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# 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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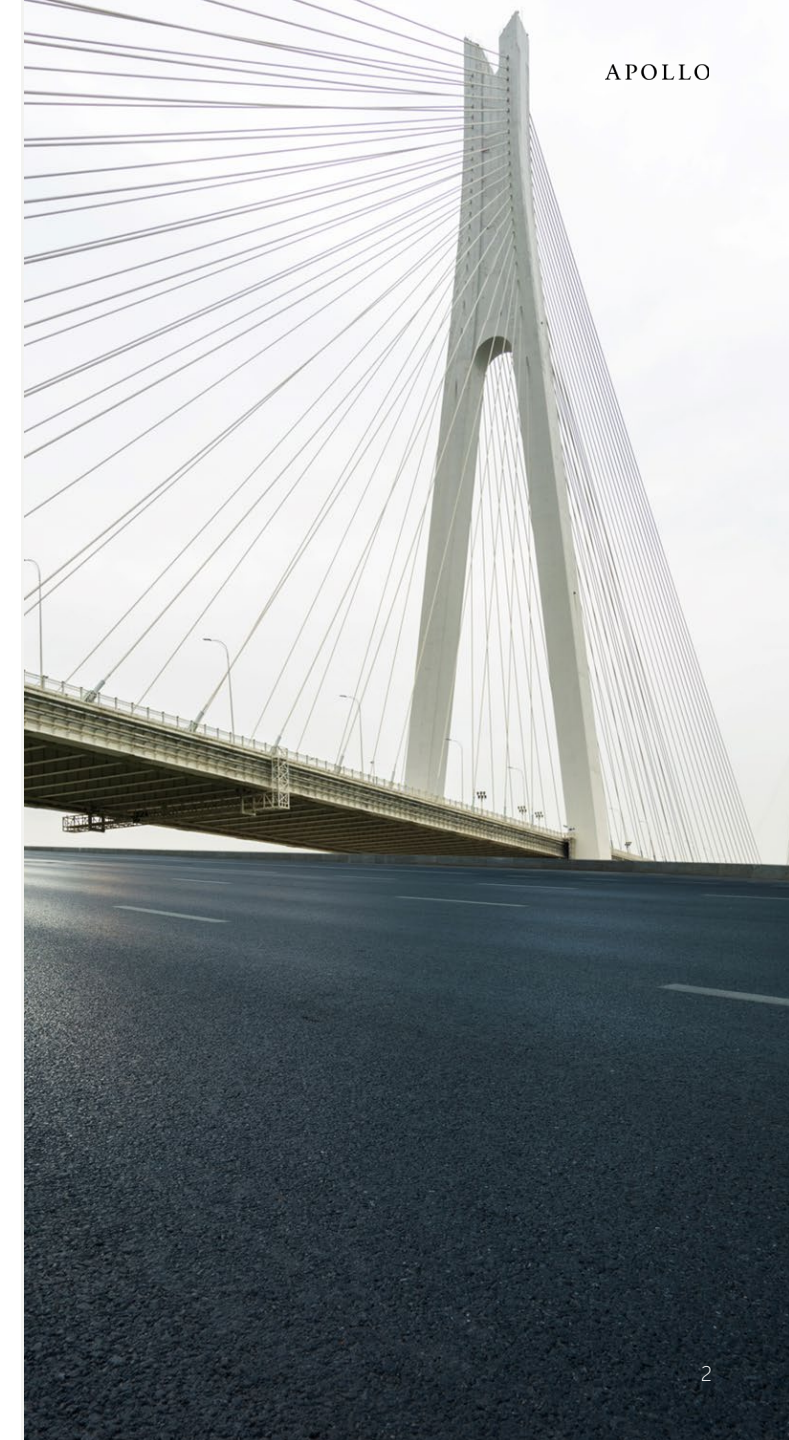
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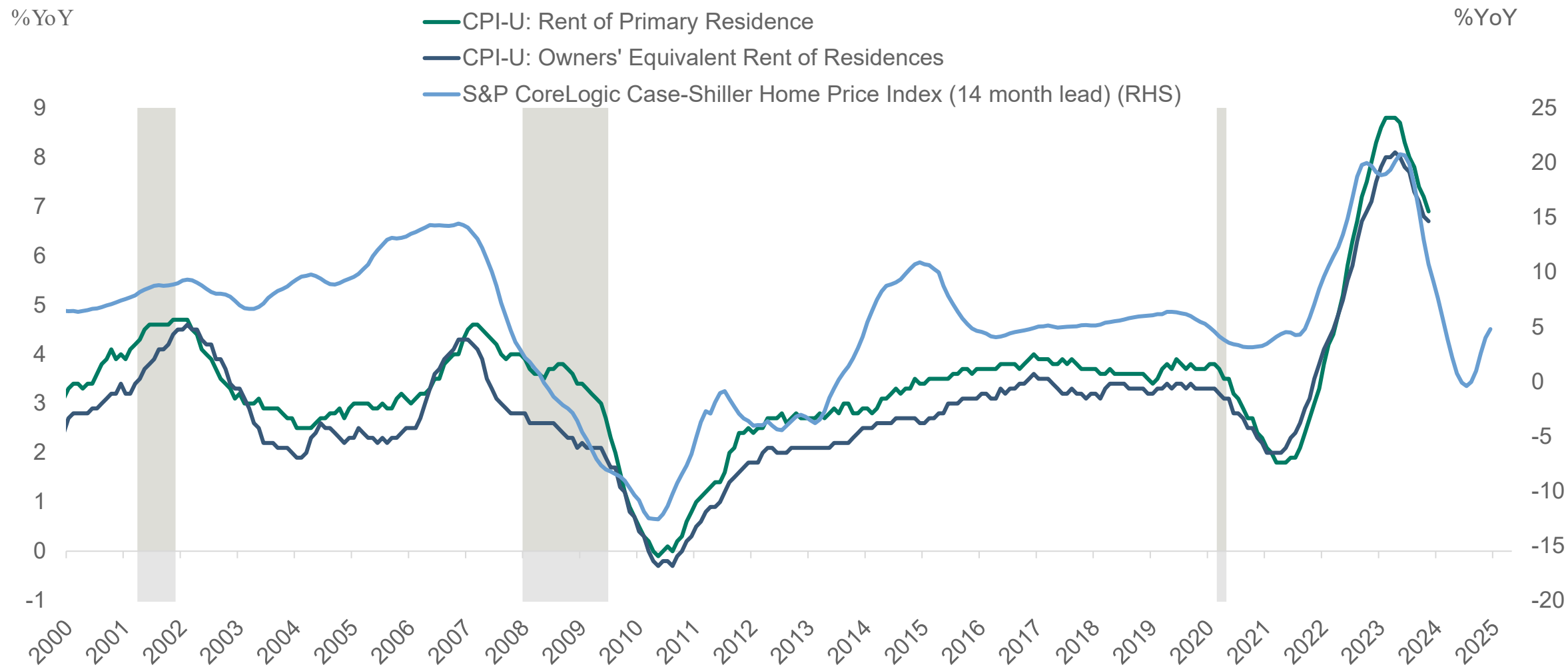


