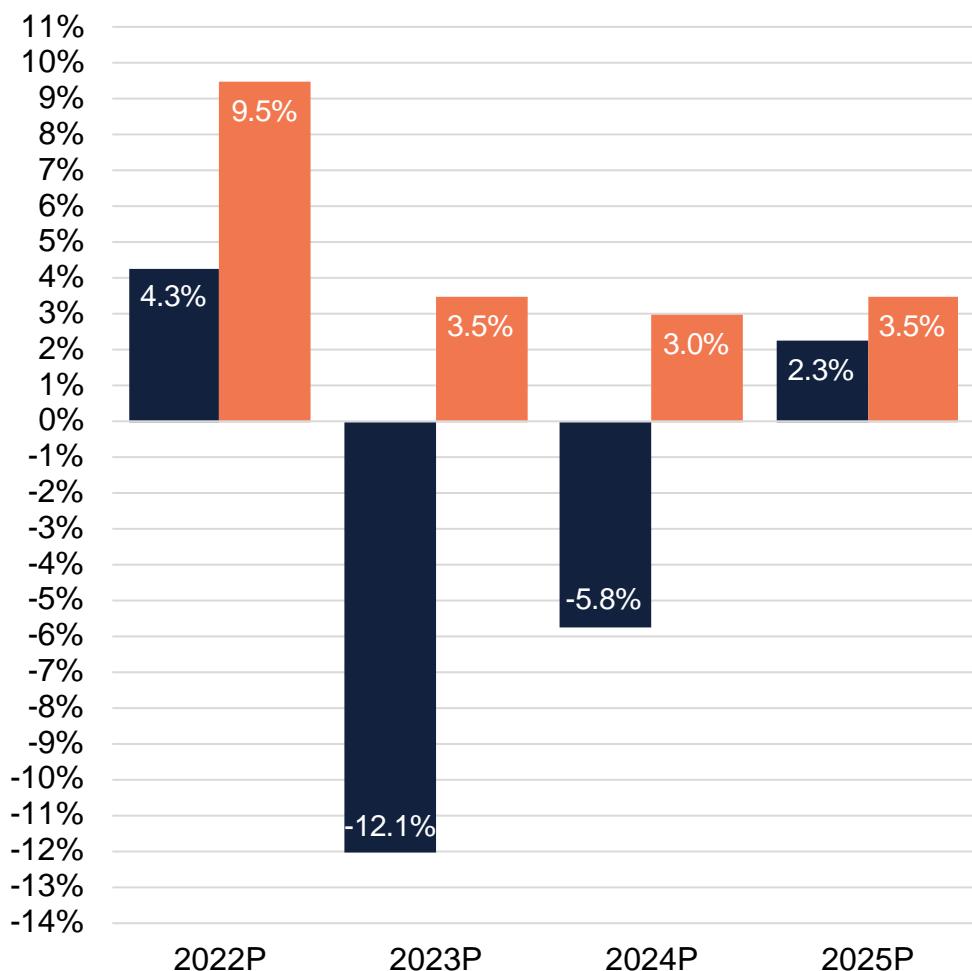
Source: John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Our Price Appreciation Forecasts Are Far below Consensus in 2023–2024

We project a -12% price decline through 2025, well below the +21% consensus of 100+ economists.

Projected Home Price Appreciation (Q4/Q4)

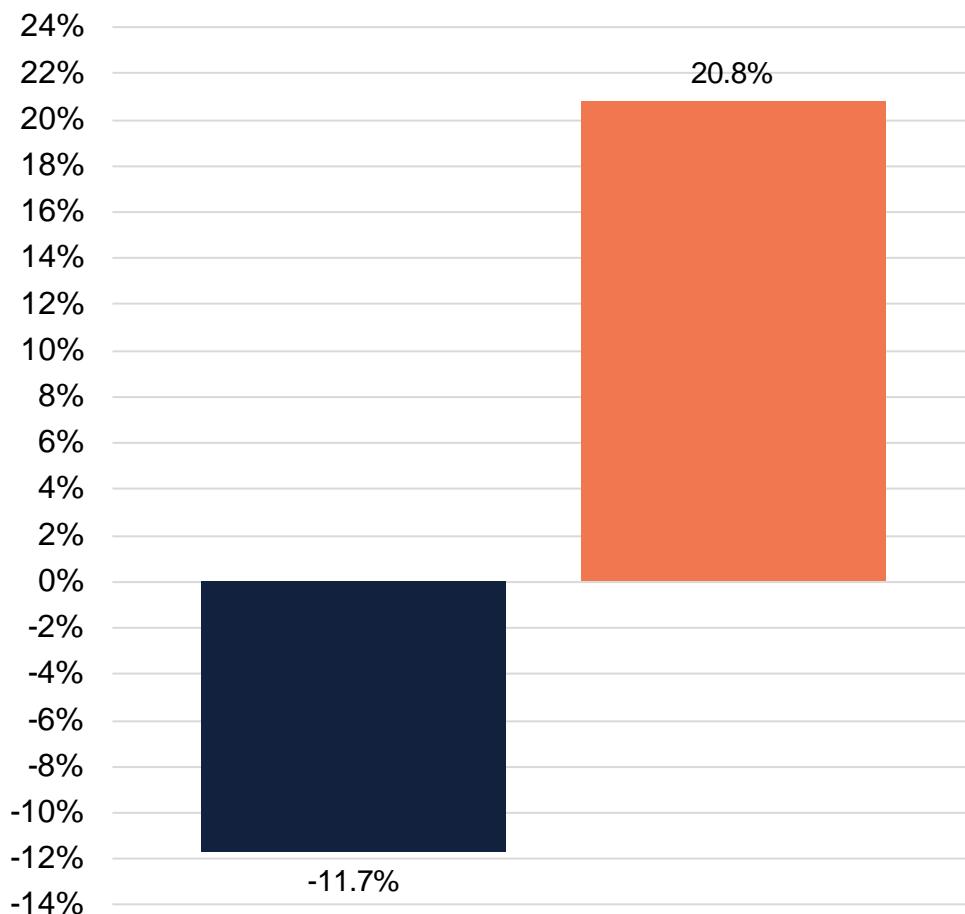
■ John Burns ■ Zillow Home Price Expectations Survey



Projected Home Price Appreciation

Cumulative through 2025

■ John Burns ■ Zillow Home Price Expectations Survey



Sources: John Burns Real Estate Consulting, LLC; Zillow Pulseonomics Home Price Expectations Survey (Data: 3Q22; Pub: Jan-23)

US Existing Home Sale Closings

We forecast existing home sales will fall -23% YOY in 2023 due to still elevated mortgage rates, soft demand, and a slowing economy which will hit consumer confidence.

US Existing Home Sale Closings

Millions

8

7

6

5

4

3

2

1

0



2022: -17%
2023: -19%
2024: +7%
2025: +5%

Cur. mo. SA* 4.1 (SAAR)

*Cur. mo. SA = Current month (seasonally adjusted annual rate)

Sources: ©2020 National Association of REALTORS®; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Our Existing Home Sales Forecast Is below Consensus

2023 JBREC vs. Moody's and NAR Resale Sale Closings Forecast

Millions

5.0

4.8

4.6

4.4

4.2

4.0

3.8

3.6

4.1 mil

4.3 mil

4.8 mil

4.8 mil

JBREC

Consensus*

Moody's

NAR

*Numerous banks and industry groups

Sources: Moody's (Jan-23); NAR (Dec-22); John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Burns Affordability Index

Our Burns Affordability Index shows the typical monthly housing-cost-to-income (HC/I) ratio for a home buyer. Our index is currently at 42.8%.

Burns Affordability Index

Housing-cost-to-income ratio

50%

Current = 42.8%

45%

40%

35%

New norm = 30.0%

30%

25%

20%

1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

We calculate the housing cost to income ratio (HC/I ratio) by dividing the market's median monthly housing costs by 125% of the median income. Housing cost assumes the purchase of a home equal to the market's median-priced existing home with a 10% down payment and a 30-year, fixed-rate mortgage. Payment includes PITI (principal, interest, taxes and insurance) plus mortgage insurance. To determine the intrinsic HC/I ratio, we look at the long-term trend of the market's HC/I ratio, with an emphasis on recent history and our forecasts. This intrinsic adjuster (the spread between the intrinsic HC/I ratio and the historical median HC/I ratio) is representative of fundamental shifts in several markets we feel are now permanently more/less expensive due to increased/decreased demand or limited supply.

Source: John Burns Real Estate Consulting, LLC (Data: Dec-22; Pub: Jan-23)

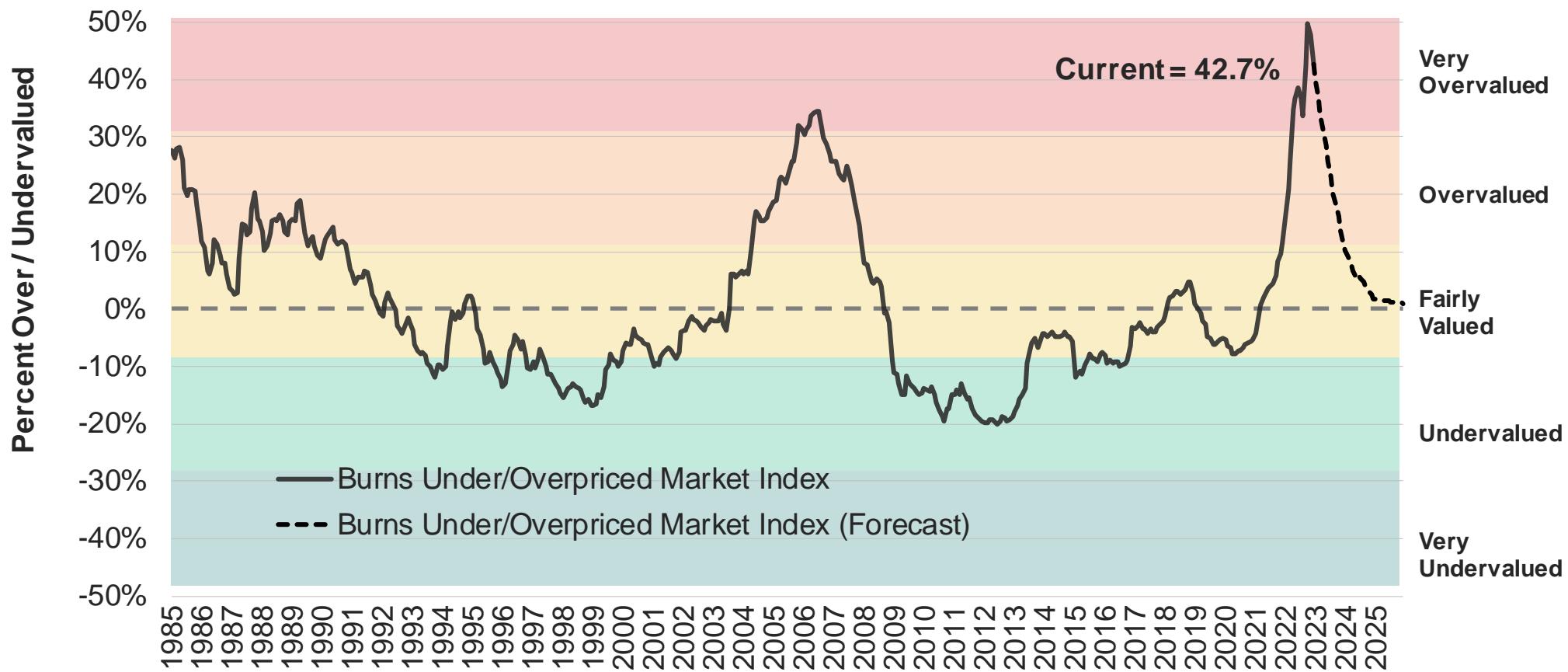
Our New Norm Intrinsic HC/I ratio reflects fundamental shifts in the housing market, which we believe is now permanently more expensive.

Burns Under/Overpriced Market Index

Nationally, homes are 42.7% overpriced at current mortgage rates.

Burns Under/Overpriced Market Index

% overvalued / undervalued compared to intrinsic value



We calculate the housing cost to income ratio (HC/I ratio) by dividing the market's median monthly housing costs by 125% of the median income. Housing cost assumes the purchase of a home equal to the market's median-priced existing home with a 10% down payment and a 30-year, fixed-rate mortgage. Payment includes PITI (principal, interest, taxes and insurance) plus mortgage insurance. To determine the intrinsic HC/I ratio, we look at the long-term trend of the market's HC/I ratio, with an emphasis on recent history and our forecasts. This intrinsic adjuster (the spread between the intrinsic HC/I ratio and the historical median HC/I ratio) is representative of fundamental shifts in several markets we feel are now permanently more/less expensive due to increased/decreased demand or limited supply

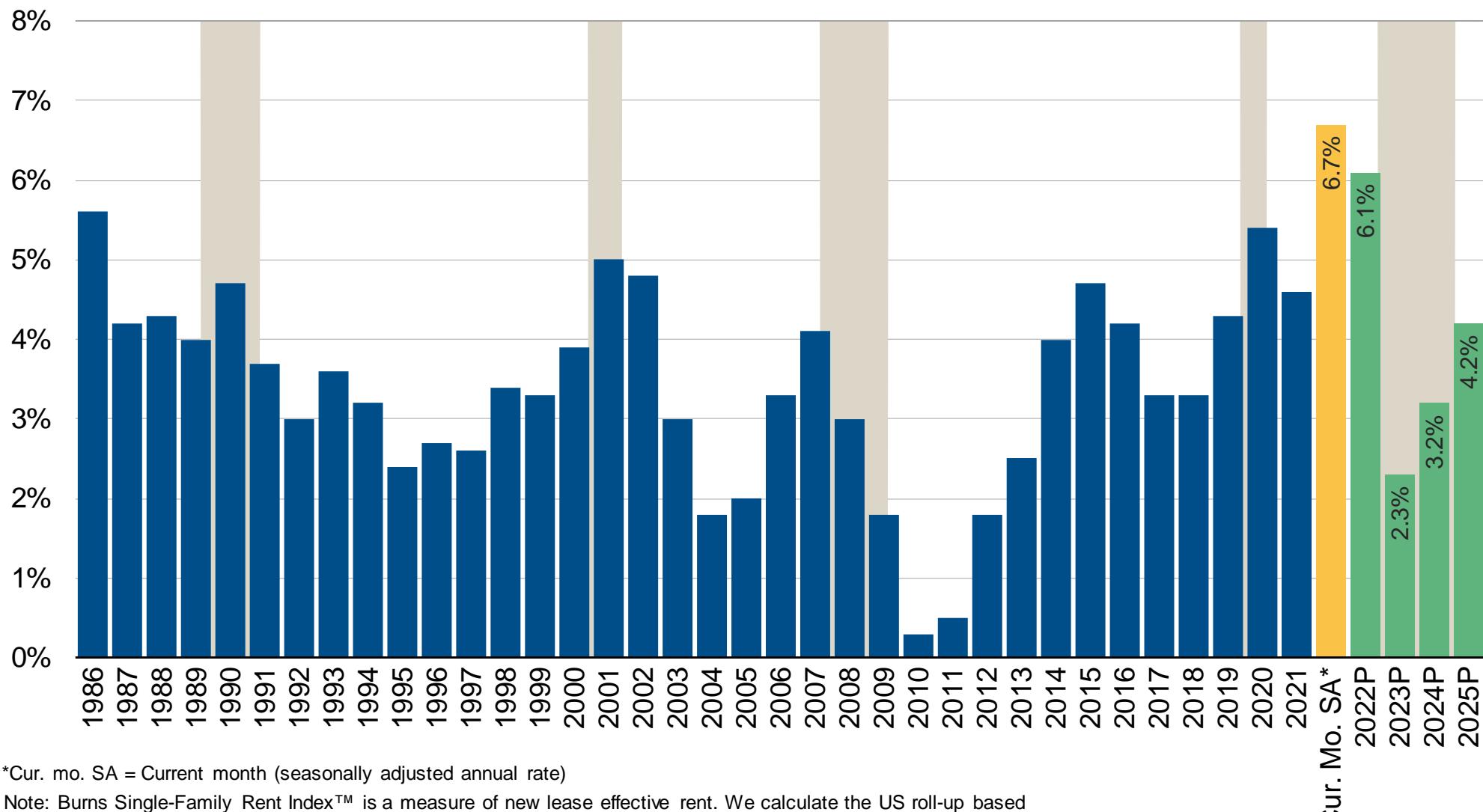
Source: John Burns Real Estate Consulting, LLC (Data: Dec-22; Pub: Jan-23)

US Single-Family Rent Growth

We forecast single-family rents will grow 2% in 2023, 3% in 2024, and 4% in 2025.

US Single-Family Rent Index

YOY % growth, 99 market rollup



*Cur. mo. SA = Current month (seasonally adjusted annual rate)

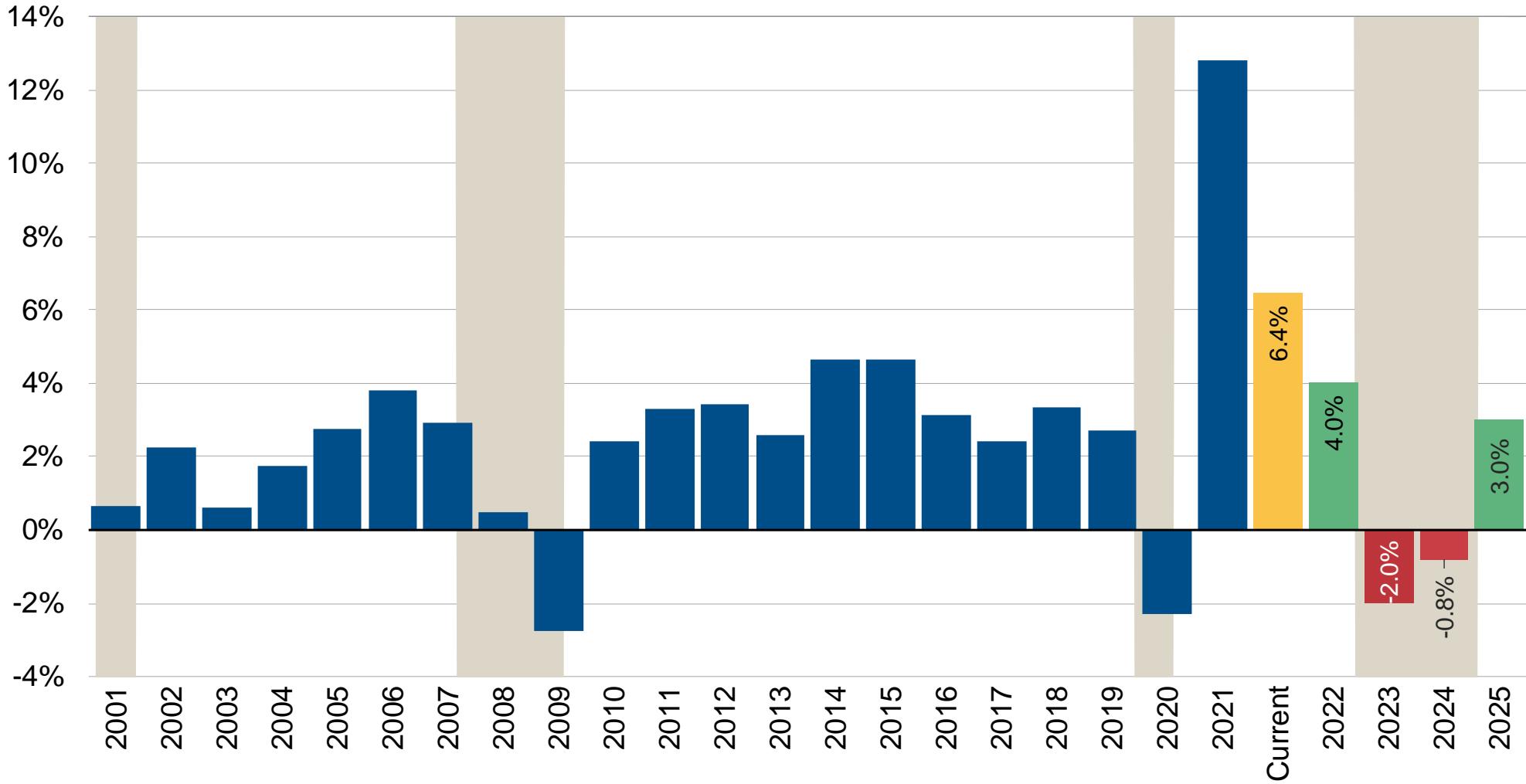
Note: Burns Single-Family Rent Index™ is a measure of new lease effective rent. We calculate the US roll-up based on a weighted average of 99 markets.

Source: John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

US Apartment Rent Growth

We forecast apartment rents will fall -2% in 2023 and -1% in 2024. Note that our apartment rent index is meant to represent rent trends in professionally-managed apartments.

Burns Apartment Rent Index Growth



The Burns Apartment Rent Index is our estimate for historical and current asking apartment rent trends in over 120 Markets. The Burns Apartment Rent Index uses stabilized property level data from RealPage and aggregates up to the market level. Due to this, our index mainly reflects institutionally owned apartments as opposed to mom-and-pop owners. Our rent forecasts are informed by demand (proxied by vacancy rates), affordability (relative to homeownership), and expected supply (multifamily permits).

Source: John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

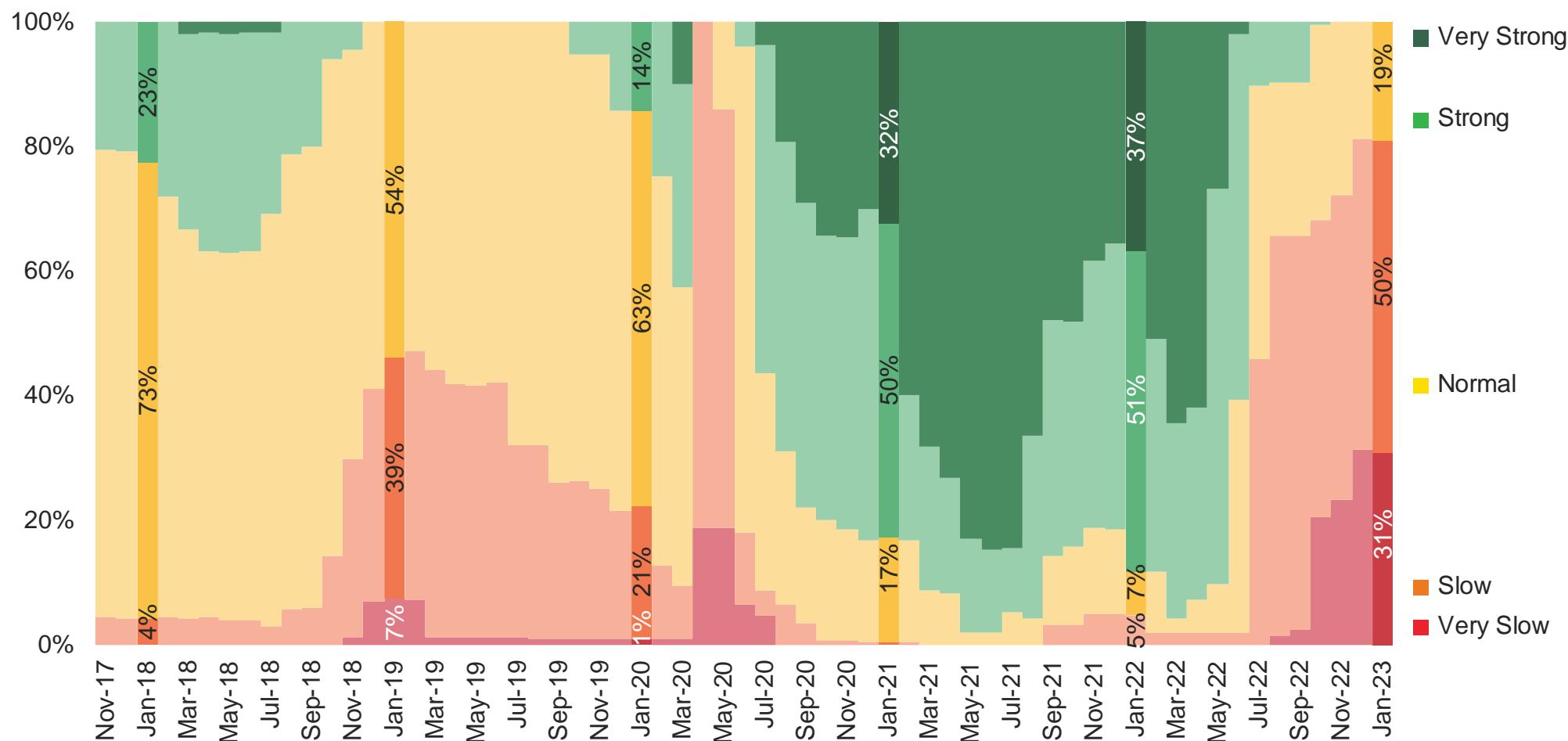
Current Market Conditions: 31% of Markets Are Very Slow

81% of markets are Slow or Very Slow as sales and pricing conditions continue to slip nationwide.
19% of markets are Normal, which reflects 2–3/month sales per community with rising net prices.

Current Market Conditions

50 top housing markets

Current market conditions are weighted by new home revenue (new home median price * single-family permits TTM). This calculation allows for more accurate representation of how the US is performing as it factors in market size.



Percentages may not add up to 100% due to rounding, as some months less than 50 markets are rated.

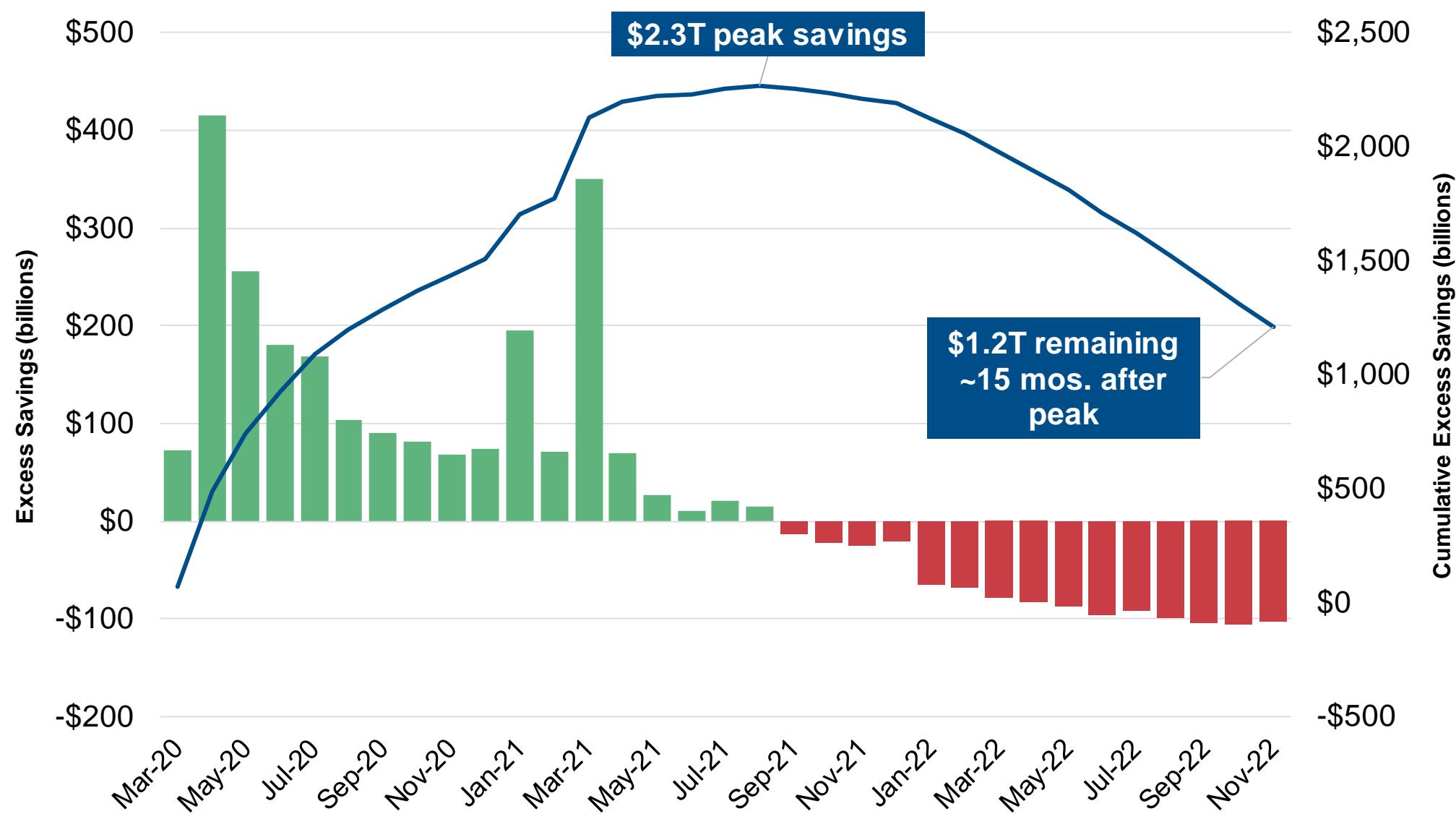
Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Government shifts

Excess Consumer Savings Have Shrunk by Half

Excess Savings

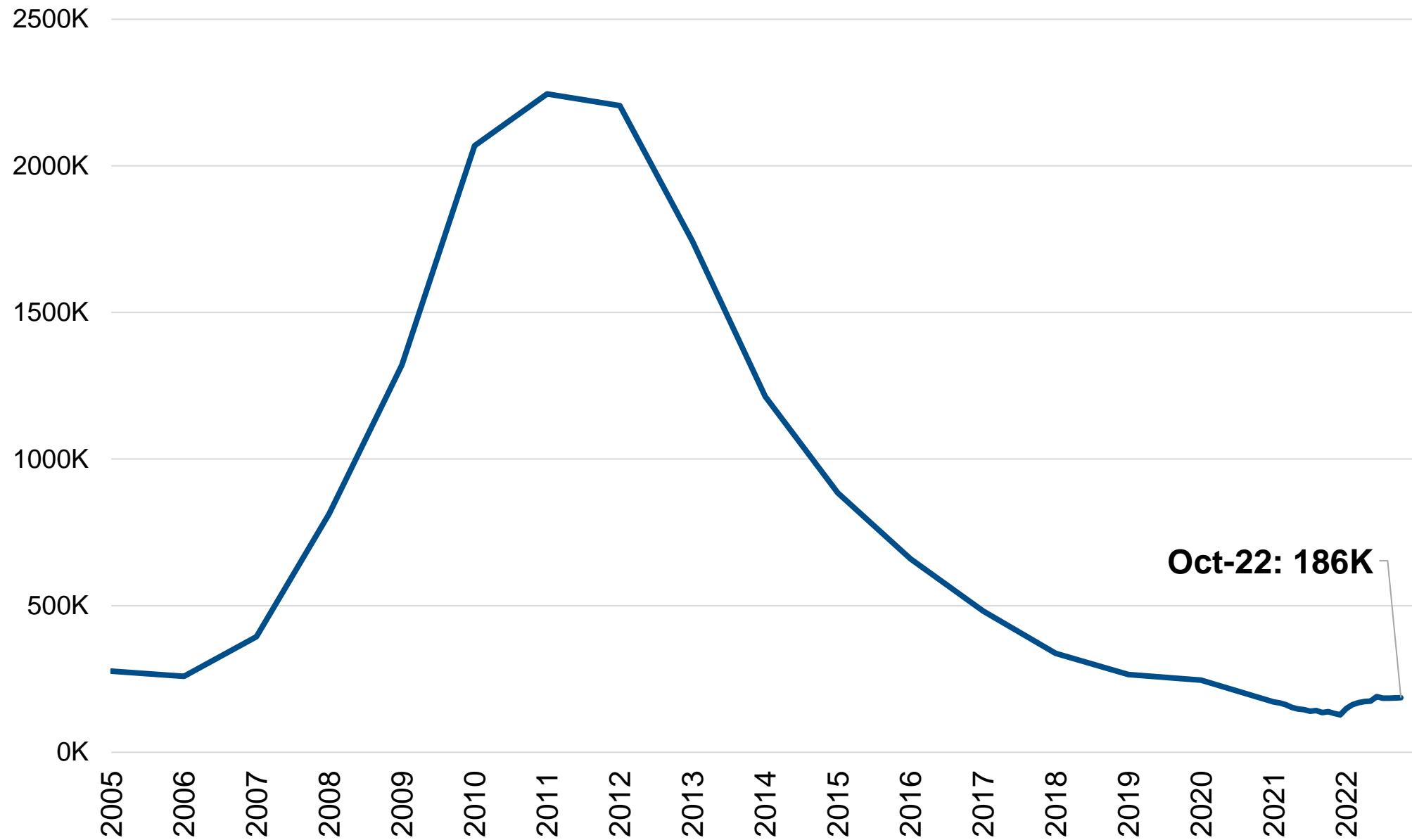
Relative to pre-COVID trend (2015–2019) — Cumulative savings



Source: Bureau of Economic Analysis, John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Foreclosures Are Ticking Up Slightly

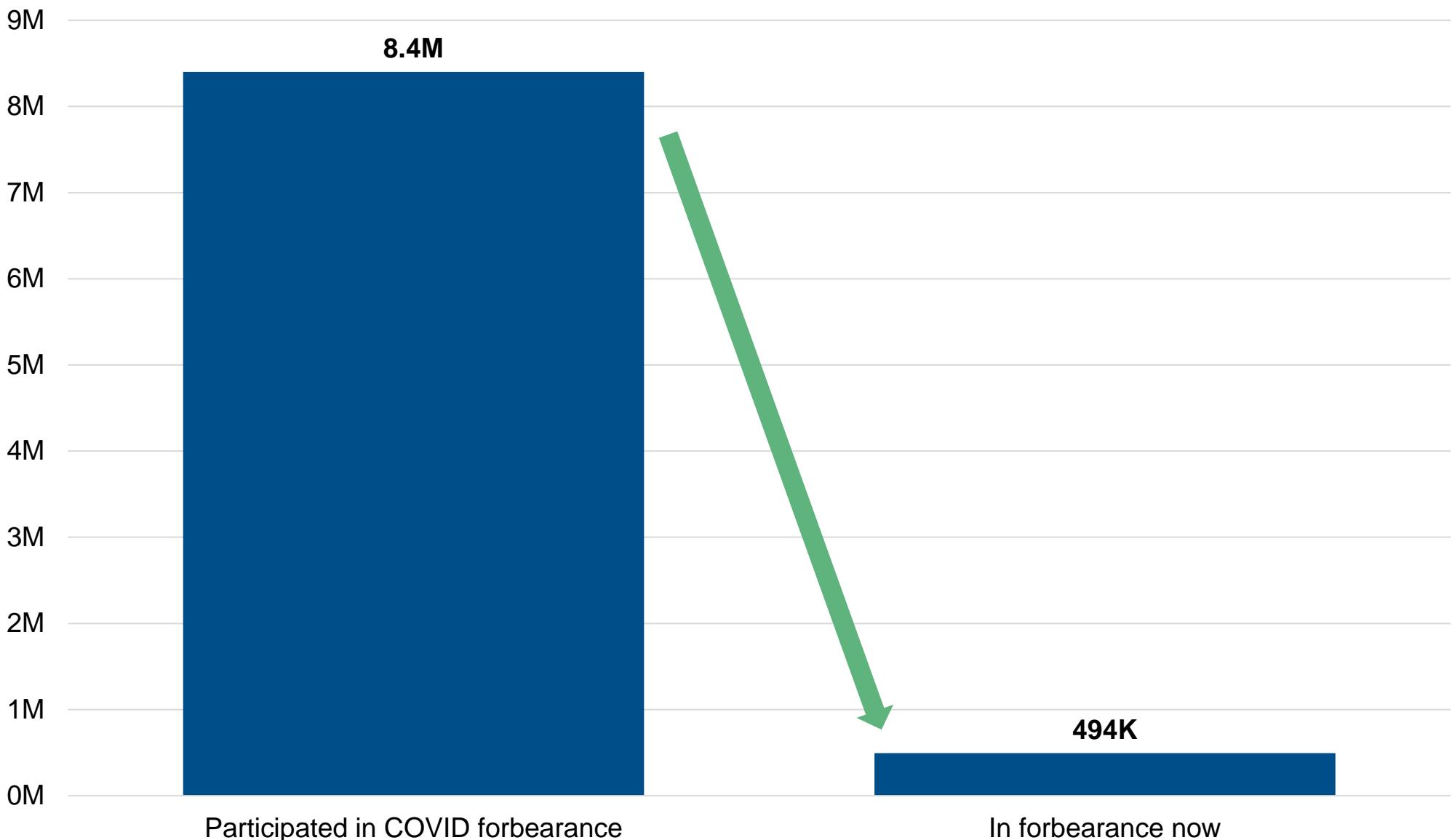
Foreclosures



Source: Black Knight (Data: Oct-22, Pub: Jan-23)

Just 494K Homeowners Are Still in Forbearance

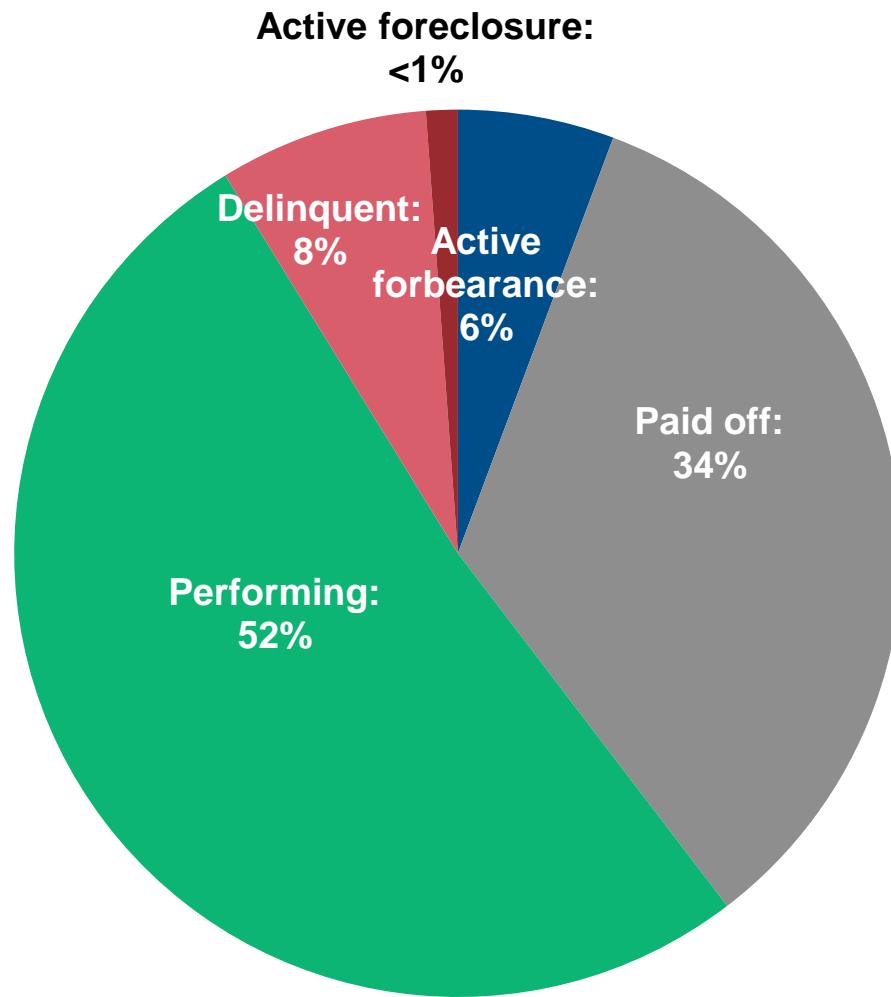
Loans in Forbearance



Source: Black Knight, MBA (Data: Oct-22, Pub: Jan-23)

Only 96K Loans That Were in Forbearance Are in Active Foreclosure; Most Were Delinquent Pre-Pandemic

Current Status of Loans in COVID-Related Forbearance



Source: Black Knight (Data: Oct-22, Pub: Jan-23)

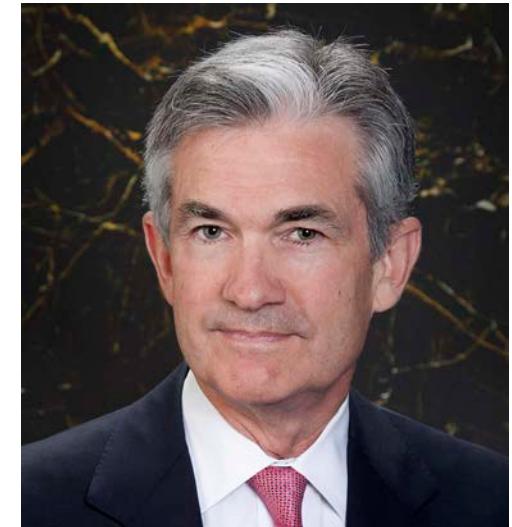
The Fed Raised Rates 50bps in December 2022

The Fed's 50bps move in December represents a slowdown in rate increases after a series of 75bps hikes.

The Fed hiked rates a cumulative 425bps in 2022 to its highest level in 15 years: 25bps in March, 50bps in May, four consecutive 75bps increases in June, July, September and November, and 50bps in December.

FOMC projections from December suggest the federal funds rate will hit a terminal rate of 5.1% in 2023, implying additional rate hikes this year.

The Federal Open Market Committee (FOMC) is the branch of the Federal Reserve Board that determines the direction of monetary policy and the federal funds rate. It consists of 12 members: 7 are governors, and 5 are presidents of the Fed's regional branches.



2023 FOMC Meeting Dates

Jan/Feb 31-1

March 21-22*

May 2-3

June 13-14*

July 25-26

Sep 19-20*

Oct/Nov 31-1

Dec 12-13*

*Meeting associated with a Summary of Economic Projections

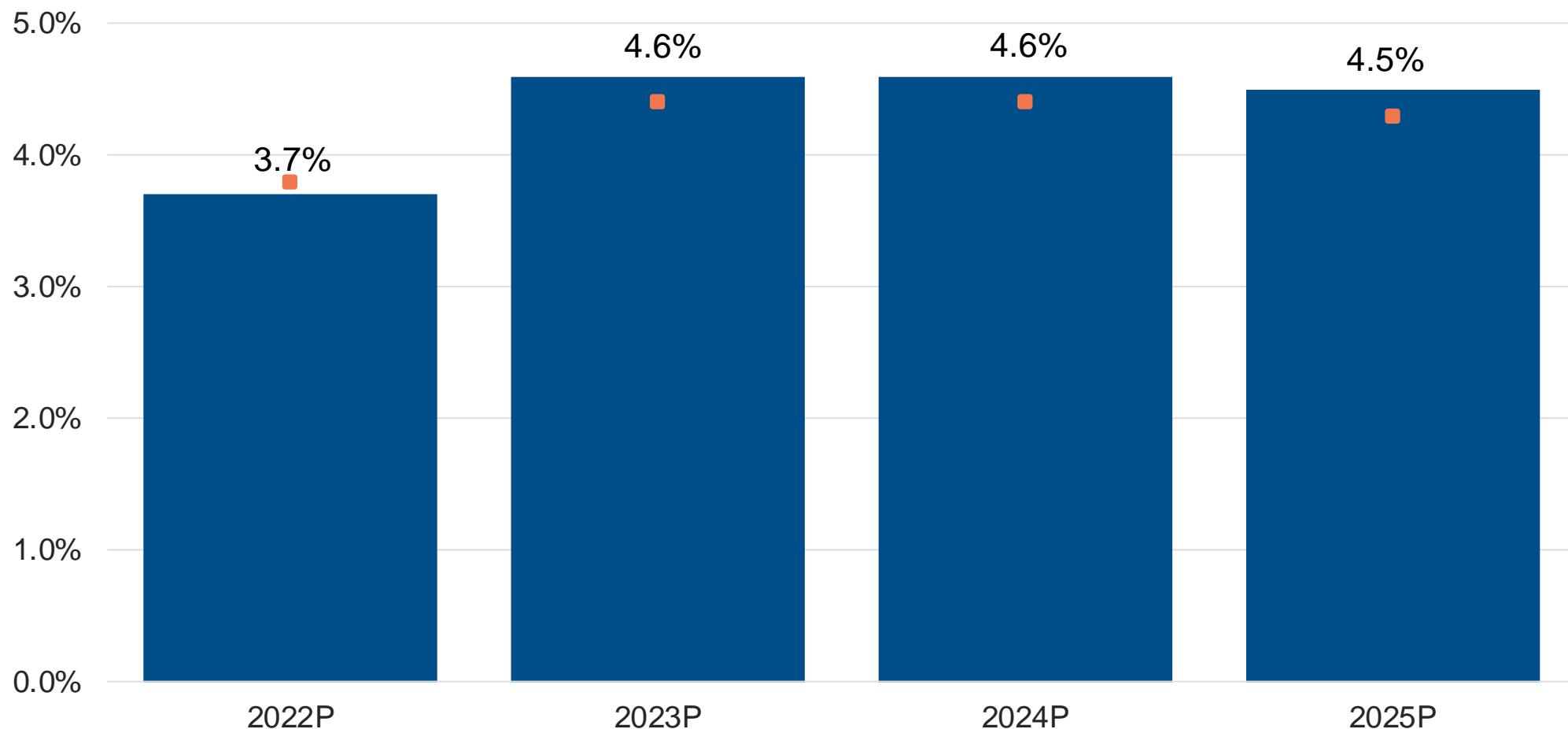
Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Federal Reserve Projection: Unemployment Rate

The Fed projects unemployment will rise to 4.6% by 2023, well above today's unemployment rate (3.7%) and up 90bps from 2022. The US has never had a 90bps rise in unemployment without a recession.

Federal Reserve Projection: Unemployment Rate

■ Current projection (Dec.) ■ Prior projection (Sep.)



Note: Economic projections represent the median of all projections received from Federal Reserve Board members and Federal Reserve Bank presidents under their assumptions of projected appropriate monetary policy and reflect estimates as of the 4th quarter of each year.

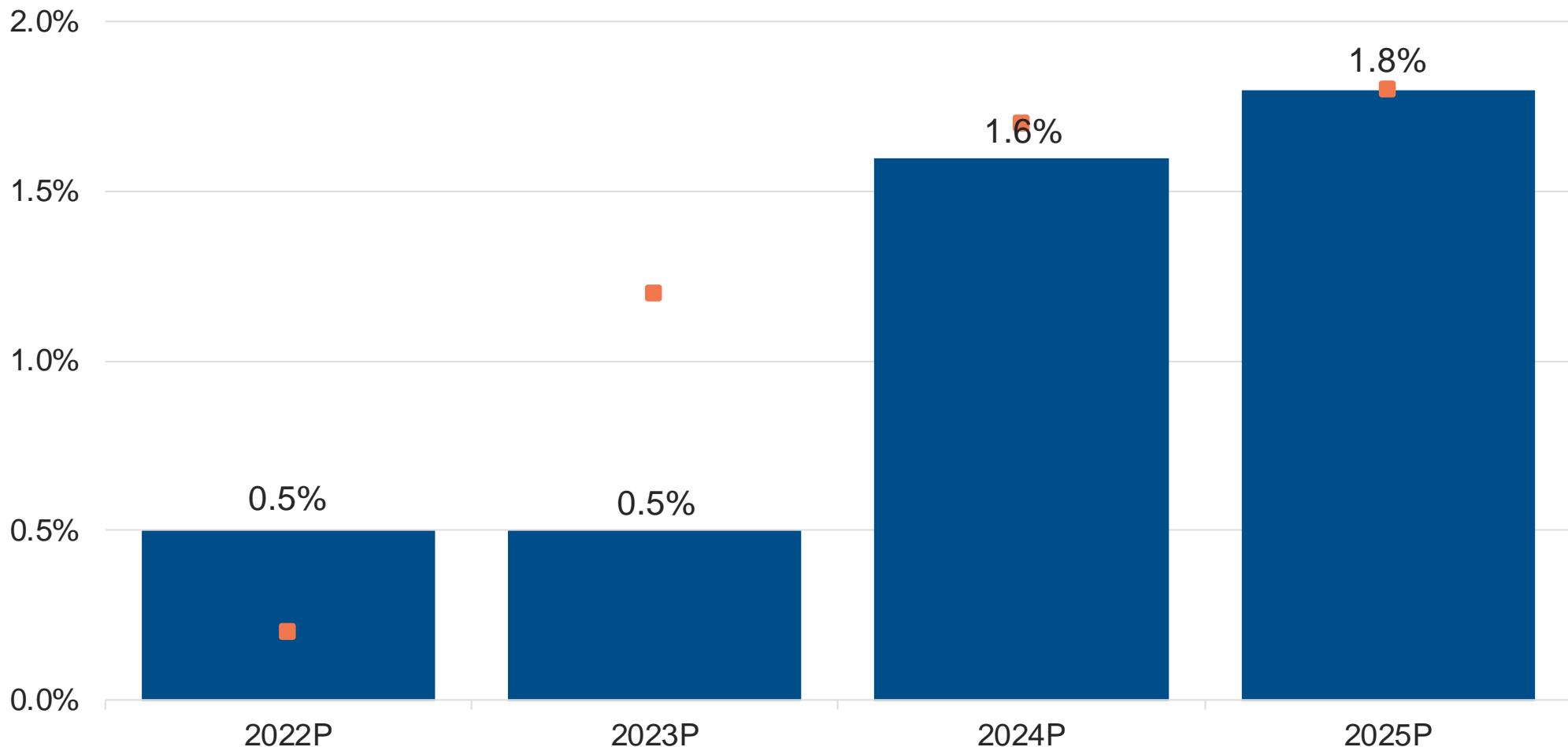
Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

Federal Reserve Projection: Real GDP

The Fed lowered its real GDP growth projections in December. However, the Fed still expects positive real GDP growth in 2023 despite an anticipated rise in unemployment.

Federal Reserve Projection: Real GDP Growth YOY

■ Current projection (Dec.) ■ Prior projection (Sep.)



Note: Economic projections represent the median of all projections received from Federal Reserve Board members and Federal Reserve Bank presidents under their assumptions of projected appropriate monetary policy and reflect estimates as of the 4th quarter of each year

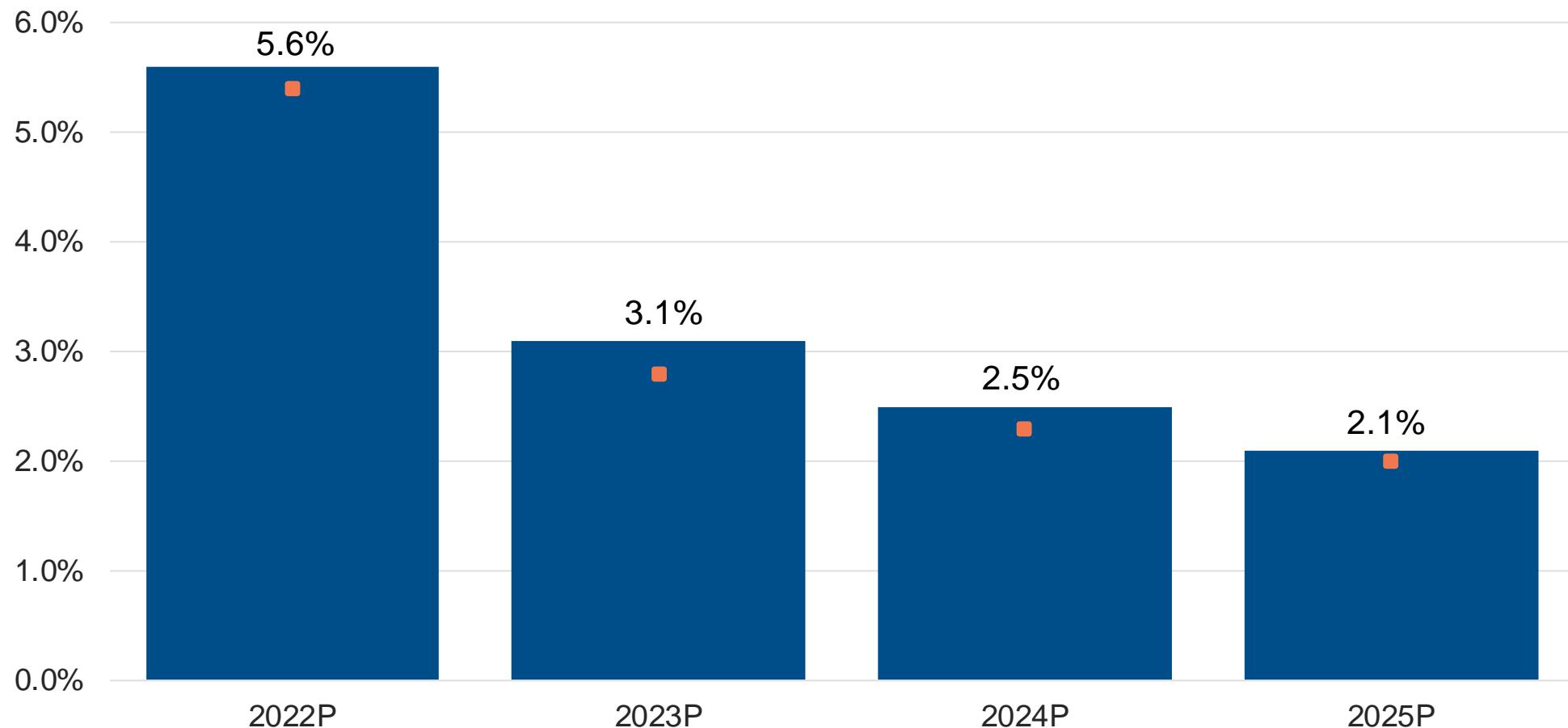
Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

Federal Reserve Projection: Personal Consumption Expenditures

Year-over-year growth in Personal Consumption Expenditures (PCE) is the Fed's preferred measured of inflation. The Fed expects PCE growth to slow their 2% YOY target by year-end 2025.

Federal Reserve Projection: Personal Consumption Expenditures

■ Current projection (Dec.) ■ Prior projection (Sep.)



Note: Economic projections represent the median of all projections received from Federal Reserve Board members and Federal Reserve Bank presidents under their assumptions of projected appropriate monetary policy and reflect estimates as of the 4th quarter of each year.

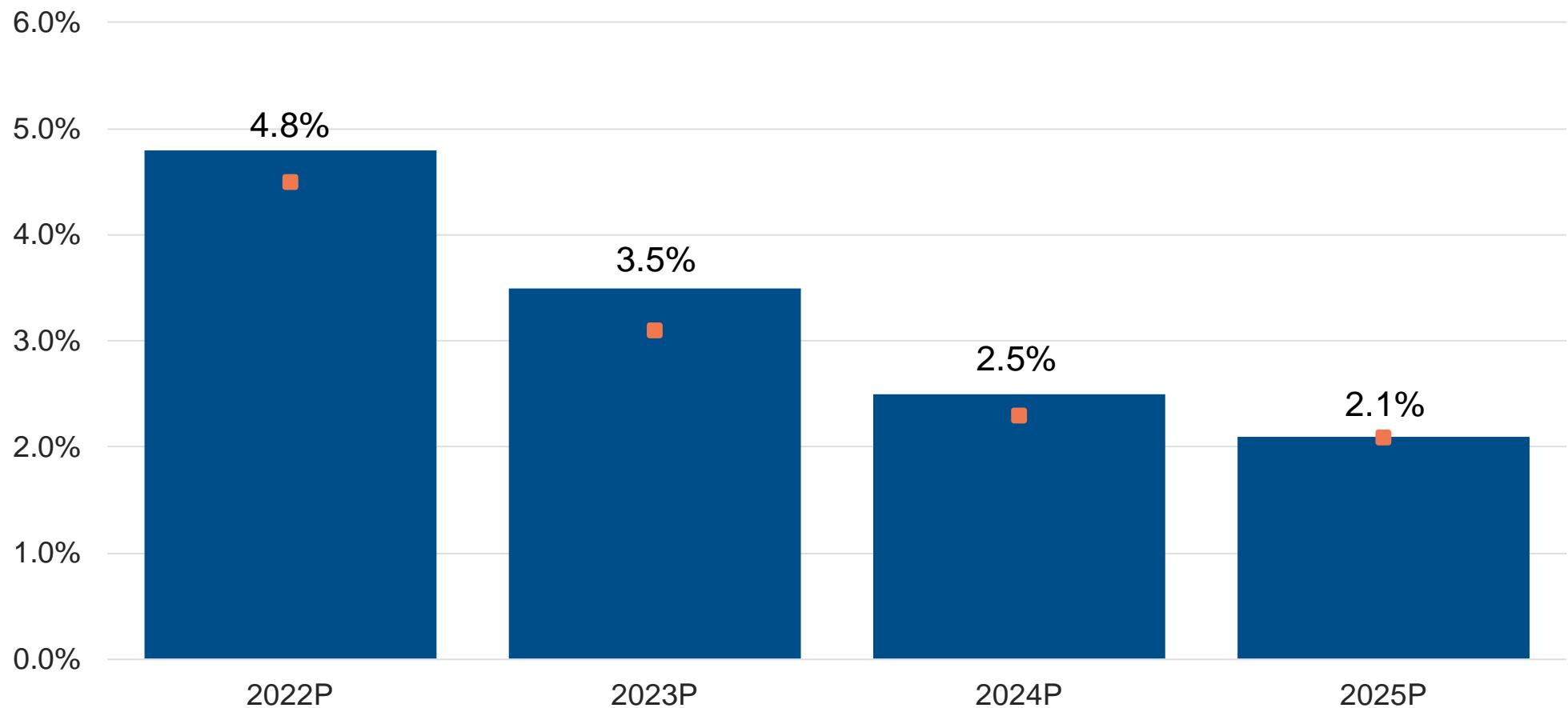
Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

Federal Reserve Projection: Core Personal Consumption Expenditures

The Fed expects Core Personal Consumption Expenditures (PCE) growth, which excludes volatile food and energy categories, to slow to their 2% target by year-end 2025.

Federal Reserve Projection: Core Personal Consumption Expenditures

■ Current projection (Dec.) ■ Prior projection (Sep.)



Note: Economic projections represent the median of all projections received from Federal Reserve Board members and Federal Reserve Bank presidents under their assumptions of projected appropriate monetary policy and reflect estimates as of the 4th quarter of each year.

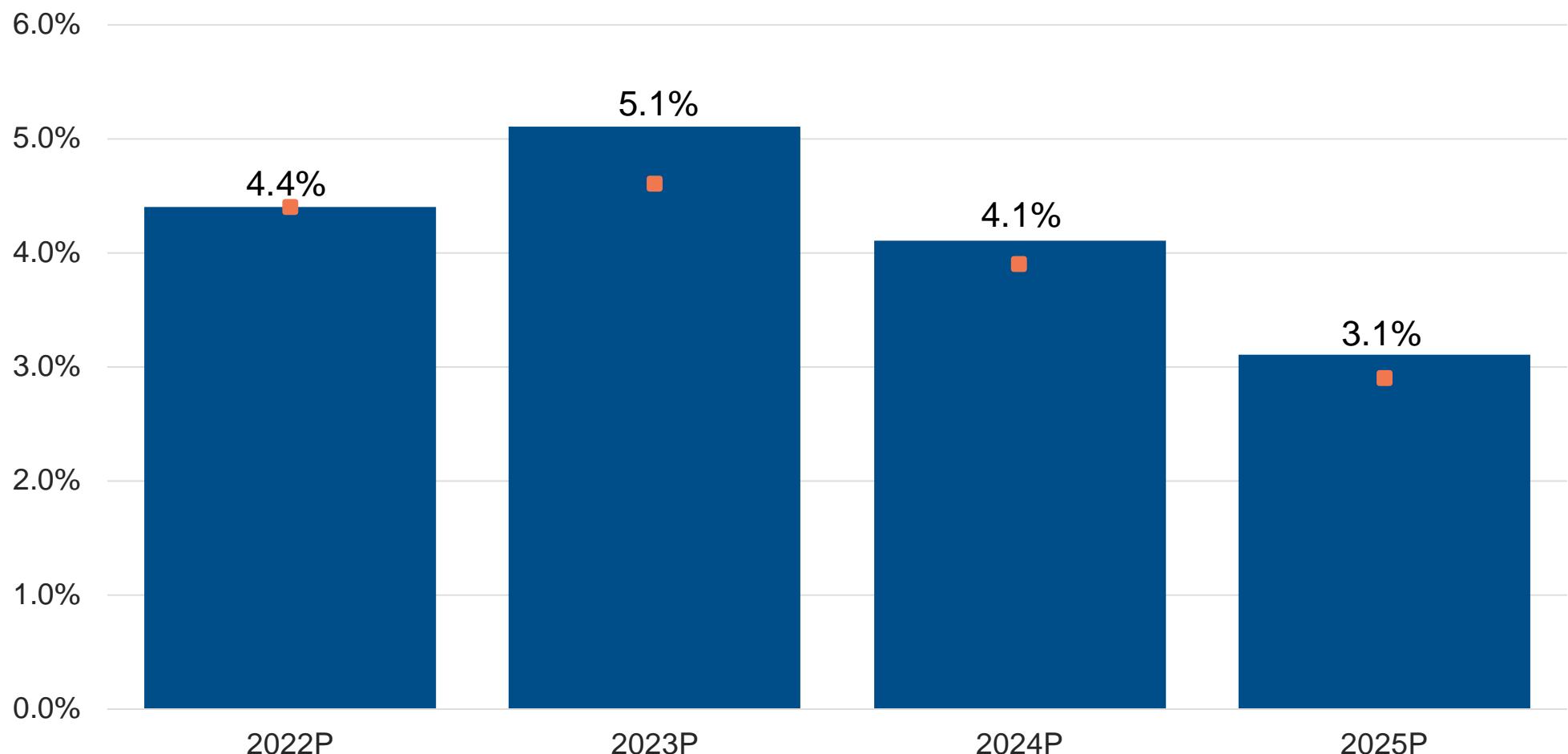
Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

Federal Reserve Projection: Federal Funds Rate

The Fed has raised their projections and now believes 5.1% is the appropriate terminal rate, to be achieved by the end of 2023. They do not expect to cut rates until 2024.

Federal Reserve Projection: Federal Funds Rate

■ Current projection (Dec.) ■ Prior projection (Sep.)



Note: Economic projections represent the median of all projections received from Federal Reserve Board members and Federal Reserve Bank presidents under their assumptions of projected appropriate monetary policy and reflect estimates as of the 4th quarter of each year.

Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

Impact of Federal Funds Rate on the Economy

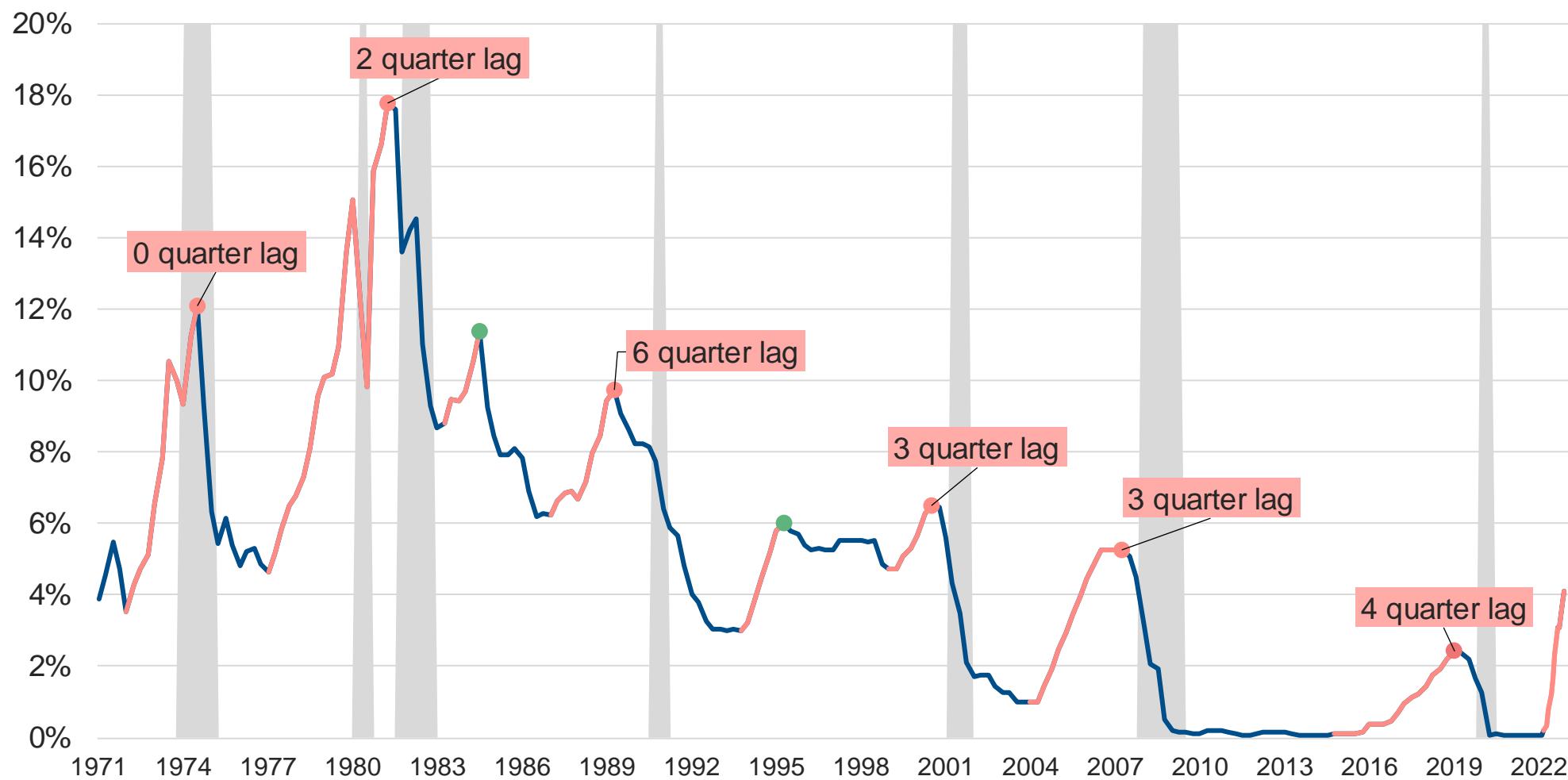
A recession has followed within 18 months of 6 of the past 8 rate hike cycles. The average lag time between rate peaks and the start of recessions is 3 quarters (9 months).

Rate Hikes and Recessions

■ Recession period
● Pre-recession rate peak

— Federal funds rate
● "Soft landing" rate peak

— Federal funds rate hike period



Source: Federal Reserve; Freddie Mac; John Burns Real Estate Consulting (Data: Dec-22)

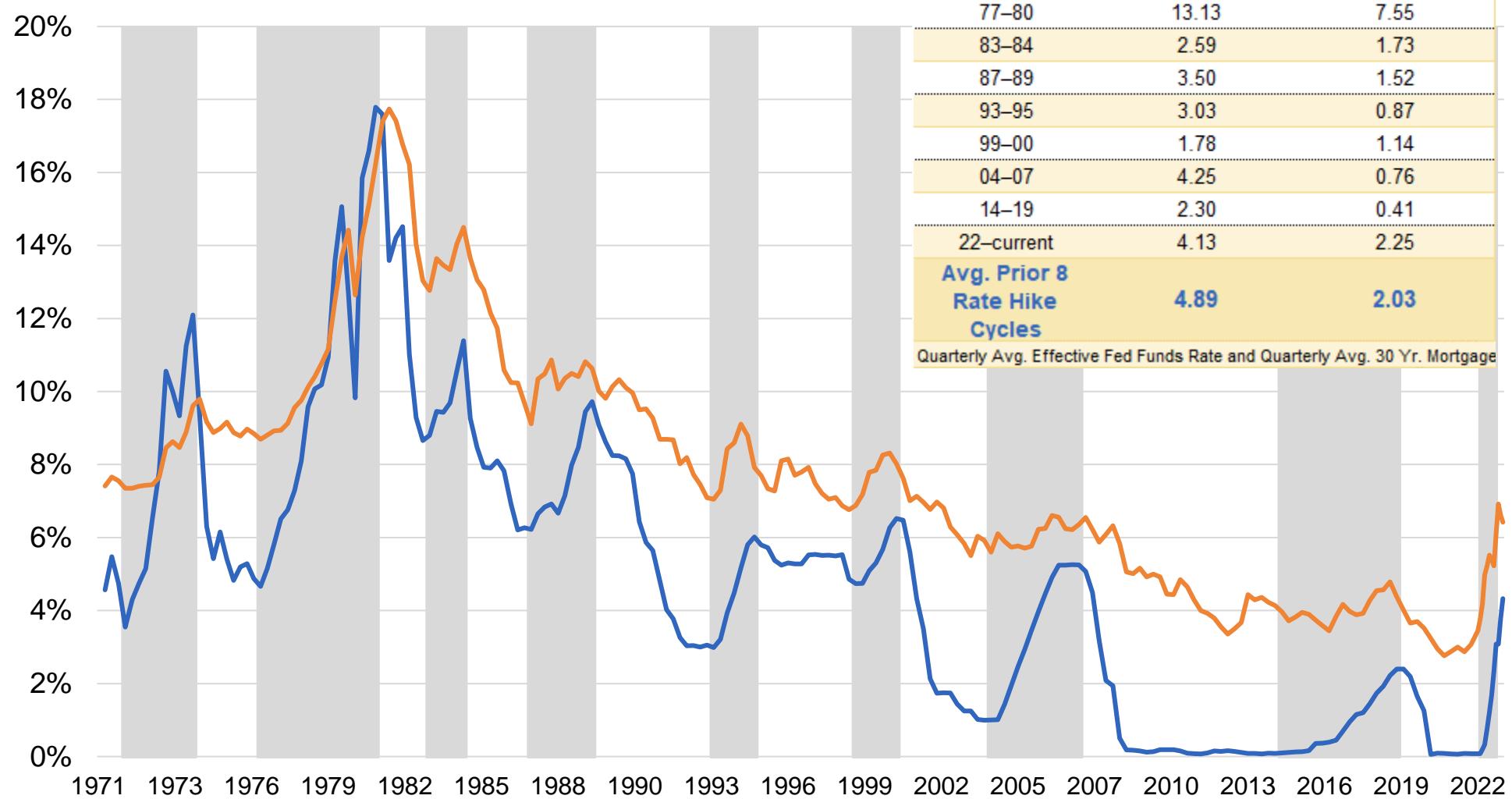
Pub: Jan-23

Impact of the Federal Funds Rate on Mortgage Rates

The federal funds rate and mortgage rates are related, but the relationship is not 1:1. On average, a 100bps federal funds rate hike drove mortgage rates 41bps higher over the last 8 rate hike cycles.

Fed Funds Rate vs 30 Year Mortgage Rate

— Federal funds rate — 30-year mortgage rate



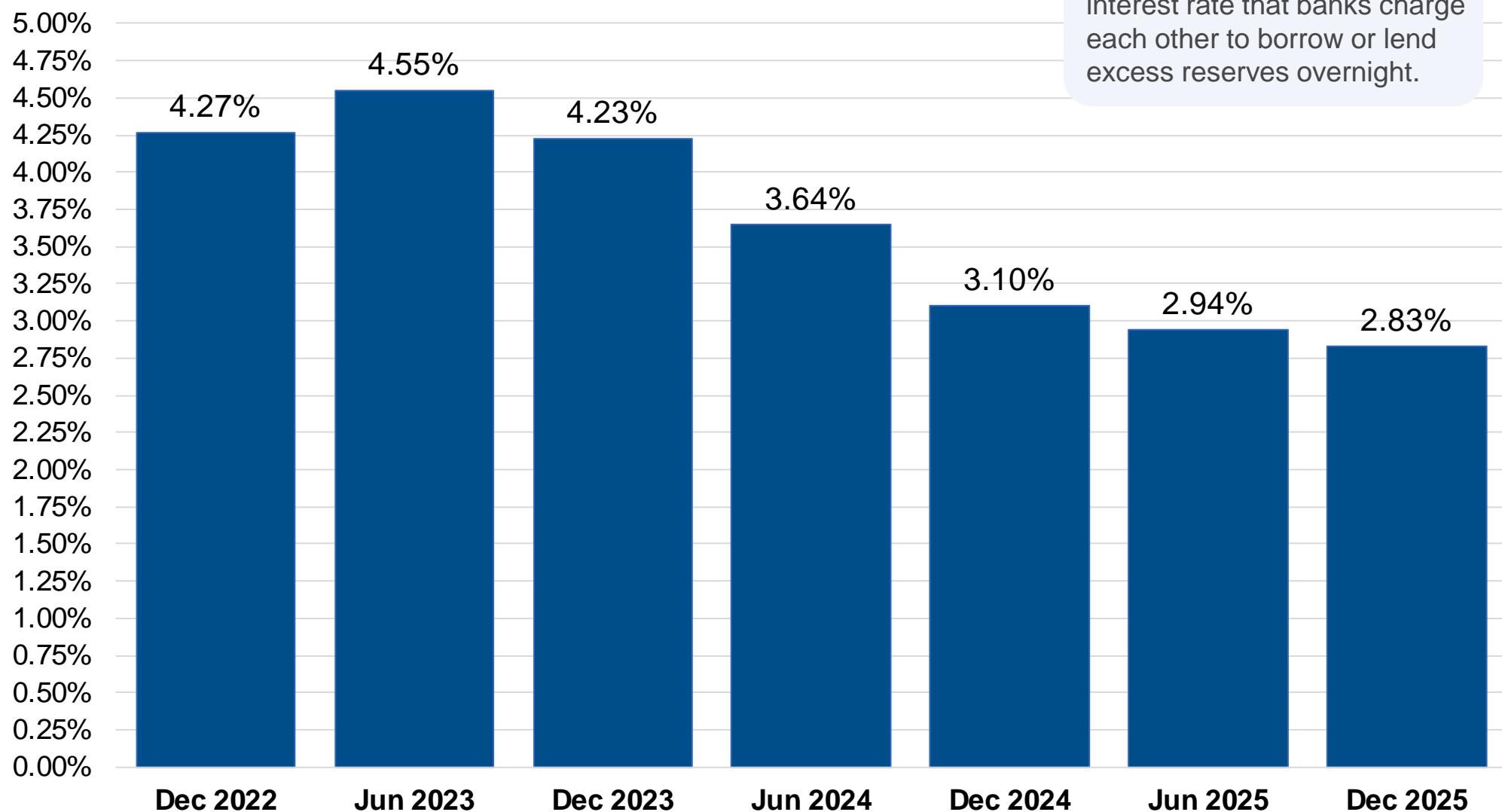
Source: Federal Reserve; Freddie Mac; John Burns Real Estate Consulting (Data: Dec-22)

Pub: Jan-23

Most Economists Expect the Fed to Raise Rates through June 2023

WSJ Economist Survey: Federal Funds Rate Forecast

Midpoint range of expectations



Source: Wall Street Journal Survey of Economists (Data: Oct-22, updated quarterly†)

Pub: Jan-23

Forecast risks

Depth and Severity of Past Economic Recessions

We show this table to highlight how the economy and the housing market responded to prior recessions and how the downturn we are forecasting compares to history. The Federal Reserve has responded to 40-year-high inflation by raising rates quickly to cool the economy.

Rate increases typically hit housing earlier than the broader economy, and we expect significant declines in home sales and home prices before the economy slows and the Fed pivots. We do not expect a “soft landing,” and we are pricing in a -4% decline in national employment through 2024.

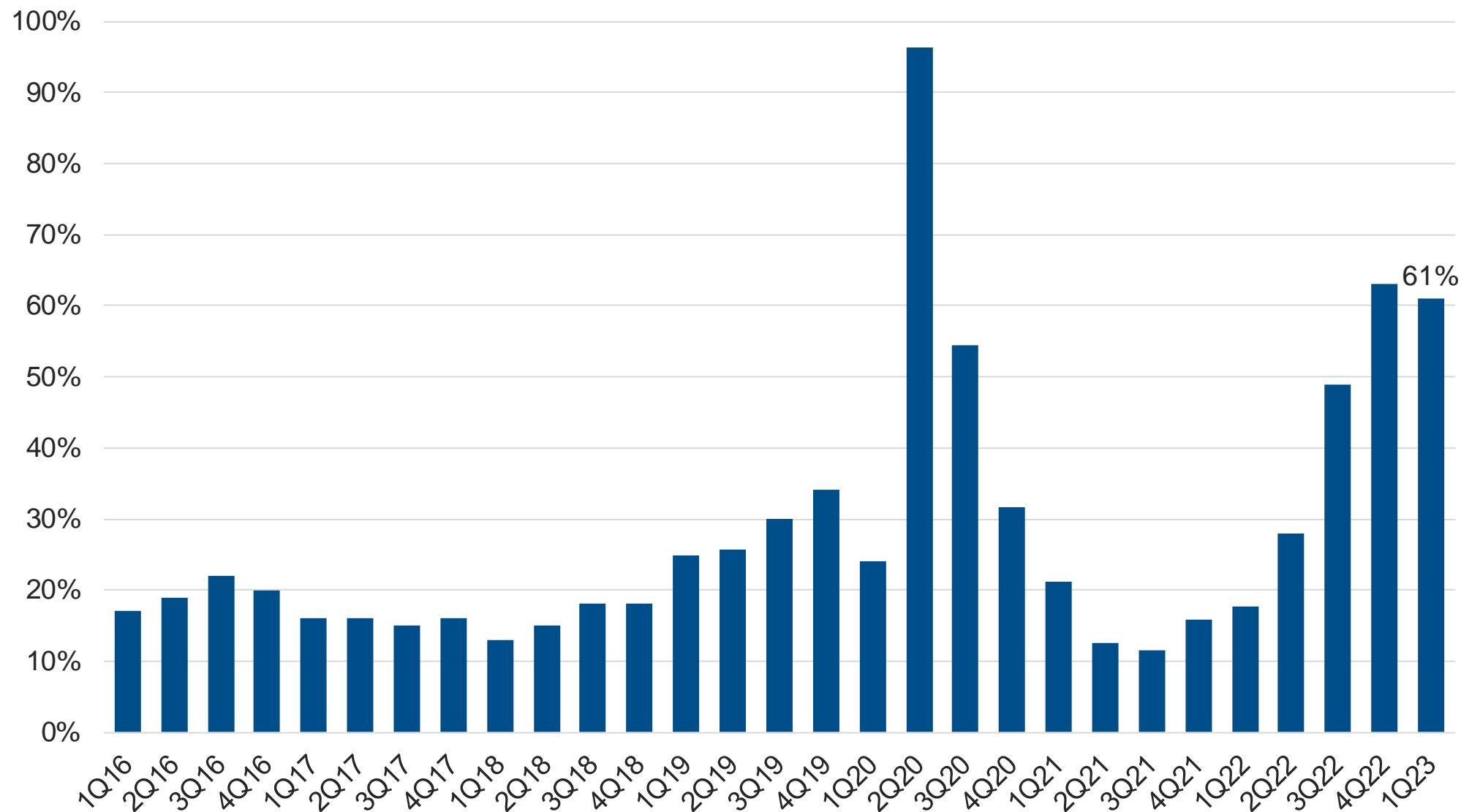
Recession	1969–1970	1973–1975	1980	1981–1983	1990–1991	2001	2008–2009	2020	2022–2024P
Employment	-3%	-4%	-2%	-5%	-3%	-4%	-7%	-14%	-4%
Real GDP	-1%	-2%	-2%	-3%	-1%	0%	-4%	-9%	-2%
Existing sales	1%	-3%	-22%	-18%	-1%	0%	-43%	-1%	-37%
New home sales	-11%	-33%	-35%	-32%	-25%	-2%	-71%	1%	-36%
Existing home prices	4%	11%	10%	-1%	-7%	-3%	-23%	11%	-18%
New home prices	2%	18%	-7%	-8%	-13%	6%	-21%	4%	-30%
Single-family permits	-14%	-43%	-41%	-37%	-29%	-5%	-75%	1%	-38%
Multifamily permits	-12%	-79%	-24%	-25%	-57%	-7%	-73%	-2%	-49%
Severity and Causes	Federal Reserve raising interest rates	Economic stagnation caused by oil crisis and fall of gold standard (Bretton Woods rising inflation system)	Federal Reserve increased interest rates to thwart	Iranian Revolution caused spike in oil prices; Federal Reserve tightening cycle	Federal Reserve raised interest rates to ward off rising inflation	Dot.com boom/bust and September 11 attacks	Subprime mortgage lending and housing speculation; credit market freeze; Lehman bankruptcy	COVID-19 pandemic causes millions of job losses; choppy recovery as nation reopens.	Federal Reserve raised interest rates to combat 40-year-high inflation

Pub: Jan-23

Probability of Recession in the next 12 Months

The odds of a recession in the next 12 months fell to 61% in 1Q23, per economists.

WSJ Recession Probability in the Next 12 Months



Source: Wall Street Journal (Data: 1Q23, updated quarterly†)

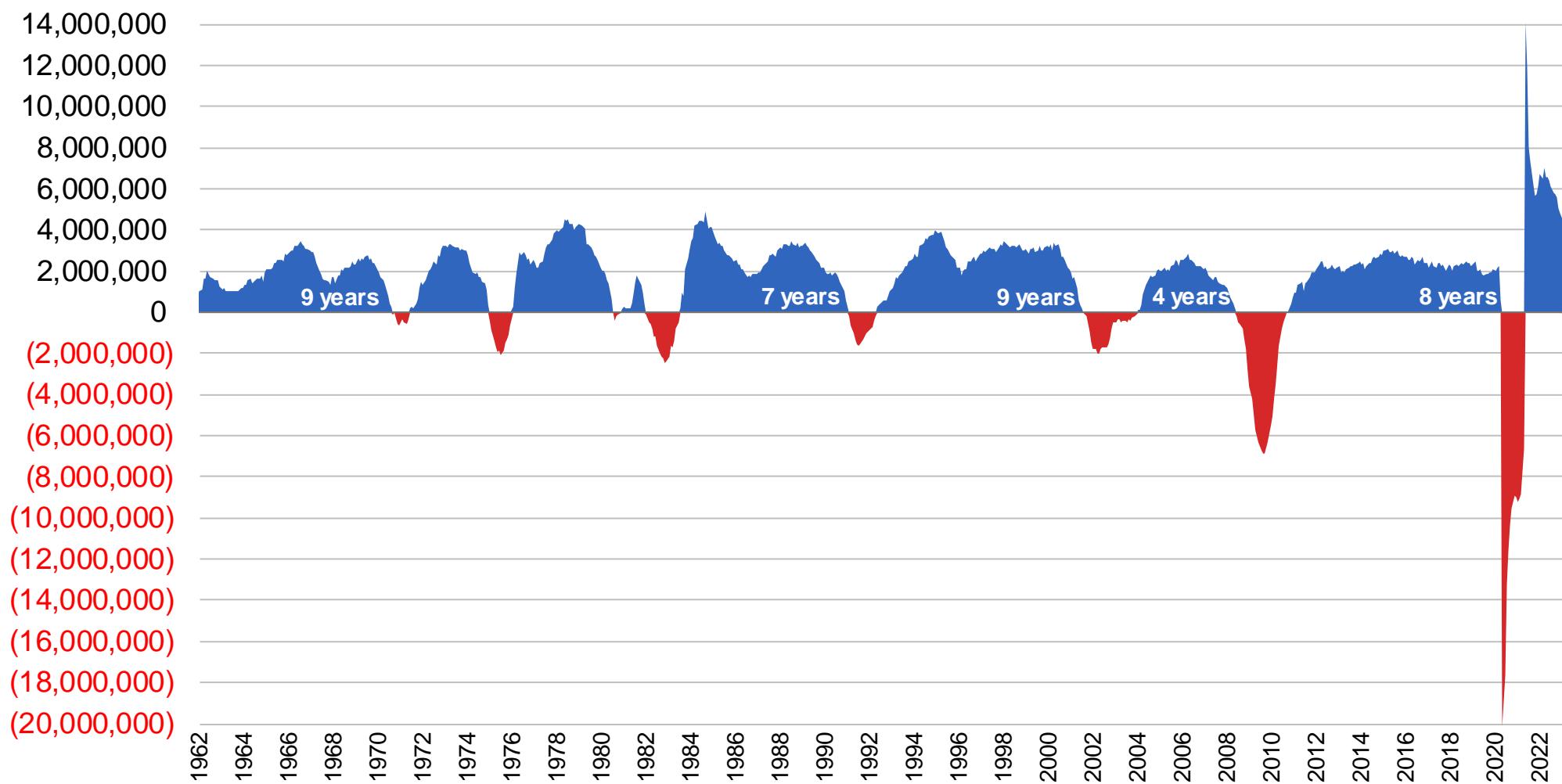
Pub: Jan-23

COVID Ended 8+ Years of Employment Expansion, but Job Growth Has Fully Recovered

Payrolls fell from a peak of 153M to 130M in 2020. All jobs lost in 2020 have been recovered.

Historical Job Growth

- Years of positive YOY job growth



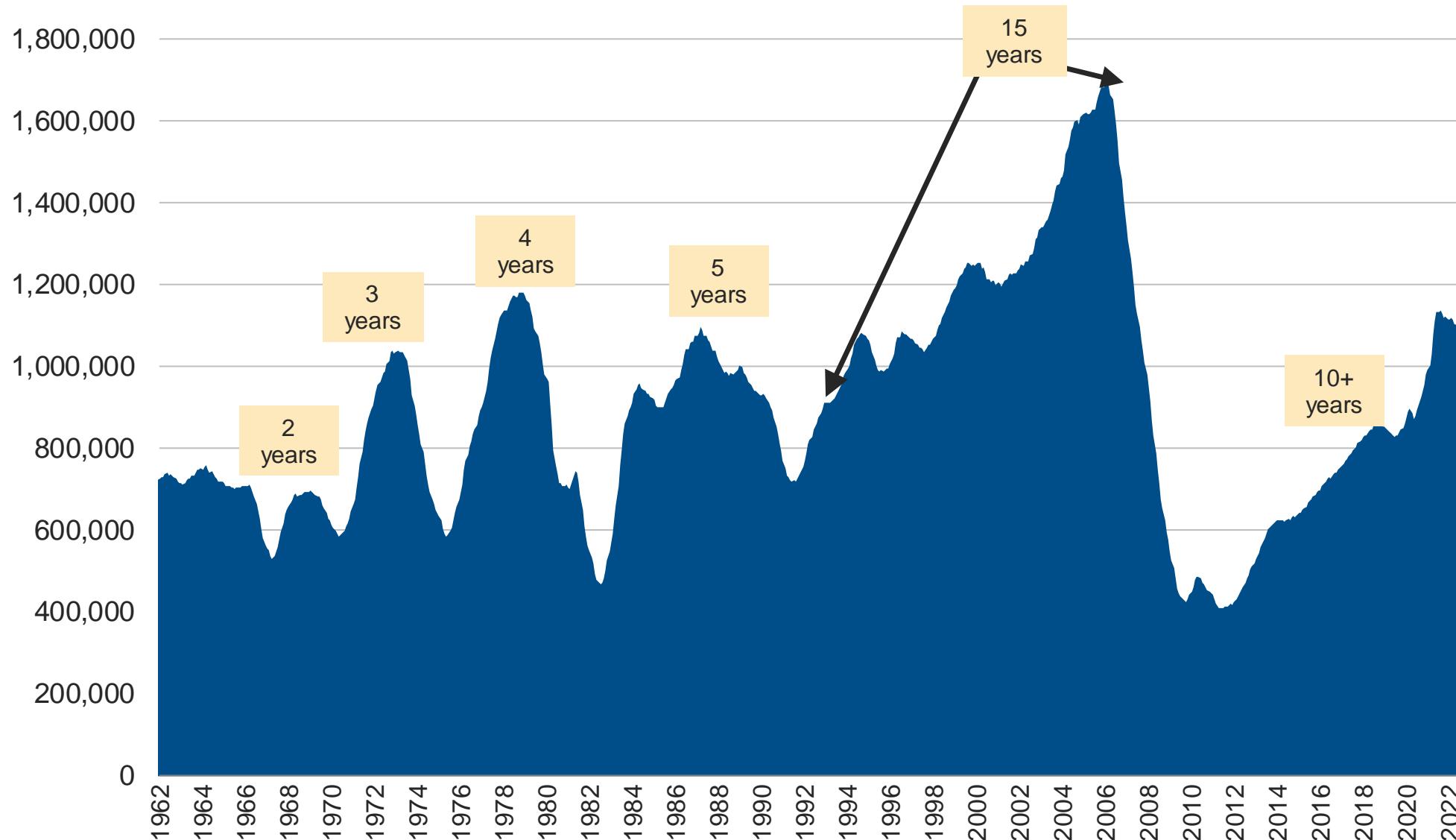
Source: BLS (Data: Dec-22, Pub: Jan-23)

Note: Job growth is the year-over-year change (NSA)

Housing Expansions (as Measured by Single-Family Permit Volumes) Typically Last Two to Five Years; Current Recovery Has Lasted 10+ Years

National Housing Expansion Length: Single-Family Permits

Non-Seasonally adjusted, trailing 12-month total



Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: Sep-22, updated quarterly†)

Pub: Jan-23

Economic Expansion That Ended in February 2020 Was the Longest on Record

Historical Length of US Economic Recovery

Length of expansion cycle in years

12

10

10.7

8

10.0

8.8

7.8

6

6.0

Average recovery = 6.0 years

4

5.0

2

3.5

0

3.3

3.0

2.0

2009

1991

1961

1983

2002

1975

1950

1954

1971

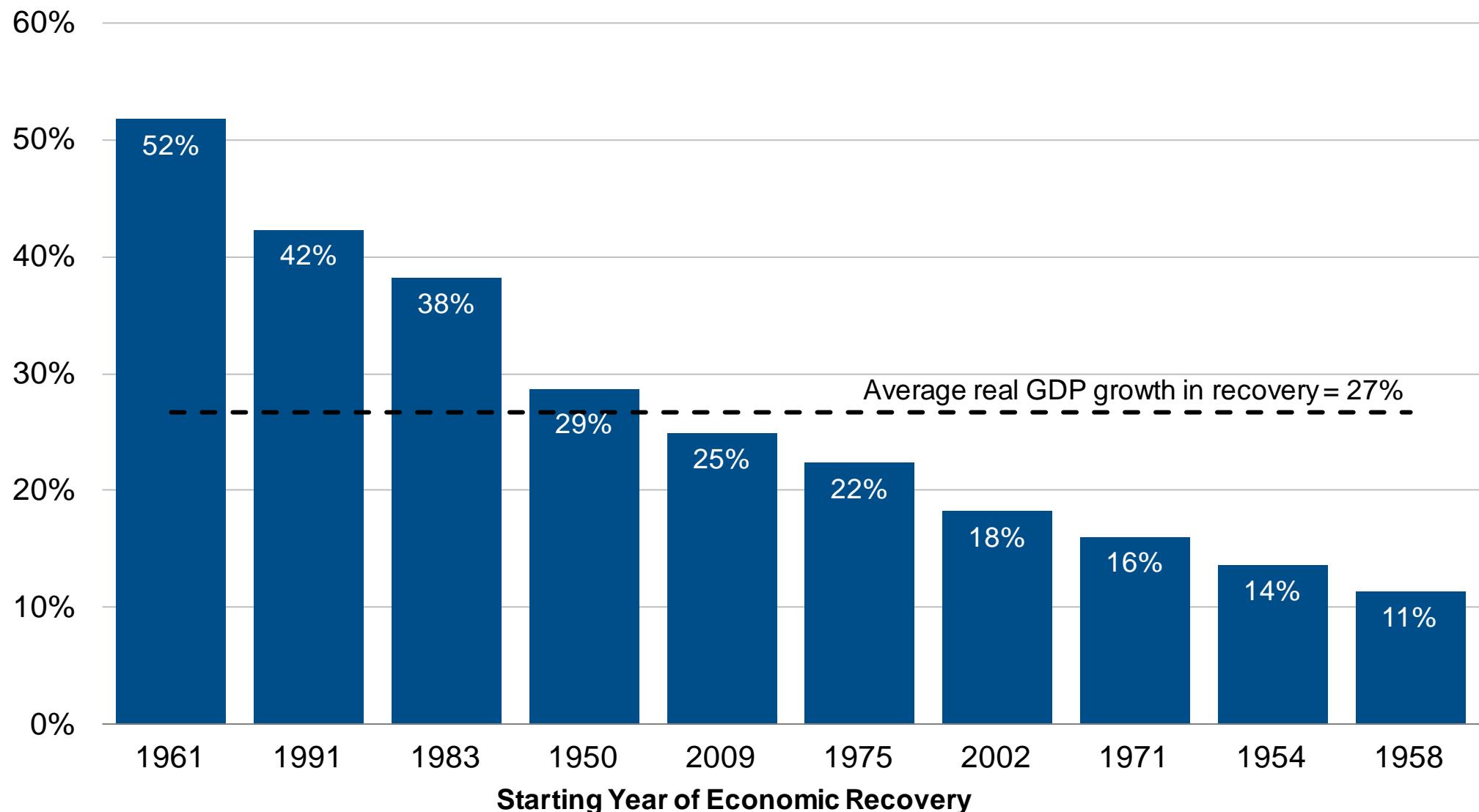
1958

Starting Year of Economic Recovery

Sources: National Bureau of Economic Research; BEA, John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Despite the Long Length of Recovery, GDP Growth in the Recent Expansion Was below Average

Real GDP Growth in US Economic Recovery



Note: We show Real GDP here as inflation varies greatly over the last 60+ years.

Sources: National Bureau of Economic Research; BEA, John Burns Real Estate Consulting, LLC (Data: 1Q20, updated quarterly†)

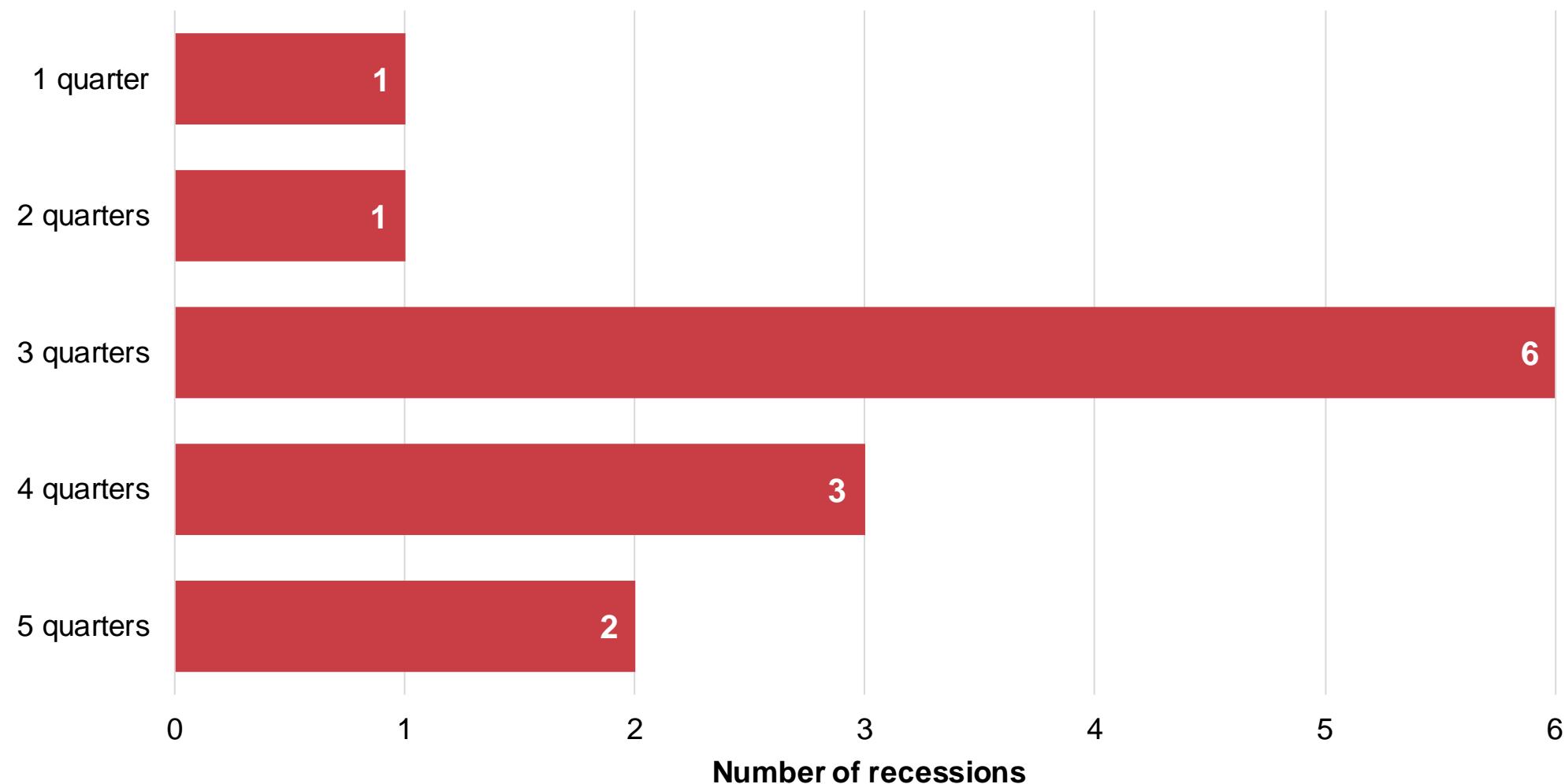
Pub: Jan-23

Historical Length of US Recessions

Since 1937, the average length of a US recession has been 3.3 quarters, or around 10 months. Of the 13 US recessions since 1937, 6 of them lasted 3 quarters (or 9 months).

Length of US Recessions since 1937

■ Length of recession

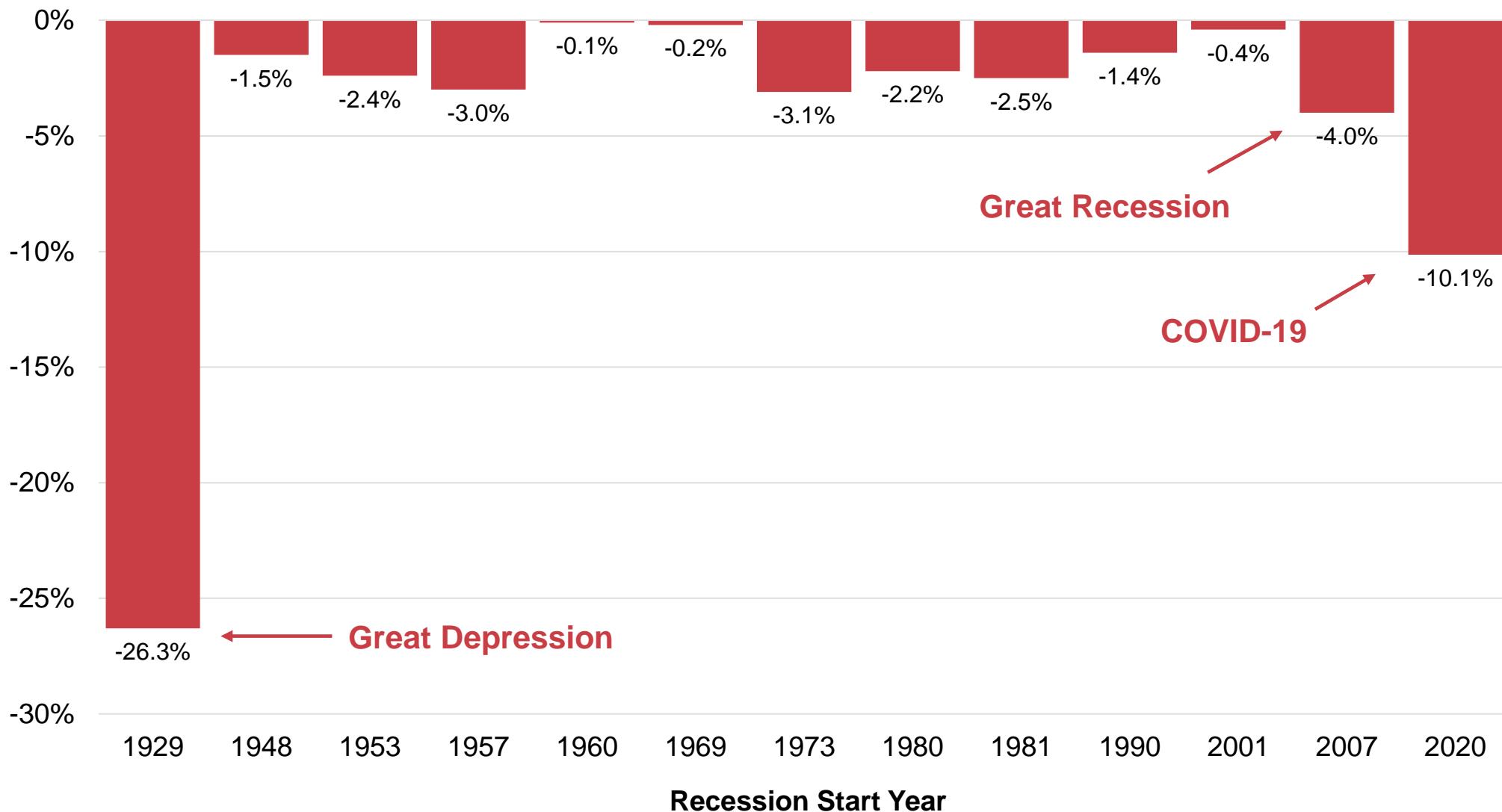


Source: National Bureau of Economic Research; John Burns Real Estate Consulting, LLC (Data: May-20, Pub: Jan-23)

Past Recessions: GDP Decline

GDP fell -10% between 1Q20 and 2Q20, more than double the decline seen during the Great Recession.

GDP Decline from Peak to Trough during Recessions



Source: Bureau of Economic Analysis (Data: 1Q21, Pub: Jan-23)

Speculative Investing—Often Fueled by Debt—Has Preceded 11 of the Last 12 Recessions

Government Post-War Spending Cuts

After running up big deficits/debts



1. **1937–38:** Post-New Deal
2. **1945:** End of WWII
3. **1948–49:** Post-WWII
4. **1953–54:** Post-Korean War
5. **1969–70:** First Vietnam War cutback

Speculative Bubbles

Usually fueled by debt



1. **1929–33:** Consumers borrow to buy stocks
 2. **1957–58:** Asian flu of 1957 killed +1 million worldwide; Consumers amass credit card debts
 3. **1980–82:** Bank loans to developers and Latin America; **oil price spike**
 4. **1990–91:** Junk bonds for leveraged buyouts; real estate speculation fueled by S&L lending; Japanese debt-induced recession
 5. **2001:** Tech stock speculation
 6. **2007–2009:** Housing speculation fueled by subprime
- ✓ = Current condition in today's economy**

Note: *Global recessions as defined by the International Monetary Fund. **We grouped the double-dip recessions. We excluded the small recession in the 1960s. The other recession was 1973-75 caused by oil spikes, removal of US dollar tied to gold, and wage controls. US defense spending cuts contributed to 1990s recession.

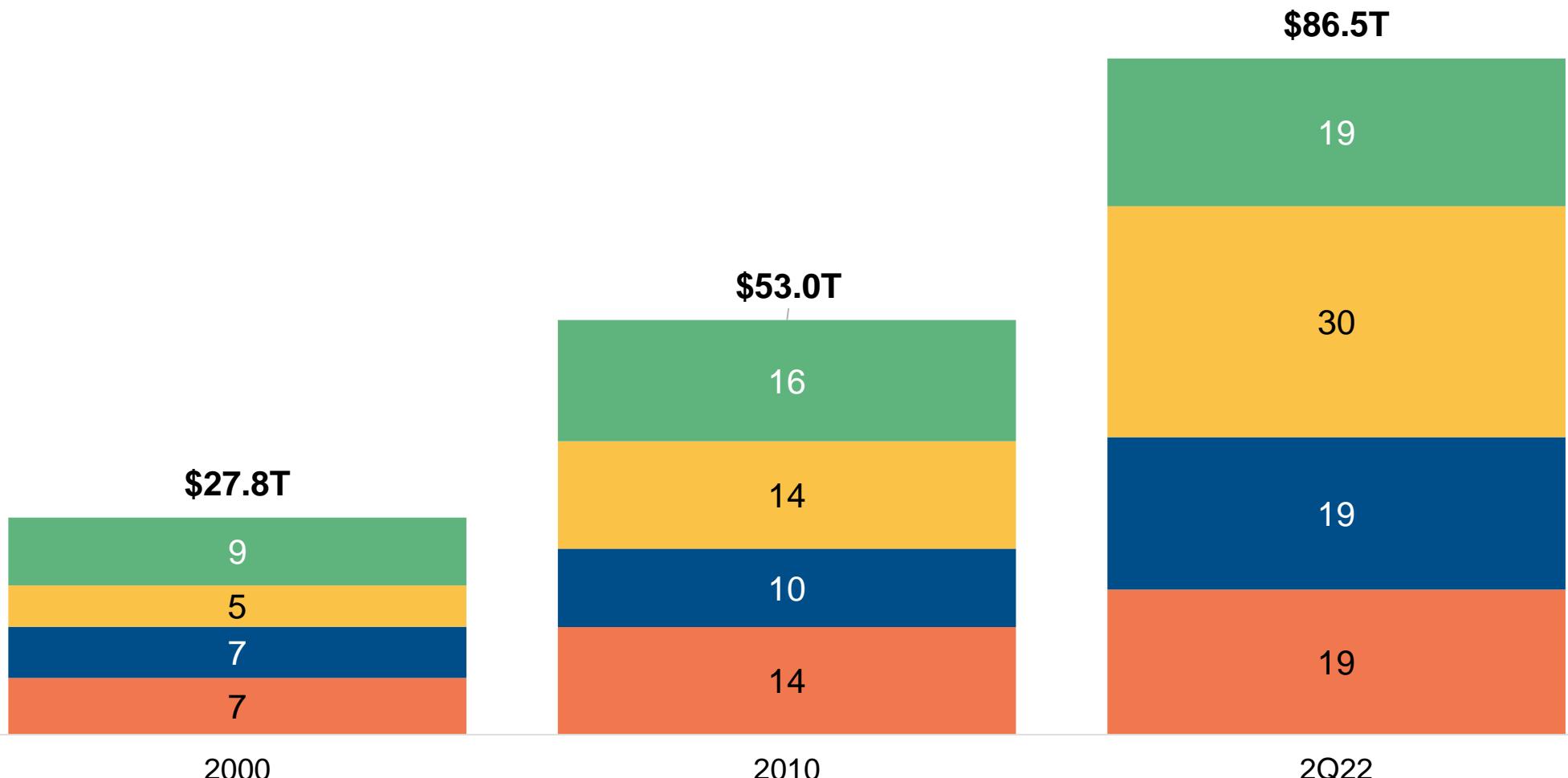
Sources: National Bureau of Economic Research; John Burns Real Estate Consulting, LLC (updated quarterly†)

Pub: Jan-23

Federal Spending Has Driven Total US Debt Outstanding to \$87B

US Stock of Debt Outstanding

\$ trillions ■ Households ■ Corporate ■ Government ■ Financial

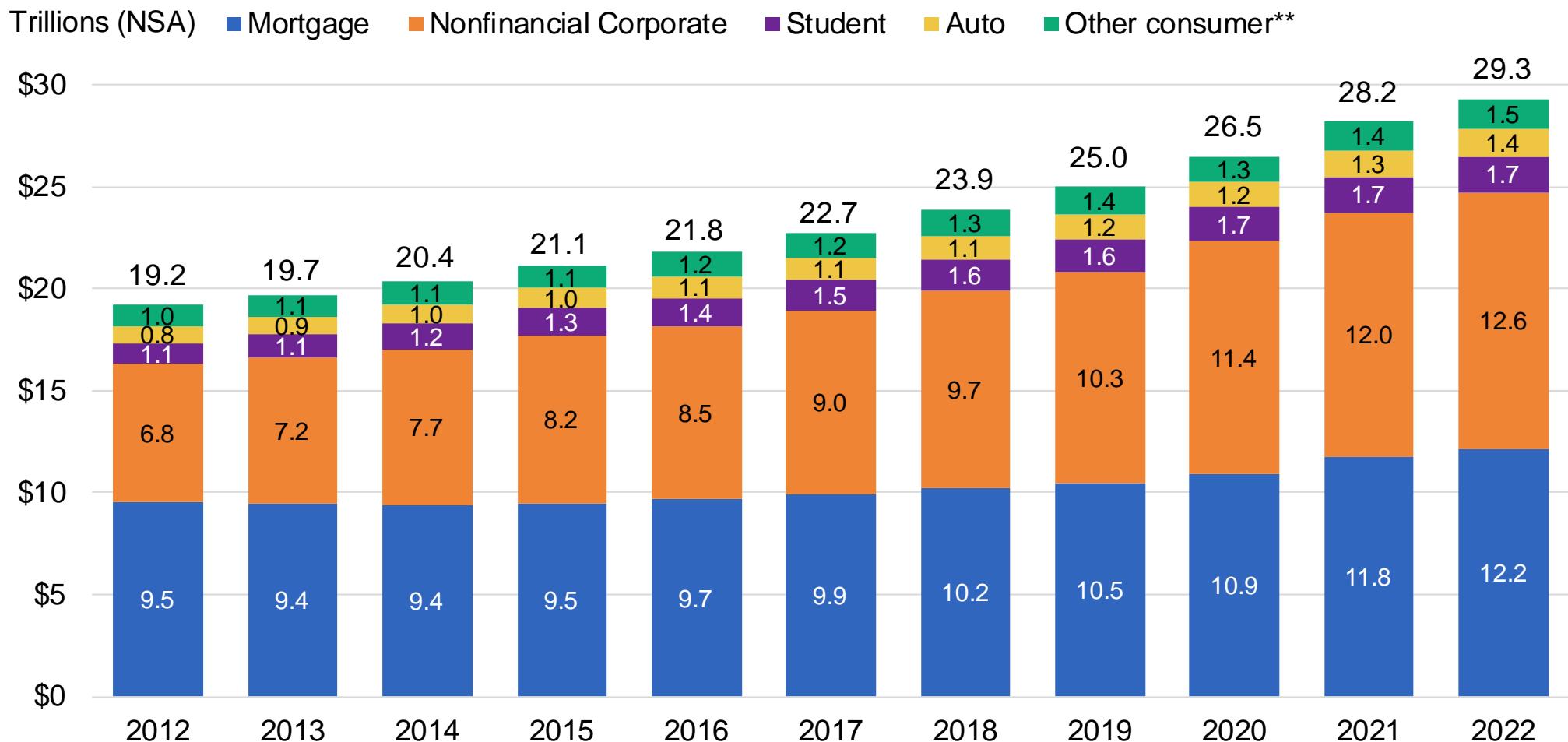


Source: US Federal Reserve (Data: 2Q22, Pub: Jan-23)

US Business and Consumer Debt Has Increased 49% since 2012; We View Debt Buildup as a Hindrance to Long-Term Economic Growth

Credit acts as a stimulus in the near term but inevitably leads to overleverage and rising risk. Since 2012, mortgage debt is up 28% and corporate debt is up 85%. Student debt has nearly doubled.

Changes in American Business and Consumer Debt



*Nonfinancial corporate debt = Debt securities (Bonds) + Loans; The following types of financial companies are excluded from the nonfinancial corporate total: US chartered depository institutions, foreign banking offices in the US, GSEs, Agency- and GSE-backed mortgage pools, ABS issuers, REITs, Broker Dealers, funding companies, credit unions, property-casualty and life insurance companies.

Source: Federal Reserve, John Burns Real Estate Consulting, LLC (Data: 2Q22, updated quarterly†)

**Includes credit card and other consumer debt

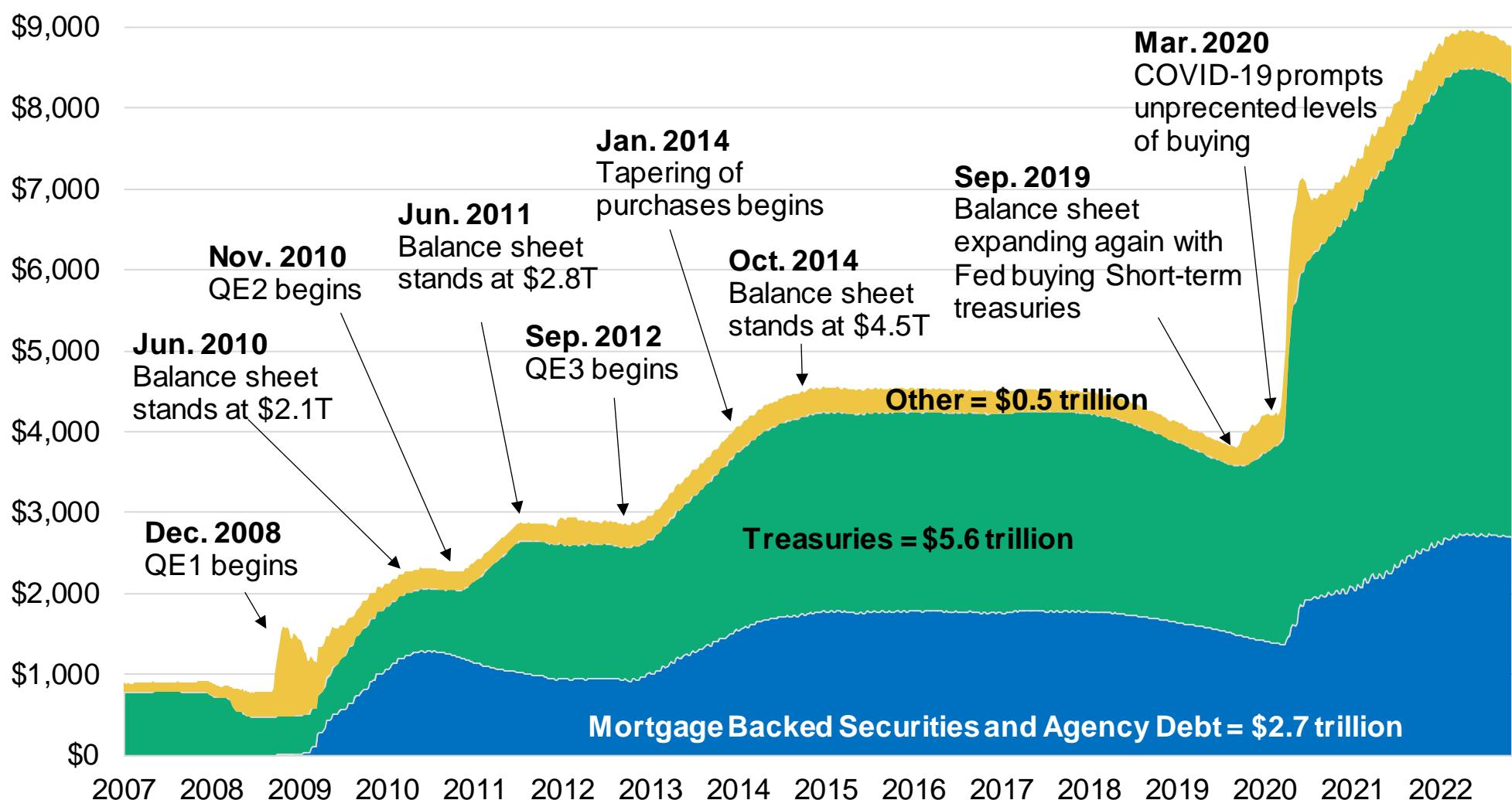
Pub: Jan-23

Federal Reserve Balance Sheet

The Federal Reserve is starting to shrink its balance sheet, including some of the \$2.7 trillion worth of MBS and agency debt on its balance sheet.

Federal Reserve Assets

Billions



Sources: Federal Reserve Board; John Burns Real Estate Consulting, LLC (Data: Oct-22, updated quarterly†)

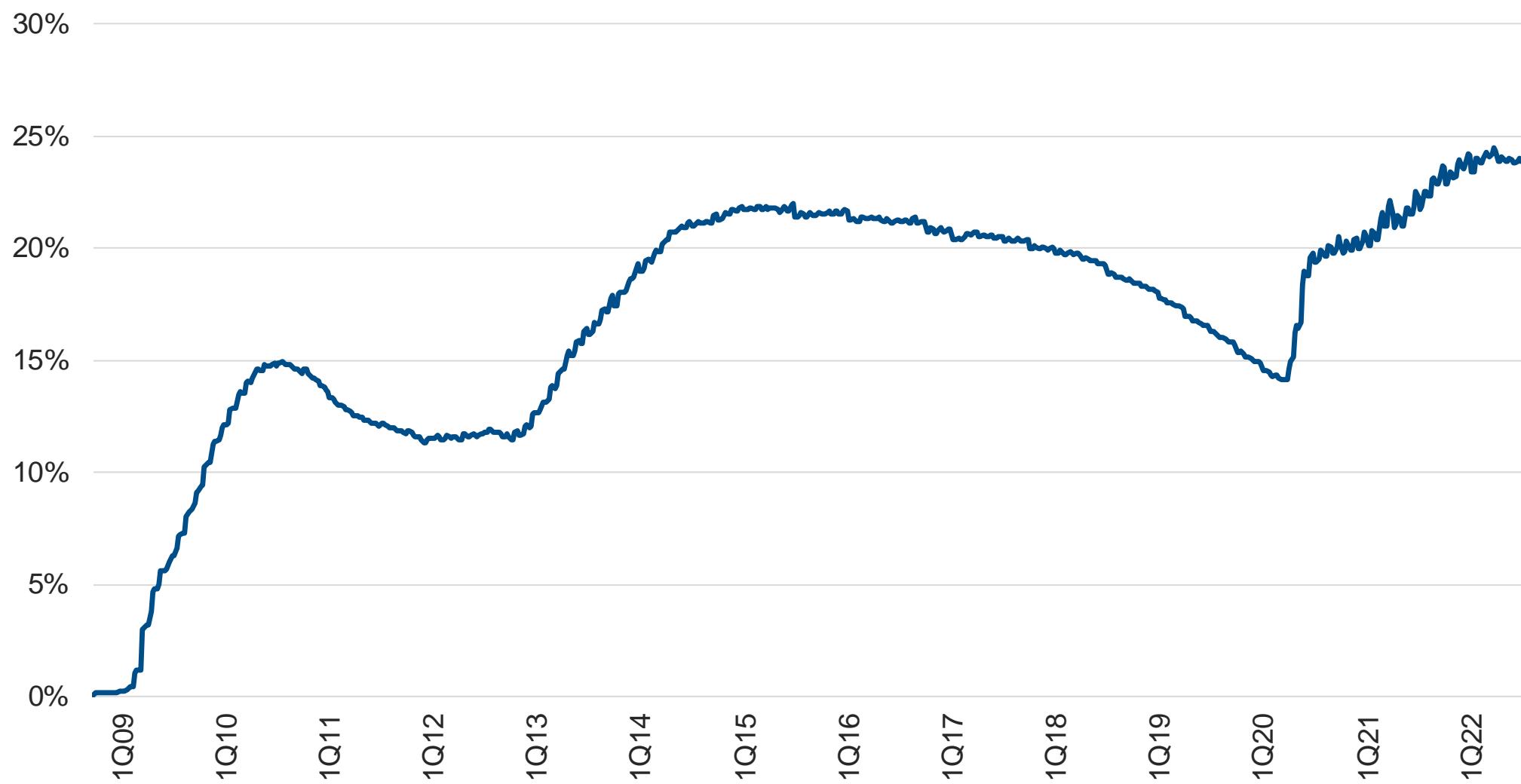
Pub: Jan-23

Federal Owned Mortgage Debt

The Federal Reserve owns 24% (2.7T) of the \$12T of outstanding consumer mortgage debt. This should start falling in coming quarters as the Fed shrinks its balance sheet.

Share of Consumer Mortgage Debt Owned by the Federal Reserve

— Fed-owned mortgage debt = 24%



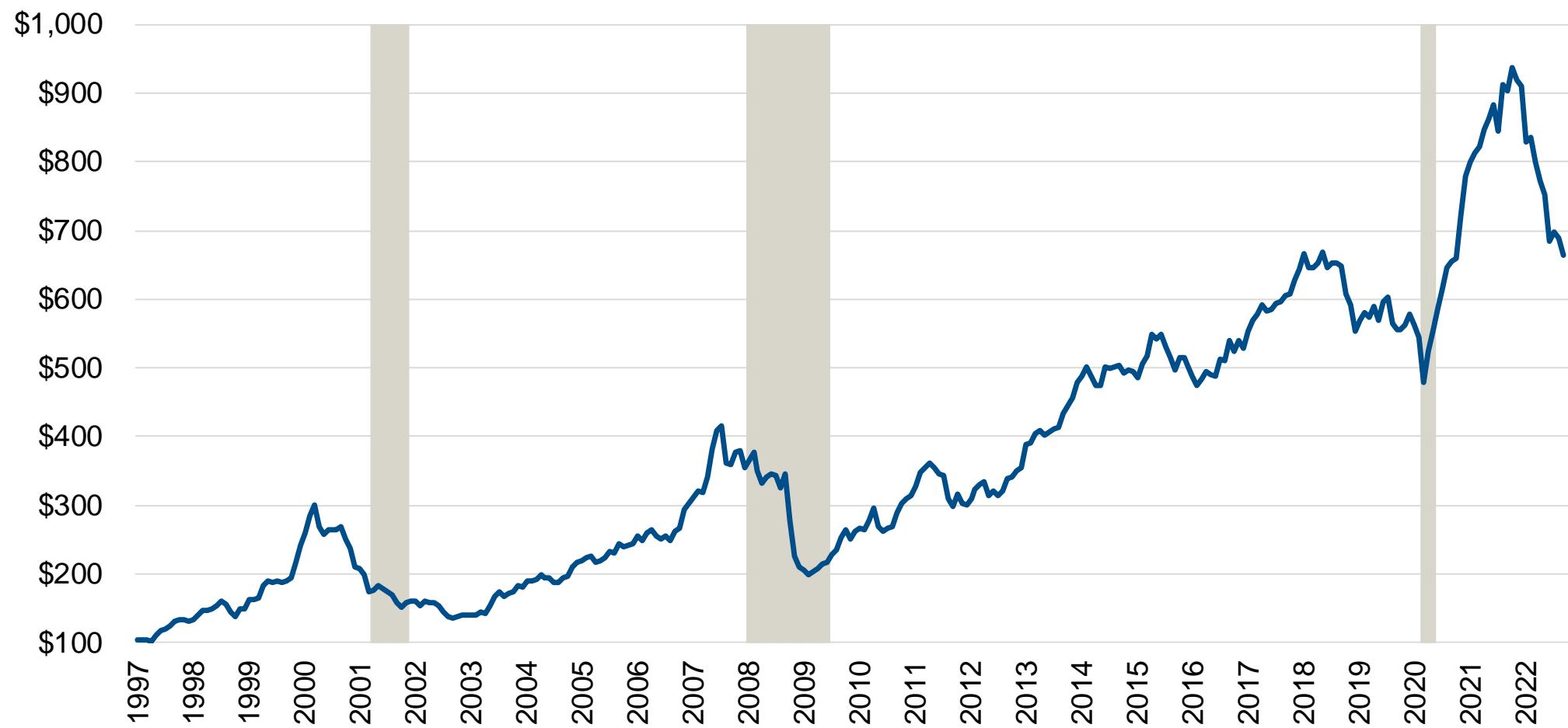
Sources: Federal Reserve Board; NY Federal Reserve Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: 2Q22, updated quarterly†)

New York Stock Exchange Margin Debt Falling Sharply after Peaking in 2021

Margin debt is a way for investors to purchase stock without covering the entire cost up front. The rapid rise in margin debt on the NYSE corresponded with stock market prices at record highs, signaling that riskier investor behavior may have been supporting stock prices.

NYSE Margin Debt

Billions



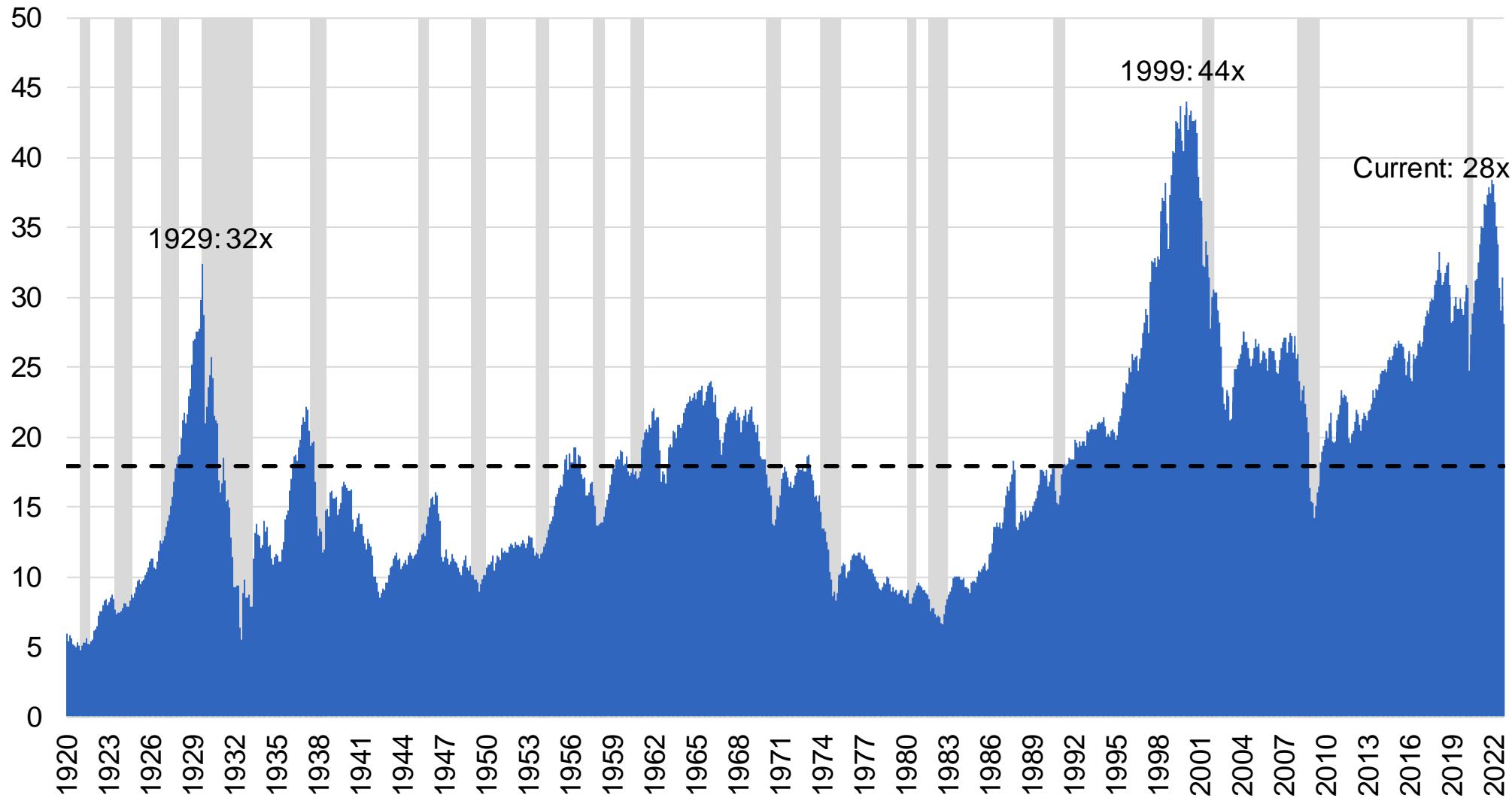
Sources: FINRA; NYSE; John Burns Real Estate Consulting, LLC (Data: Sep-22, updated quarterly†)

Pub: Jan-23

Stock Prices Are High at 28x Earnings

S&P 500 Price-to-Earnings Ratio

— 10-year Shiller cyclically adjusted price-to-earnings (CAPE) ratio - - - Historical average* = 18



Note: The Cyclically Adjusted Price to Earnings Ratio, also known as CAPE or the Shiller PE Ratio, is a valuation measure which adjusts past company earnings by inflation to present a snapshot of stock market affordability at a given point in time. CAPE uses the last 10 years of earnings to calculate the ratio. The ratio may be artificially inflated due to weakened earnings in the last recession. The Tax Cuts and Jobs Act, effective 2018-2025, is being priced into the forward earnings of S&P 500 companies while not being captured in the historical earnings. This mismatch is likely skewing the ratio.

*Historical average: 1920 through current

Source: DQYDJ.com (Data: Sep-22, updated quarterly†)

Pub: Jan-23

Data at a glance

The New and Resale Home Markets Are Deteriorating Faster Than the Broader Economy

Economic Snapshot

◆ One year ago

Poor

Average

Strong



Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Economic Growth

Wages rose 6.1% YOY on average but are still trailing inflation.

Economic Growth Indicators								
Spending Indicators	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Real GDP (annualized)	Average	3Q22	3.2%	Increasing	-29.9%	3.2%	35.3%	1947
Retail and Food Service Sales	Strong	Nov-22	6.5%	Decreasing	-20.2%	4.9%	53.7%	1993
Personal Income Growth, nominal	Weak	Nov-22	4.8%	Increasing	-5.1%	6.6%	16.1%	1947
Personal Income Excluding Government Transfers, real	Poor	Nov-22	0.0%	Decreasing	-6.3%	3.0%	8.3%	1960
Average Wage Growth	Excellent	Dec-22	6.1%	Decreasing	1.6%	3.7%	6.7%	1997
US Hourly Earnings Growth	Excellent	Dec-22	4.7%	Decreasing	1.8%	2.9%	6.6%	2007
Personal Savings Rate (6 Month Average)	Poor	Nov-22	2.6%	Decreasing	2.6%	8.9%	21.4%	1959

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Economic Growth

Job growth is steady and voluntary job quits remain high at 4.2 million. A high number of quits indicate confidence in the labor market.

Economic Growth Indicators

Demand Indicators	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Nonfarm Payroll Change (YOY), NSA	Excellent	Dec-22	4,419,000	Decreasing	-20,168,000	1,462,273	14,105,000	1940
Nonfarm Payroll Rate, NSA	Strong	Dec-22	2.9%	Decreasing	-13.4%	2.0%	16.4%	1940
Total Payroll Monthly Emp. Growth (SA)	Strong	Dec-22	223,000	Decreasing	-20,493,000	122,959	4,505,000	1939
Private Sector Payroll Monthly Emp. Growth (SA)	Strong	Dec-22	220,000	Increasing	-19,572,000	104,635	4,510,000	1939
Gov. Sector Payroll Monthly Emp. Growth (SA)	Weak	Dec-22	3,000	Decreasing	-921,000	18,325	452,000	1939
US Job Openings	Excellent	Nov-22	10,458,000	Decreasing	2,232,000	5,090,447	11,855,000	2000
US Job Quits	Excellent	Nov-22	4,173,000	Increasing	1,555,000	2,772,045	4,510,000	2000
Total Population Growth	Poor	Dec-22	0.3%	Decreasing	0.1%	1.0%	2.2%	1960
U.S. Employment Growth-to-Permit Ratio	Excellent	Nov-22	2.9	Decreasing	-14.3	1.0	8.9	1959
U.S. Total Employment-to-Households Ratio	Strong	Nov-22	1.2	Increasing	1.0	1.2	1.3	1967
Total Households Growth Rate	Weak	3Q22	1.0%	Decreasing	-0.4%	1.4%	4.1%	1967
Owned Households		3Q22	84,732,000	Increasing	0	60,913,279	85,987,000	1967
- Growth Rate	Strong	3Q22	2.0%	Increasing	-4.0%	1.4%	9.6%	1967
Rented Households		3Q22	43,575,000	Decreasing	0	32,090,271	44,230,000	1967
- Growth Rate	Poor	3Q22	-1.0%	Decreasing	-7.2%	1.3%	7.3%	1967
Growth in Residential Electric Customers	Excellent	Oct-22	1,493,038	Increasing	170,907	1,115,048	1,997,071	1991

Overall Grade based on a percentage rank against history

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Economic Growth

CPI (inflation) rose 7.1% YOY (3-month average).

Economic Growth Indicators								
Efficiency Indicators	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Productivity	Average	2021	1.9%	Decreasing	-1.6%	1.9%	4.5%	1967
Capacity Utilization	Average	Nov-22	79.7%	Decreasing	64.5%	80.0%	89.4%	1967
Malaise Indicators								
Unemployment Rate	Excellent	Dec-22	3.5%	Decreasing	2.5%	5.7%	14.7%	1948
Average Length of Unemployment (Weeks)	Weak	Dec-22	19.5	Decreasing	7.1	16.4	40.7	1948
Median Length of Unemployment (Weeks)	Weak	Dec-22	8.9	Increasing	1.7	8.9	25.2	1967
Labor Force Unemployed (27 weeks & over)	Strong	Dec-22	0.6%	Decreasing	0.1%	1.0%	4.4%	1948
U-6 Unemployment Rate	Excellent	Dec-22	6.5%	Decreasing	6.5%	10.3%	22.9%	1994
U.S. Initial Jobless Claims	Excellent	Dec-22	206,000	Decreasing	162,000	370,796	5,946,000	1967
Civilians Not in the Labor Force but Who Currently Want a Job	Average	Dec-22	5,639,333	Decreasing	4,396,750	5,488,469	7,565,833	1994
Labor Force Participation Rate Ages 20-64	Average	Nov-22	77.3%	Decreasing	0.0%	72.8%	80.1%	1979
Inflation Indicators								
Core PCE	Poor	Nov-22	4.7%	Decreasing	0.6%	3.2%	10.2%	1960
Core CPI	Poor	Dec-22	6.0%	Decreasing	0.7%	3.7%	13.3%	1958
Full CPI	Poor	Dec-22	7.1%	Decreasing	-14.9%	3.3%	22.4%	1914

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Leading Indicators

Leading indicators of the economy are mostly weakening.

Leading Economic Indicators								
Early Indicator Indices	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
ECRI Leading Index	Poor	Dec-22	-7.3%	Increasing	-38.9%	1.8%	26.4%	1980
Financial Stress Index	Average	Dec-22	-0.1	Decreasing	-1.2	0.0	5.7	1990
US Corporate Credit Spreads	Weak	Dec-22	3.4%	Increasing	0.0%	2.3%	13.1%	1980
Early Job Growth Indicators								
Manpower Net Employment Outlook	Excellent	1Q23	29.0%	Decreasing	-2.0%	16.1%	48.0%	1989
Planned Job Cuts (YOY % Change)	Poor	Dec-22	172.0%	Increasing	-94.5%	21.8%	780.9%	2000
U.S. Average Hours Worked per Week	Weak	Dec-22	33.8	Decreasing	33.0	34.9	38.8	1964
Temporary Employed Workers (YOY % Change)	Weak	Dec-22	-1.1%	Decreasing	-34.2%	3.7%	43.3%	1991
U.S. Vistage CEO Confidence Index	Poor	4Q22	75.3	Increasing	48.7	93.9	115.6	2003
Chief Executive Magazine CEO Confidence Index	Weak	Dec-22	1.1	Decreasing	0.3	1.1	1.5	2002
Small Business Optimism Index	Poor	Dec-22	91.0	Decreasing	82.7	98.2	108.2	1974
Early Spending Indicators								
Capital Goods New Orders	Average	Nov-22	7.7%	Decreasing	-27.8%	5.8%	56.0%	1969
Architecture Billings Index	Excellent	Nov-22	46.6	Decreasing	29.5	50.8	62.4	1995
ISM Manufacturing Index (6mo Avg)	Weak	Dec-22	50.7	Decreasing	33.1	53.0	73.5	1948
ISM Non-Manufacturing Business Activity Index (6mo Avg)	Average	Dec-22	55.1	Decreasing	41.0	55.0	64.4	1997
Crude Oil Price (Current \$)	Strong	Dec-22	\$77	Decreasing	\$19	\$67	\$186	1983
Tougher Standards on Business Loans - Large Firms	Poor	4Q22	39.1%	Increasing	-32.4%	6.7%	83.6%	1990
Tougher Standards on Business Loans - Small Firms	Poor	4Q22	31.8%	Increasing	-25.7%	6.6%	74.5%	1990

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Leading Indicators

The 10/2-year treasury yield spread is inverted. A spread below 0 typically occurs before a recession, since investors are pricing in more risk in the short-term than in the long term.

Leading Economic Indicators									
Stock and Bond Market Indicators	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year	
10-year Treasury		Dec-22	3.9%	Increasing	0.5%	5.9%	15.8%	1962	
2-year Treasury		Dec-22	4.4%	Increasing	0.1%	5.0%	16.7%	1976	
Interest Rate Spread	Poor	Dec-22	-0.6%	Increasing	-2.0%	0.9%	2.8%	1976	
S&P 500 (YOY % Change)	Poor	Dec-22	-19.4%	Decreasing	-44.8%	8.4%	53.7%	1961	
ITB ETF (YOY % Change)	Poor	Dec-22	-26.9%	Decreasing	-59.8%	8.1%	134.6%	2007	
S&P Super Homebuilding (YOY % Change)	Poor	Dec-22	-24.6%	Decreasing	-58.5%	14.6%	149.6%	1995	

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Affordability

Mortgage rates fell to 6.4% in December. Affordability is worse now than any time since 1985 (furthest back that we have history for) from a housing cost-to-income standpoint.

Affordability									
Home Payment Ratios		Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Burns Affordability Index		Poor	Dec-22	42.8%	Decreasing	24.0%	30.2%	44.9%	1985
Burns Under/Overpriced Market Index		Very Overvalued	Dec-22	42.7%	Decreasing	-20.0%	0.8%	49.7%	1985
Monthly Homeownership Costs Minus Monthly Rents			Nov-22	\$1,324	Increasing	\$283	\$555	\$1,567	2000
Mortgage Rates, Fixed		Strong	Dec-22	6.4%	Decreasing	2.7%	7.8%	18.4%	1971
Mortgage Rates, Adjustable		Poor	Dec-22	5.6%	Increasing	2.4%	3.9%	6.4%	2005
Fixed/Adjustable Spread		Poor	Oct-22	1.5%	Increasing	-0.3%	0.7%	1.5%	2005
Fixed/10-year Spread		Poor	Dec-22	2.6%	Decreasing	0.7%	1.7%	3.9%	1971
Fed Funds Rate		Average	Dec-22	4.1%	Increasing	0.1%	4.6%	19.1%	1954
Home Equity									
Percentage of Mortgages Underwater		Excellent	3Q22	1.9%	Increasing	1.8%	11.3%	32.2%	2009

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Consumer Behavior

Consumer sentiment remains near levels during the Global Financial Crisis. The Misery Index, which is the sum of employment and inflation, fell to 10.8 in December.

Consumer Behavior									
Confidence	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year	
Consumer Confidence SA	Strong	Dec-22	108.3	Increasing	25.3	95.6	144.7	1967	
Consumer Sentiment Index	Poor	Dec-22	59.7	Increasing	50.0	85.4	112.0	1978	
Misery Index (Unemployment + Inflation)	Weak	Dec-22	10.8	Decreasing	3.0	9.3	22.0	1948	
Debt									
Revolving Cons. Credit per Household (inflation adjusted)	Average	Nov-22	\$9,131	Increasing	\$189	\$6,567	\$12,312	1968	
Consumer Credit Growth Rate	Weak	Sep-22	5.4%	Decreasing	-13.7%	8.2%	108.1%	1969	
Financial Obligation Ratio	Excellent	3Q22	14.5%	Increasing	12.6%	16.1%	18.0%	1980	

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Existing Home Market

Price appreciation is moderating quickly. Resale home prices rose 4% YOY as of December.

Existing Home Market

Home Price Appreciation	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Resale Appreciation - Burns Home Value Index YOY % Change)	Average	Dec-22	4.3%	Decreasing	-12.1%	4.7%	20.2%	1982
S&P/Case-Shiller Tiered Home Price Indices								
High-Tier Home Price Index	Excellent	Oct-22	9.2%	Decreasing	-15.6%	4.7%	25.0%	1988
Mid-Tier Home Price Index	Strong	Oct-22	8.5%	Decreasing	-19.2%	5.1%	22.1%	1988
Low-Tier Home Price Index	Strong	Oct-22	9.8%	Decreasing	-27.7%	6.1%	22.2%	1988
NAR Single-Family Median Home Price		Nov-22	\$376,700	Decreasing	\$19,700	\$133,811	\$420,900	1968

Existing Home Market

Sales Volumes	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Annual Sales Volume, SA	Average	Nov-22	4,090,000	Decreasing	1,370,000	4,064,613	7,260,000	1968
Existing Home Inventory for Sale, NSA	Excellent	Nov-22	1,196,666	Decreasing	860,000	2,303,574	3,940,000	1982
Months Supply of Unsold Homes, SA	Excellent	Nov-22	3.3	No Change	1.6	6.5	13.8	1982
Mrtg Bankers Purchase Index SA	Poor	Dec-22	160.2	Decreasing	75.0	252.1	495.6	1989
Pending Home Sales Index, SA	Poor	Nov-22	73.9	Decreasing	70.0	104.0	130.3	2001
Homeownership Rate	Strong	3Q22	66.0%	Increasing	62.9%	65.4%	69.2%	1967

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

Housing Supply

Housing supply indicators are mostly positive, though inventory is rising quickly. Note that high numbers here are considered “poor.”

Housing Supply									
Single-Family		Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Single-Family Permits, SA		Average	Nov-22	781,000	Decreasing	337,000	892,523	1,798,000	1960
Single-Family Starts, SA		Weak	Nov-22	828,000	Decreasing	353,000	1,015,982	1,823,000	1959
Homeowner Vacancy Rate		Excellent	3Q22	0.9%	Increasing	0.0%	1.6%	2.9%	1967
Multifamily		Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Multifamily Permits, SA		Strong	Nov-22	570,000	Decreasing	106,000	476,489	1,385,000	1960
Multifamily Starts, SA		Excellent	Nov-22	599,000	Increasing	58,000	417,657	1,144,000	1959
Manufactured Housing Placements		Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Manufactured Housing Placements		Strong	Nov-22	98,000	Decreasing	40,000	180,950	390,000	1980
Totals		Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Total Starts, SA		Average	Nov-22	1,427,000	Decreasing	478,000	1,433,639	2,494,000	1959
Total Permits, SA		Average	Nov-22	1,351,000	Decreasing	513,000	1,369,012	2,419,000	1960
Total Housing Stock			Sep-22	143,648,486	No Change	63,509,188	106,872,317	143,648,486	1966
- Growth Rate		Strong	Sep-22	1.0%	No Change	0.0%	1.5%	3.9%	1967
New Housing Units Completed, SA		Weak	Nov-22	1,490,000	Increasing	520,000	1,395,809	2,299,000	1968
Total New Homes Completed and Shipped		Average	Nov-22	1,588,000	Increasing	564,000	1,507,027	2,380,000	1980
U.S. Employment Growth-to-New Homes Completed and Shipped Ratio		Poor	Nov-22	3.0	Decreasing	-15.9	0.9	9.3	1980

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

New Home Market

New home market indicators are weakening. Price appreciation is moderating on a YOY basis, and prices are now falling MOM. Sales are slowing, and inventory is rising.

New Home Market									
Sales	Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year	
NAHB Housing Market Index	Poor	Dec-22	31	Decreasing	8	52	90	1985	
New Sales Volume, SA	Average	Nov-22	640,000	Increasing	270,000	657,262	1,389,000	1964	
New Home Inventory for Sale, NSA	Poor	Nov-22	465,000	Decreasing	142,000	312,569	570,000	1963	
Months Supply of Unsold New Homes, SA	Poor	Nov-22	9.3	Increasing	3.4	6.1	11.6	1963	
Months of Homes Completed, SA	Strong	Nov-22	1.2	Increasing	0.5	1.8	5.6	1973	
Months of Homes Under Const., SA	Poor	Nov-22	6.1	Decreasing	2.1	3.4	6.6	1973	
Months of Homes Not Started, SA	Excellent	Nov-22	2.0	Increasing	0.5	1.0	2.0	1973	
Home Price Appreciation		Grade	Period	Statistic	Direction	Min	Avg	Max	1st Year
Median Price, NSA	Excellent	Nov-22	\$471,000	Increasing	\$17,700	\$146,820	\$471,000	1963	
Annual Appreciation Rate		Nov-22	11.2%	Increasing	-12.1%	5.8%	22.4%	1964	

Overall Grade based on a percentage rank against history

SA = seasonally adjusted annual rate; NSA = not seasonally adjusted

** Direction is in comparison to the most recent data for the prior month's statistic. A positive number that says "Decreasing" means that the number was more "positive" last month, and vice versa. Due to revisions, prior month's data may change. As a result, this month's direction indicated may not coincide with the statistics reported in the prior month.

