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US Housing Outlook:
High mortgage rates weighing on demand.
But housing supply remains very low.

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Apollo Global Management

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Unless otherwise noted, information as of November 2023.

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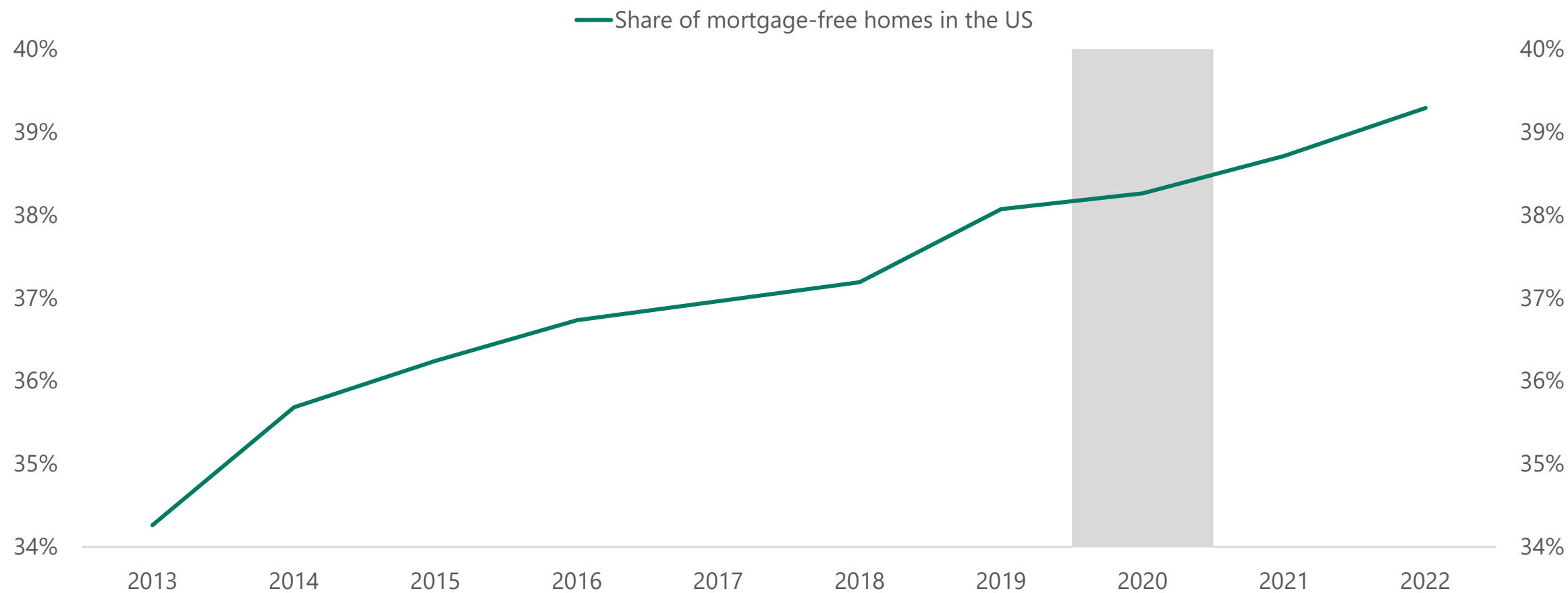


Why is housing still doing well despite higher mortgage rates?

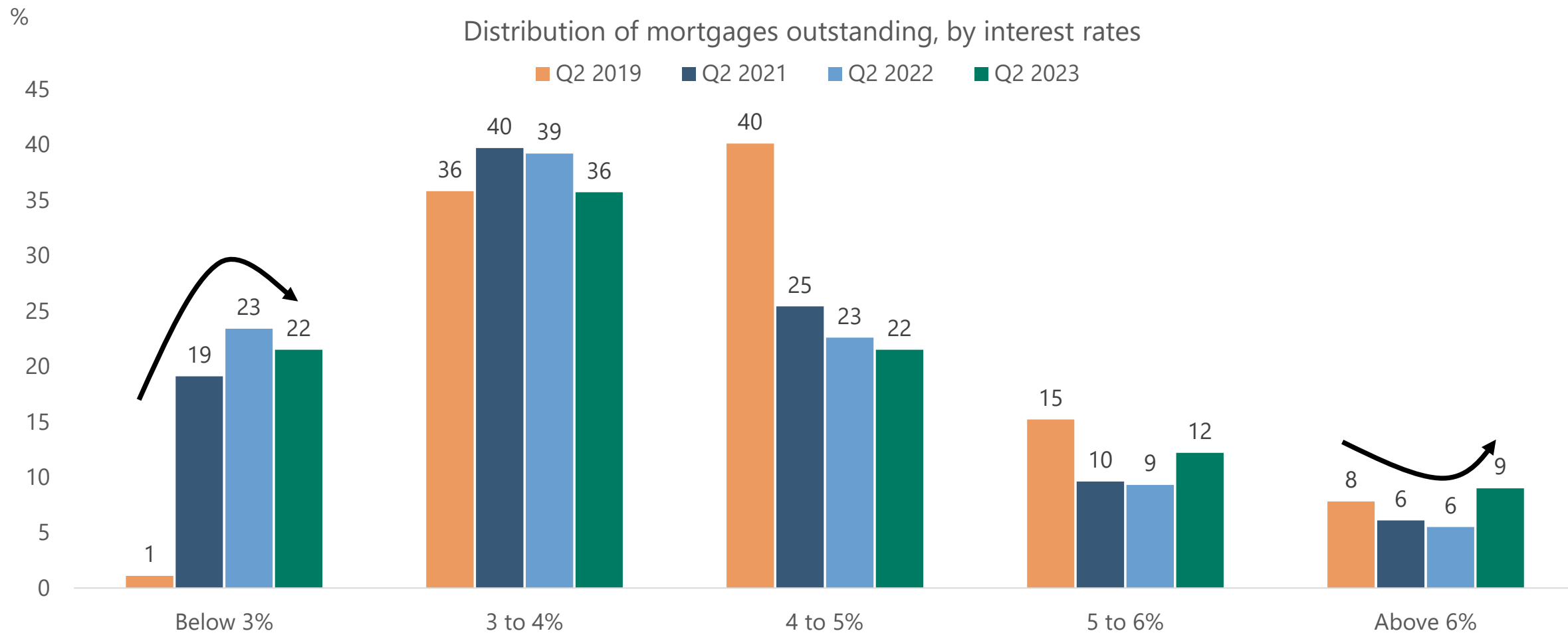
1. Low housing supply
2. Decent job growth
3. Robust wage growth
4. Still some excess savings left

Leading indicators of the housing market

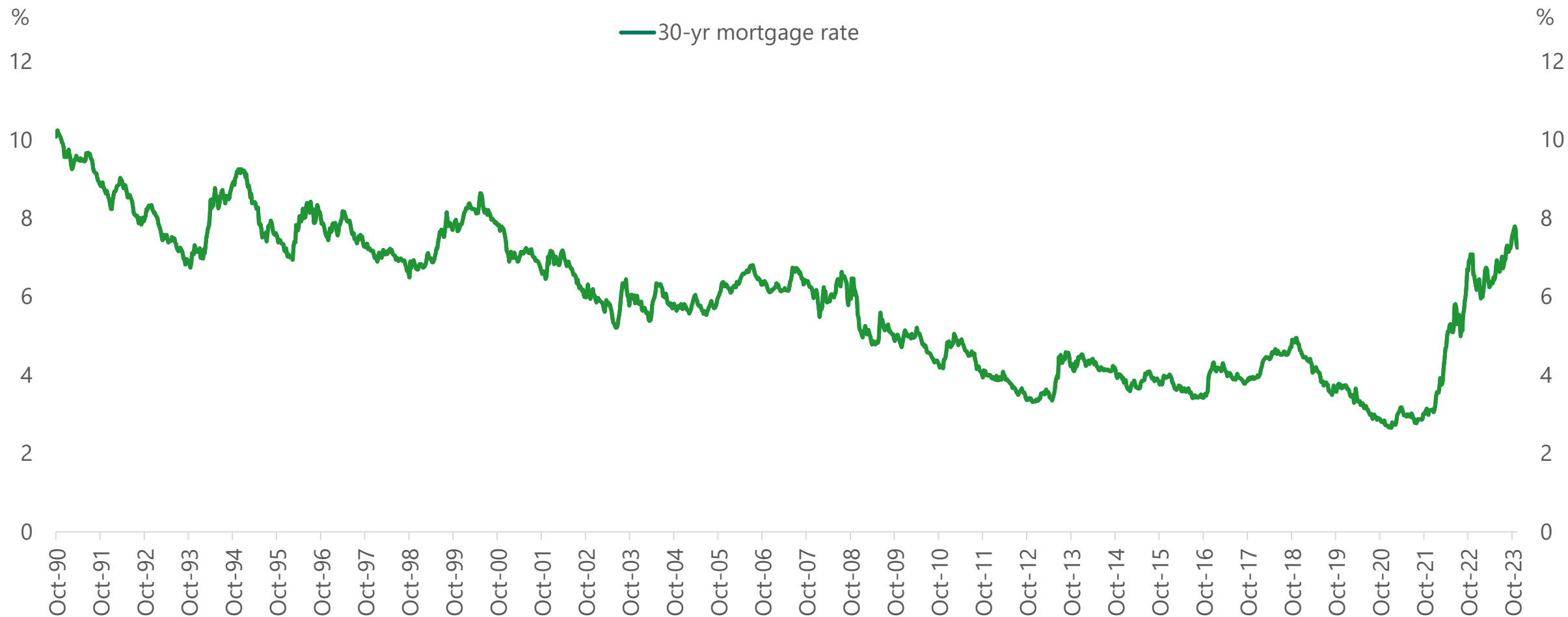
Almost 40% of US homes don't have a mortgage



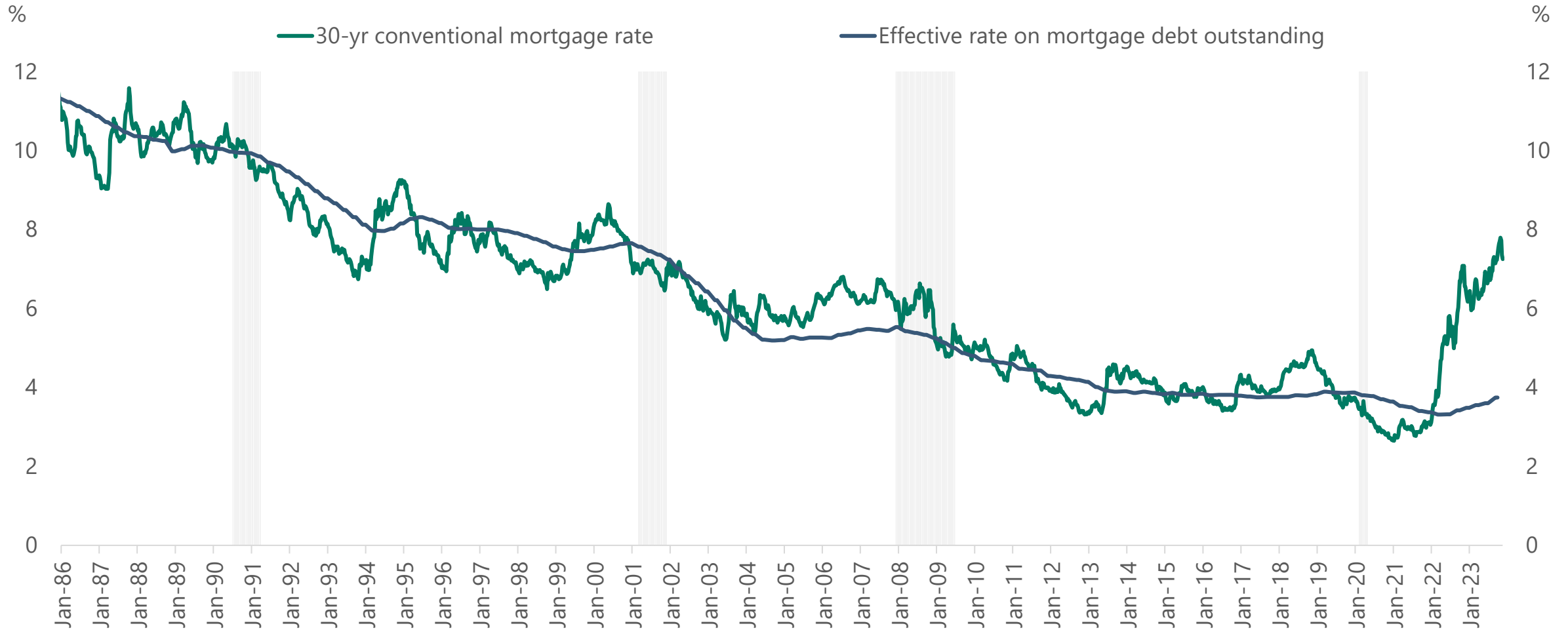
Distribution of interest rates on outstanding mortgages



30-year mortgage rates



Effective outstanding mortgage rate is 3.7%



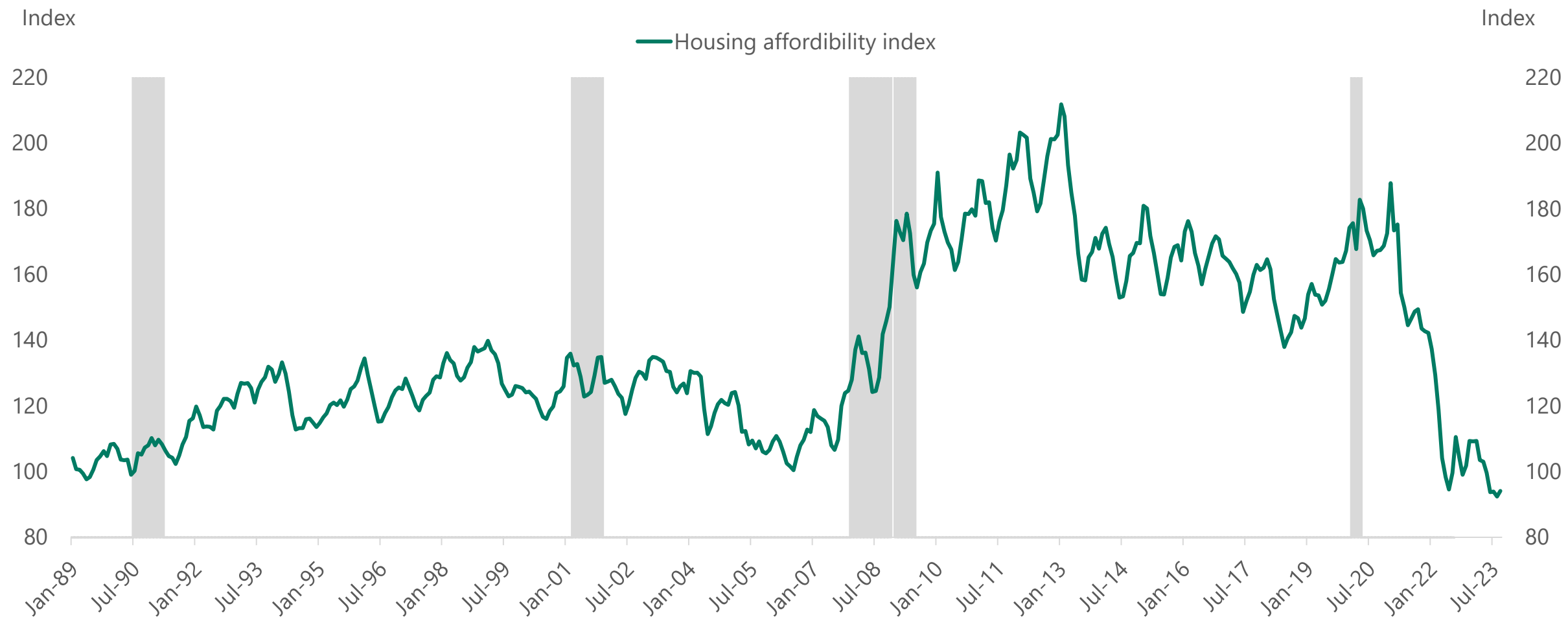
Source: Freddie Mac, BEA, Bloomberg, Apollo Chief Economist. The effective interest rate (%) reflects the amortization of initial fees and charges over a 10-year period, which is the historical assumption of the average life of a mortgage loan.

Monthly mortgage payment on a new mortgage has basically doubled since 2021

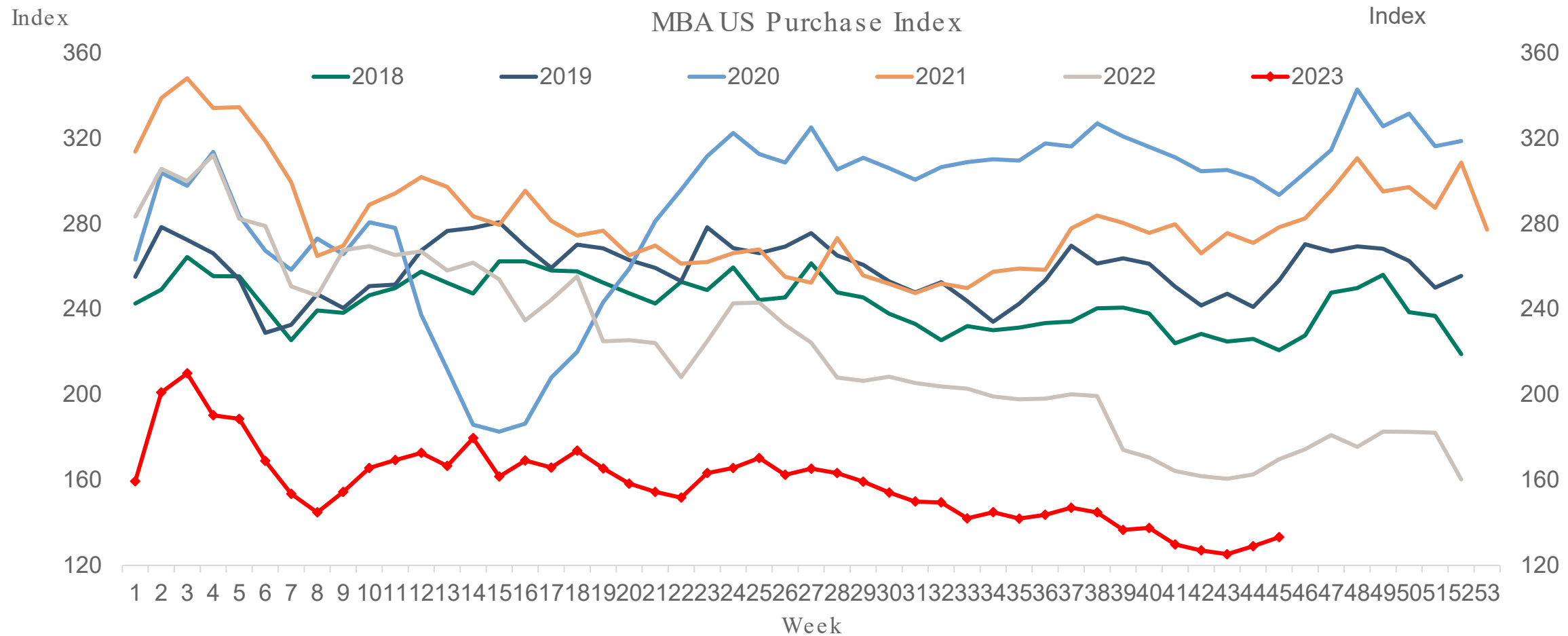


Source: Bloomberg L.P., Apollo Chief Economist (Note: Calculation of monthly payment using the 30-year purchase loan application size and the 30-yr effective rate.)

Housing affordability near record lows



Mortgage purchase applications very weak because of high mortgage rates



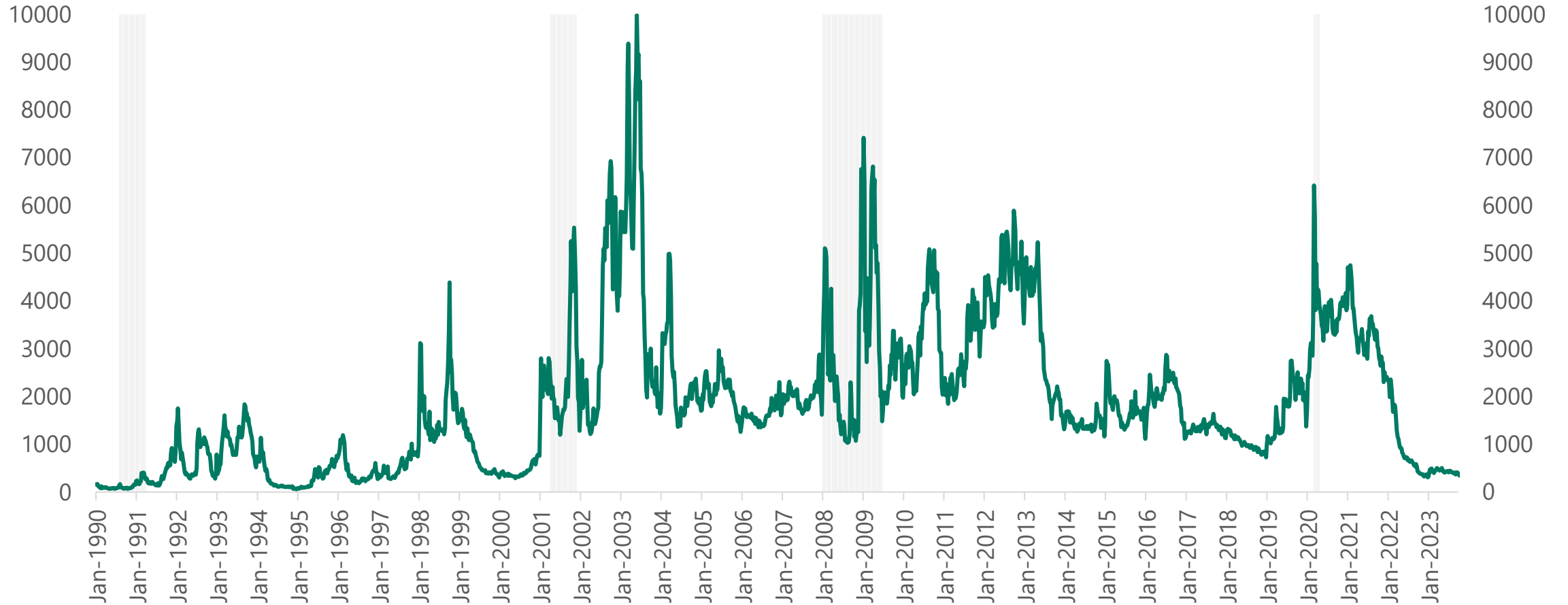
Source: Mortgage Bankers Association, Bloomberg, Apollo Chief Economist

Record-low number of homeowners are refinancing their mortgage at the moment

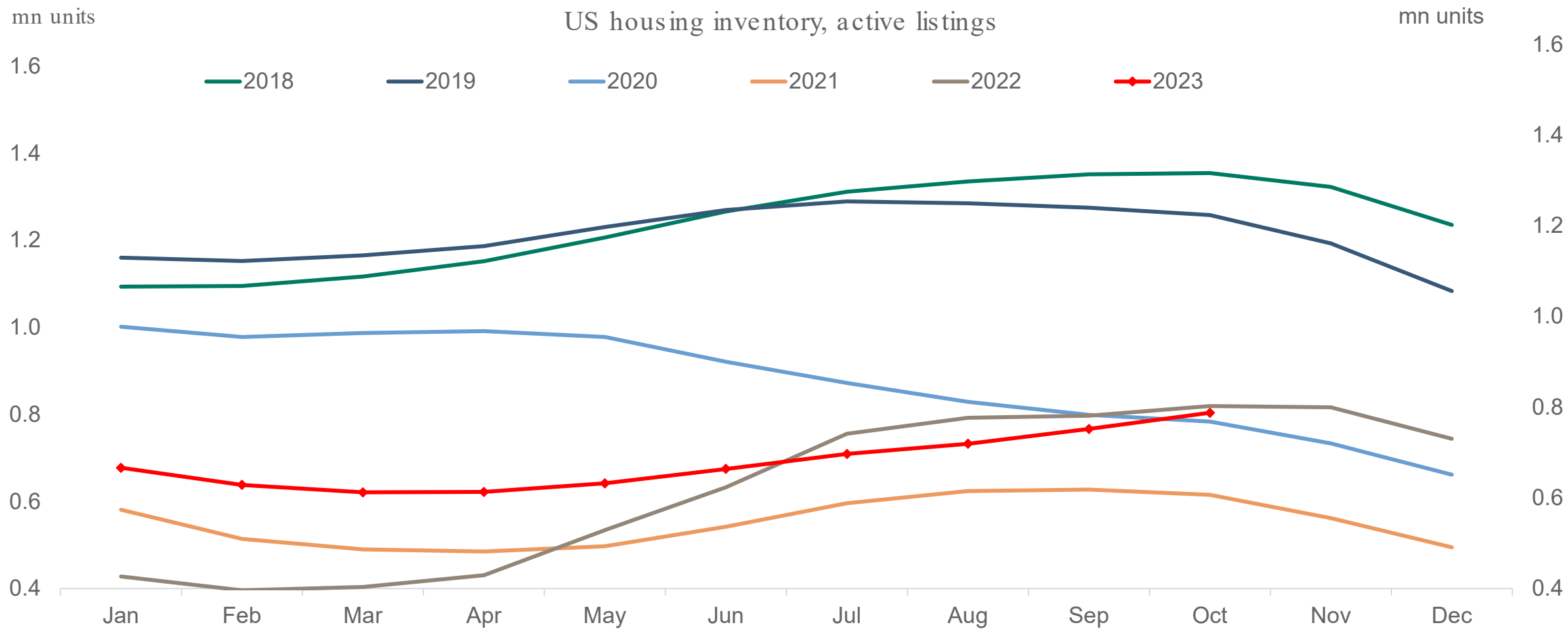
Index, Mar 1990 = 100

— Mortgage loan applications for refinancing

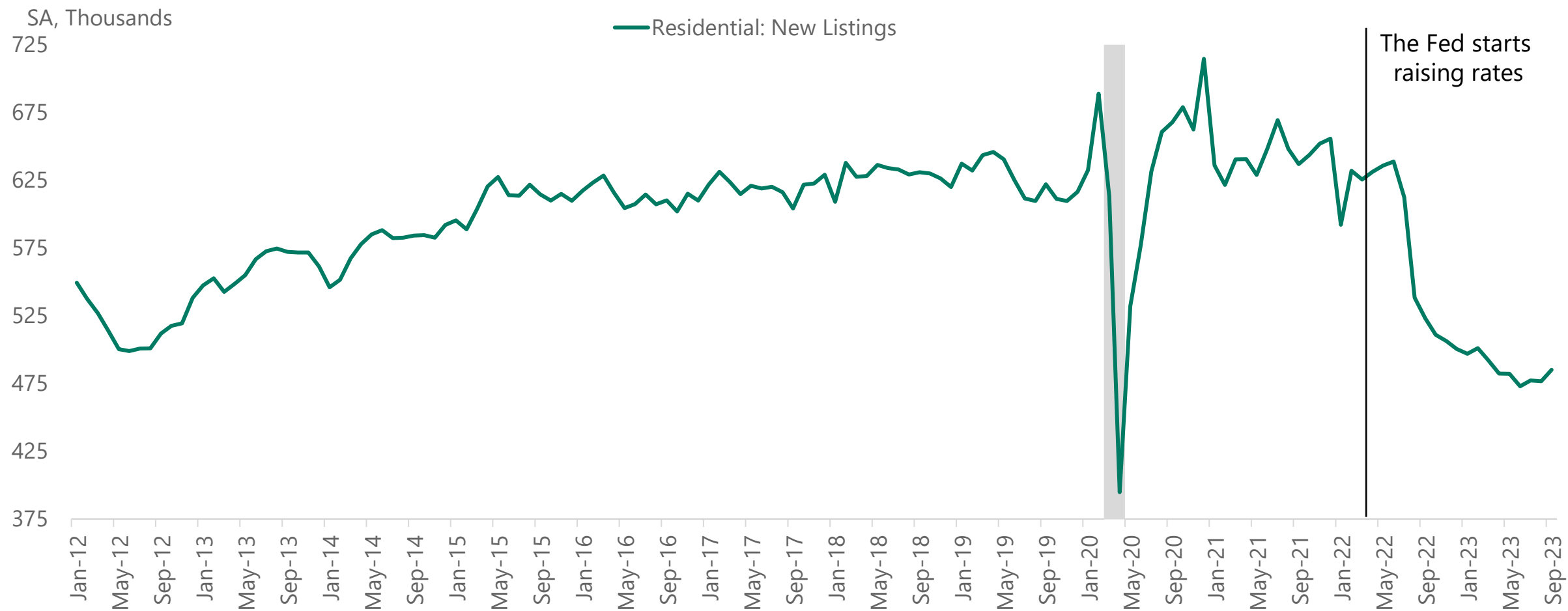
Index, Mar 1990 = 100



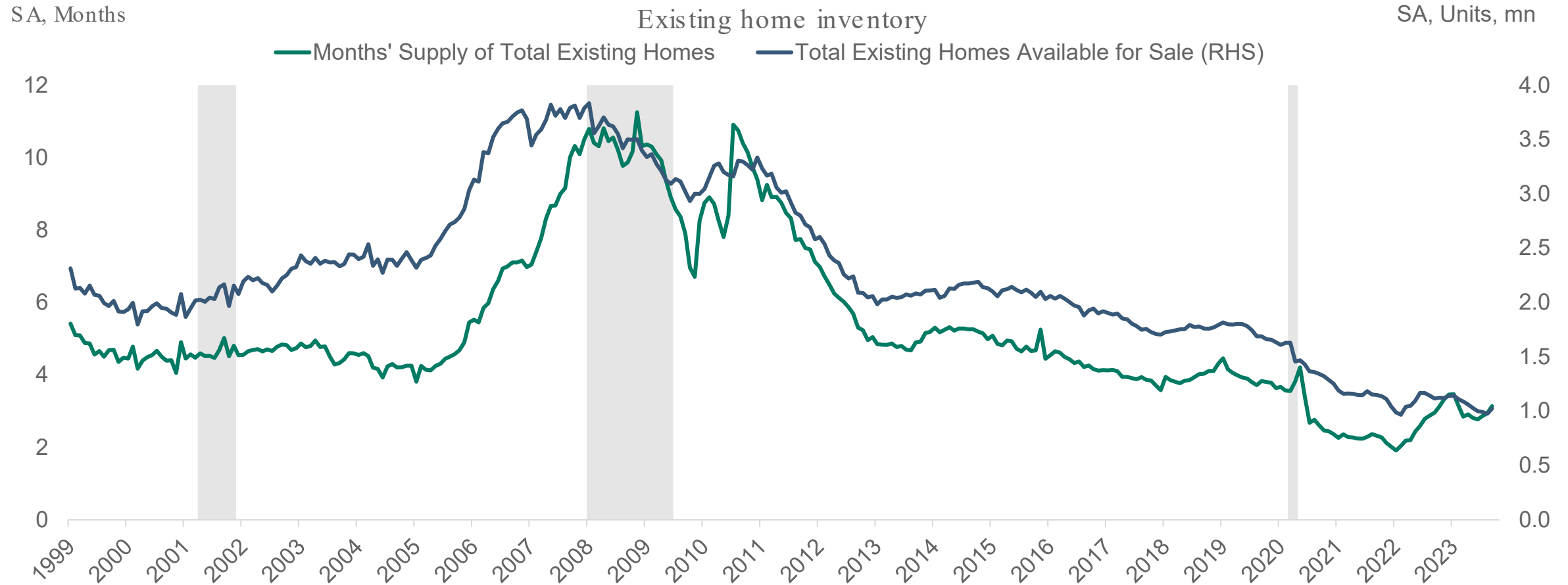
Very low inventory of homes for sale



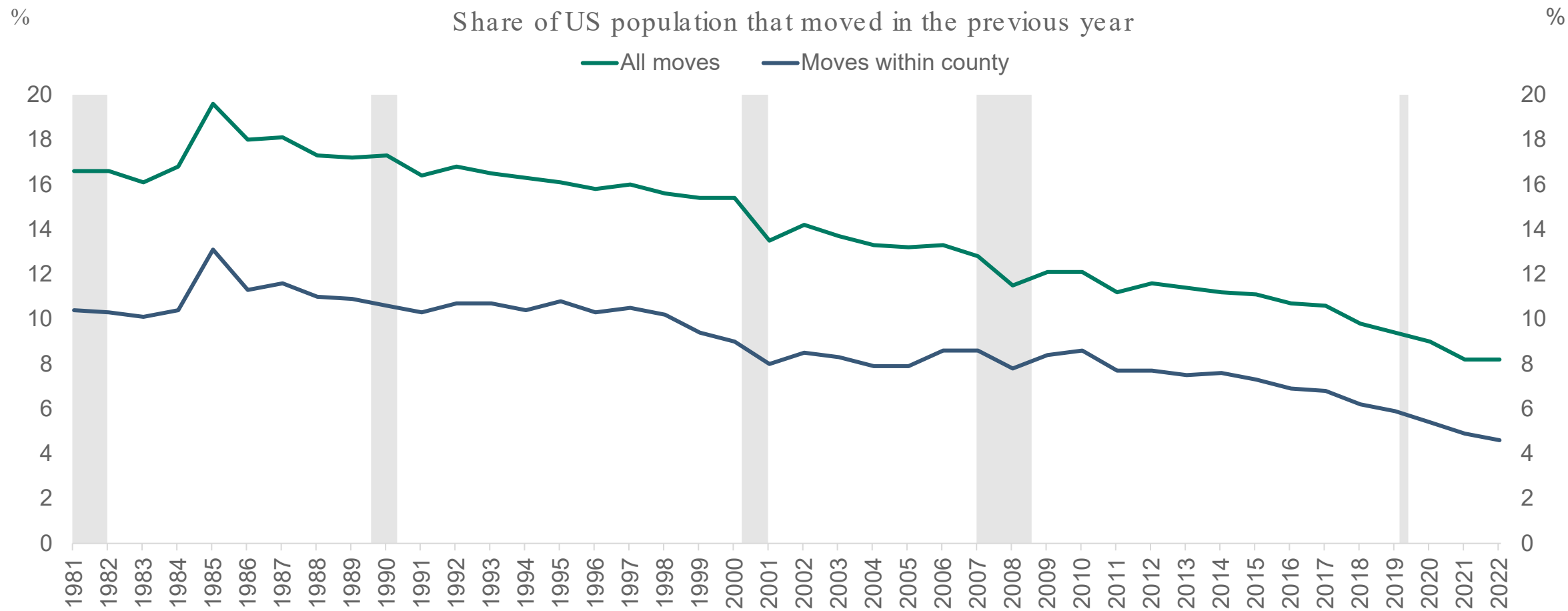
Fewer people listing their home for sale at the moment