## **A housing recovery has started driven by:**

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

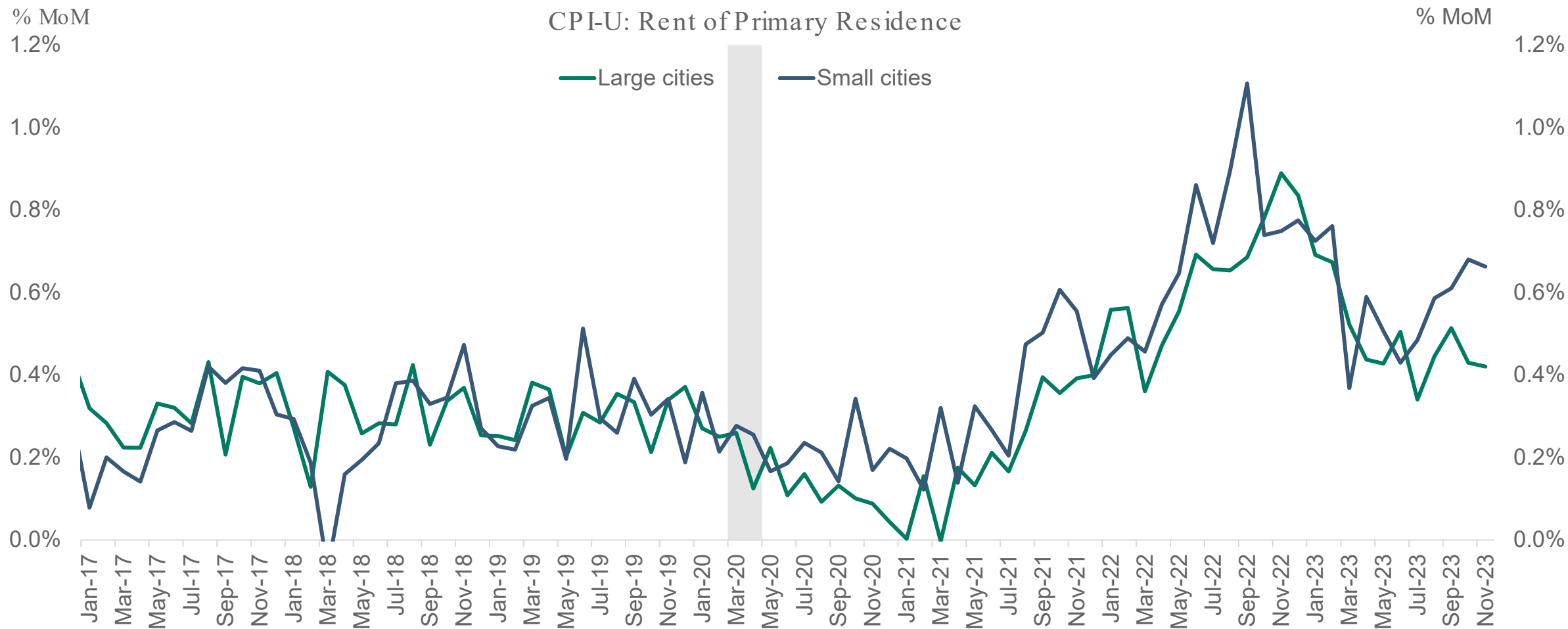
# Leading indicators of the housing market

# Home price inflation rebounding



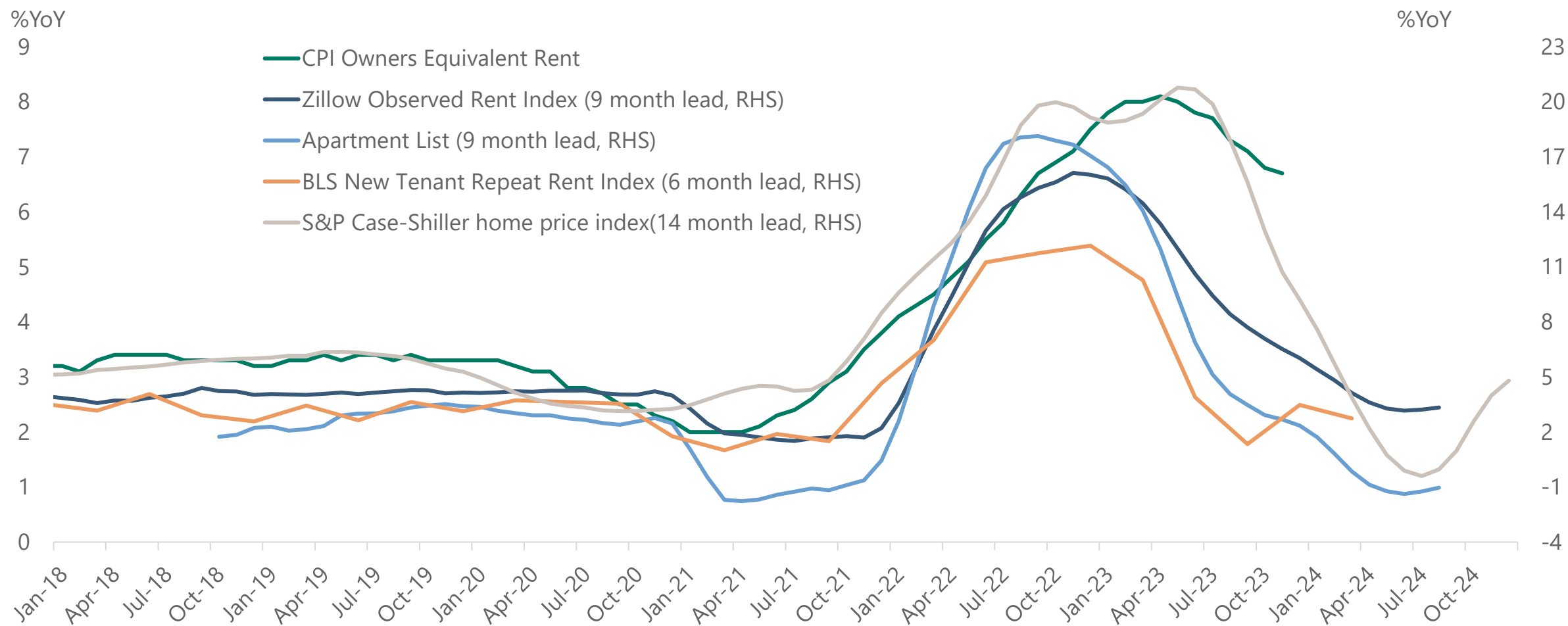
Source: Haver Analytics, BLS, S&P, Apollo Chief Economist

