

APOLLO

US Housing Outlook:

A housing recovery has started, driven by low supply and pent-up demand boosted by falling mortgage rates

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Apollo Global Management

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Unless otherwise noted, information as of December 2023.

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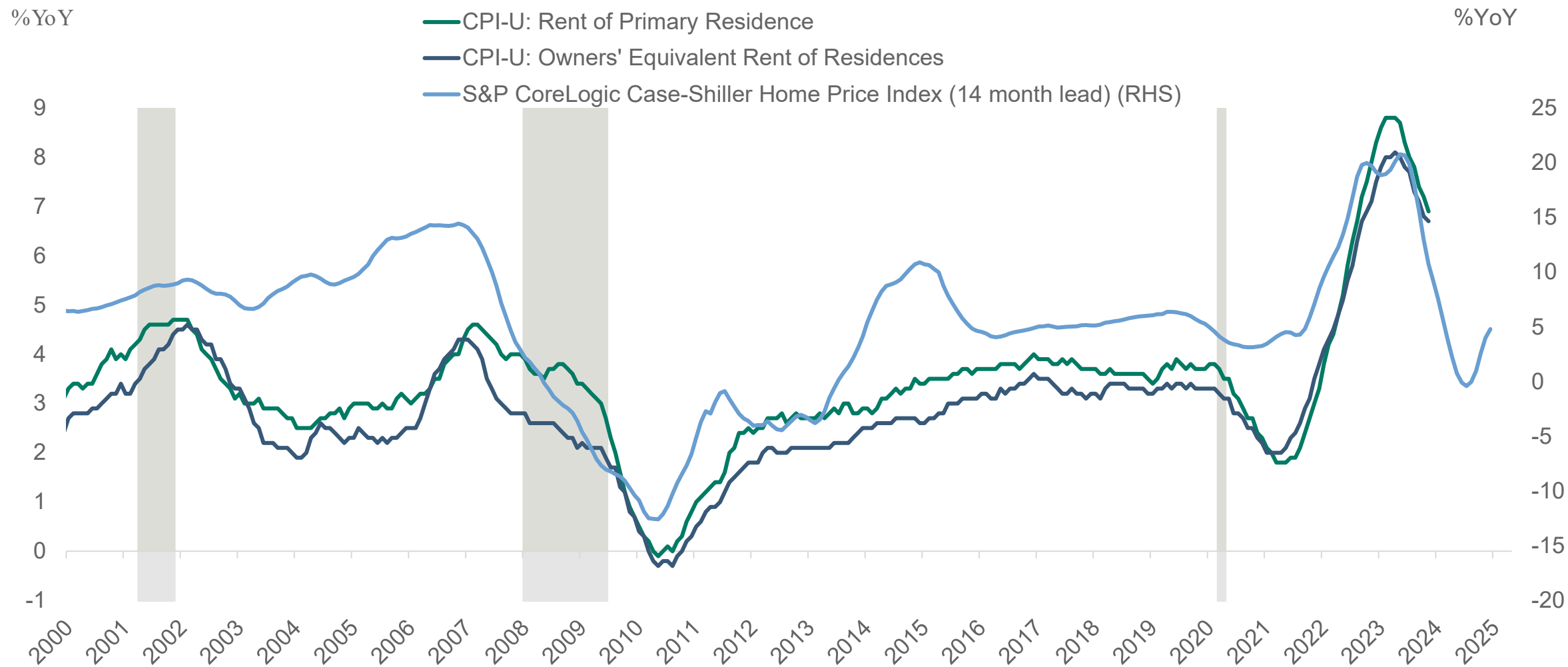


A housing recovery has started driven by:

1. Low housing supply
2. Pent-up demand boosted by falling mortgage rates
3. Decent job growth
4. Robust wage growth
5. Still some excess savings left

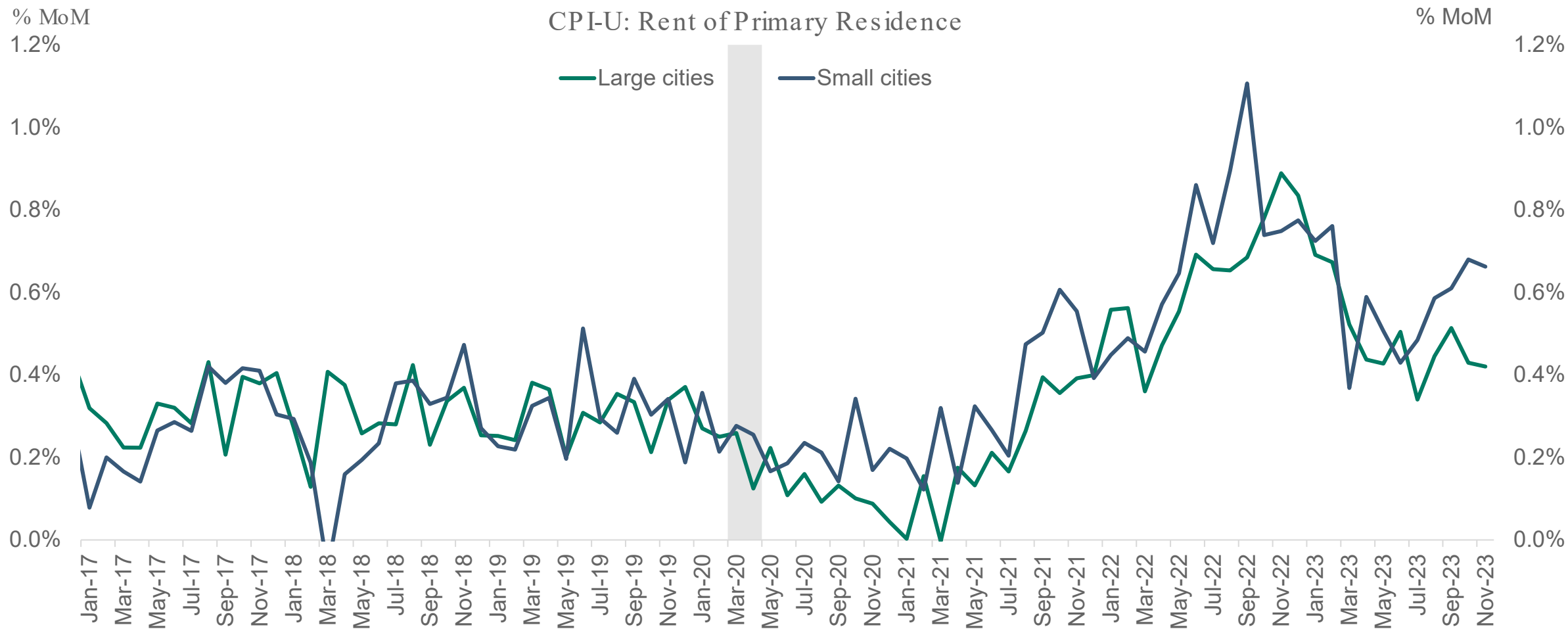
Leading indicators of the housing market

Home price inflation rebounding



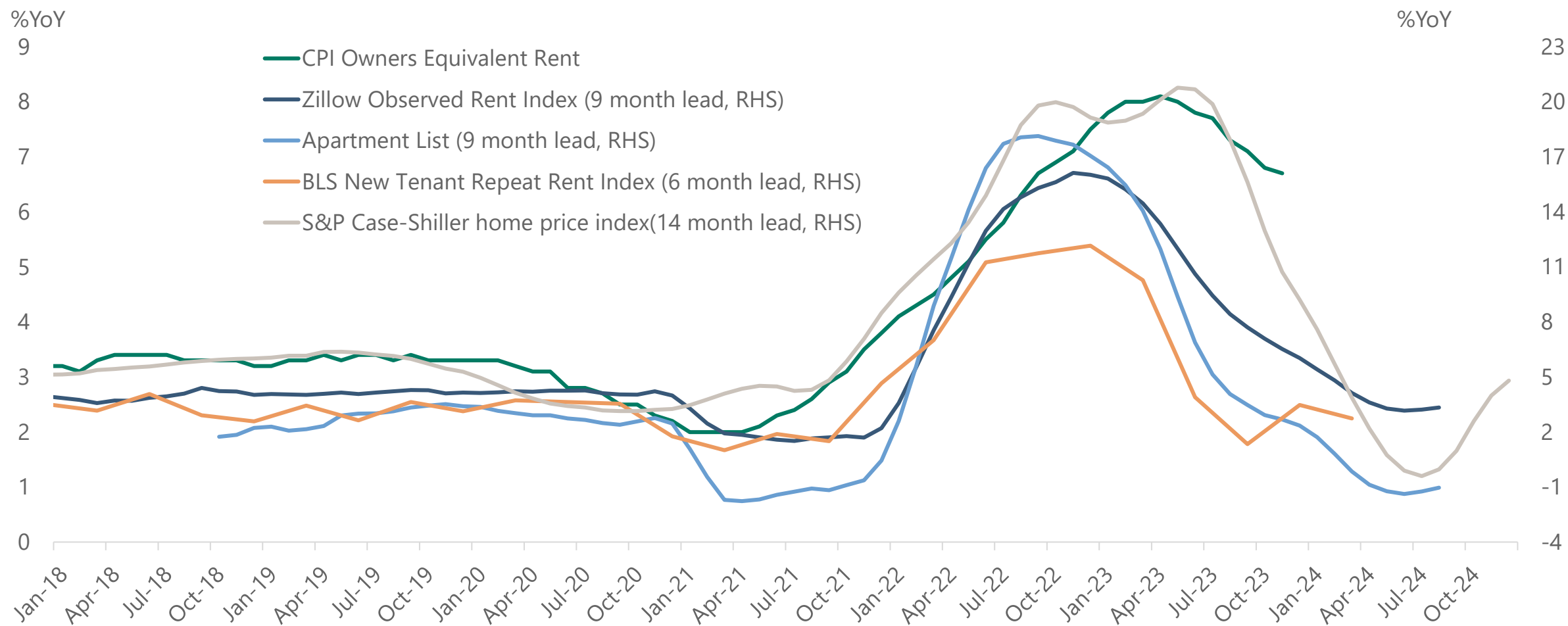
Source: Haver Analytics, BLS, S&P, Apollo Chief Economist

Rent inflation rising in small cities and elevated in large cities



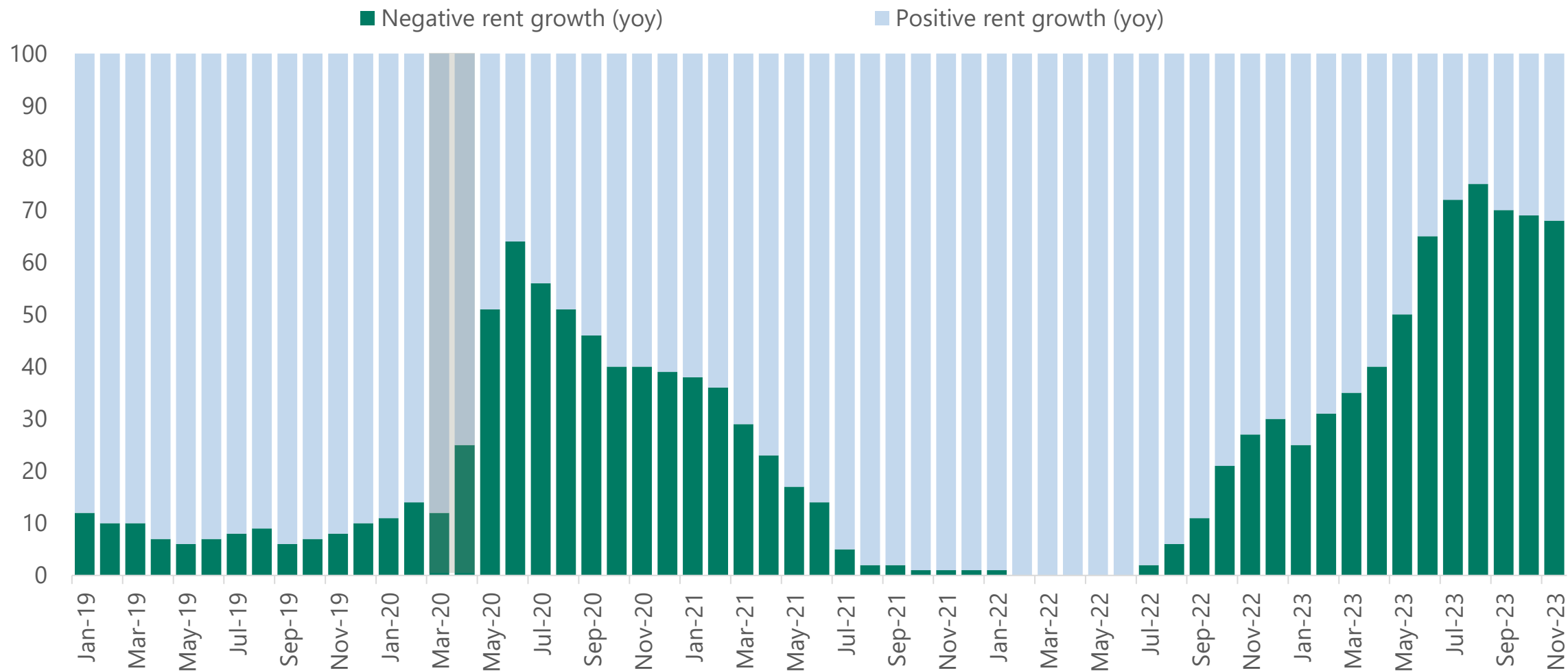
Source: BLS, Haver Analytics, Apollo Chief Economist

Rebound coming in housing inflation

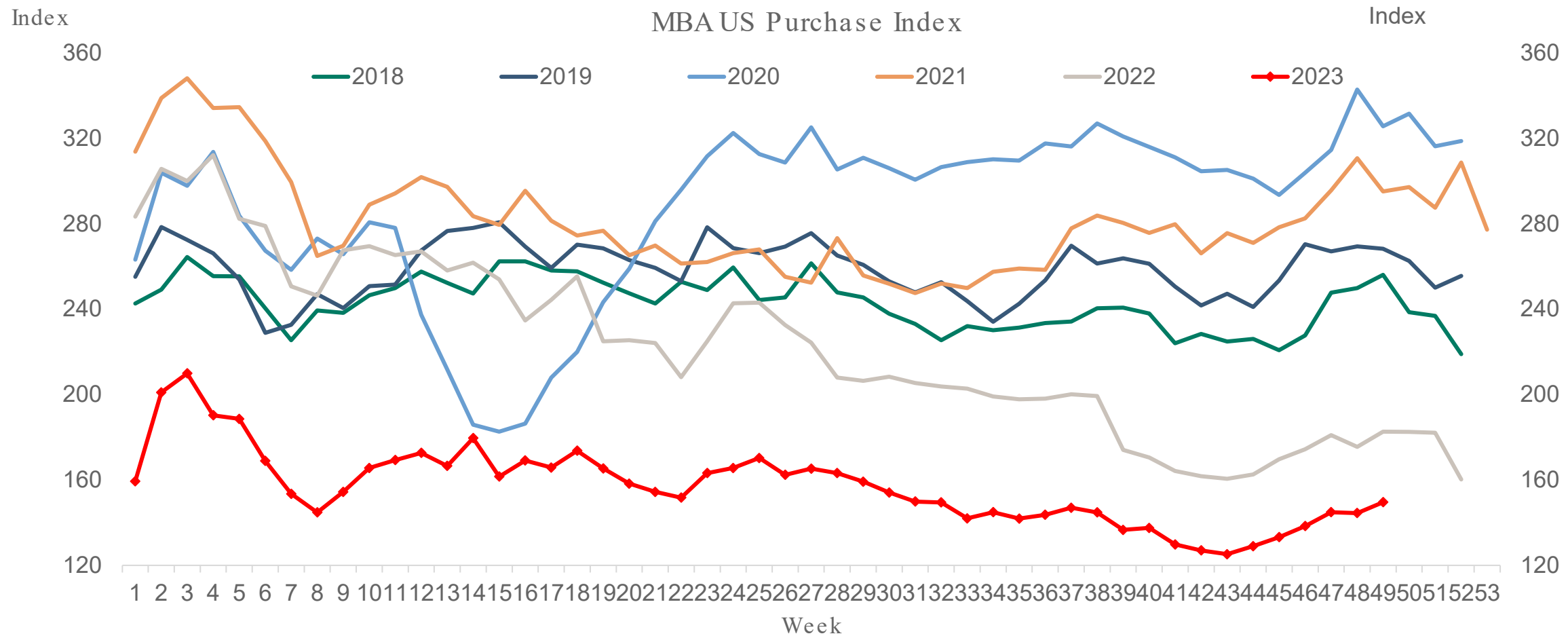


Source: BLS, S&P Case Shiller, Zillow, Haver Analytics, Apollo Chief Economist

100 largest US cities: Share of cities with positive rent growth is rising

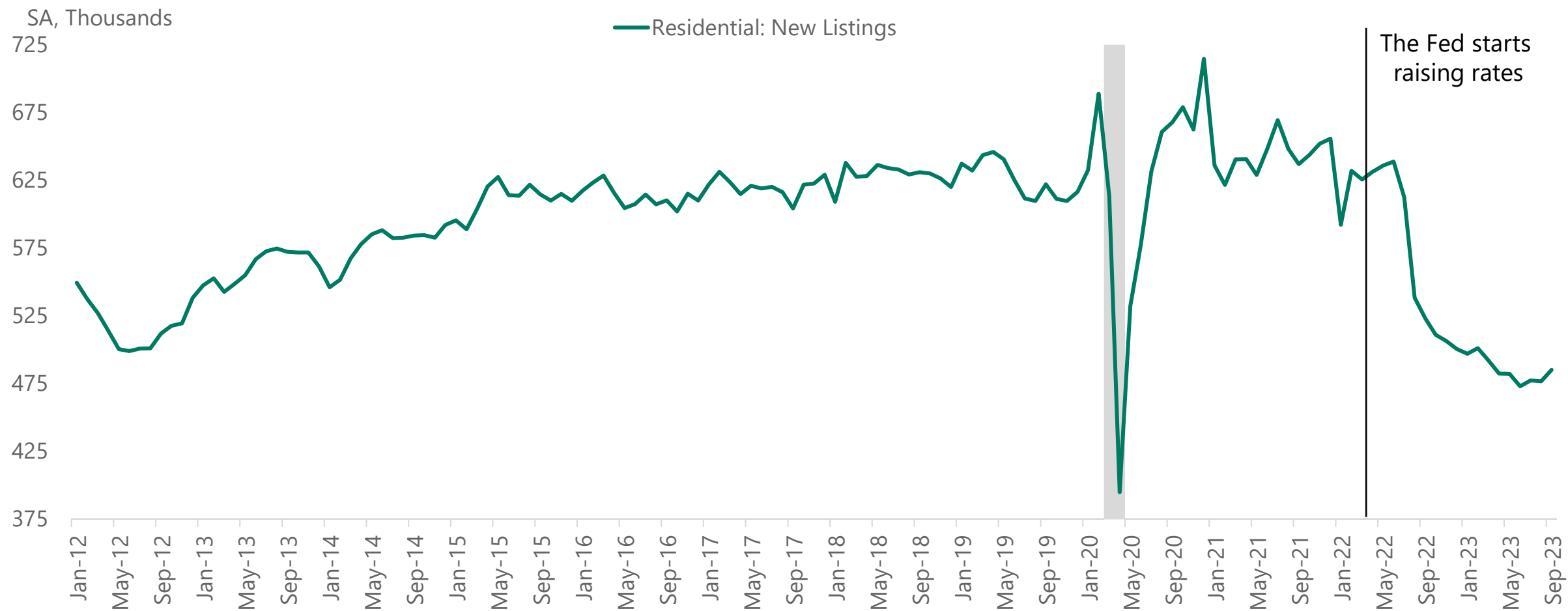


Mortgage purchase applications have started to recover



Source: Mortgage Bankers Association, Bloomberg, Apollo Chief Economist

Residential new listings starting to rebound

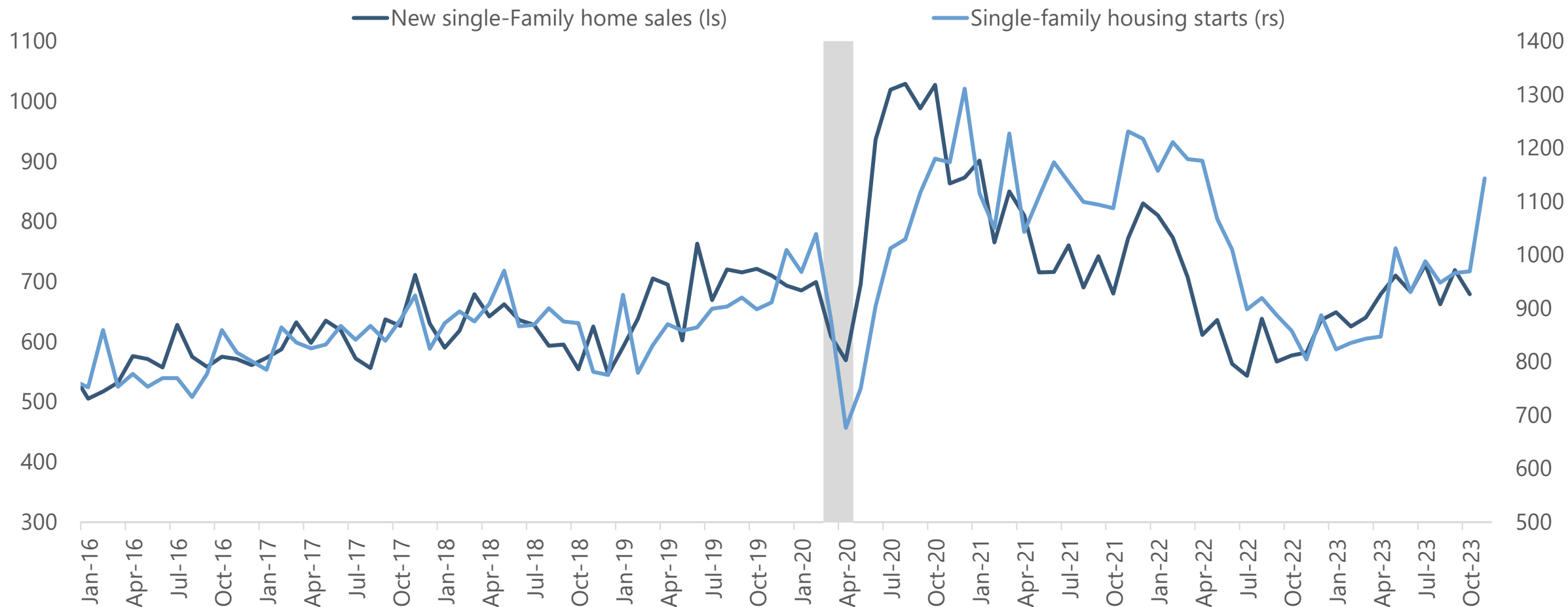


Source: Redfin, Haver Analytics, Apollo Chief Economist.

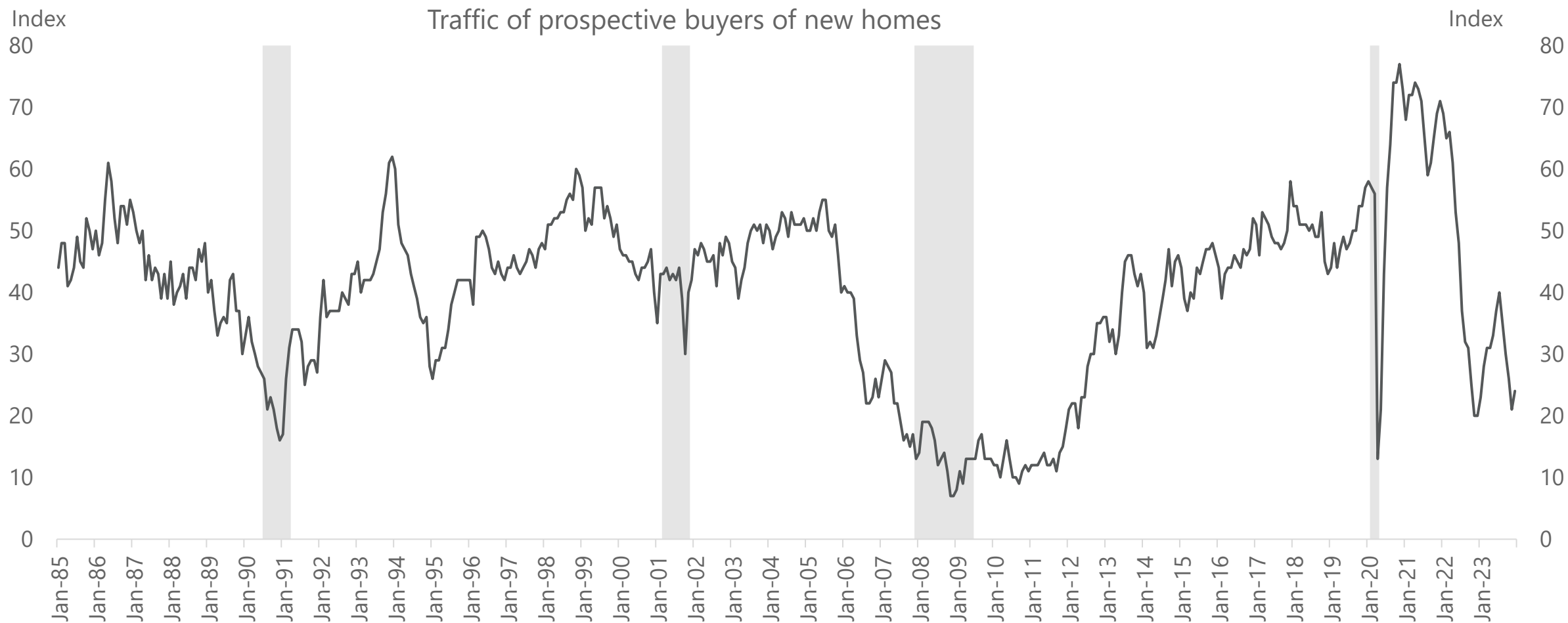
The jump in housing starts points to a jump in new home sales

SAAR, Thous.

SAAR, Thous.

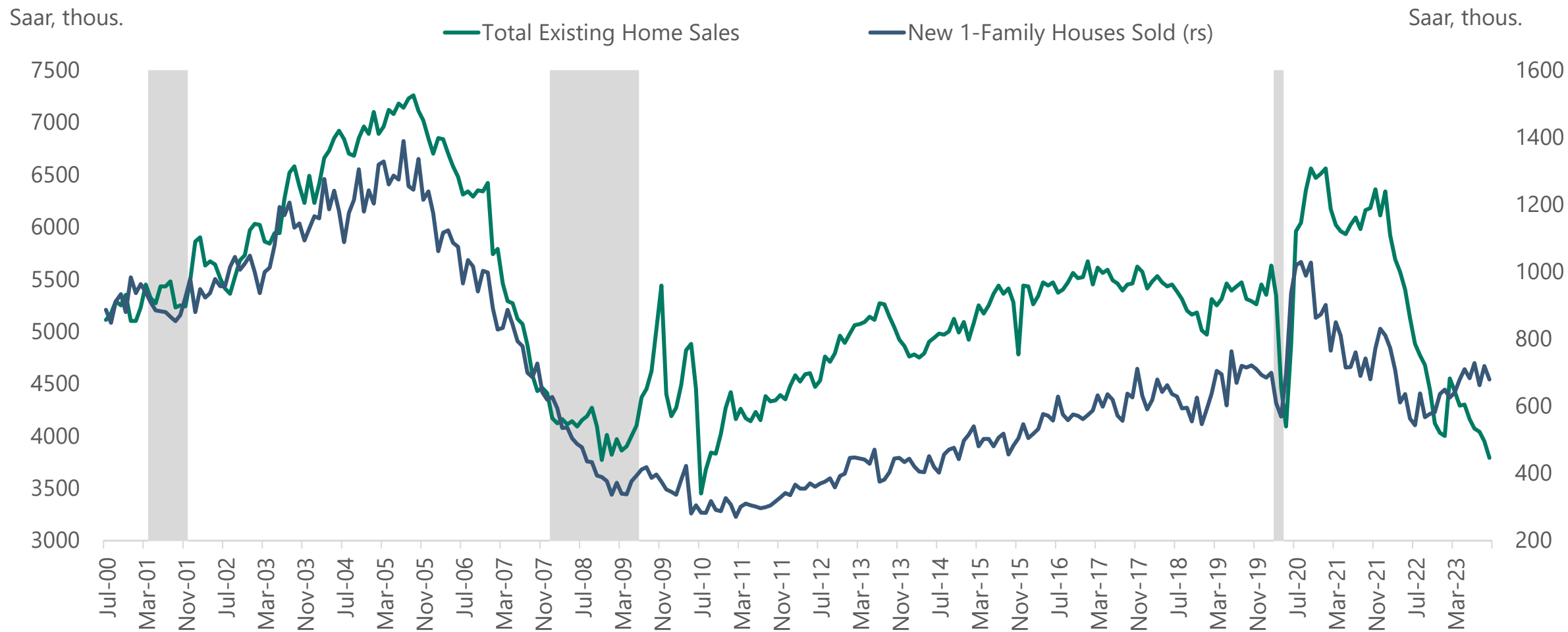


Traffic of prospective homebuyers bottoming out



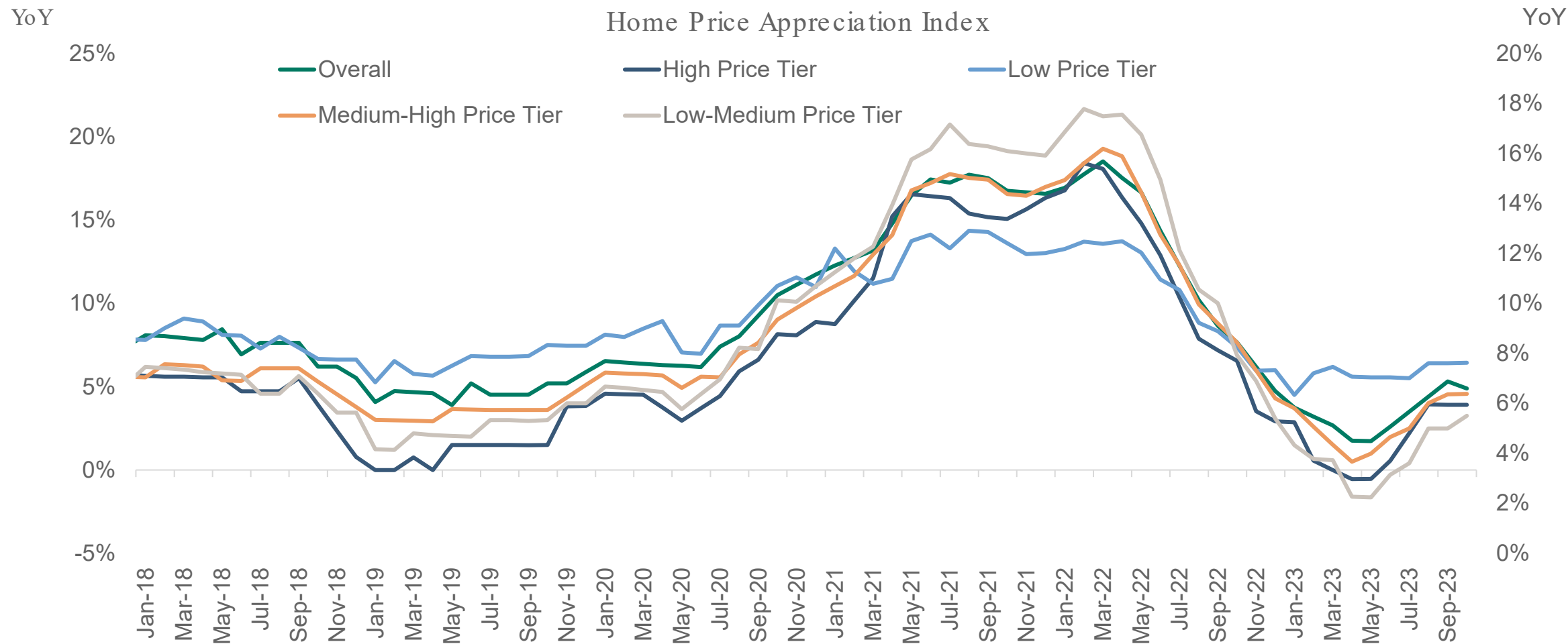
Source: National Association of Homebuilders, Bloomberg, Apollo Chief Economist

New home sales rebounding

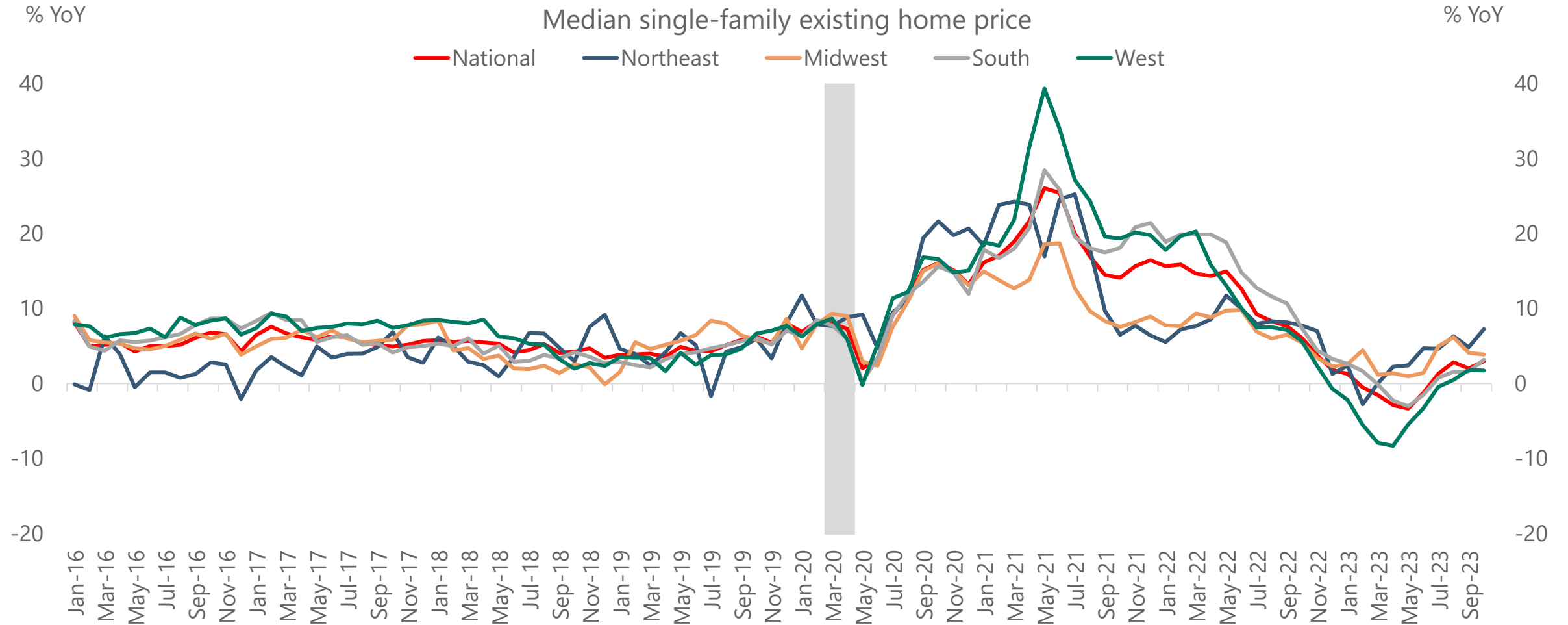


Source: Census Bureau, NAR, Haver, Apollo Chief Economist; Forecast is Bloomberg consensus