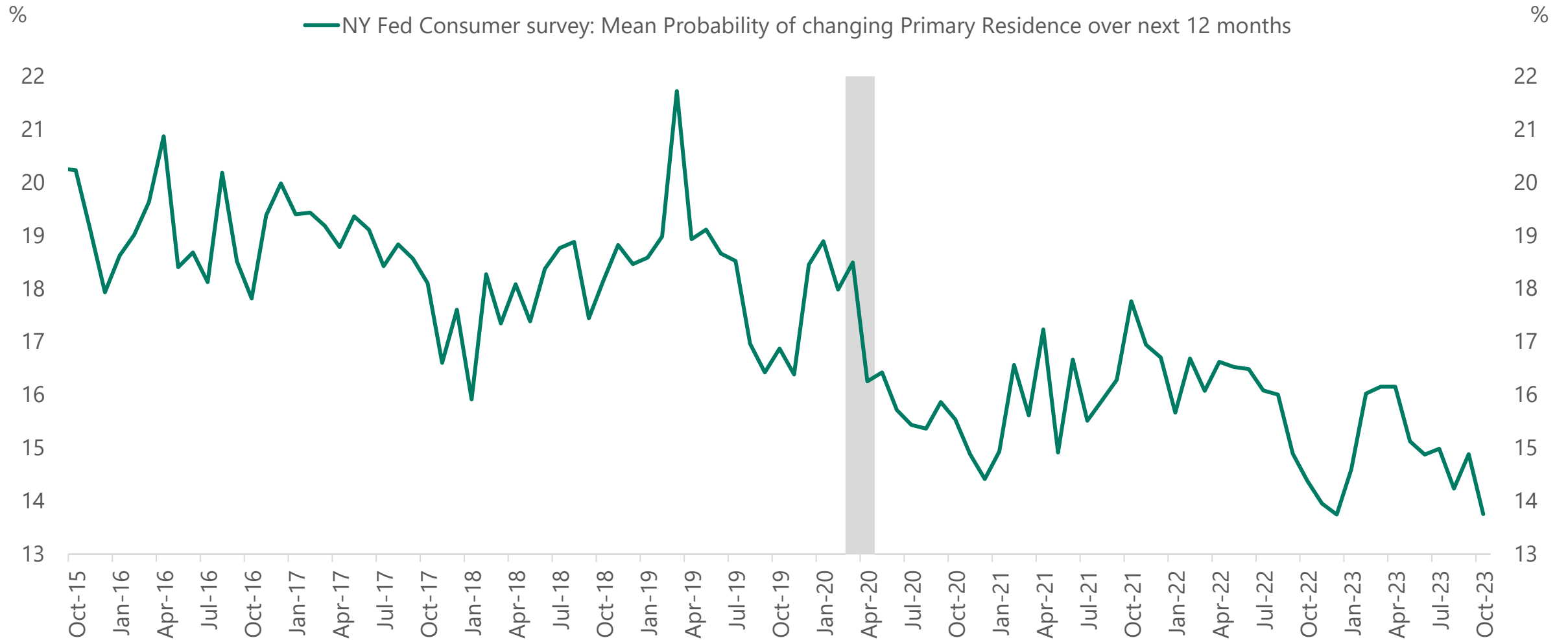
Homesellers don't want to sell their house and get a new mortgage: The stock of total existing homes for sale moving down



Structural decline in the share of the US population moving to a new address



A very low share of households are planning to move

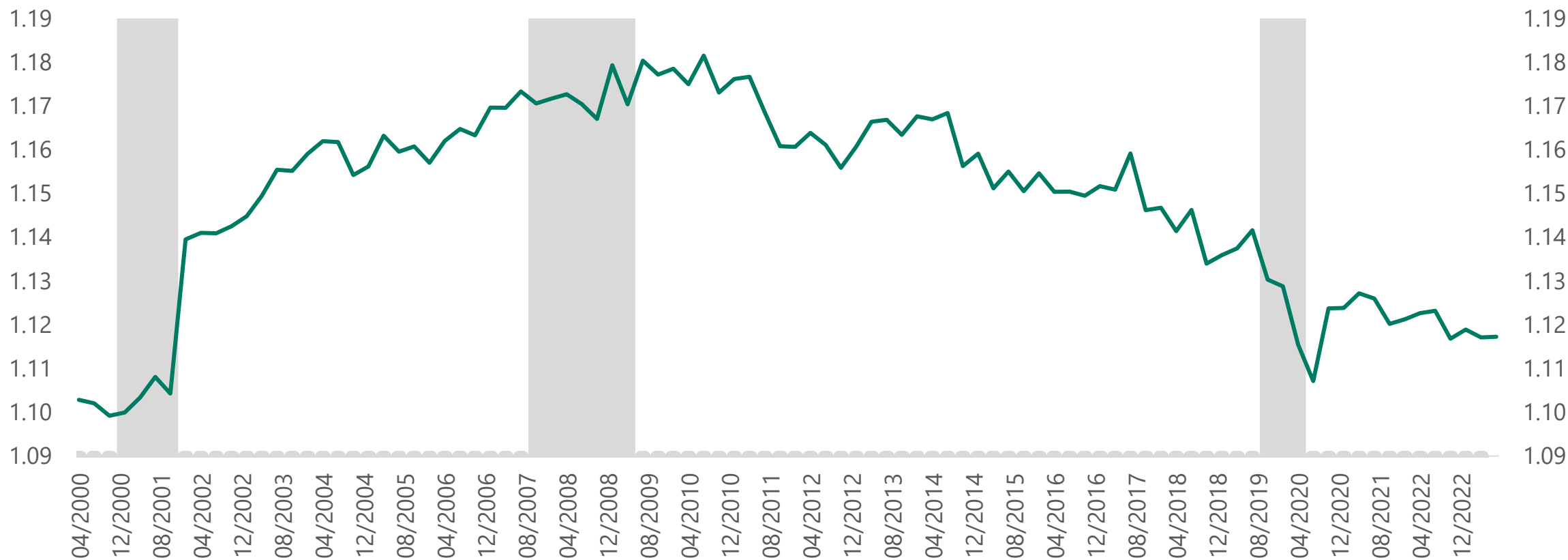


Total housing inventory per person continues to decline

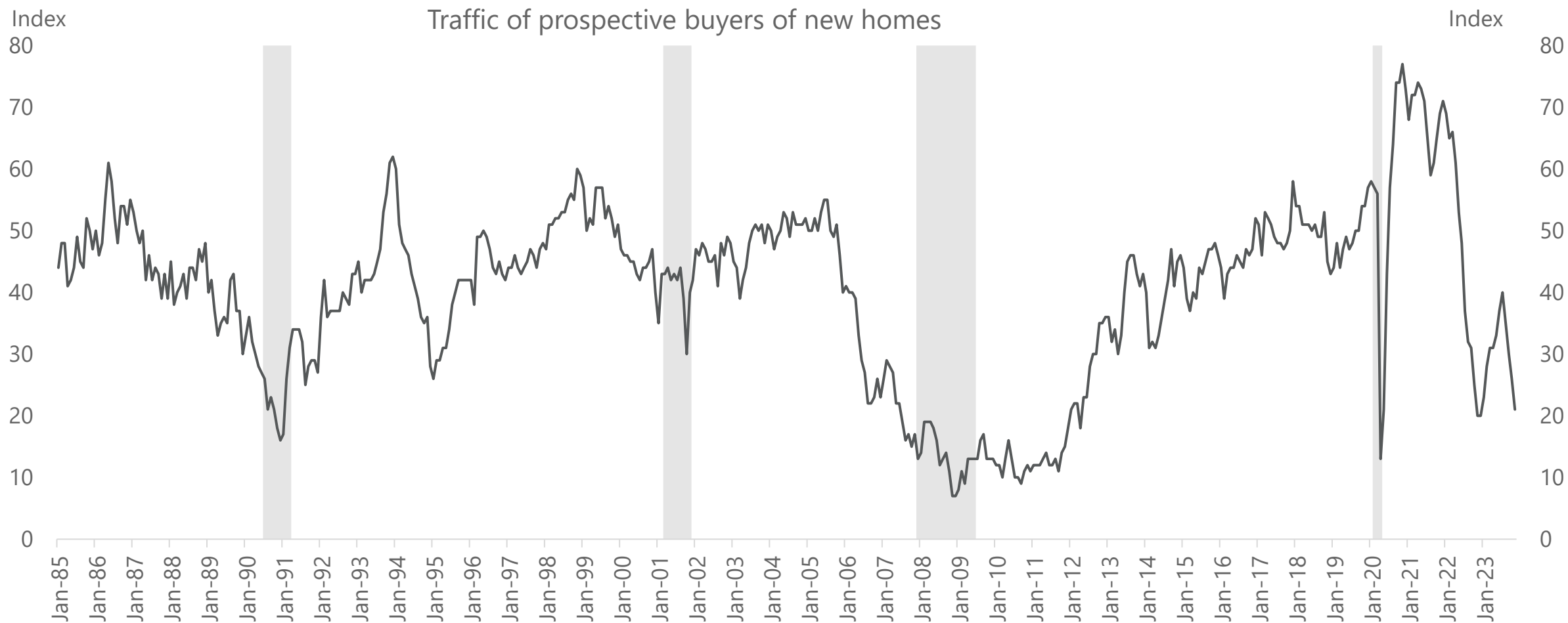
Units per person

Housing inventory estimate: Total housing units/Household

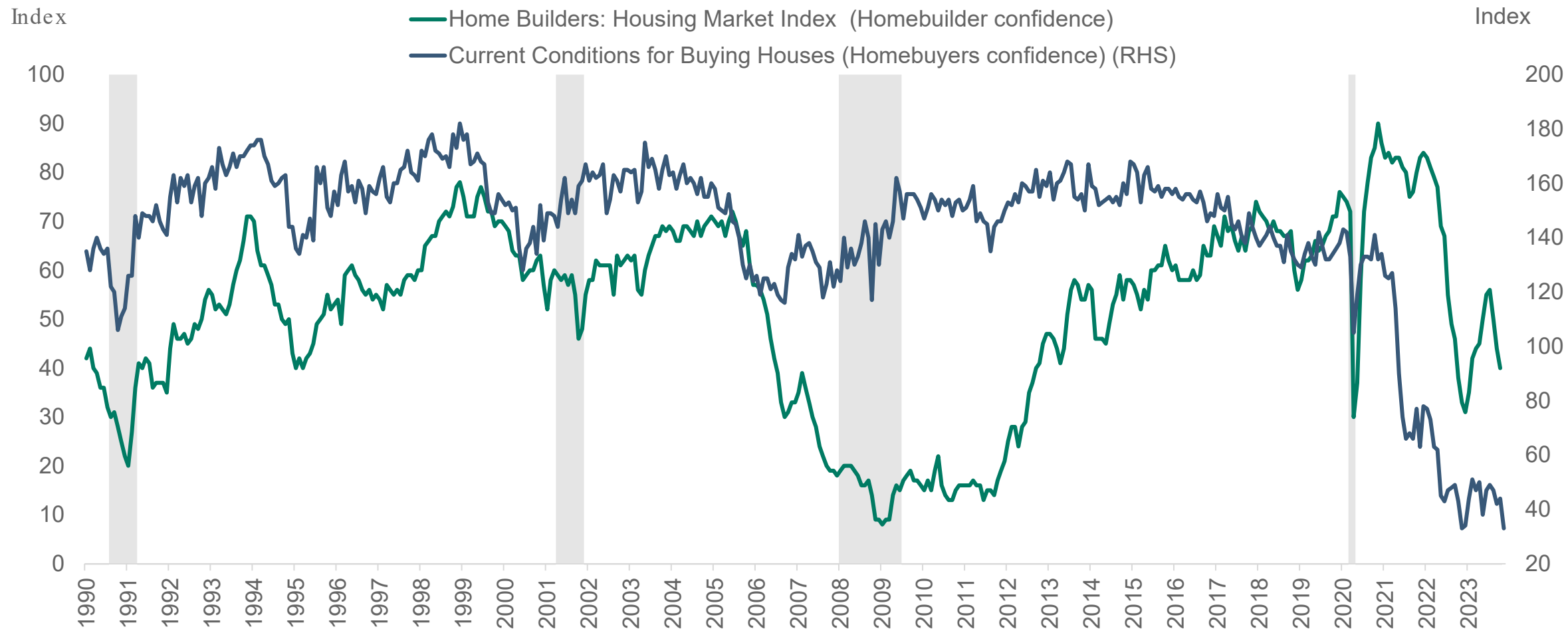
Units per prson



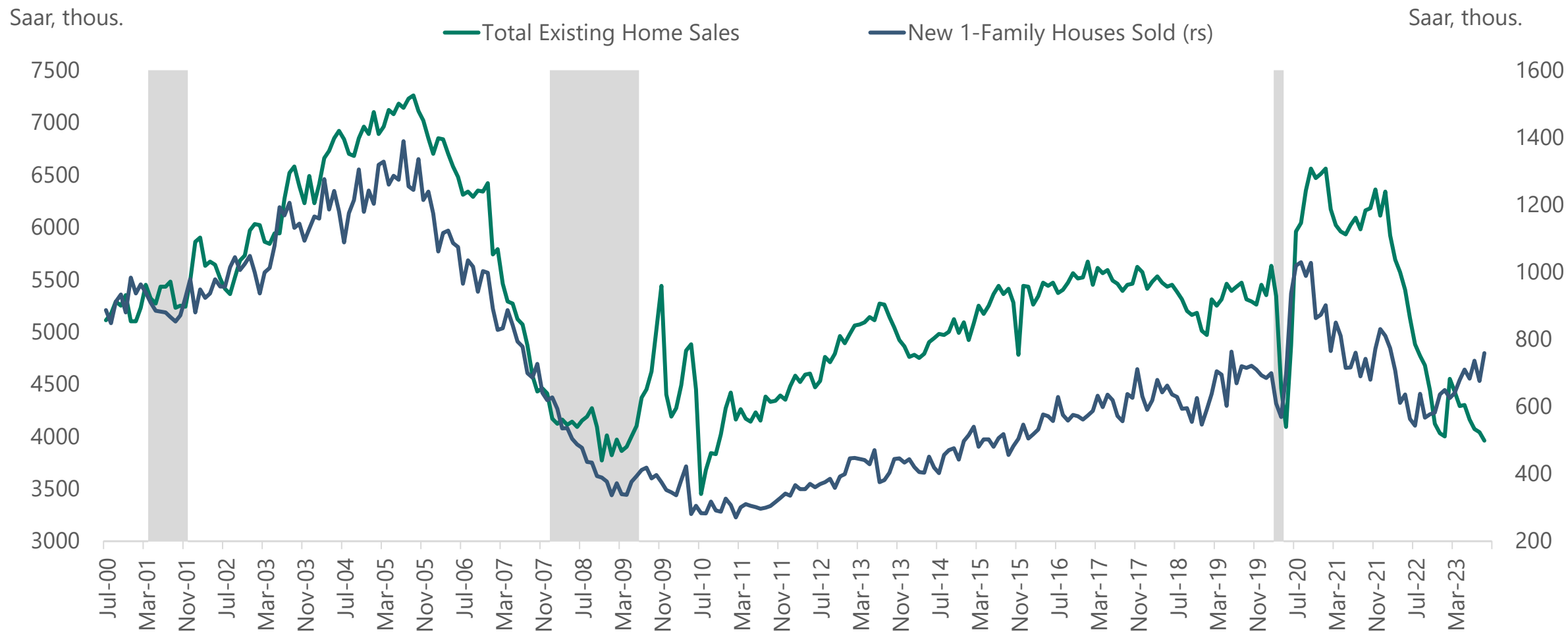
Traffic of prospective homebuyers negatively impacted by higher mortgage rates



Higher mortgage rates also having a negative impact on homebuyer and homebuilder confidence

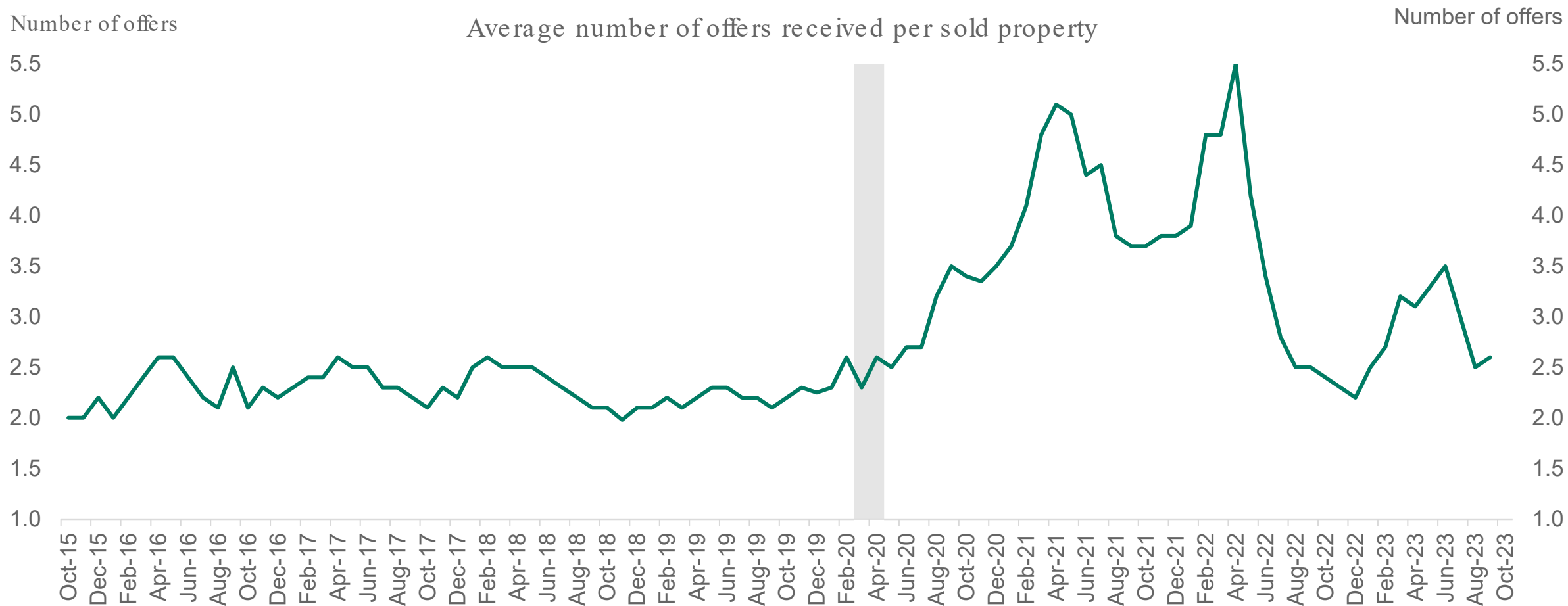


Existing home sales negatively impacted by higher mortgage rates

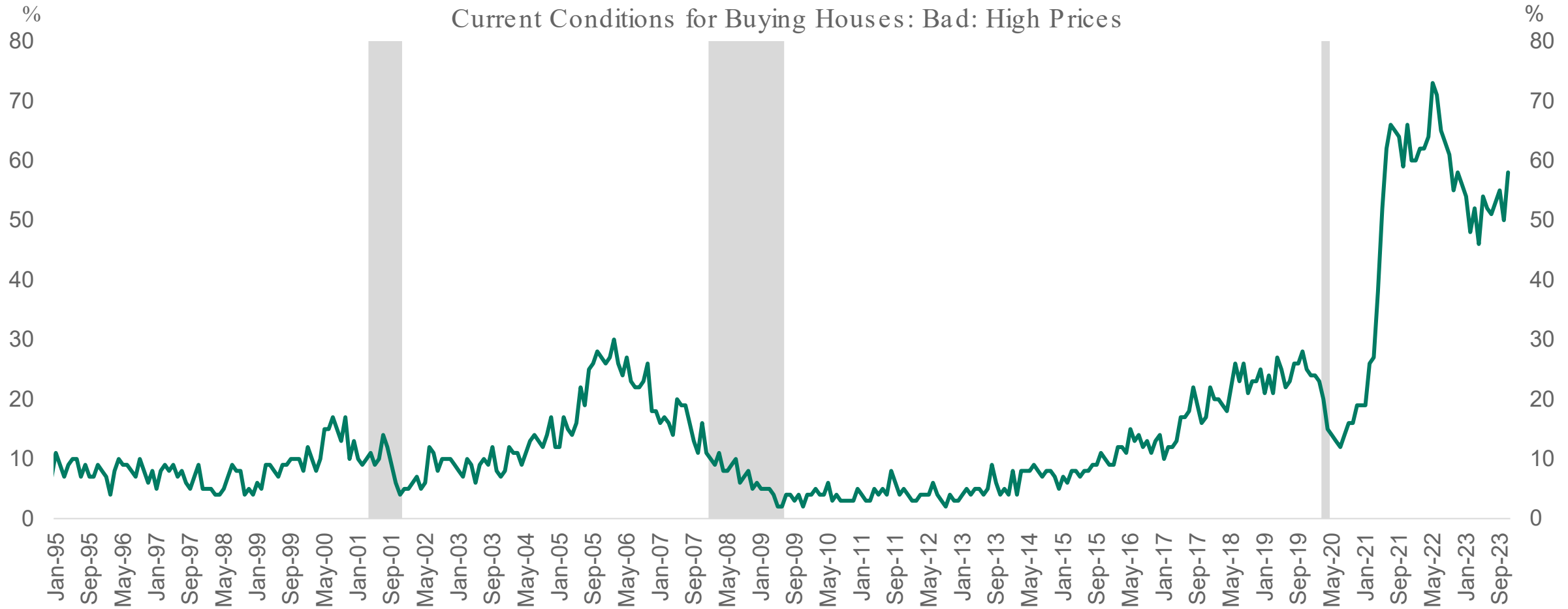


Source: Census Bureau, NAR, Haver, Apollo Chief Economist; Forecast is Bloomberg consensus

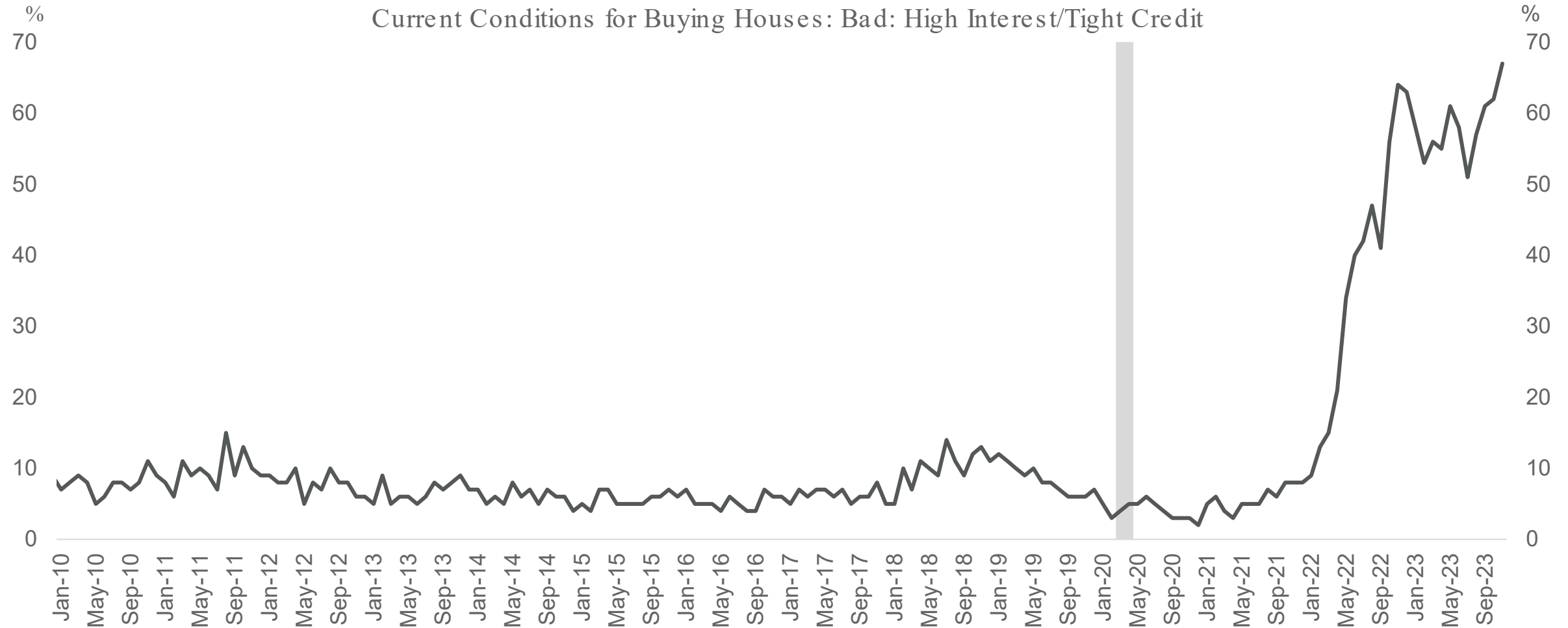
Fewer bidding wars recently because of higher mortgage rates



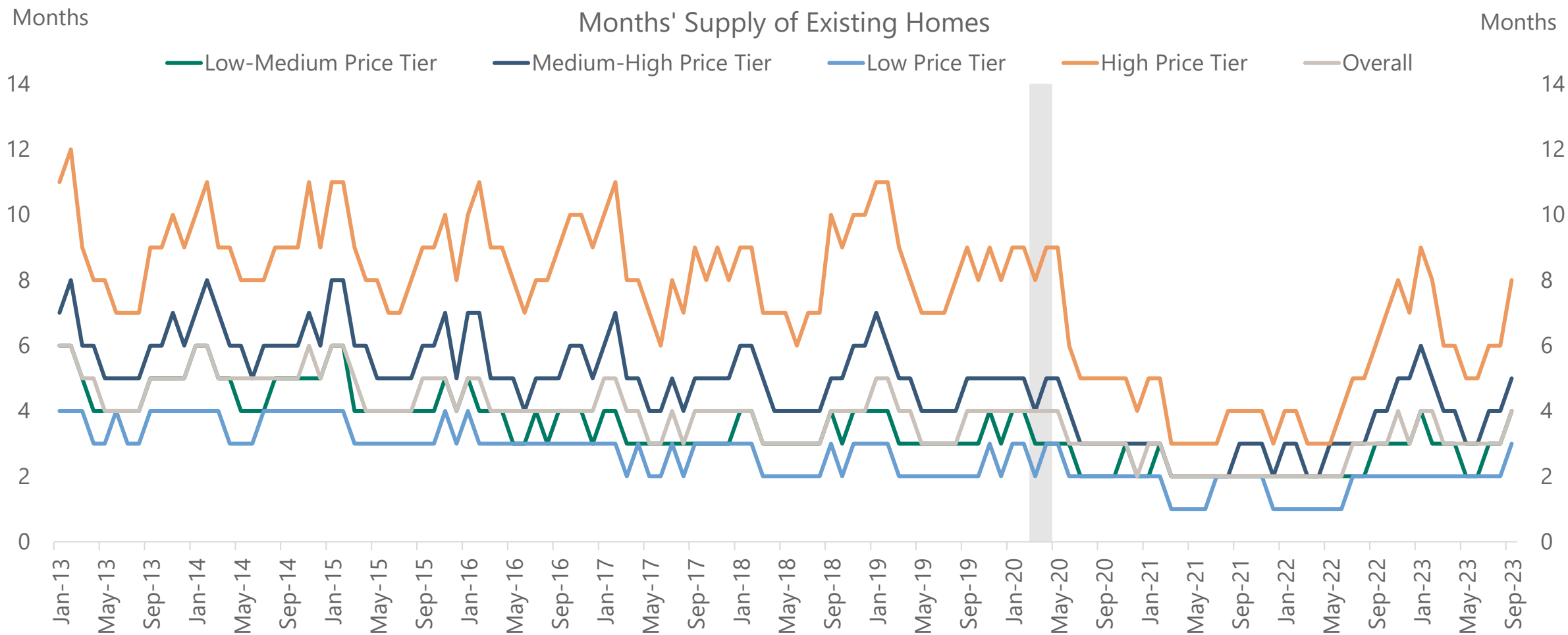
Homebuyer sentiment deteriorating again, likely because of high mortgage rates