# Rent inflation rising in small cities and elevated in large cities



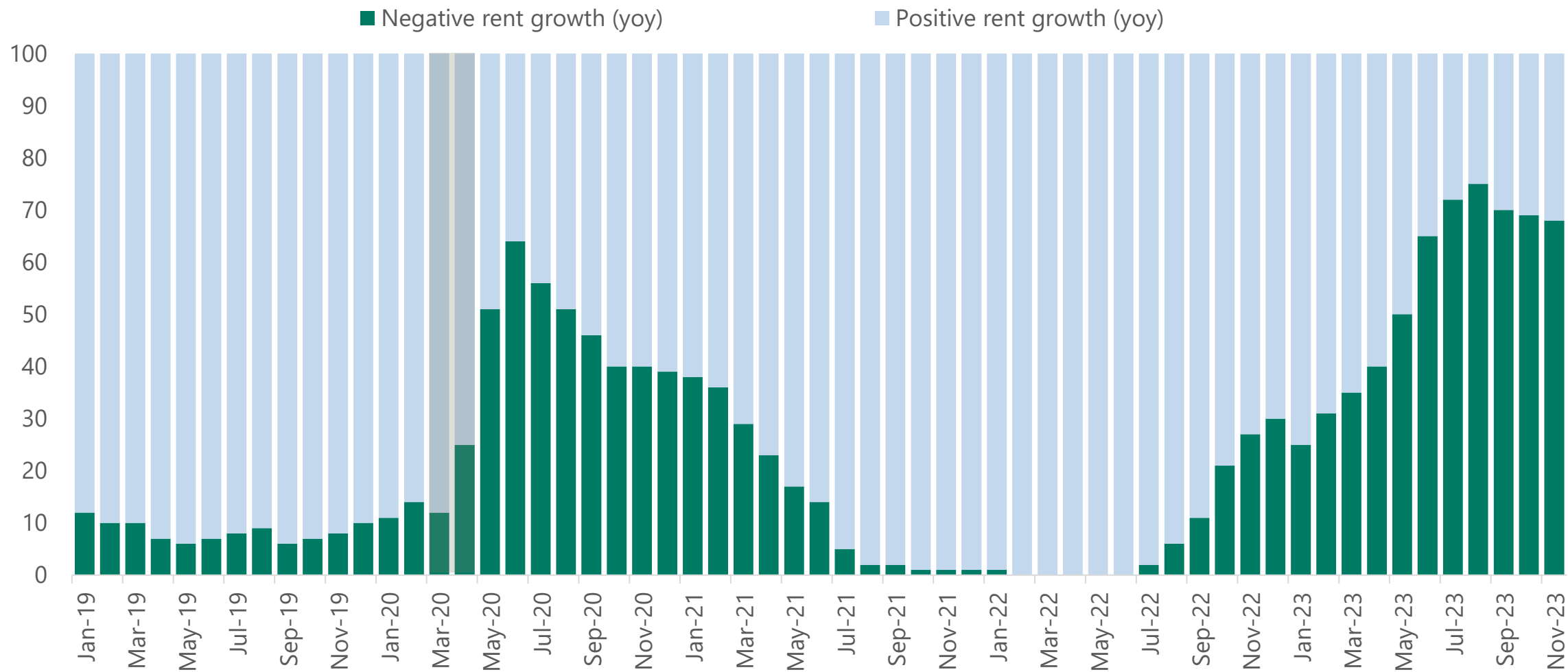
Source: BLS, Haver Analytics, Apollo Chief Economist