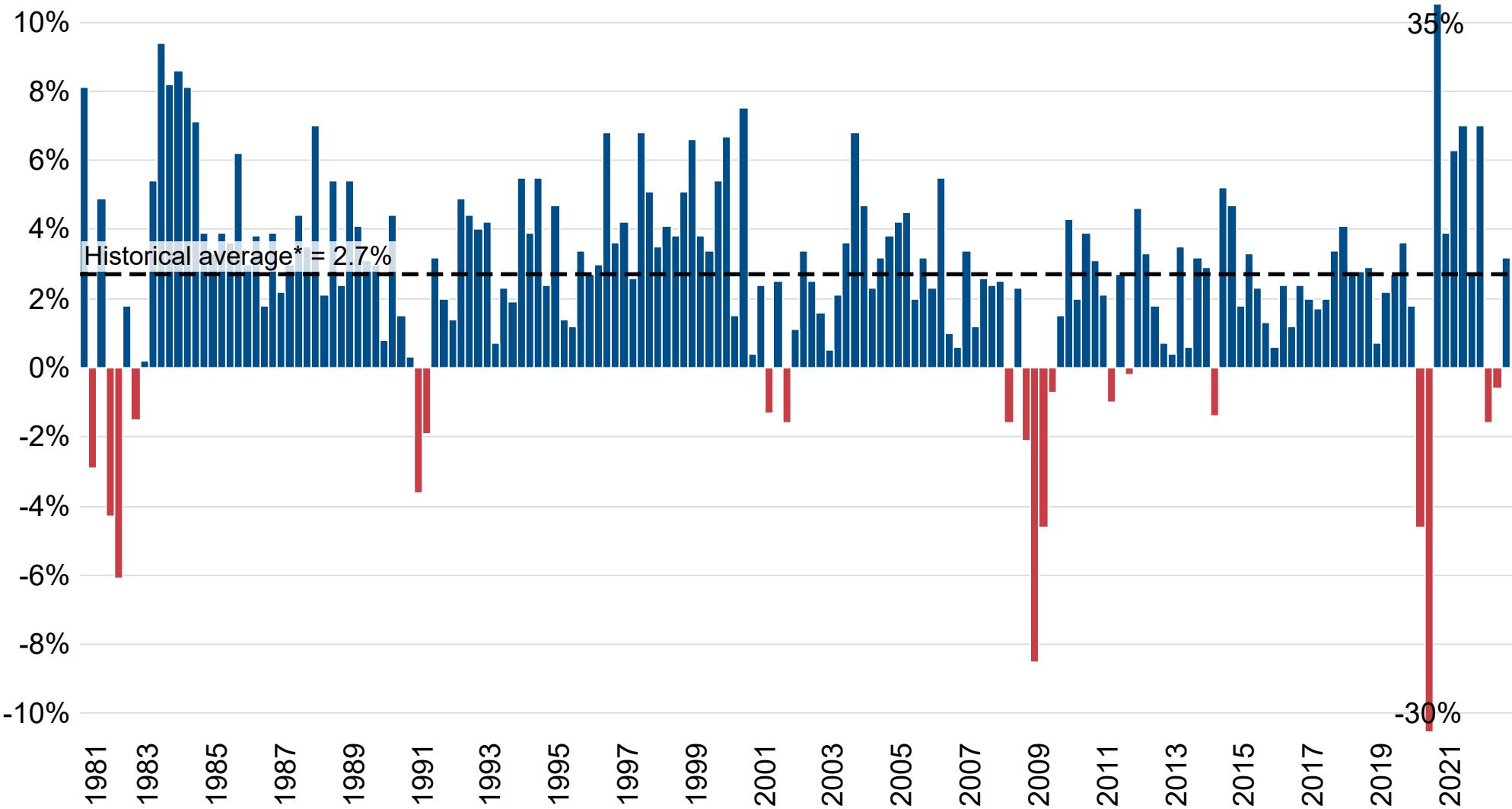
Economic growth indicators

Real GDP

Real GDP rose 3.2% in 3Q22 on an annualized basis, above the 2.7% historical average.

Real GDP

Seasonally adjusted annualized rate QOQ % change



Note: Due to the impact of COVID-19, the annualized QOQ change in GDP was -31.4% in 2Q20 and +33.4% in 3Q20.

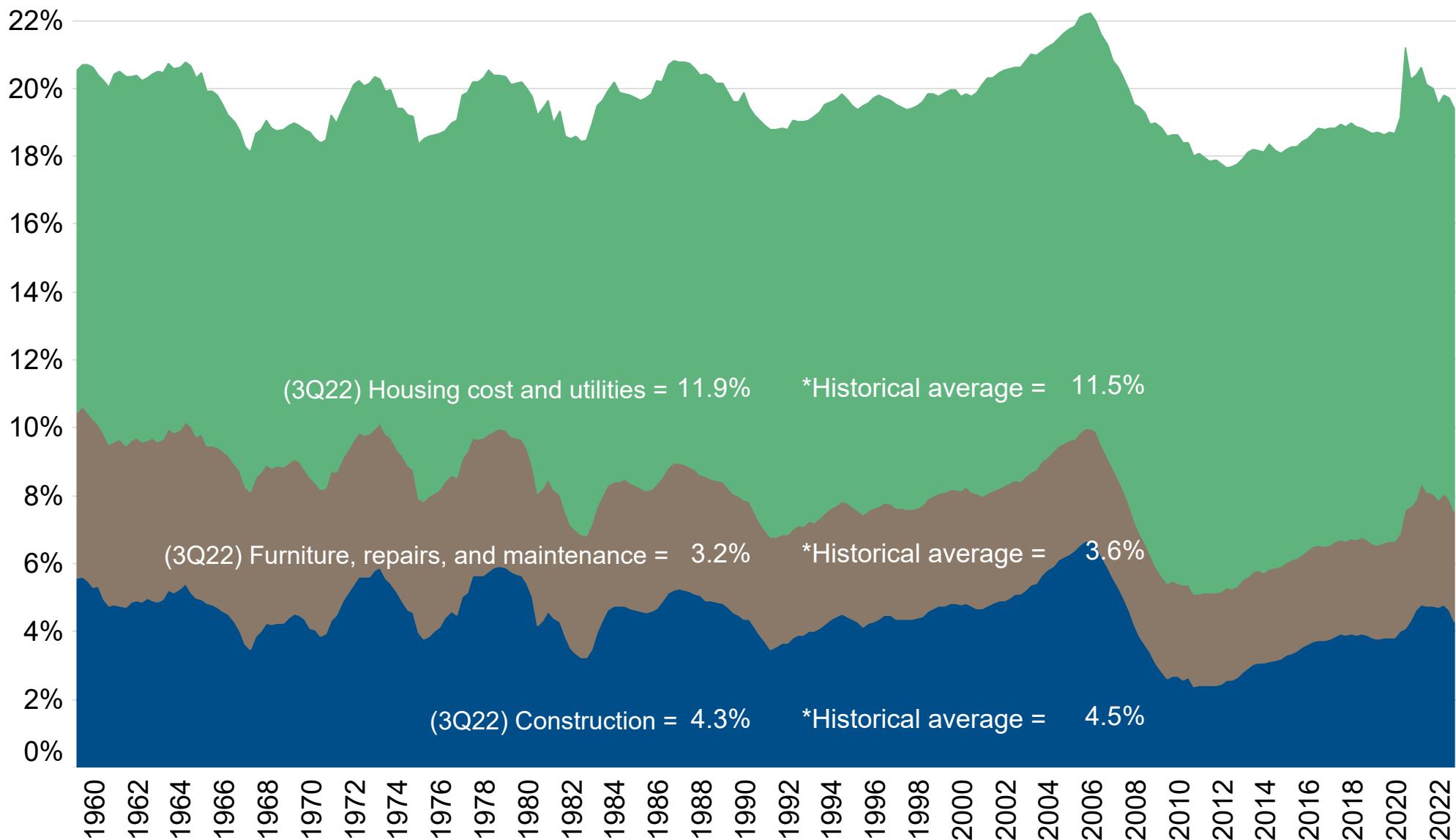
Source: BLS (Data: 3Q22, Pub: Jan-23)

*Historical average: 1981 through current

Housing as Percentage of GDP

The share of GDP tied to housing is at 19.4%, below the historical average of 19.6%.

Housing as Percentage of GDP



JOHN BURNS
REAL ESTATE CONSULTING

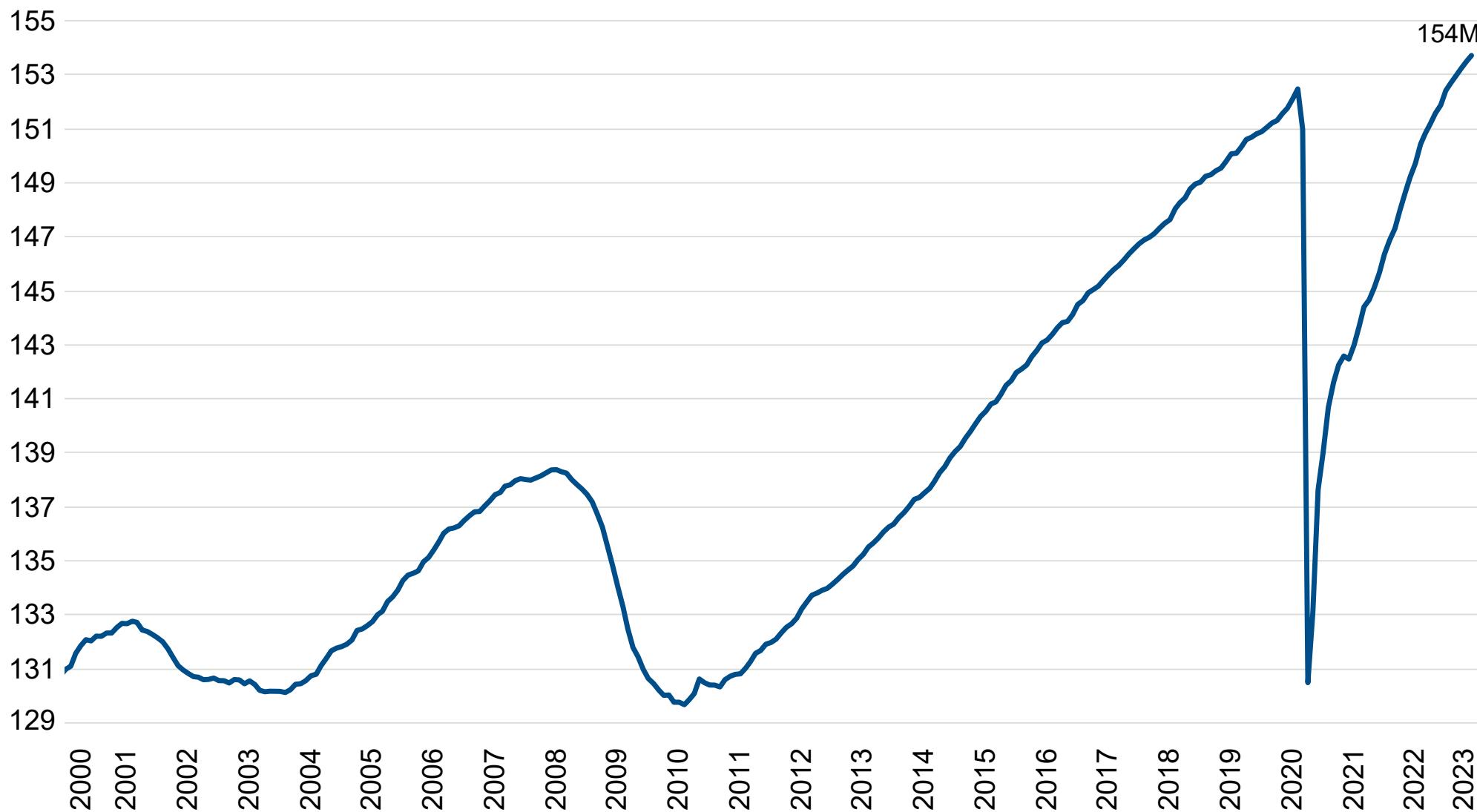
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Total US Payroll Employment

Total payroll employment rose to 154M in December.

Total US Payroll Employment

Millions, SA



Source: BLS (Data: Dec-22, Pub: Jan-23)

Labor Force: Full-Time versus Part-Time

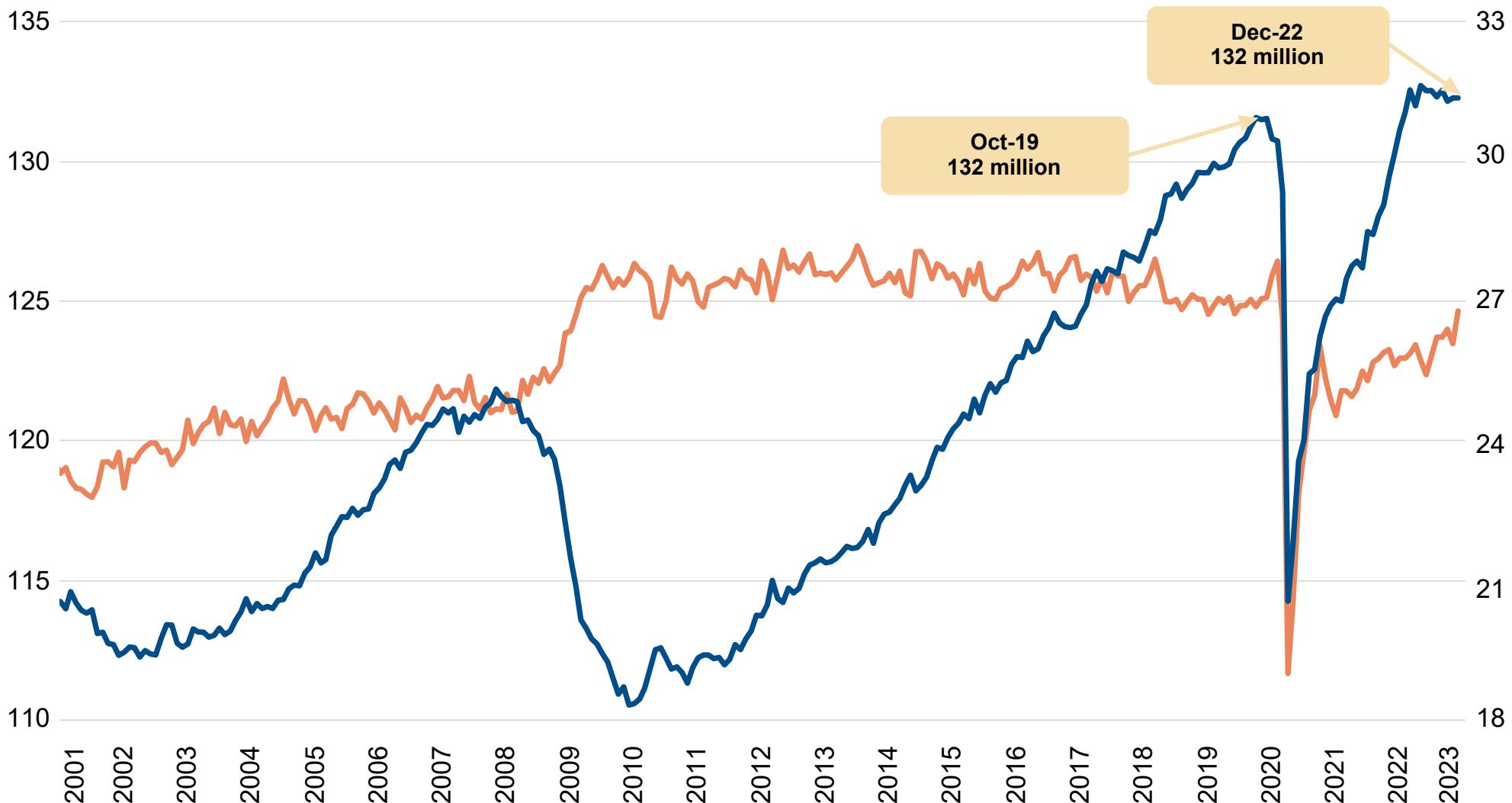
The number of full-time workers is above the pre-pandemic peak. Workers generally need full-time work to have the confidence to take on and qualify for a mortgage.

Labor Force: 16 Years and Older

Seasonally adjusted, millions

Full-time (left-axis)

Part-time (right-axis)



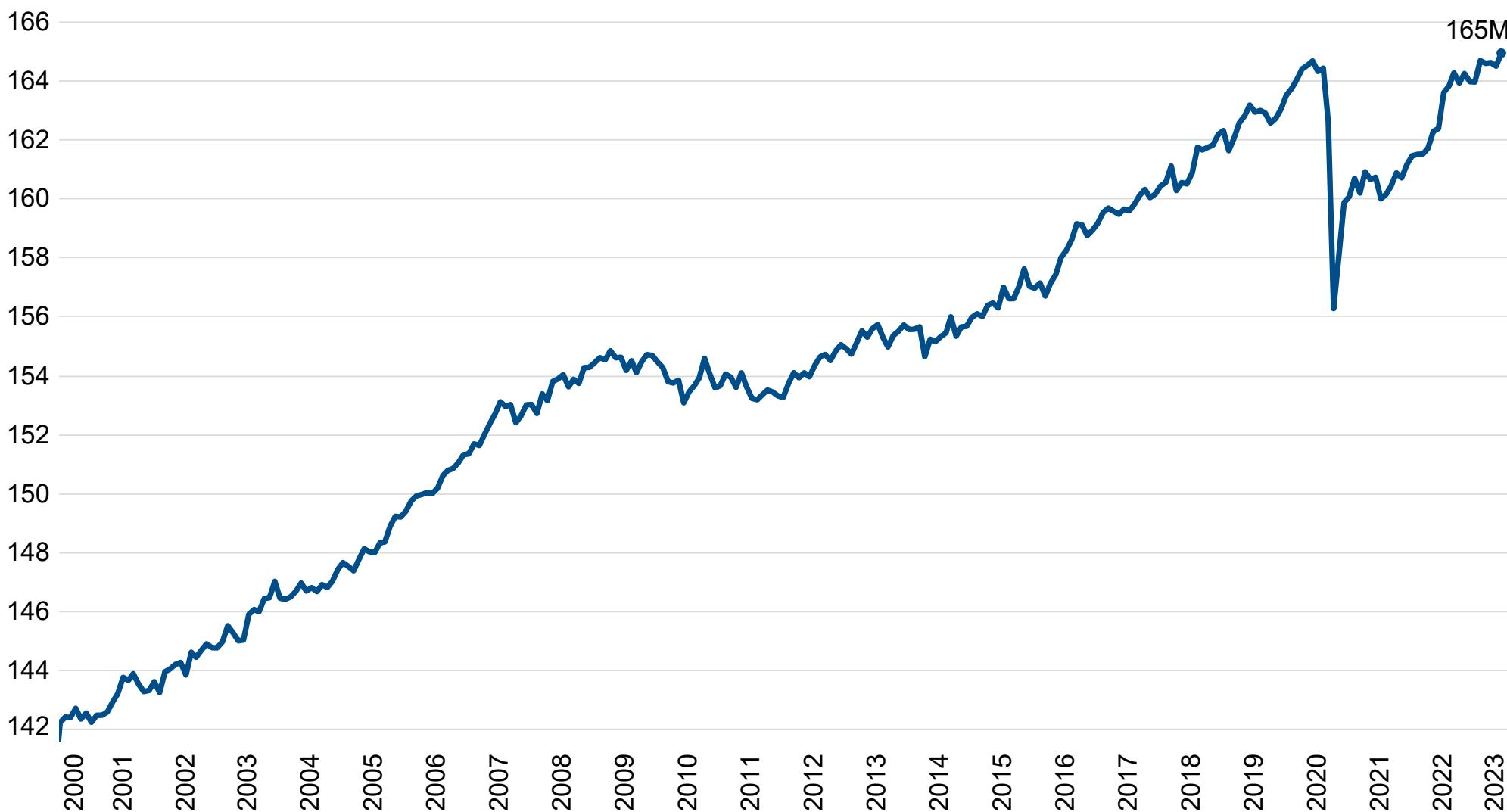
Sources: BLS; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Civilian Labor Force

At 165M, the civilian labor force has surpassed pre-pandemic levels.

Civilian Labor Force Level

Seasonally adjusted, millions



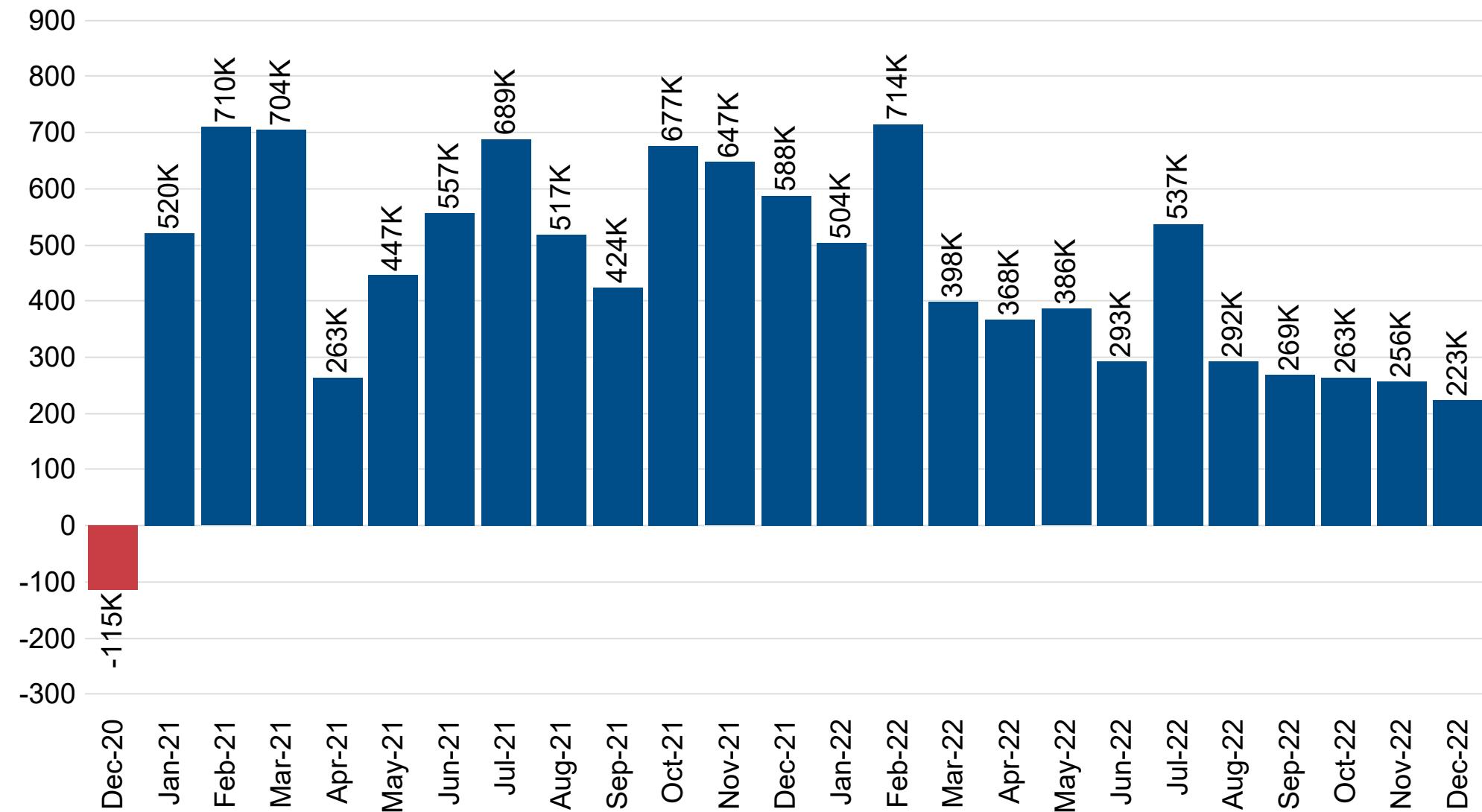
Sources: BLS; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Monthly US Payroll Employment Growth

The US economy gained 223K jobs in December.

Monthly US Payroll Employment Growth

Thousands, SA



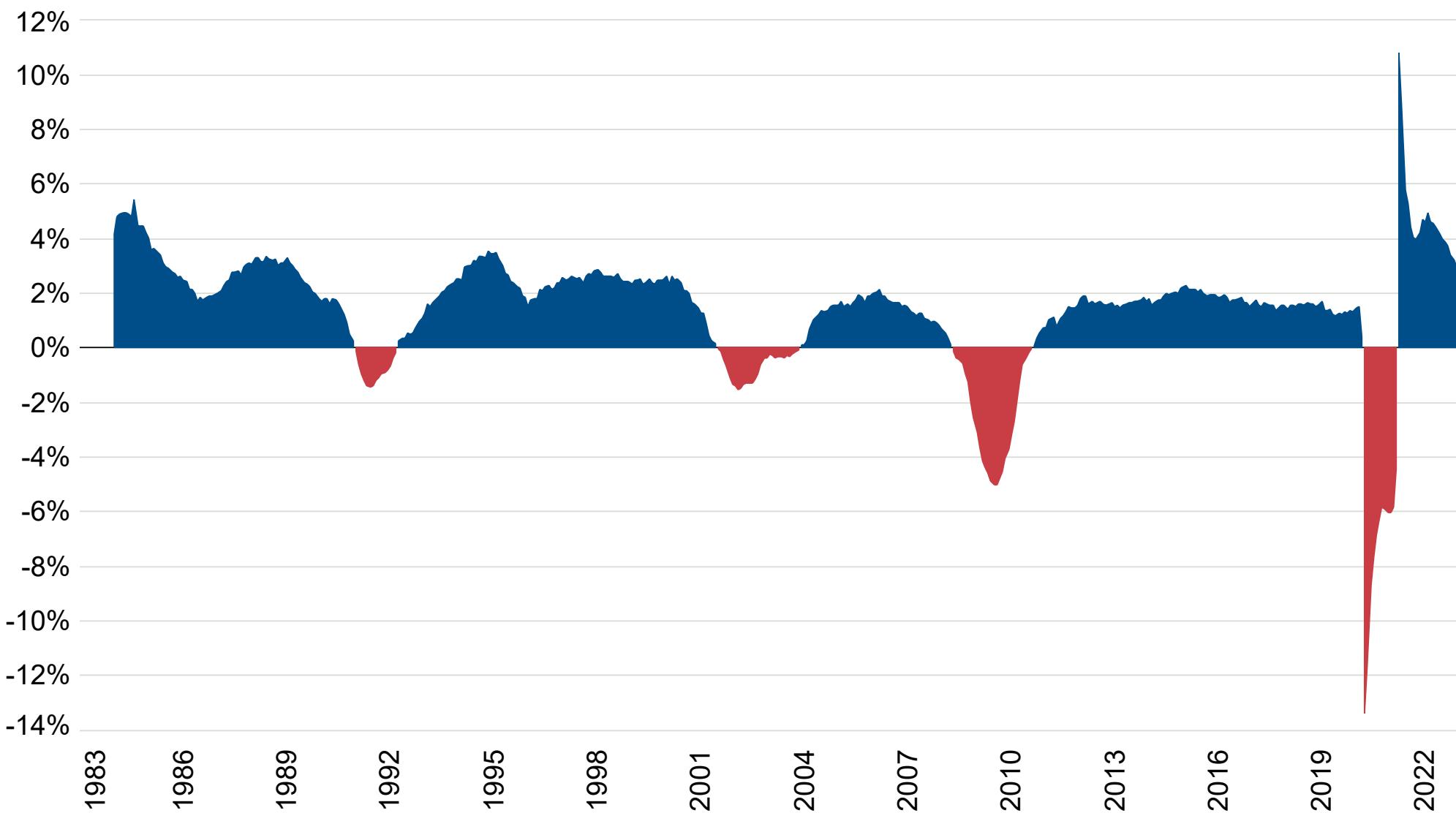
Source: BLS (Data: Dec-22, Pub: Jan-23)

Monthly US Payroll Employment Growth YOY

Total US employment rose 2.9% YOY in December.

US Payroll Employment

YOY % change, NSA Current YOY = 2.9%



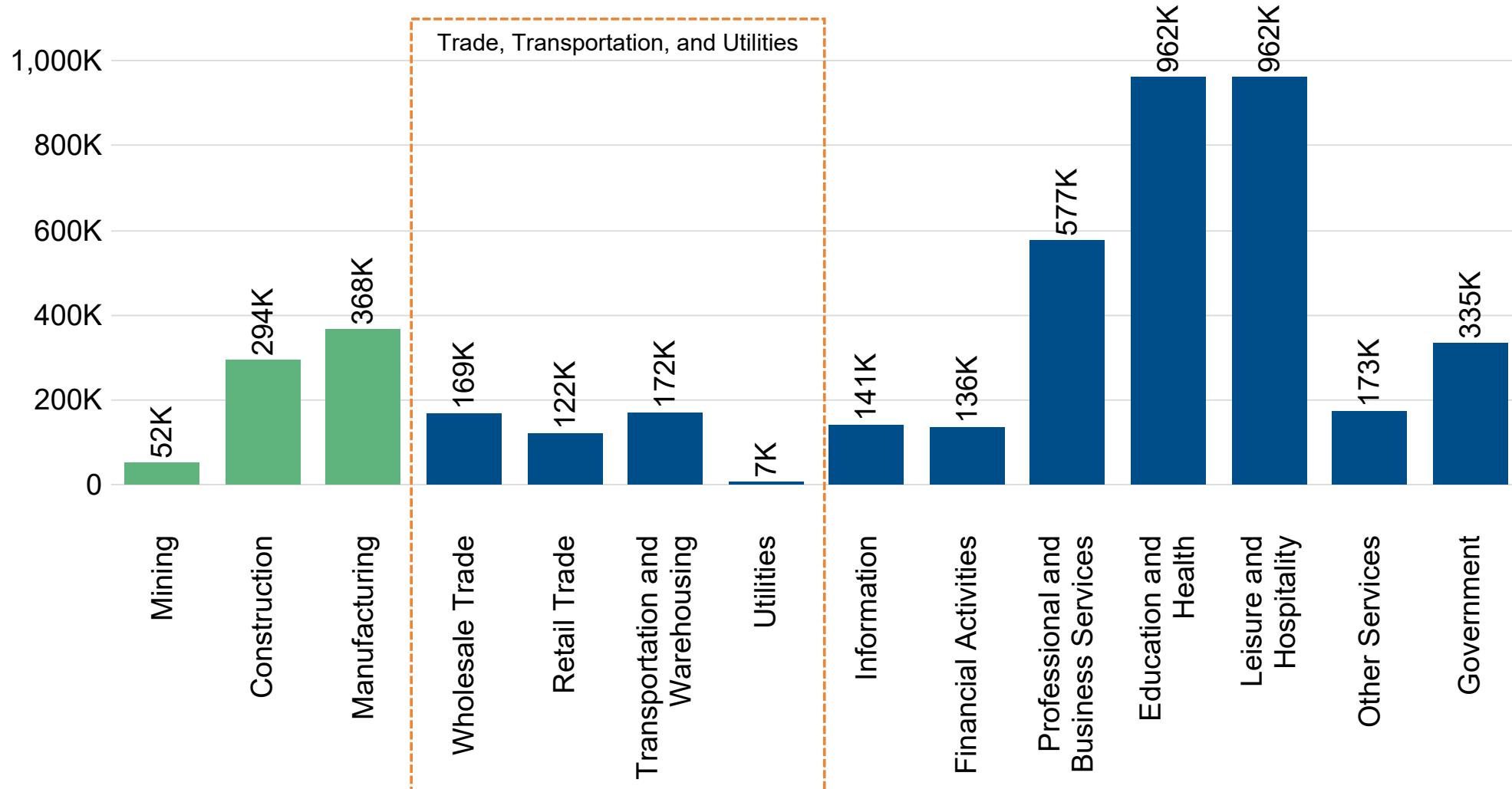
Source: BLS (Data: Dec-22, Pub: Jan-23)

US Payroll Employment Growth YOY by Sector

All industries gained jobs YOY. The Leisure and Hospitality industry added 962K jobs YOY. The Education and Health industry also increased 962K jobs YOY.

Job Growth by Sector

YOY (NSA), thousands — Goods-producing industries — Service-providing industries



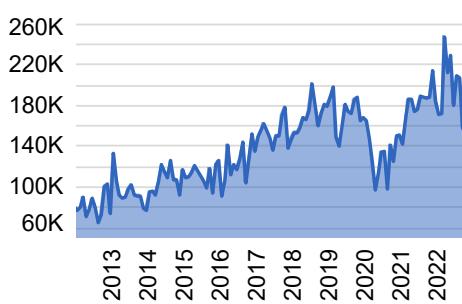
Source: BLS (Data: Dec-22, Pub:Jan-23)

Job Quits by Industry

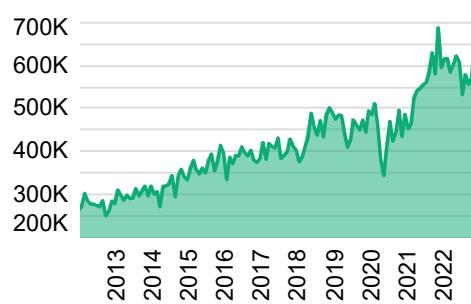
An increase in job quits traditionally indicates a greater level of confidence in employment opportunities among labor market participants. Quits are elevated in most sectors.

Job Quits by Industry, SA

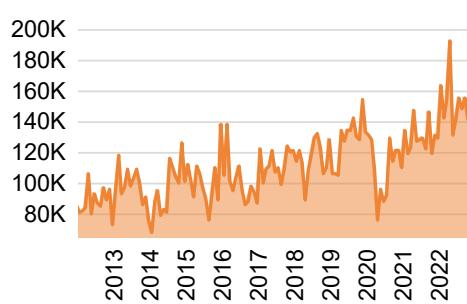
Construction



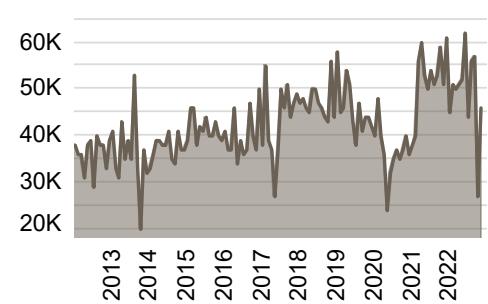
Education and Health



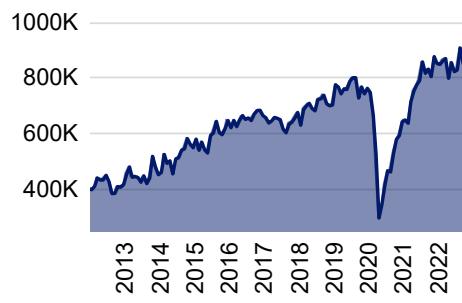
Financial



Information



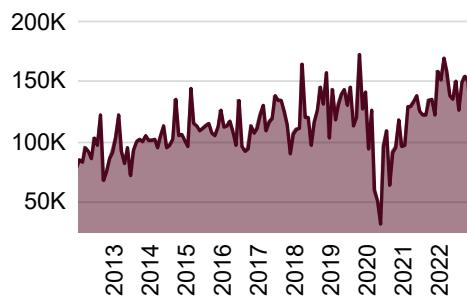
Leisure and Hospitality



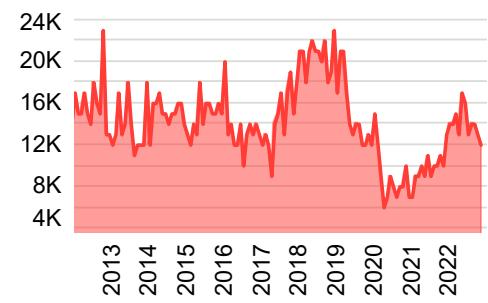
Manufacturing



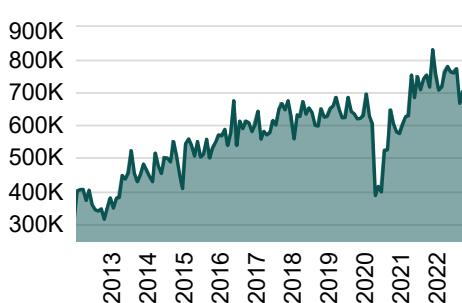
Other



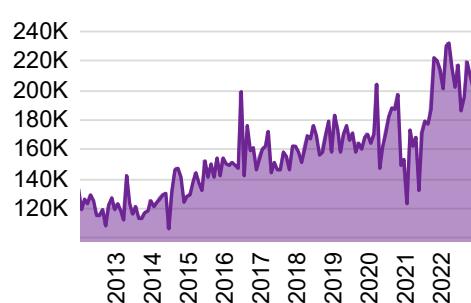
Mining and Logging



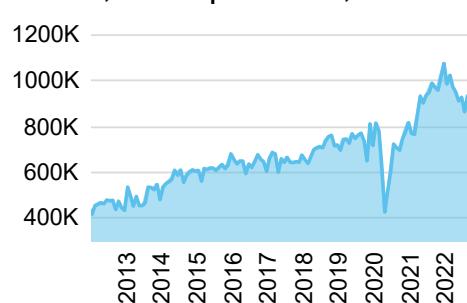
Professional



State and Local Government



Trade, Transportation, and Utilities



Source: BLS (Data: Nov-22, Pub: Jan-23)

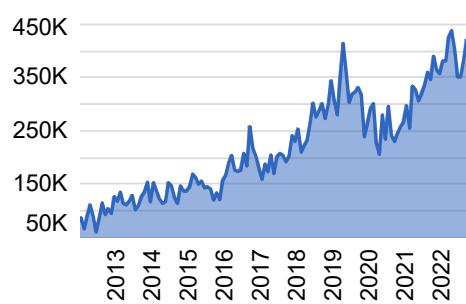
Note: Job quits are the total number of quits that occurred during the entire month.

Job Openings by Industry

Job openings indicate the level of currently unmet demand for workers. Job openings are near all-time highs in many sectors but are mostly falling.

Job Openings by Industry, SA

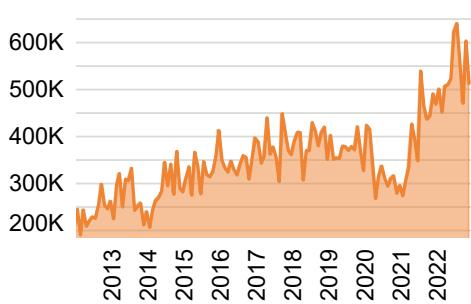
Construction



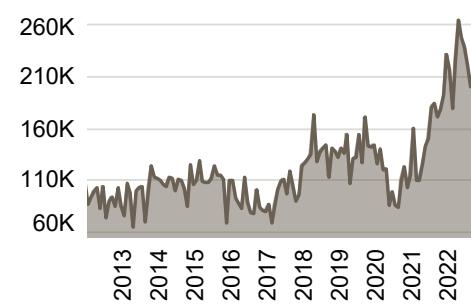
Education and Health



Financial



Information



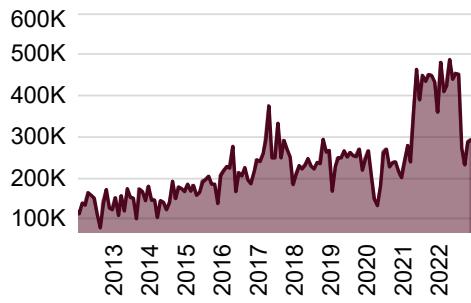
Leisure and Hospitality



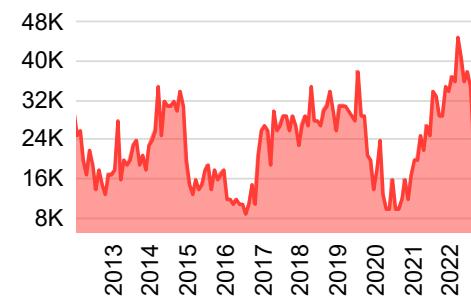
Manufacturing



Other



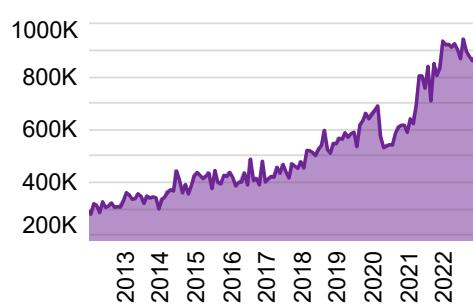
Mining and Logging



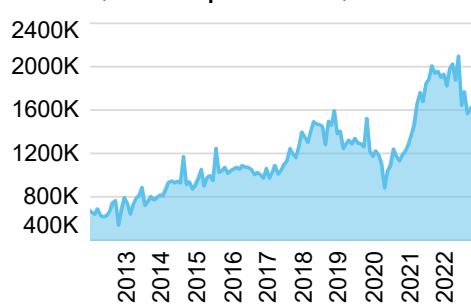
Professional



State and Local Government



Trade, Transportation, and Utilities



Source: BLS (Data: Nov-22, Pub: Jan-23)

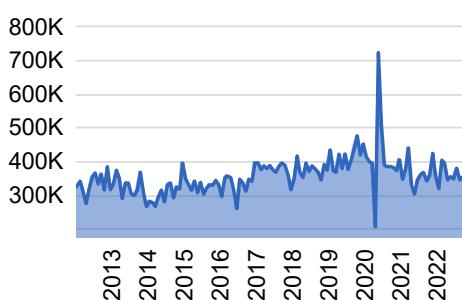
Note: Job openings are the total number of openings that occurred during the entire month.

Job Hires by Industry

Hiring is slowing in several sectors, including Professional Business Services, Manufacturing, and Trade, Transportation, and Utilities.

Job Hires by Industry, SA

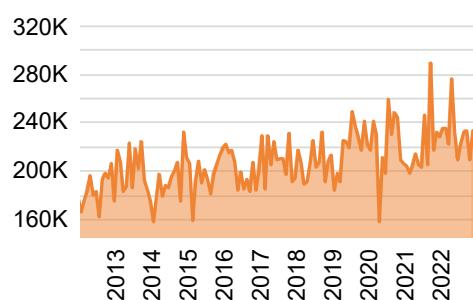
Construction



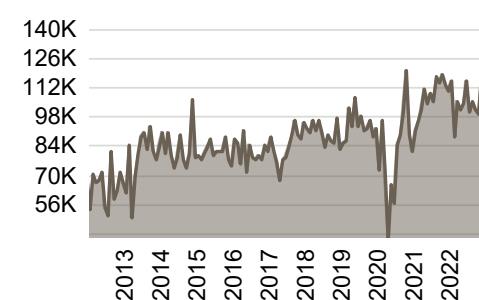
Education and Health



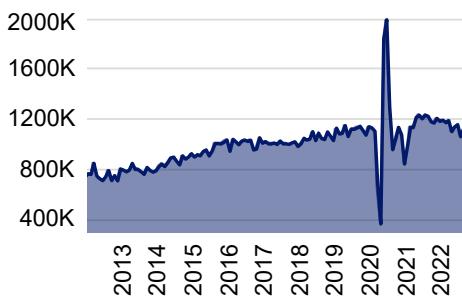
Financial



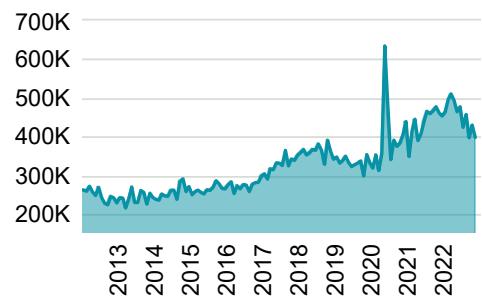
Information



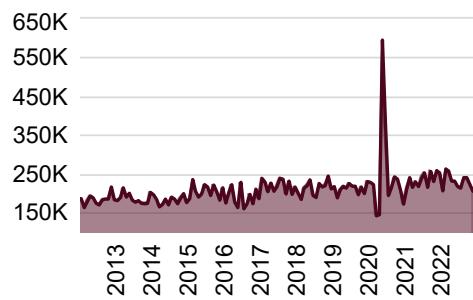
Leisure and Hospitality



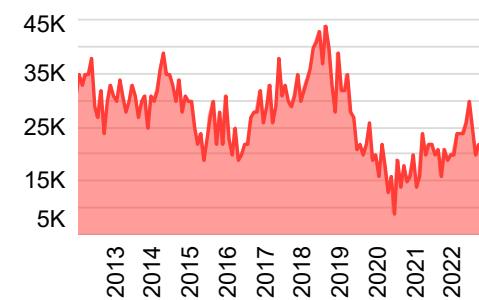
Manufacturing



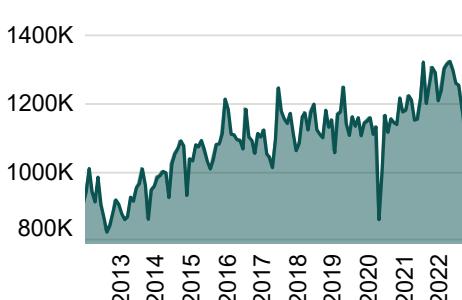
Other



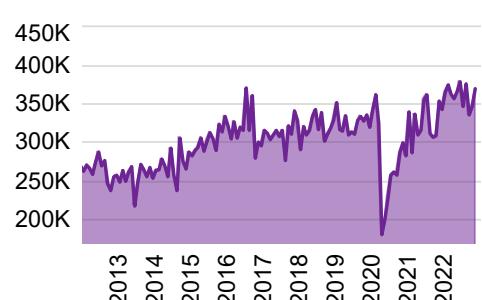
Mining and Logging



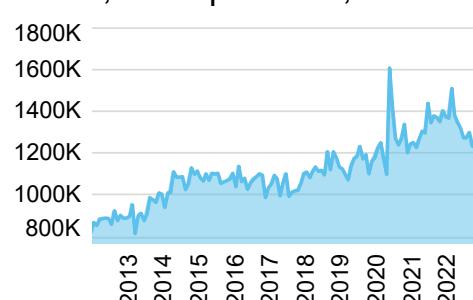
Professional



State and Local Government



Trade, Transportation, and Utilities



Source: BLS (Data: Nov-22, Pub: Jan-23)

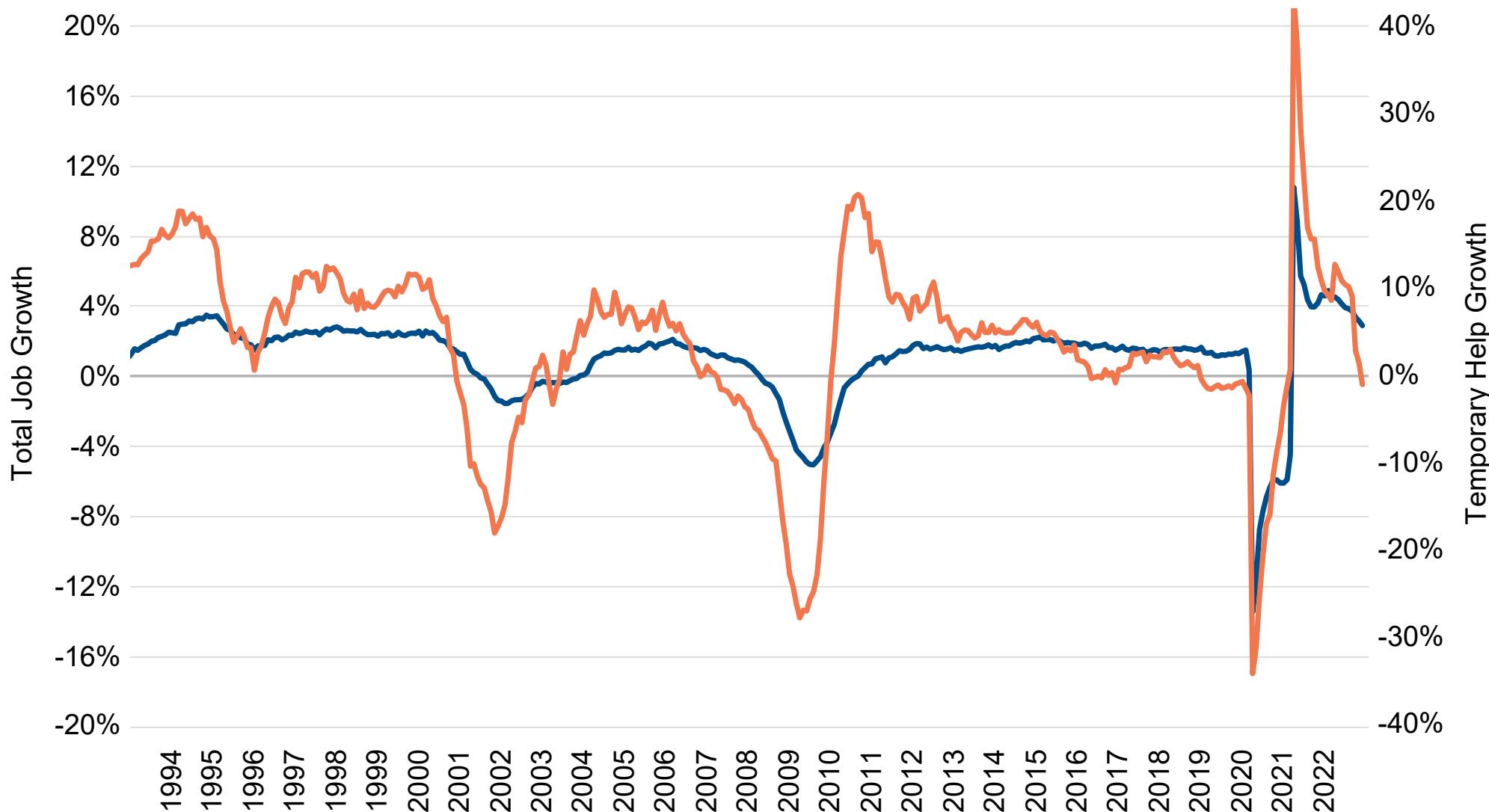
Note: Job hires are the total number of hires that occurred during the entire month.

Temporary Job Growth YOY

Total job growth rose 2.9% YOY, and temporary help employment fell -1.1% YOY.

Total Job Growth vs. Temporary Help Employment

— Total job growth = 2.9% YOY — Temporary help growth = -1.1% YOY



Source: BLS (Data: Dec-22, Pub: Jan-23)

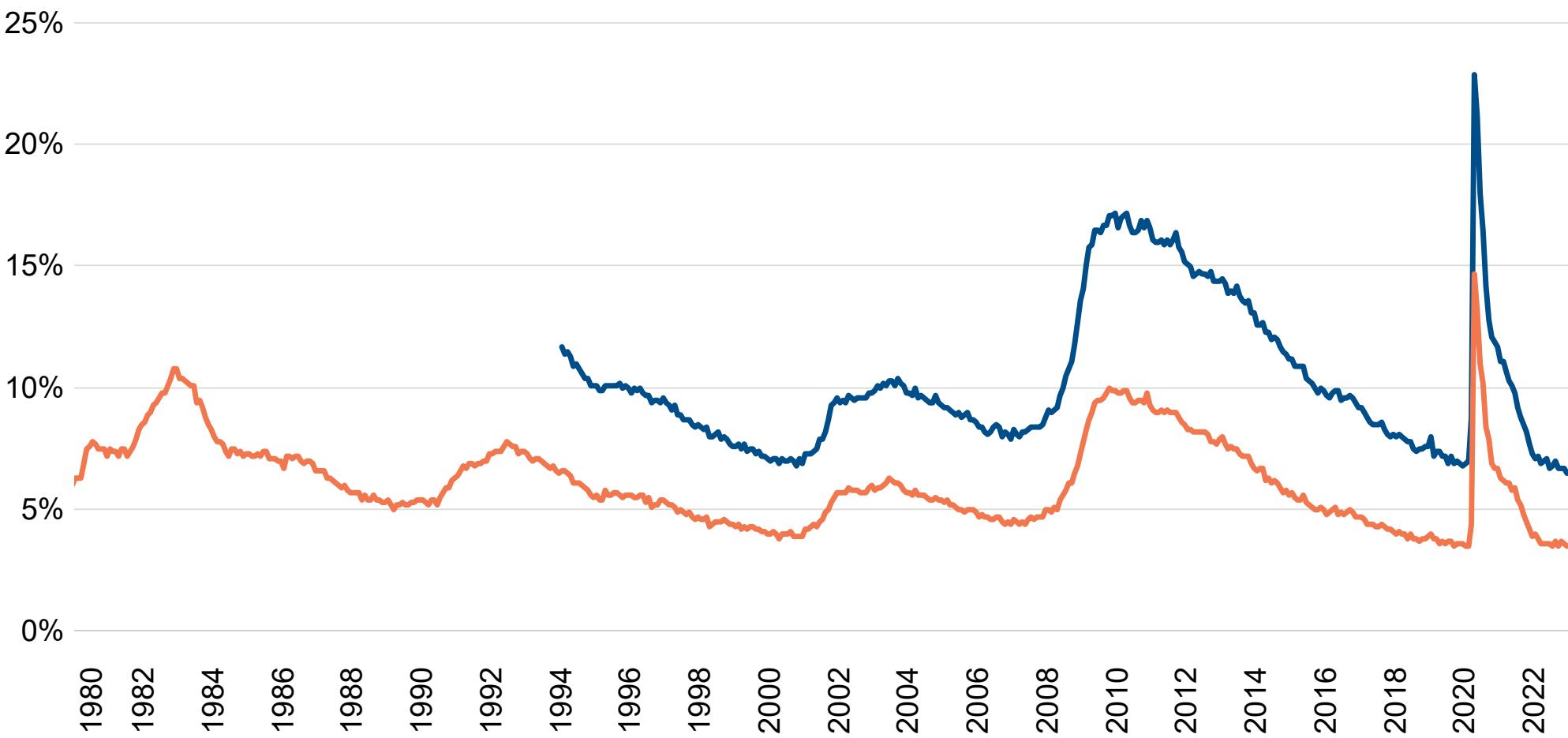
Unemployment Rate

The unemployment rate fell to 3.5% in December. The U6, a broader measure of unemployment that captures underemployment and discouraged workers, fell to 6.5%.

US Labor Force Unemployment Rate (SA)

— Official unemployment rate = 3.5% — U-6 unemployment rate = 6.5%

The U-6 unemployment rate is a broader measure of unemployment that covers part-time workers who would like full-time work and those who have given up looking for work.



Source: BLS (Data: Dec-22, Pub: Jan-23)

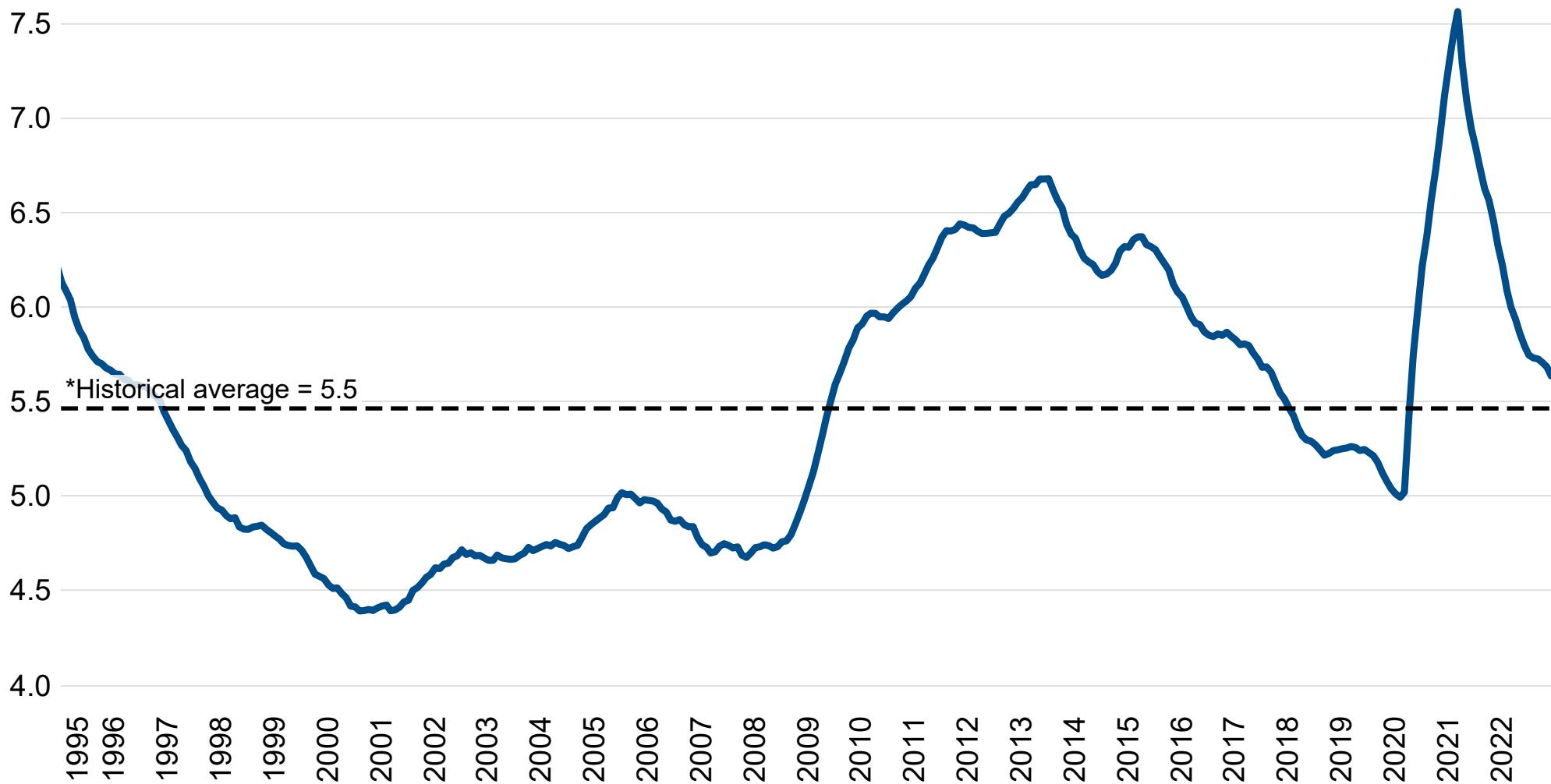
Civilians Not in the Labor Force but Who Currently Want a Job

There are 5.6 million people who are not in the labor force but who currently want a job.

US Civilians Not in Labor Force but Who Currently Want a Job

12-month moving average, NSA, millions Current stat: 5.6

8.0



Sources: BLS; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

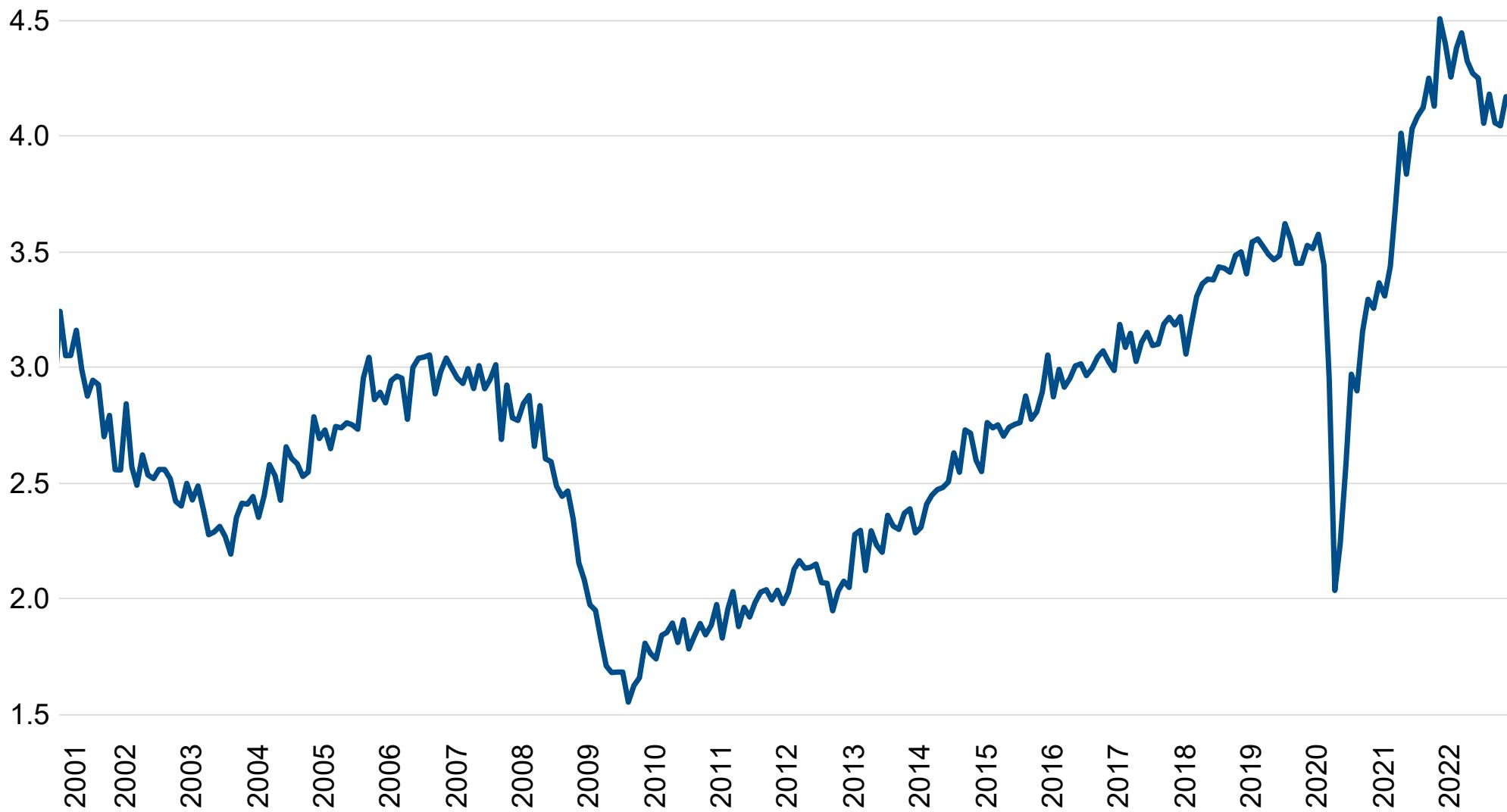
*Historical average: Jan-94 through current

US Job Quits

The number of people who quit their jobs is -7% below one year ago. A high number of voluntary job quits indicates a healthy economy.

US Job Quits

— Millions, SA = 4.2 (-7% YOY)



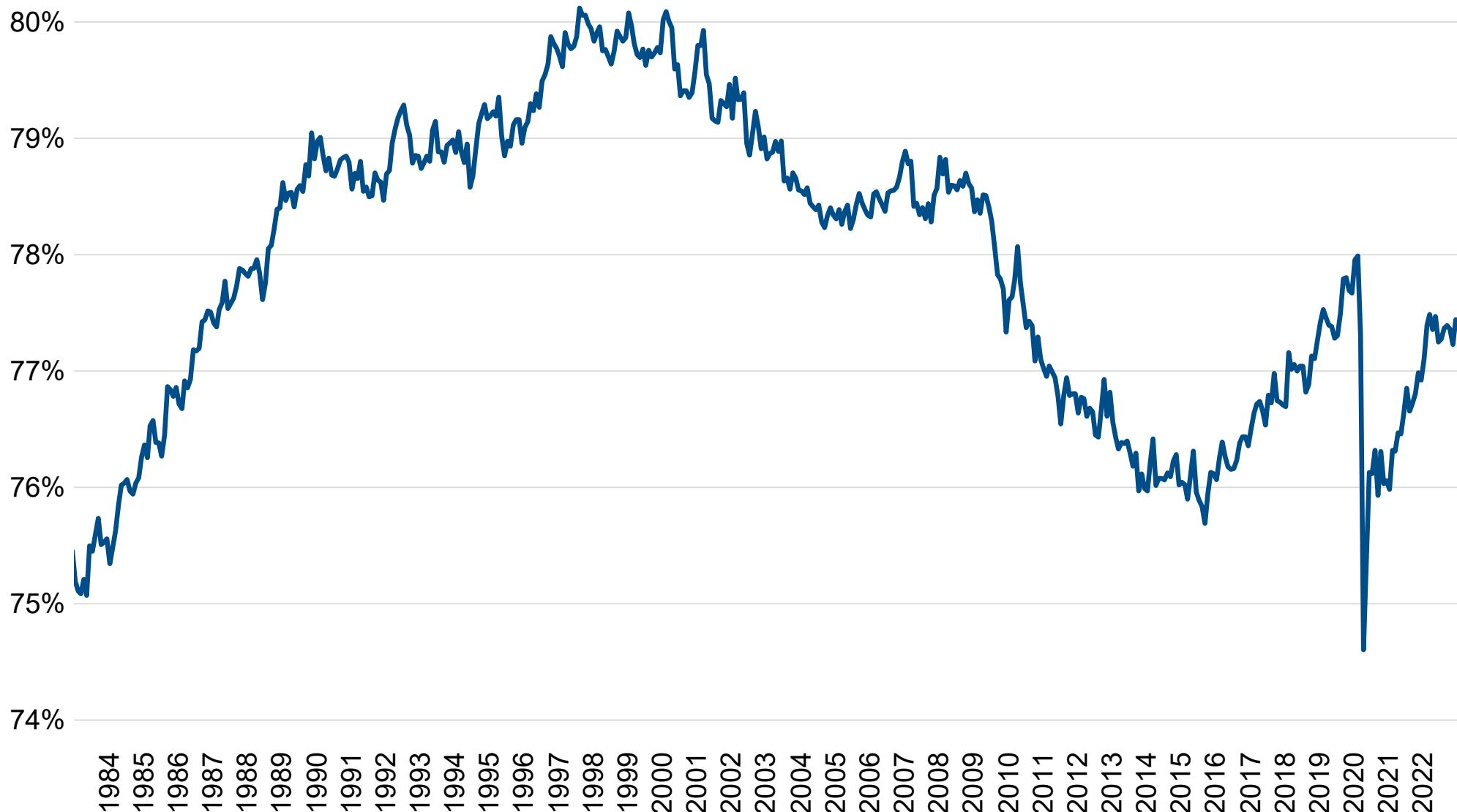
Source: BLS (Data: Nov-22, Pub: Jan-23)

Labor Force Participation Rate

Labor force participation among the prime working-age population is still well below pre-COVID levels.

Labor Force Working-Age Participation Rate Ages 20–64

Seasonally adjusted



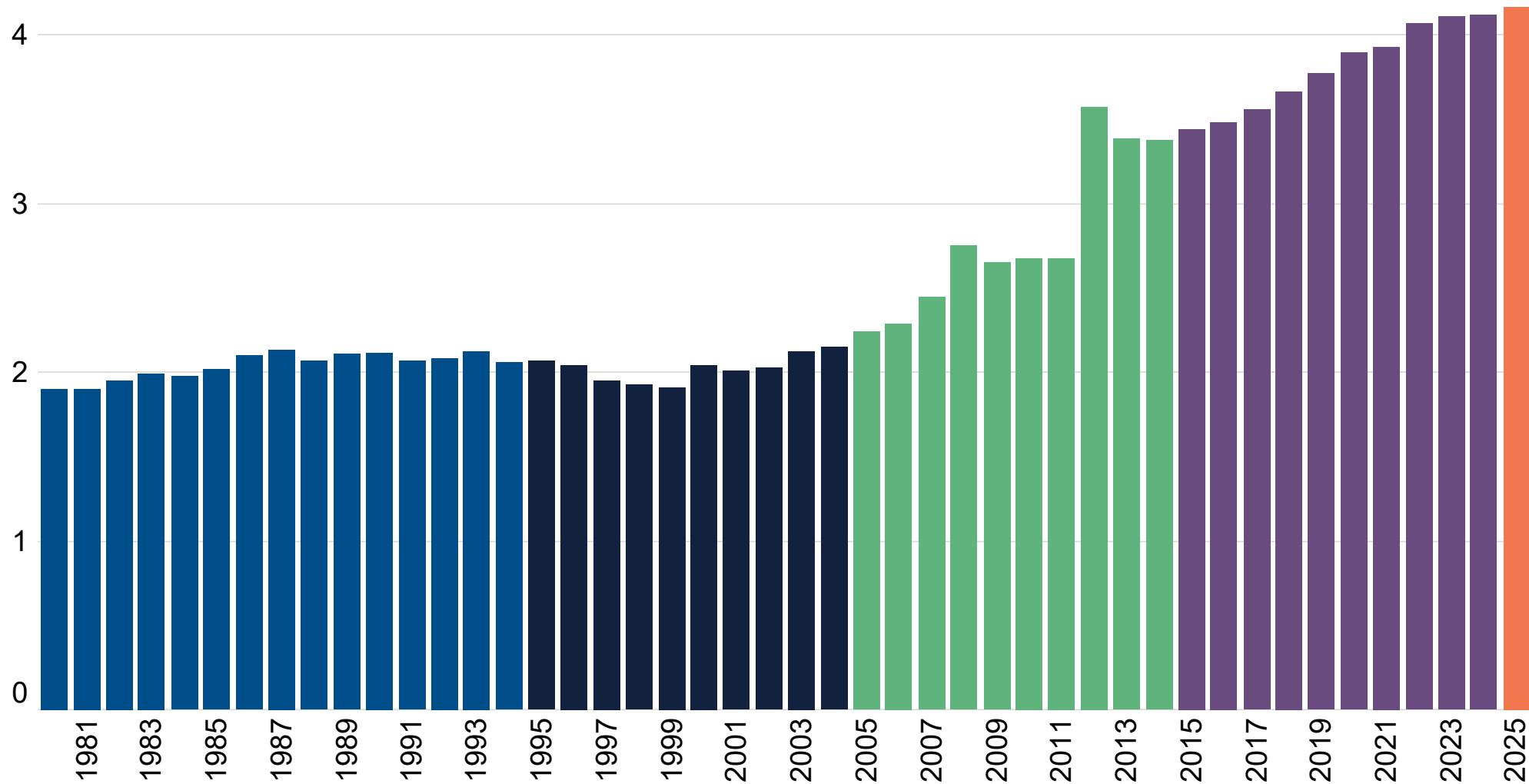
Sources: BLS; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Retirement Age Population Explosion Began in 2012

The decline in labor force participation is partially based on a retiree population explosion that started in 2012. By the mid-2020s, twice as many people will celebrate their 65th birthday than in the 1980s/90s.

Retirement Age Population (Number of People Turning 65 Each Year)

Millions ■ Pre-1930s ■ 1930s Savers ■ 1940s Achievers ■ 1950s Innovators ■ 1960s Equalers



Note: Names reference age groupings from our Demographics book *Big Shifts Ahead*; 65-year-old population as of July 1 each year.

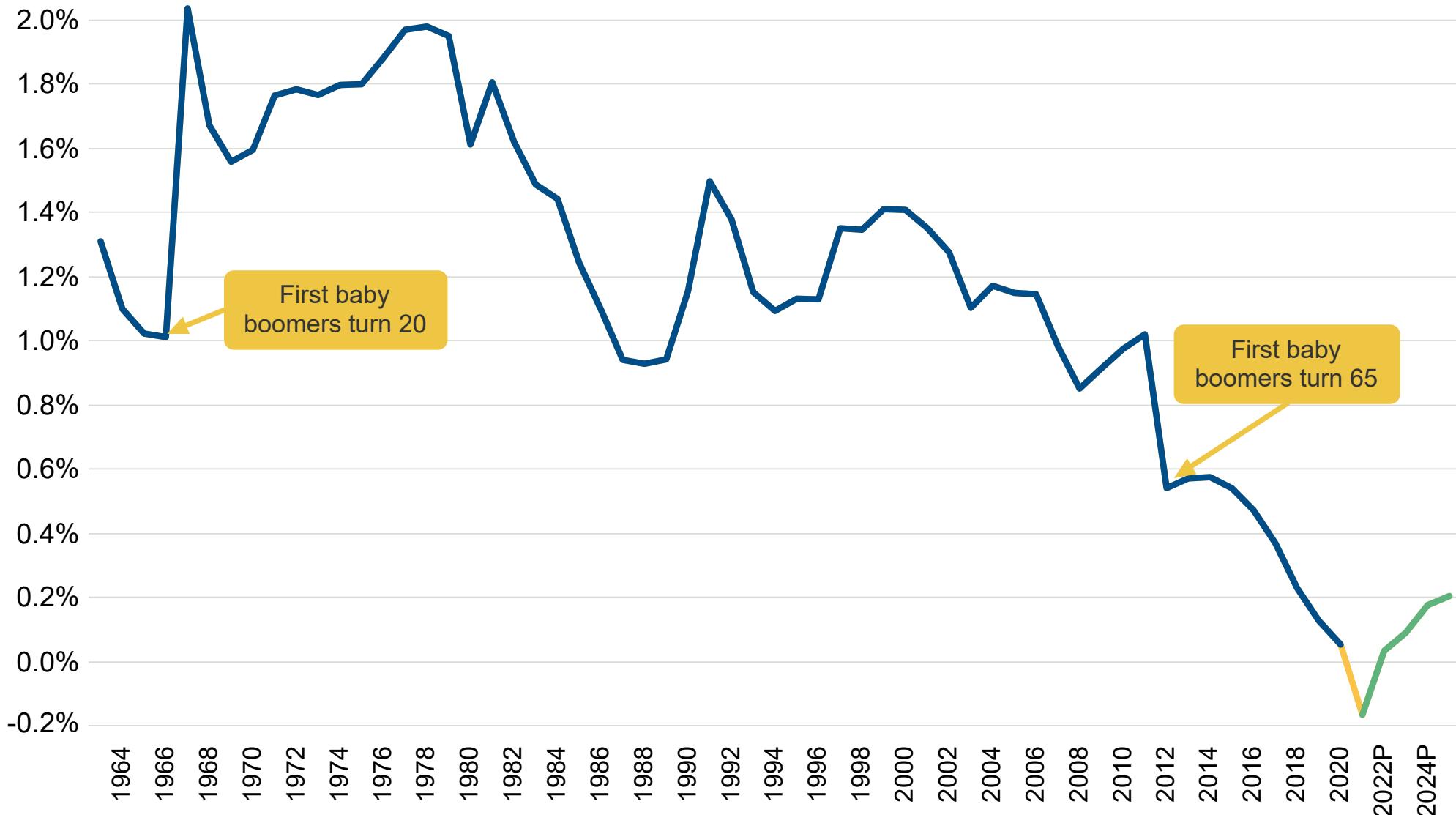
Sources: U.S. Census Bureau intercensal population estimates; JBREC adjustment of Census Dec. 2018 population projections

Pub: Jan-23

Population Growth for 20–64-Year-Olds

When baby boomers entered the labor force, they increased the population growth rate of 20–64-year-olds. As they retire, the population of working-age Americans falls. Scarcity of workers will likely suppress overall job growth.

Annual Growth of 20–64-Year-Old Population



Sources: U.S. Census Bureau population estimates; JBREC adjustments of Census Feb. 2020 low- and middle-immigration population projections

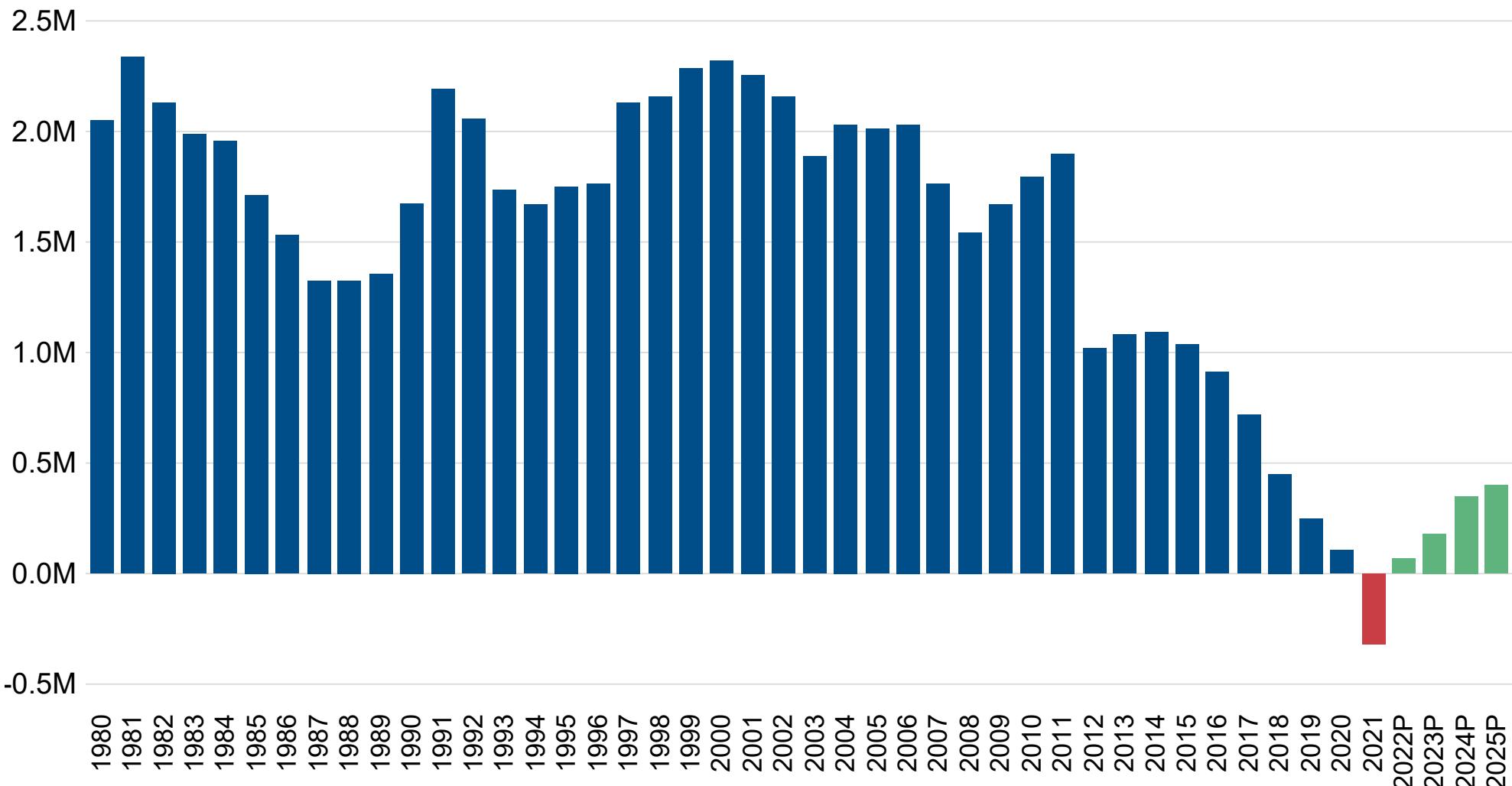
Pub: Jan-23

Retirement Will Drastically Slow Job Growth

The population growth of prime-age workers (20–64 years old) is forecast to remain low by historical standards through 2025. Immigration will fuel much of the increase over the next several years.

Growth of US Population Aged 20–64

Millions



Sources: U.S. Census Bureau population estimates; JBREC adjustments of Census Feb. 2020 low- and middle-immigration population projections

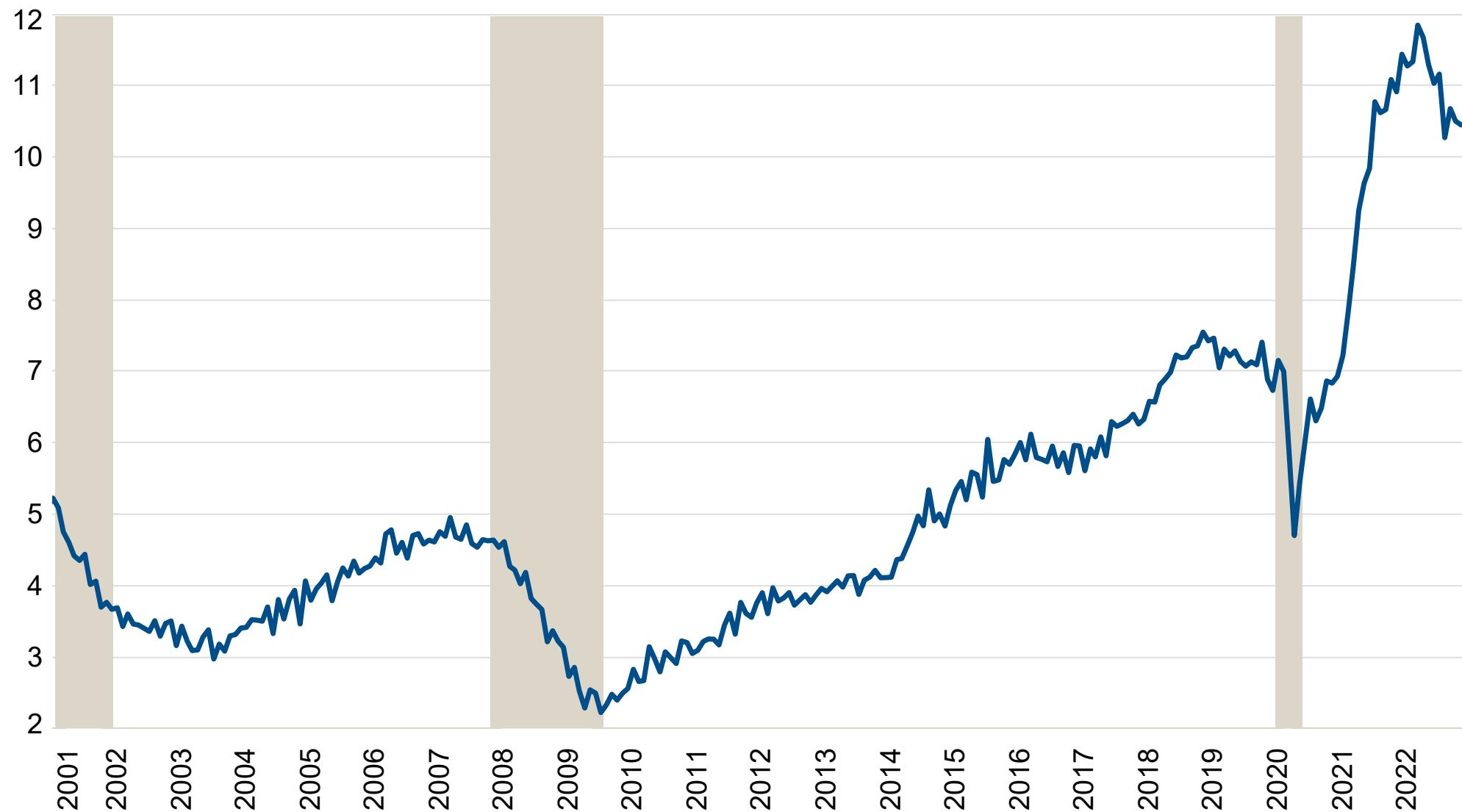
Pub: Jan-23

US Job Openings

As of November, 10.5M jobs were available to workers with the requisite skills.

US Job Openings

Millions, SA Recession — Job openings



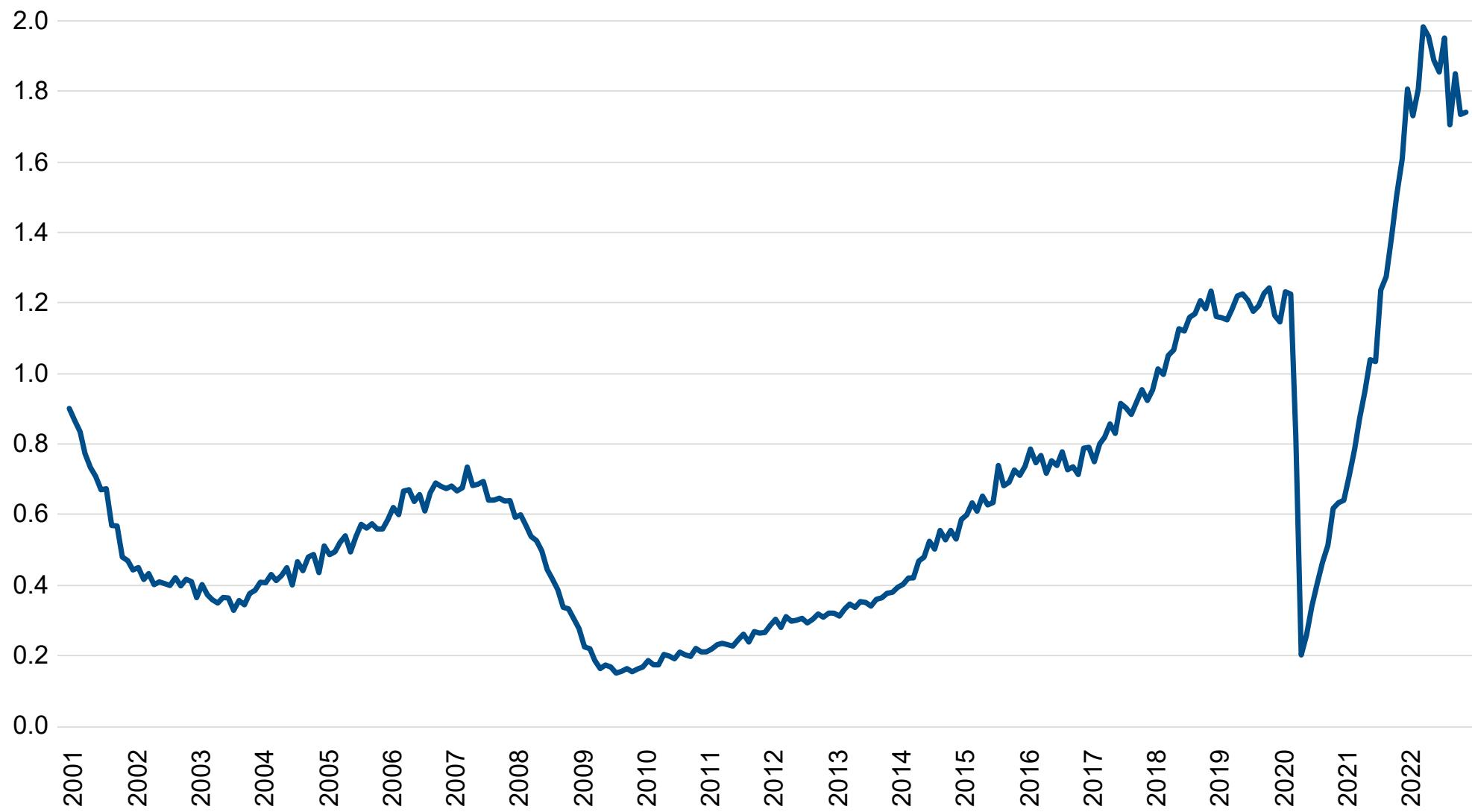
Source: BLS (Data: Nov-22, Pub: Jan-23)

Job Openings per Unemployed Person

There are 1.74 job openings per unemployed person.

Job Openings per Unemployed Person

Seasonally adjusted



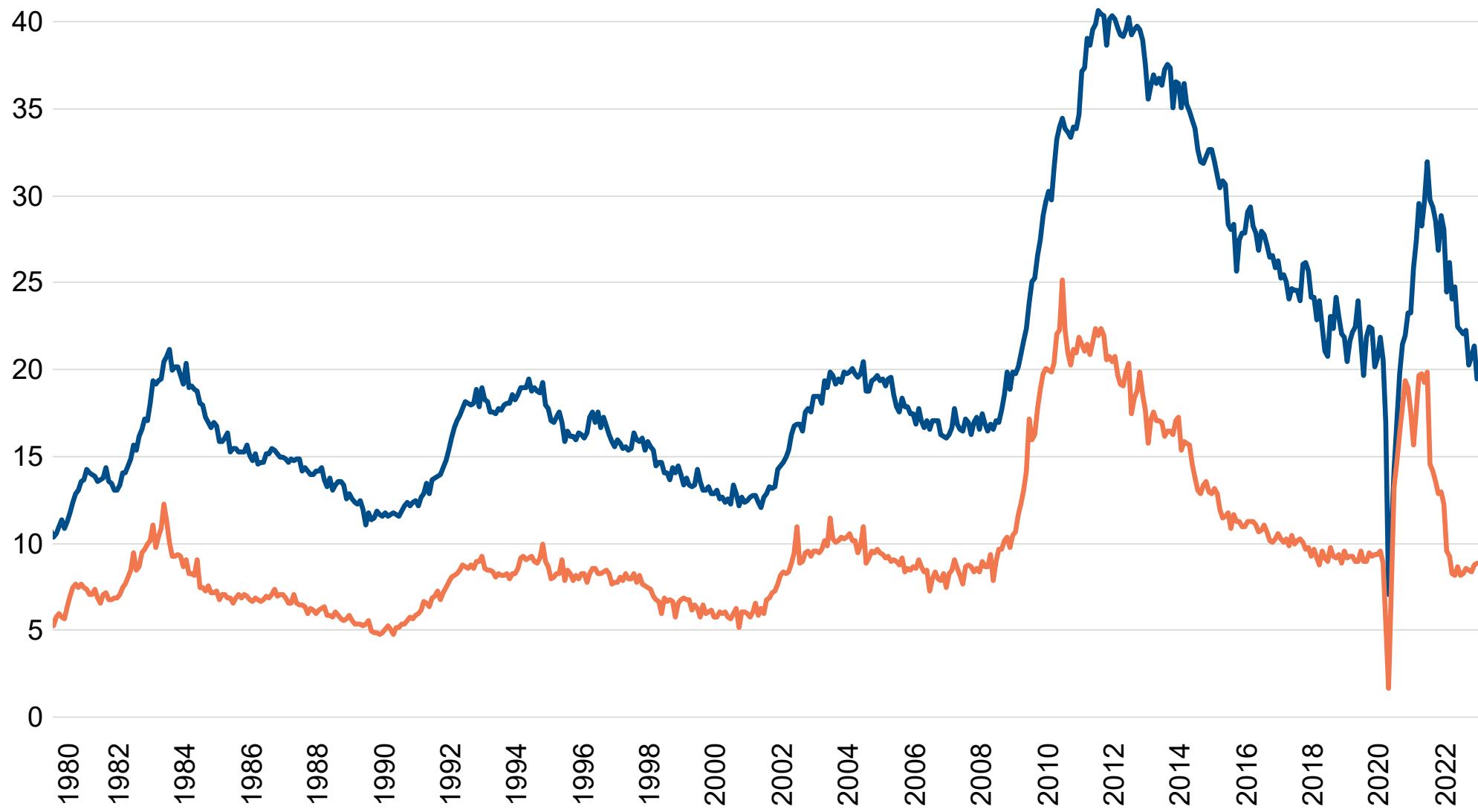
Source: BLS (Data: Nov-22, Pub: Jan-23)

Length of Unemployment

The median length of unemployment rose to 8.9 weeks.

Length of Unemployment

Weeks, SA — Average = 19.5 weeks — Median = 8.9 weeks

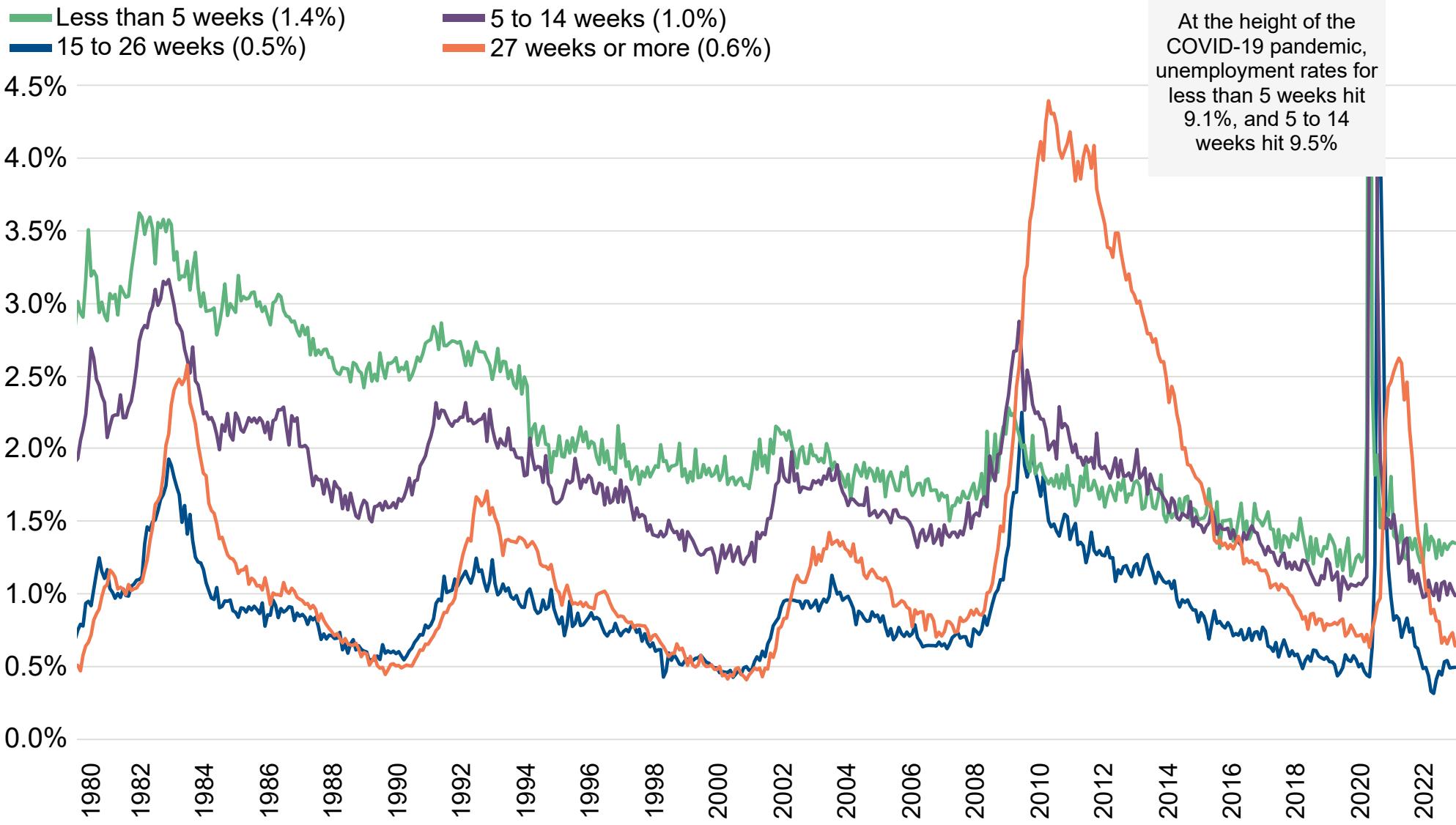


Source: BLS (Data: Dec-22, Pub: Jan-23)

Unemployment Rate by Duration

Most job losses occurred fewer than 5 weeks ago. 1.4% of the labor force has been unemployed for fewer than 5 weeks.

Percentage of Labor Force That Is Unemployed by Duration (SA)



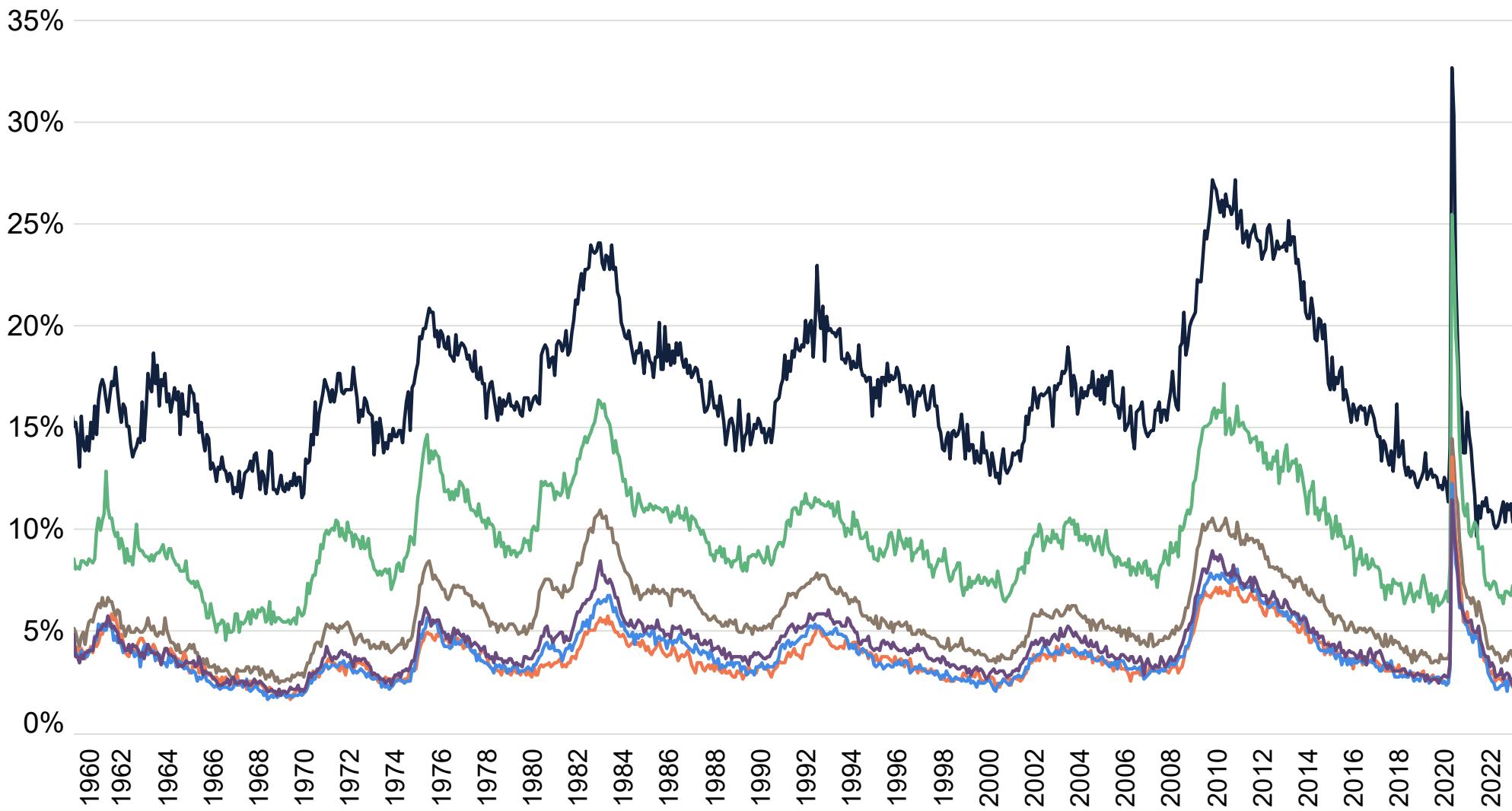
Source: BLS (Data: Dec-22, Pub: Jan-23)

Unemployment Rate by Age

The unemployment rate is low by historical standards across all age groups.

Unemployment Rate by Age

— 16 to 19 years old (10.4%) — 20 to 24 years old (7.3%) — 25 to 34 years old (3.8%)
— 35 to 44 years old (2.4%) — 45 to 54 years old (2.3%) — 55 years and over (2.7%)



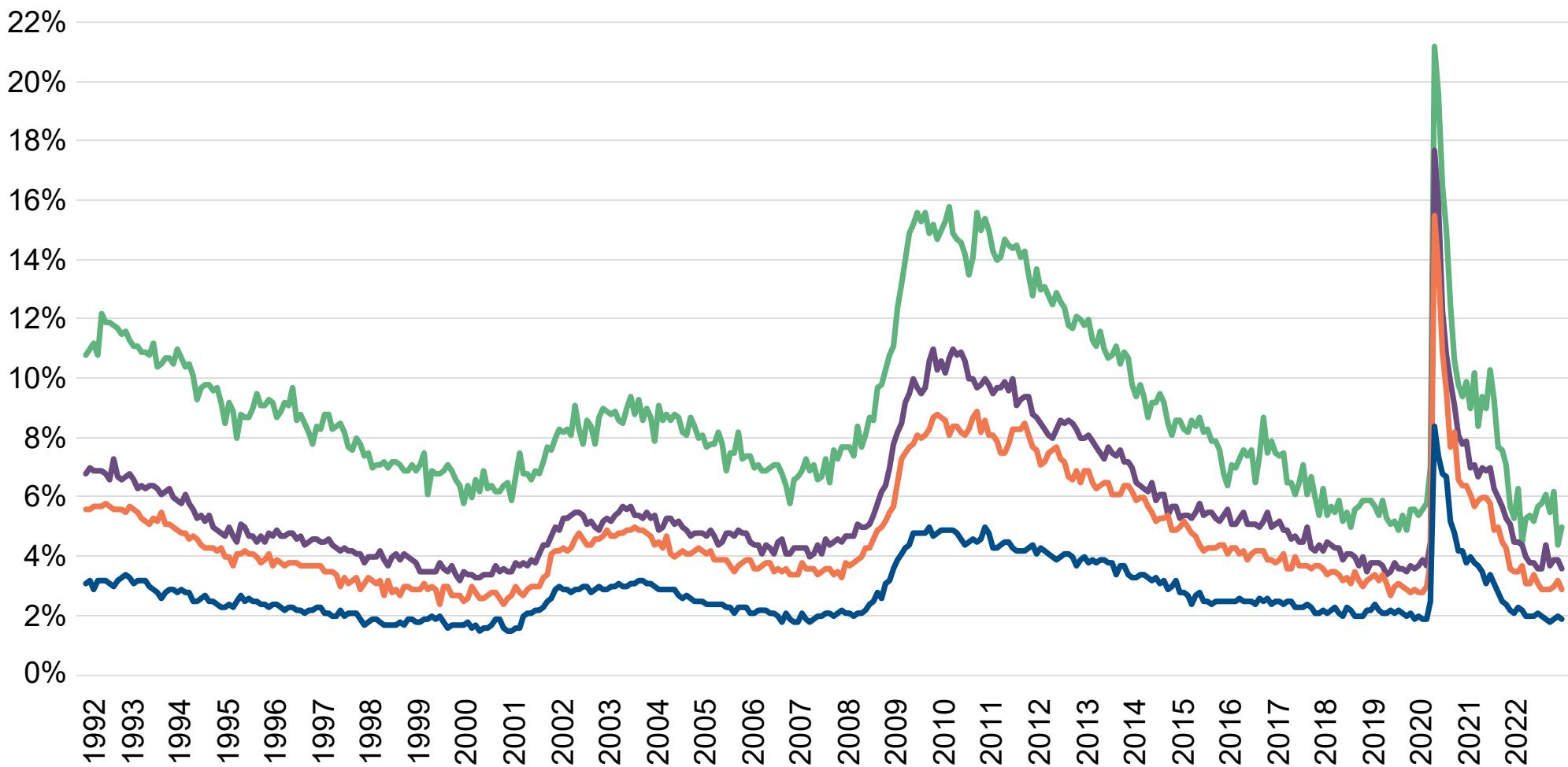
Source: BLS (Data: Dec-22, Pub: Jan-23)

Unemployment Rate by Level of Education

The unemployment rate is significantly lower for workers with a bachelor's degree or higher (1.9%), who are more likely to be able to work from home.

Unemployment Rate by Level of Education (SA)

- Less than high school diploma (5.0%)
- High school graduate, no college (3.6%)
- Some college or associate's degree (2.9%)
- Bachelor's degree or higher (1.9%)



Source: BLS (Data: Dec-22, Pub: Jan-23)

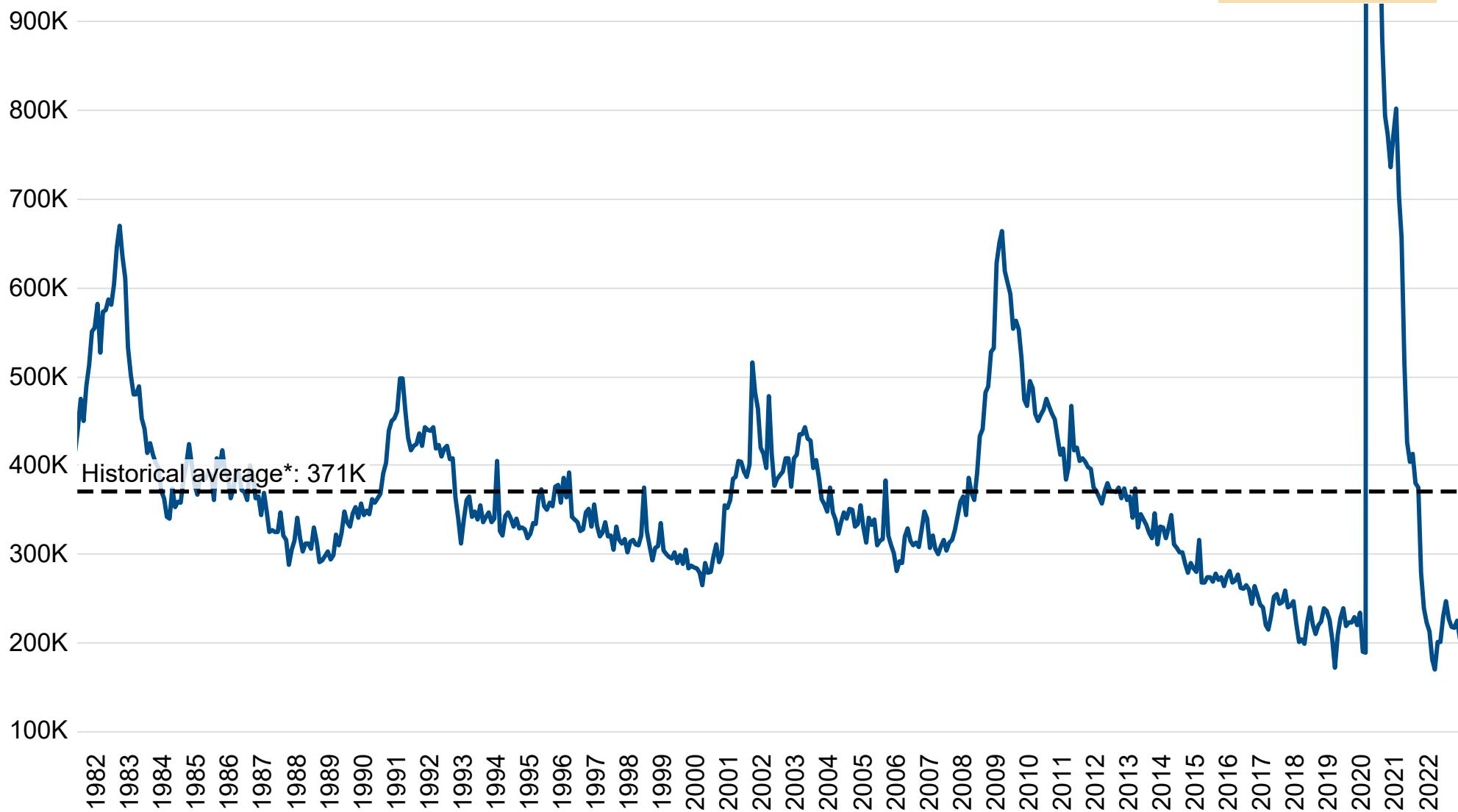
Initial Jobless Claims

Weekly jobless claims fell in December and remain low relative to history.

US Initial Jobless Claims

Seasonally adjusted — Current initial jobless claims = 206K

Initial Jobless Claims
in March 2020
reached **6 million**.



Source: Department of Labor (Data: Dec-22, Pub: Jan-23)

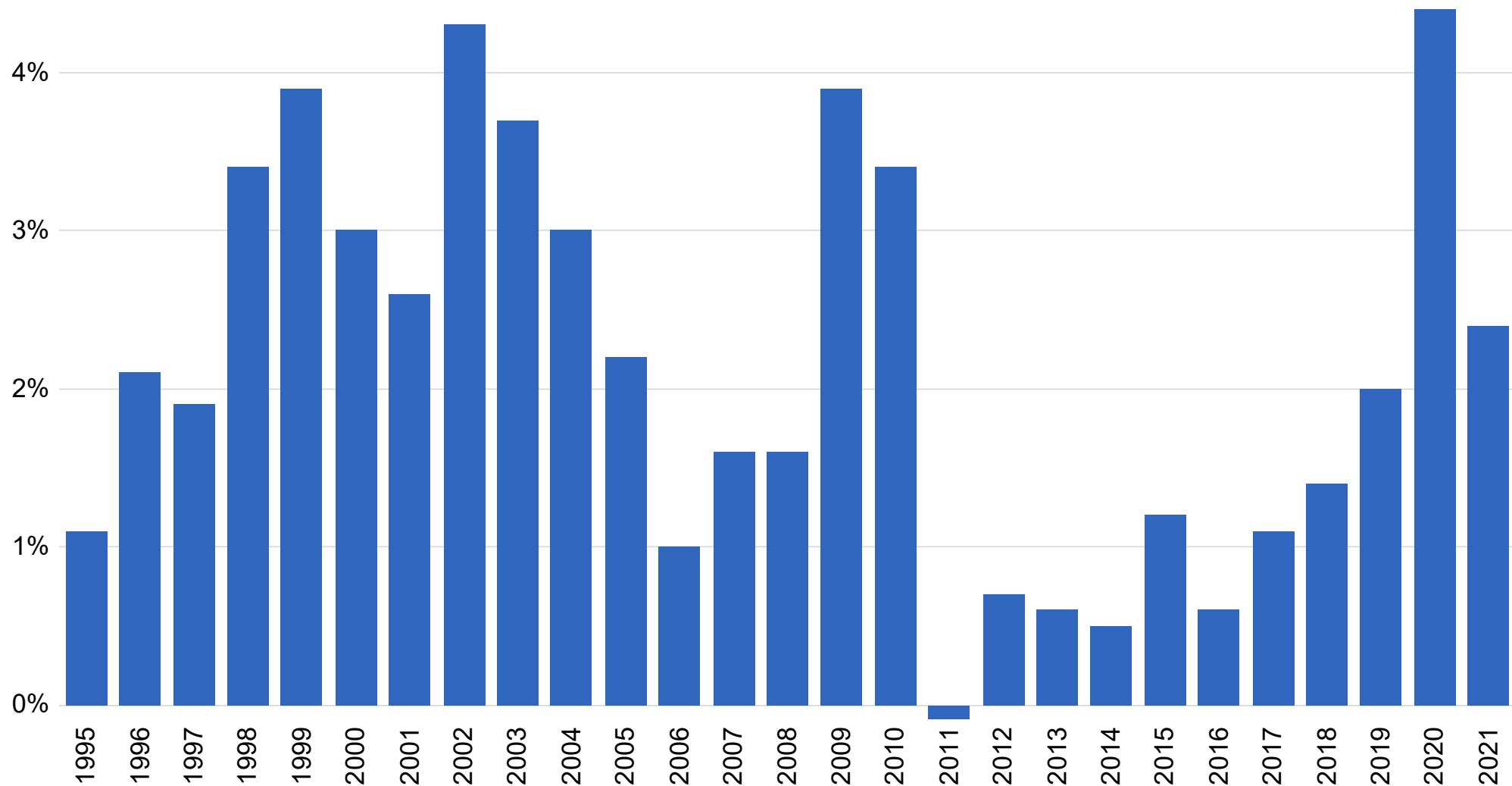
*Historical average: Jan-67 through current

Annual Productivity

Annual productivity grew 2% in 2021.

Nonfarm Business Labor Productivity

Output per hour (% YOY)



Source: BLS (Data: 2021, Pub: Jan-23)

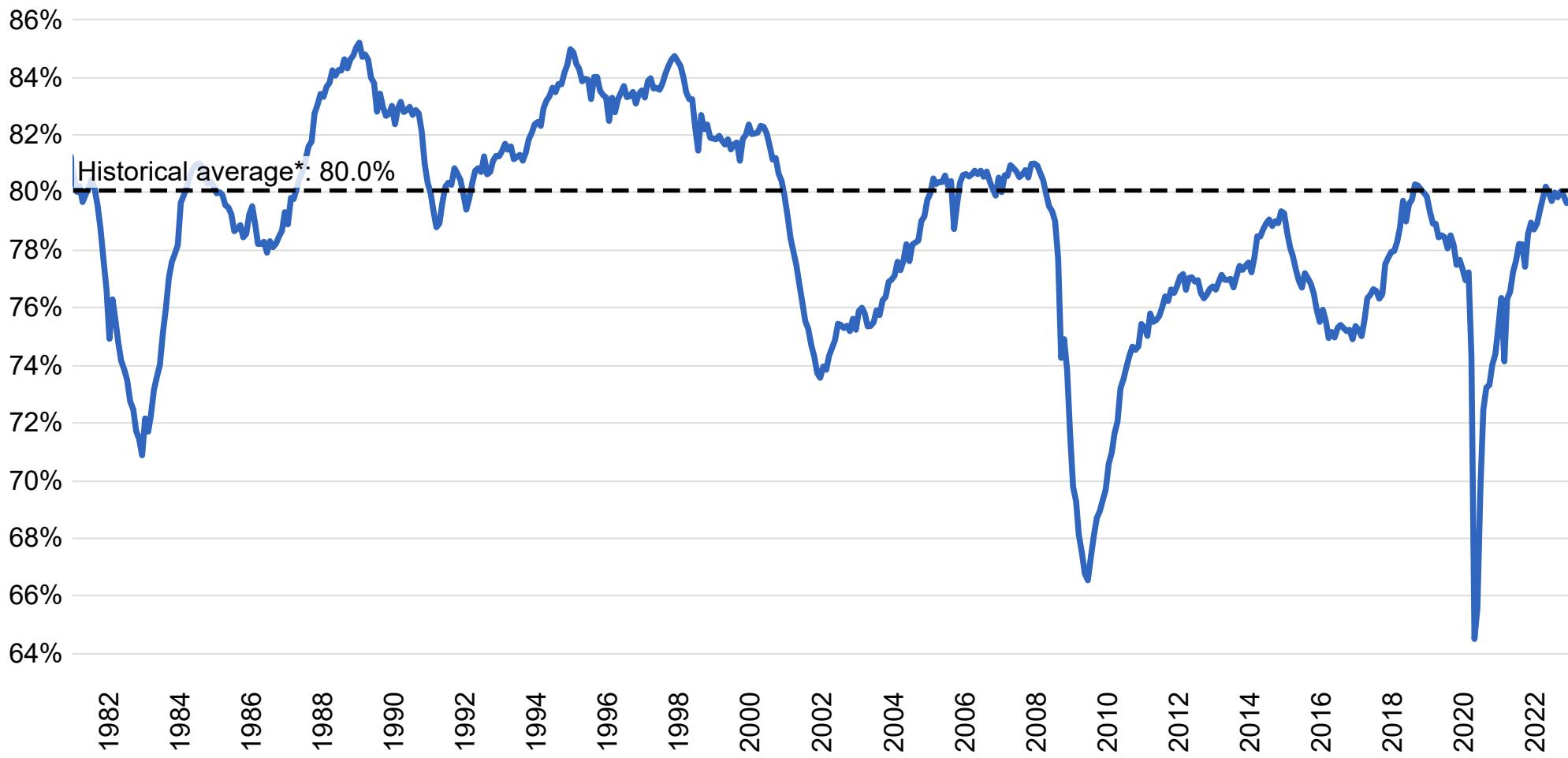
Capacity Utilization

Capacity utilization fell to 80% in November.

Capacity Utilization (Index Value)

Capacity utilization measures the amount of current output from the economy compared to its potential, without building additional infrastructure to produce more goods. A rise in capacity utilization means that businesses are opening previously shut factories and are beginning to gear up for a recovery in demand.

Current US capacity = 79.7%



Source: Federal Reserve (Data: Nov-22, Pub: Jan-23)

*Historical average: Jan-67 through current

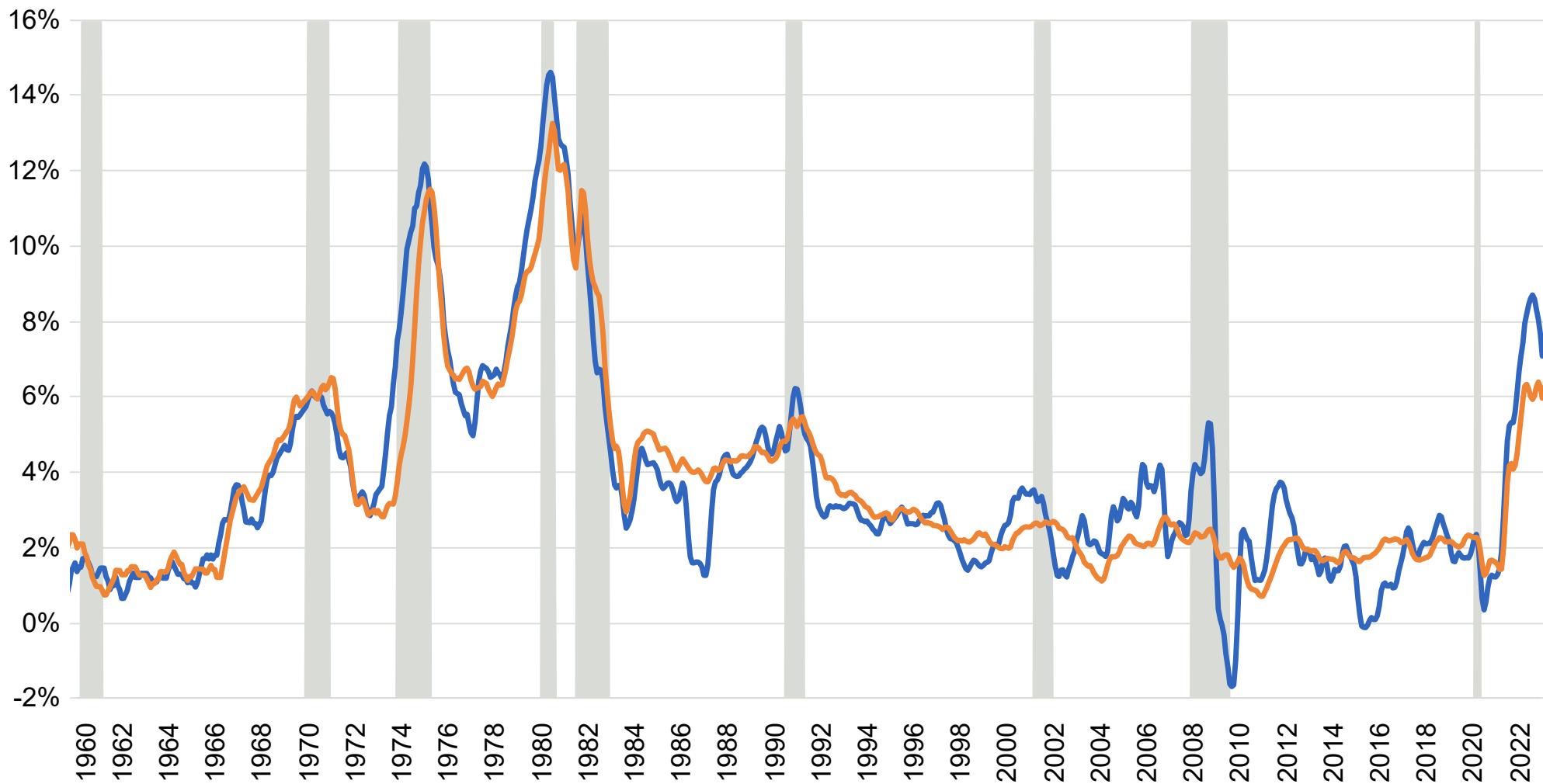
Inflation

CPI All Items decreased in December to 7.1% YOY, while Core CPI fell to 6.0% YOY. Note that we display a 3-month average, so this chart will not match CPI headline numbers.

Inflation

YOY % change (3-month moving average) — CPI All Items = 7.1% — Core CPI = 6.0% Recession

Core CPI excludes goods with high price volatility, such as food and energy.



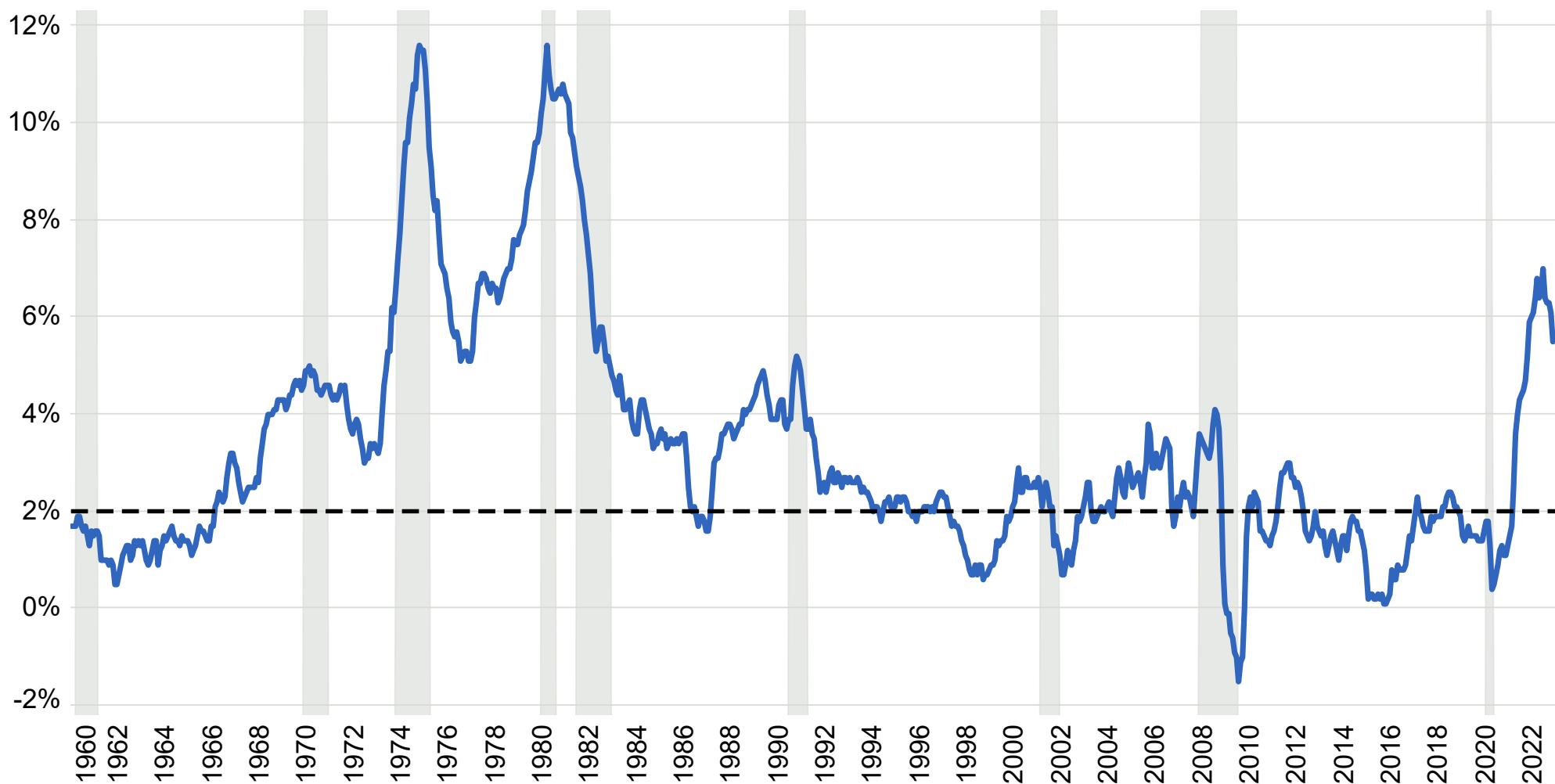
Source: Bureau of Labor Statistics (Data: Dec-22, Pub: Jan-23)

Inflation

The Fed views the Personal Consumption Expenditures (PCE) price index as a more accurate measure of inflation. The Fed sets its 2% inflation target based on the PCE. The most recent print is at 5.5%.

US Personal Expenditures Price Index

YOY % change — PCE Price Index YOY (SA) = 5.5% —— Fed target rate ■ Recessions



Note: PCE includes a broader range of expenditures than the CPI and is weighted based on what goods businesses are selling rather than what households are buying.

Source: BEA (Data: Nov-22, Pub: Jan-23)

Rent Inflation Expectations

Consumers are wary of inflation and believe rents will rise 10% over the next 12 months.

Rent: 12-Month Inflation Expectations

— Current = 9.6%



Source: Survey of Consumer Expectations, © 2013–2022 Federal Reserve Bank of New York (Data: Dec-22, Pub: Jan-23)

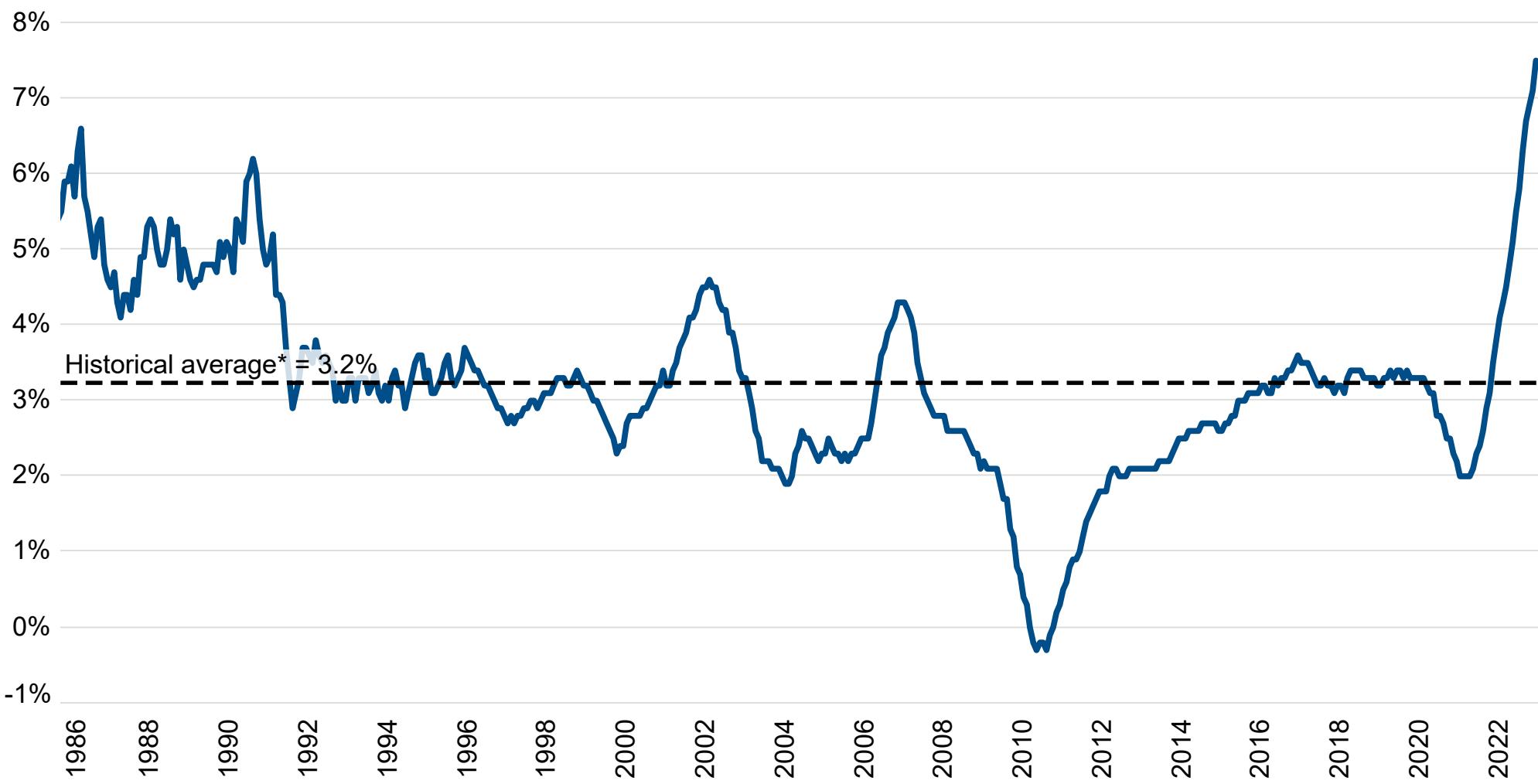
Owners' Equivalent Rent of Primary Residence

Owners' equivalent rent for single-family homes increased 7.5% YOY, a record high.

Owners' Equivalent Rent of Primary Residence, Rate of Inflation

Current YOY % change = 7.5%

This measures the amount a homeowner would pay to rent or would earn from renting his or her home in a competitive market. This metric accounts for 24.4% of the CPI weighting.



Source: Bureau of Labor Statistics (Data: Dec-22, Pub: Jan-23)

*Historical average: Dec-83 through current

Inflation: Inputs to Residential Construction

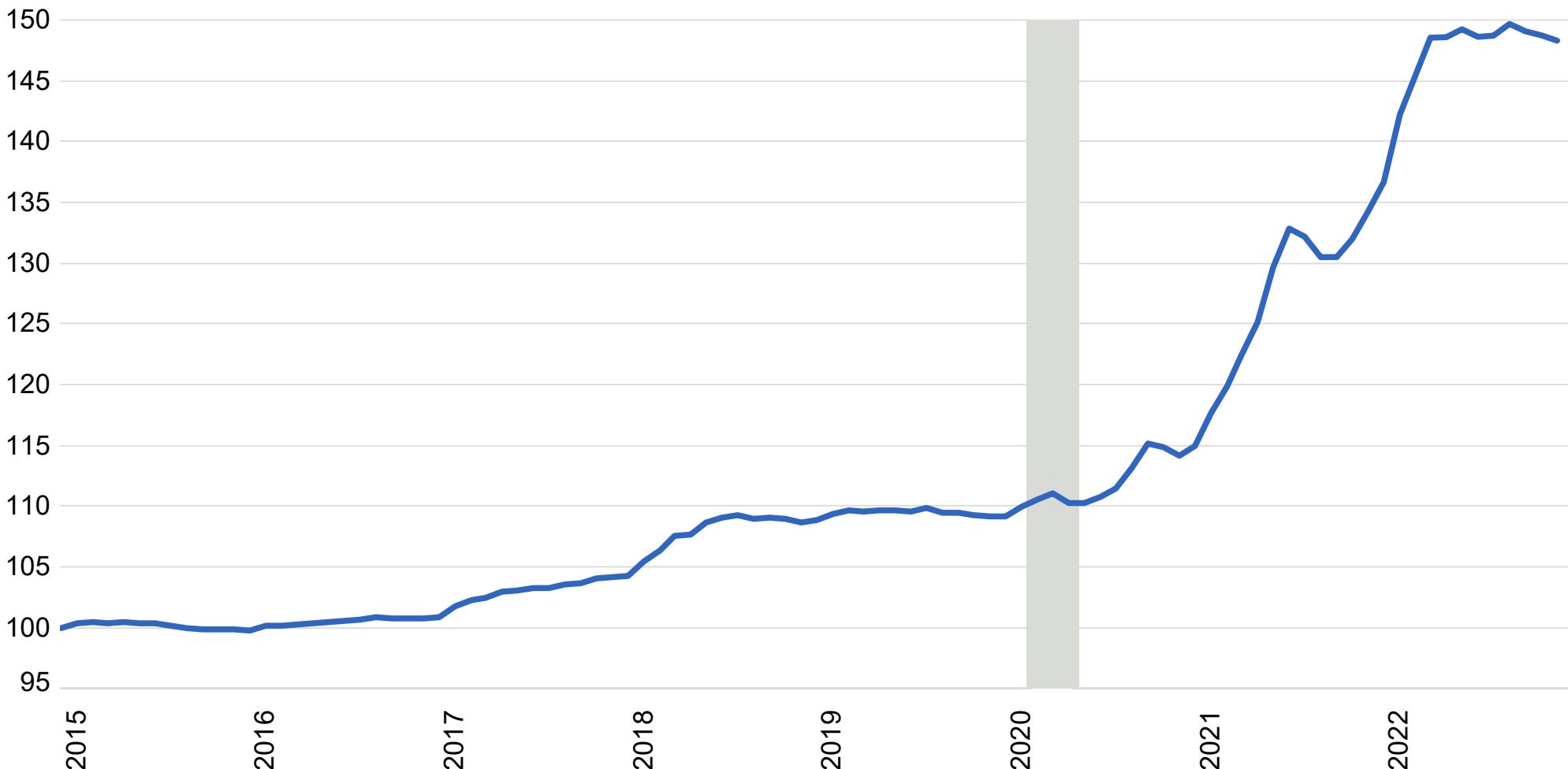
Strong housing demand and supply chain constraints have caused prices for inputs to residential construction to increase 10% YOY as of November.

Producer Price Index: Inputs to Residential Construction

Goods less food and energy

Current = 10.4% YOY

= Recession



Note: The producer price index tracks changes in the price of more than 100 goods that are considered inputs for residential construction. These inputs include the materials required for most types of building products.

Source: Bureau of Labor Statistics (Data: Nov-22, Pub: Jan-23)

Retail and Food Services Sales

Retail and food services sales rose 7% YOY.

Retail and Food Services Sales

YOY % change (SA)

50%

40%

30%

20%

10%

0%

-10%

-20%

1994

1996

1998

2000

2002

2004

2006

2008

2010

2012

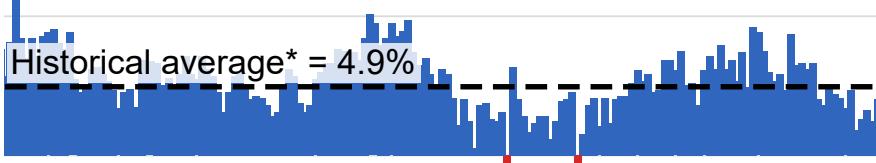
2014

2016

2018

2020

2022



Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

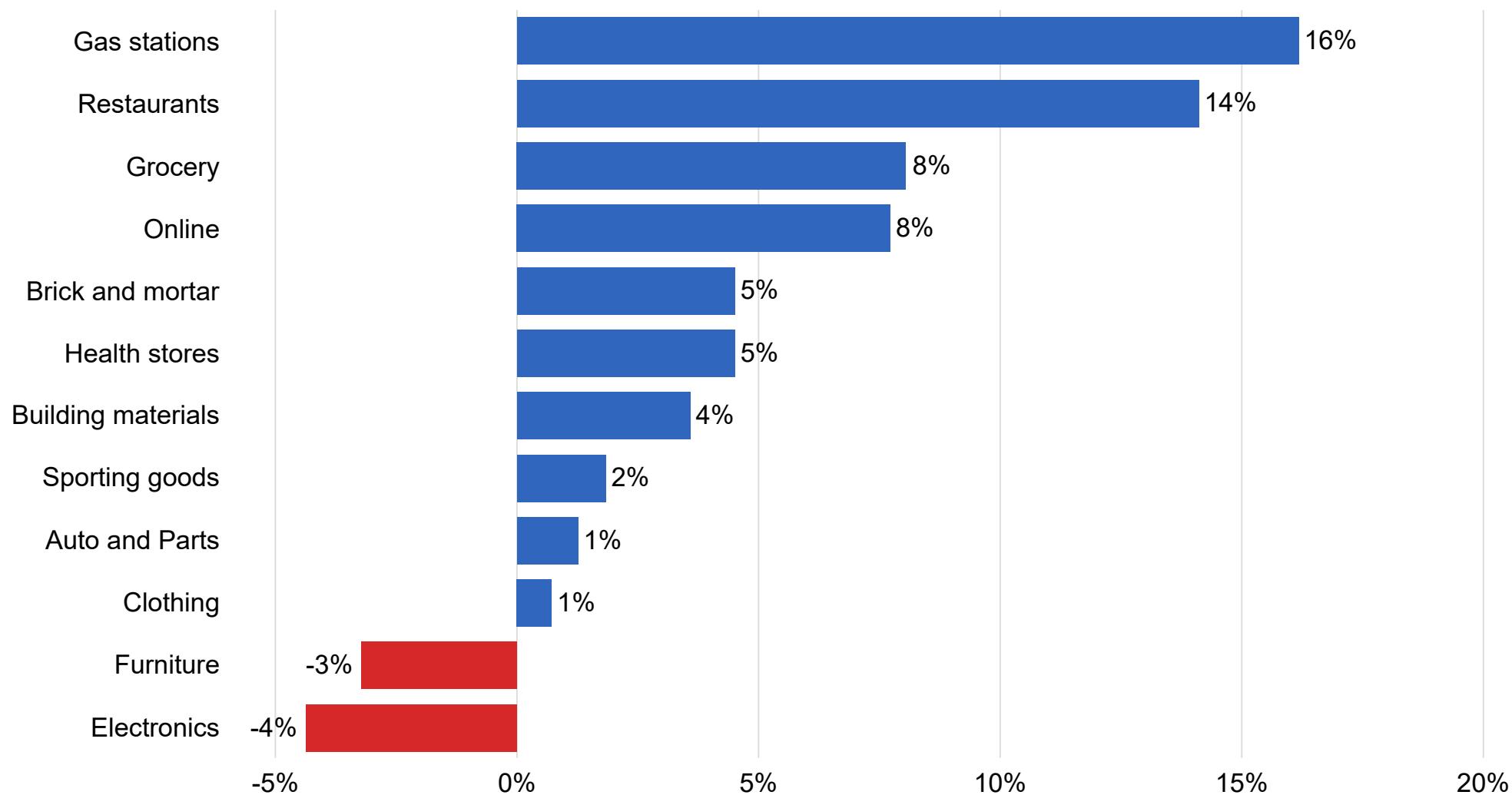
*Historical average: Jan-93 through current

Components of Retail Sales: Annual Growth Rate

Spending at gas stations is up 16% YOY.

Retail Sales Components YOY % Change

Seasonally adjusted



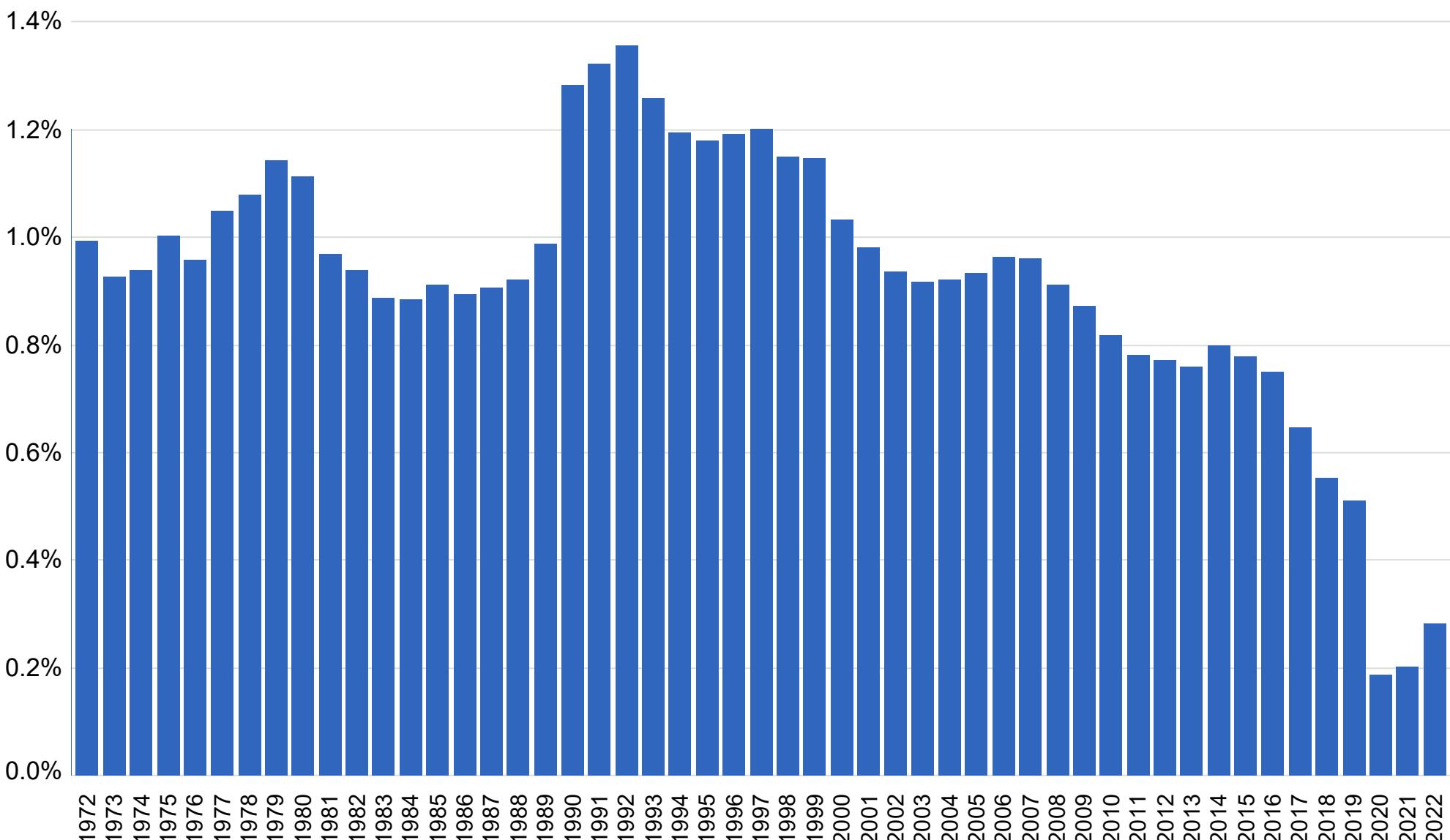
Brick and mortar contains general merchandise stores and miscellaneous store retailers.

Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

US Population Growth

The population growth rate has gradually slowed since peaking in 1992.

US Annual Population Growth



Sources: U.S. Bureau of Economic Analysis; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

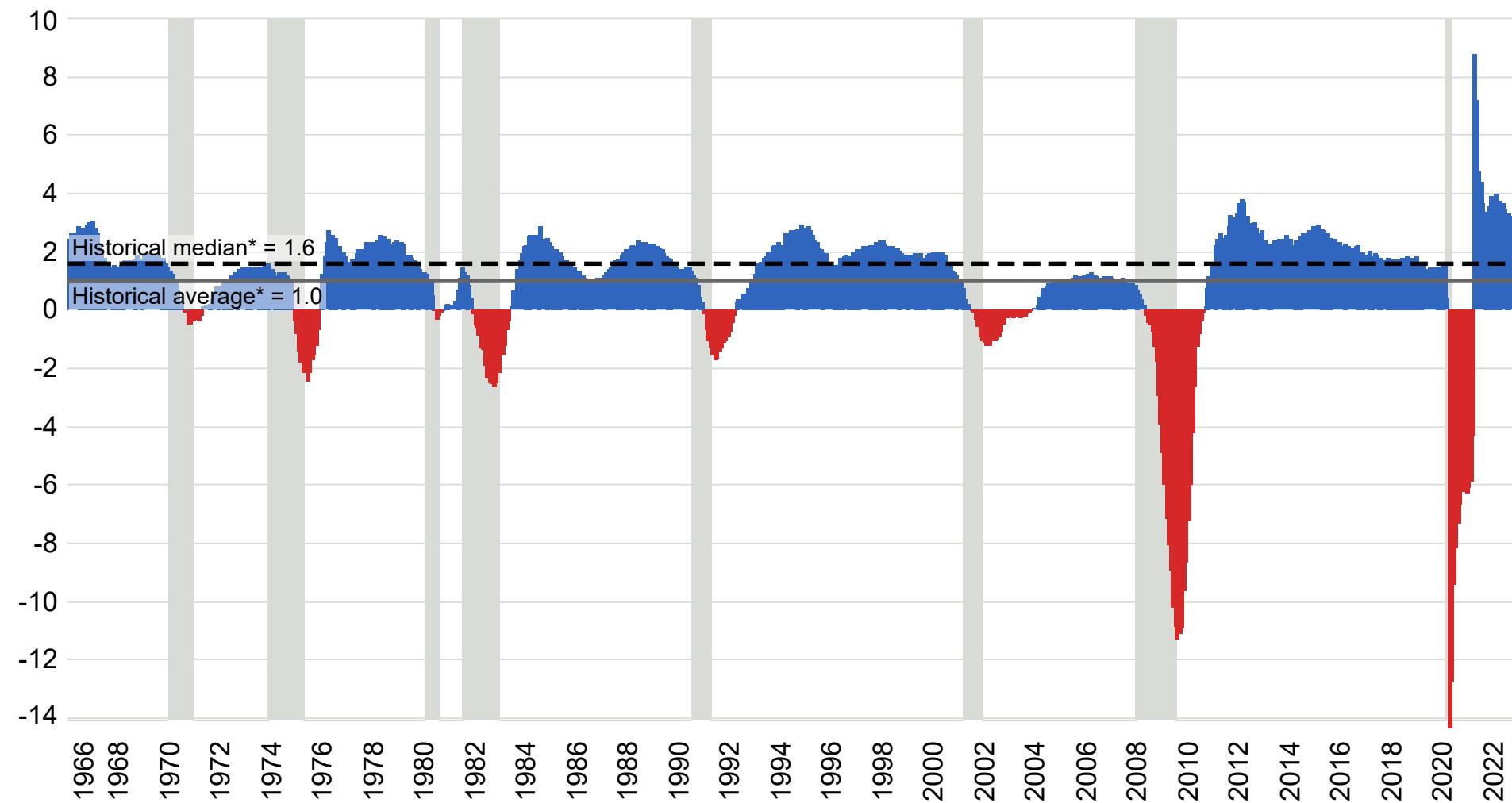
Employment-to-Permit Ratio

The employment-to-permit (E/P) ratio fell to 2.9 in November.