67% of consumers are saying that this is a bad time to buy a house because of high mortgage rates and tight credit

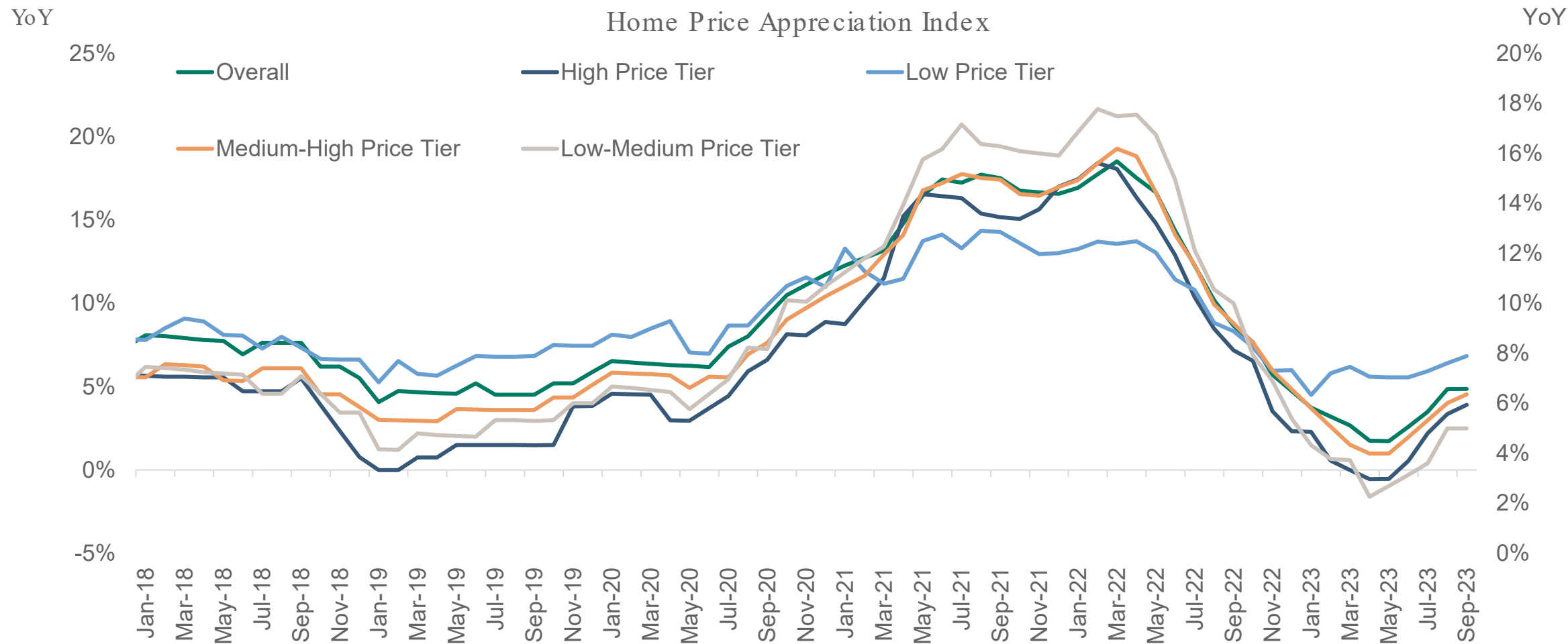


Seasonal increase in the inventory of homes for sale



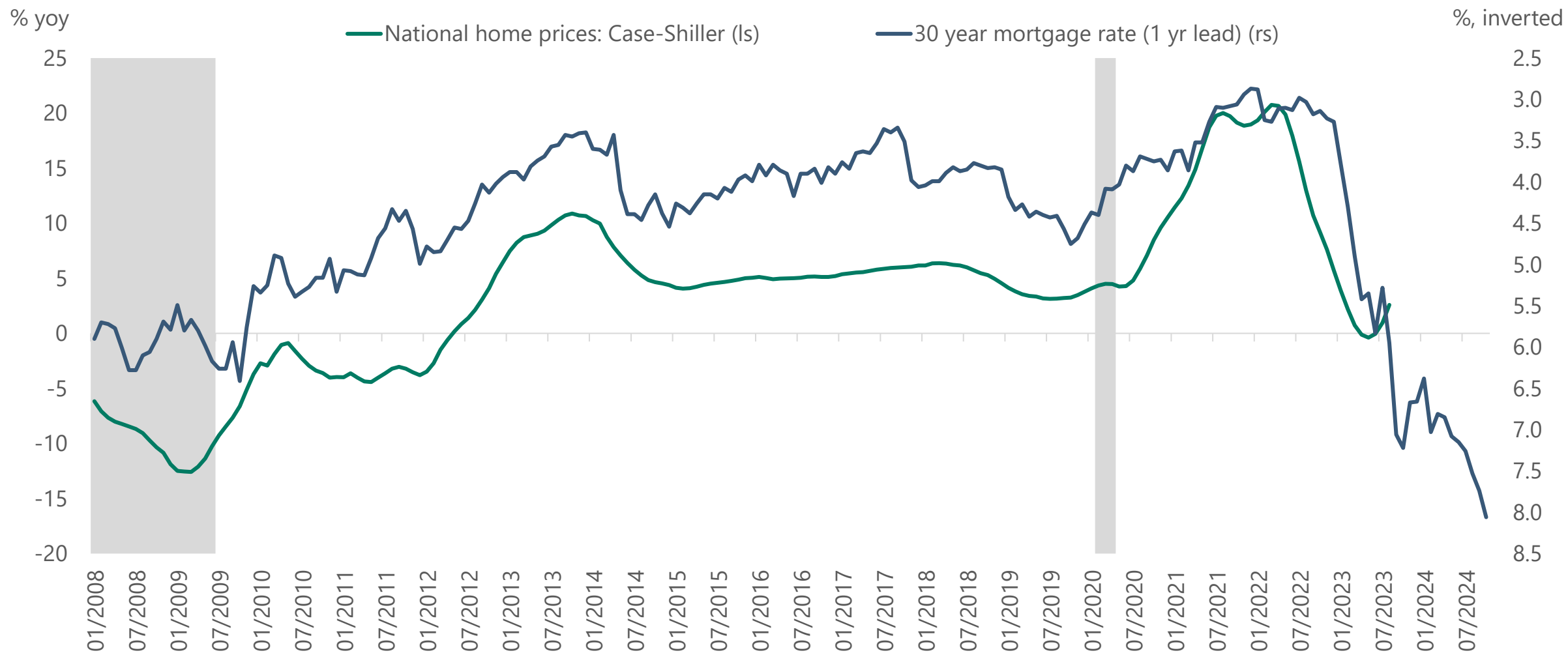
Source: American Enterprise Institute, Haver, Apollo Chief Economist

Higher mortgage rates not yet weighing on home price inflation

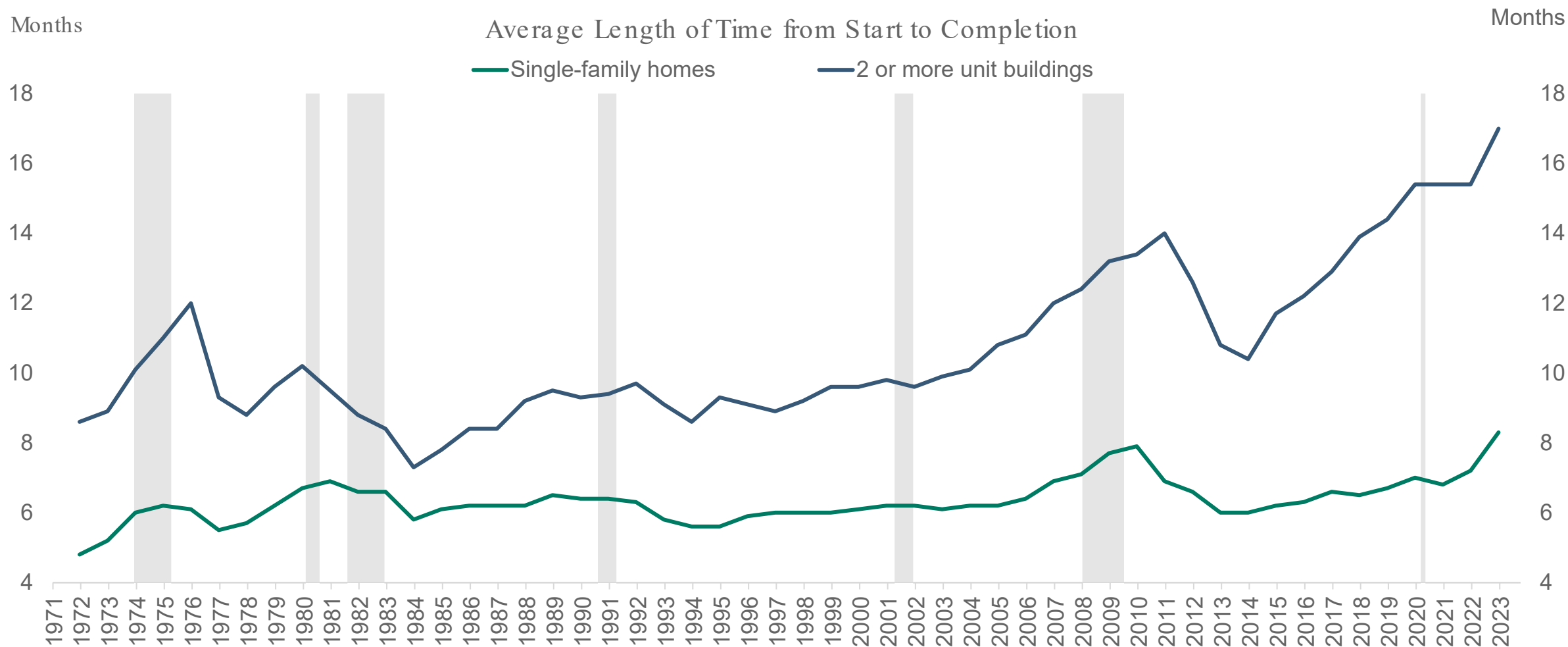


Source: American Enterprise Institute, Haver, Apollo Chief Economist

If mortgage rates stay high home prices will start falling

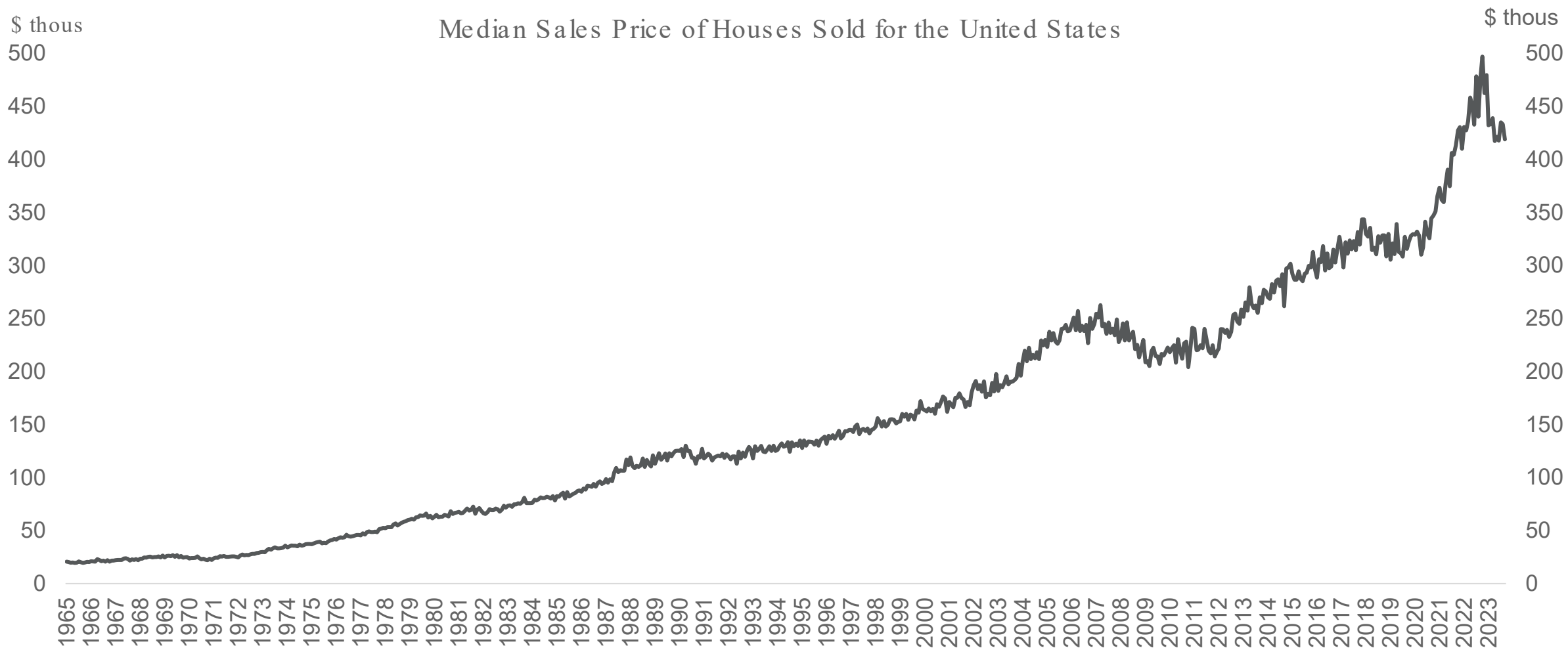


It currently takes 8 months on average to build a single-family house

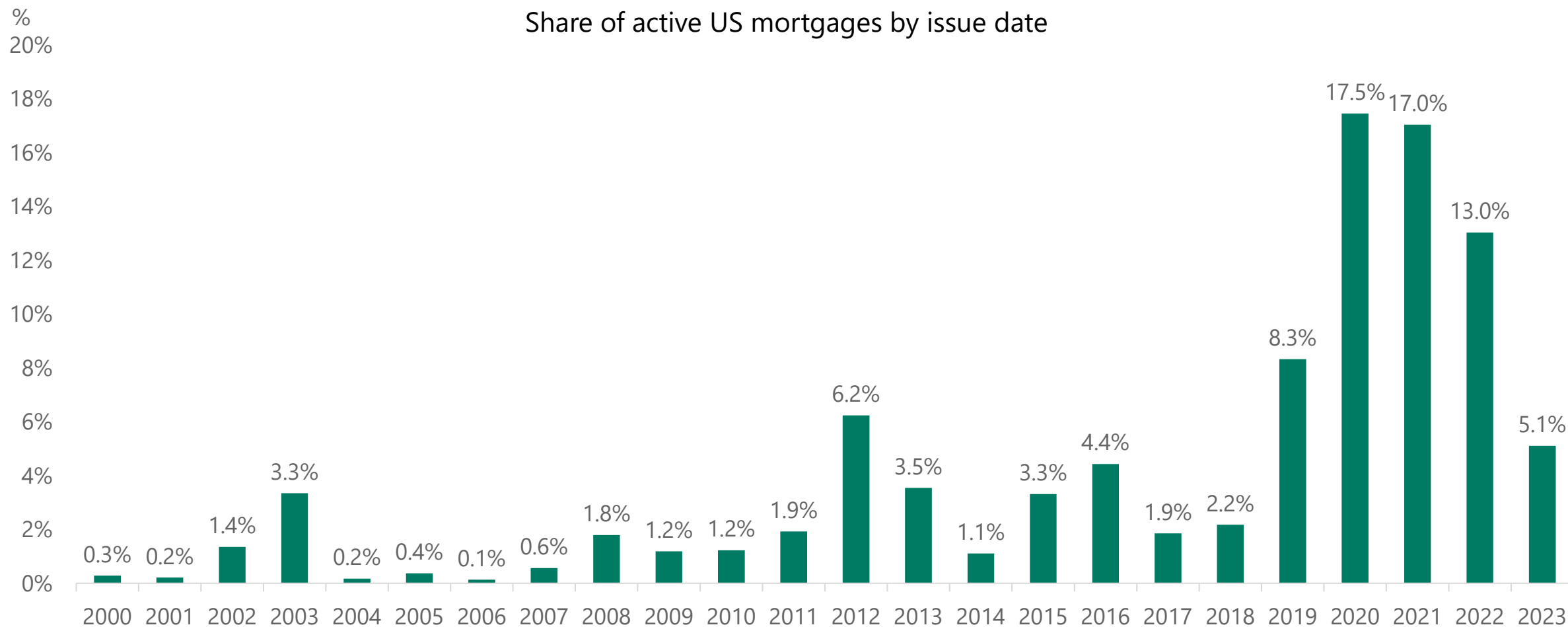


Source: Census, Haver Analytics, Apollo Chief Economist. Note: Single family homes are 1 unit buildings

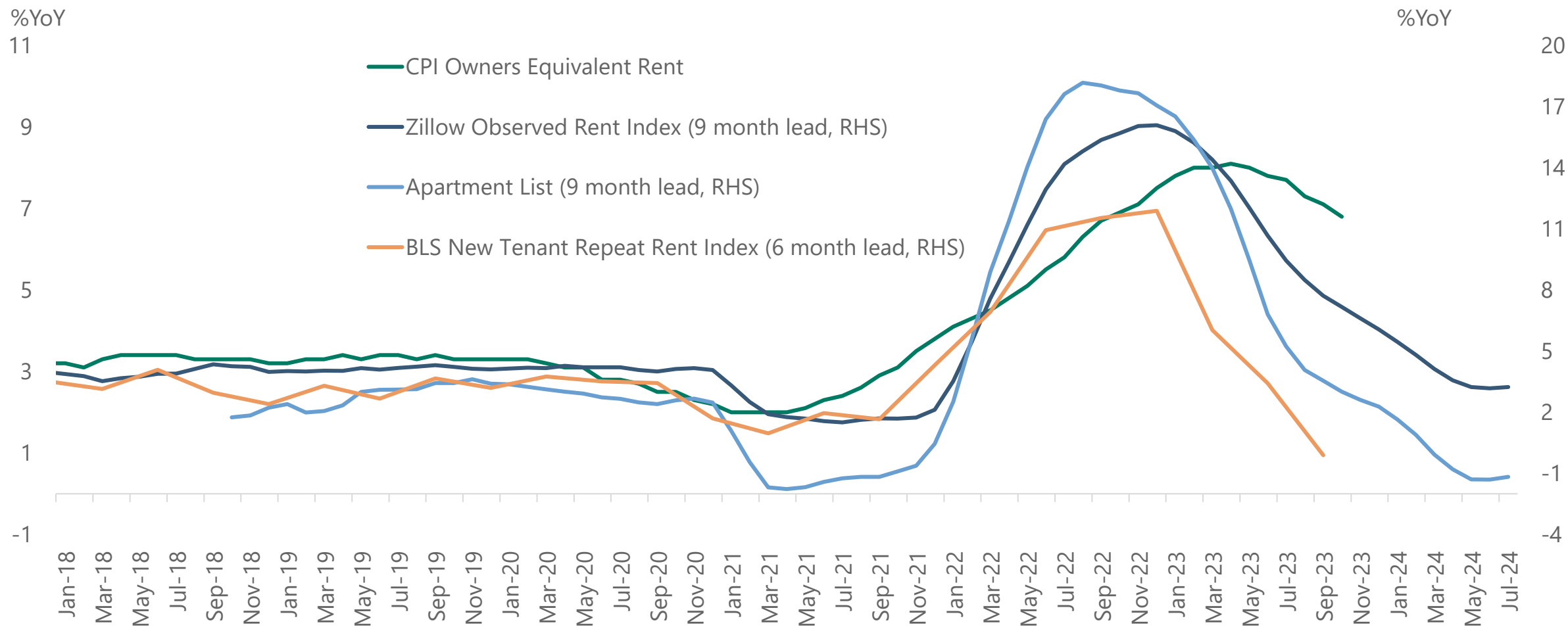
Median home sales price now \$420K



63% of all mortgages outstanding were issued after 2018

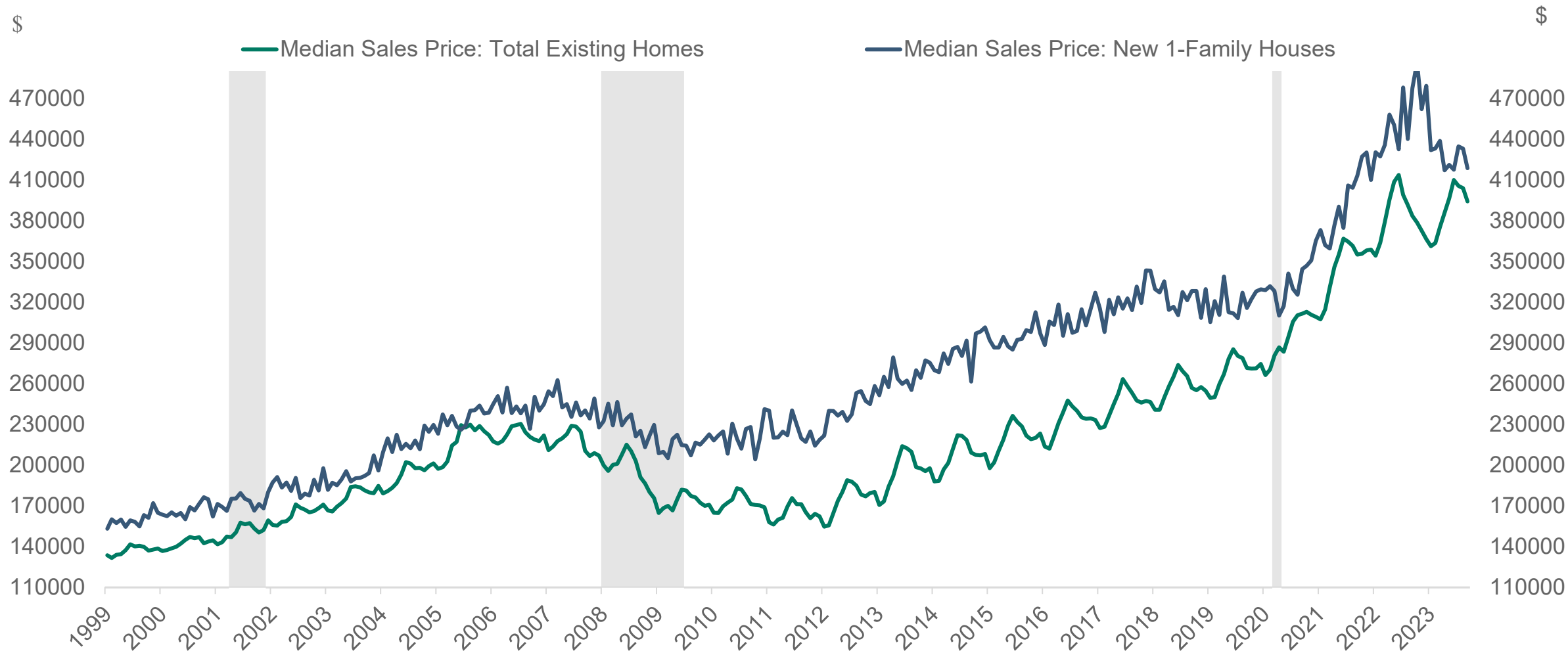


Housing inflation likely to continue to decline

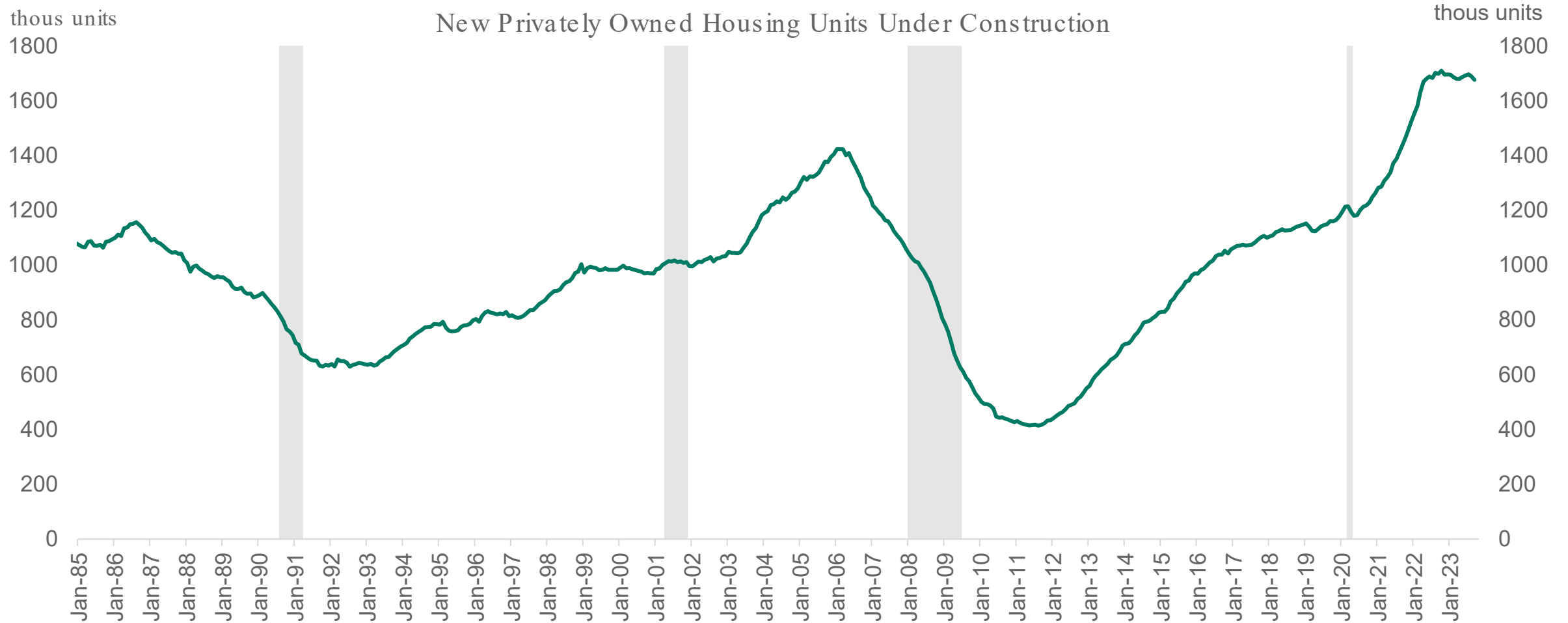


New versus existing homes

House prices for new homes and existing homes



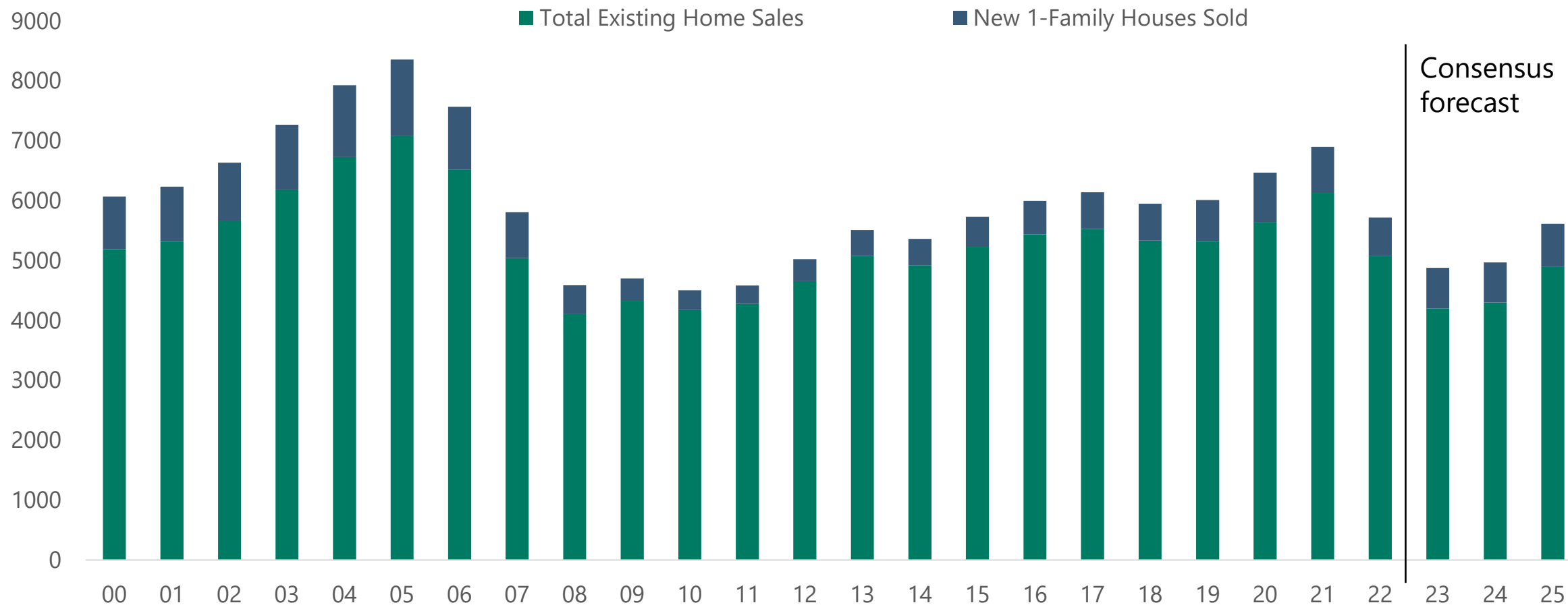
New privately owned housing units under construction starting to peak



Source: Census Bureau, Haver Analytics, Apollo Chief Economist

Consensus is forecasting a modest rebound in home sales

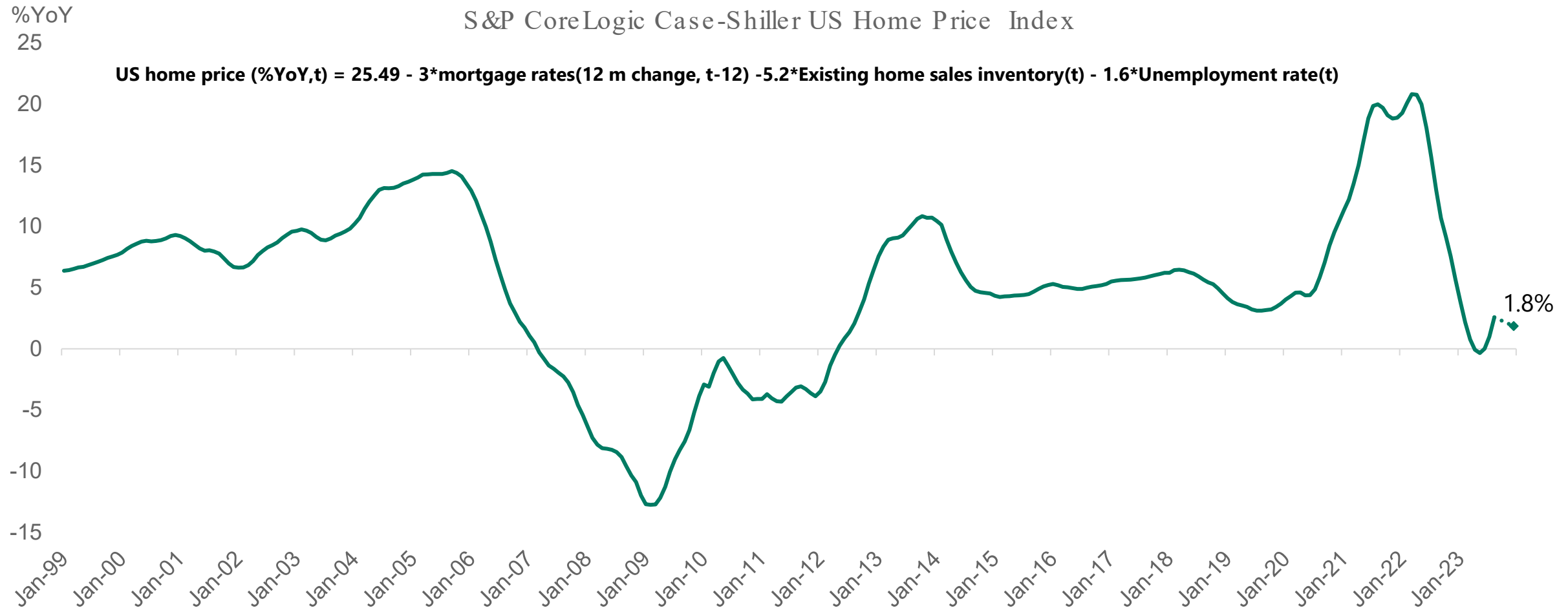
SAAR, thous.