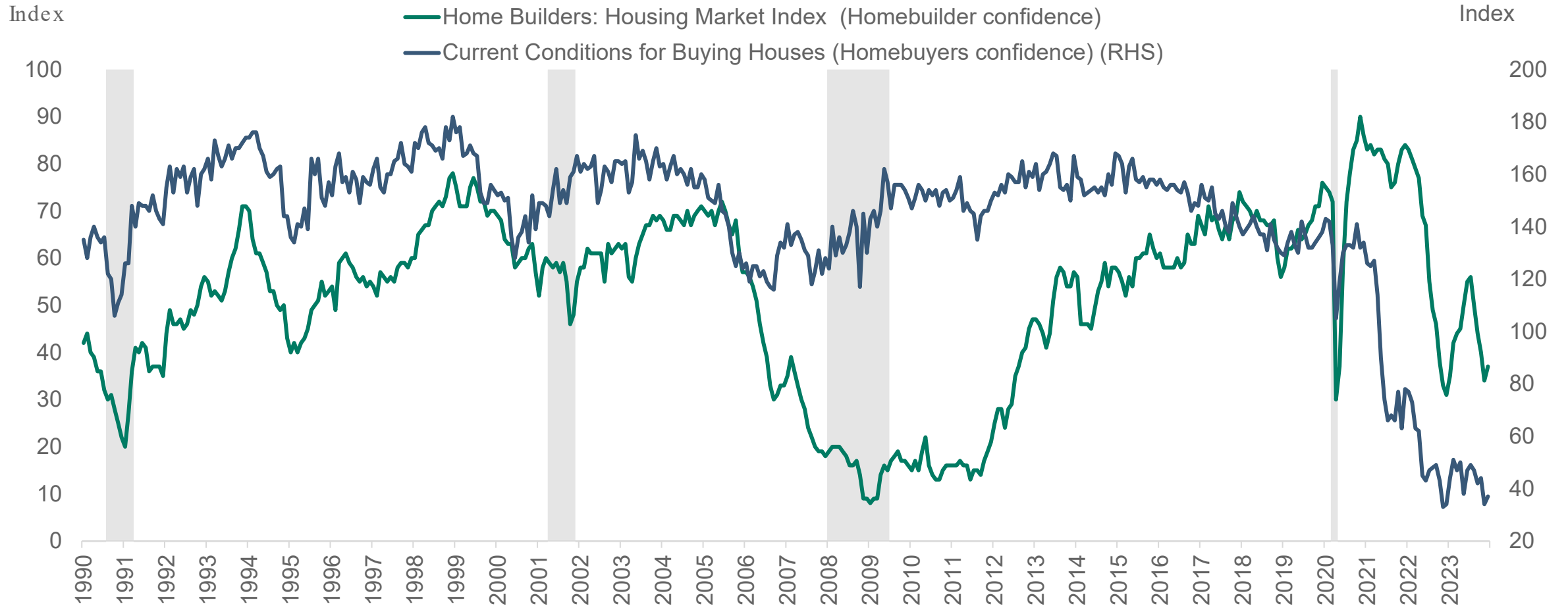
Home price inflation solid because of low inventory of homes for sale



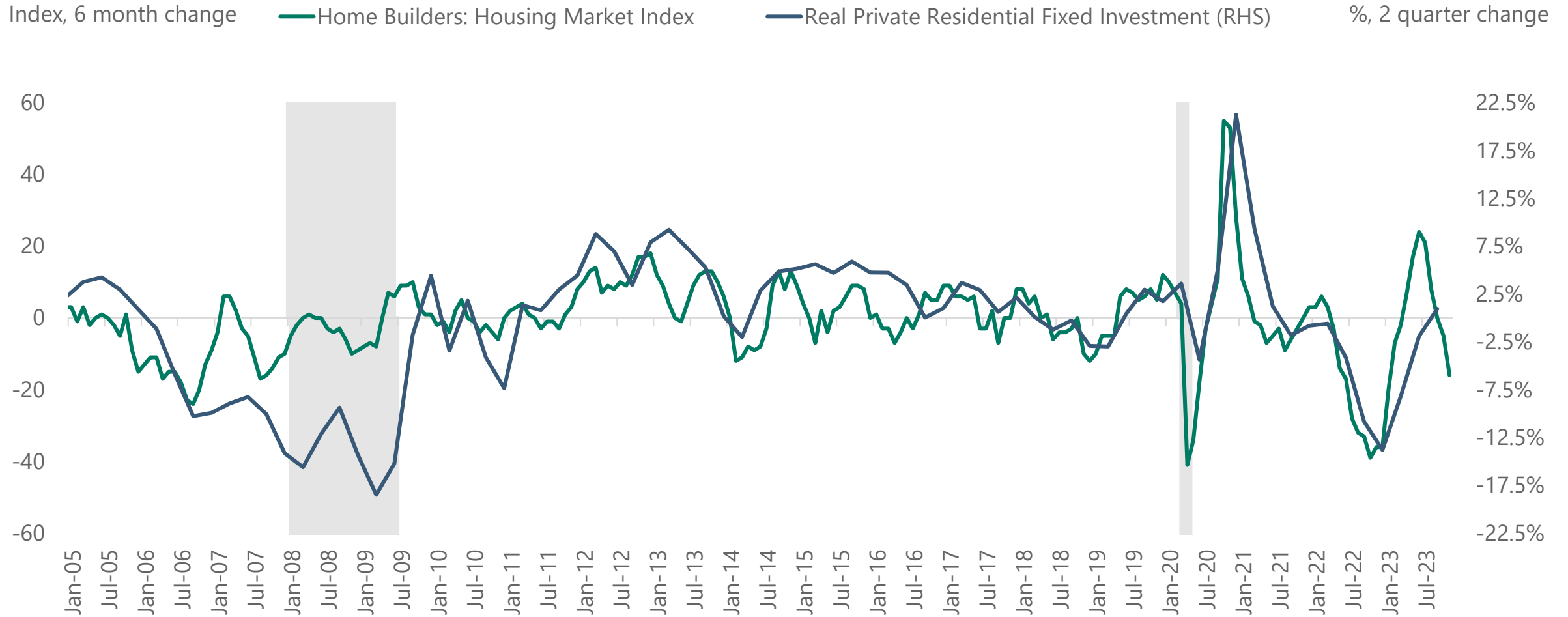
Home price inflation solid because of low inventory of homes for sale



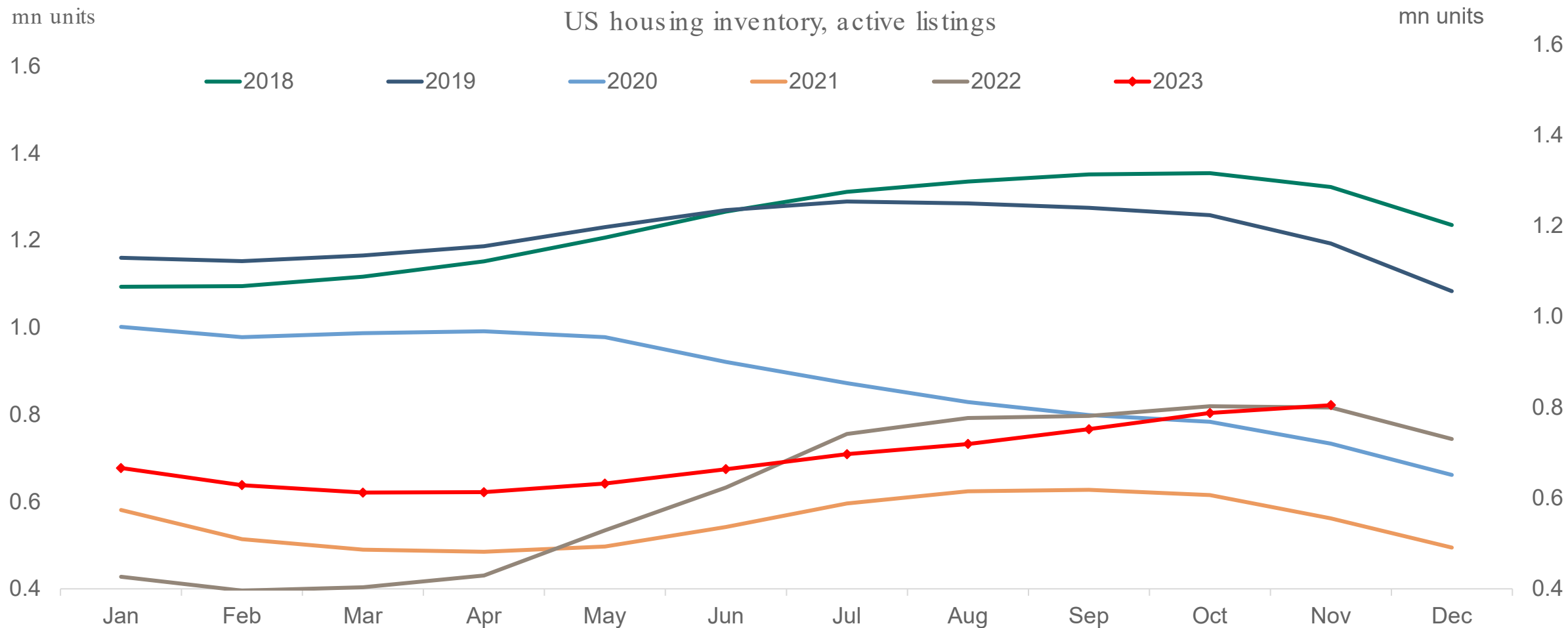
Homebuyer and homebuilder confidence bottoming out



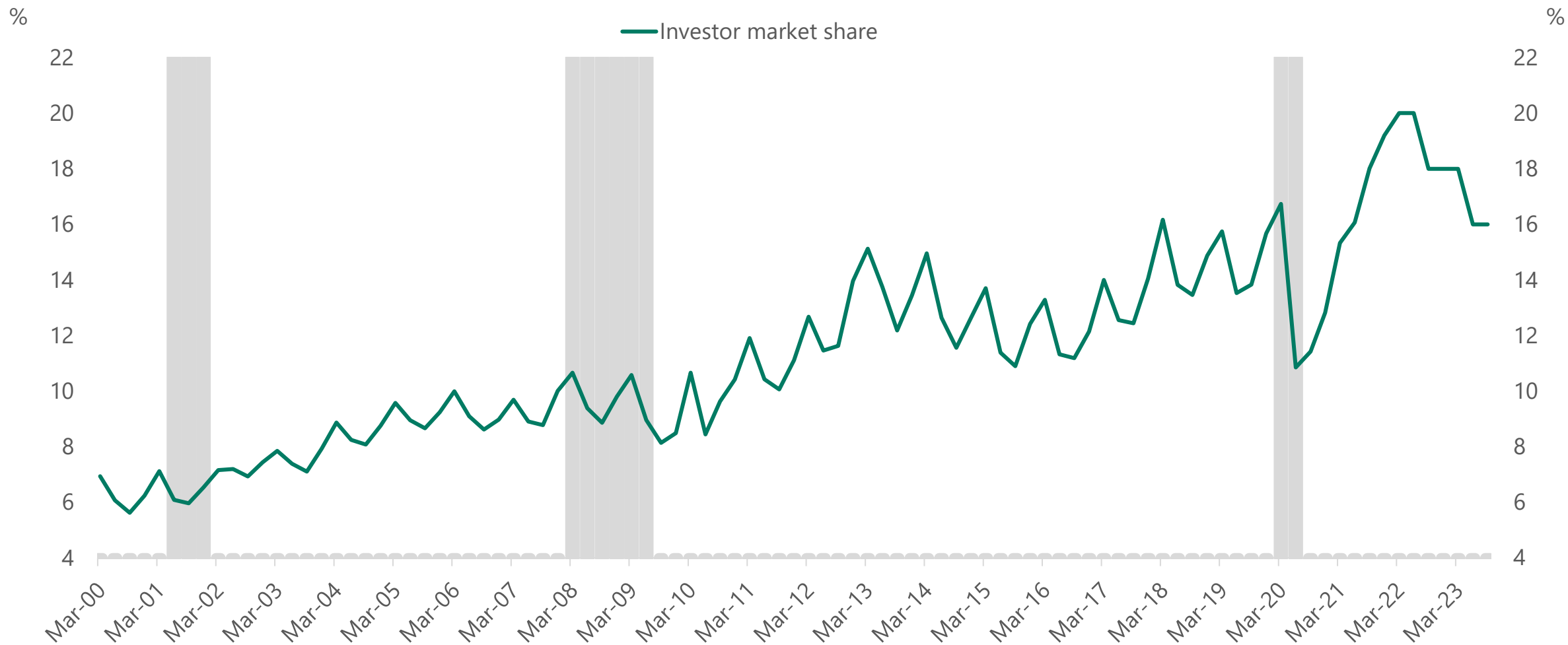
If homebuilder confidence rebounds over the coming months because of the Fed pivot, residential investment will also rebound



Very low inventory of homes for sale

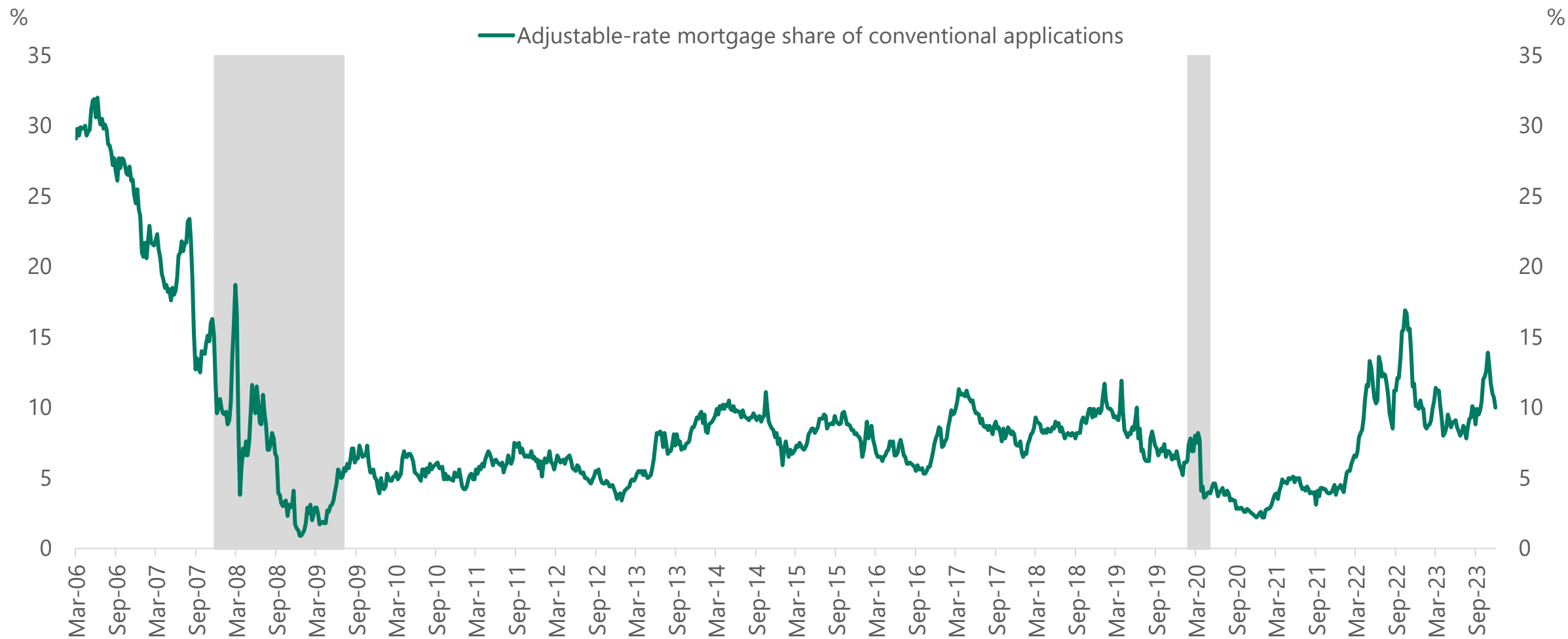


Investors account for 16% of all home purchases, down from 20% in 2022



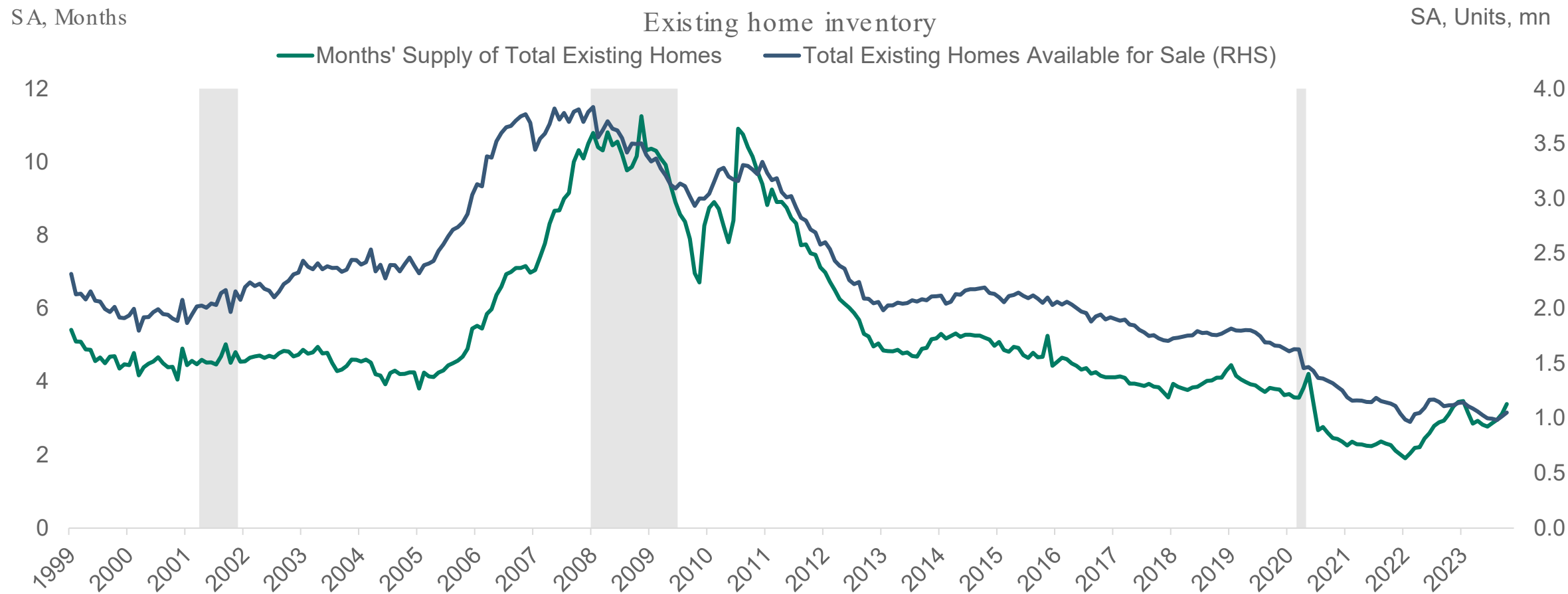
Source: Redfin, Apollo Chief Economist. Definition of Investor market share: the percentage of total home sales in which an investor was the buyer.

ARM share of total mortgage applications has declined recently



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

Existing housing inventory starting to rise

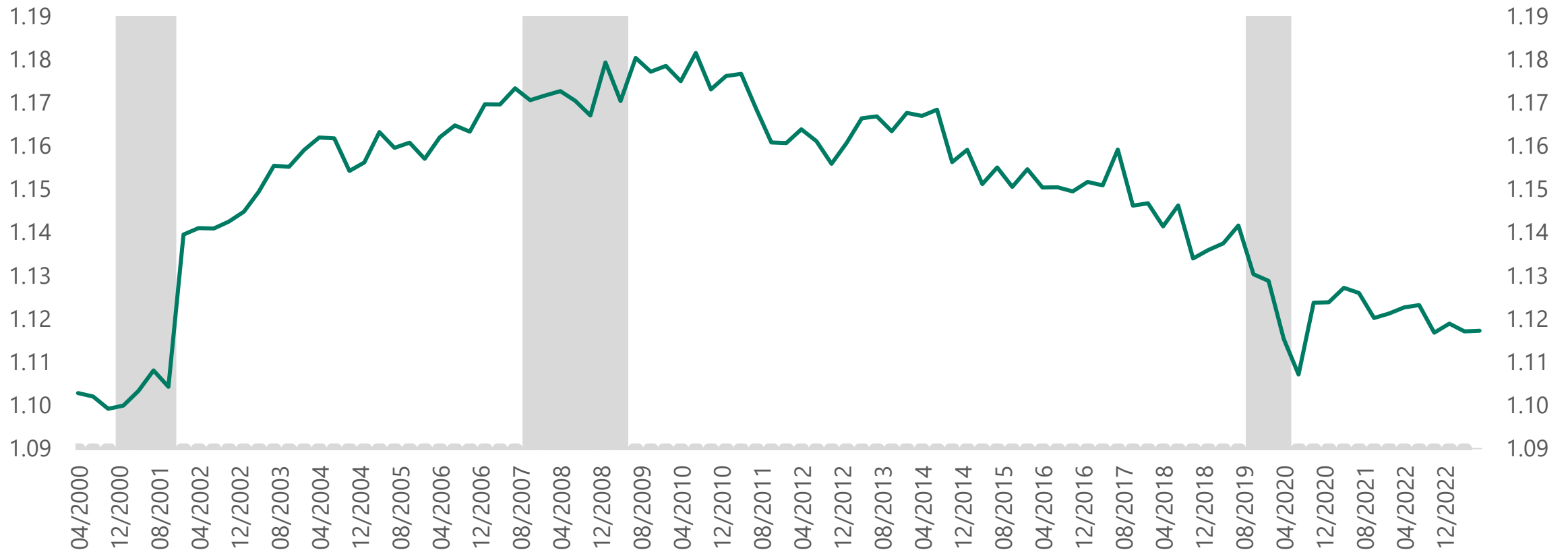


Total housing inventory per person continues to decline

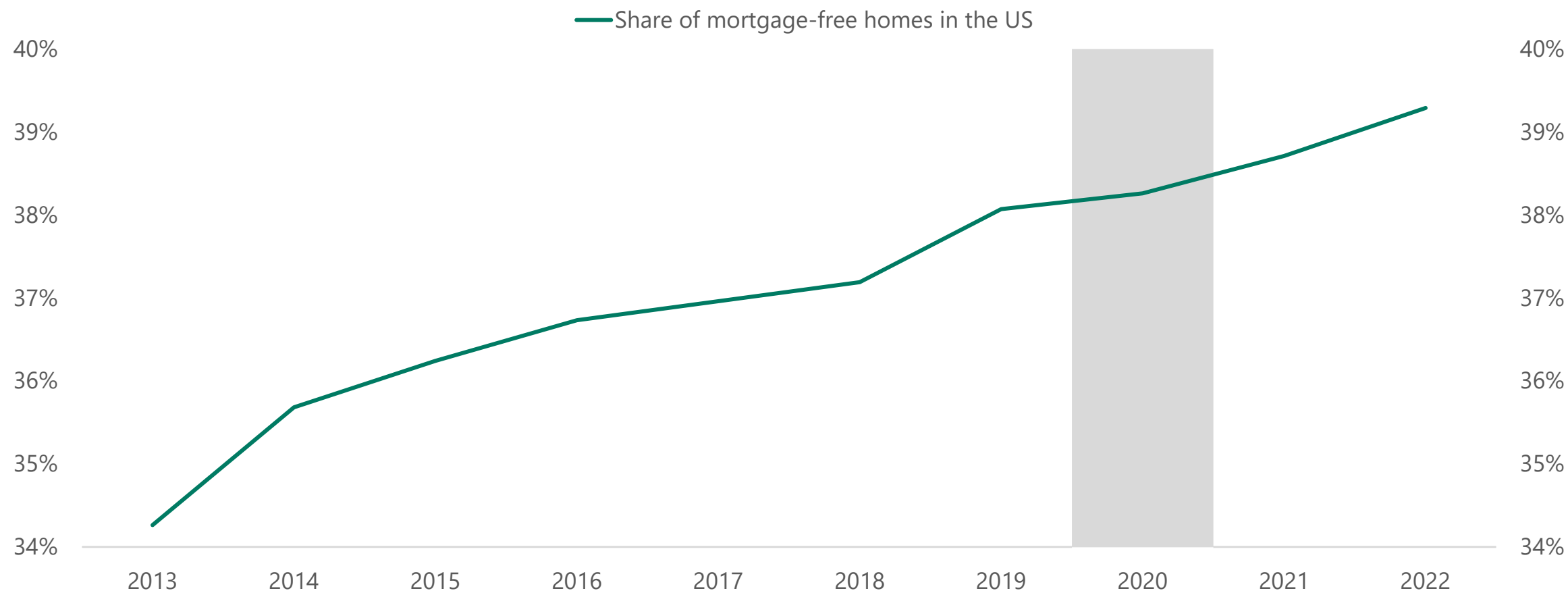
Units per person

Housing inventory estimate: Total housing units/Household

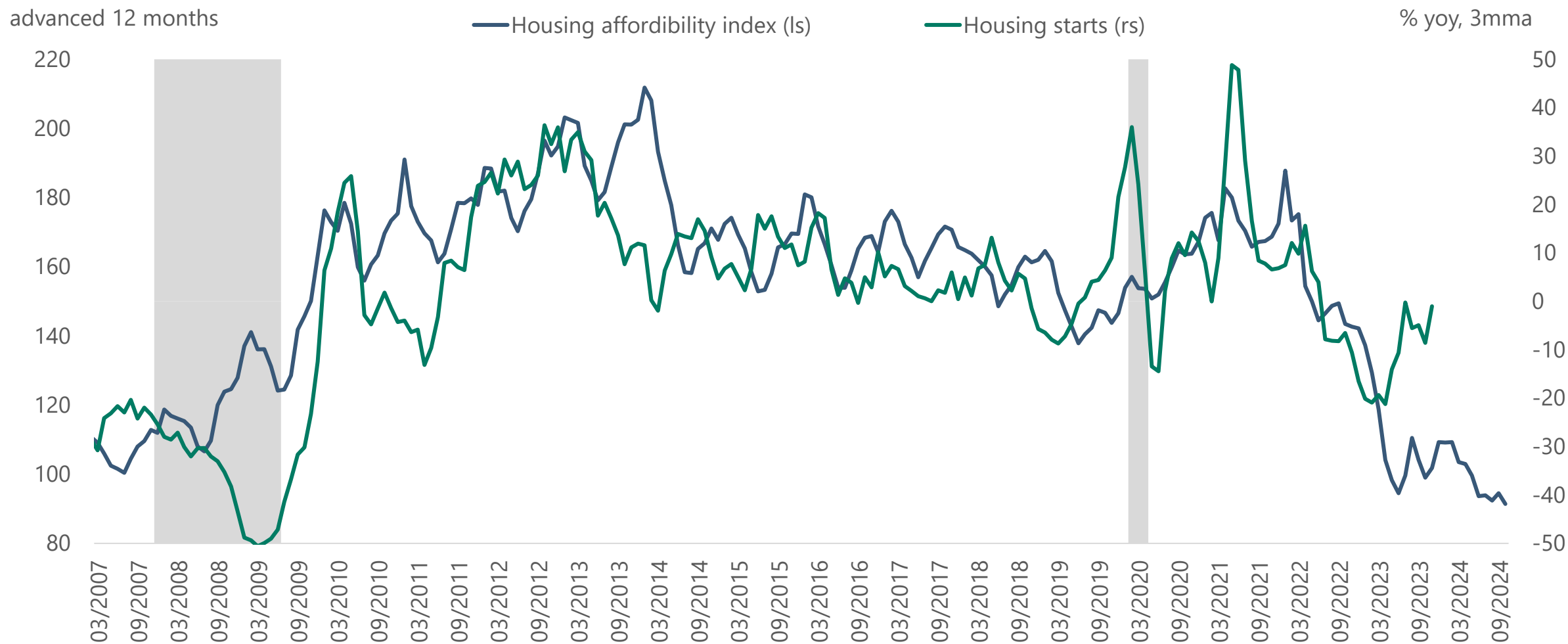
Units per prson



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

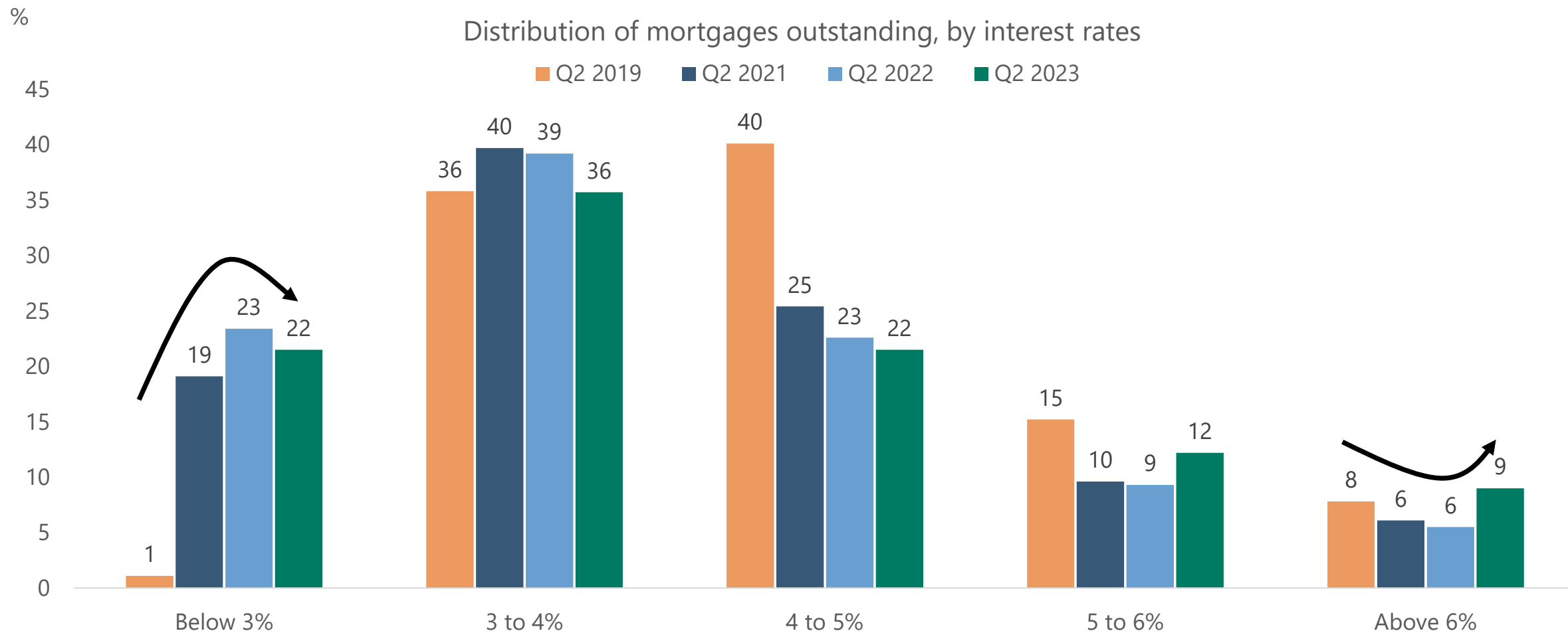


Low inventory boosting housing starts despite low affordability

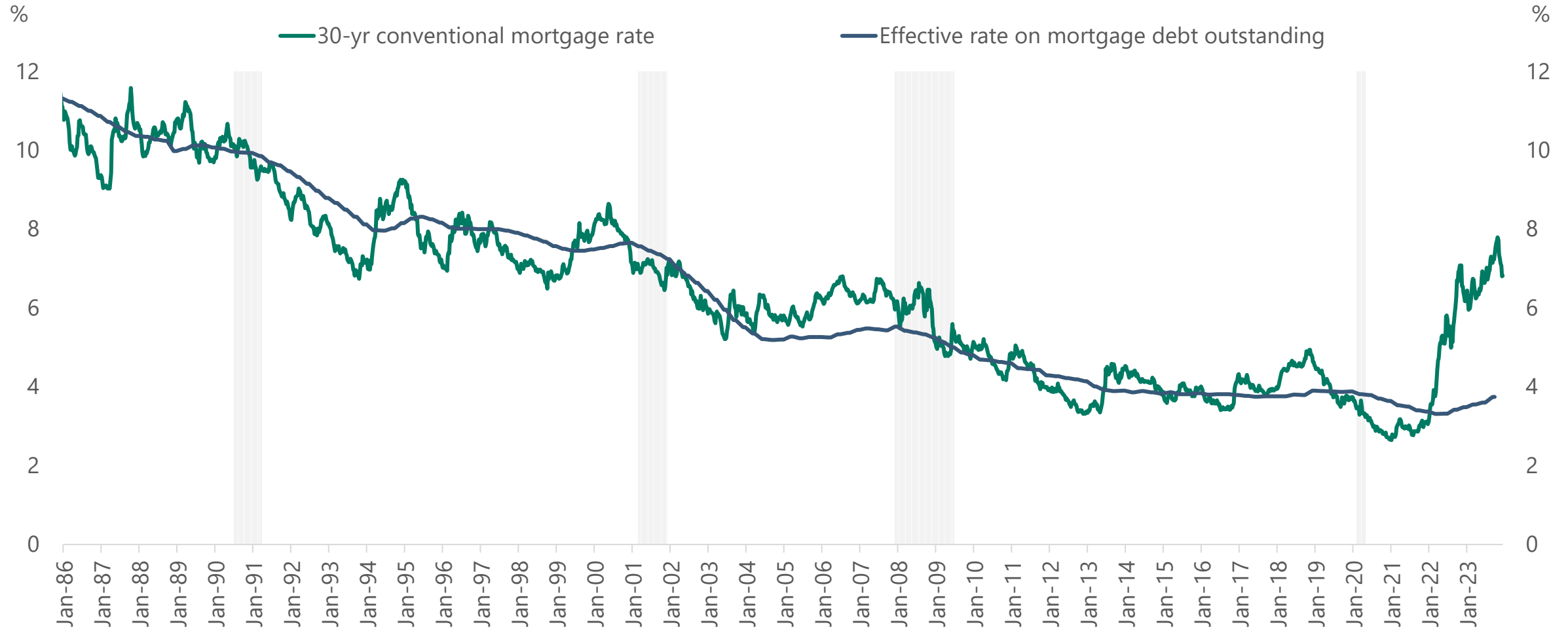


Source: Bloomberg, Apollo Chief Economist

Distribution of interest rates on outstanding mortgages

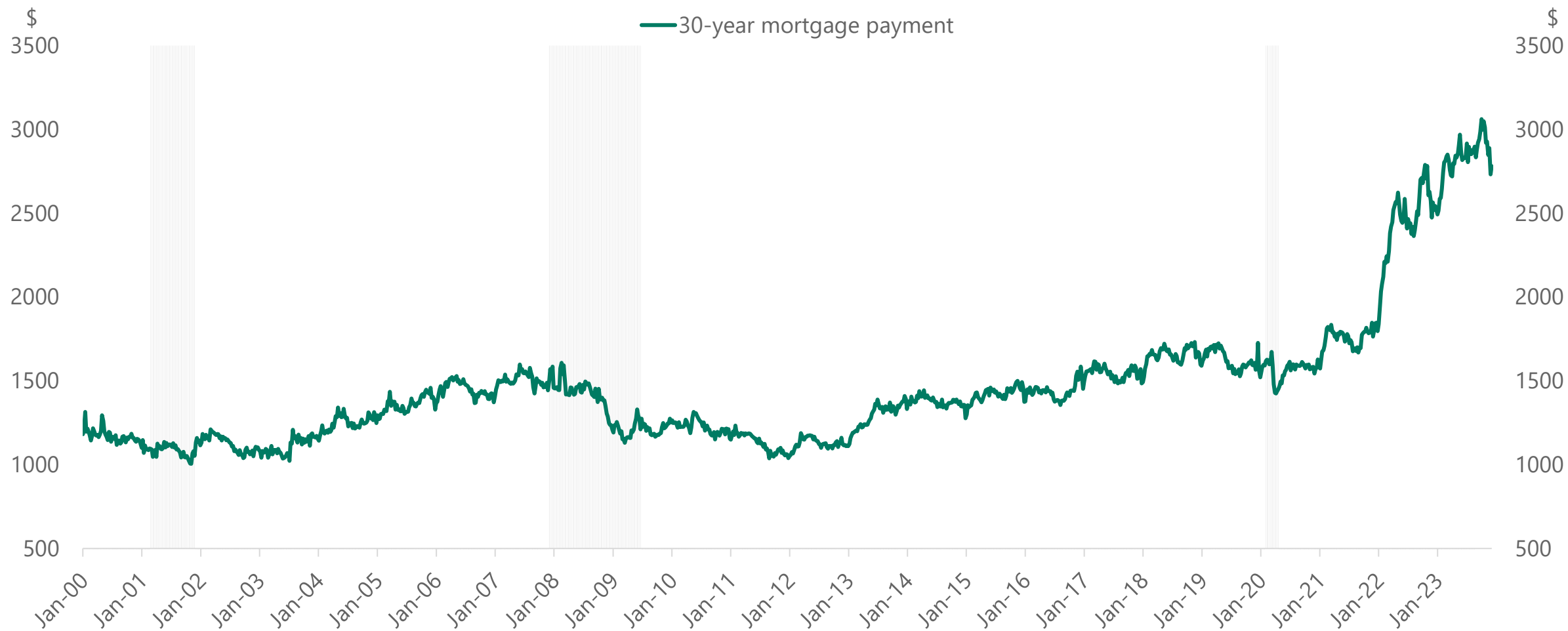


Effective outstanding mortgage rate is 3.7%



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 declined recently



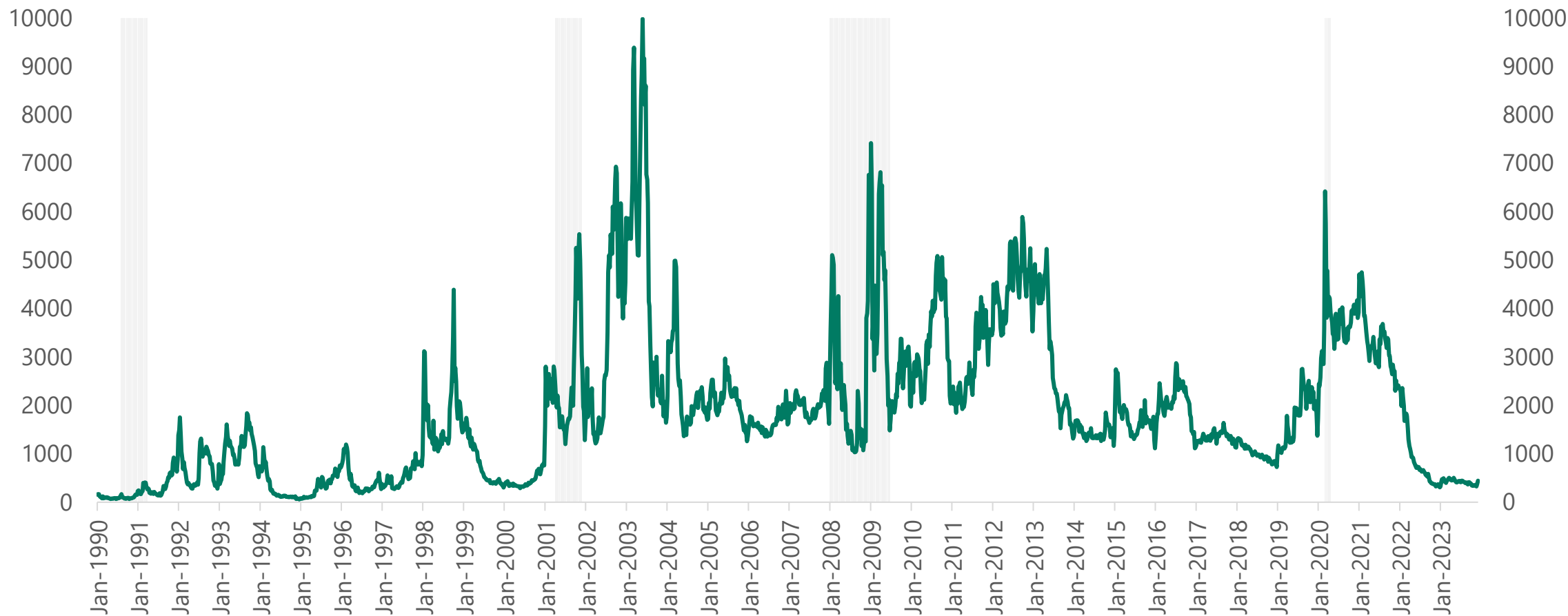
Source: Bloomberg L.P., Apollo Chief Economist (Note: Calculation of monthly payment using the 30-year purchase loan application size and the 30-yr effective rate.)