# Rebound coming in housing inflation



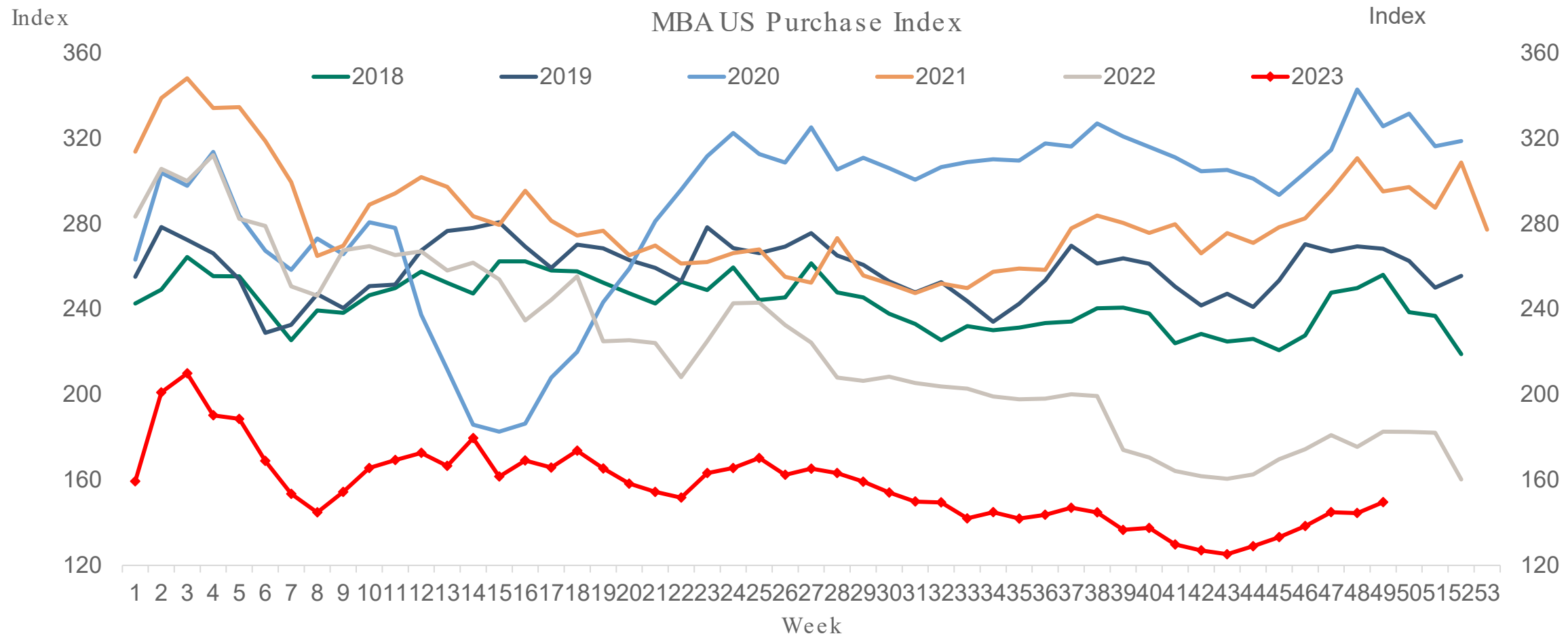
Source: BLS, S&P Case Shiller, Zillow, Haver Analytics, Apollo Chief Economist