Source: Census Bureau, NAR, Haver, Apollo Chief Economist; Forecast is Bloomberg consensus

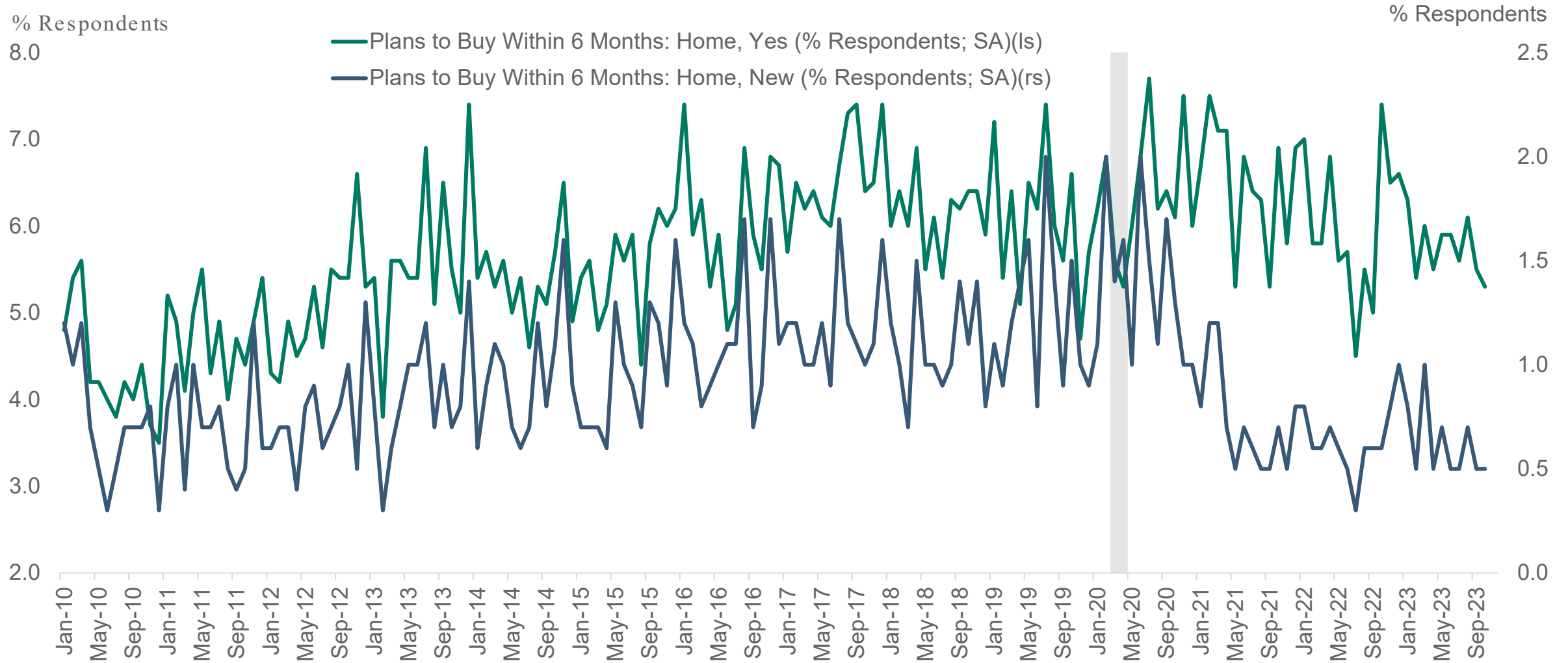
Our US house price model

US house price model: High mortgage rates pushing home prices down. Low inventory pushing home prices higher.

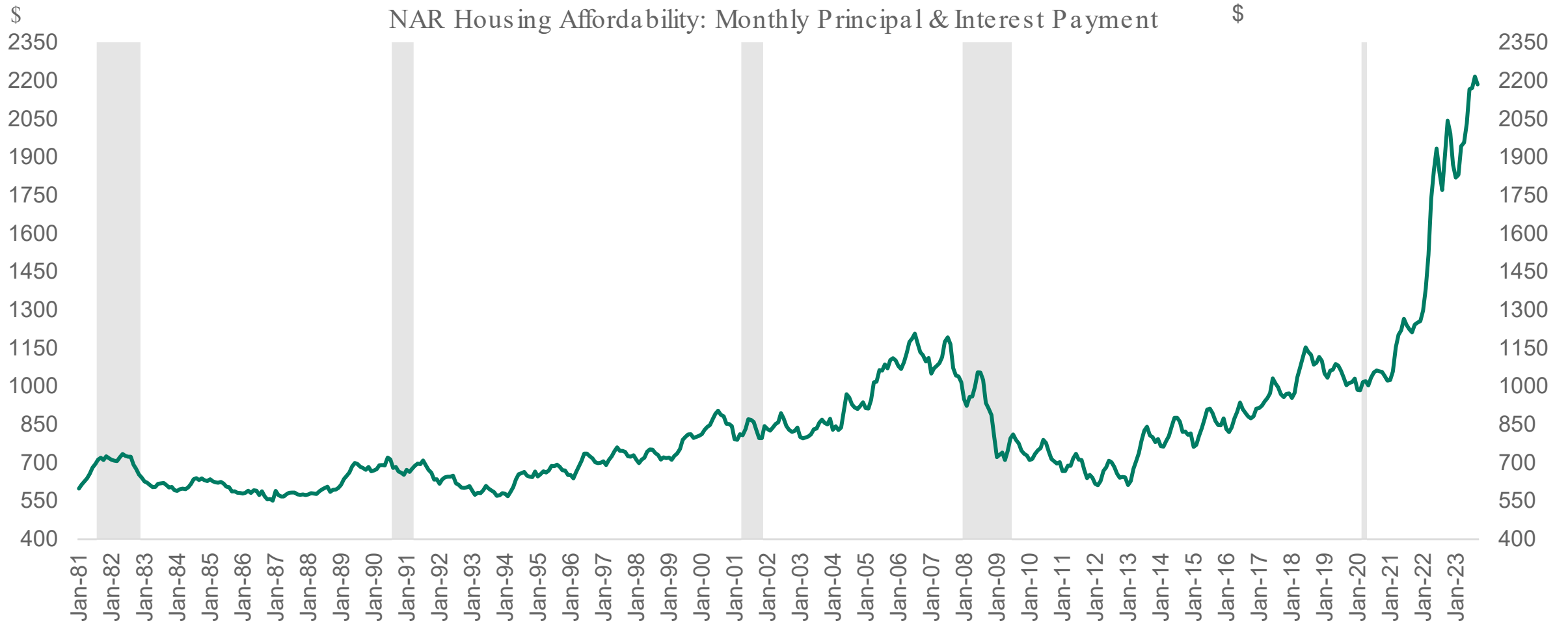


1) Housing Demand: Higher mortgage rates and high home prices slowing demand

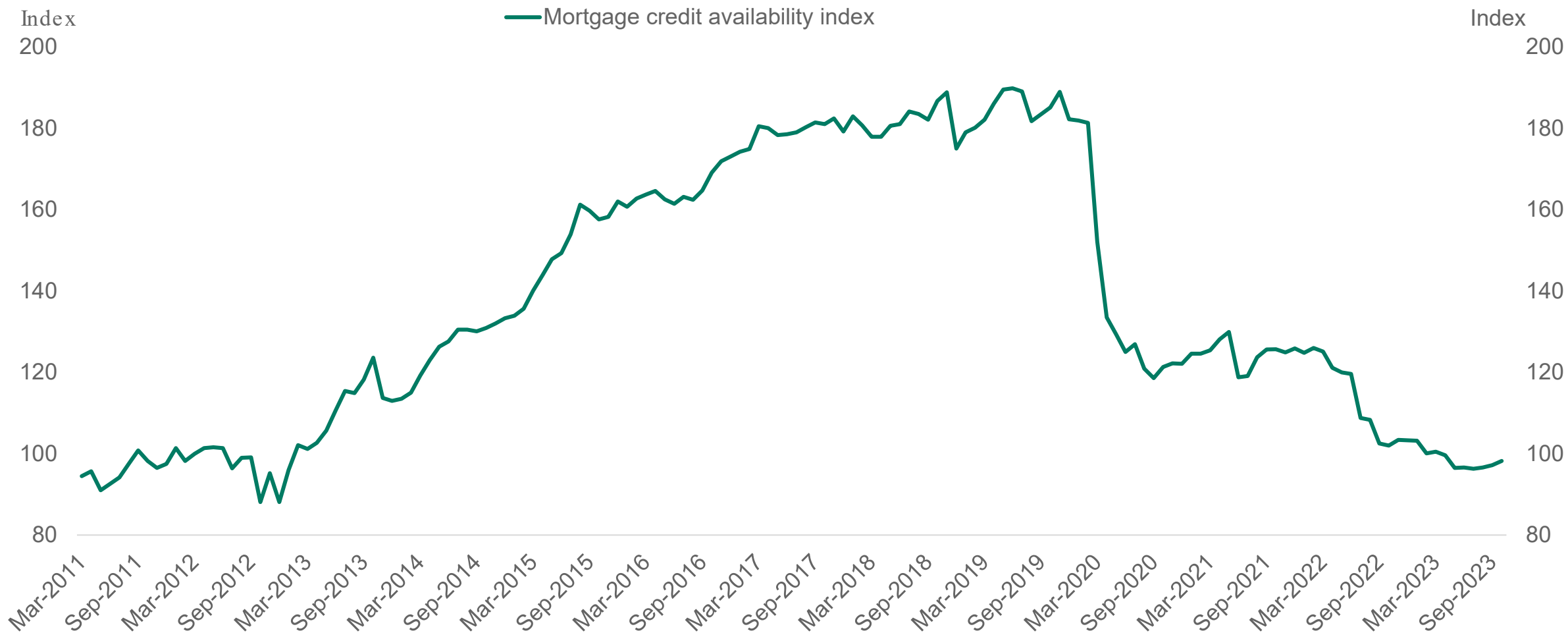
Home buying plans stable despite high mortgage rates



Monthly mortgage payments on new mortgages have doubled since 2021

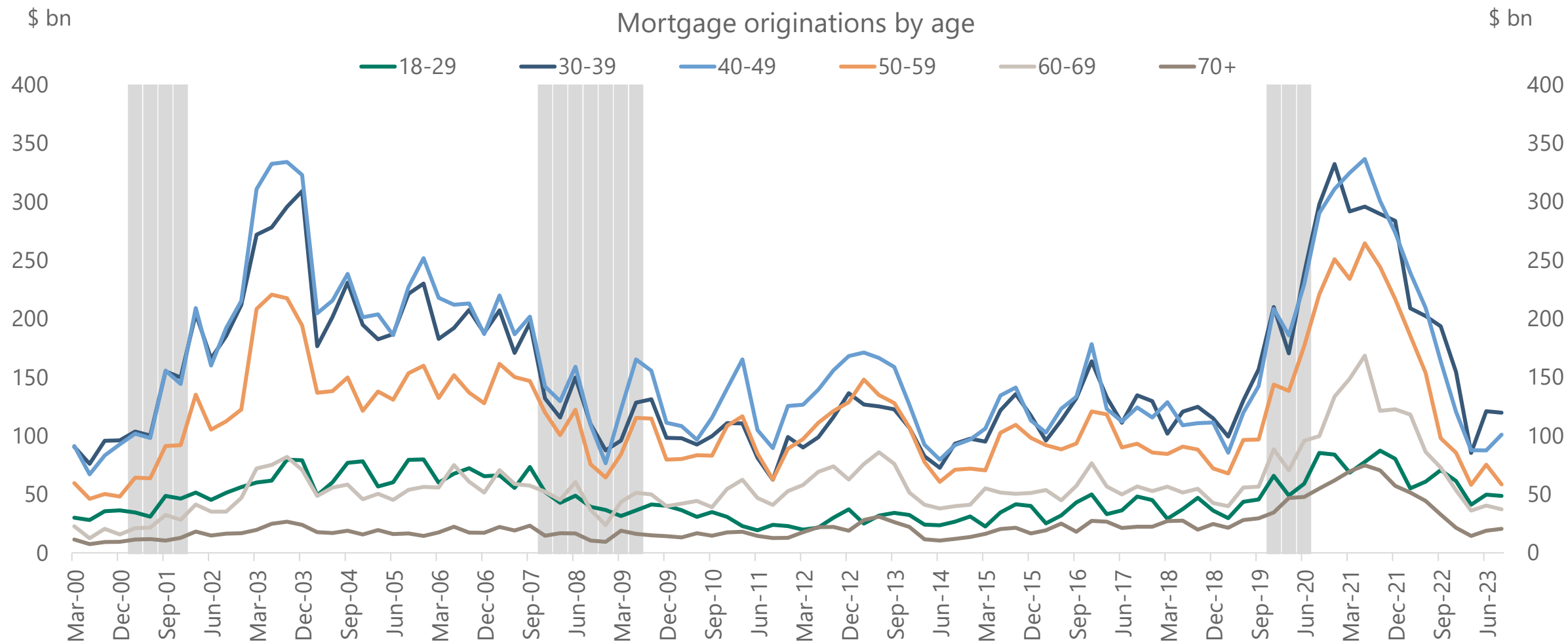


Availability of mortgage credit at tight levels



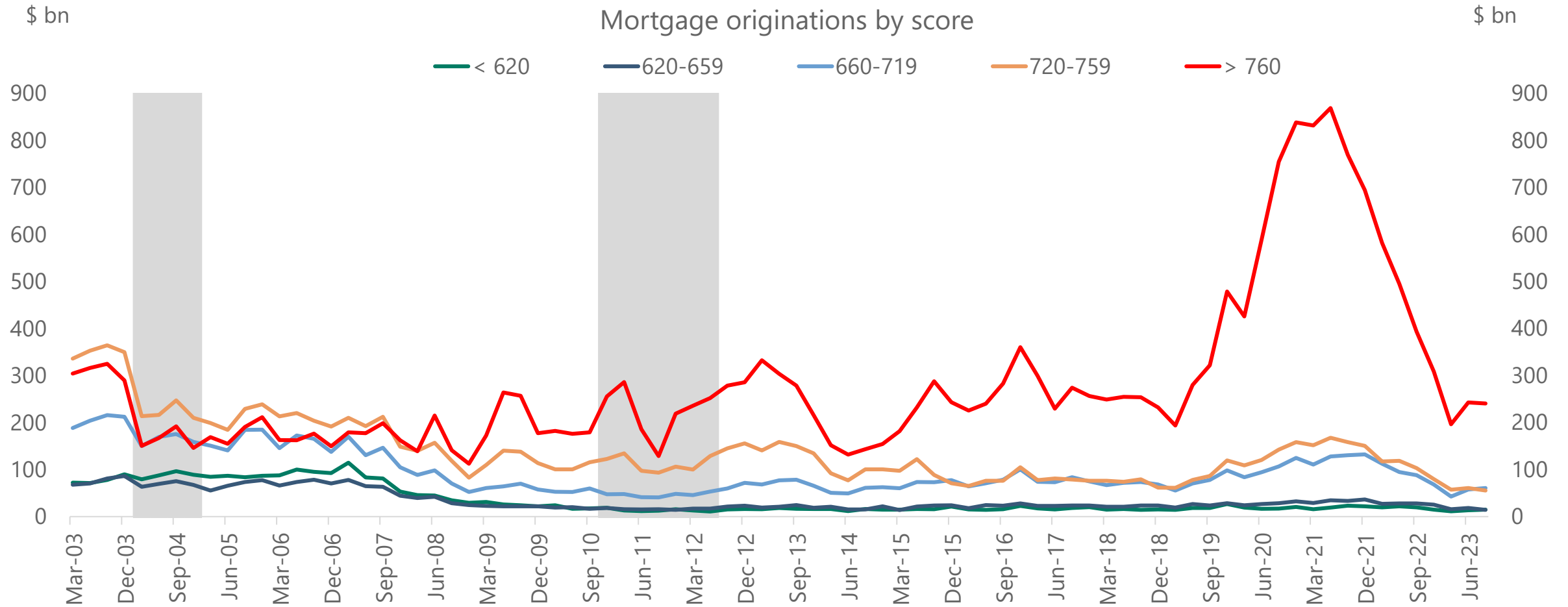
Source: Mortgage Bankers Association, Bloomberg, Apollo Chief Economist

Mortgage originations back at pre-pandemic levels



Source: NY Fed, Bloomberg, Apollo Chief Economist

Mortgage originations normalizing for households with high credit scores



Source: NY Fed, Bloomberg, Apollo Chief Economist

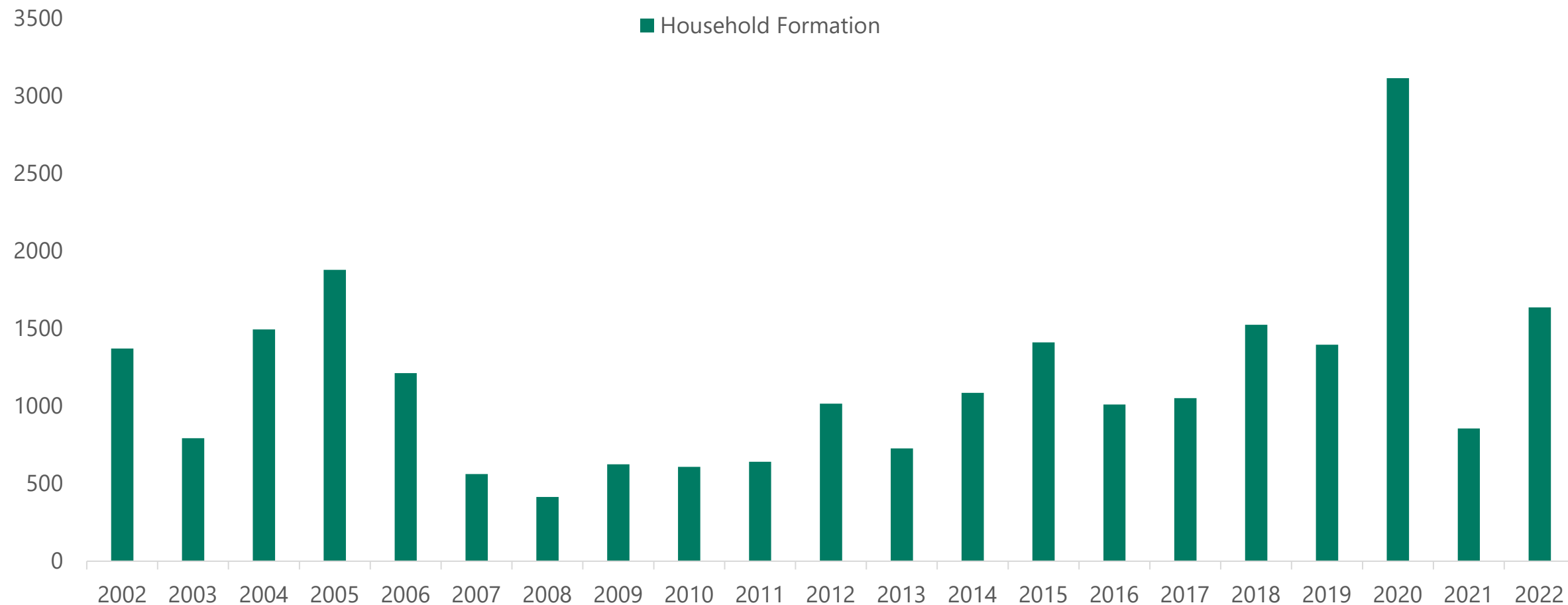
Demographics are a tailwind to housing demand



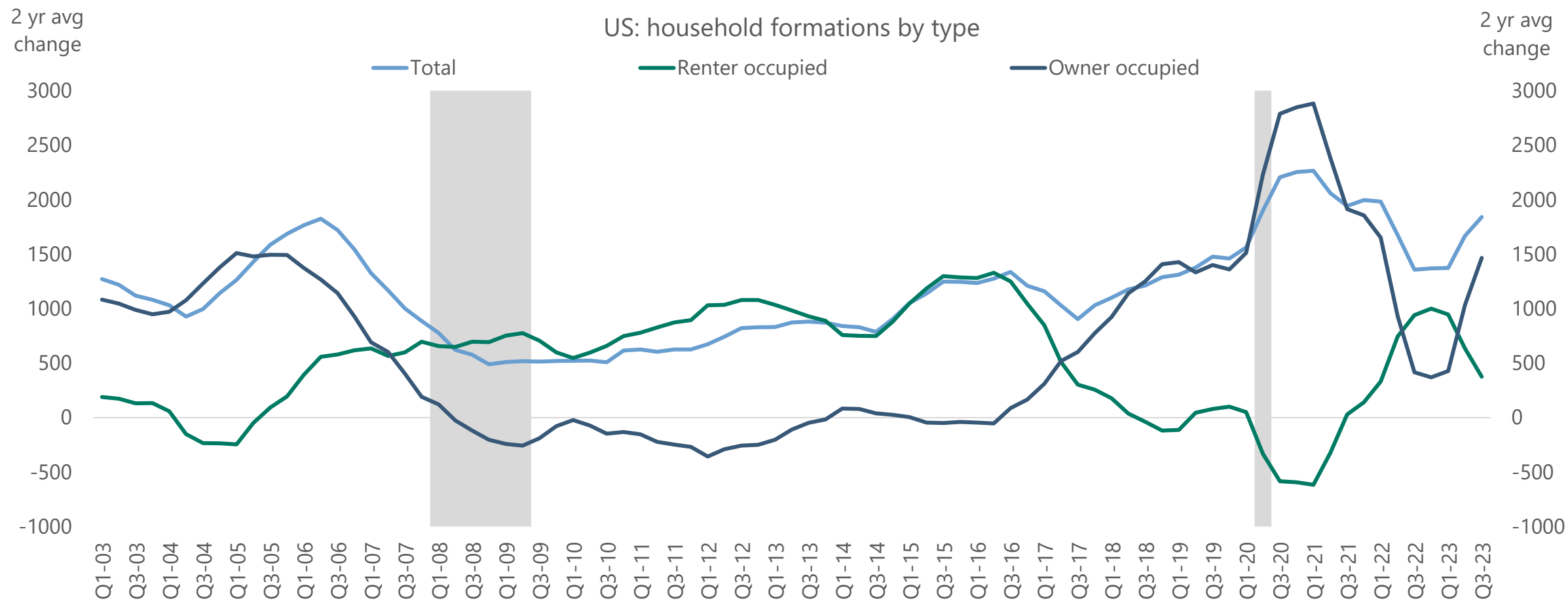
Source: Census Bureau, Apollo Chief Economist

Rebounding household formation is a tailwind to housing

Thousands of units

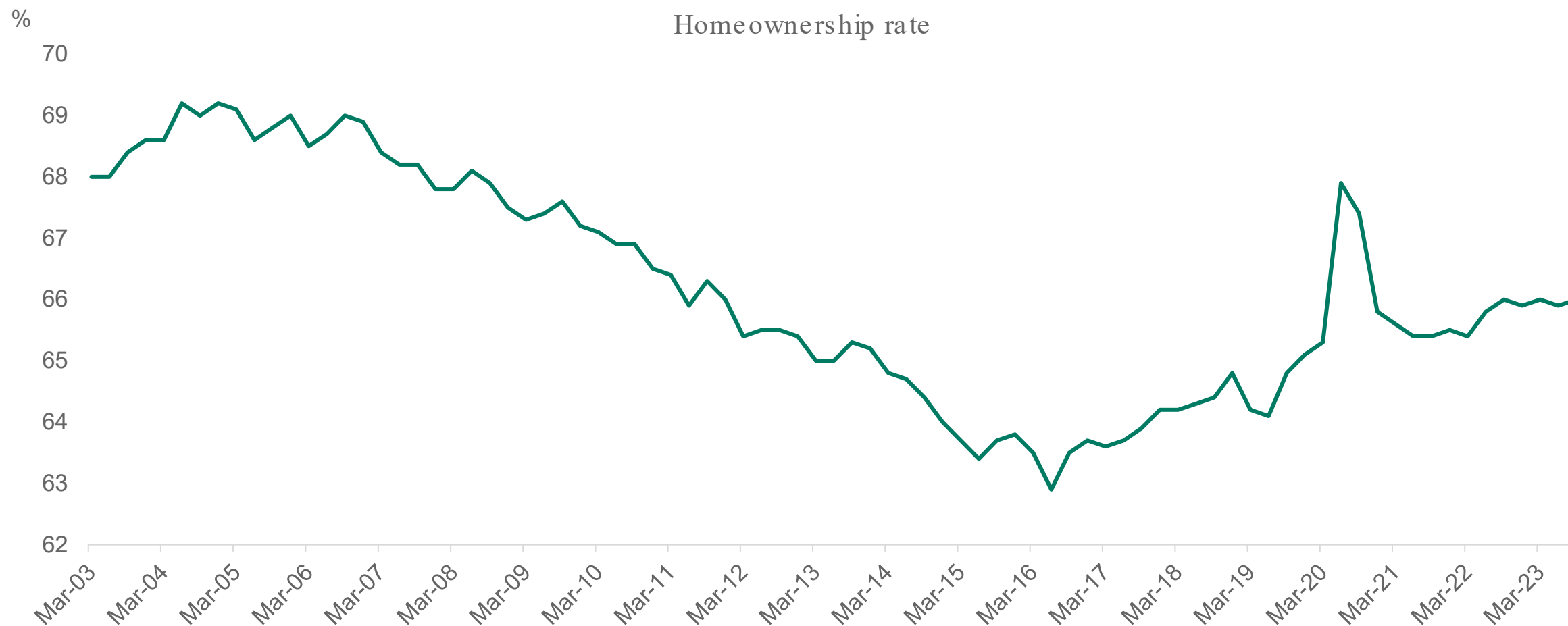


A rise in the number of renters recently



Source: Census Bureau, Haver, Apollo Chief Economist

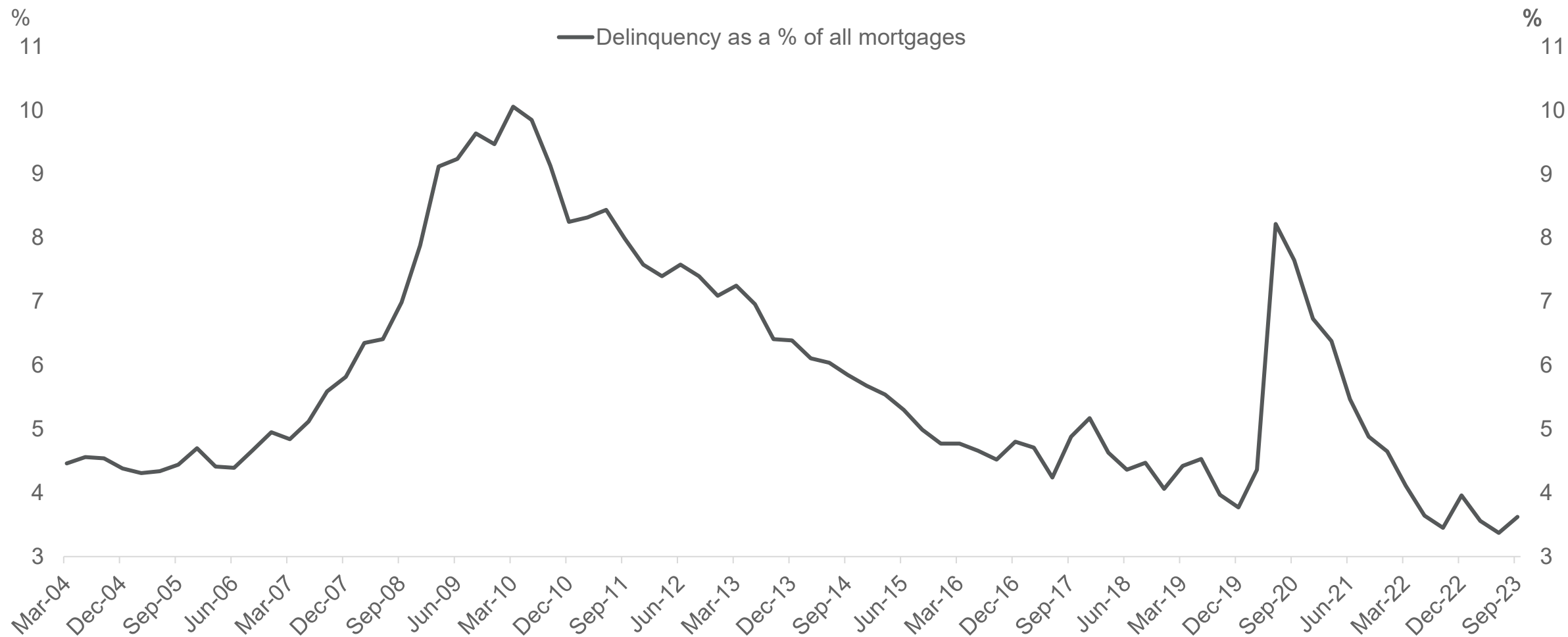
Homeownership rate moving sideways



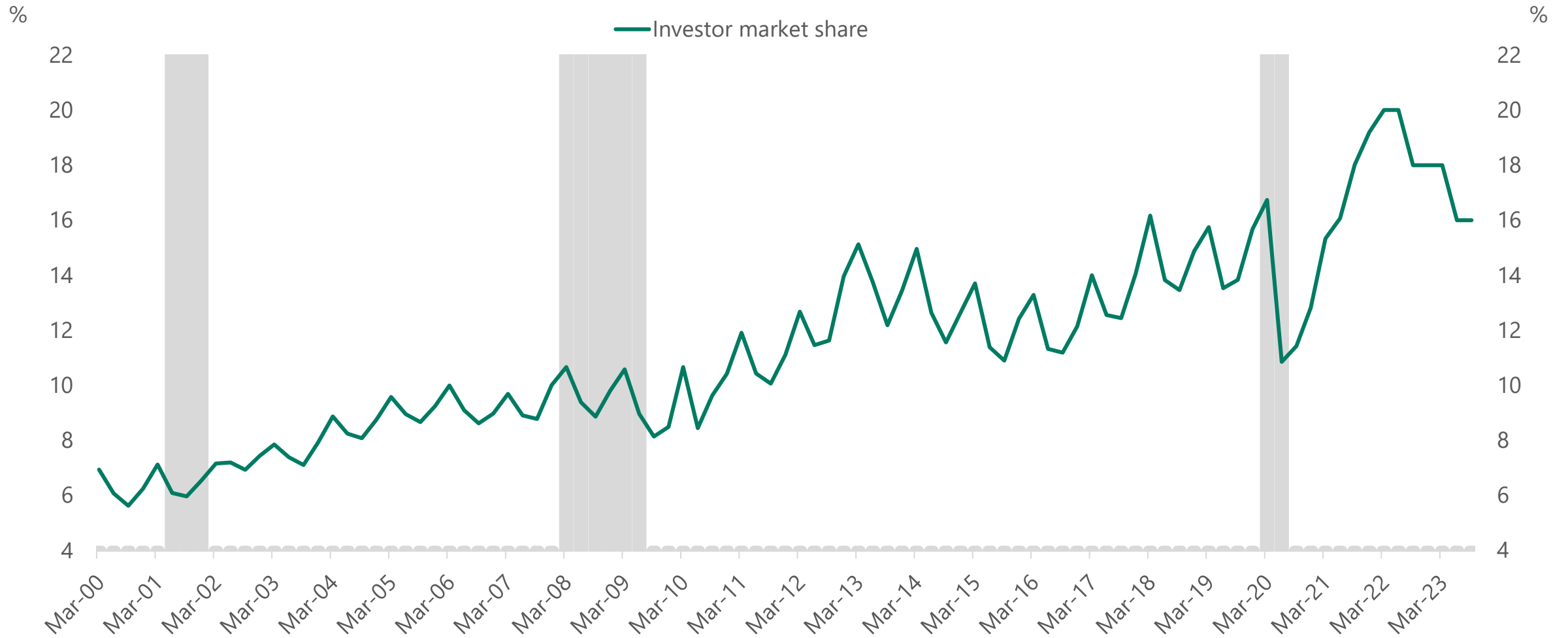
Low unemployment is a tailwind to housing demand