US Employment Growth to Total Permits Ratio

Current = 2.9

Note: The E/P ratio hit -11 during the Great Recession as construction activity slowed and employment went negative.



Sources: BLS; U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

*Historical average and median: Jul-65 through

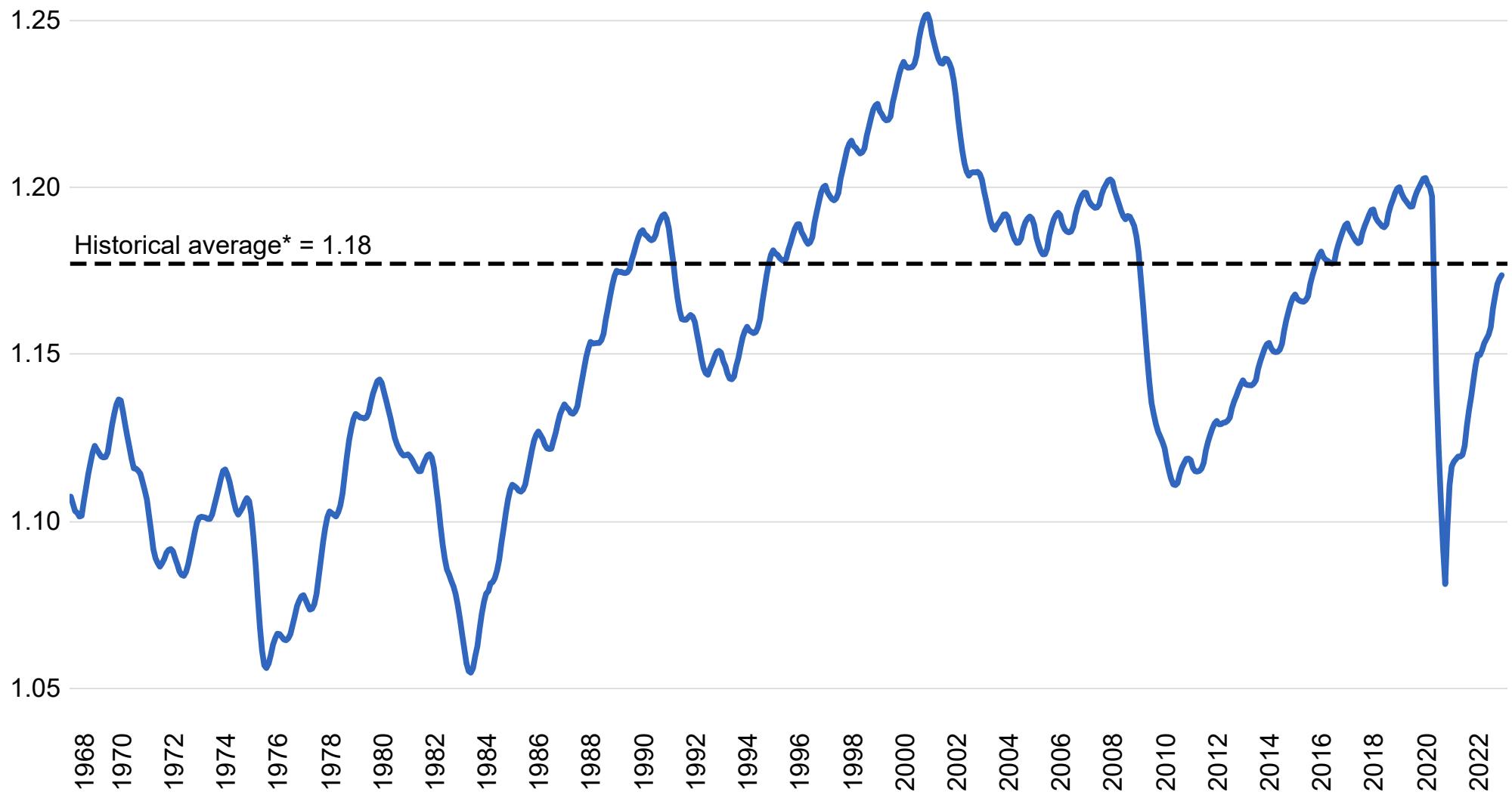
current

Employment-to-Households Ratio

As the unemployment rate drops and people work later in life, the jobs-to-households ratio increases. The current ratio of 1.17 is below the 2007 peak of 1.2.

US Total Employment-to-Households Ratio

— Rolling 6-month average = 1.17



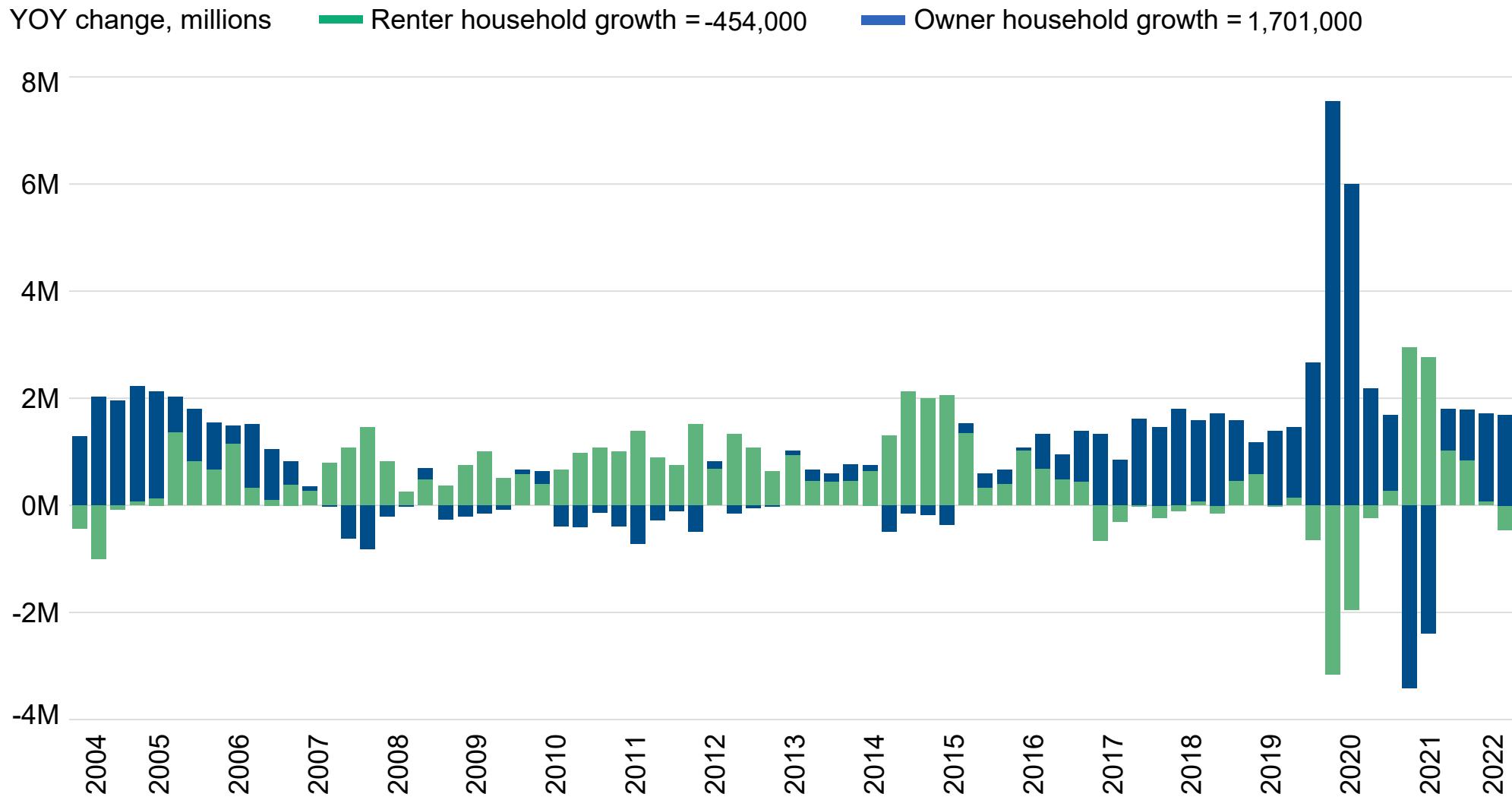
Sources: BLS; Census Bureau; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

*Historical average: Jan-90 through current

Total Household Growth

The Census Bureau reported a 1.2M household increase YOY in 3Q22, with an increase of 1.7M owners and a decrease of -0.5M renters. This quarter-to-quarter Census Bureau data is highly volatile; we include it to show trends. Be aware that this data is subject to revisions and volatility.

Census Headline Total Household Growth



Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

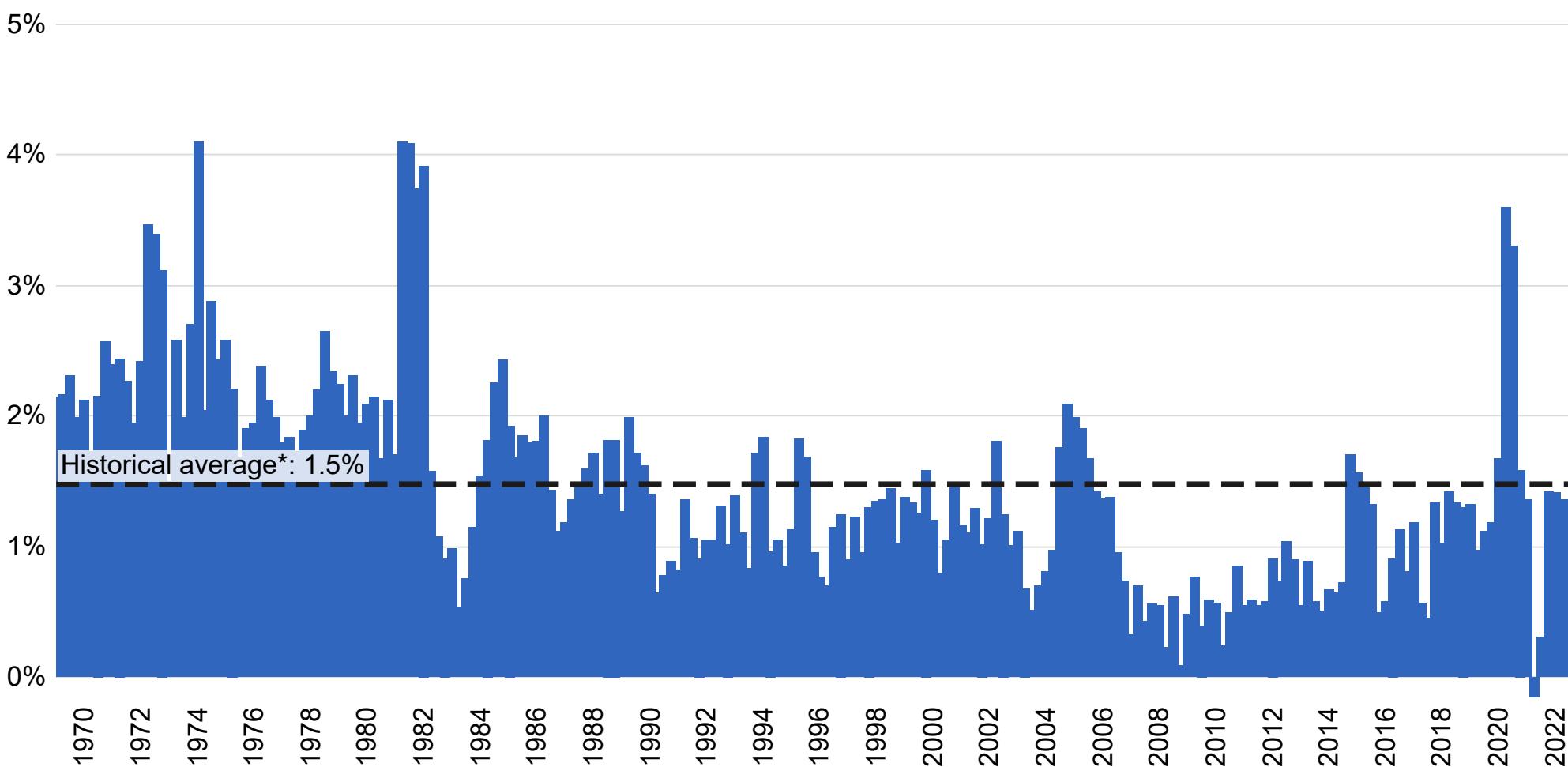
Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

Total Household Growth

The Census reports total households rose 1% YOY in 2022, below the 1.5% historical average.* This quarter-to-quarter Census Bureau data is highly volatile; we include it to show trends. Understand that this data is subject to revisions and volatility.

Census Headline Total Household Growth

YOY change



Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

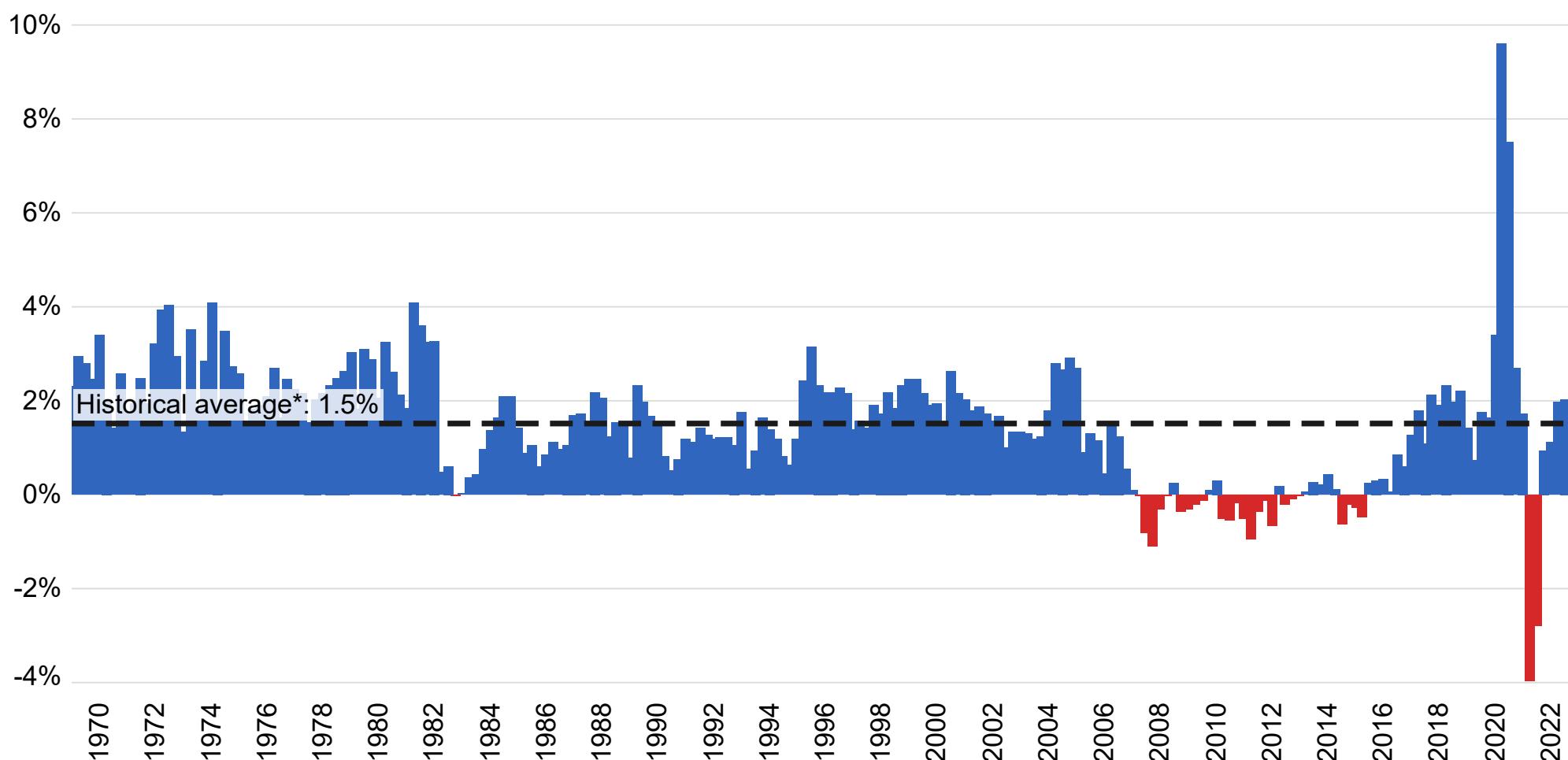
*Historical average: 3Q68 through current

Total Owner Household Growth YOY

The Census reports the number of homeowners increased by 2% YOY in 3Q22. This quarter-to-quarter Census Bureau data is highly volatile; we include it to show trends. Understand that this data is subject to revisions and volatility.

Census Headline Total Owned Household Growth

YOY change



Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

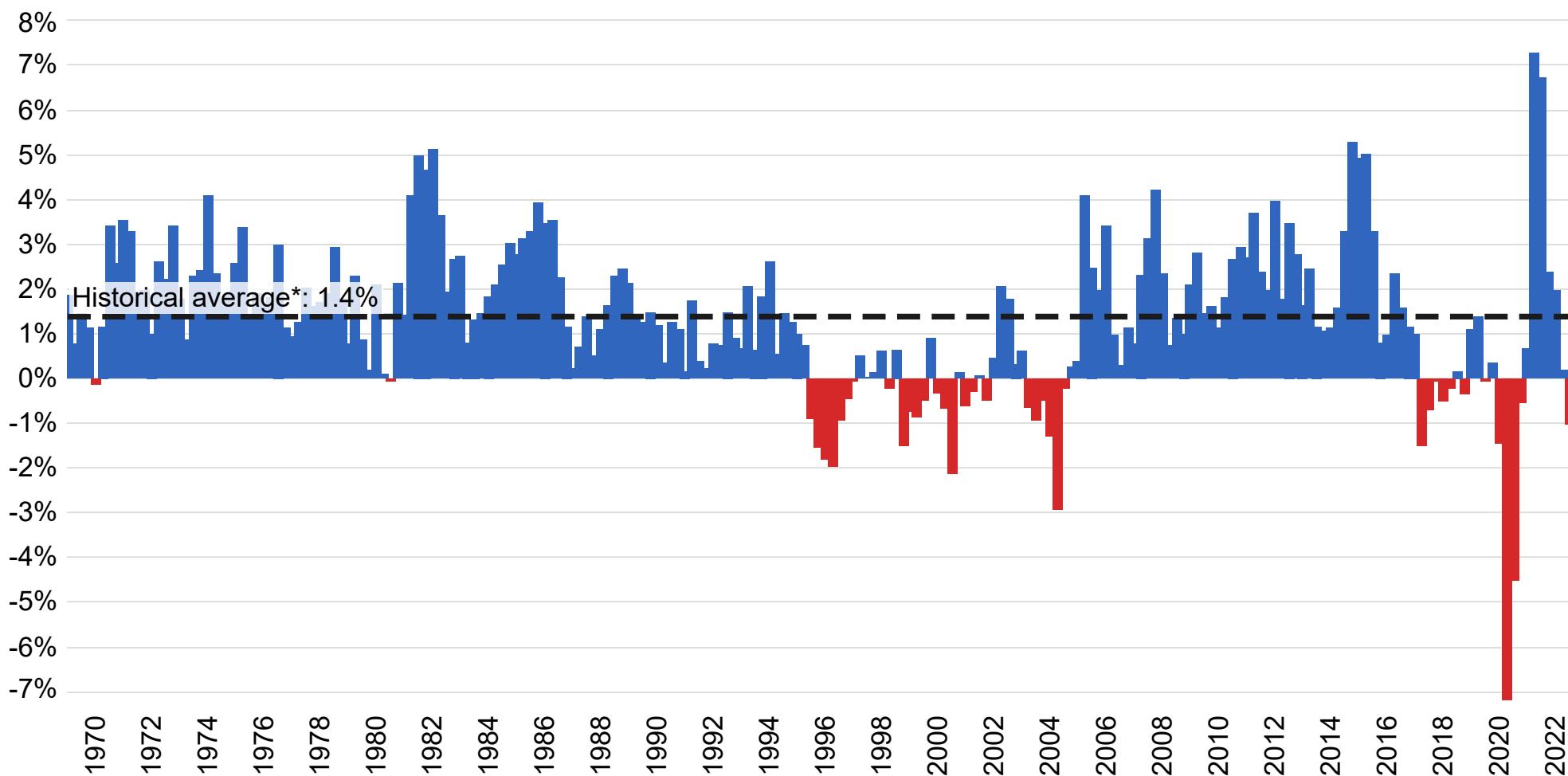
*Historical average: 3Q68 through current

Total Renter Household Growth YOY

The Census reports the number of renter households fell -1% YOY in 3Q22. This quarter-to-quarter Census Bureau data is highly volatile; we include it to show trends. Understand that this data is subject to revisions and volatility.

Census Headline Total Renter Households

YOY change



Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

*Historical average: 3Q68 through current

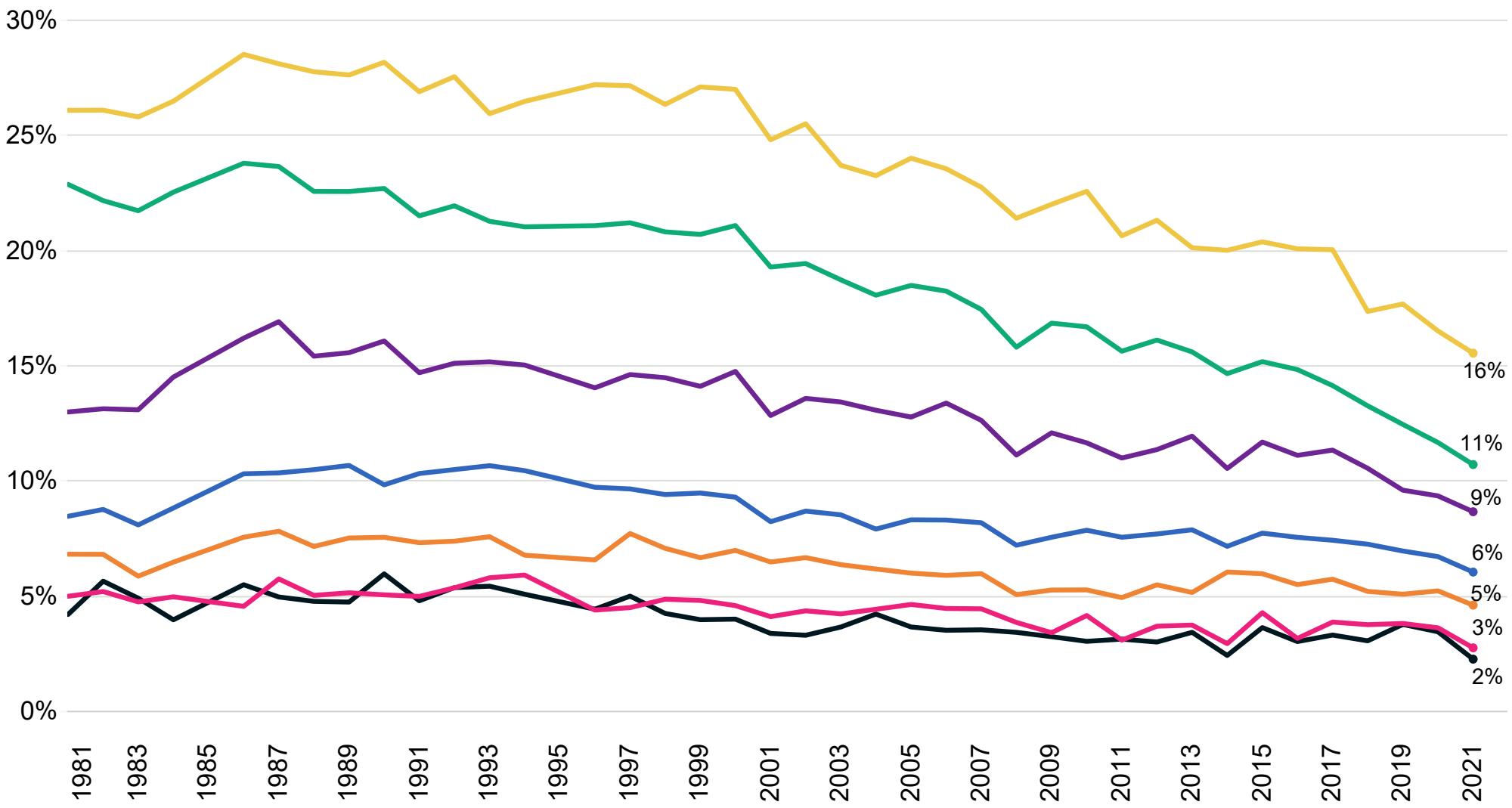
Mobility Rates by Age

Declining mobility rates suppress housing turnover and related building products spending.

Mobility Rates by Age

Share of people that moved in the prior year

- Under 25 years old (11%)
- 25 to 34 years old (16%)
- 35 to 44 years old (9%)
- 45 to 54 years old (6%)
- 55 to 64 years old (5%)
- 65 to 74 years old (3%)
- Over 75 years old (2%)



Sources: U.S. Census Bureau; Current Population Survey (Data: 2021, Pub: Jan-23)

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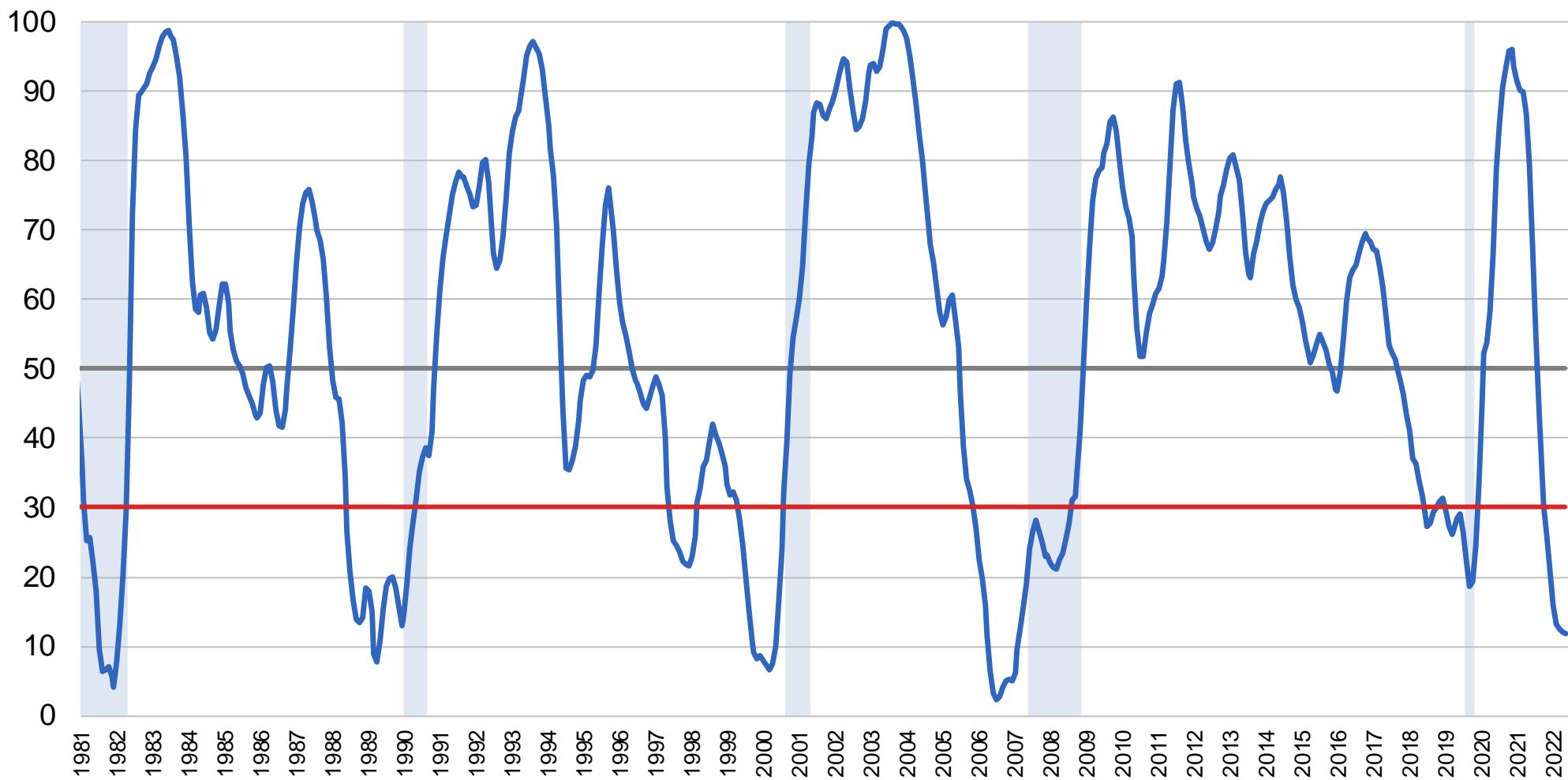
Leading economic indicators

Burns Economic Leading Indicator

Our leading economic indicator fell to 12. Historically, a recession has followed every time our indicator has dropped below 30.

Burns Economic Leading Indicator

Recessions — Leading indicator — 30 line



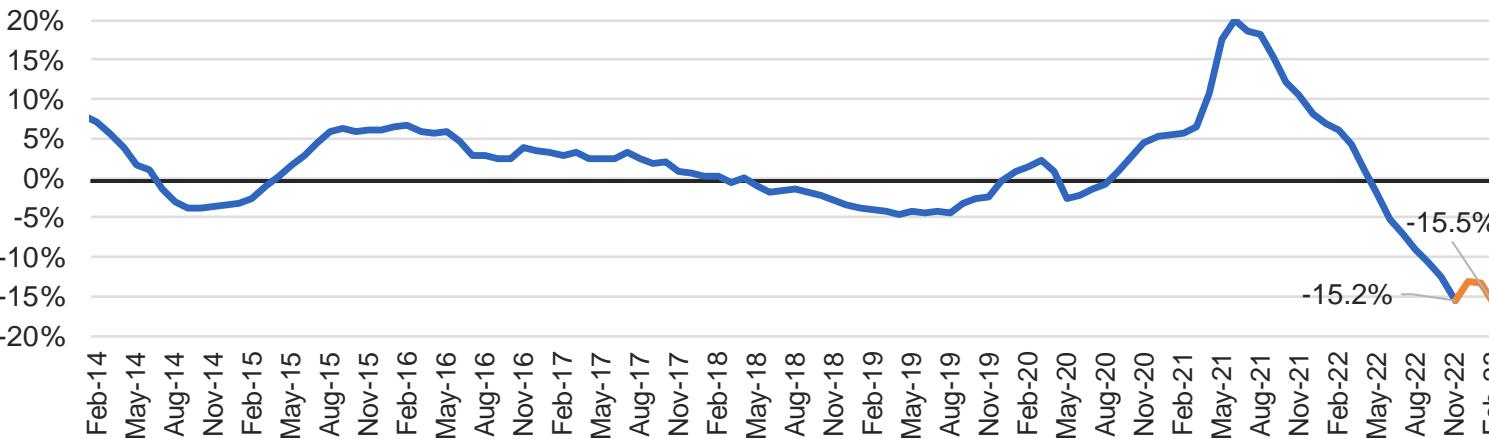
A forward-looking component of the Burns Economic Performance Index™ with data back to 1953 provides a lead on recession events as well as an early indication of coming growth cycles. We did a 64-year back test of this data, which shows a normal risk of recession in any given year on average to be 27% 2 years out and 50% four years out. The 30 line equates to a 75% 2-year likelihood of recession.

Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Burns Predictive Analytics: 3-Month Sales Forecast

Forecasts based on Google search trends

Existing Home Sale Closings 12-month total, YOY %



Forecast

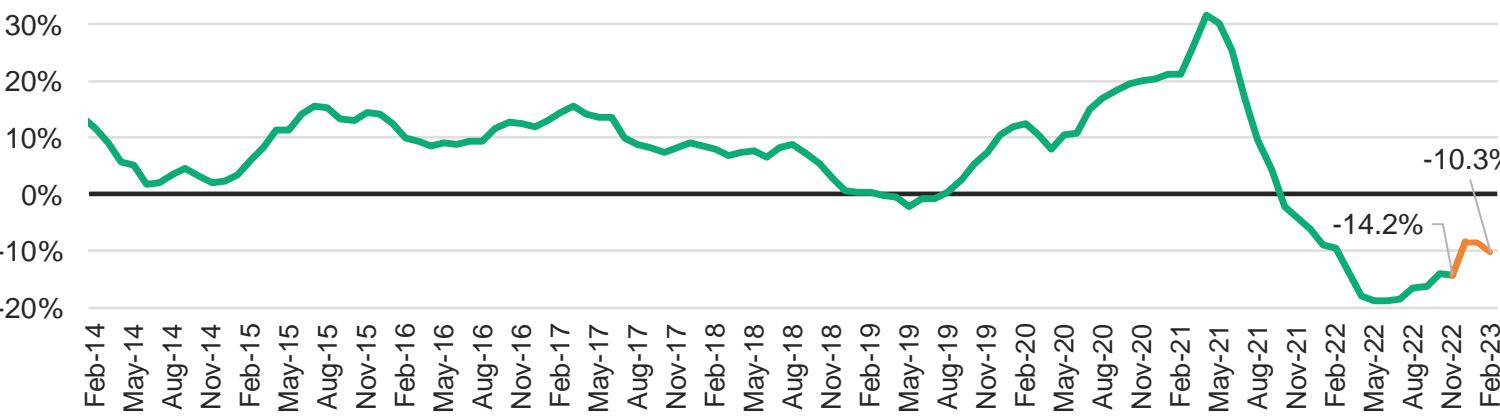
History



Existing home sales

Projected to decrease from -15.2% YOY in November to -15.5% in February

New Home Sales 12-month total, YOY %



Forecast

History

New home sales

Projected to increase from -14.2% YOY growth in November to -10.3% in February



Note: To forecast sales, we use a proprietary model based on the trends of several Google search terms/categories that have proven to strongly correlate to housing demand. Based on historical back testing, our existing home sale closings forecast accurately predicts next month's sales volume within 0.4% of actual 68% of the time (standard deviation is 0.4%), and our new home sales forecast is within 0.8% of actual 68% of the time. For more detail about our back testing results, see our methodology page [here](#).

Disclaimer: We obtained search trends data from the Google Trends website. Google did not participate in our analysis. JBREC inferences are not associated with any Google statements.

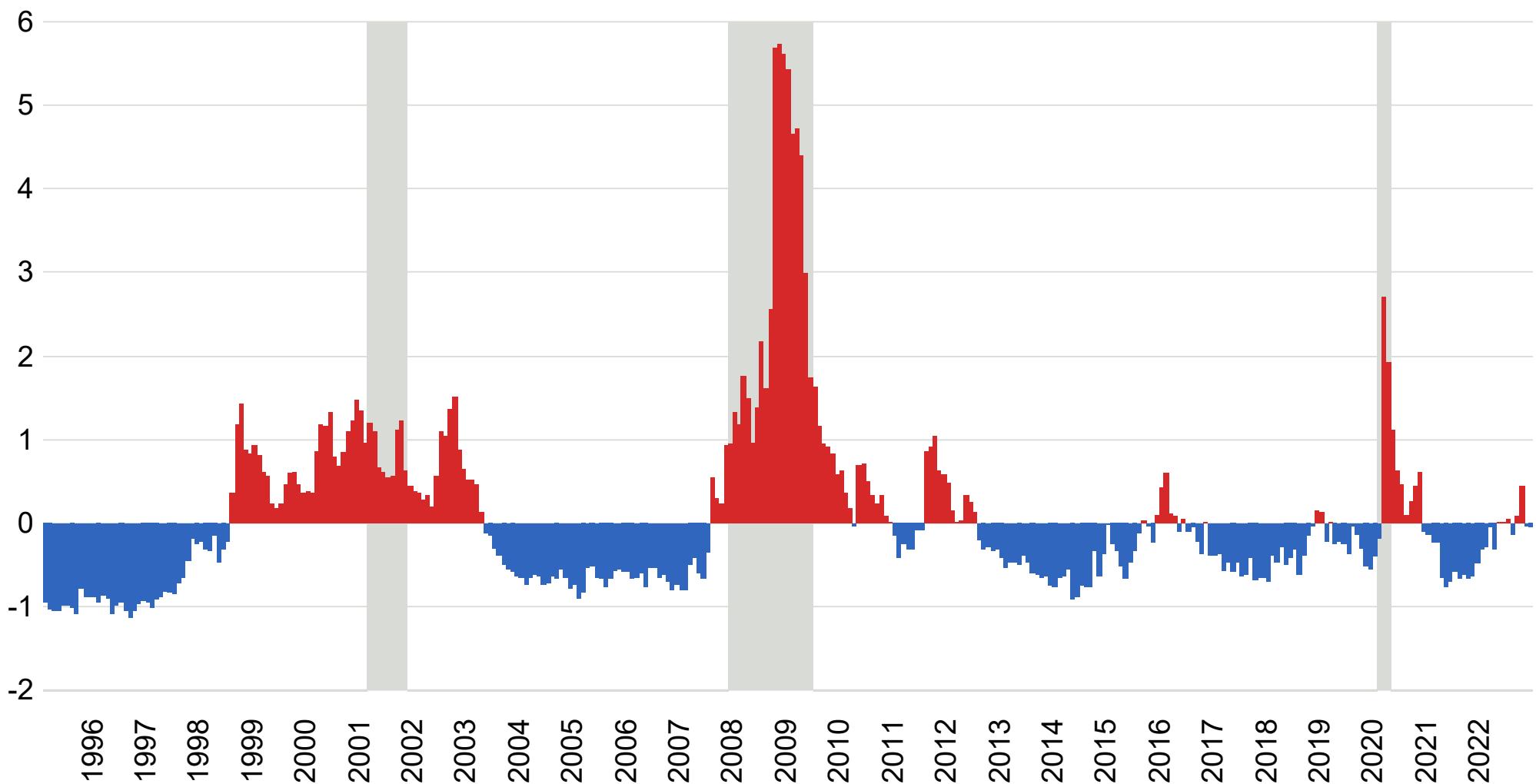
Sources: John Burns Real Estate Consulting, LLC; Google Trends (Pub: Jan-23)

Financial Stress Index

The Financial Stress Index is negative in December. Zero represents normal conditions, and a value above zero means higher stress.

Kansas City Financial Stress Index

Monthly average ■ Current = -0.05

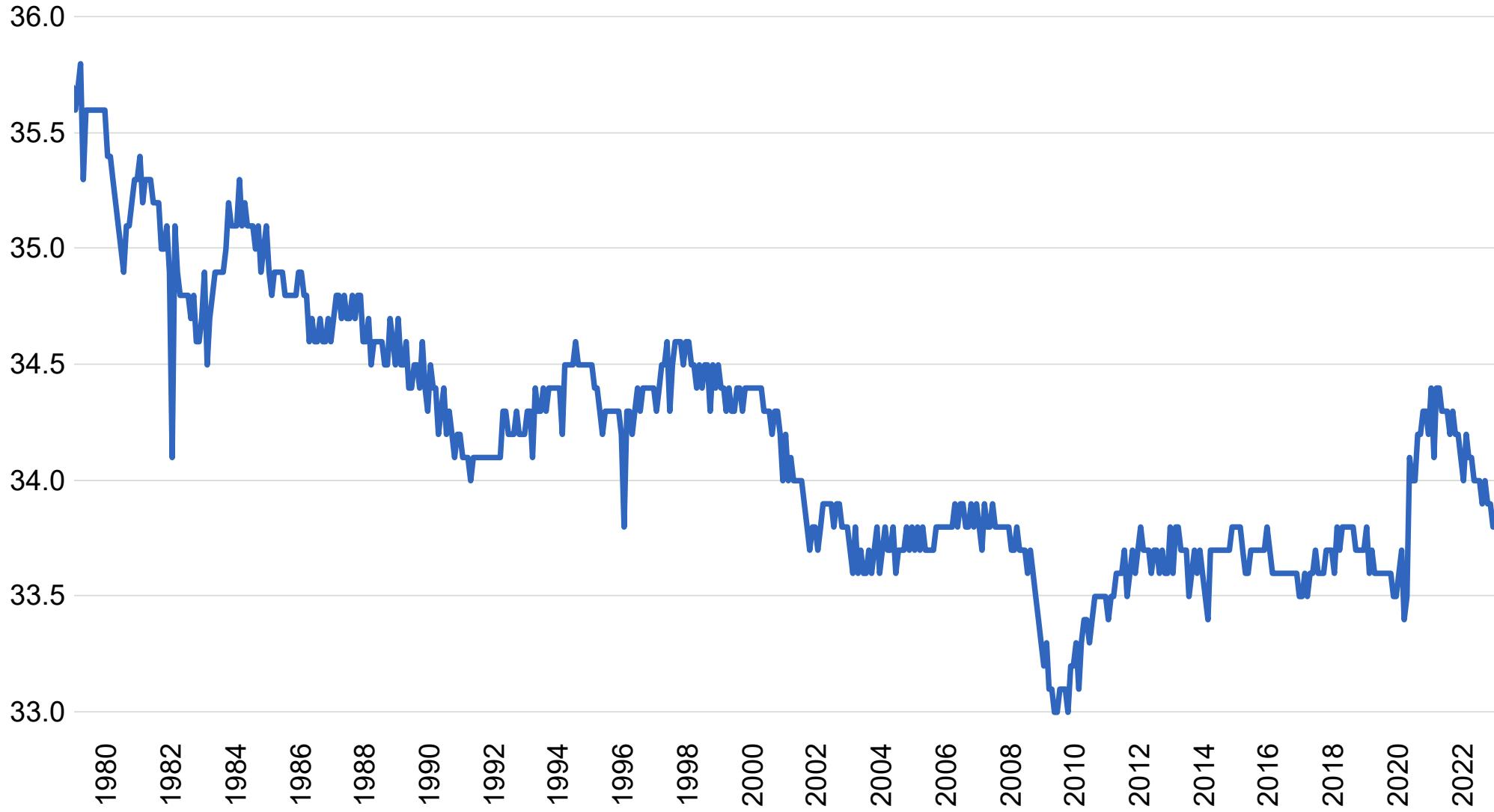


Sources: Federal Reserve Bank of Kansas City; NBER; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

US Average Hours Worked per Week

Hours worked per week for production and nonsupervisory employees have increased since the recession but are declining over the long term. Average hours worked per week totaled 34 in December.

US Average Hours Worked per Week



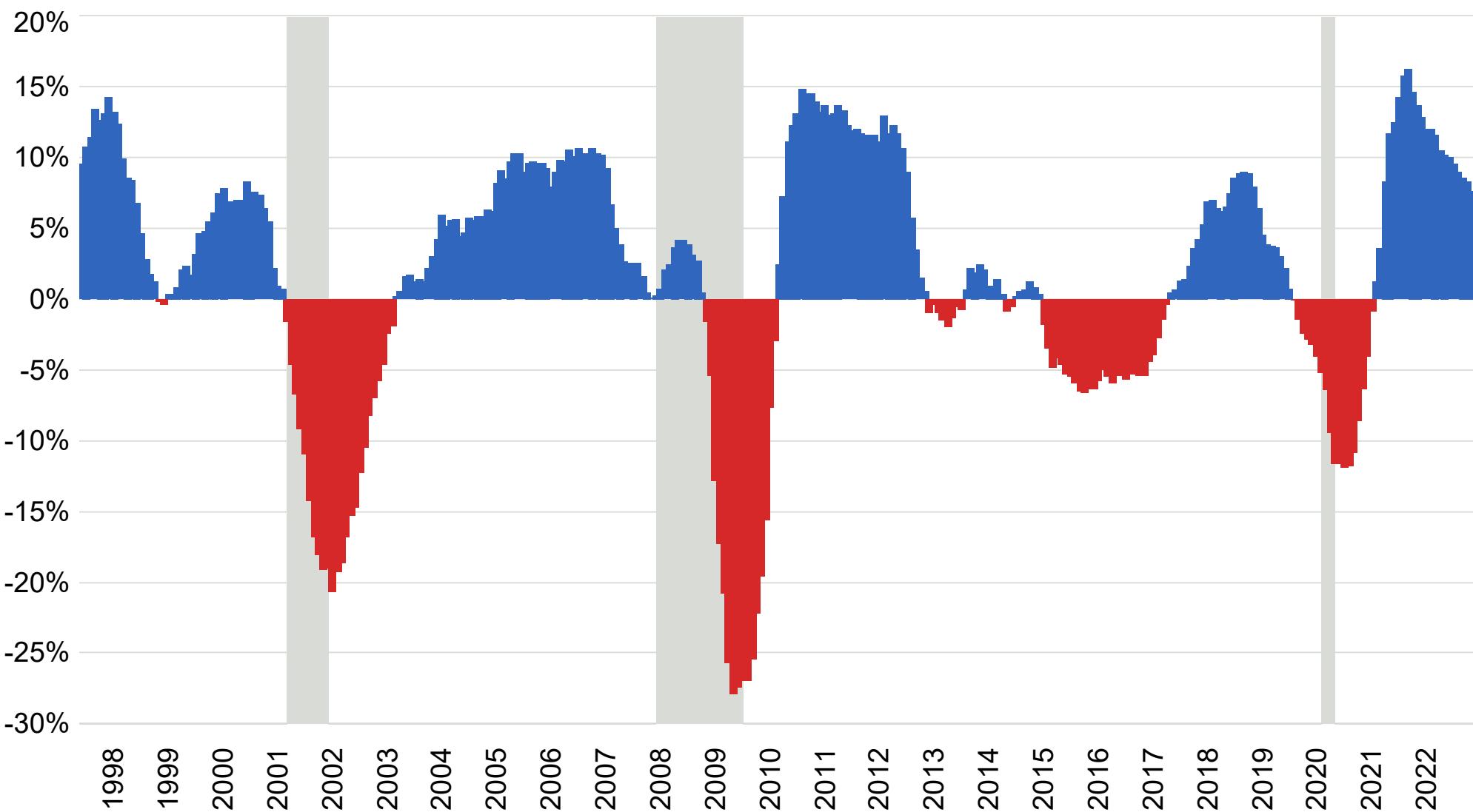
Source: Census Bureau (Data: Dec-22, Pub: Jan-23)

Capital Goods New Orders

Capital goods new orders rose 8% YOY.

Capital Goods New Orders, Nondefense excluding Aircraft

■ YOY% change, 6-month moving average = 7.7%



Source: Federal Reserve (Data: Nov-22, Pub: Jan-23)

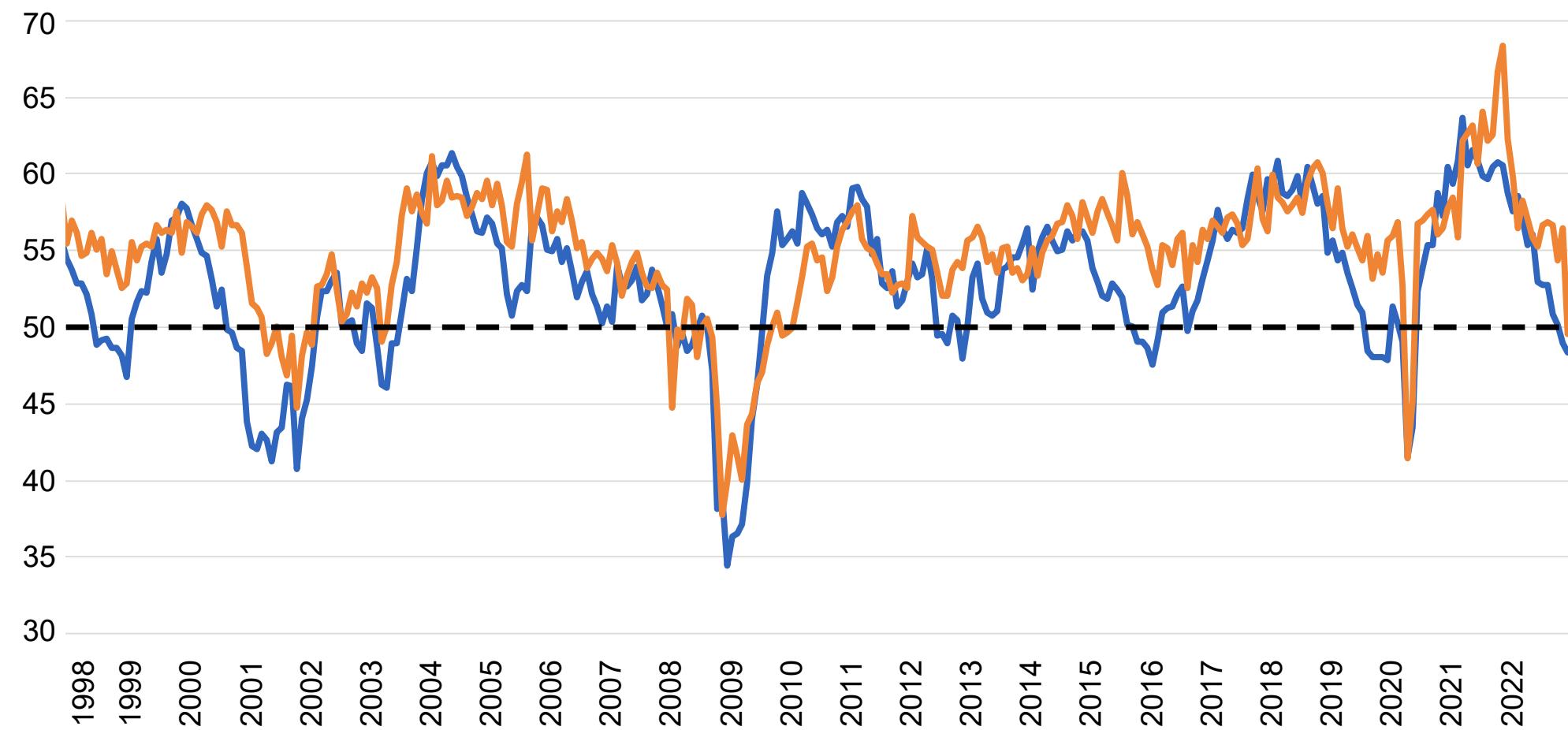
Institute for Supply Management (ISM) Indices

The ISM Non-Manufacturing (Business Activity) Index and the Purchasing Managers' Index (a proxy for manufacturing activity) are falling. Both fell below 50 in December, signaling contraction.

Institute for Supply Management (ISM) Indices

The indices, which monitor employment, production inventories, new orders, and supplier deliveries, are based on surveys of manufacturing and non-manufacturing firms. An index value greater than 50 signals growth.

■ ISM Purchasing Managers' Index (PMI) = 48.4 ■ ISM Non-Manufacturing Index (Business Activity) = 49.6



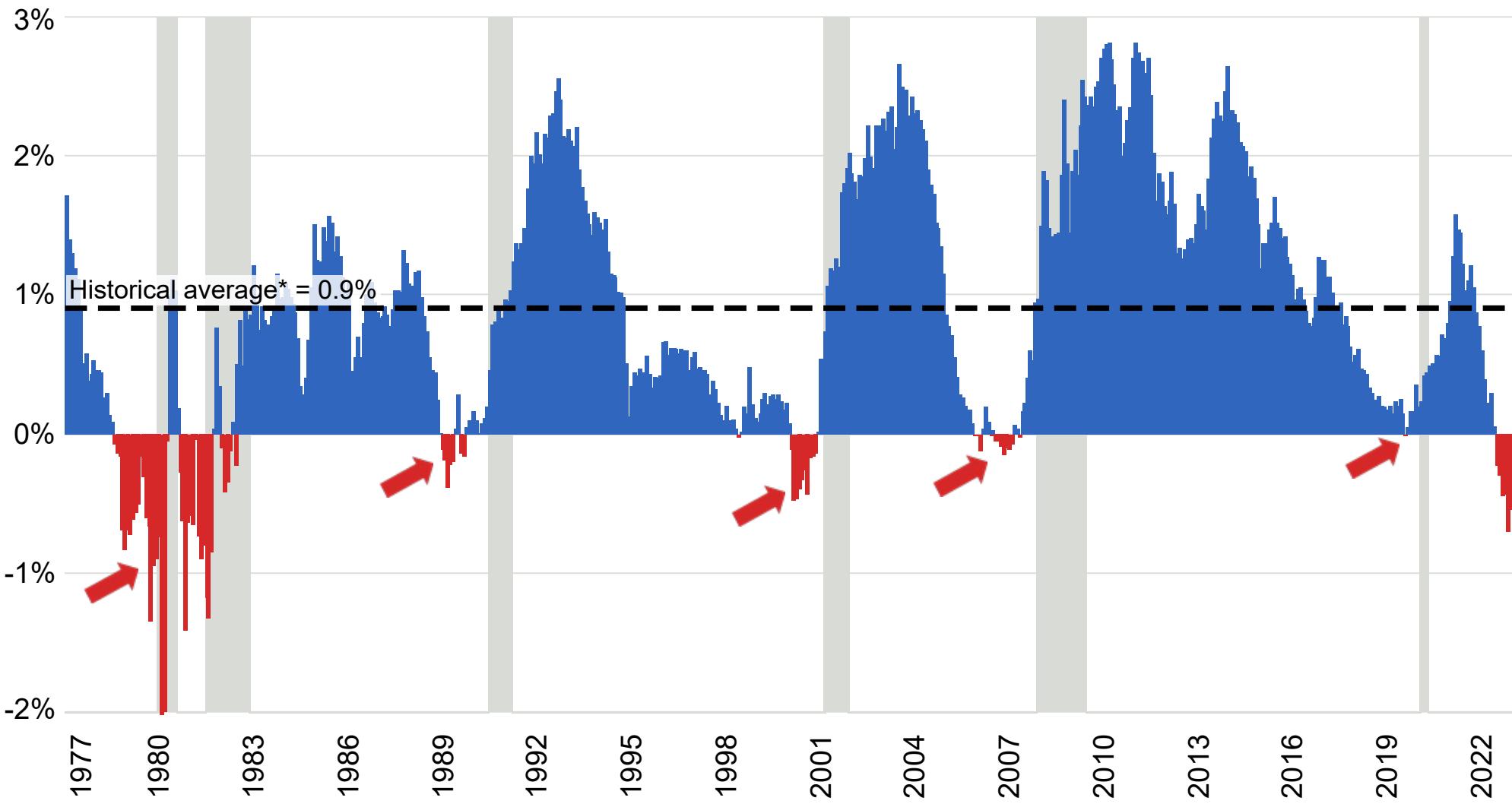
Source: Institute for Supply Management (Data: Dec-22, Pub: Jan-23)

Interest Rate Spread

The ten-year vs. two-year spread is at -55bps. An interest rate spread below 0% (inverted yield curve) is usually an early predictor of a recession.

Treasury Interest Rate Spread: 10-Year vs. 2-Year

Current value = -0.55%

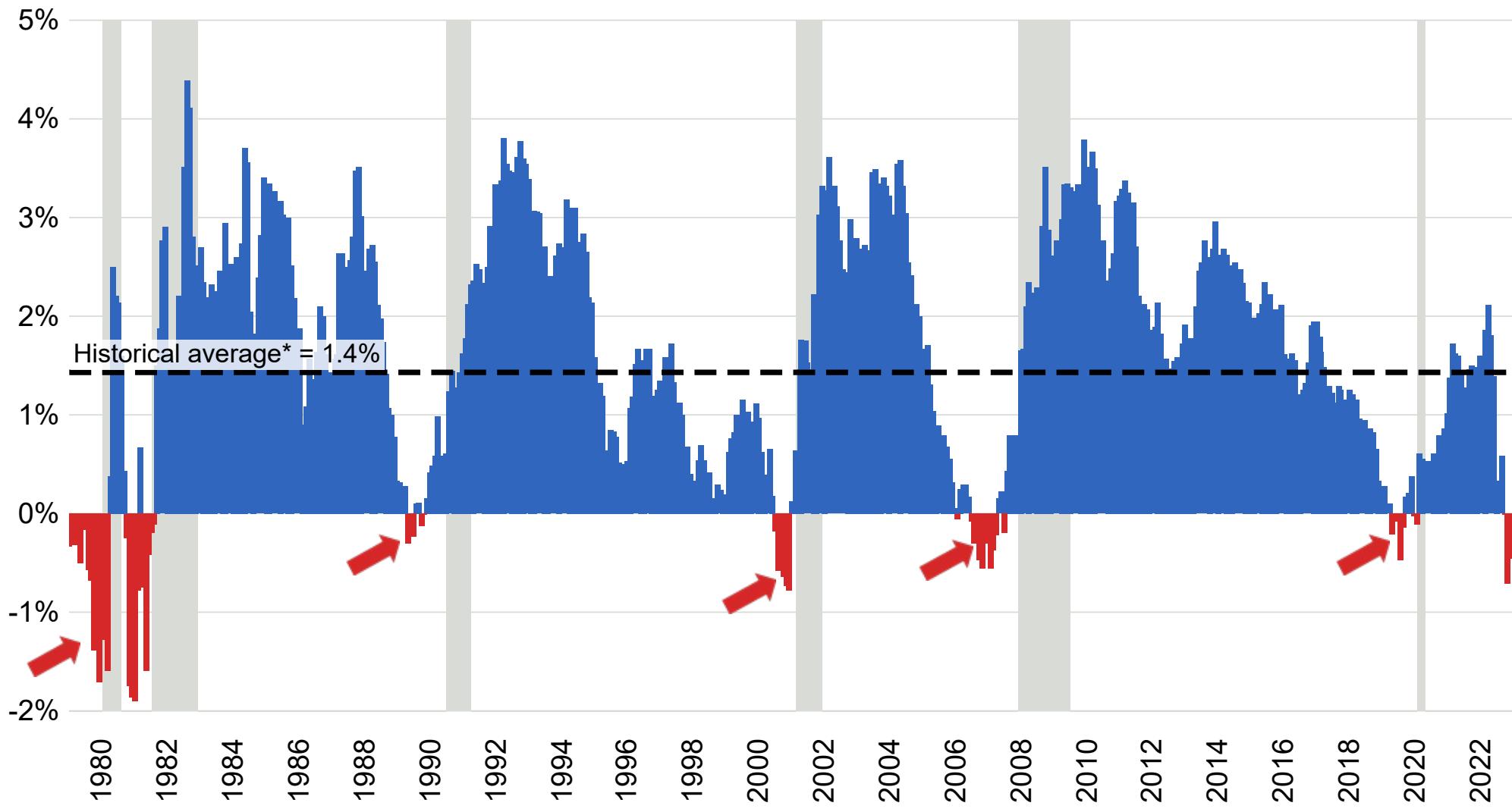


Interest Rate Spread

The ten-year vs. three-month spread is at -47bps. An interest rate spread below 0% (inverted yield curve) is usually an early predictor of a recession.

Treasury Interest Rate Spread: 10-Year vs. 3-Month

Current value = -0.47%



Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

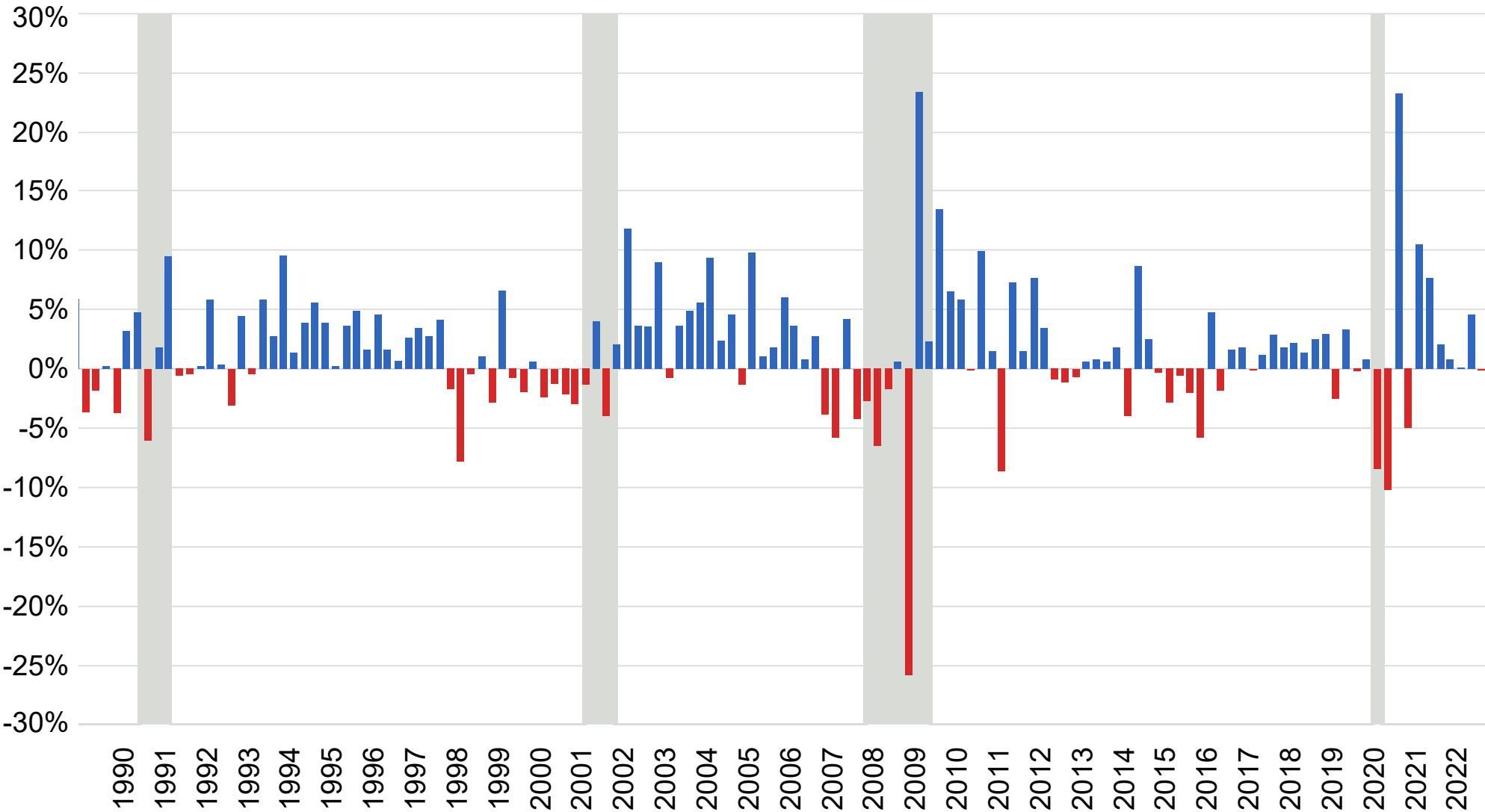
*Historical average: Feb-54 through current

US Corporate Profits

Corporate profits remained flat at 0% growth in 3Q22 on an annualized basis.

US Corporate Profits

YOY% change, quarterly; with inventory valuation adjustment and capital consumption adjustment



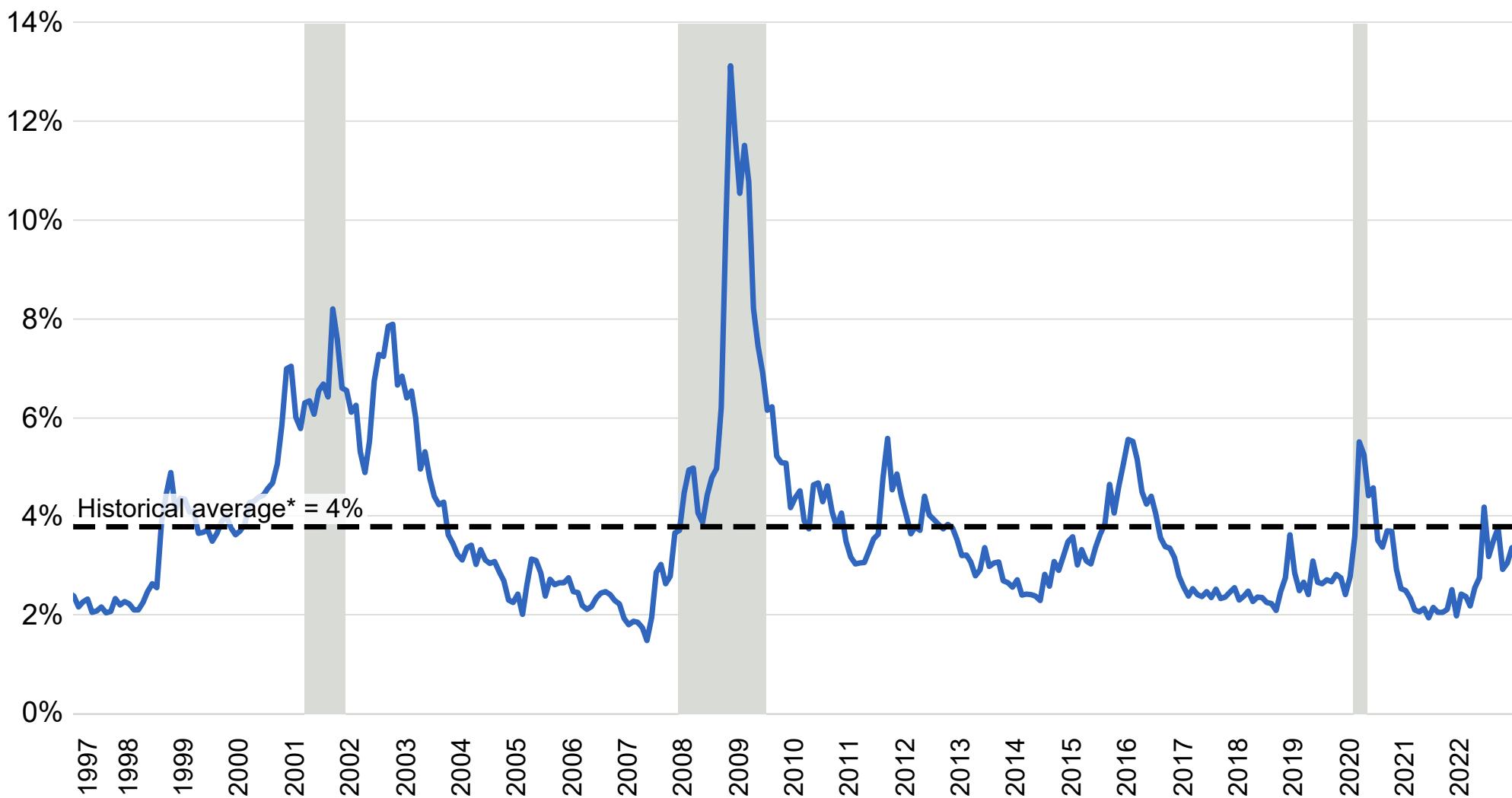
Sources: BEA; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

US Corporate Credit Spreads (Investment Grade vs. High Yield)

Risk premiums have decreased in recent months, lowering the spread between high yield and investment grade debt. Increases in the credit spread precede distress in the economy and eventual recessions.

US Corporate Credit Spread (Investment Grade vs. High Yield)

Monthly average — Current spread = 3.4%



Sources: BofA Merrill Lynch; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

*Historical average: Jan-97 through current

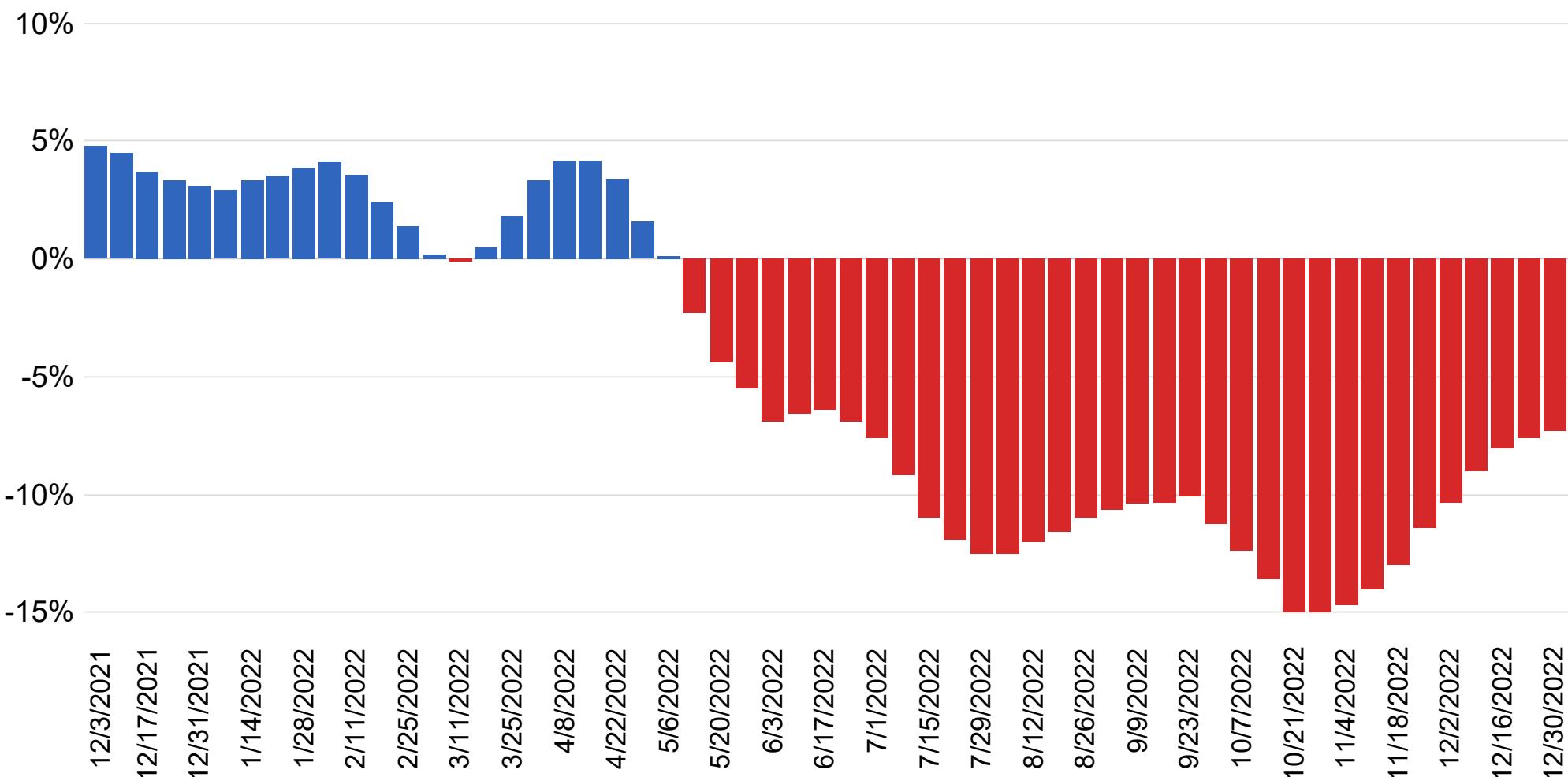
ECRI US Weekly Leading Index

The ECRI Weekly Leading Index fell -7.3%.

ECRI US Weekly Leading Index

■ ECRI, YOY% change = -7.3%

ECRI WLI has a moderate lead over cyclical turns in US economic activity. It includes measures of money supply, industrial materials prices, housing activity, bond markets, job growth, and stock prices.



Source: ECRI (Data: Dec-22, Pub: Jan-23)

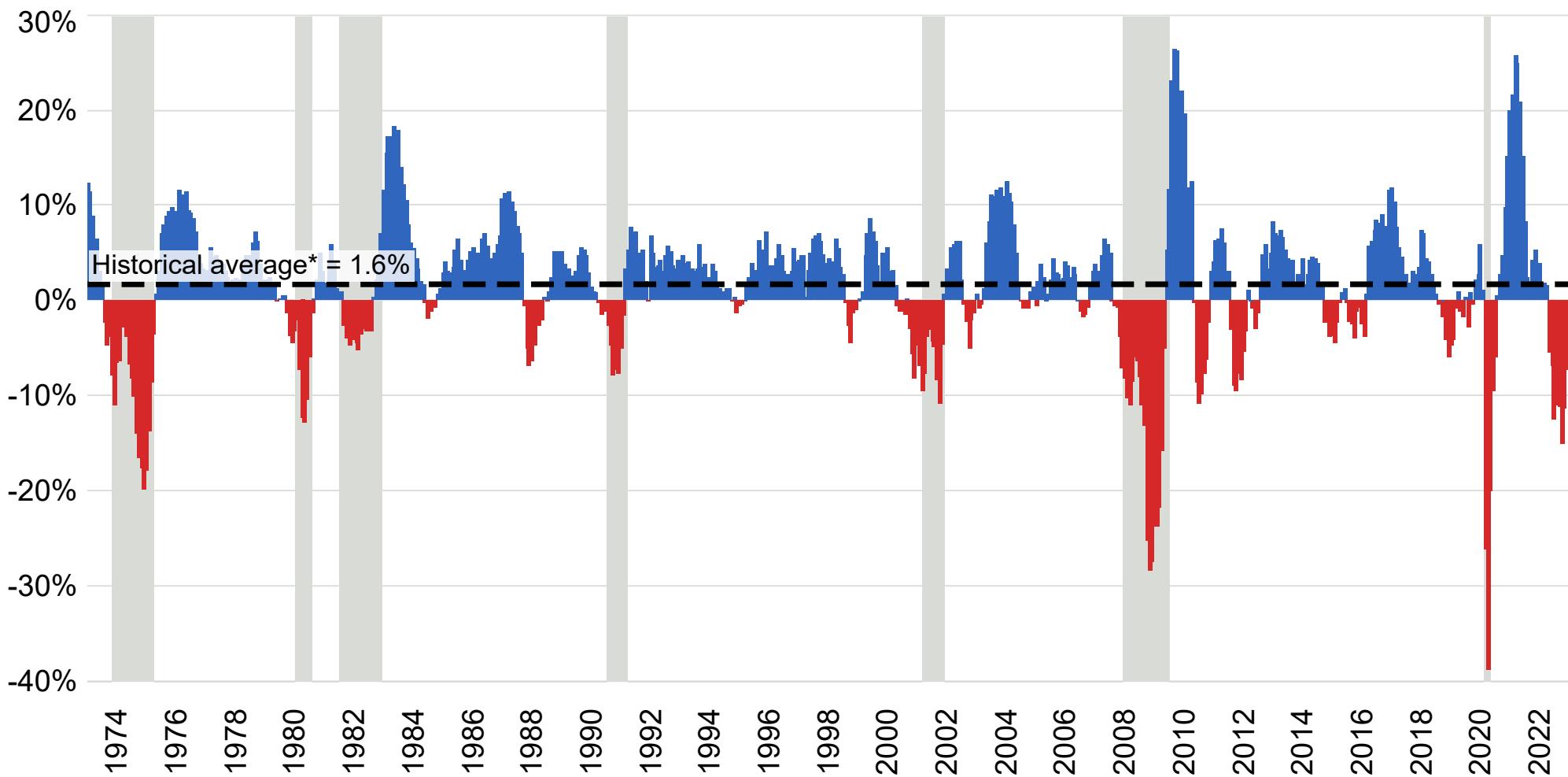
ECRI US Weekly Leading Index

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ECRI US Weekly Leading Index

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— ECRI, YOY% change = -7.3%



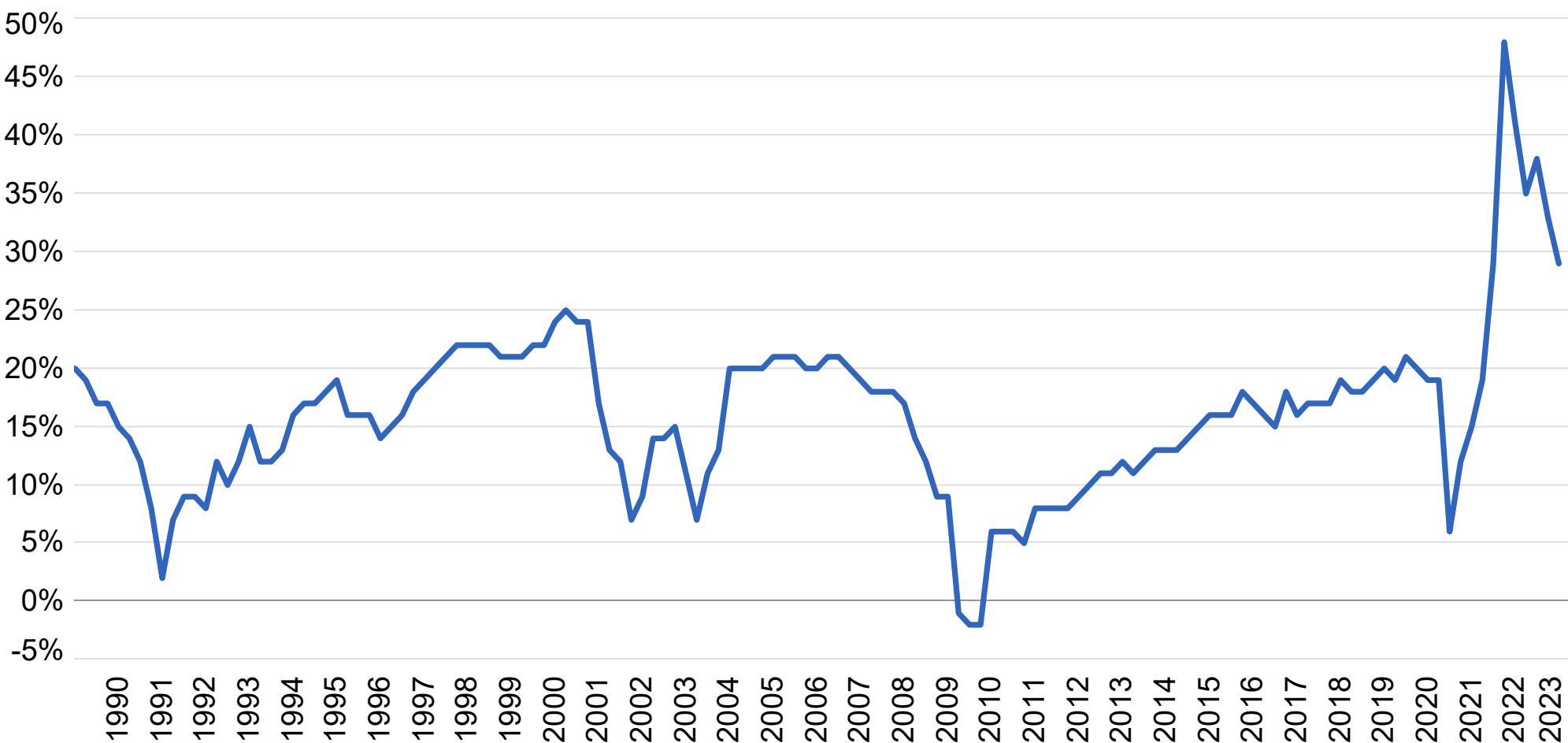
ManpowerGroup Net Employment Outlook

A net 29% of employers are looking to add to their workforce in 1Q23, down from 48% in 4Q21.

ManpowerGroup Net Employment Outlook

Seasonally adjusted

The Net Employment Outlook is derived by taking the percentage of employers anticipating an increase in hiring activity and subtracting from this the percentage of employers expecting a decrease in hiring activity. The survey looks at hiring confidence for approximately 66,000 employers in 42 counties and territories.



Source: Manpower Employment Group Outlook Survey (Data: 1Q23, Pub: Jan-23)

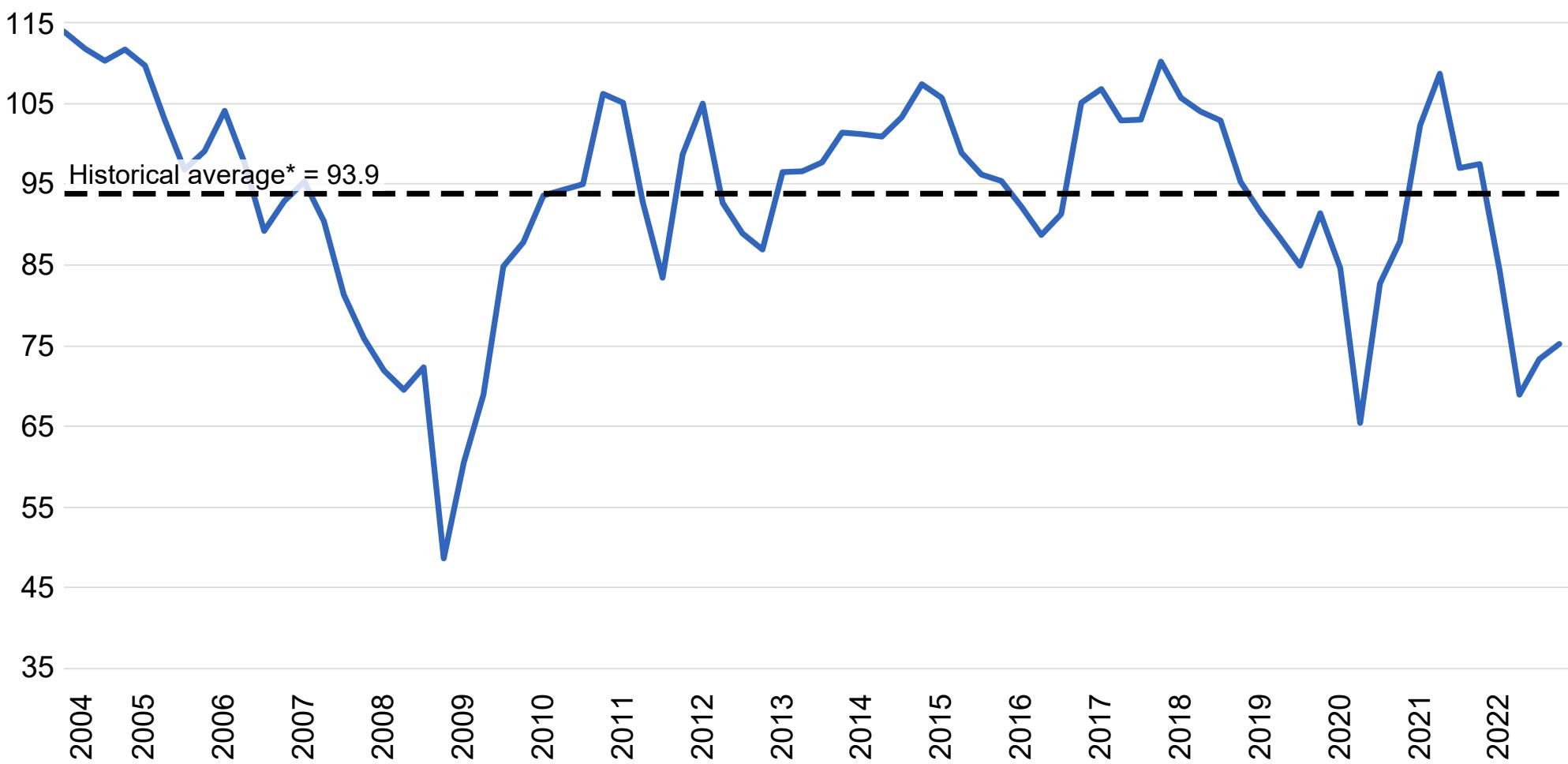
US Vistage CEO Confidence Index

Small- and mid-sized business CEO confidence fell -23% YOY as of 4Q22, indicating CEOs are less optimistic about the overall health of the economy.

US Vistage CEO Confidence Index

Survey of more than 1,500 CEOs of small to mid-sized businesses across the country.

■ Current = 75



Note: An index value above 100 suggest that more CEOs find conditions favorable than unfavorable.
Source: Vistage (Data: 4Q22, Pub: Jan-23)

*Historical average: 2Q03 through current

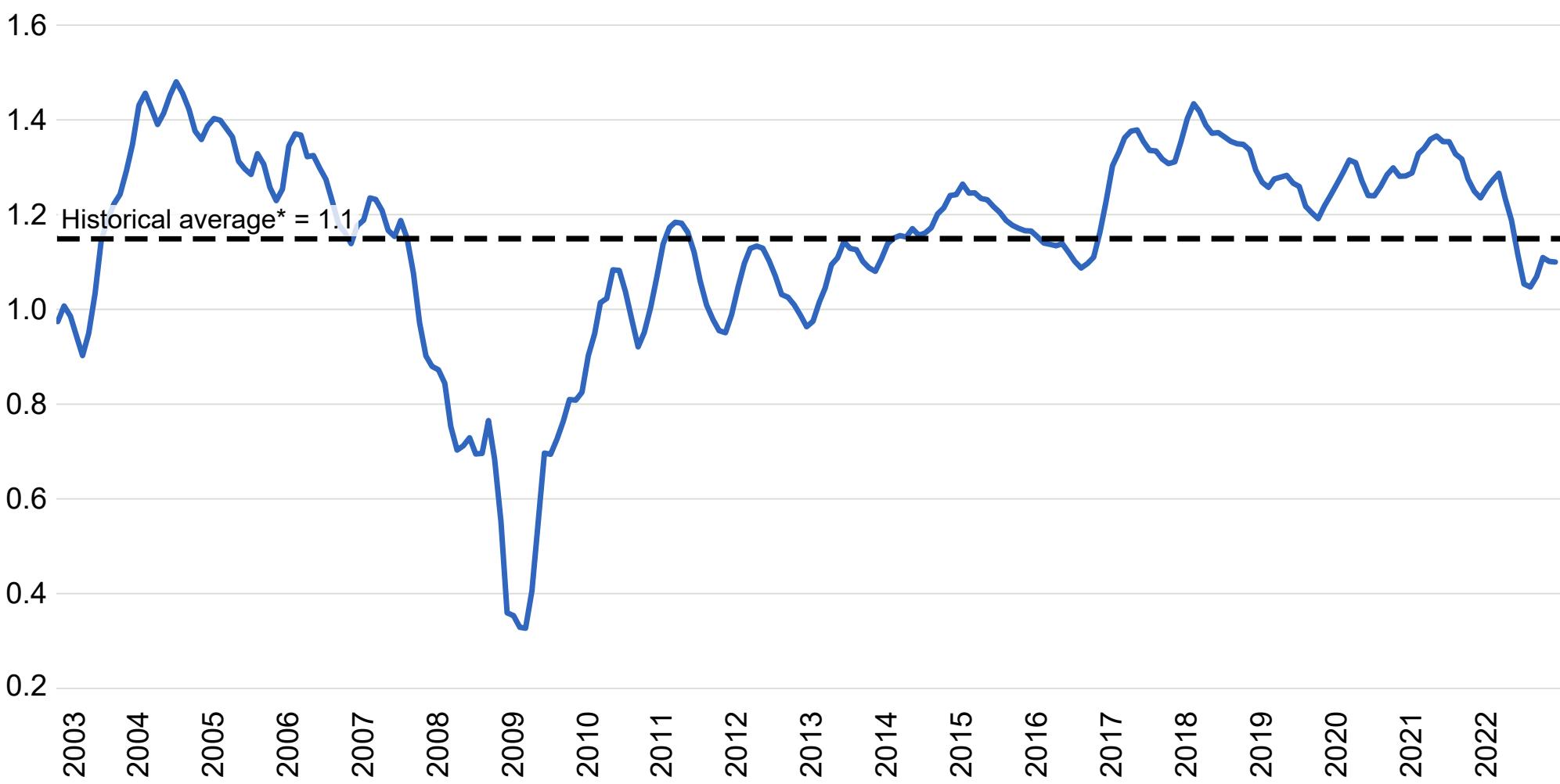
CEO Confidence Index

CEO Confidence remains below historical average. The index gauges CEOs' expectations for business conditions over the next 12 months.

CEO Confidence Index: 1-Year Outlook

The CEO Confidence Index sets the 1.0 value to October 2002 (when polling began); the higher the value, the greater the CEO optimism.

3-month average

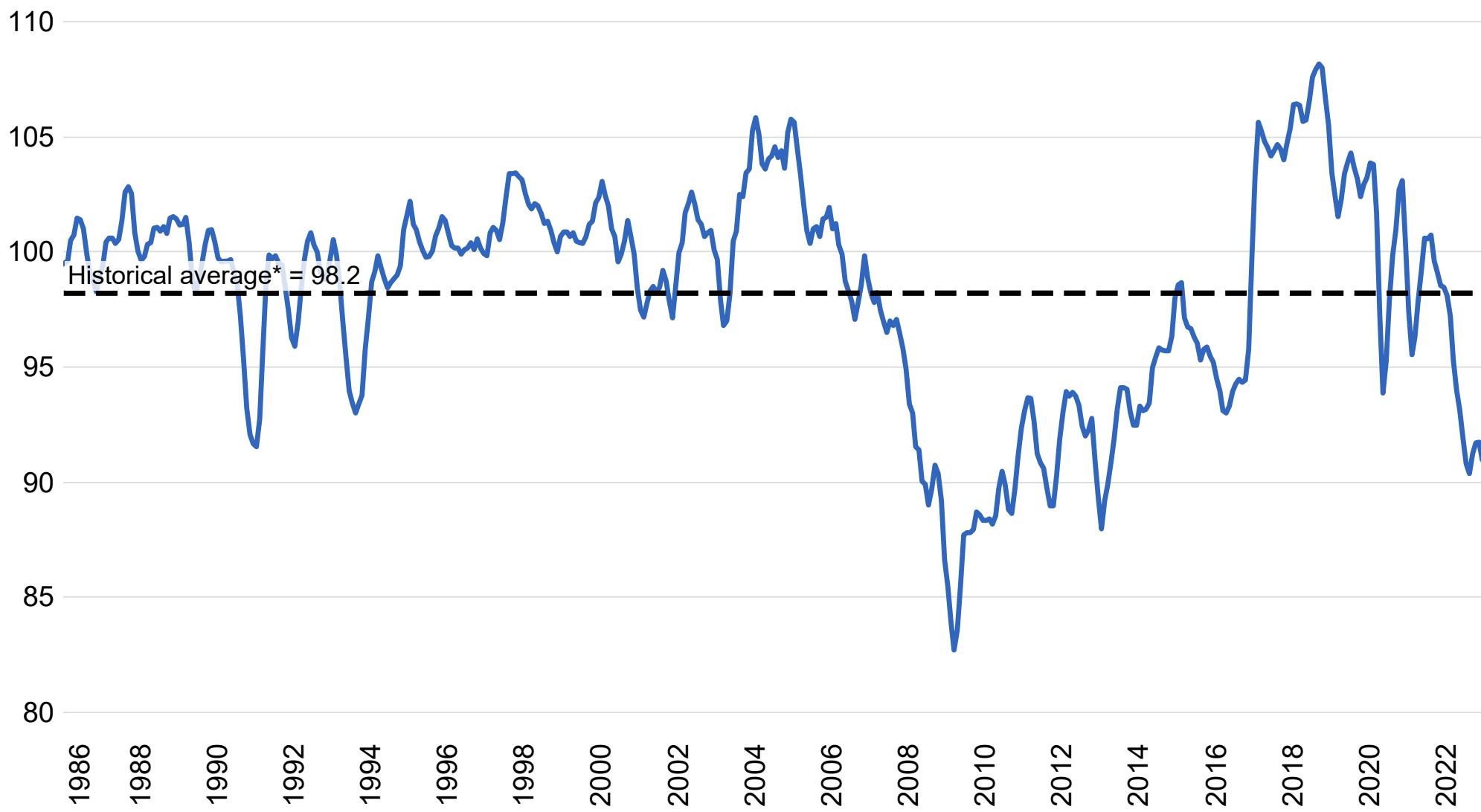


Small Business Optimism Index

Small business optimism fell -8% YOY.

Small Business Optimism Index

3-month moving average; Index value (1986 = 100)



Source: National Federation of Independent Business (Data: Dec-22, Pub: Jan-23)

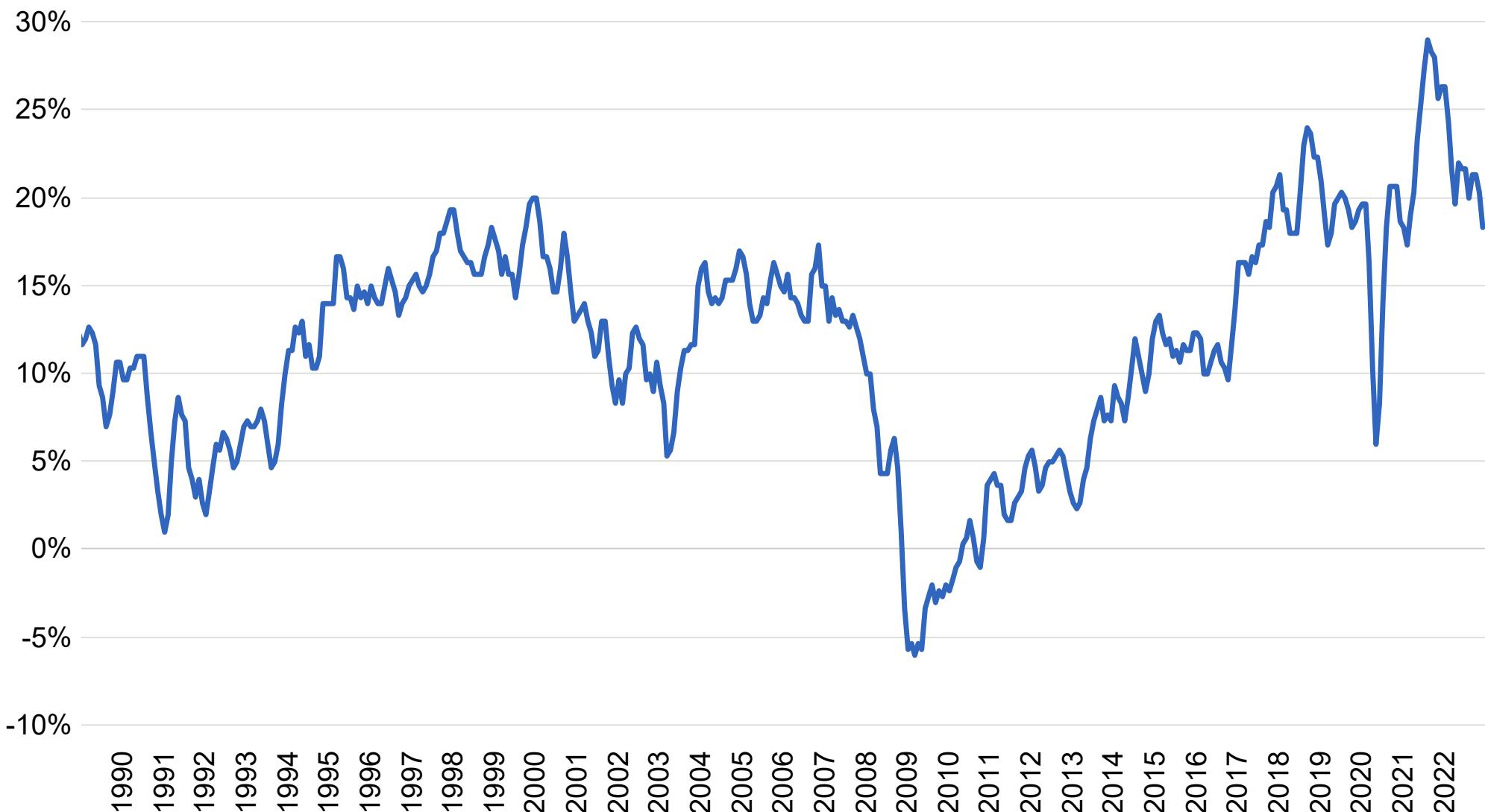
*Historical average: Oct-74 through current

Small Business Hiring Plans Index

A net 18% of small businesses plan to hire more people in the next three months.

Small Business Hiring Plans Index

3 mo. average; net hiring planned for next 3 months (% planning to increase - % planning to decrease)



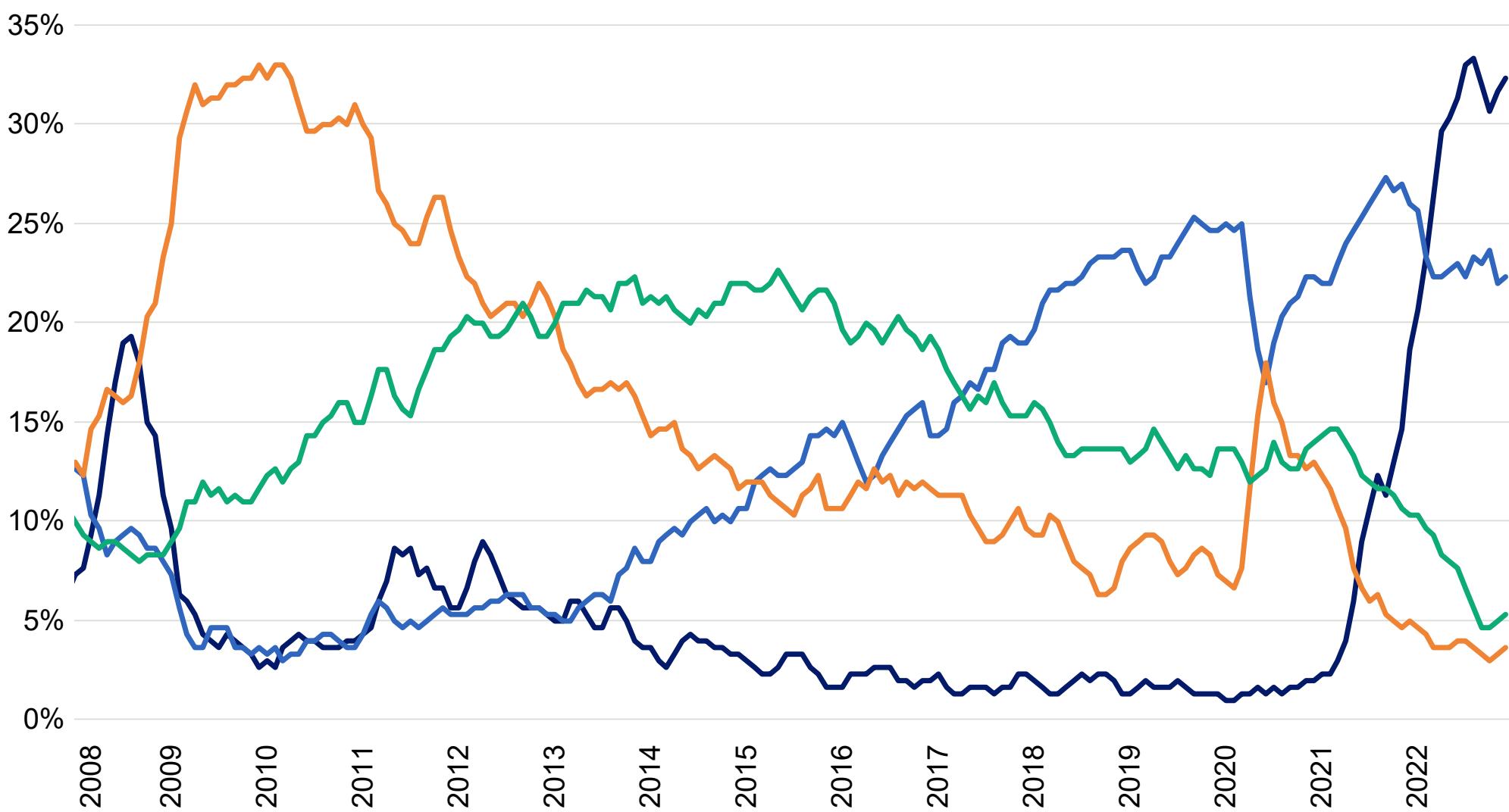
Source: National Federation of Independent Business (Data: Dec-22, Pub: Jan-23)

Single Most Important Problem for Small Businesses

Inflation is by far the biggest issue facing small businesses.

Single Most Important Problem for Small Businesses

3-month avg. — Quality of labor = 22% — Government requirements = 5% — Poor sales = 4% — Inflation = 32%



This graph shows the percentage of survey respondents that said one of the charted items was their single most important problem.

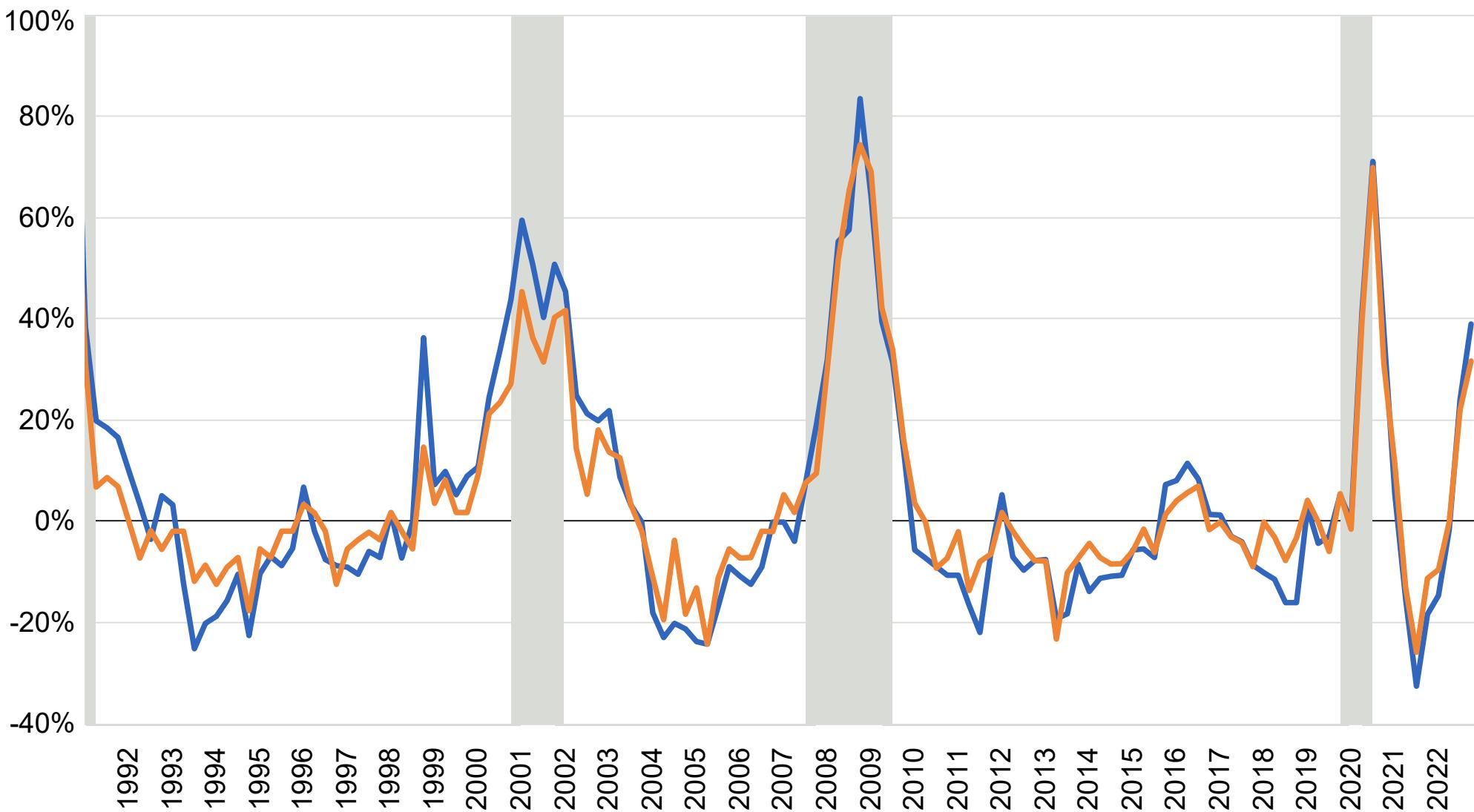
Sources: National Federation of Independent Business; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Lending Standards for Business Loans

Large and small banks alike are tightening credit standards.

Net % of Large US Banks Reporting Tougher Standards of Business Loans

— Large and medium firms = 39% — Small firms = 32%



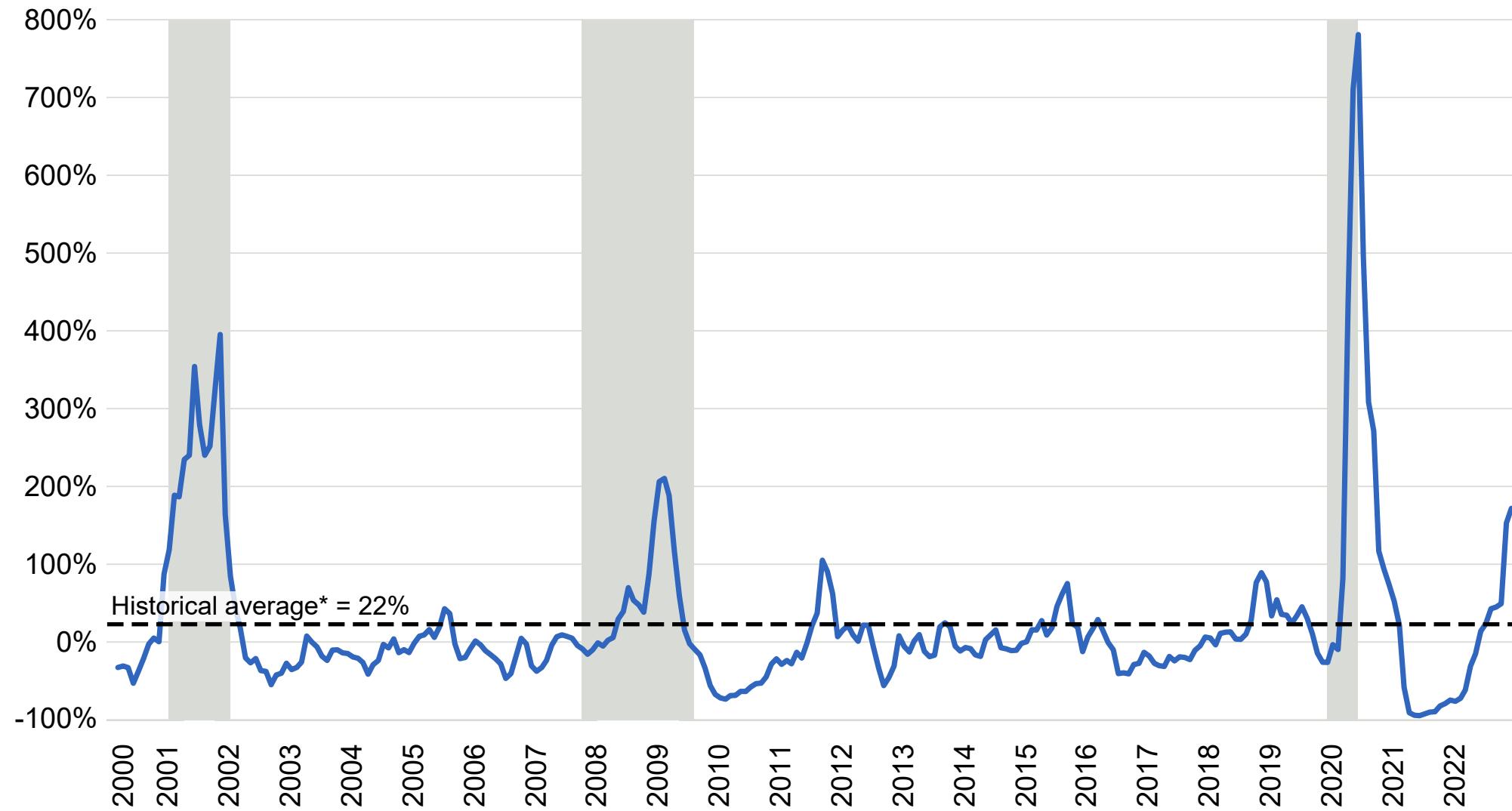
Source: Federal Reserve/Board of Governors (Data: 4Q22, Pub: Jan-23)

US Planned Job Cuts

Total planned job cuts are up 172% YOY.

US Planned Job Cuts

3-month average, YOY % change



Note: Planned job cuts hit peak over 600% in the early 2000s.

Sources: Challenger, Gray & Christmas, Inc.; JBREC (Data: Dec-22, Pub: Jan-23)

*Historical average: Mar-2000 through current

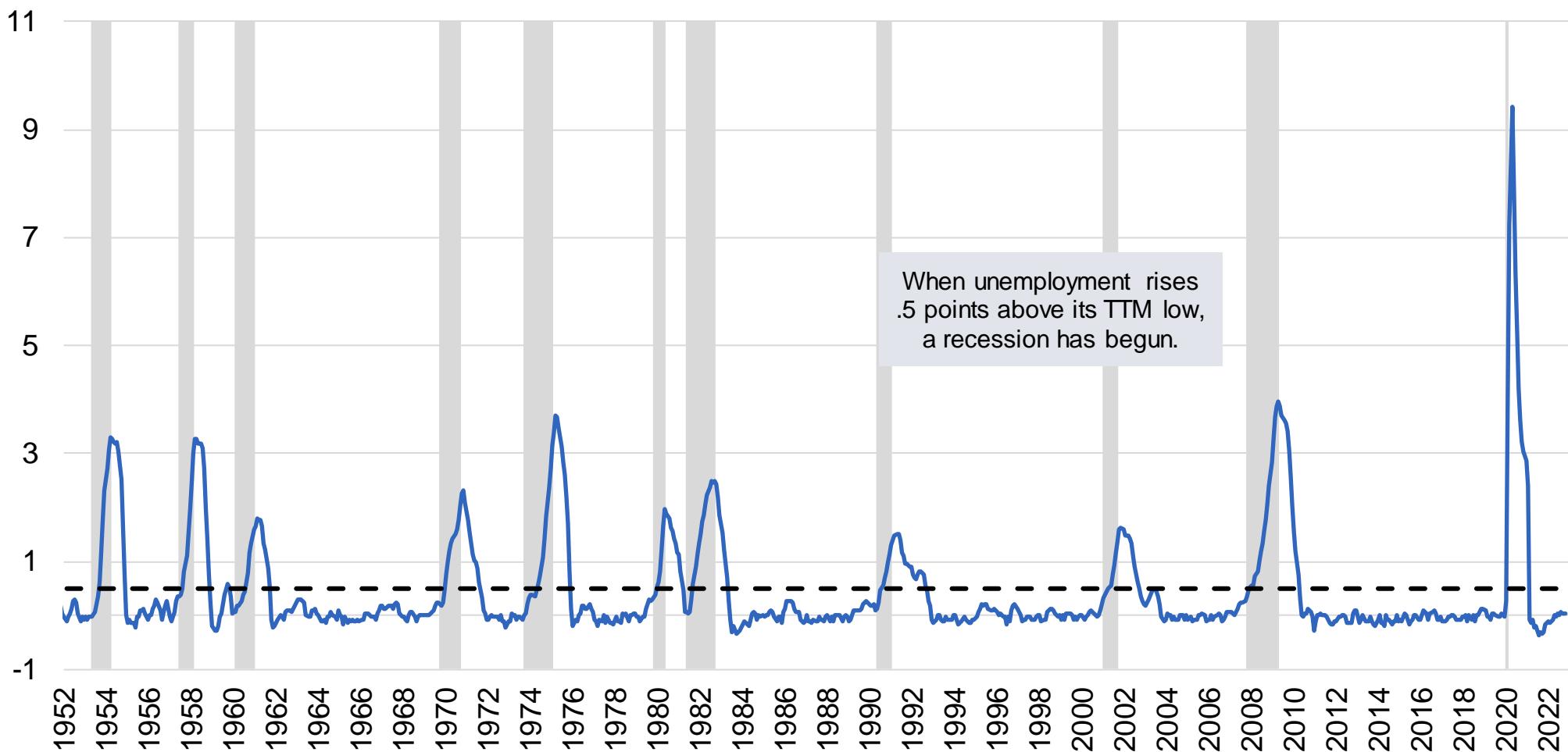
Sahm Recession Indicator

According to the Sahm Recession Indicator, we are not in a recession. Historically, rapid spikes in unemployment have preceded recessionary periods. The indicator compares the current unemployment rate (U3) to its own history over the preceding twelve months.

Sahm Recession Indicator

The Sahm Indicator is the 3-month moving average of the U3 unemployment rate less its lowest point in the preceding 12 months.

— SAHM Indicator - - - 0.5 benchmark

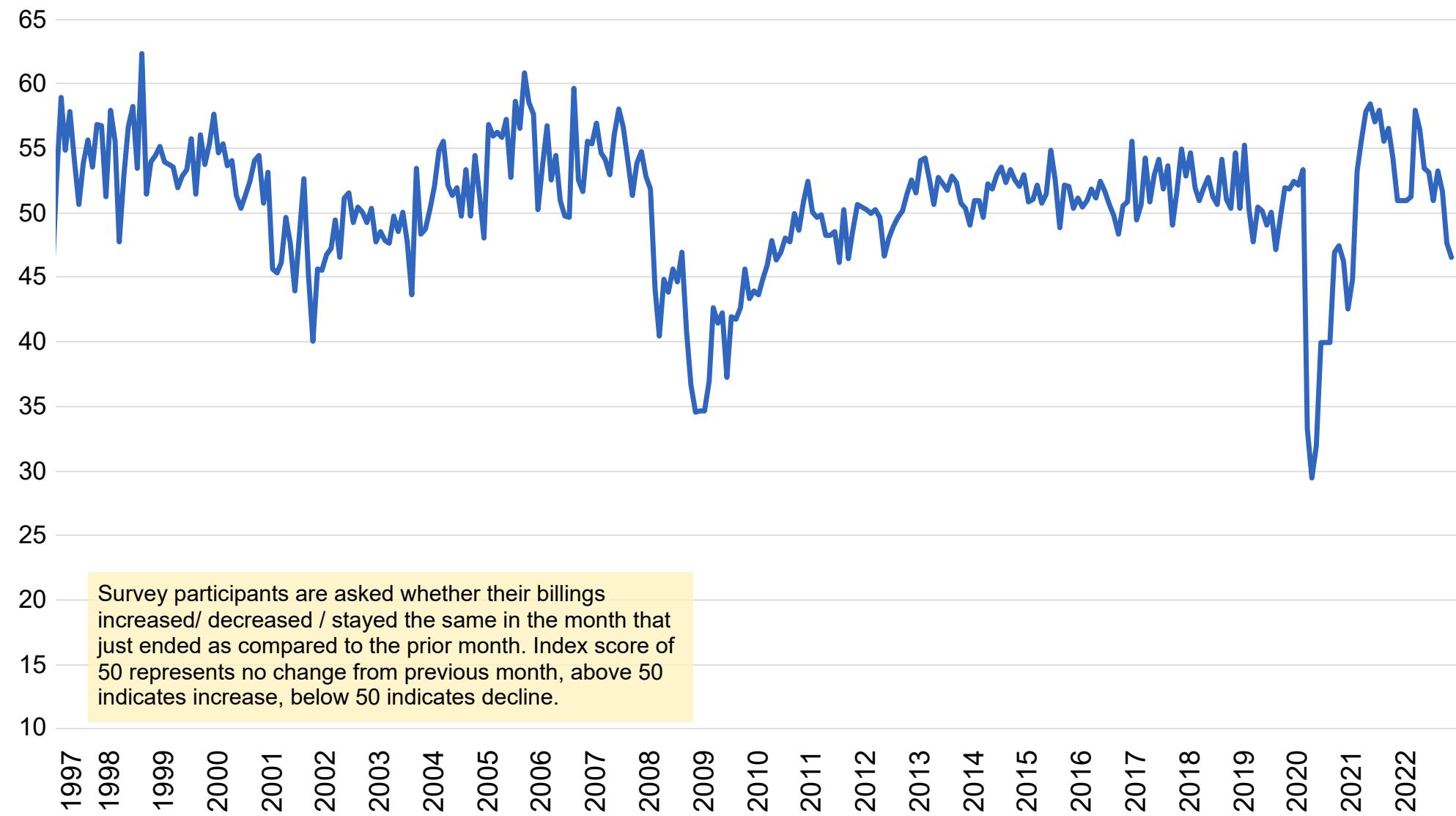


Architecture Billings Index

The Architecture Billings Index fell to 47. A value under 50 indicates decline.

Architecture Billings Index

Current = 46.6



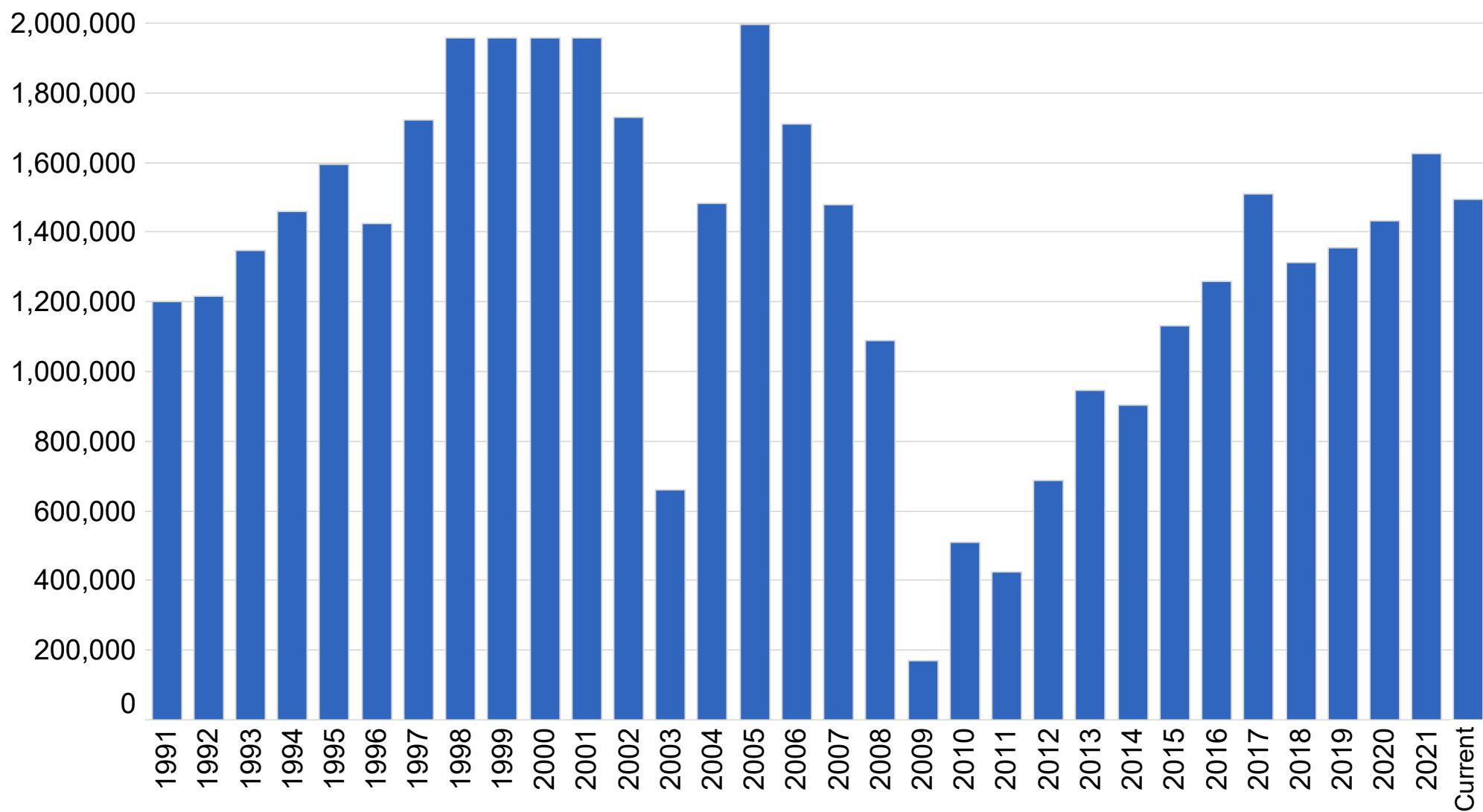
Source: The American Institute of Architects (Data: Nov-22, Pub: Jan-23)

*Historical average: Jan-97 through current

Electric Utilities Customers as Proxy for Household Formation

Trends in residential electric customers track household formation demand. Electric customer growth is down -8% from 2021.

Growth in Residential Electric Customers



Note: 2001 data is smoothed; current data is a trailing 12-month average.

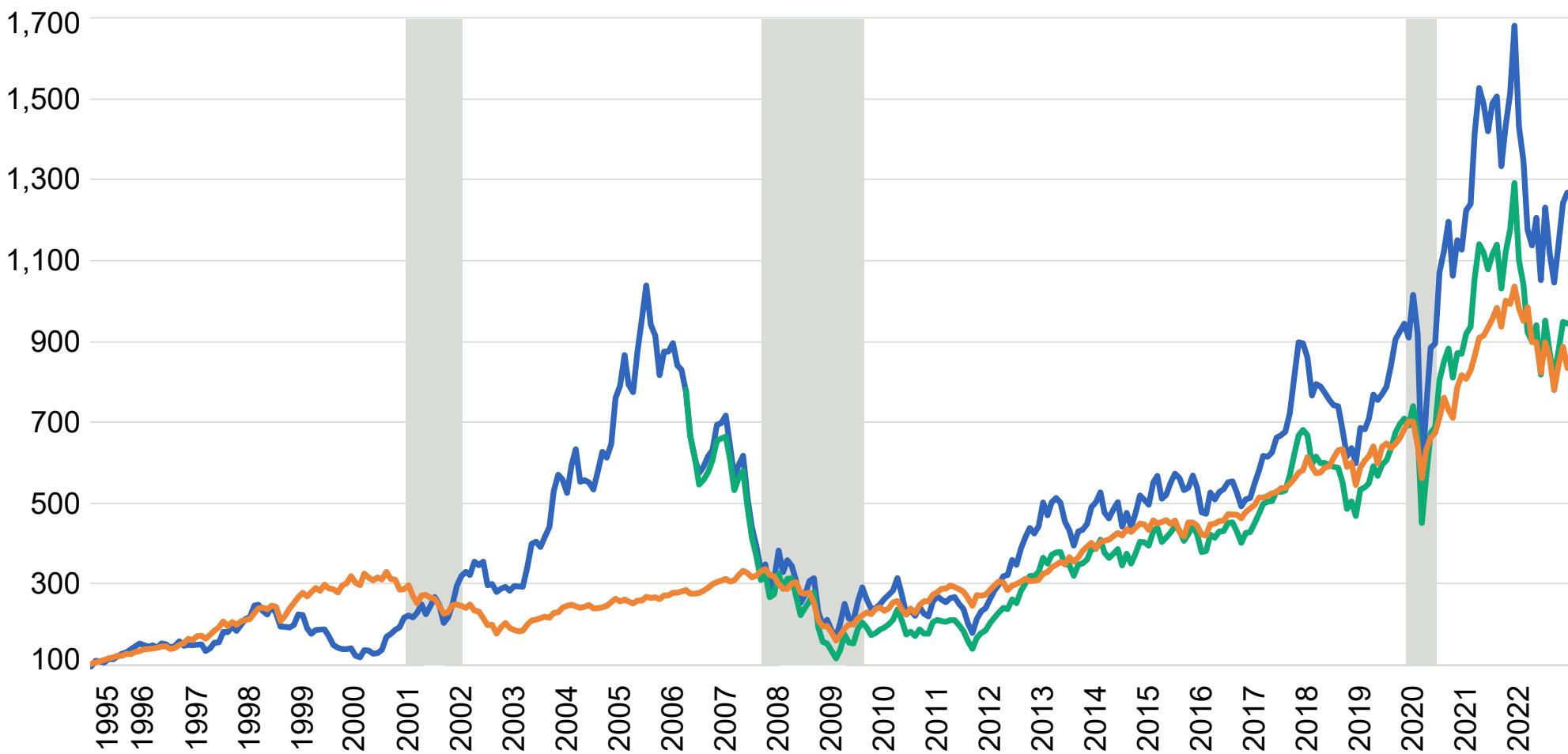
Sources: US EIA; John Burns Real Estate Consulting, LLC (Data: Oct-22, Pub: Jan-23)

Stock Market Indices

Housing stock indices have fallen more during recent correction than the broader stock market. The S&P Super Homebuilder Index fell -25% YOY compared to -19% YOY for the S&P 500.

Stock Market Indices

— S&P Super Homebuilder Index = 1,270 (-25% YOY) — ITB ETF = 946 (-27% YOY) — S&P 500 = 836 (-19% YOY)



Note: The S&P Super Homebuilder Index consists of home builders and housing-related stocks, such as building product manufacturers. The ITB Index has a greater concentration of home builders. S&P Super Homebuilder Index and S&P 500 Indexed to 100 in Dec-1994, ITB ETF indexed to S&P Super Homebuilding Index value in May 2006.

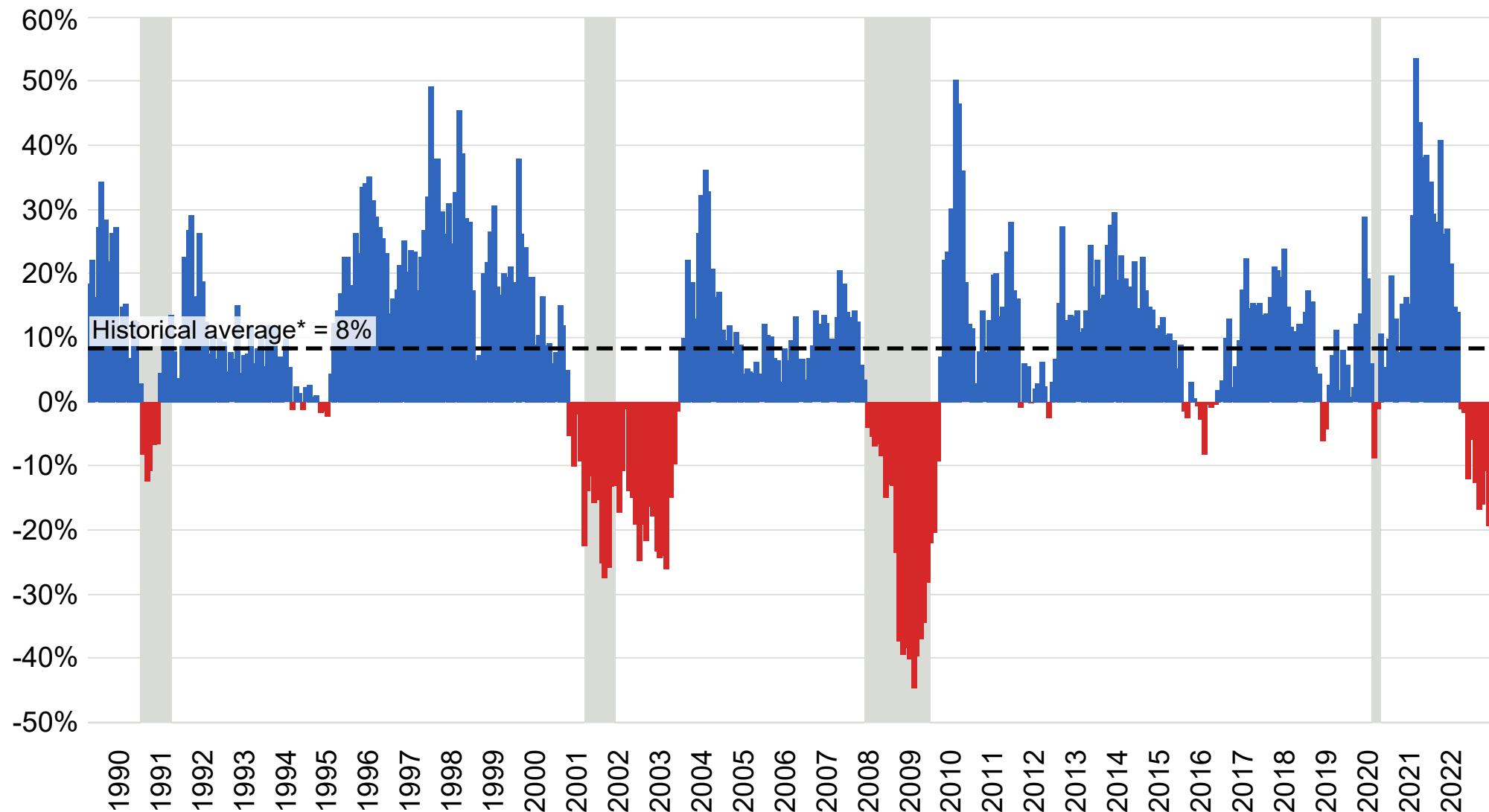
Sources: S&P and Bloomberg L.P. (Data: Dec-22, Pub: Jan-23)

S&P 500

The S&P 500 stock index fell -19% YOY.

S&P 500 YOY Growth %

■ S&P 500 YOY = -19%

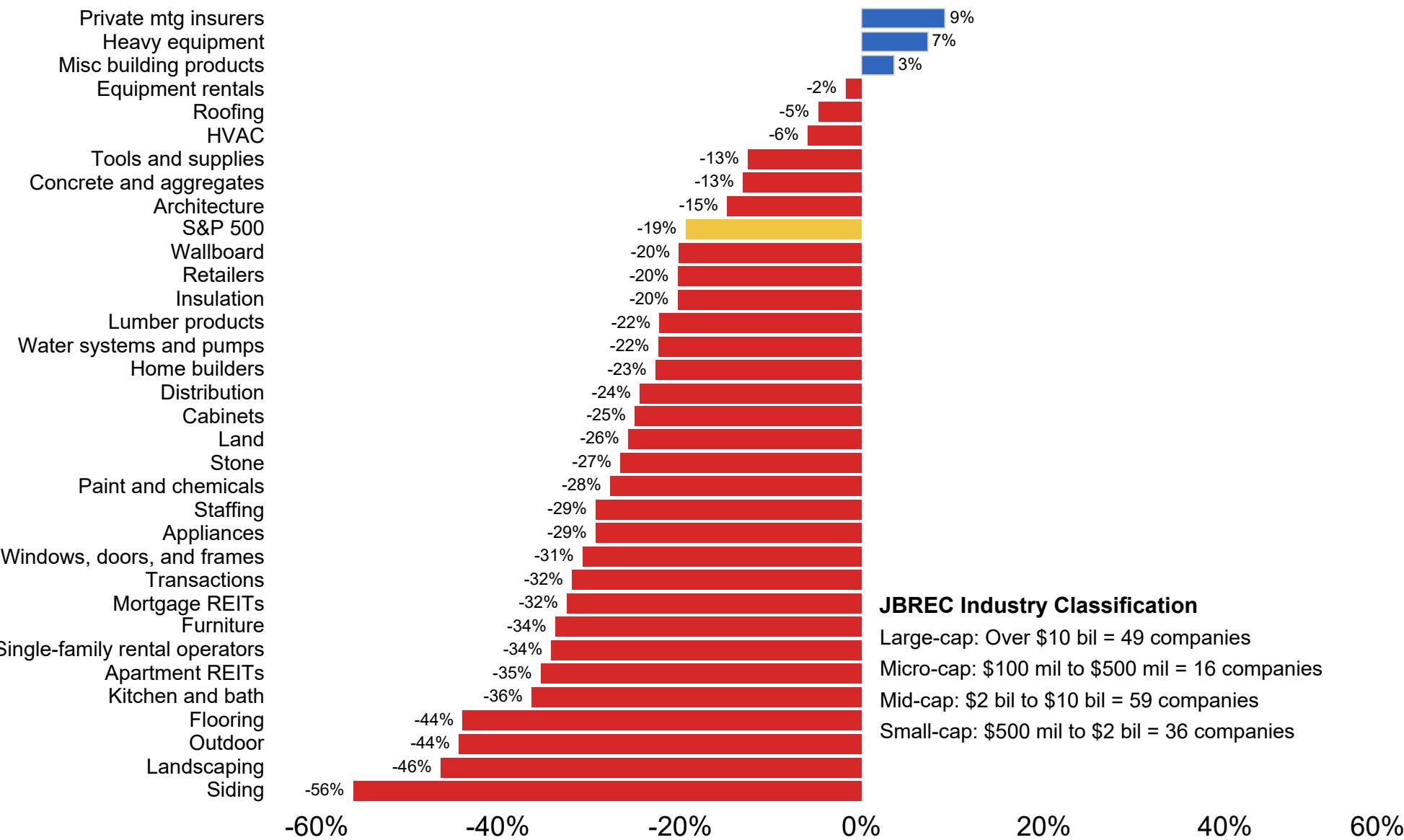


Sources: S&P and Bloomberg L.P. (Data: Dec-22, Pub: Jan-23)

Stock Price Appreciation for Housing-Dependent Industries

Stock prices for 30 out of 33 housing-dependent industries decreased YOY.

Weighted Average YOY Stock Price Appreciation for Housing-Dependent Industries



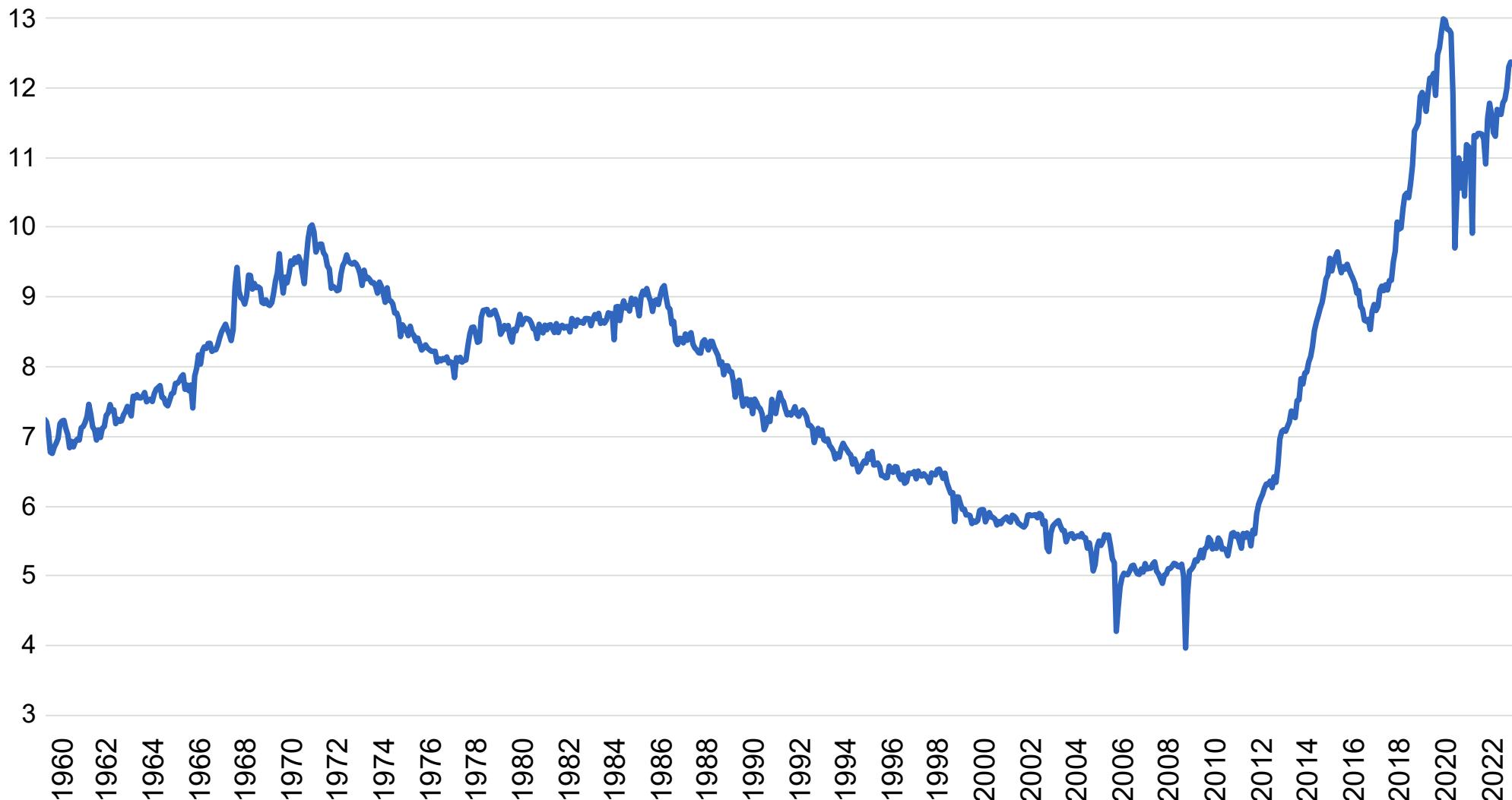
Sources: John Burns Real Estate Consulting, LLC; Bloomberg (Data: Dec-22, Pub: Jan-23)

Crude Oil Production

Oil production rose to 12 million barrels per day. Production is still well below the 2019 peak of 13M barrels per day.

Monthly US Crude Oil Production

Millions of barrels per day

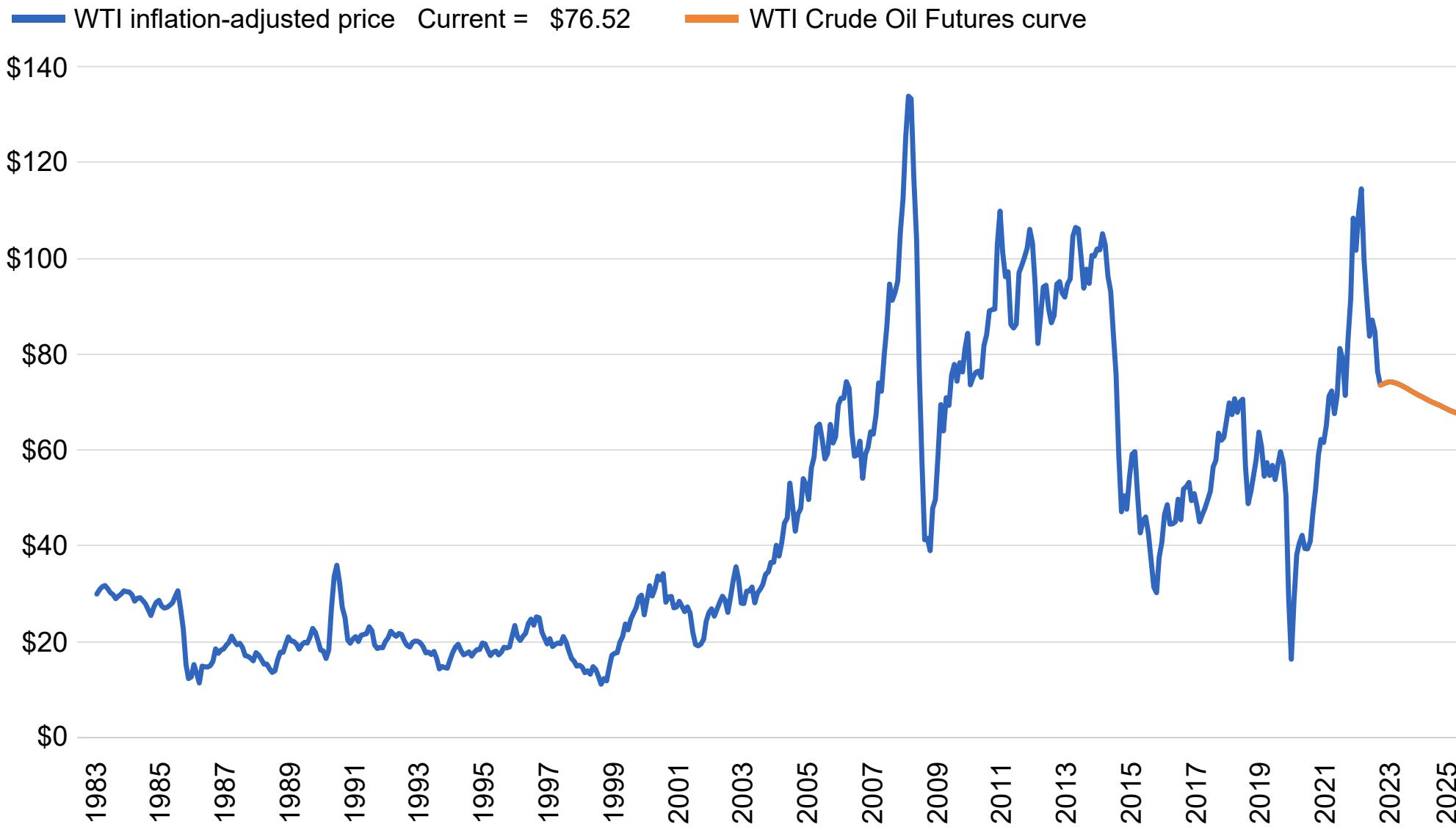


Source: U.S. Department of Energy (Data: Oct-22, Pub: Jan-23)

Crude Oil Prices

Crude oil prices fell to \$77. The current futures curve indicates that market participants believe prices will fall into 2025.

Inflation-Adjusted Crude Oil Price



Sources: West Texas Intermediate Spot Price; Bloomberg (Data: Dec-22, Pub: Jan-23)

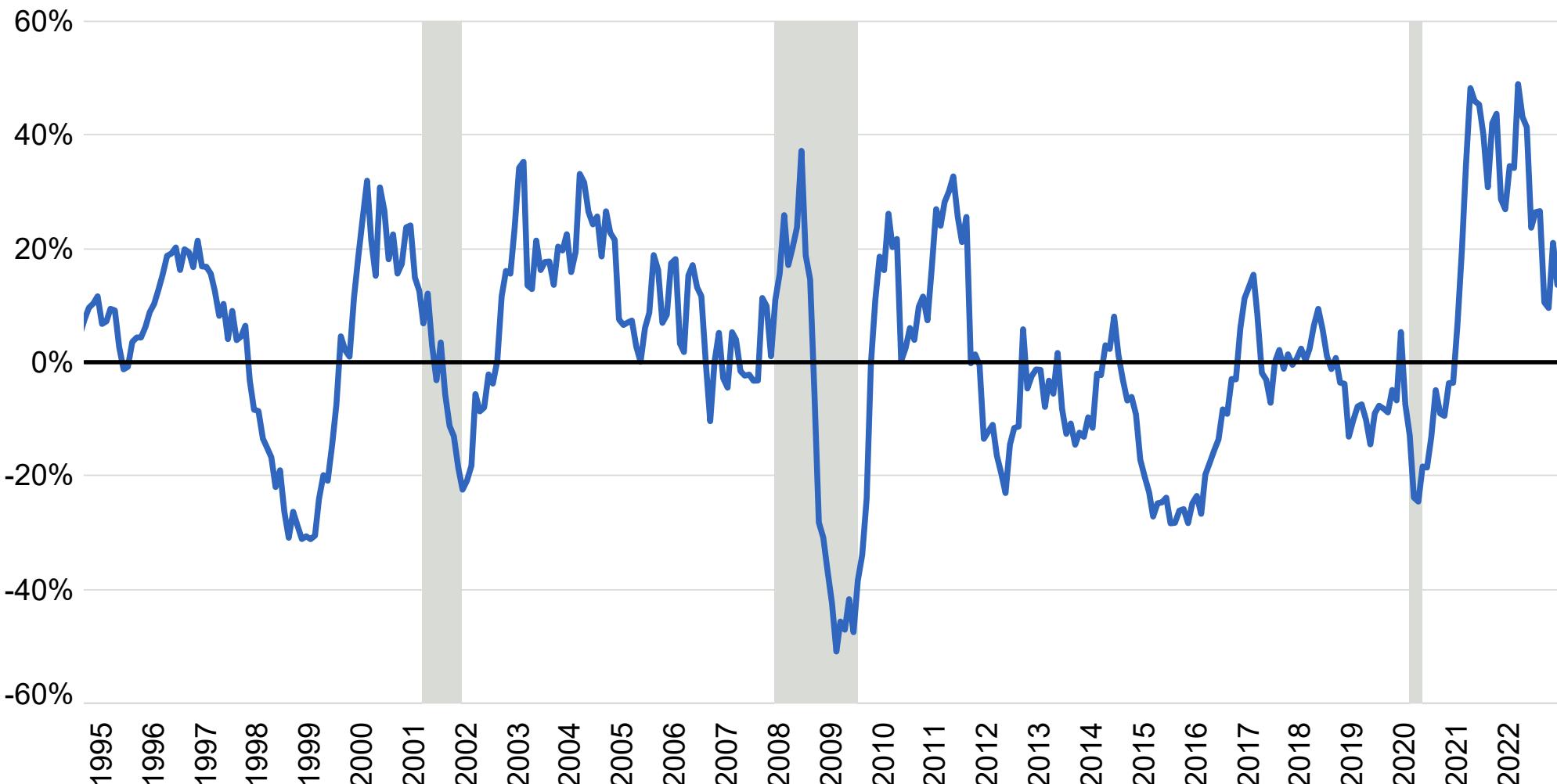
*Historical average: May-83 through current

Commodities

Lower commodity prices are typically a bearish indicator for growth and vice versa. The Bloomberg Commodities Index rose 14% YOY.