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

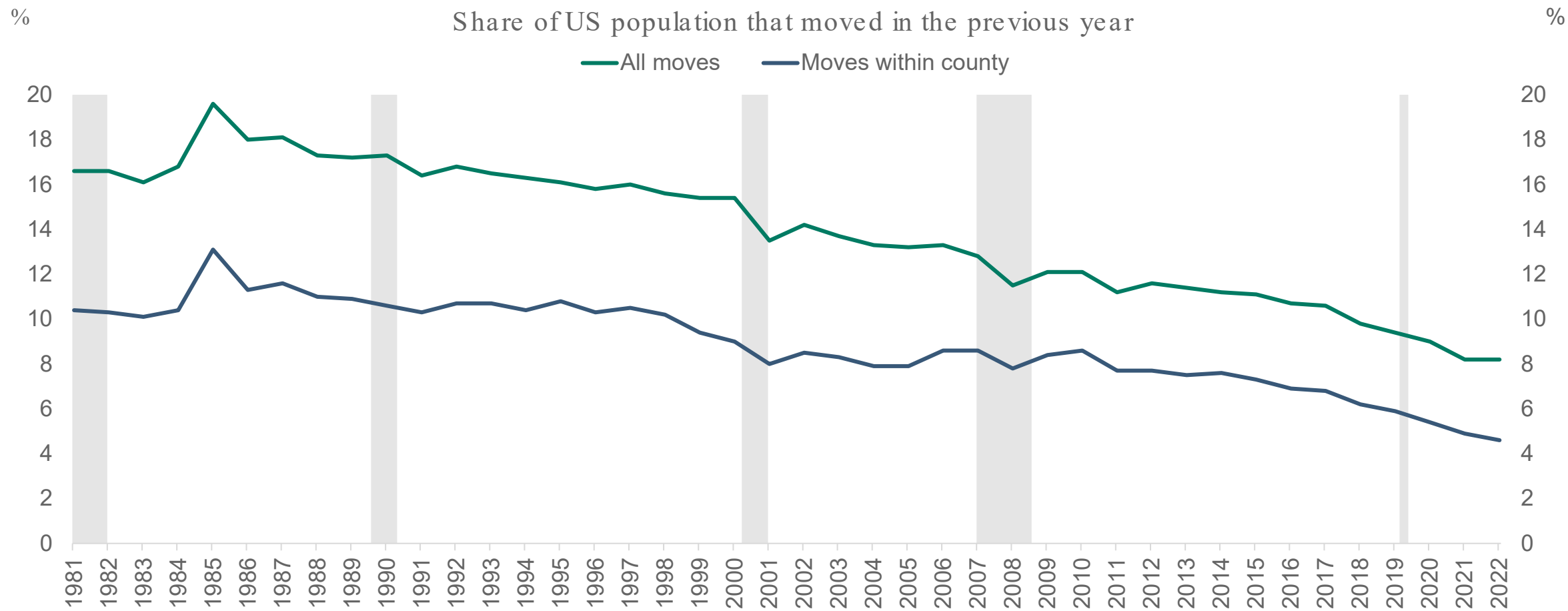
Index, Mar 1990 = 100

— Mortgage loan applications for refinancing

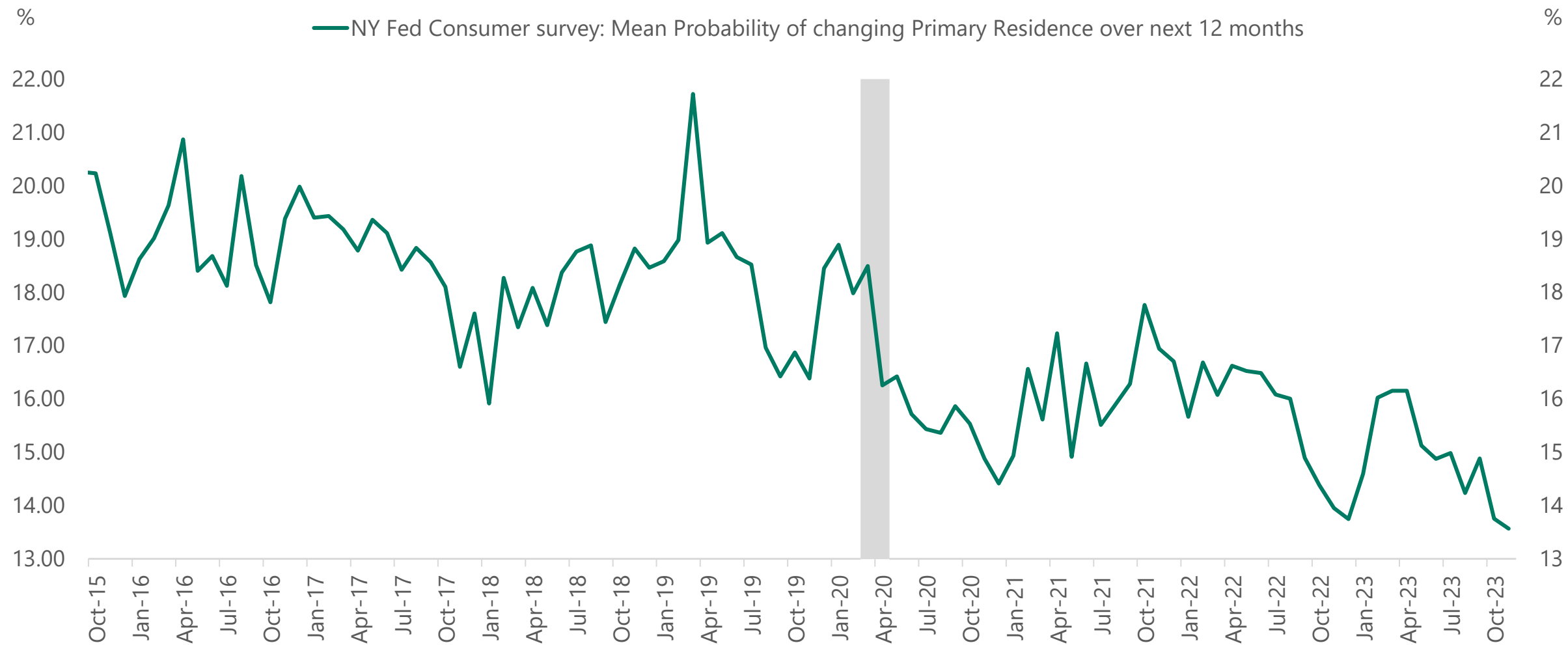
Index, Mar 1990 = 100



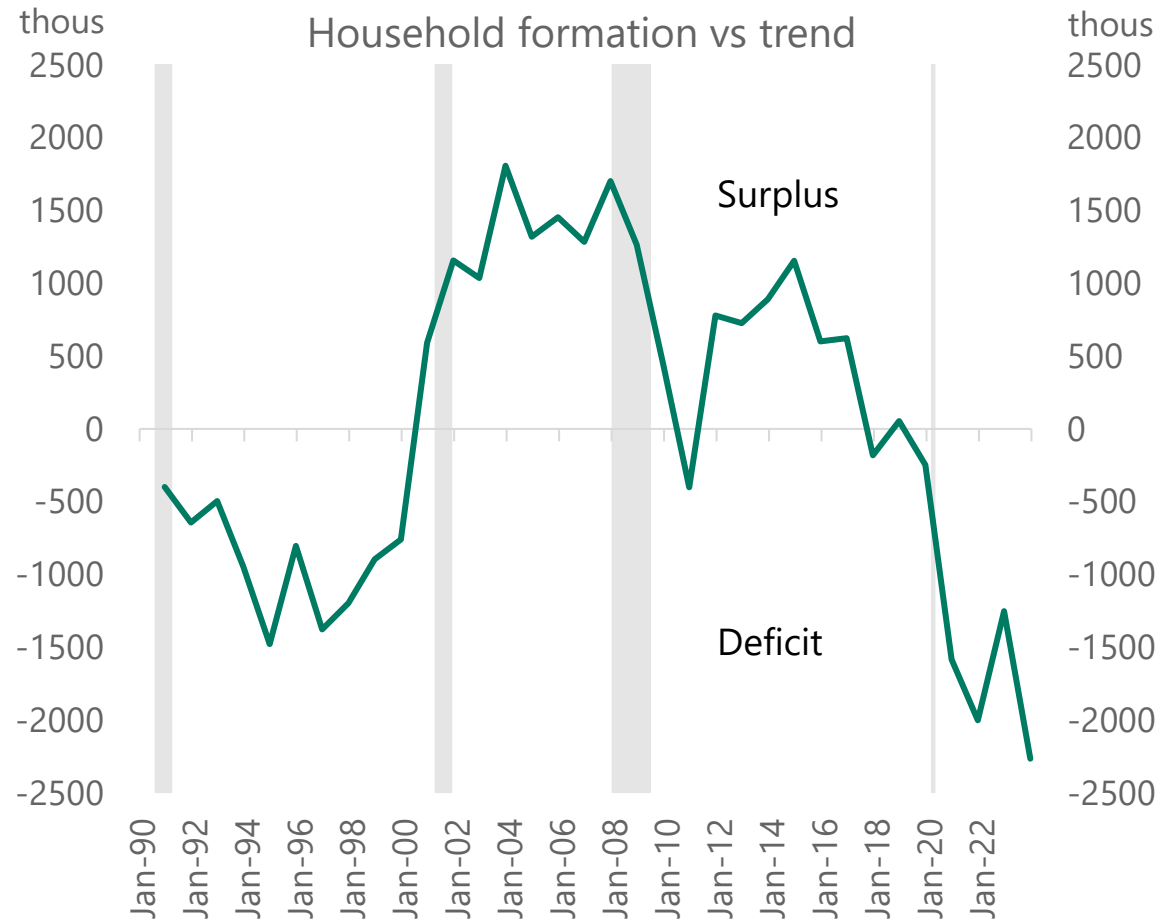
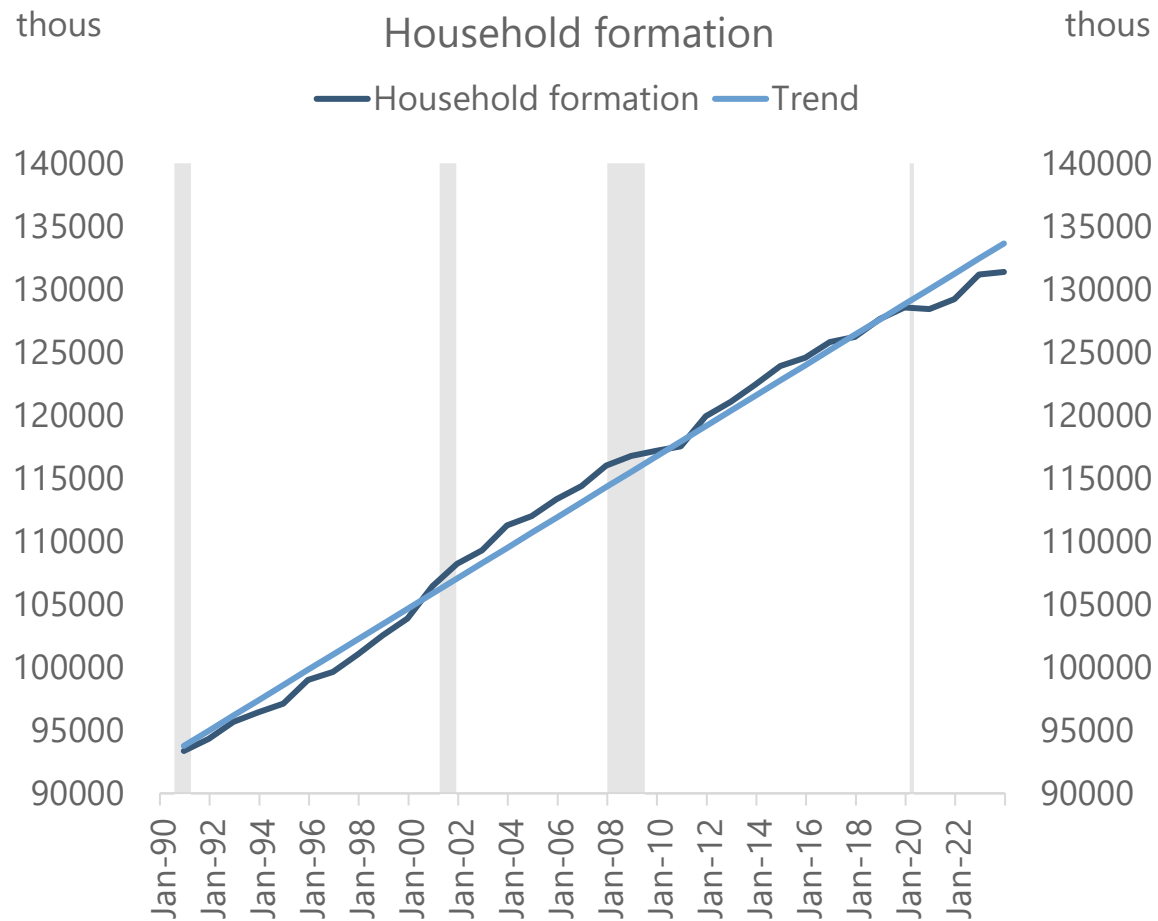
Structural decline in the share of the US population moving to a new address



A very low share of households are planning to move

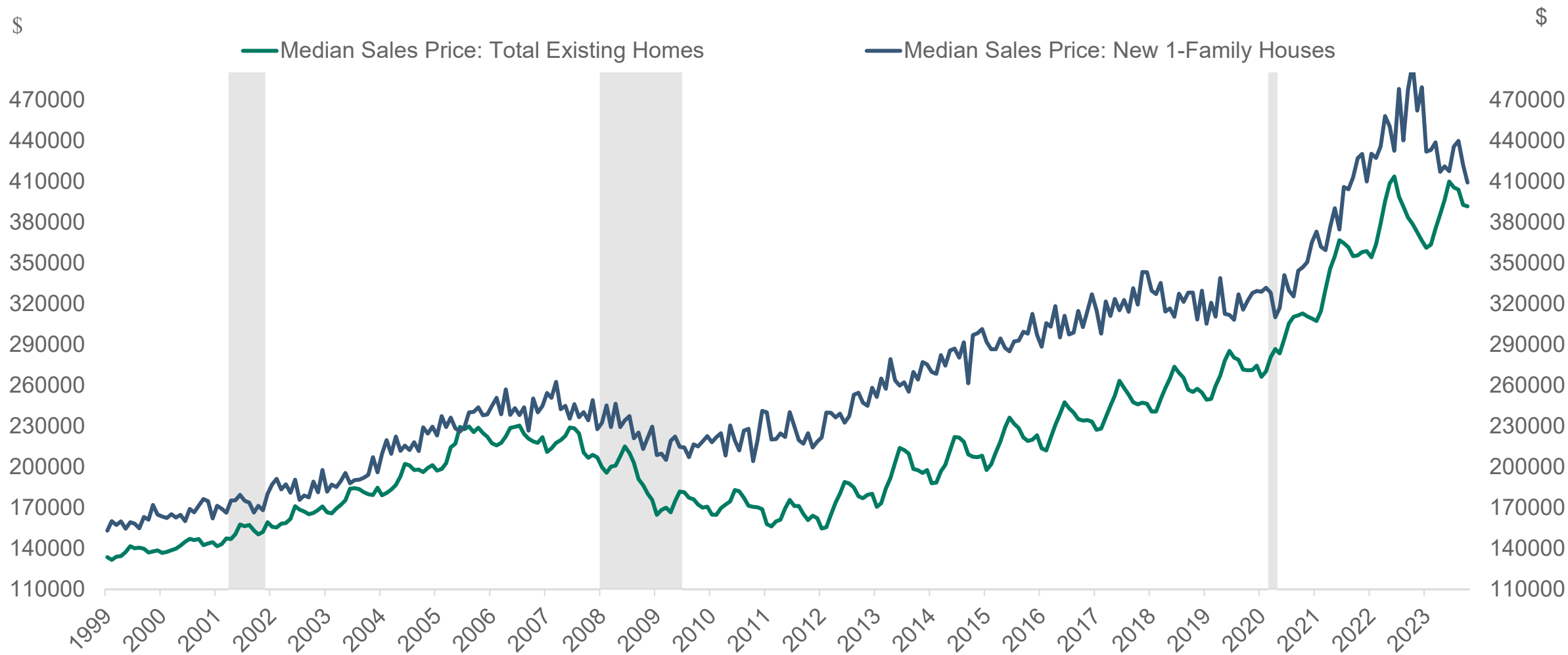


US has an estimated deficit of 2.5mn homes

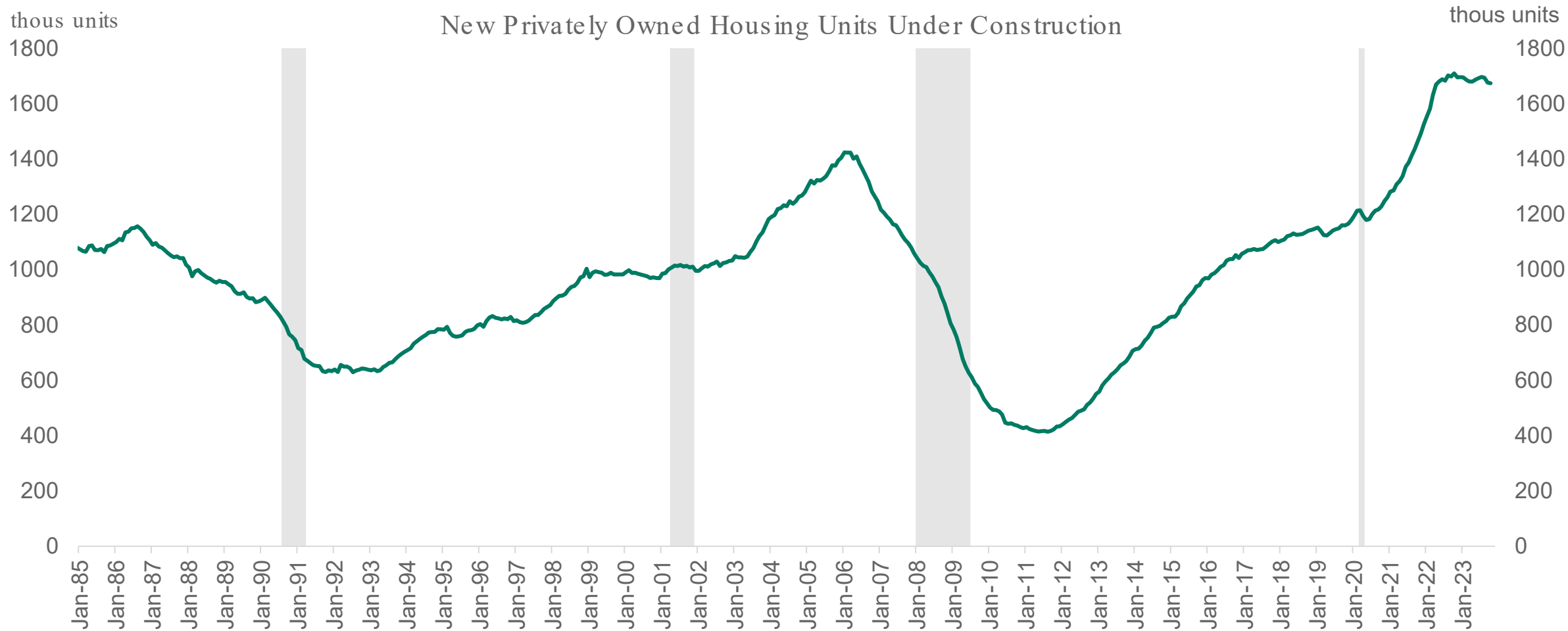


New versus existing homes

House prices for new homes and existing homes



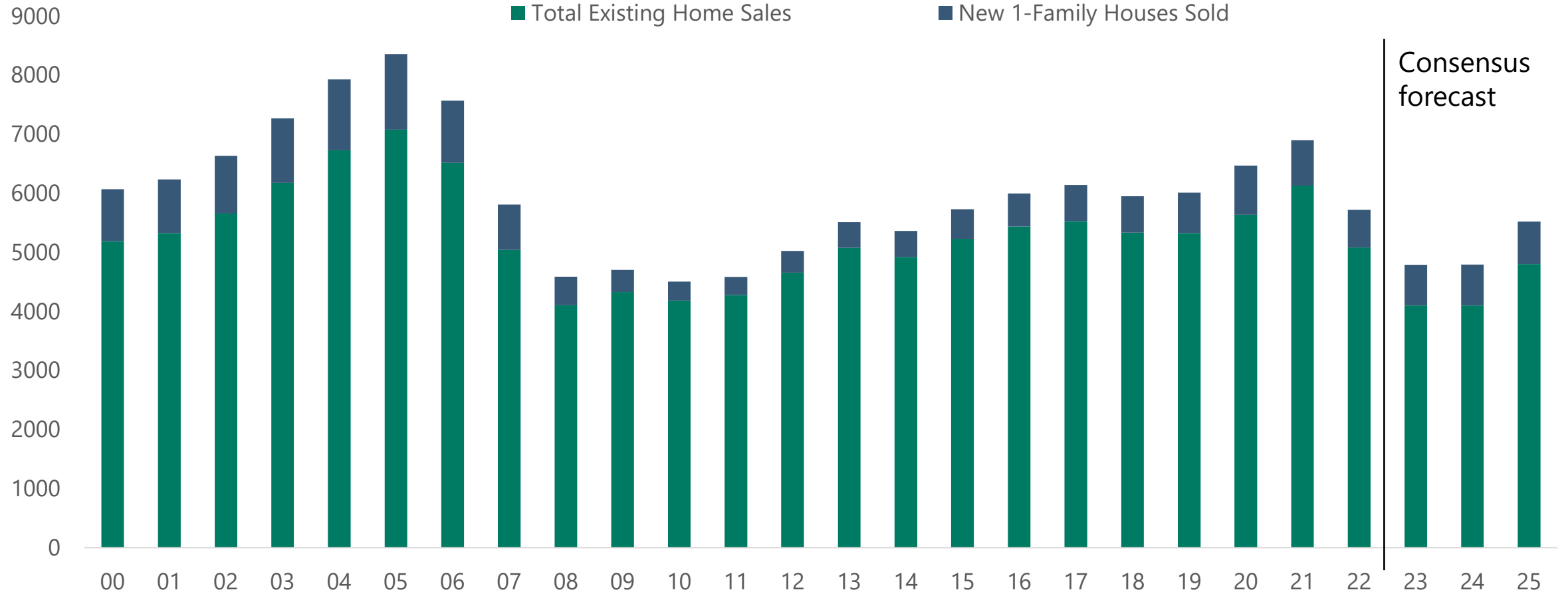
New privately owned housing units under construction starting to peak



Source: Census Bureau, Haver Analytics, Apollo Chief Economist

Consensus is forecasting a modest rebound in home sales

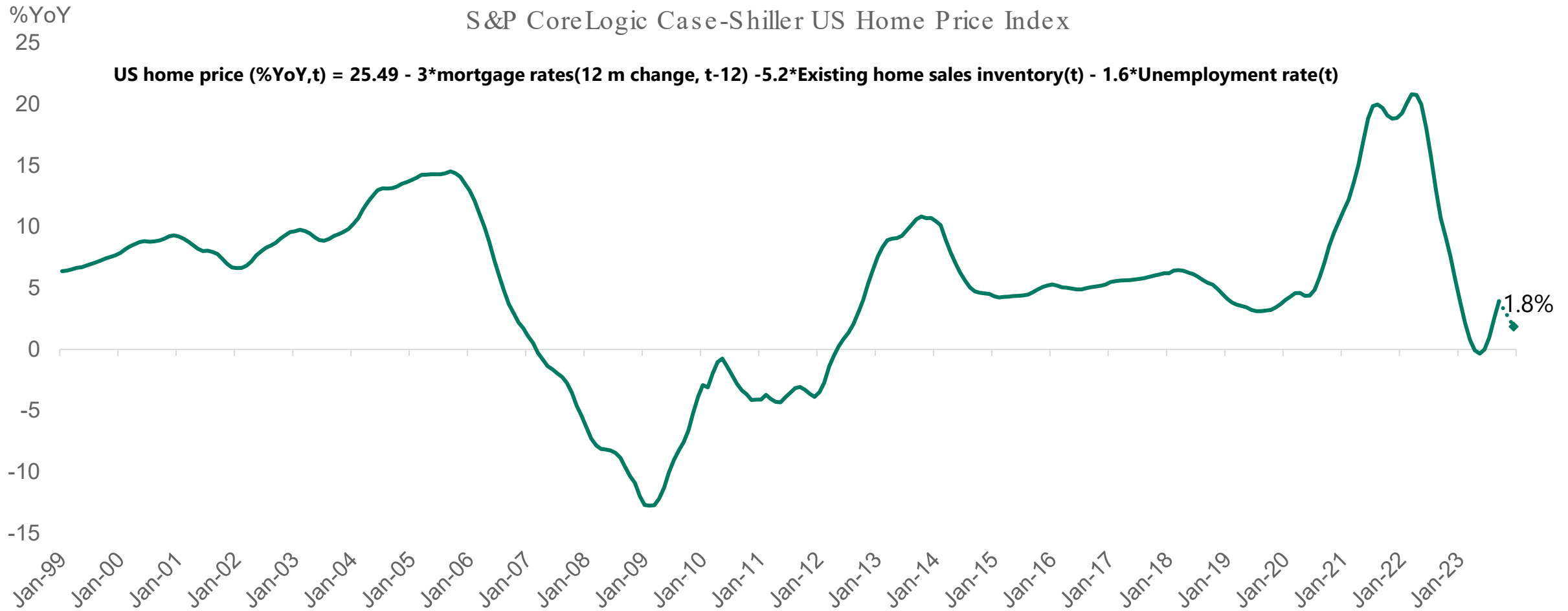
SAAR, thous.