Very few delinquent mortgages

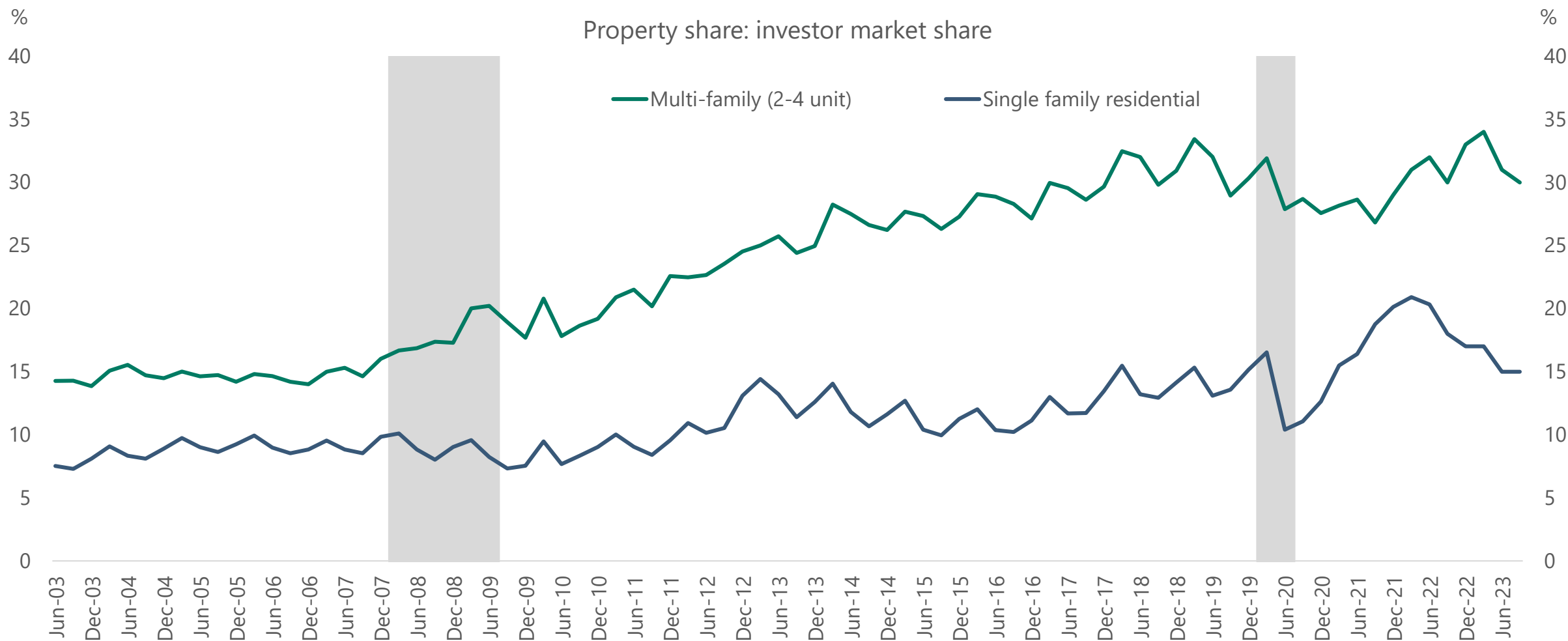


Investors account for 16% of all home purchases



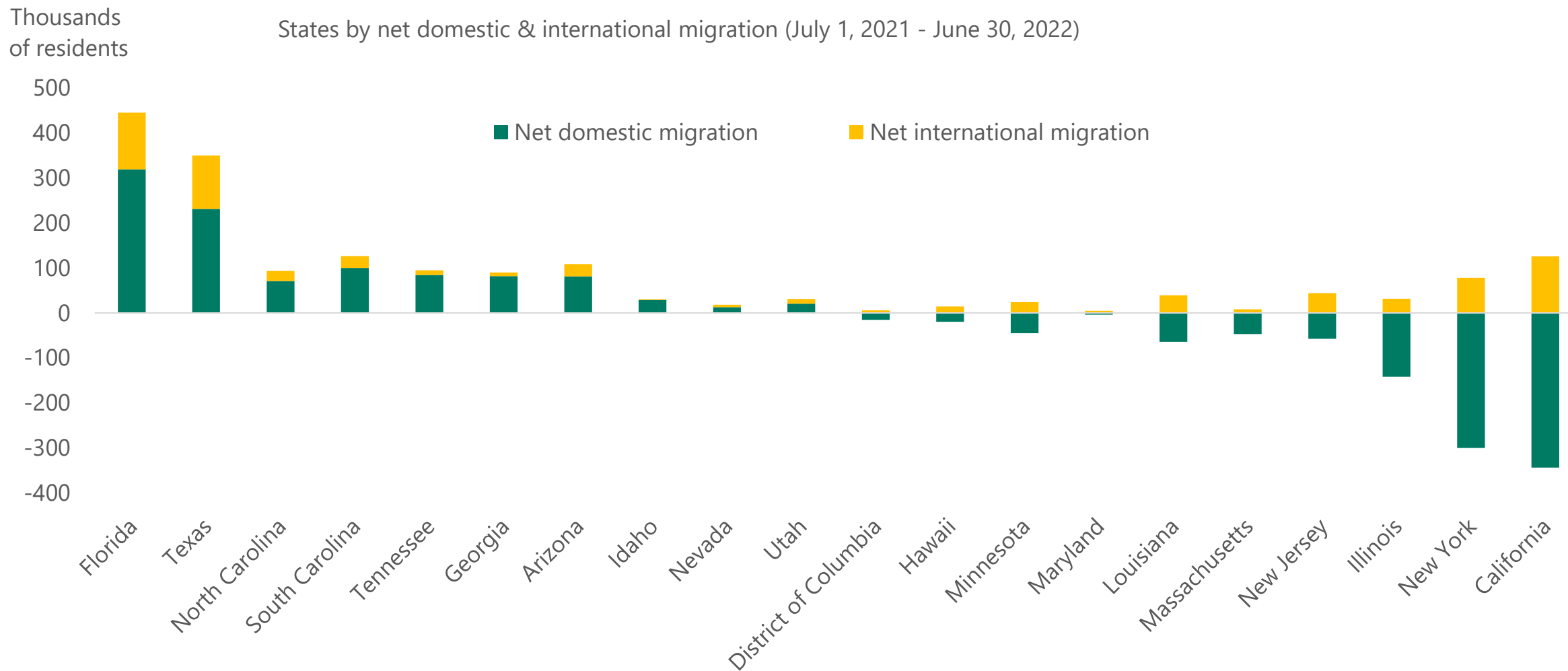
Source: Redfin, Apollo Chief Economist. Definition of Investor market share: the percentage of total home sales in which an investor was the buyer.

Investor share of single-family has trended lower as mortgage rates have increased

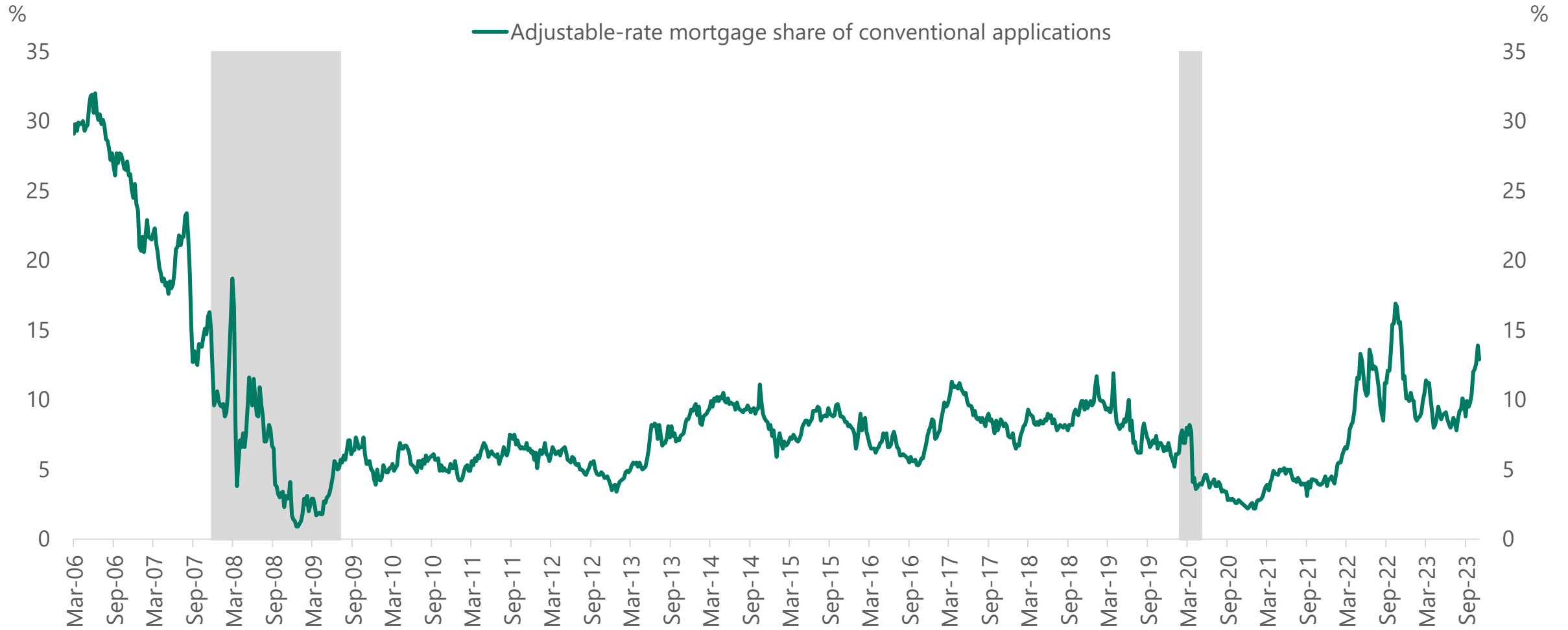


Source: Redfin, Apollo Chief Economist (Definition of Investor market share: the percentage of total home sales in which an investor was the buyer)

Migration out of California and migration into Florida during the pandemic



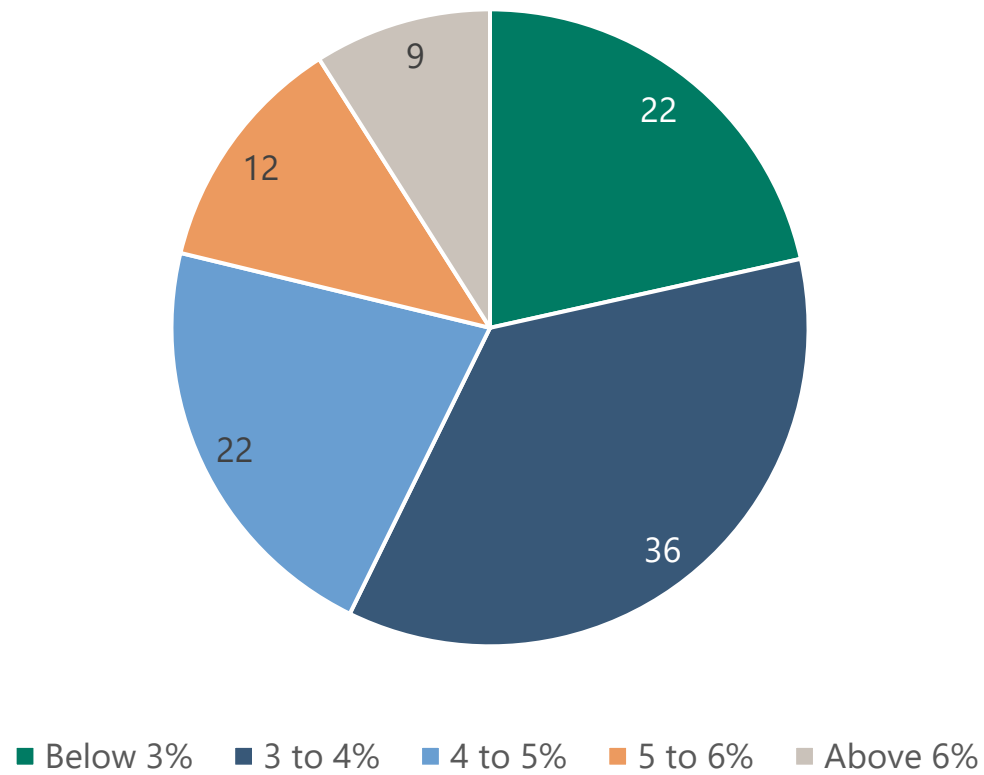
ARM share of total mortgage applications has increased recently



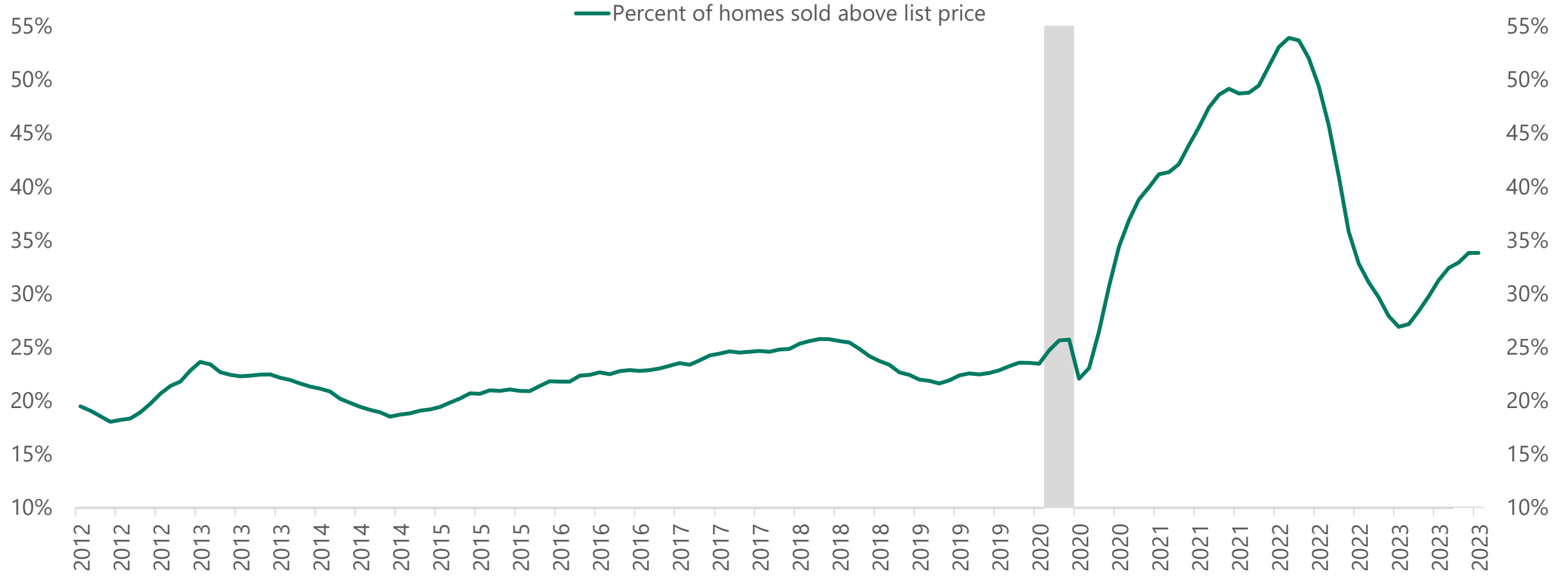
Source: MBA, Bloomberg, Apollo Chief Economist (Note: It is 5-year ARM)

Share of mortgages outstanding by interest rate

Share of mortgages outstanding by interest rate at origination by count, 2023 Q2



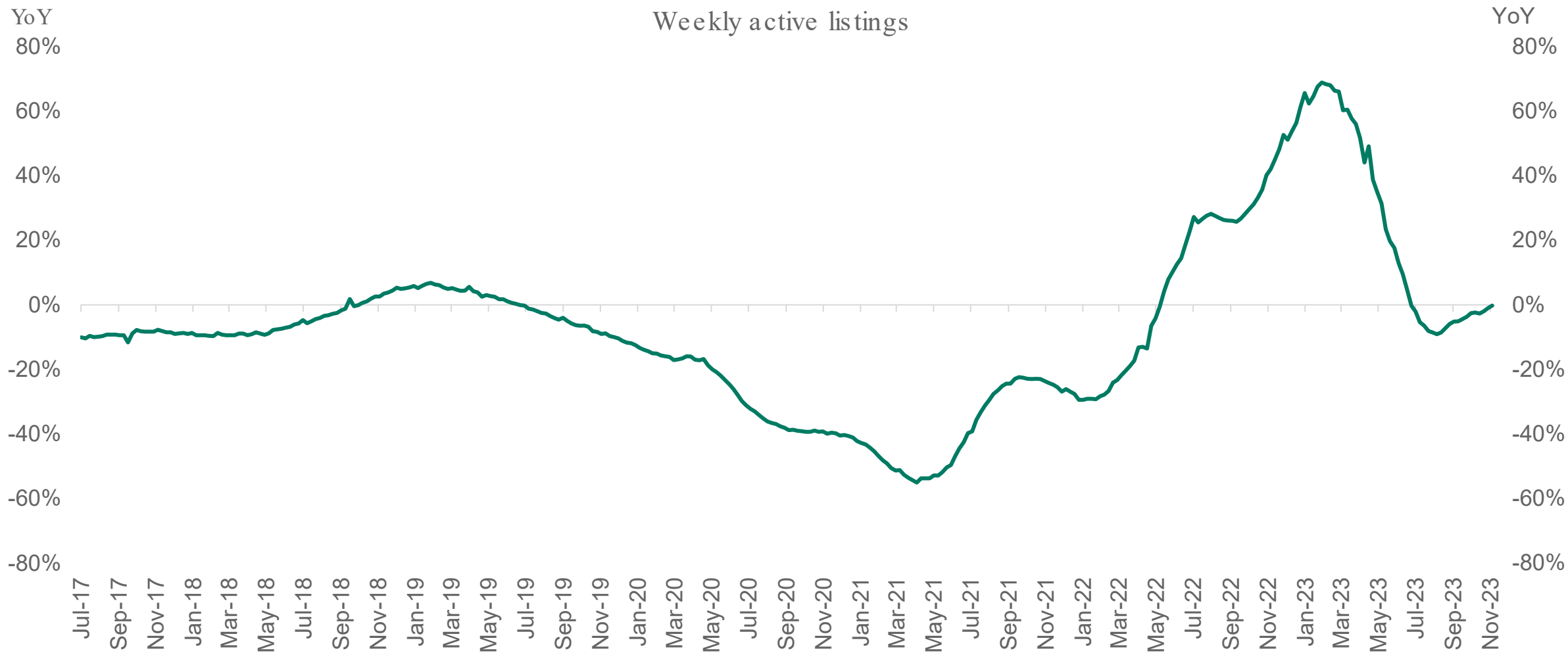
Despite high mortgage rates, 34% of homes sold above their list price



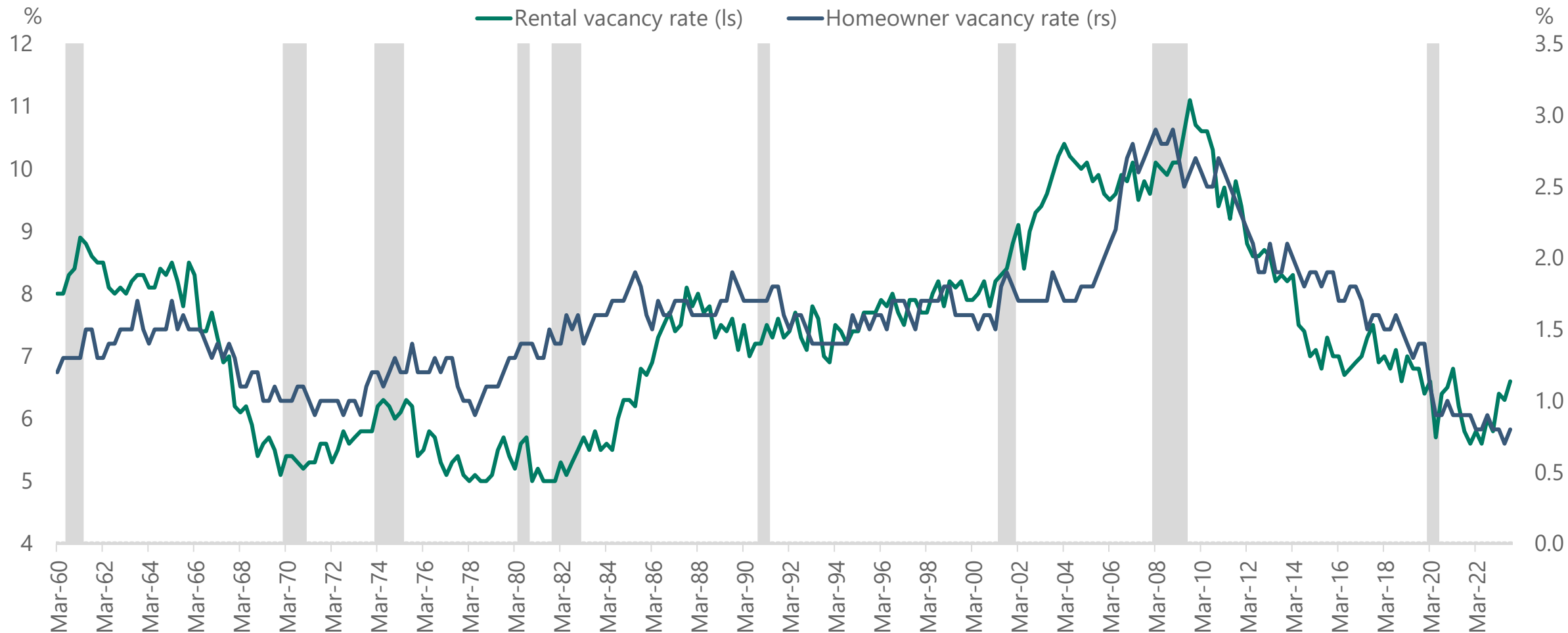
Source: Redfin, Apollo Chief Economist

2) Housing Supply: Housing supply is low, construction coming down from record-high levels

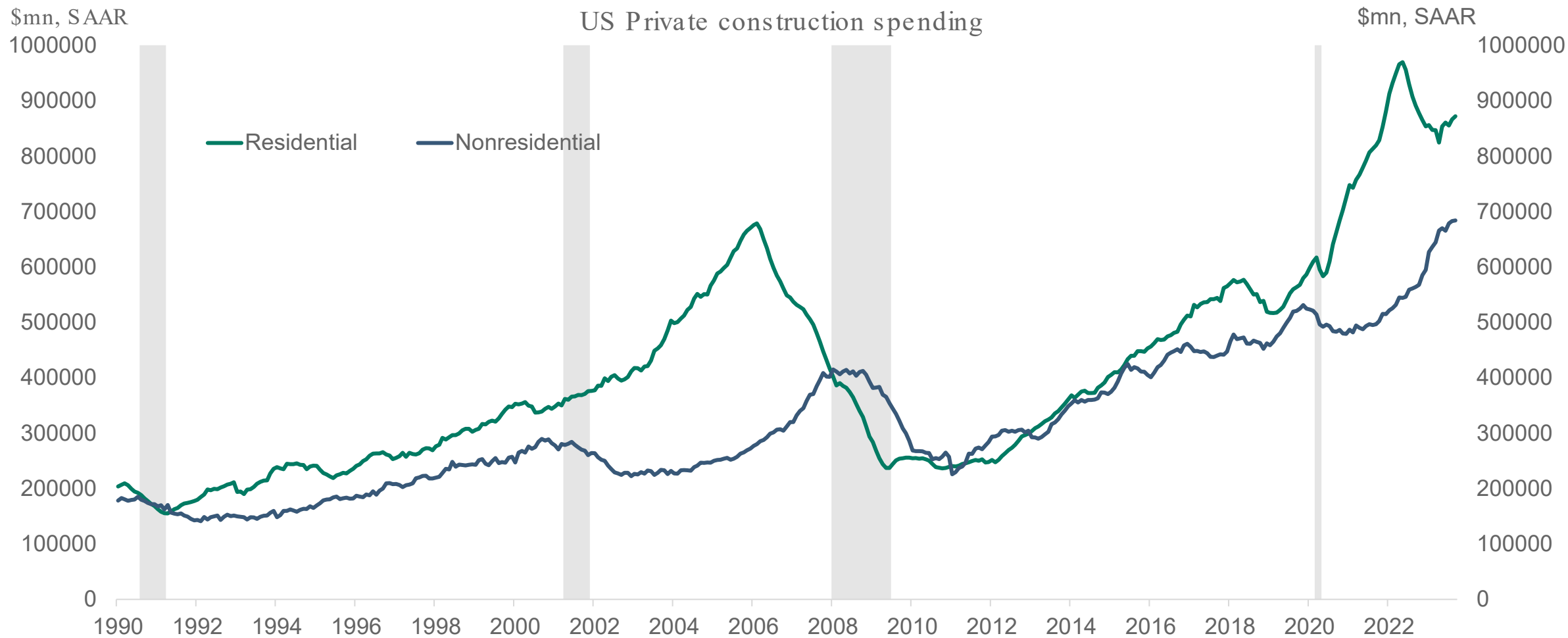
Low inventory of homes for sale



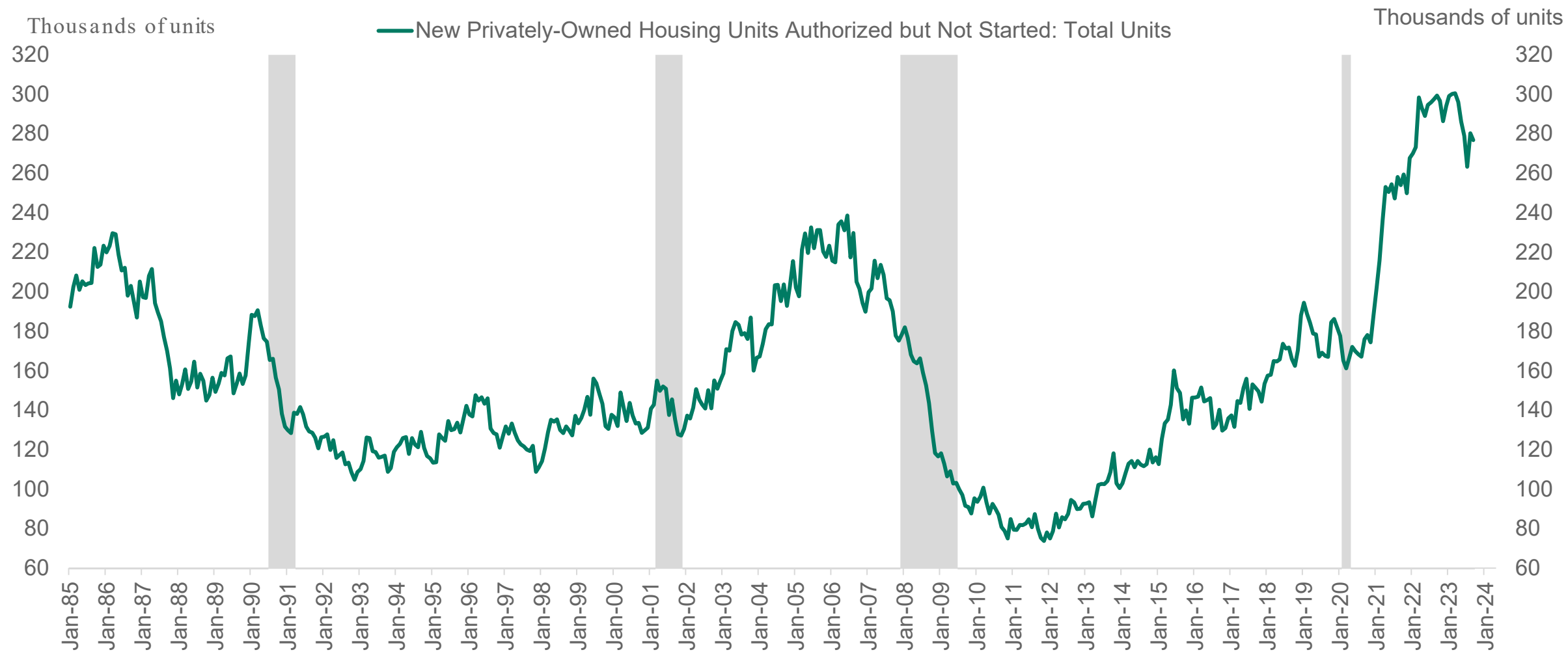
Homeowner and rental vacancy rates at very low levels