Bloomberg Commodities Index

YOY % change — Current = 13.7%



Six categories weighted: Energy (30%), Grains (22%), Precious Metals (17%), Industrial Metals (18%), Sugar/Coffee/Cotton (7%), Livestock (6%)
Sources: Bloomberg; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

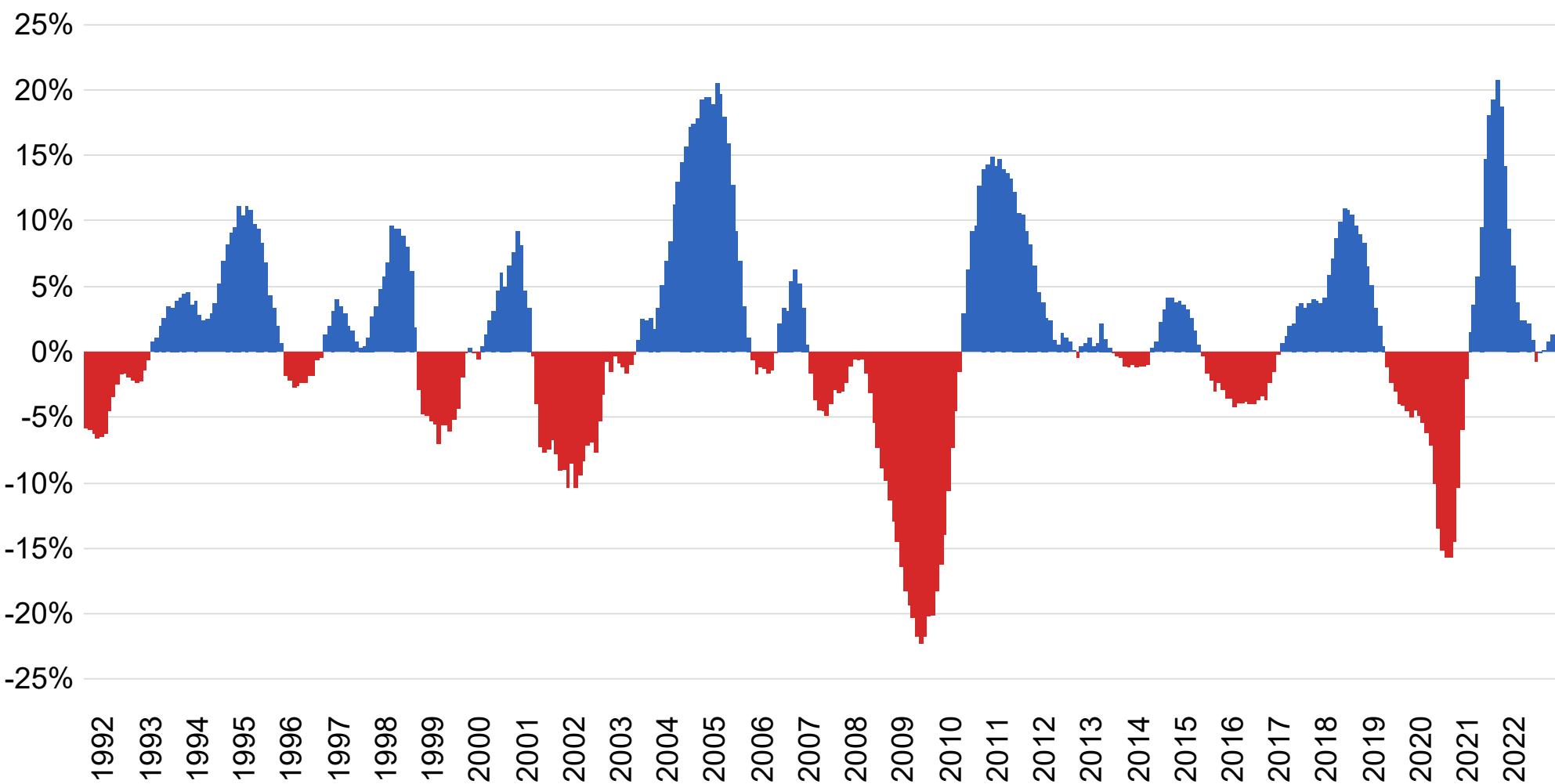
Cass Freight Index

The Cass Freight Index, a measure of freight volumes domestically, rose 1.5% YOY. The higher the index value, the more shipment activity.

Cass Freight Index

The Cass Freight Index is a measure of North American freight volumes.

YOY change; 6-month moving average — Current = 1.5%



Sources: Cass Information Systems; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

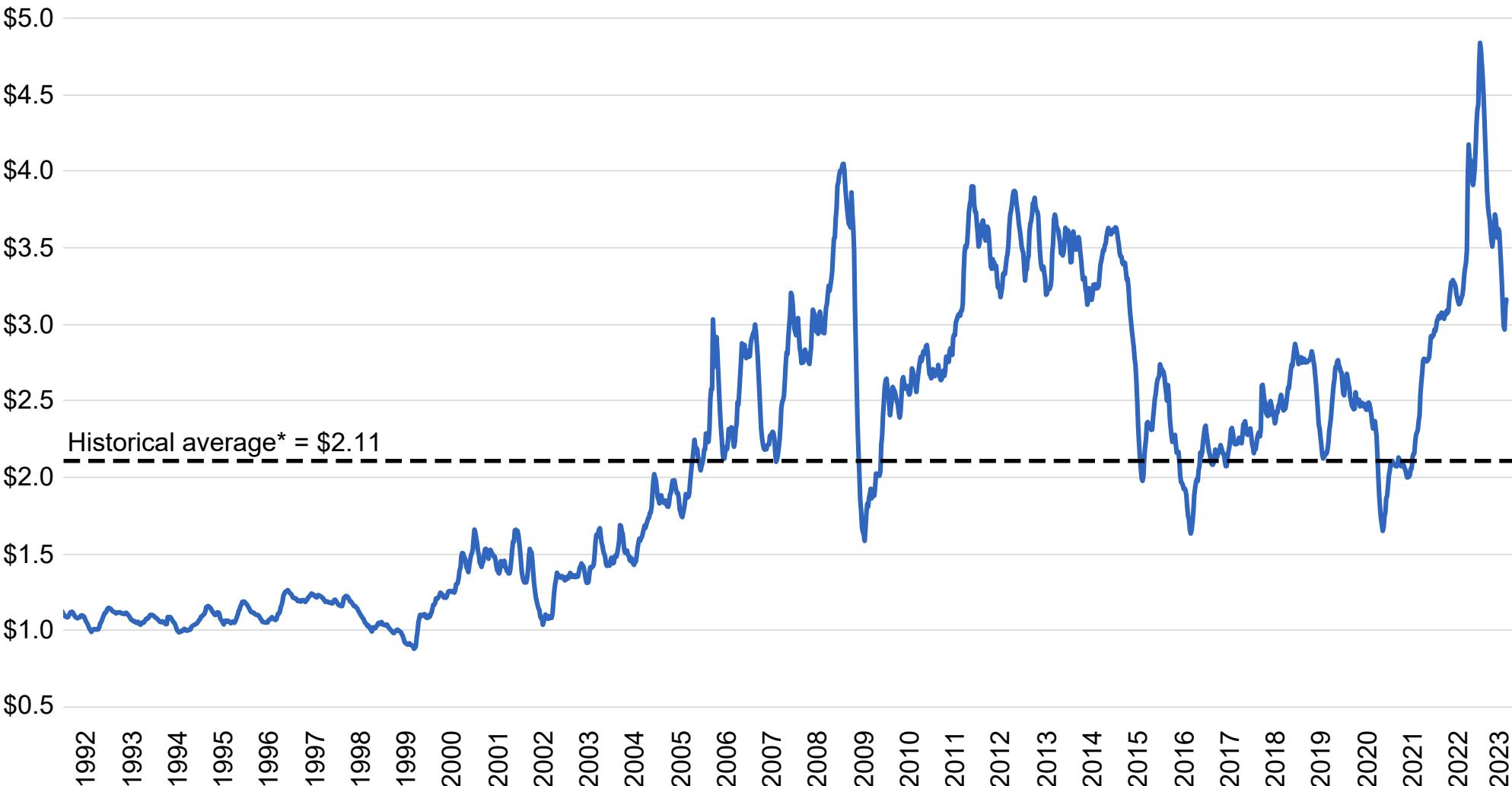
Consumer behavior

US Gas Prices

As of January 9, gas prices remained flat YOY at \$3.17.

Weekly US Regular Conventional Retail Gasoline Prices

Dollars per gallon (nominal) Current gas price = \$3.17 (0% YOY)



*Historical average: Adjusted for inflation, Aug-90 through current.

Sources: Energy Information Administration; John Burns Real Estate Consulting, LLC (Data: Jan-23, Pub: Jan-23)

US Total Auto Sales

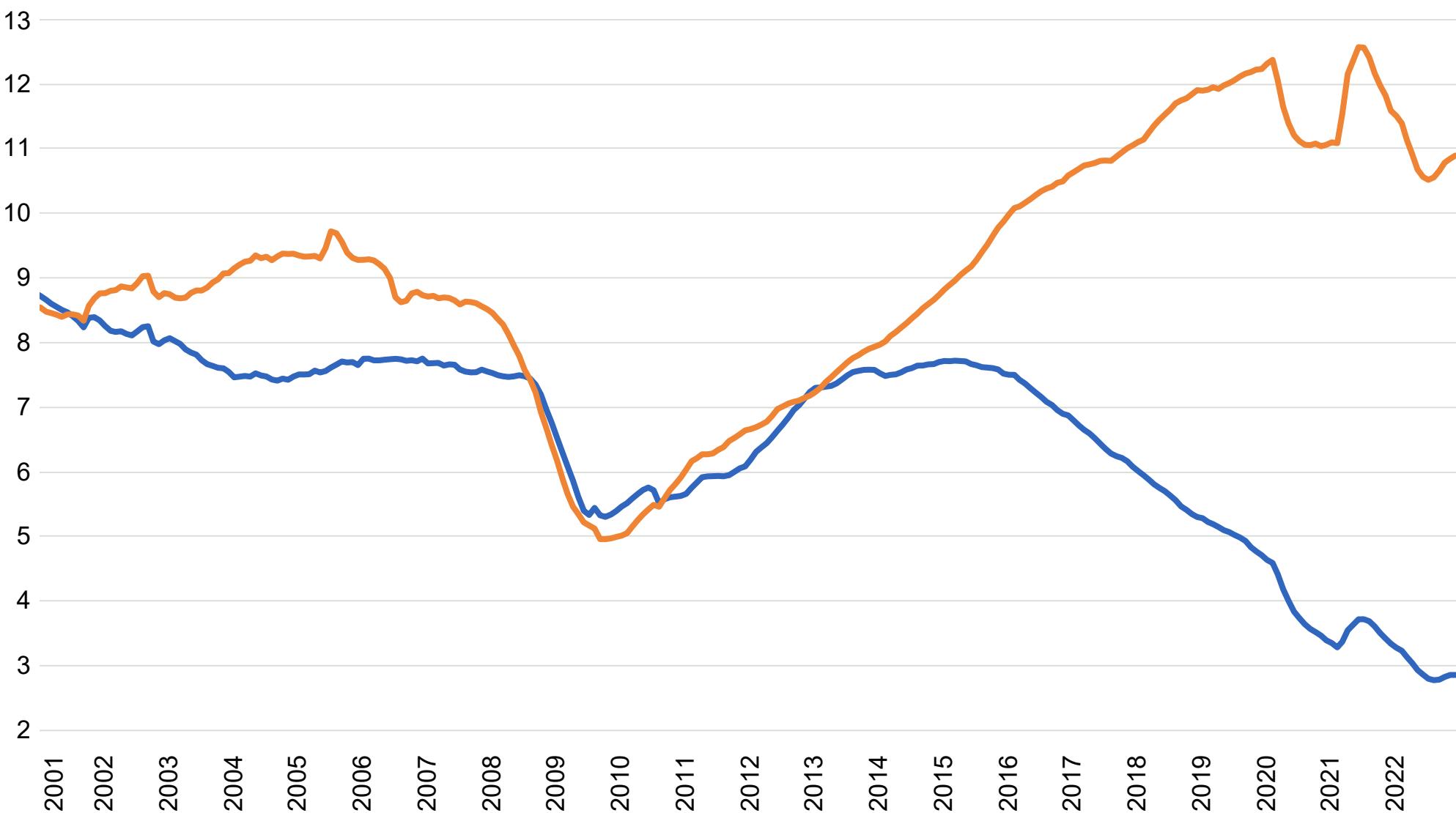
Car sales fell -14% YOY and truck sales fell -6% YOY as of December on an annualized 12-month average.

US Vehicle Sales

Annualized, millions, 12-month average (SA)

Car sales

Truck sales



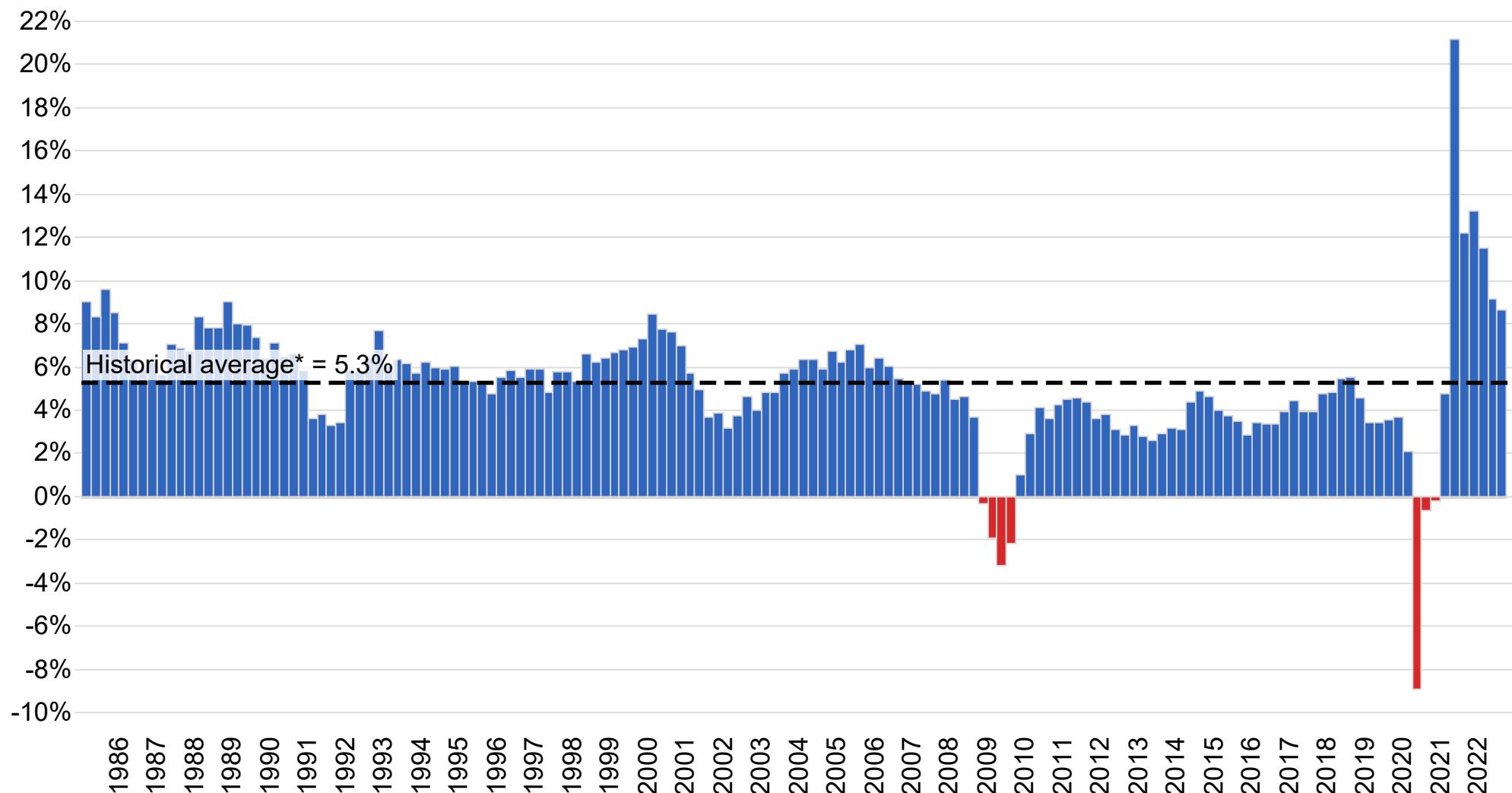
Source: Bureau of Economic Analysis (Data: Dec-22, Pub: Jan-23)

Consumer Spending

Consumer spending increased 8.6% YOY in 3Q22. Consumer spending drives nearly 70% of the US economy.

US GDP Consumer Spending (Nominal)

YOY% change — Personal consumption = 8.6%



Sources: U.S. BEA; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

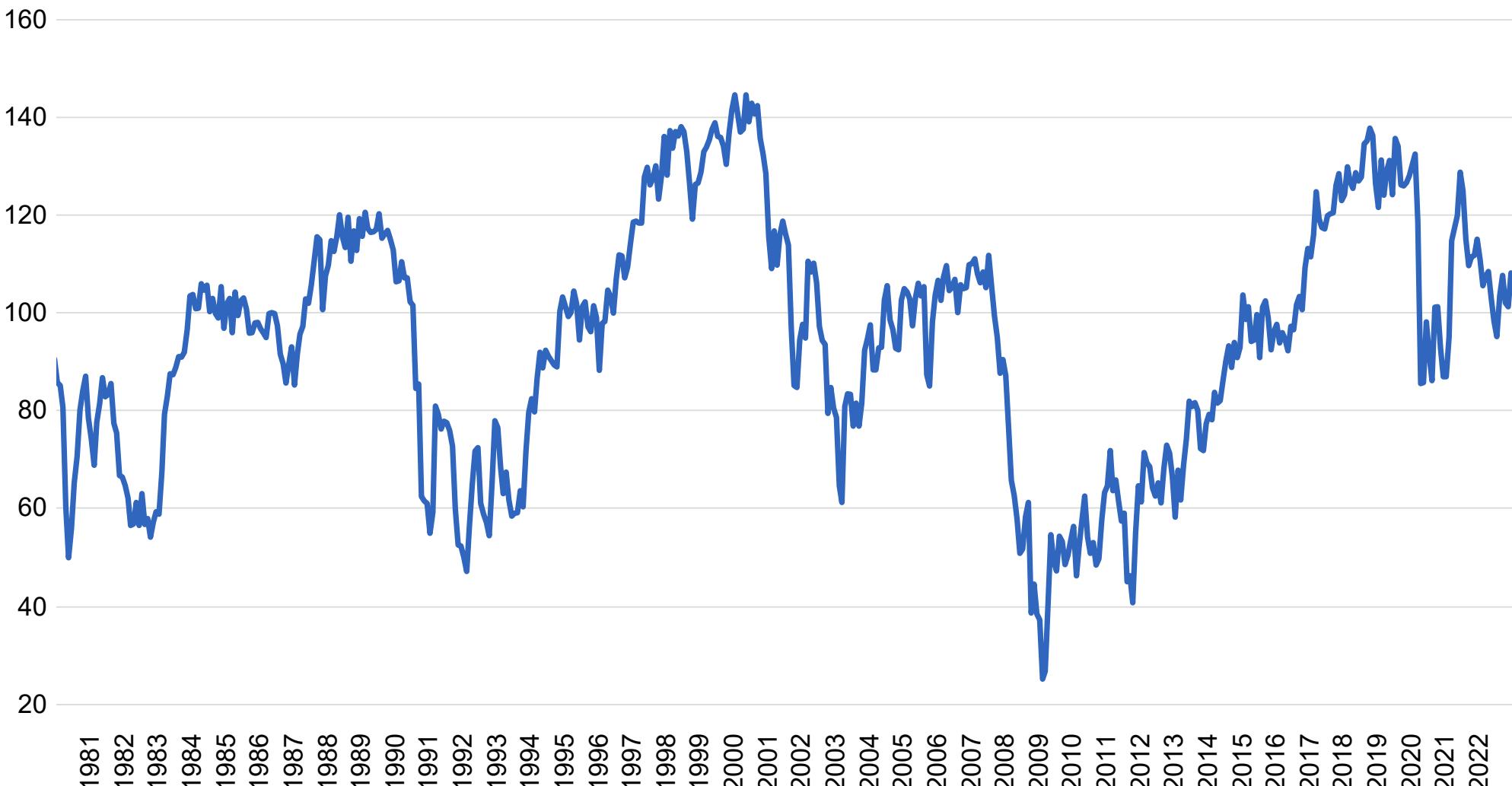
*Historical average 1Q85 through current

US Consumer Confidence

The US Consumer Confidence Index decreased -8% YOY.

US Consumer Confidence

Consumer Confidence = 108.3 Note: 1985 = 100



Note: The Consumer Confidence and Sentiment indices generally track each other. Consumer confidence measures consumers' 6-month forward expectations for business, employment, and income.

Source: Conference Board (Data: Dec-22, Pub: Jan-23)

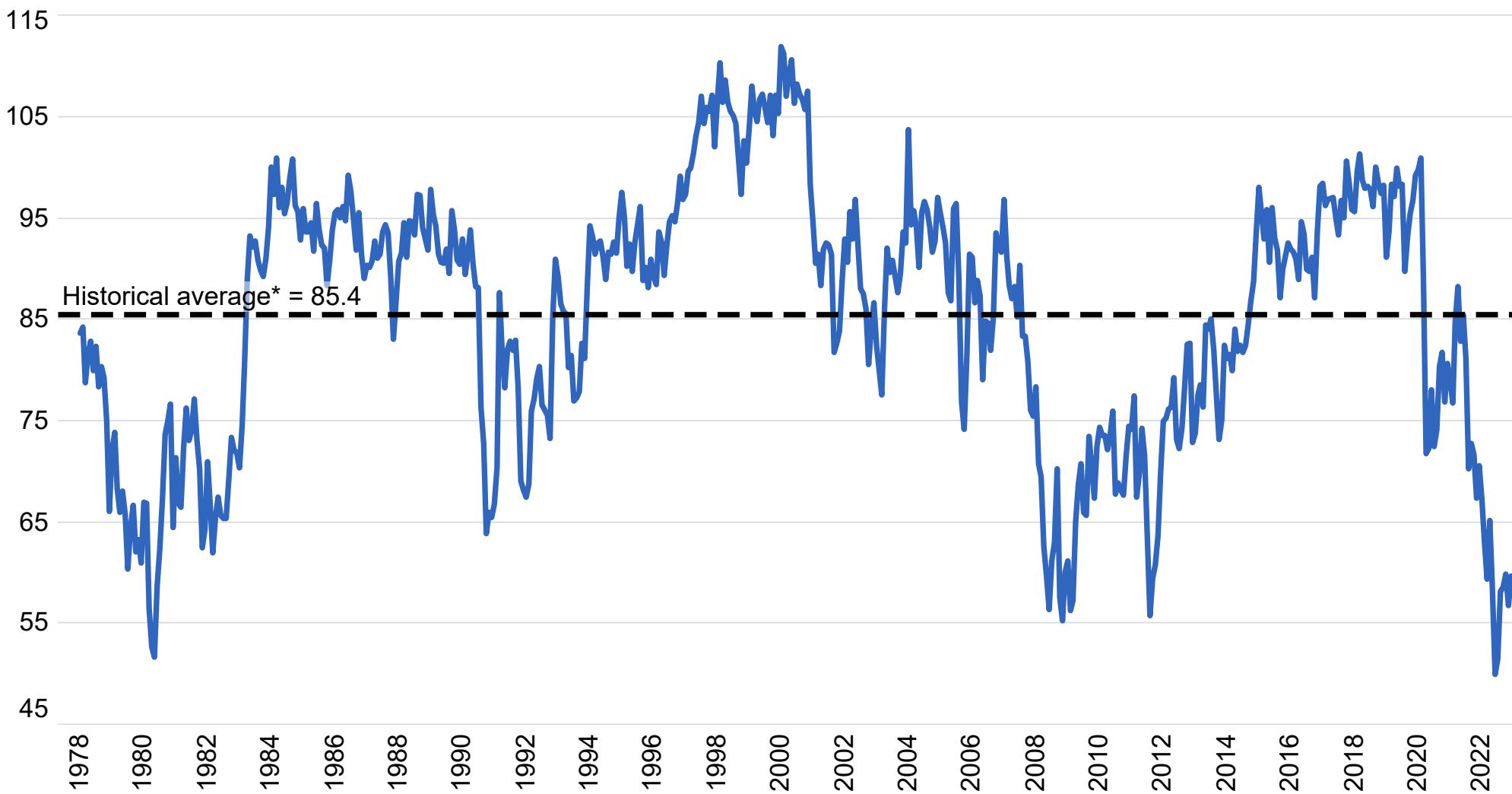
*Historical average Feb-67 through current

Consumer Sentiment

Consumer sentiment is near a record low but ticking up.

Consumer Sentiment

Current = 59.70



Note: The Consumer Confidence and Sentiment indices generally track each other. Consumer sentiment measures consumers' 12-month forward expectations for business and personal finance.

Source: University of Michigan Survey of Consumer Sentiment (Data: Dec-22, Pub: Jan-23)

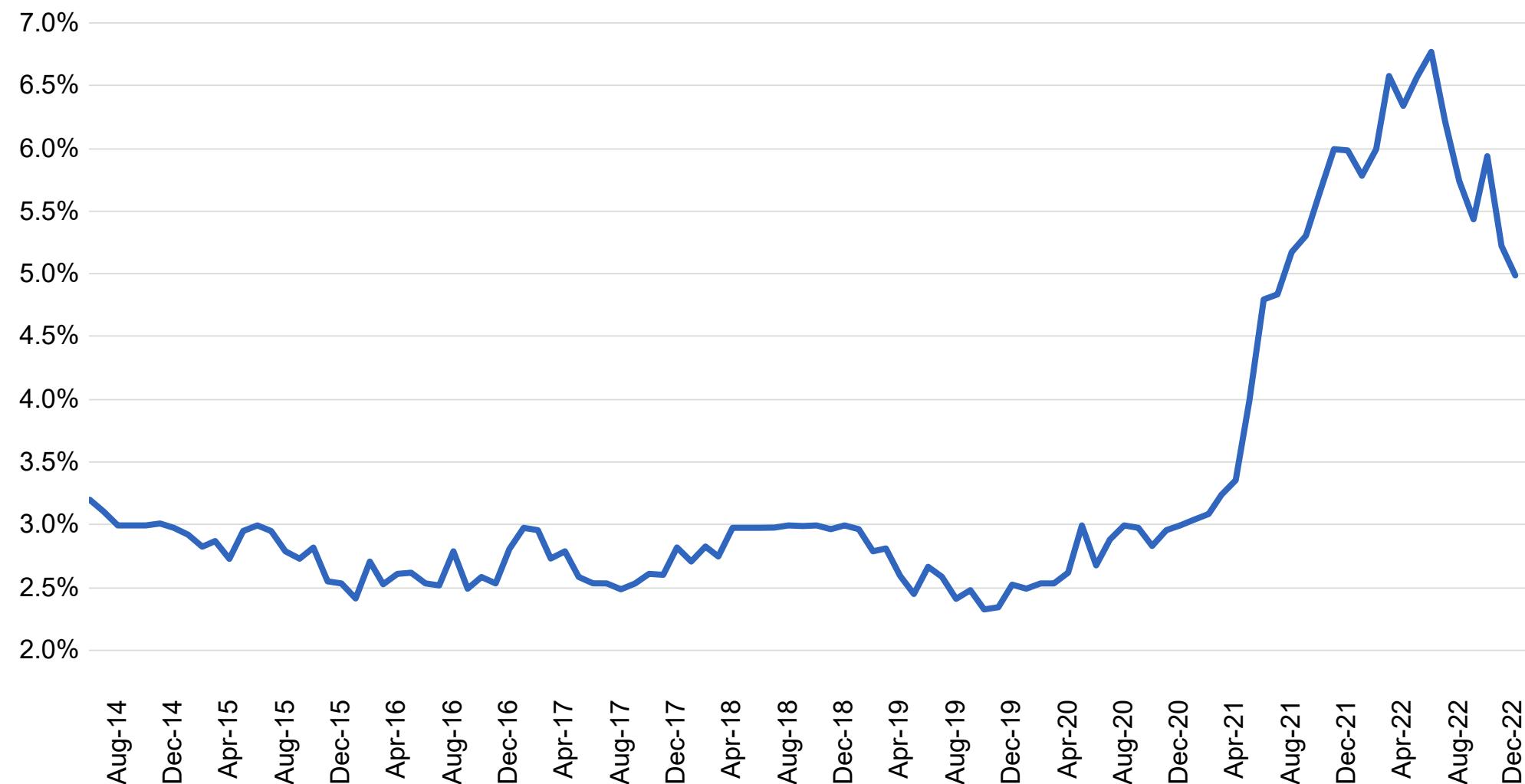
*Historical average Mar-78 through current

Consumer Inflation Expectations over the Next 12 Months

Consumer one-year-ahead inflation expectations fell to 5% in December. Central banks place high importance on these results because they give insight into future consumer spending.

Median Inflation Expectations

One-year-ahead expectation — Inflation expectations = 5.0%



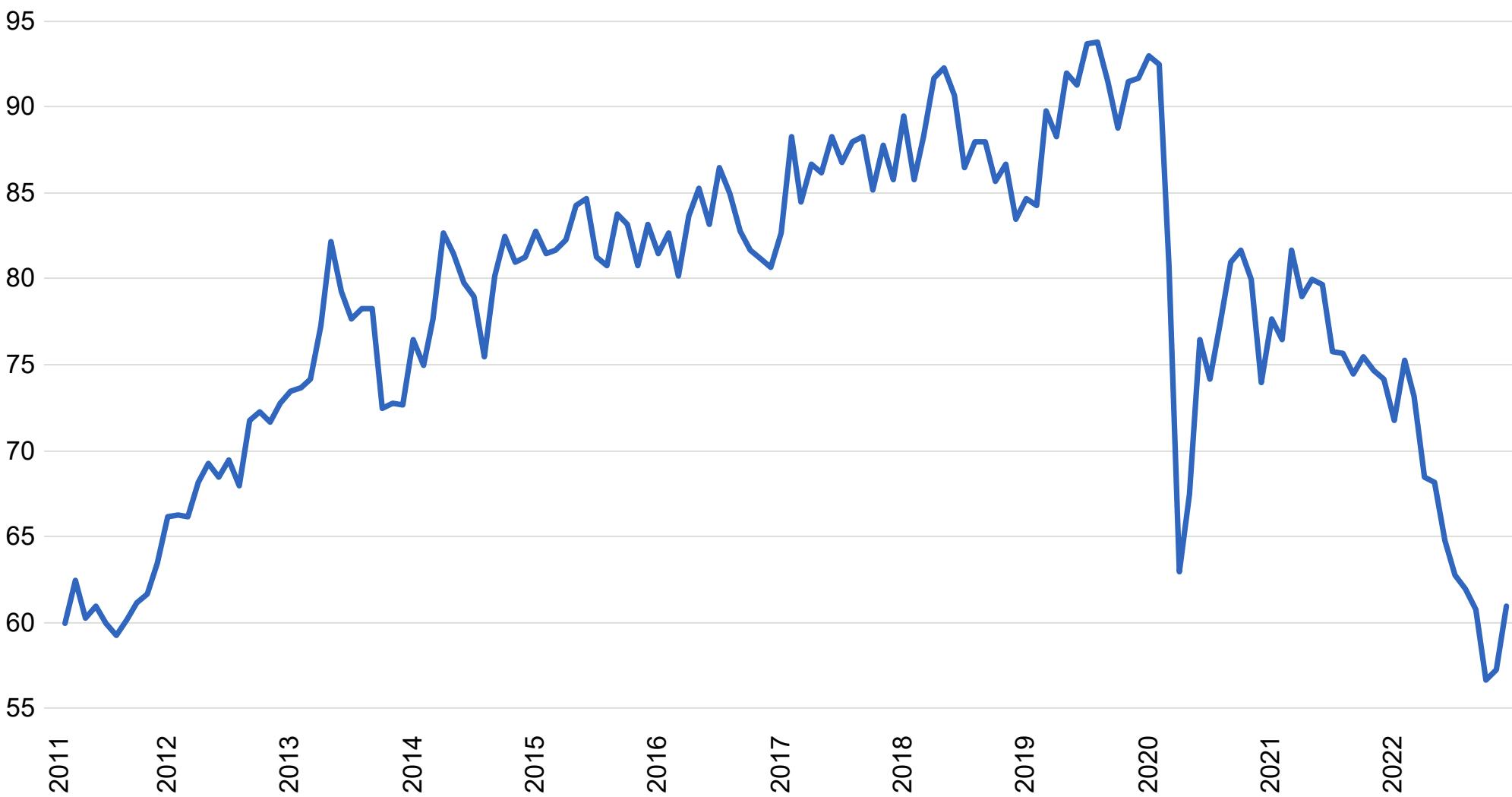
Source: Survey of Consumer Expectations, © 2013-2021 Federal Reserve Bank of New York (Data: Dec-22, Pub: Jan-23)

Fannie Mae Home Purchase Sentiment Index

The Fannie Mae Home Purchase Sentiment Index (HPSI) rose to 61 from a record low. This index tracks consumer attitudes about the housing market.

National Housing Survey: Home Purchase Sentiment Index

Home Purchase Sentiment Index (HPSI) = 61



Note: HPSI indexed to 60 in Mar-11. The sample size is roughly 1,000 Americans, 18 years or older, who are surveyed via telephone.

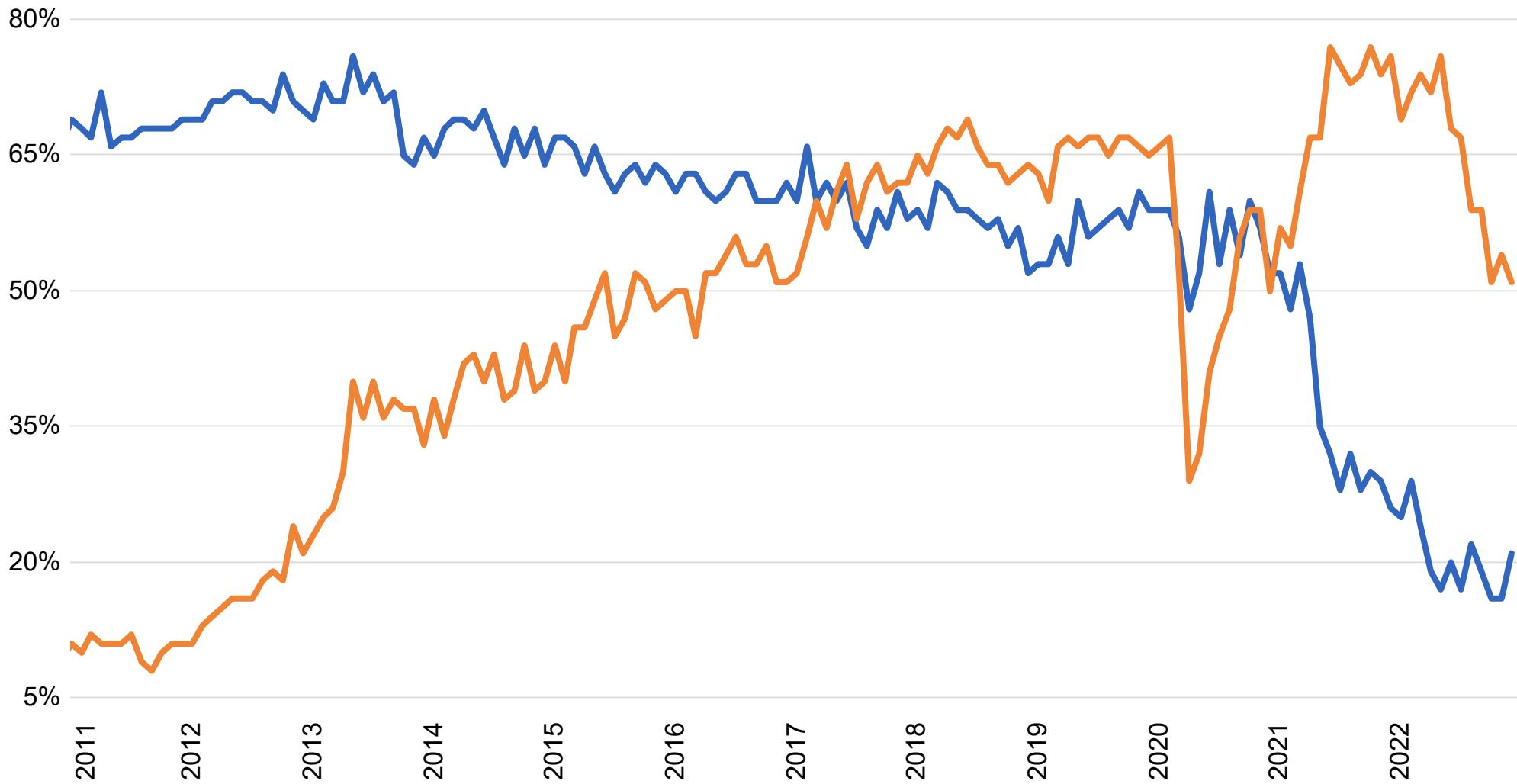
Source: Fannie Mae National Housing Survey (Data: Dec-22, Pub: Jan-23)

Home Buyer and Seller Sentiment

51% of consumers believe that now is a good time to sell a house, down from a recent high of 77%. Only 21% of consumers believe now is a good time to buy a house, near a record low.

National Housing Survey: Consumer Sentiment

Good time to buy = 21% Good time to sell = 51%



Note: The sample size is roughly 1,000 Americans, 18 years or older, who are surveyed via telephone.

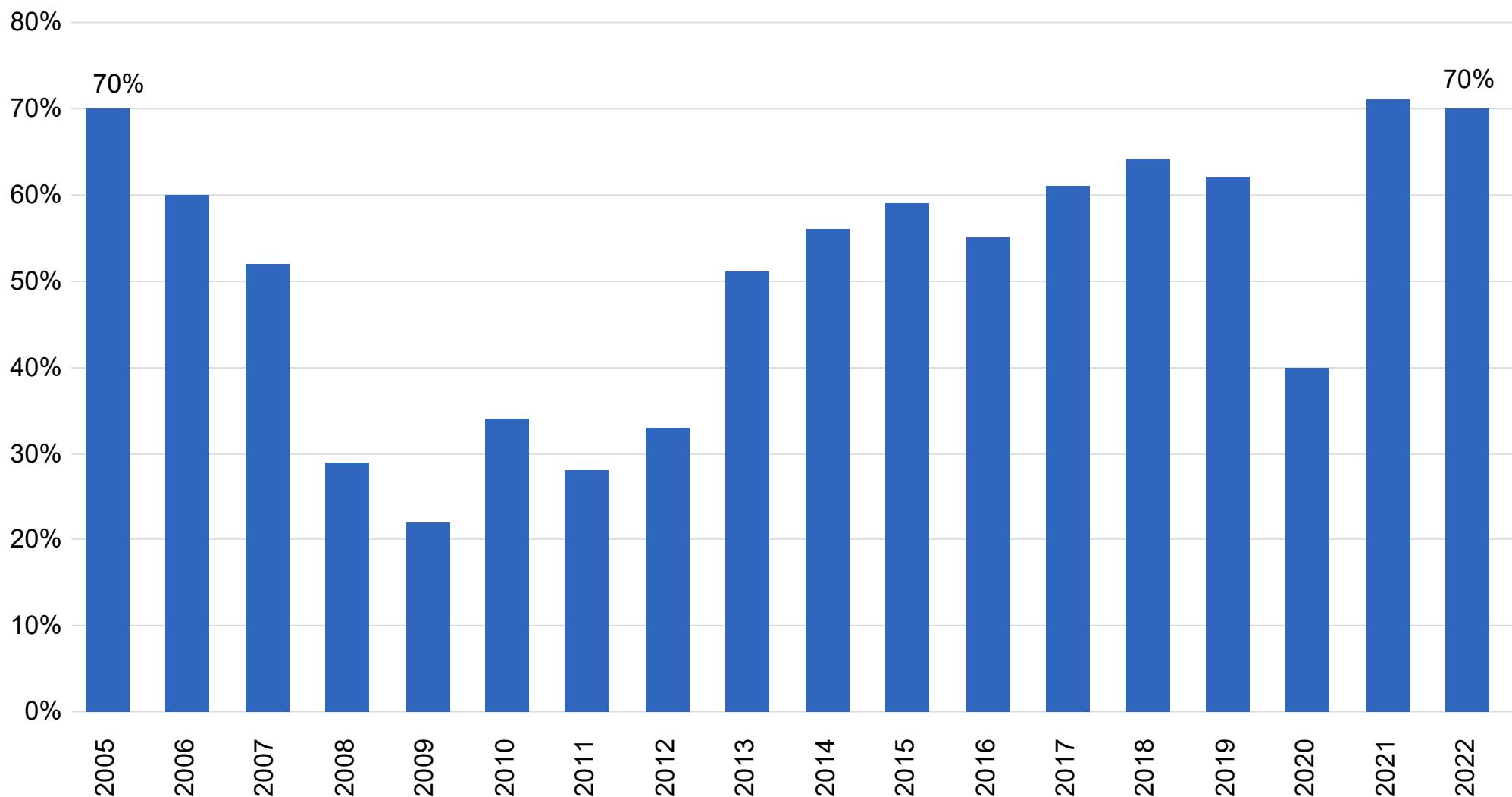
Source: Fannie Mae National Housing Survey (Data: Dec-22, Pub: Jan-23)

Share of Americans Expecting Local Home Price Increases

70% of Americans expect local home prices to increase over the next year.

Share of Americans Expecting Local Home Price Increases

Survey participants were asked: "Over the next year, do you think that the average price of houses in your area will increase, stay the same, or decrease?"



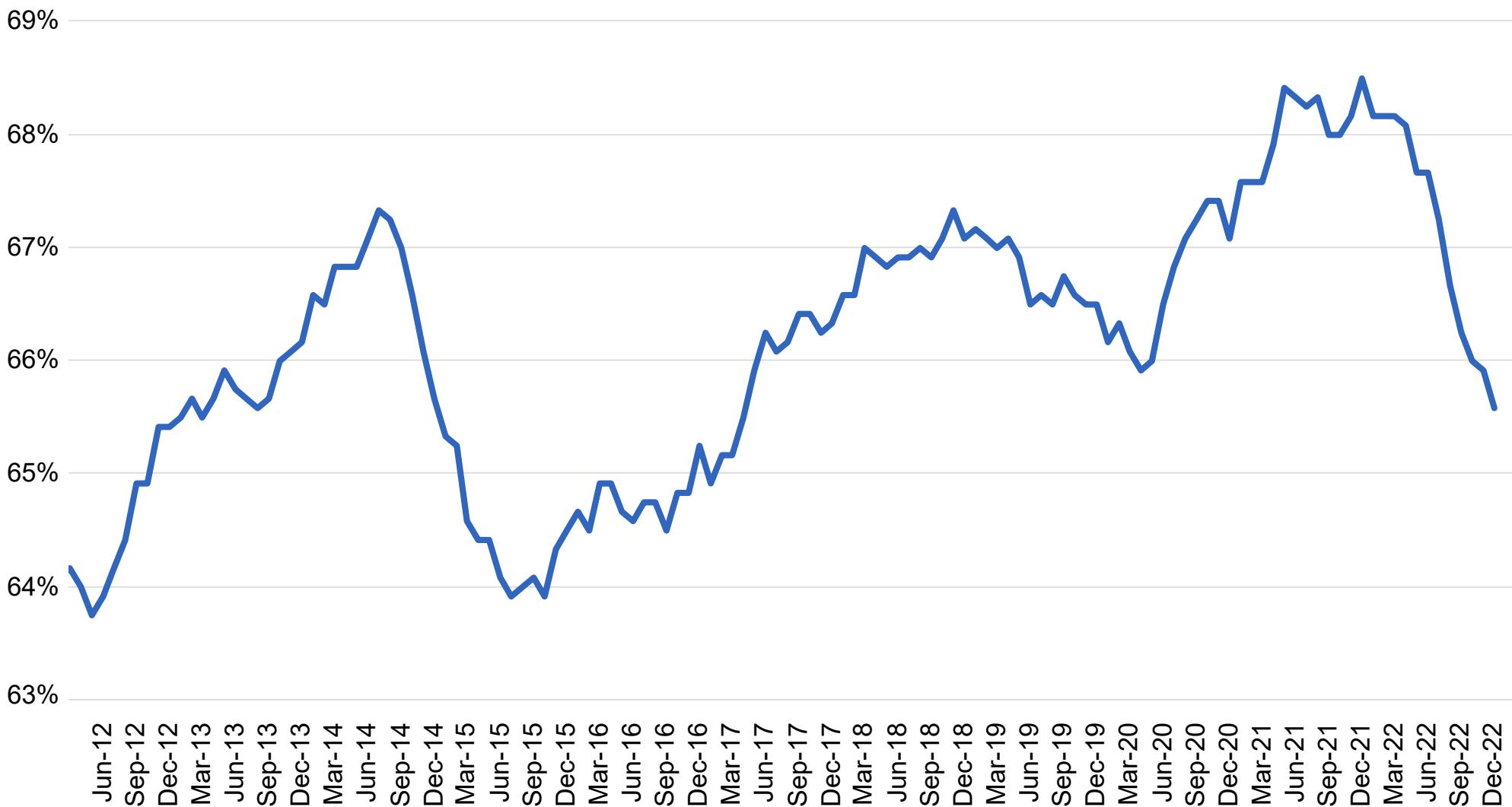
Sources: Gallup; John Burns Real Estate Consulting, LLC (Data: Apr-22, Pub: Jan-23)

Buy vs. Rent Sentiment

66% of consumers said they would buy if they were going to move today.

National Housing Survey: Consumer Preference if They Were Going to Move

12-month average — Buy = 66%



Note: The sample size is roughly 1,000 Americans, 18 years or older, who are surveyed via telephone.

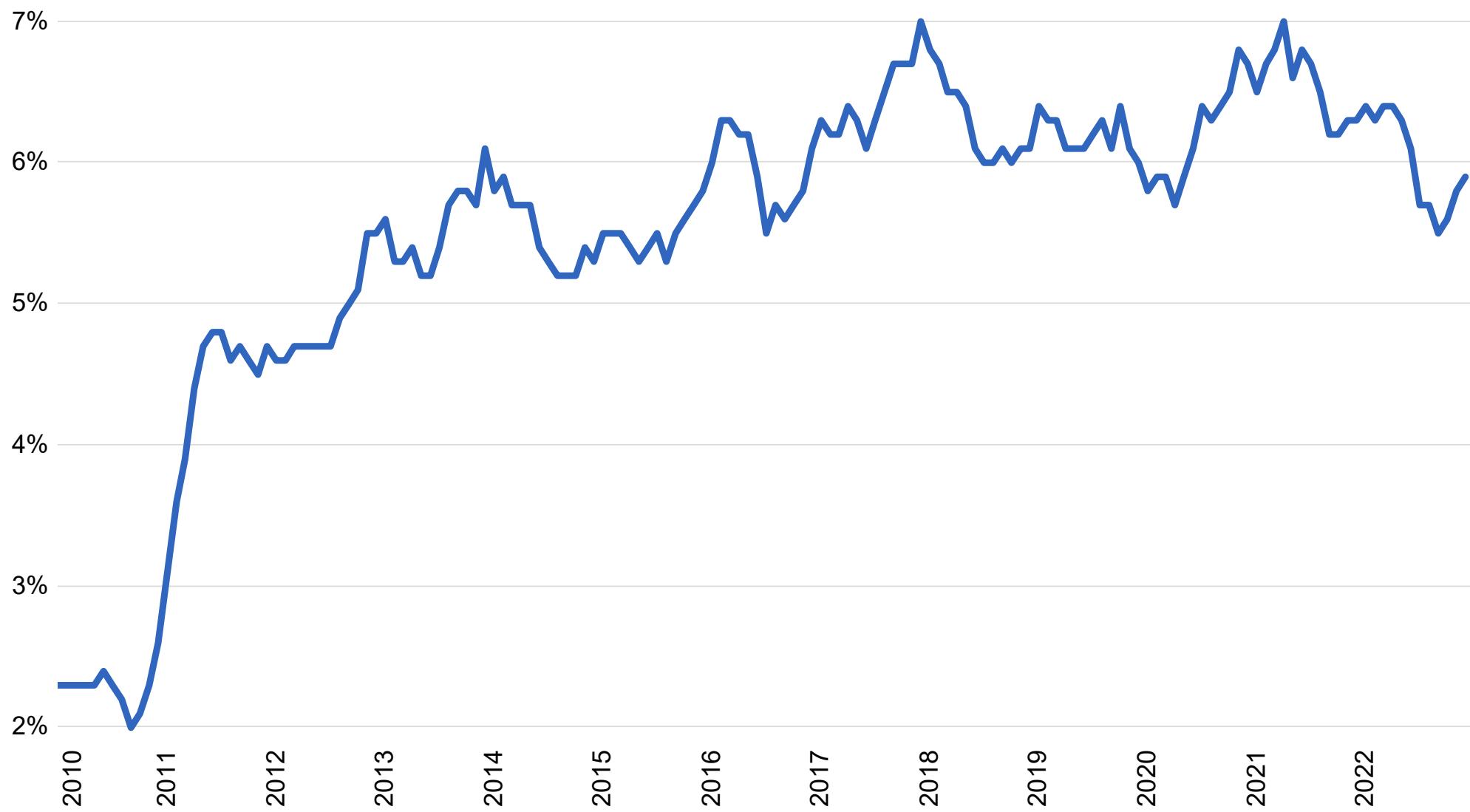
Source: Fannie Mae National Housing Survey (Data: Dec-22, Pub: Jan-23)

Plans to Purchase a Home in the Next Six Months

6% of respondents are planning to buy a home in the next six months.

Percent of Respondents Planning to Purchase a Home in Next Six Months

6-month average

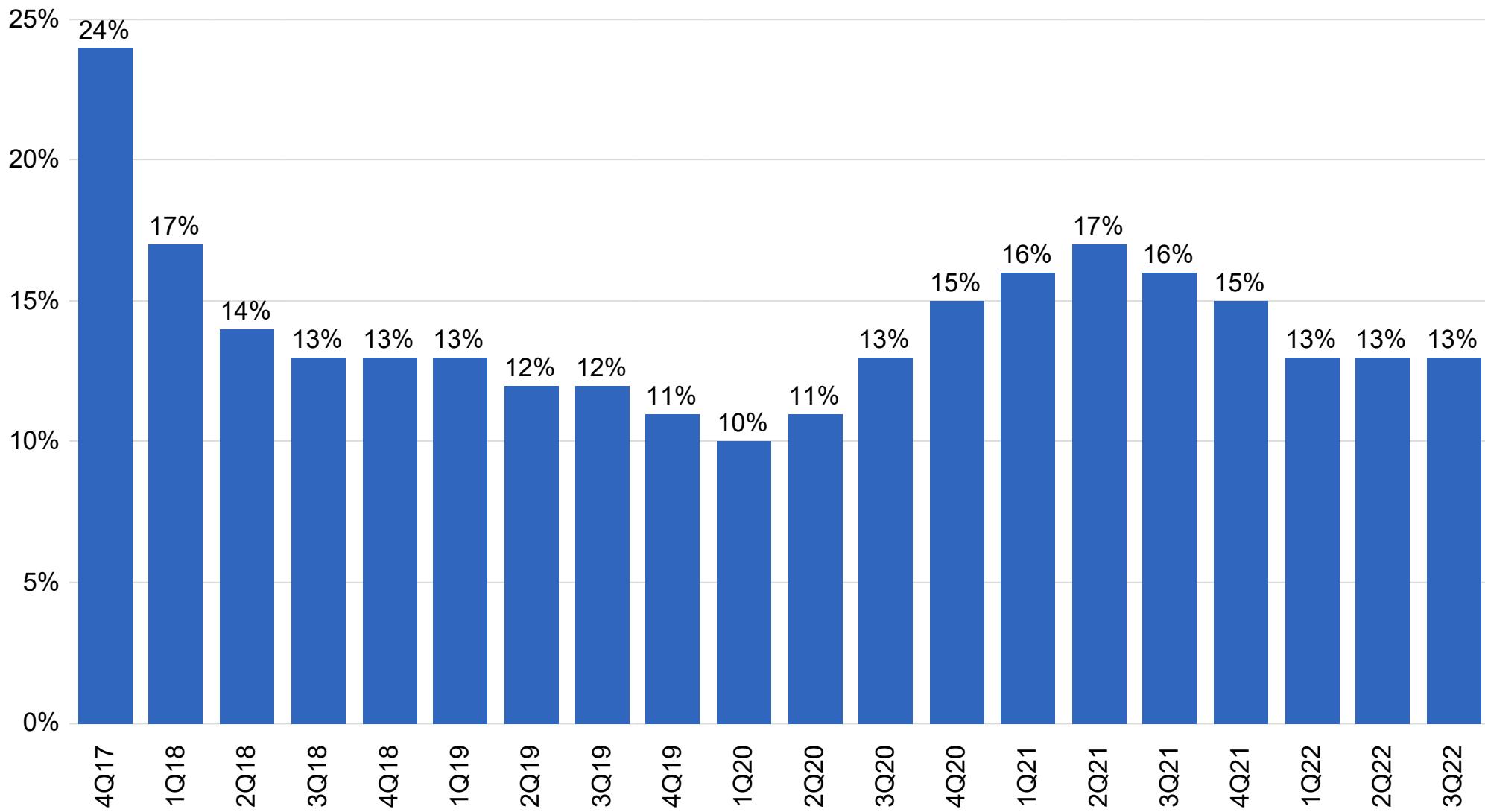


Source: Conference Board (Data: Dec-22, Pub: Jan-23)

Plans to Purchase a Home in One Year

13% of respondents are planning to buy a home in a year, down from a peak of 17% in 2Q21.

Percent of Respondents Planning to Purchase a Home in One Year



NAHB polls a national sample of adults selected to proportionately represent the US adult population in terms of age, gender, region, race/ethnicity, and education. Further weights are applied to the final set of respondents to ensure proper representation across these demographic variables.

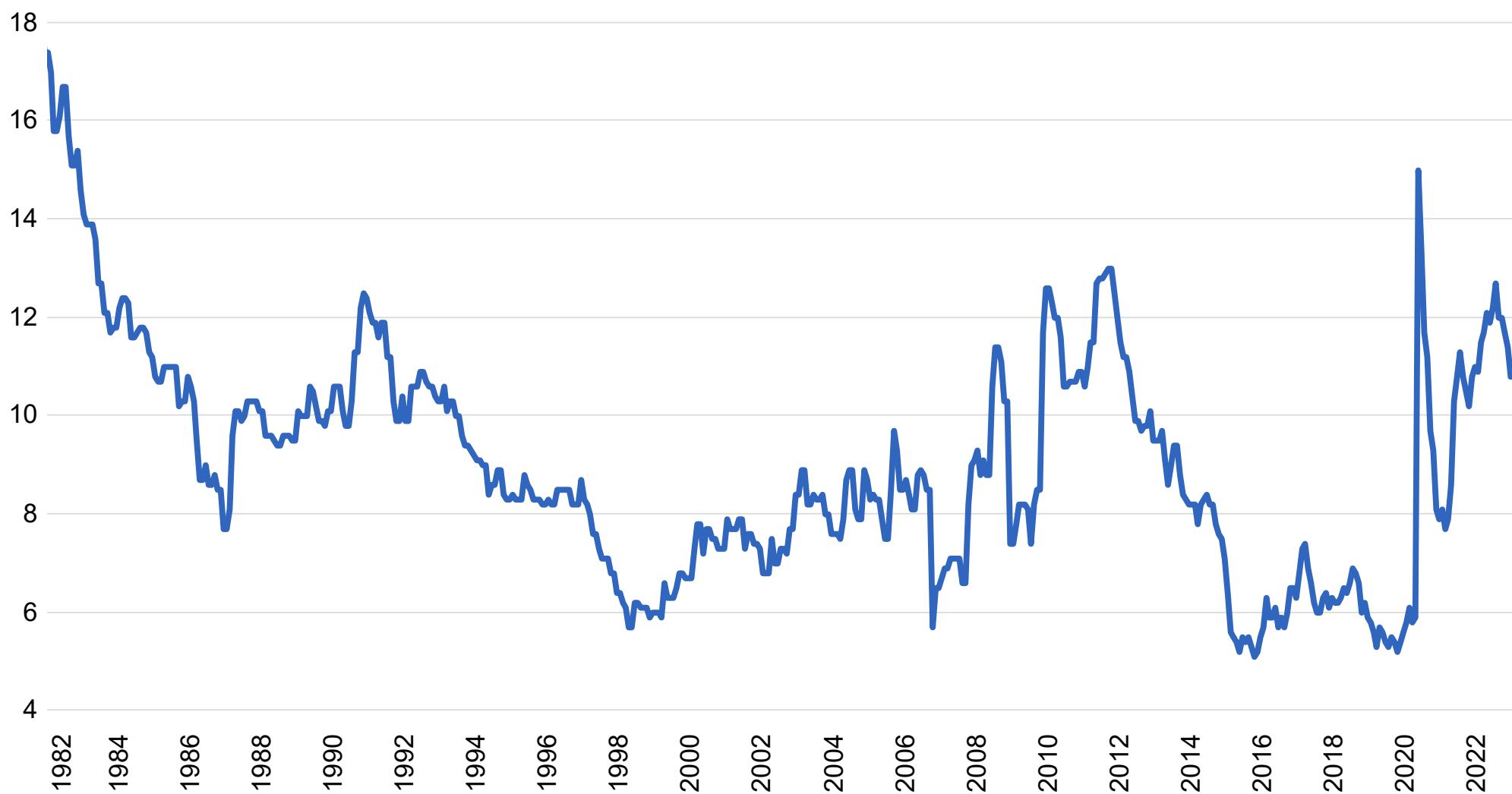
Source: NAHB (Data: 3Q22, Pub: Jan-23)

Misery Index

The Misery Index fell to 10.8 in December. Note that when the index is higher (caused by higher unemployment and worsening of inflation), there are greater economic and social costs.

Misery Index (Inflation + Unemployment)

— Misery Index = 10.8



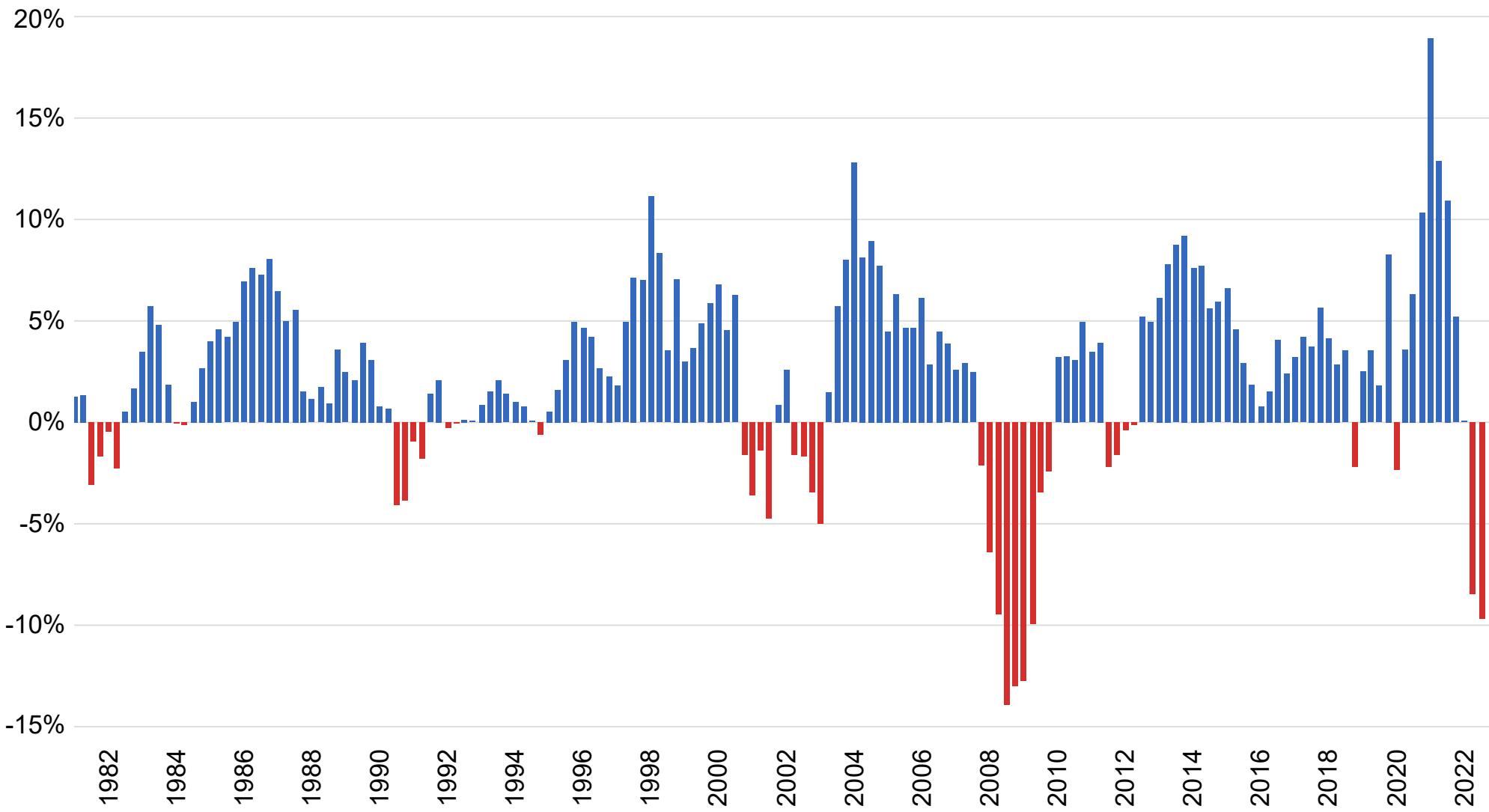
Source: Bureau of Labor Statistics (Data: Dec-22, Pub: Jan-23)

US Net Worth per Household

US inflation-adjusted net worth per household fell -10% YOY in 3Q22.

US Inflation Adjusted Net Worth per Household

YOY % change



Source: Federal Reserve (Data: 3Q22, Pub: Jan-23)

Consumer finance

US Hourly Earnings Growth

Hourly earnings rose 4.7% YOY.

Total US Hourly Earnings YOY Growth

Three-month moving average, seasonally adjusted



This wage gauge does not control for compositional shifts in the labor force, so clean comparisons over time are difficult. For example, average hourly earnings can fall just because more low-paid workers were hired.

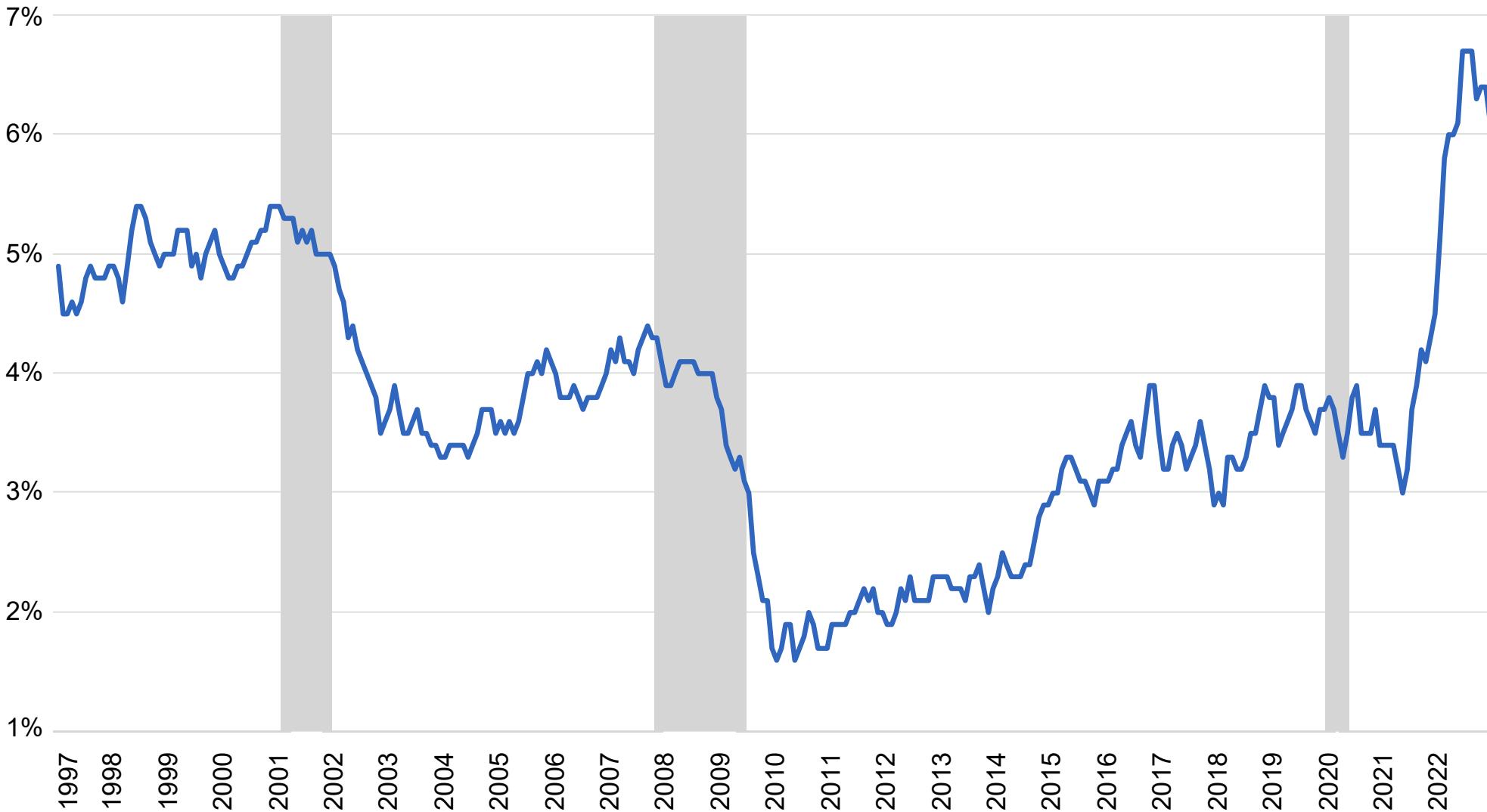
Source: Bureau of Labor Statistics (Data: Dec-22, Pub: Jan-23)

Average Wage Growth

Wages rose 6% YOY according to the Atlanta Fed. This wage gauge strips out wage outliers on both the high and low end of earners for a more accurate measure of middle-class wage growth.

Atlanta Federal Reserve Board Wage Growth Tracker

YOY %, 3-month moving average



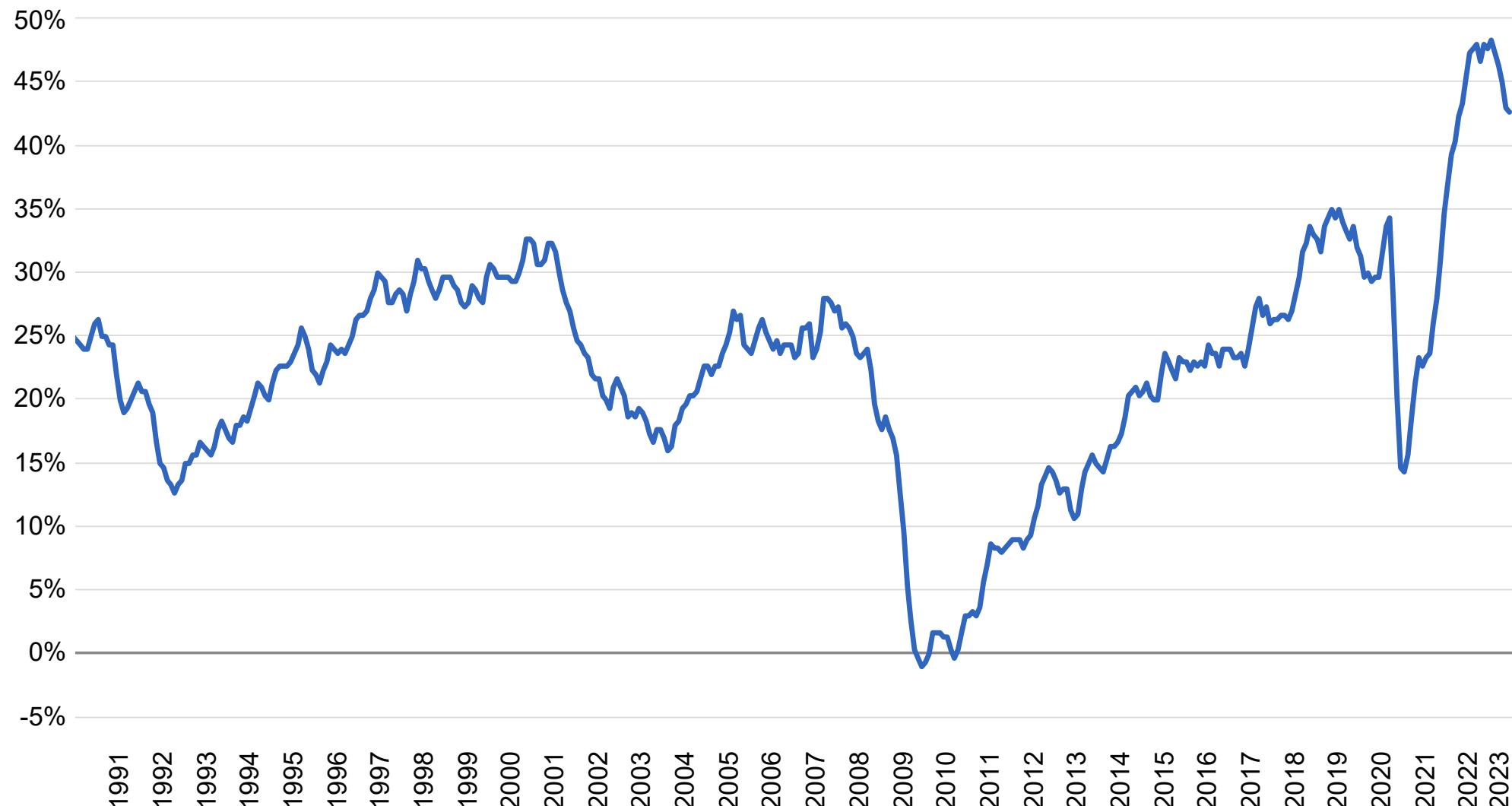
Source: Current Population Survey, Bureau of Labor Statistics and Federal Reserve Bank of Atlanta's calculations (Data: Dec-22, Pub: Jan-23)

Small Business Compensation Index

43% of small businesses plan to raise compensation for employees, up from 14% in 2020. Small businesses make up about 50% of private sector jobs.

Small Business Compensation Index

Net % of small businesses that raised compensation during last 3 months (% who increased less % who decreased)



Source: National Federation of Independent Business (Data: Dec-22, Pub Date: Jan-23)

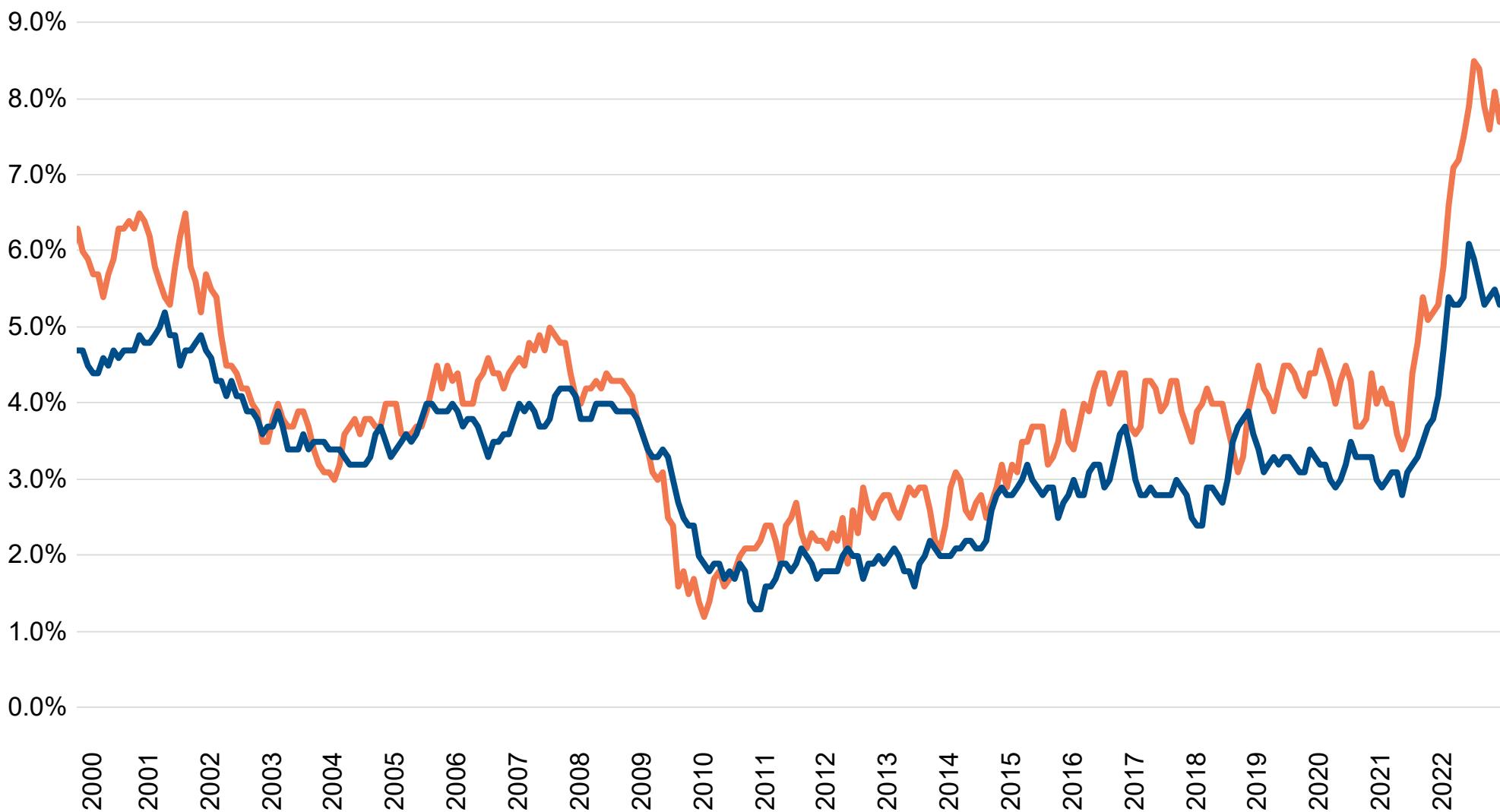
Wage Growth for Job Switchers and Stayers

Wages rose 7.7% YOY for workers who switched jobs and 5.3% YOY for workers who stayed in the same job.

Wage Growth for Job Switchers and Stayers

3-month moving average

Stayed in same job Switched job



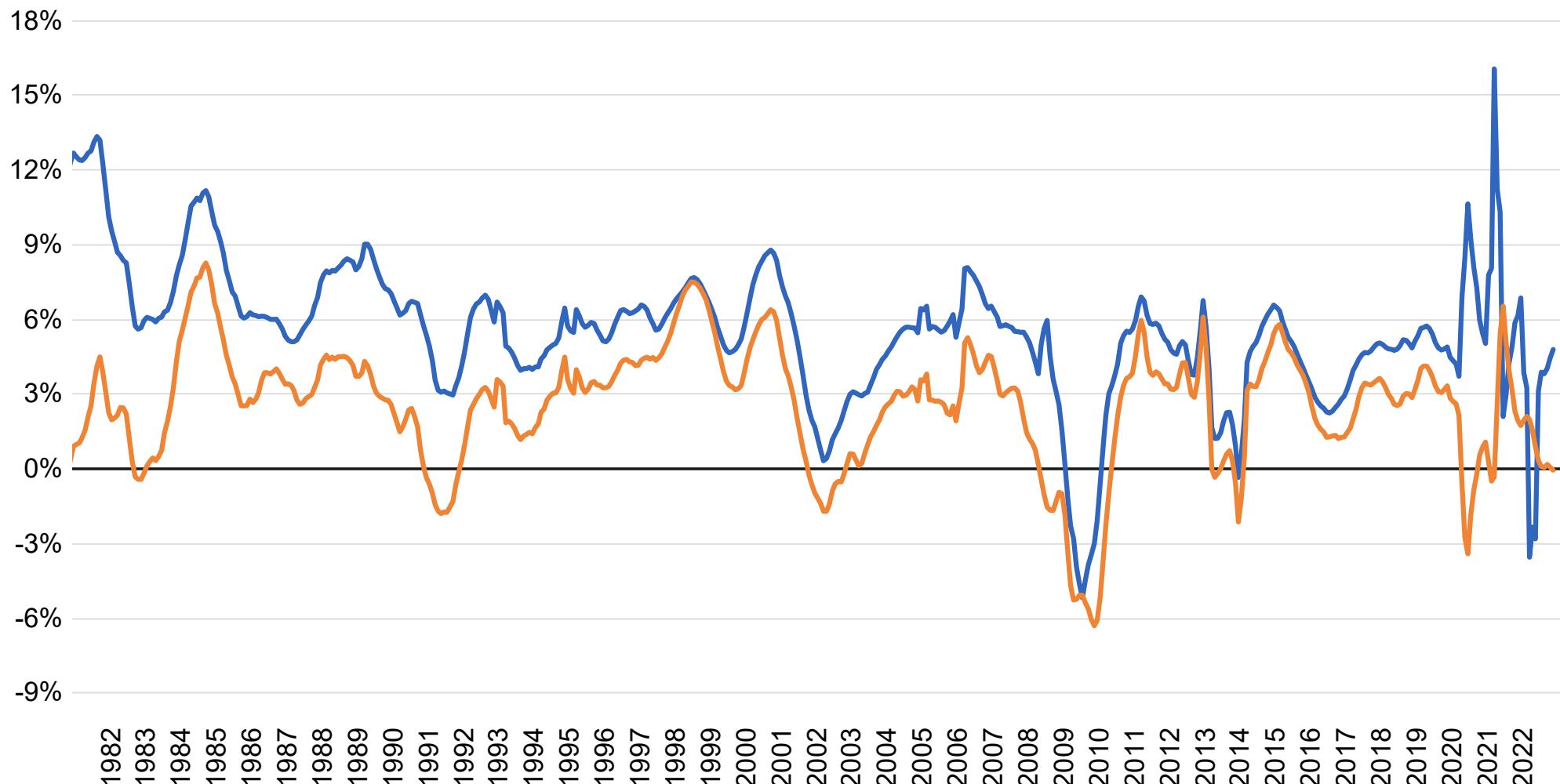
Source: Federal Reserve Bank of Atlanta (Data: Dec-22, Pub: Jan-23)

Personal Income

Real personal income remained flat YOY as 40-year high inflation negated nominal income growth.

Personal Income

YOY % change, 3-month average — Nominal personal income growth = 4.8% — Real personal income growth = 0.0%



Income measured using chained 2009 dollars. Real personal income growth adjusts for inflation and excludes government transfers, like welfare and social security.

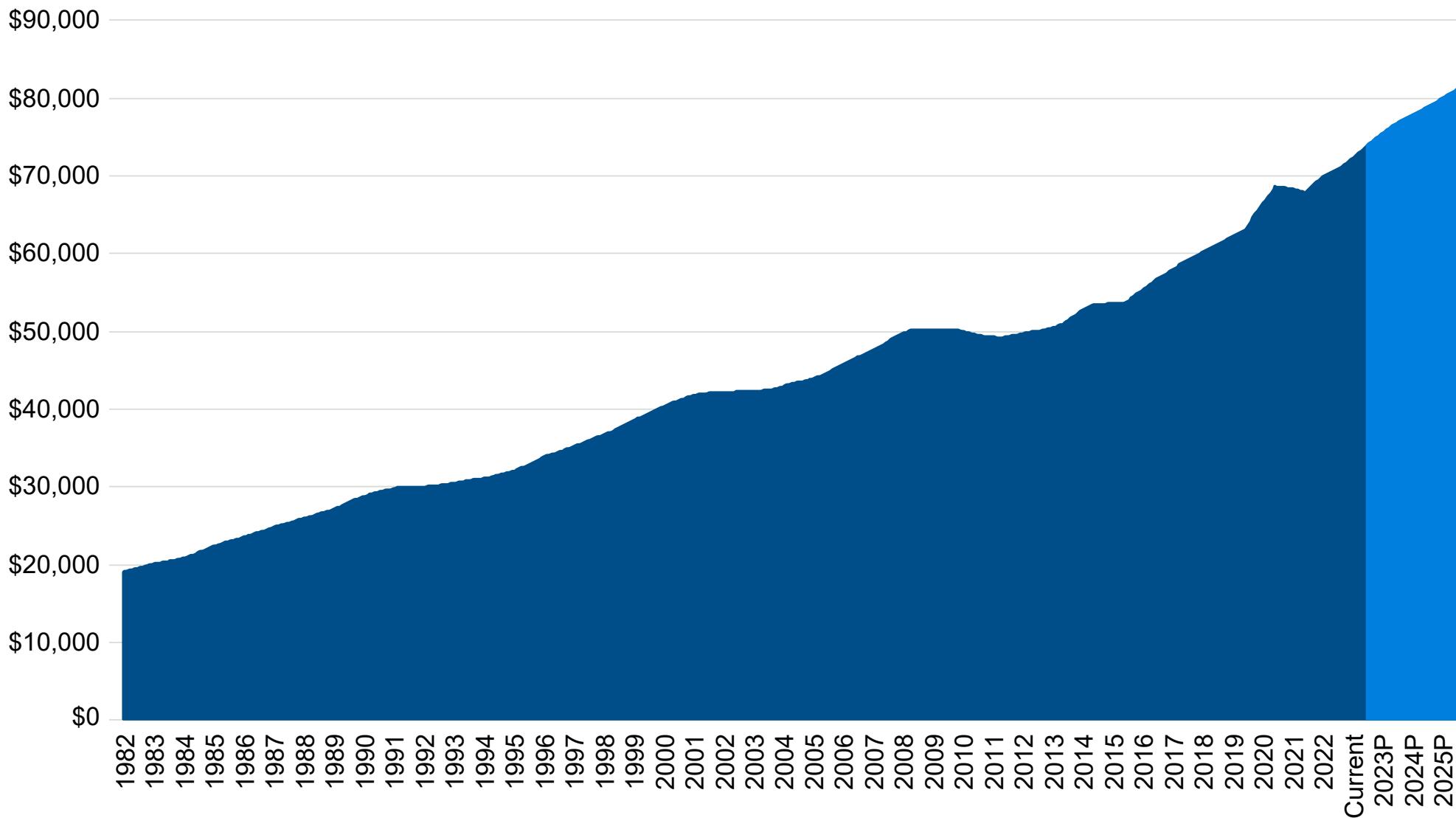
Source: BEA (Data: Nov-22, Pub: Jan-23)

Median Household Income

Median household income increased 4% YOY to \$74K.

Median Household Income

Current = \$73,640 (4% YOY)

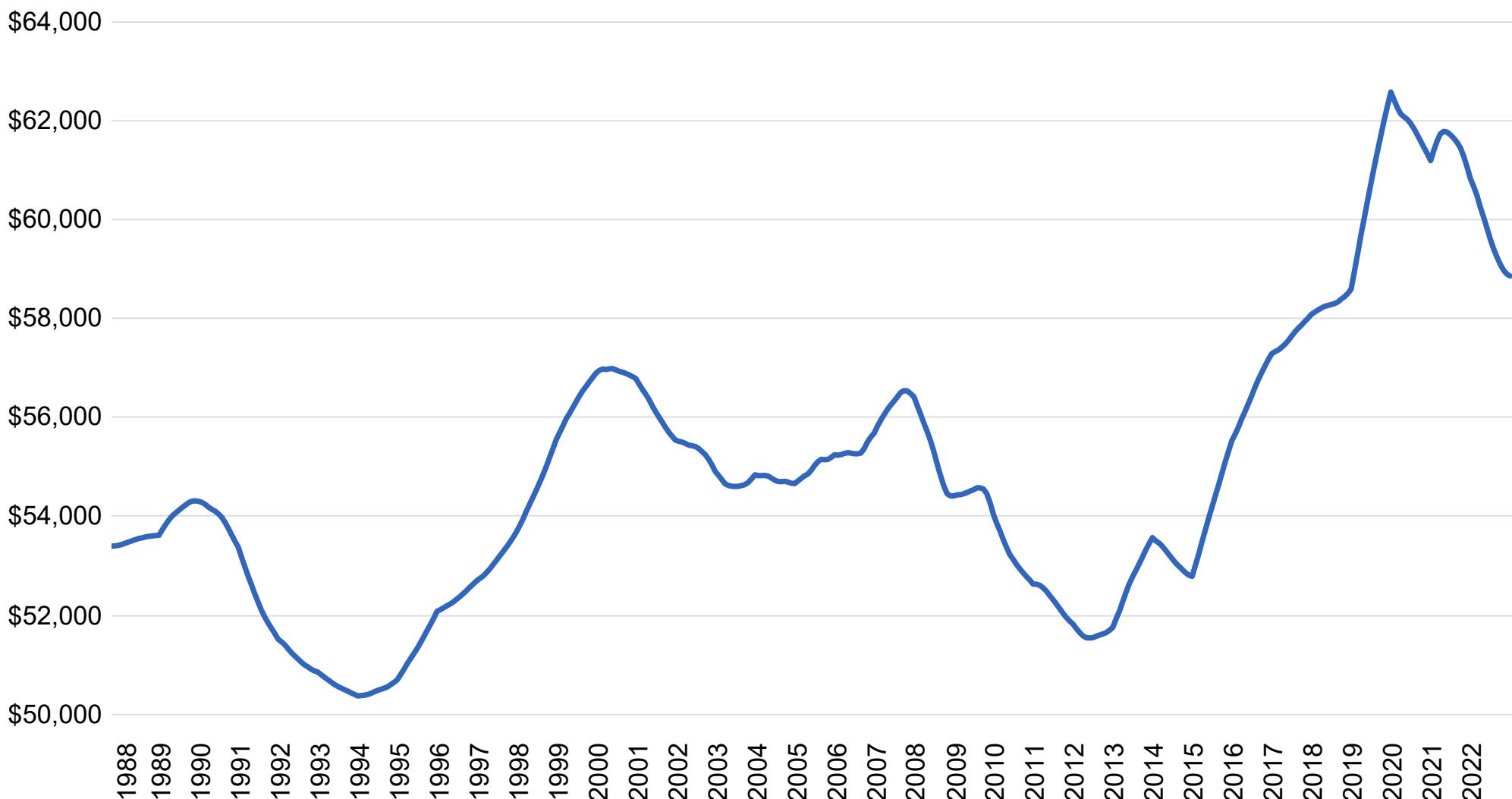


Sources: John Burns Real Estate Consulting, LLC; Census Bureau; Moody's Analytics (Data: Nov-22, Pub: Jan-23)

Inflation-Adjusted Median Household Income

Inflation-adjusted income is \$59K, down from a high of \$63K in 2019. High inflation is causing real incomes to fall for middle-class households.

Real Median Household Income



Note: Median income is inflation-adjusted to 2013 dollars (2013-chained).

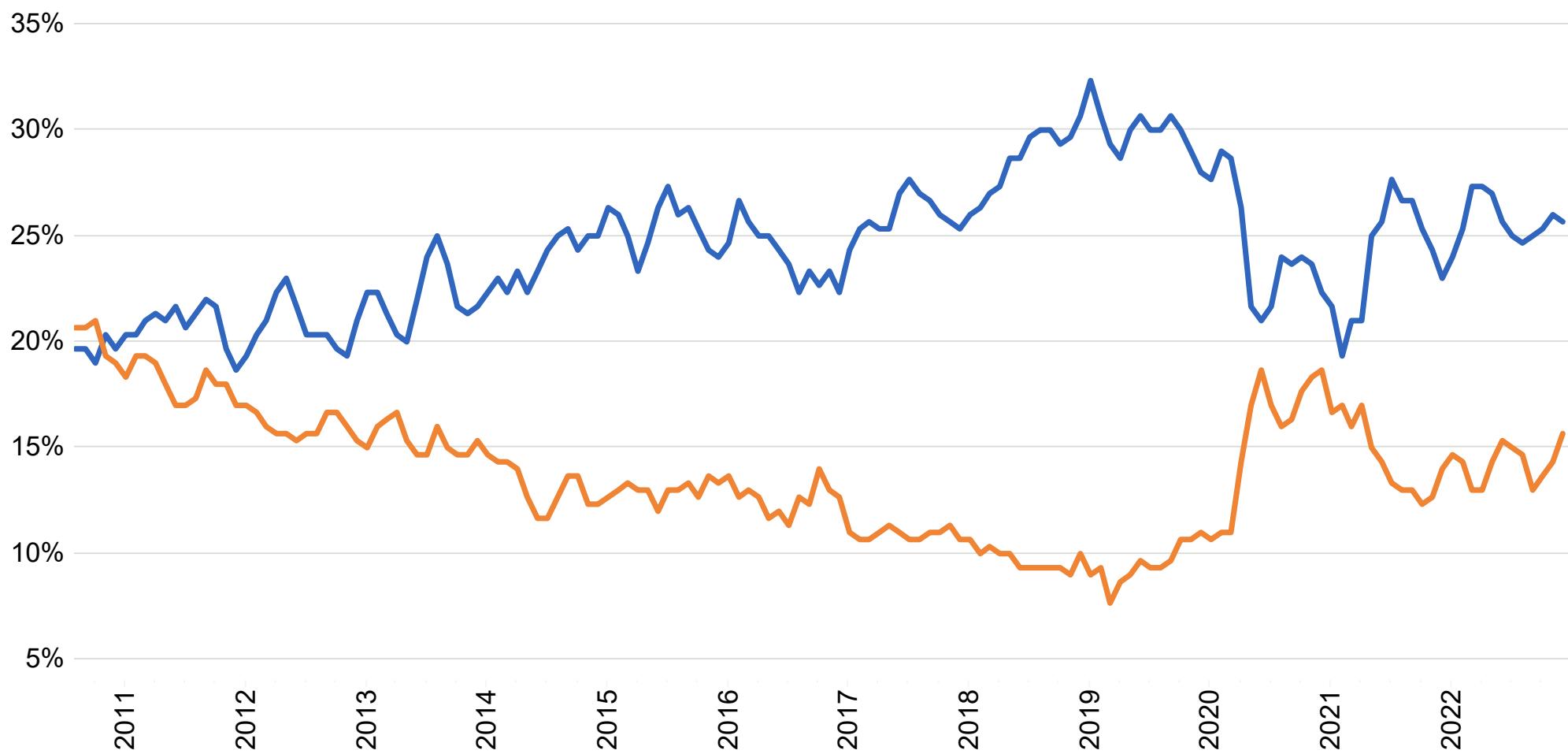
Sources: John Burns Real Estate Consulting, LLC; Census Bureau; Moody's Analytics (Data: Dec-22, Pub: Jan-23)

Fannie Mae National Housing Survey: Household Income Compared to 12 Months Ago

26% of consumers surveyed said their household income was significantly higher than it was one year ago.

National Housing Survey: Household Income Compared to 12 Months Ago

3-month moving average — Significantly higher = 26% — Significantly lower = 16%



Note: The sample size is roughly 1,000 Americans, 18 years or older, who are surveyed via telephone.

Source: Fannie Mae National Housing Survey (Data: Dec-22, Pub: Jan-23)

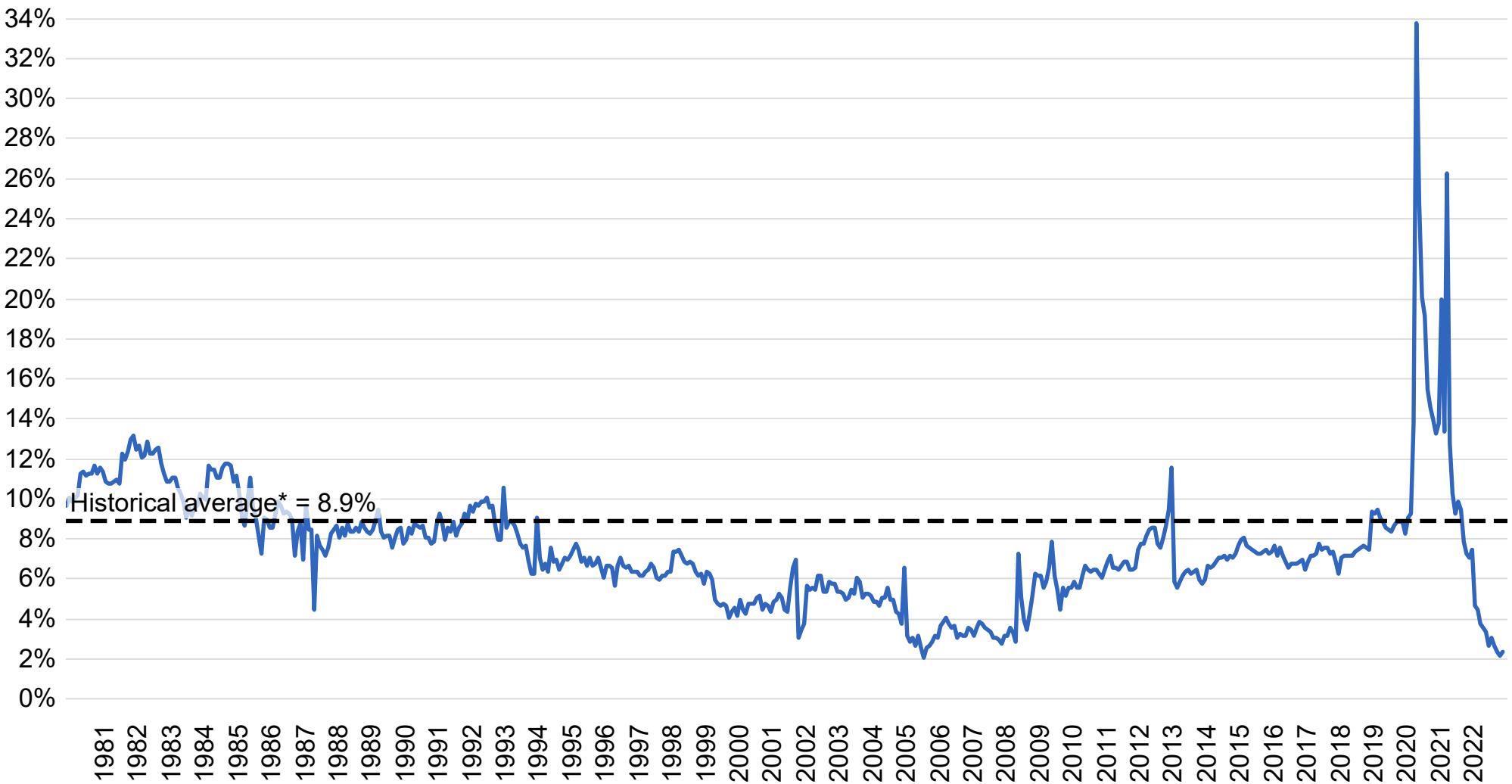
Personal Savings Rate

The personal savings rate has not been this low since 2005.

Personal Savings Rate

— Personal savings rate = 2.4%

Note: The PSR is the ratio of monthly savings to personal disposable income.



Consumer Debt Balance

The total debt balance of US consumers is greater than the prior peak level of 3Q08. Mortgages are the bulk of consumer debt at 71%. Student loans, a major hindrance to homeownership, have taken a larger share—at 10% compared to 3% in 2003.

Total Debt Balance and Composition

Mortgage = 71% Student loan = 10% Auto loan = 9% Credit card = 6% HE revolving = 2% Other = 3%

Trillions

18

16

14

12

10

8

6

4

2

0



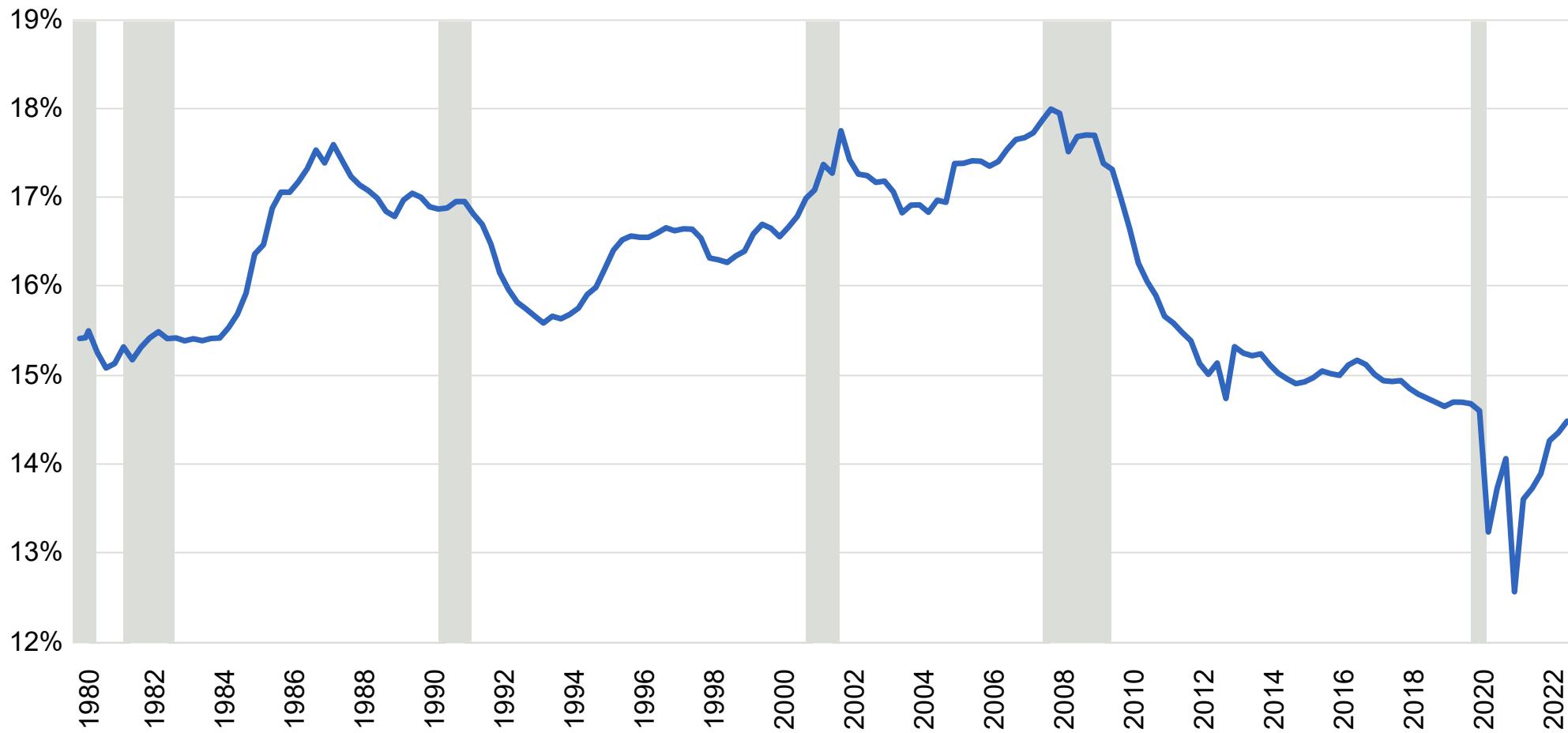
Sources: NY Federal Reserve Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

Financial Obligation Ratio

With a 14.5% financial obligation ratio, consumer debt in relation to income is rising from a record low. The lower the ratio, the lower the risk that consumers are unable to meet their financial obligations.

Financial Obligation Ratio

Recession Current ratio = 14.5%



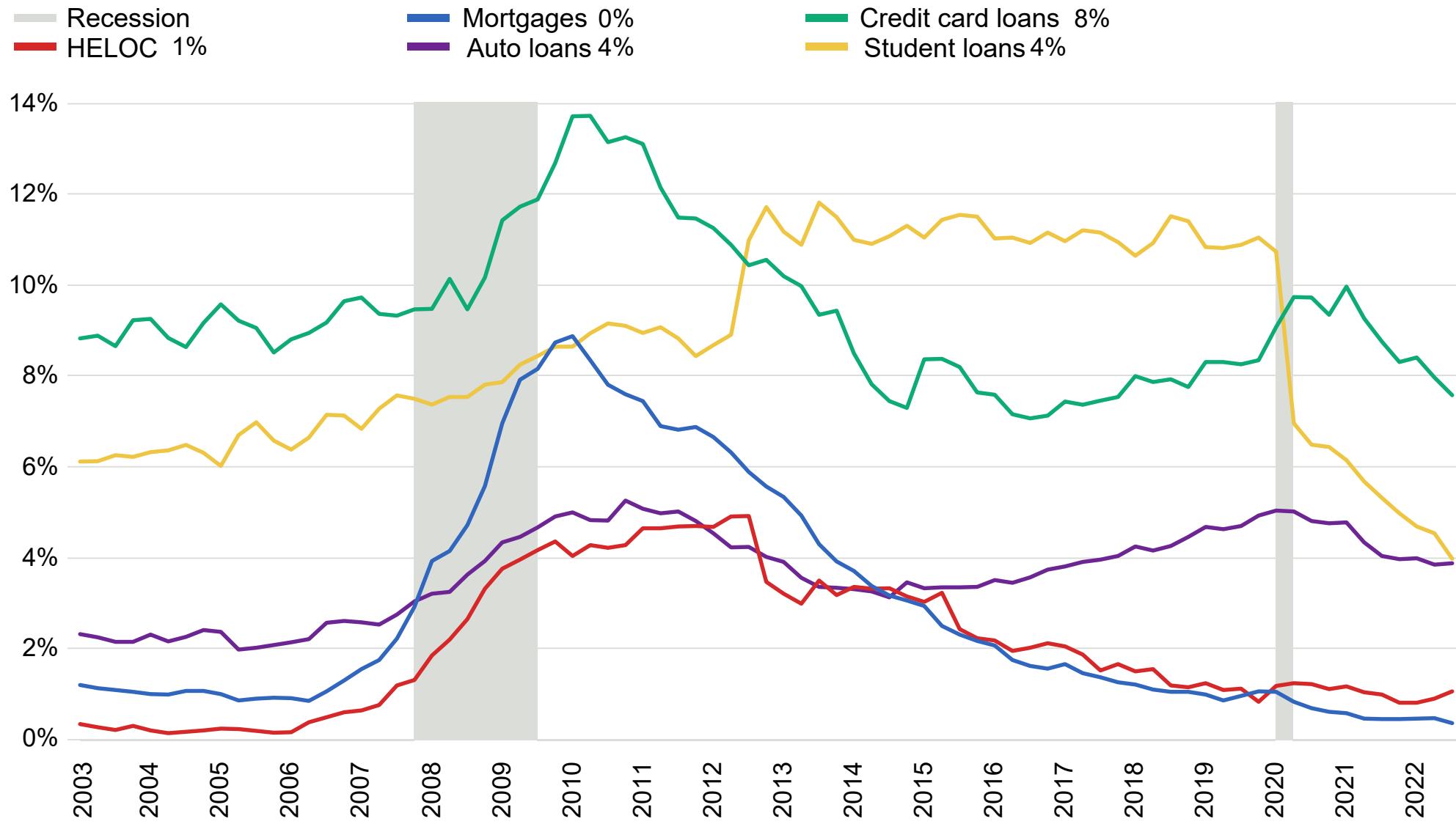
Note: FOR is a relation of debt payments to disposable personal income, and is not a particularly reliable percentage overall, but can be used for historical comparison for gauging changes in debt service. The FOR includes estimated required payments on outstanding mortgage, consumer debt, automobile lease payments, rental payments on tenant-occupied property, homeowners' insurance, and property tax payment. Consumer debt includes student debt, which has drastically increased the last 10–15 years.

Source: Federal Reserve; (Data: 3Q22, Pub: Jan-23)

Delinquent Loans by Type

More credit card loans are 90+ days delinquent than any other loan types. Student loan delinquencies plummeted due to emergency forbearance.

Share of Loans 90+ Days Delinquent by Type



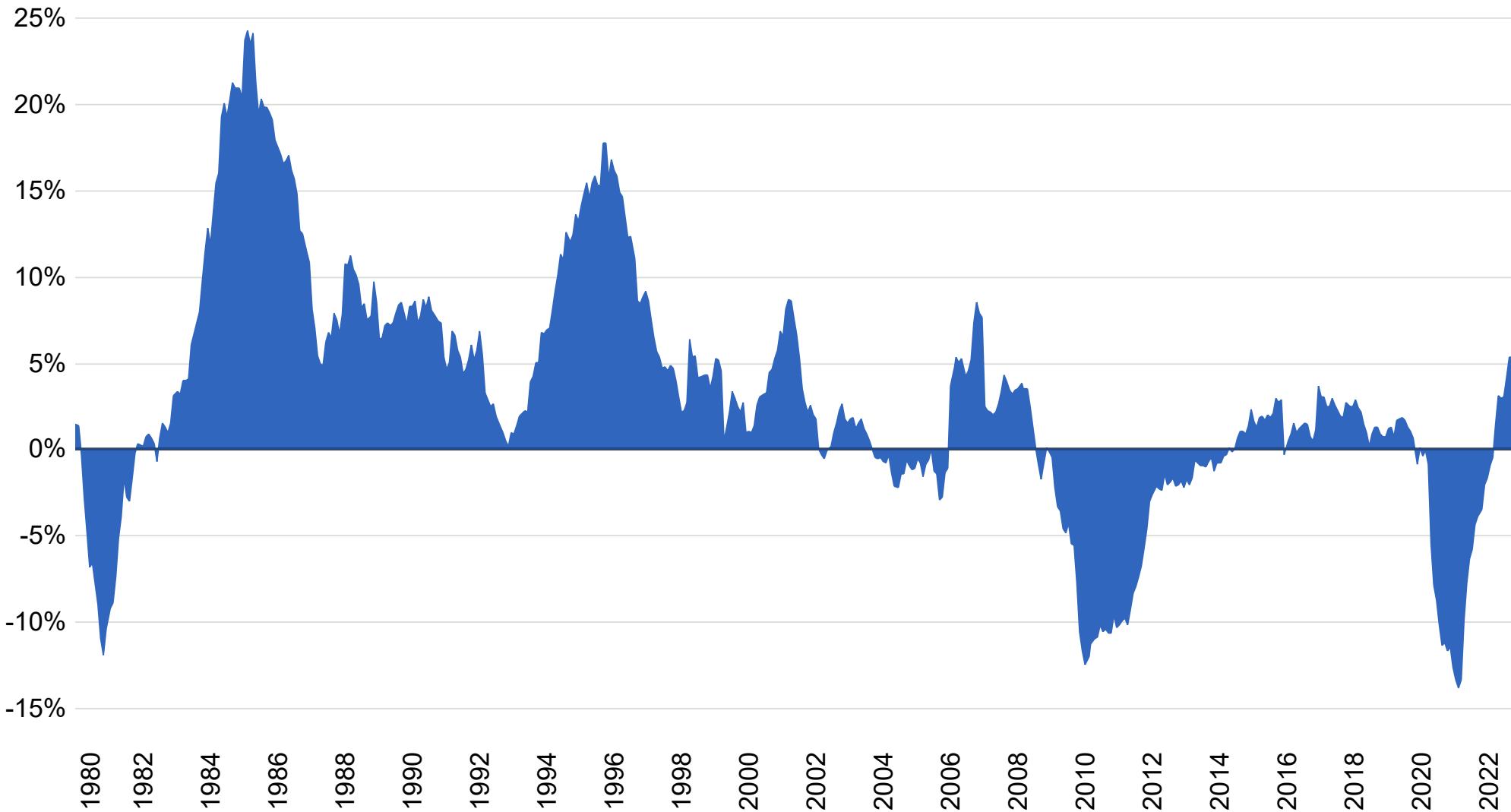
Source: New York Fed Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: Sep-22, Pub: Jan-23)

Revolving Consumer Credit

Consumer credit outstanding per household rose 5% YOY.

Revolving Consumer Credit Outstanding per Household

YOY change, inflation adjusted — Current = 5%

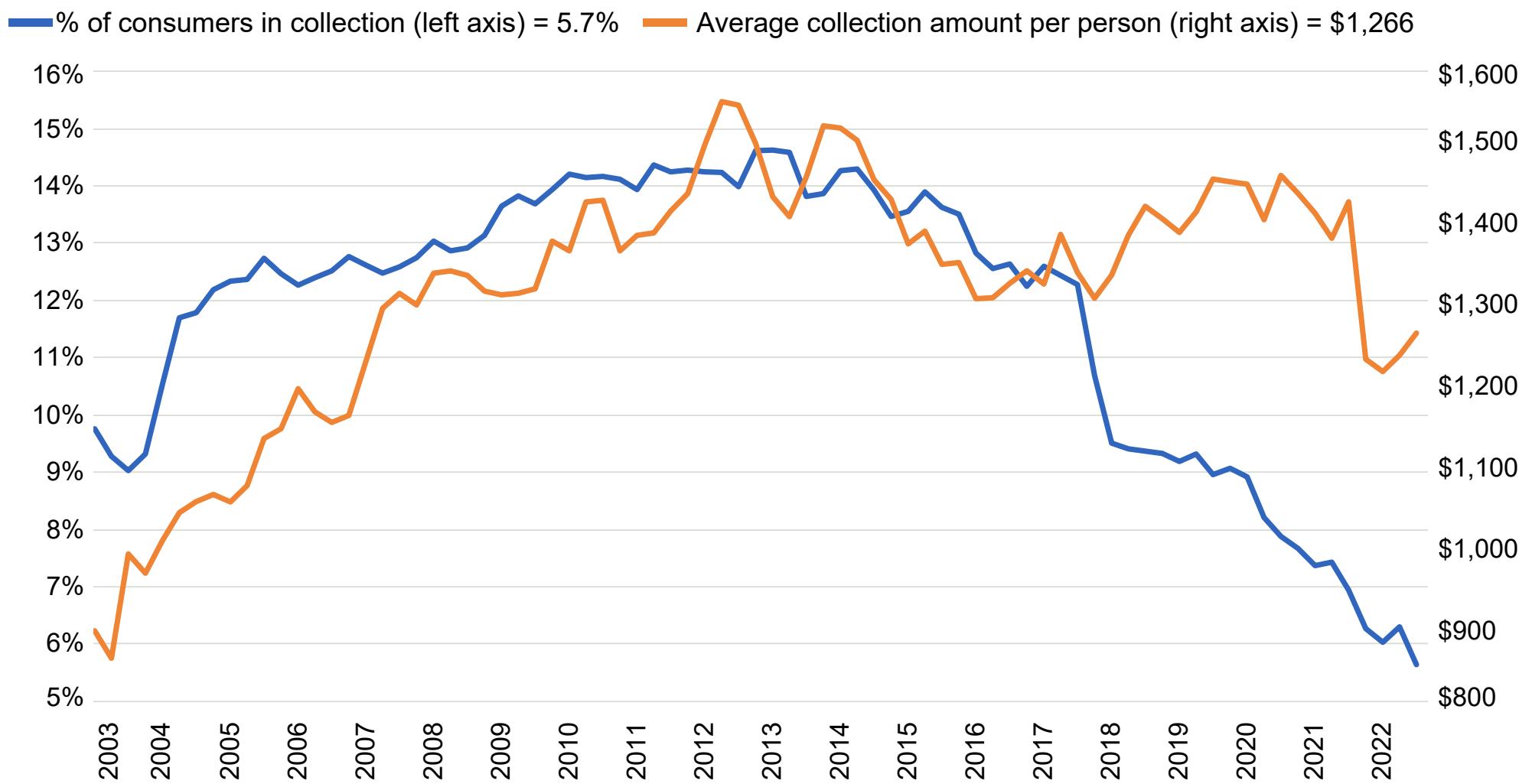


Sources: Federal Reserve; John Burns Real Estate Consulting, LLC (Data: Sep-22, Pub: Jan-23)

Third-Party Collections

5.7% of consumers have at least one loan account in third-party collections, with an average collection amount of \$1,266. The share of people in collections is at the lowest level in our data going back to 2003.

Third-Party Collections



Note: The share of consumers in collections dropped significantly in 4Q17 as a result of a change in required reporting practices that impacted collections accounts, known as the National Consumer Assistance Plan. The plan, which came into effect during the second half of 2017, prohibited reporting debts that were from medical collections less than 180 days old.

Sources: NY Federal Reserve Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

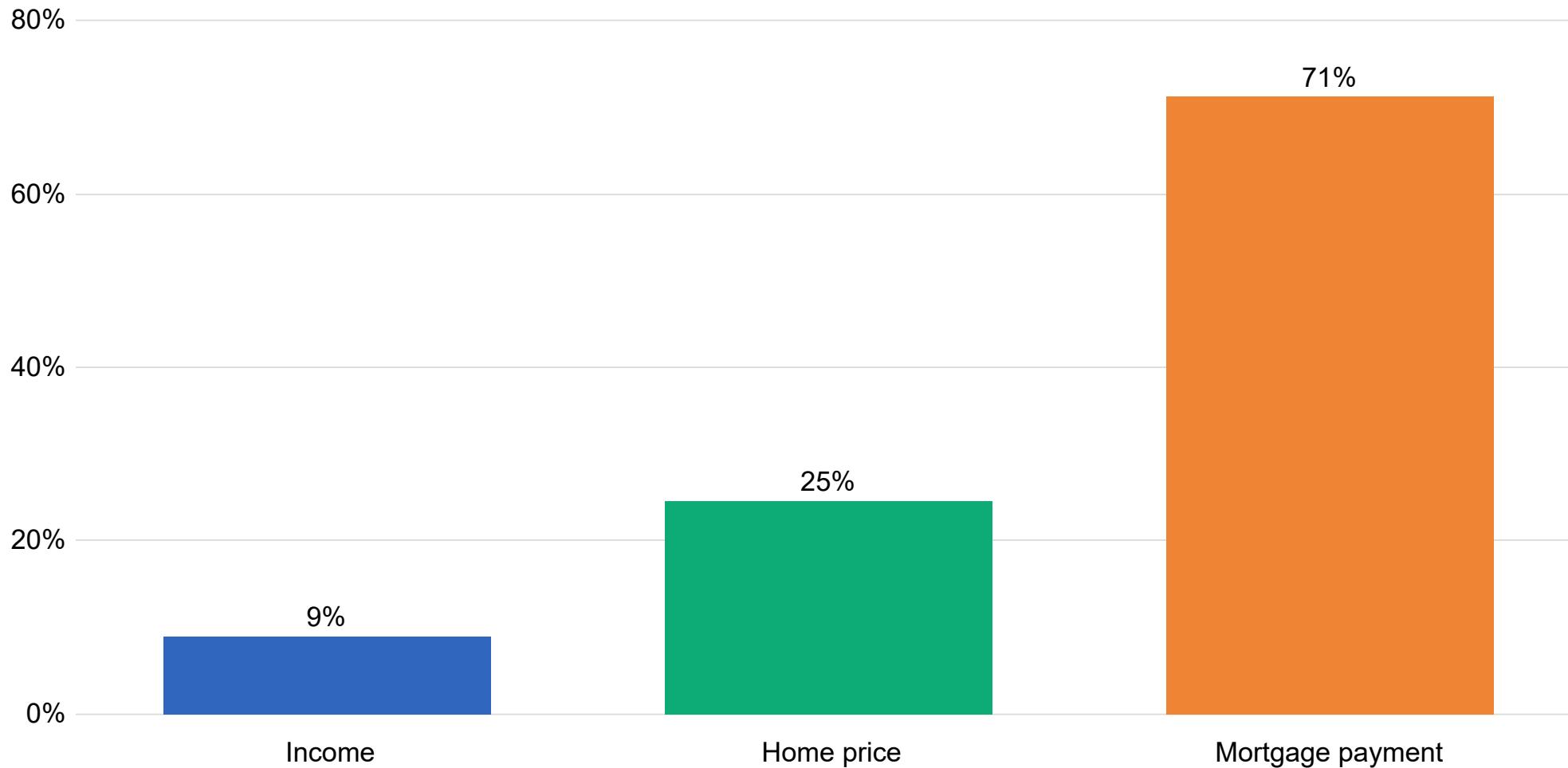
Housing affordability

Income, Price, and Mortgage Payment Growth from 2020 Lows

Mortgage payments have increased 71% since the 2020 lows, while median incomes only gained 9%. The disparity between home price and income growth has contributed to worsening affordability since 2020.

Income, Home Price, and Mortgage Payment Growth

From 2020 lows — Income — Home price — Mortgage payment



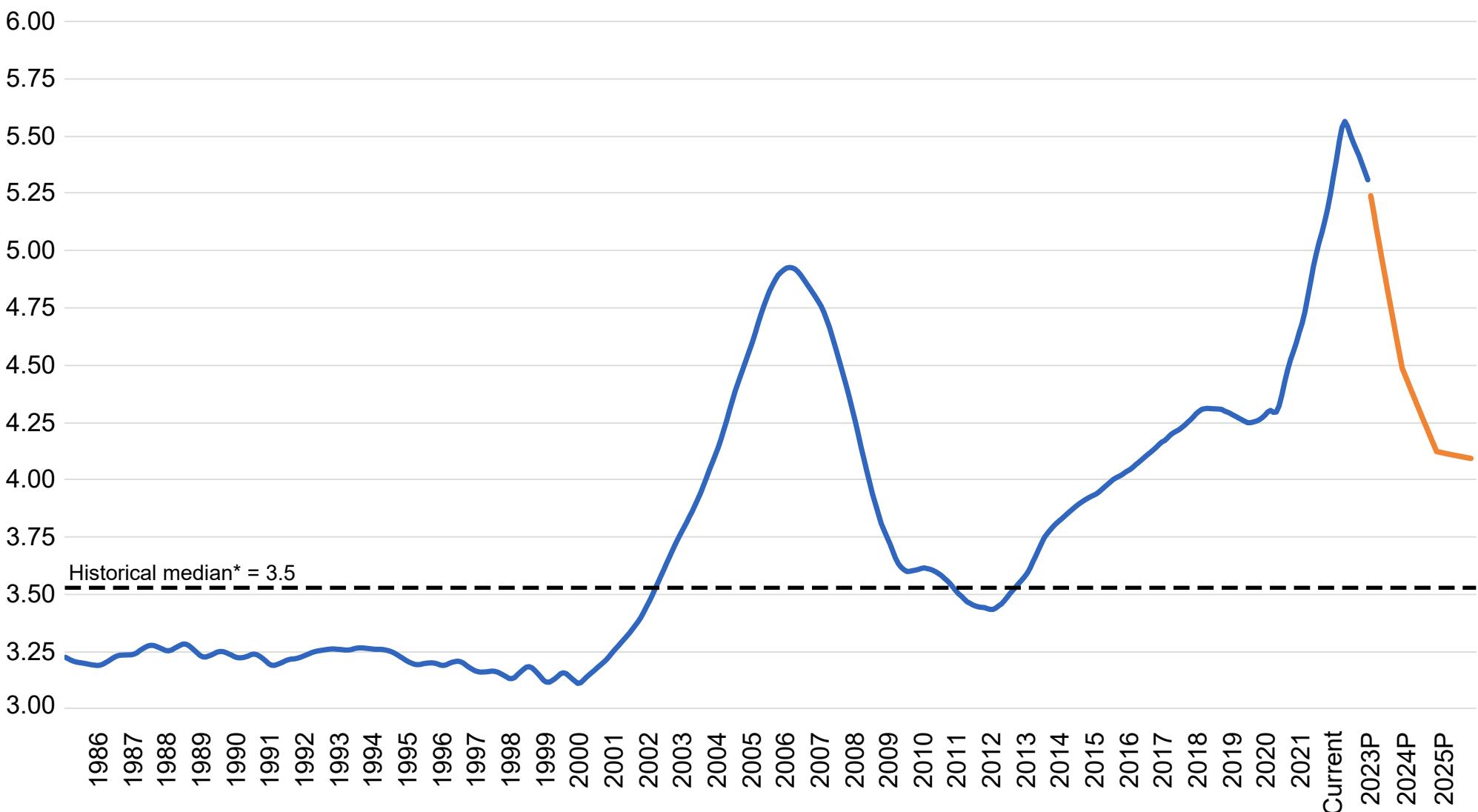
Our definition of median housing payment assumes the purchase of a home at 80% of the market's median-priced resale home, 5% down payment, and a 30-year, fixed-rate mortgage. Payment is PITI and includes mortgage insurance. We divide the median housing payment by the median income to calculate the ratio.

Source: John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Median Home Value to Income Ratio

Incomes are rising faster than home prices, which is driving the home-value-to-income ratio lower. The ratio now sits at 5.31, which we expect to fall.

Median Home Value to Income Ratio



Source: John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

*Historical median: Jan-85 through current

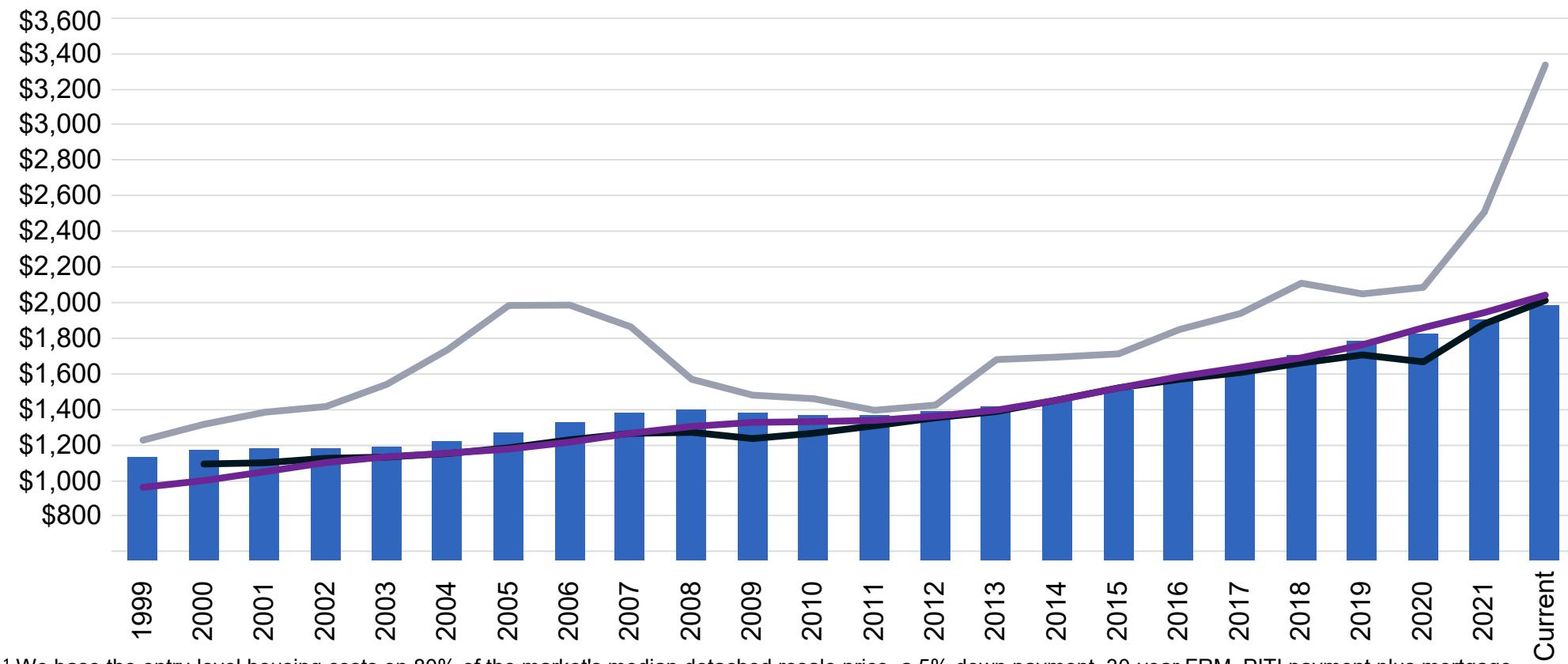
Housing Costs and Rents

Owning an entry-level home costs more than renting a professionally managed apartment in many markets. The current spread is \$1,324. The spread between home costs and single-family rents is smaller, at \$1,294.

Housing Costs, Entry-Level¹ vs. Effective Apartment Rent vs. SF Rents

Annually weighted average of 82-market roll-up

— Avg housing costs, entry-level = \$3,340 — Burns Single-Family Rent Index™ = \$2,046 ■ 28% of median income = \$1,980
— Burns Apartment Rent Index™ = \$2,016



¹ We base the entry-level housing costs on 80% of the market's median detached resale price, a 5% down payment, 30-year FRM, PITI payment plus mortgage insurance, and maintenance costs ranging from 0.85% to 1.25% of the home price set in 2014 and historically adjusted for inflation, factored in monthly. Our analysis assumes no tax deduction. Apartment rent data is the market's average effective rent. Annual values (excluding the current quarter) are for Q4 of each year.

Note: The Burns Single-Family Rent Index models historical and current single-family rent trends. The index tracks the median single-family home listed for rent on the open market and represents new leases, not renewals.

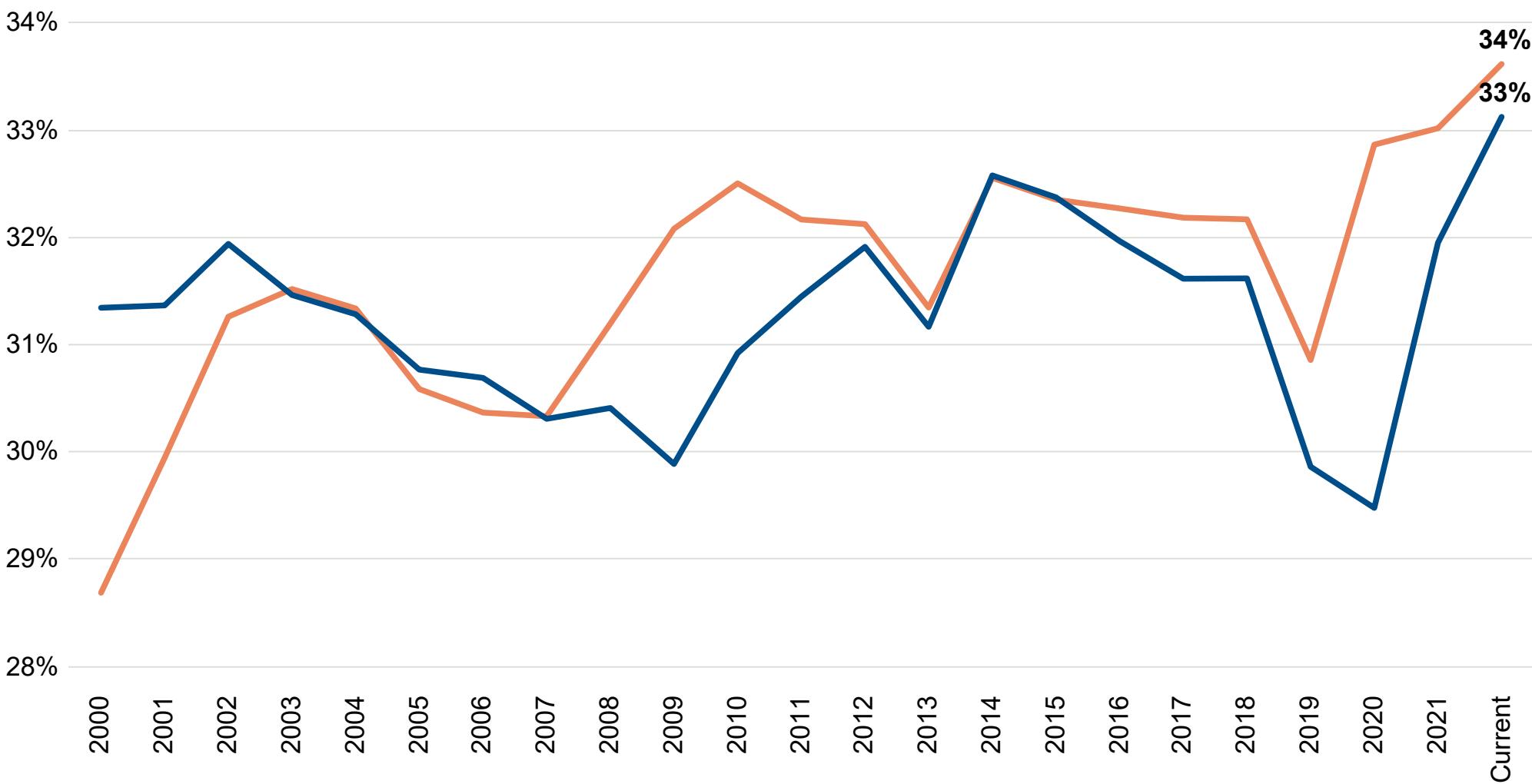
Source: John Burns Real Estate Consulting based on aggregated data from RealPage, Inc. (Data: Nov-22, Pub: Jan-23)

Effective Rents as Percentage of Median Income

Typical single-family rents are 34% of median income (versus 33% for apartments).

Effective Rents as % of Median Income

Burns Single-Family Rent Index™ Burns Apartment Rent Index™



Note: The Burns Single-Family Rent Index models historical and current single-family rent trends. The index tracks the median single-family home listed for rent on the open market and represents new leases, not renewals.

Source: John Burns Real Estate Consulting based on aggregated data from RealPage, Inc. (Data: Nov-22, Pub: Jan-23)

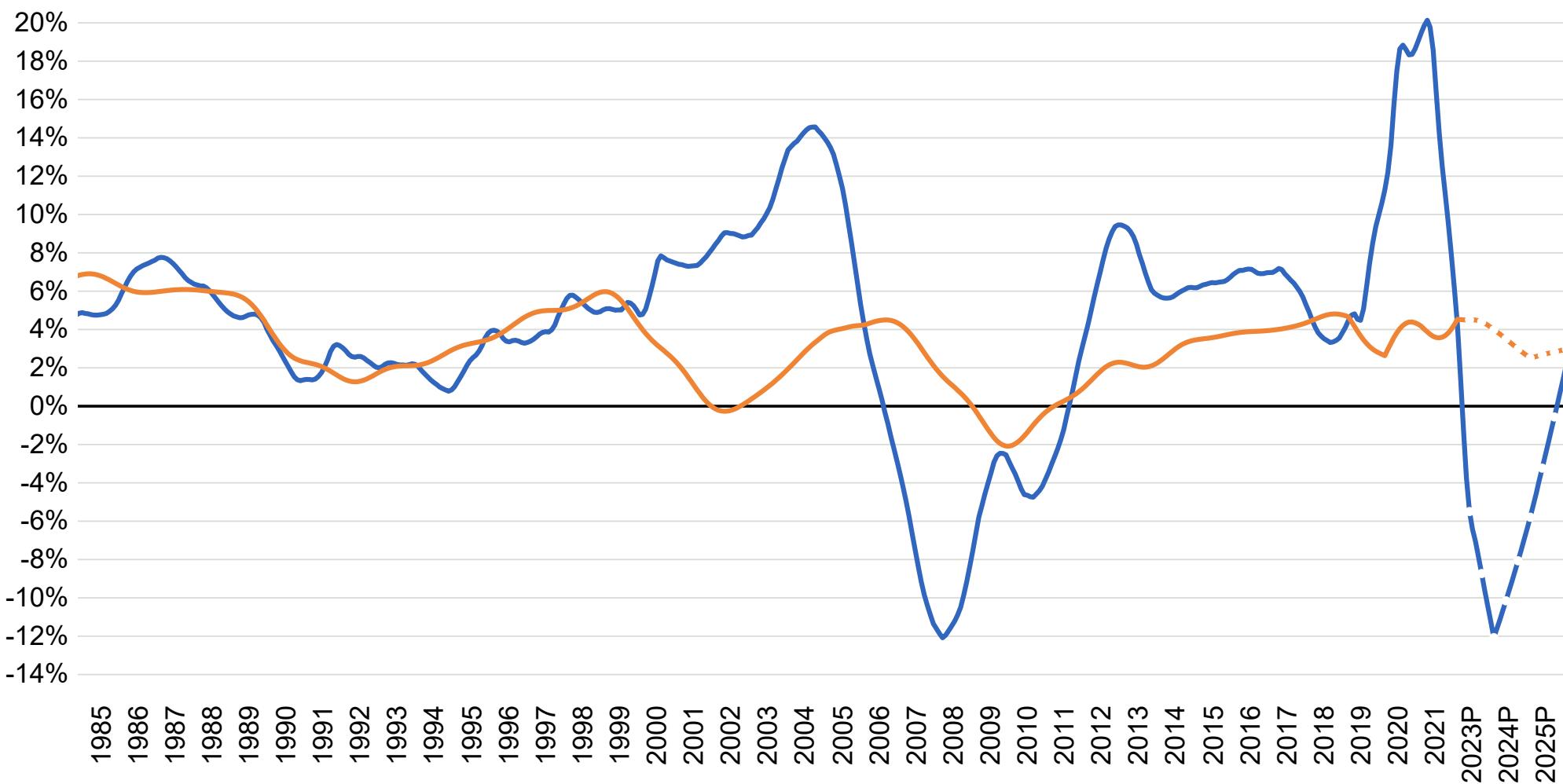
Note: Data is for 99 markets.

Home Price Appreciation vs. US Income Growth

We expect incomes to appreciate faster than home prices through 2025 as home prices decline and recover slowly.

Home Value Growth vs. Income Growth

— Burns Home Value Index YOY% — Income YOY%



Note: Income forecasts are a roll-up of 134 core markets, weighted by Households.

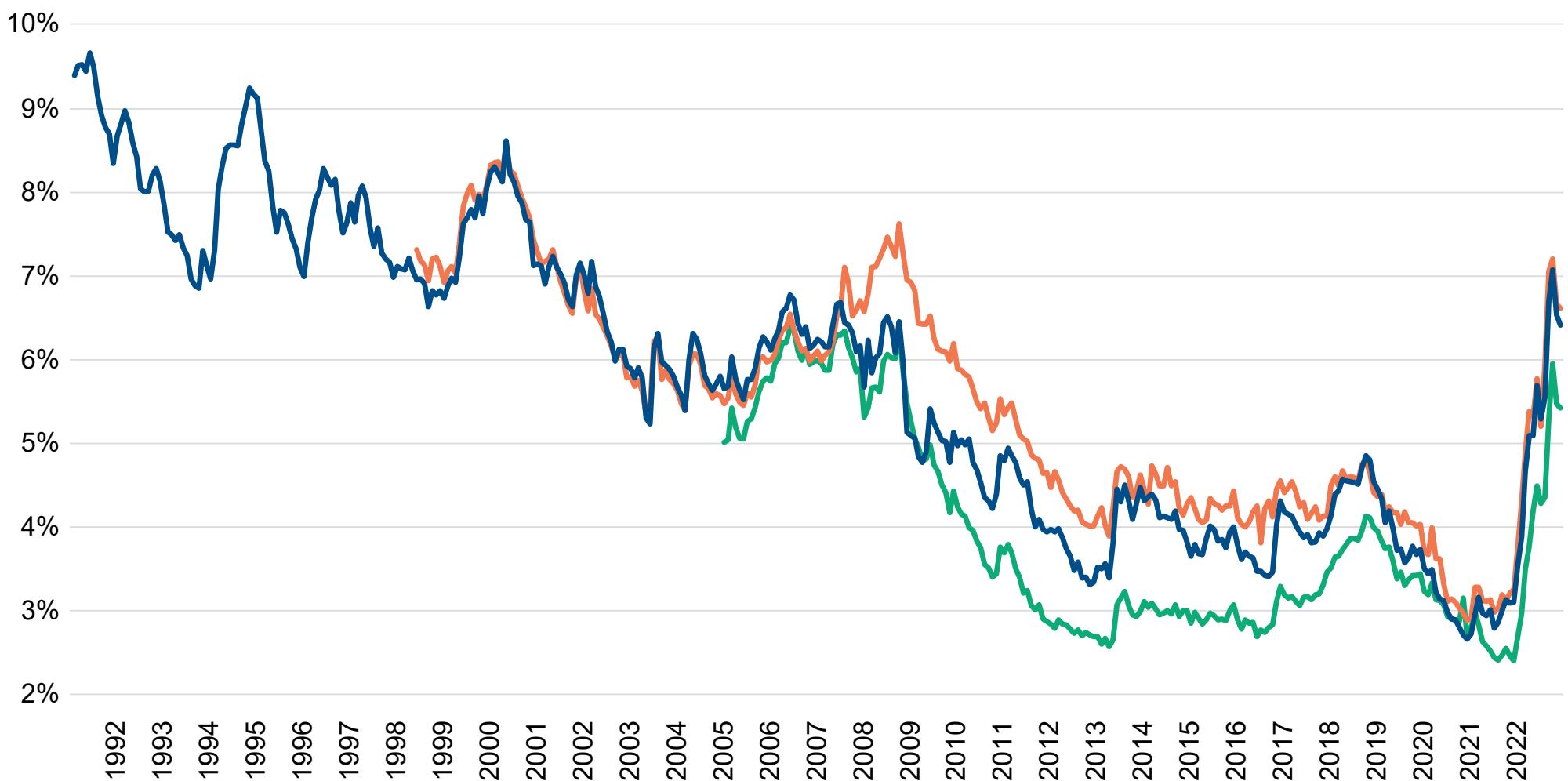
Sources: John Burns Real Estate Consulting, LLC; Census Bureau; Moody's Analytics (Data: Dec-22, Pub: Jan-23)

Mortgage Rates

The 30-year fixed conventional mortgage rate fell to 6.42% in December.

Mortgage Rates

- Fixed, 30-year jumbo mortgage = 6.62%
- 5-year adjustable rate mortgage = 5.43%
- Fixed, 30-year conventional mortgage = 6.42%



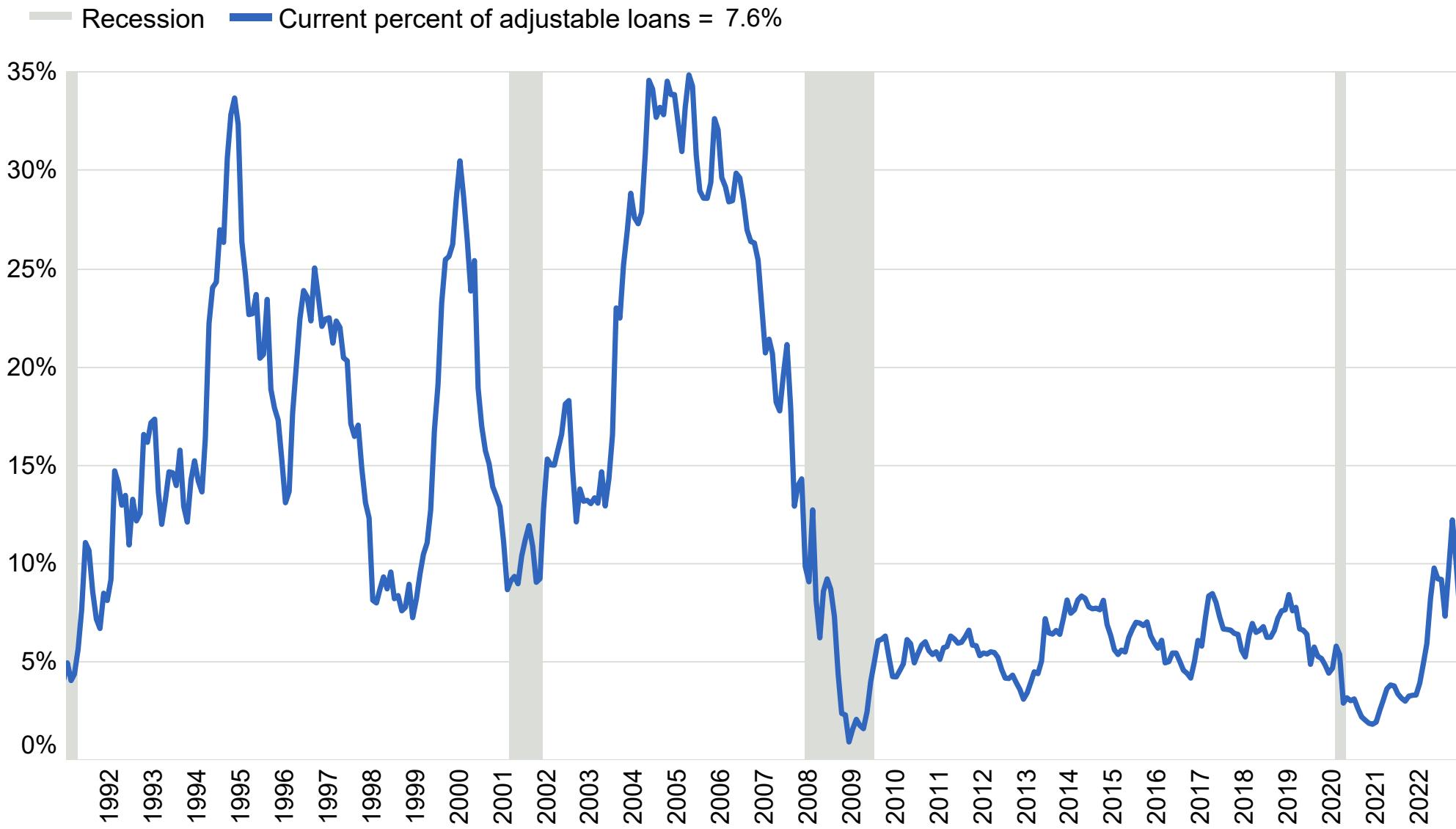
Note: the 5-year adjustable rate mortgage is the 5/1 rate, which is a 5 year fixed rate that adjusts annually.

Sources: Bankrate.com; MBA; Freddie Mac; FFIEC (Data: Dec-22, Pub: Jan-23)

Percentage of Adjustable Loans

The current percent of adjustable loans is 7.6%. ARMs are now subject to more stringent underwriting requirements after the financial crisis.