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

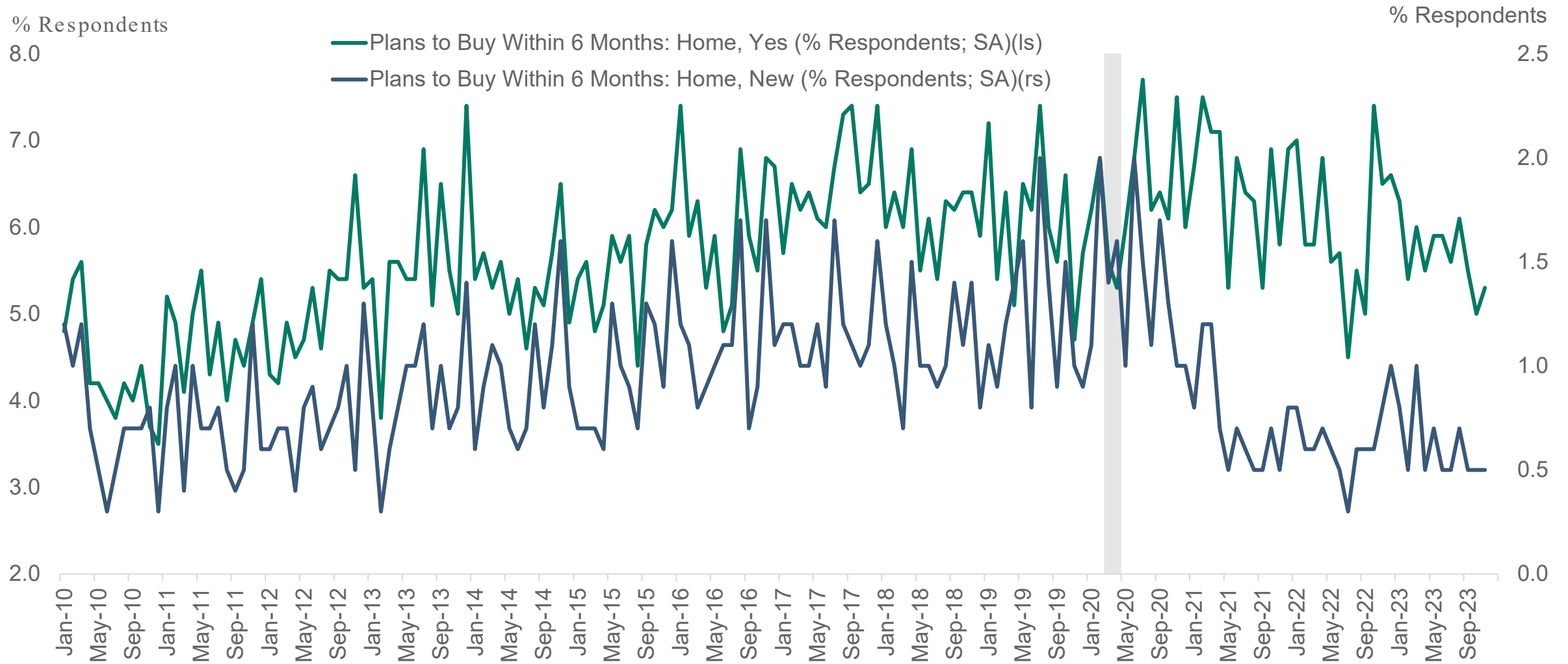
Our US house price model

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

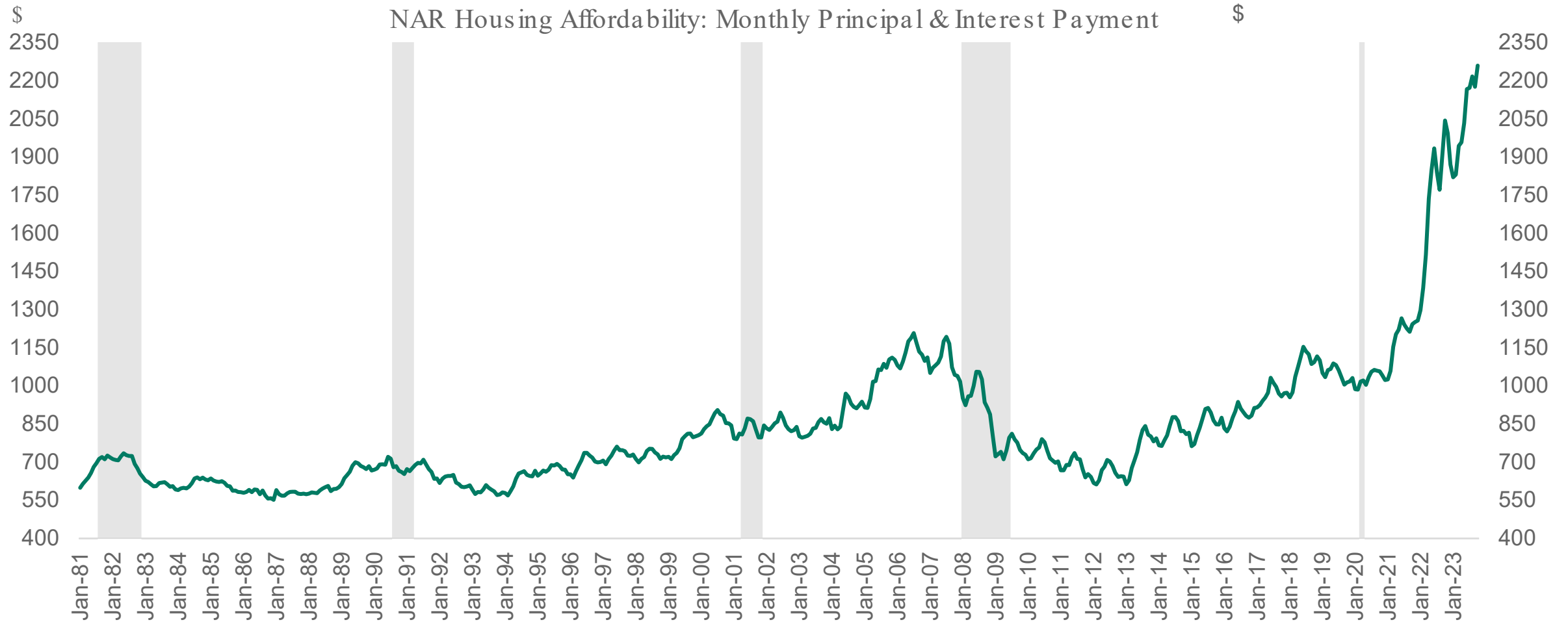


1) Housing Demand: Higher mortgage rates and high home prices slowing demand

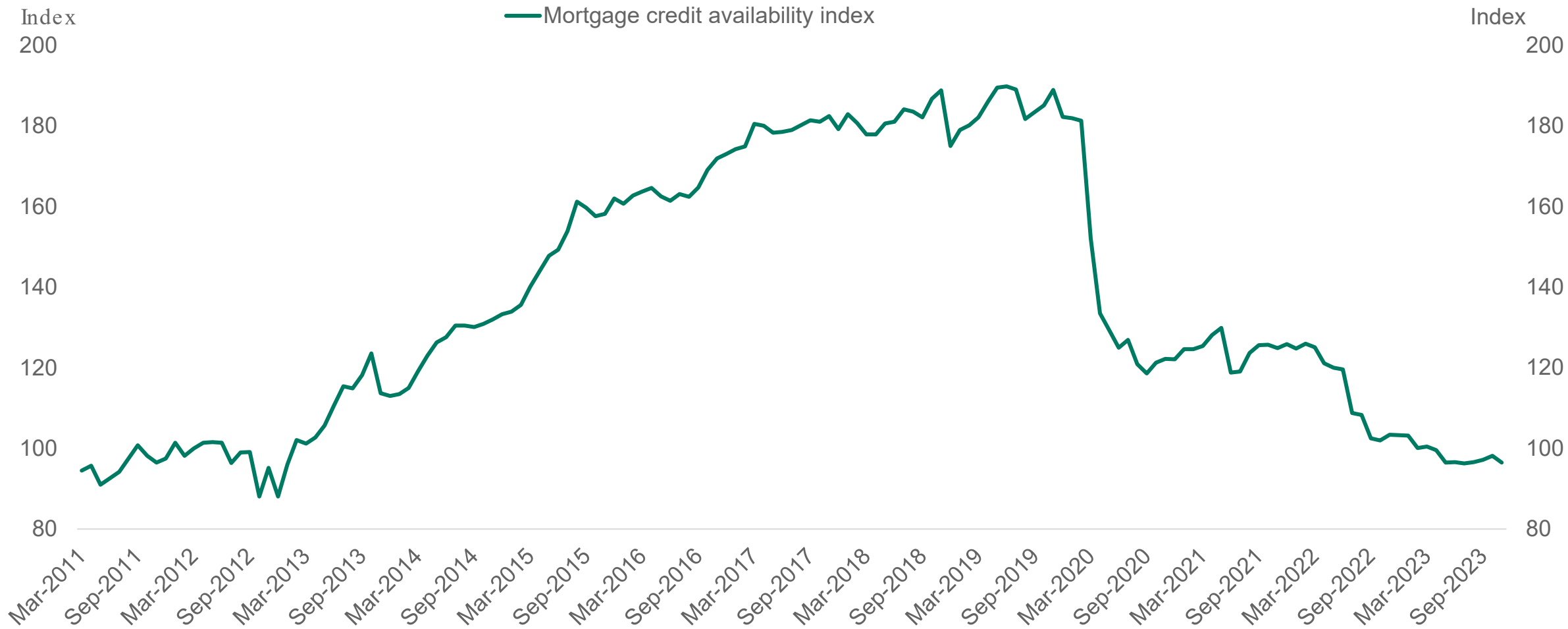
Home buying plans stable despite high mortgage rates



Monthly mortgage payments on new mortgages have doubled since 2021

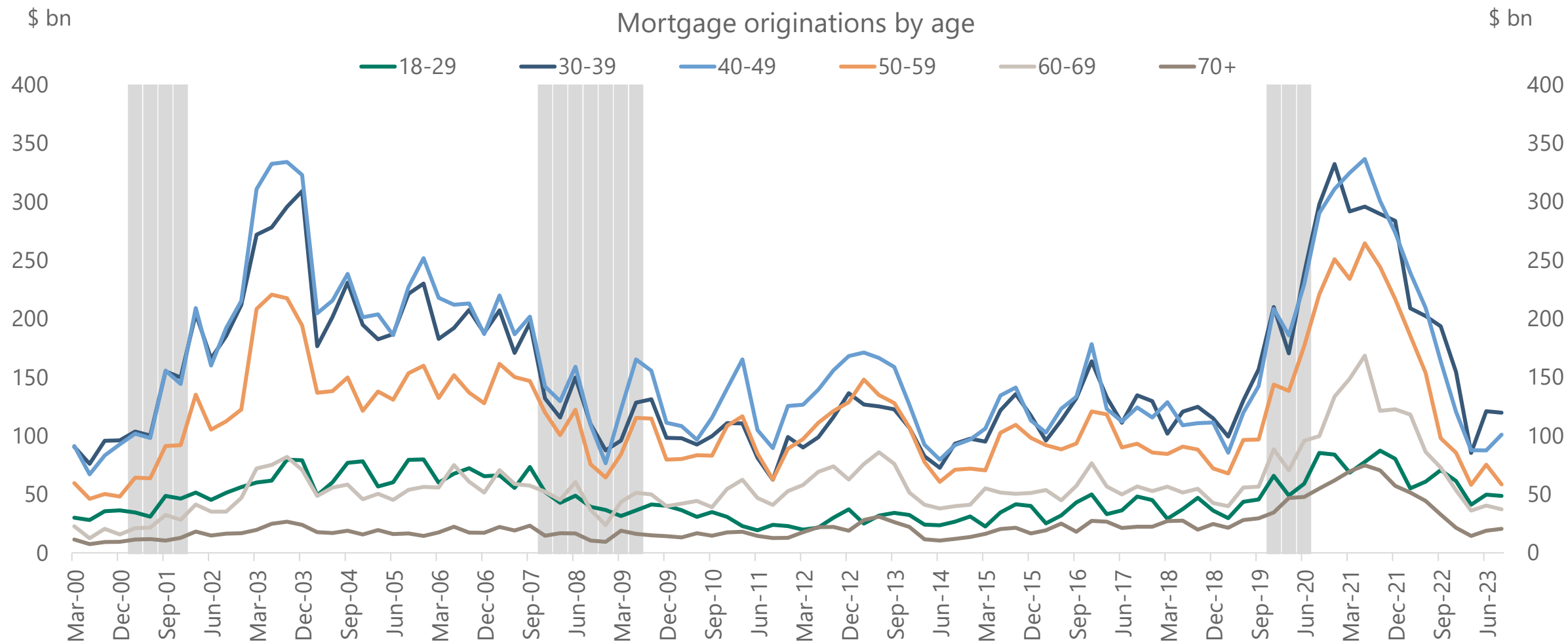


Availability of mortgage credit at tight levels



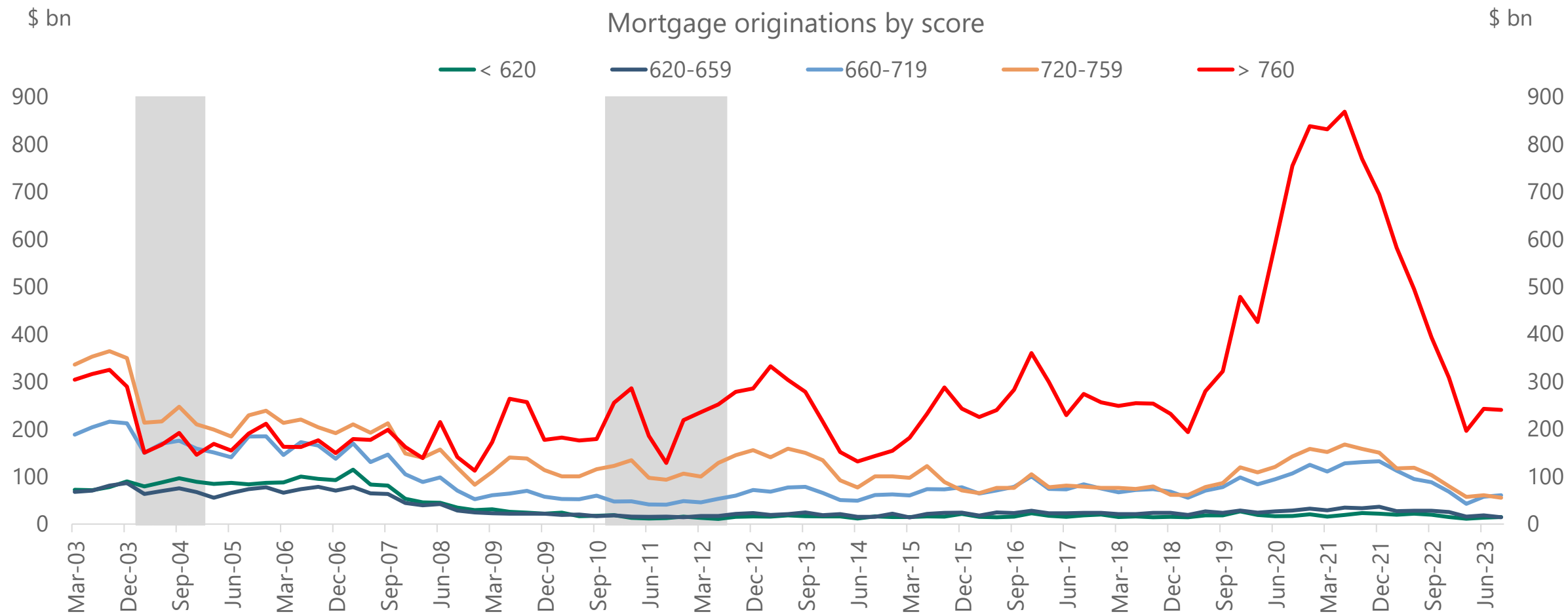
Source: Mortgage Bankers Association, Bloomberg, Apollo Chief Economist

Mortgage originations back at pre-pandemic levels



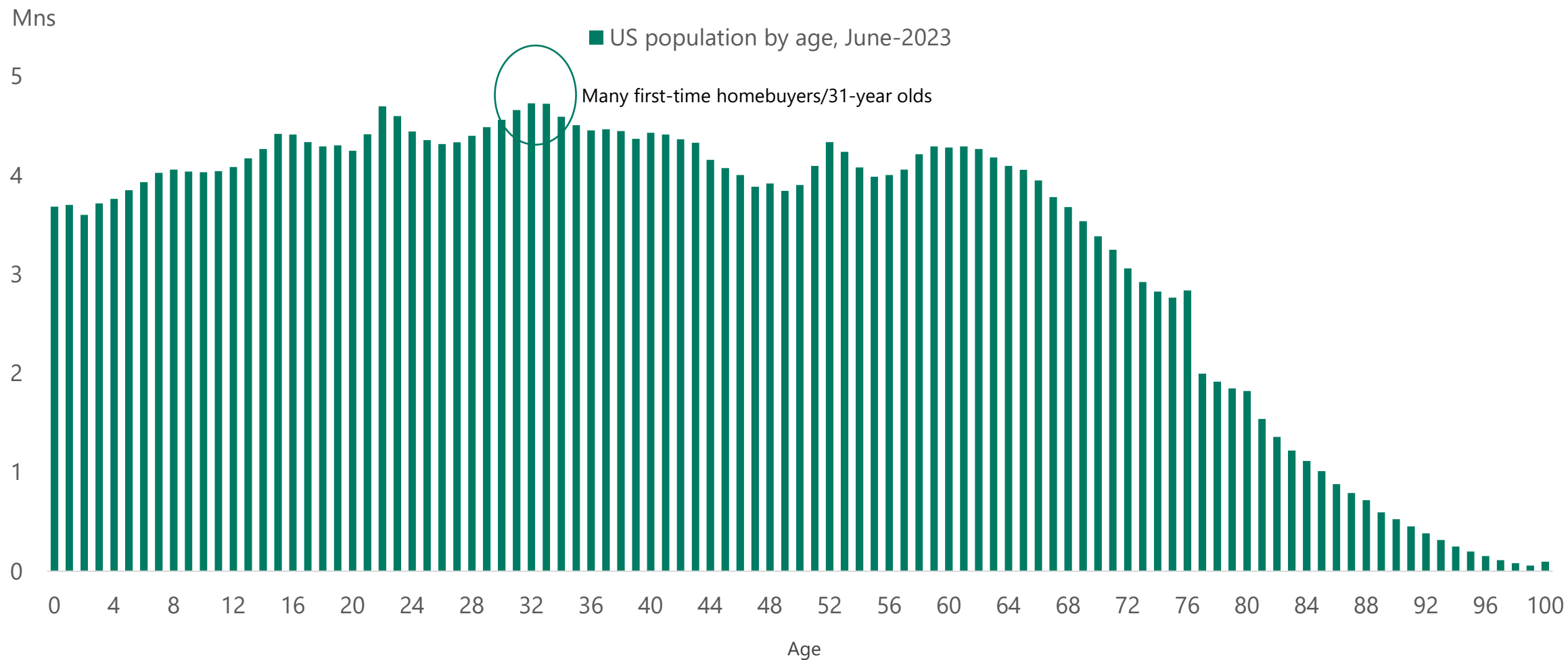
Source: NY Fed, Bloomberg, Apollo Chief Economist

Mortgage originations normalizing for households with high credit scores



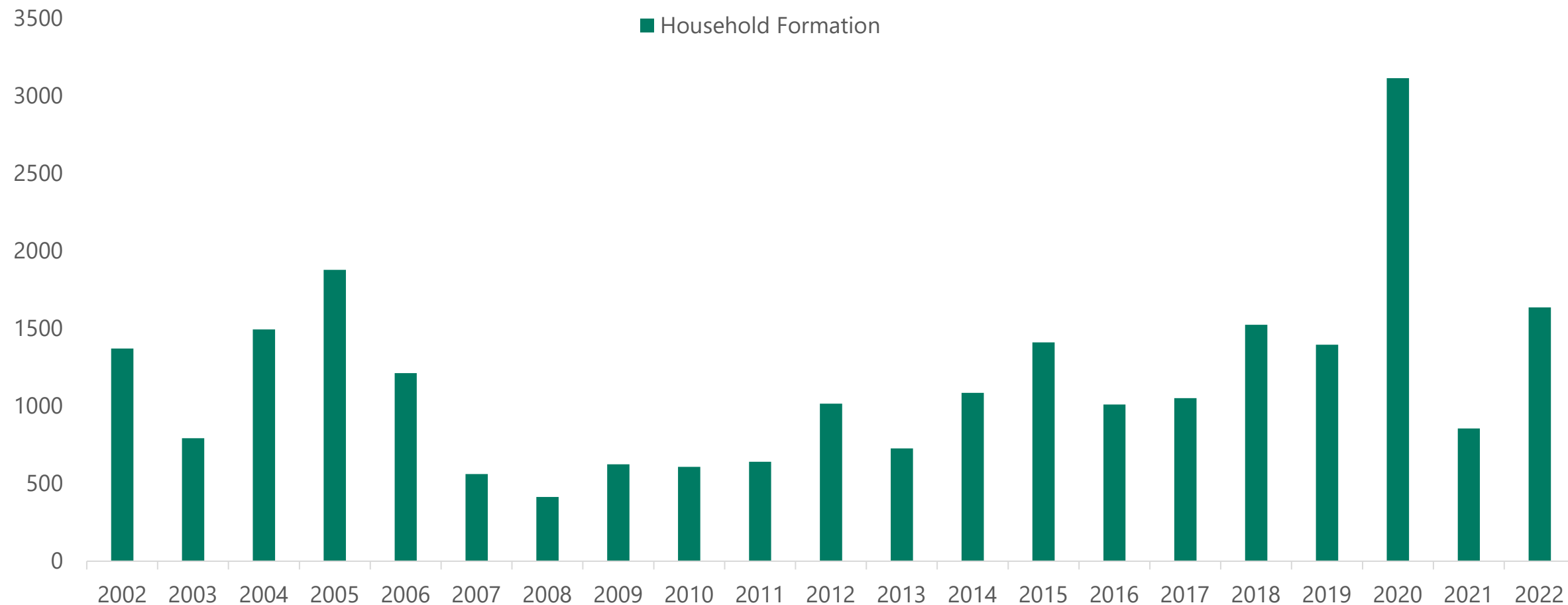
Source: NY Fed, Bloomberg, Apollo Chief Economist

Demographics are a tailwind to housing demand

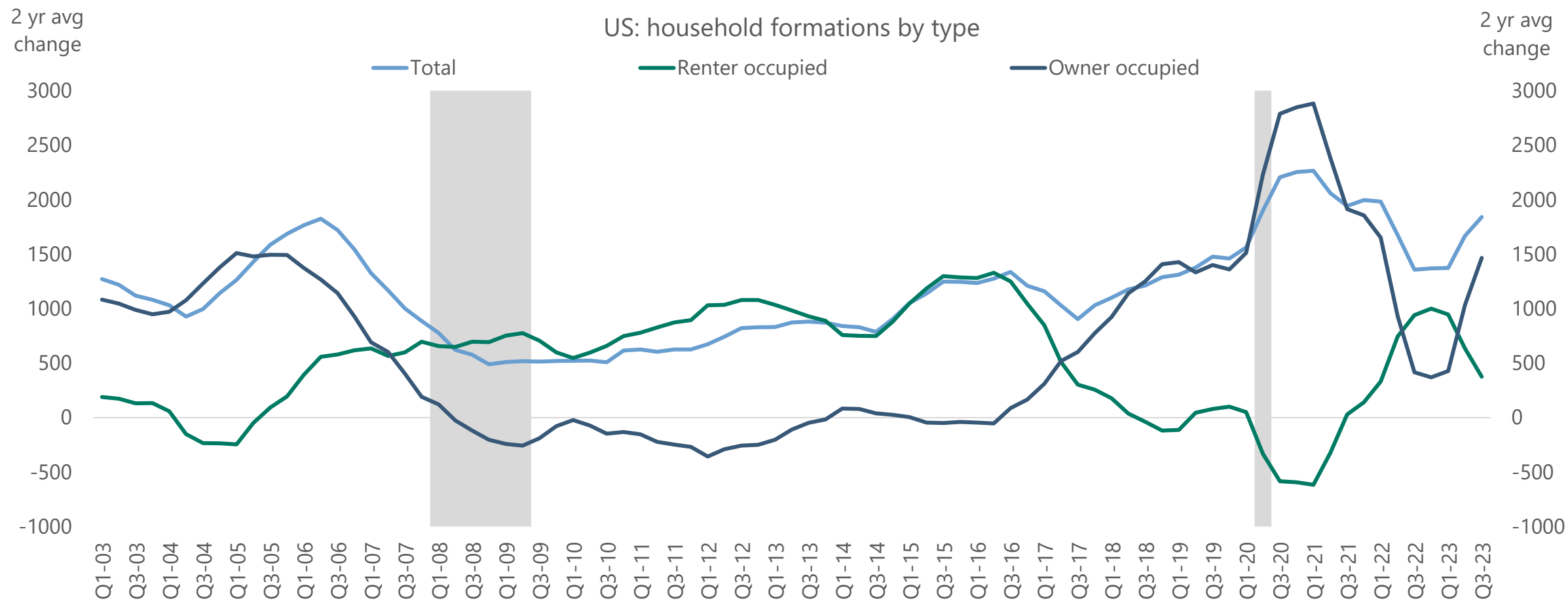


Rebounding household formation is a tailwind to housing

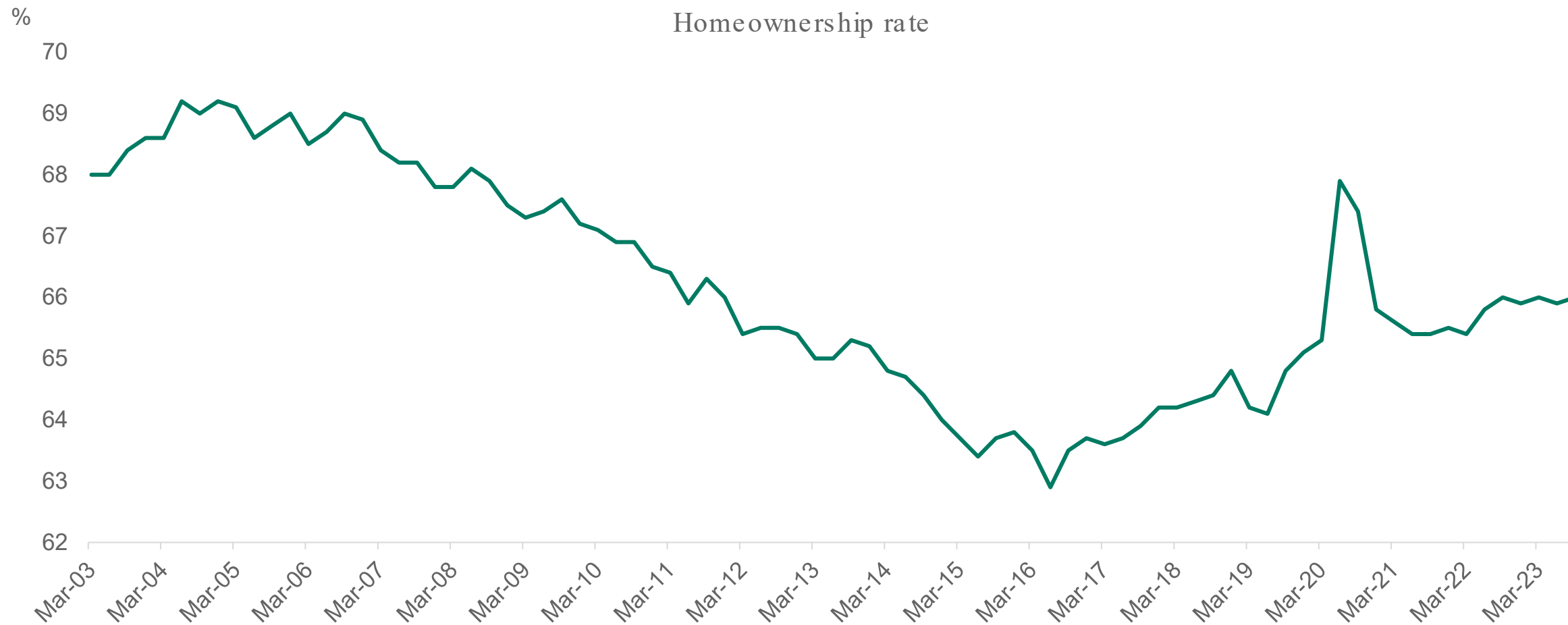
Thousands of units



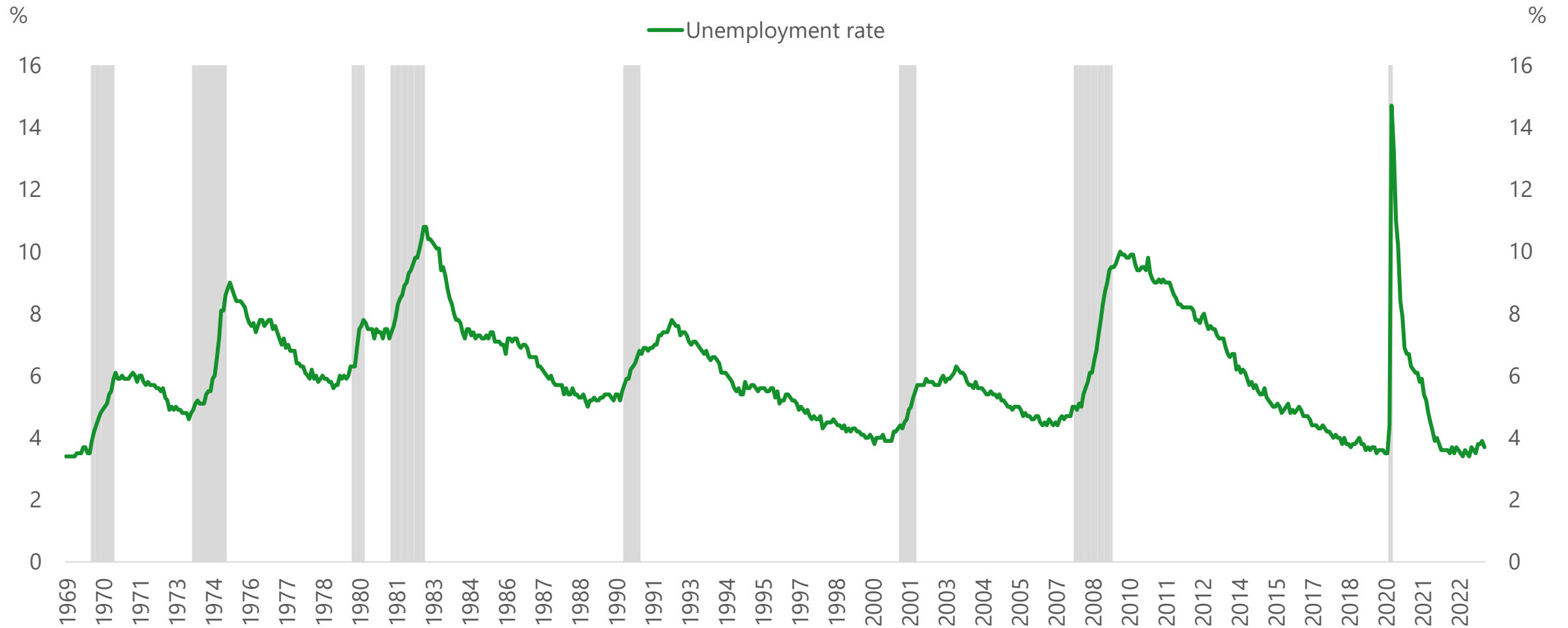
A rise in the number of renters recently



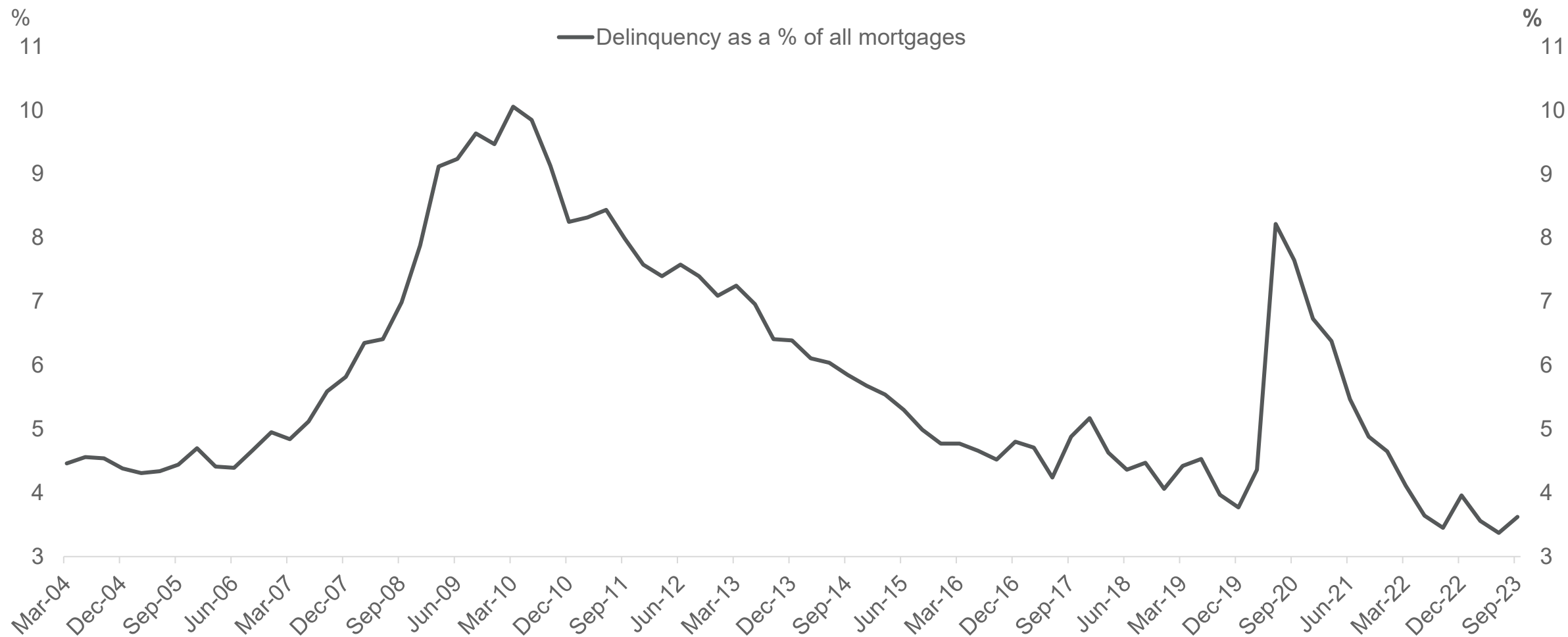
Homeownership rate moving sideways



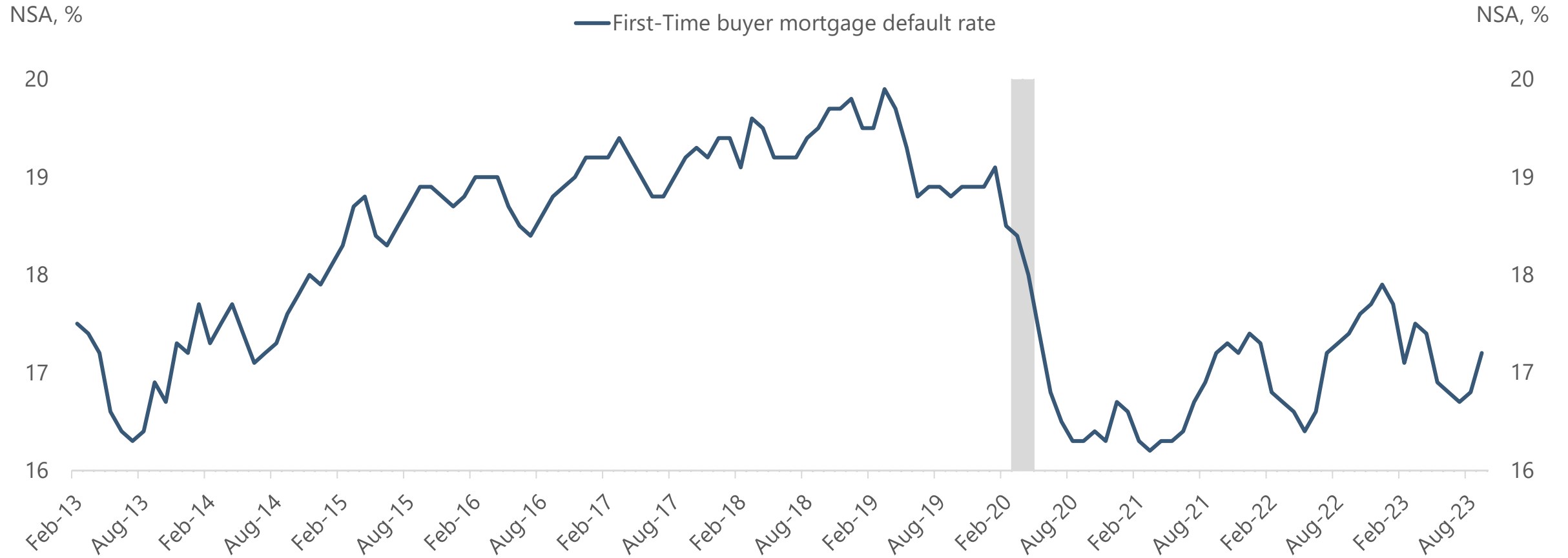
Low unemployment is a tailwind to housing demand



Very few delinquent mortgages

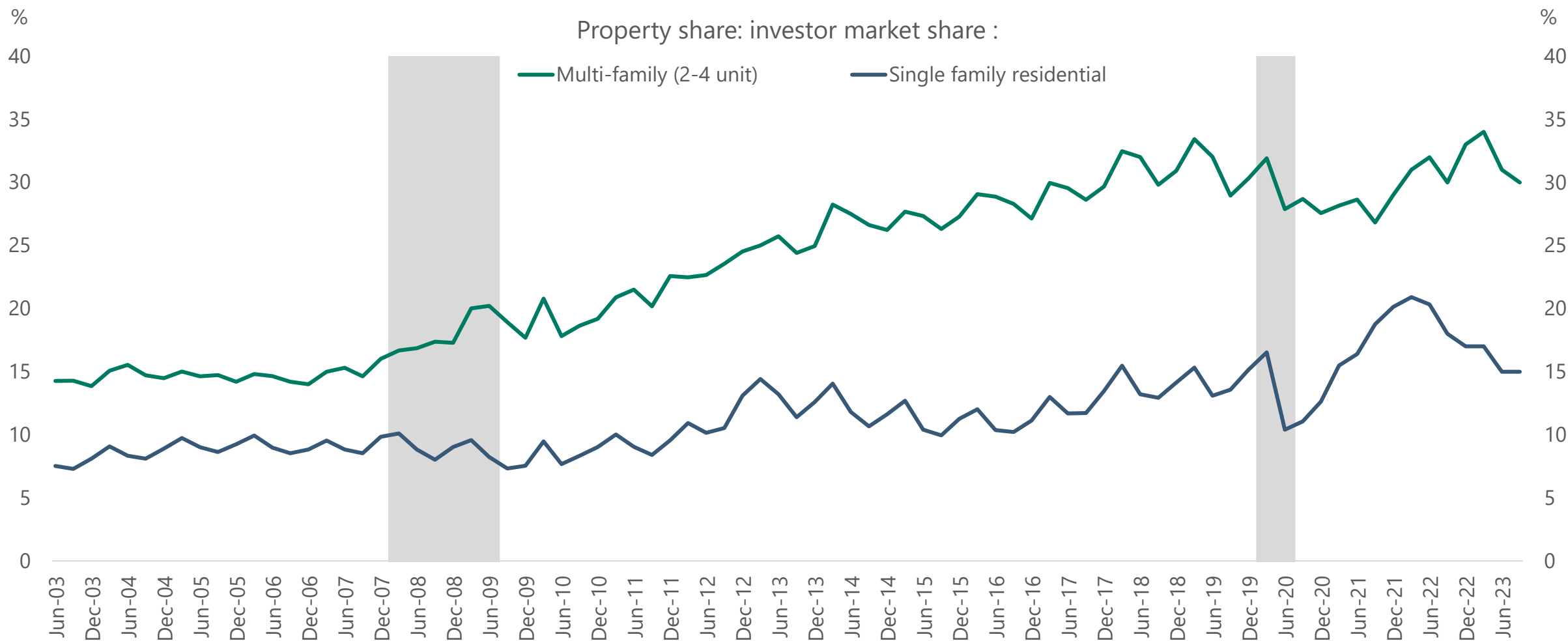


First time homebuyers are feeling pinch of high interest rates



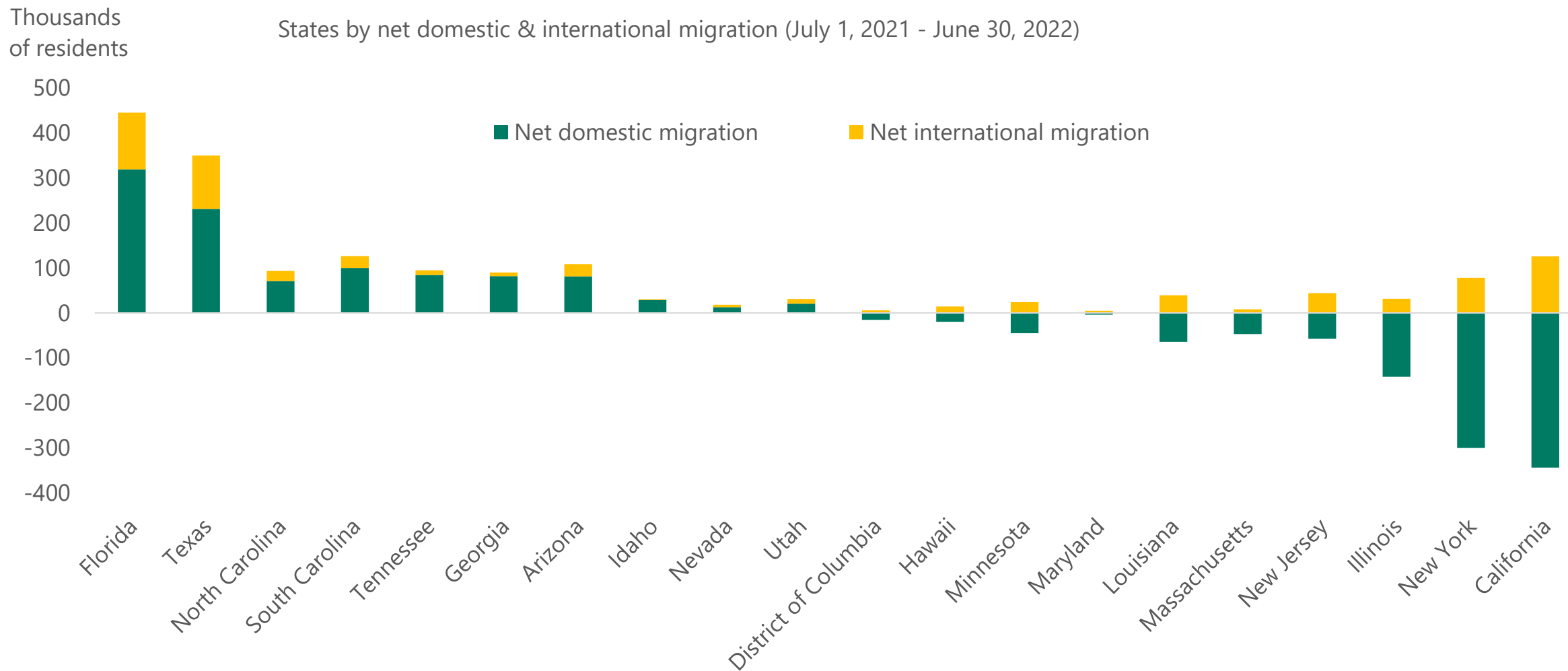
Source: American Enterprise Institute, Haver Analytics, Apollo Chief Economist (Note: The First-time Buyer Mortgage Default Rate (FBMDR) is calculated using the same methodology as for the National Mortgage Default Rate (NMDR). The only difference is that the set of included loans is restricted to first-time buyers. It uses the default experience of loans originated in 2007 as a benchmark to quantify how new mortgage loans would perform if they were hit with a market collapse on par with the recent crisis. The index classifies loans as low-risk, medium-risk, and high-risk.)