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



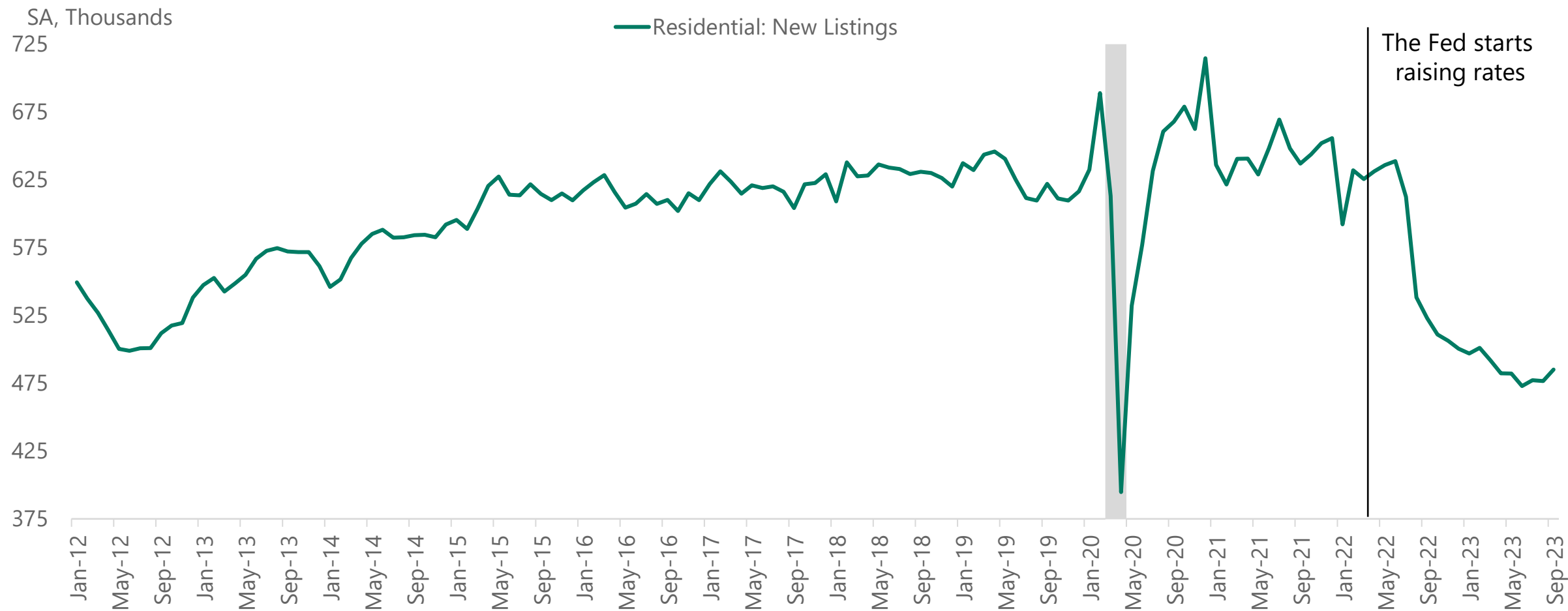


# Mortgage purchase applications have started to recover



Source: Mortgage Bankers Association, Bloomberg, Apollo Chief Economist

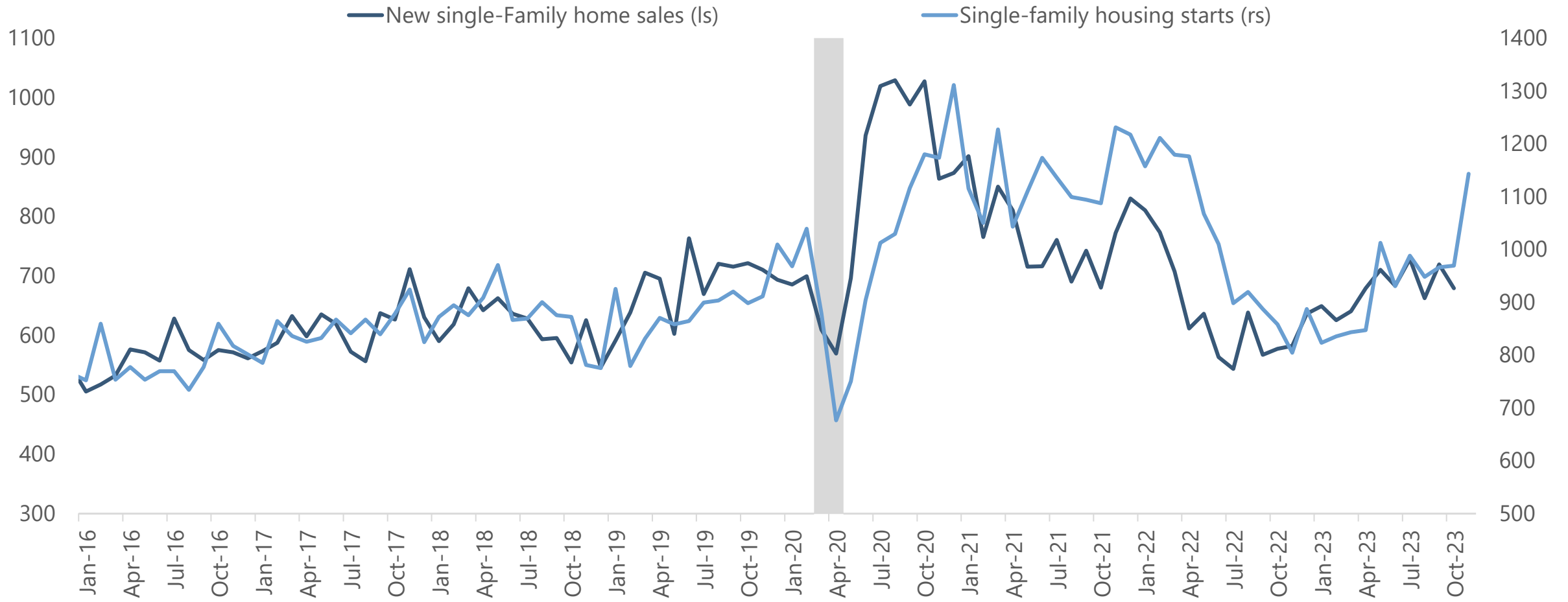
# Residential new listings starting to rebound



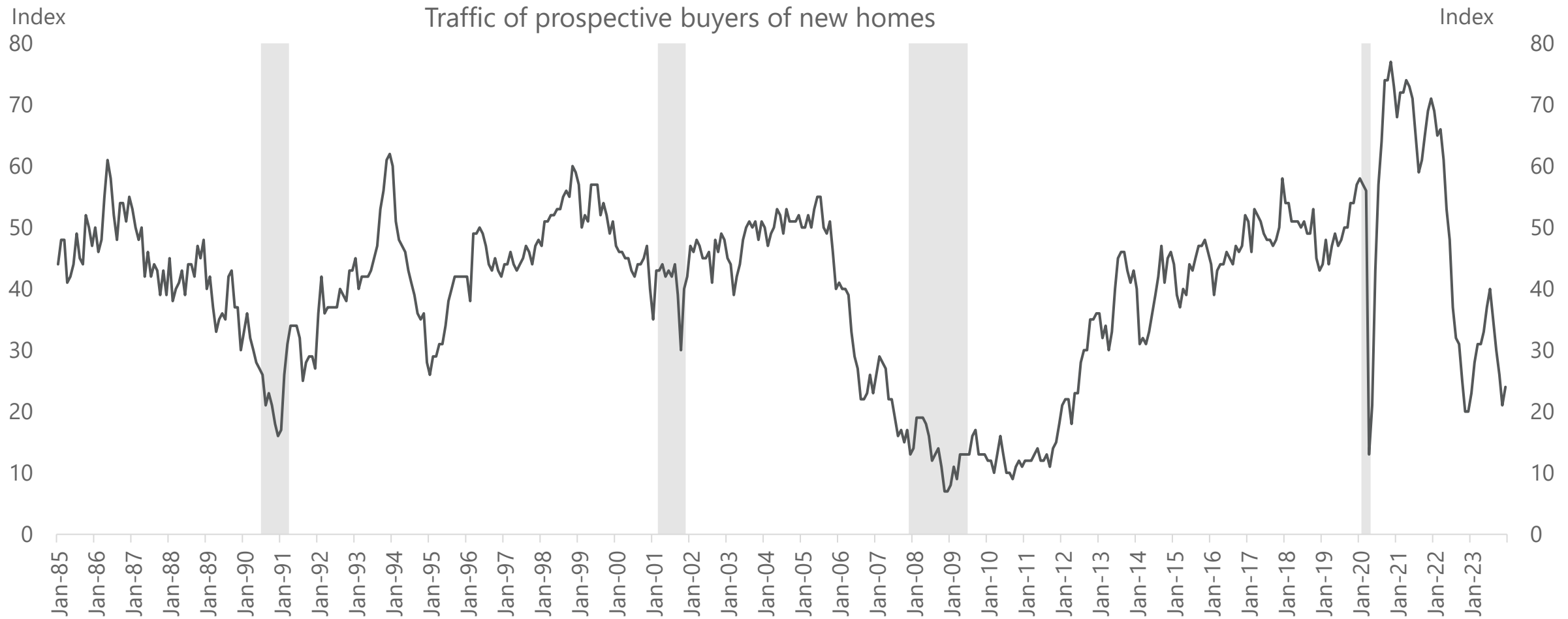
# The jump in housing starts points to a jump in new home sales

SAAR, Thous.

SAAR, Thous.