Percent of Adjustable Loans



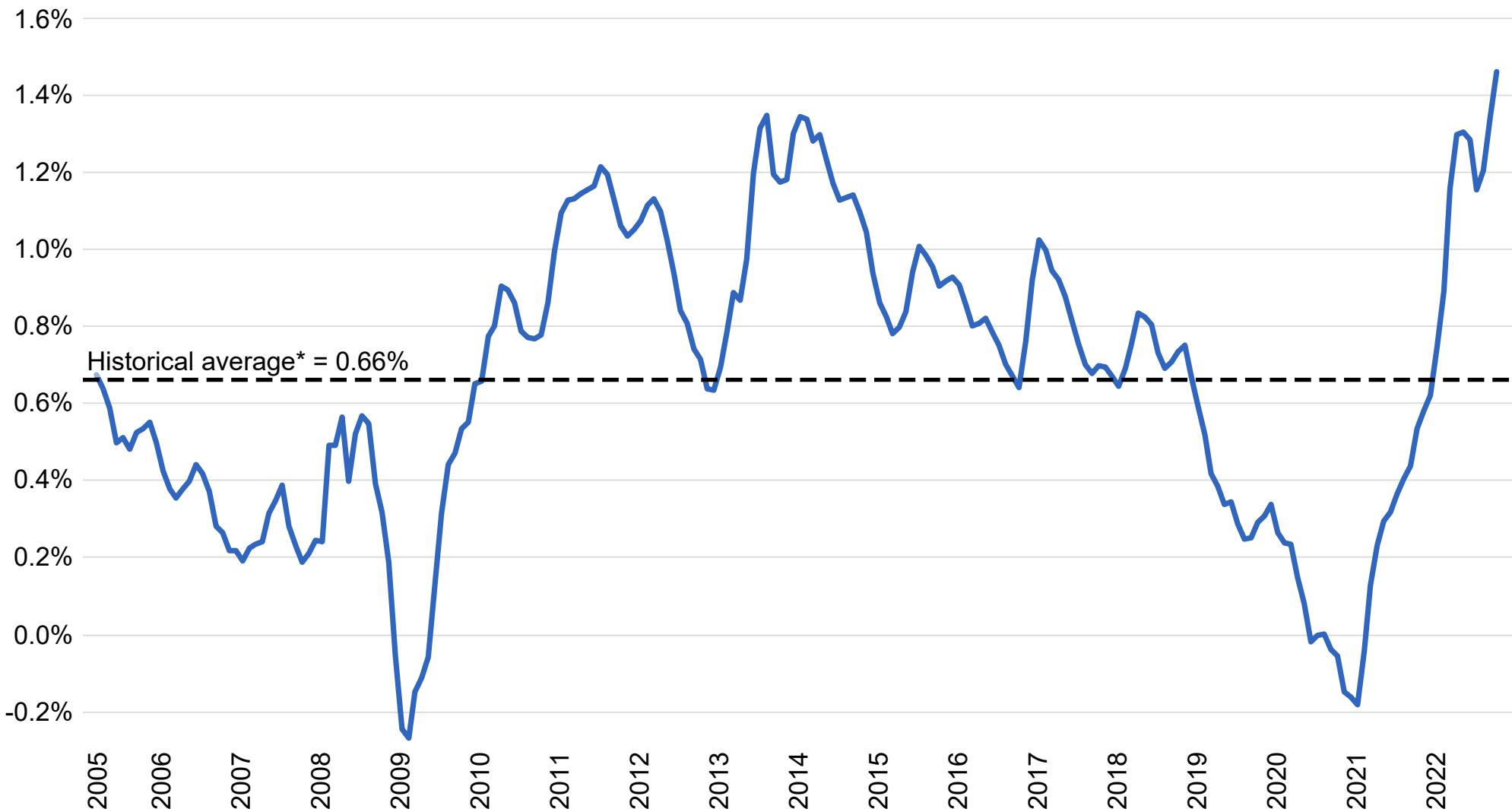
Source: MBA (Data: Dec-22, Pub: Jan-23)

Interest Rate Spread: Fixed vs. Adjustable

The current 30-year FRM to 5-year ARM spread is 146bps, up from 54bps last year.

Interest Rate Spread: Fixed vs. Adjustable Rate Mortgage

3-month moving average



Note: the adjustable rate mortgage is the 5/1 rate, which is a 5 year fixed rate that adjusts annually.

Sources: Freddie Mac; FFIEC (Data: Oct-22, Pub: Jan-23)

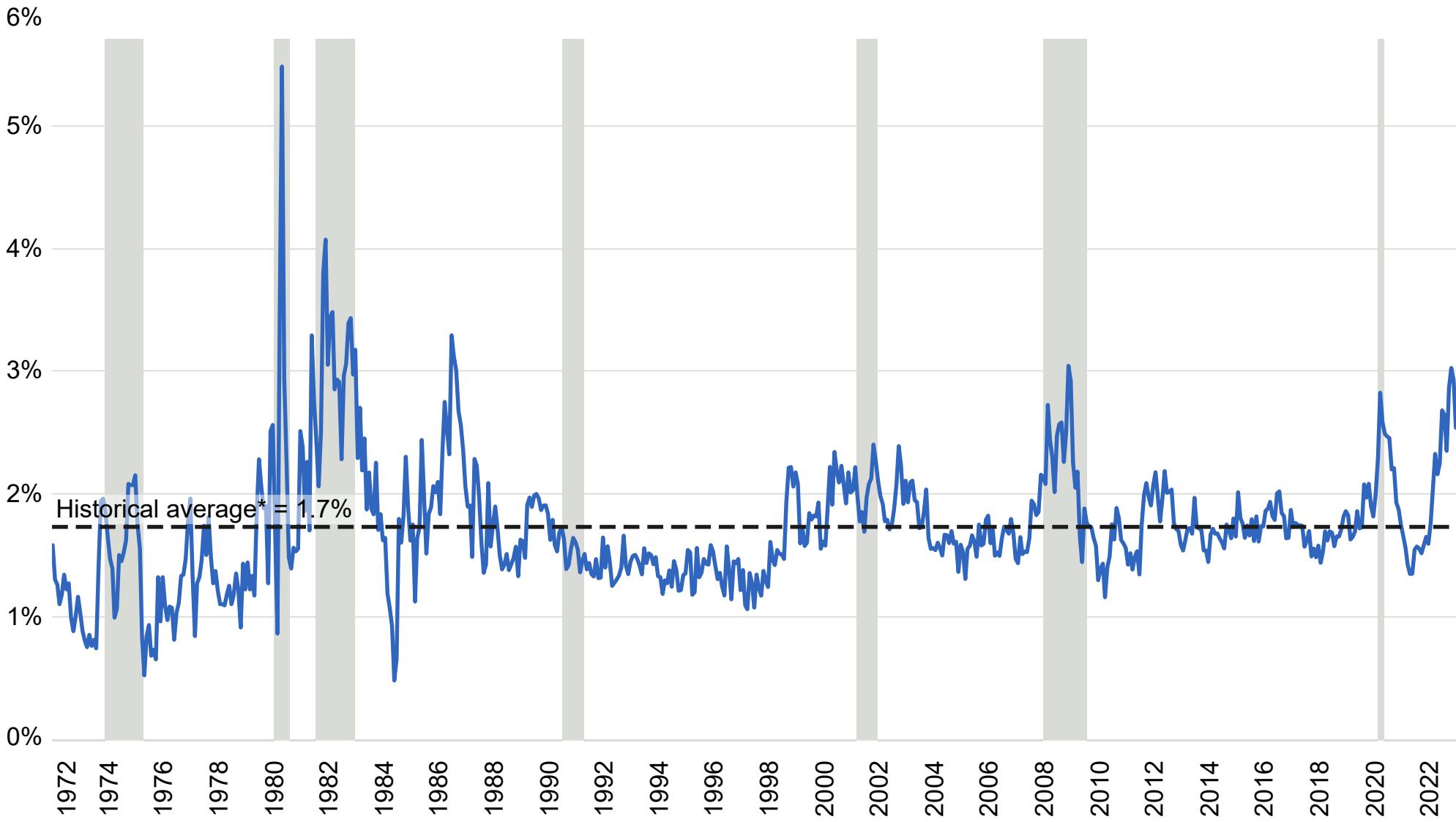
*Historical average Mar-05 through current

Interest Rate Spread: 30-Year Fixed vs. 10-year Treasury

The spread between the 30-year fixed rate and 10-year Treasury rose 95bps YOY to 2.55%.

Interest Rate Spread: 30-Yr. Fixed vs. 10-Yr. Treasury

Recession Interest Rate Spread



Source: Freddie Mac, Federal Reserve (Data: Dec-22, Pub: Jan-23)

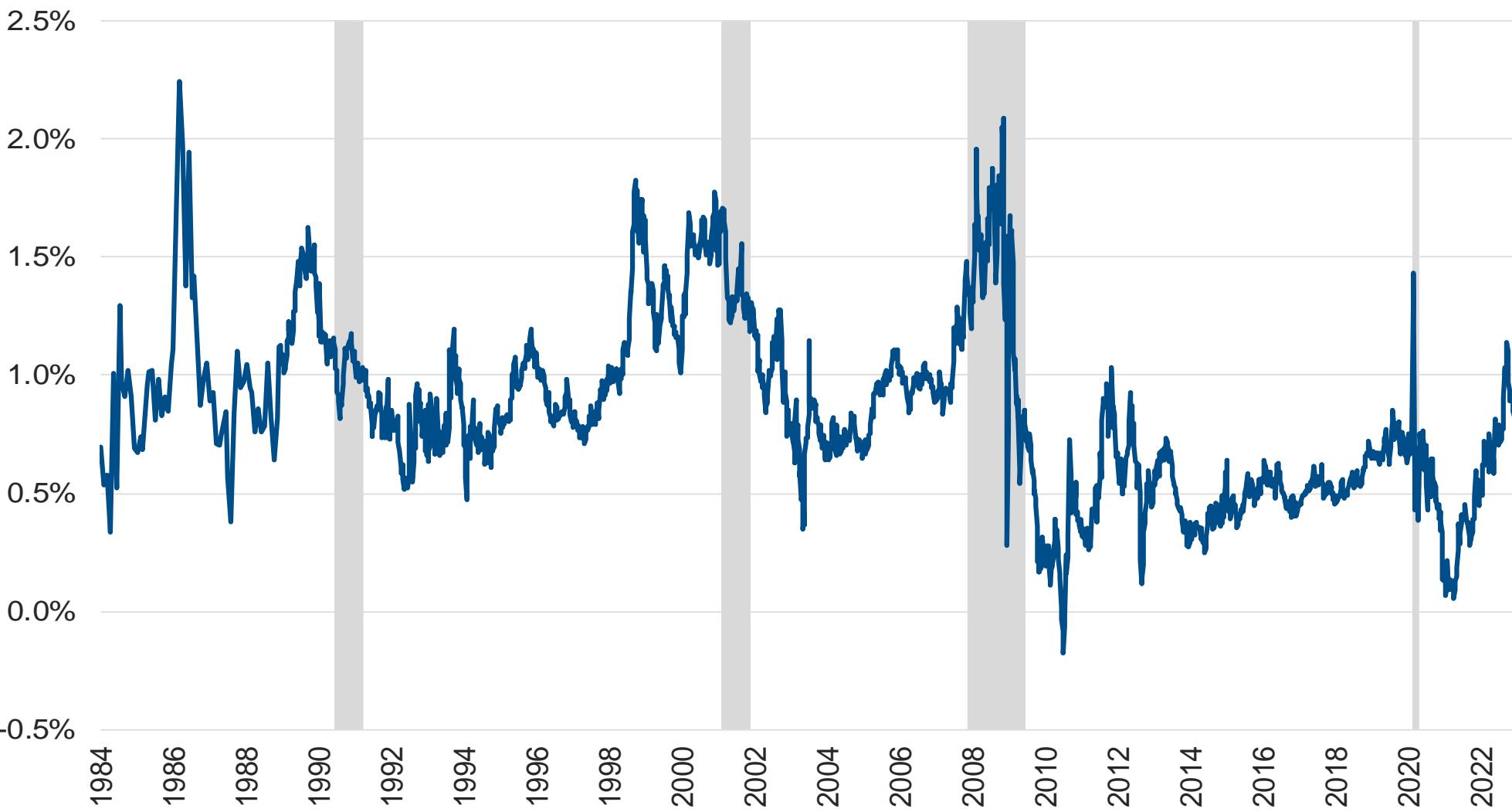
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MBS Risk Premium

The MBS risk premium over the 10-year treasury has risen since the Fed started tapering purchases in 2022. A higher risk premium can be an indicator of distress in the housing market and larger economy.

MBS Risk Premium

Bloomberg US MBS Index - 10Yr. Treasury Recession — MBS Risk Premium = 0.84%



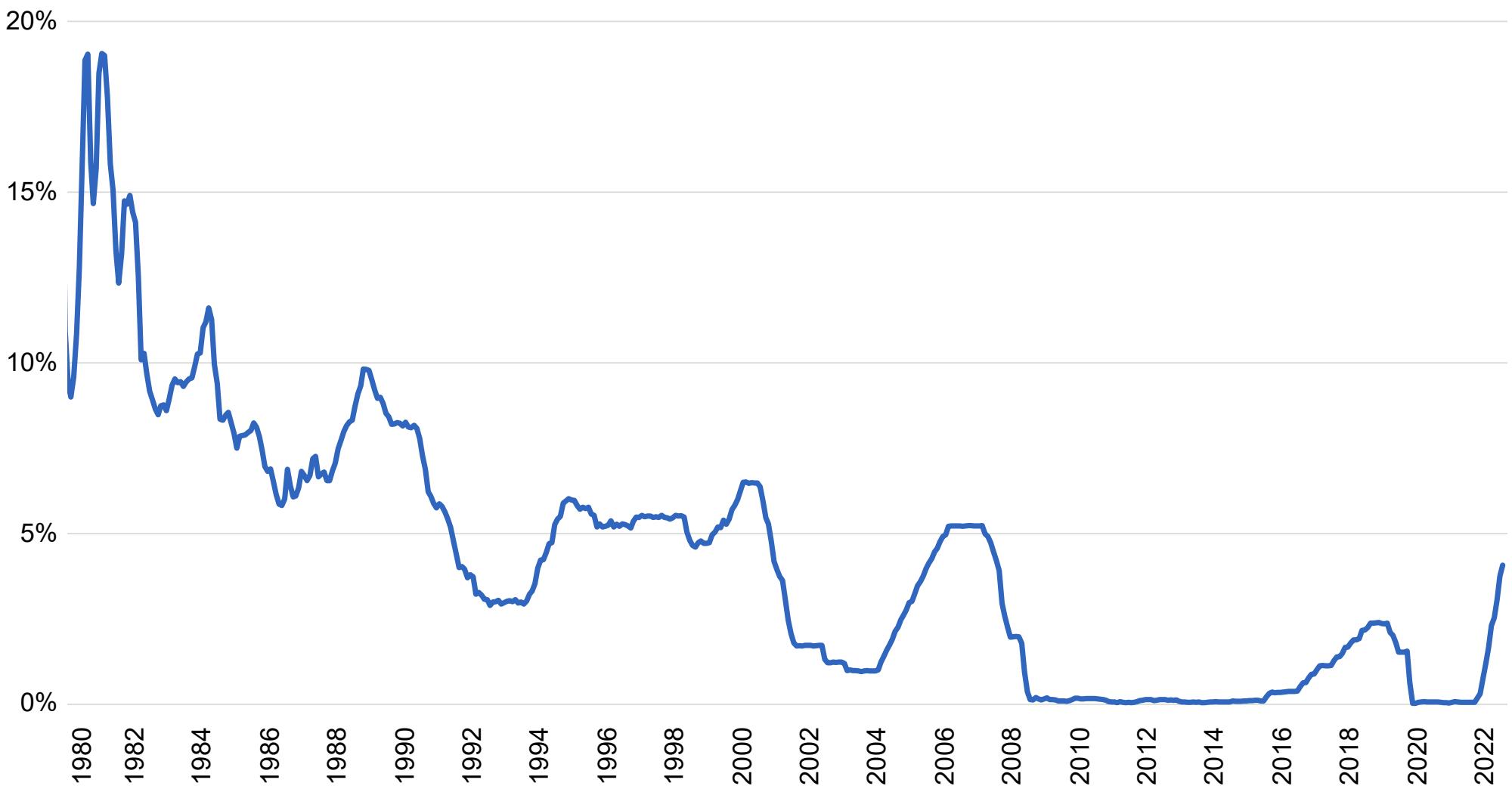
Sources: Bloomberg; John Burns Real Estate Consulting (Data: Dec-22, Pub: Jan-23)

Federal Funds Rate

The Fed increased rates 7 times in 2022. Note that we show the effective monthly average rate, which will lag official rate increases.

Federal Funds Rate (Effective)

— Federal funds rate = 4.10%

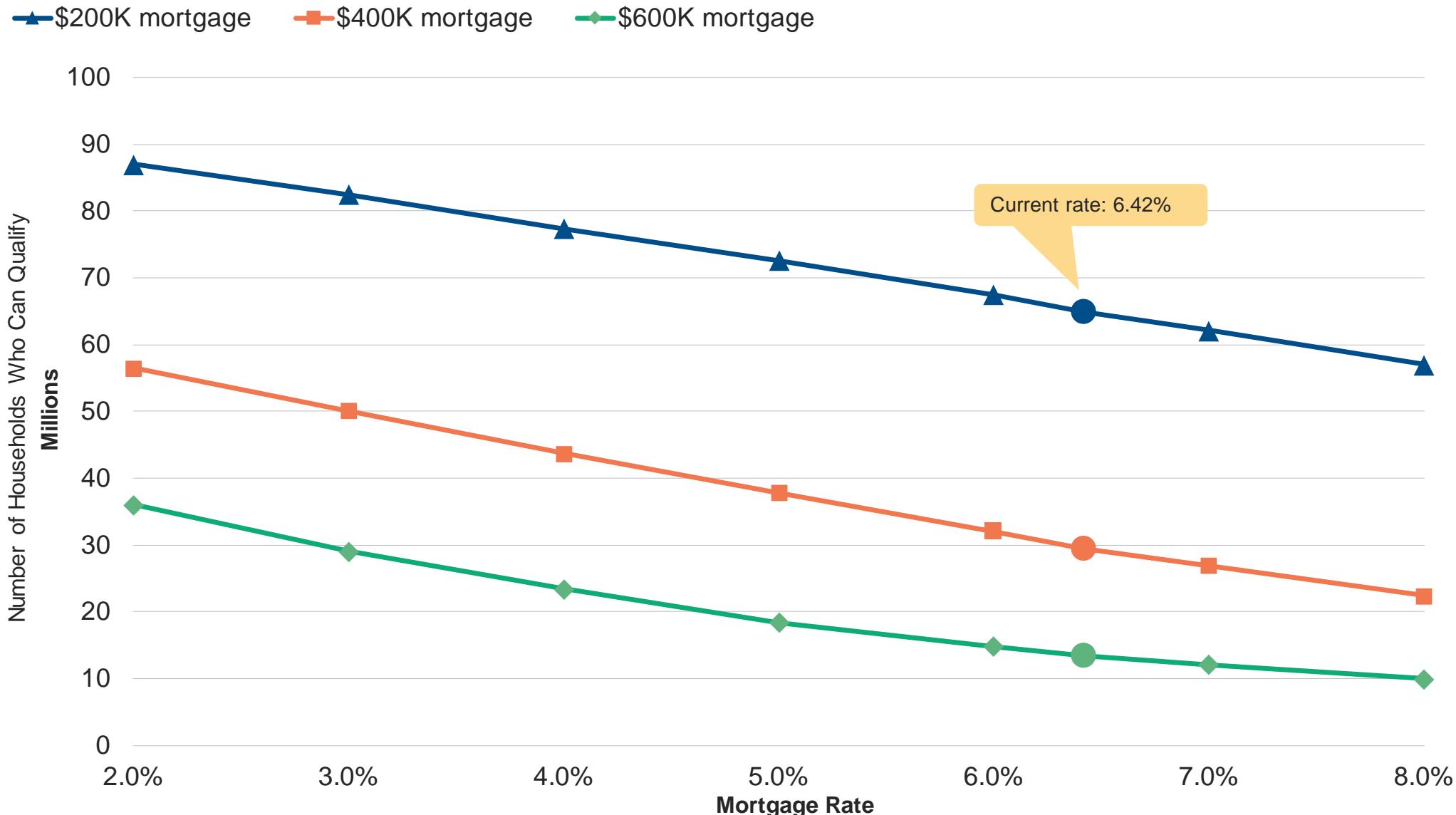


Source: Federal Reserve (Data: Dec-22, Pub: Jan-23)

Mortgage Rate Sensitivity

If rates rise to 7%, 2.8M households will be priced out of a \$200K mortgage. At current rates, 55% of households (65M) can afford a \$200K mortgage, and only 11% (13M) can afford a \$600K mortgage.

National Mortgage Rate Sensitivity



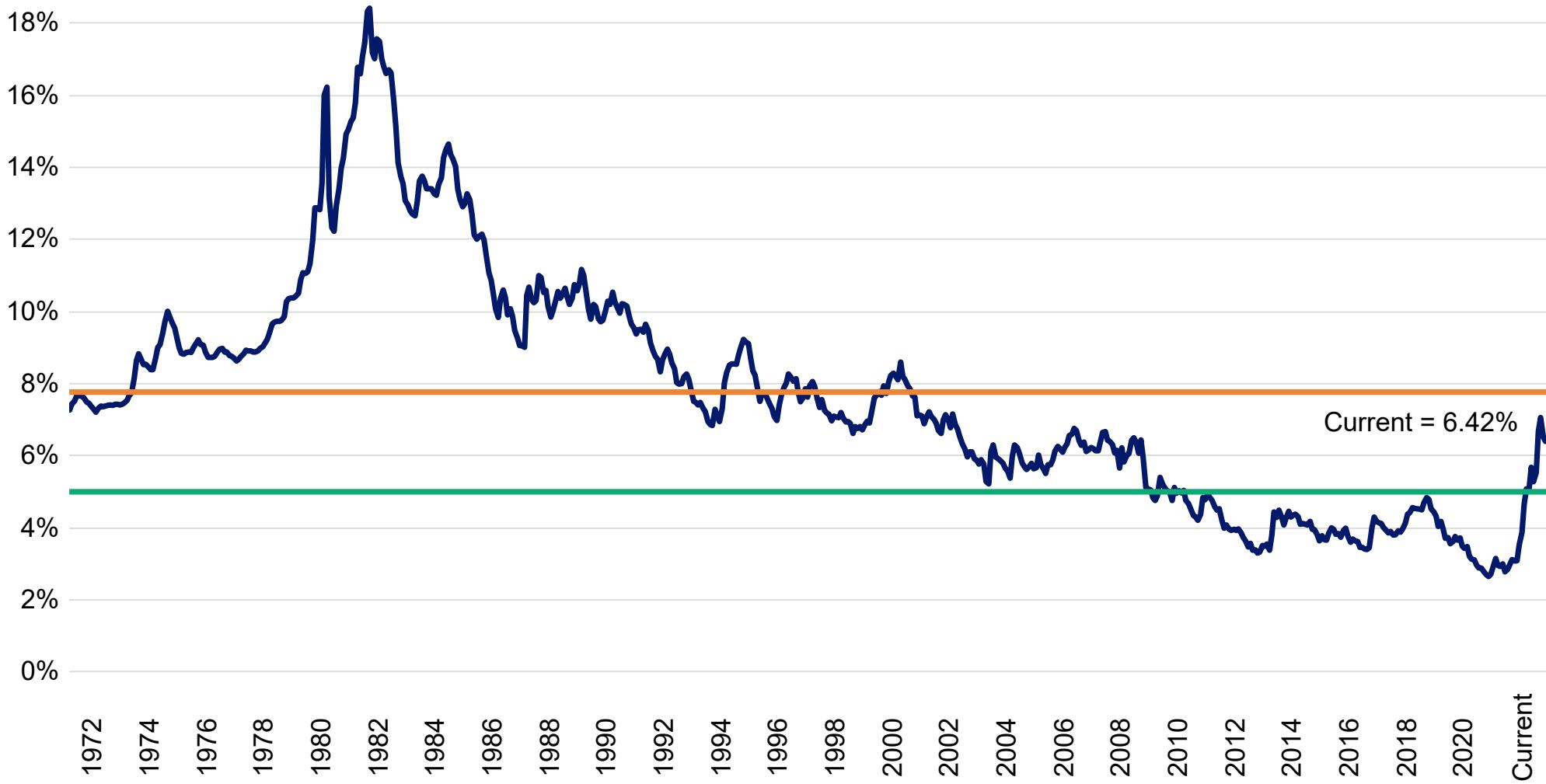
Source: John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Historical Mortgage Rates

Mortgage rates fell to 6.42% in December. We highlight 5.0% in the graph below because it is the benchmark rate for our Burns Under/Overpriced Market Index™.

30-Year Mortgage Rate

— Historical average* = 7.8% — 30-yr. fixed rate = 6.42%
— Benchmark rate for Burns Affordability Index™ = 5.00%



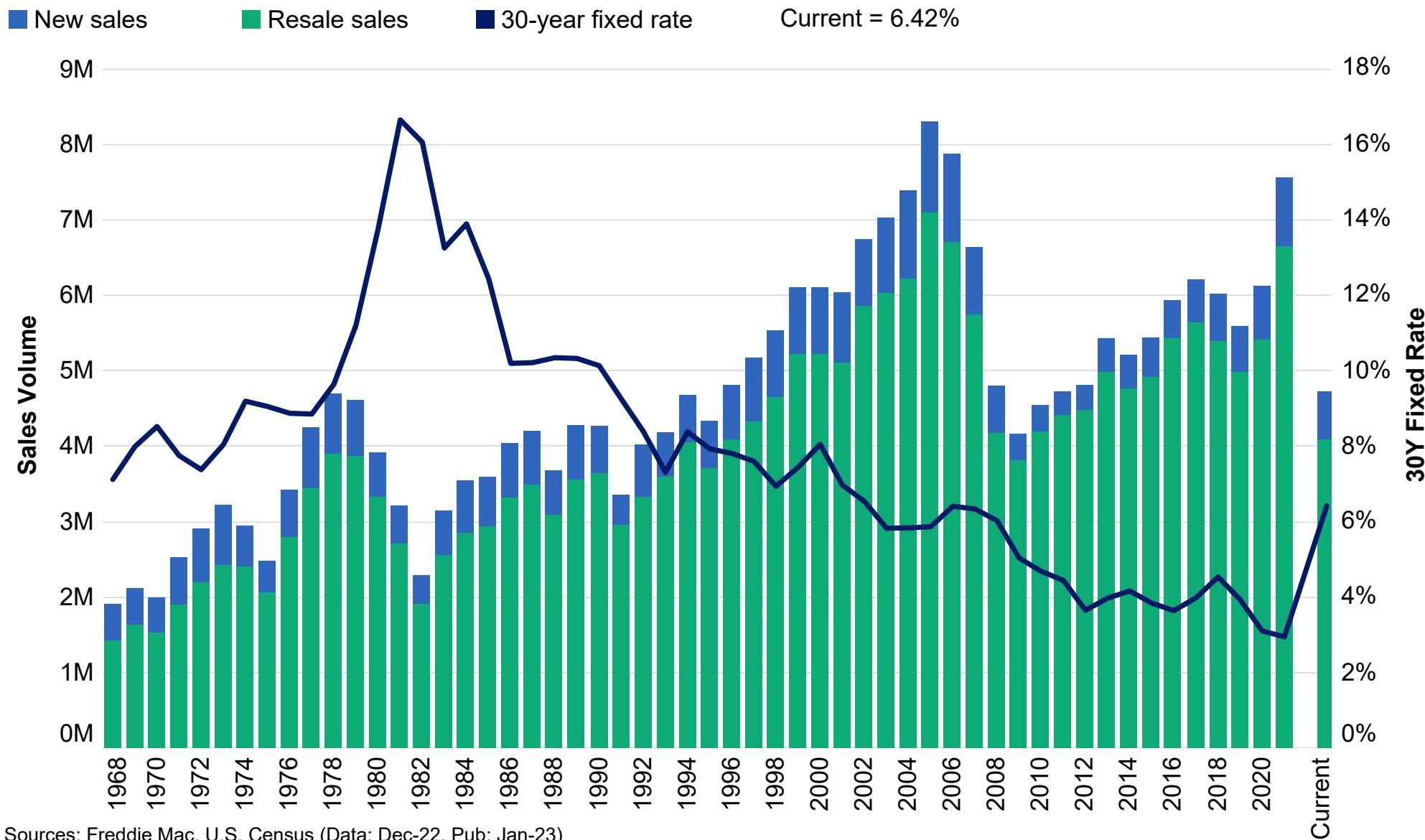
Sources: Freddie Mac; JBREC (Data: Dec-22, Pub: Jan-23)

*Historical average: 1971 through current

Impact of Mortgage Rates on Home Sales

Steadily declining mortgage rates have boosted home sales over the last several decades, but homes have historically continued to transact even in much higher mortgage rate environments.

30-Year Mortgage Rate and Home Transactions

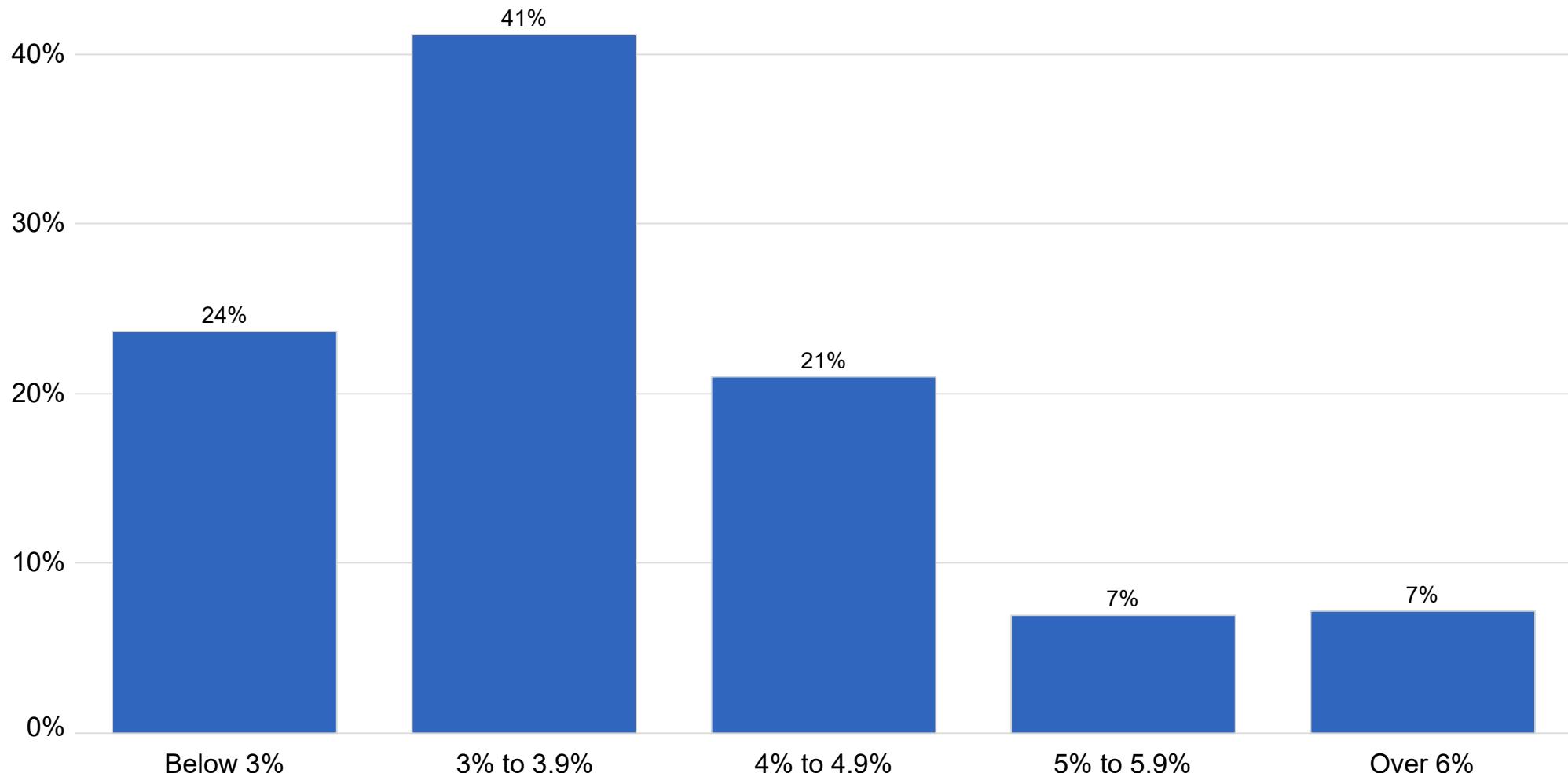


Sources: Freddie Mac, U.S. Census (Data: Dec-22, Pub: Jan-23)

86% of Outstanding Mortgages Are Locked In at Rates Less Than 5%

86% of mortgage holders are locked in at sub-5% rates. Higher rates make it more difficult to move up or refinance.

Distribution of Outstanding Primary Residential Mortgages by Interest Rate



Source: FHFA (Data: 2Q22, Pub: Jan-23)

Underwriting and mortgage banking

Mortgage Access to Credit Overview

Indicator	Most Recent	Value	Historical Average	Starting Period	Loosening(+) / Tightening(-)*	Source
% Mortgages Originated by Non-Banks	Jul-22	73%	56%	2012	+	AEI
% Private Label Mortgage Origination Volume	2Q22	3%	9%	2002	-	Urban Institute
% FHA/VA Mortgage Origination Volume	2Q22	18%	18%	2002	+	Urban Institute
% Mortgages Originated < 660 Credit Score	2Q22	7%	12%	2003	-	FRBNY
Median Credit Score at Mortgage Origination	2Q22	773	749	1999	-	FRBNY
% Consumers Saying "Easy" to Obtain Mortgage	Oct-22	47%	62%	2010	-	Fannie Mae
% Senior Mortgage Executives Saying "Easy" for Buyers to Obtain Mortgage	1Q22	69%	44%	2014	+	Fannie Mae
% Purchase Loans with CLTV > 90%	Jul-22	51%	**55%	2012	-	AEI
% Purchase Loans with DTI \geq 42%	Jul-22	48%	**37%	2012	+	AEI
Net % of Banks Easing Credit Standards for HELOCs	3Q22	3%	5%	2008	-	Loan Officer Survey
Net % of Banks Increasing HELOC Disbursements	3Q22	36%	17%	2008	+	Loan Officer Survey

Totals	
-	6
+	5

*Note: + indicates loosening and - indicates tightening.

**Based on the following periods: 1990–1992; 2000–2003; 2005–2007; 2013–2016

Sources: AEI; Fannie Mae; Federal Reserve; Urban Institute (updated quarterly†)

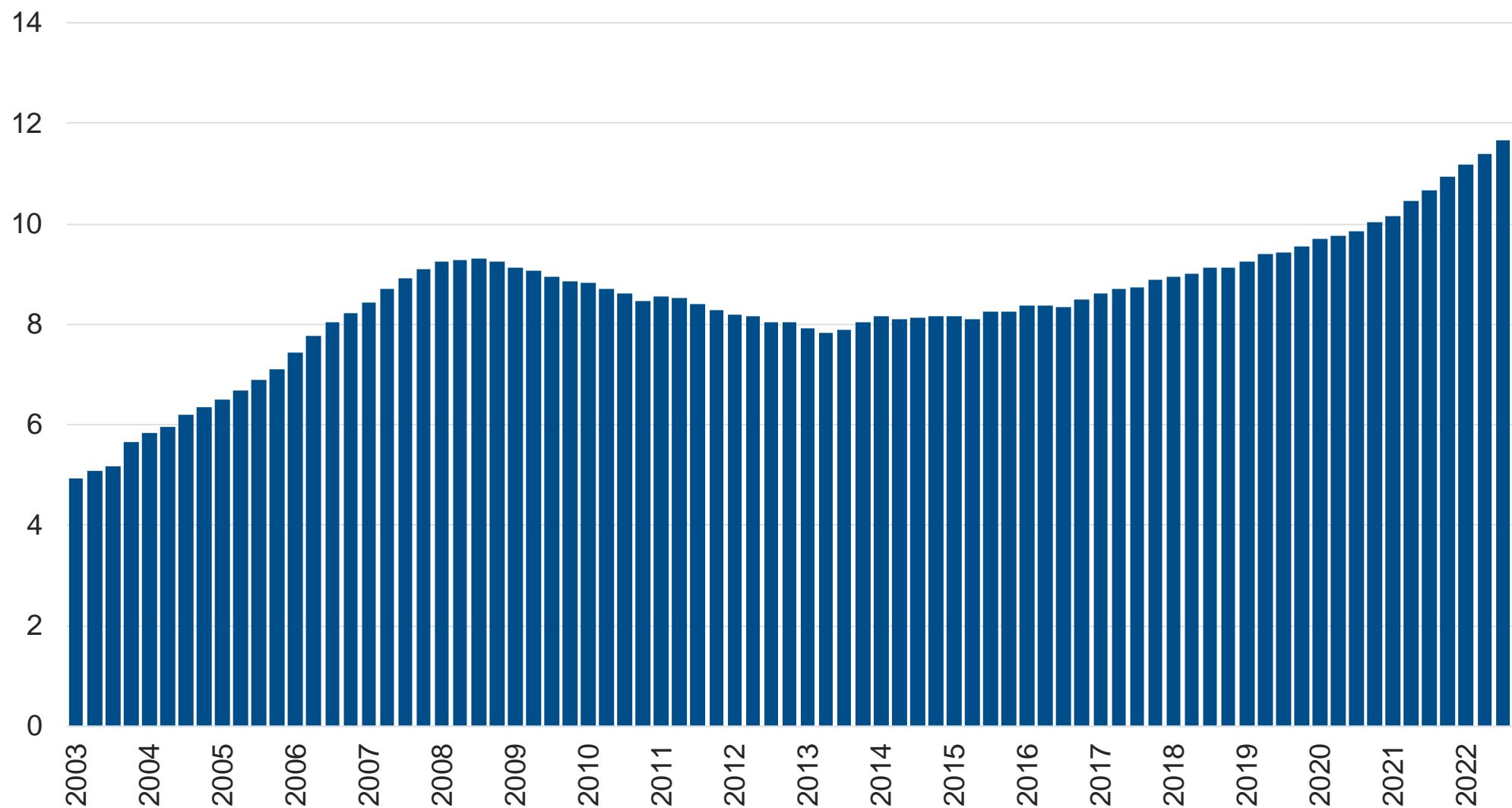
Pub: Jan-23

Consumer Mortgage Debt Balance

Total consumer mortgage debt is now \$11.7 trillion, a record high.

Mortgage Debt Balance

■ Current = \$11.7 trillion



Sources: NY Federal Reserve Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

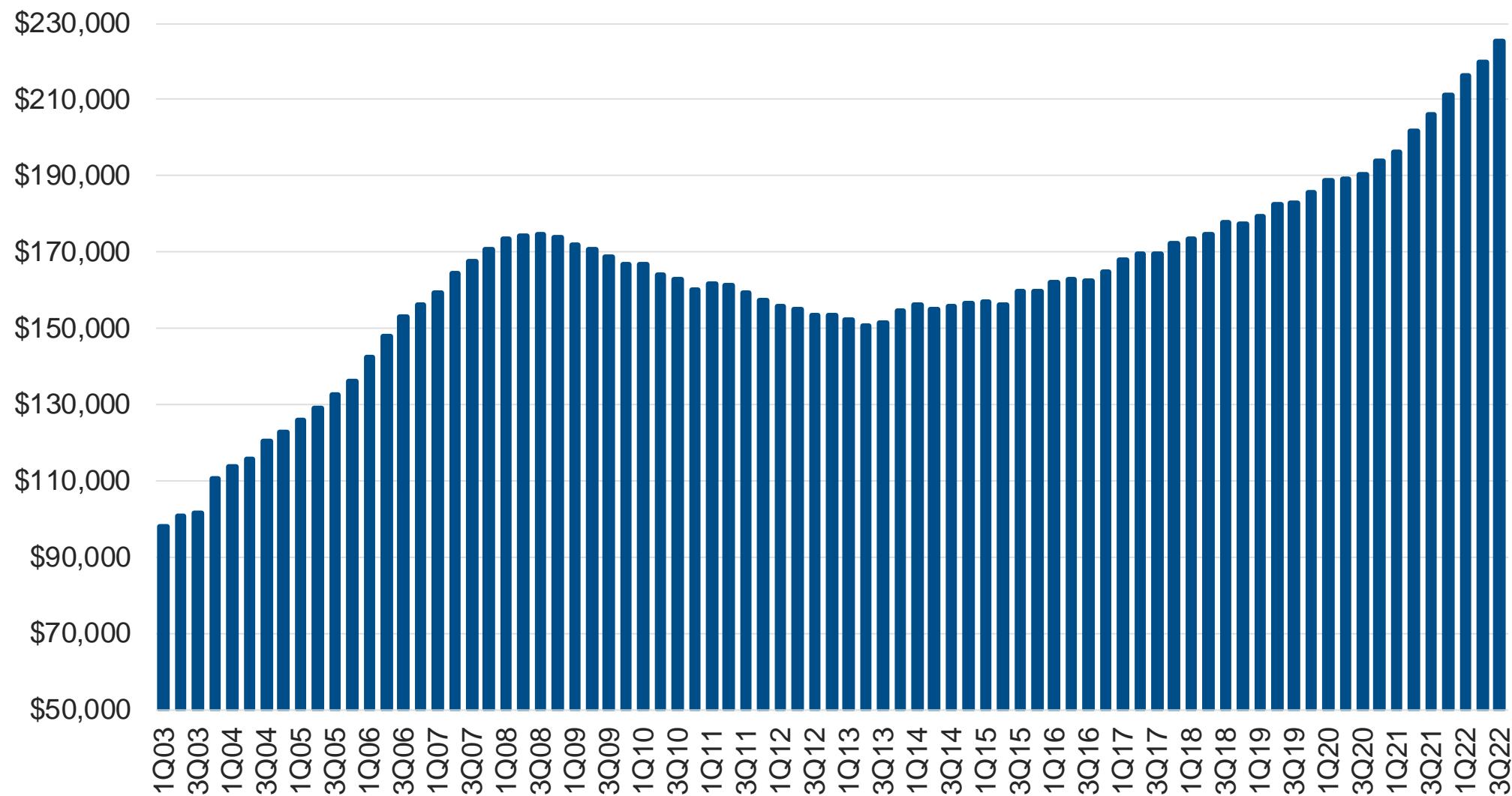
Pub: Jan-23

Average Mortgage Debt per Household

The average mortgage debt per household with a mortgage is \$225K, an all-time high.

Average Mortgage Debt per Household with a Mortgage

■ Current = \$225,358



Sources: NY Federal Reserve Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

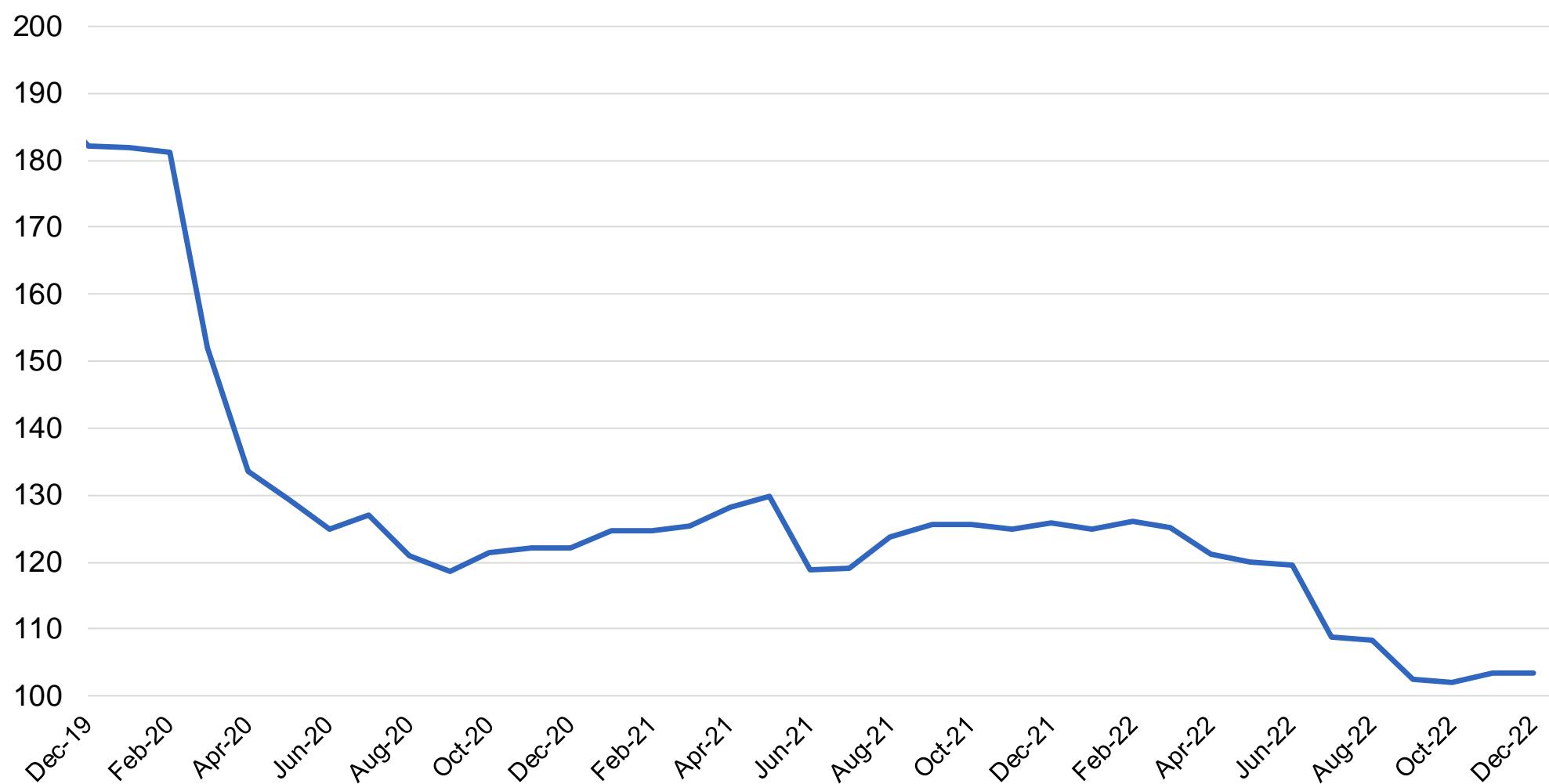
Pub: Jan-23

Mortgage Credit Availability

The Mortgage Credit Availability Index remains low at 103 in December. A low index value represents a tight supply of available mortgage programs.

Mortgage Credit Availability Index

— Current = 103



Note: 100 = March 2012

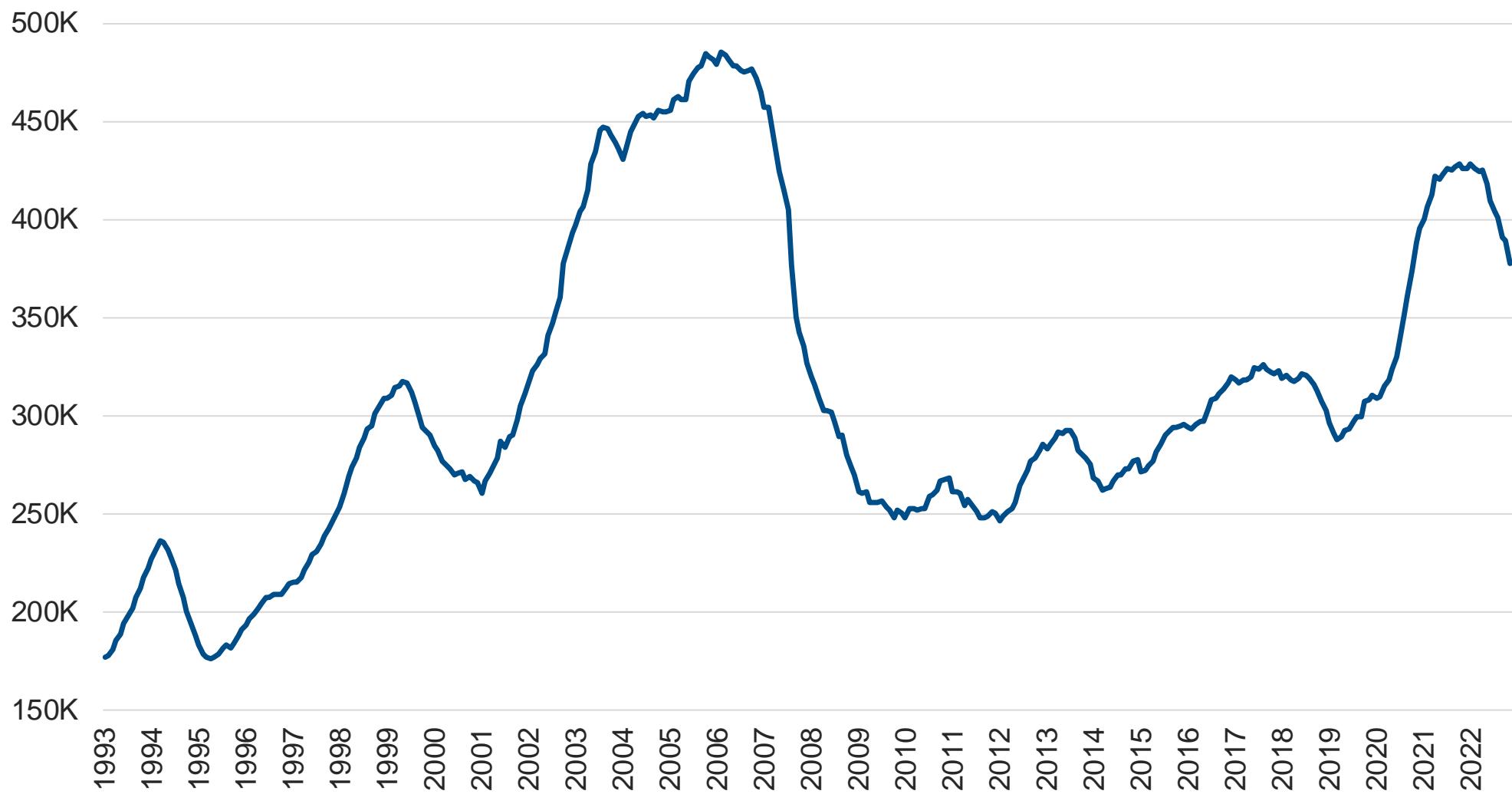
Source: Mortgage Bankers Association (Data: Dec-22; Pub: Jan-23)

Nonbank Mortgage Broker Employment

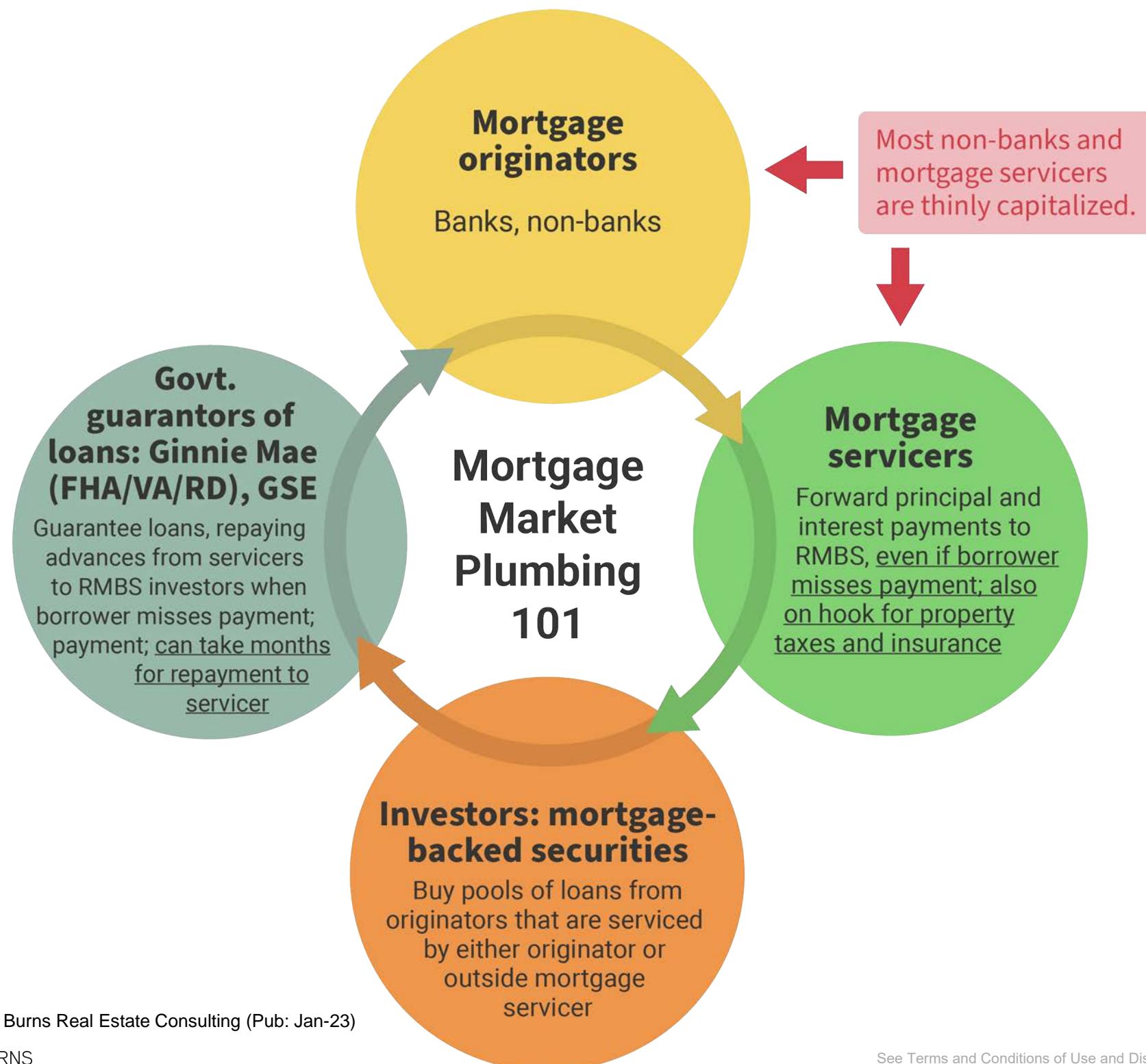
Mortgage industry employment tends to move inversely with mortgage rates. Nonbank mortgage broker employment has fallen -12% from the 2021 peak, and we expect further losses as rates stay elevated.

Nonbank Mortgage Broker Employment

— Current = 377K



Source: Bureau of Labor Statistics (Data: Nov-22, Pub: Jan-23)

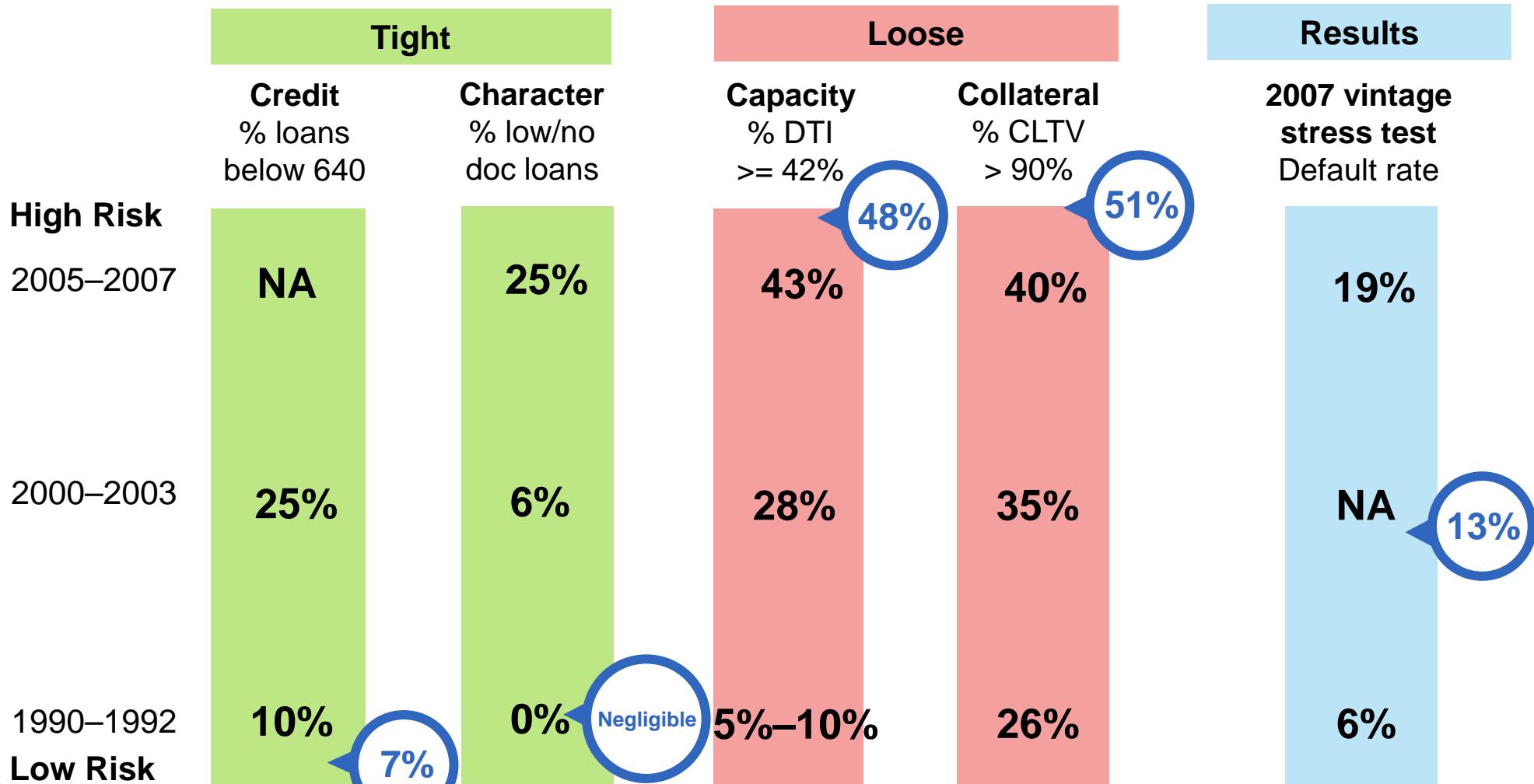


Source: John Burns Real Estate Consulting (Pub: Jan-23)

Lending Standards on Government-Backed Loans: 80% of All Loans

Current lending standards are tight on credit and documentation, but not on DTI and LTV.

Current value



Note: This chart only includes primary purchase loans guaranteed by the five government agencies (Fannie Mae, Freddie Mac, FHA, VA, and RHS). These loans currently account for 70% of all primary purchase loans (by count). Our current percentage of low/no document loans is based on JBREC analysis. The DTI numbers shown above include only back-end DTI percentages.

Sources: American Enterprise Institute; John Burns Real Estate Consulting, LLC (Data: Jul-22, updated quarterly†)

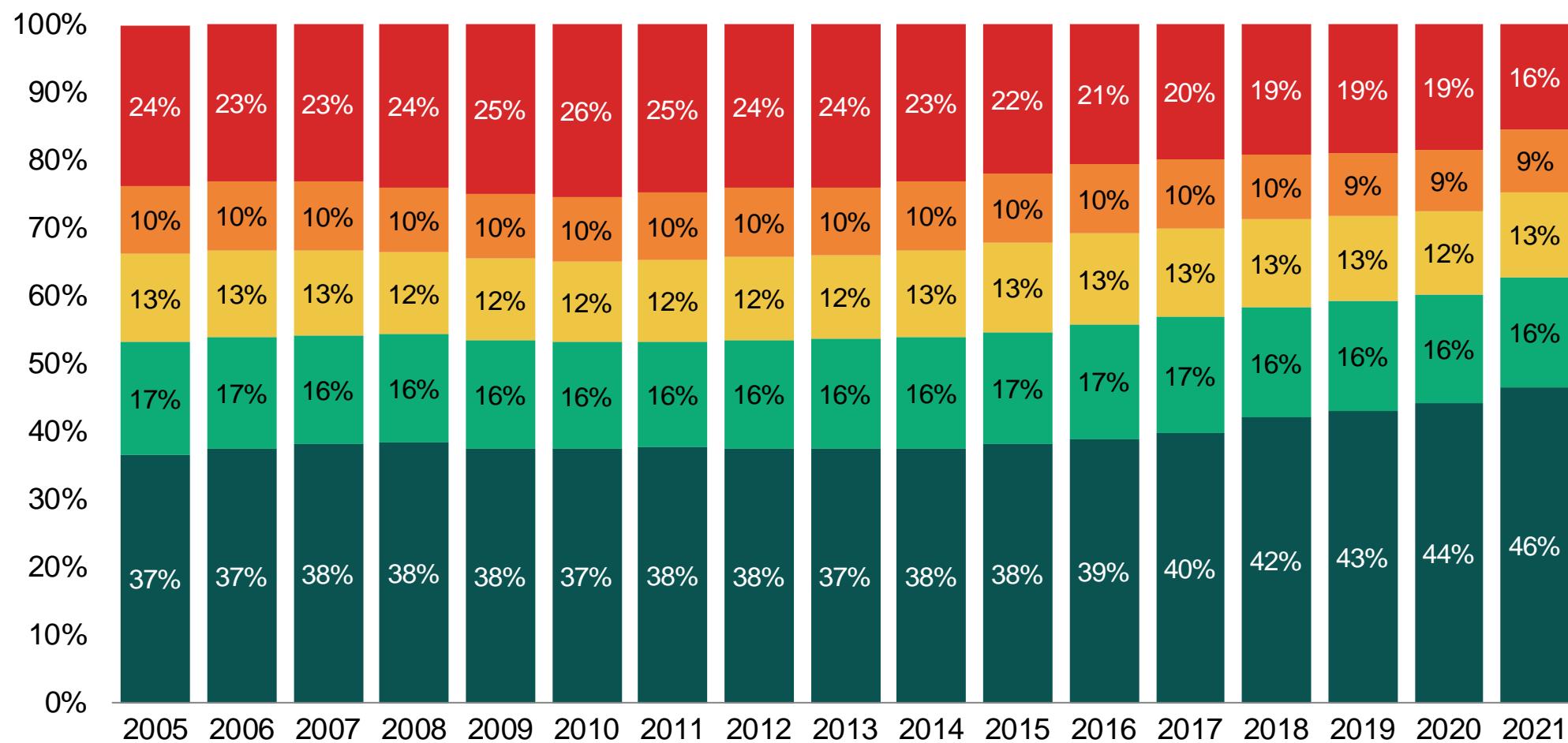
Pub: Jan-23

National FICO Score Distribution

Consumers have slowly rebuilt their credit profiles. In 2021, 62% had FICO scores above 700, and 84% had FICO scores above 600.

National FICO™ Score Distribution For All Consumers

■ 750 and above ■ 700–749 ■ 650–699 ■ 600–649 ■ Below 600



Scores are based on the following five categories in order of weighting: payment history (35%), amounts owed (30%), length of credit history (15%), new credit (10%), and types of credit used (10%).

Source: FICO™ Banking Analytics Blog (Data: Apr-21, updated quarterly†)

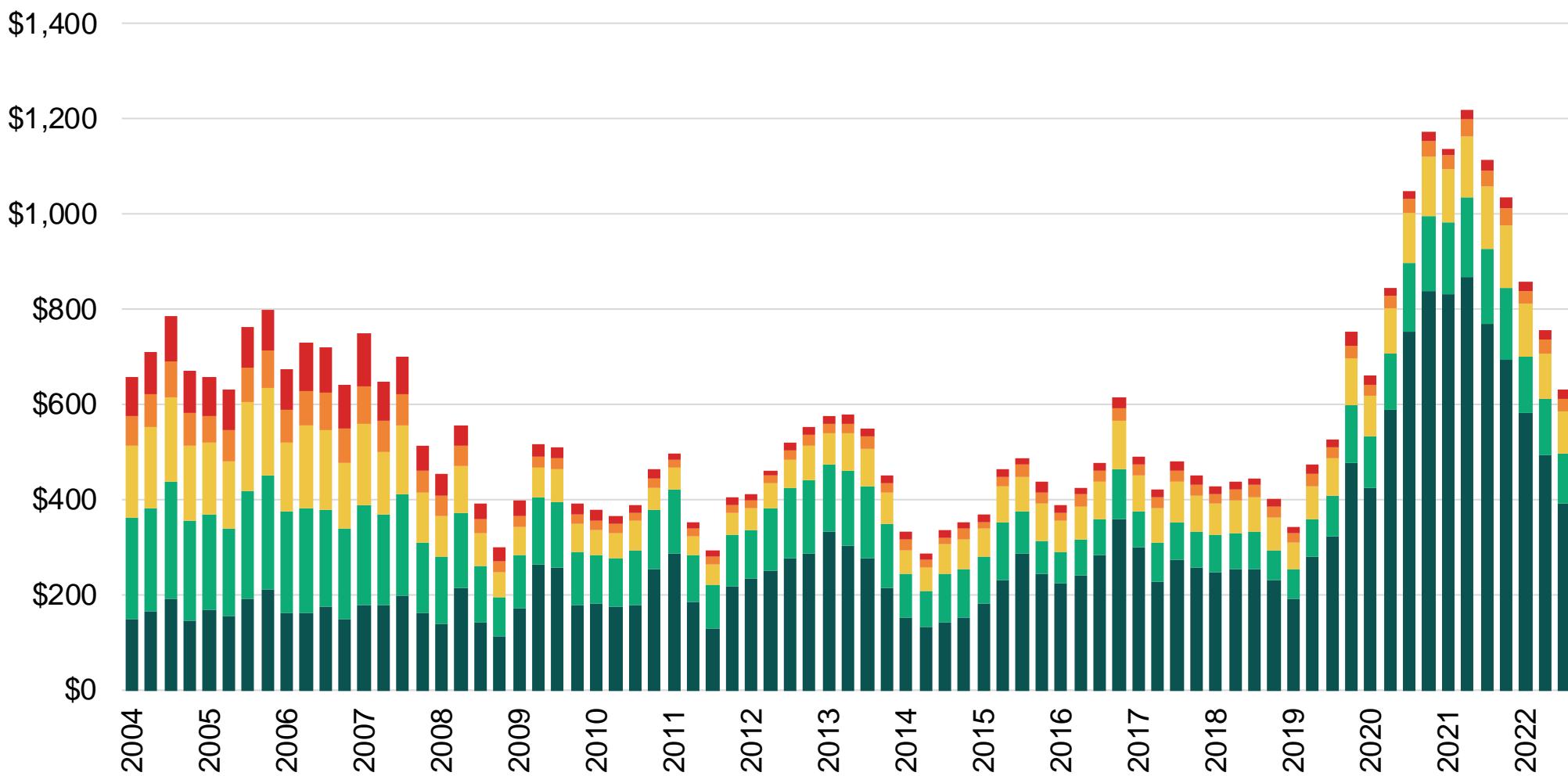
Pub: Jan-23

Mortgage Originations by Credit Score

In 1Q07, 15% of mortgage originations were to subprime borrowers with a credit score of <620. As of 3Q22, only 3% of mortgages went to borrowers with a credit score less than 620.

Mortgage Originations by Credit Score*

Billions (USD) Share in parentheses: ■ 760+ (62%) ■ 720–759 (16%) ■ 660–719 (14%) ■ 620–659 (4%) ■ <620 (3%)



*Credit Score is Equifax Riskscore 3.0.

Source: FRBNY Consumer Credit Panel/Equifax (Data: 3Q22, updated quarterly†)

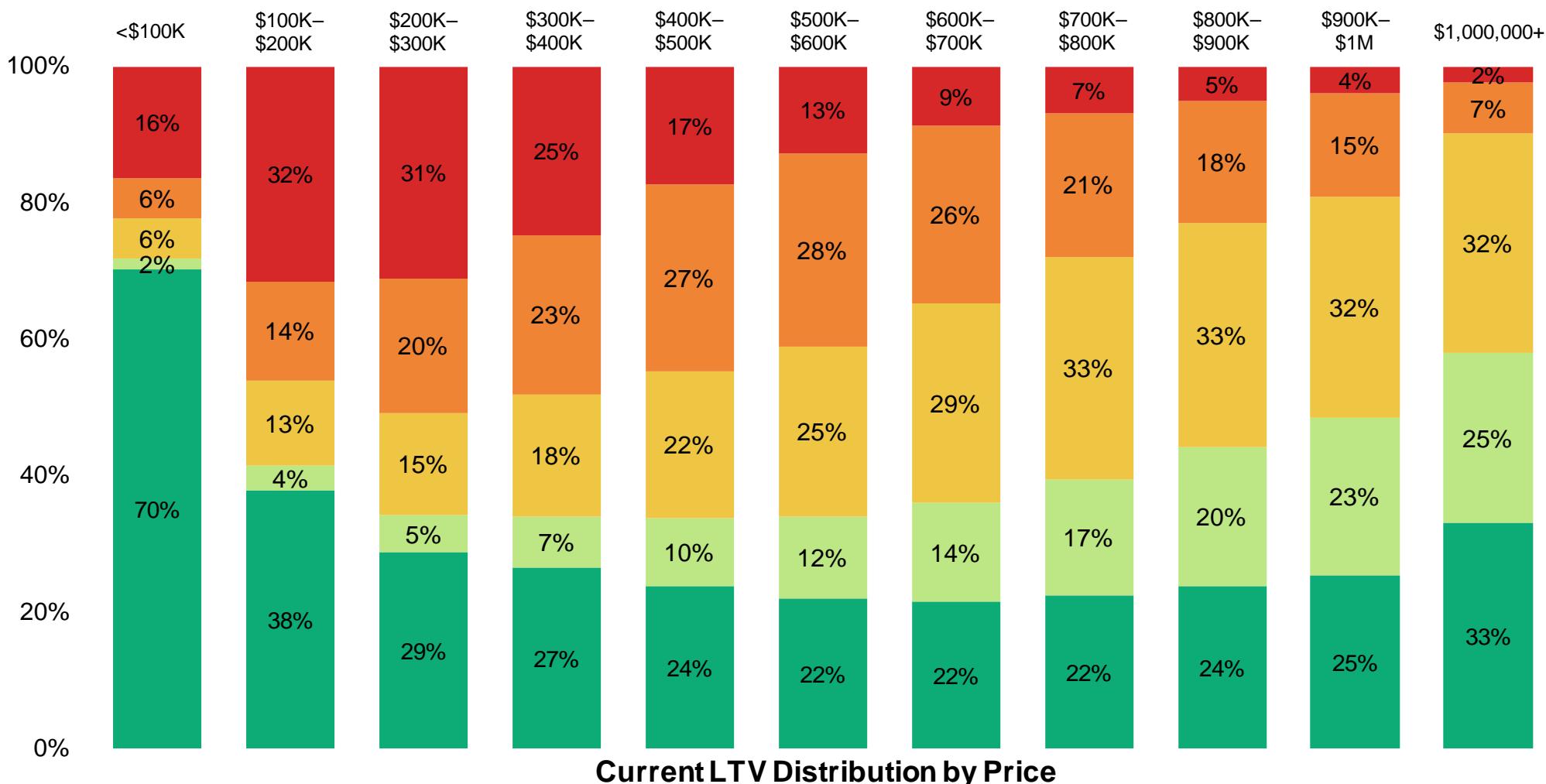
Pub: Jan-23

Loan-to-Value Distribution by Price

Nearly a third of homes priced between \$100K–\$300K have an LTV of 95%+, compared to just 9% of homes in the \$600K–\$700K price range. LTV trends higher among lower-priced homes due to lower down payment requirements.

Loan-to-Value Distribution by Price

■ All cash ■ <70% ■ 70%–80% ■ 80.1%–95% ■ 95%+



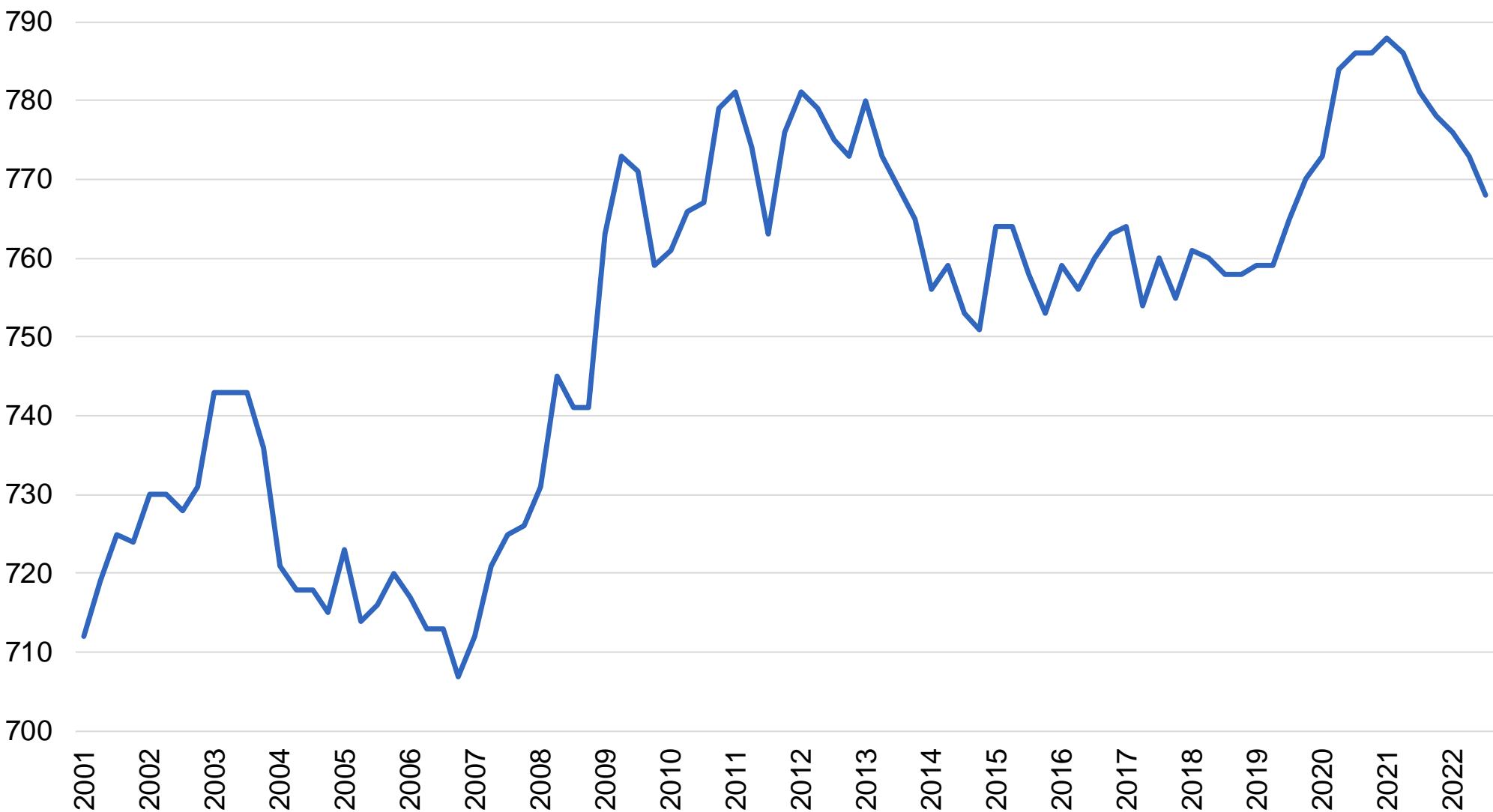
Source: CoreLogic; Provided by DQNews (Data: Mar-22, updated quarterly†)

Pub: Jan-23

Median Credit Score at Mortgage Origination

The median credit score at mortgage origination fell to 707 during the credit heyday of 2006. Since then, creditors have tightened standards. As of 3Q22 median score at origination was 768.

Median Credit Score at Mortgage Origination*



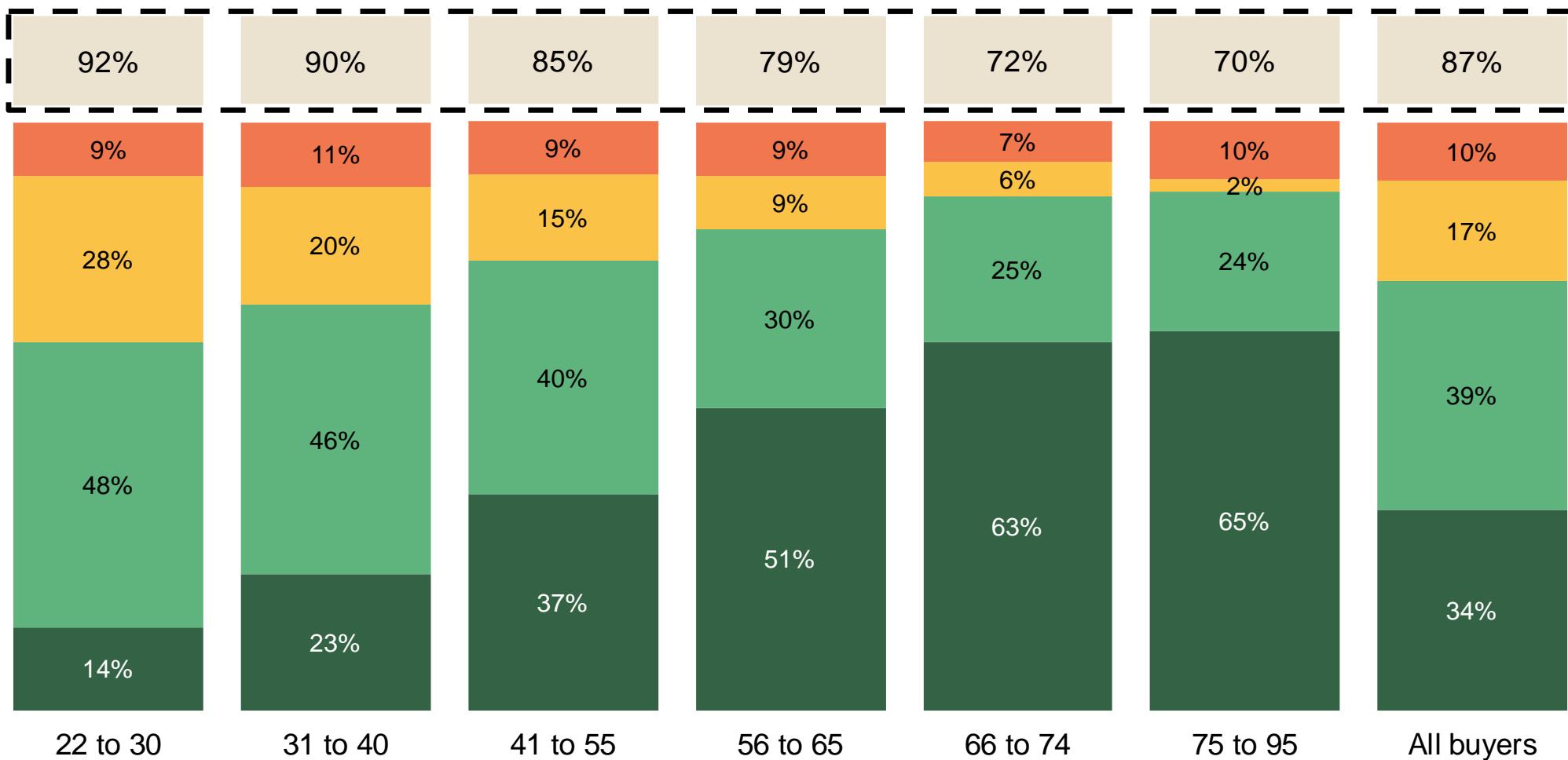
Source: FRBNY Consumer Credit Panel/Equifax (Data: 3Q22, updated quarterly†) *Credit Score is Equifax Riskscore 3.0; mortgage include first liens only. Pub: Jan-23

Financing the Home Purchase, by Age Group

27% of all home buyers who use a mortgage are putting 5% or less down. The figure jumps to 37% among those 30 and younger. Only 13% of 66- to 74-year-olds have an LTV of +95%.

Down Payment as Percent of Home Value by Age of Home Buyer*

■ +20% ■ 6% to 20% ■ 1% to 5% ■ 0%** ■ Median percent financed



*Percentages only include homes that were purchased with a mortgage.

**0%: Financed the entire purchase price with a mortgage

Source: ©2021 National Association of REALTORS® Home Buyer and Seller Generational Trends (Data: 2022, updated quarterly†)

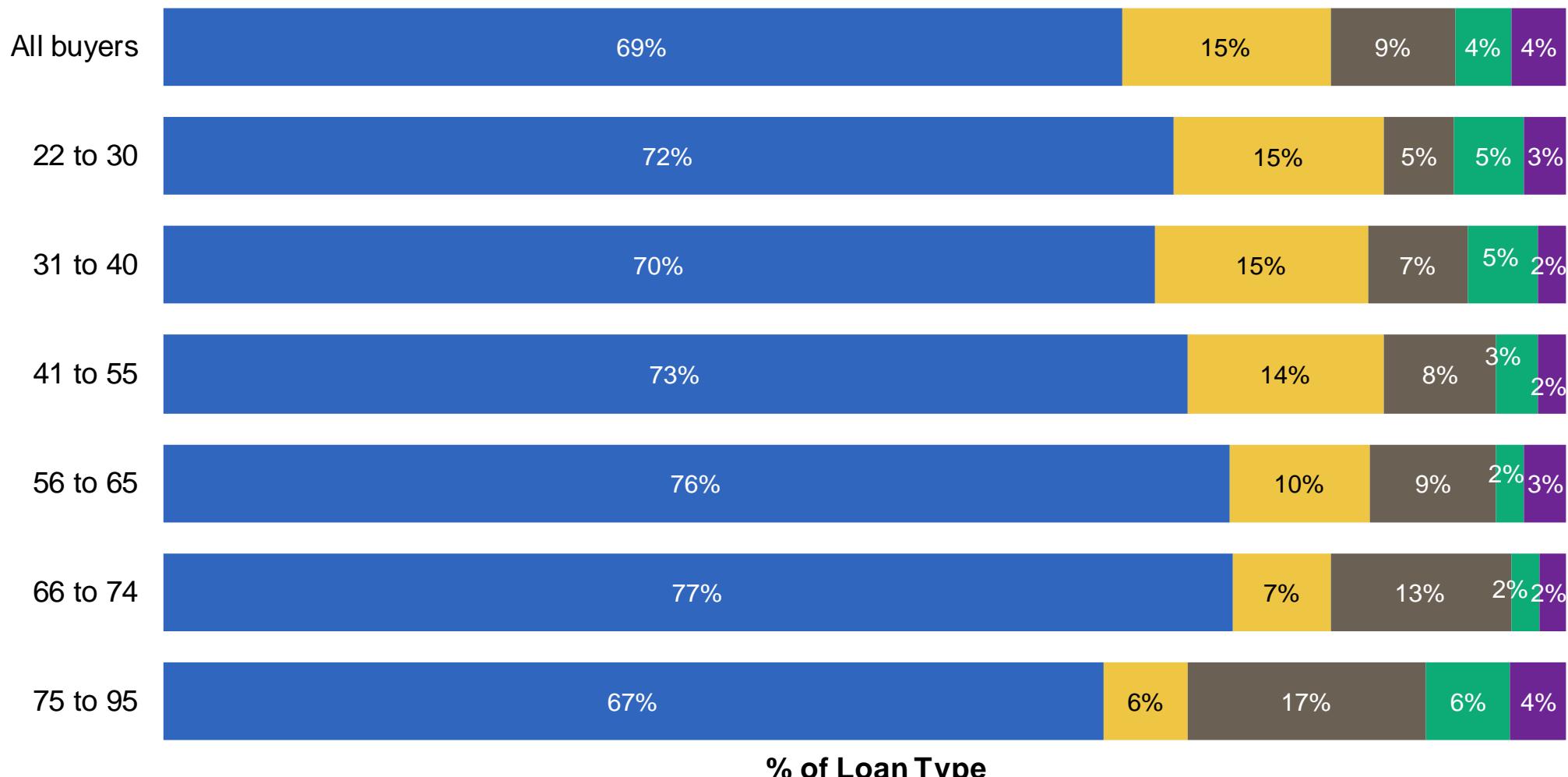
Pub: Jan-23

Financing the Home Purchase, by Age Group

Buyers under 30 are more likely to use FHA financing because of lower down payment requirements. Conventional loans are still the most common among all age groups.

Percent of Loan Type by Age of Home Buyer

■ Conventional ■ FHA ■ VA ■ Don't know ■ Other



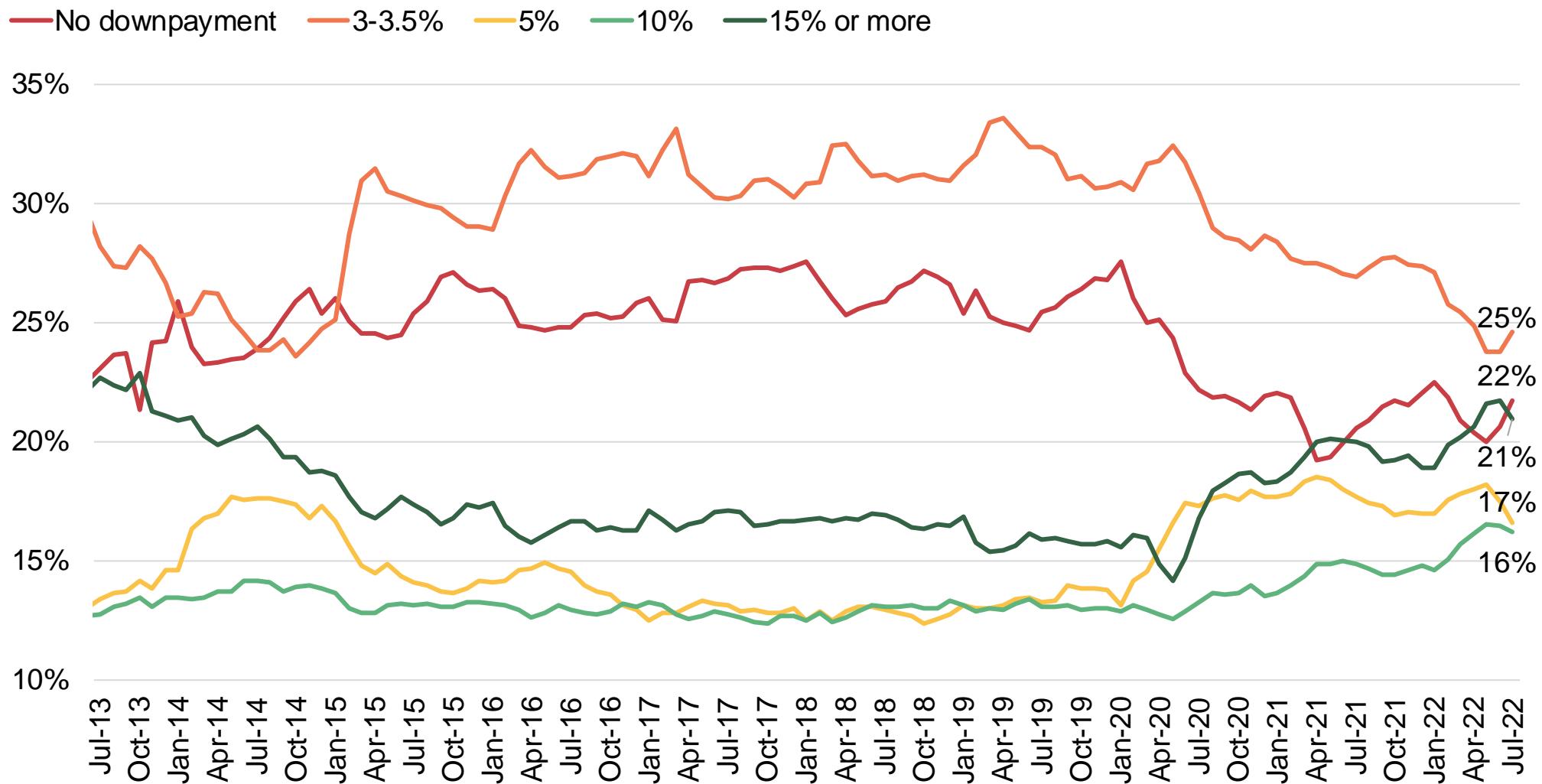
Source: ©2022 National Association of REALTORS® Home Buyer and Seller Generational Trends (Data: 2022, updated quarterly)

Pub: Jan-23

Down Payment Levels of First-Time Loans

Most first-time buyers (25%) put down 3.0%–3.5% of the purchase price for the down payment.

Share of First-Time Purchase Loans by Level of Down Payment



Note: Calculated for primary home purchase loans with a government guarantee and reported CLTV. Borrowers with downpayment assistance and CLTVs of 95% or greater are assumed to have no downpayment. Terms and conditions of the downpayment assistance programs vary by program, but in most cases they allow borrowers to offset the downpayment entirely.

Source: AEI (Data: Jul-22, updated quarterly†)

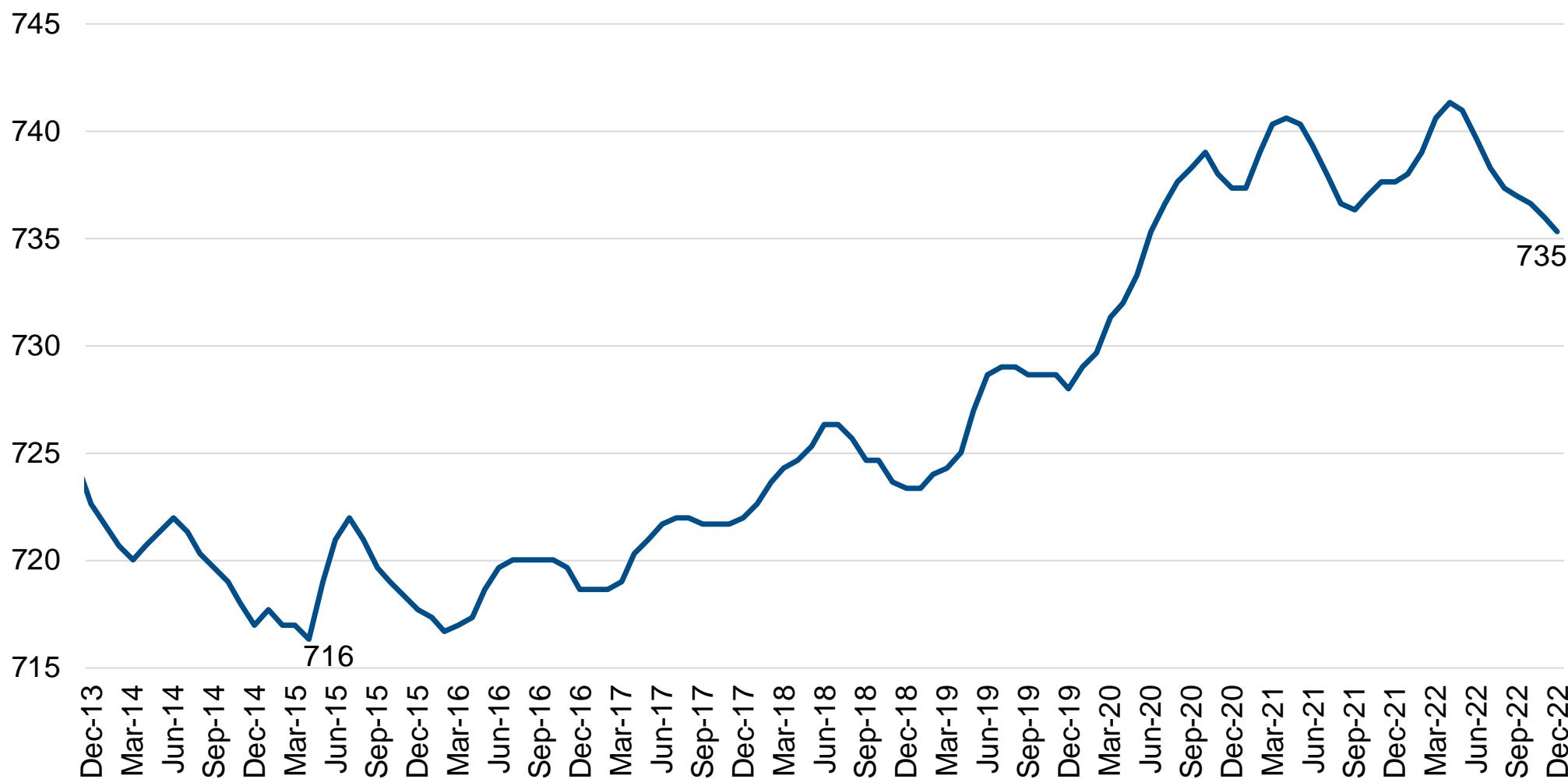
Pub: Jan-23

FICO Scores

The median FICO score of purchase loan originations is 735, up from 716 in 2015.

National Median FICO Score

3-month rolling average



Note: National Median FICO is the median representative FICO (as defined by Optimal Blue) of purchase loan originations. Optimal Blue tracks, representing about 30% of all loan origination, for single-family and townhomes.

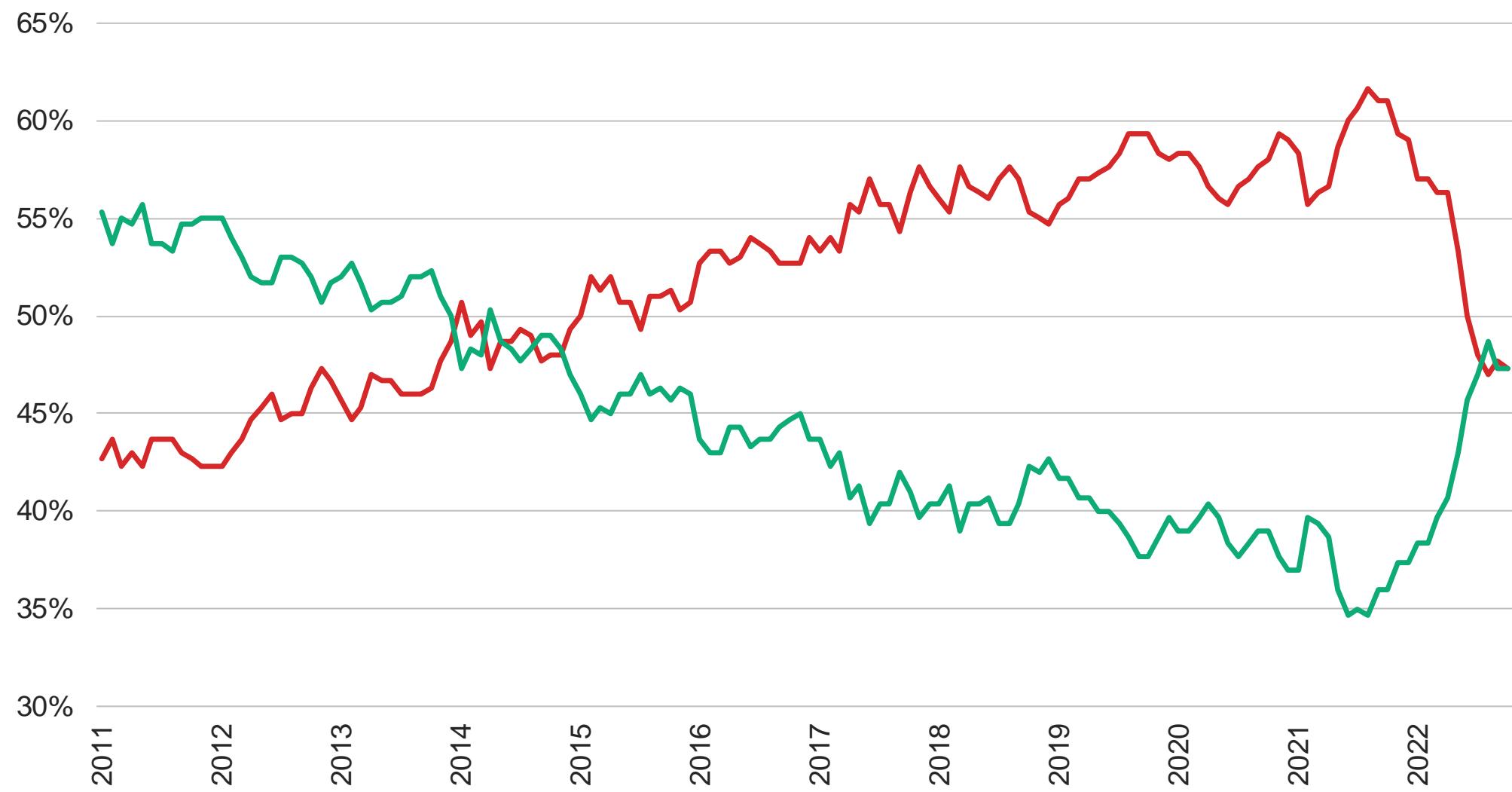
Sources: Optimal Blue, LLC www.optimalblue.com; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Consumer Sentiment on Mortgage Availability

47% of consumers surveyed believe it would be difficult to get a mortgage today.

National Housing Survey: Ability to Get a Mortgage Today

3-month moving average — Easy = 47% — Difficult = 47%



Source: Fannie Mae National Housing Survey (Data: Oct-22, updated quarterly†)

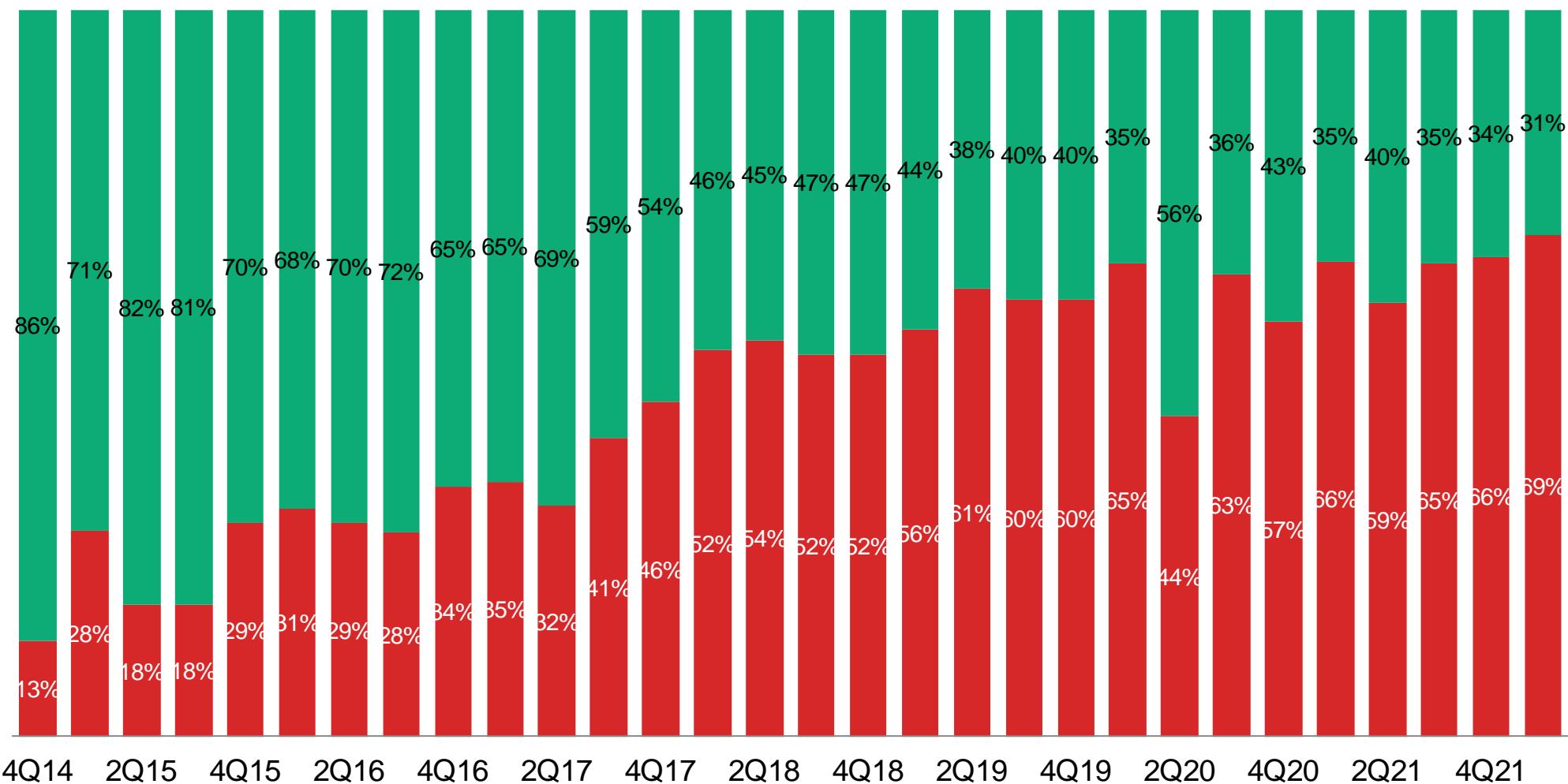
Pub: Jan-23

Mortgage Lender Sentiment on Mortgage Availability

As of 1Q22, 69% of senior mortgage executives believe it is easy for consumers to get a mortgage, a record high.

National Housing Survey: Mortgage Lender Sentiment on Mortgage Availability

Question: Do you think it is easy or difficult for consumers to get a mortgage today? ■ Difficult ■ Easy



Note: Rows may not add up to 100% because of rounding and "Don't know" responses that are not included in the chart.

Source: Fannie Mae, Mortgage Lender Sentiment Survey, (Data: 1Q22, updated quarterly†)

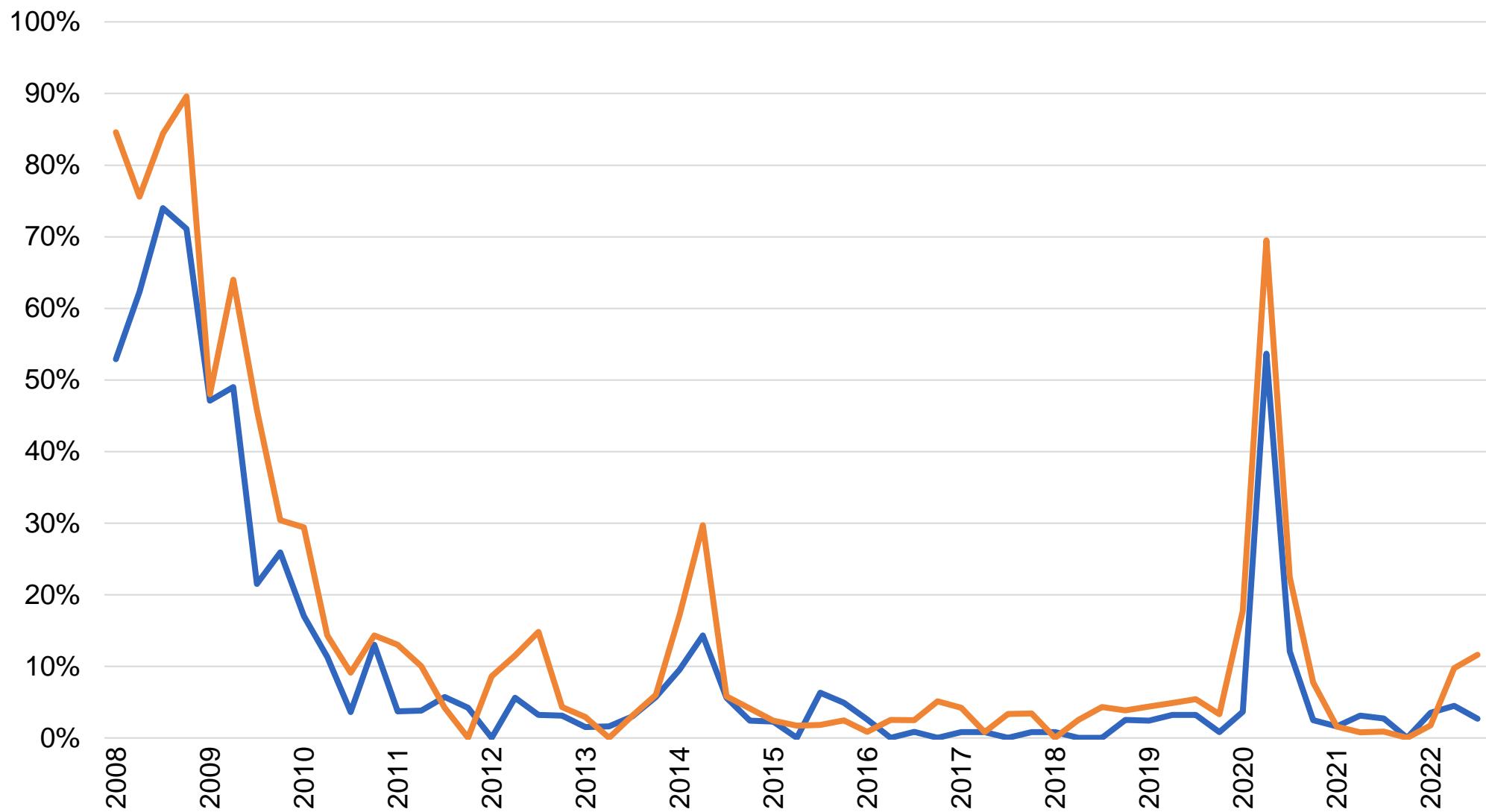
Pub: Jan-23

Bank Standards for Residential Purchase Mortgage Loans

Banks are starting to tighten standards for residential purchase mortgages again.

Net Percentage of Banks Tightening Standards for Residential Purchase Mortgage Loans

—Prime mortgages — Nontraditional mortgages



Sources: Federal Reserve Senior Loan Officer Survey (big banks only); John Burns Real Estate Consulting, LLC (Data 3Q22, updated quarterly†)

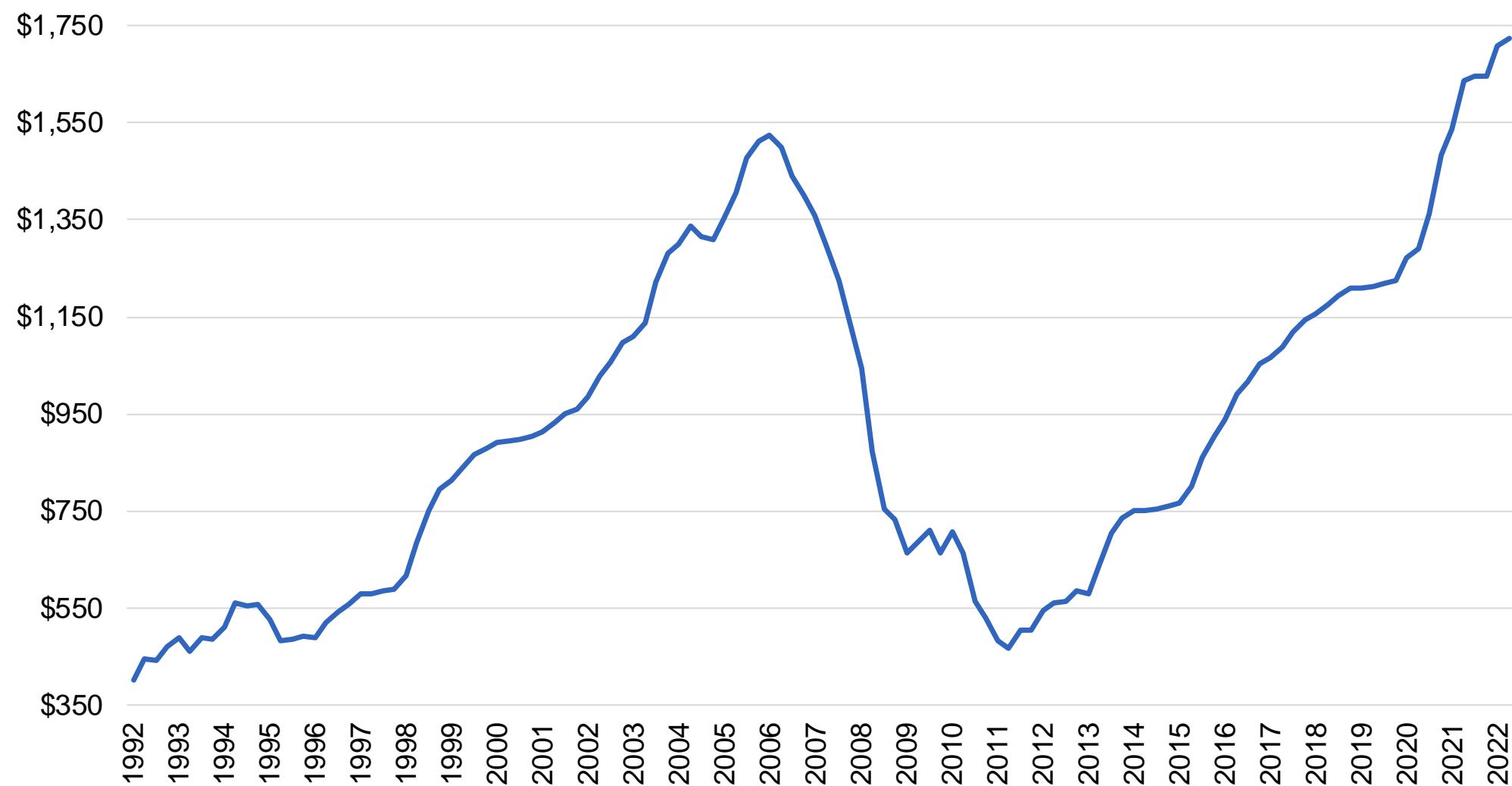
Pub: Jan-23

Annual Purchase Mortgage Originations

Purchase mortgage originations gained 5% YOY in terms of dollar value, signaling increasing demand for homes. The dollar value of originations is above the prior peak in 2006.

Rolling Annual Purchase Mortgage Originations

Dollars (billions)



Sources: Mortgage Banker Association; John Burns Real Estate Consulting, LLC (Data: 2Q22, updated quarterly†)

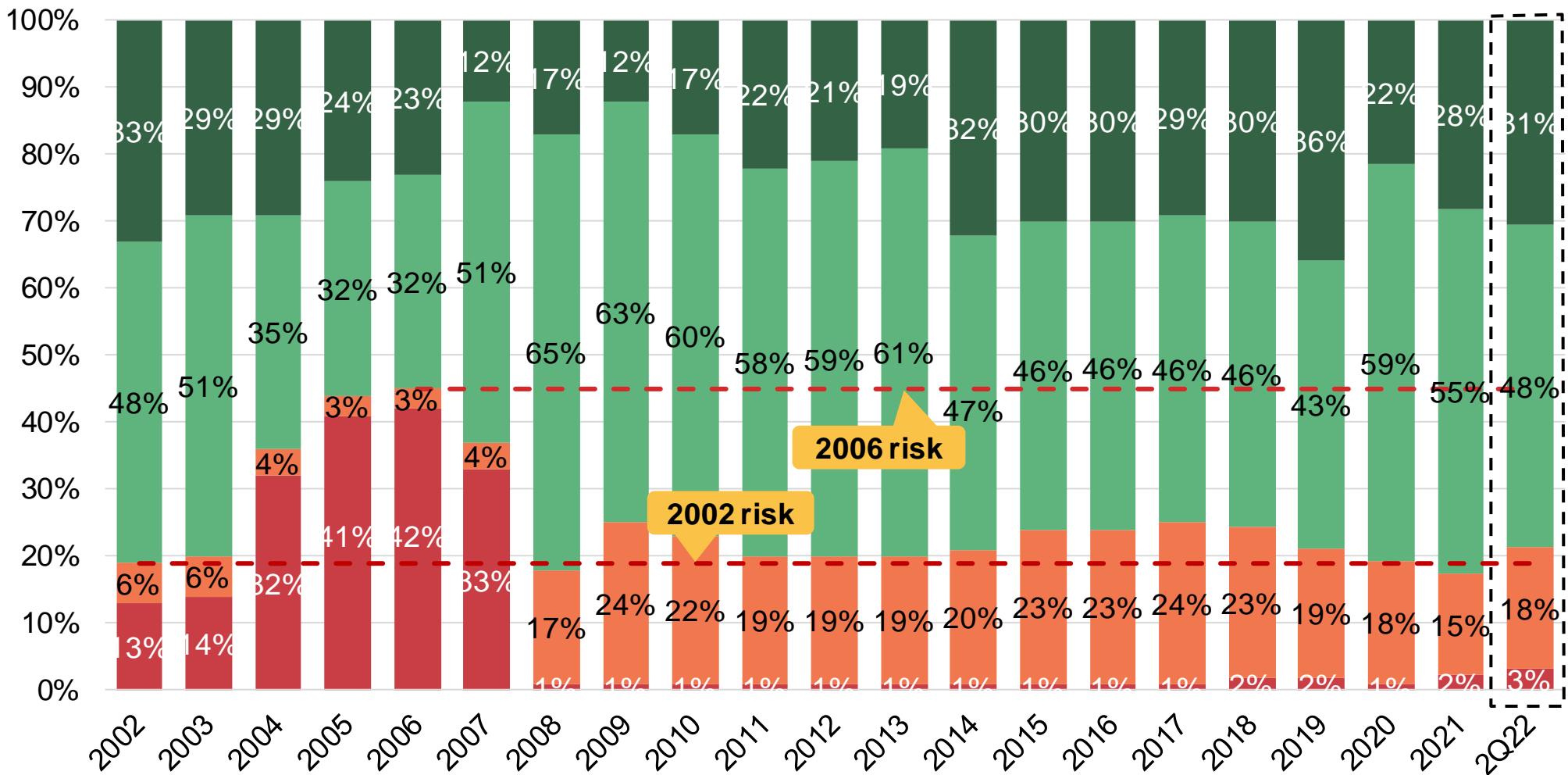
Pub: Jan-23

Origination Volume and Composition

The share of GSE originations fell to 48% in 2Q22. Portfolio loan share rose to 31% in 2Q22.

First Lien Mortgage Origination Volume by Loan Type

- Very High Risk: Subprime/private label
- Low Risk: GSE
- High Risk: FHA/VA
- Very Low Risk: Bank portfolio



Sources: Inside Mortgage Finance; Urban Institute; John Burns Real Estate Consulting, LLC (Data: 2022, updated quarterly†)

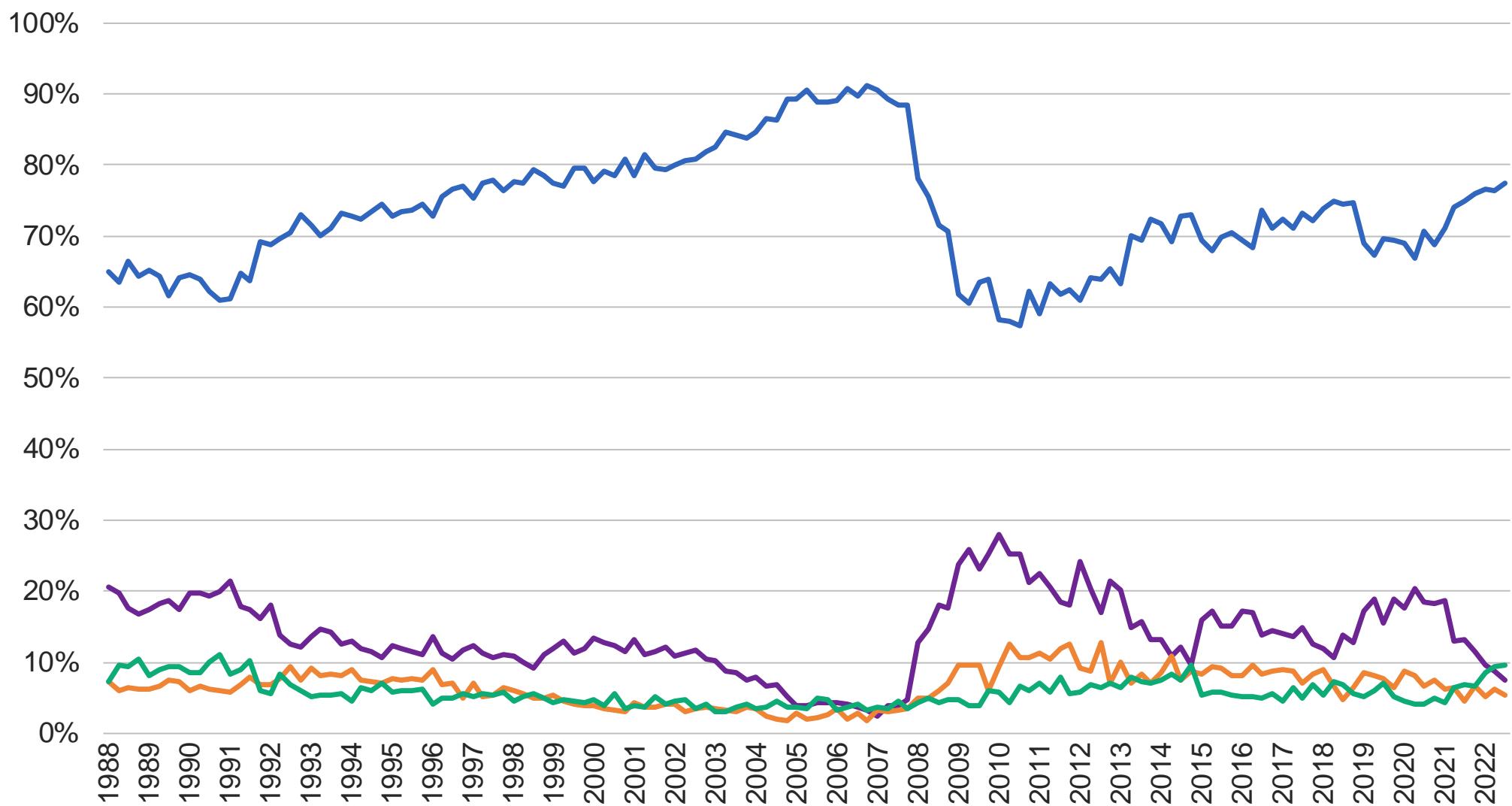
Pub: Jan-23

New Home Sales Share by Type of Financing

The share of conventional and jumbo loans was 78% in 3Q22, down from peak levels of 91% in 2007.

New Home Sales Share by Type of Financing

— Conventional¹ and jumbo = 78% — FHA insured = 7% — VA guaranteed = 5% — Cash = 10%



Sources: Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

¹Includes houses reporting other types of financing.

Beginning in 2008, also includes Rural Housing Service.

Pub: Jan-23

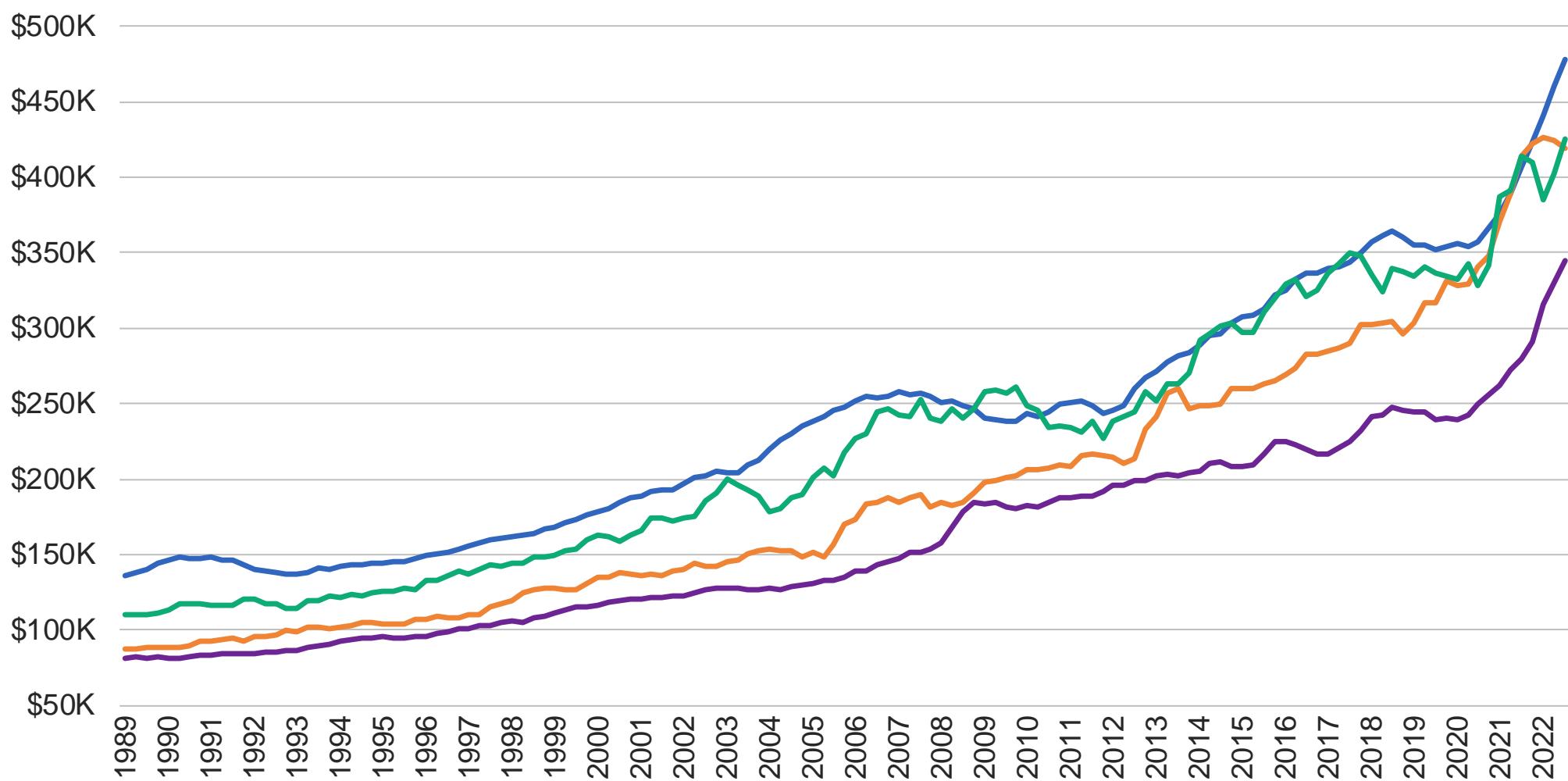
New Home Sales Price by Type of Financing

New homes sold with FHA financing currently sell for -28% below conventional financing.

Median New Home Sales Price by Type of Financing

4-quarter rolling average

Conventional¹ = \$478,425 FHA Insured = \$345,000 VA Guaranteed = \$418,925 Cash = \$425,725



¹Includes houses reporting other types of financing.

Beginning in 2008, also includes Rural Housing Service.

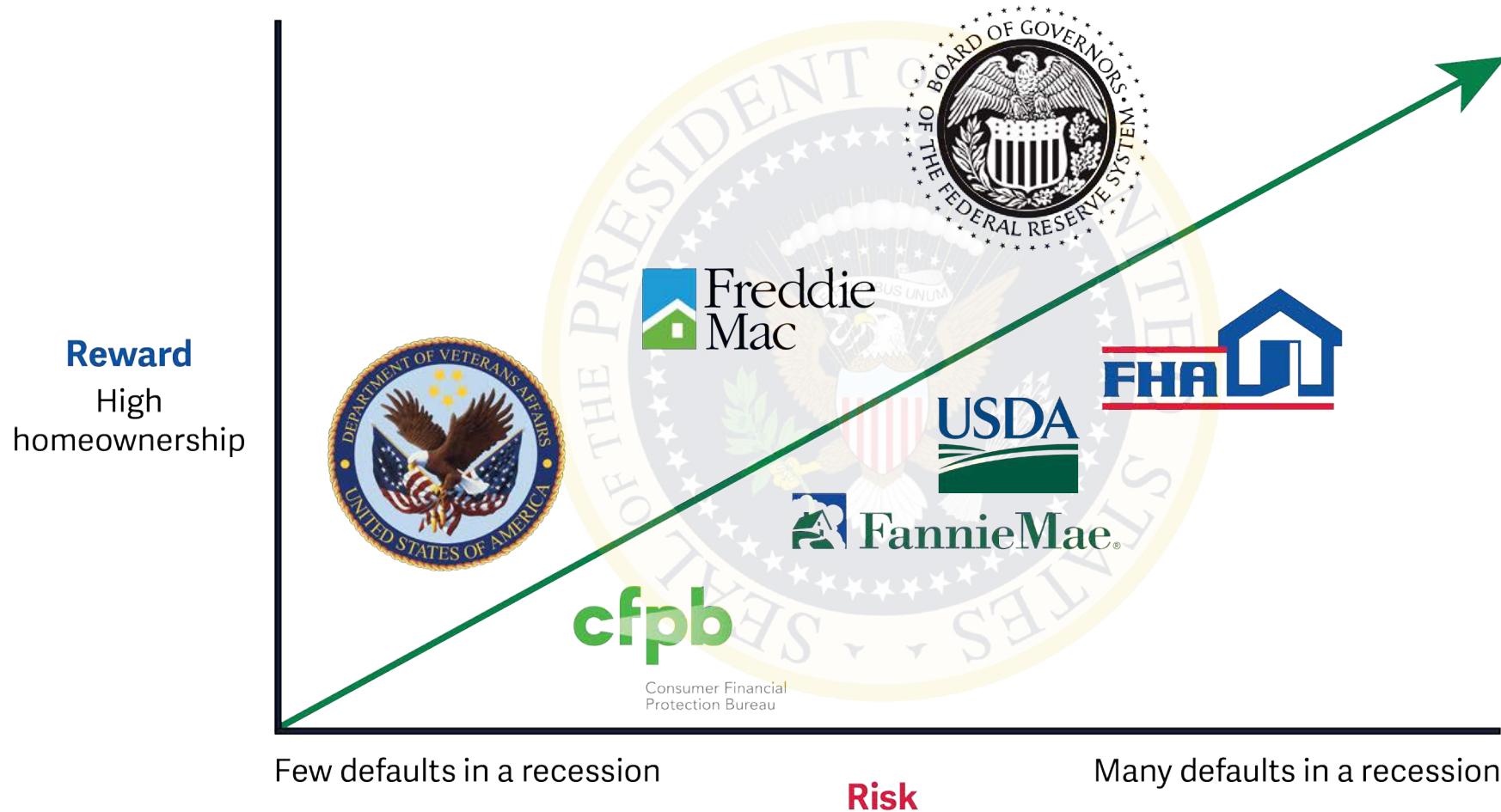
Pub: Jan-23

Sources: Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

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Presidential Power and Mortgage Lending

Federal officials ultimately decide how aggressive mortgage lending will be through regulation of the VA, FHA, GSEs, and banks.



Source: John Burns Real Estate Consulting, LLC (Pub: Jan-23)

Default Rates of Freddie Mac's 2007 Loans

We now have good data on how various categories of borrowers perform in a downturn. For perspective, today's lending standards imply a 12% default rate.

Default Rates of Freddie Mac's 2007 Loans

Risk Bucket	FICO	CLTV	Total DTI	Default Rate
Very low	≥ 770	61–70%	≤33%	0.8%
Low	720–769	76–80%	34–38%	4.2%
Medium	690–719	81–85%	39–43%	9.3%
High	660–689	91–95%	44–50%	22.7%
Very high	620–659	>95%	>50%	45.8%

Riskiest mortgages

Note: Default rates represent cumulative defaults through year-end 2012 for Freddie Mac's 2007 vintage of acquired loans. The loans included in the calculation are all primary owner-occupied, 30-year fixed-rate, fully amortizing, full-documented, home purchase loans.

Source: American Enterprise Institute (Pub: Jan-23)

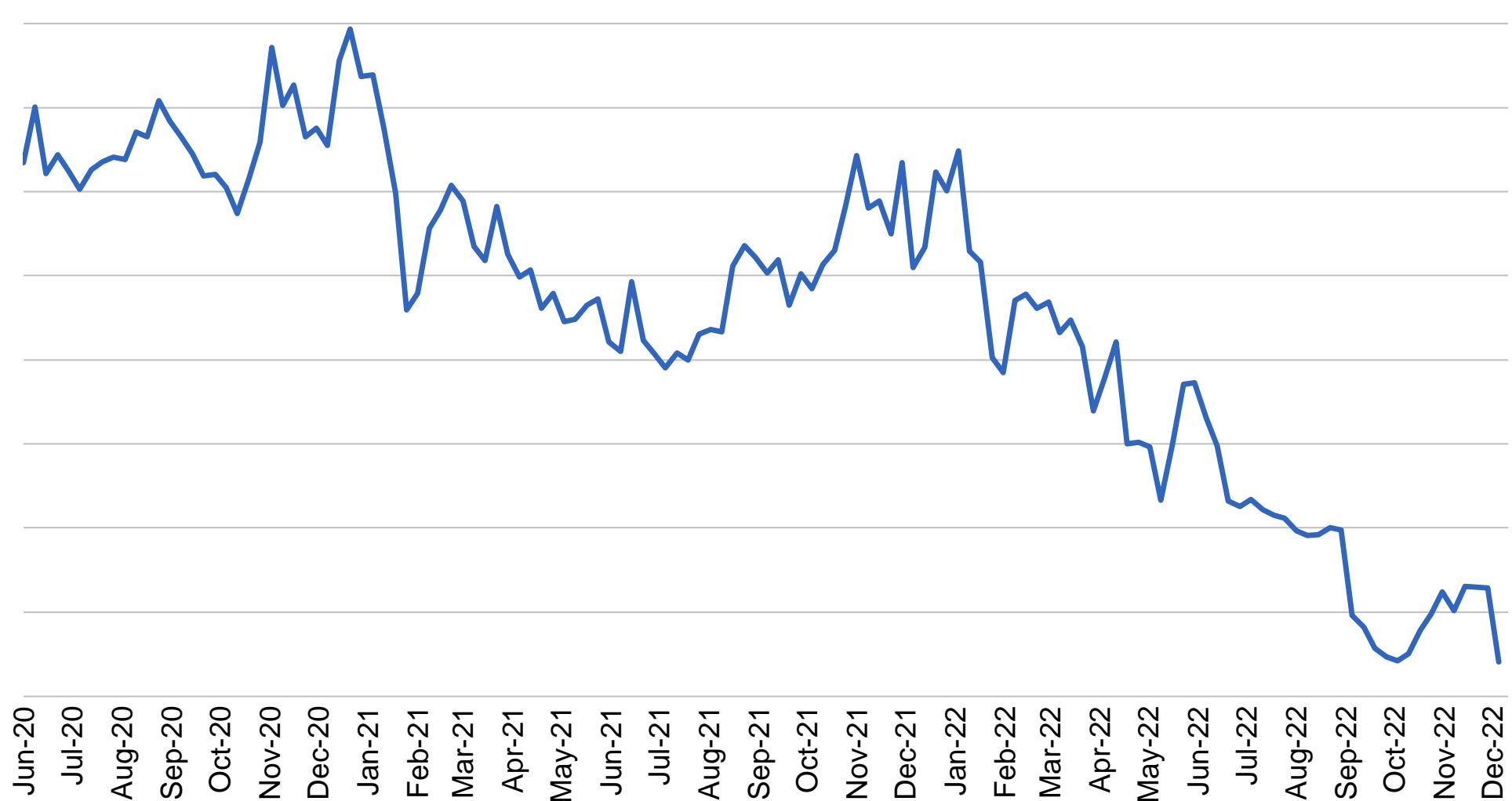
Purchase Mortgage Application Index

The Purchase Mortgage Applications Index fell -42% YOY.

Purchase Mortgage Application Index

Seasonally adjusted weekly values

Note: The index does not capture cash transactions and thus understates activity.



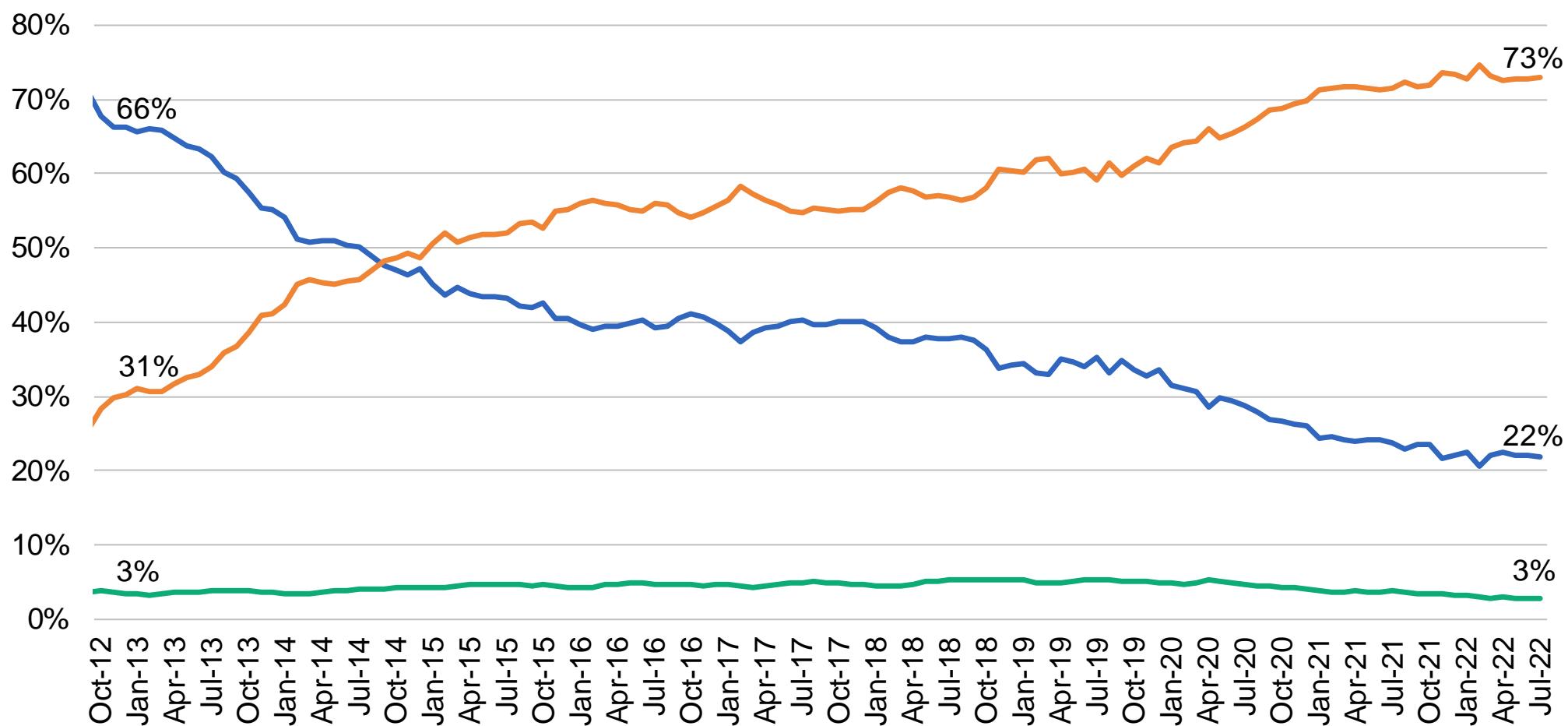
Source: MBA (Data: Dec-22, Pub: Jan-23)

Agency Purchase Mortgage Origination Share by Lender Type

Non-banks (firms such as Rocket Mortgage and PennyMac) account for the most agency mortgage originations, at 73%. Tighter restrictions on capital reserves for large banks such as Wells Fargo have caused the drop in originations, with non-banks taking more risk.

Agency* Origination Shares by Lender Type

— Banks — Non-banks — Credit unions / state housing agencies



*Agency = Fannie Mae, Freddie Mac, FHA, VA, and RHS. Origination shares represent the percentage of the total number of loan originations

Sources: AEI International Center on Housing Risk; John Burns Real Estate Consulting, LLC (Data: Jul-22, updated quarterly†)

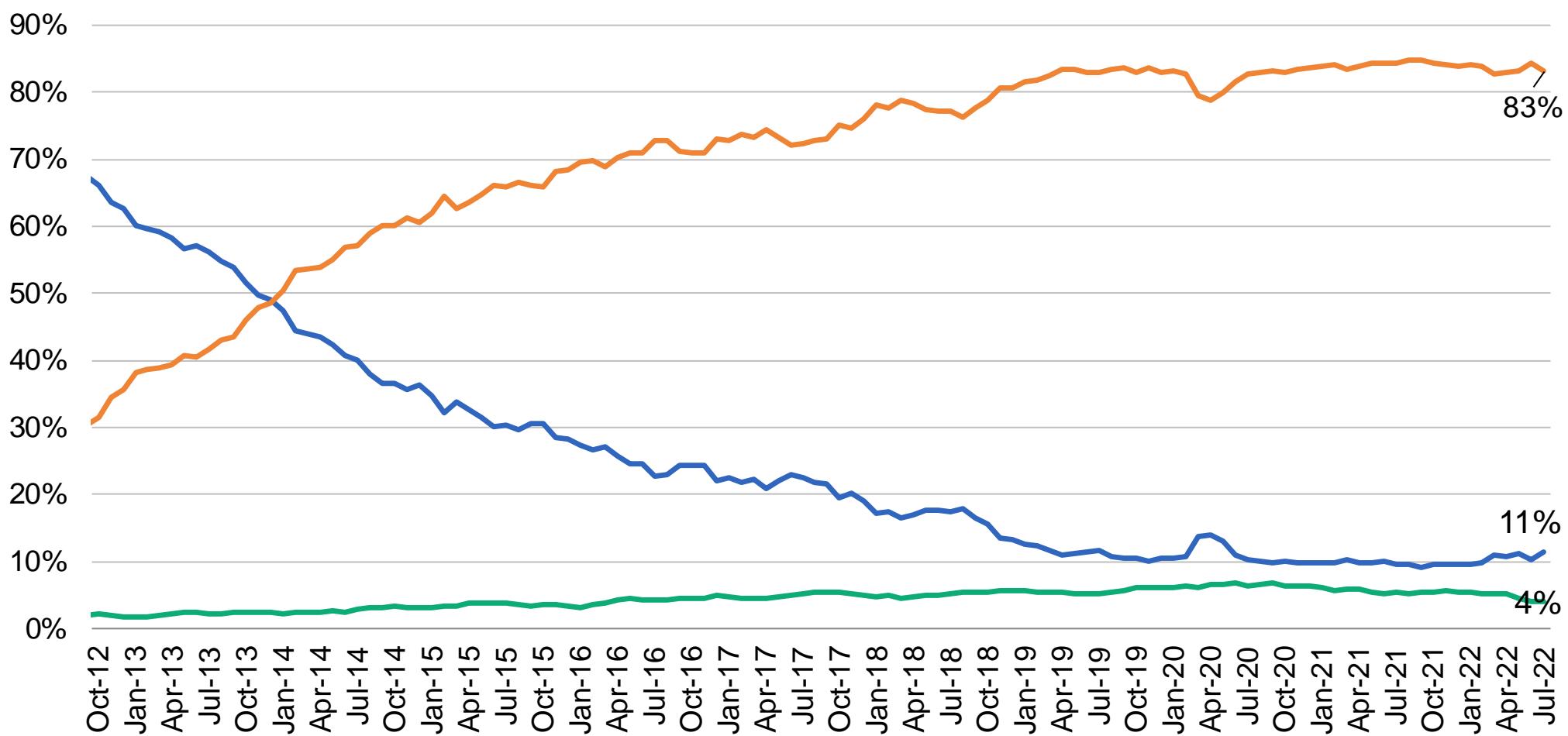
Pub: Jan-23

FHA Purchase Mortgage Origination Share by Lender Type

Non-banks (firms such as Rocket Mortgage and PennyMac) represent most FHA loans, at 83%. Tighter restrictions on large banks such as Wells Fargo and Bank of America have caused the drop in originations, with non-banks taking more risk.

FHA Origination Shares by Lender Type

Banks Non-banks Credit unions / state housing agencies



Note: Origination shares represent the percentage of the total number of loan originations

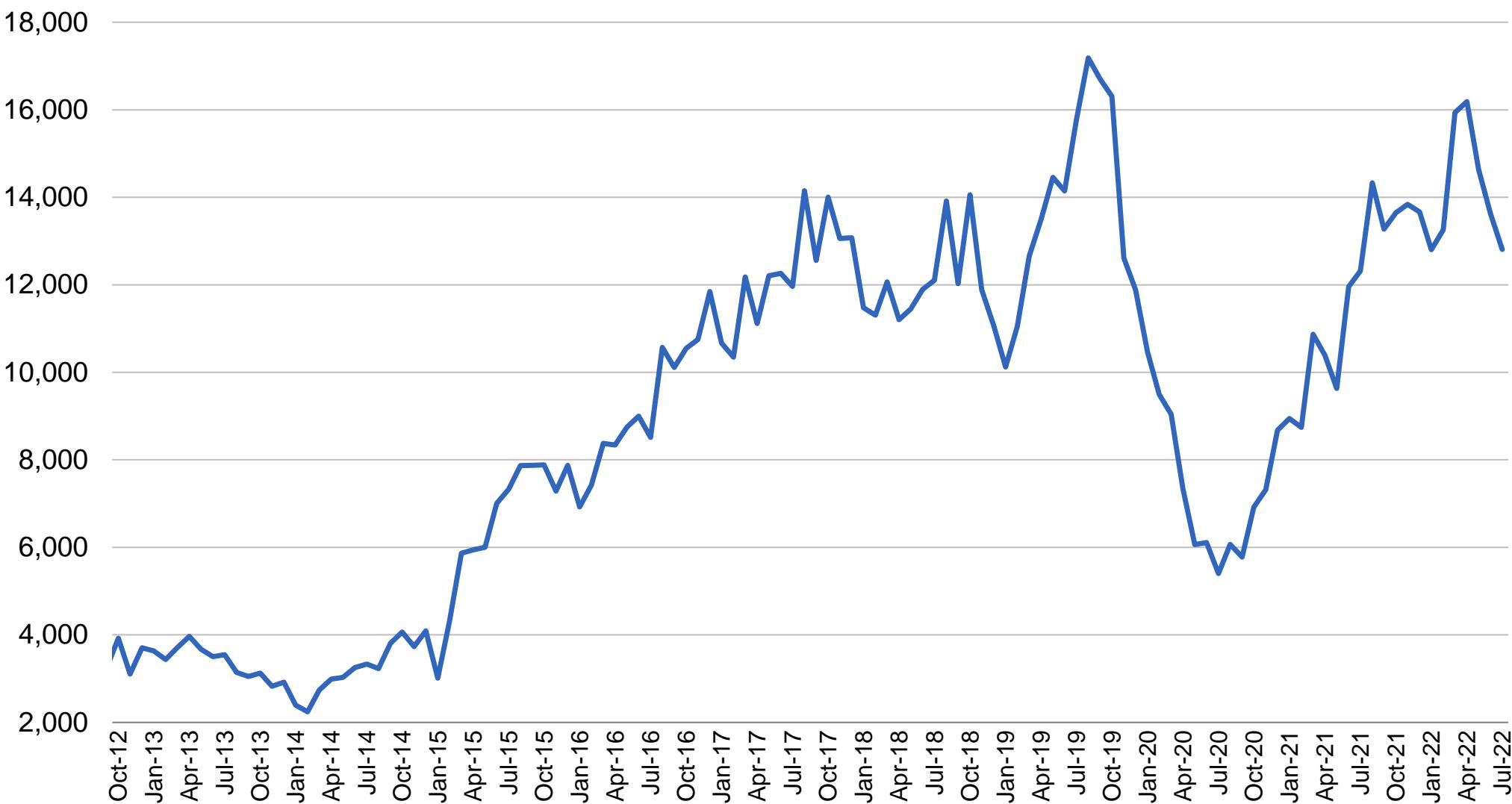
Sources: AEI International Center on Housing Risk; John Burns Real Estate Consulting, LLC (Data: Jul-22, updated quarterly†)

Pub: Jan-23

FHA Cash-Out Refinance Volume

FHA cash-out refinance volume rose 4% YOY. Cash-out refinance activity can increase the risk of default during times of market stress.

FHA Cash-Out Refinance Count



Note: Counts refers to the number of Cash-out Refis Loans from the FHA.