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



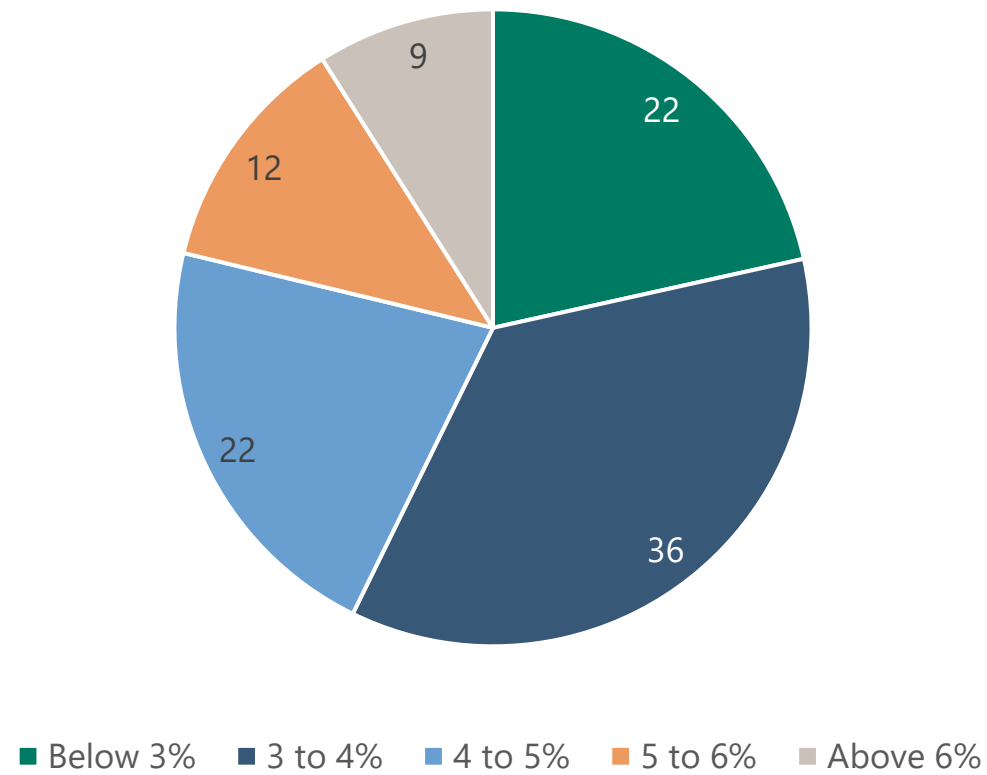
Source: Redfin, Apollo Chief Economist (Definition of Investor market share: the percentage of total home sales in which an investor was the buyer)

Migration out of California and migration into Florida during the pandemic

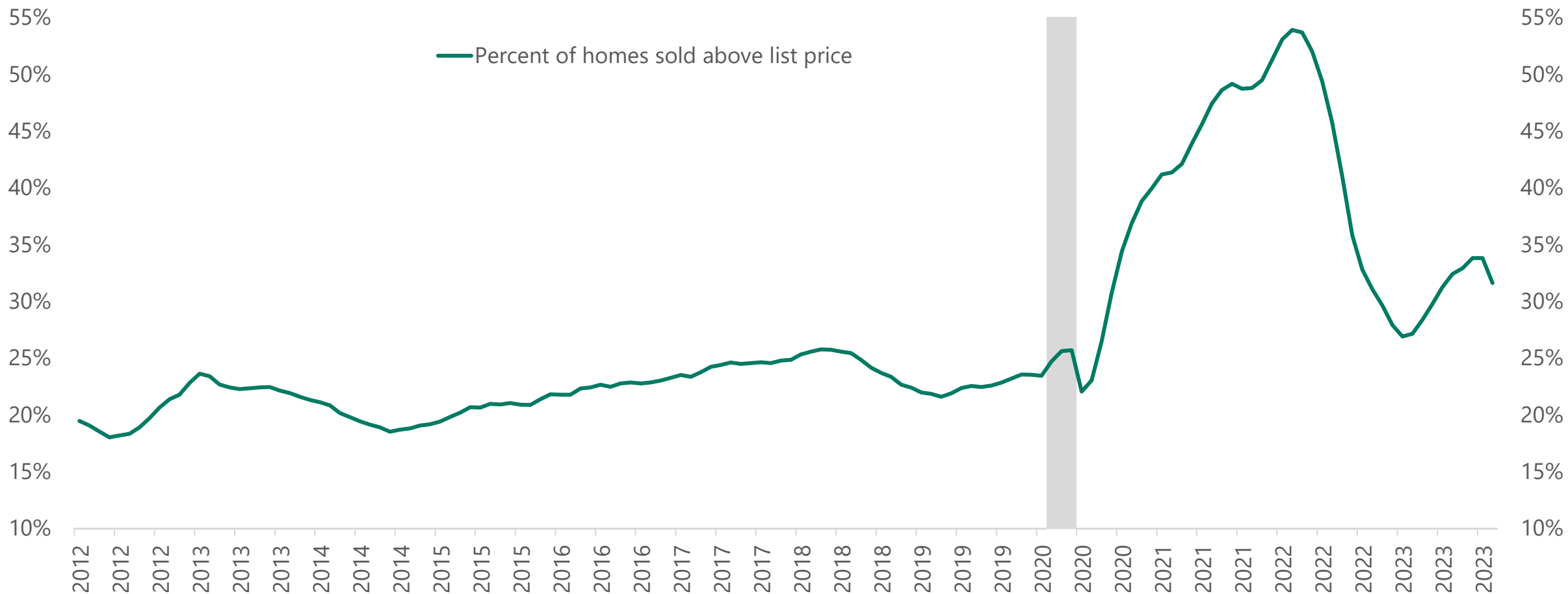


Share of mortgages outstanding by interest rate

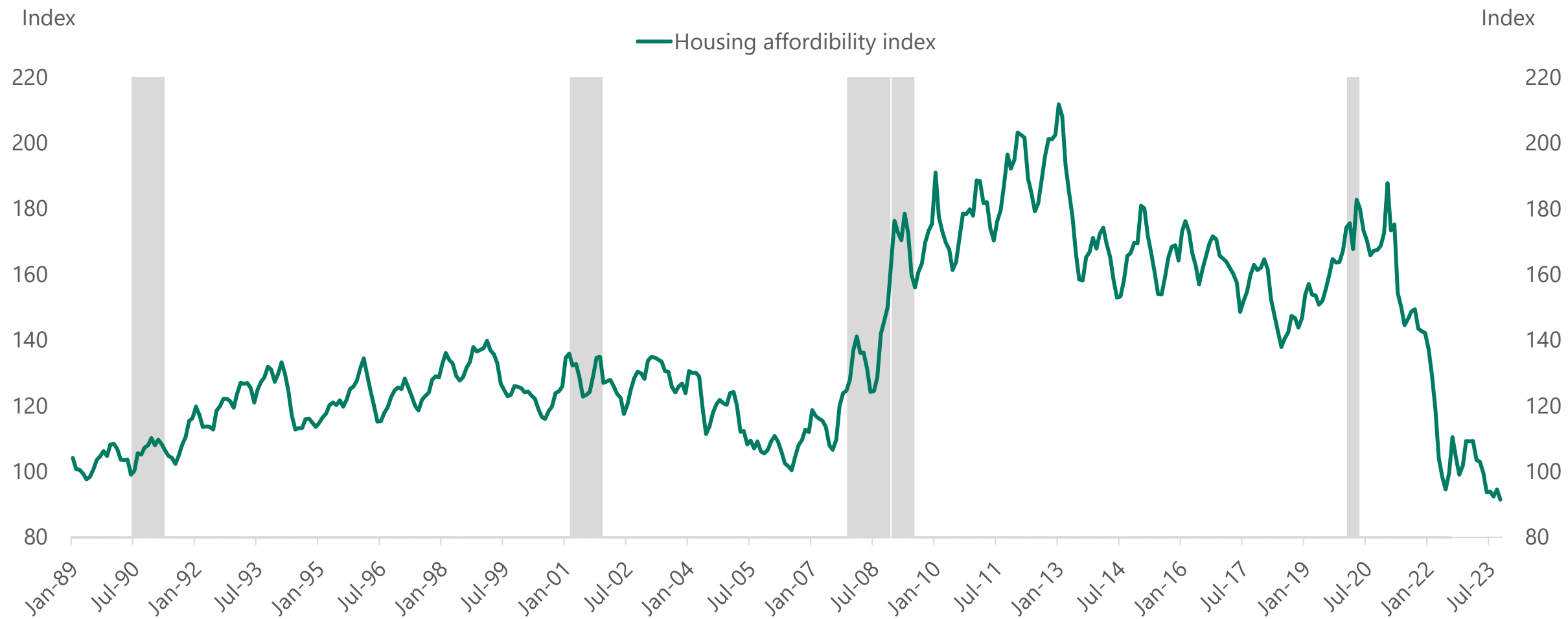
Share of mortgages outstanding by interest rate at origination by count, 2023 Q2



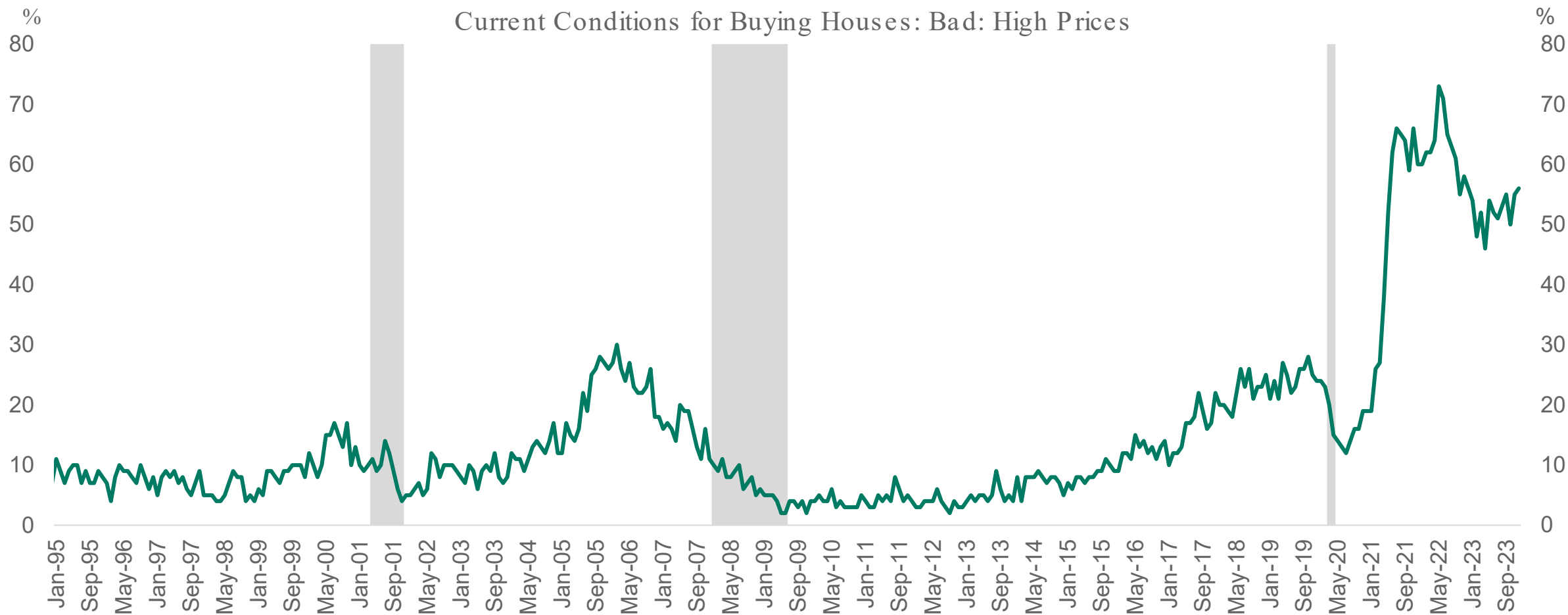
Despite high mortgage rates, 32% of homes sold above their list price



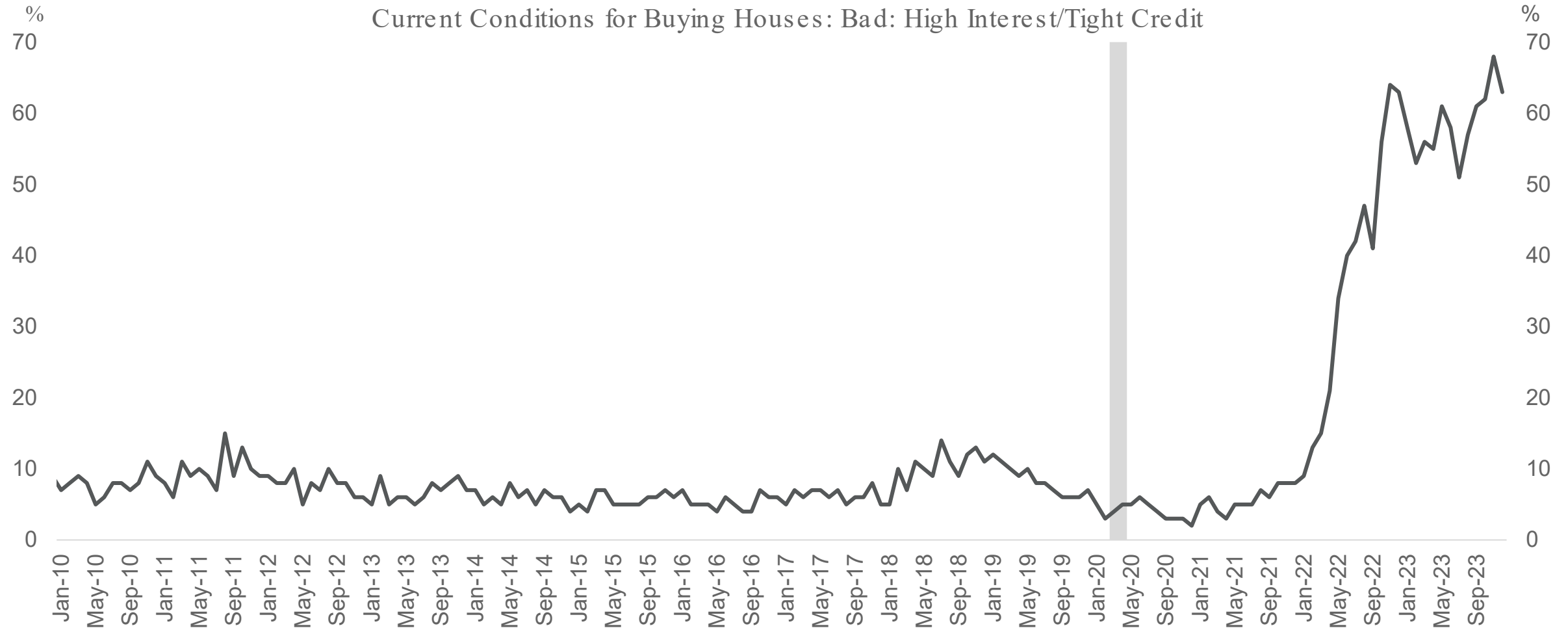
Housing affordability near record lows



Homebuyer sentiment

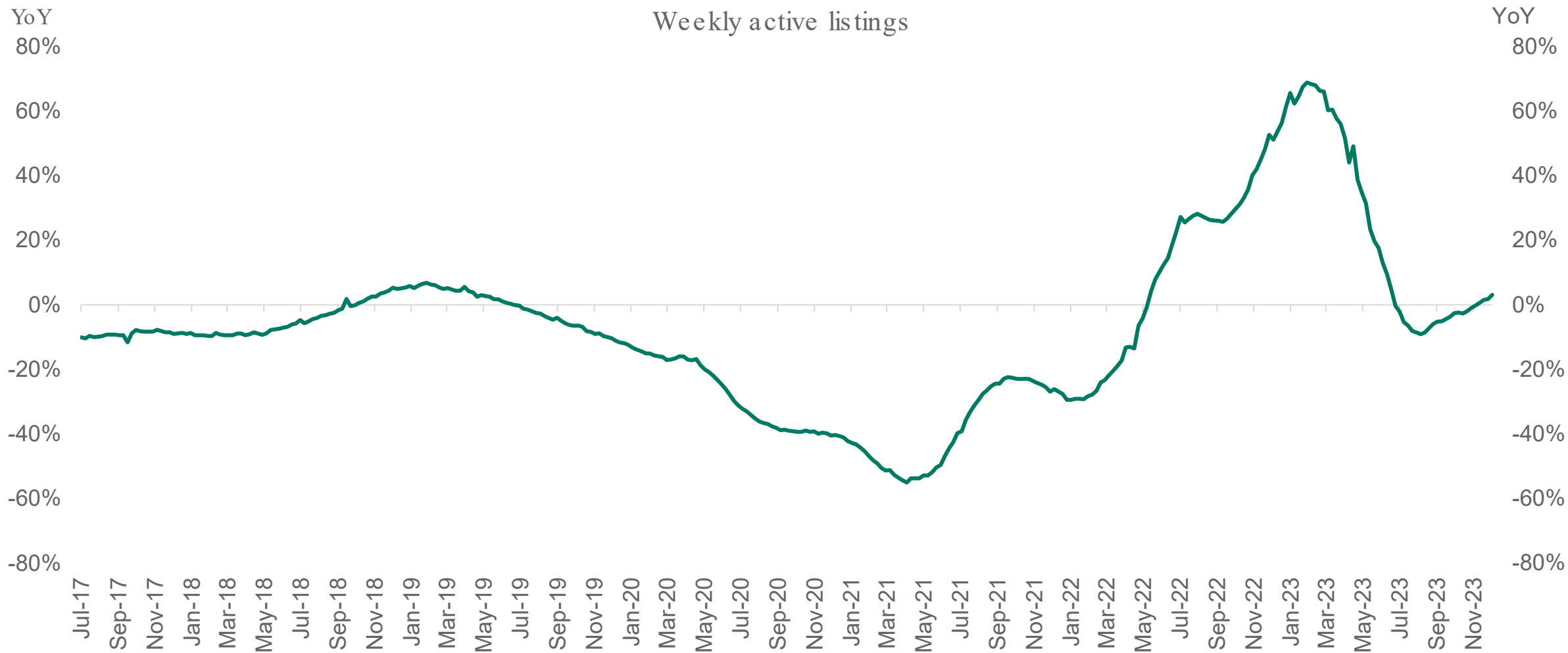


63% of consumers are saying that this is a bad time to buy a house because of high mortgage rates and tight credit

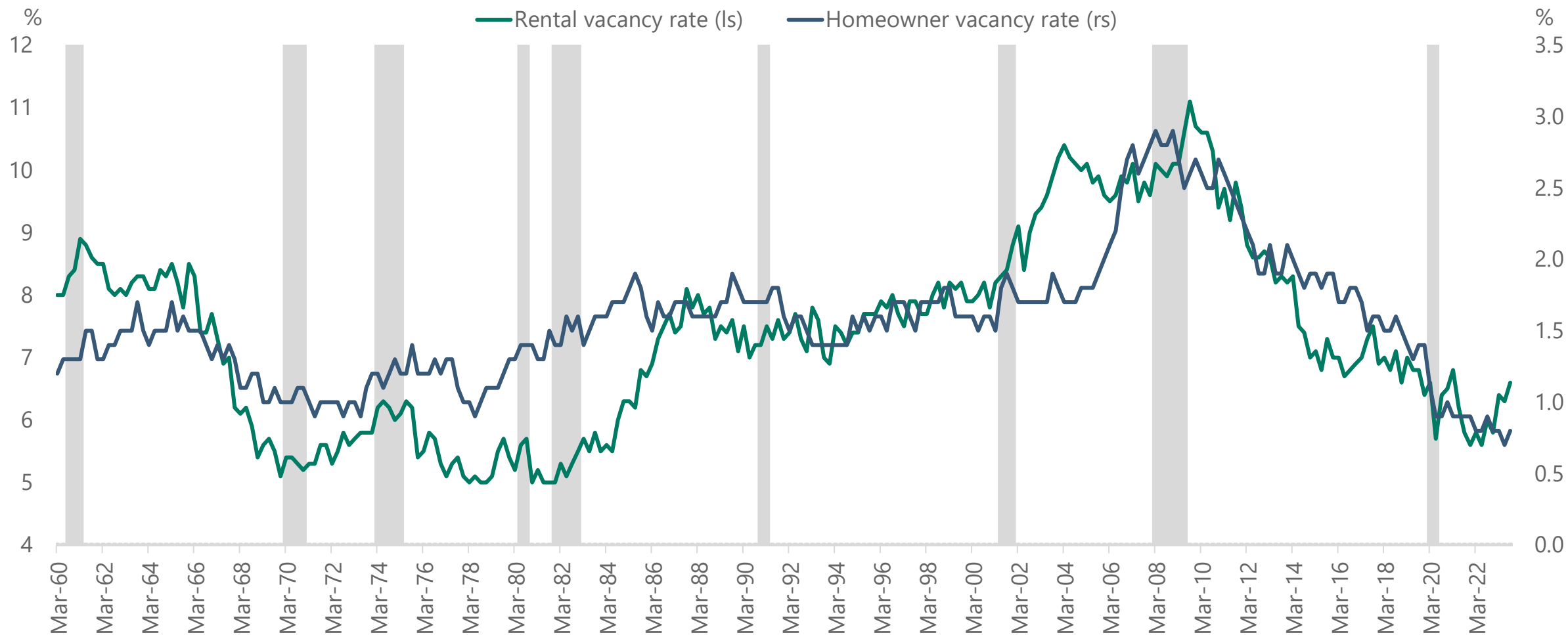


2) Housing Supply: Housing supply is low, construction coming down from record-high levels

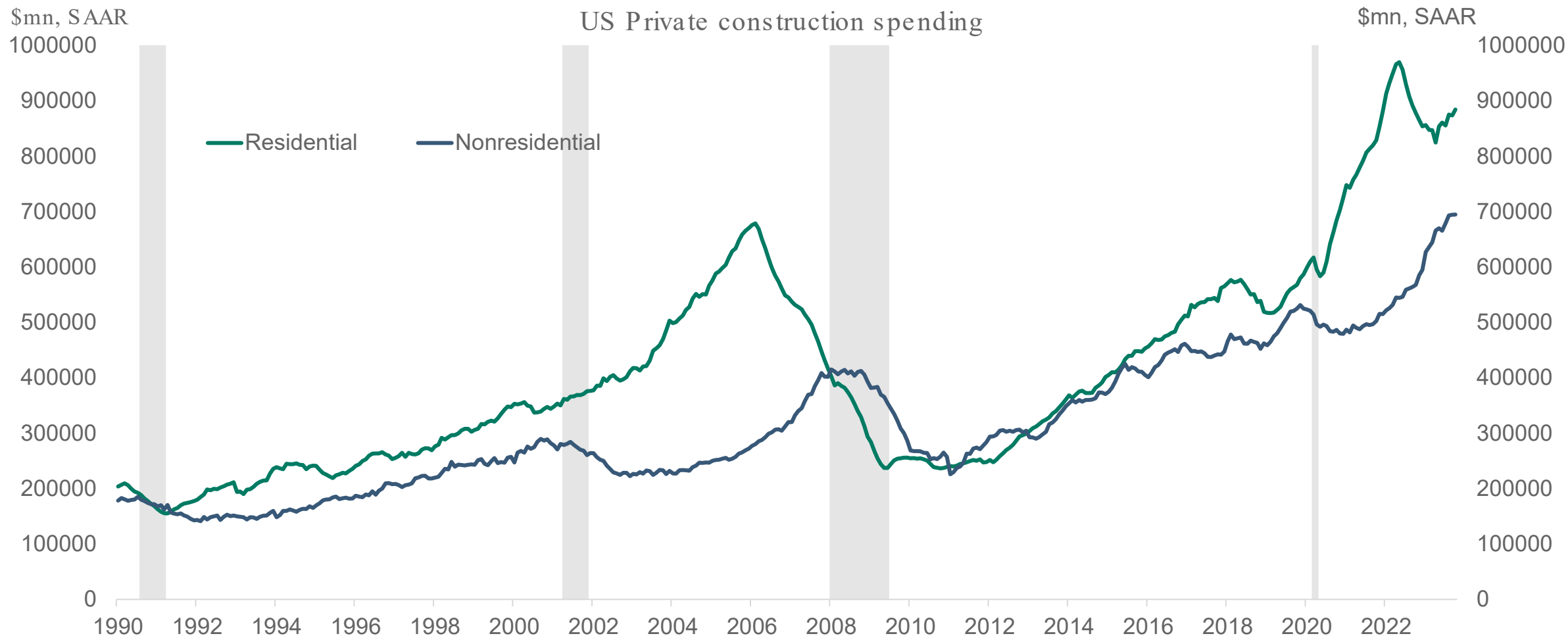
Listings starting to rise



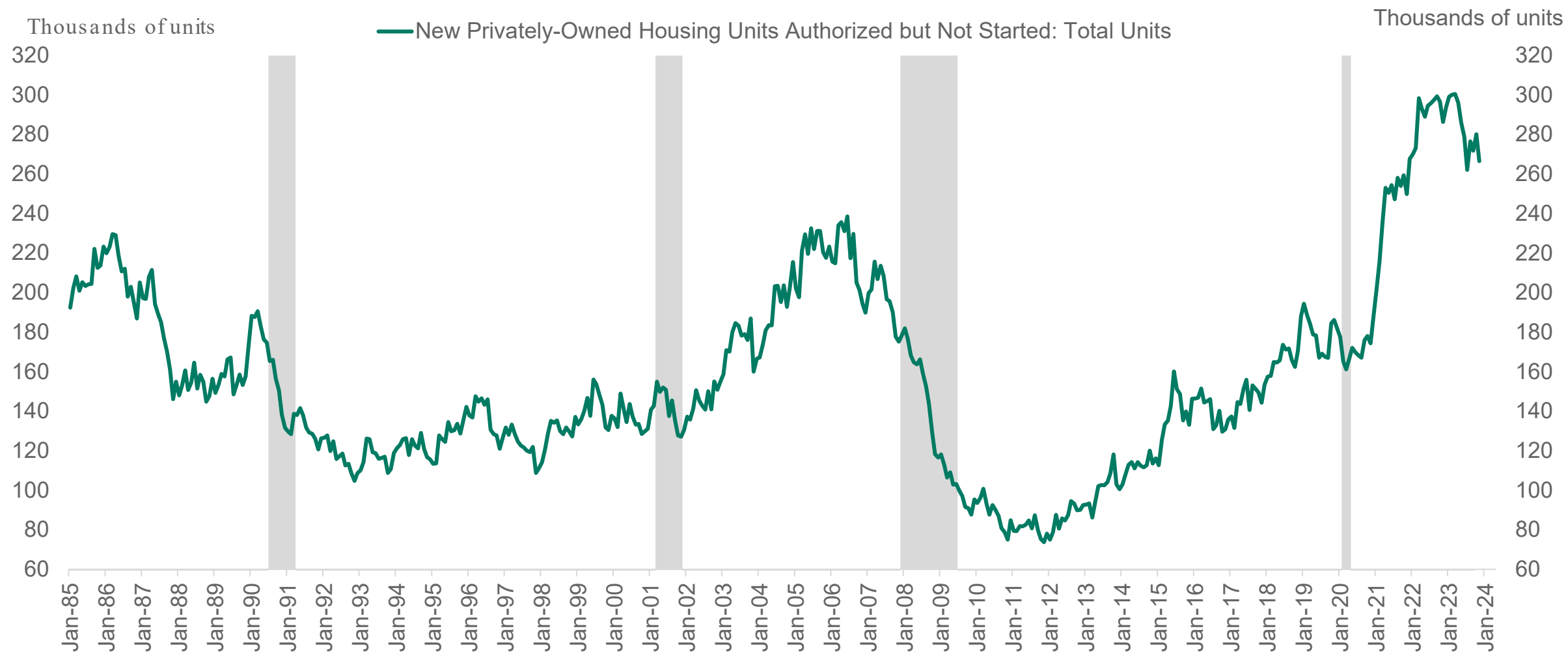
Homeowner and rental vacancy rates at very low levels