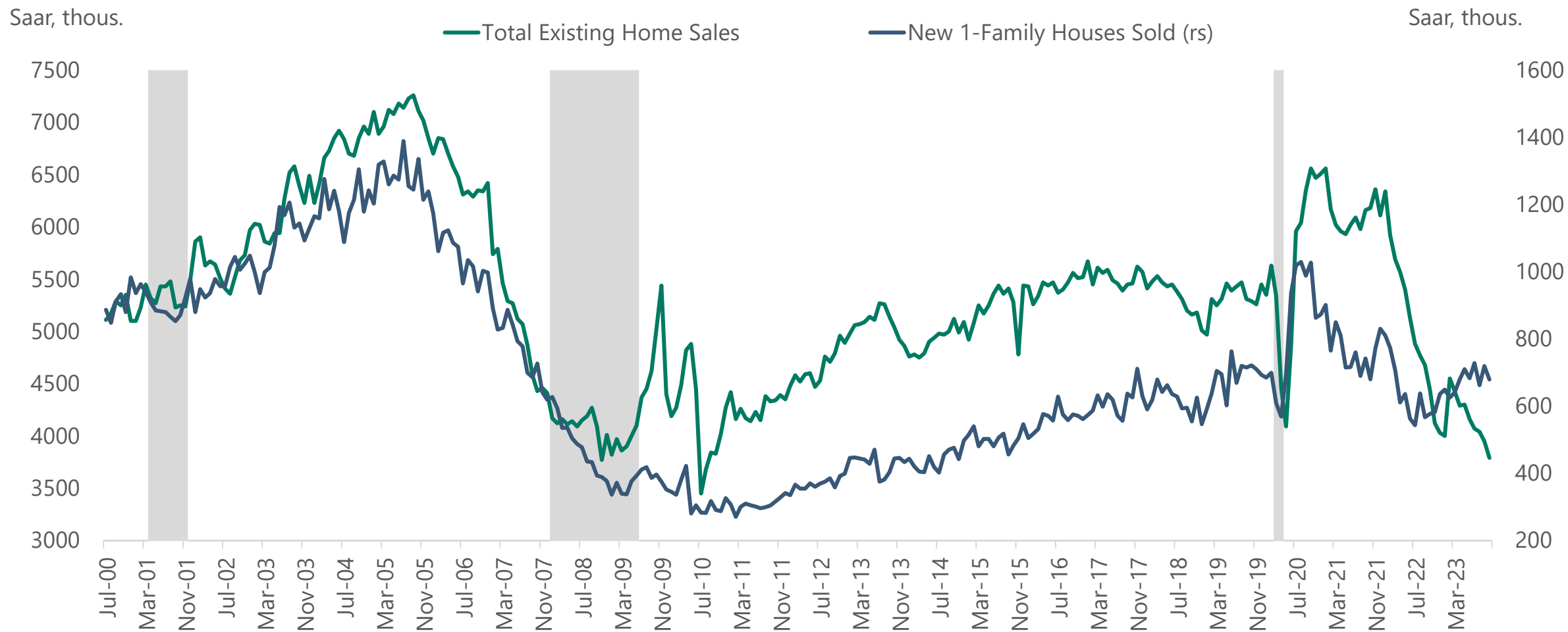


# Traffic of prospective homebuyers bottoming out



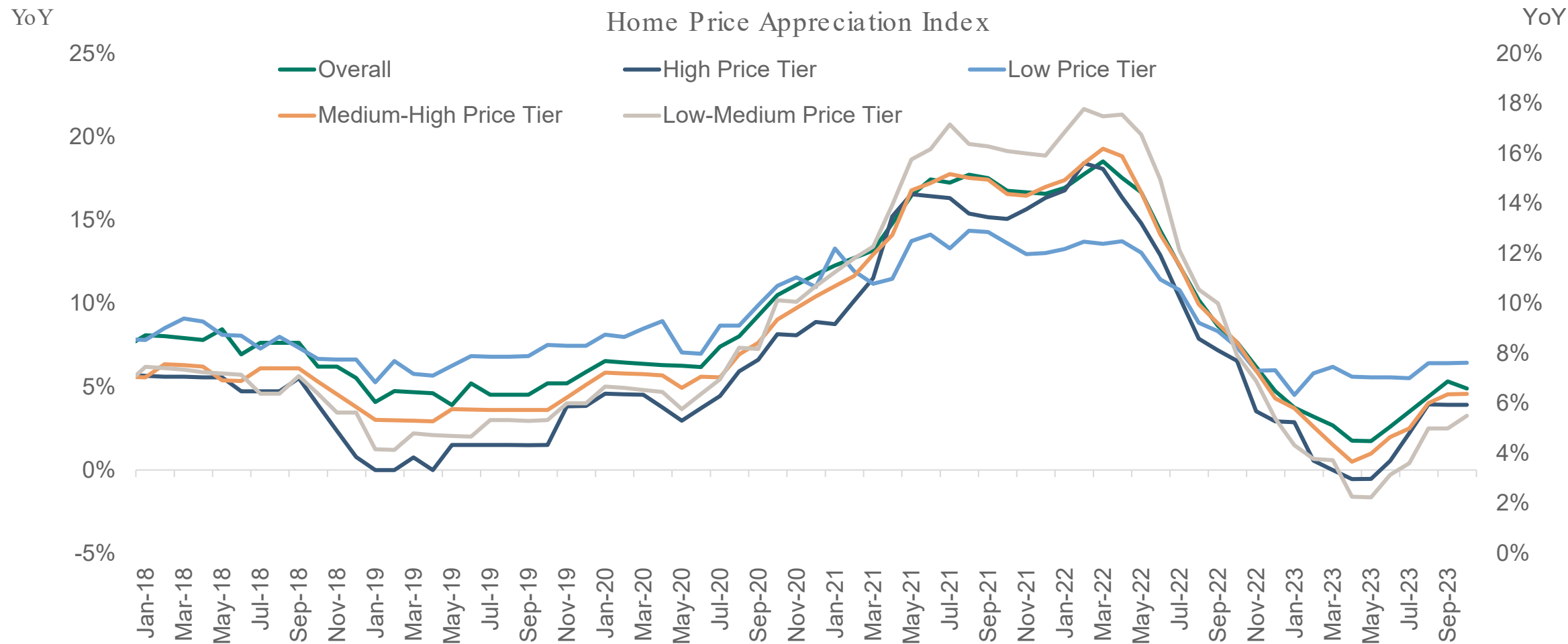
Source: National Association of Homebuilders, Bloomberg, Apollo Chief Economist