Sources: AEI International Center on Housing Risk; John Burns Real Estate Consulting, LLC (Data: Jul-22; updated quarterly†)

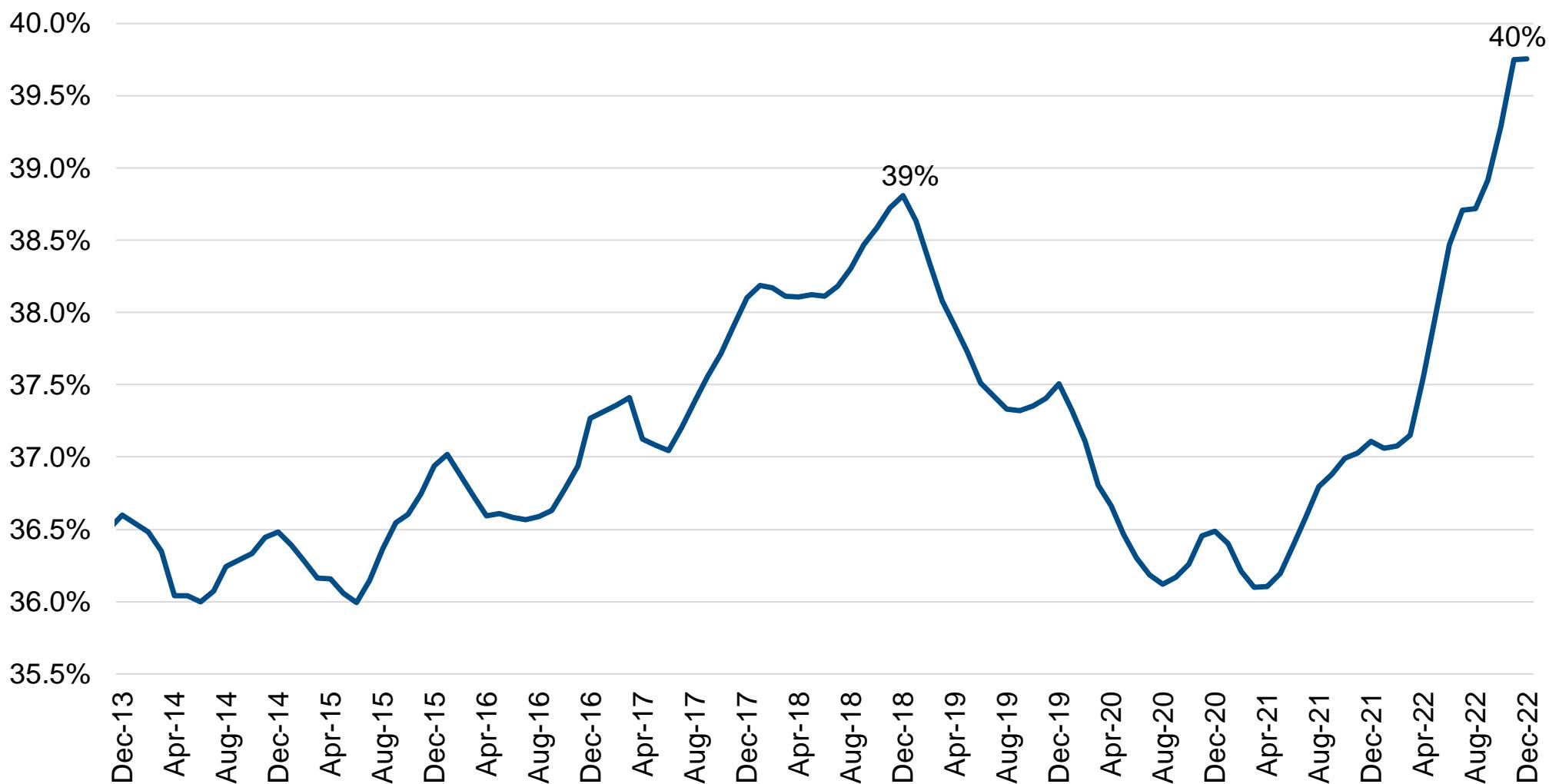
Pub: Jan-23

Debt-to-Income Ratio

The national median DTI ratio (back end) for purchase loan originations is 40%, slightly above the 2019 peak.

National Median Debt-to-Income Ratio

3-month rolling average



Note: National Median DTI is the median DTI of purchase loan originations Optimal Blue tracks, representing about 30% of all loan origination, for single-family and townhomes.

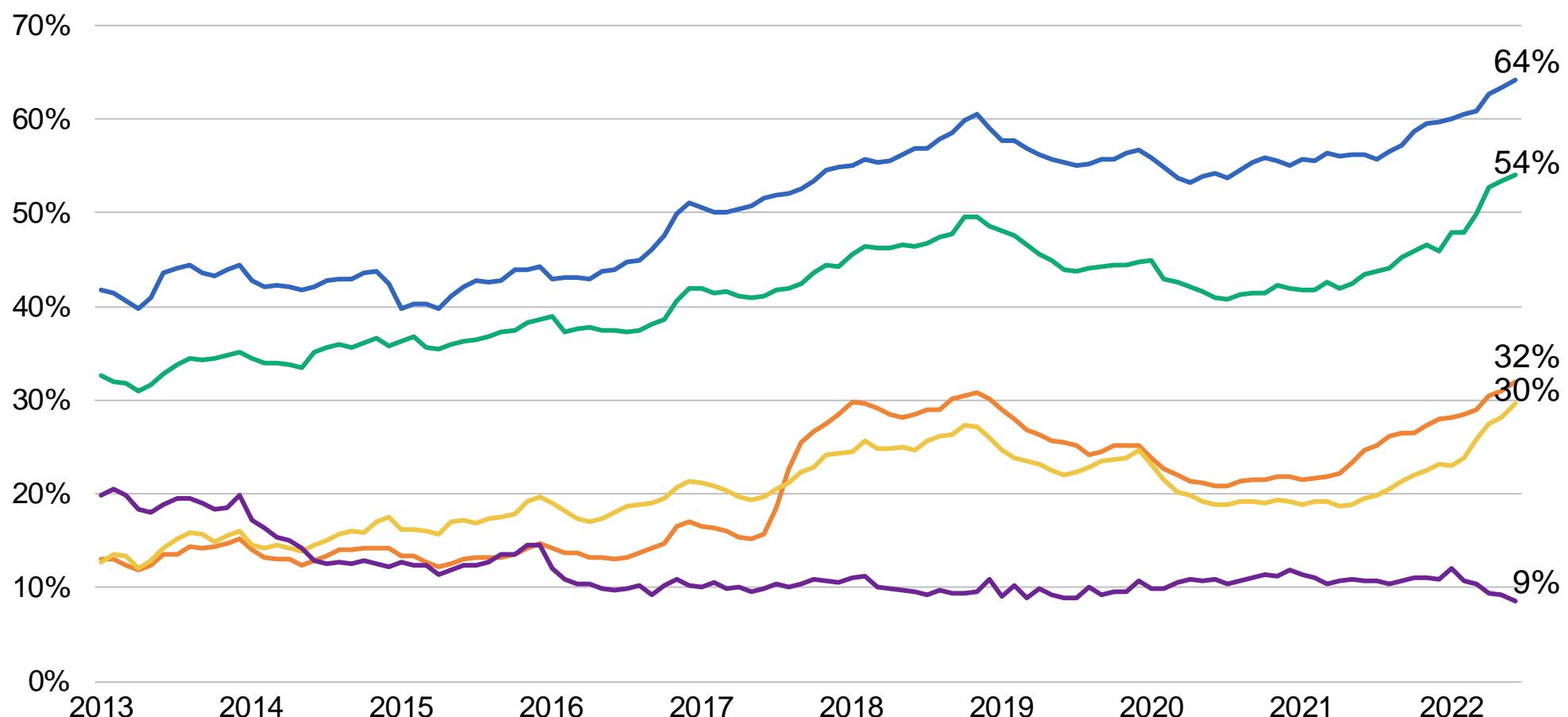
Sources: Optimal Blue, LLC www.optimalblue.com; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Debt-to-Income (DTI) for Purchase Loans

An increasing share of government-sponsored purchase loans have a high debt-to-income (DTI) ratio. 64% of FHA-insured loans have a DTI ratio greater than 43%.

Purchase Loans with Total Debt to Income Greater than 43%

—FHA —VA —Fannie —Freddie —RHS (Rural Housing Service)



Note: Data pertains to purchase loans for primary owner-occupied properties.

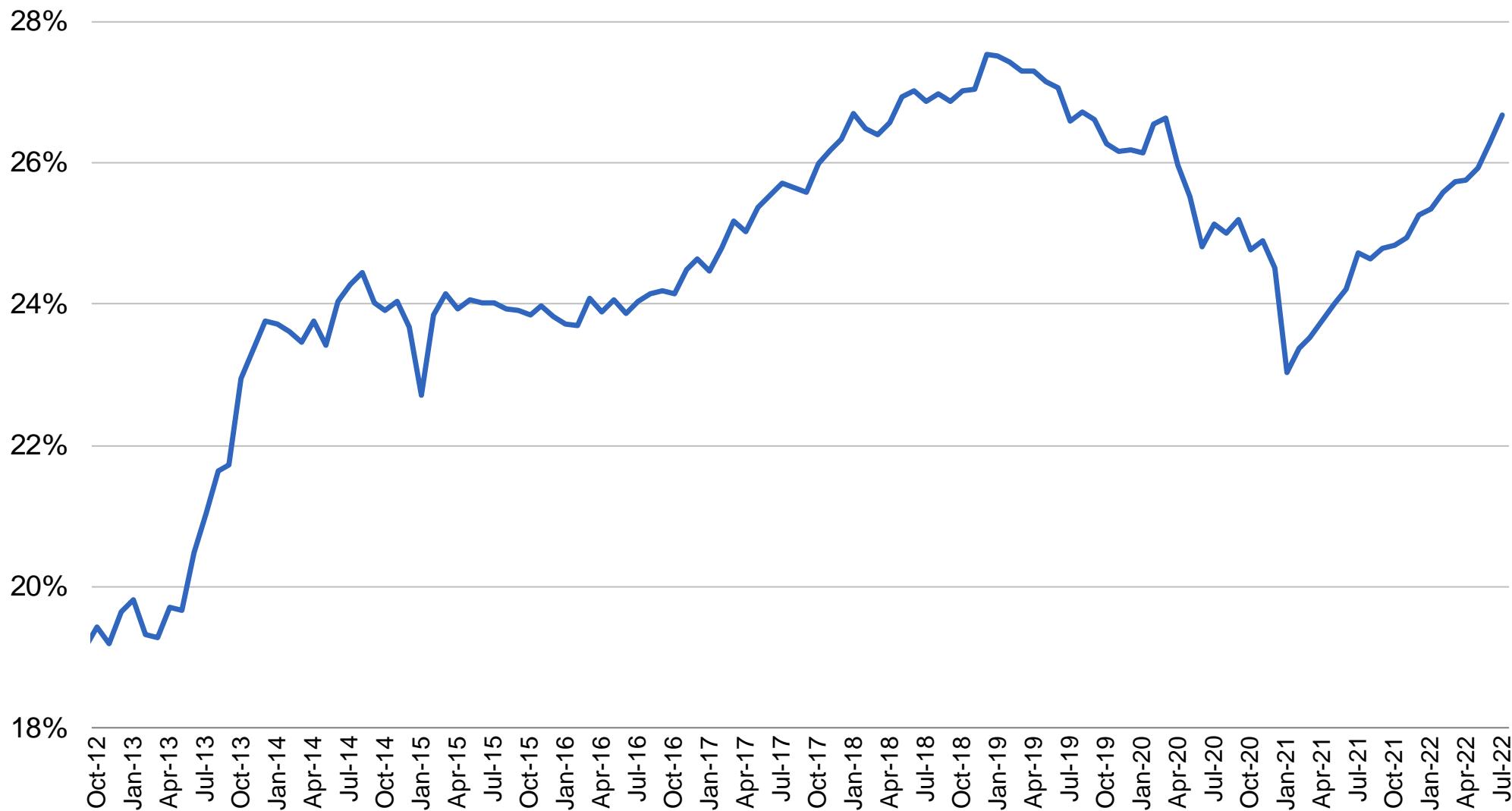
Sources: AEI International Center on Housing Risk; John Burns Real Estate Consulting, LLC (Data: Jul-22; updated quarterly†)

Pub: Jan-23

FHA Cash-Out Refinance Risk

The AEI Refinance Cash-Out Mortgage Risk Index measures the percentage of cash-out refinance loans that would default under similar market stress conditions to the 2008 housing crisis. Currently, 27% of cash-out refinance mortgages are projected to default in a stress event.

FHA Cash-Out Refinance Mortgage Risk Index



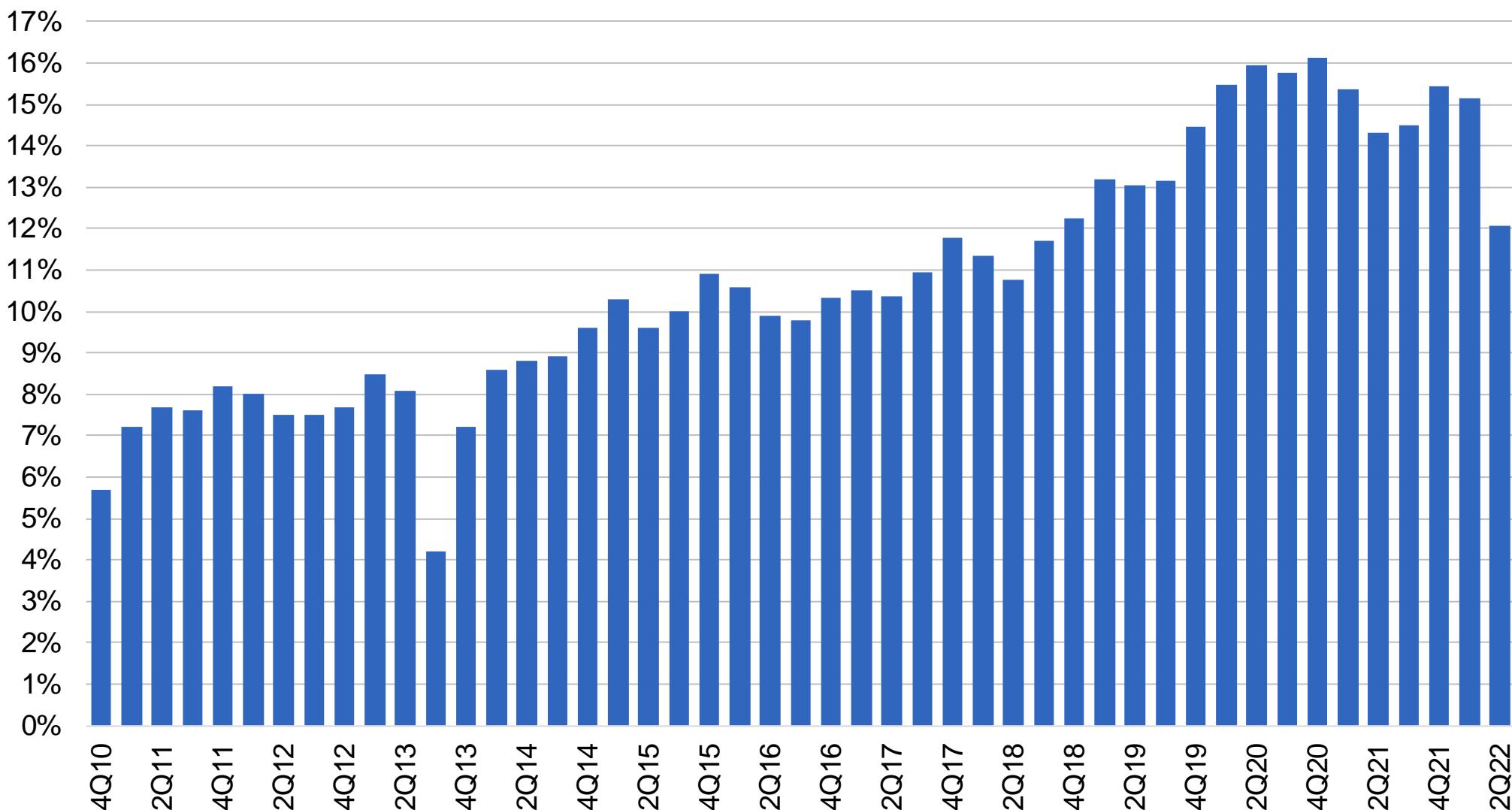
Sources: AEI International Center on Housing Risk; John Burns Real Estate Consulting, LLC (Data: Jul-22; updated quarterly†)

Pub: Jan-23

FHA Mortgage Assistance

12% of FHA mortgage originations use additional government assistance to help cover home purchase costs, down from 15% in 2021. This indicates tightening for these riskier borrowers.

Share of FHA Mortgage Originations Using Government Assistance



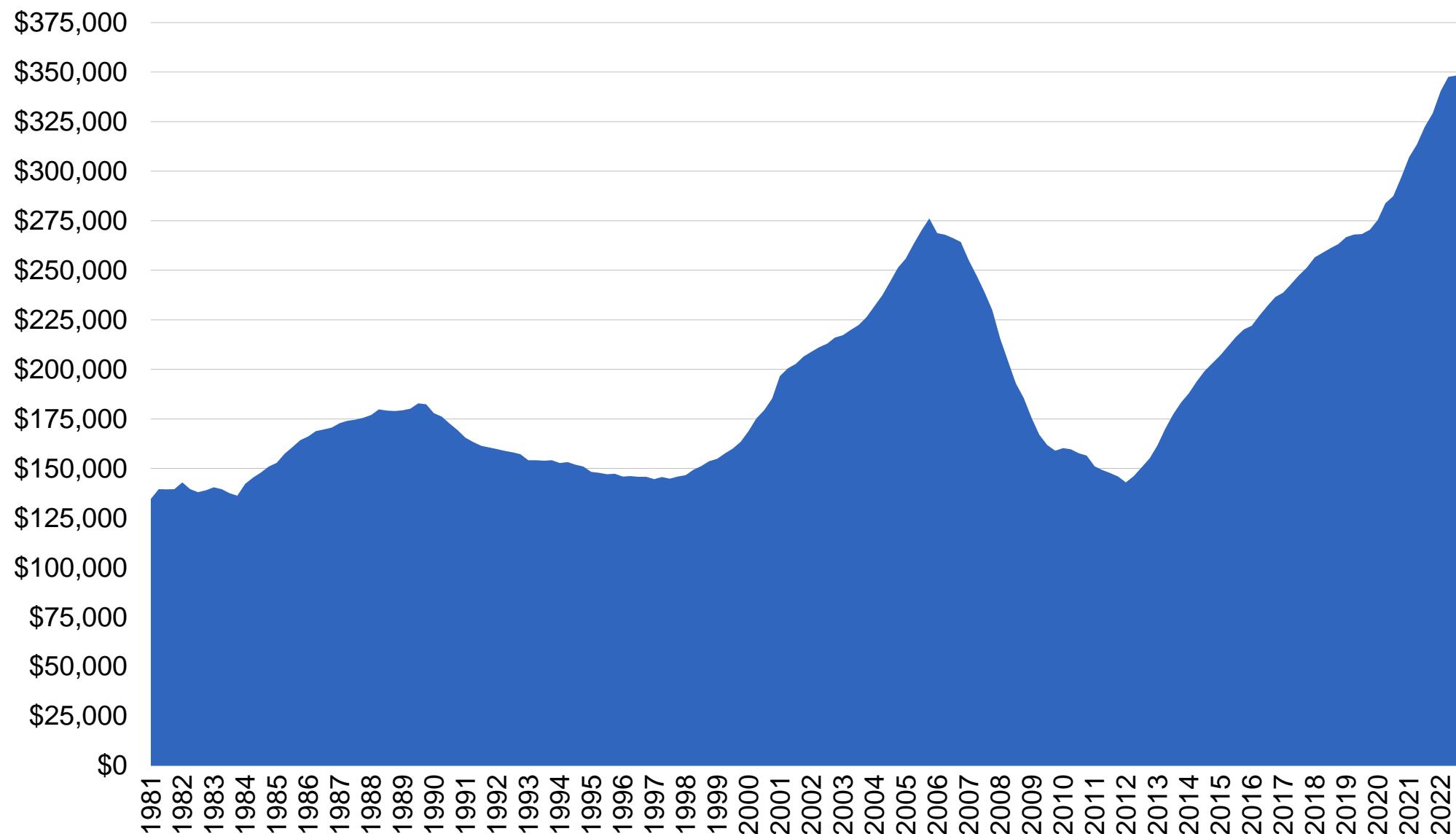
Source: U.S. Department of Housing and Urban Development (Data: 2Q22, updated quarterly†)

Pub: Jan-23

Homeowner Equity

Homeowners have an average of \$348K in equity in their homes as of 3Q22, an all-time high.

Inflation-Adjusted Homeowner Equity per Owned Household



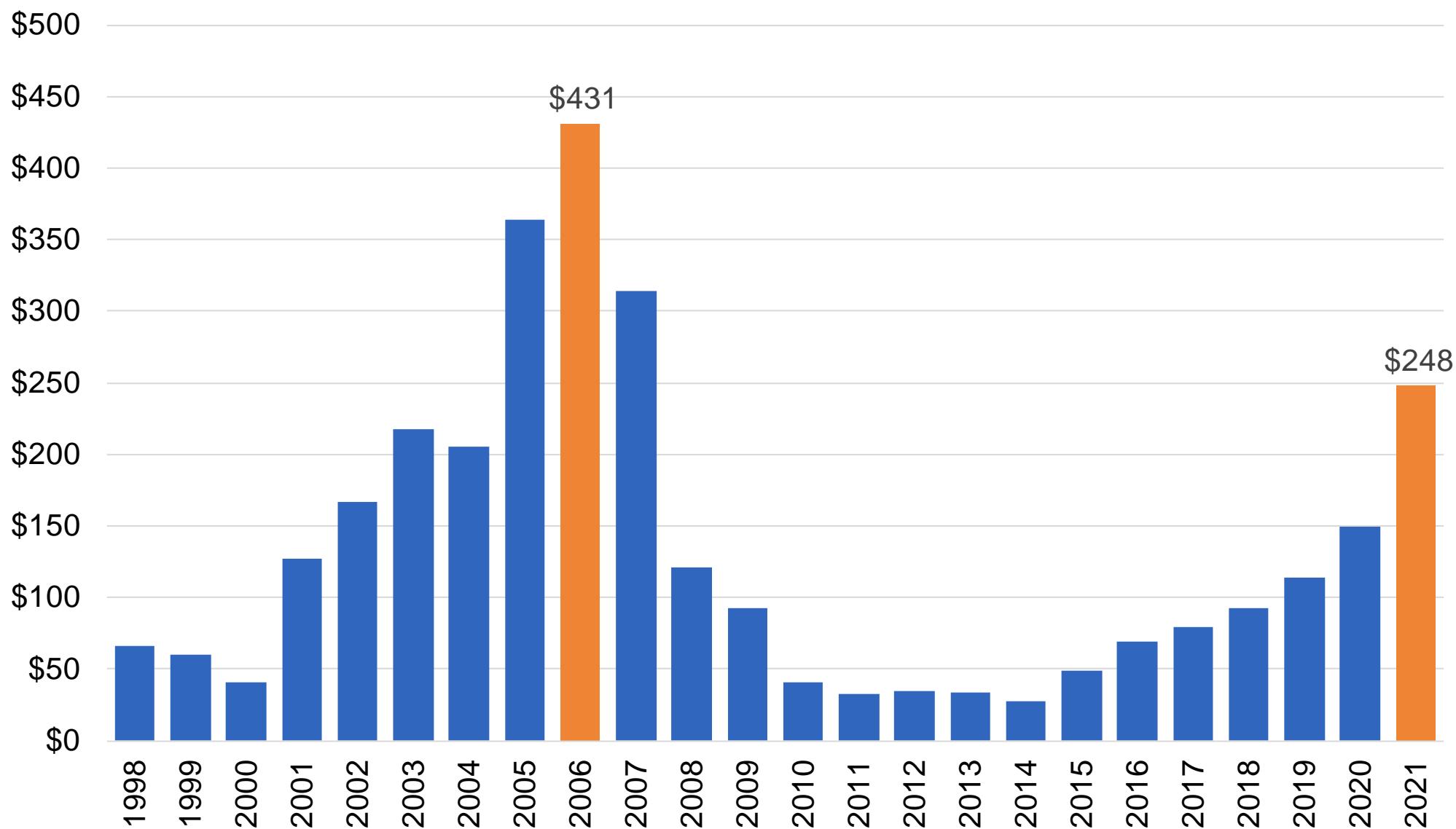
Sources: Federal Reserve; Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

Pub: Jan-23

Net Equity Cashed Out

Cash-out refinance activity rose to \$248B in 2021 for prime conventional loans, the highest since 2007.

Total home equity cashed out (in 2021 dollars, billions)



Sources: Freddie Mac; John Burns Real Estate Consulting, LLC (Data: 2021, updated quarterly†)

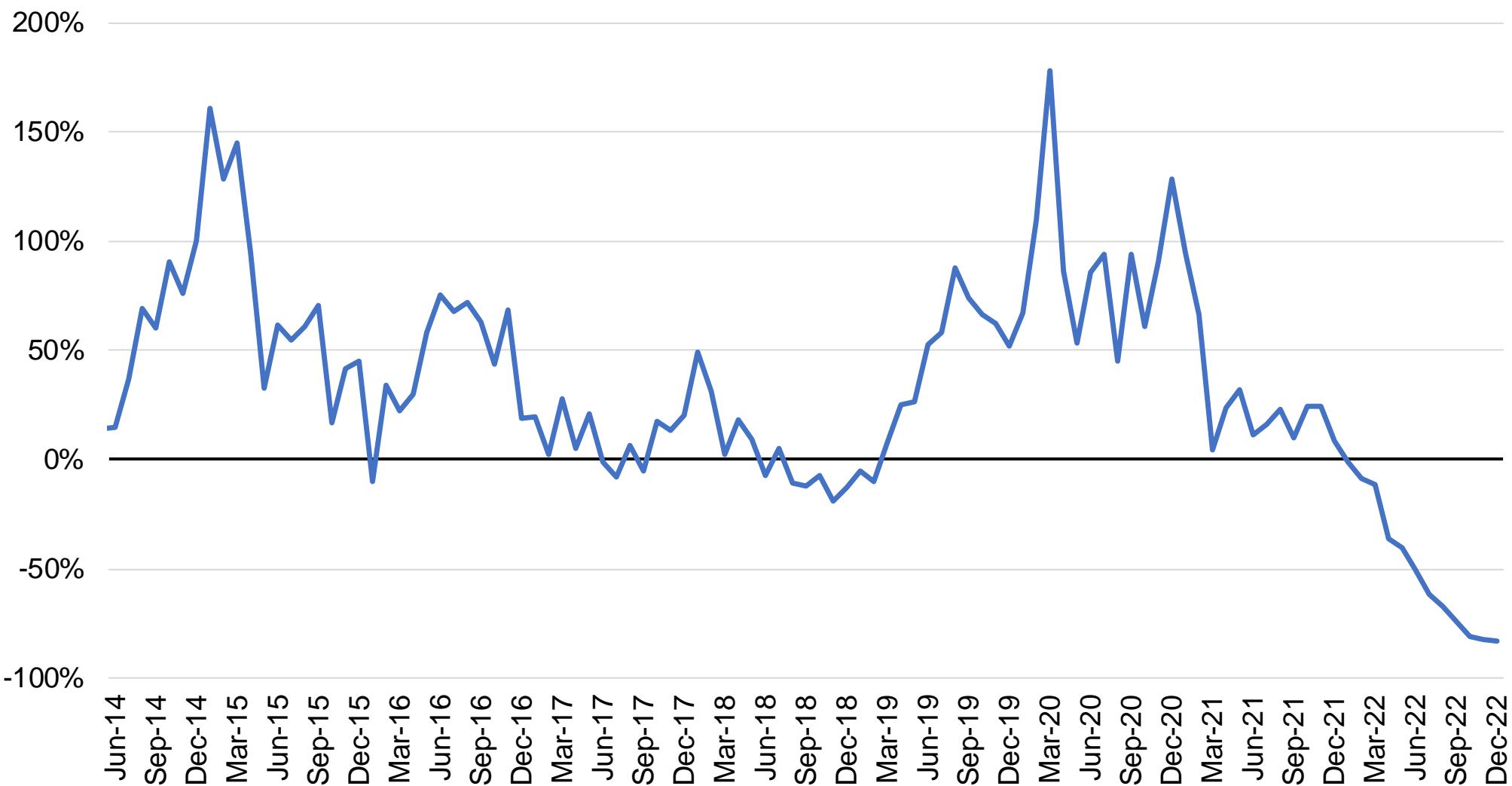
Pub: Jan-23

Cash-Out Refinance Loan Lock Volume

The number of cash-out refinance loan locks fell -83% YOY.

Cash-Out Refinance Loan Lock Volume, YOY change

— Current = -83% YOY



Note: Cash-Out Refi totals as tracked by Optimal Blue, for single-family and townhomes.

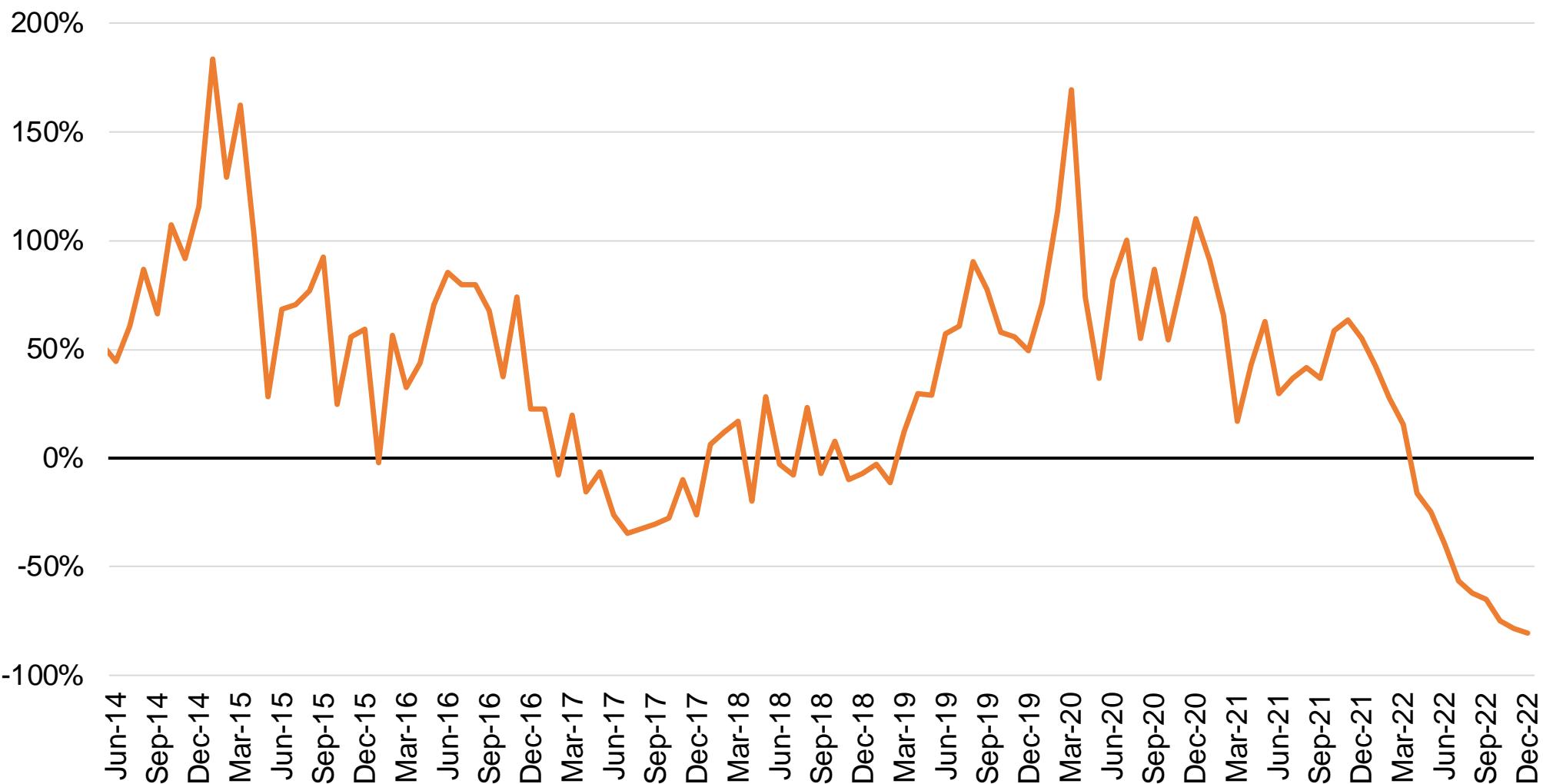
Sources: Optimal Blue, LLC www.optimalblue.com; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Cash-Out Refinance Cash Volume

The amount cashed out via refinance fell -81% YOY.

Cash-Out Refinance Total Cash Volume, YOY change

— Current = -81% YOY



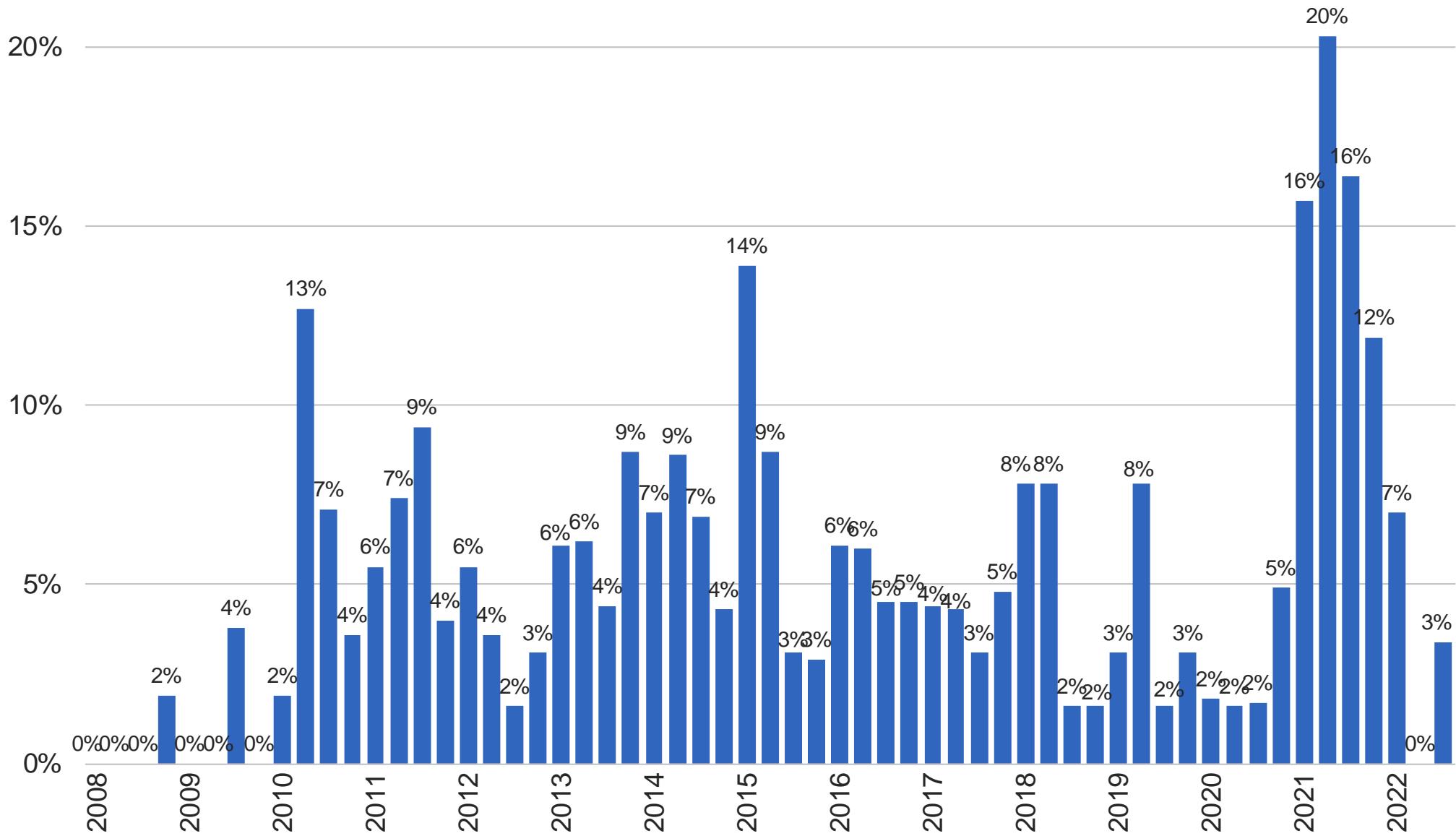
Note: Cash-Out Refi total dollars as tracked by Optimal Blue, for single-family and townhomes.

Sources: Optimal Blue, LLC www.optimalblue.com; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Credit Standards for HELOCs

In 3Q22, 3% of banks reported easing credit standards for HELOCs, up from 0% in 2Q22.

Percentage of Banks Easing Credit Standards for HELOCs



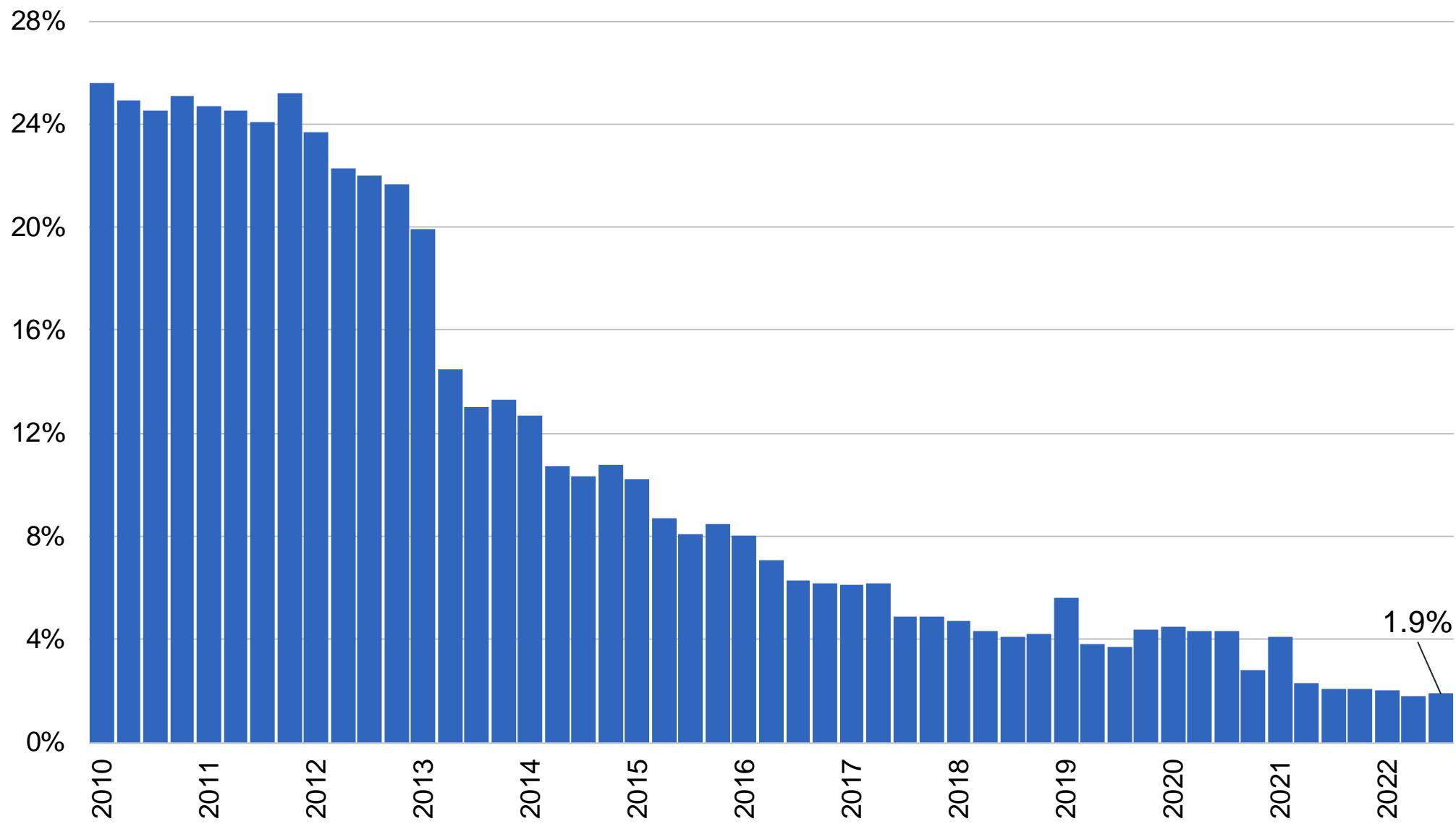
Sources: Federal Reserve Senior Loan Officer Survey (big banks only); John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

Pub: Jan-23

Percentage of Negative Equity Homes

Nationally, the number of negative equity mortgages decreased YOY to 2% of total mortgages.

Percentage of Negative Equity Homes



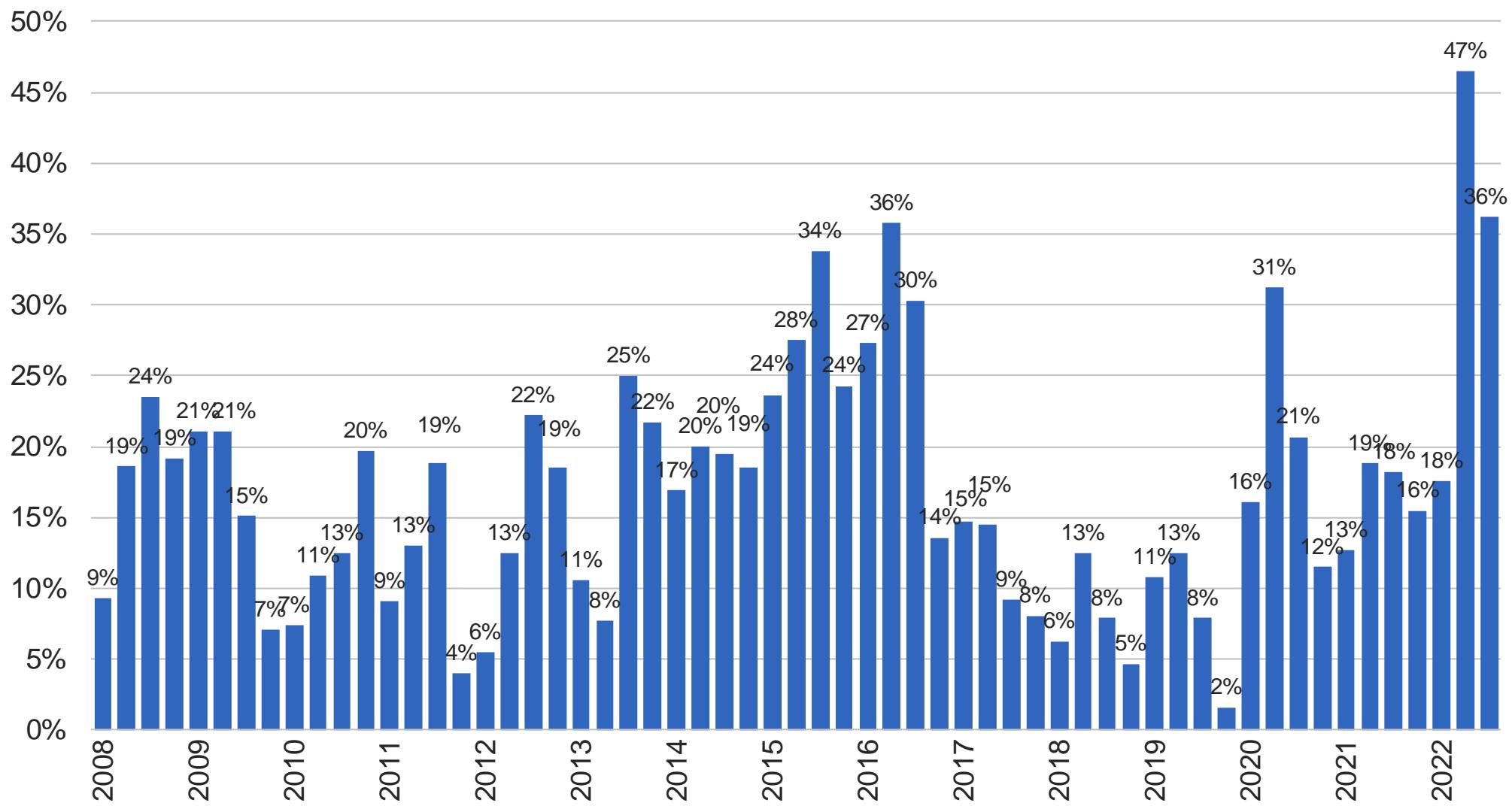
Source: CoreLogic (Data: 3Q22, updated quarterly)

Pub: Jan-23

Issuance for HELOC Disbursements

In 3Q22, 36% of banks reported increased HELOC disbursements, down from 47% in 2Q22.

Percentage of Banks with Increased HELOC Disbursements



The question asked was: *Apart from normal seasonal variation, how has demand for revolving home equity lines of credit changed over the past three months? (Please consider only funds actually disbursed as opposed to requests for new or increased lines of credit.)*

Sources: Federal Reserve Senior Loan Officer Survey (big banks only); John Burns Real Estate Consulting, LLC (Data 3Q22, updated quarterly†)

Pub: Jan-23

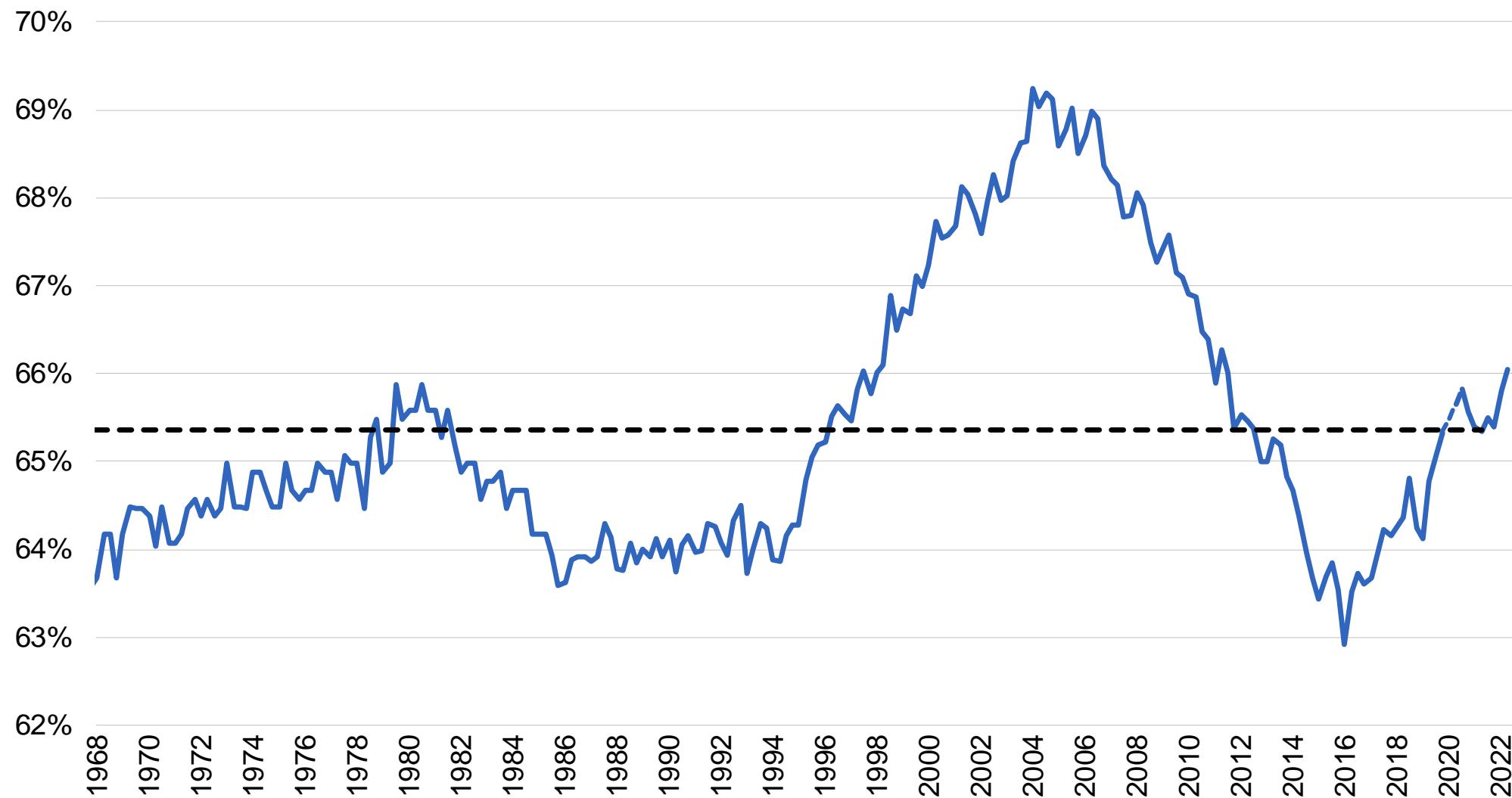
First-time buyers and homeownership

Homeownership

At 66% in 3Q22, the homeownership rate is above its historical average.

Census Headline Homeownership Rate

— Homeownership rate = 66.0% - - - Historical average* = 65.4%



Note: The pandemic complicated the Census Bureau's collection process in 2020. We have removed the data for this period.

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†) *Historical average: 2Q68 through current

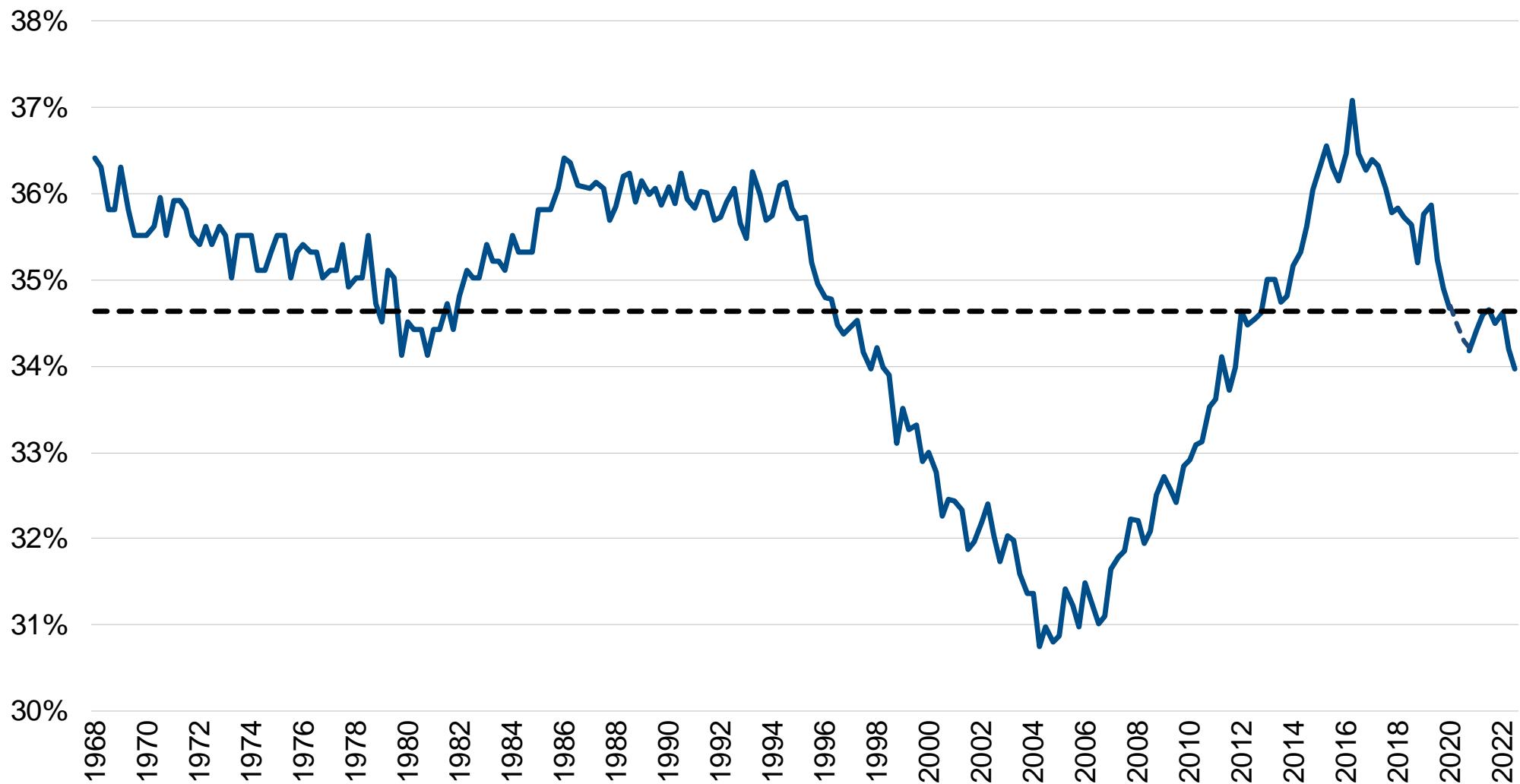
Pub: Jan-23

Rentership

The rentership rate fell to 34% in 3Q22.

Census Headline Rentership Rate

— Rentership rate = 34.0% - - - Historical average* = 34.6% - - - 2020



Note: The pandemic complicated the Census Bureau's collection process in 2020. We have removed the data for this period.

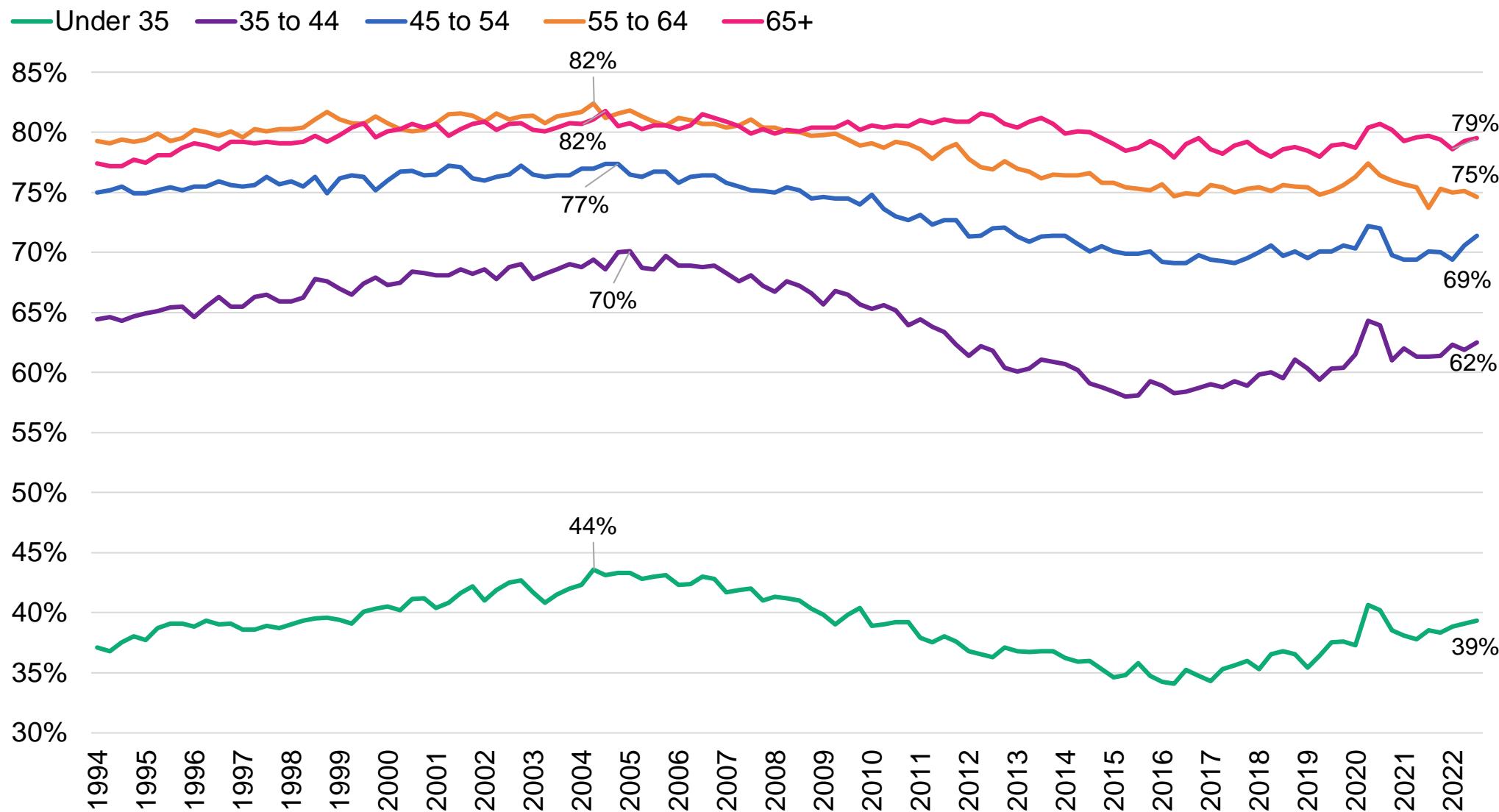
Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

*Historical average: 2Q68 through current

Homeownership Rate by Age

Homeownership is rising for those under 45.

Homeownership Rate by Age



Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

Source: U.S. Census Bureau, Housing Vacancies and Homeownership Survey (Data: 3Q22, updated quarterly†)

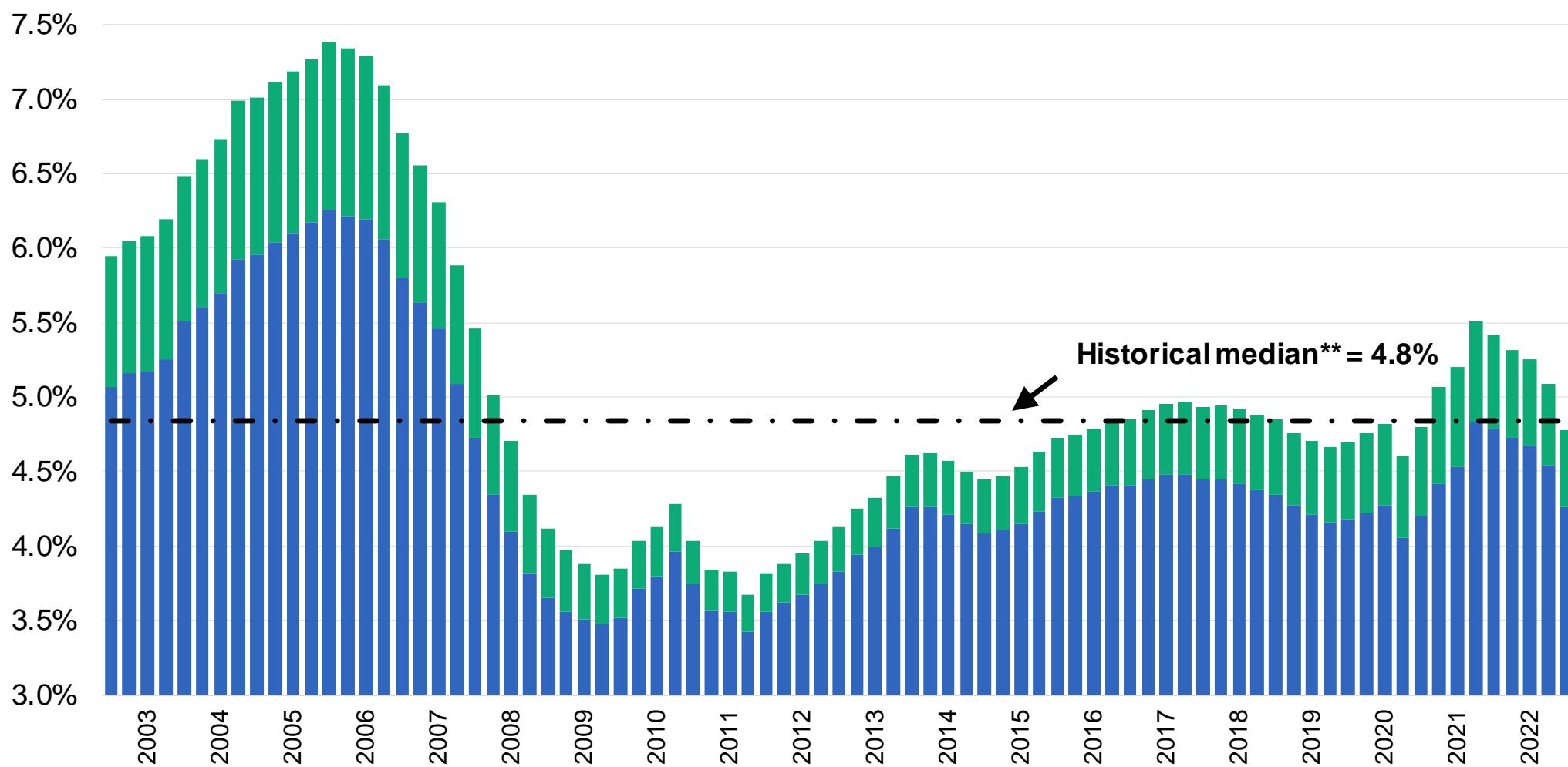
Pub: Jan-23

Homes Sold as a Percentage of Households

Sales as a percentage of total households fell to 4% in 3Q22.

Homes Sold as % of Households

■ Existing homes sold* as a % of households = 4.3% ■ New homes sold as a % of households = 0.5%



*Existing home sale closings **Historical median: 2Q00 through current

Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

Sources: NAR; U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

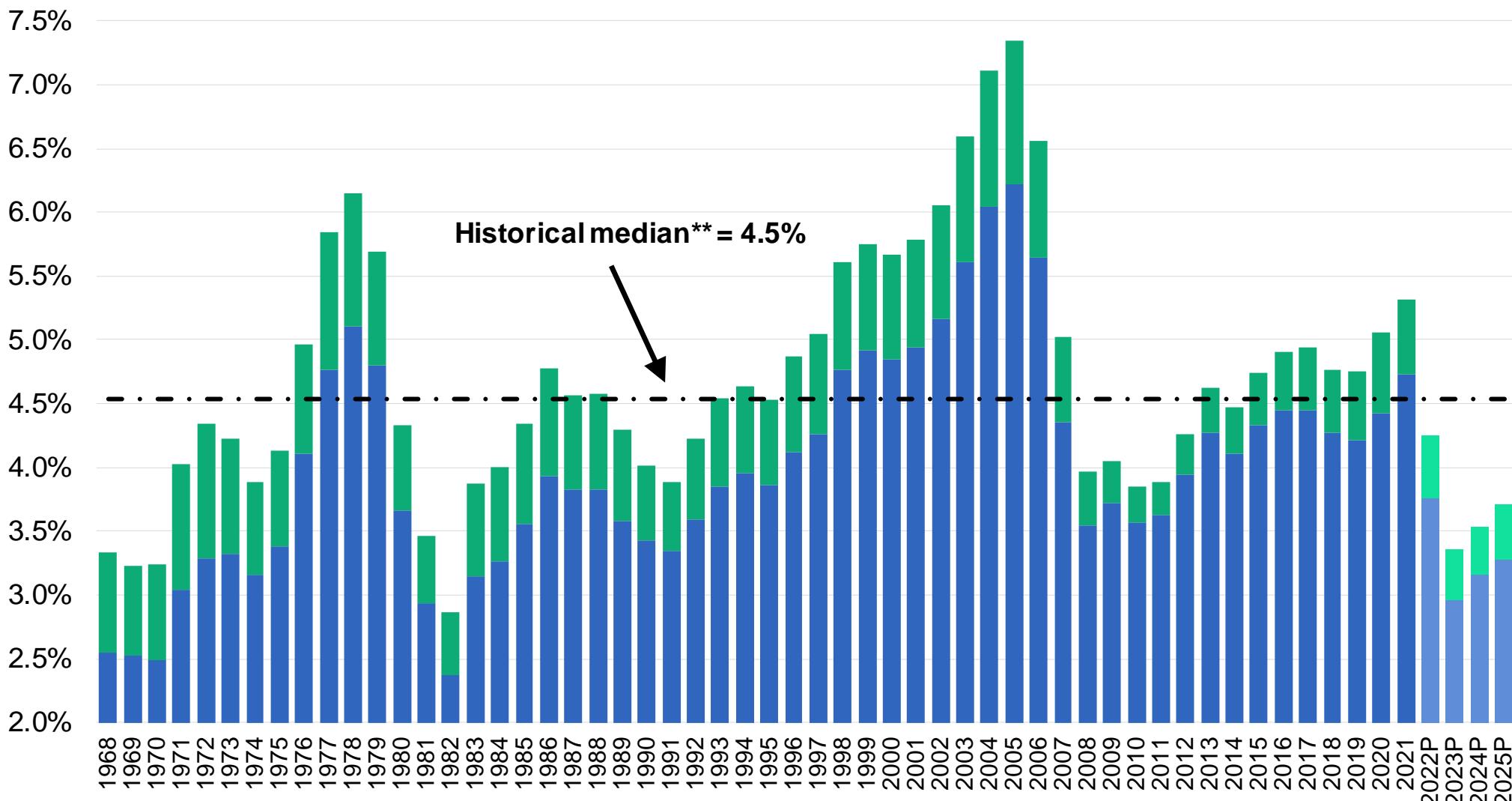
Pub: Jan-23

Homes Sold as a Percentage of Households

The ratio of homes sold to total households is 5.4%.

Homes Sold as % of Households

- Existing homes sold* as a % of households
- New homes as a % of households



*Existing home sale closings **Historical median: 1968 through 2018

Sources: NAR; U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 2021, updated quarterly†)

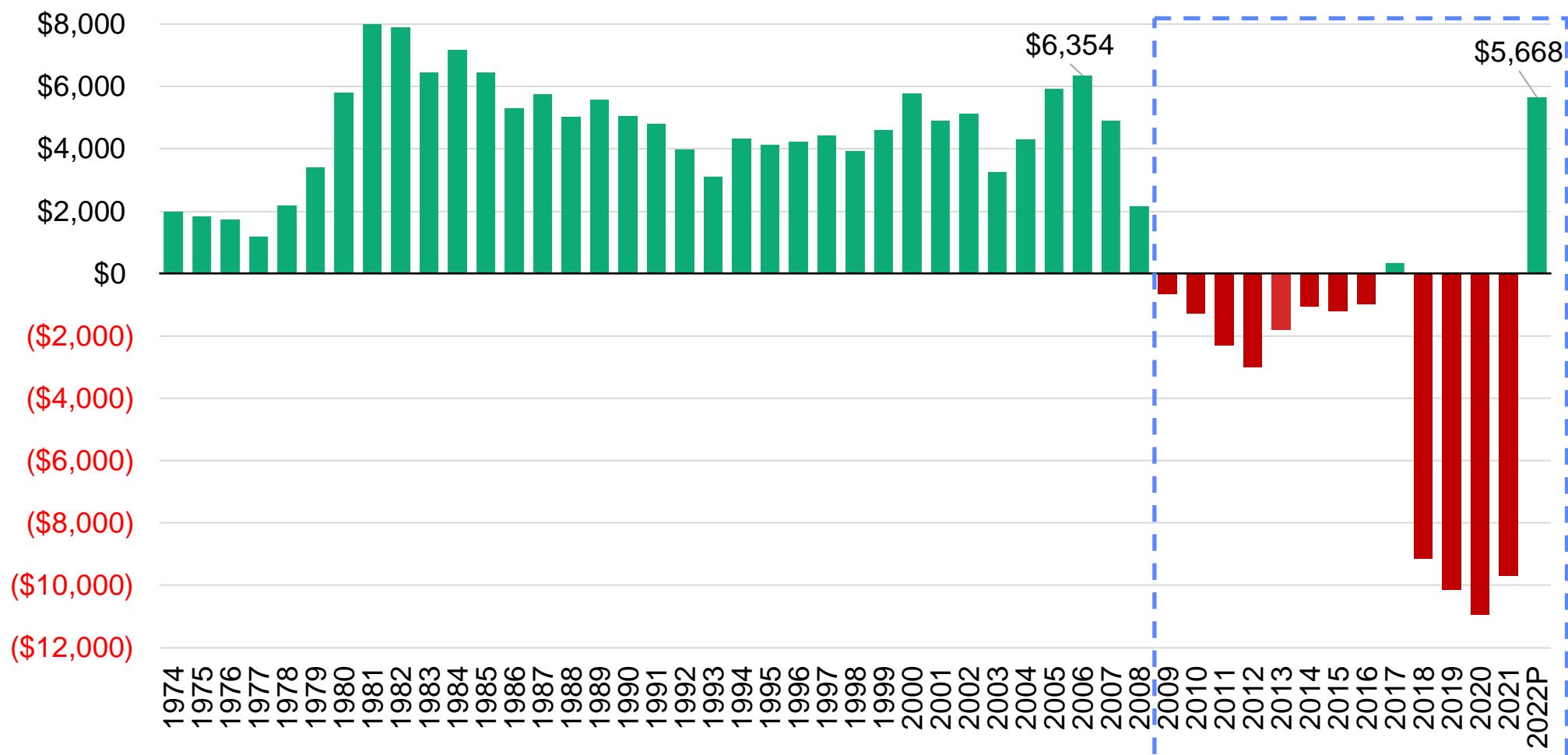
Pub: Jan-23

Mortgage Tax Savings

Rising interest rates have caused the cost of mortgage interest and property taxes to soar past the standard deduction for a married couple over the last year. 2022 will be the first year since 2008 new home buyers will see a significant benefit from the deductions associated with homeownership.

Mortgage Interest and Property Taxes in Excess of Standard Tax Deduction*

US national



*Assumes a married couple with a mortgage equal to 95% of median home price and a 1.5% property tax rate.

Source: John Burns Real Estate Consulting, LLC (Data: 2022, updated quarterly†)

Pub: Jan-23

Share of Homes Sold to First-Time Buyers

The share of existing homes sold to first-time buyers fell in 2022 to a record low of 26%. Peak share was reached in 2010 when 50% of buyers were first-time buyers due to temporary tax credits.

Share of Existing Homes Sold to First-Time Buyers

1985–2003

55%

50%

45%

40%

35%

30%

25%

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003

2004–2022

55%

50%

45%

40%

35%

30%

25%

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

2008/09: Temporary federal first-time buyer tax credit

Sources: NAR; John Burns Real Estate Consulting, LLC (Data: 2022, updated quarterly†)

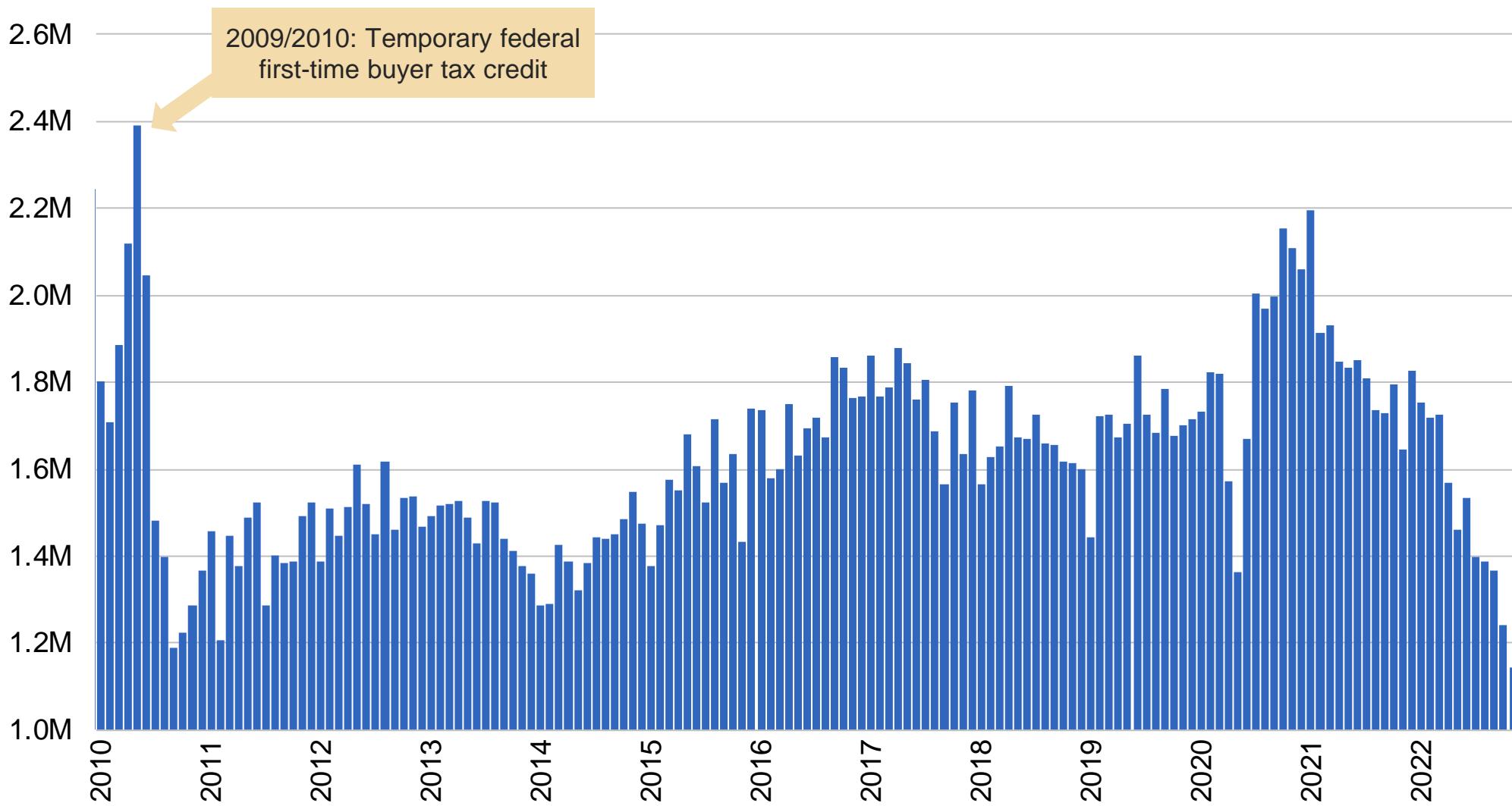
Pub: Jan-23

Existing Sales to First-Time Home Buyers (SAAR)

The number of existing homes sold to first-time buyers fell to a record low in November. First-time buyers are more rate sensitive than other buyer types.

Existing Sales to First-Time Home Buyers (SAAR)

■ Current = 1.15 million

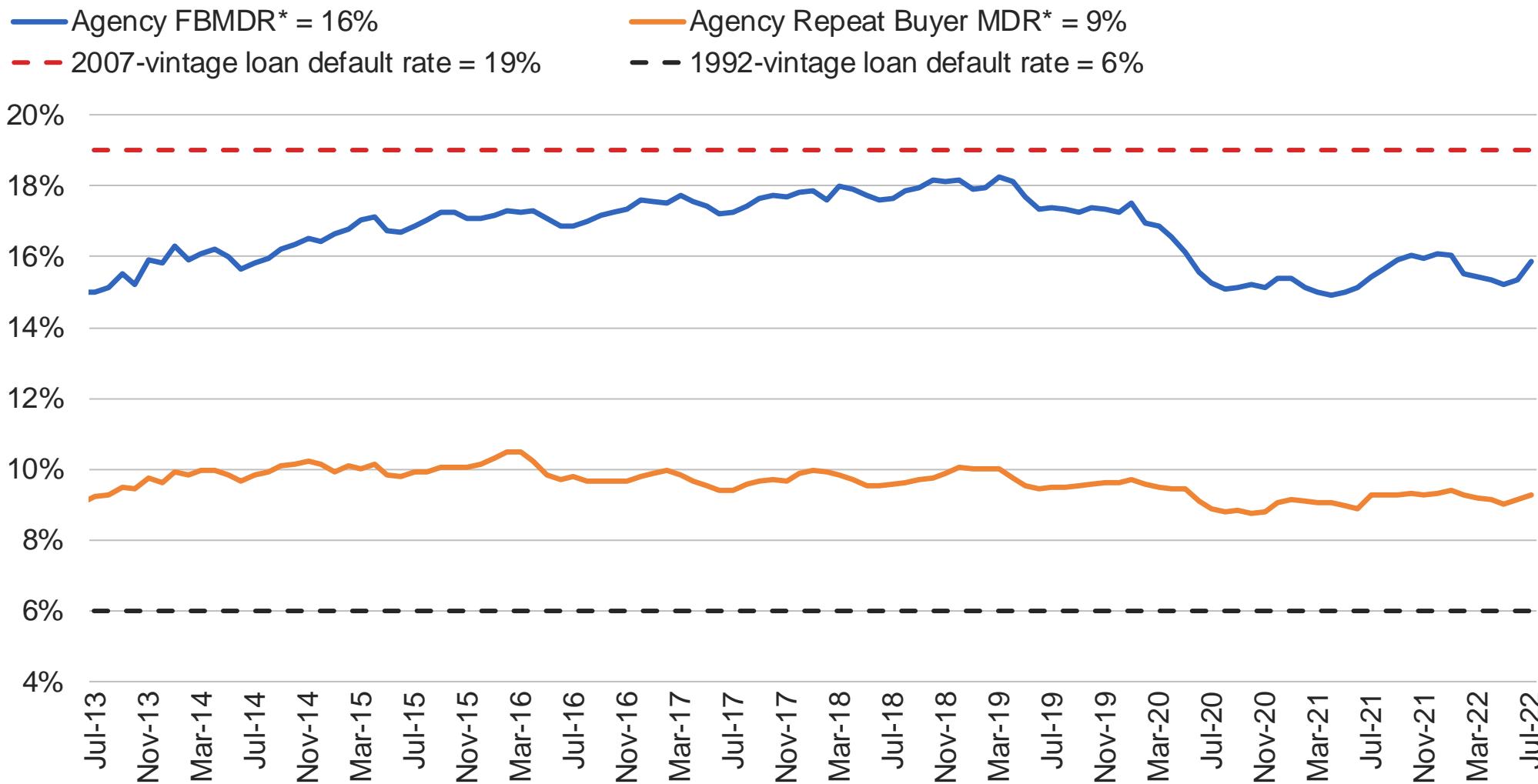


Sources: NAR; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Buyer Mortgage Risk Index

The First-Time Buyer Mortgage Risk Index (16% in July) estimates the share of first-time-buyer mortgages that would default in a stress event similar to the 2008 financial crisis. First-time buyers are riskier than repeat buyers (current default risk is 9%). For context, loans made in 1992 had a 6% default rate, while 2007 vintage loans had a 19% default rate.

Buyer Mortgage Risk Index



*Agency includes Fannie Mae, Freddie Mac, FHA, RHS, and VA.

Source: AEI International Center on Housing Risk (Data: Jul-22, updated quarterly†)

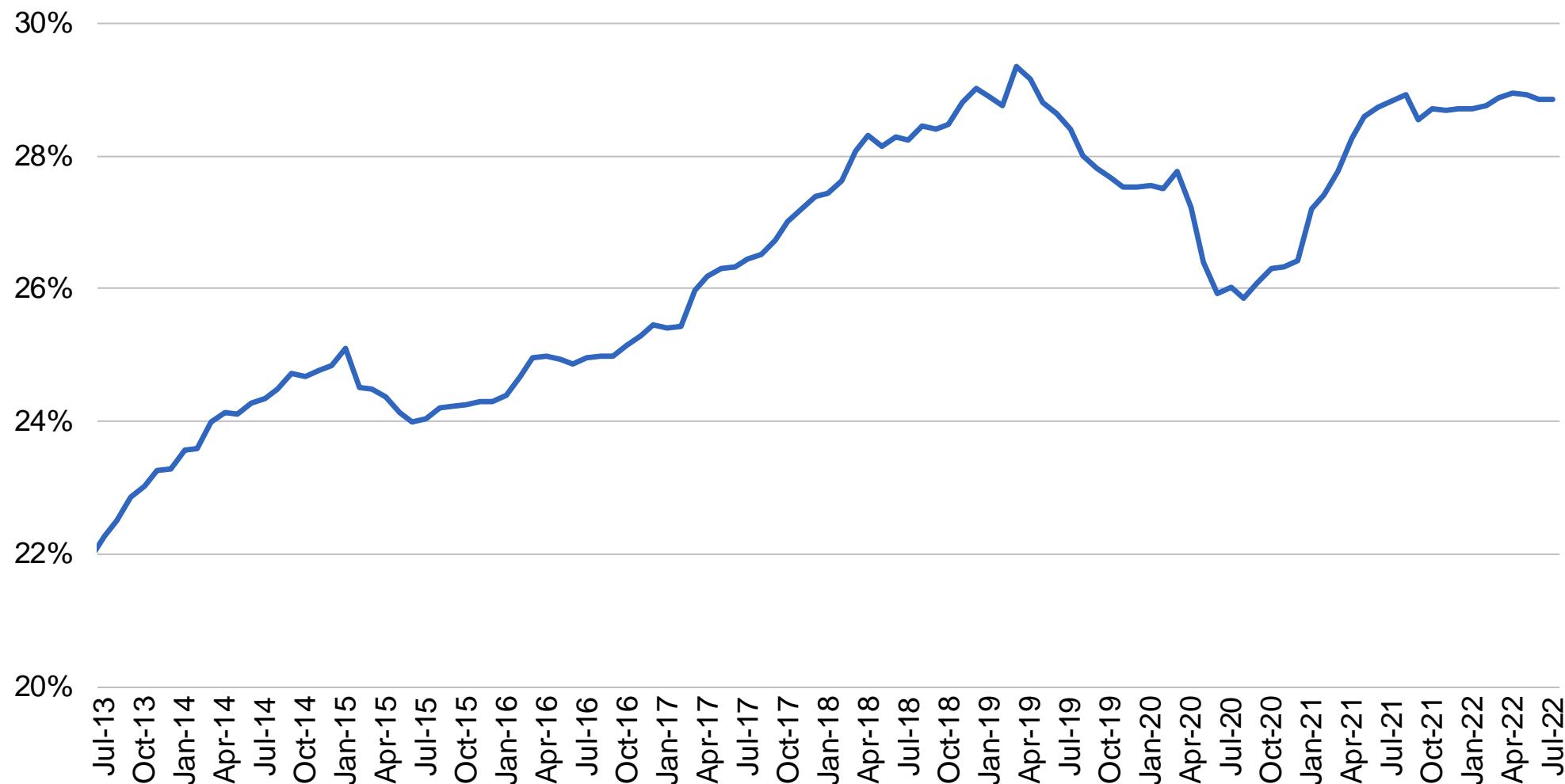
Pub: Jan-23

FHA First-Time Buyer Risk Index

The FHA First-Time Buyer Risk Index sat at 29% in July, up from 22% in 2013 due to loosened credit standards. The FHA has tightened its lending criteria, which should decrease risk. The index measures the percentage of FHA first-time home buyers who would default in the event of a recession like the 2008 financial crisis.

FHA First-Time Buyer Risk Index

— Index = 29%



Sources: AEI International Center on Housing Risk; John Burns Real Estate Consulting, LLC (Data: Jul-22; updated quarterly†)

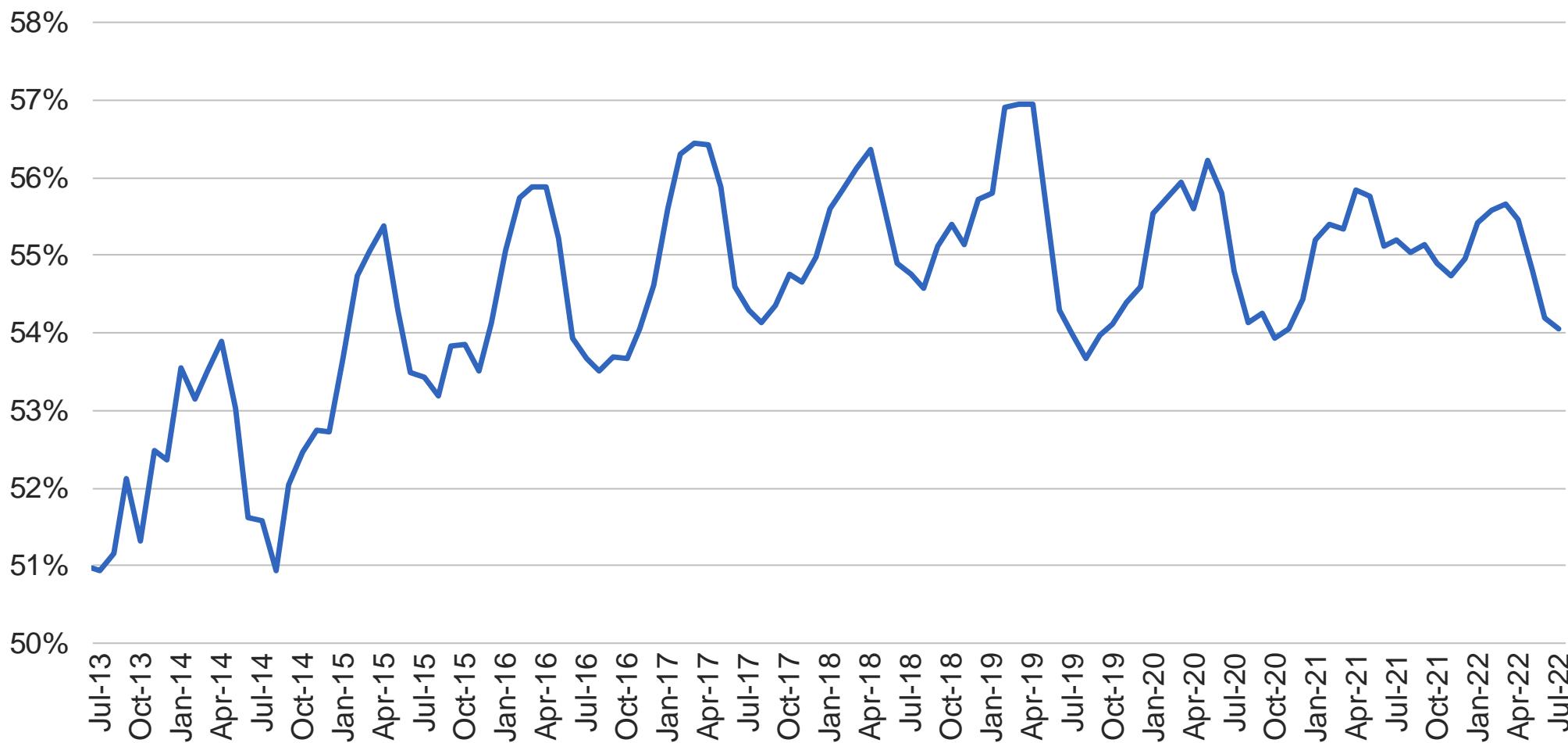
Pub: Jan-23

First-Time Buyer Mortgage Share Index

AEI collects data for nearly all government-guaranteed home purchase loans. Per AEI data, first-time buyers were 54% of primary owner-occupied home purchase mortgages with a government guarantee.

First-Time Buyer Mortgage Share Index

— Combined FBMSI** = 54%



*Includes agency (Fannie Mae, Freddie Mac, FHA, RHS, and VA) and private loans. AEI's result is different from the one in NAR's report because the NAR analysis includes total transactions (first-time, repeat, investors, and cash), while AEI considers only homes bought with a mortgage (excluding cash buyers).

Source: AEI International Center on Housing Risk (Data: Jul-22, updated quarterly)

Pub: Jan-23

Townhome Starts Rose 7% YOY

Townhome Starts

Thousands, trailing 12-month total (NSA)

250

200

150

100

50

0



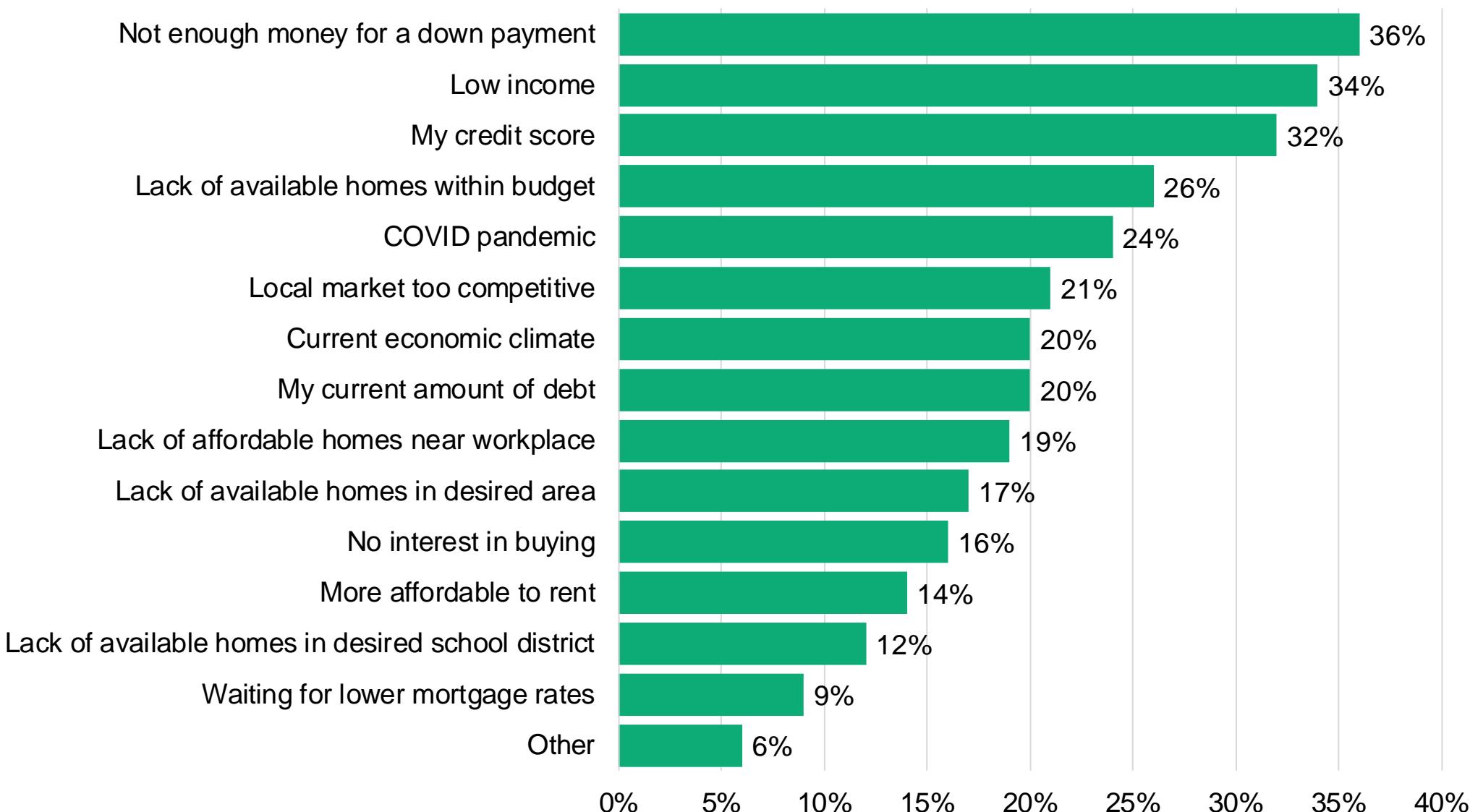
Sources: U.S. Census Bureau, John Burns Real Estate Consulting, LLC (Data: 2Q22, updated quarterly†)

Pub: Jan-23

Main Reasons Non-Homeowners Do Not Currently Own

The #1 reason given for not owning a home is a lack of money for a down payment, followed closely by credit score.

Main Reasons Non-Homeowners Do Not Currently Own



Sources: nerdwallet.com (Data: Jan-22)

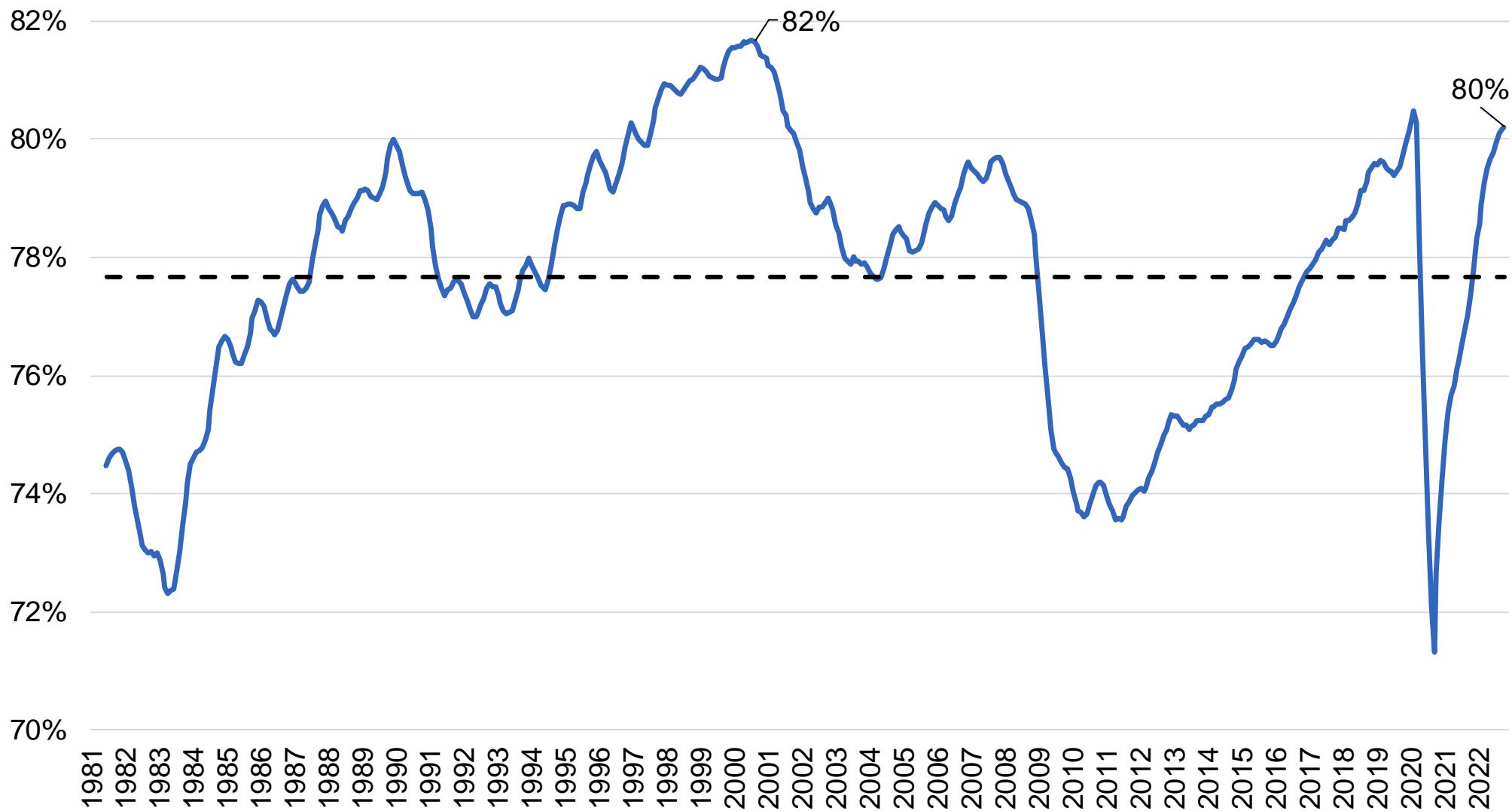
Pub: Jan-23

Employment to Population for People Aged 25–34

The employment-to-population ratio for ages 25–34 is at 80% but is still below the pre-COVID peak.

Employment to Population for 25–34-Year-Olds

6-month average, NSA — Historical avg. = 77.7%



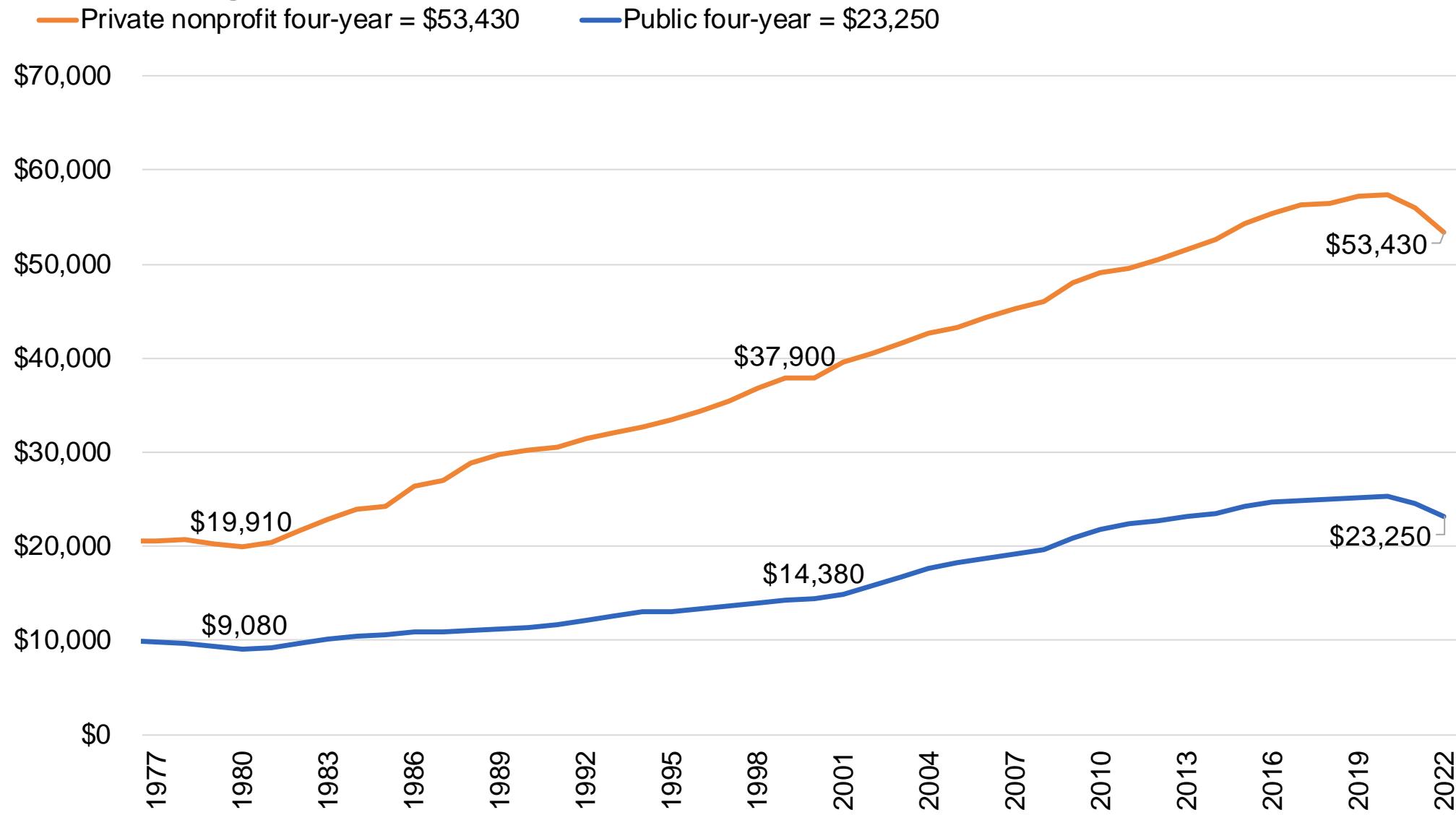
Source: Bureau of Labor Statistics (Data: Oct-22, updated quarterly†)

Pub: Jan-23

College Tuition Costs

College tuition, fees, and room and board costs are steadily rising. Since 1999, college costs increased 41% at private nonprofit colleges and 62% at public colleges, on an inflation-adjusted basis.

Annual College Tuition and Fees plus Room and Board in 2022 Dollars



Sources: College Board; John Burns Real Estate Consulting, LLC (Data: 2022, updated quarterly†)

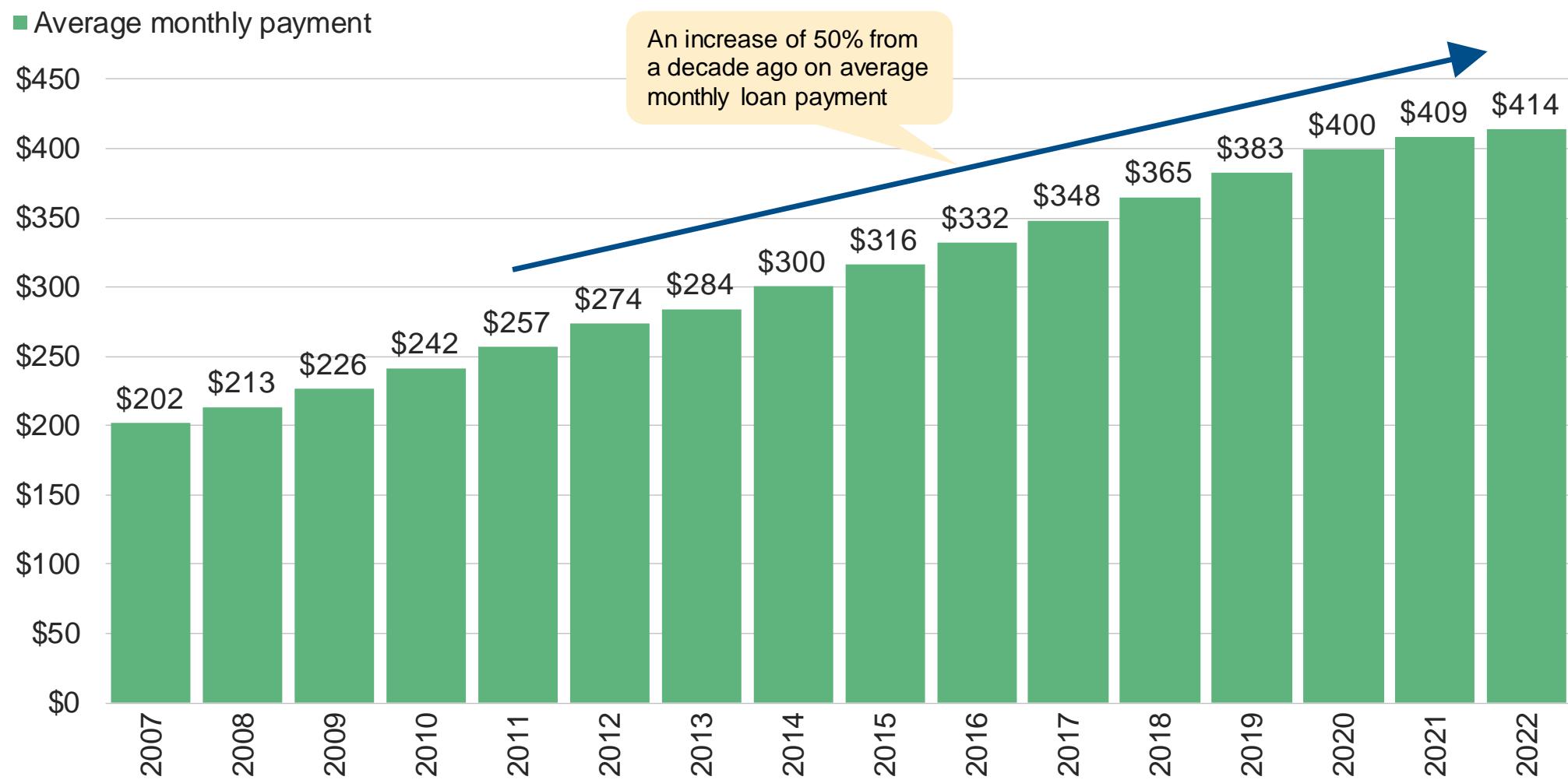
Pub: Jan-23

Average Student Debt Payment Up to \$414/Month; Saving for Down Payment Difficult, Pushing Homeownership Out of Reach

The average monthly payment on student loan debt more than doubled from 2007 to 2022. We estimate that student loans are responsible for \$83B of lost revenue for the housing industry in 2014. For more information, log into your **client portal** and download our student debt white paper.

Student Loans

■ Average monthly payment



Sources: U.S. Department of Education, Federal Student Aid Office; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

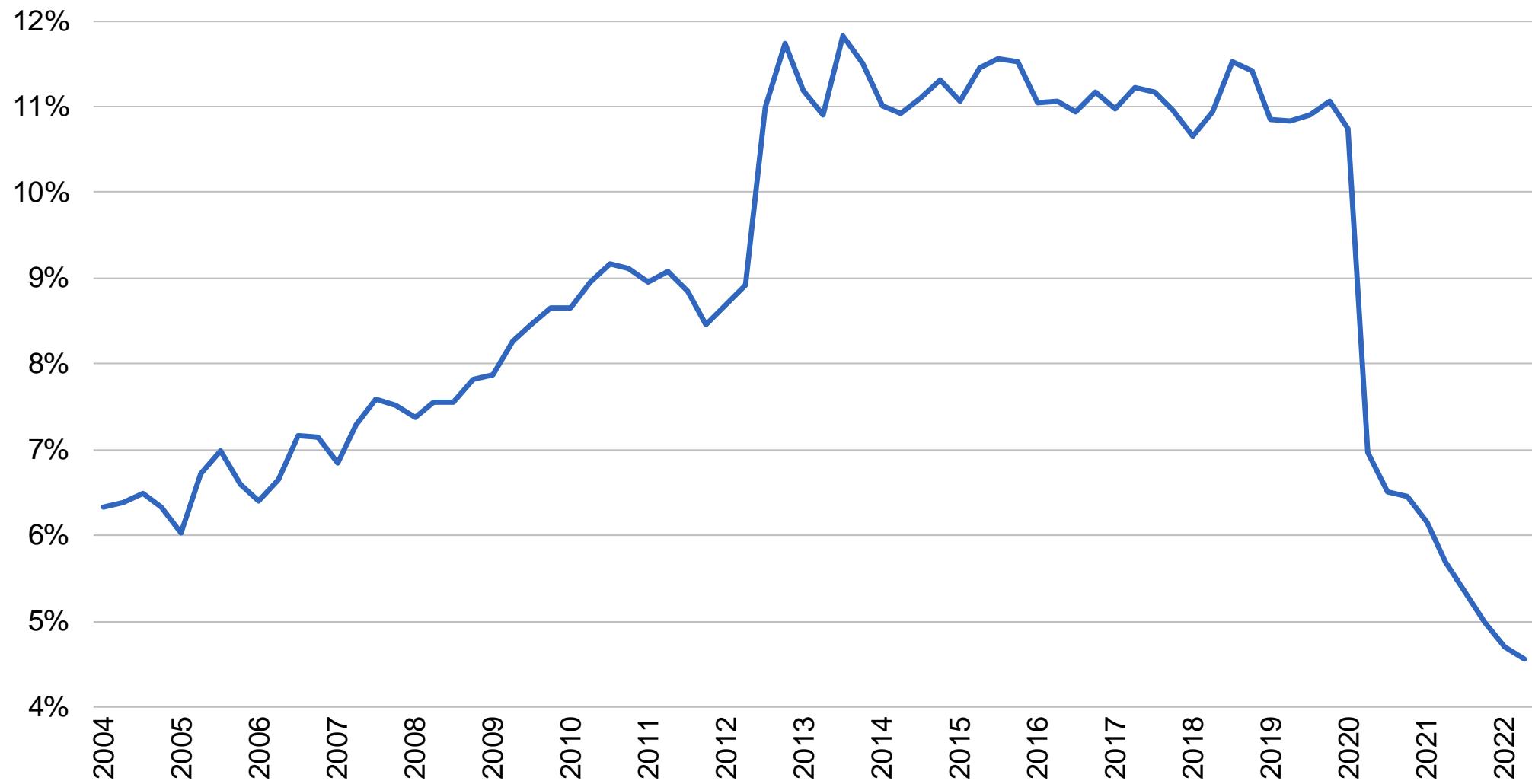
Pub: Jan-23

Student Loan Delinquency Rate

As of 2Q22, just 4.6% of student loan debt is 90+ days delinquent due to federal forbearance.

Total Student Loan

— % of balance 90 days delinquent = 4.6%



Note: This data underreports total student loan debt. The Consumer Credit Panel does not capture loans that have originated but have not yet been reported by the servicer to credit bureaus, nor does it capture loans that are transferred between servicers.

Sources: NY Federal Reserve Consumer Credit Panel/Equifax; John Burns Real Estate Consulting, LLC (Data: 2Q22, updated quarterly†)

Pub: Jan-23

Investor activity

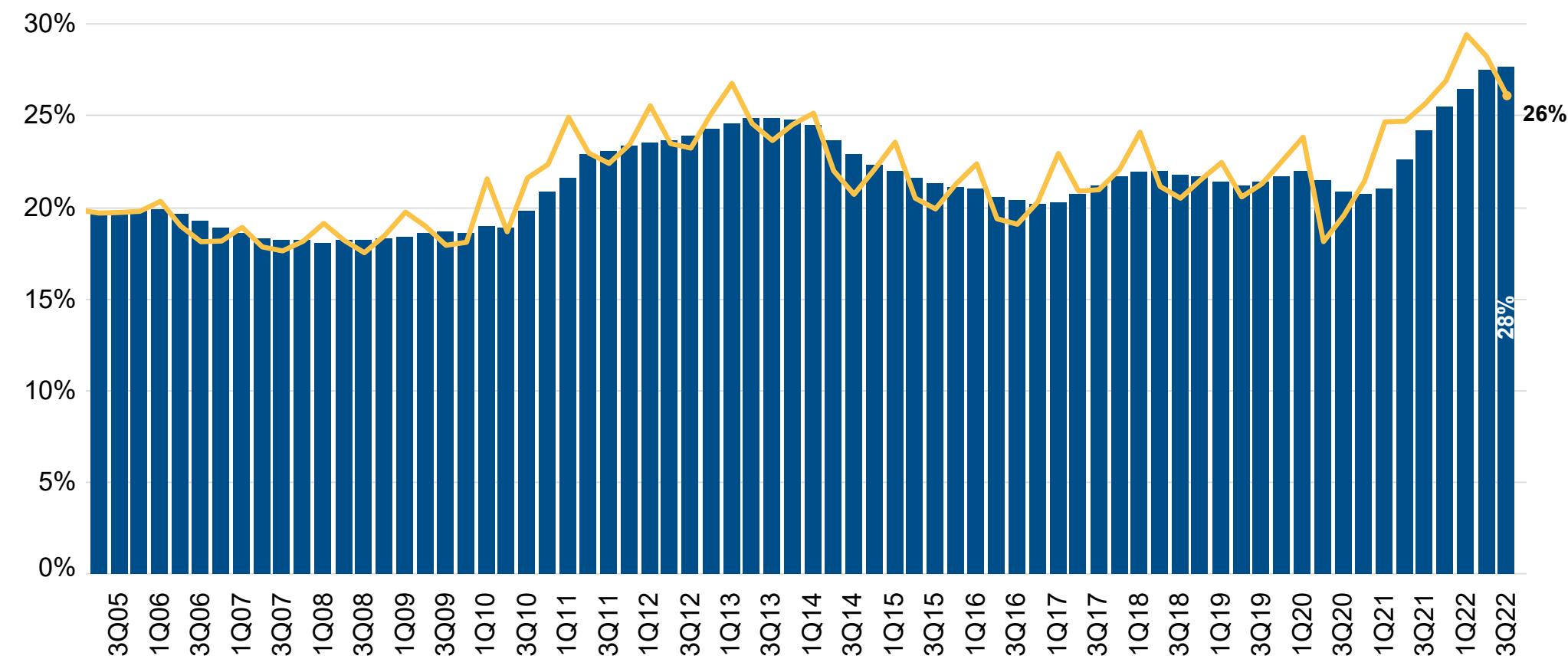
Investor Purchases

The investor share of home purchases ticked down to 26% in 3Q22 from a high of 29% in 1Q22.

Investor Percentage of Home Buying Activity

230 metro areas

— Investor % of purchases ■ Investor % of purchases, trailing 12 months



Jan. 2023: We updated our investor purchases data series source, which led to a recast of our entire investor data series metrics.

After purchasing a new public records dataset, we undertook a deeper review of the data underlying our summary statistics. One of the key indicators of whether a home is purchased by an investor is that the mailing address of the tax statement is different than the property address. During our review, we found purchases in which the mailing address of the new owner was originally recorded to a secondary address (not the property address) but was changed to the property address shortly after recording the purchase. This indicates that purchases initially categorized as an investor purchase were being overstated in some cases. Due to this discovery, we have added an adjustment to the summary statistics that lowers the number of historical investor purchases in our updated methodology. The percentage change varies by metro. Due to the new data source and our adjustments, you may note minor to significant historical revisions to this metric.

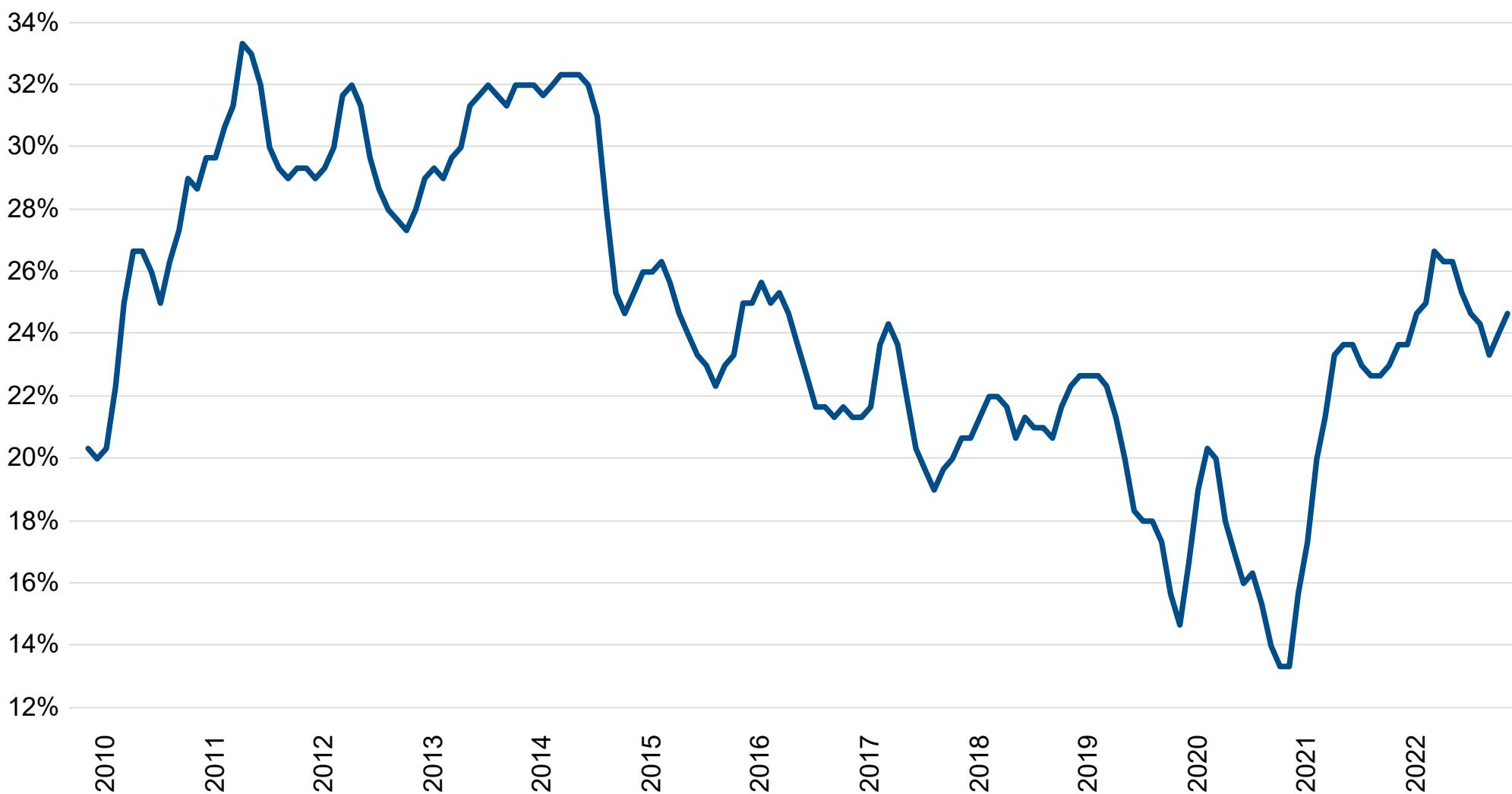
Source: JBREC analysis of public records data for transactions and ownership (Data: 3Q22, Pub: Jan-23)

Share of Existing Home Sale Closings to Cash Buyers

All-cash sales are 25% of existing home transactions.

Share of Existing Home Sale Closings to All-Cash Buyers

3-month average — Percentage of all-cash buyers = 25%



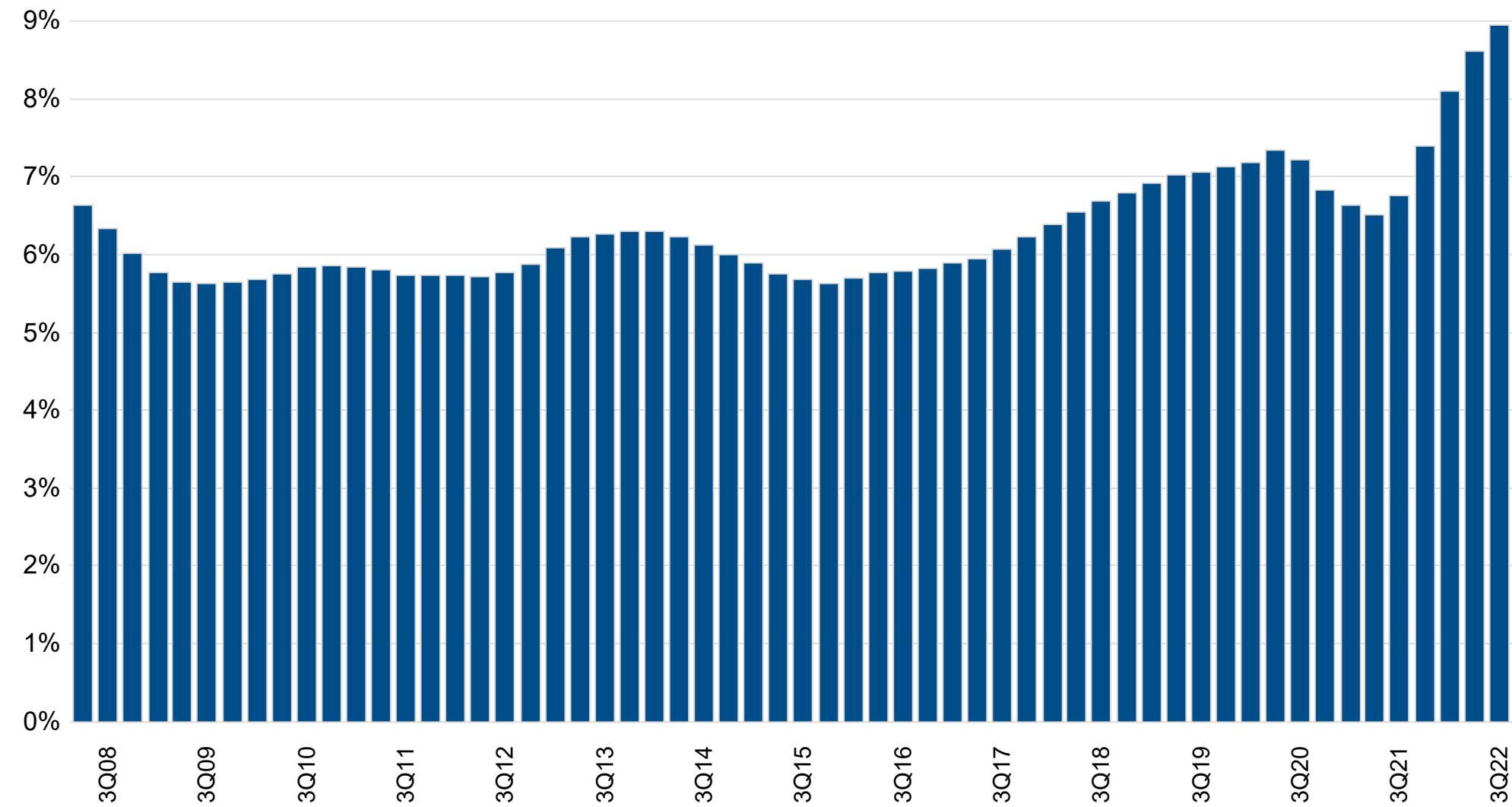
Note: NAR began tracking this data point in November 2009.

Source: ©2022 National Association of REALTORS® (Data: Nov-22, Pub: Jan-23)

Home Flipping Share of Total Existing Home Sale Closings

In 3Q22, home flips made up 9% of total sales.

Percentage of Home Flips to Total Existing Home Sale Closings (TTM Average)



Note: US data rollup of 99 metros. Includes existing detached single family home sales where the second sale was recorded within 12 months of the first sale ("flipped"). The non-disclosure (such as Texas) state counts seem high and may include non-arm's length transactions parading as flipped homes.

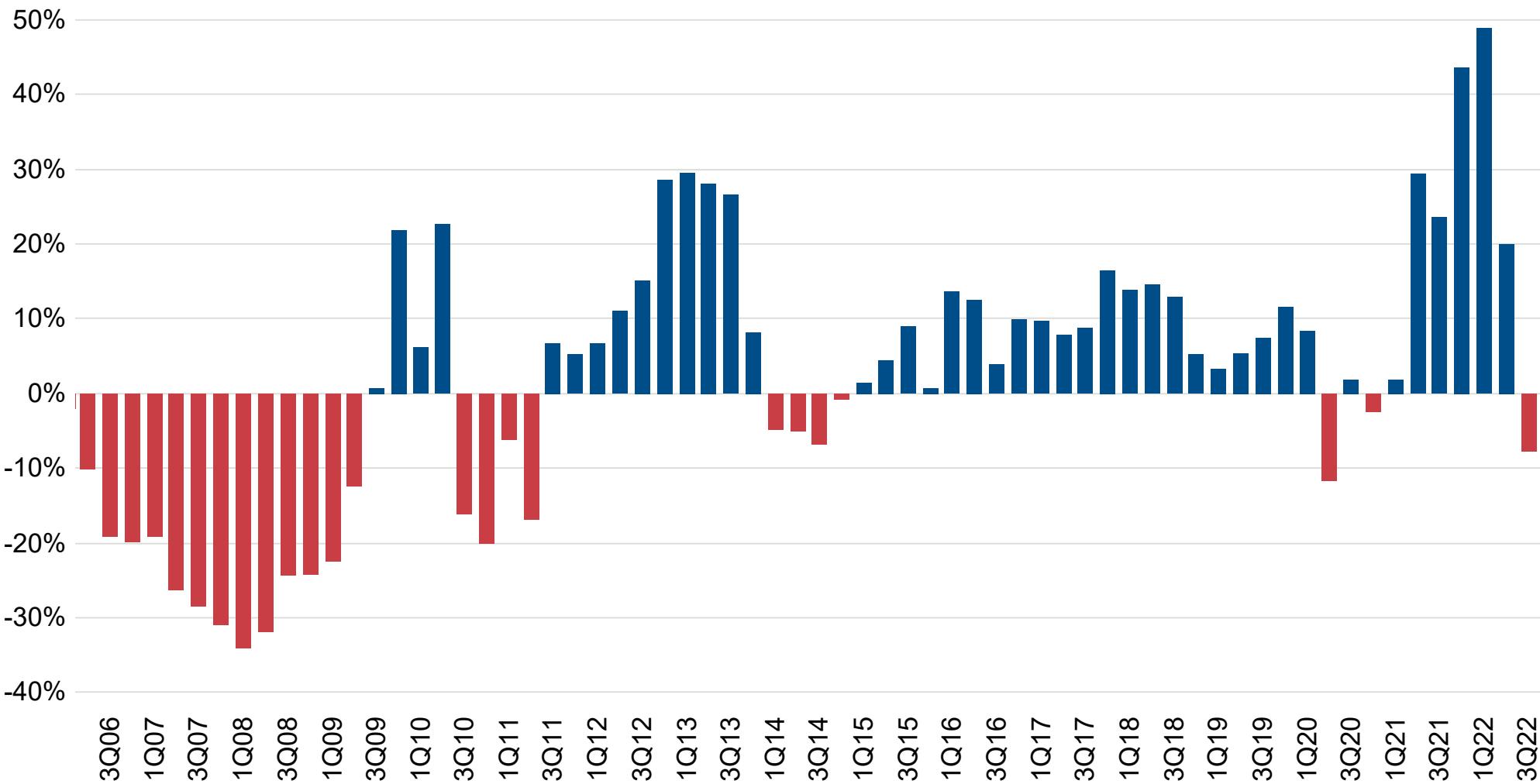
Source: JBREC analysis of public records data for transactions and ownership (Data: 3Q22, Pub: Jan-23)

Home Flipping Transactions

Flipped home transactions decreased -8% YOY in 3Q22.

Flipped Home Transactions YOY Growth Rate

— YOY% = -8%



Note: US data rollup of 99 metros. Includes existing detached single family home sale closings where the second sale was recorded within 12 months of the first sale ("flipped"). The non-disclosure (such as Texas) state counts seem high and may include non-arm's length transactions parading as flipped homes.

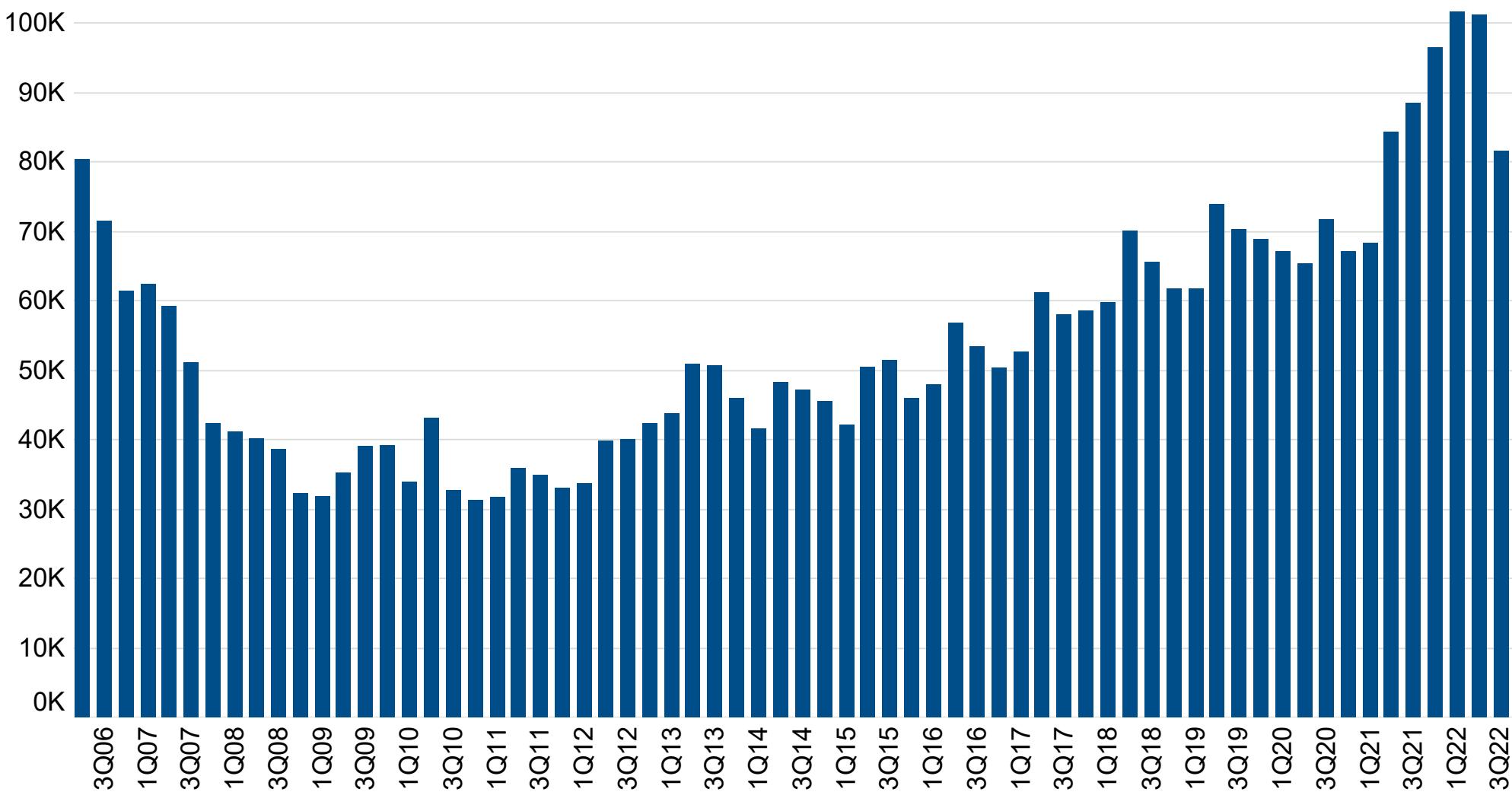
Source: JBREC analysis of public records data for transactions and ownership (Data: 3Q22, Pub: Jan-23)

Home Flipping Transactions

Flipped home transactions decreased to 82K in 3Q22 across 99 metros.

Flipped Home Transactions

Current = 82K (-7.8% YOY)



Note: US data rollup of 99 metros. Includes existing detached single family home sale closings where the second sale was recorded within 12 months of the first sale ("flipped"). The non-disclosure (such as Texas) state counts seem high and may include non-arm's length transactions parading as flipped homes.

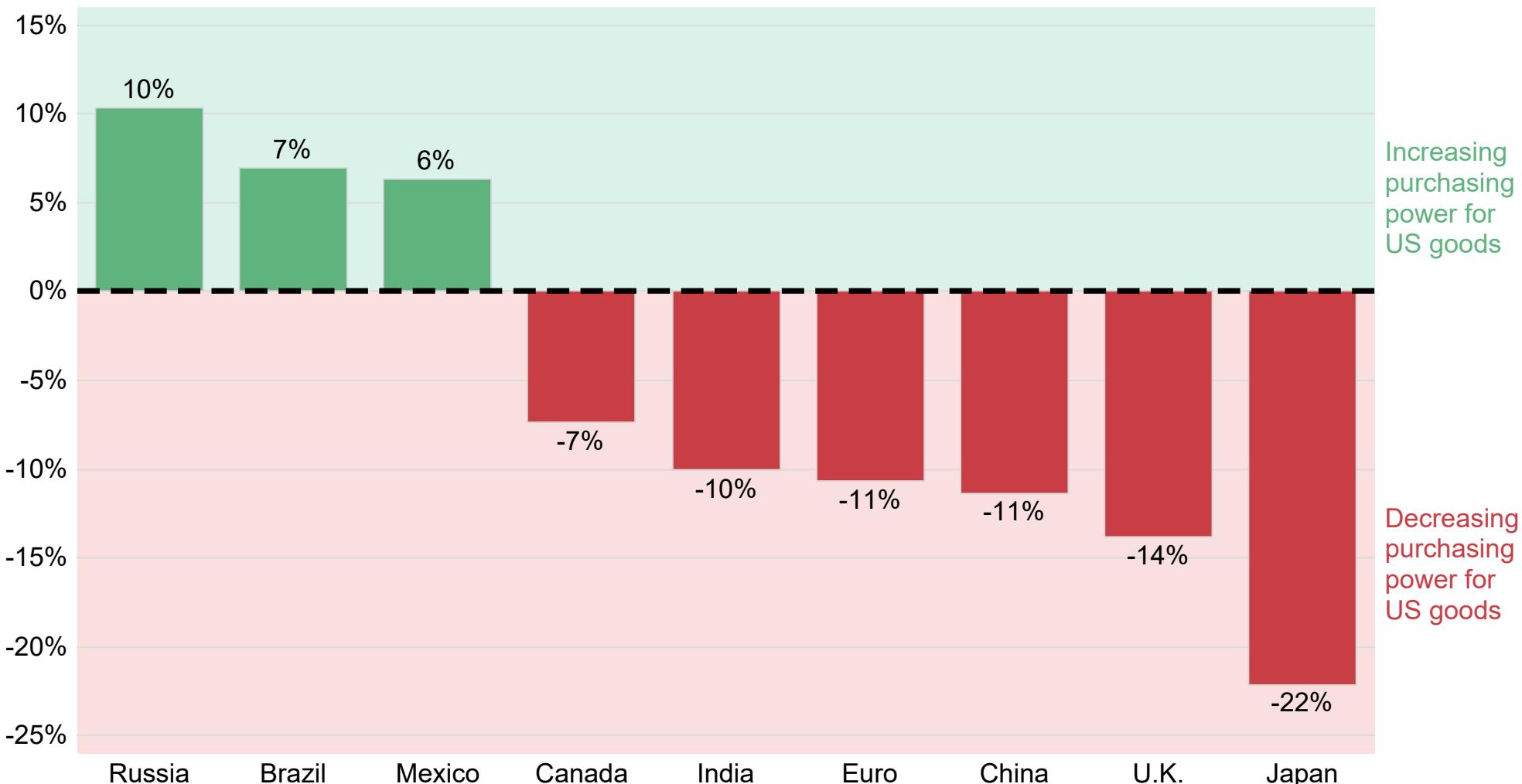
Source: JBREC analysis of public records data for transactions and ownership (Data: 3Q22, Pub: Jan-23)

Strength of Other National Currencies Compared to US Dollar

Most major currencies have weakened in comparison to the US dollar (USD). A foreign currency stronger than USD makes US goods cheaper for foreign buyers, all else being equal. US goods (homes, for instance) are now 11% more expensive for European buyers YOY.

Strength of National Currency Relative to US Dollar

3-month average, YOY change in exchange rate



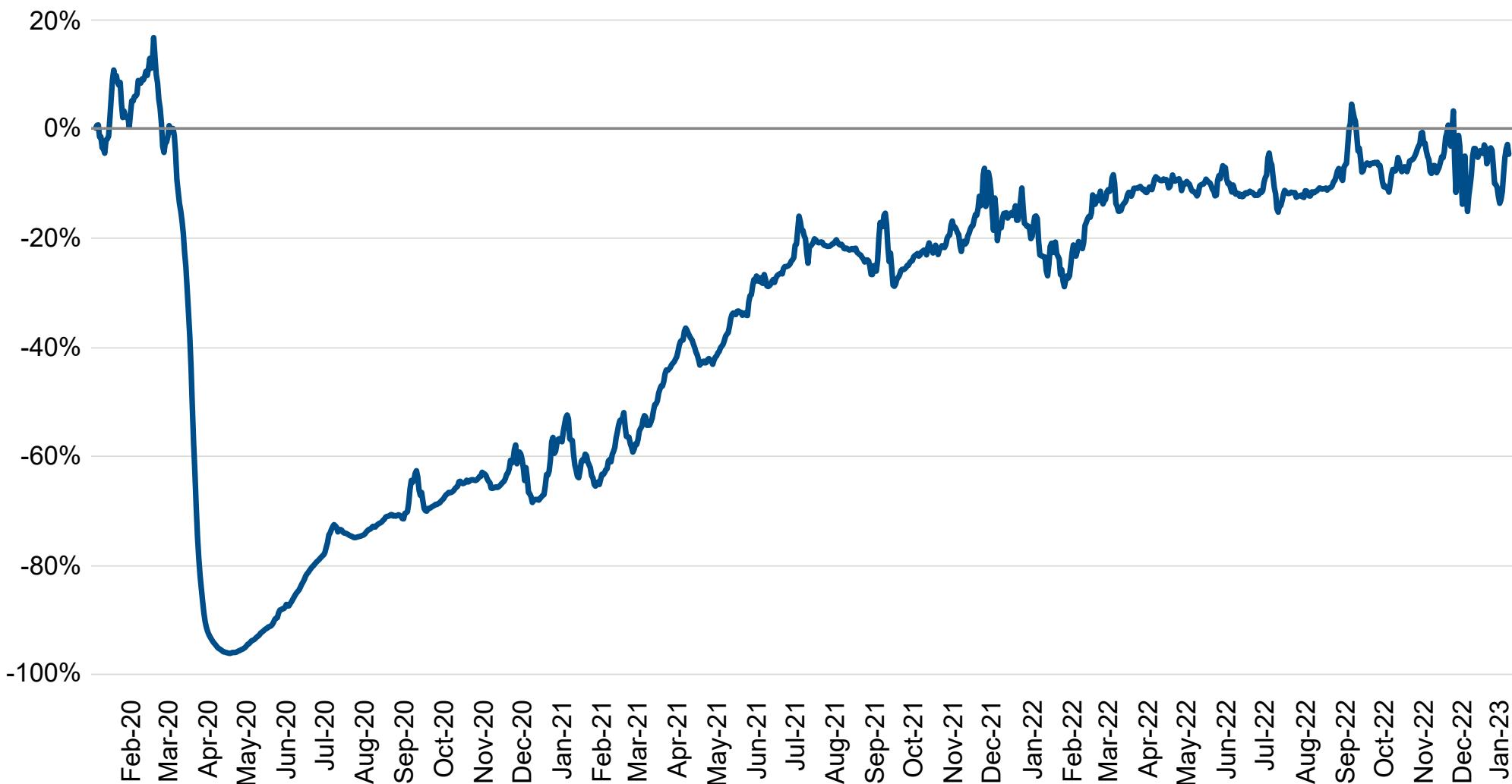
Source: Bloomberg (Data: Dec-22, Pub: Jan-23)

Air Travel to the United States

Passenger throughput at US airports is down -4% relative to the 2019 baseline.

Airport Passengers

— 7-day average as a % of 2019 same date baseline*



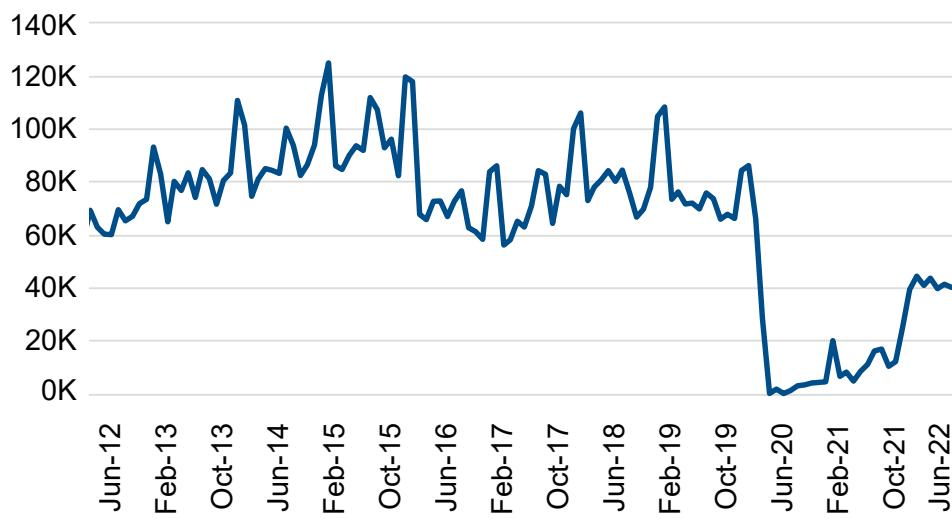
*Baseline = 7-day average number of airport passengers on the same date in 2019

Source: Transportation Security Administration (Data: Jan-23; Pub: Jan-23)

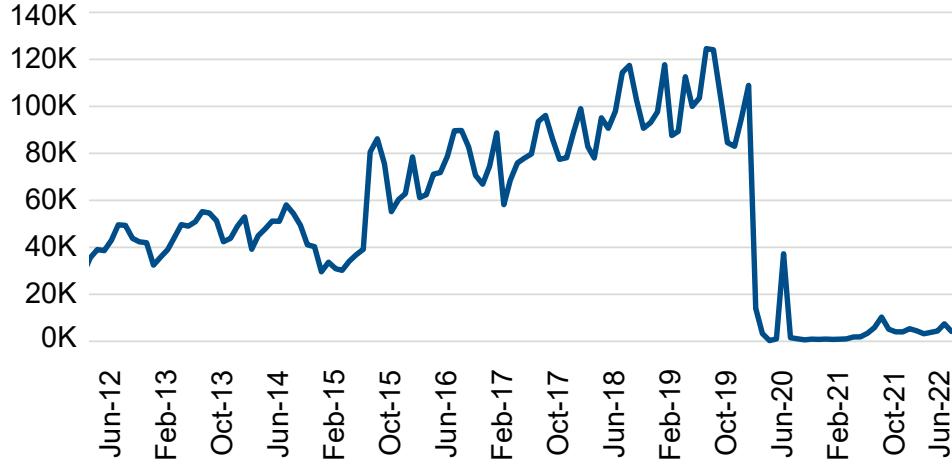
Air Travel (Total Number of Passengers)

International flights from Canada and Brazil remain below pre-COVID, and flights from China to the US remain limited.

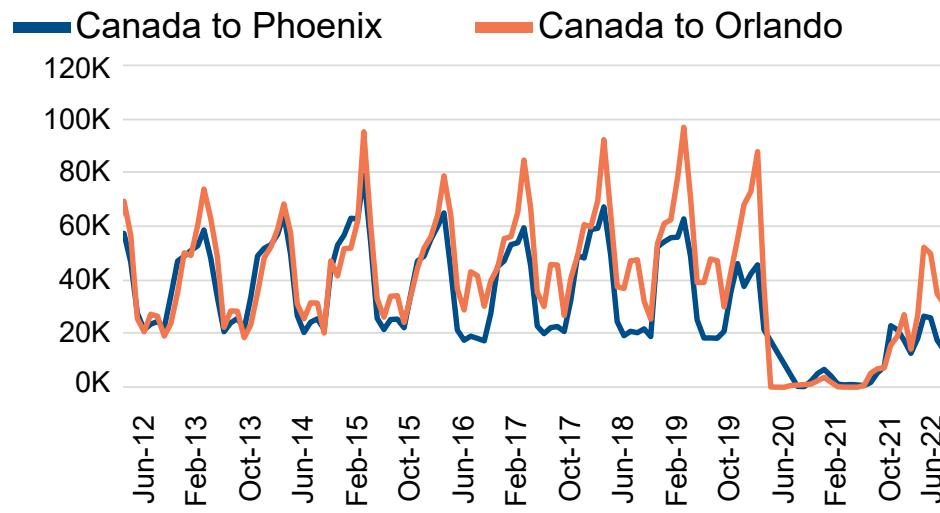
Brazil to Miami



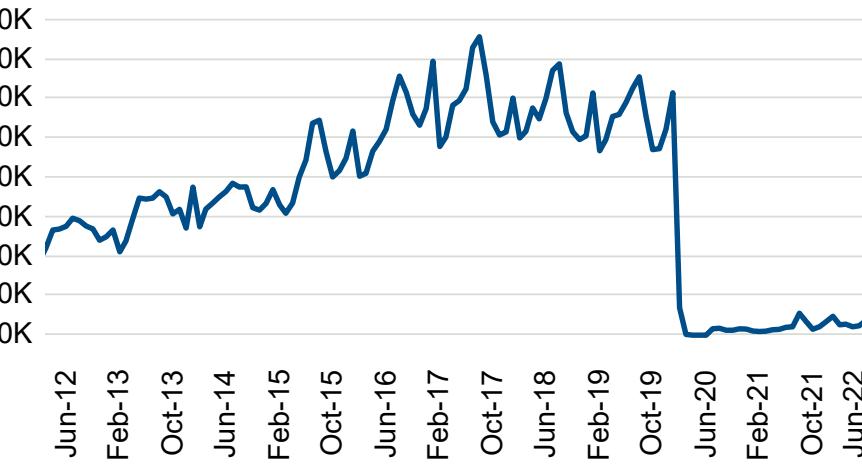
China to Los Angeles



Canada to Targeted US Markets



China to San Francisco



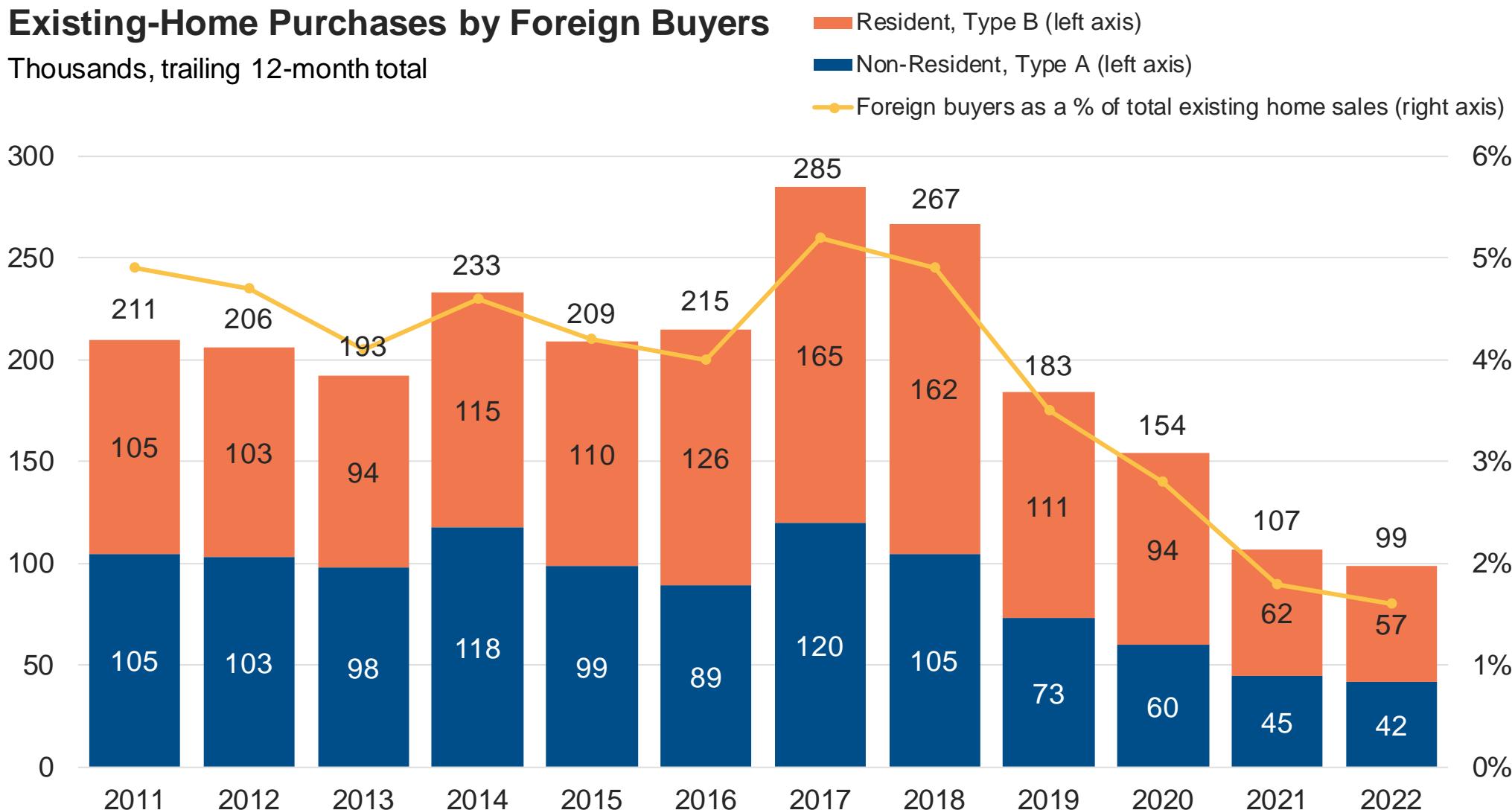
Source: Bureau of Transportation Statistics (Data: Jun-22, Pub: Jan-23)

Existing Home Purchases by Foreign Buyers

Existing homes purchased by foreign buyers fell to a record low of 98.6K from April 2021–March 2022. Foreign buyers represented just 1.6% of sales during this period, a record low.