Residential construction spending starting to rise again

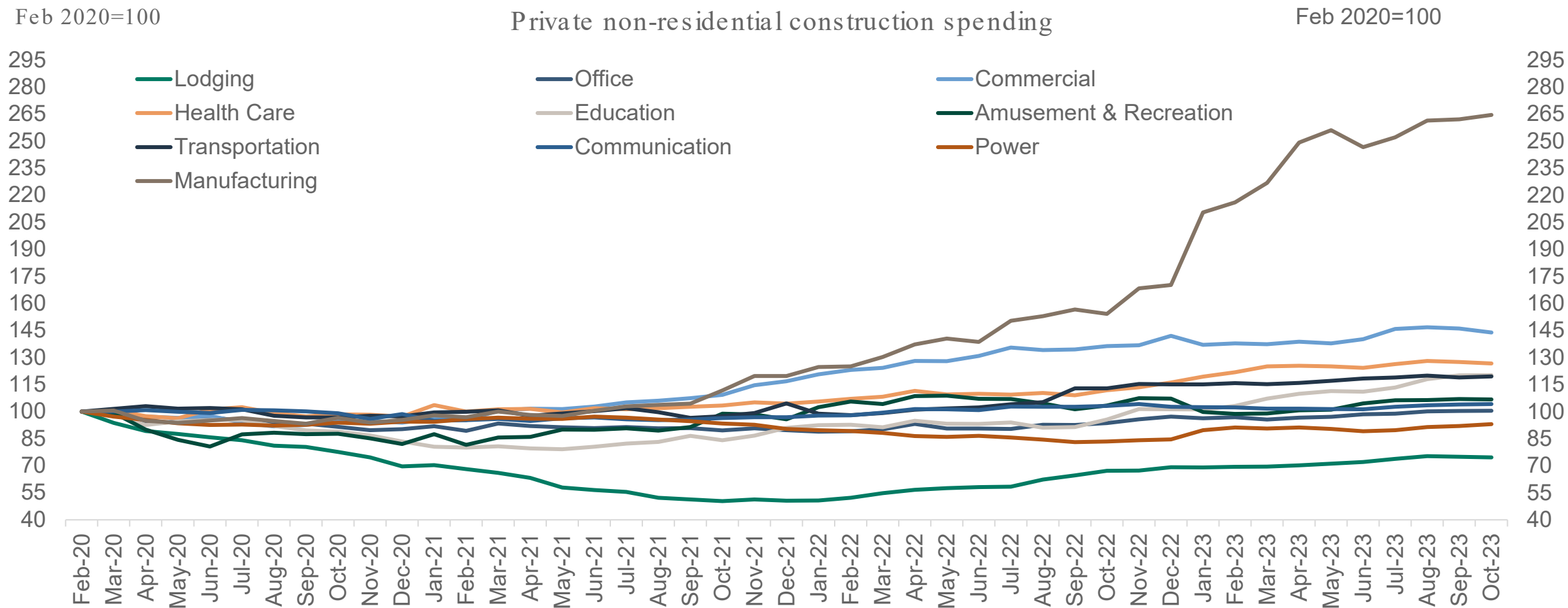


New housing units authorized but not started

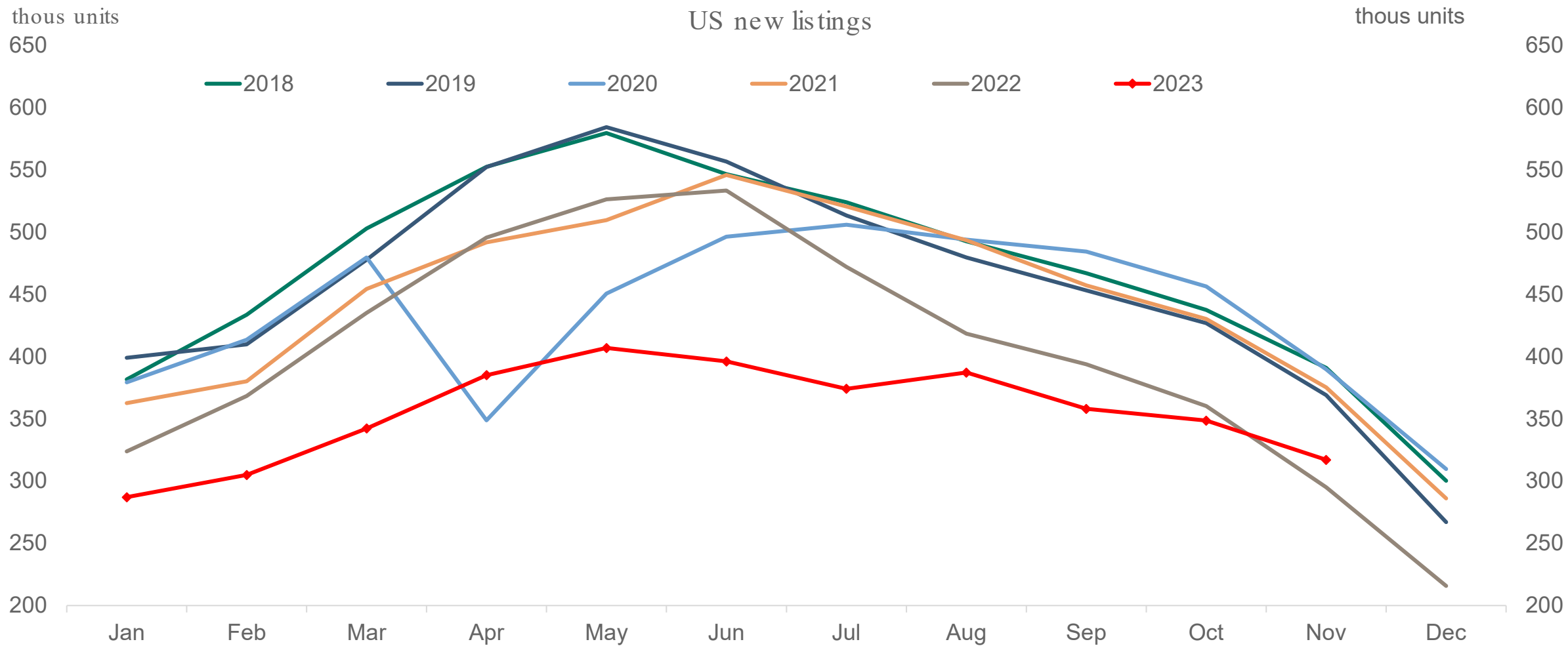


Source: FRED, Apollo Chief Economist

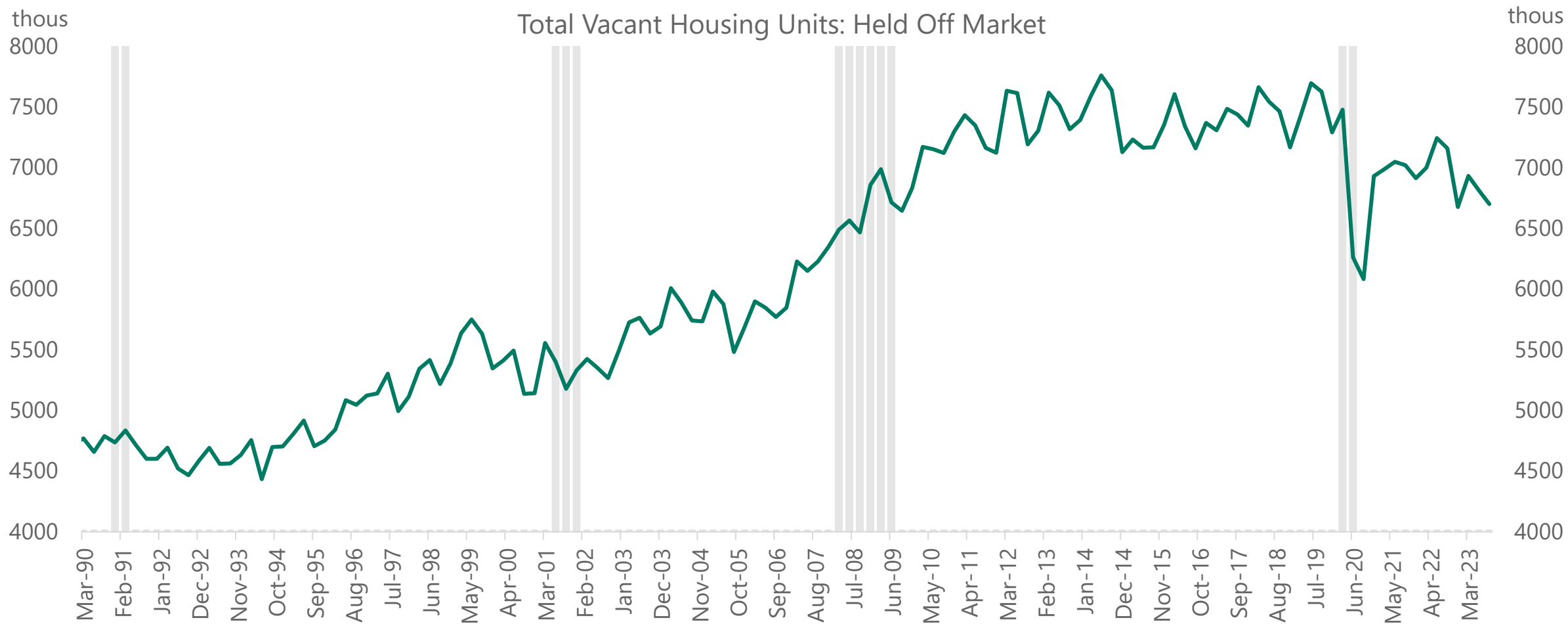
The biggest increase in non-residential construction has been in manufacturing



Newly listed homes very low

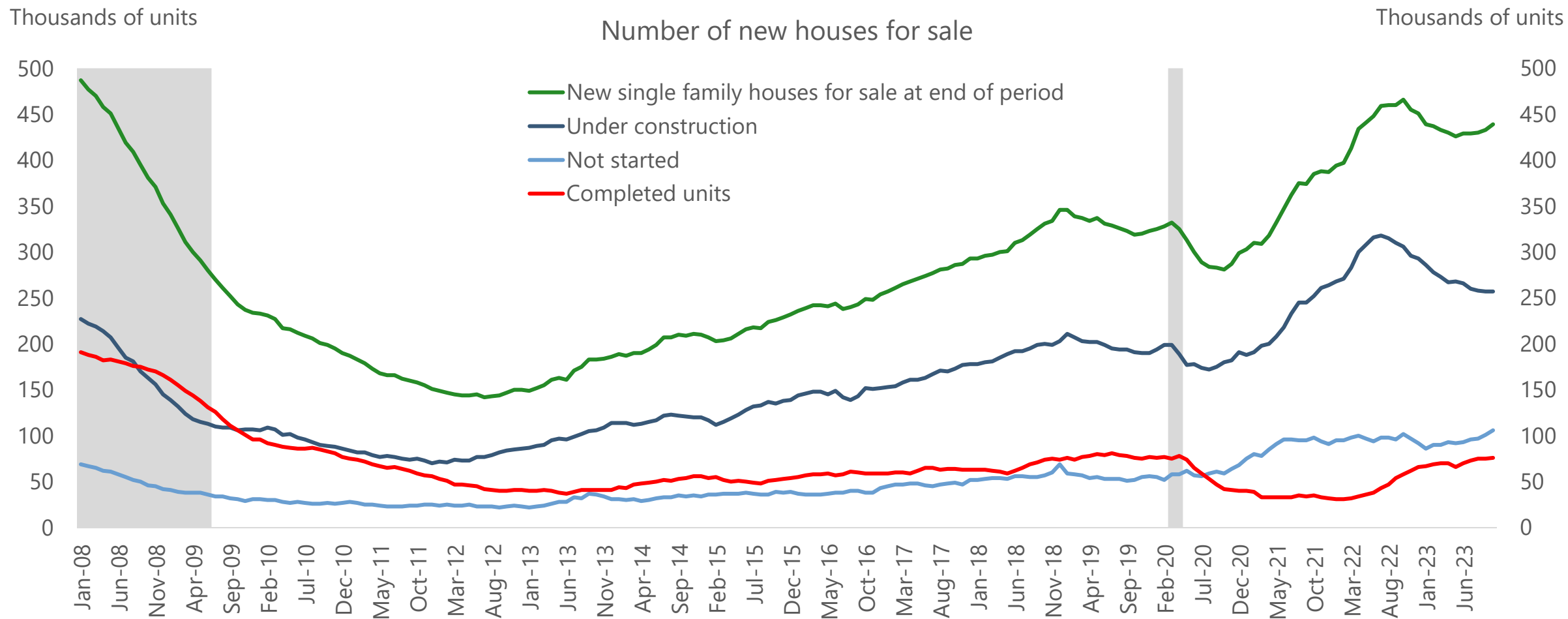


Vacant housing units held off market coming down

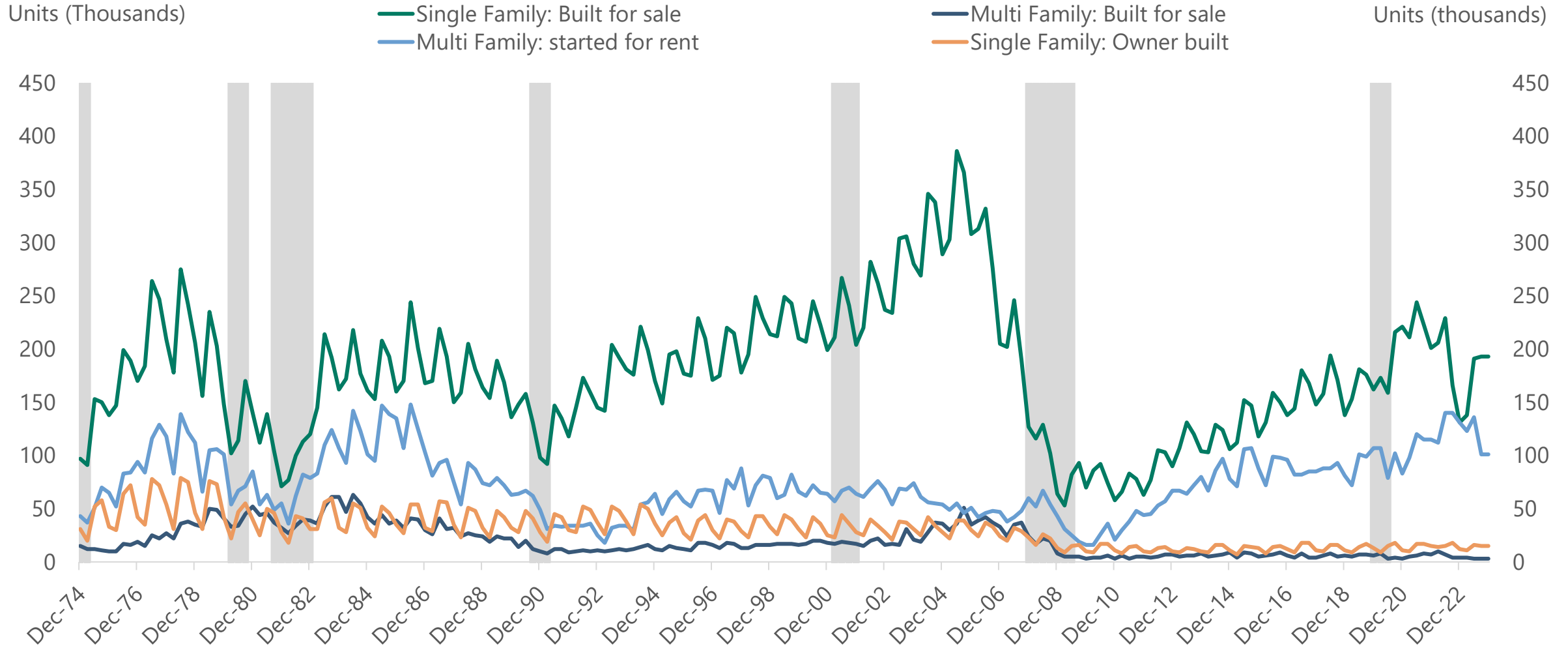


Source: Census Bureau, Haver Analytics, Apollo Chief Economist

Decline in the number of new houses for sale under construction

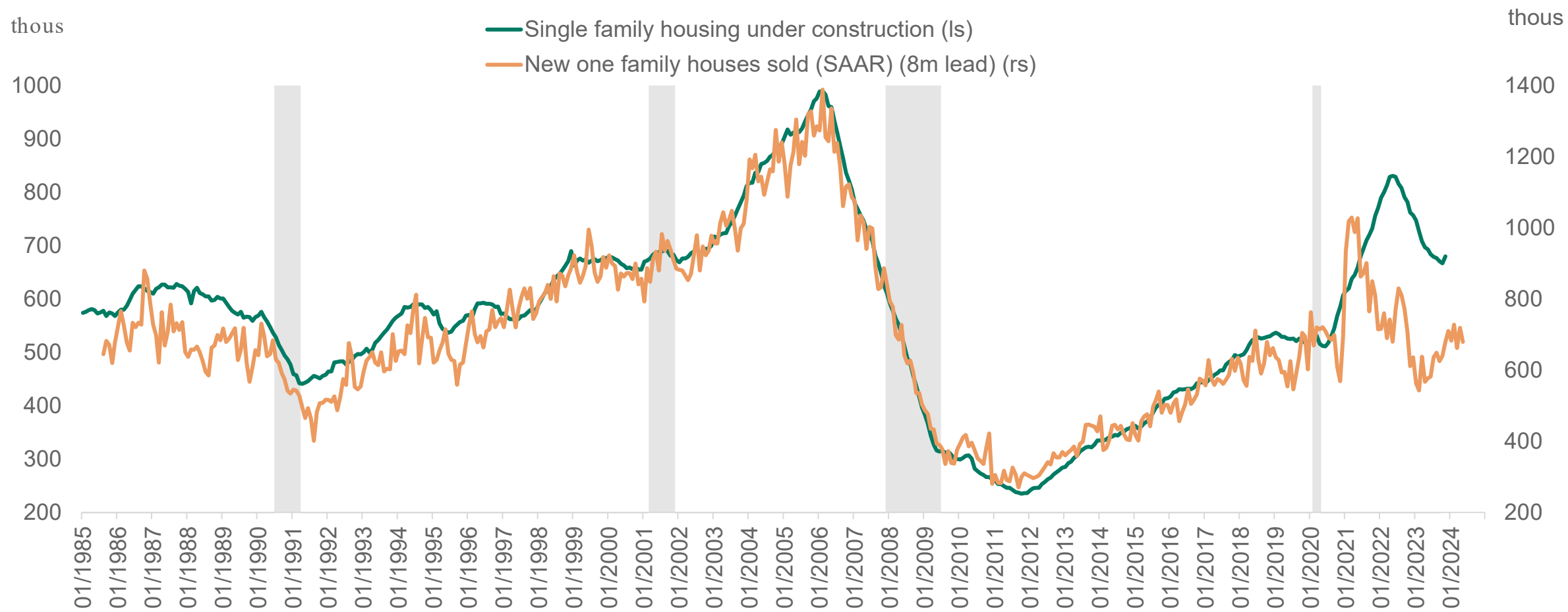


Intent of housing starts



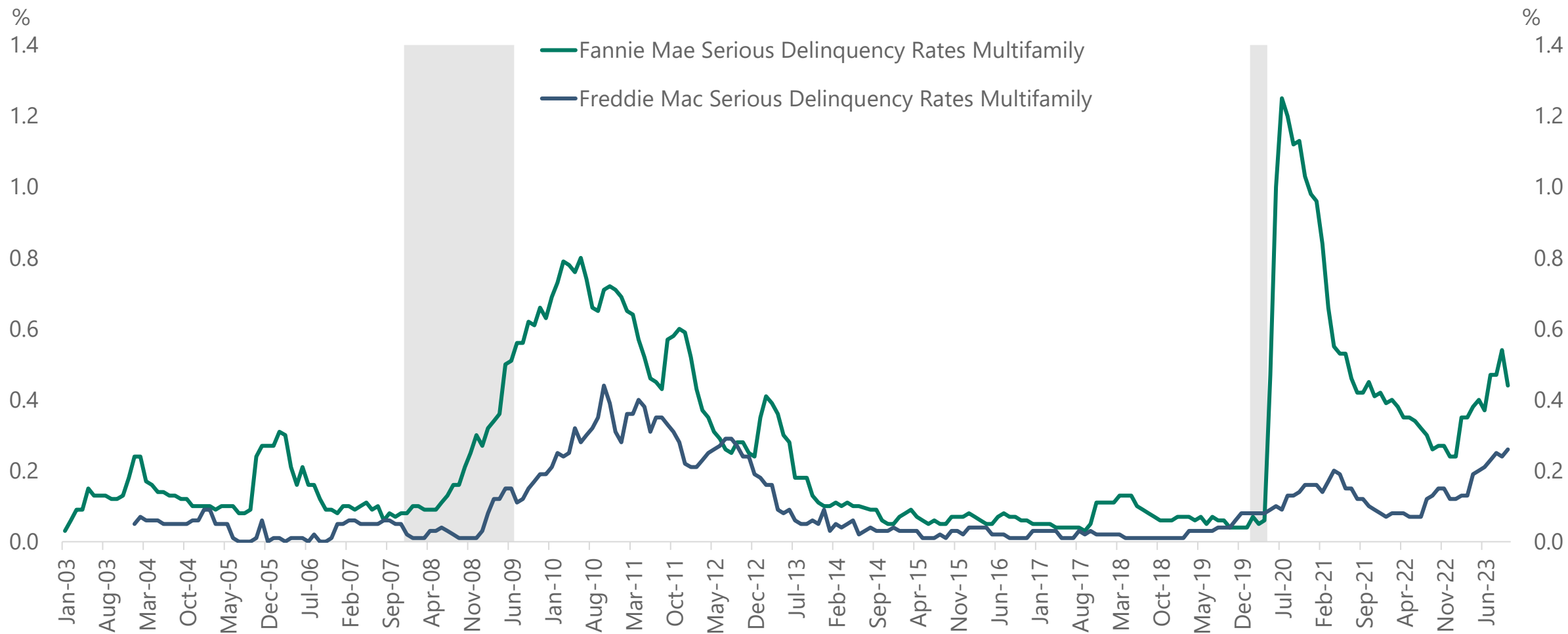
Source: US Census Bureau, Apollo Chief Economist

Some disconnect between housing under construction and new homes sold

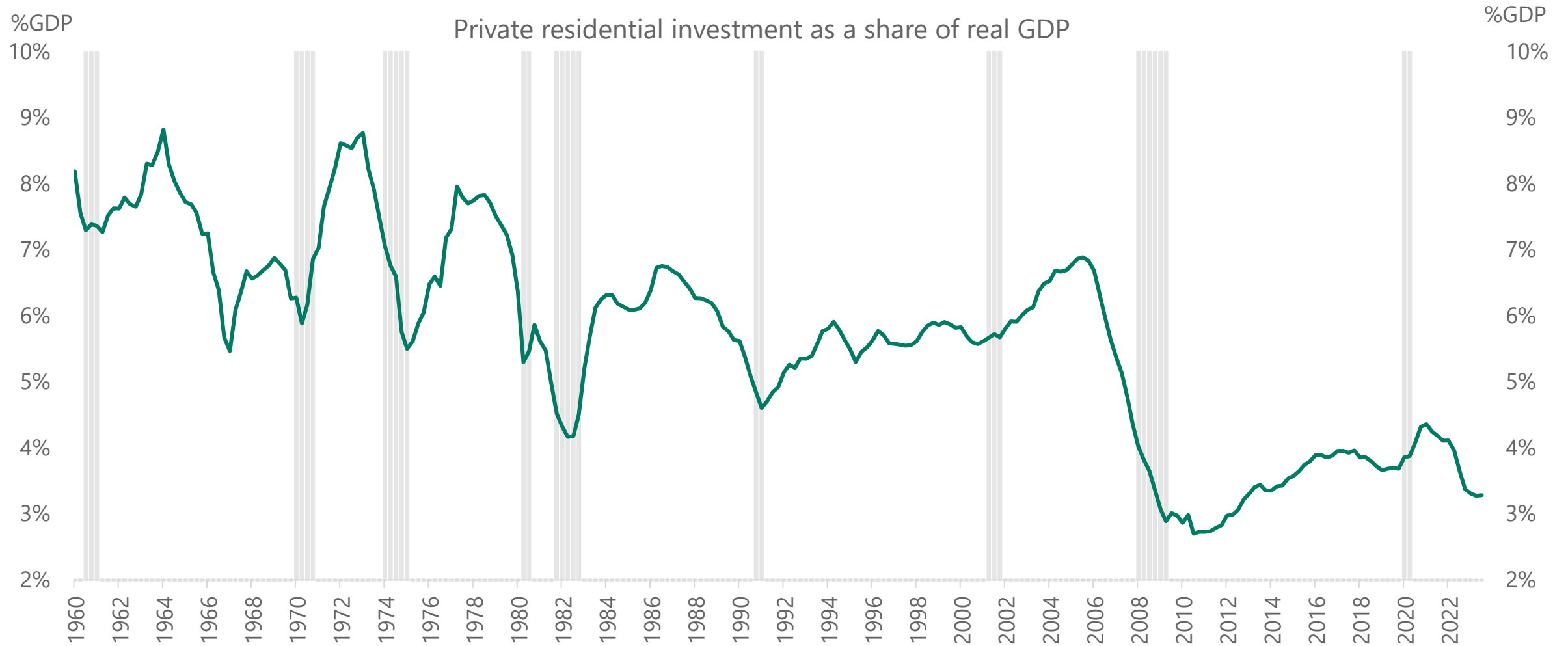


Source: Census Bureau, Bloomberg, Apollo Chief Economist.

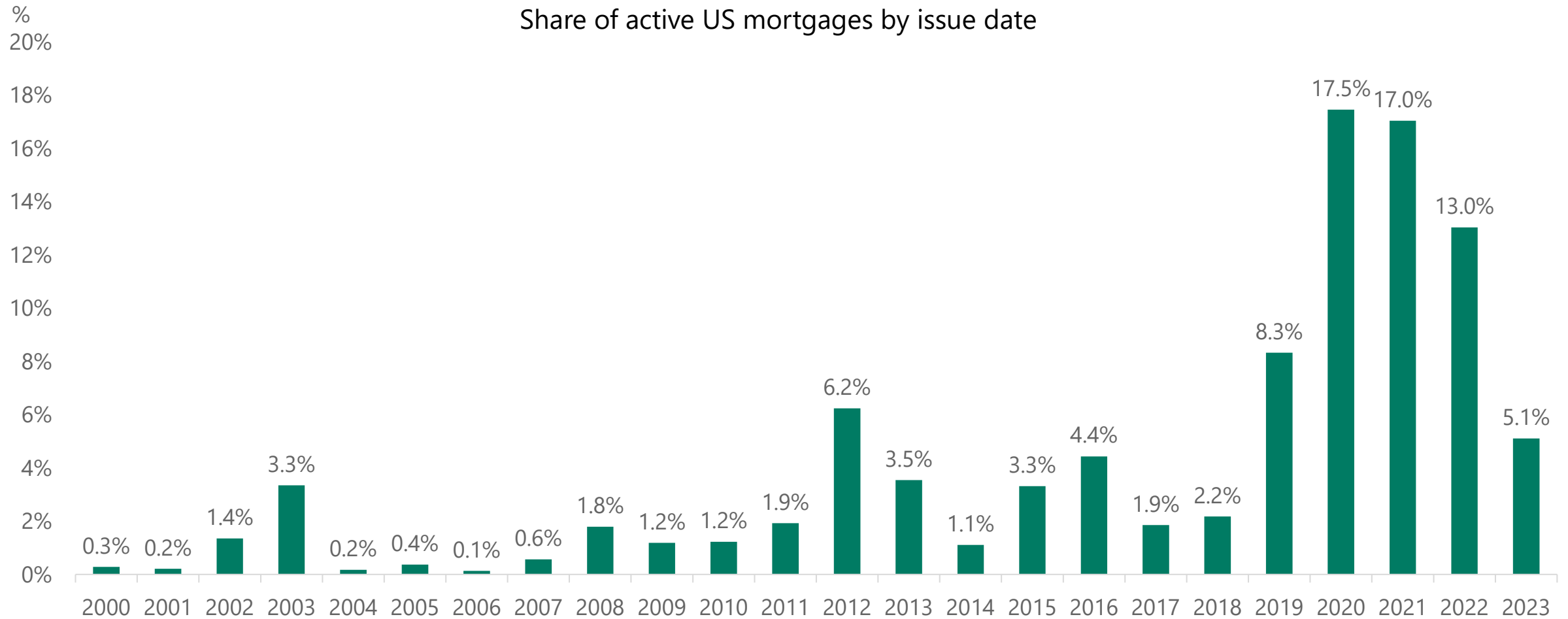
Multifamily delinquencies rising



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

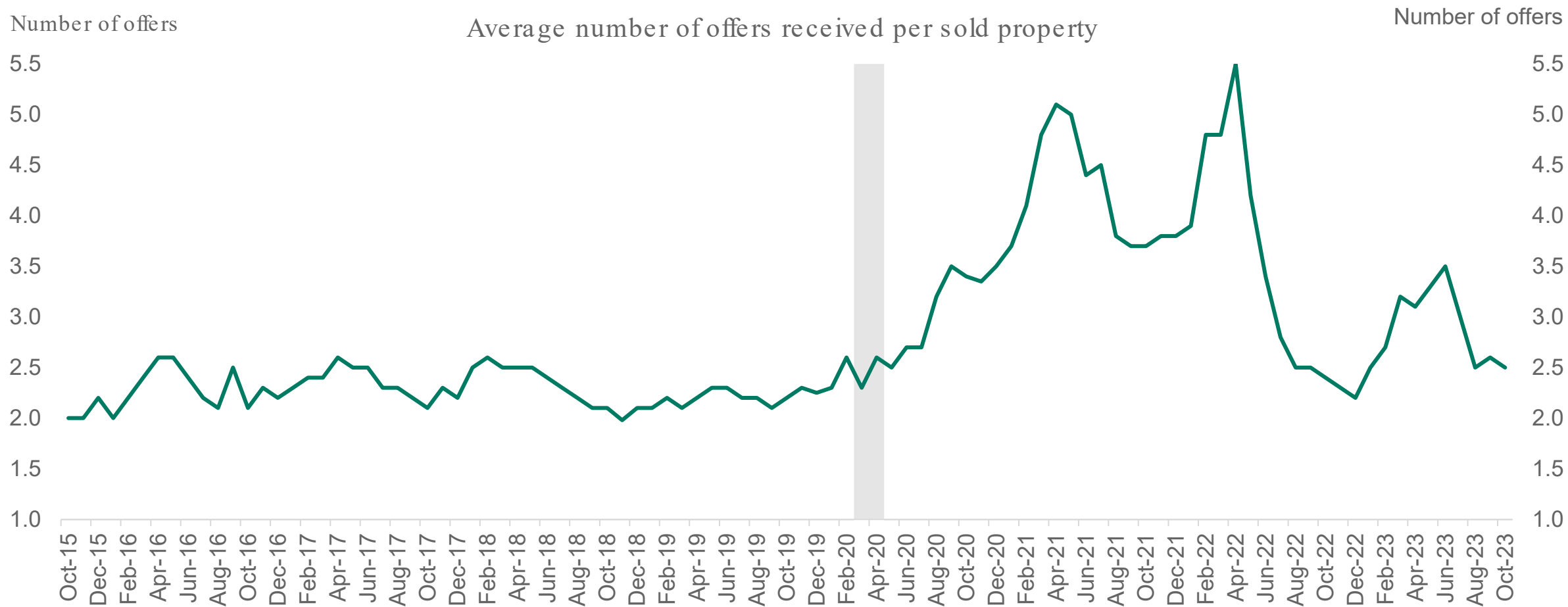


63% of all mortgages outstanding were issued after 2018

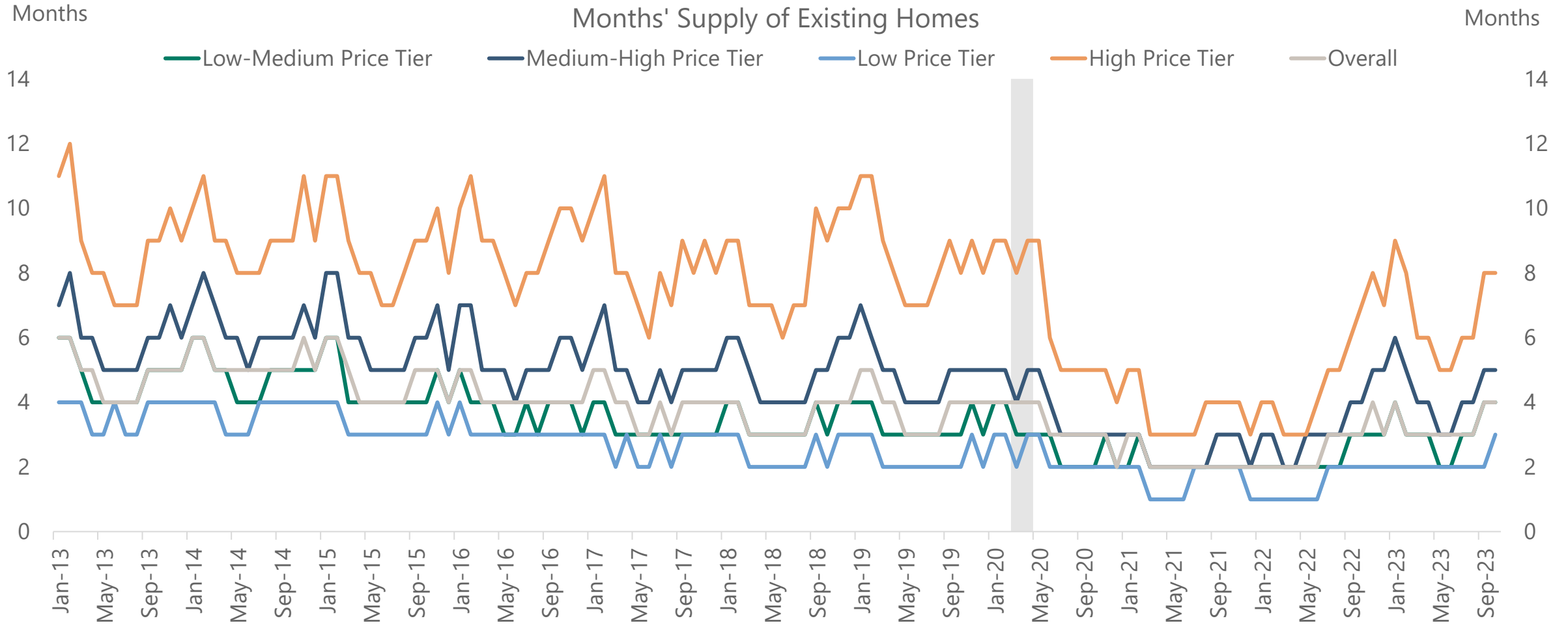


Source: Bloomberg, Apollo Chief Economist. Note: Data comes from MTGS <GO> screen on Bloomberg

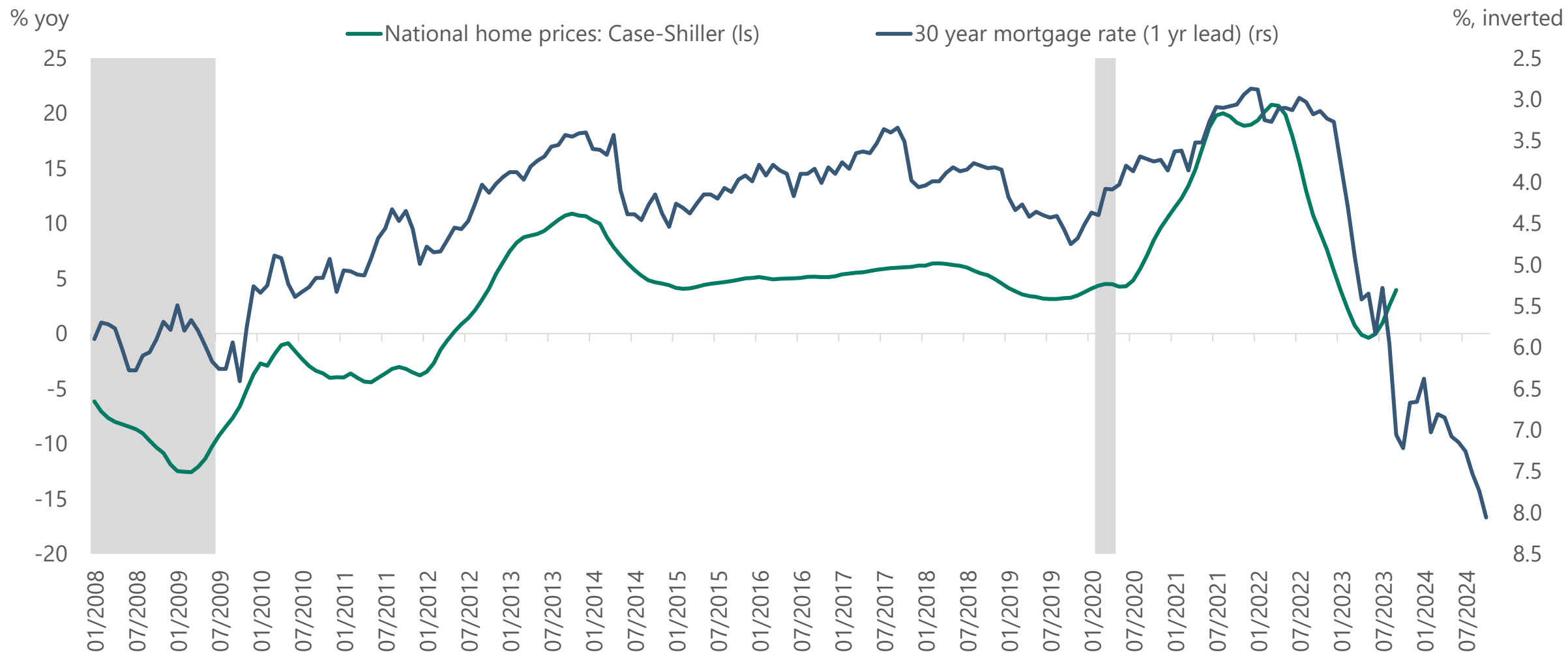
Fewer bidding wars recently



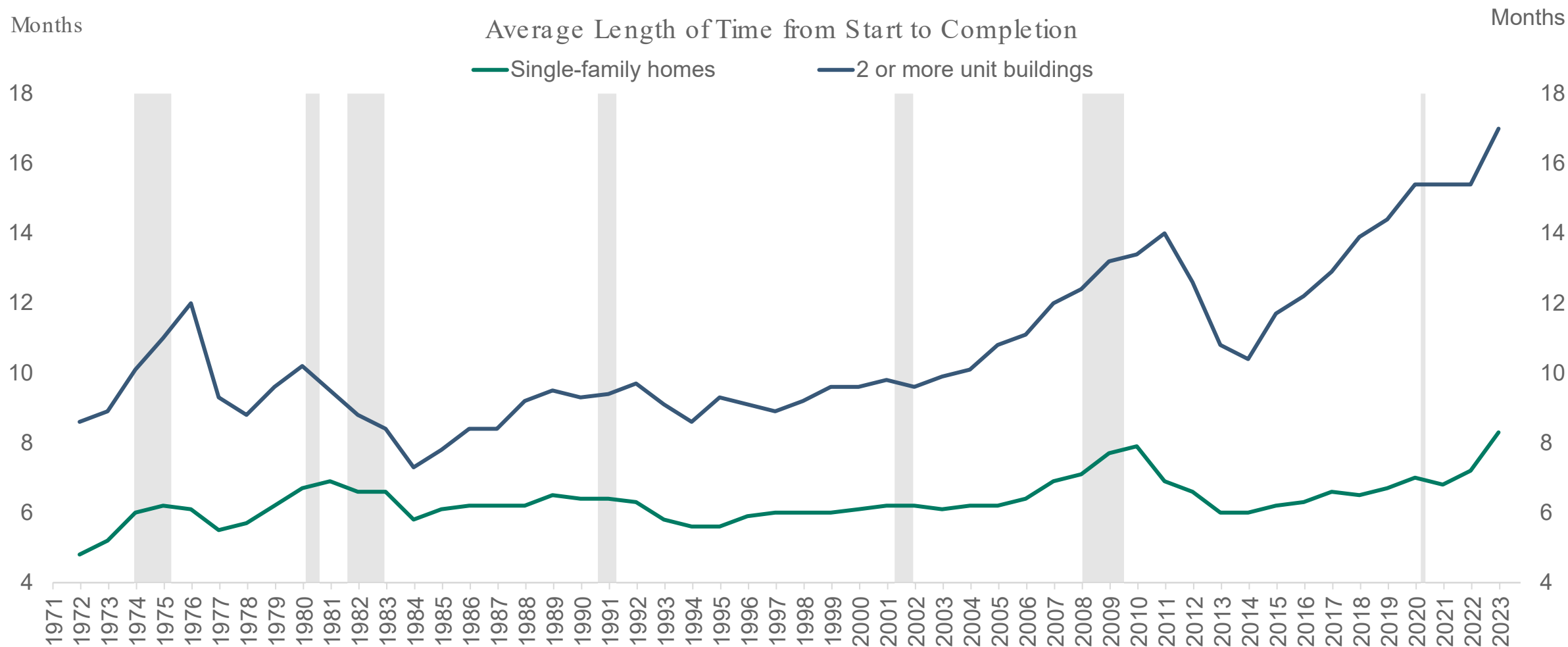
Seasonal increase in the inventory of homes for sale