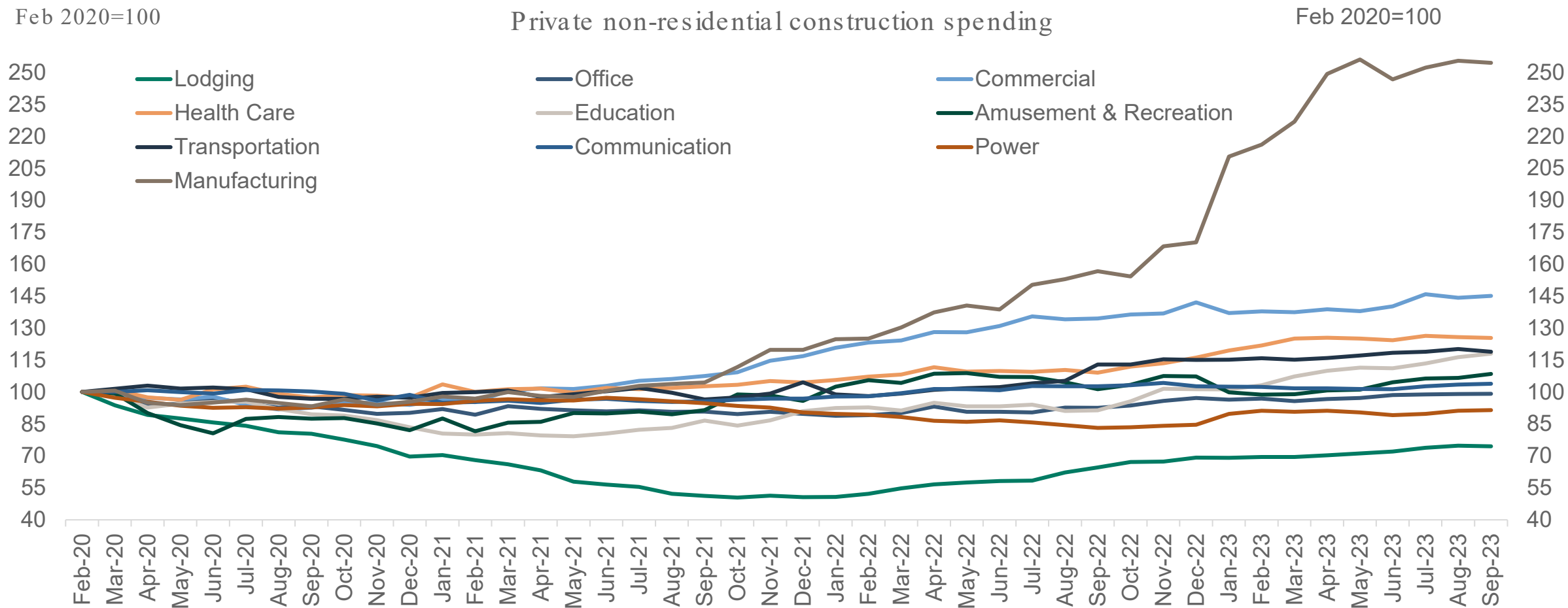
Residential construction spending starting to rise again



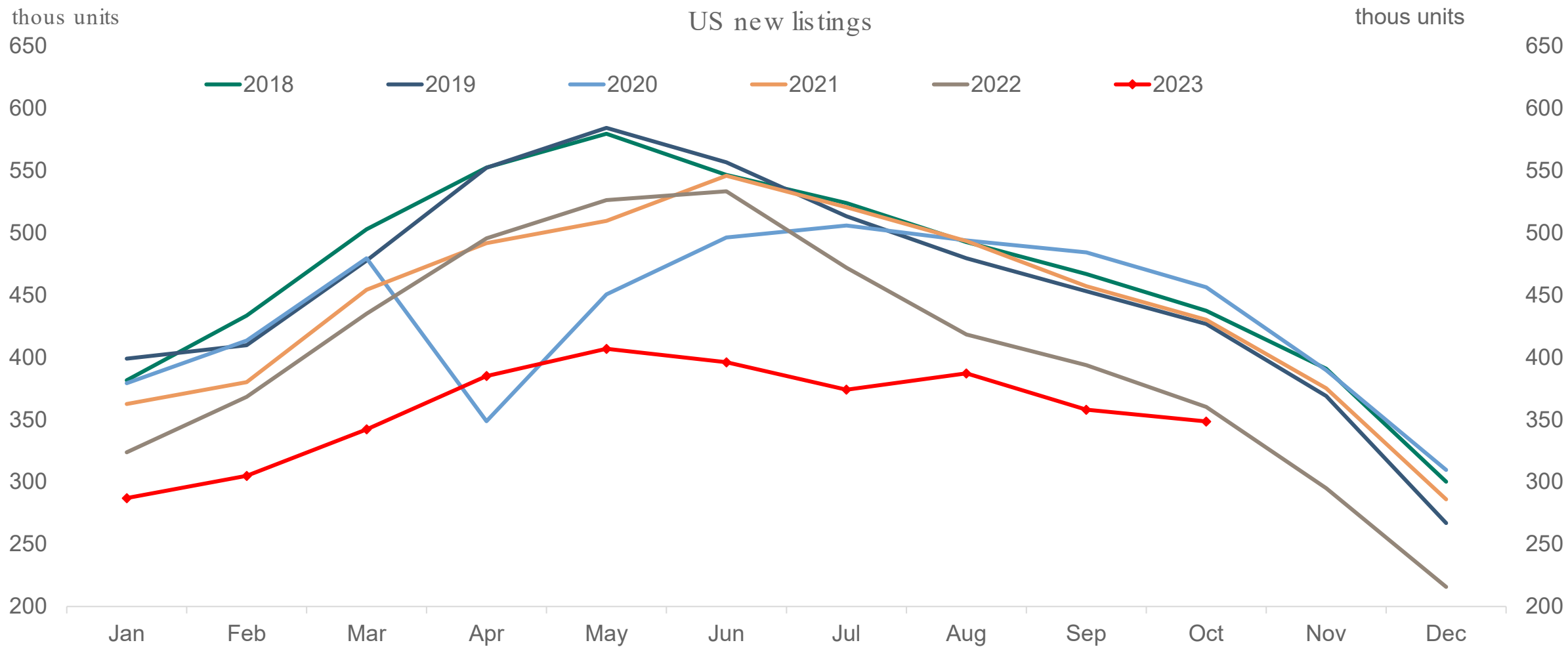
New housing units authorized but not started



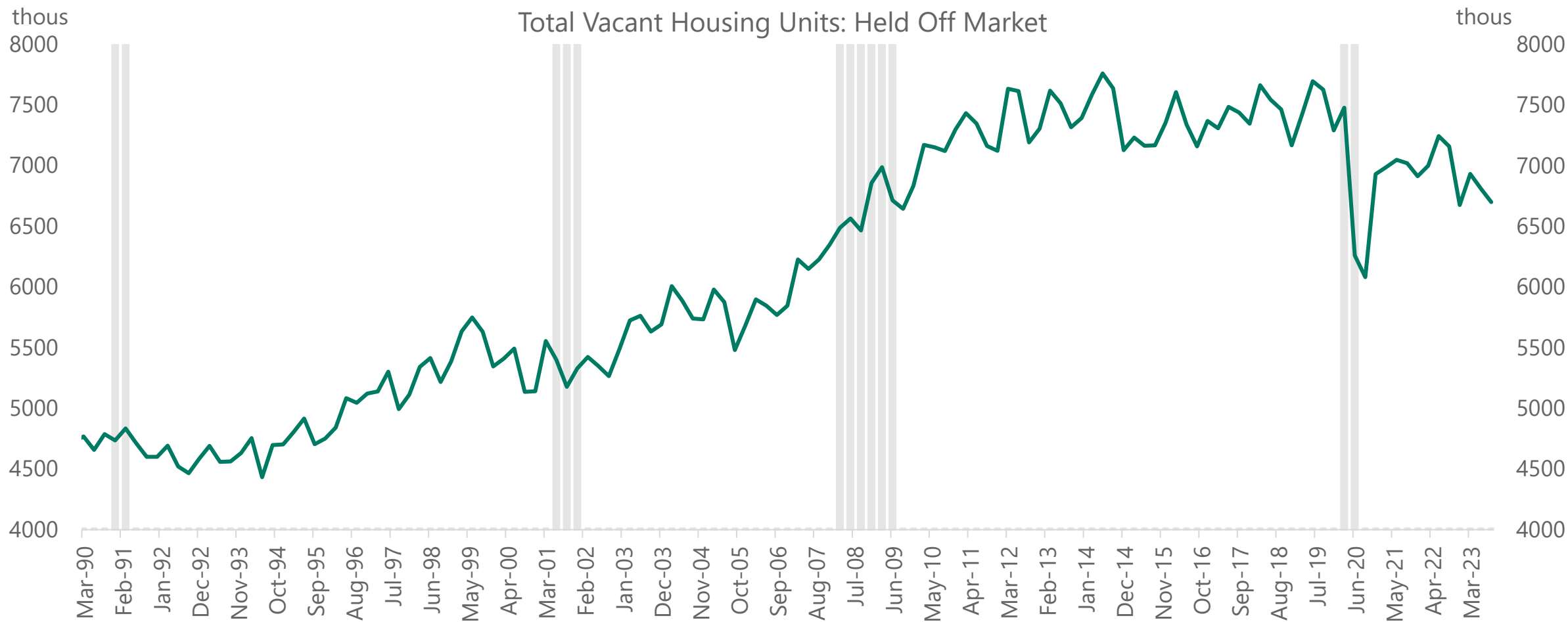
The biggest increase in non-residential construction has been in manufacturing



Newly listed homes very low

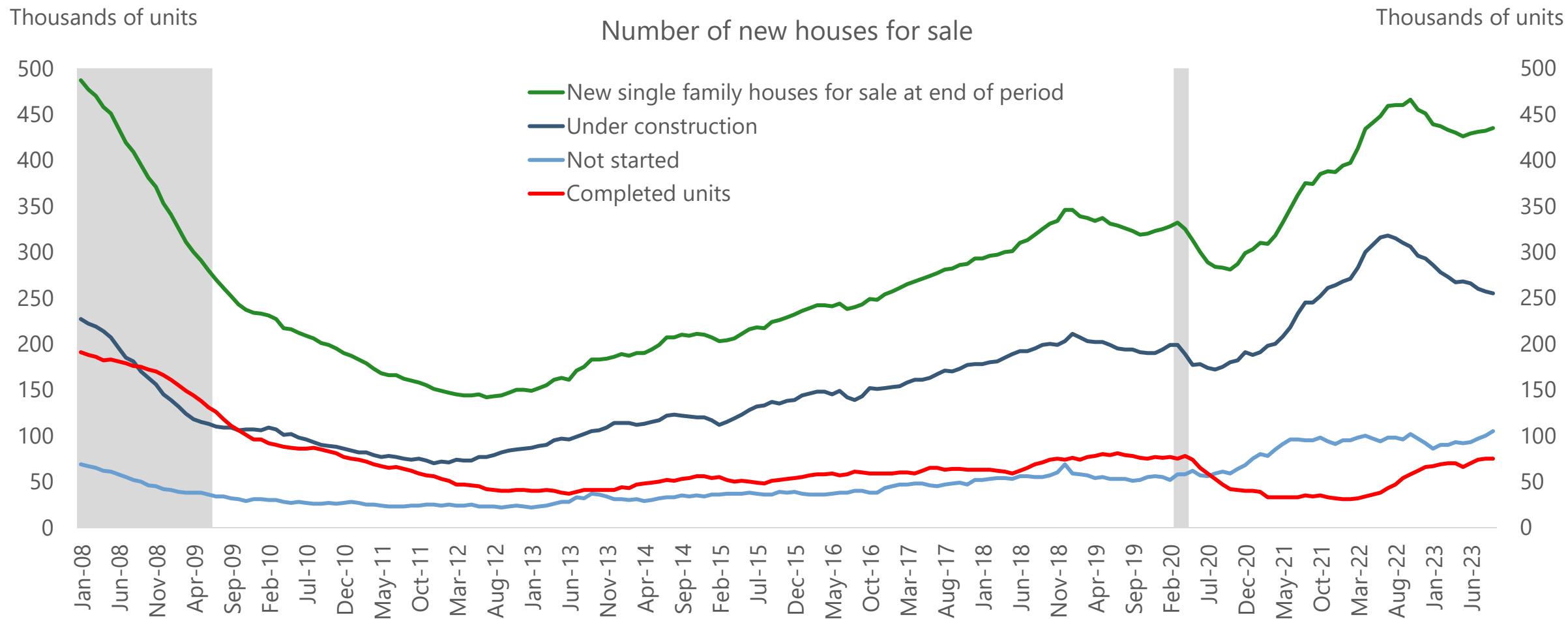


Vacant housing units held off market coming down

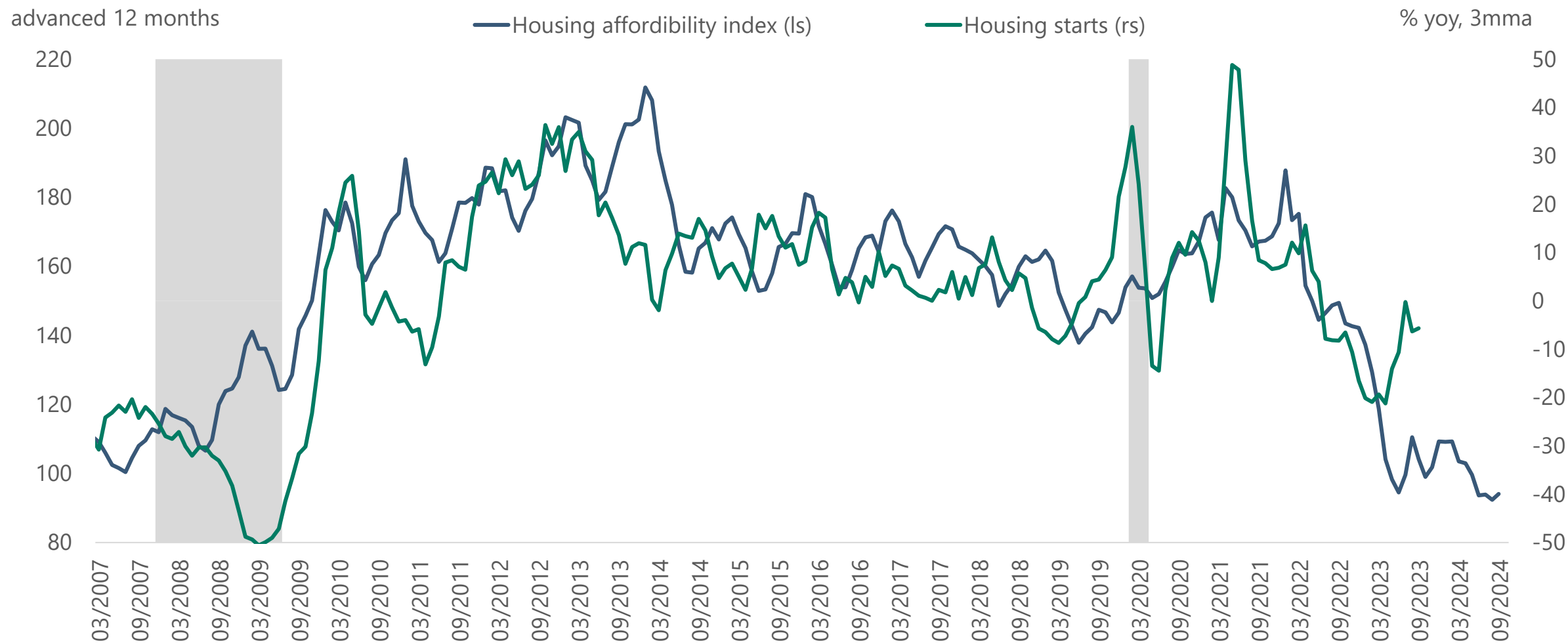


Source: Census Bureau, Haver Analytics, Apollo Chief Economist

Decline in the number of new houses for sale under construction

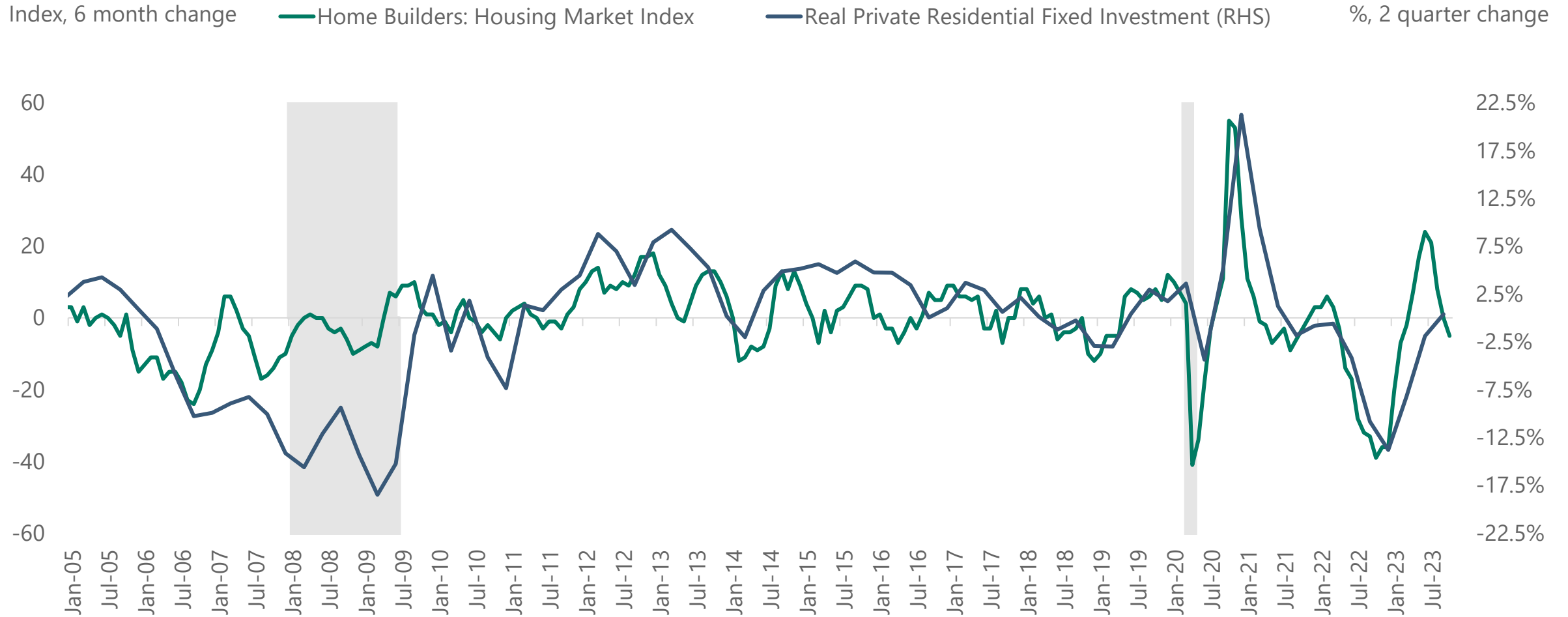


Housing starts surprisingly strong despite low affordability

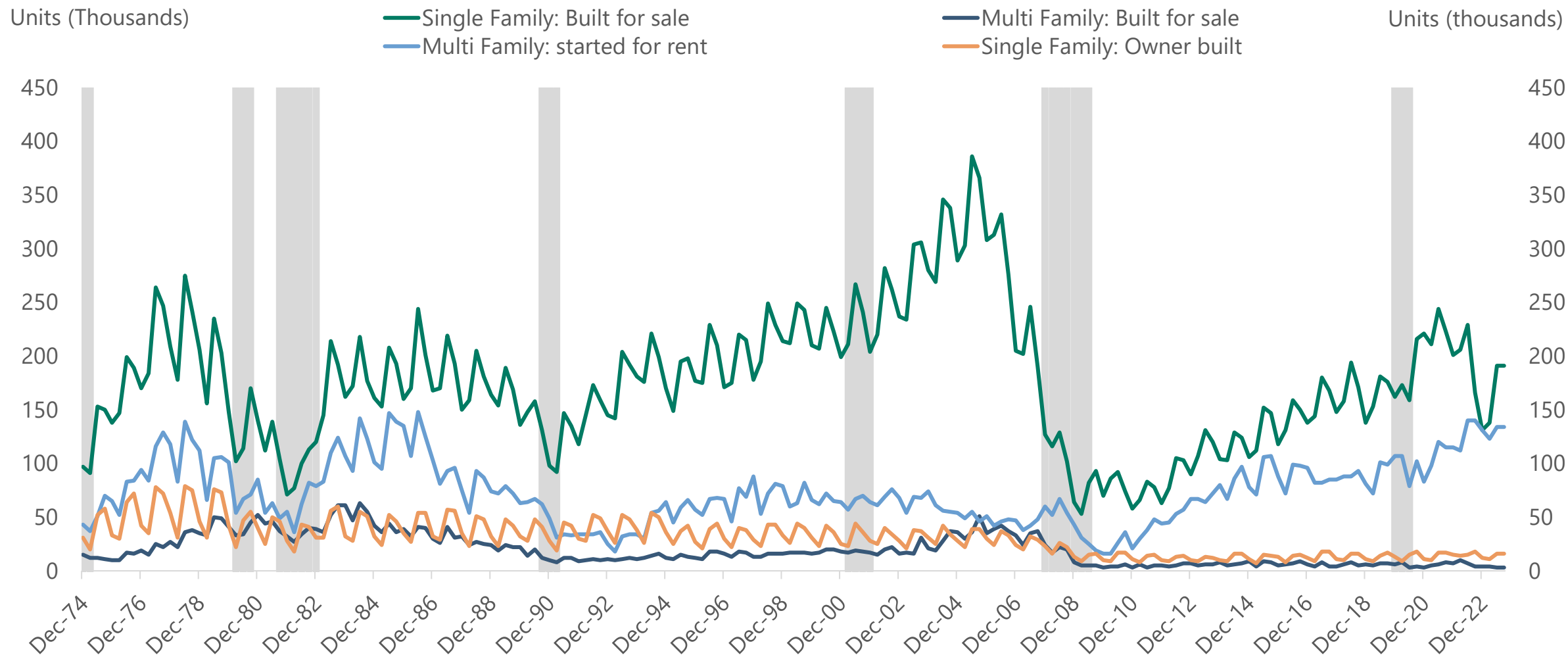


Source: Bloomberg, Apollo Chief Economist

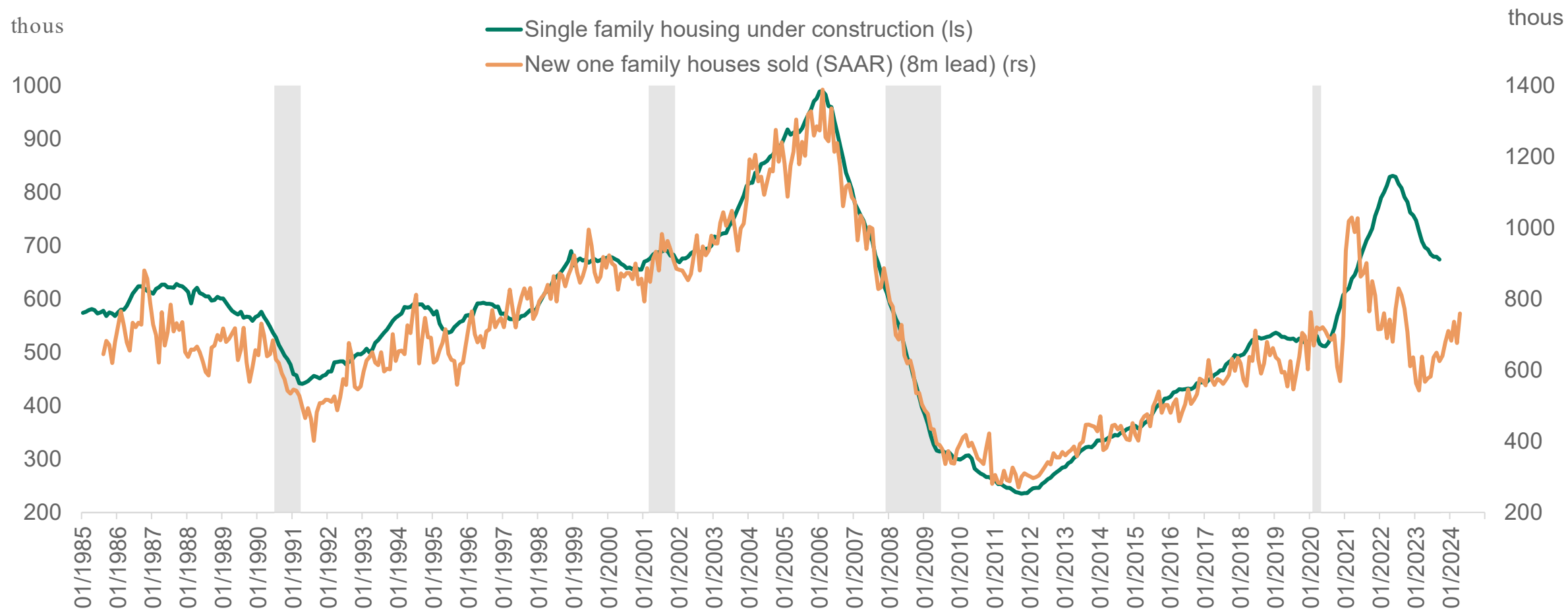
Homebuilder confidence highly correlated with residential investment



Intent of housing starts

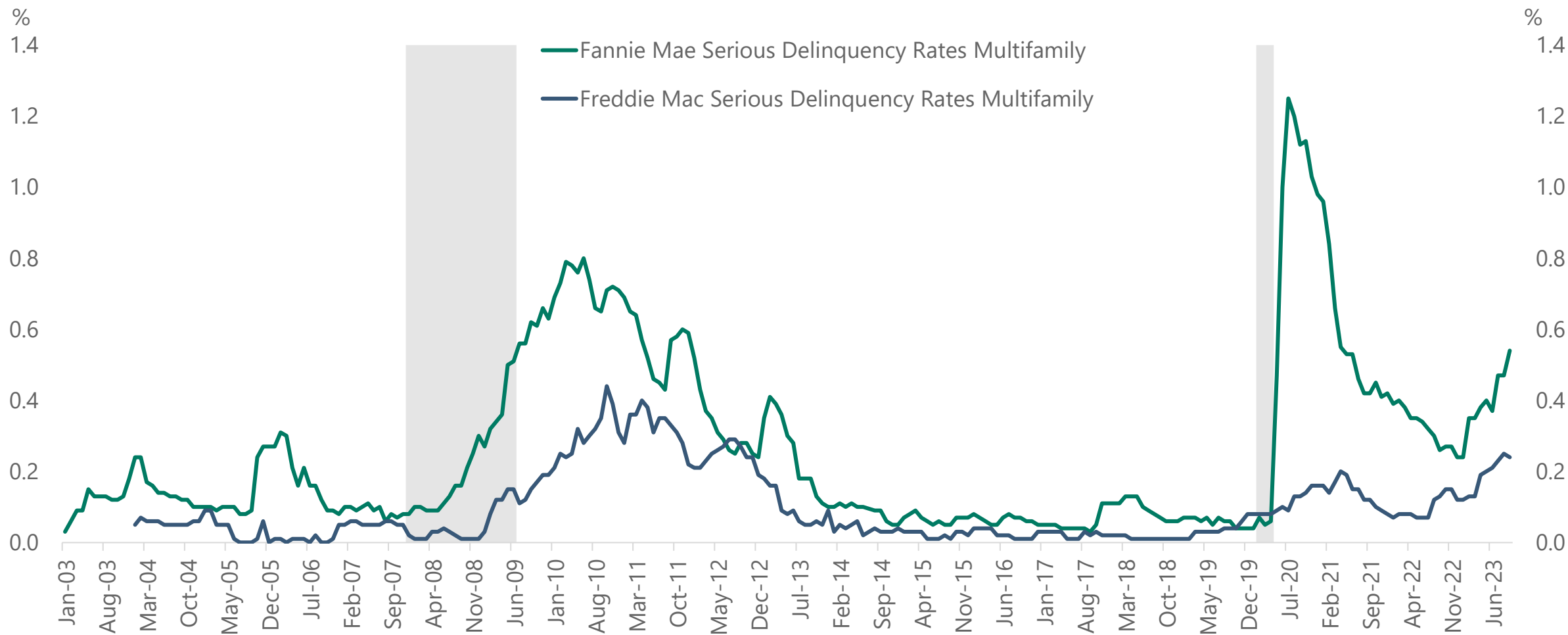


Some disconnect between housing under construction and new homes sold

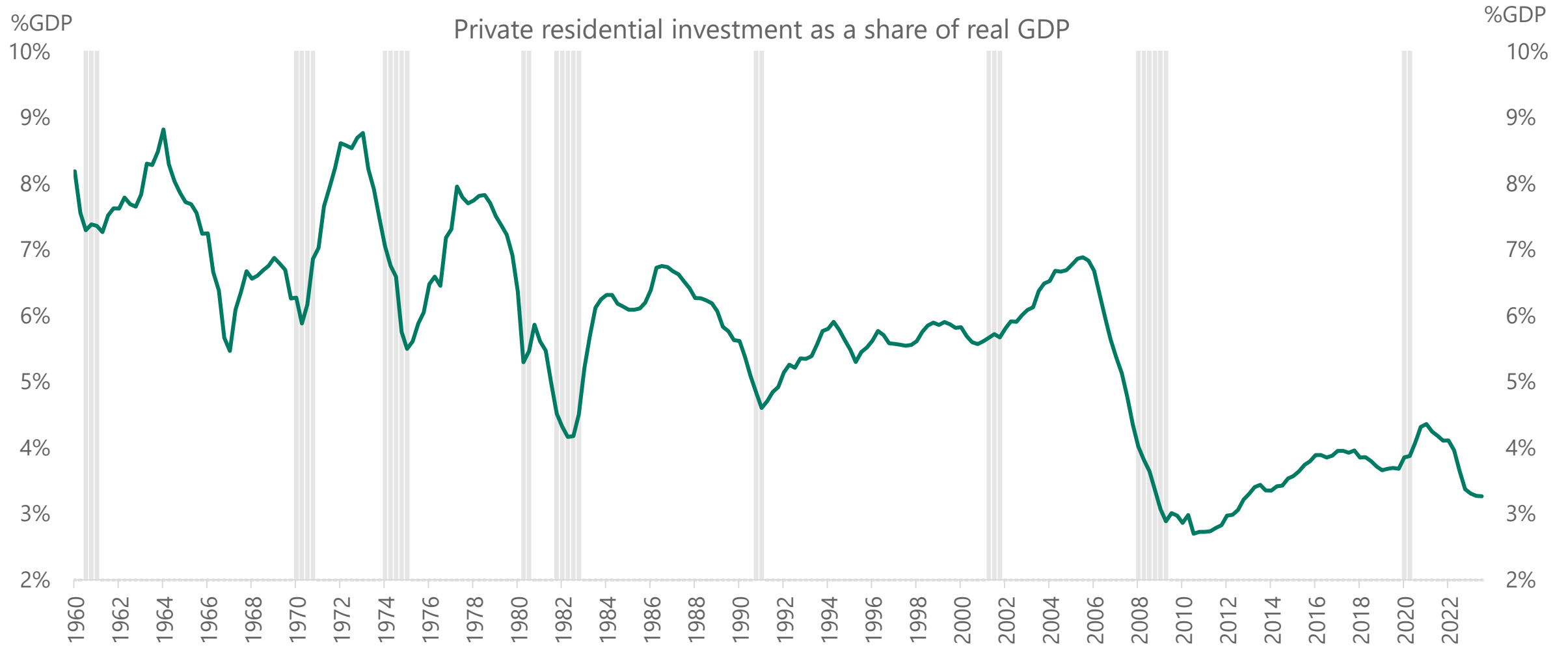


Source: Census Bureau, Bloomberg, Apollo Chief Economist.