Existing-Home Purchases by Foreign Buyers

Thousands, trailing 12-month total



Note: Non-resident foreigners (Type A) are non-U.S. citizens with permanent residences outside the U.S. Resident foreigners (Type B) are non-U.S. citizens who are recent immigrants (less than two years at the time of the transaction) or non-immigrant visa holders who reside for more than six months in the U.S. for professional, educational, or other reasons. Reference period is April of the preceding year to March of the current year.

Source: 2022 NAR Profile of International Transactions in the US Residential Real Estate (Data: Mar-22, updated quarterly†)

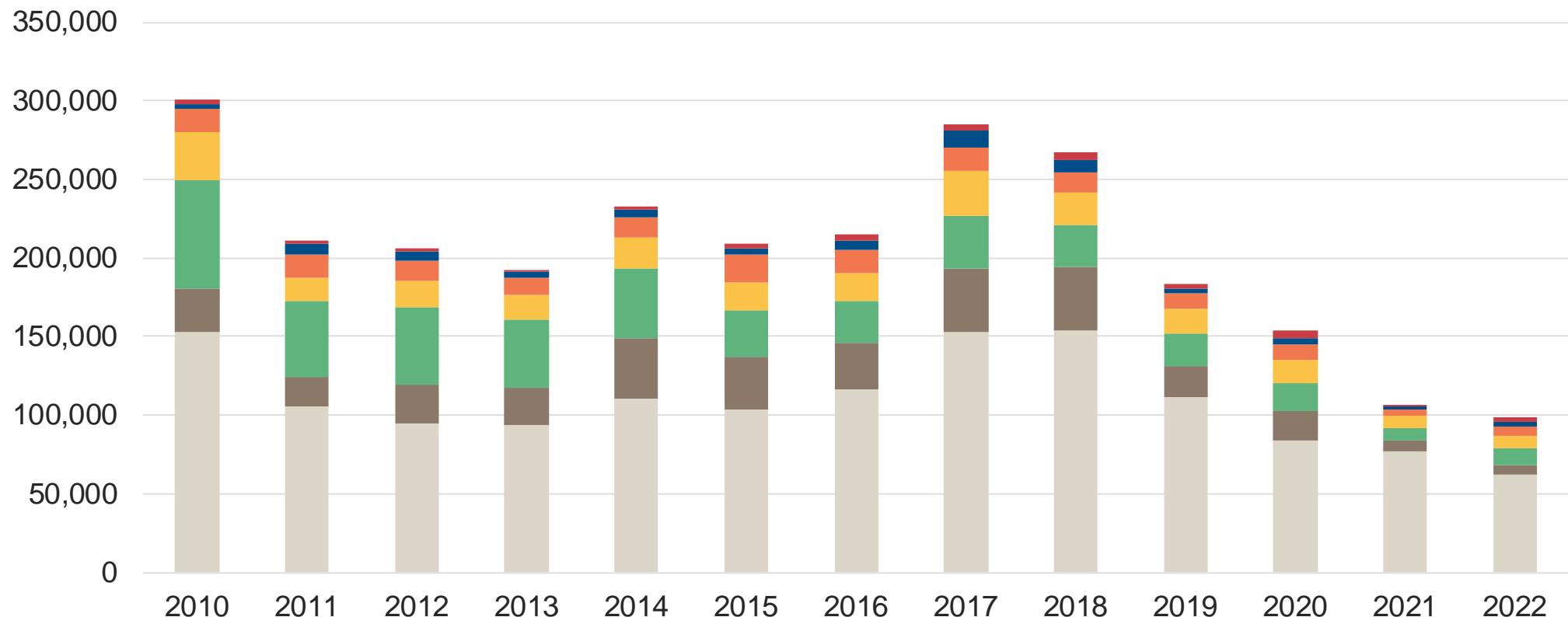
Pub: Jan-23

Total International Home Buyers

The volume of international buyer purchases fell -8% YOY in 2022. Canada is the largest country of origin of foreign buyers. Sales to Chinese buyers fell -9% YOY.

Total International Home Buyers

■ Other (-19% YOY) ■ China (-9% YOY) ■ Canada (28% YOY) ■ Mexico (10% YOY)
■ India (9% YOY) ■ Brazil (146% YOY) ■ Colombia (88% YOY)



Note: The NAR data presents information about REALTOR® transactions with international clients who purchased and sold US residential property during the 12-month period of April 2021–March 2022. A total of 9,397 Realtors responded to the 2022 survey, 1,101 of which reported an international residential foreign buyer. The term international or foreign client refers to two types of clients: non-resident foreigners who are non-US citizens with permanent residences outside the United States. These clients typically purchase property for investment, vacation, or visits of less than six months to the US on non-immigrant visas; resident foreigners are non-US citizens who are recent immigrants (less than two years at the time of the transactions) or non-immigrant visa holders who reside for more than six months in the US for professional, educational, or other reasons.

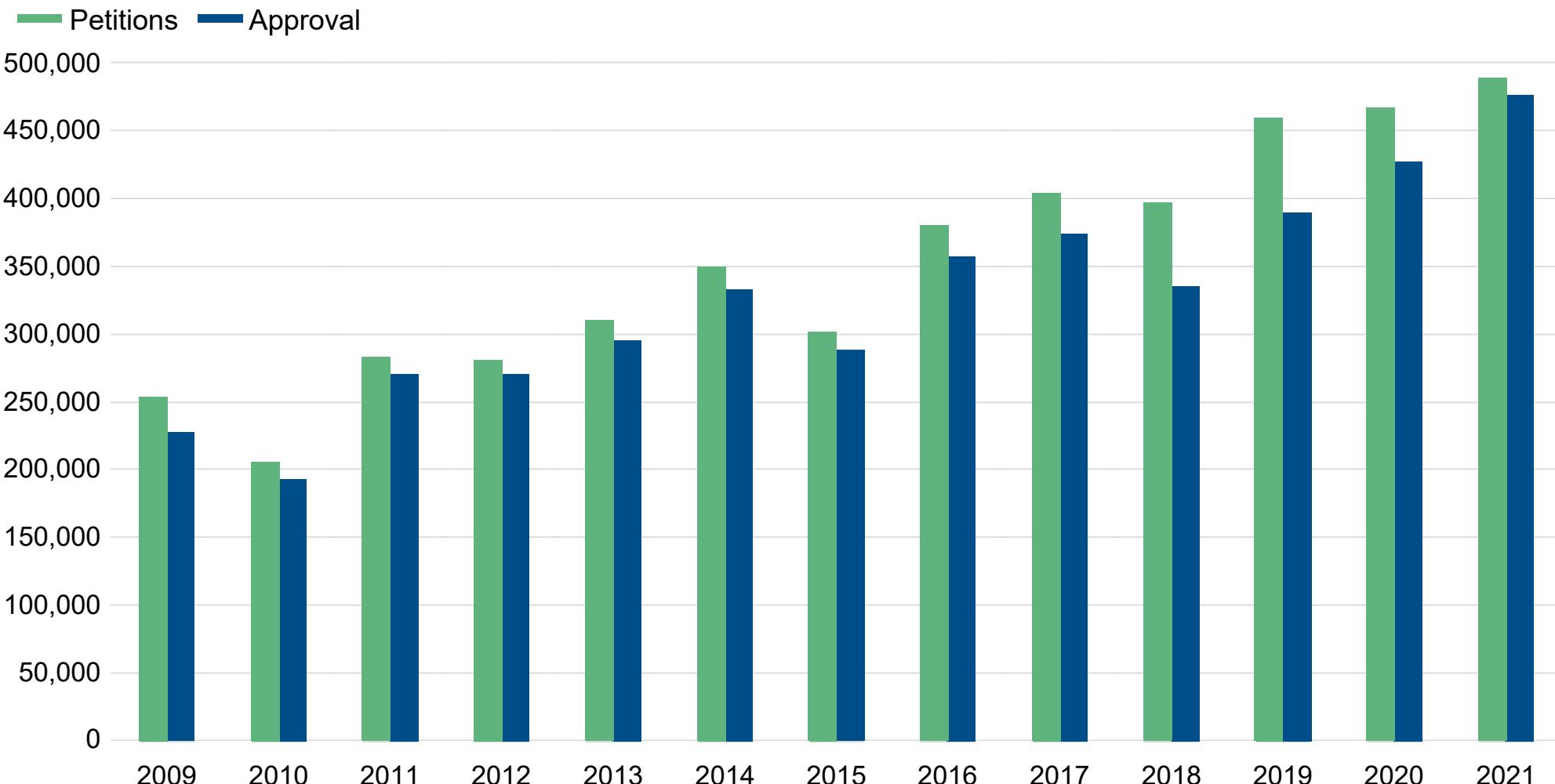
Source: 2022 NAR Profile of International Transactions in the US Residential Real Estate (Data: Jul-22, updated quarterly†)

Pub: Jan-23

Employer-Sponsored Immigration

H-1B visas allow US employers to hire foreign workers in specialty occupations that require theoretical or technical expertise. In 2021, H-1B visa approvals rose to a record 475K (+11% YOY). This likely is increasing foreign home buyer demand.

Annual H-1B Visa Trends



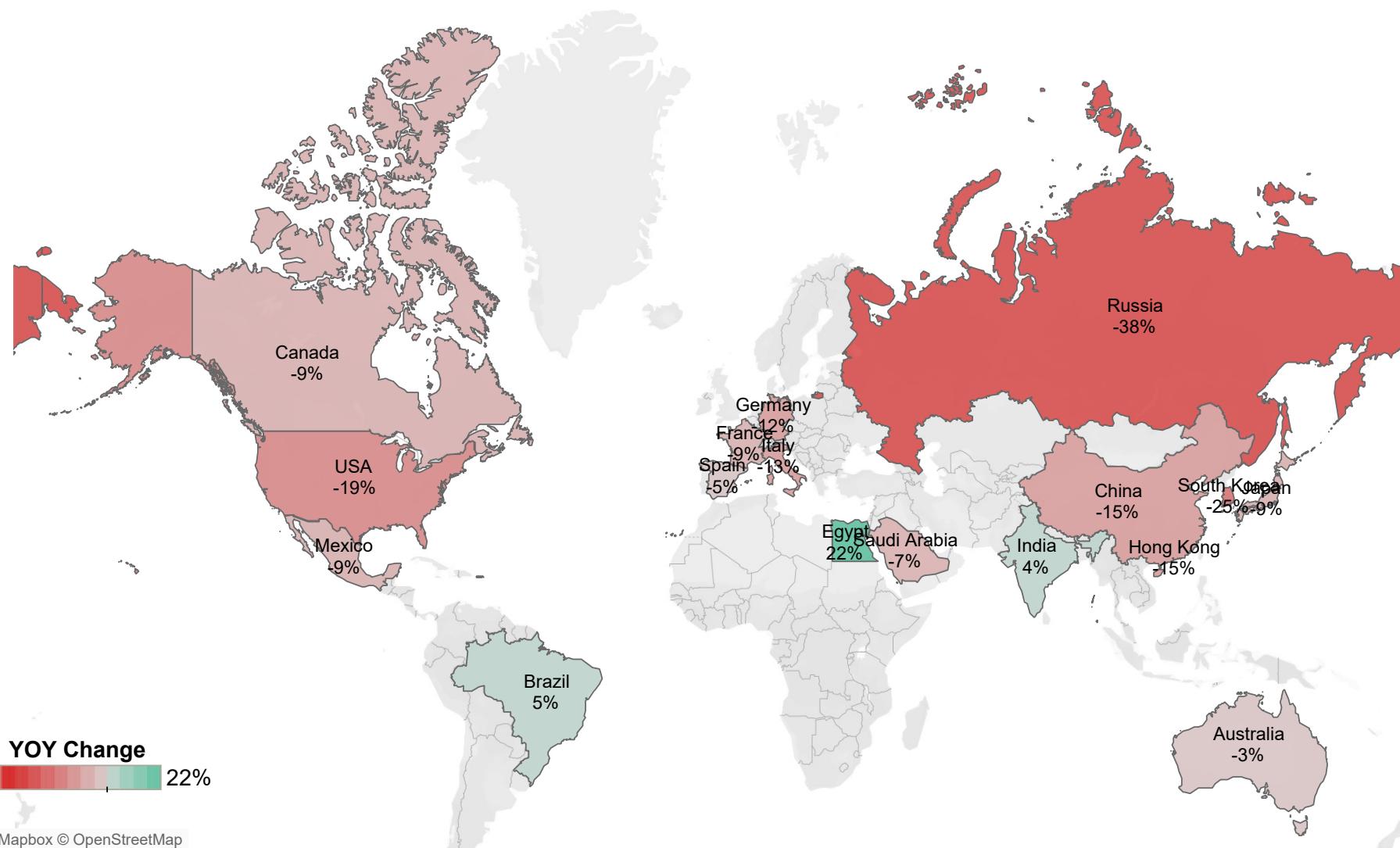
The number of approvals are for petitions received in a given fiscal year, even where the actual approval date may have occurred in a later fiscal year. Revocations may change the number of approvals over time.

Source: USCIS (Data: 2021, Pub: Jan-23)

Impact of Global Stock Markets on International Buyers

Global stock markets are mostly down YOY. Russia's stock market fell -38% YOY. Foreign buyers whose markets are down YOY may decrease purchasing activity abroad.

YOY Change in Major Stock Indices per Country



Source: John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Existing home market

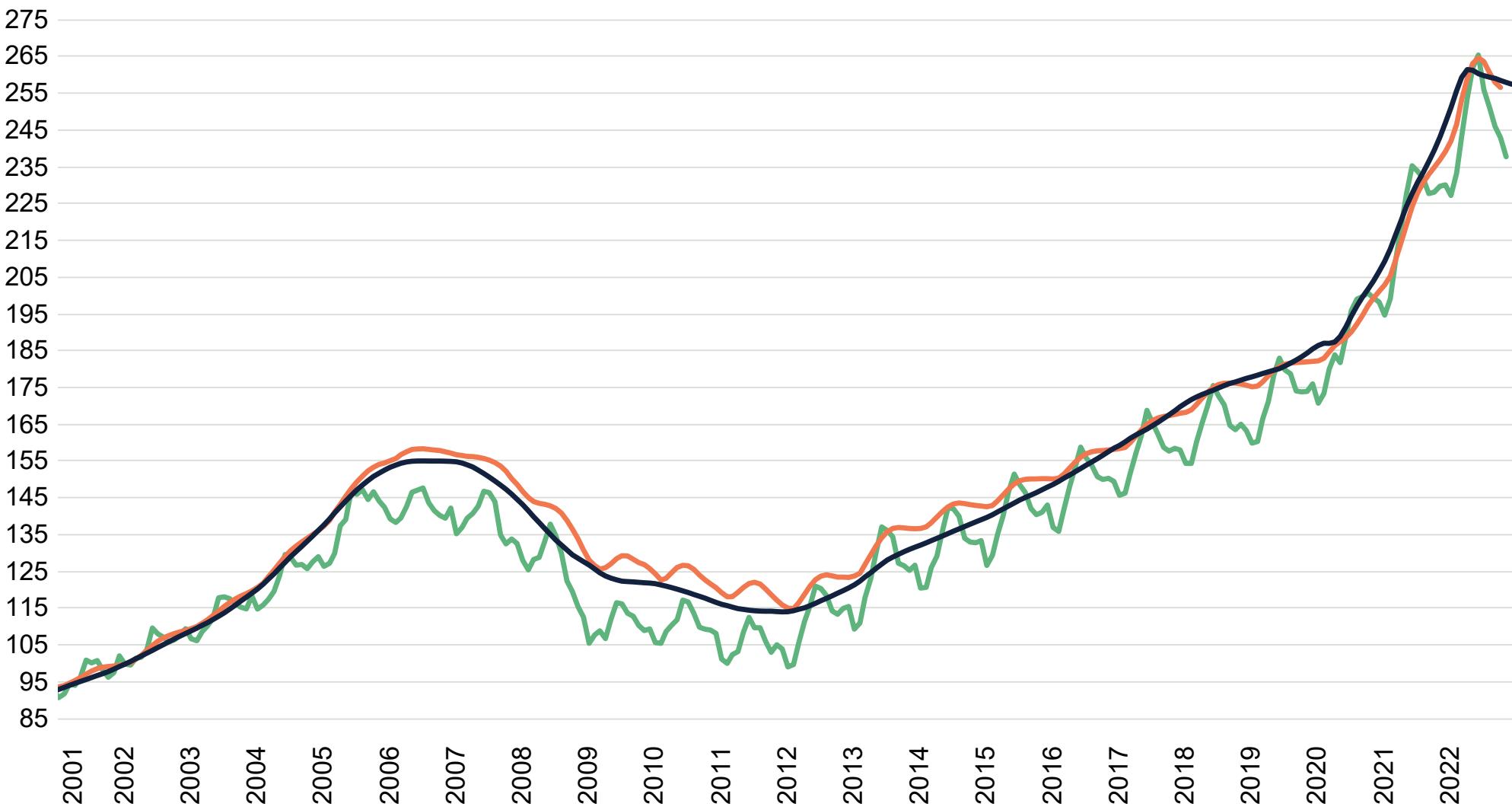
US Home Prices

US home prices gained 4.3% YOY, according to our Burns Home Value Index™.

Burns Home Value Index™ vs. Median Price and CoreLogic Case-Shiller Index (SA) United States

BHVI™ is based on contract date and precedes most published HPIs by months. It is indexed to 100 in January 2002.

— CoreLogic Case-Shiller = (9.2% YOY) — NAR Median Price = (3.5% YOY) — BHVI = (4.3% YOY)



Sources: NAR; S&P/Case Shiller; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

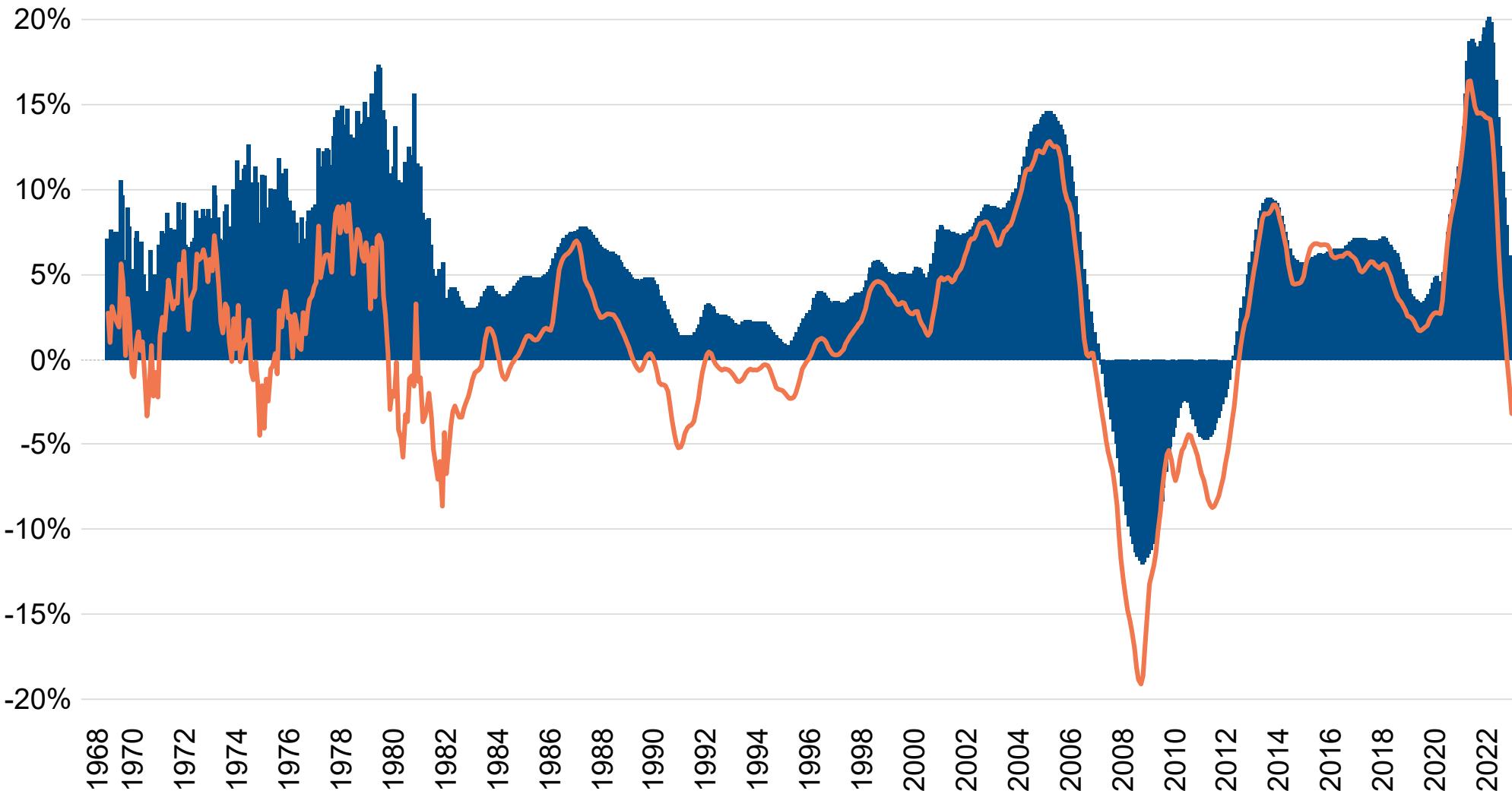
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Nominal vs. Real US Home Prices

Adjusted for inflation, home prices fell -3% YOY. Real home price declines are not uncommon during periods of high inflation.

US National Home Prices: Not Inflation-Adjusted vs. Inflation-Adjusted, YOY

— US home prices (not inflation-adjusted) — US home prices (inflation-adjusted)



Note: Burns Home Value Index used from 1982 onwards, from 1969-1981 median resale home (nominal YOY) used.

Sources: John Burns Real Estate Consulting, LLC (Dec-22); National Association of Realtors (Dec-22); Bureau of Labor Statistics (Dec-22)

(Pub: Jan-23)

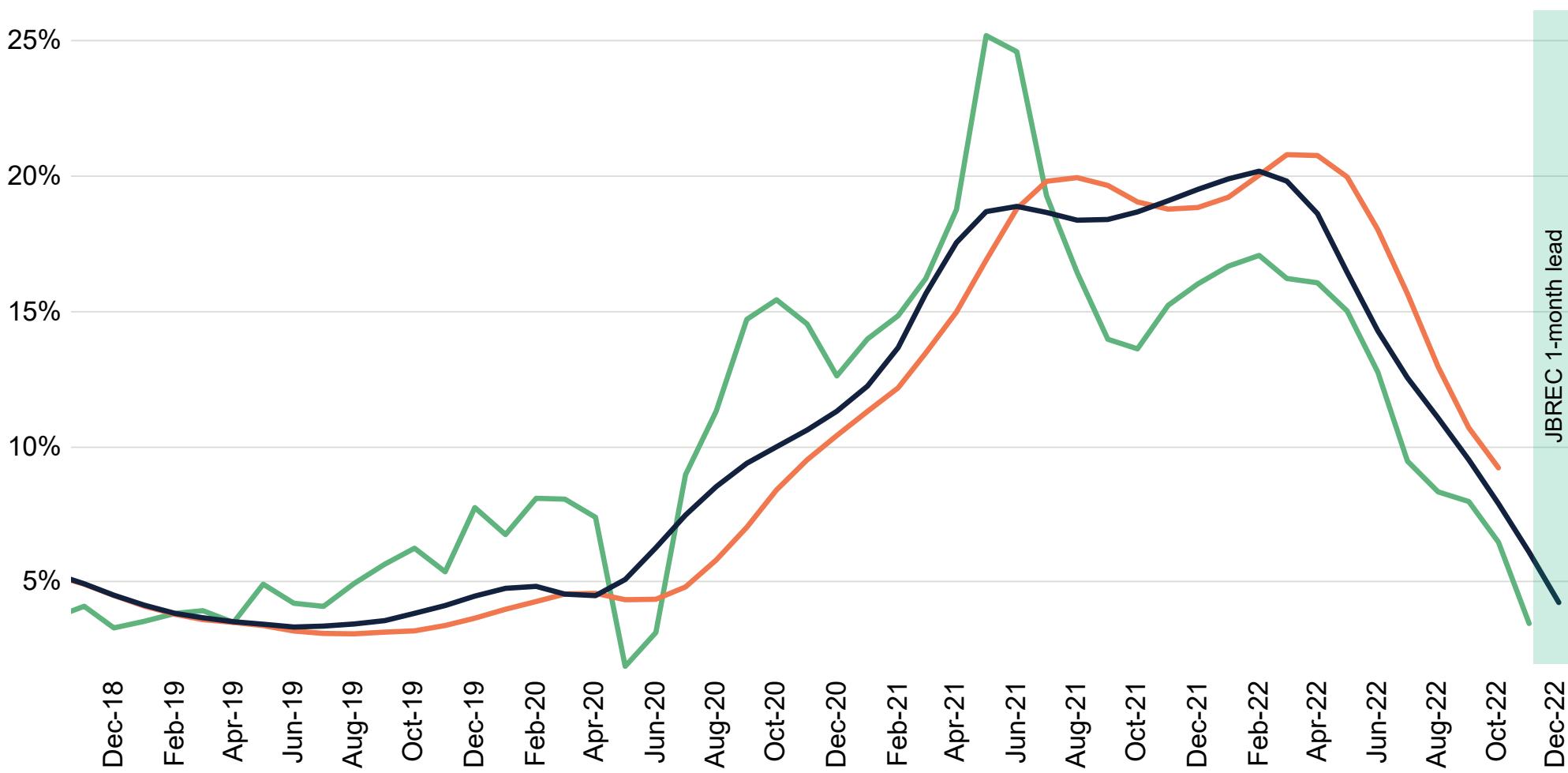
US Home Prices

Our Burns Home Value Index™ (BHVI) is less affected by distressed sales than the median home price, which makes it a better representation of US home values. It is also more current.

Burns Home Value Index™ vs. Median Price and CoreLogic Case-Shiller Index (SA) United States

BHVI™ is based on contract date and precedes most published HPIs by months. It is indexed to 100 in January 2002.

— CoreLogic Case-Shiller = (9.2% YOY) — NAR Median Price = (3.5% YOY) — BHVI = (4.3% YOY)

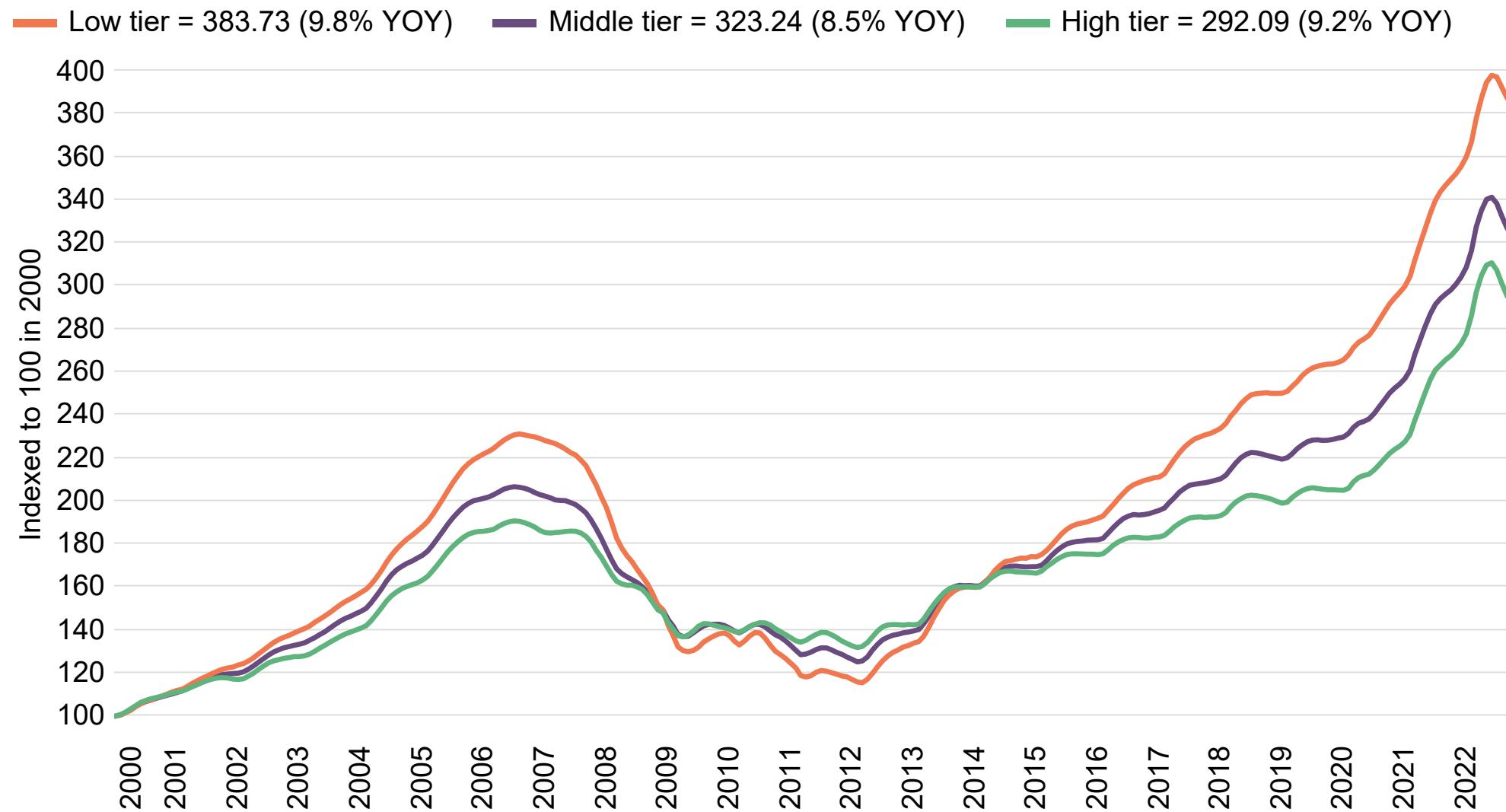


Sources: NAR; S&P/Case Shiller; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

CoreLogic Case-Shiller

Price appreciation is positive for all price tiers YOY but is slowing across all price tiers.

CoreLogic Case-Shiller Tiered Home Price Index



Tiers price breakpoints are calculated by breaking up all sales for each period, so that there are the same number of sales, after accounting for exclusions, in each of the three tiers. These 16 metro areas are used to derive the Tiered HPI: Boston, NYC, DC, Chicago, Denver, Las Vegas, Los Angeles, San Diego, San Francisco, Miami, Atlanta, Minneapolis, Phoenix, Portland, Seattle, and Tampa.

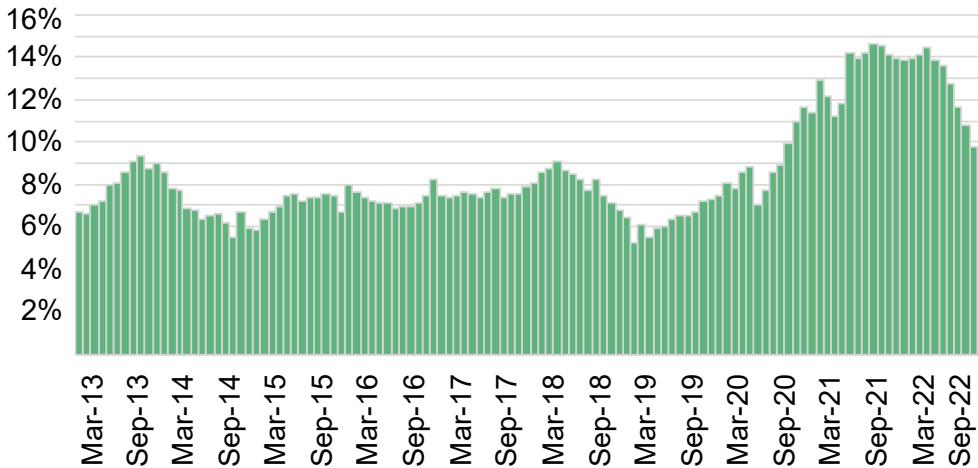
Sources: CoreLogic Case-Shiller (Data: Oct-22, Pub: Jan-23)

Home Price Appreciation by Tier YOY Change

Low-tier home prices increased 10% YOY, and high-tier home prices increased 6% YOY.

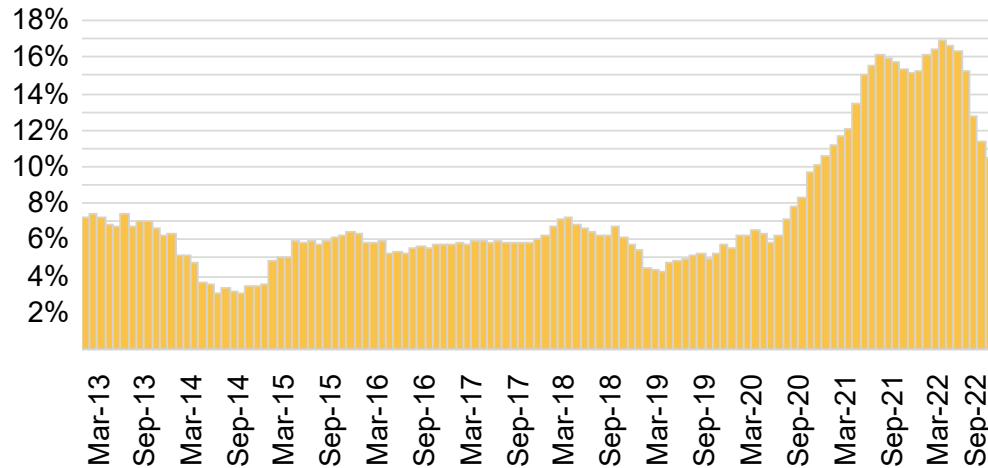
Home Price Appreciation Index YOY Change

■ Low: 10%



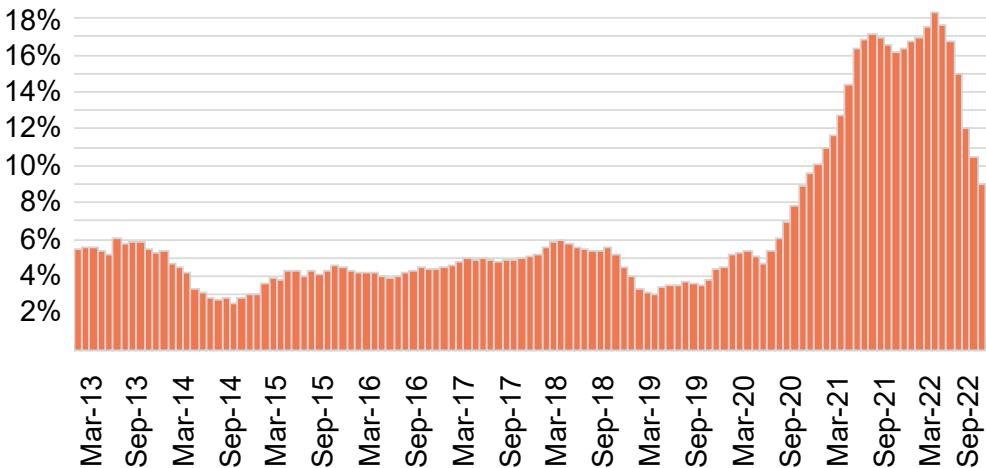
Average sales price: \$198,265

■ Low-Medium: 10%



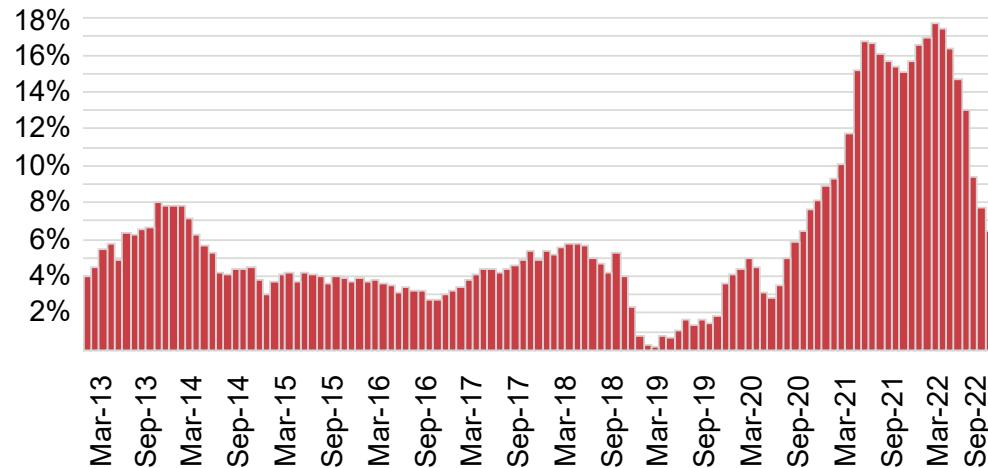
Average sales price: \$326,654

■ Medium-High: 9%



Average sales price: \$530,850

■ High: 6%



Average sales price: \$1,426,200

Note: Price tiers are set at the metro level: 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: rest.

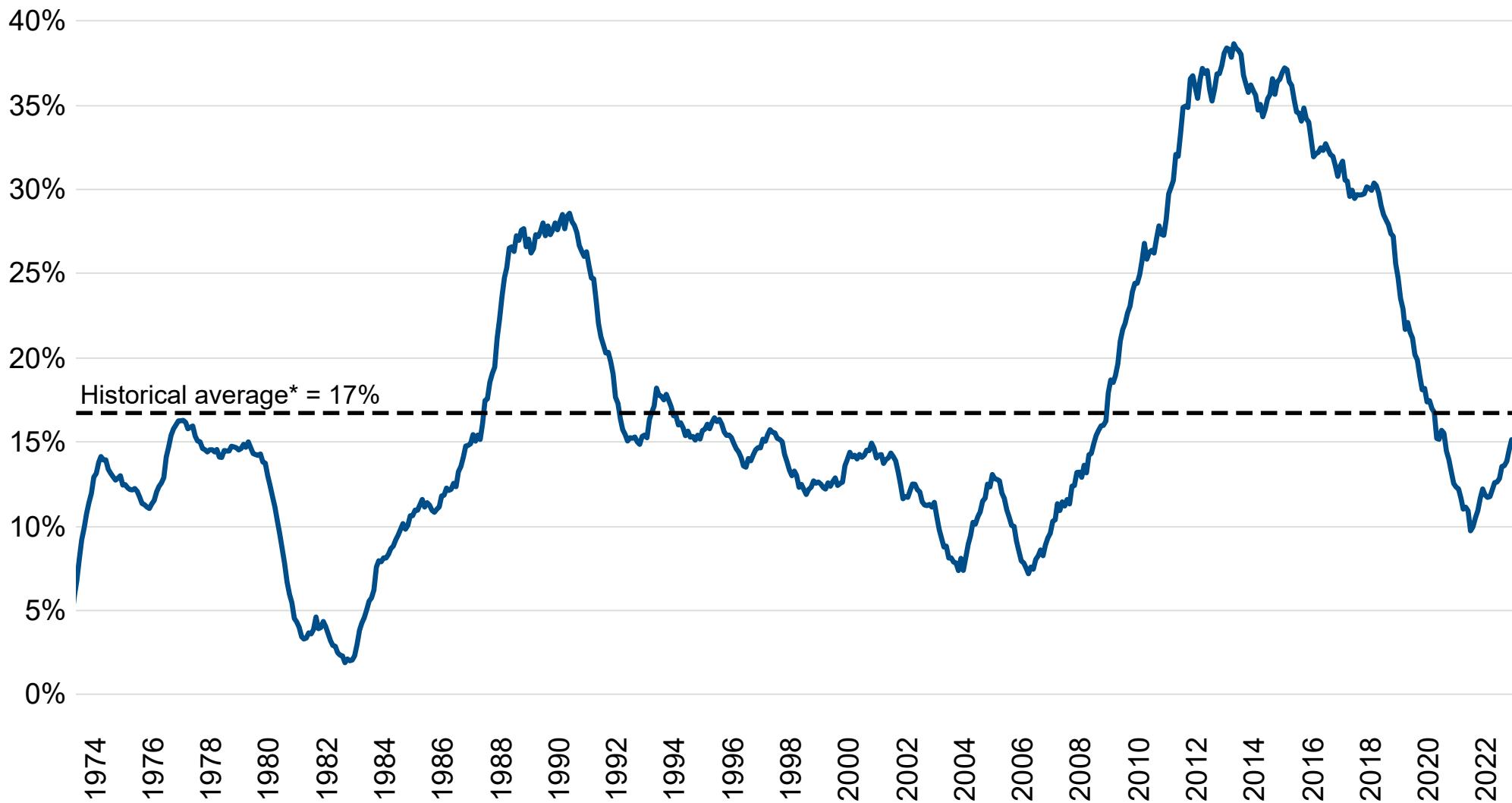
Sources: AEI International Center on Housing Risk (Data: Sep-22, Pub: Jan-23)

New Home Premium

The new home price premium rose to 15% but remains low relative to history. Builders have pivoted to offering more product at lower prices and in more distant locations where homes are cheaper, driving down the new home price premium.

New Home Price Premium vs. Resale

12-month average



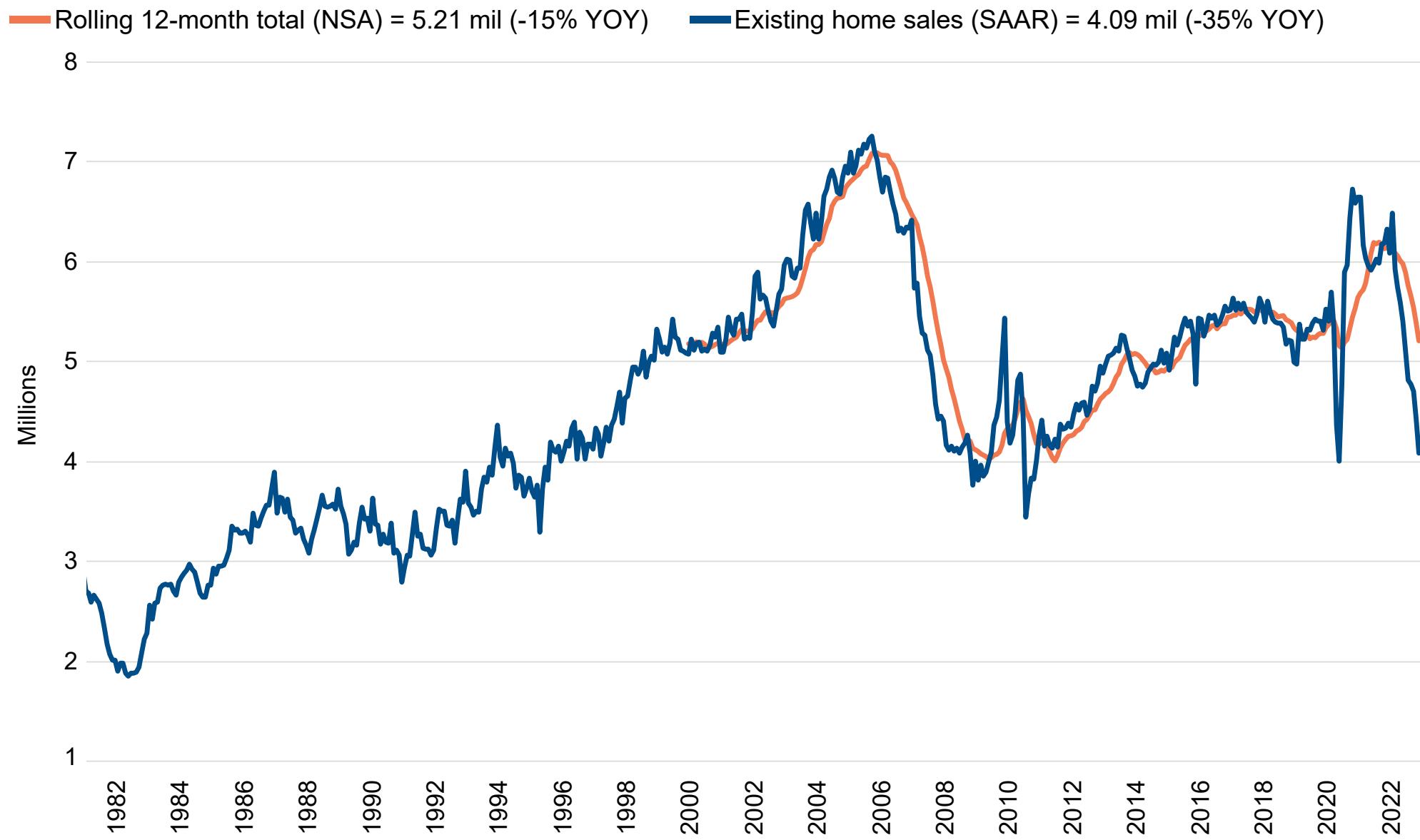
Sources: NAR; U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

*Historical average: Dec-87 through current

Existing Home Sale Closings

Resale sales closings (SAAR) fell -35% YOY, and the rolling 12-month total (NSA) fell -15% YOY.

Existing Home Sale Closings



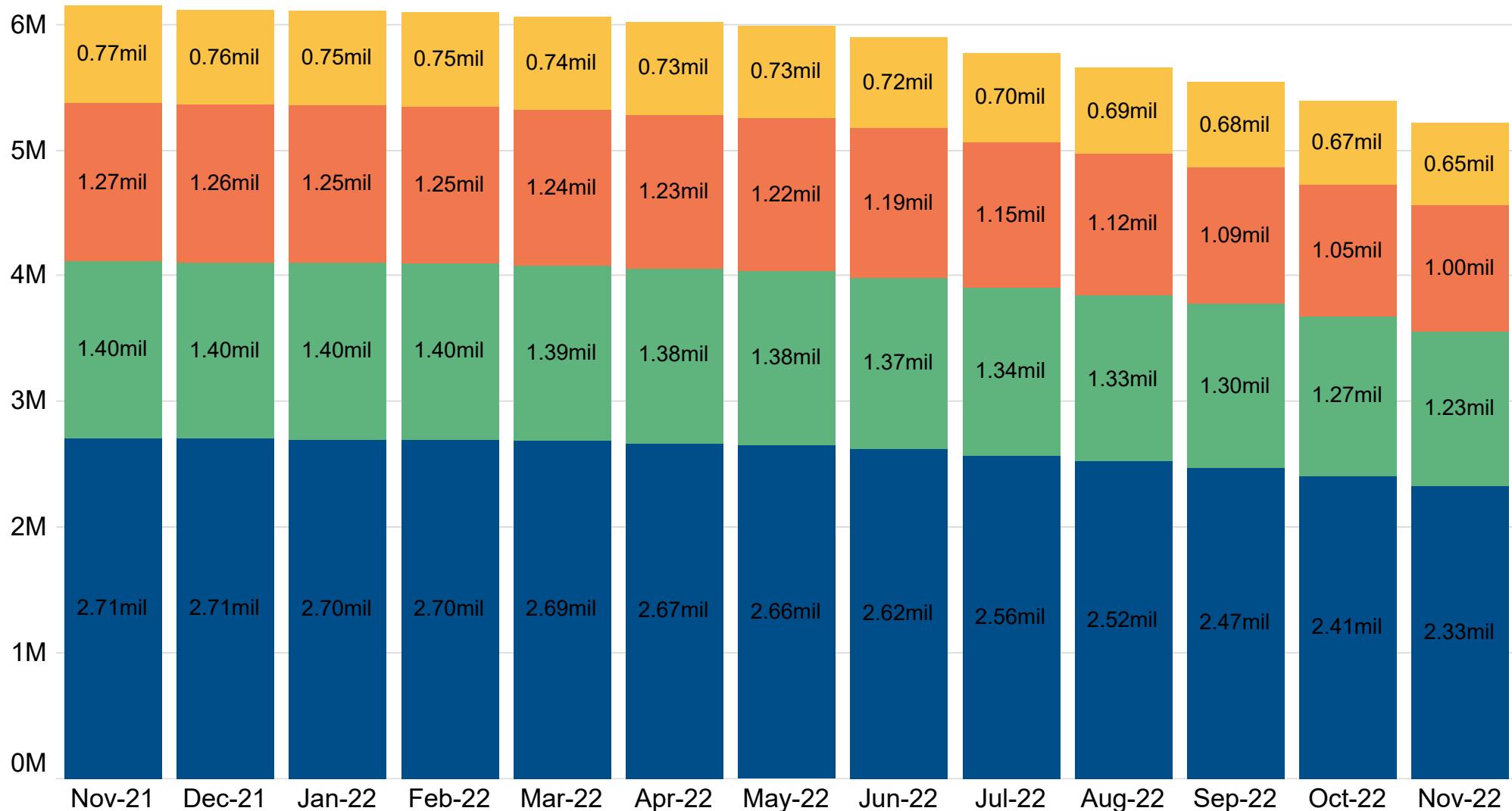
Sources: NAR; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Regional Existing Home Sale Closings by Region

Existing home closings fell across all regions.

Regional Existing Home Sale Closings

12-month rolling NSA ■ Northeast (-15% YOY) ■ West (-21% YOY) ■ Midwest (-12% YOY) ■ South (-14% YOY)



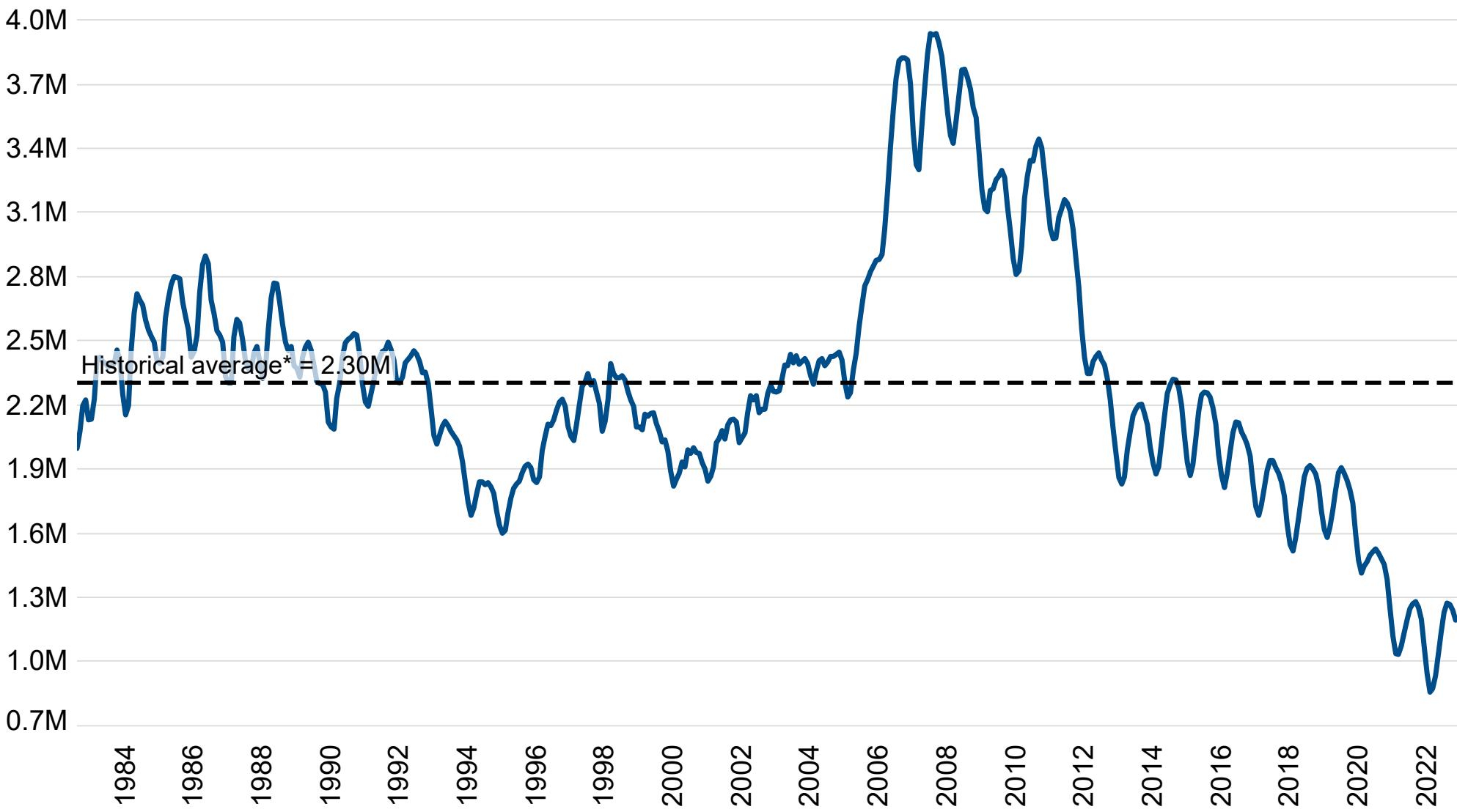
Sources: NAR; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Existing Home Inventory

Resale inventory remained flat YOY at 1.2 million units in November.

Existing Home Inventory for Sale

3-month average (NSA) — Existing inventory = 1.2M (0% YOY)



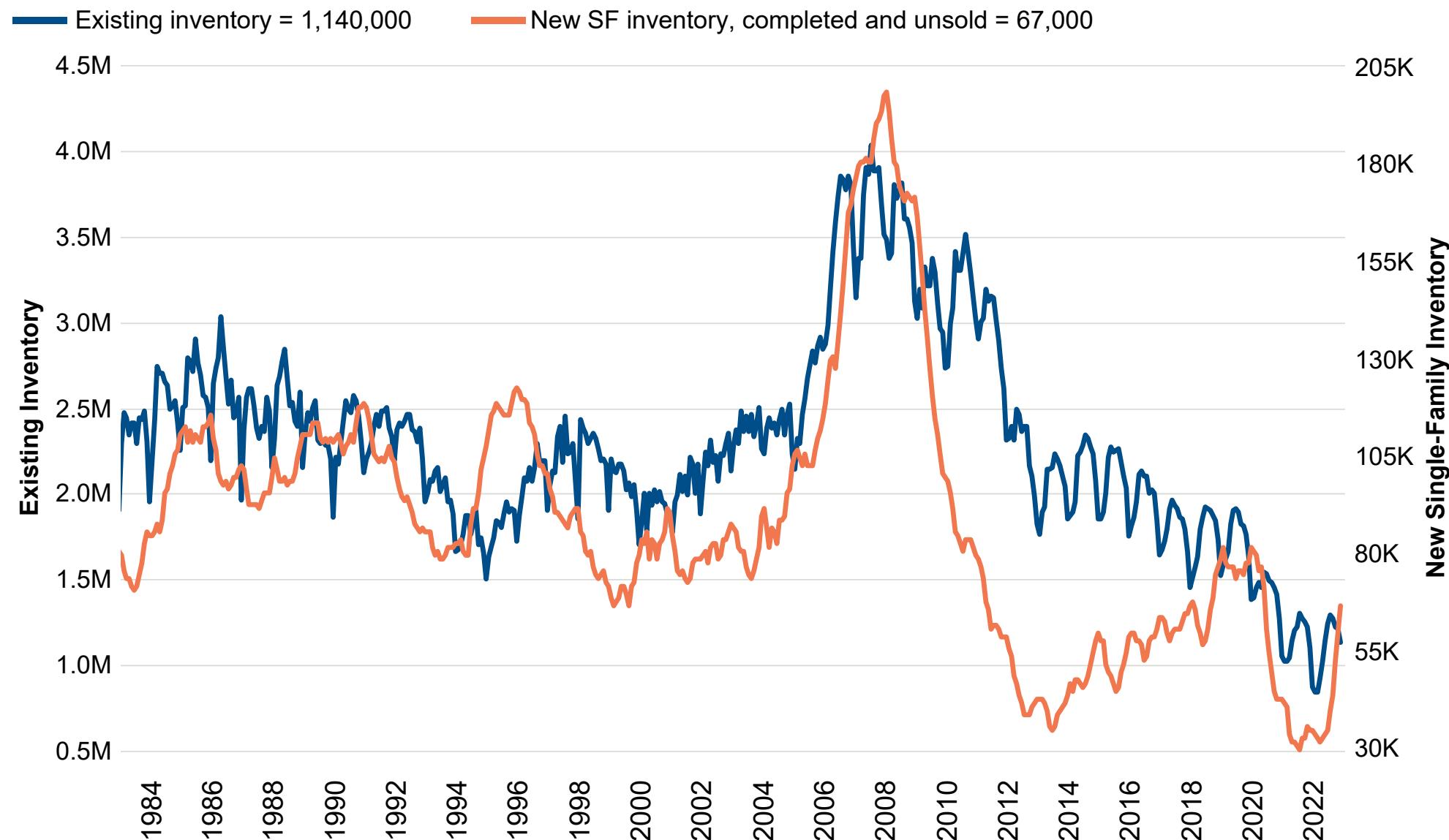
Sources: NAR; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

*Historical average: Dec-87 through current

Total Single-Family Inventory

Existing and new home inventory generally track each other. New single-family inventory is rising as the massive amount of homes under construction are being completed.

Total Housing Inventory (Existing and New Single-Family Completed)



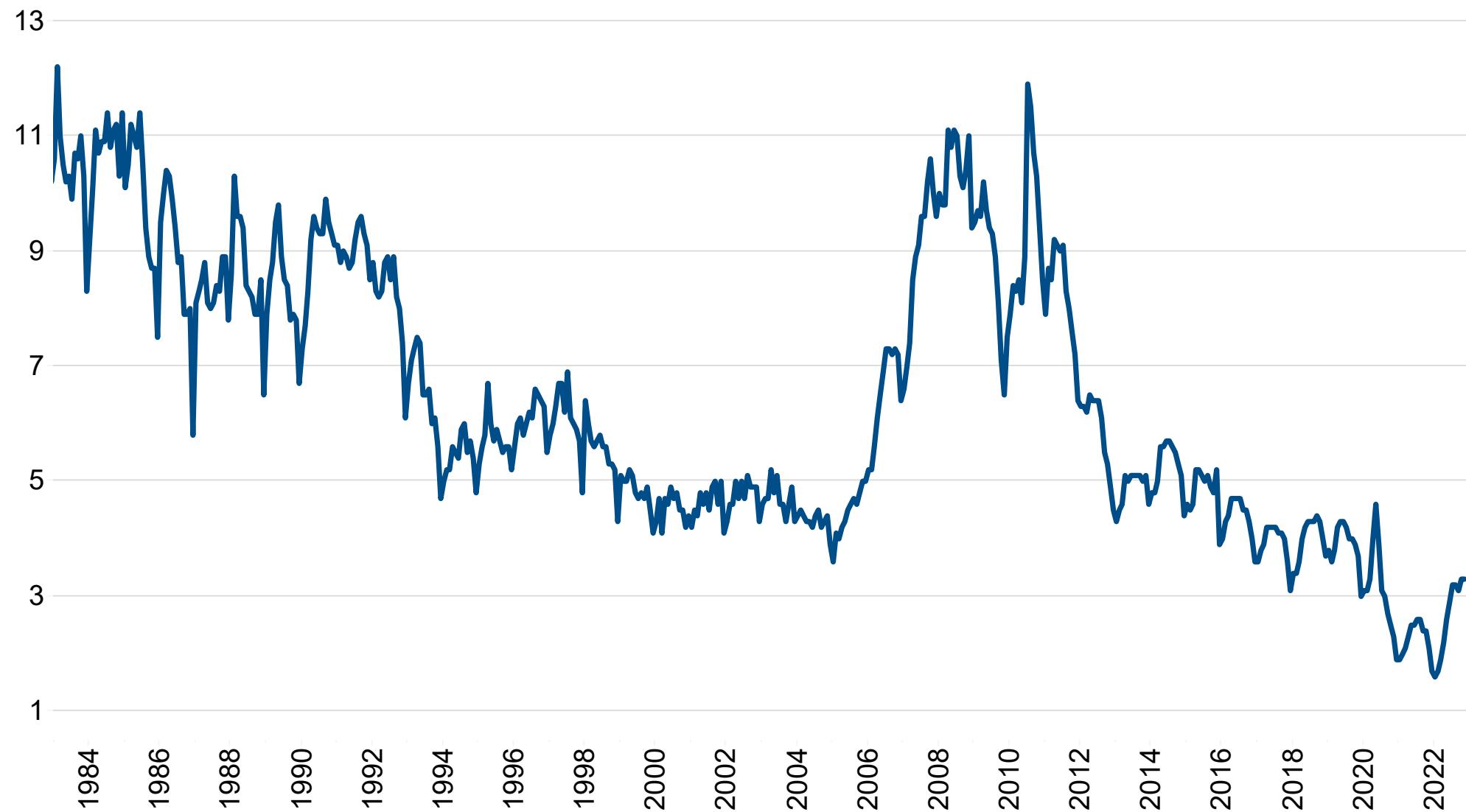
Sources: NAR; U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Existing Home Months of Supply

Existing home inventory remained at 3.3 months of supply and is rising off of a record low earlier in 2022.

Months of Supply (Existing Home Inventory) - Under Contract or Available for Sale

Current = 3.3 months



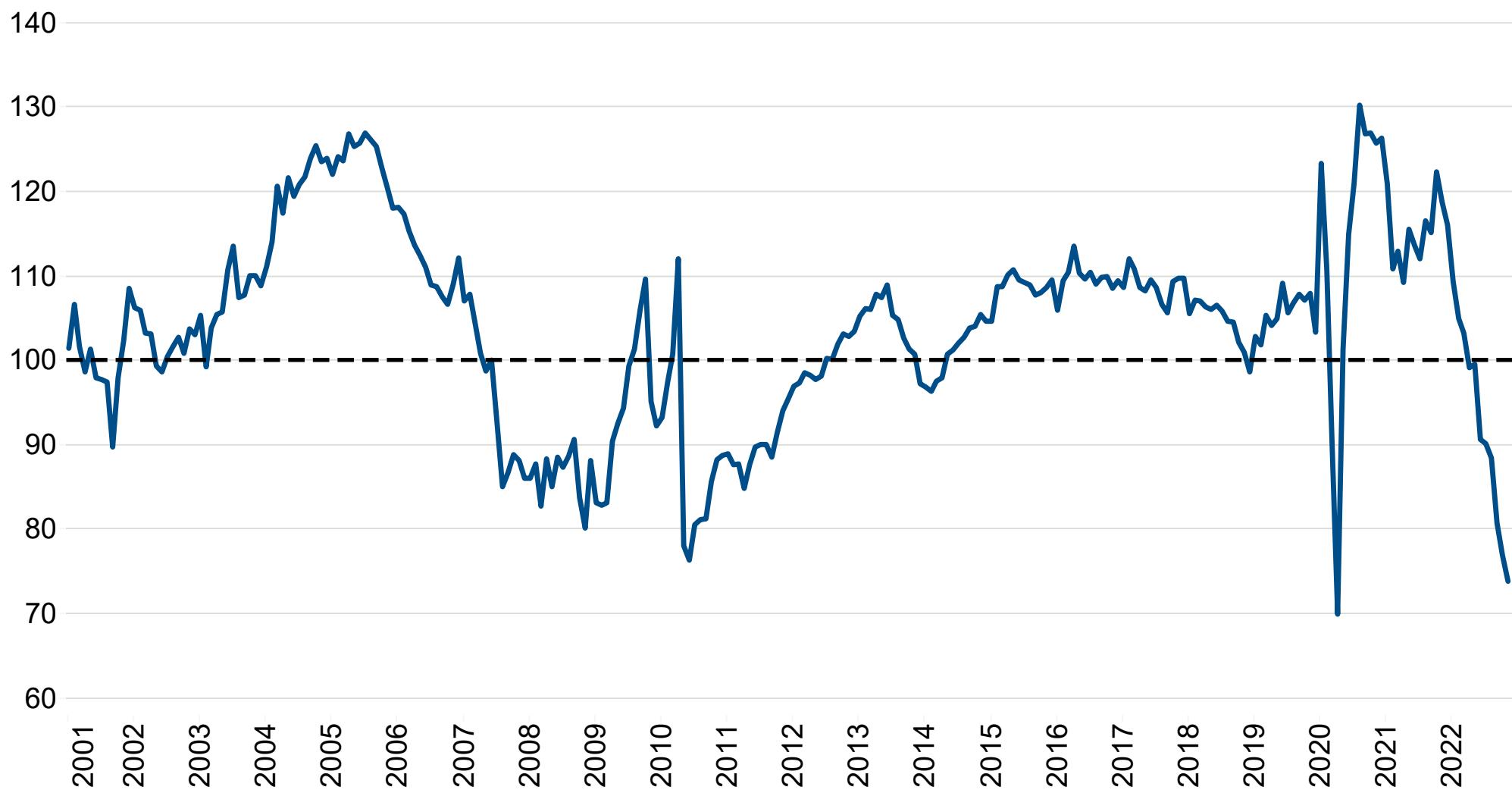
Sources: NAR; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Pending Home Sales

The Pending Sales Index, a leading indicator for home purchases, fell -38% YOY.

Pending Home Sales Index

Seasonally adjusted; includes SF, townhomes, condos and co-ops, and is based on contract signings. 100 = average level of contract activity during 2001 and is considered historically healthy.



Source: NAR (Data: Nov-22, Pub: Jan-23)

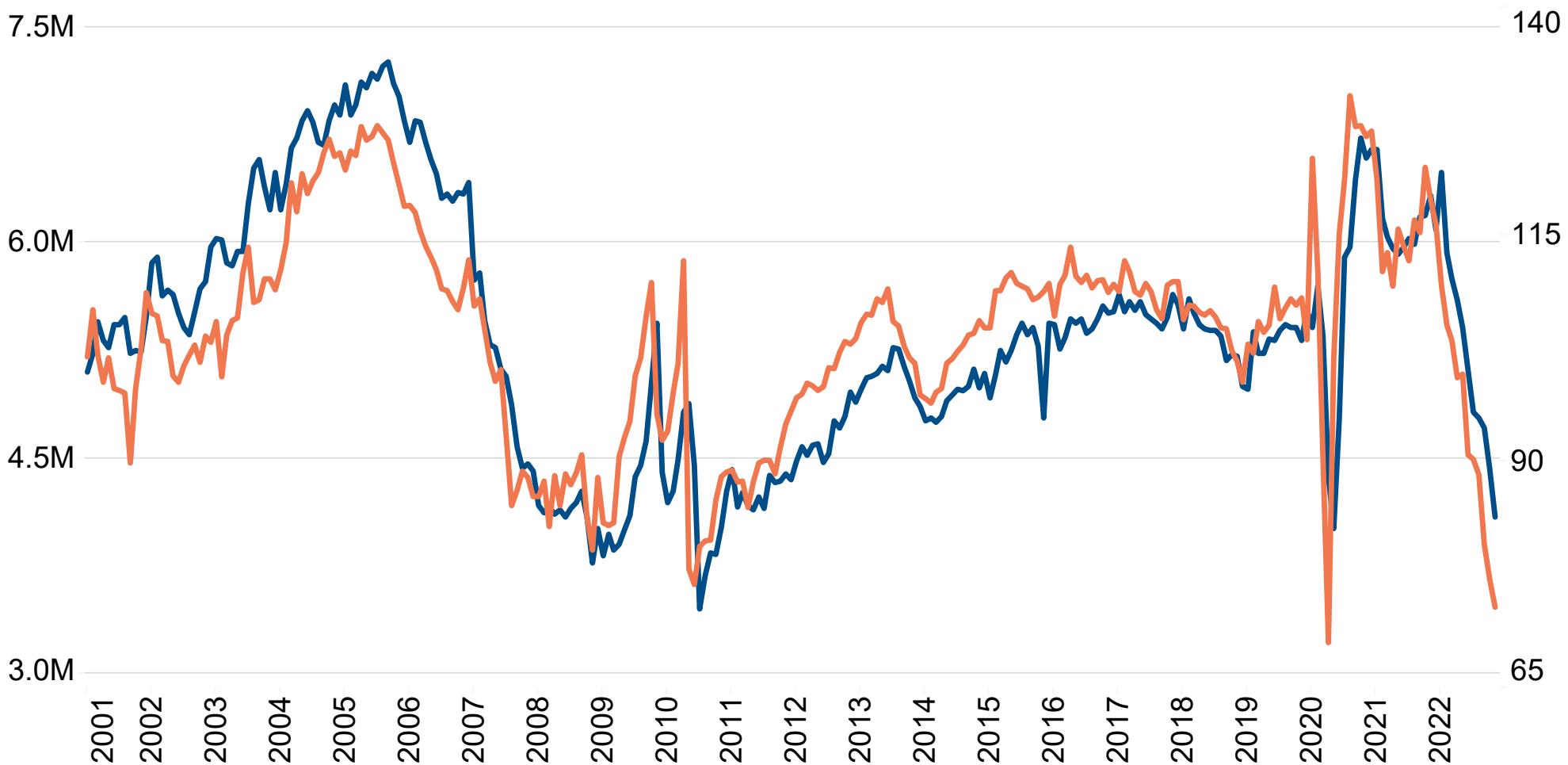
Pending and Existing Home Sale Closings

Pending and existing sales correlation is historically strong, at 0.93. Existing home sales closings fell -35% YOY, and pending sales fell -38% YOY.

Pending Home Sales Index vs. Existing Home Sale Closings

Seasonally adjusted; historical one-month lag correlation = 0.93

— Existing home sales (left axis) = 4.1M (-35% YOY) — Pending home sales index (right-axis) = 74 (-38% YOY)



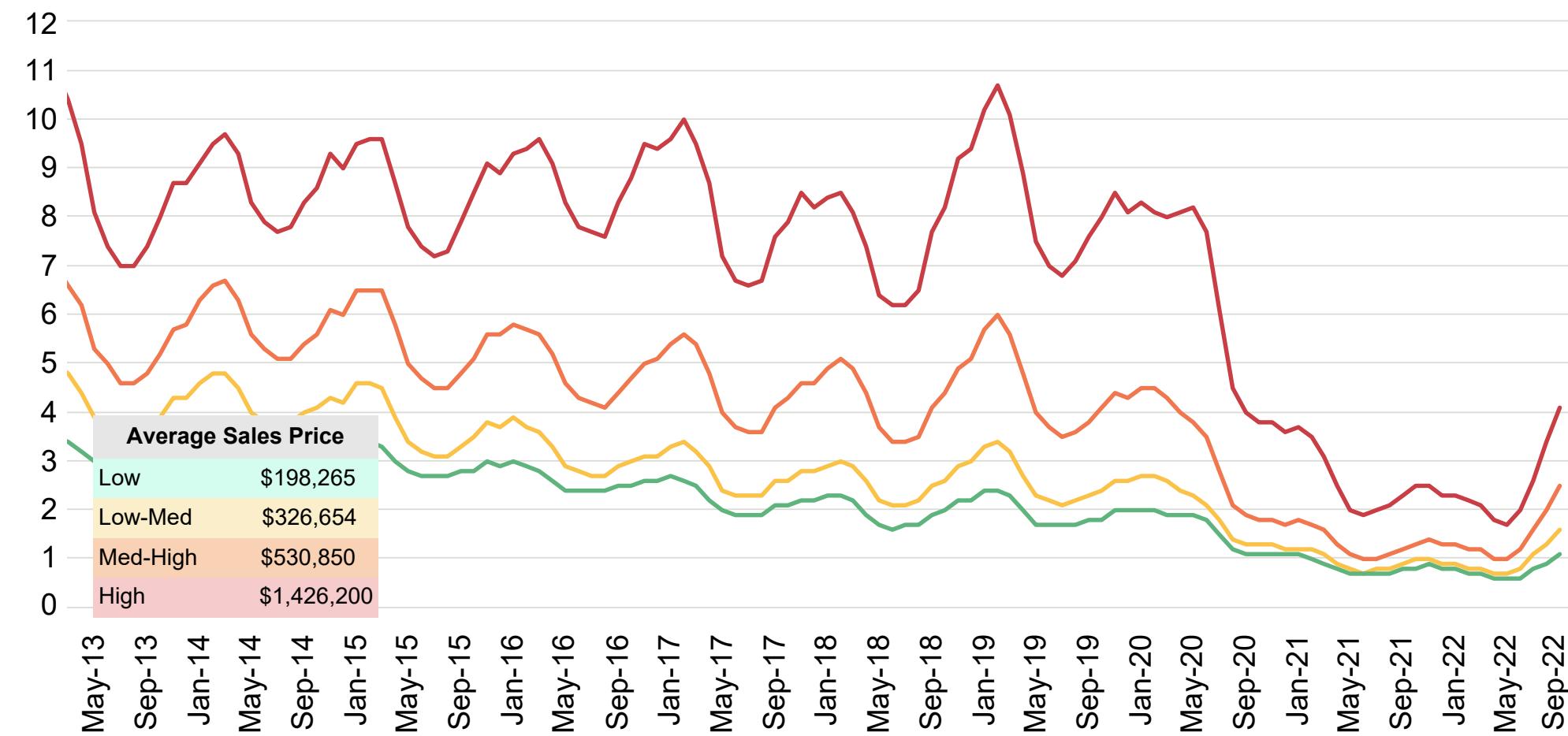
Sources: NAR; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

Months of Supply by Price Tier

High-tier homes sat at 4.1 months of resale supply as of September, above the supply of lower-priced homes (1.1 months).

Months of Supply by Price Tier

3-month moving average — Low: (1.1) — Low-Medium: (1.6) — Medium-High: (2.5) — High: (4.1)



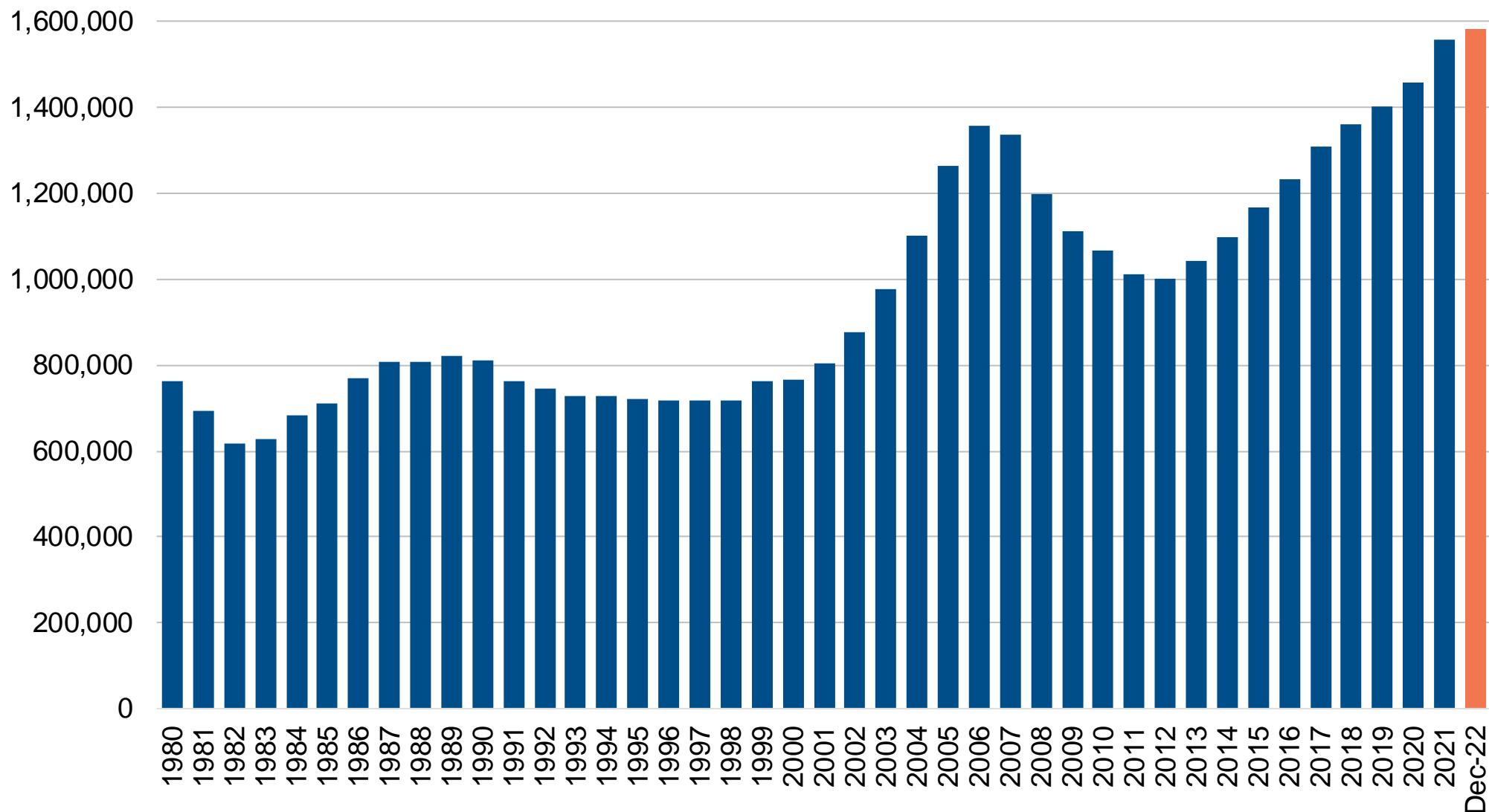
Note: Price tiers are set at the metro level and are defined as follows: Low: all sales at or below the 40th percentile of FHA sales prices; Low-Medium: all sales at or below the 80th percentile of FHA sales prices; Medium-High: all sales at or below the 125% of the GSE loan limit; and High: the rest.

Source: AEI International Center on Housing Risk (Data: Sep-22, Pub: Jan-23)

Total Realtors

The number of Realtors rose to 1.6 million, an all-time high. We view NAR membership as a gauge of demand and exuberance in the market.

Total Realtors by NAR Membership



Sources: ©2022 National Association of REALTORS®; John Burns Real Estate Consulting, LLC (Data: Dec-22)

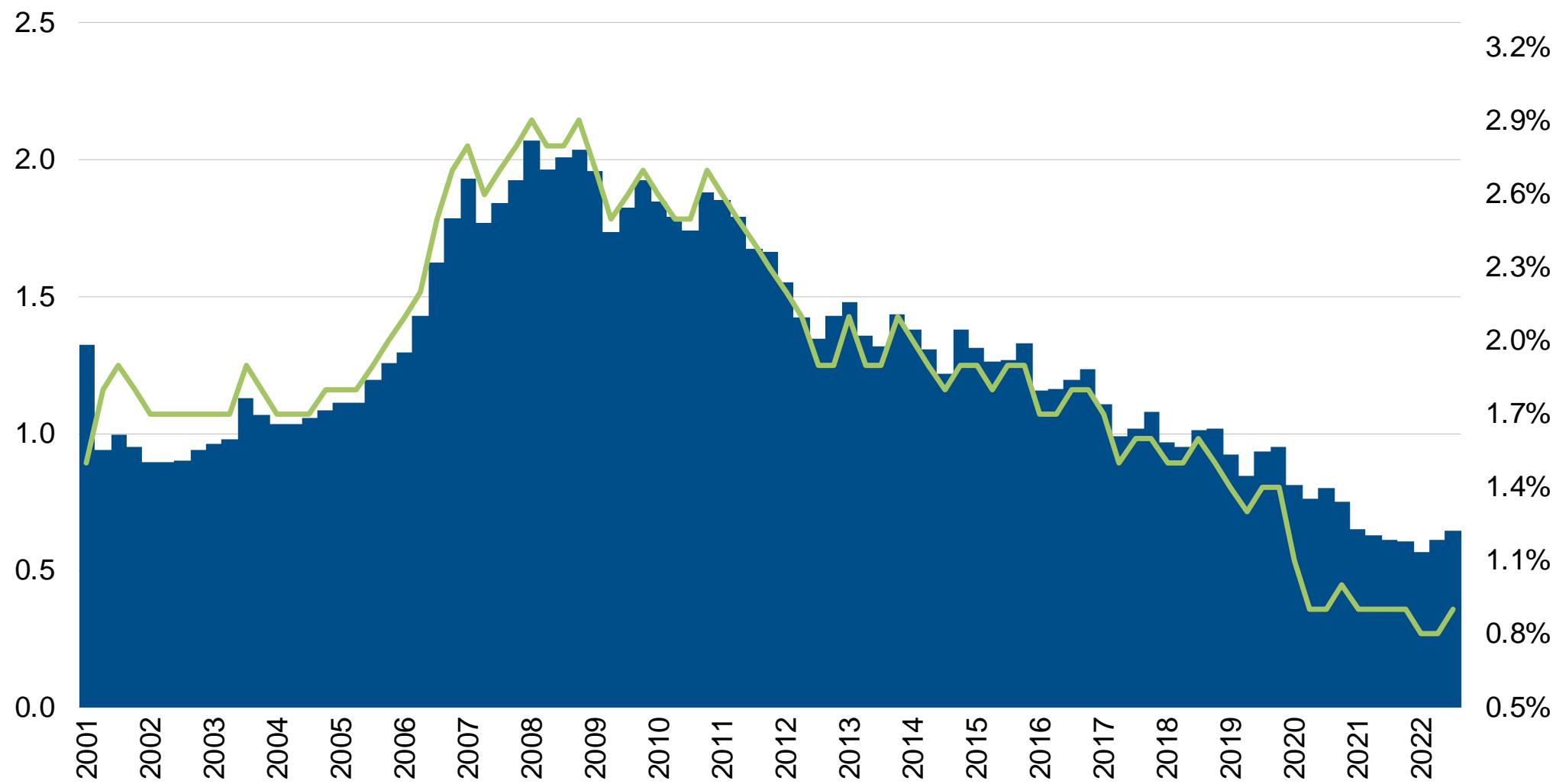
Pub: Jan-23

Housing Vacancy

Vacant homes for sale increased to 646K in 3Q22, a 0.9% vacancy rate.

Vacancy Rates

■ For sale vacant units, left axis (millions) ■ Homeowner vacancy rate, right axis (percent)



Note: The pandemic complicated the Census Bureau's collection process in 2020. We advise using caution in comparing data from this time period.

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

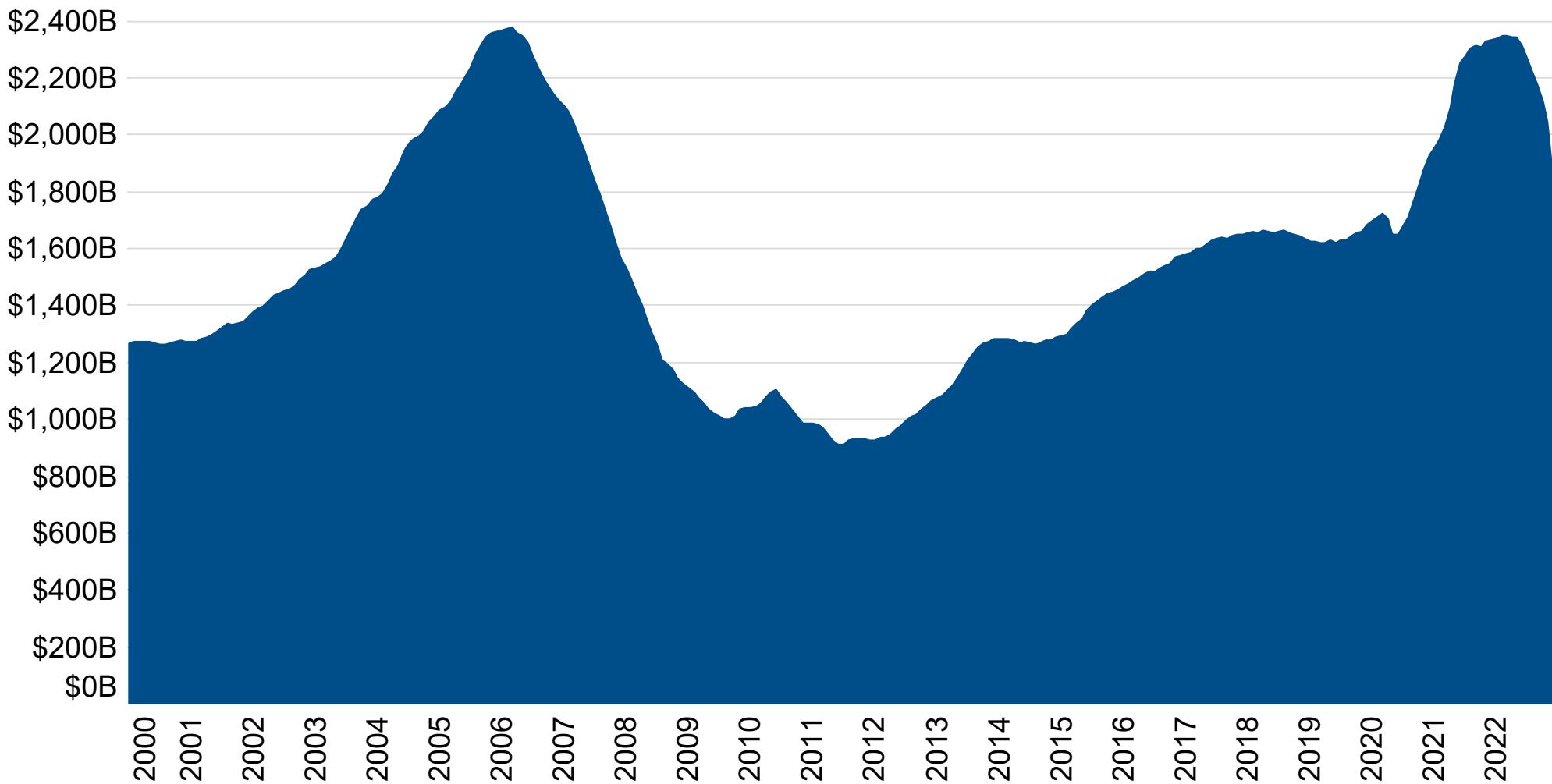
Pub: Jan-23

Existing Home Revenue

Existing home revenue is -21% below the most recent cycle peak.

Existing Home Revenue

Inflation-adjusted, rolling 12 months



We calculate the annual existing home revenue as a rolling 12-month count of existing home sales multiplied by median price of home sold, adjusted to Nov-22 dollars.

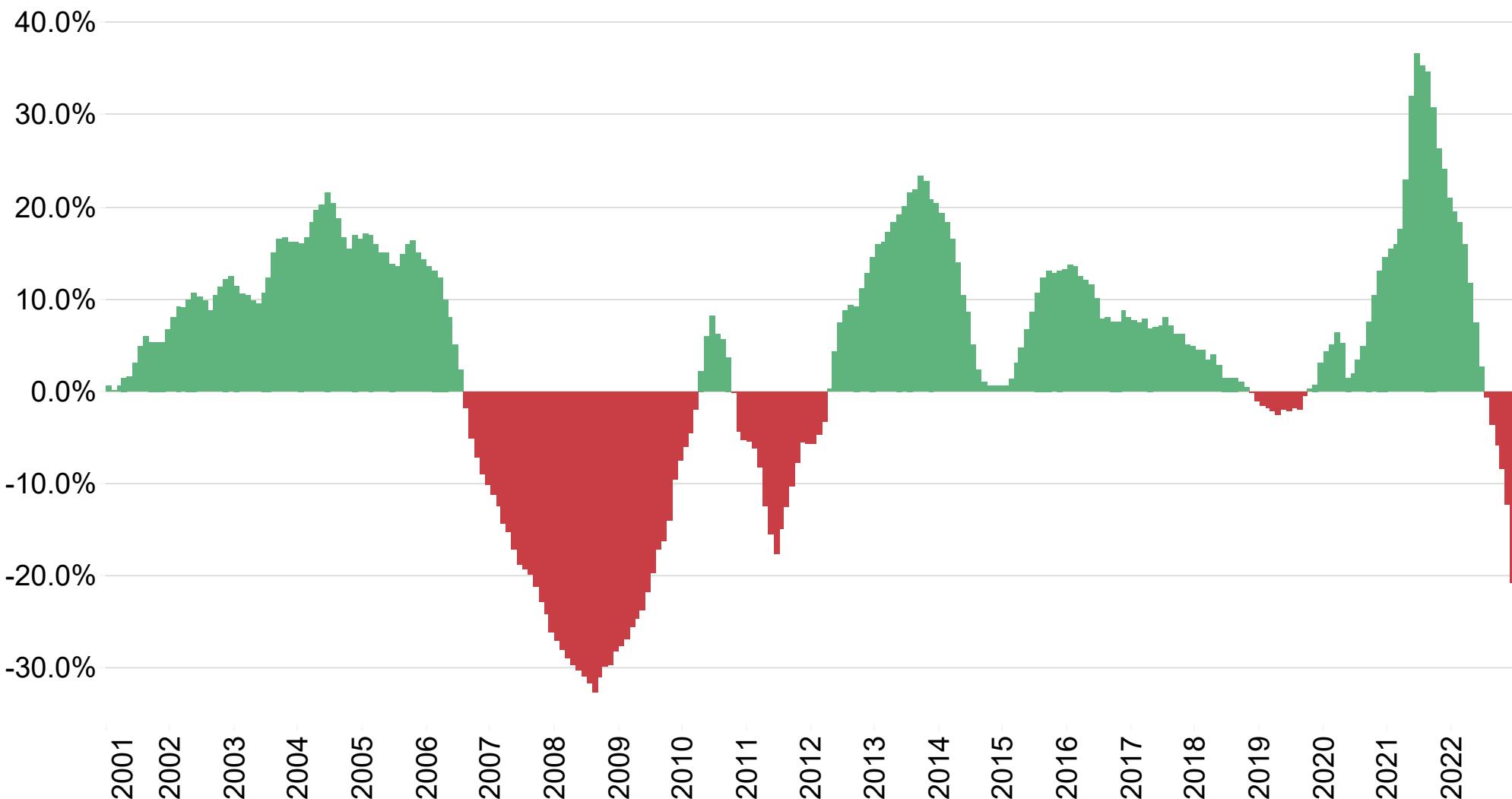
Source: John Burns Real Estate Consulting, LLC, calculations of National Association of Realtors data (Data: Dec-22, Pub: Jan-23)

Existing Home Revenue YOY

Existing home revenue fell -21% YOY on a rolling TTM non-seasonally adjusted basis.

Existing Home Revenue

YOY change; inflation-adjusted, rolling 12 months



Annual existing home revenue calculated as rolling 12-month count of existing home sales multiplied by median price of home sold, adjusted to Dec-22 dollars.

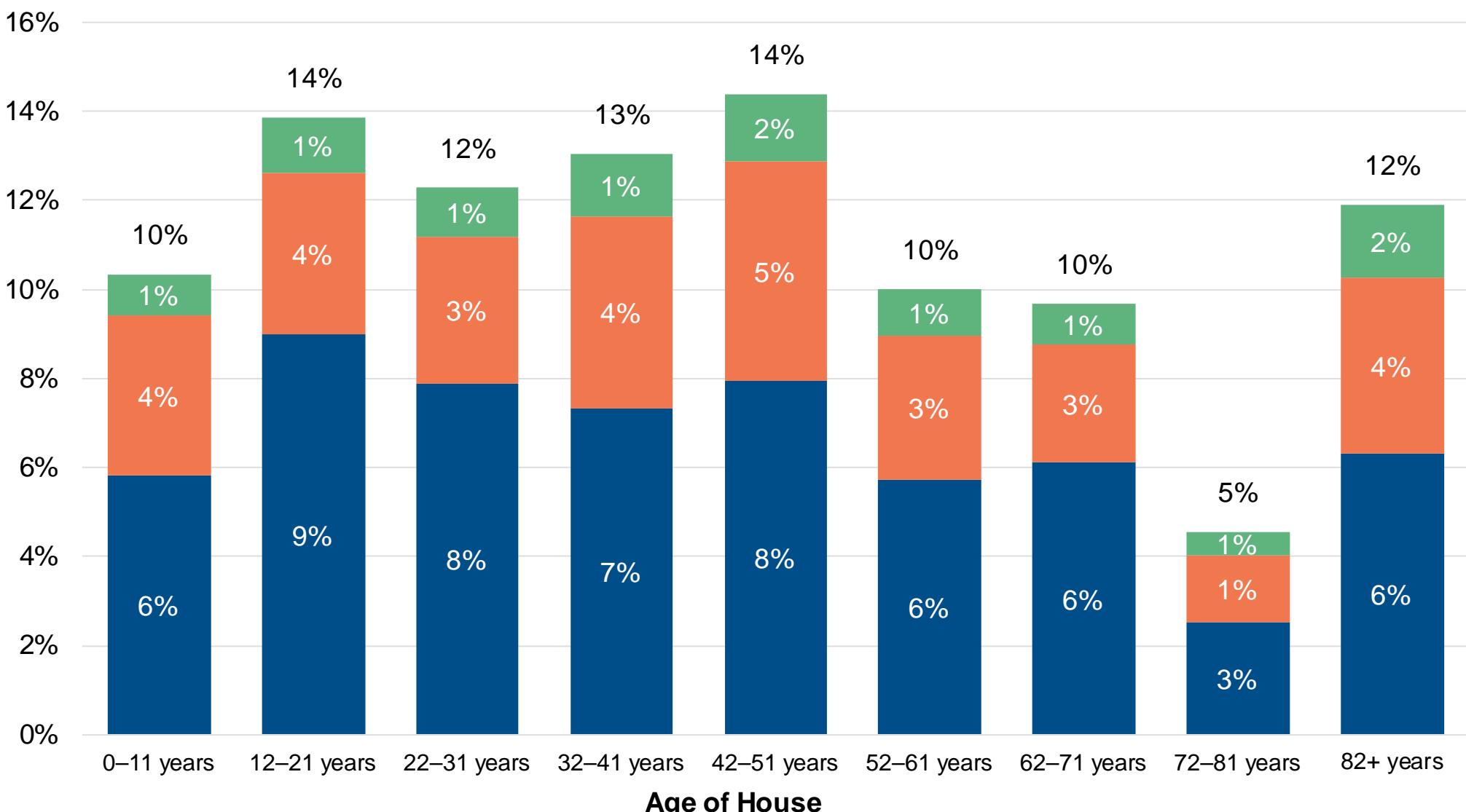
Source: John Burns Real Estate Consulting, LLC, calculations of National Association of Realtors data (Data: Dec-22 Pub: Jan-23)

Percentage of Housing Units by Year Built

51% of the nation's housing stock is at least 41 years old.

Percentage of Housing Units by Year Built

■ Owner occupied ■ Renter occupied ■ Vacant



Source: U.S. Census Bureau (Data: 2021, updated annually)

Pub: Jan-23

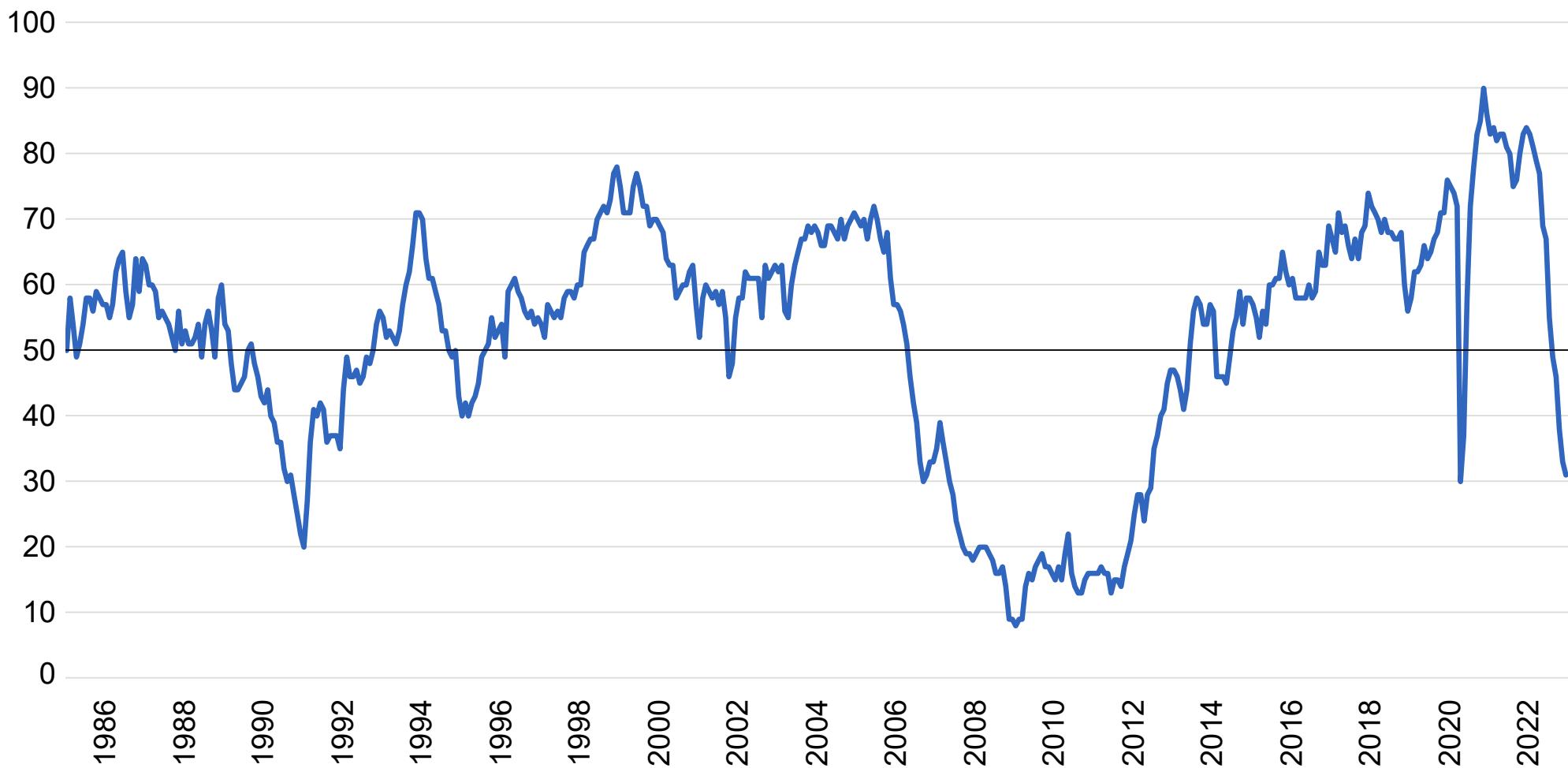
New home market

NAHB Housing Market Index

The Housing Market Index fell to 31 in December. More survey respondents consider the housing market poor than good, and sentiment is continuing to deteriorate.

Housing Market Index

— Housing Market Index = 31; a value over 50 indicates that more builders view conditions as good than poor.



We believe the HMI is somewhat disconnected from the on-the-ground housing market conditions of big builders, as it includes many small builders in rural areas. We trust our monthly survey of builders, which includes a big geographic footprint and feedback from top executives of many larger production builders.

Source: NAHB (Data: Dec-22, Pub: Jan-23)

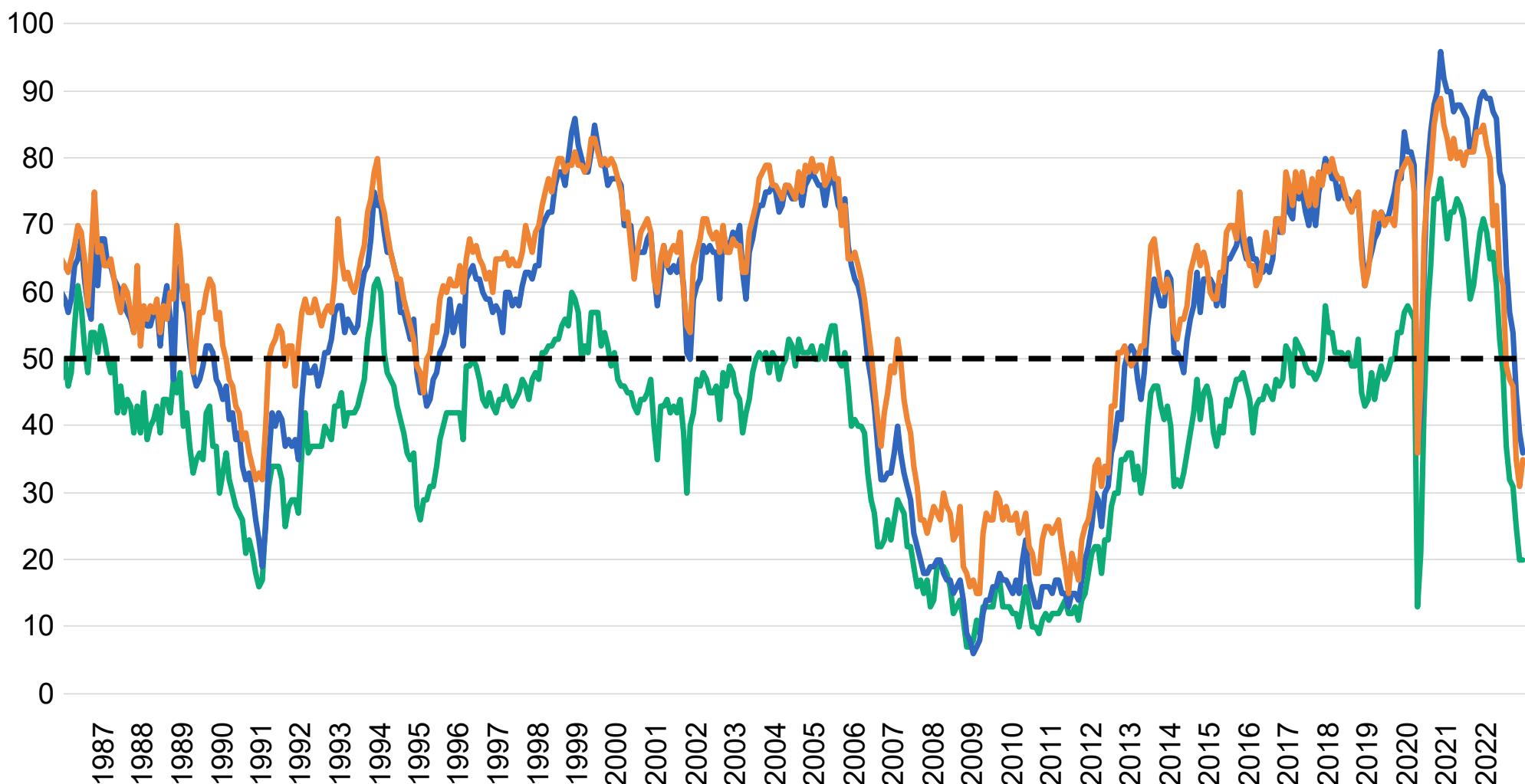
NAHB Housing Market Index Components

Buyer traffic and present sales fell in December. Expected sales over the next 6 months ticked up.

Housing Market Index Components

— Single-family sales: present = 36 — Sales: next six months = 35 — Buyer traffic = 20

A value over 50 indicates that more builders view conditions as good rather than poor.



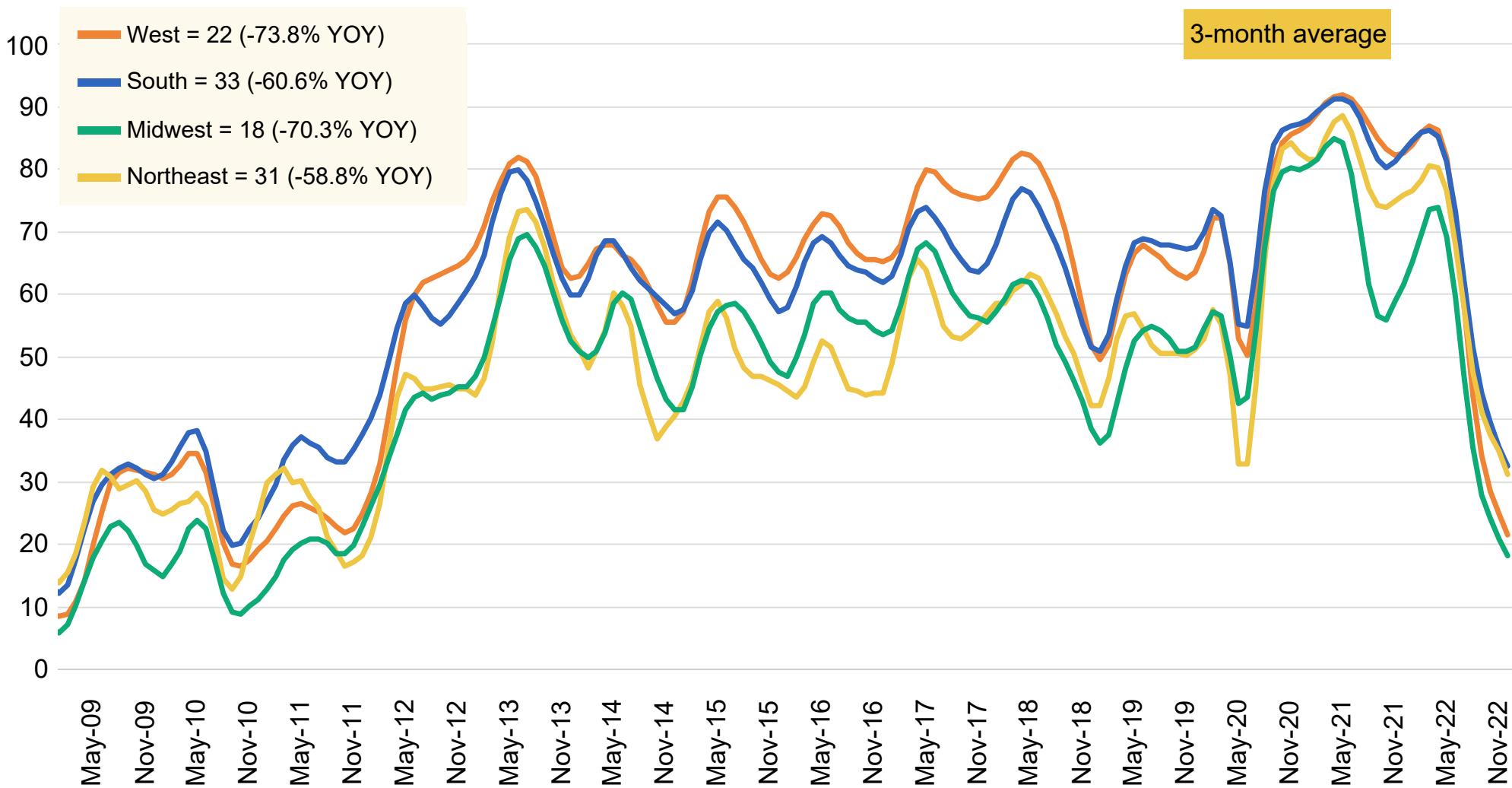
Source: NAHB (Data: Dec-22, Pub: Jan-23)

Regional Housing Market Index (JBREC Survey)

In every region, more builders rate conditions as poor than good.

Regional Housing Market Index

Index based on 3-month average in JBREC's monthly builder survey. Any number over 50 indicates more builders view as good than poor.



Source: John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

Regional New Home Sales Volume

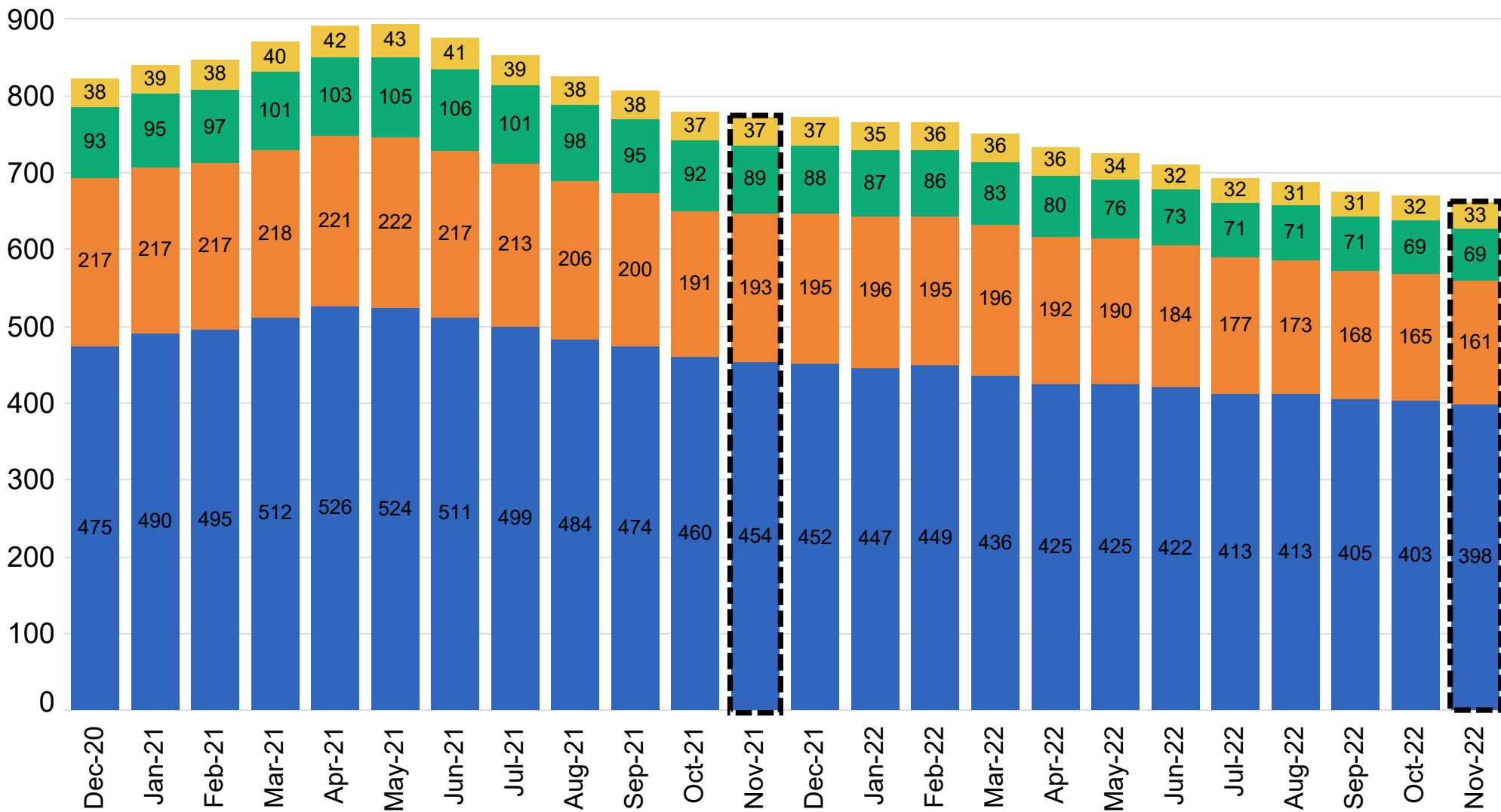
On a YOY basis, new home sales fell across all regions. Sales fell most in the Midwest (-22% YOY).

Regional New Home Sales

NSA, trailing 12-month total (thousands)

Northeast = 33K (-11% YOY)
West = 161K (-17% YOY)

Midwest = 69K (-22% YOY)
South = 398K (-12% YOY)



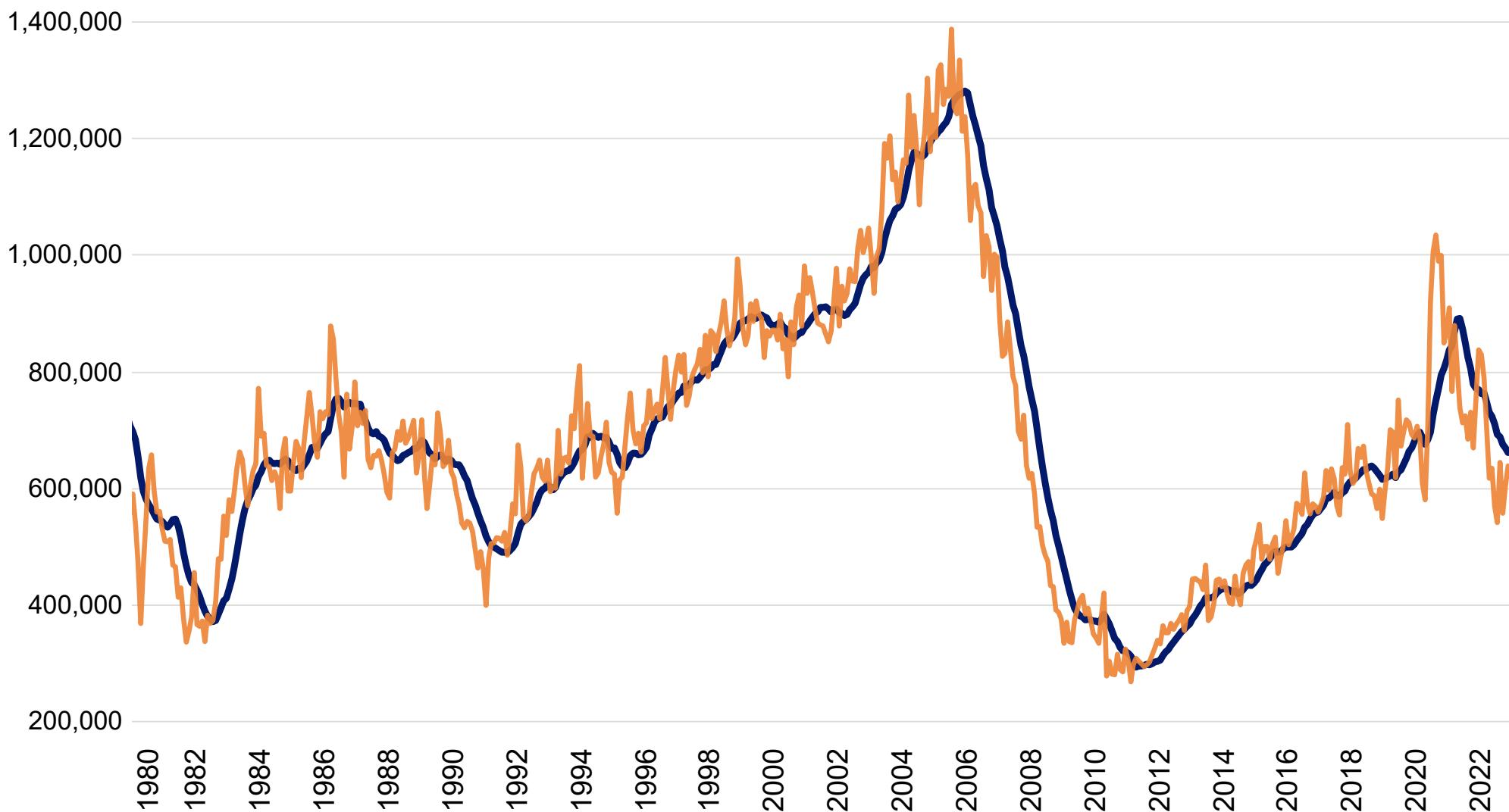
Source: NAHB (Data: Nov-22, Pub: Jan-23)

New Home Sales Volume

New home sales fell -15% YOY on a seasonally adjusted basis.

New Home Sales Volume

— Seasonally adjusted = 640K (-15% YOY) — Rolling 12-month total (NSA) = 663K (-14% YOY)



Note that the seasonally adjusted MOM margin of error is +/- 16%, so we focus more on the underlying non-seasonally adjusted trend.

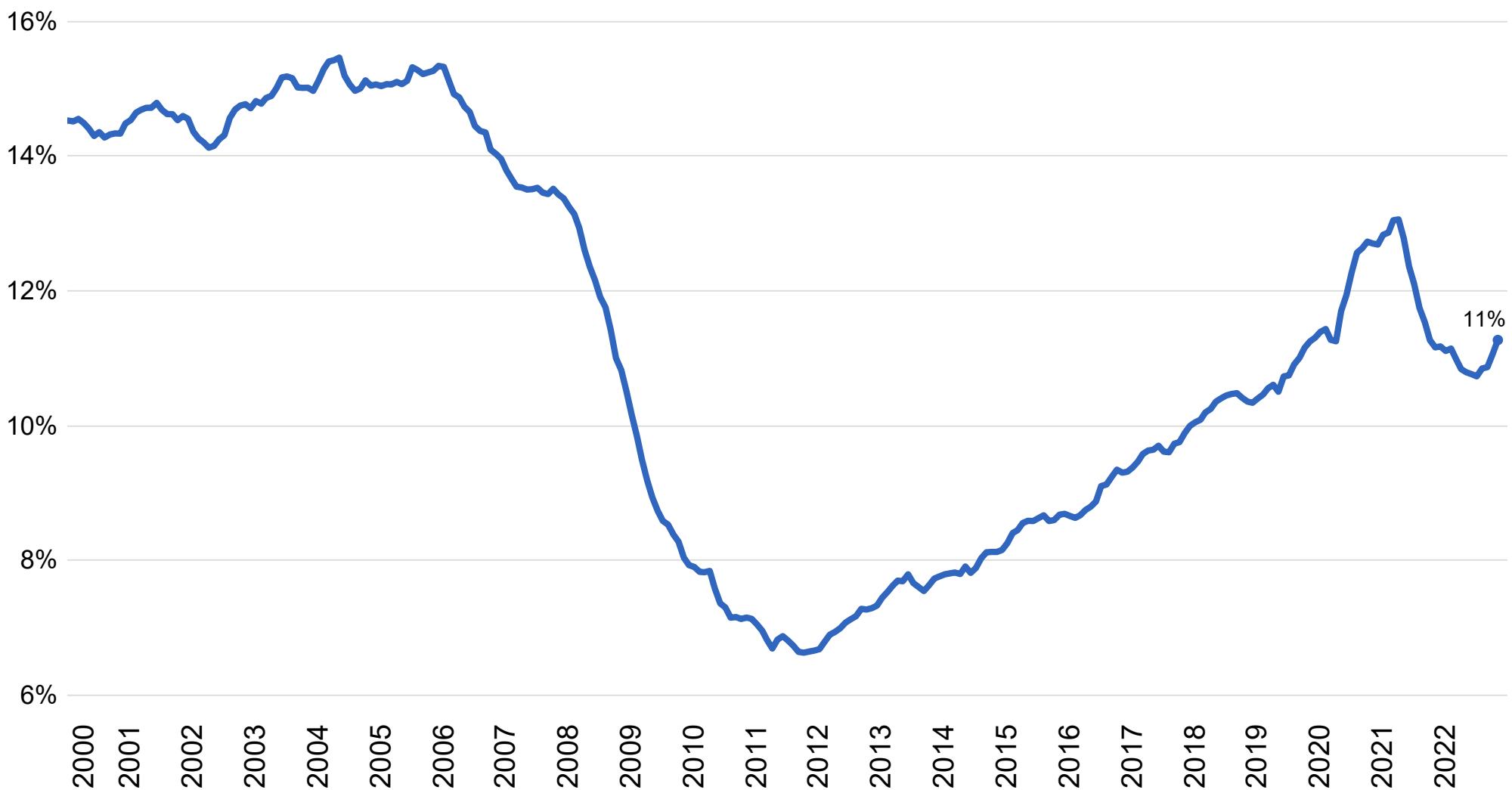
Source: Census Bureau (Data: Nov-22, Pub: Jan-23)

New Home Share of All Sales

New homes represent 11% of all sales, down from a recent peak of 13%.

New Home Share of All Sales

— New Homes Share of All Sales (NSA) Current = 11%



Sources: Census Bureau; John Burns Real Estate Consulting (Data: Nov-22, Pub: Jan-23)

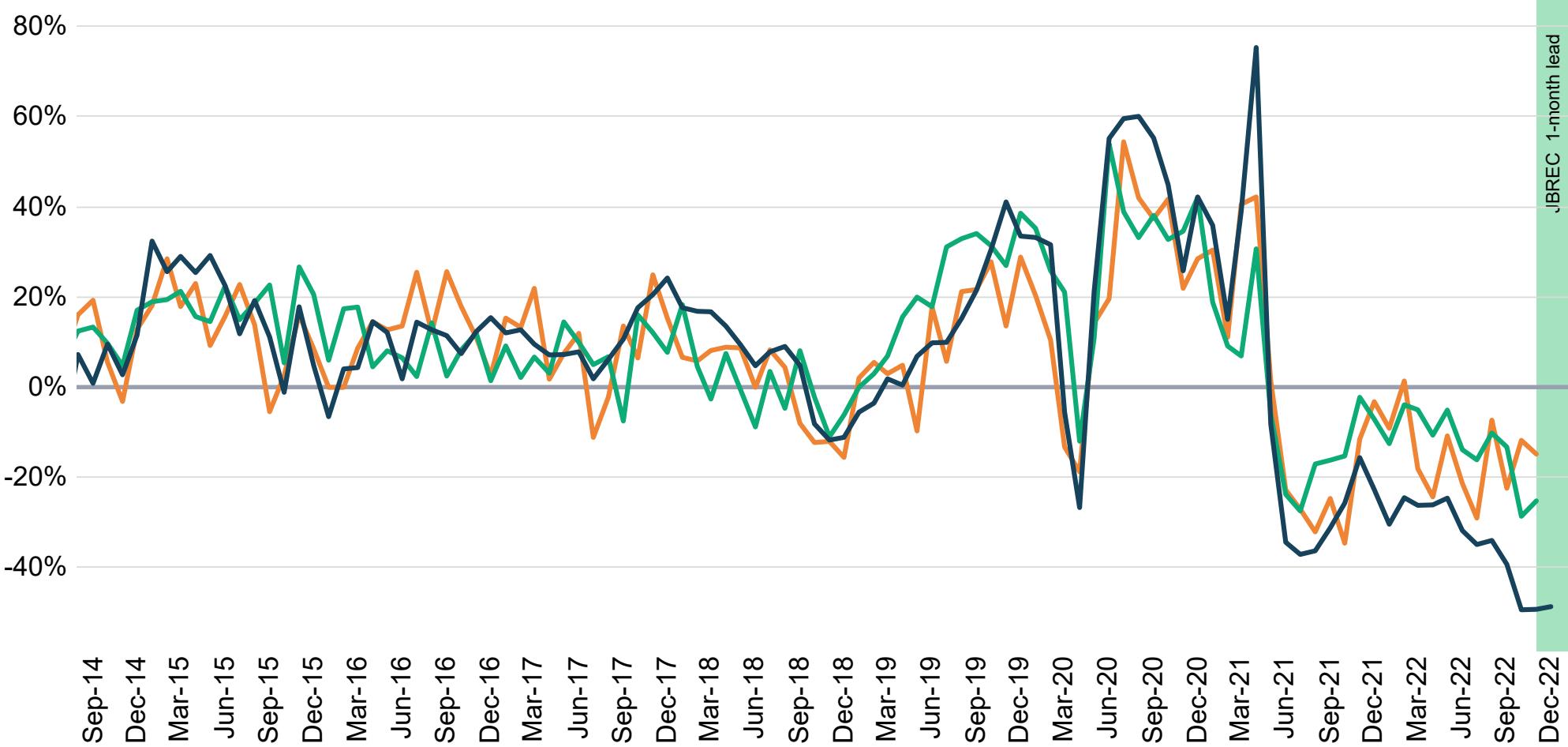
Indicators for New Home Purchase

Our national new home sales index leads the Census Report by over two weeks and the MBA Builder Application Survey by one week. According to our December 2022 index, sales fell -49% YOY.

Proxies for New Home Sales

NSA, YOY

- JBREC Builder Survey National Sales Index = -49% YOY
- MBA Builder Mortgage Applications Survey = -25% YOY
- Census New Home Sales Reported = -15% YOY



MBA's Builder Mortgage Applications Survey captures ~20% of the new home sales market, with most participation from lenders associated with the larger builders. This survey is based on loan-level data from mortgage companies composed of applications for only new single-family homes. MBA survey data is collected monthly.

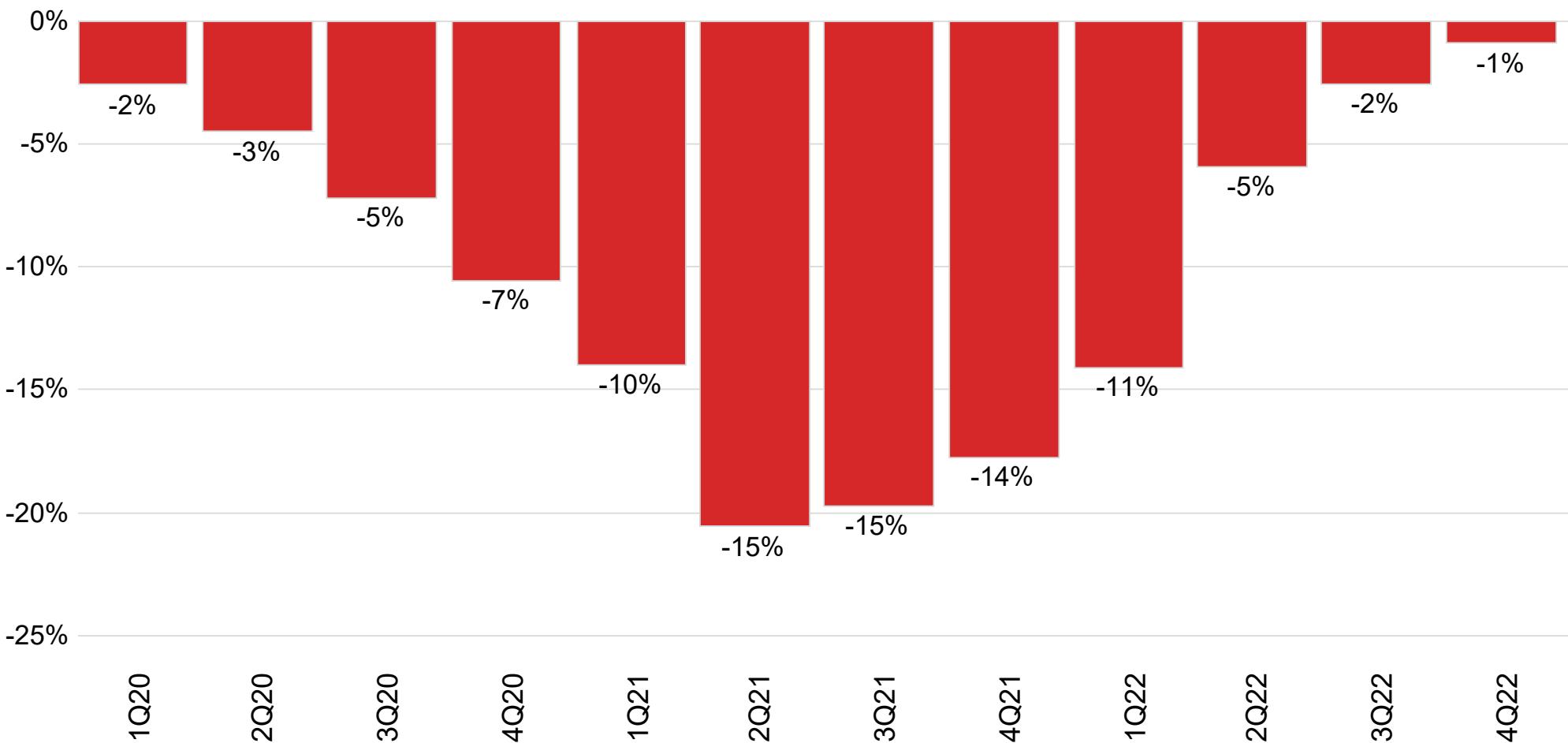
Sources: U.S. Census Bureau; Mortgage Bankers Association; John Burns Real Estate Consulting, LLC (Data: Dec-22, Pub: Jan-23)

New Home Builder Community Count Growth

New home communities decreased -1% YOY in 4Q22.

New Home Builder Community Count Growth

Within the top 65 markets



Methodology: Every quarter, we count and geocode every actively selling community of every production builder we can identify in 65 major markets. This allows us to track almost all of the for-sale new home subdivision supply in 65 major markets, which comprise 40%+- of all the SF construction in the country. We also count and geocode all of the publicly traded home builder communities in the other MSAs where they build. All told, the 900+ active home builders we survey are building 14,000+ communities that make up roughly 65% of all new homes in the country.

Source: John Burns Real Estate Consulting, LLC (Data: 4Q22, Pub: Jan-23)

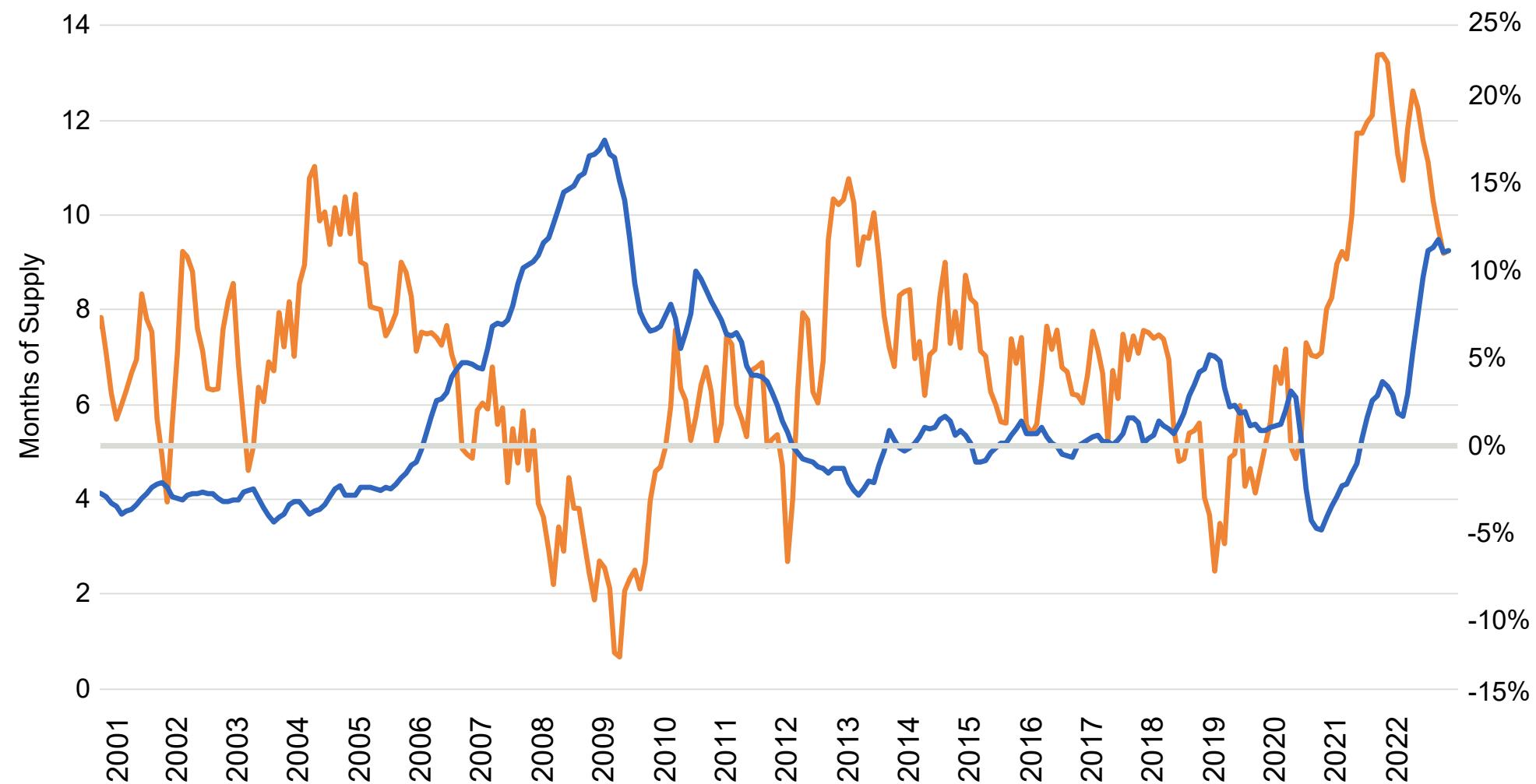
New Home Price Appreciation and Unsold Supply

New home months of unsold supply rose to 9.3, while new home prices rose 11% YOY. Note that mix shift can skew median new home price trends as reported by the Census Bureau.

New Home Unsold Months of Supply vs. Price Appreciation

— 3-month average new price change = (11% YOY) — 3-month average months of supply = 9.3

Months of Supply = not started + under construction + completed



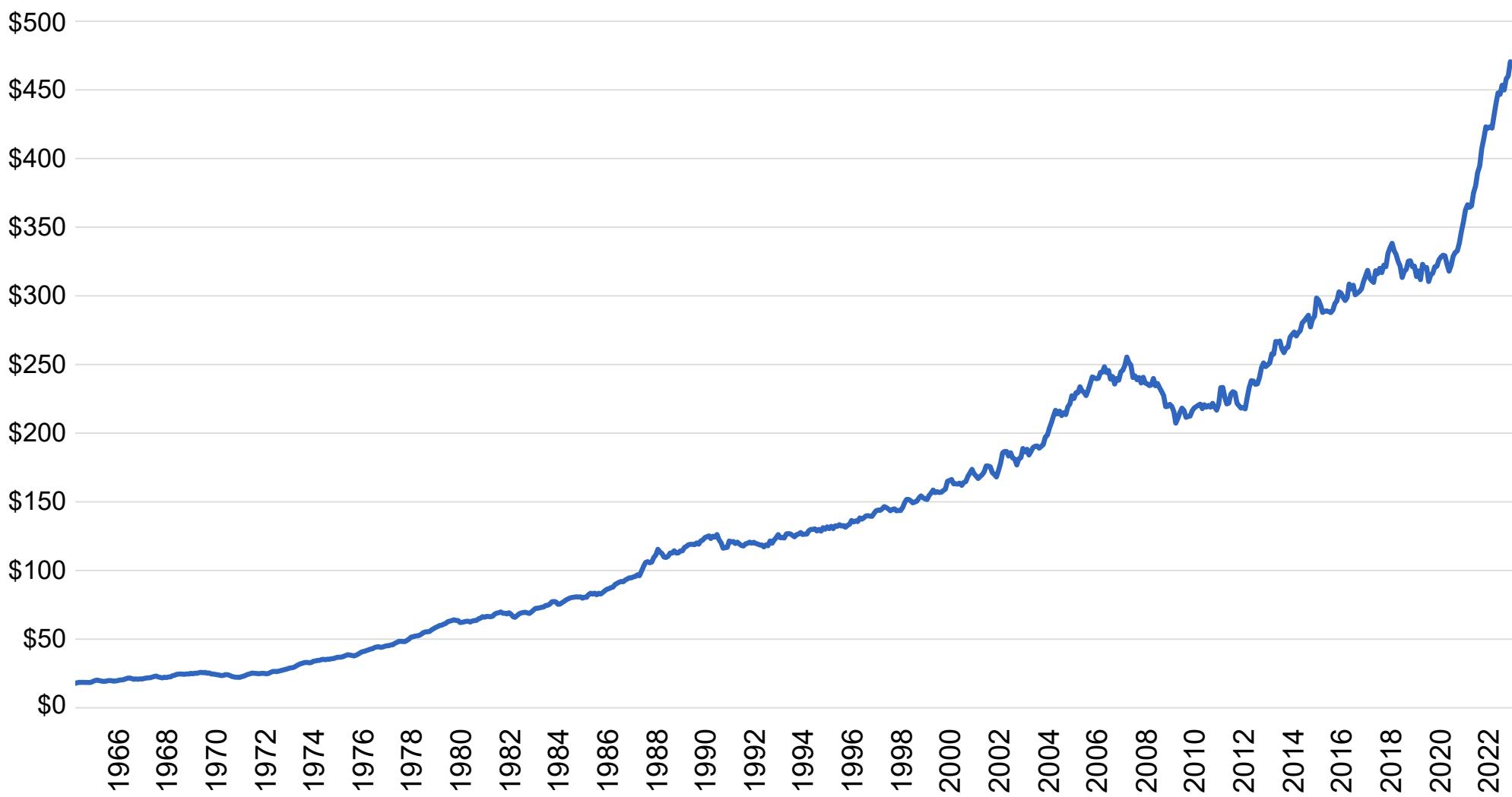
Sources: Census Bureau; John Burns Real Estate Consulting (Data: Nov-22, Pub: Jan-23)

Single-Family Median New Home Price

The single-family median new home price is \$471K, up 11.2% YOY. Note that mix shift can skew median new home price trends as reported by the Census Bureau.

Single-Family Median New Home Price

Thousands, 3-month moving average — Current = \$471K



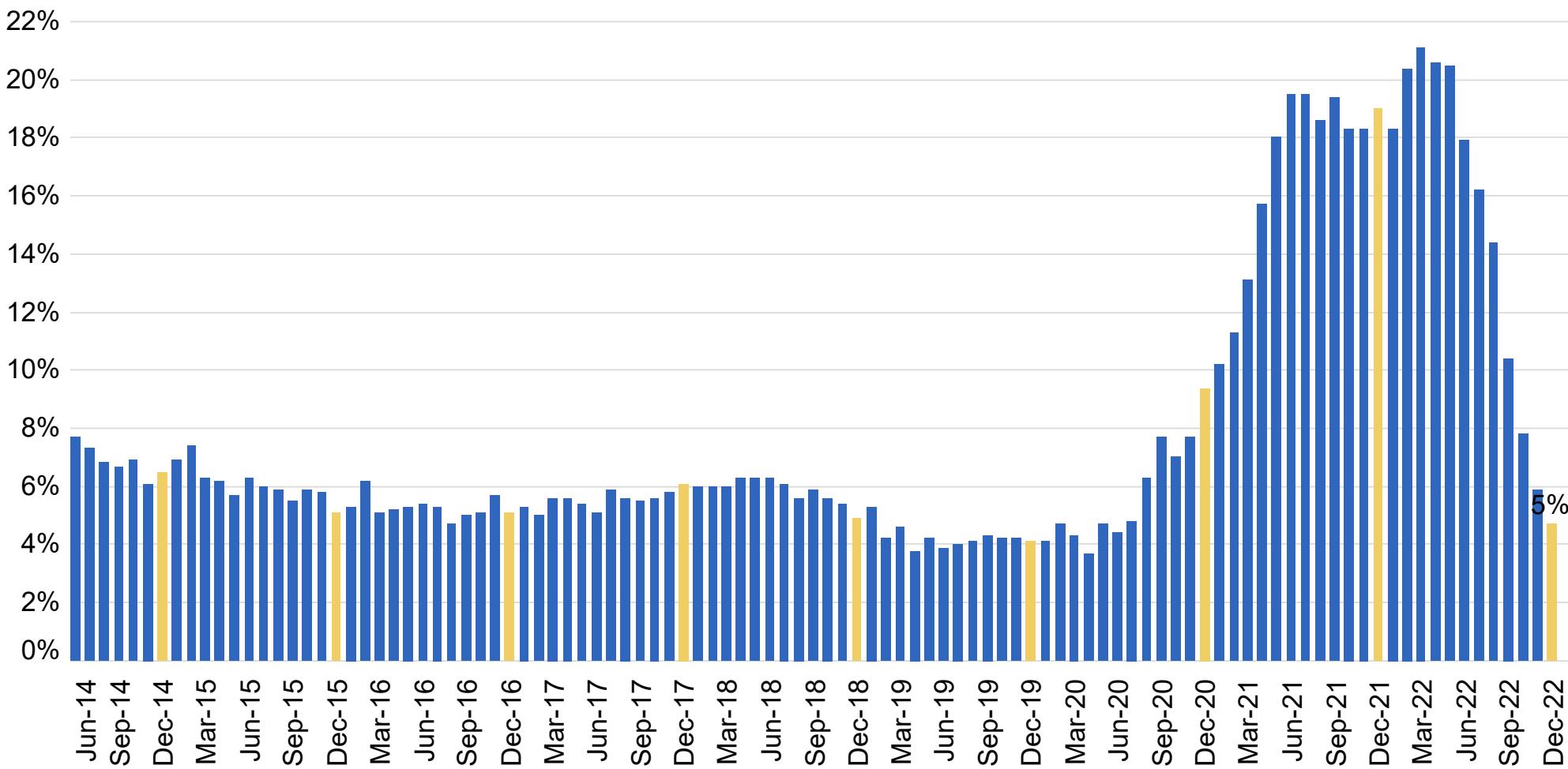
Source: Census Bureau (Data: Nov-22, Pub: Jan-23)

National New Home YOY Price Increases

According to our monthly builder survey, new home prices (net of incentives) increased 5% YOY. We draw on the large sample size of our proprietary survey when developing our new home price forecasts.

National New Home YOY Price Increases (Net of Incentives)

Weighted average (matched builders YOY)



*Note: The above chart shows YOY comparisons only for builders who participated in the survey one year prior. For the Dec-22 survey, YOY comparisons include 400 responses.