If mortgage rates stay high home prices will start falling



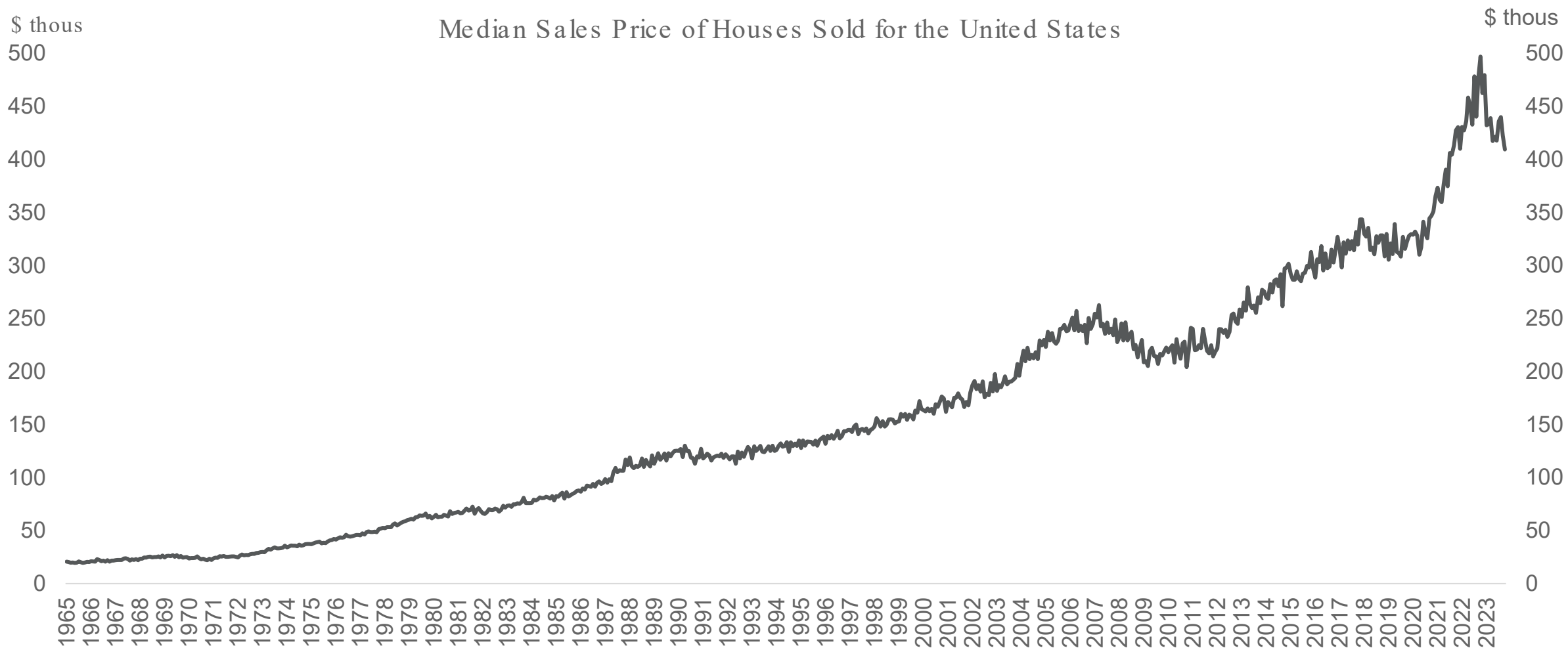
It currently takes 8 months on average to build a single-family house



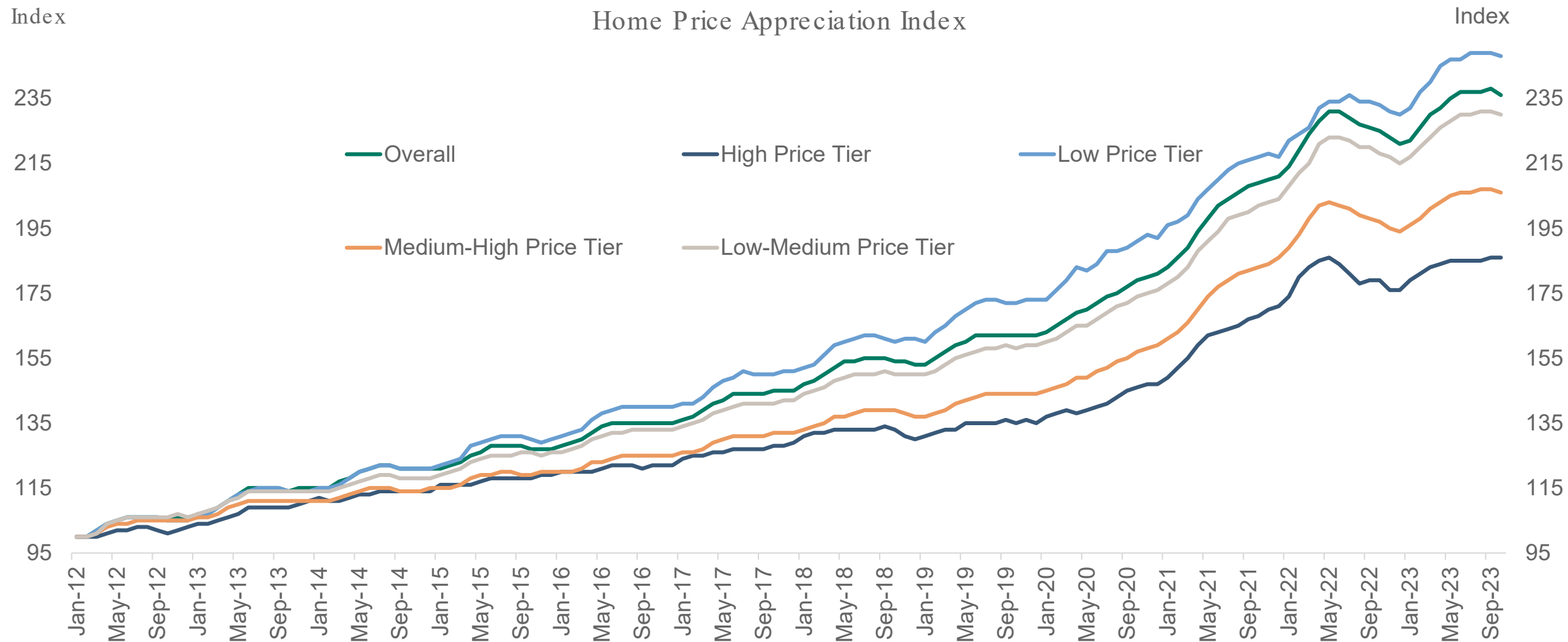
Source: Census, Haver Analytics, Apollo Chief Economist. Note: Single family homes are 1 unit buildings

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

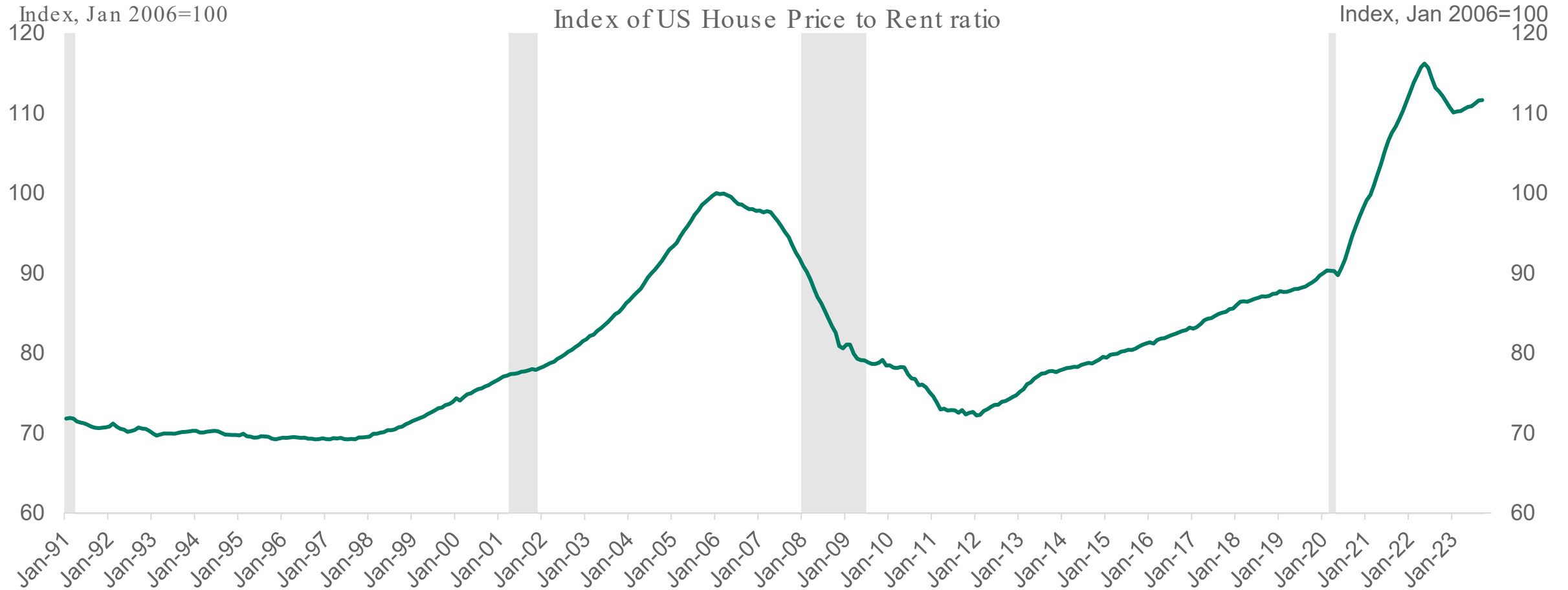
Median home sales price now \$409K



House price inflation stabilizing across price tiers

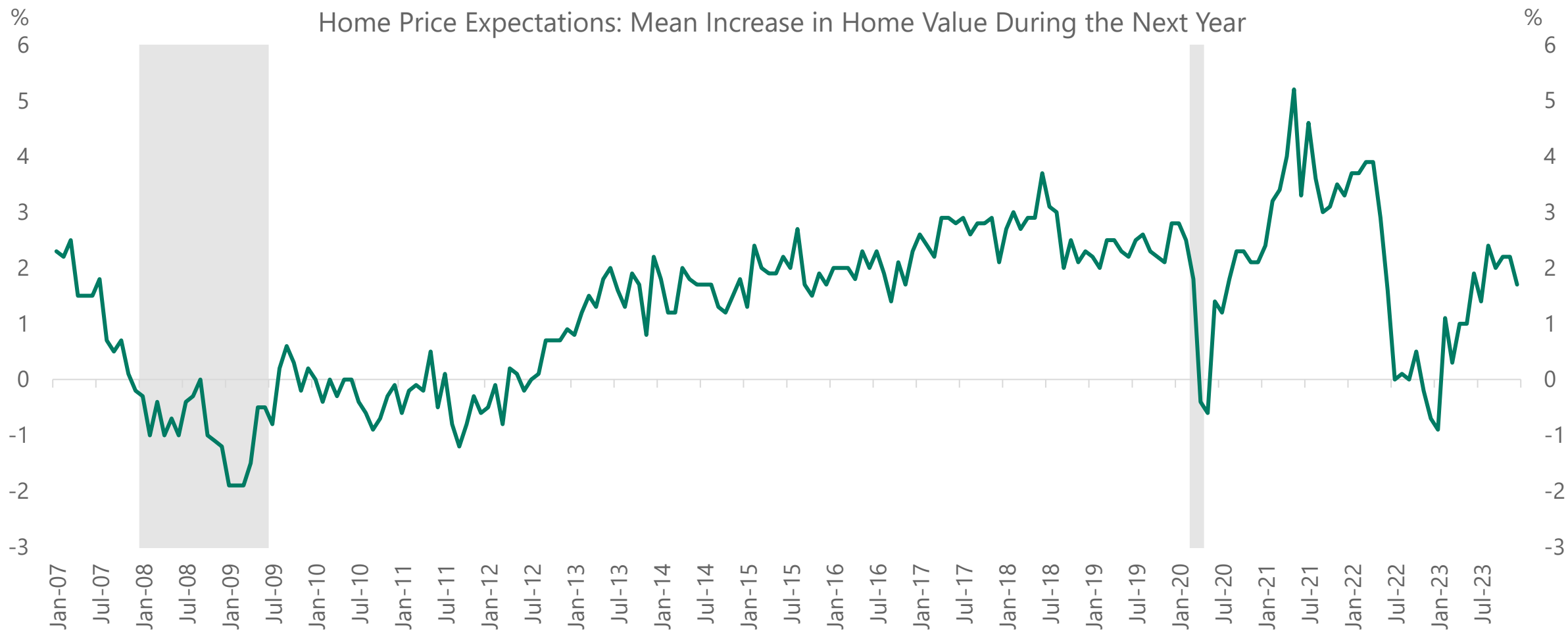


Home price to rent ratio significantly above 2006 levels



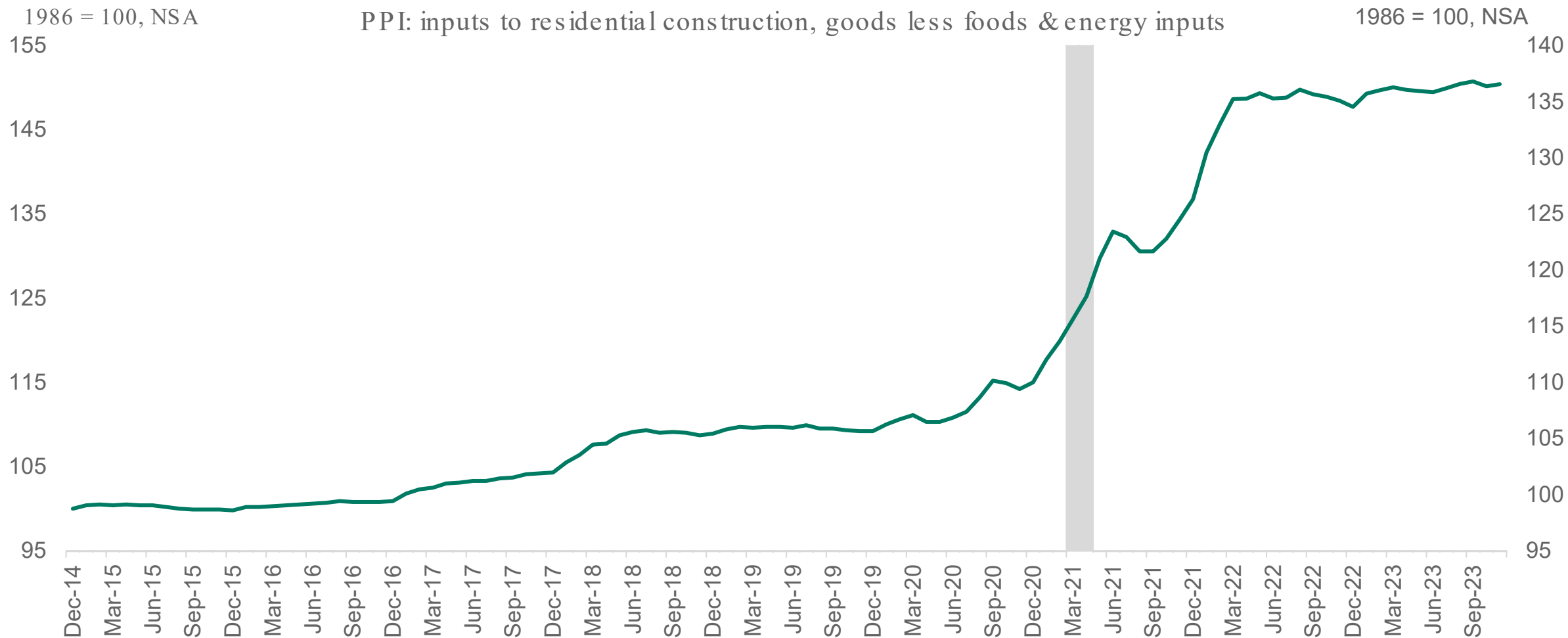
Source: FHFA, BLS, Apollo Chief Economist. Note: the series is indexed ratio of FHFA monthly purchase only house price index divided by the OER component of the CPI.

Consumers' expectations of home price inflation



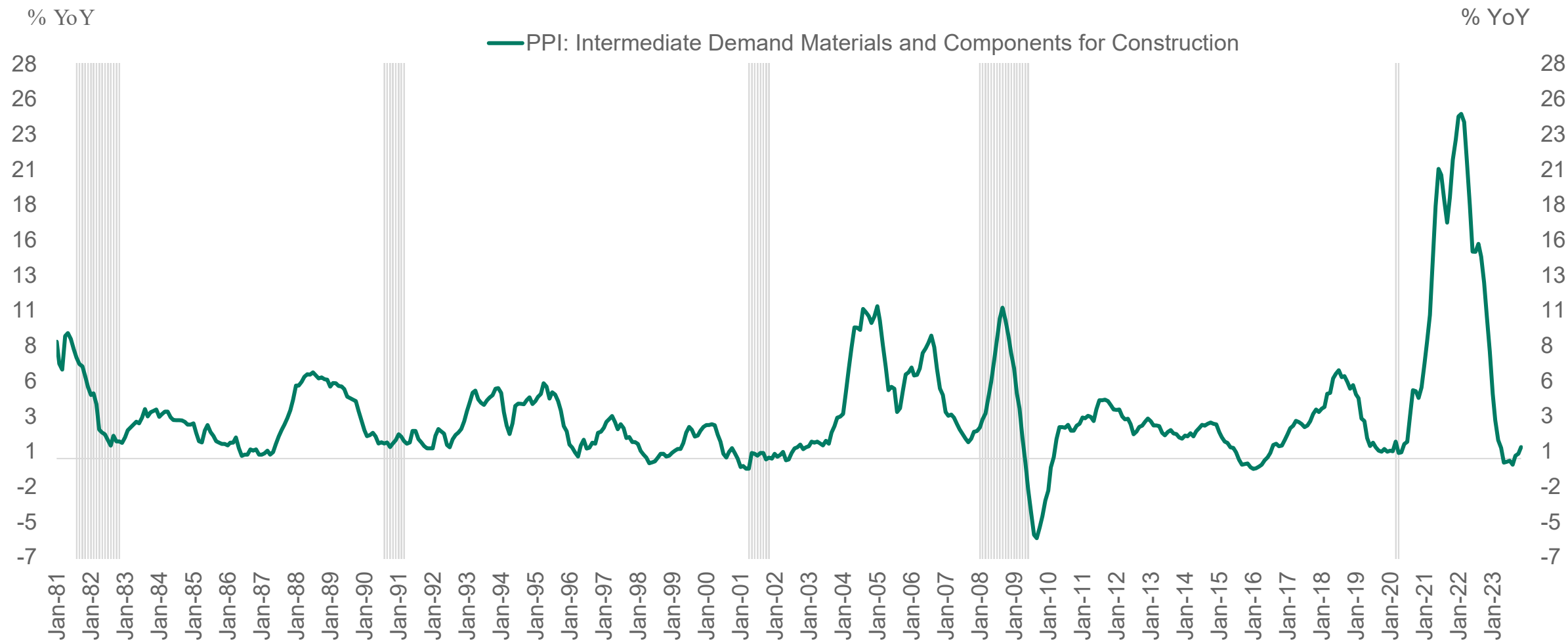
4) Housing Outlook: **High mortgage rates, high home prices, strong supply pipeline, and high building costs are risks to this housing cycle**

Housing construction costs are high



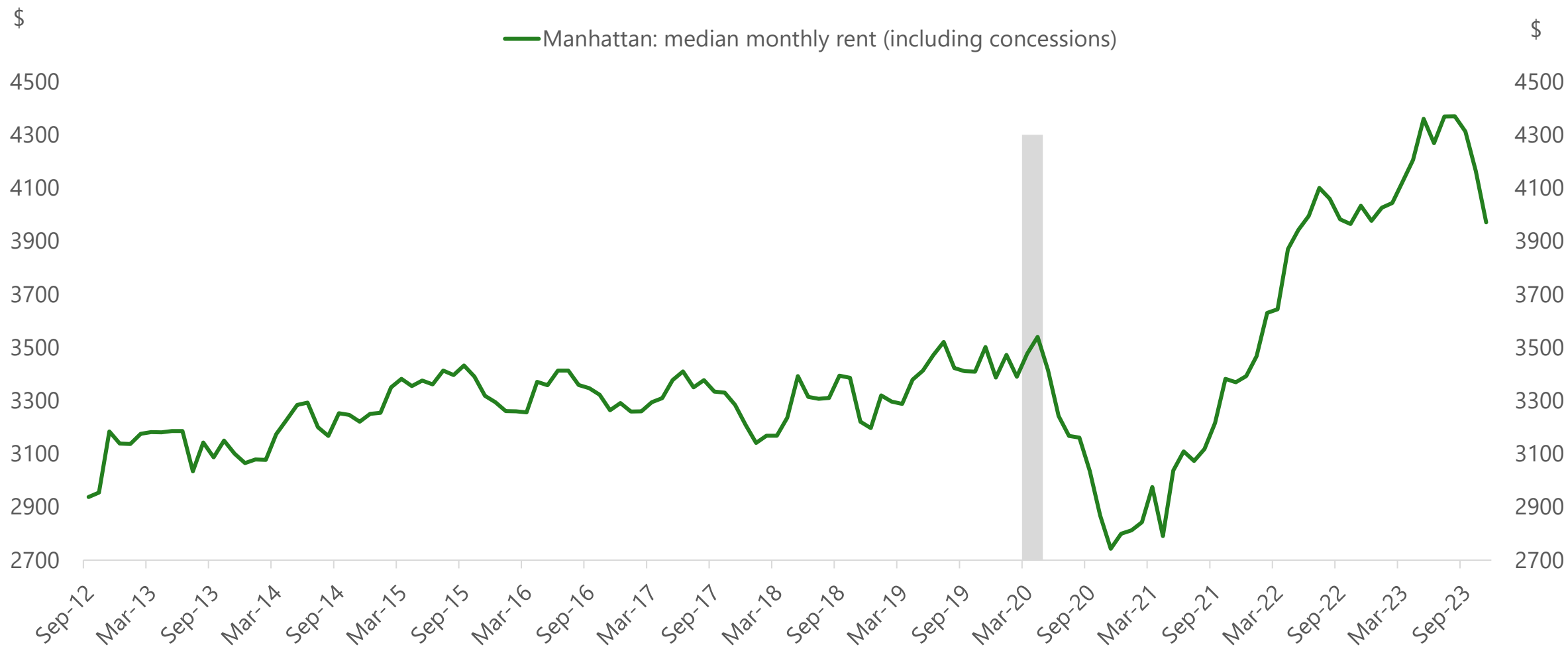
Source: Bureau of Labor Statistics, Apollo Chief Economist

Inflation in input costs for home builders declining

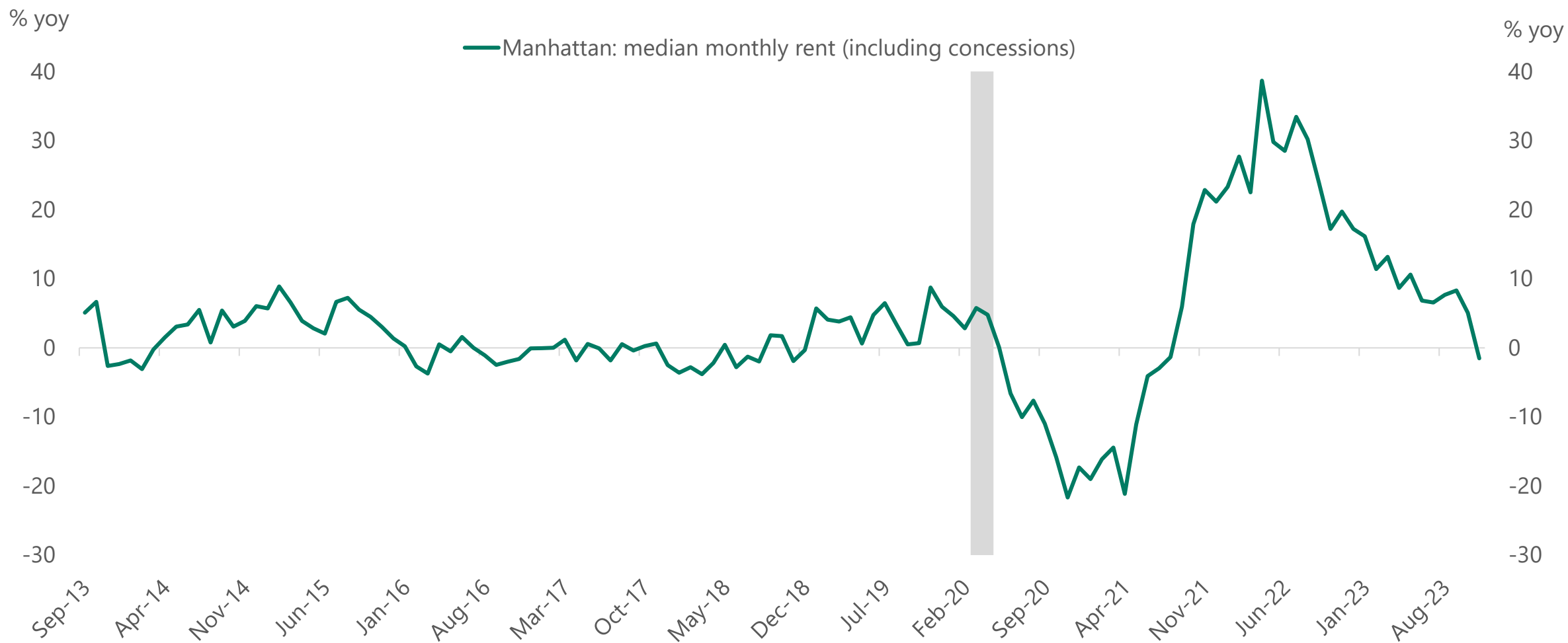


Source: Bureau of Labor Statistics, Apollo Chief Economist

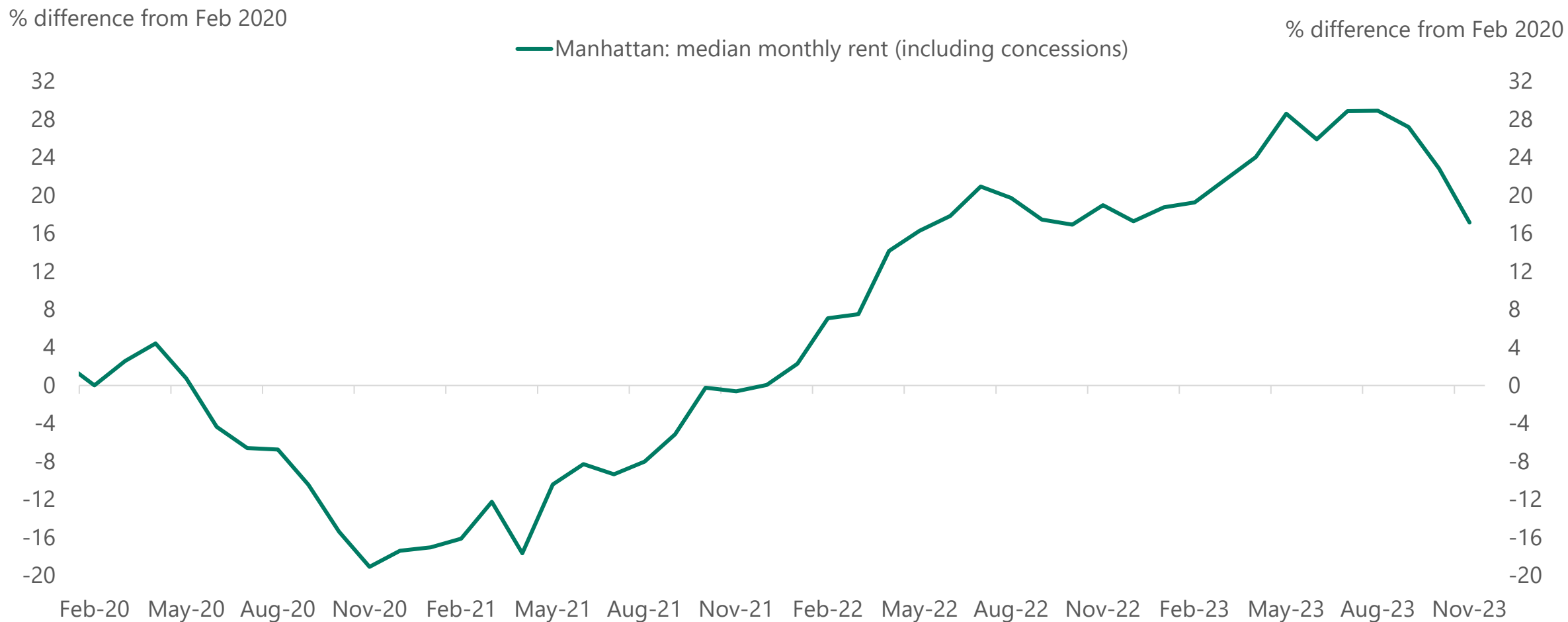
Manhattan median rent declined to \$3971 in November 2023



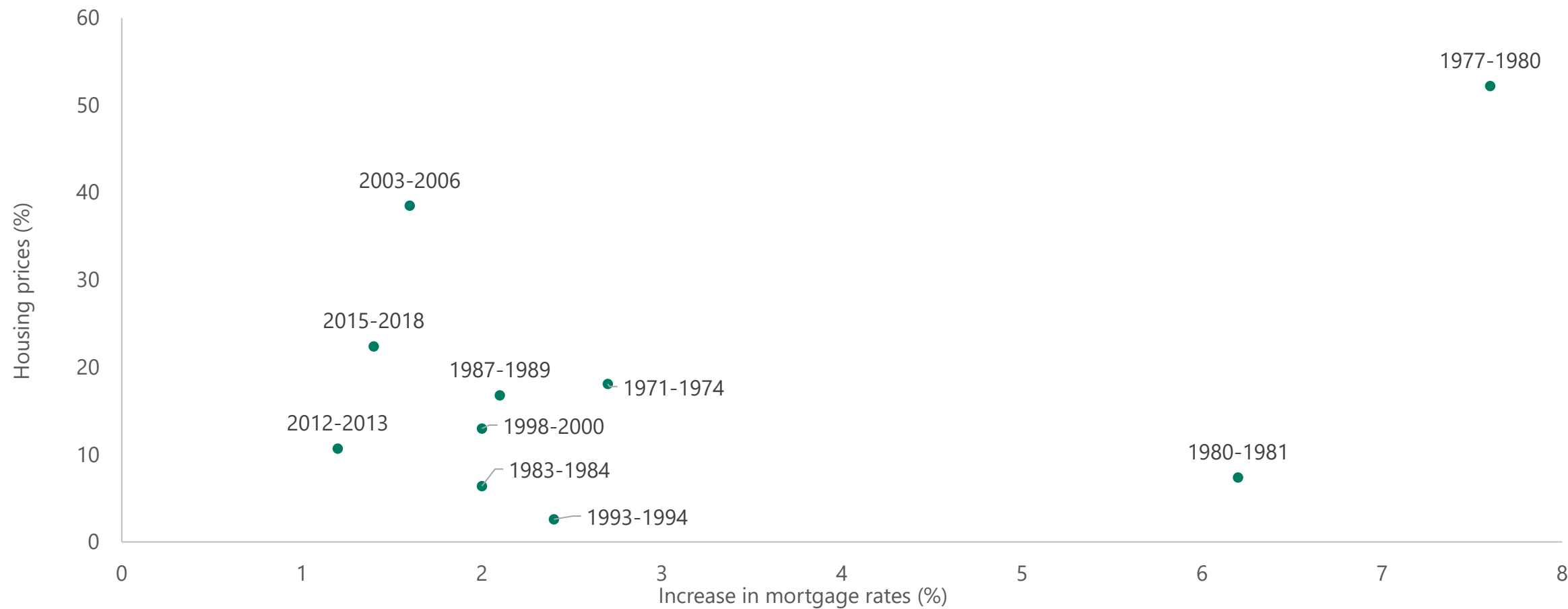
Manhattan rent growth slowing



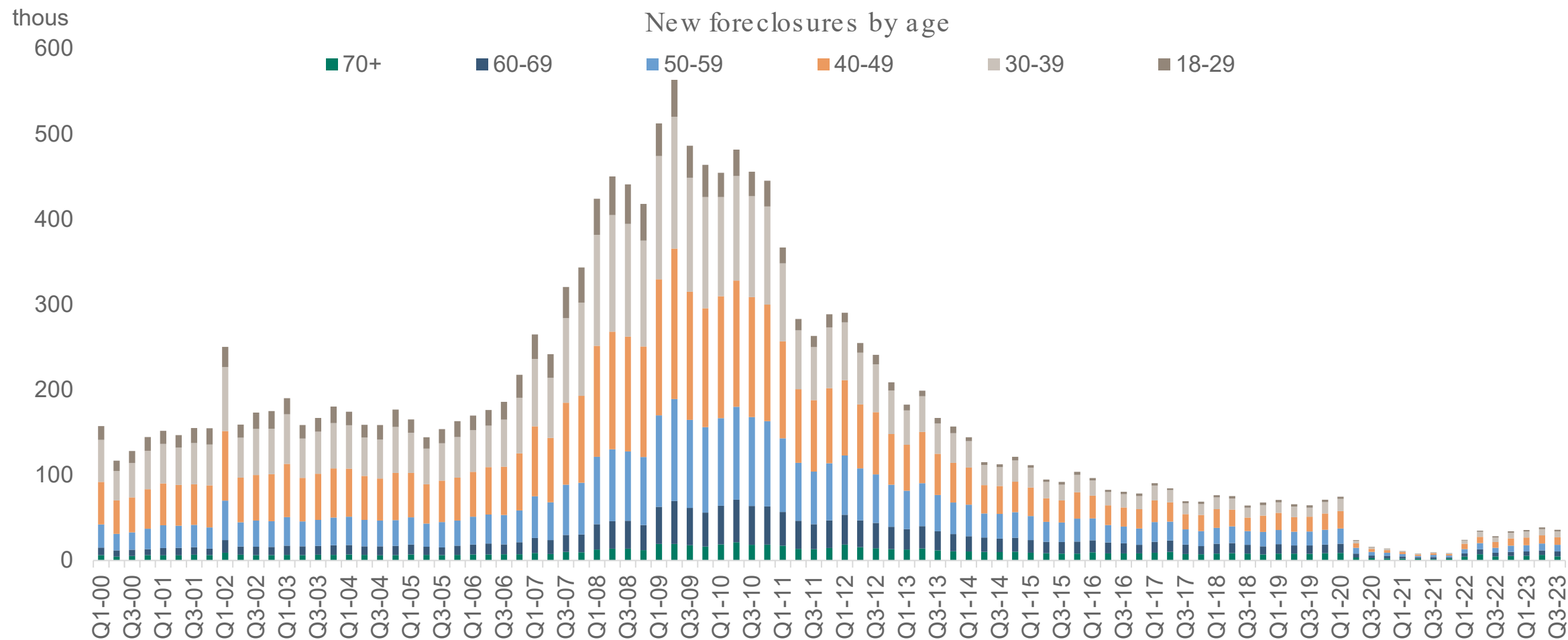
Manhattan rents still above pre-pandemic levels