# New home sales rebounding

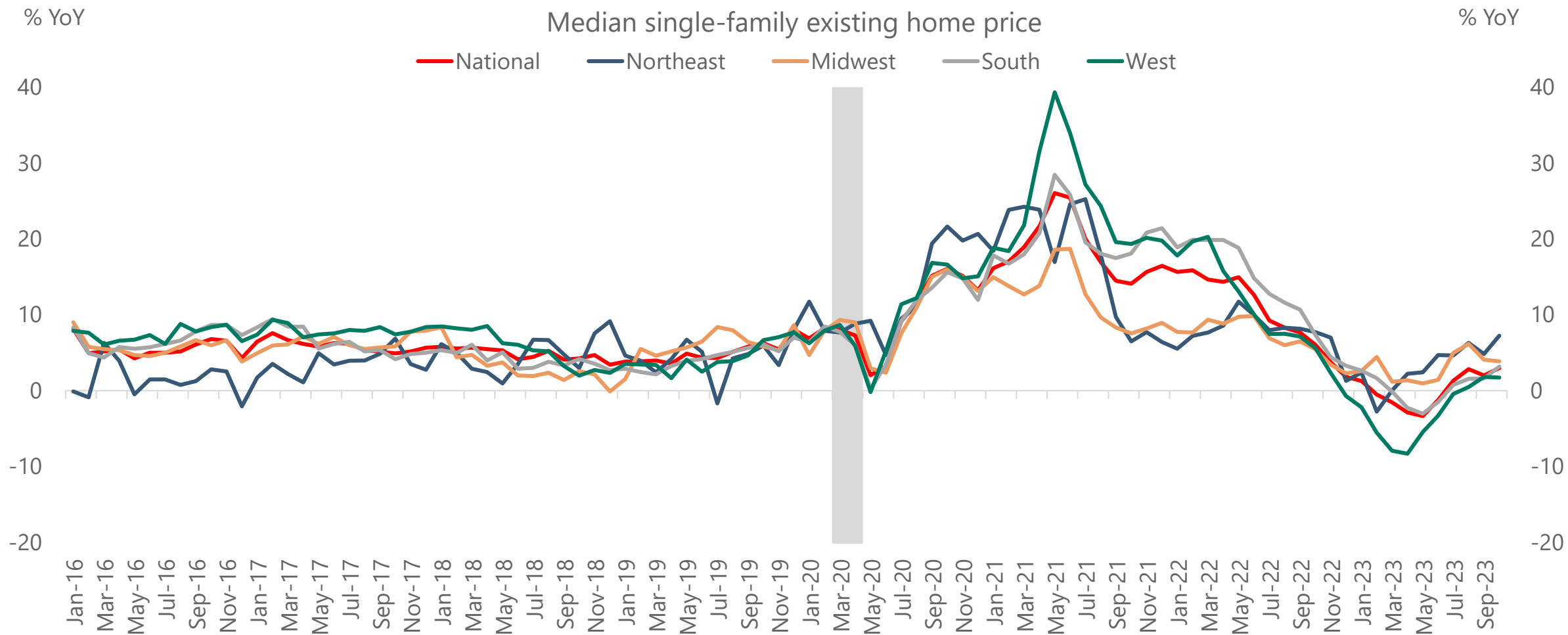


Source: Census Bureau, NAR, Haver, Apollo Chief Economist; Forecast is Bloomberg consensus

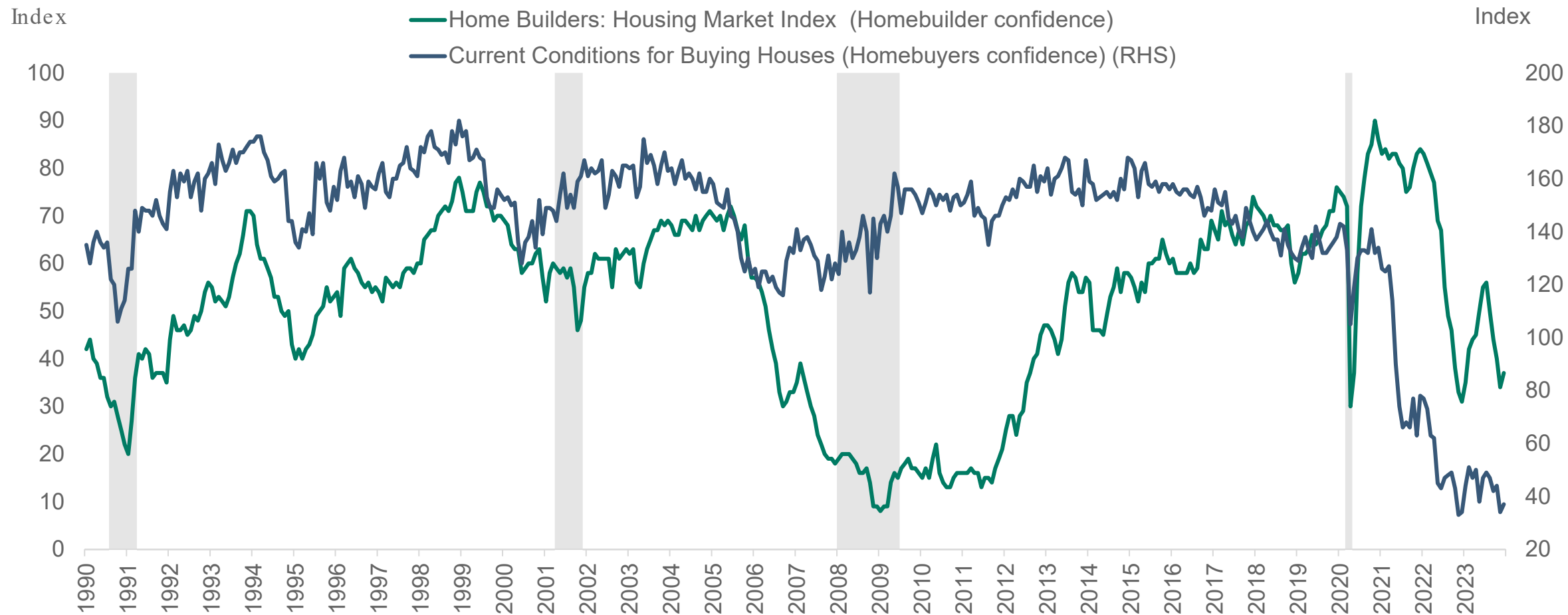
# Home price inflation solid because of low inventory of homes for sale