Multifamily delinquencies rising

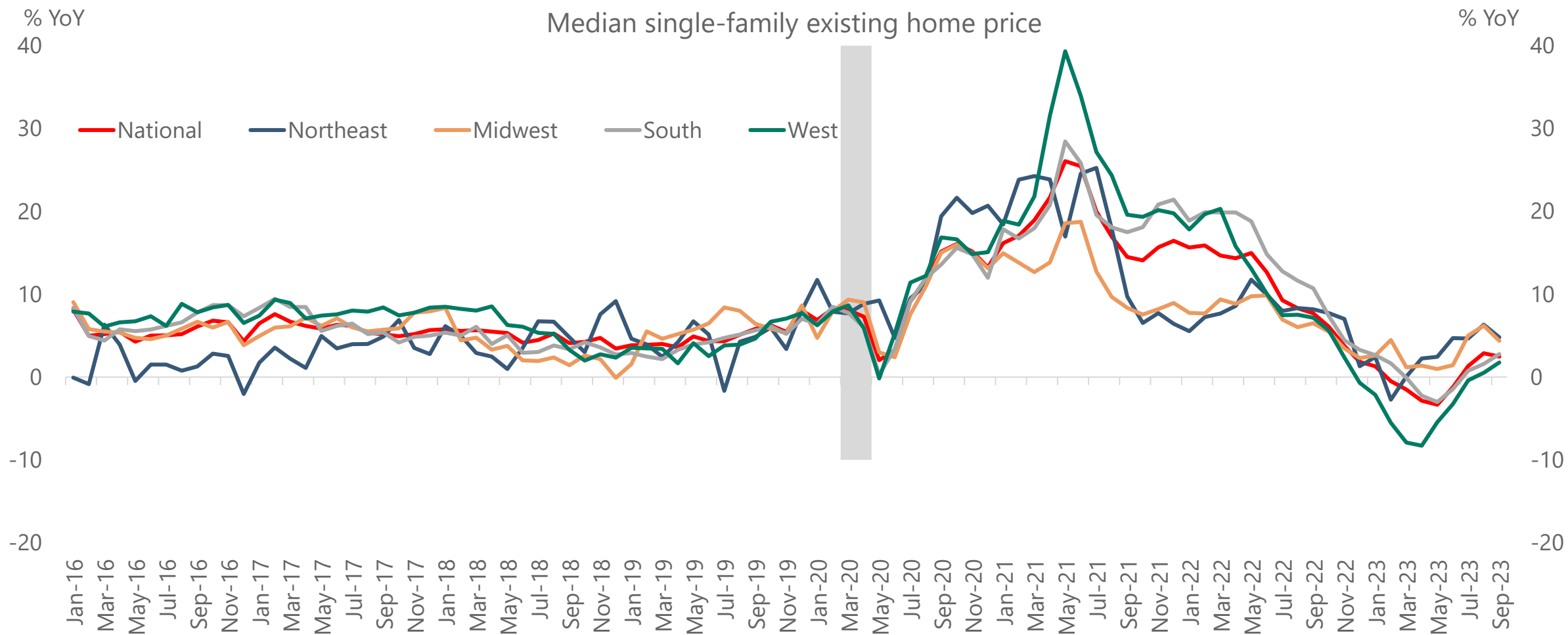


Residential investment as a share of real GDP declined to 3.3% from 9% in 1964



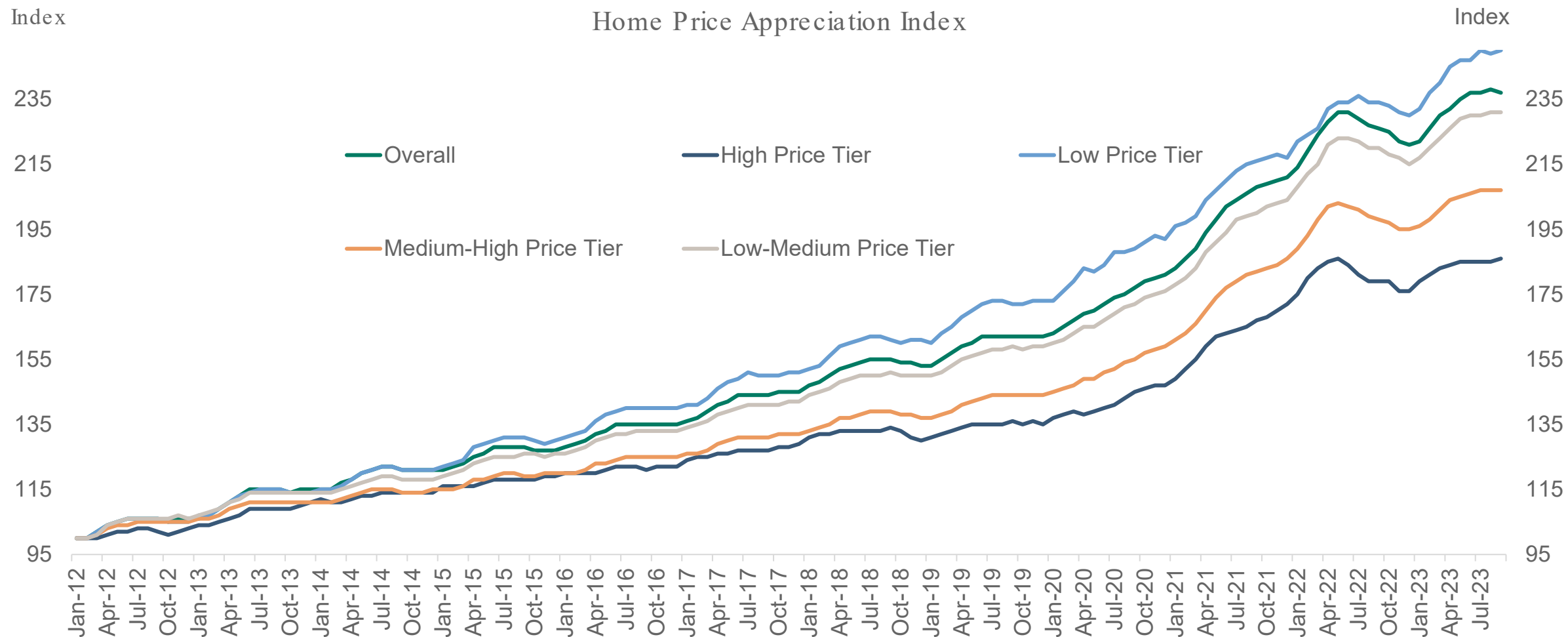
3) House Prices: Home price inflation not yet impacted by higher mortgage rates

Higher mortgage rates will weigh on home prices

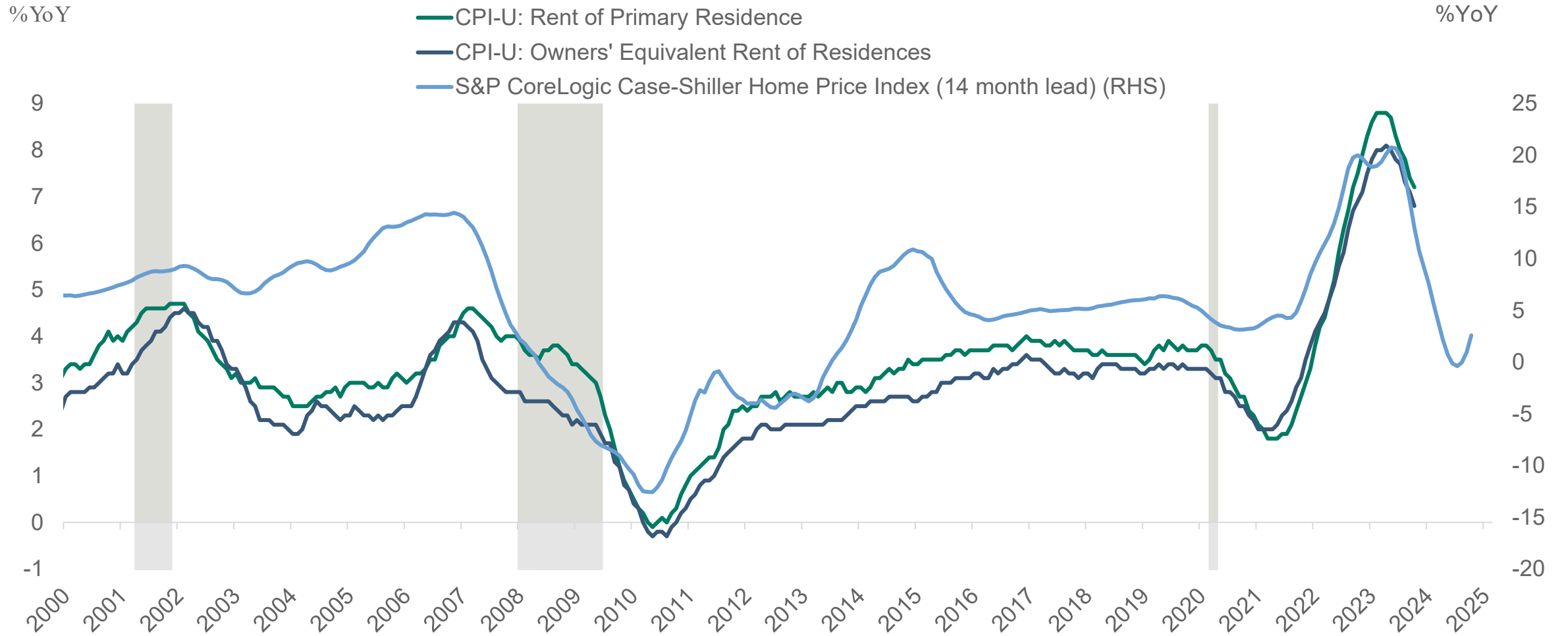


Source: NAR, Haver, Apollo Chief Economist

House price inflation stabilizing across price tiers

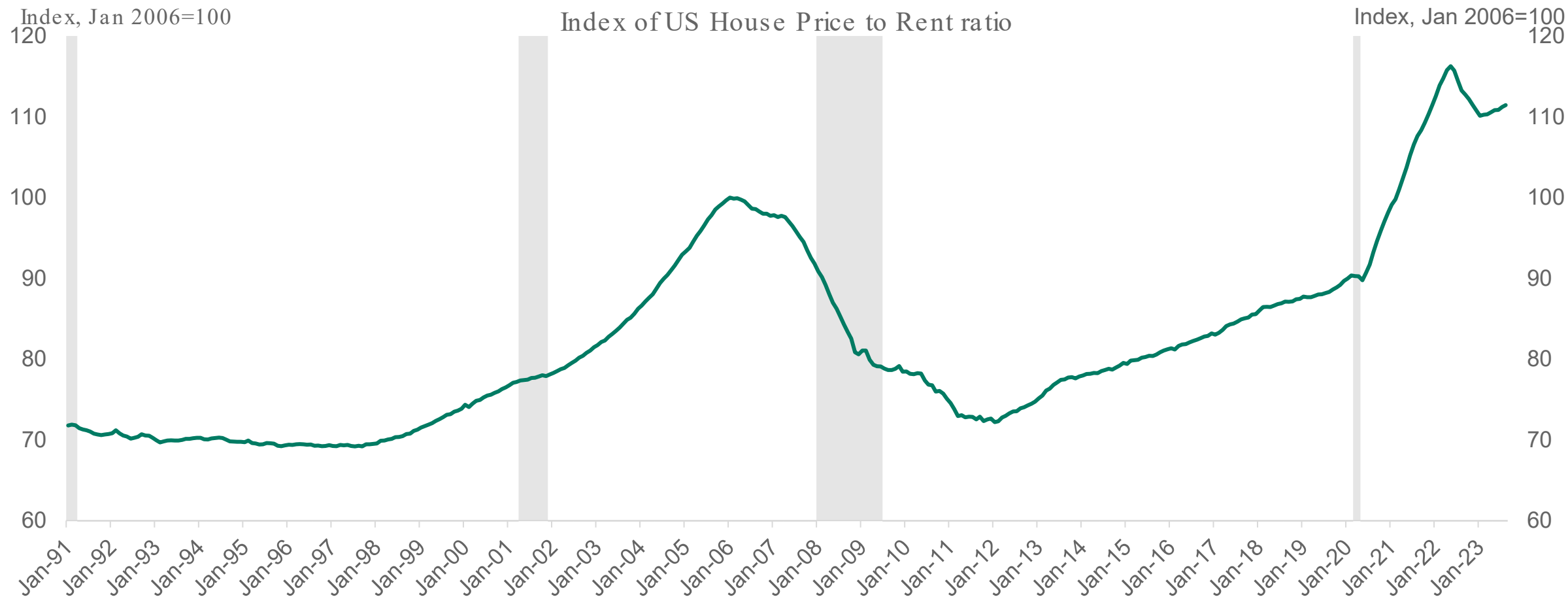


Home price inflation coming down



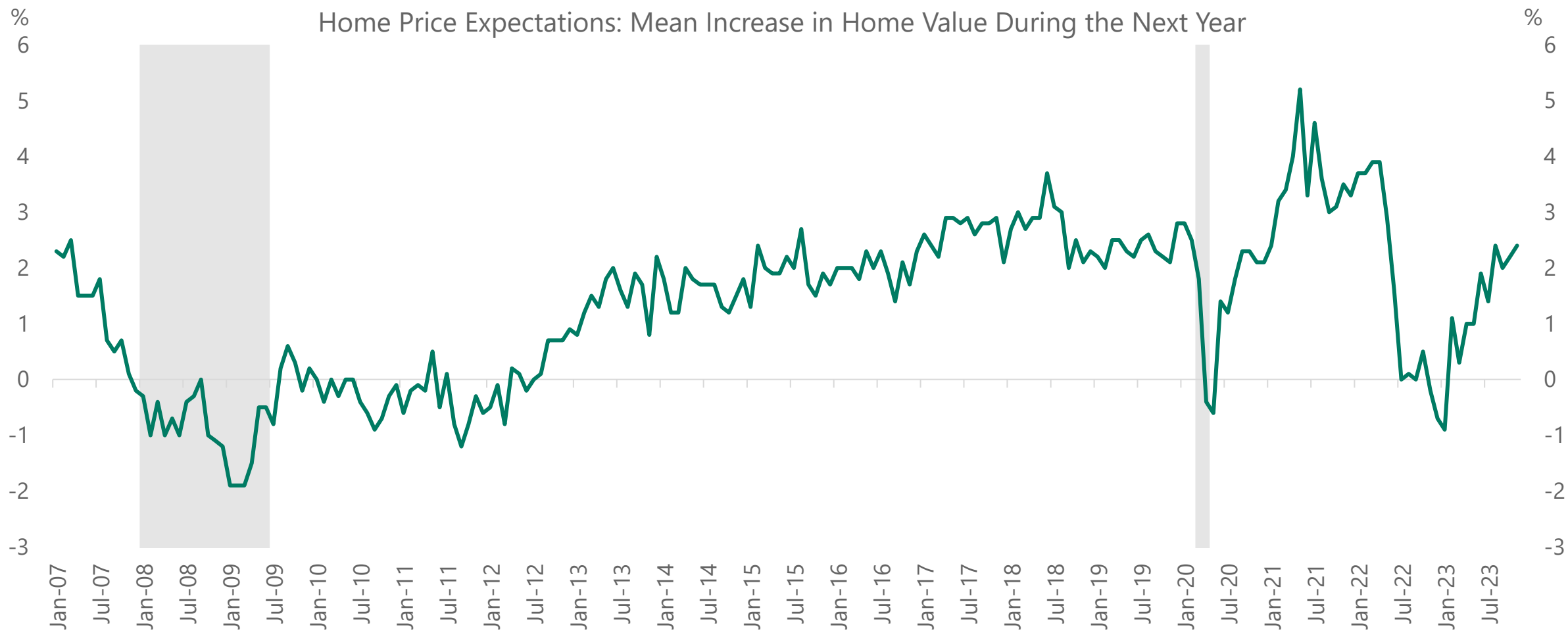
Source: Haver Analytics, BLS, S&P, Apollo Chief Economist

Home price to rent ratio significantly above 2006 levels



Source: FHFA, BLS, Apollo Chief Economist. Note: the series is indexed ratio of FHFA monthly purchase only house price index divided by the OER component of the CPI.

Steady increase in consumers' expectations to home price inflation



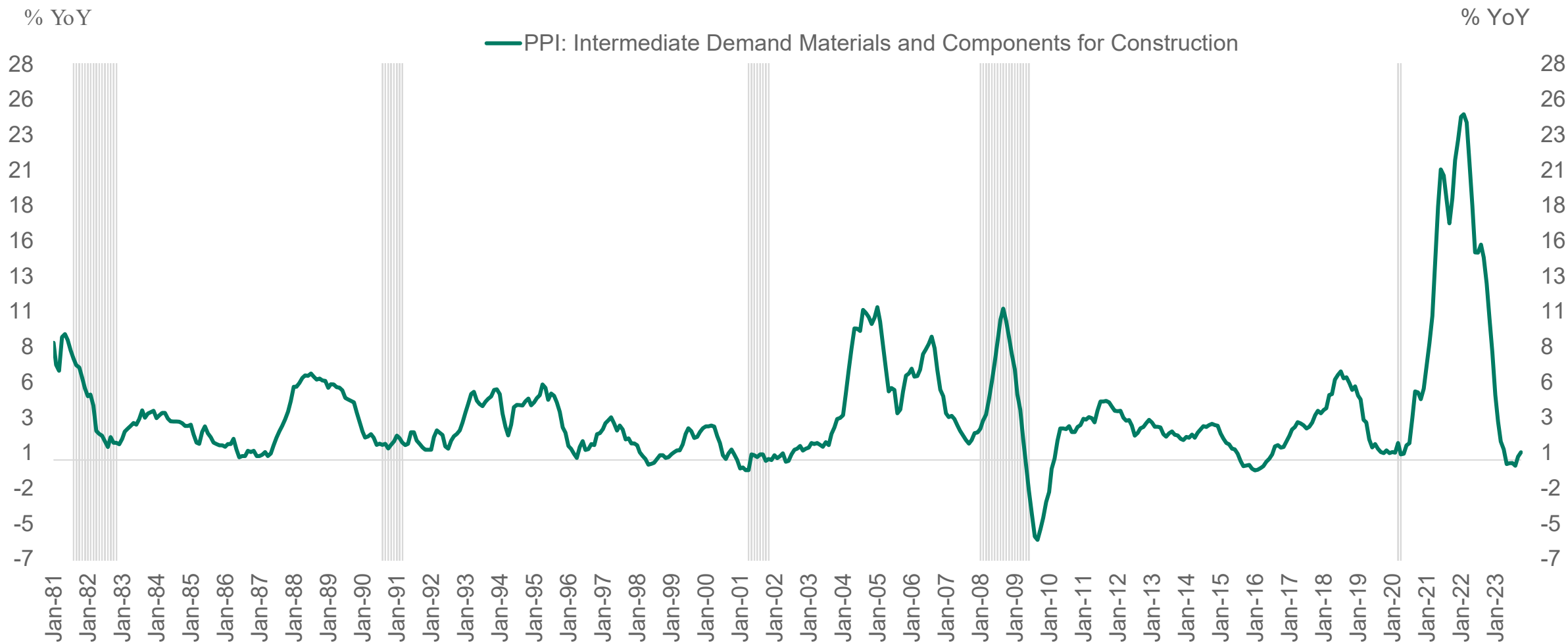
4) Housing Outlook: **High mortgage rates, high home prices, strong supply pipeline, and high building costs are risks to this housing cycle**

Housing construction costs are high



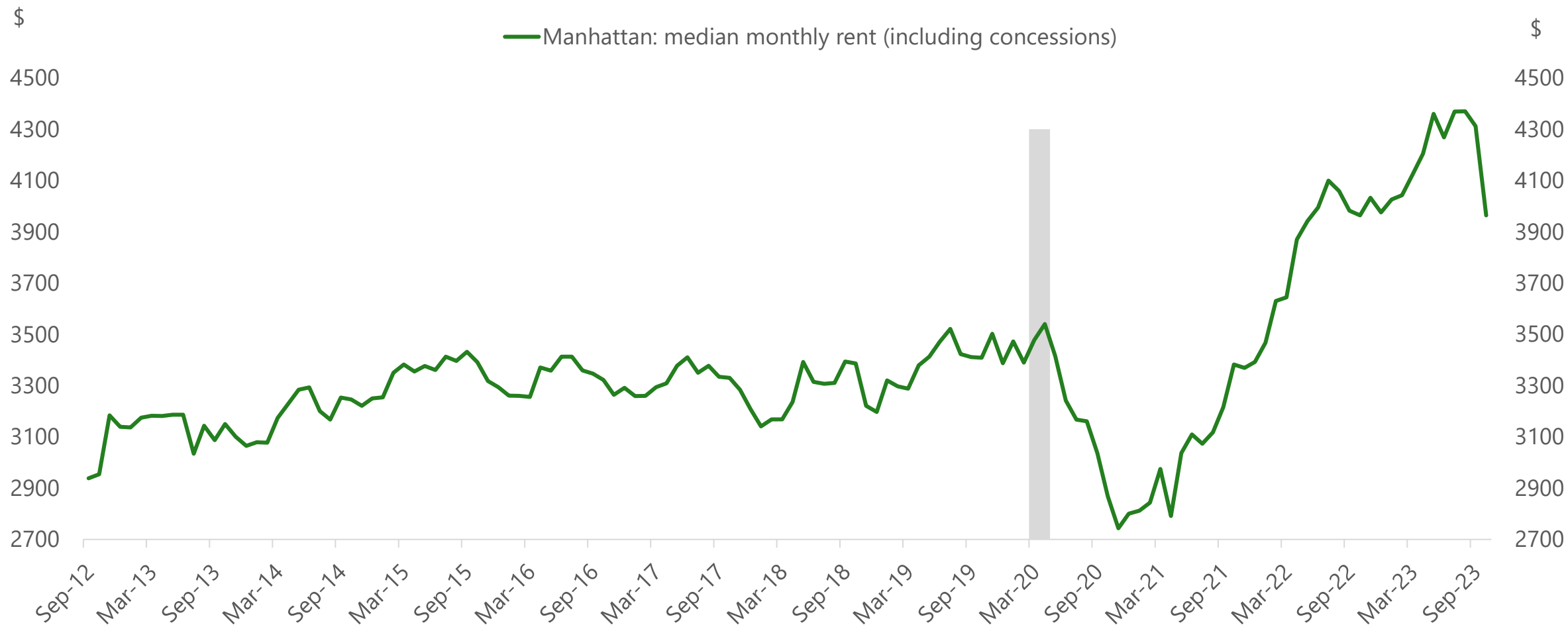
Source: Bureau of Labor Statistics, Apollo Chief Economist

Inflation in input costs for home builders declining

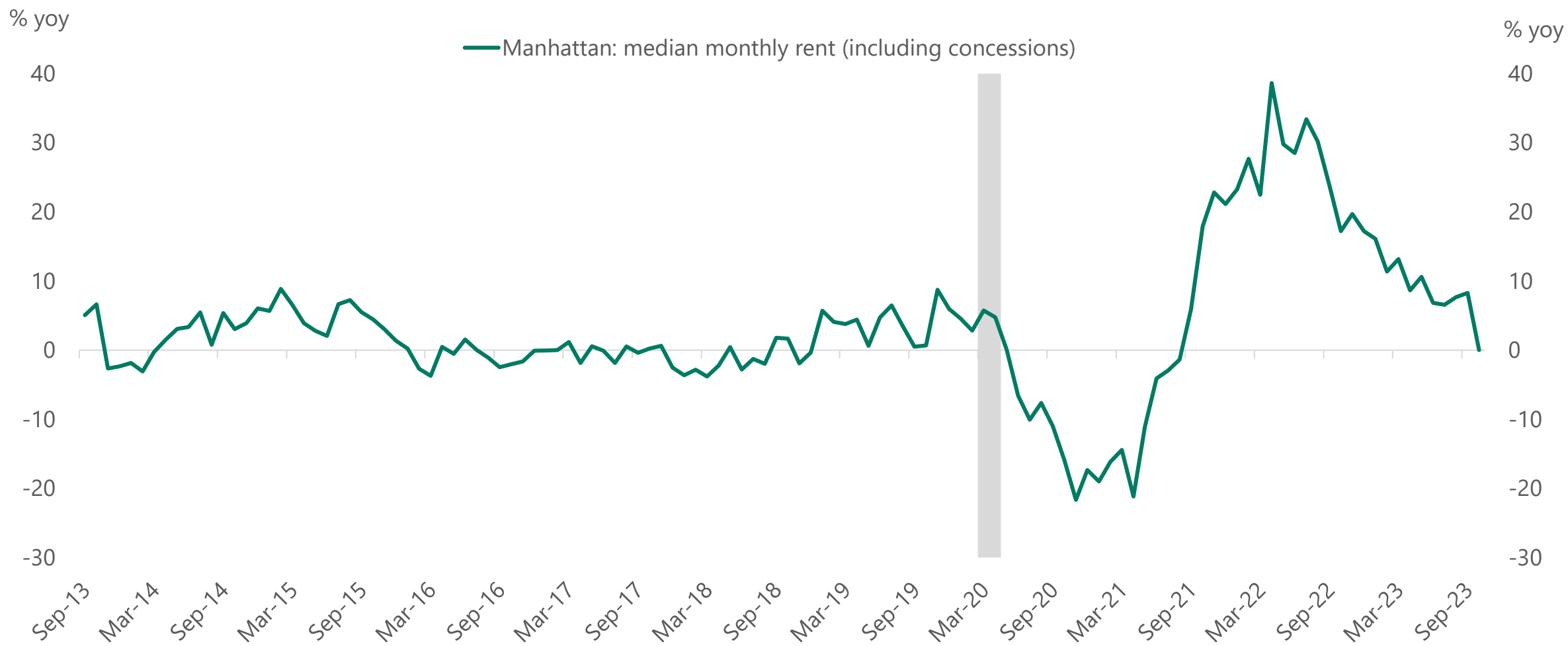


Source: Bureau of Labor Statistics, Apollo Chief Economist

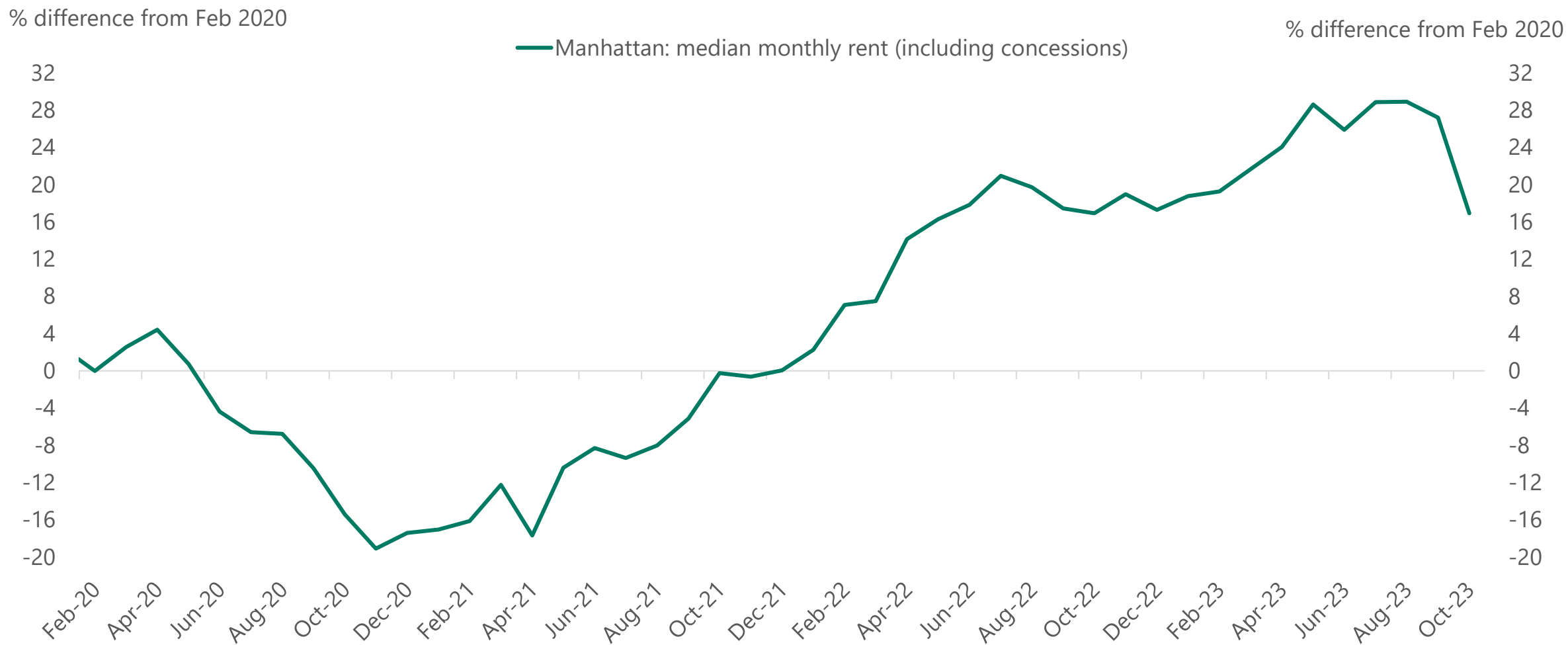
Manhattan median rent declined to \$3964 in October 2023