Rising mortgage rates generally associated with lower home price inflation

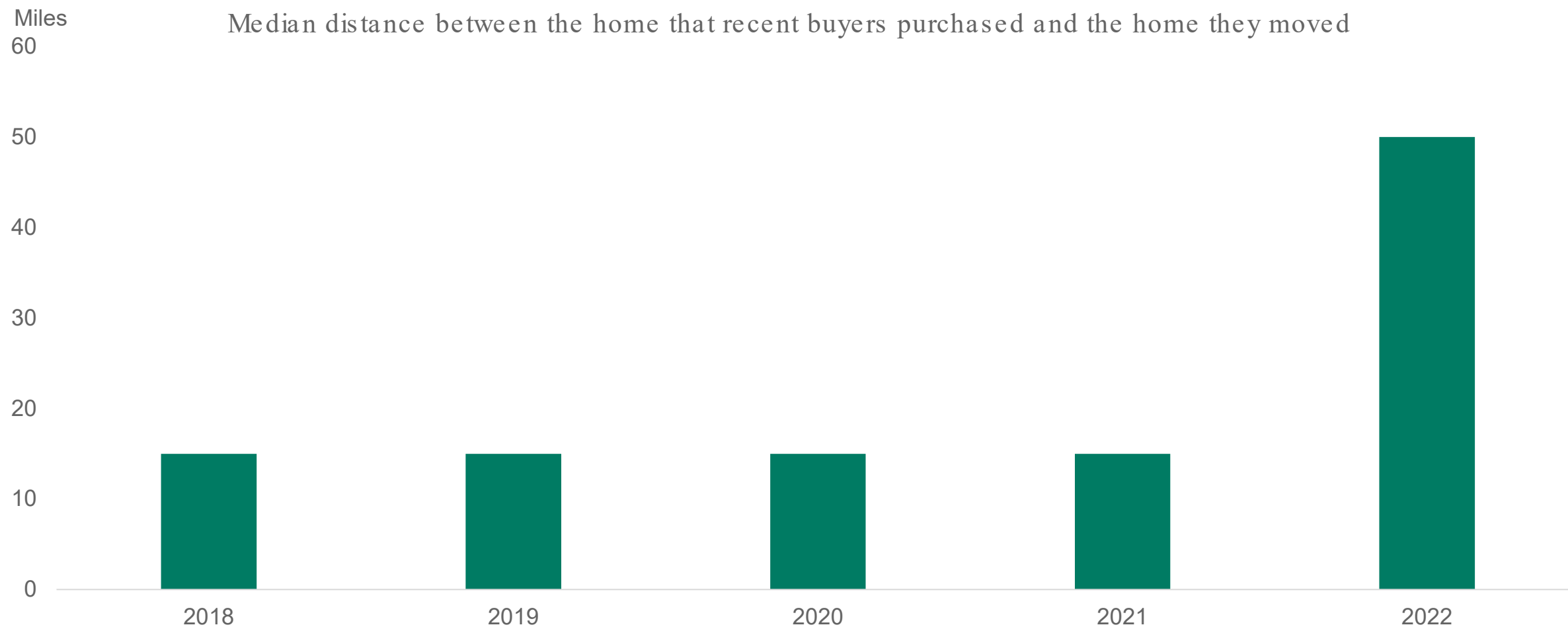


New foreclosures, by age of homeowner

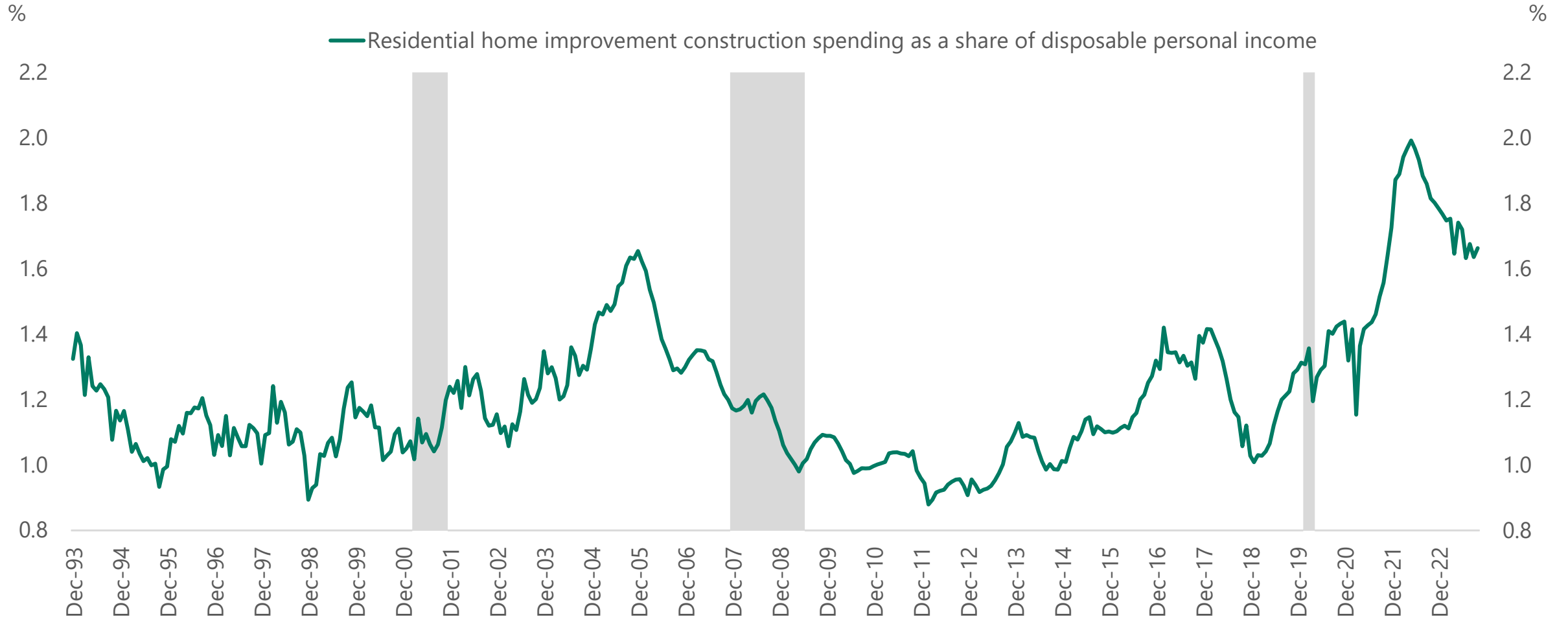


Source: FRBNY Consumer Credit Panel, Equifax, Haver Analytics, Apollo Chief Economist

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

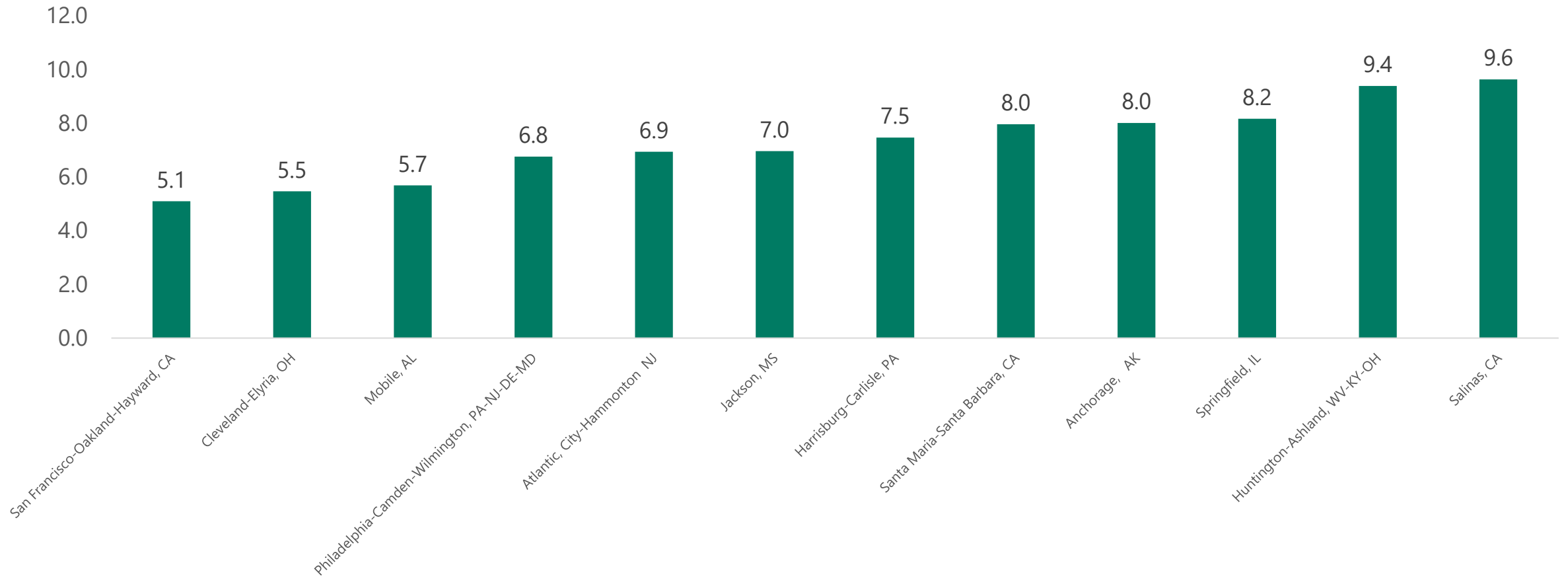


Source: Census Bureau, BEA, Bloomberg, Apollo Chief Economist

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

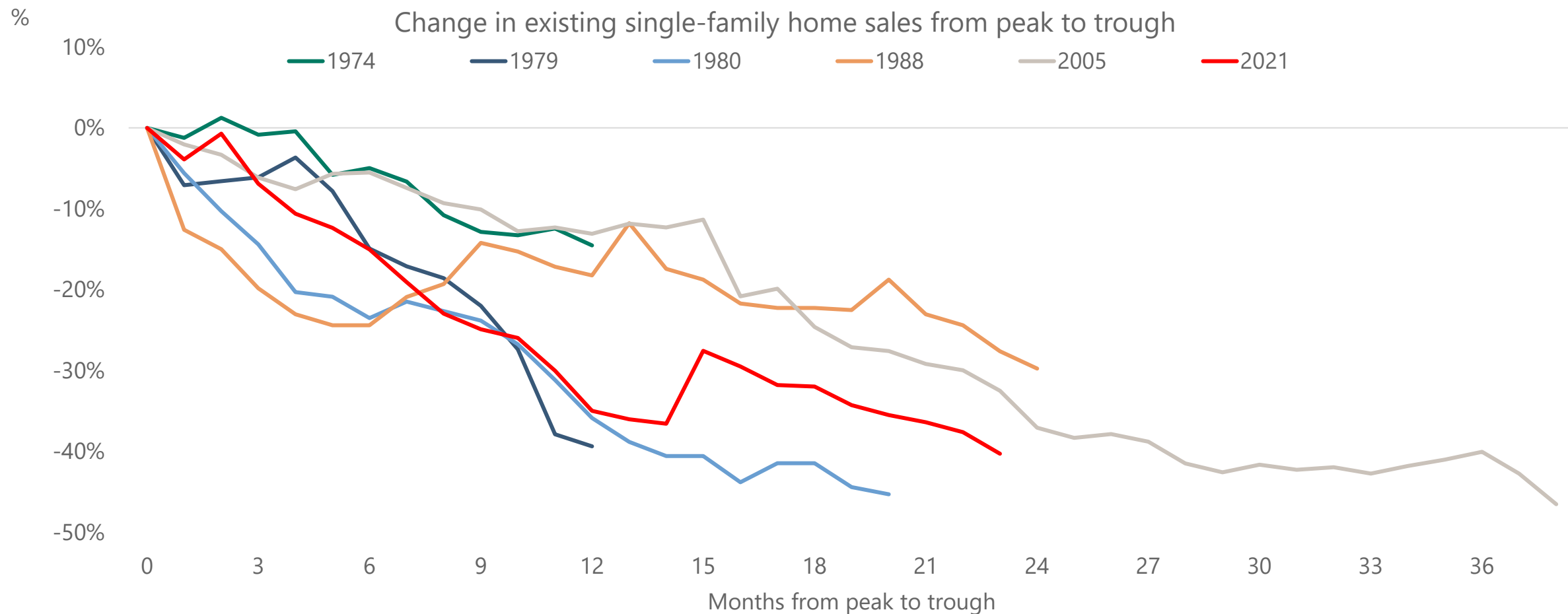
Permit (total units, thous)

Housing shortage (Sep-23)

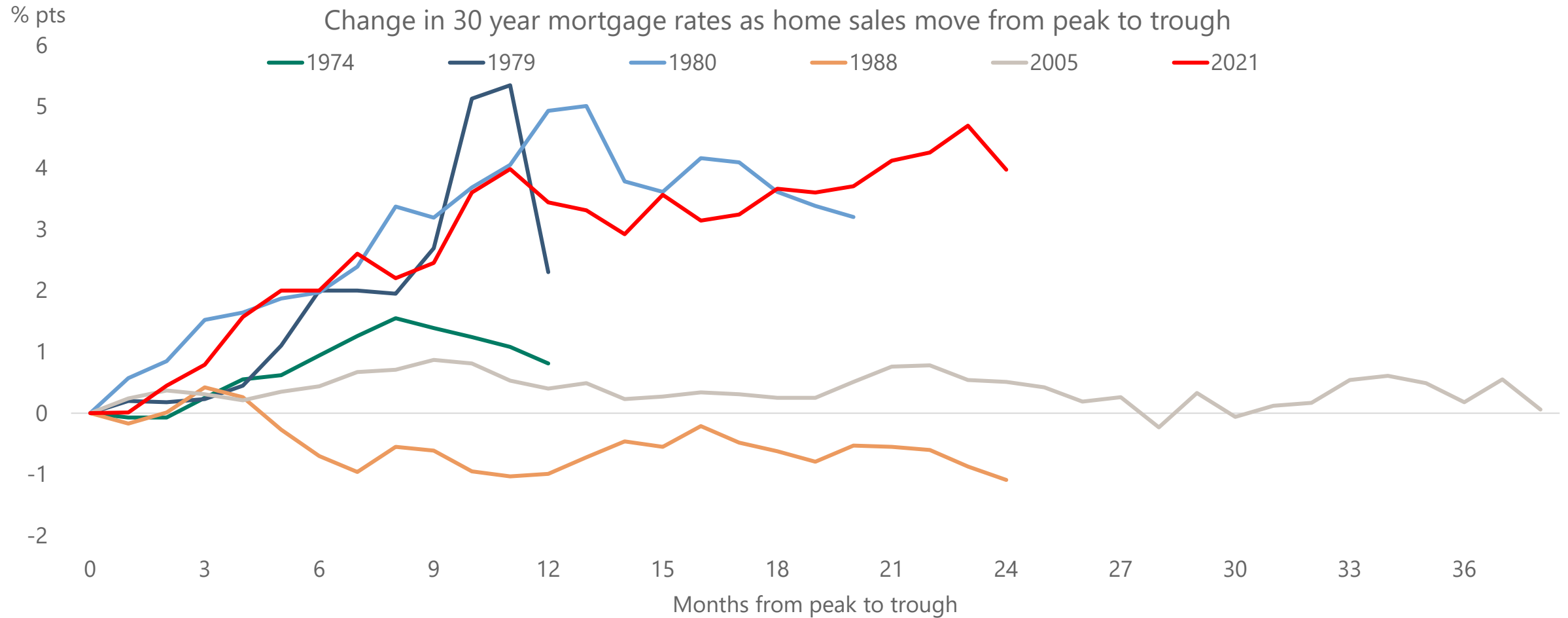


Comparing the current housing slowdown to previous housing slowdowns

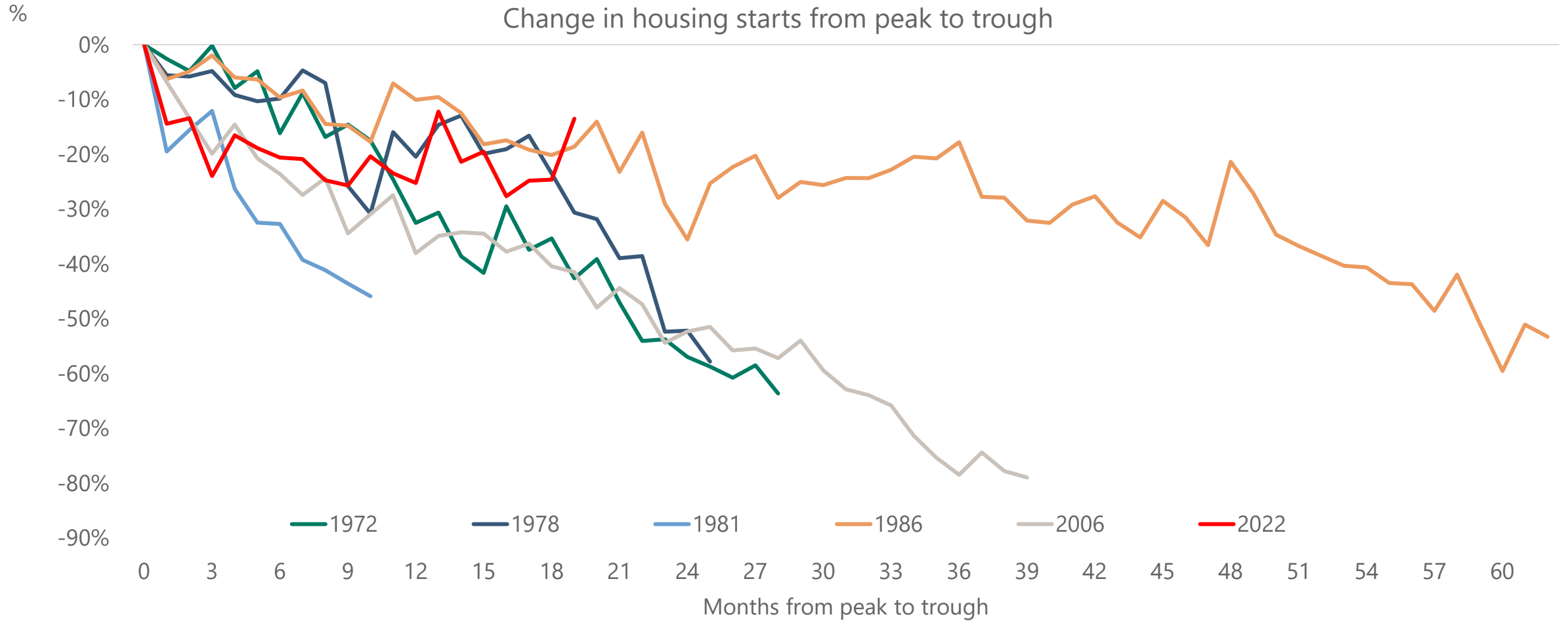
The current decline in existing home sales is in line with previous housing slowdowns



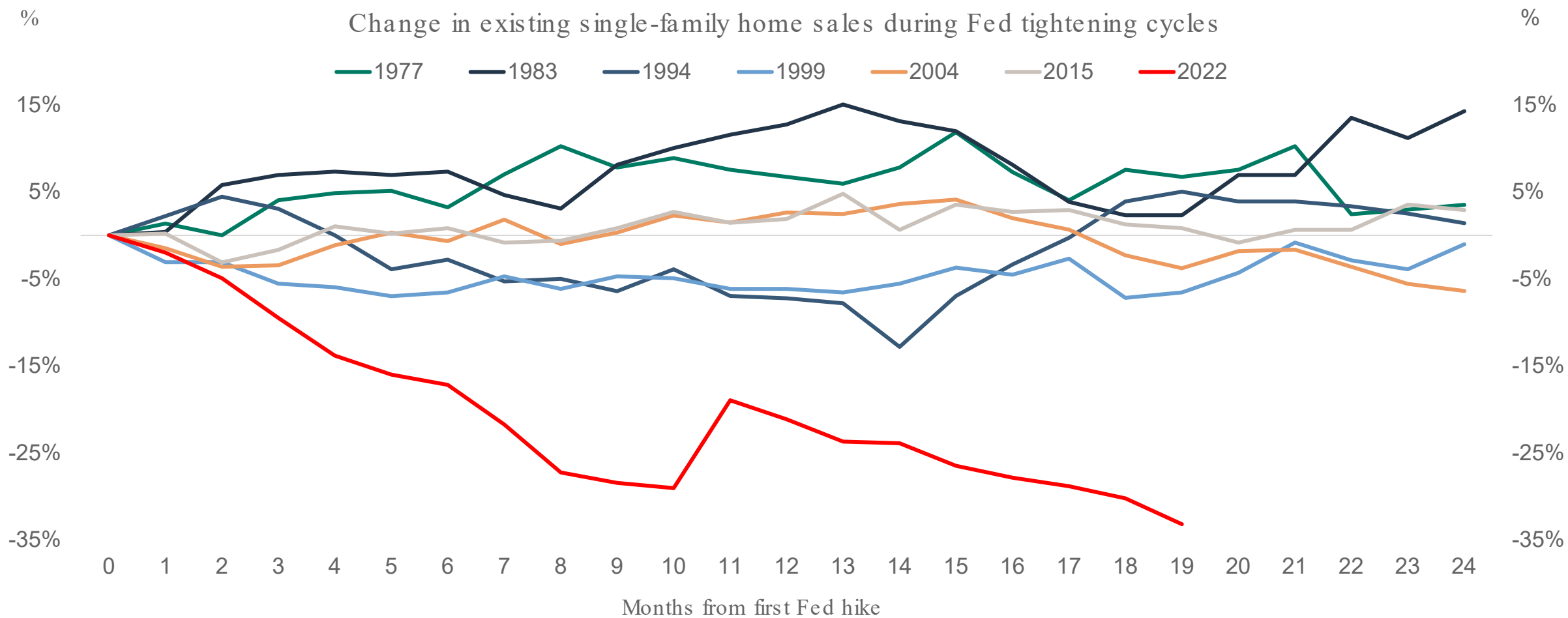
The current rise in mortgage rates is similar to what we saw during the Volcker disinflation



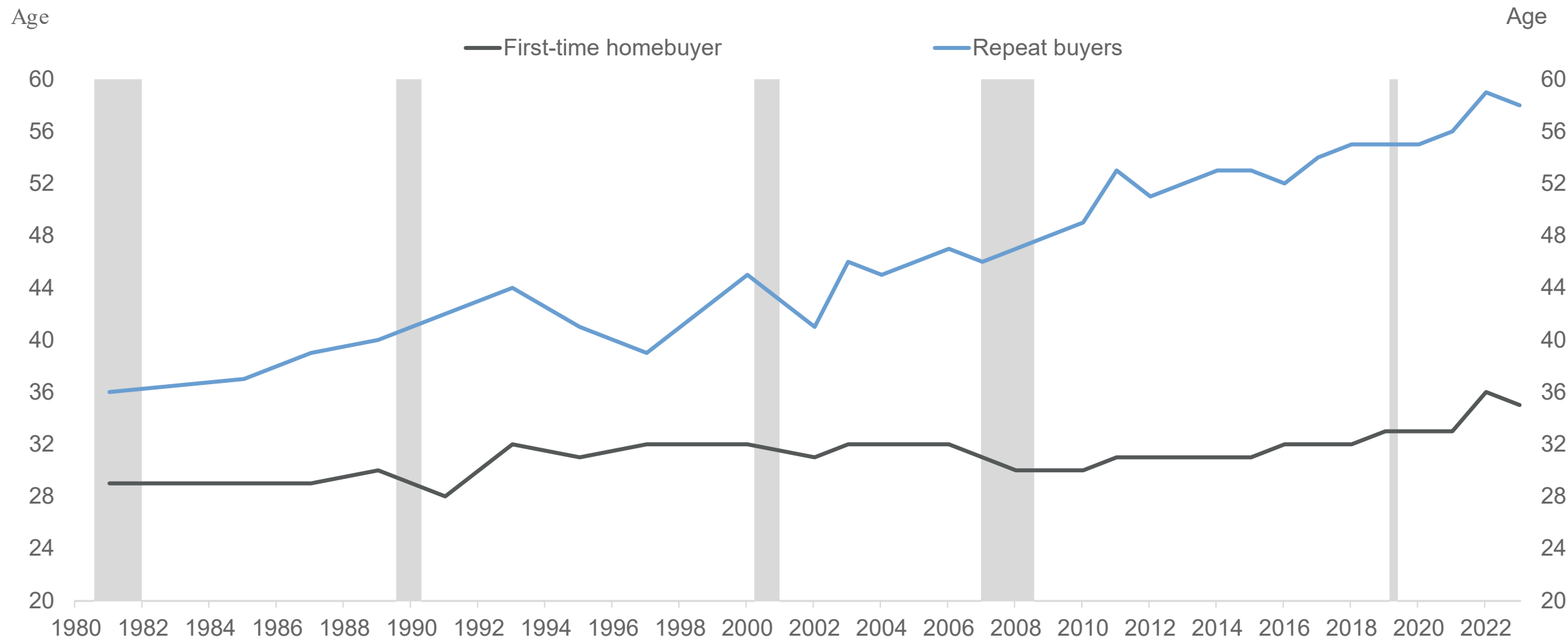
The current decline in housing starts follows the pattern of previous slowdowns



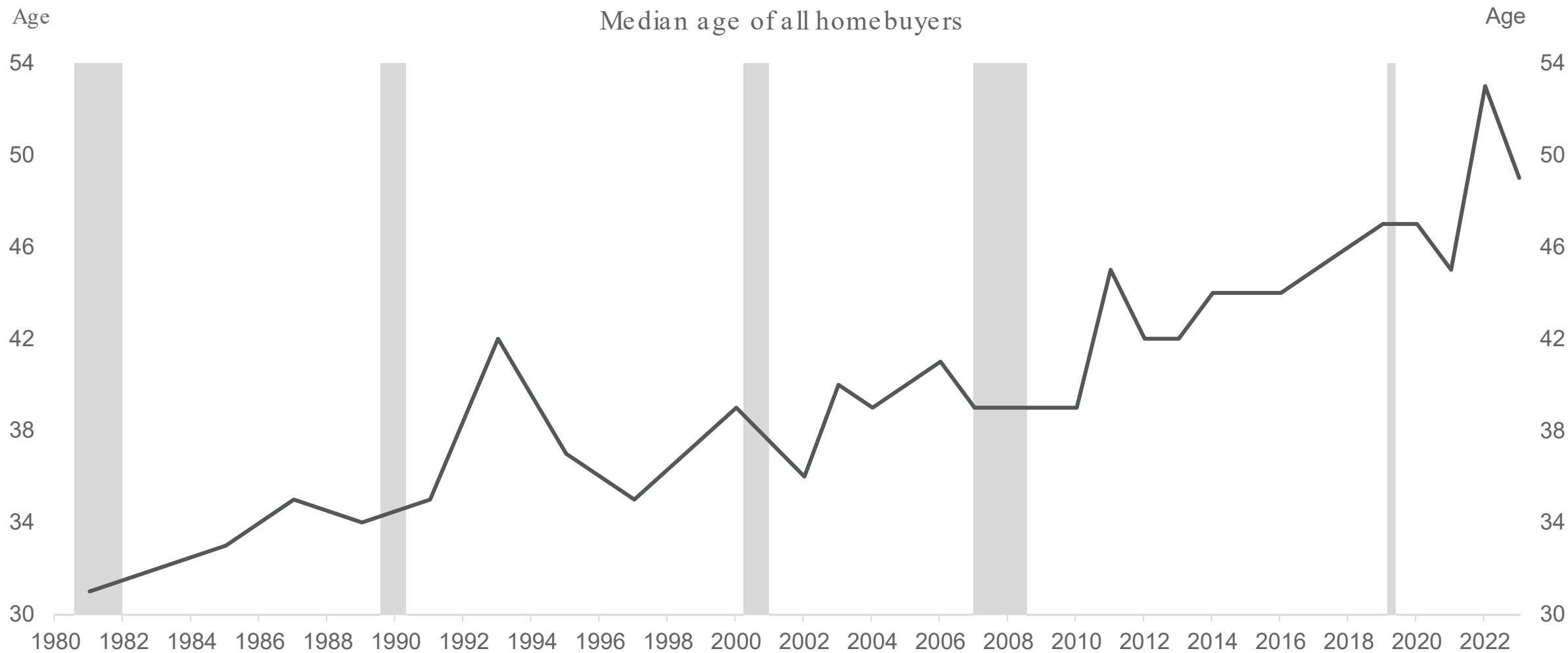
This is the fastest Fed-driven housing slowdown on record



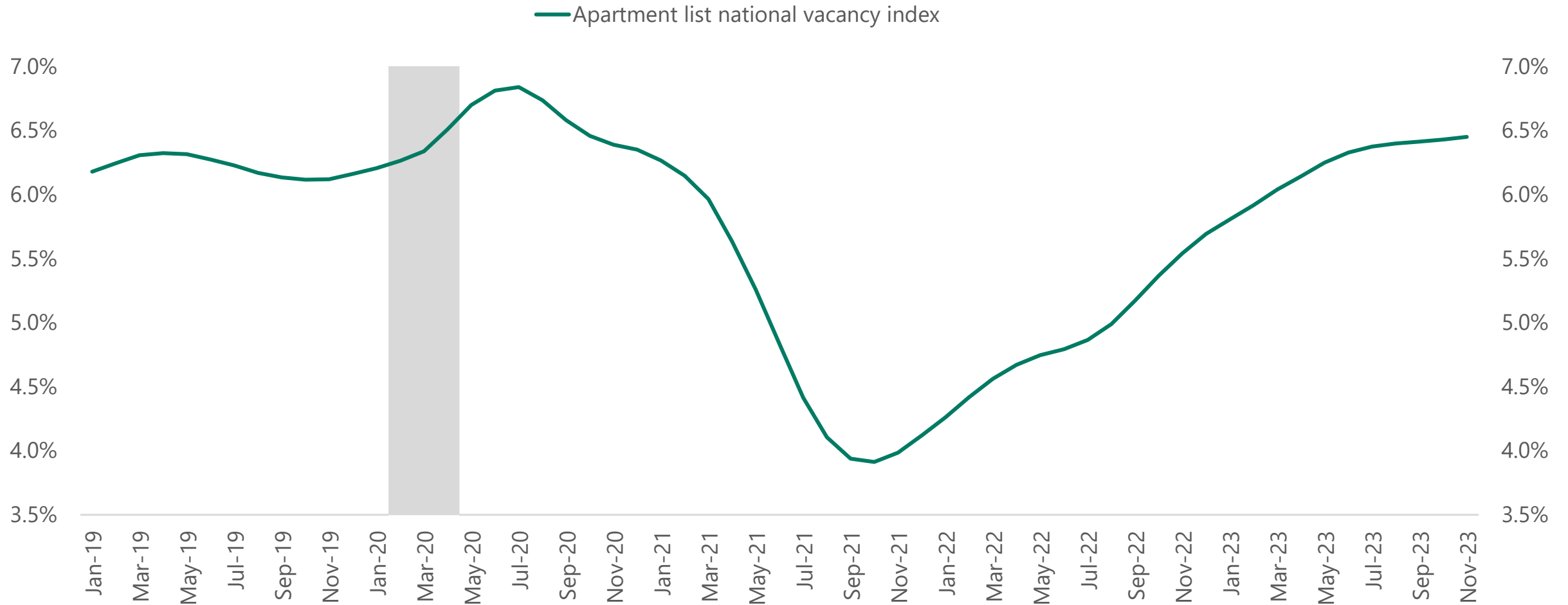
Homebuyers are getting older



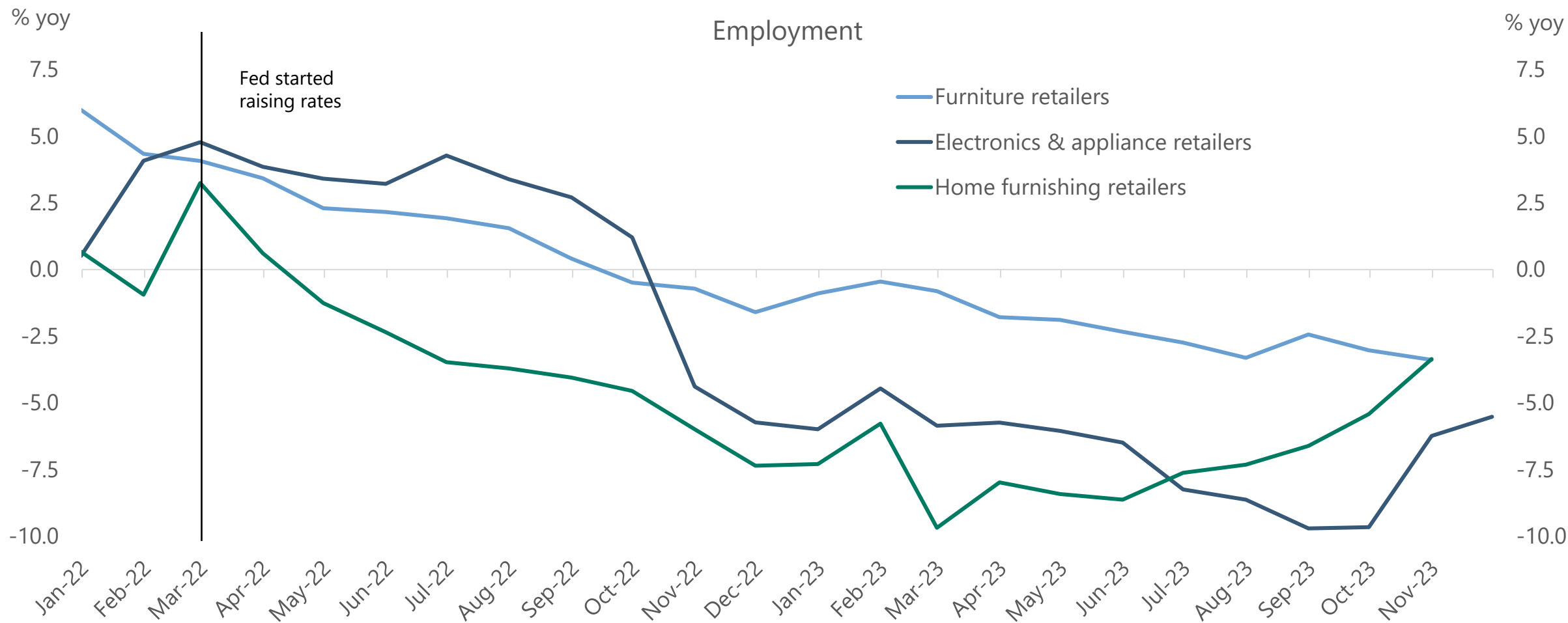
The median age of all homebuyers is now 49 years old, up from 31 in 1981



Apartment vacancies are back above pre-pandemic levels



Employment in retail trade continued to decline





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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.

Mr. Slok has a Ph.D in Economics and has studied at the University of Copenhagen and Princeton University.