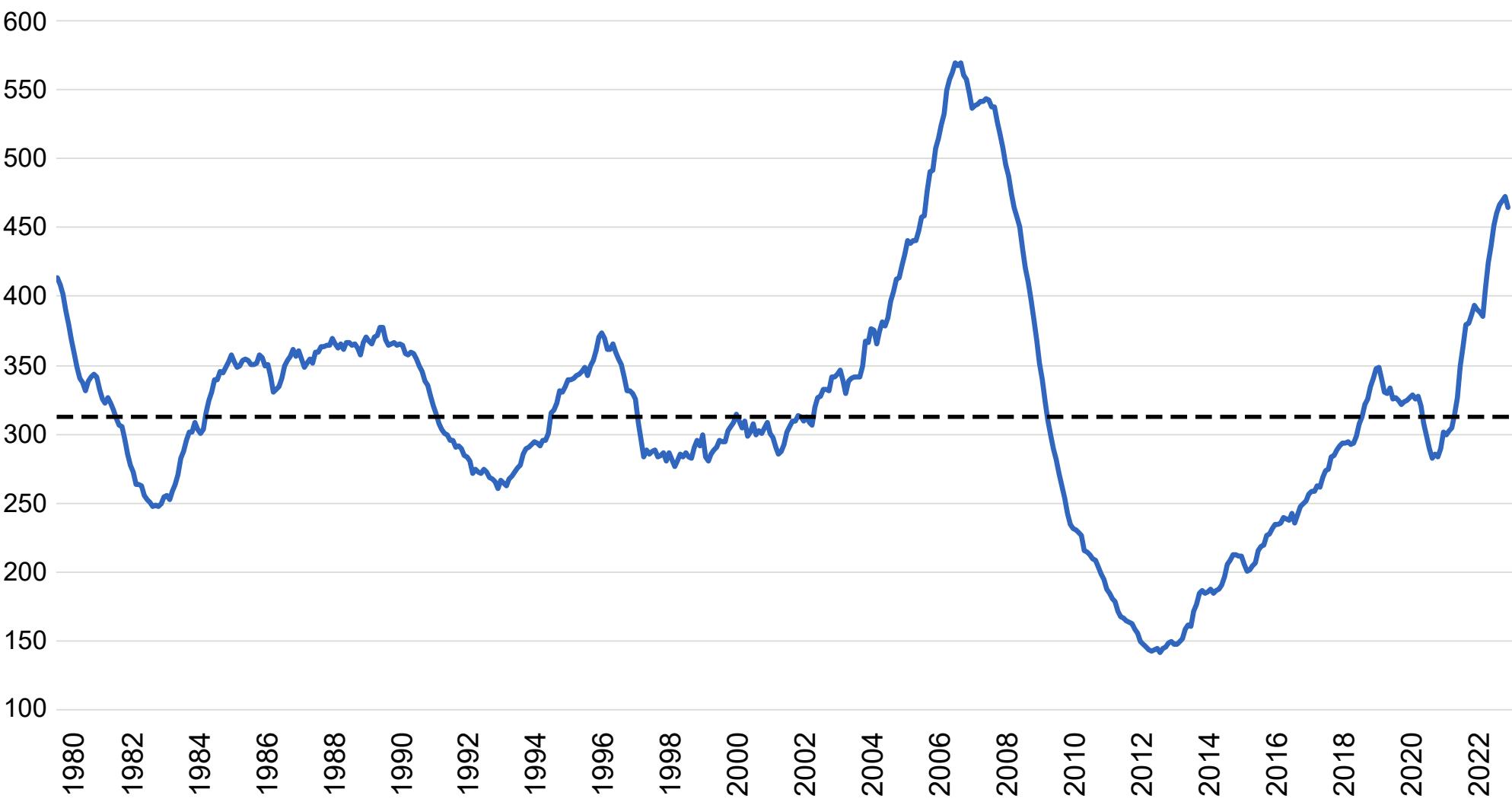
Source: John Burns Real Estate Consulting, LLC, independent survey of ~21% of all US new home sales, NSA (Data: Dec-22, Pub: Jan-23)

Unsold New Home Inventory

Unsold new home inventory increased 18% YOY. Unsold inventory is above the historical average and is 18% below peak levels reached in mid-2006.

Unsold New Home Inventory

Thousands, NSA — New home inventory = 465K (18% YOY) - - Historical average*



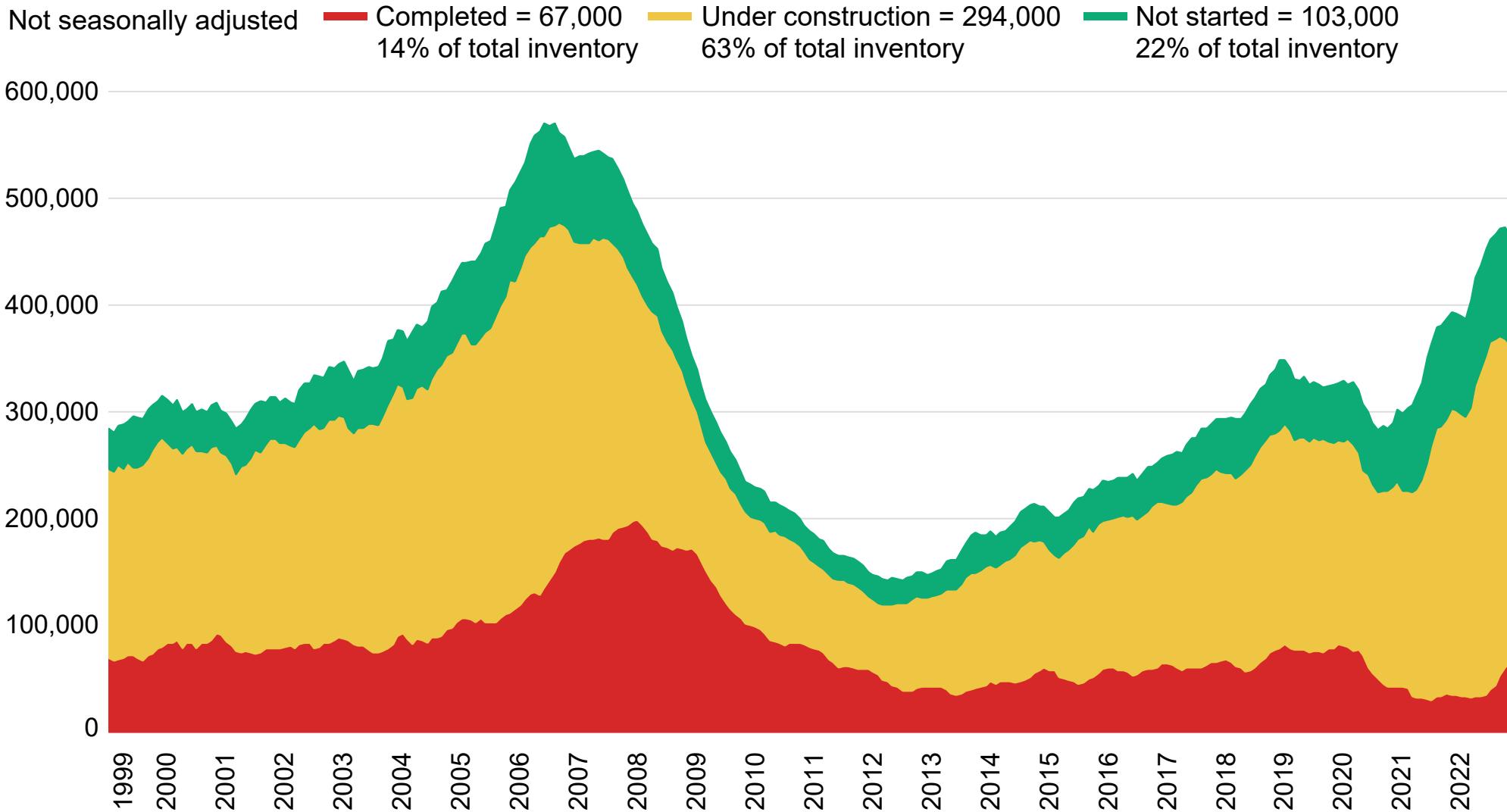
Source: Census Bureau (Data: Nov-22, Pub: Jan-23)

*Historical average Jan-63 through current

Unsold Single-Family Inventory

The gap between unsold single-family homes under construction vs. completed remains large. Completed homes represent just 14% of total inventory (compared to 15-20% on average this cycle).

Unsold Single-Family Inventory

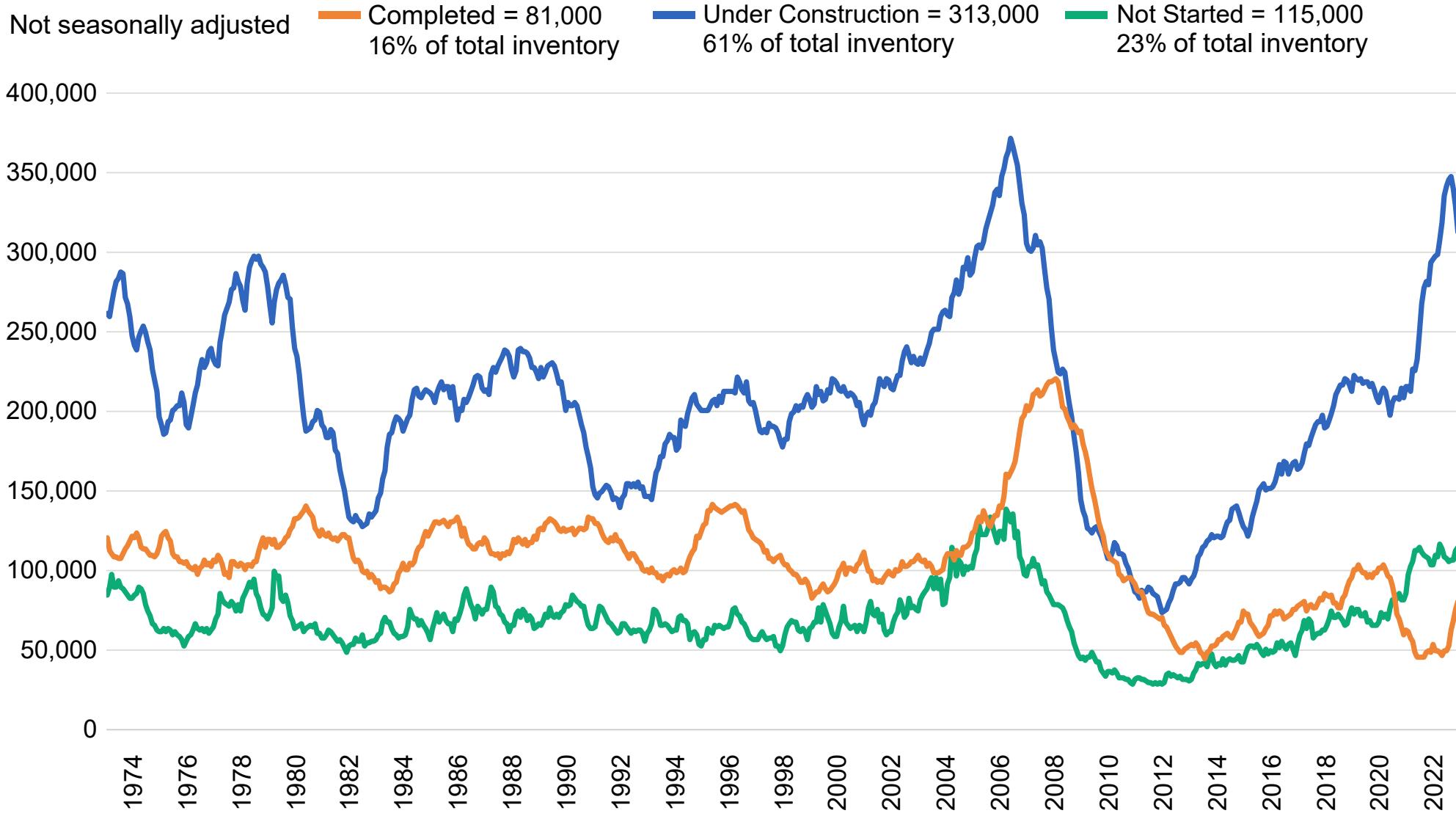


Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Single-Family Housing Stock Under Construction (Sold + Unsold)

There are 313K single-family homes currently under construction, which represent 61% of total inventory. Authorized but not started homes represent 23% of total inventory.

Single-Family Housing Stock Under Construction (Sold + Unsold)



Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

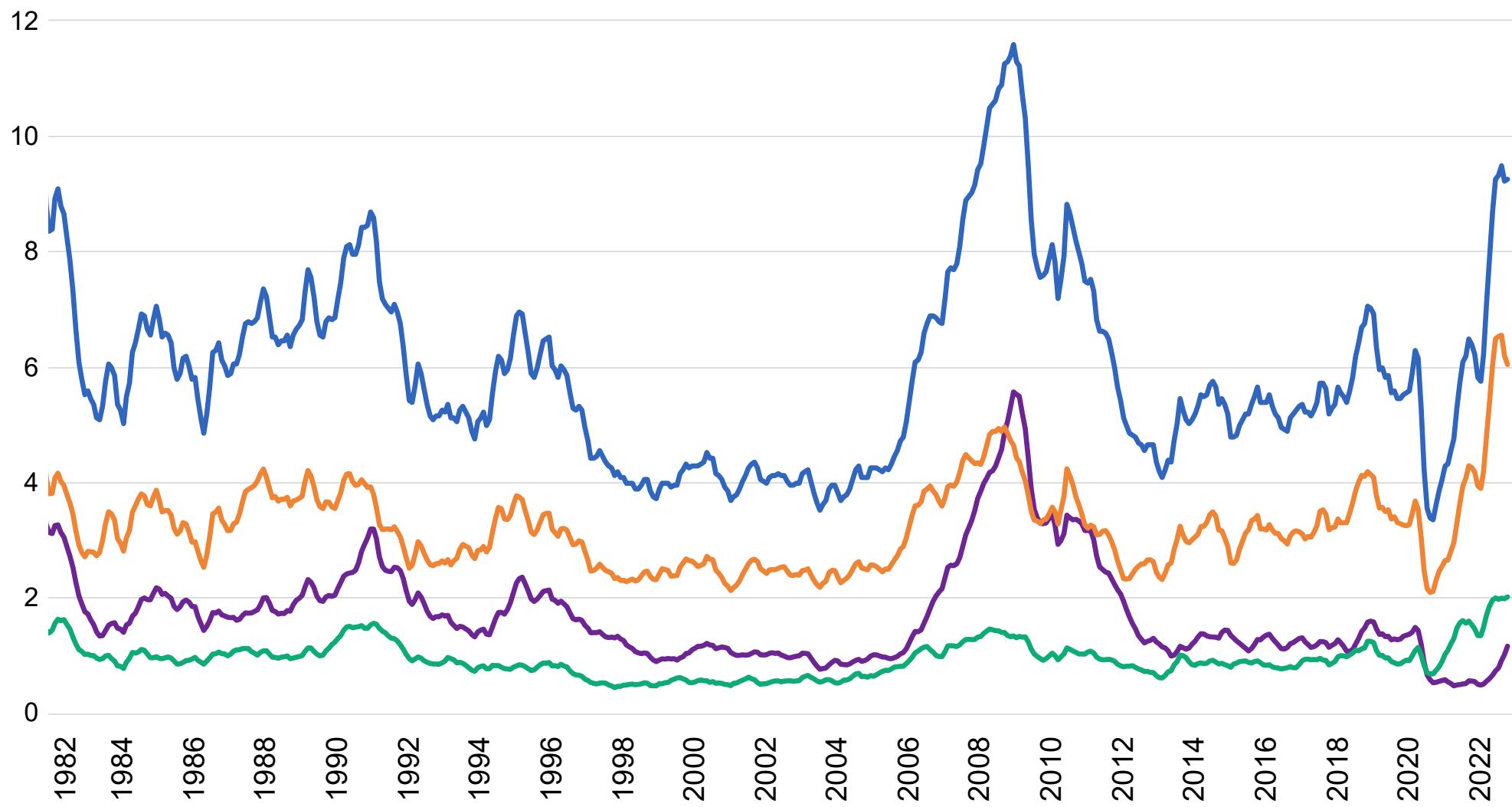
Months of Supply: New Homes Unsold

Unsold new home inventory rose to 9.3 months of supply in November.

Months of Supply (New Homes by Stage of Completion)

All unsold = 9.3 Not started = 2.0 Under construction = 6.1 Completed = 1.2

3-month average (all unsold equals not started + under construction + completed)



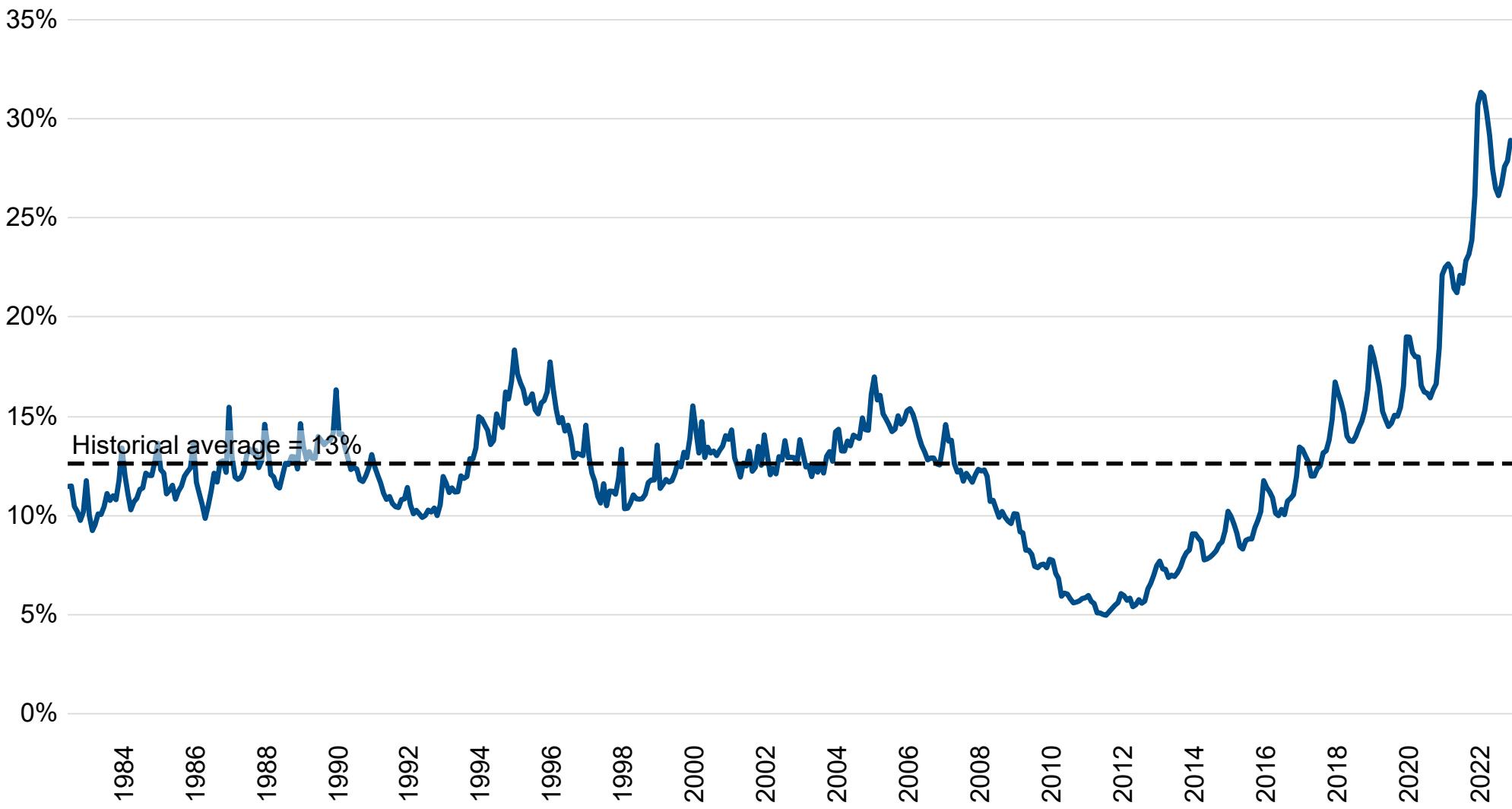
Sources: Census Bureau; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

New Homes for Sale as a Share of Inventory

New homes represented 29% of total for-sale single family inventory in November. Note that this includes both completed inventory as well as inventory under construction.

New Homes for Sale as a % of Total For-Sale Single-Family Inventory

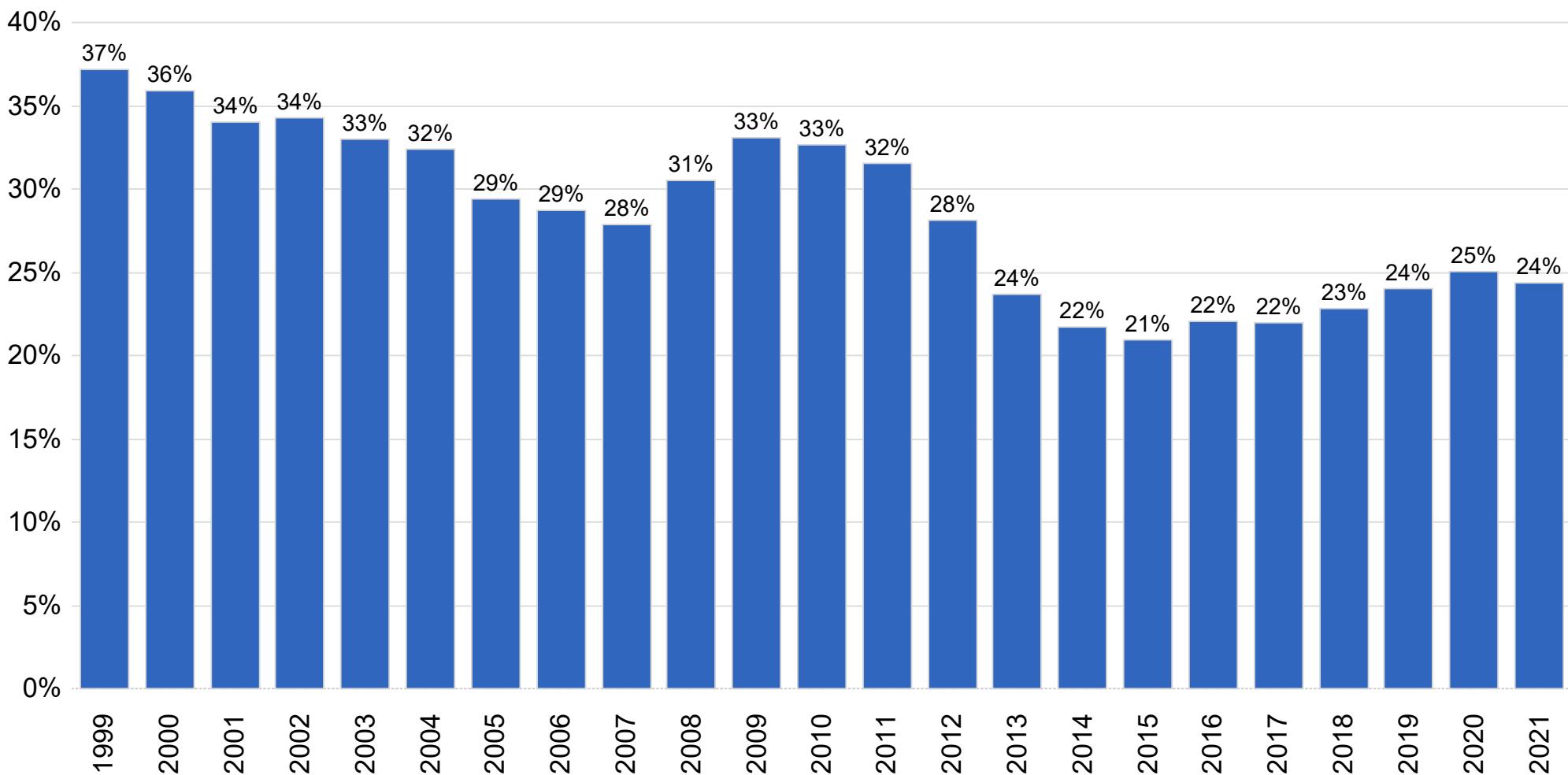
— New home share of inventory (NSA) Current = 29.0%



Percentage of New Homes Built with Less than 1,800 Square Feet

Since 1999, new homes built with less than 1,800 sq. ft. declined from 37% to just 24% of the overall new home market.

Percentage of New Homes Built with Less than 1,800 Square Feet



Source: U.S. Census Bureau (Data: 2021, Pub: Jan-23)

New Single-Family Completions

Completions of new single-family homes under 1,799 sq. ft. increased 3% YOY in 2021.

New Single-Family Completions

YOY % Change in square feet of floor area

Under 1,799 (3% YOY)

2,400 - 2,399 (7% YOY)

1,800 - 2,399 (7% YOY)

3,000+ (8% YOY)



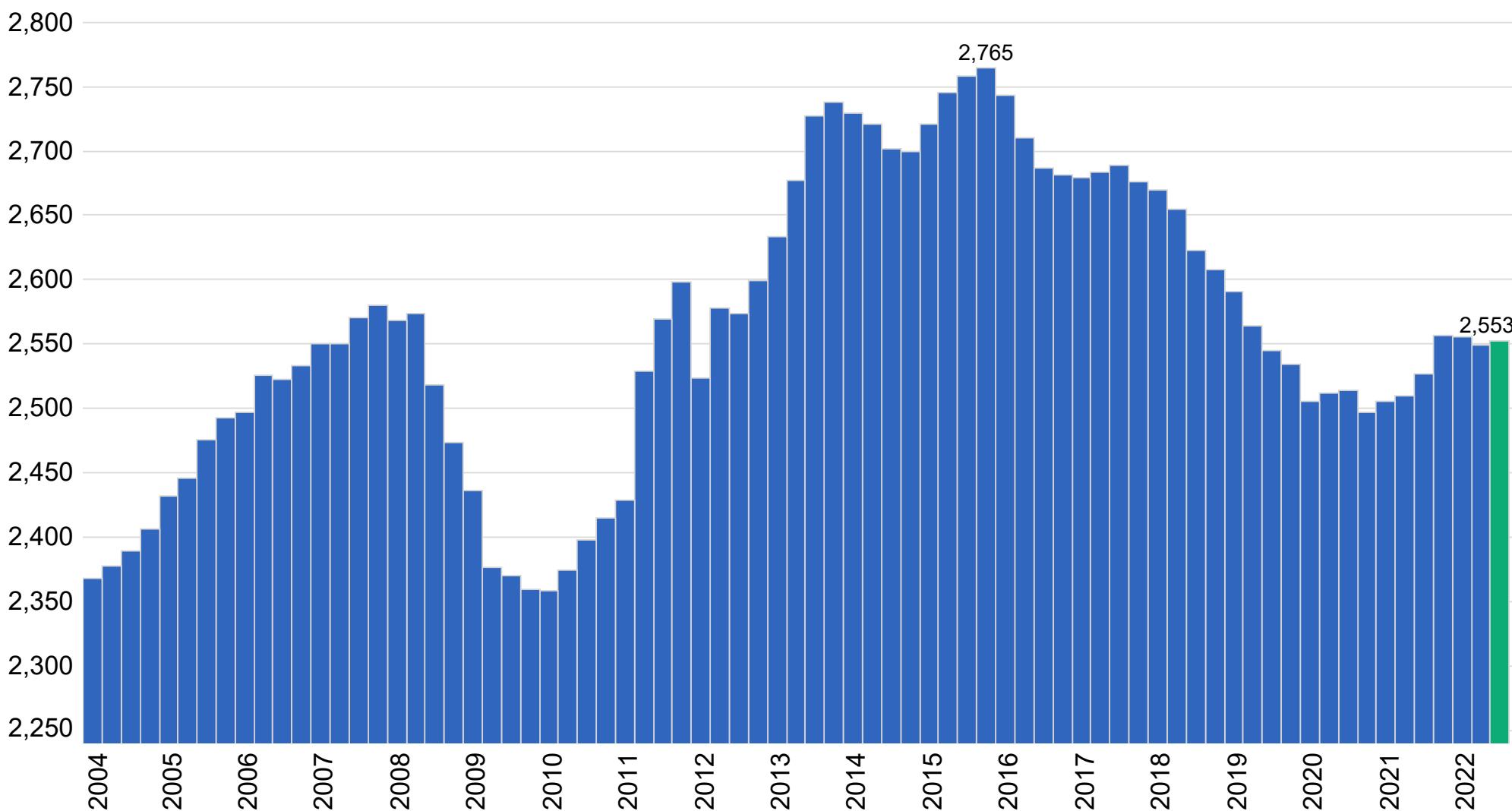
Source: U.S. Census Bureau (Data: 2021, Pub: Jan-23)

Size of New Single-Family Homes

The average size of new single-family homes rose slightly in 3Q22.

Size of New Single-Family Homes

■ SF starts: average floor area ■ Current* = 2,553



*Current is a rolling 4 quarter average

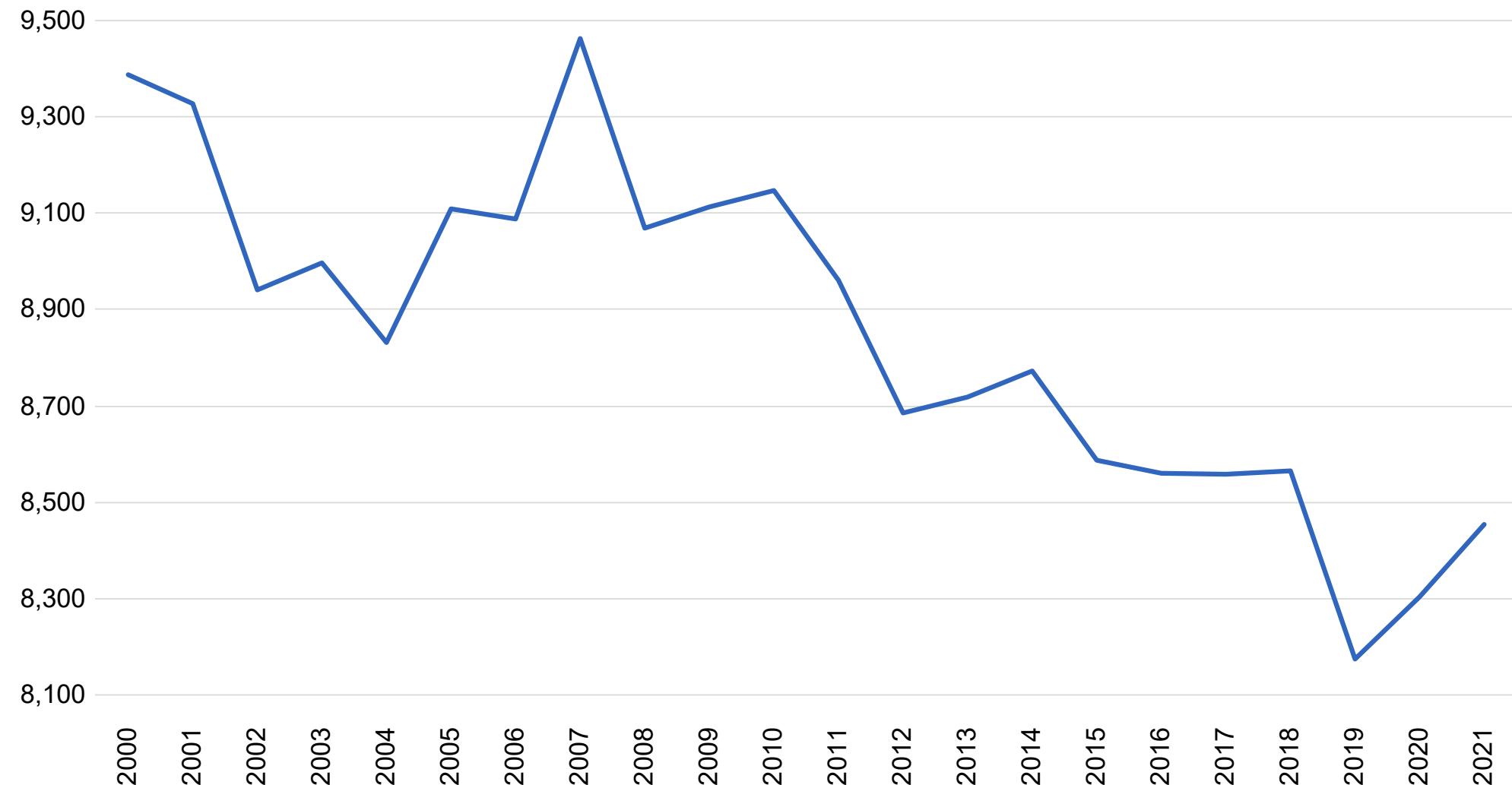
Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

Median Lot Size

Since 1999, lot sizes have declined -11%. As first-time buyers enter the market, builders are pivoting to denser projects to accommodate this rising demand.

Median Lot Size: New Homes Sold*

Median lot size, sq. ft.



Source: U.S. Census Bureau (Data: 2021, Pub: Jan-23)

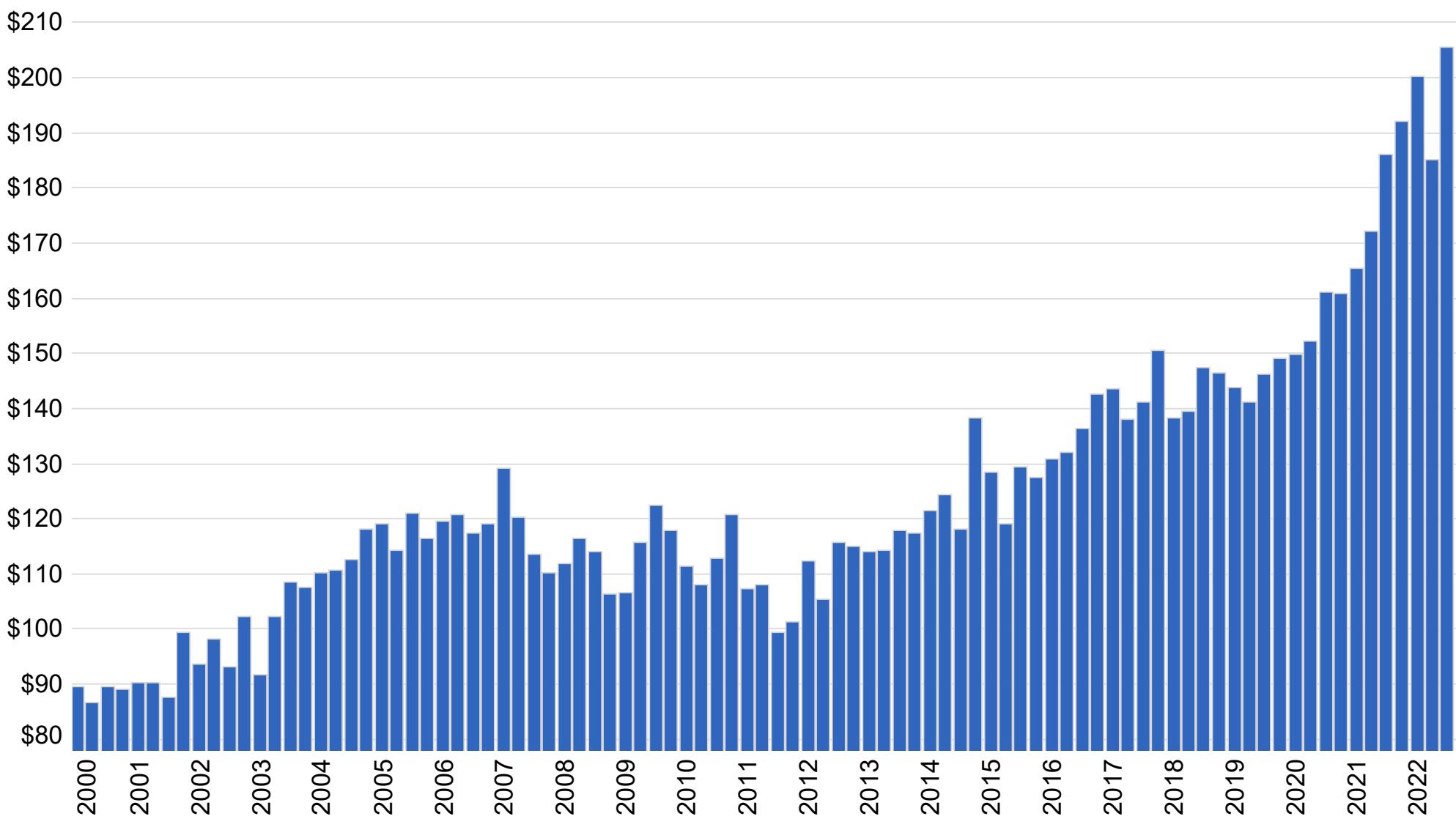
*Single-family detached

Average Price per Square Foot of Newly Built US Homes

The average price per square foot for a newly built home in 3Q22 rose 10% YOY to \$206.

Average Price per Square Foot of Newly Built US Homes

Current = \$206

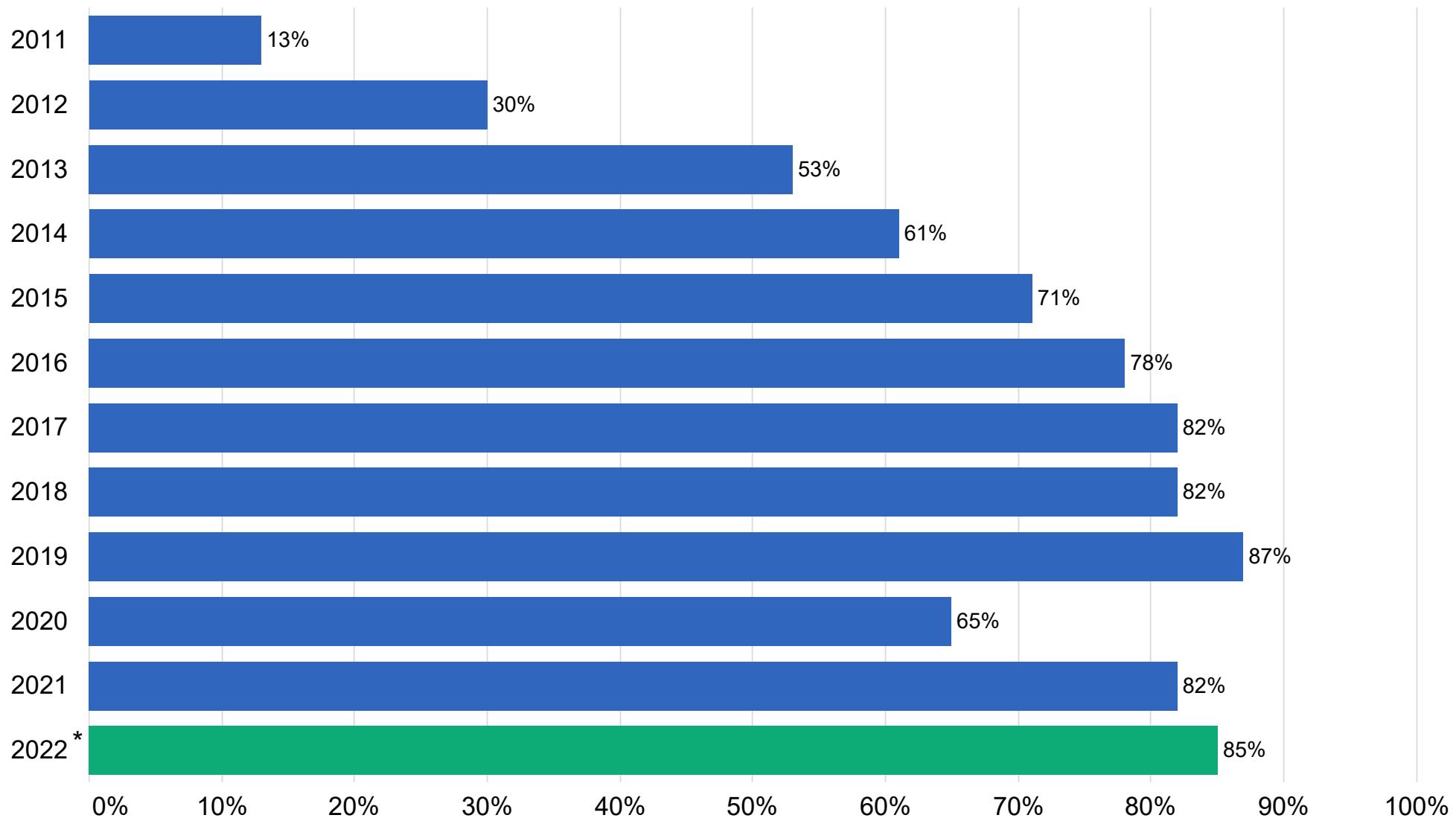


Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, Pub: Jan-23)

Labor Challenges

85% of builders expect labor shortages in 2022 versus 82% who experienced shortages in 2021. Shortages drive up builder costs, lengthen building cycle times, and hamper construction activity.

Percentage of Builders Reporting Cost/Availability of Labor as a Challenge

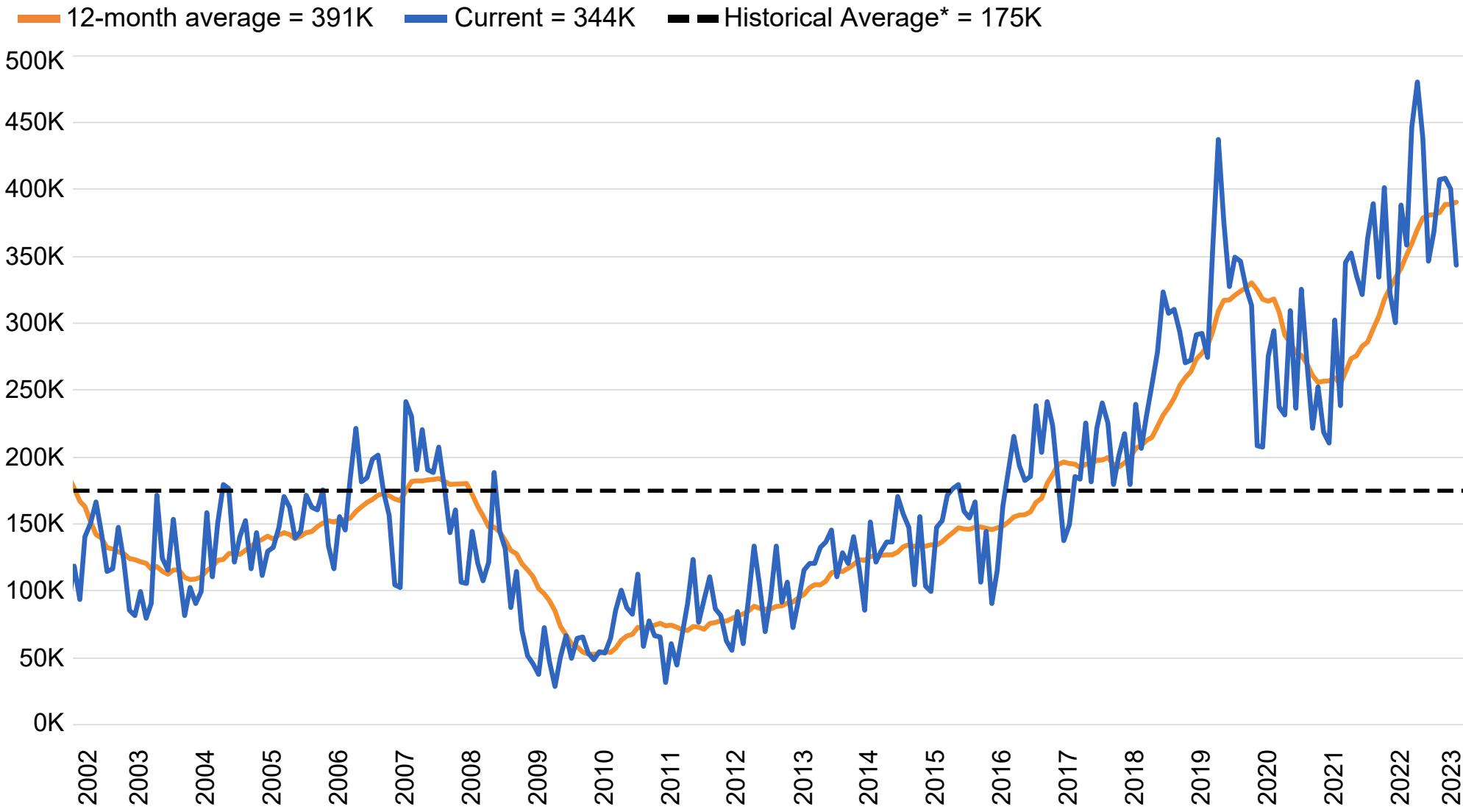


Source: NAHB (Data: Dec-21, Pub: Jan-23) *Expected labor cost/availability challenges

Construction Job Openings

Construction job openings fell to 344K in November. Job openings are still high relative to history. A large number of openings entail a shortage of labor, which can delay build times and increase costs.

Construction Job Openings



Sources: BLS; John Burns Real Estate Consulting, LLC (Data: Nov-22, Pub: Jan-23)

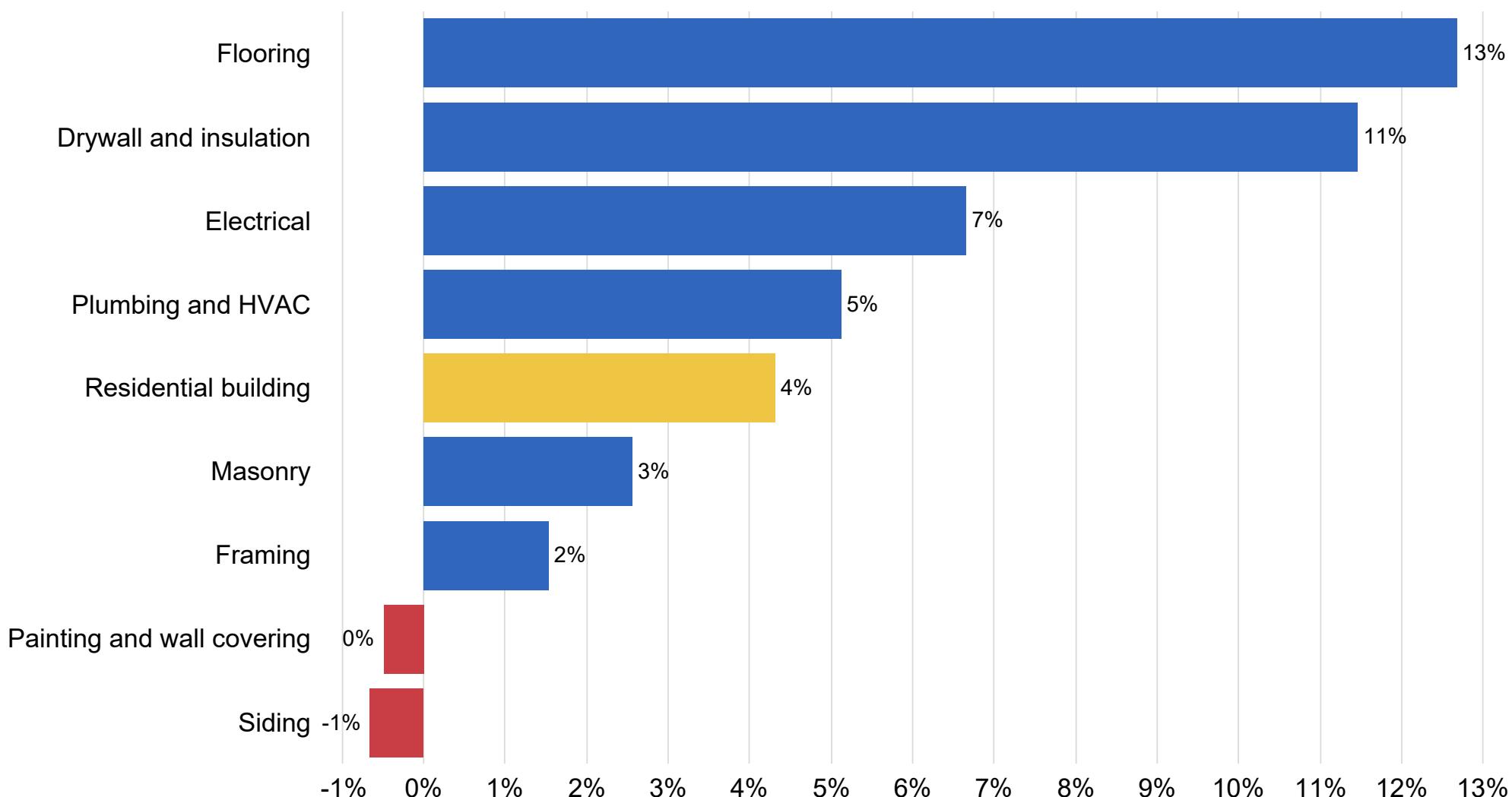
*Historical average: Jan-01 through current

Construction Contractor Hourly Wages by Trade

Hourly wages for construction contractors increased 4% YOY, with notable dispersion between trades. Painting and siding wages fell slightly YOY.

Construction Contractor Hourly Wages

YOY % change*



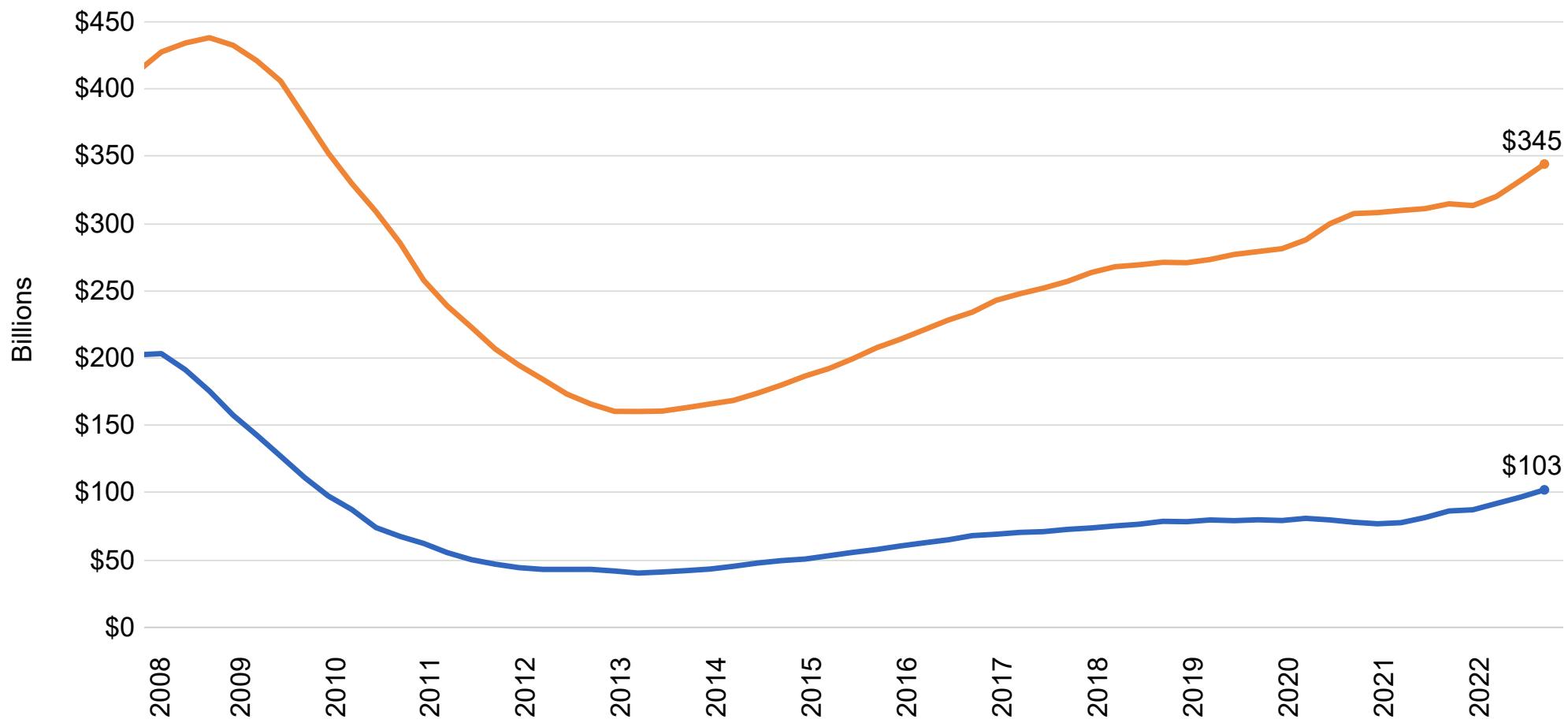
Source: BLS (Data: Nov-22, Pub: Jan-23) *We take a 3-month average to remove unnecessary volatility.

Land Acquisition, Construction, and Development Loans Outstanding

Outstanding balances on loans for land acquisition, development, and construction (AD&C), excluding 1-4 family residential construction, reached \$345 billion (+9% YOY). 1–4 family residential construction represents a better proxy for single-family construction and has increased 18% YOY.

Total Loans Outstanding: Land Acquisition, Construction, and Development

— 1–4 family residential construction — Other construction, land development, and land acquisition



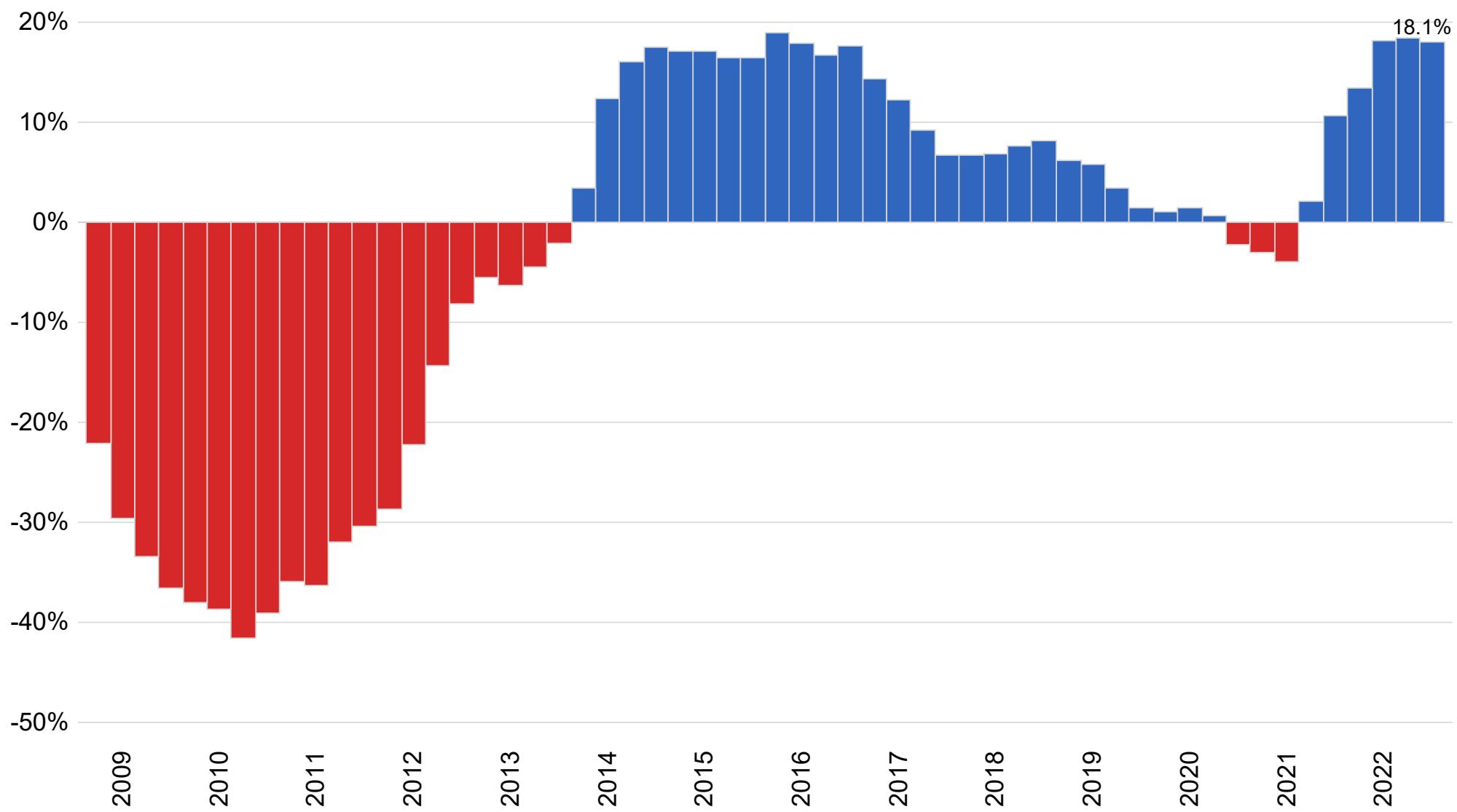
Source: FDIC (Data: 3Q22, Pub: Jan-23)

1–4 Family Residential Construction Loan Growth

The outstanding balances for single-family residential construction loans gained 18.1% YOY.

1–4 Family Residential Construction Loan Growth

— 1–4 family residential construction loans = 18.1% YOY



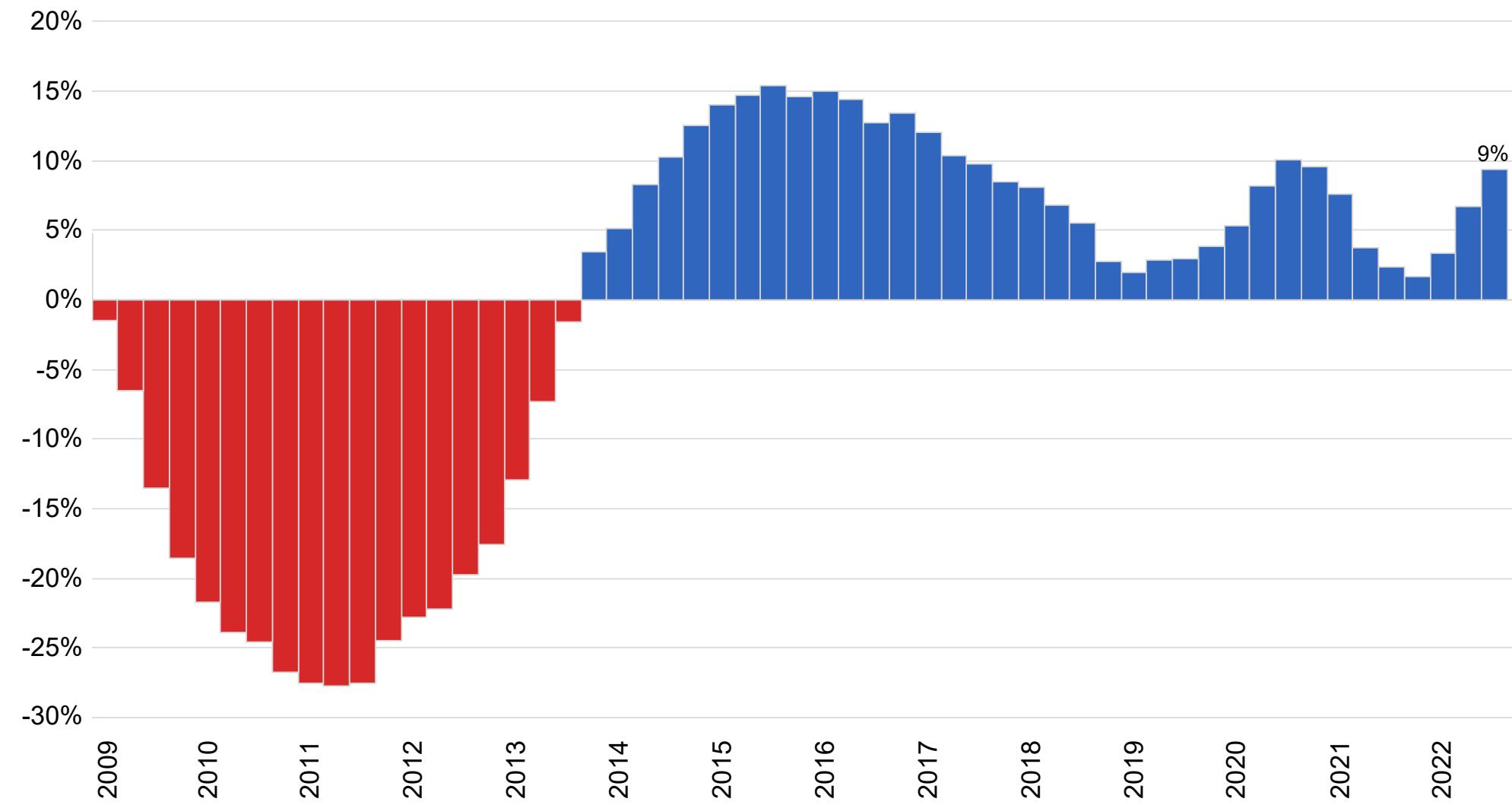
Source: FDIC (Data: 3Q22, Pub: Jan-23)

Other Loan Growth

The outstanding balances for construction loans (excluding 1-4 family residential construction), land development loans, and land acquisition loans increased 9% YOY.

Other Construction Loan Growth

— Other construction, land development, and land acquisition YOY %



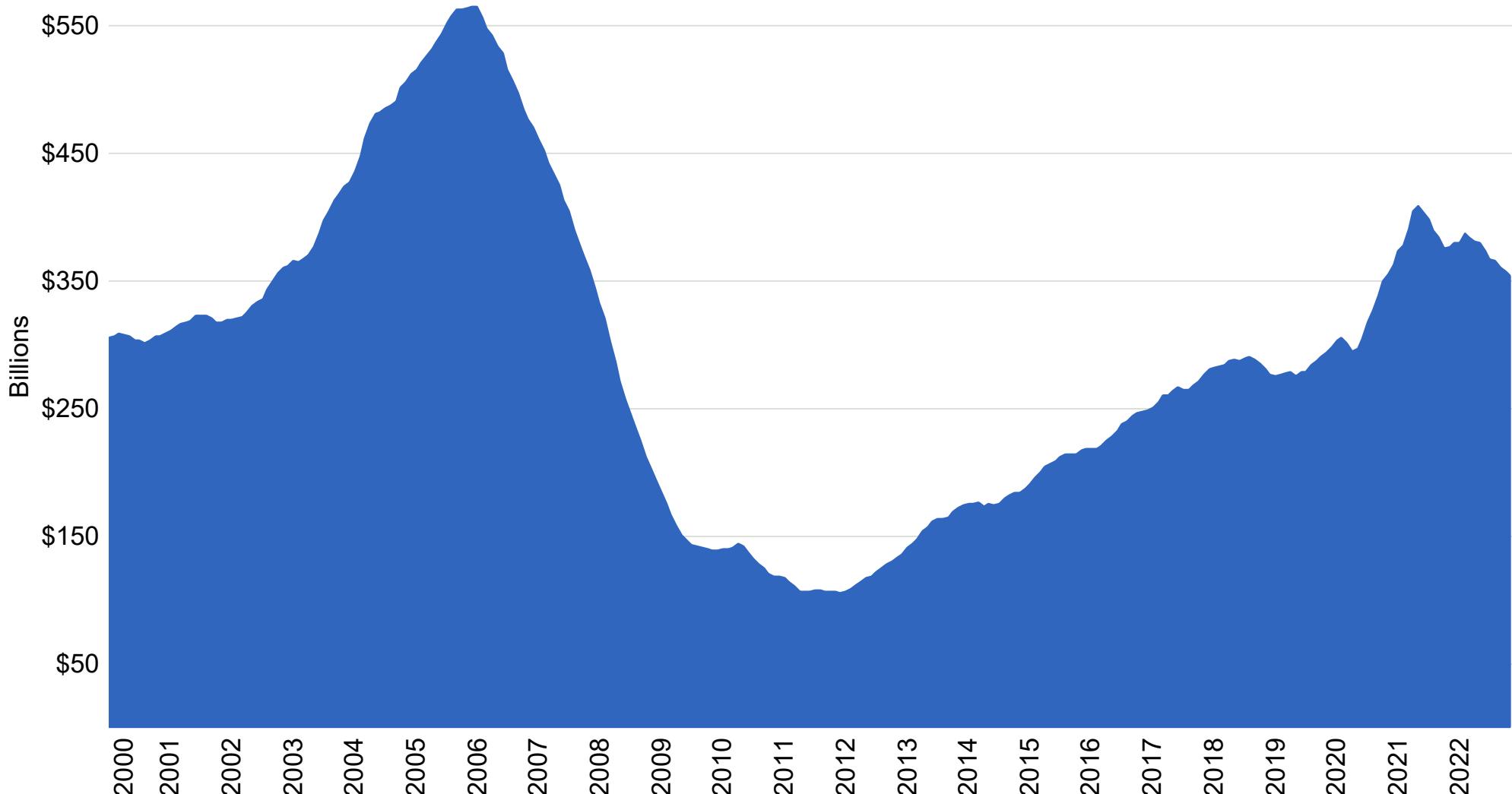
Source: FDIC (Data: 3Q22, Pub: Jan-23)

New Home Revenue

New home revenue decreased -14% from the May 2021 peak.

New Home Revenue

Inflation-adjusted, rolling 12 months



Note: Annual new home revenue calculated as rolling 12-month count of new home sales multiplied by average price of home sold, adjusted to Nov-22 dollars.

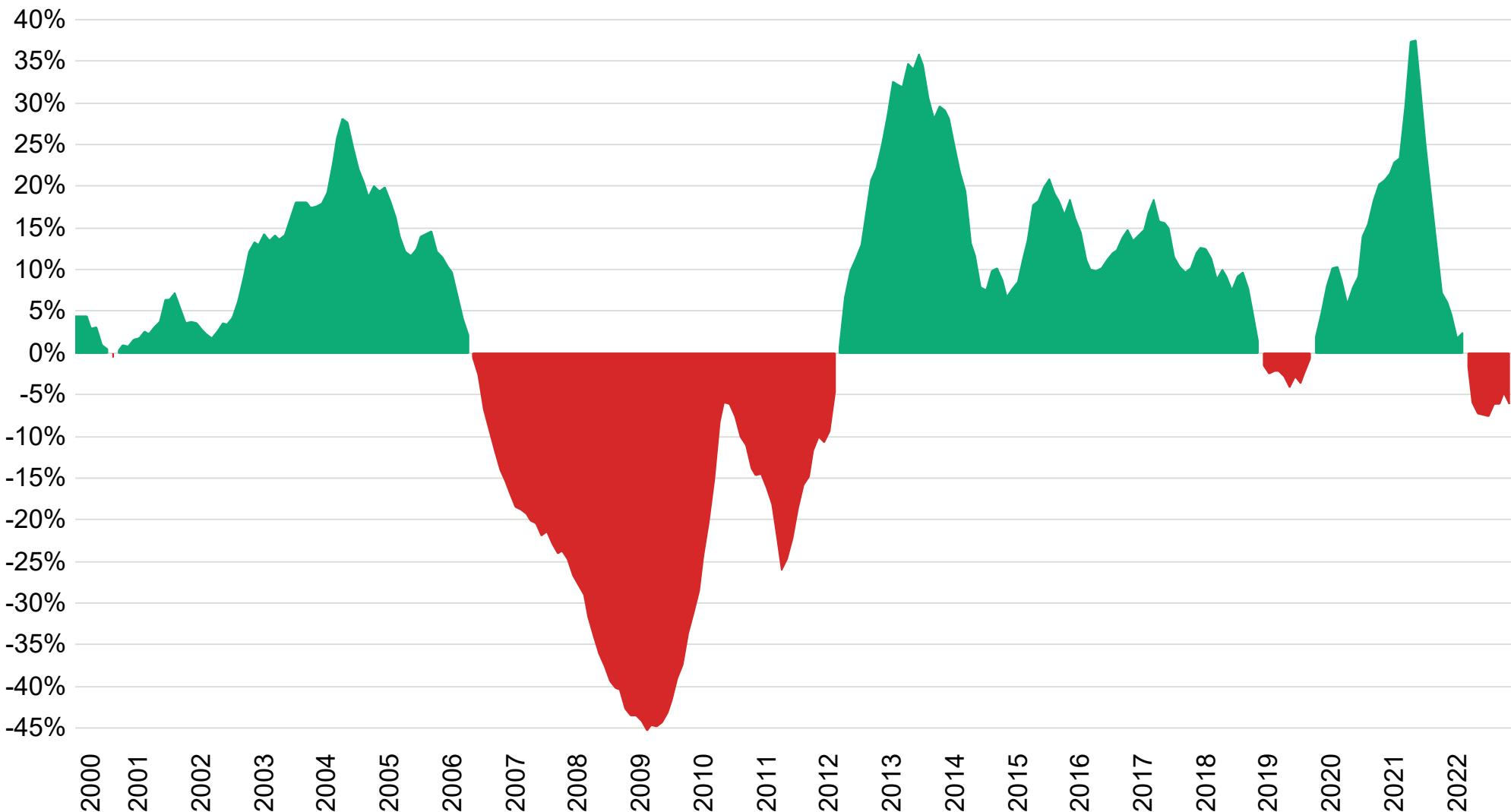
Source: John Burns Real Estate Consulting, LLC, calculations of US Census Bureau data (Data: Nov-22, Pub: Jan-23)

New Home Revenue YOY

New home revenue fell -6% YOY on a rolling TTM non-seasonally adjusted basis.

New Home Revenue

Inflation-adjusted, rolling 12 months

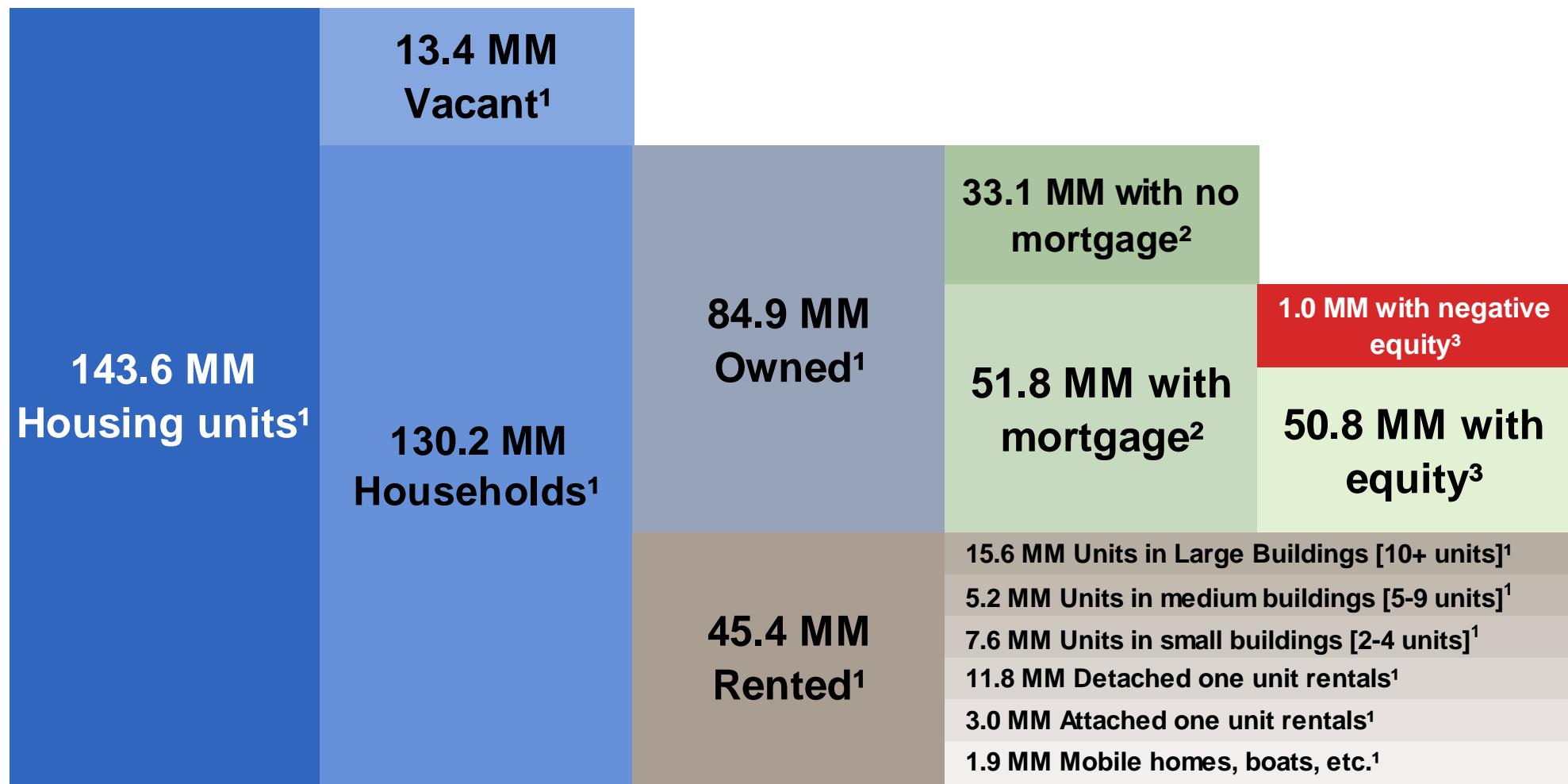


Note: Annual new home revenue calculated as rolling 12-month count of new home sales multiplied by average price of home sold, adjusted to Nov-22 dollars.

Source: John Burns Real Estate Consulting, LLC, calculations of US Census Bureau data (Data: Nov-22, Pub: Jan-23)

Housing supply

Housing Supply Overview



¹JBREC estimates using 2010 Census figures and trending data from ACS / HVS

^a Average of 1990 and 2000 Decennial Census

²JBREC extrapolation from Mortgage Bankers Association and Census

³JBREC estimate and extrapolation from CoreLogic and MBA.

Note that figures are not perfect due to overlap (vacant homes with mortgages, etc.).

Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC (Data: 3Q22, updated quarterly†)

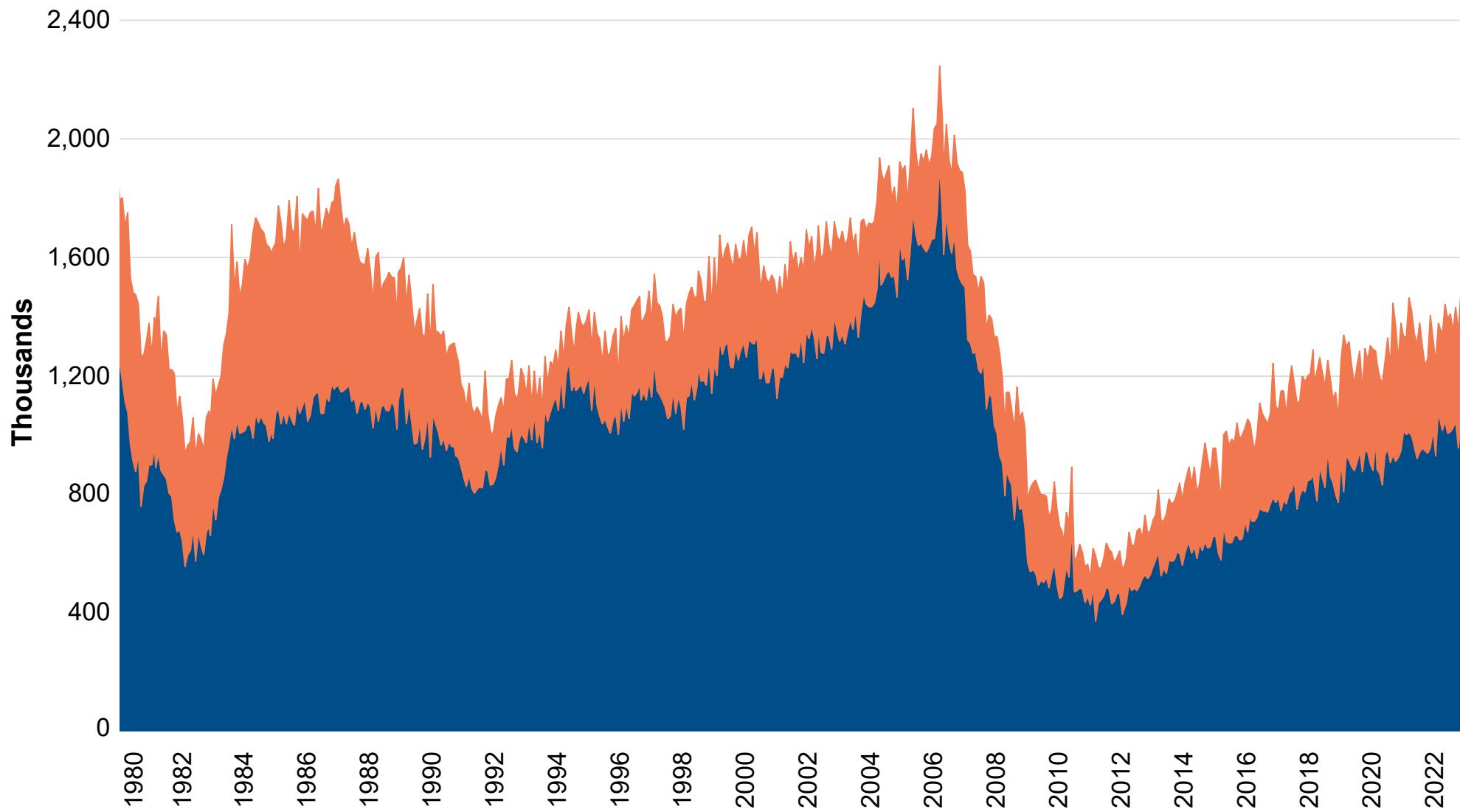
Pub: Jan-23

Housing Completions

Total completions rose 6% YOY on a seasonally adjusted basis.

Housing Completions

Seasonally adjusted ■ Multifamily (SA) = 443,000 (-2% YOY) ■ Single-family (SA) = 1,047,000 (10% YOY)



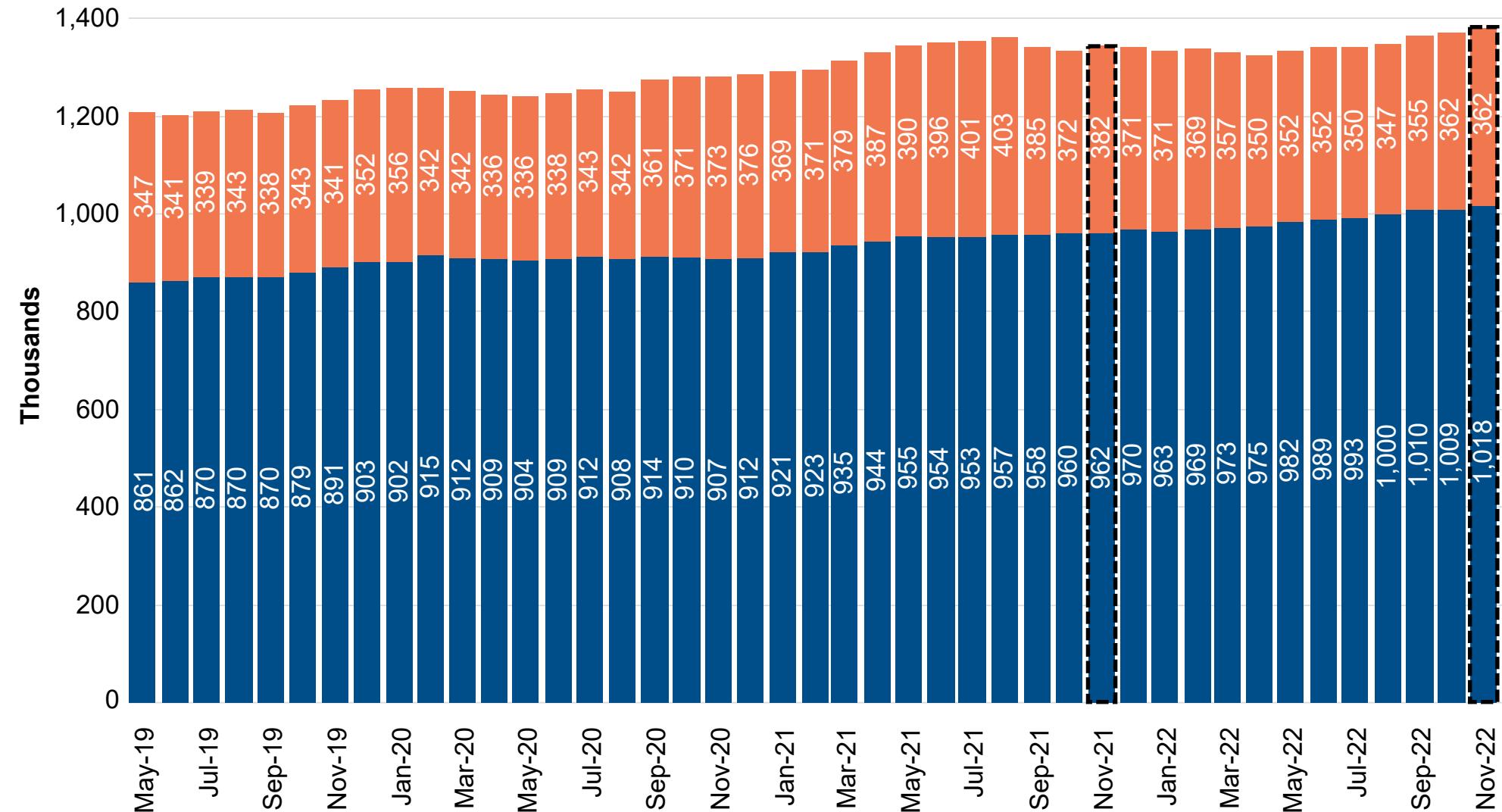
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Completions

Based on a non-seasonally adjusted, trailing-12-month total, multifamily completions fell -5% YOY, and single-family completions gained 6% YOY.

Housing Completions

Trailing 12-month total (NSA) ■ Multifamily ■ Single-family



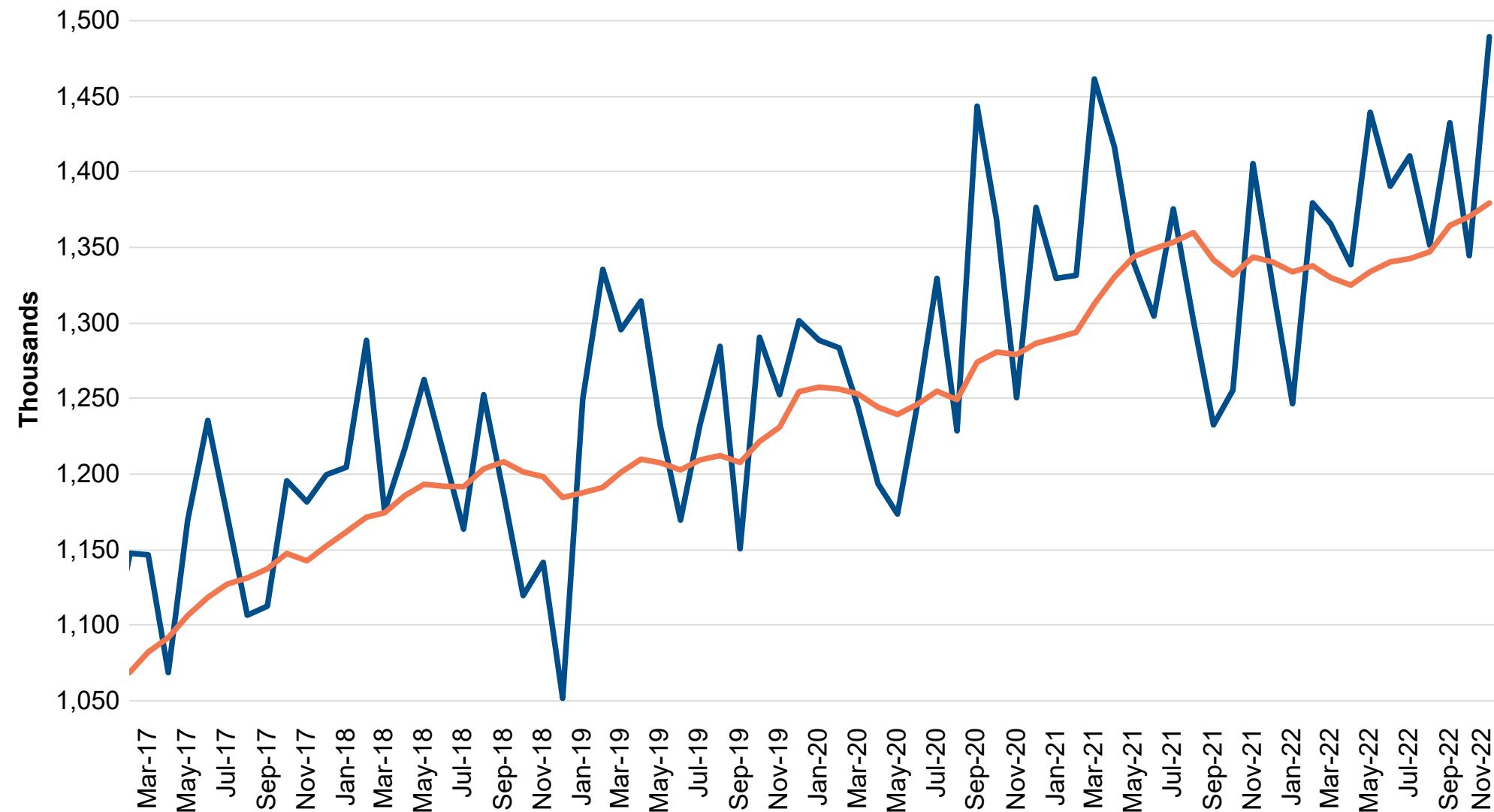
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Completions

The rolling 12-month total (NSA) for completions increased 3% YOY to 1.4 million.

Housing Completions

— Seasonally adjusted = 1,490,000 (6% YOY) — Rolling 12-month total (NSA) = 1,379,900 (3% YOY)



Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Starts

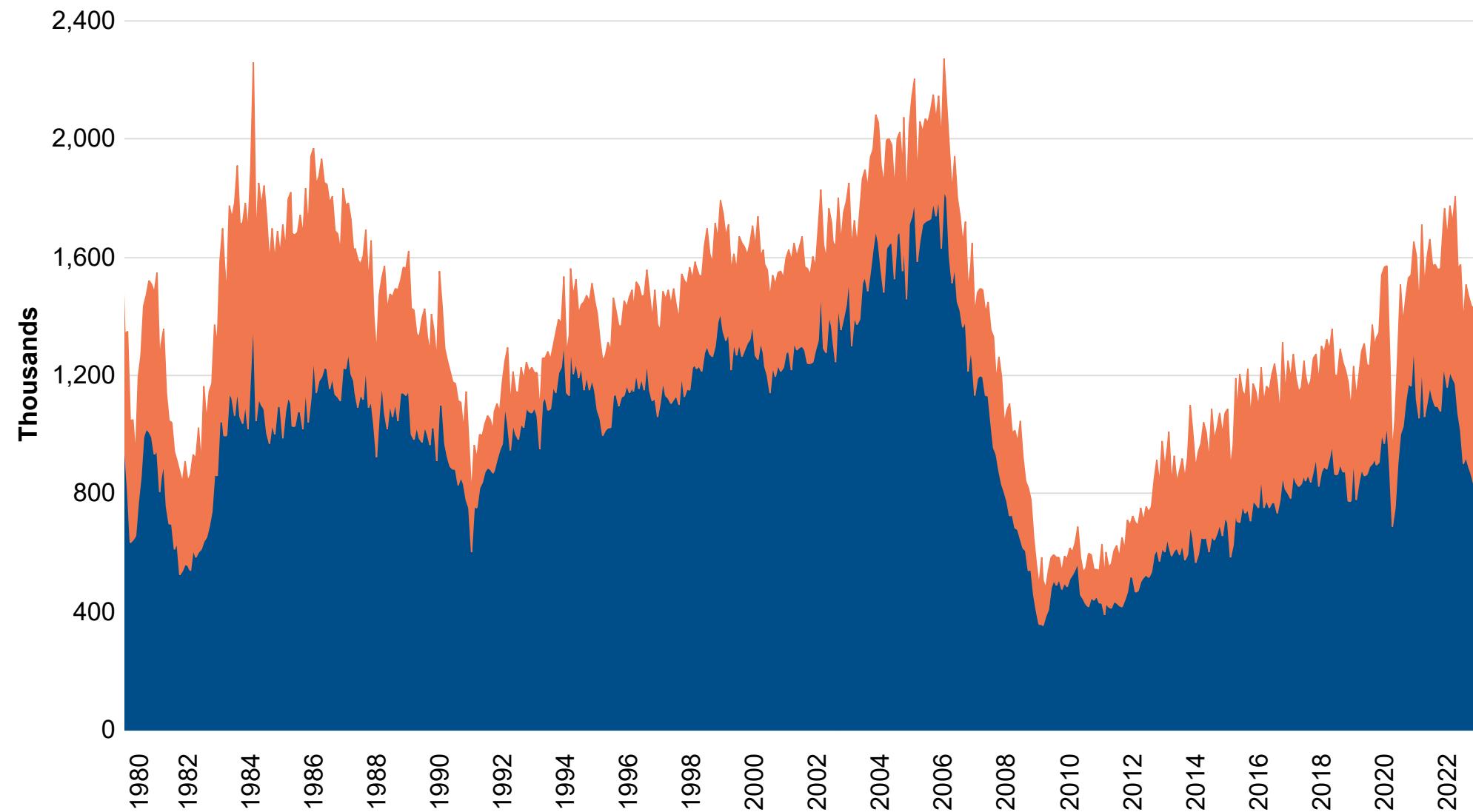
Total housing starts are currently running at a SAAR of 1.4M, down -16% YOY.

Housing Starts

Seasonally adjusted

■ Multifamily (SA) = 599,000 (23% YOY)

■ Single-family (SA) = 828,000 (-32% YOY)



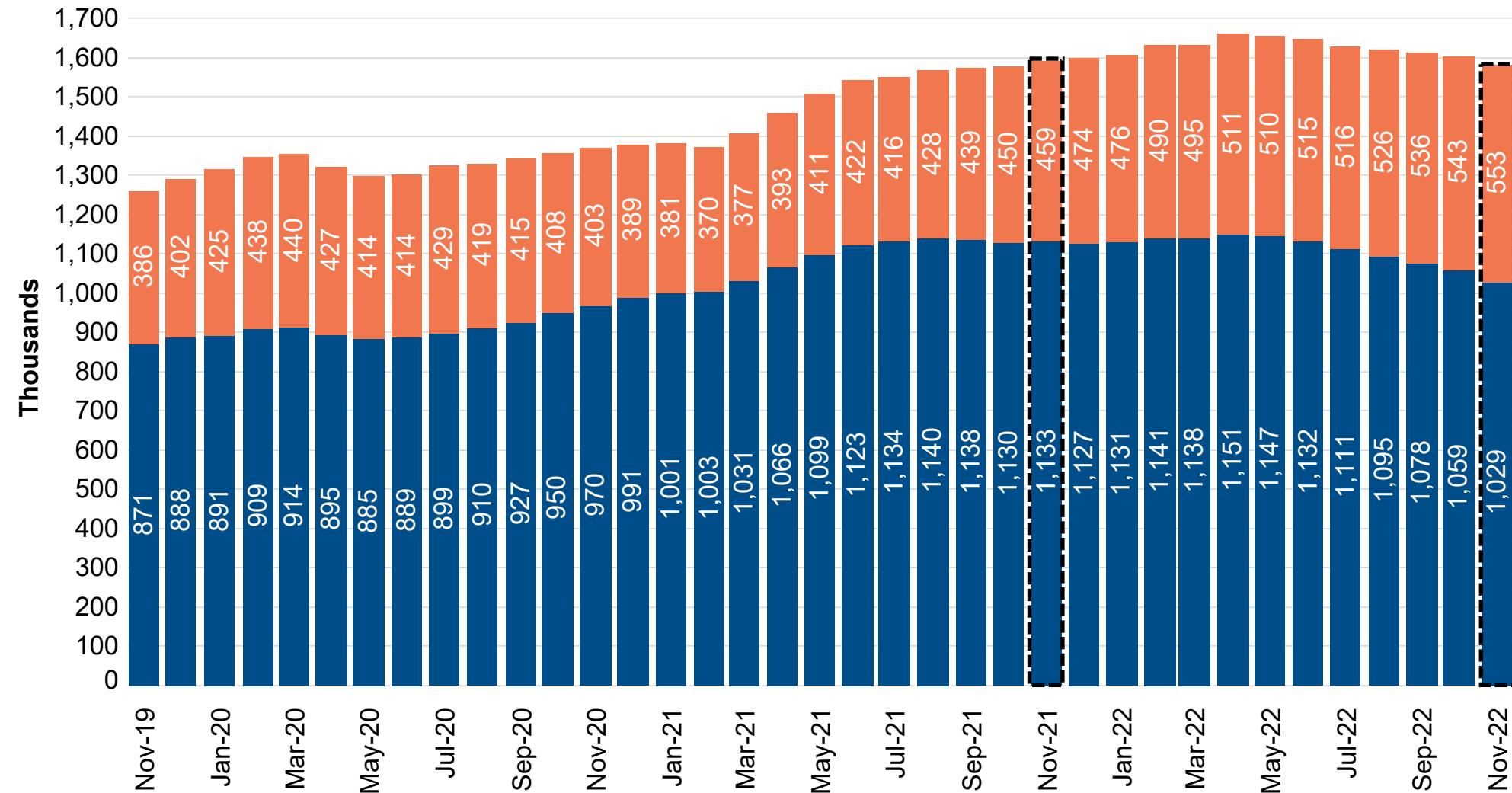
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Starts

Based on a non-seasonally adjusted, trailing 12-month total, single-family starts decreased -9% YOY, and multifamily starts rose 21% YOY.

Housing Starts

Trailing 12-month total (NSA) ■ Multifamily ■ Single-family



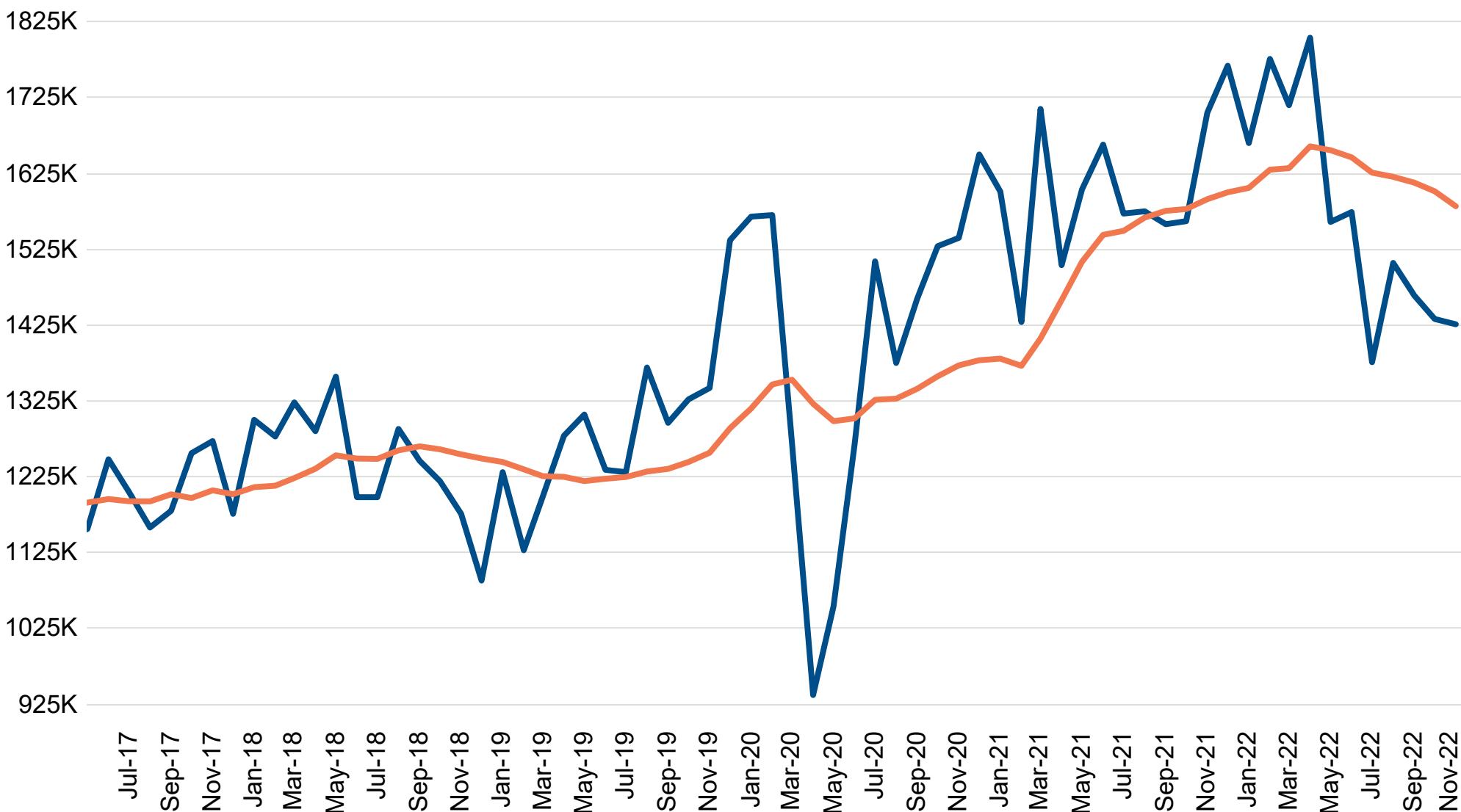
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Starts

Seasonally adjusted housing starts fell -16% YOY in November.

Housing Starts

— Seasonally adjusted = 1,427,000 (-16% YOY) — Rolling 12-month total (NSA) = 1,582,700 (-1% YOY)



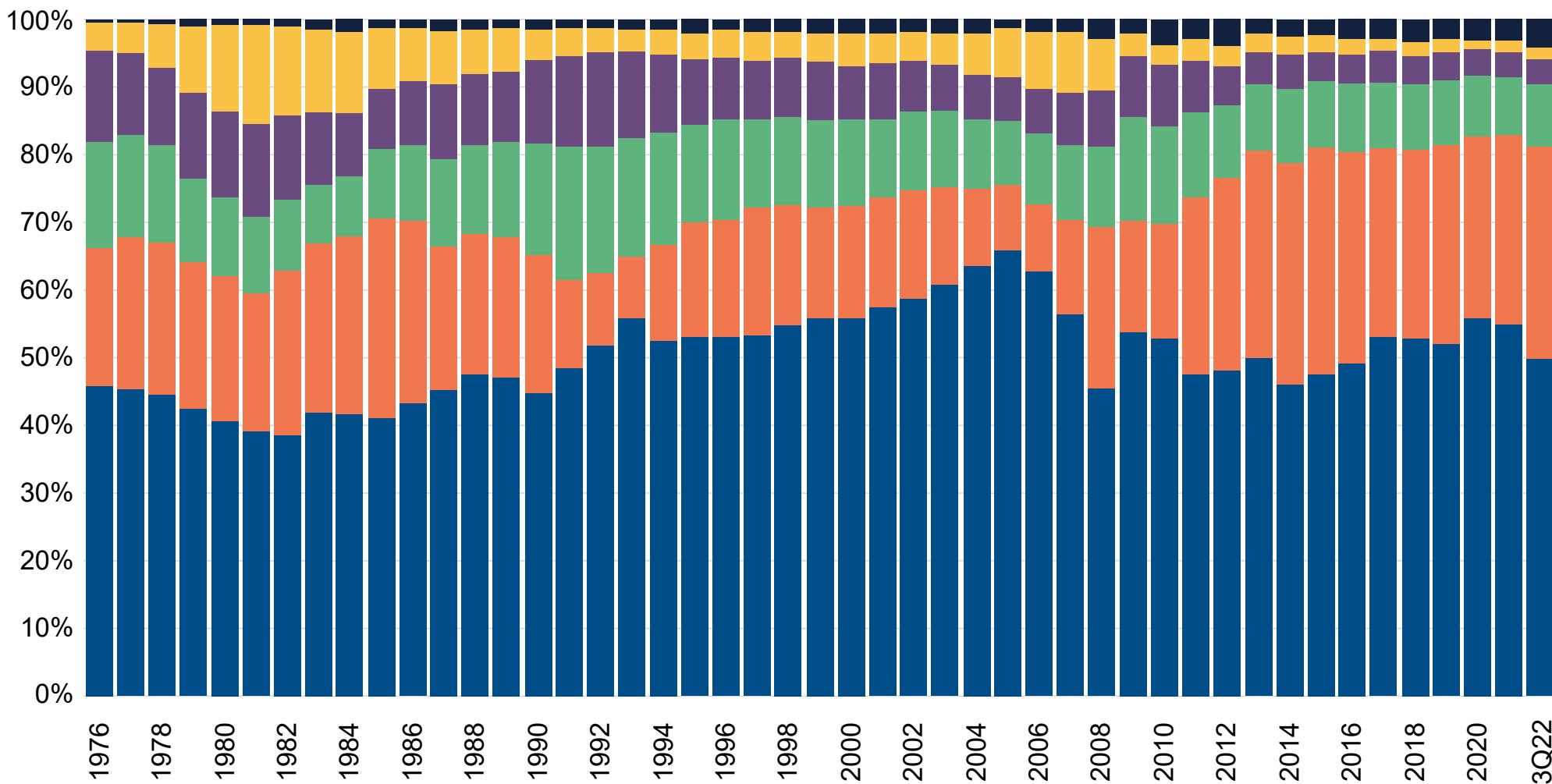
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Intent of Housing Starts

Single-family built-for-sale starts accounted for 50% of total starts in 3Q22.

Annual Housing Starts by Intent, % of Total Starts

- Single-family = built for sale (50%)
- Multifamily = built for rent (31%)
- Single-family = contractor built (9%)
- Single-family = owner built (4%)
- Multifamily = built for sale (2%)
- Single-family = built for rent (4%)



Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

Build-to-Rent Starts

Total build-to-rent starts (single-family and multifamily) rose 24% YOY.

Build-to-Rent Starts

Trailing 4 quarters ■ Multifamily = 508,000 ■ Single-family = 68,000

600K

550K

500K

450K

400K

350K

300K

250K

200K

150K

100K

50K

0K



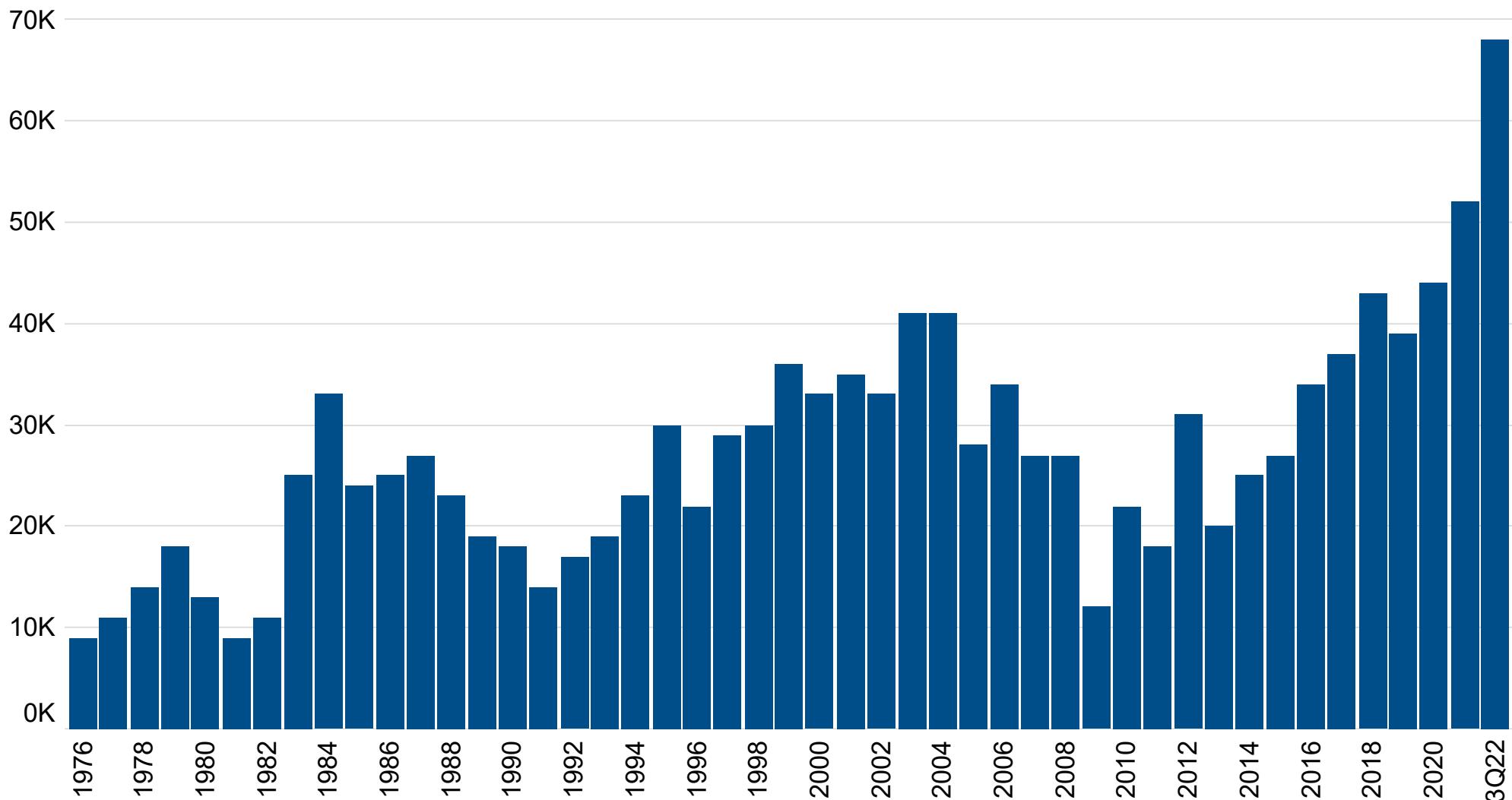
Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

Single-Family Build-to-Rent Starts

Single-family build-to-rent starts rose to 68K on a trailing-4-quarter basis. Note that the Census definition of build-to-rent is subjective, and we believe this data understates the true number of BFR starts.

SF Build-to-Rent Starts

Trailing 4 quarters ■ Single-family = 68,000



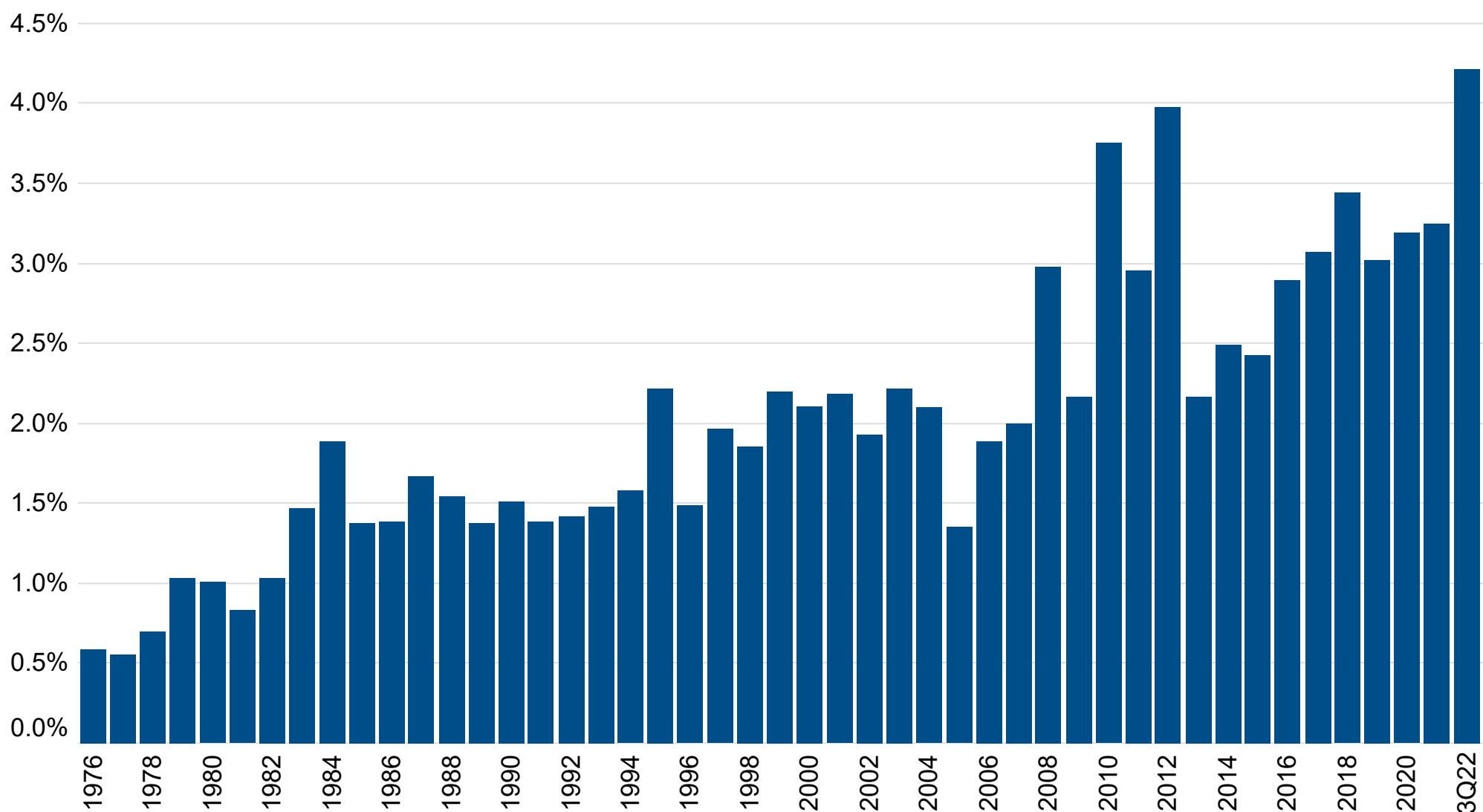
Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

Single-Family Build-to-Rent Starts Market Share

The market share of single-family build-to-rent starts is small, but trending higher over the long term.

Single-Family Build-to-Rent Starts Market Share

■ One-year moving average = 4.2%



Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

Multifamily Starts (2–9 units)

Multifamily starts for buildings with under 10 units remain low compared to pre-GFC years.

Multifamily Starts (2–9 units)

Trailing 4 quarters ■ 2–4 units per building = 16,000

■ 5–9 units per building = 22,000

100K

90K

80K

70K

60K

50K

40K

30K

20K

10K

0K



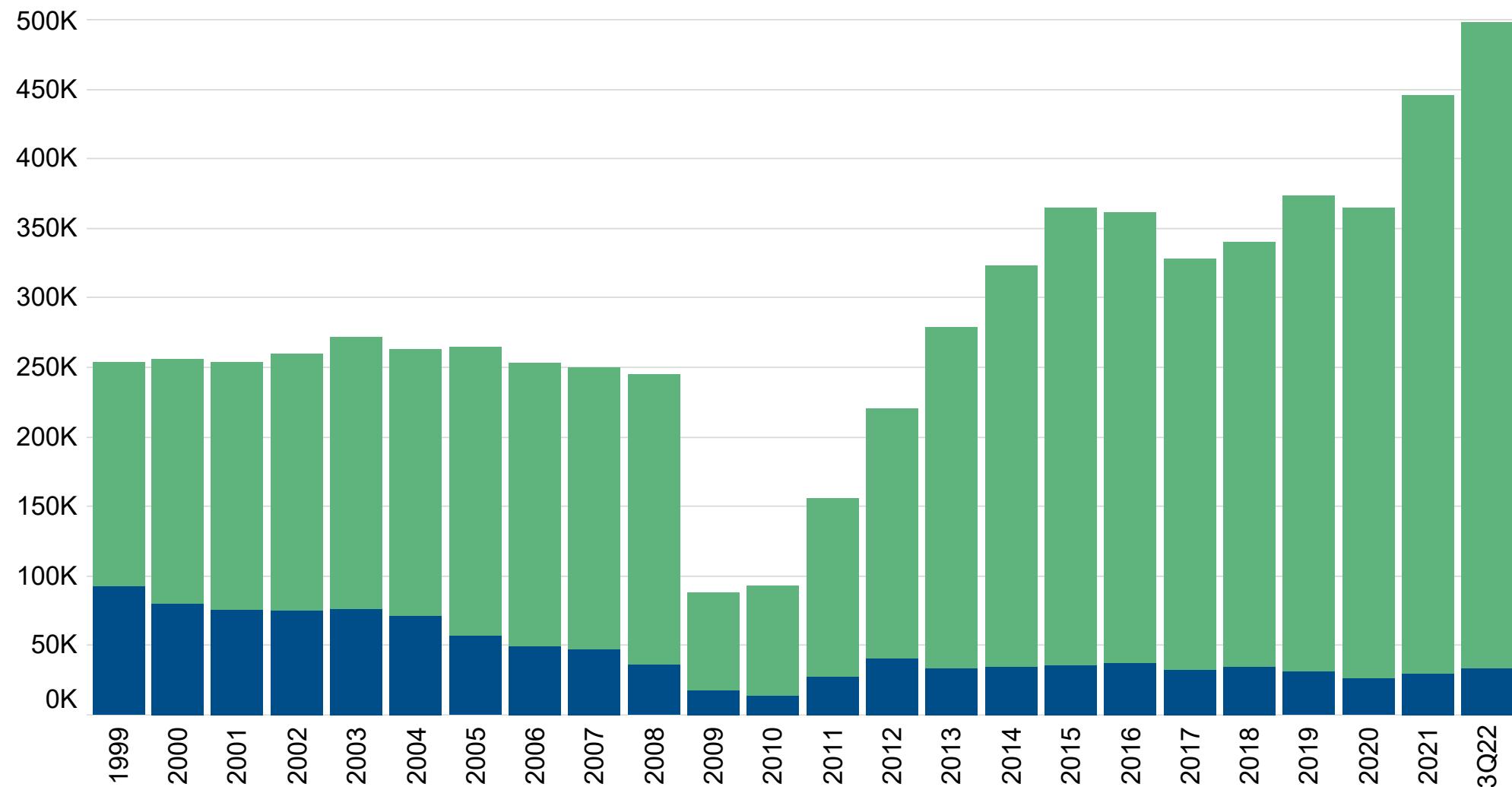
Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

Multifamily Starts (10+ units)

Multifamily starts for high-density buildings (10+ units) are at a record high of 498K on a trailing-4-quarter basis as capital continues to flow into the multifamily space.

Multifamily Starts (10+ units)

Trailing 4 quarters ■ 10–19 units per building = 34,000 ■ 20+ units per building = 464,000



Source: U.S. Census Bureau (Data: 3Q22, Pub: Jan-23)

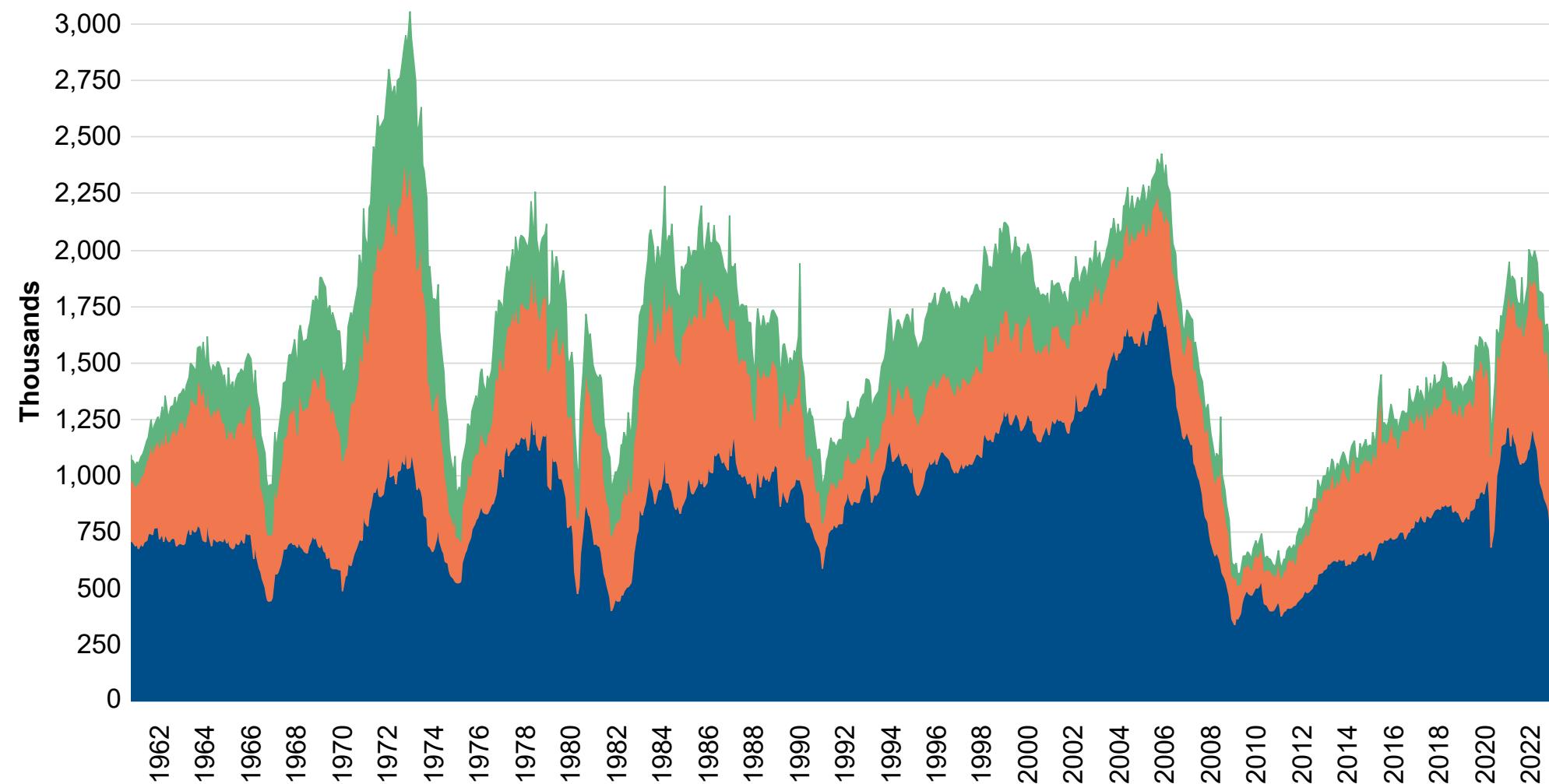
Housing Permits

Seasonally adjusted total permits decreased -21% YOY (including manufactured units). Permits are a good gauge of builder activity in the future and are less impacted by changes in weather.

Housing Permits

Seasonally adjusted

- Multifamily (SA) = 570,000 (-8% YOY)
- Single-family (SA) = 781,000 (-30% YOY)
- Manufactured (SA) = 98,000 (-12% YOY)



Note: Manufactured housing shipments lag single-family and multifamily permit counts by one month.

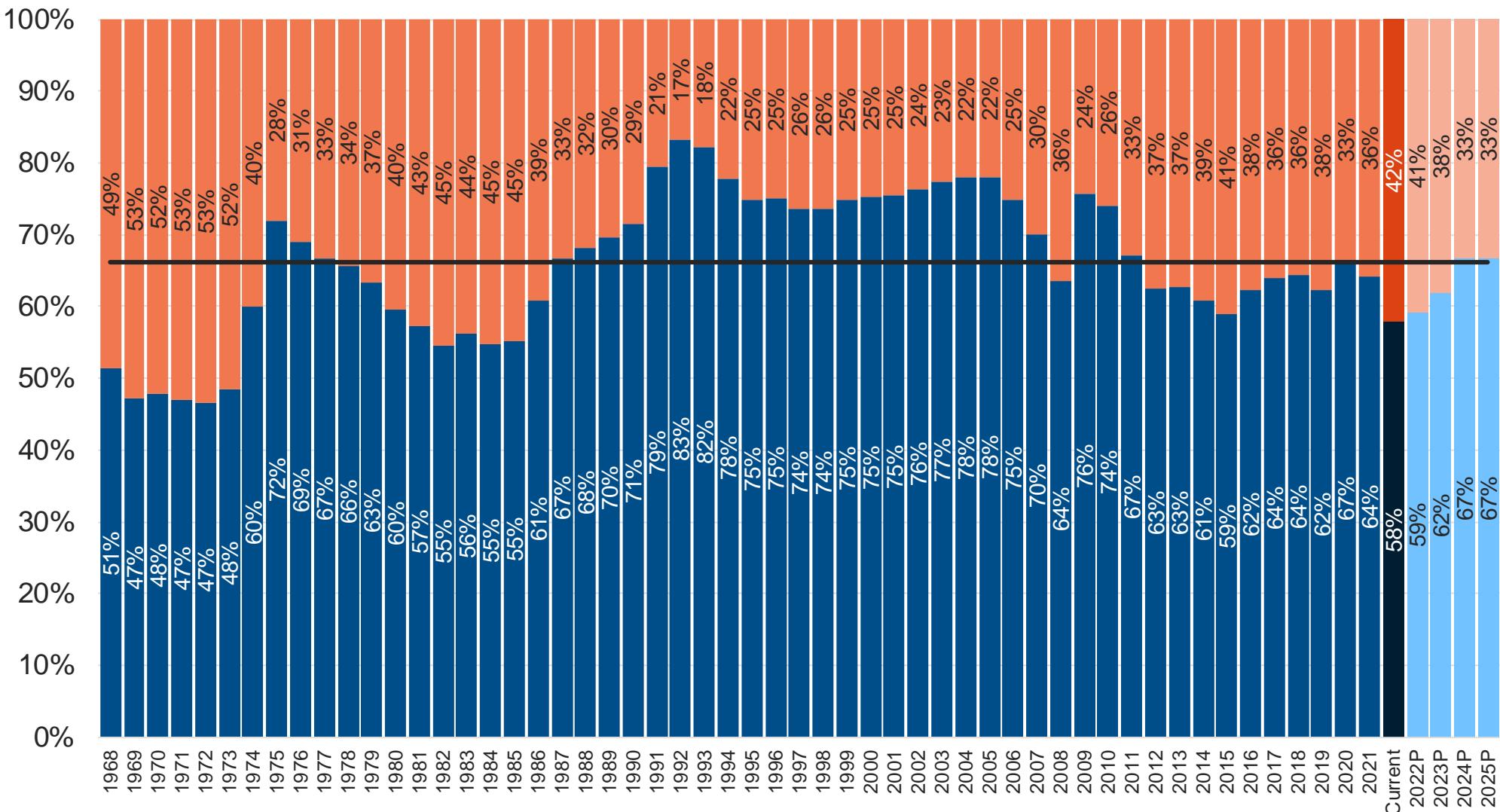
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

US Residential Permits

Multifamily permits made up 42% of total permits as of November.

US Residential Permits

■ Single-family ■ Multifamily — Historical average*



*Historical average: Jan-68 through current

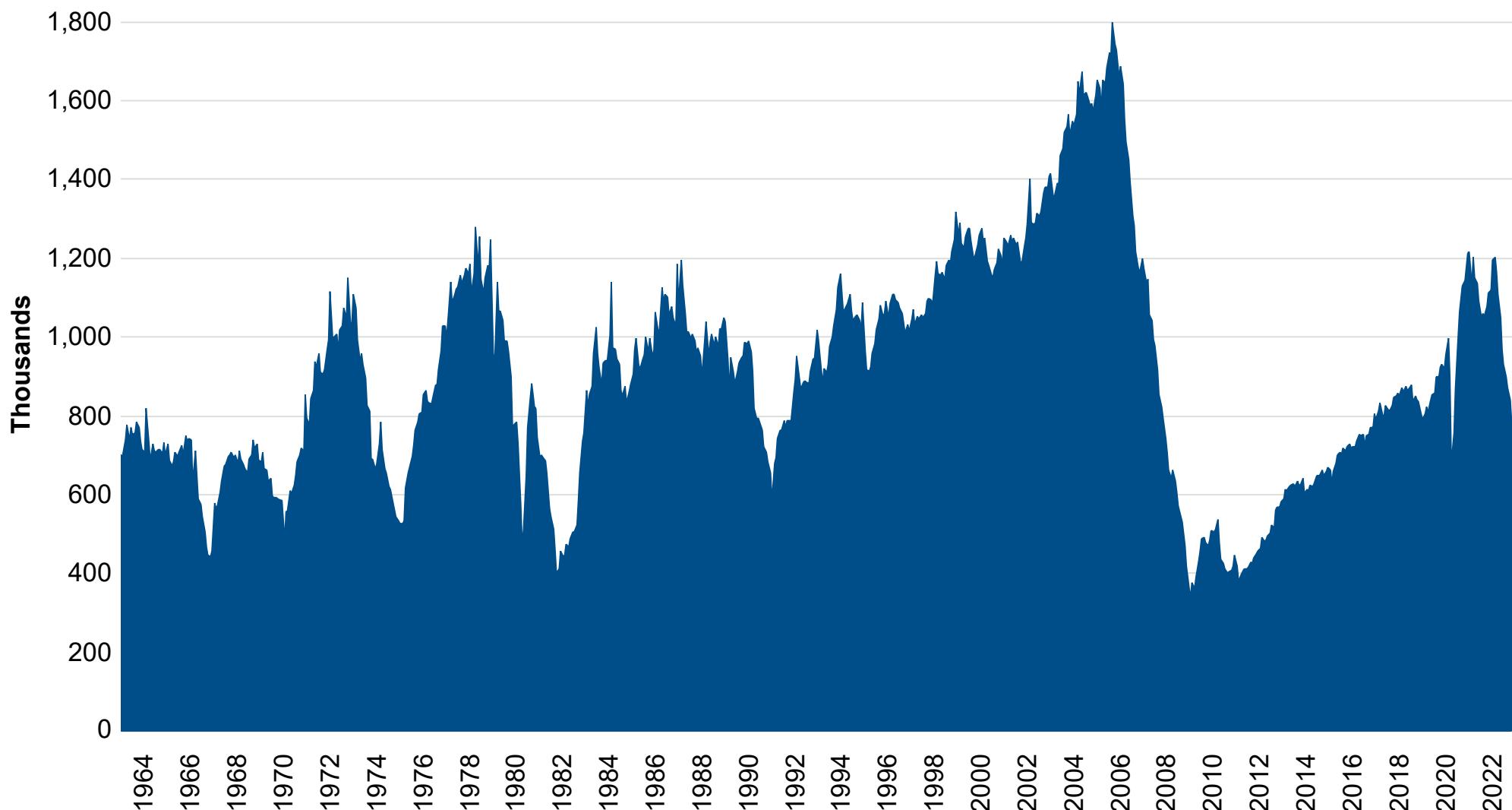
Sources: U.S. Census Bureau; John Burns Real Estate Consulting, LLC forecasts (Data: Nov-22, Pub: Jan-23)

Single-Family Housing Permits

Single-family permit issuance fell -30% YOY on a seasonally adjusted basis.

Single-Family Housing Permits

Seasonally adjusted ■ Single-family (SA) = 781,000 (-30% YOY)



Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

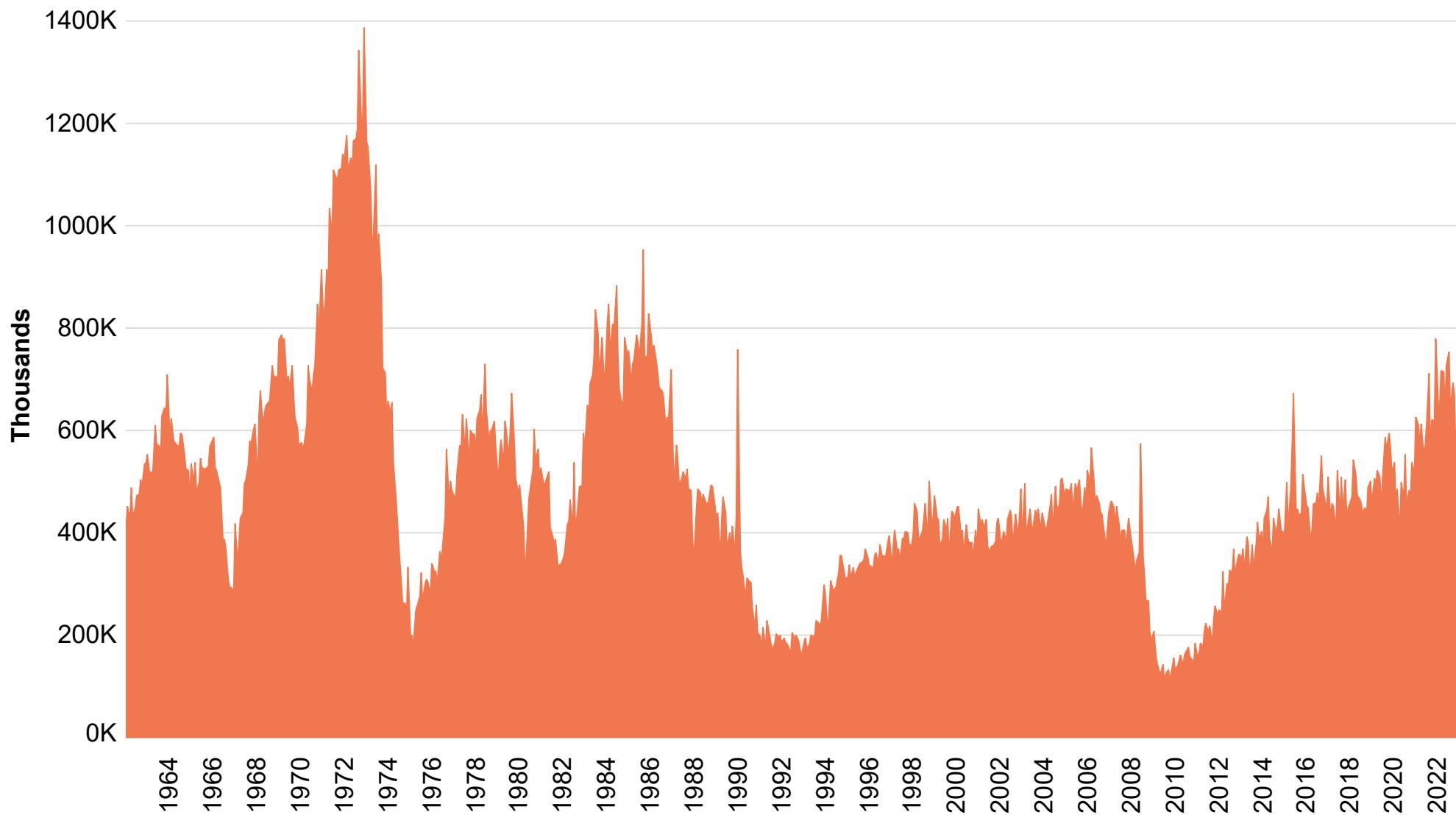
Multifamily Housing Permits

Multifamily permit issuance fell -8% YOY on a seasonally adjusted basis.

Multifamily Housing Permits

Seasonally adjusted

■ Multifamily (SA) = 570,000 (-8% YOY)



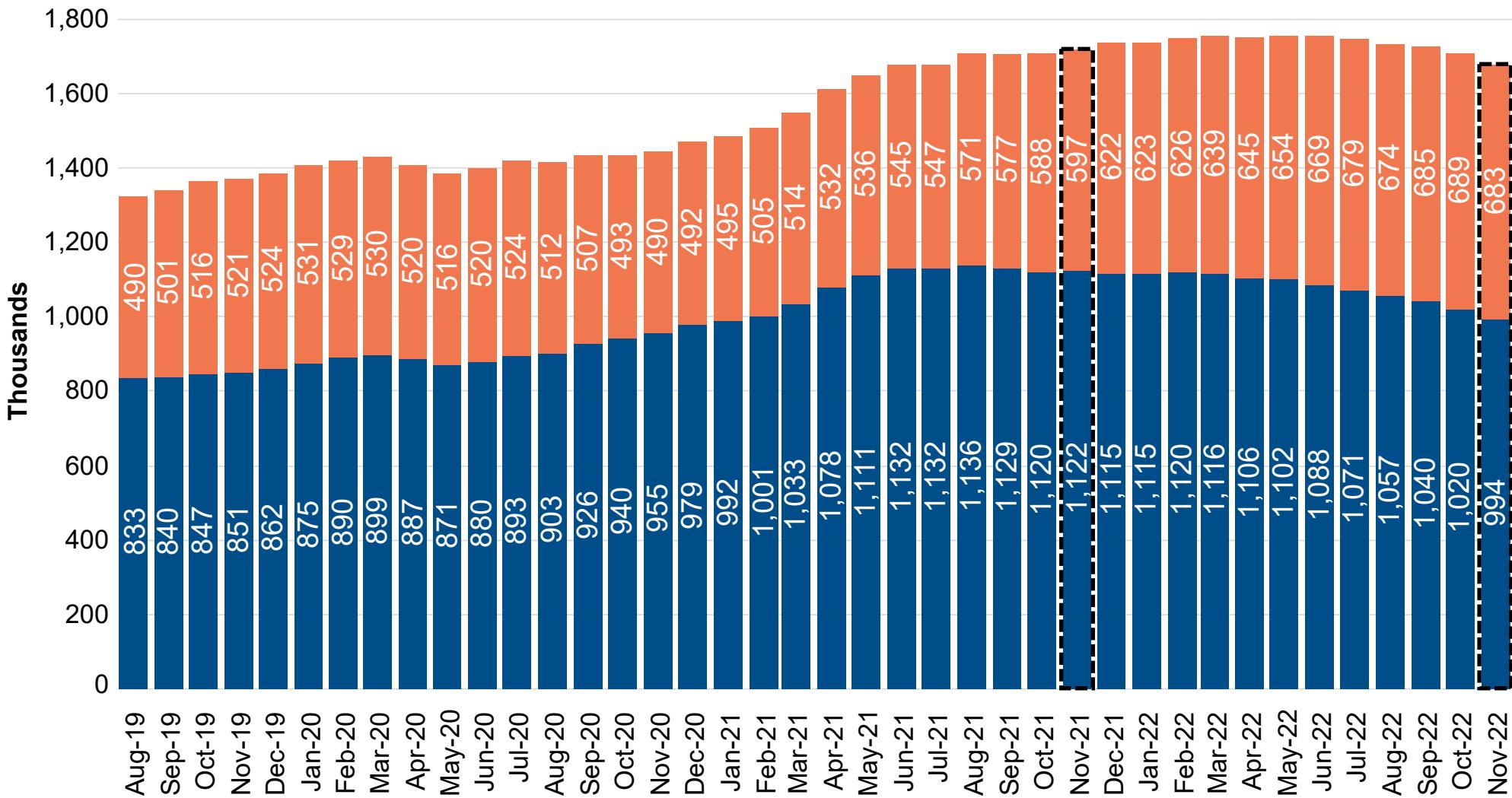
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Permits

Based on a non-seasonally adjusted, trailing-12-month total, single-family permits fell -11% over the last year. Multifamily permits rose 14% YOY.

Housing Permits

Trailing 12-month total (NSA) ■ Multifamily ■ Single-family



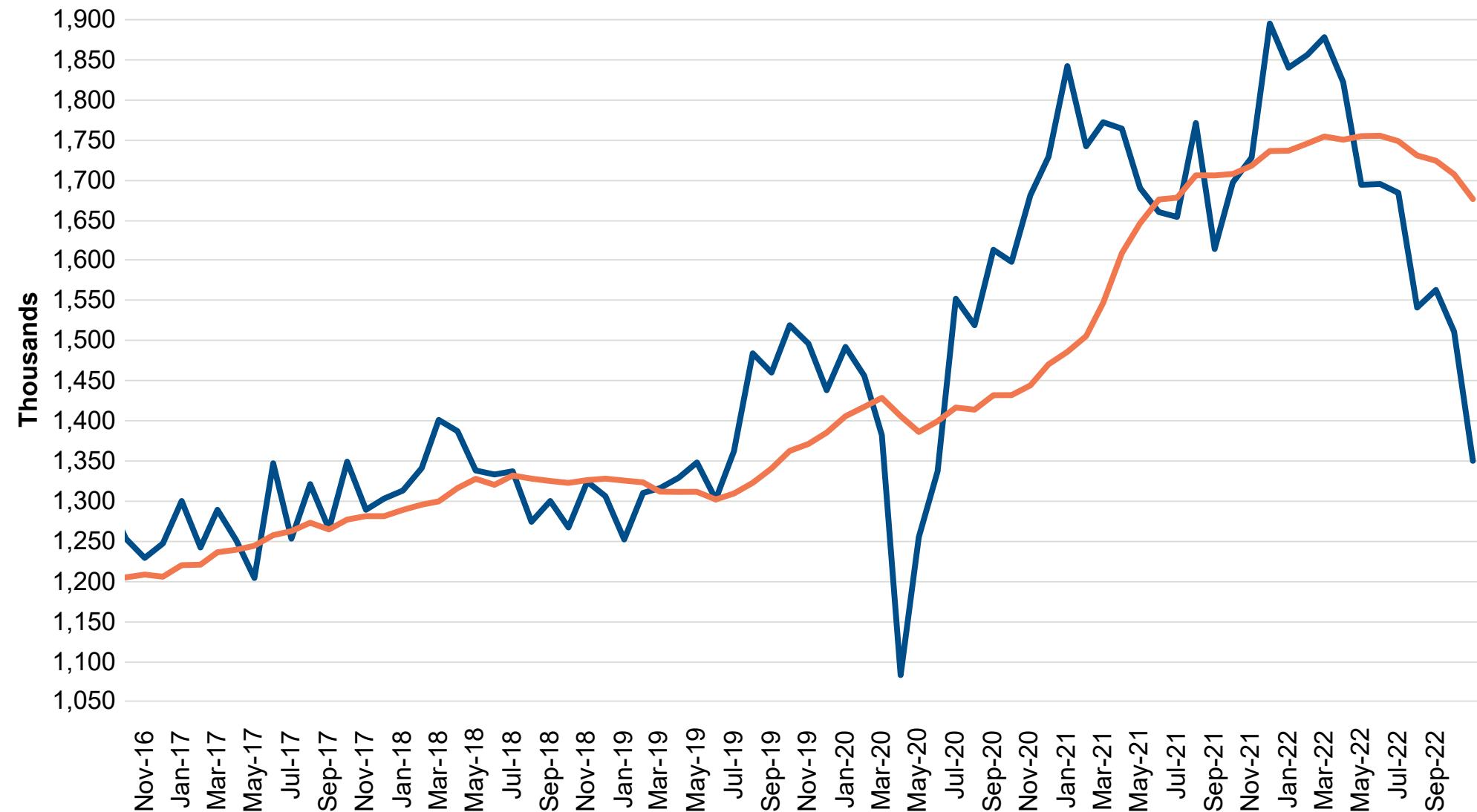
Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

Housing Permits

The seasonally adjusted, rolling 12-month total for housing permits fell -22% YOY.

Housing Permits

— Seasonally adjusted = 1,351,000 (-22% YOY) — Rolling 12-month total (NSA) = 1,677,200 (-2% YOY)



Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

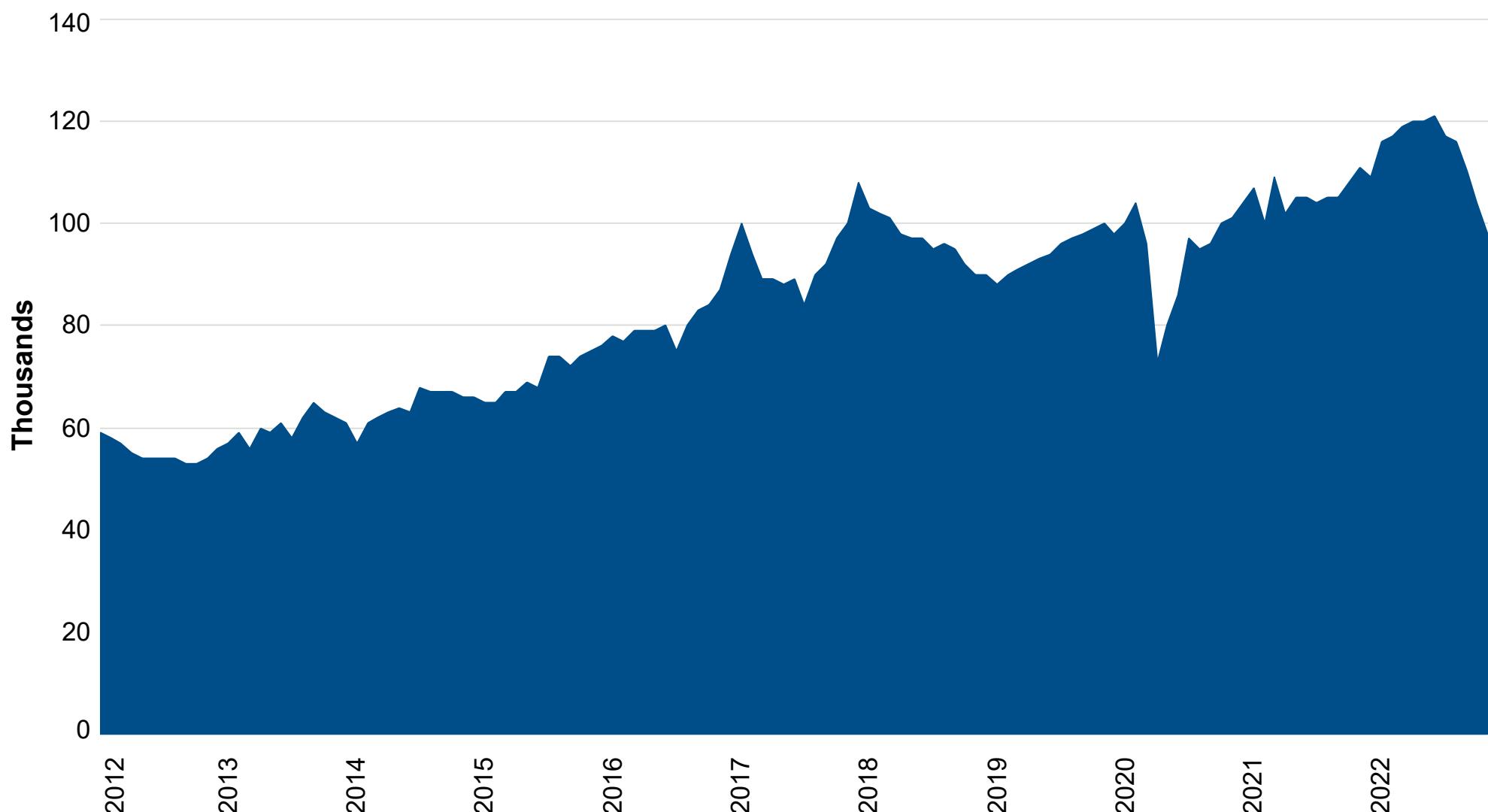
Shipments of Manufactured Housing

Shipments of manufactured housing decreased -12% YOY in November.

Shipments of Manufactured Housing

Seasonally adjusted

■ Manufactured (SA) = 98,000 (-12% YOY)



Source: U.S. Census Bureau (Data: Nov-22, Pub: Jan-23)

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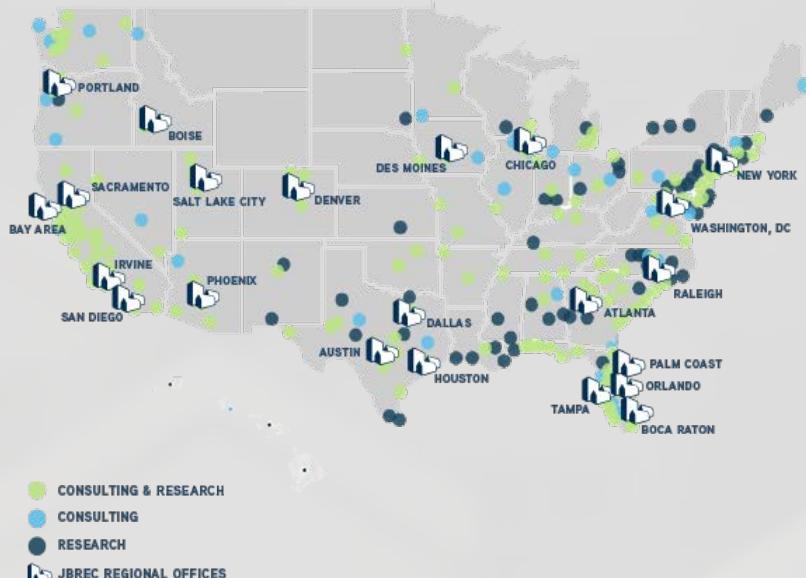
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