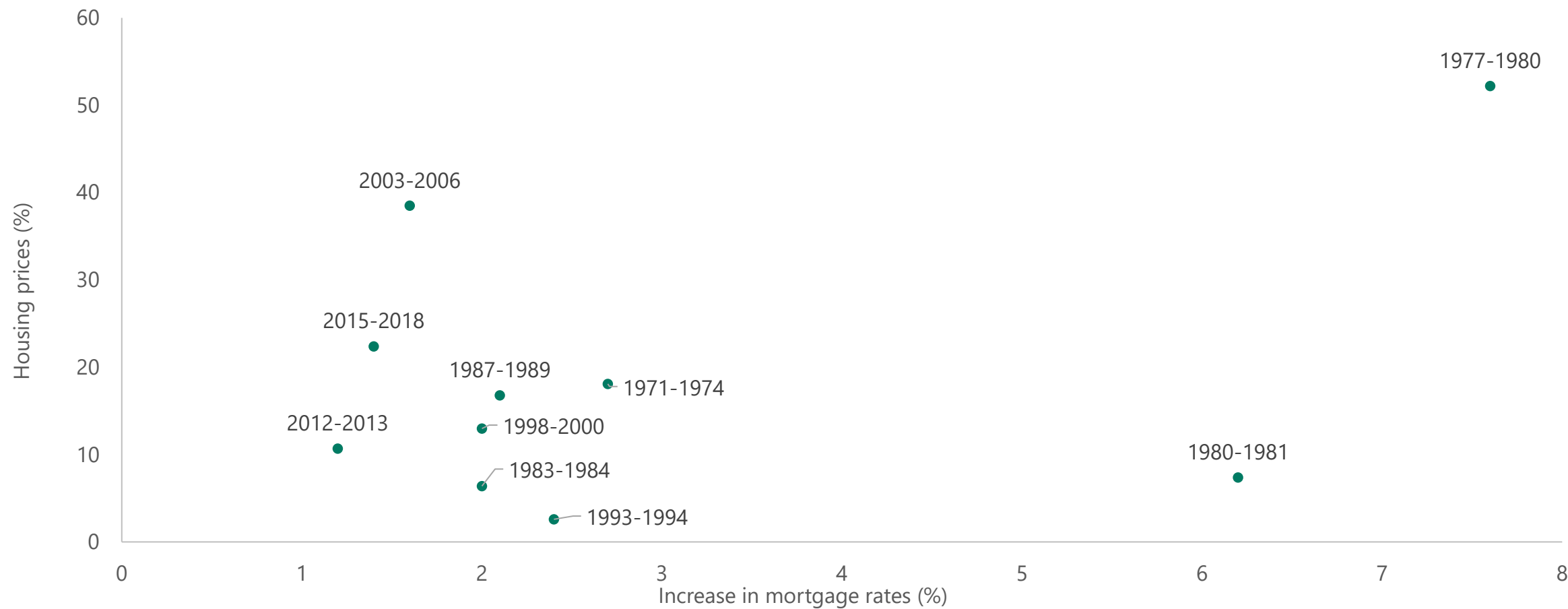
Manhattan rent growth slowing



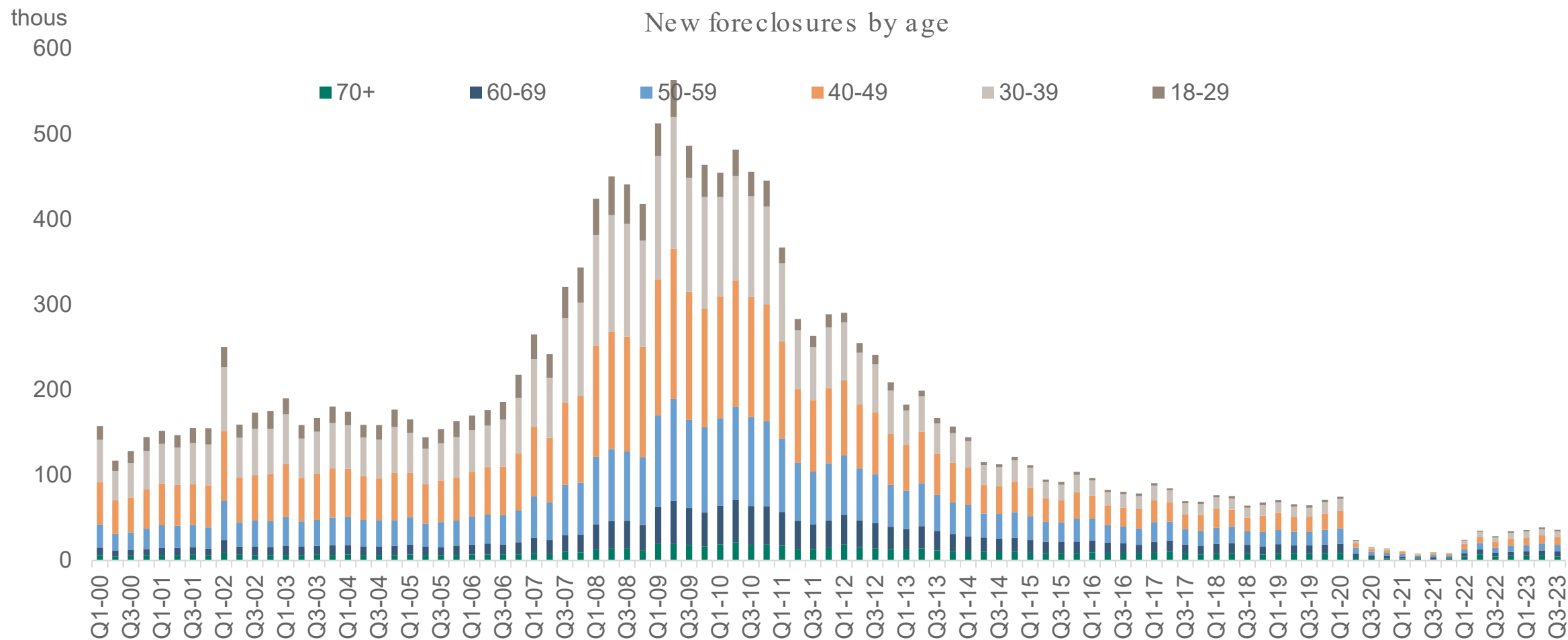
Manhattan rents still above pre-pandemic levels



Rising mortgage rates generally associated with lower home price inflation

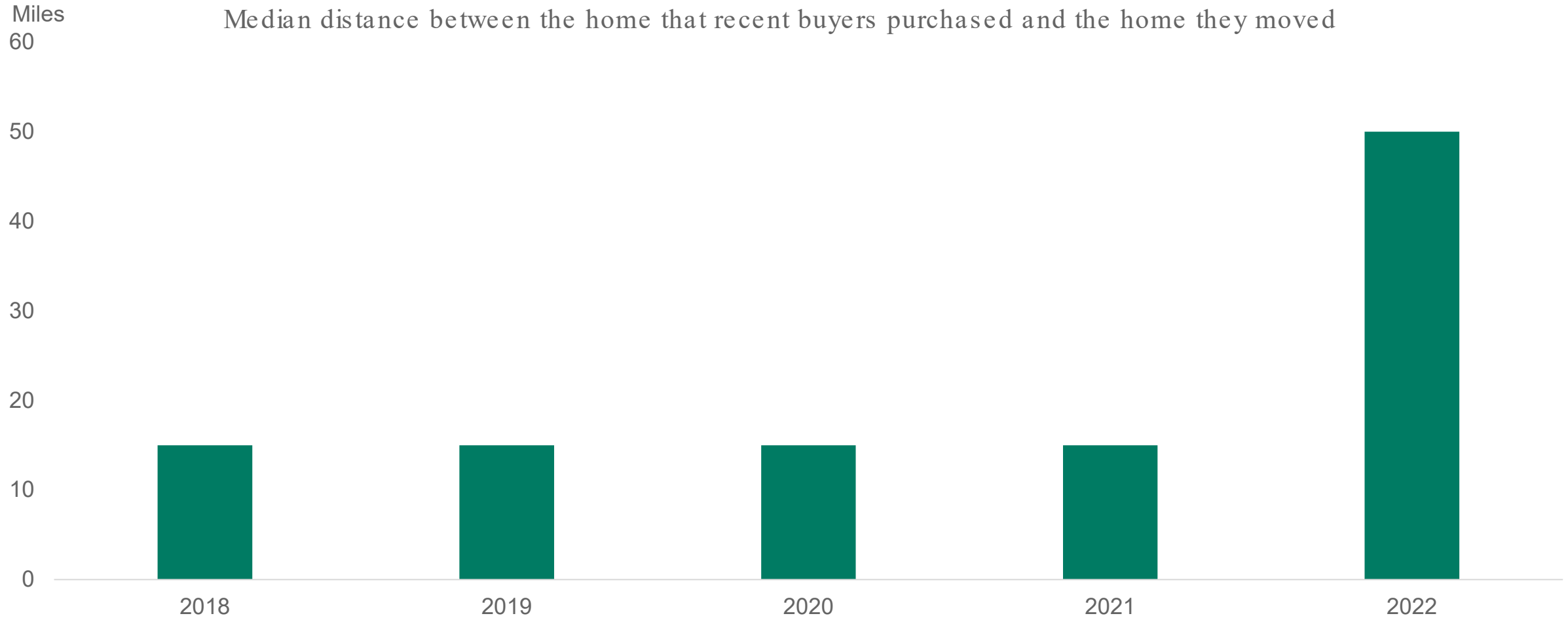


New foreclosures, by age of homeowner

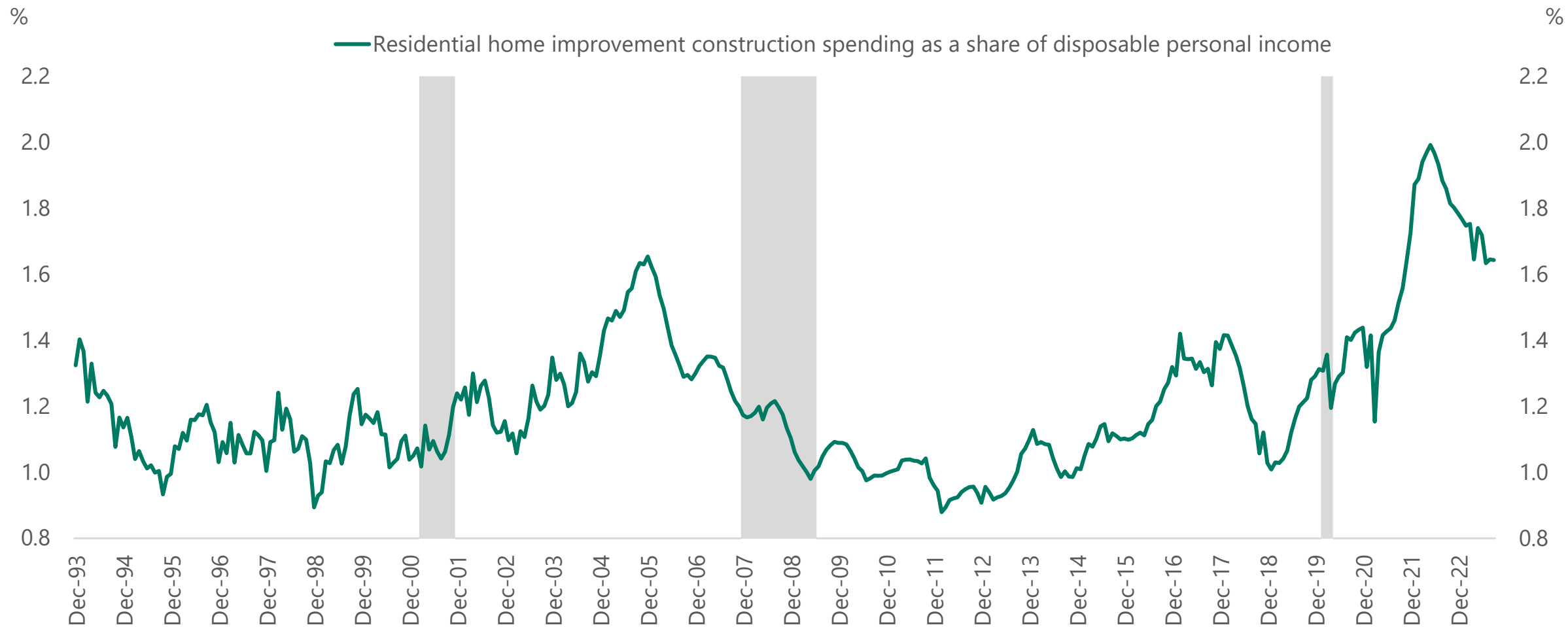


Source: FRBNY Consumer Credit Panel, Equifax, Haver Analytics, Apollo Chief Economist

Median distance between the home that recent buyers purchased and the home they moved from at 50 miles in 2022



Home improvement spending remains at high levels

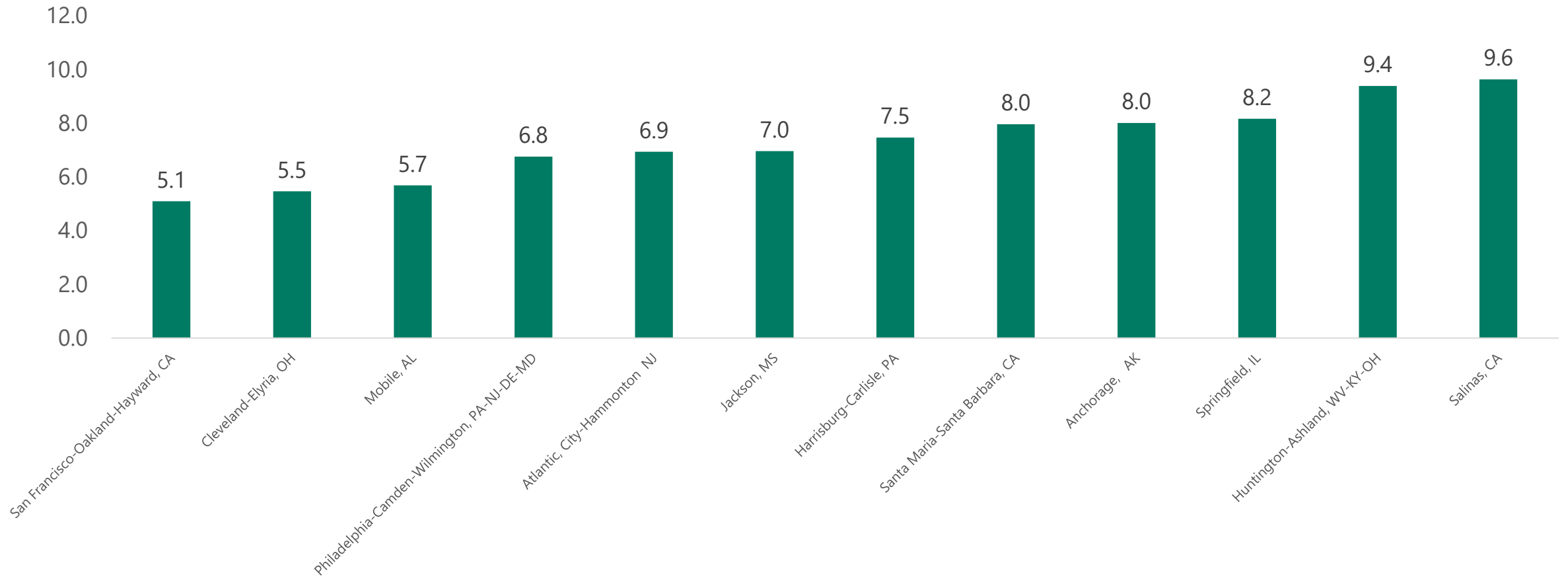


Source: Census Bureau, BEA, Bloomberg, Apollo Chief Economist

Areas that need to build more houses to keep up with the increased demand

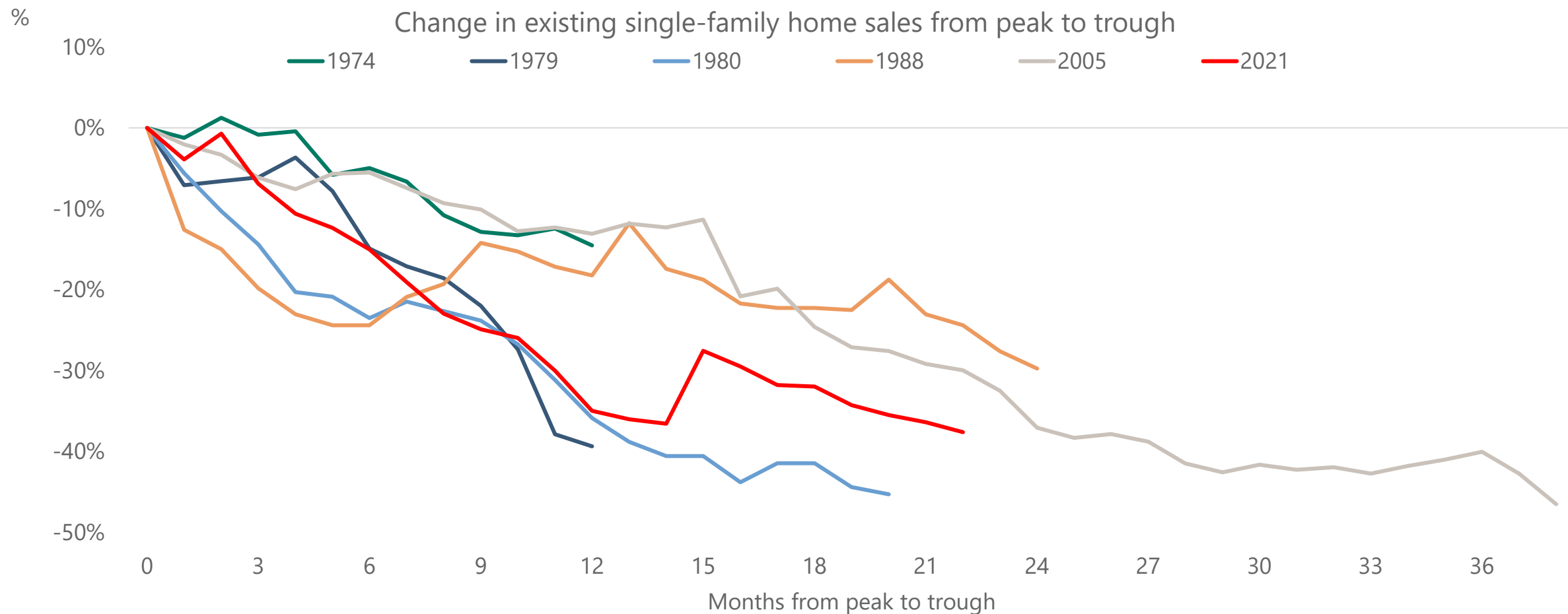
Permit (total units)

Housing shortage

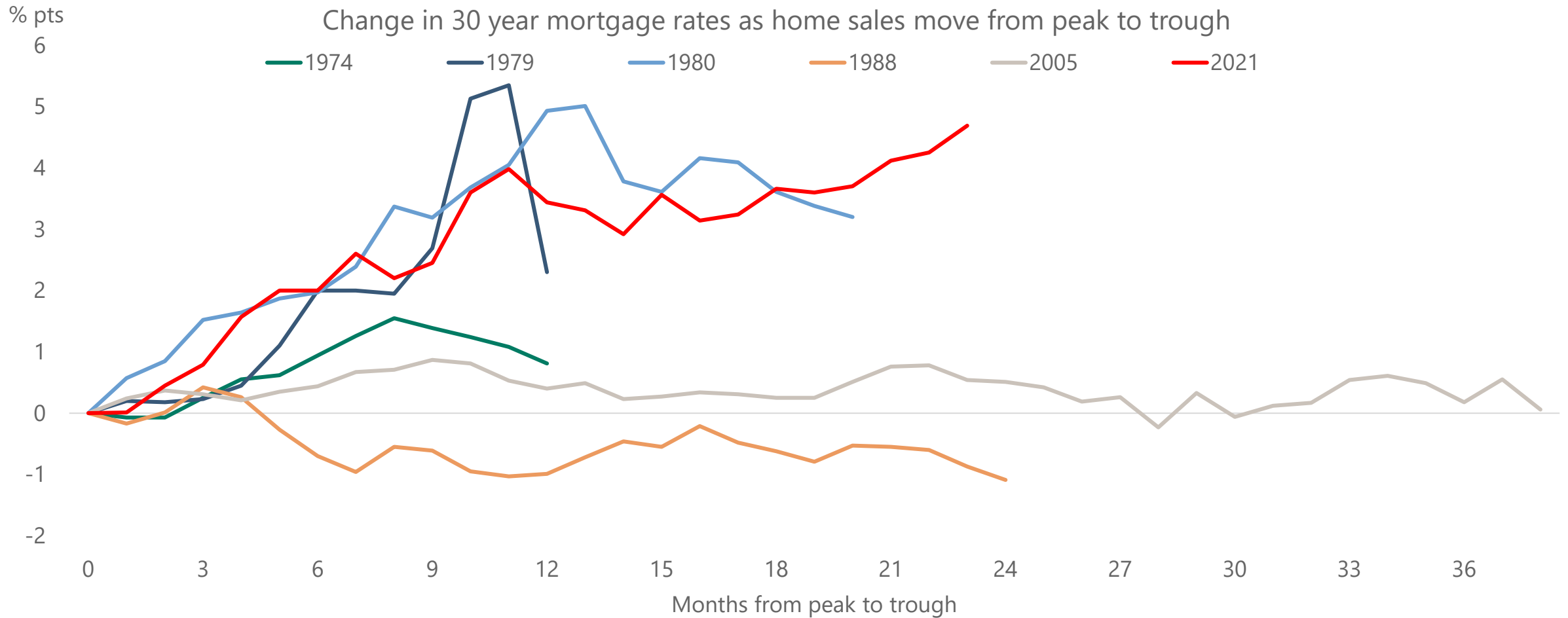


Comparing the current housing slowdown to previous housing slowdowns

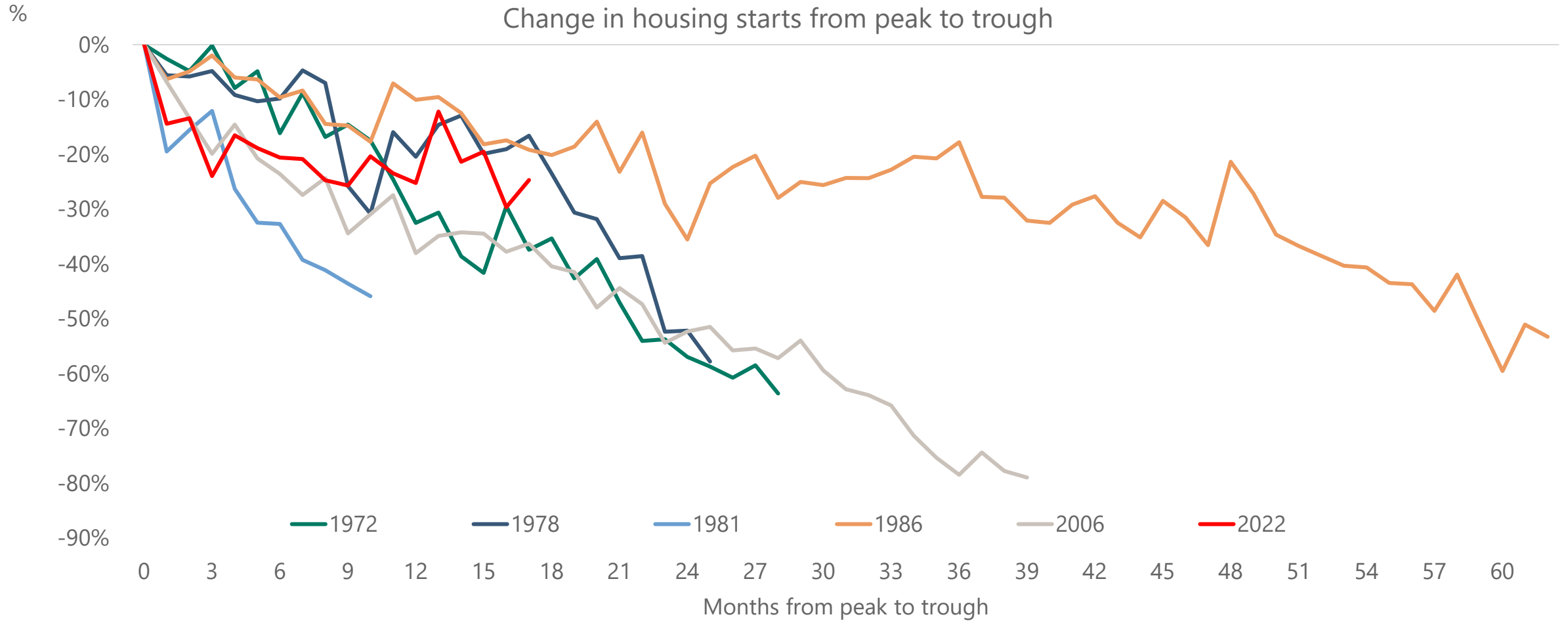
The current decline in existing home sales is in line with previous housing slowdowns



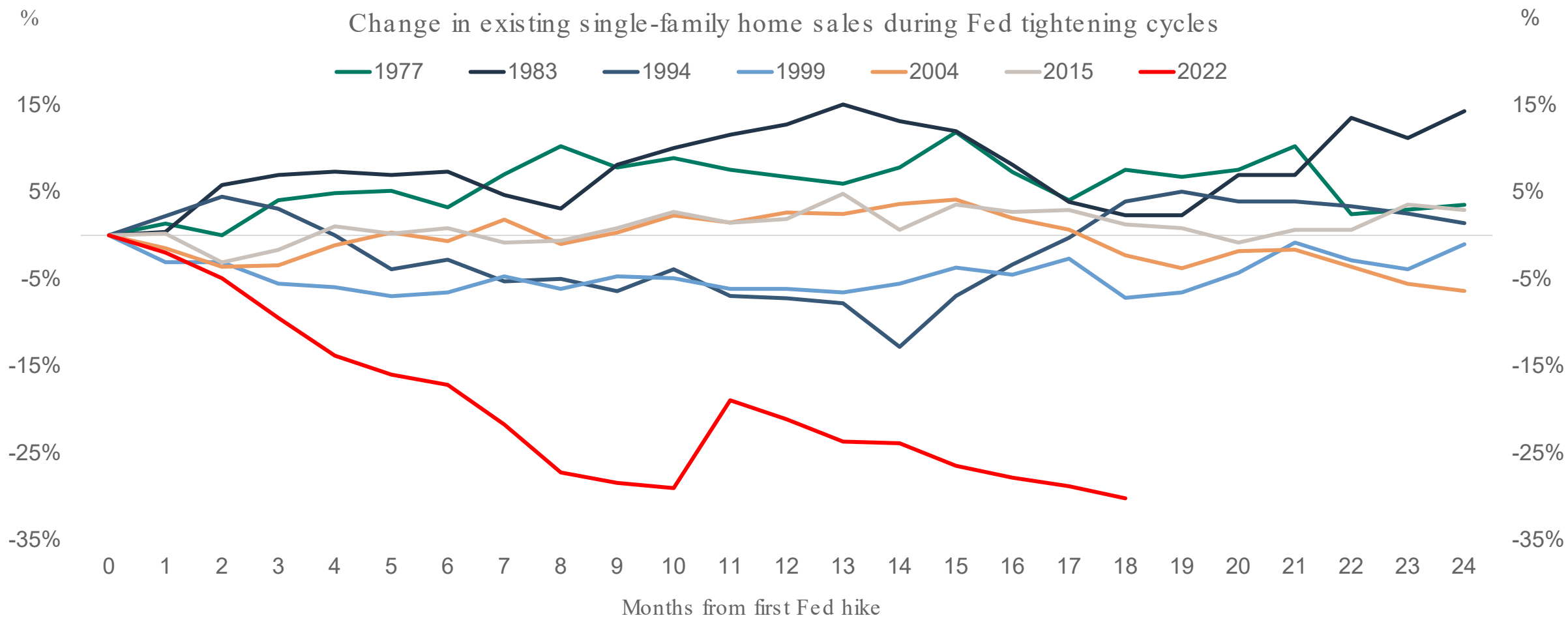
The current rise in mortgage rates is similar to what we saw during the Volcker disinflation



The current decline in housing starts follows the pattern of previous slowdowns



This is the fastest Fed-driven housing slowdown on record





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Torsten Slok joined Apollo in August 2020 as Chief Economist and he leads Apollo's macroeconomic and market analysis across the platform.

Prior to joining, Mr. Slok worked for 15 years as Chief Economist at Deutsche Bank where his team was top ranked in the annual Institutional Investor survey for a decade. Prior to joining Deutsche Bank Mr. Slok worked at the IMF in Washington, DC and at the OECD in Paris.

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