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

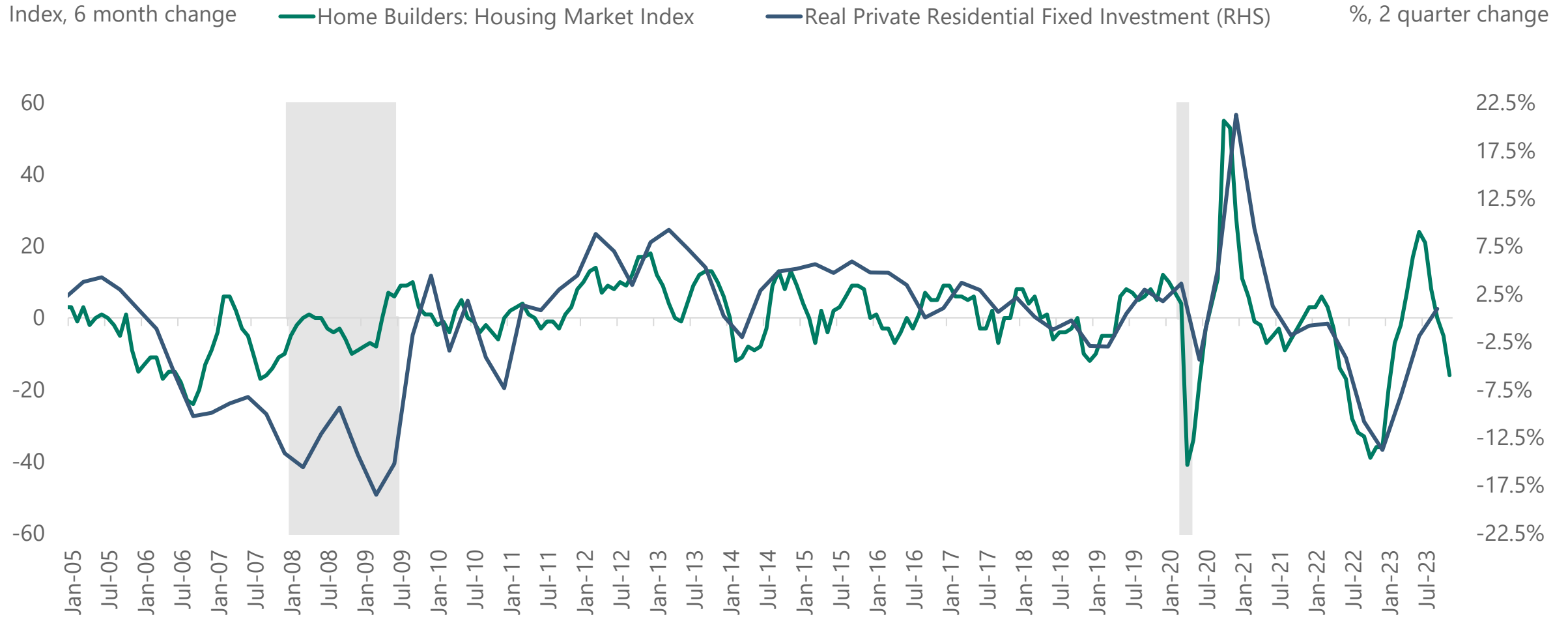


# Homebuyer and homebuilder confidence bottoming out

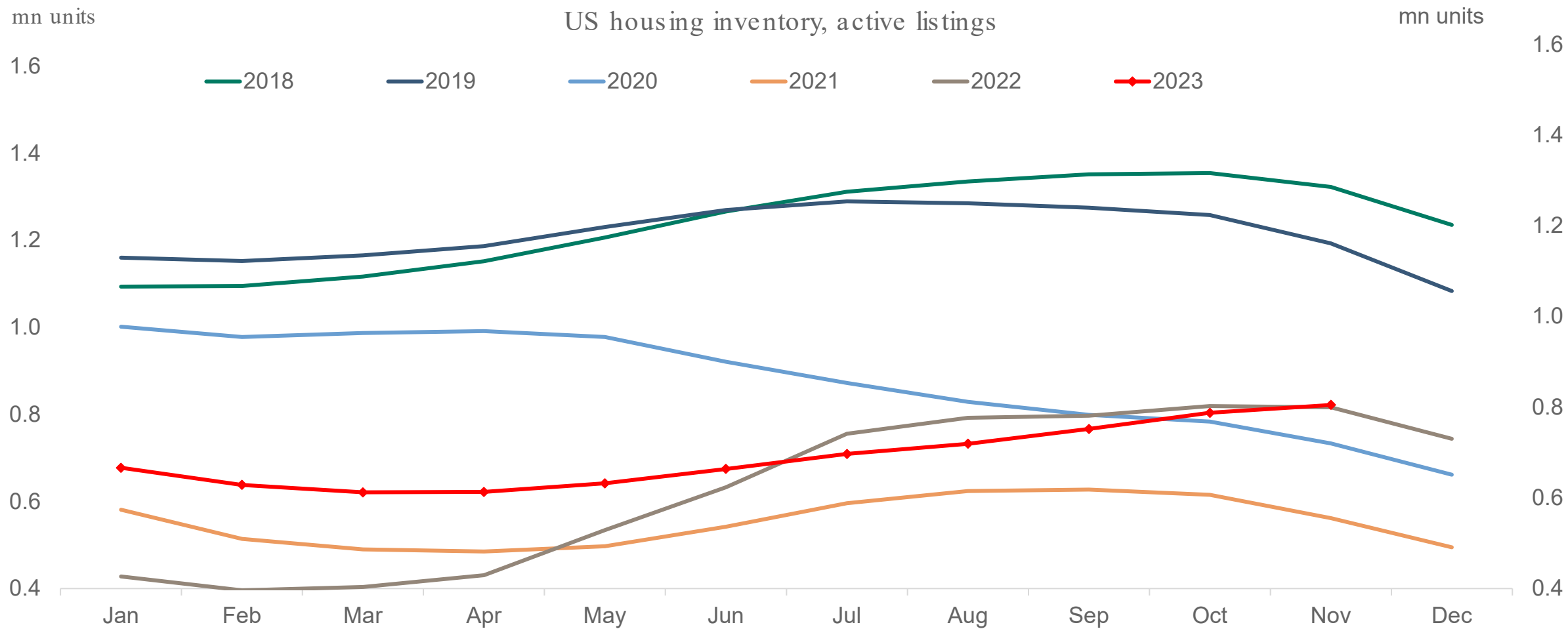




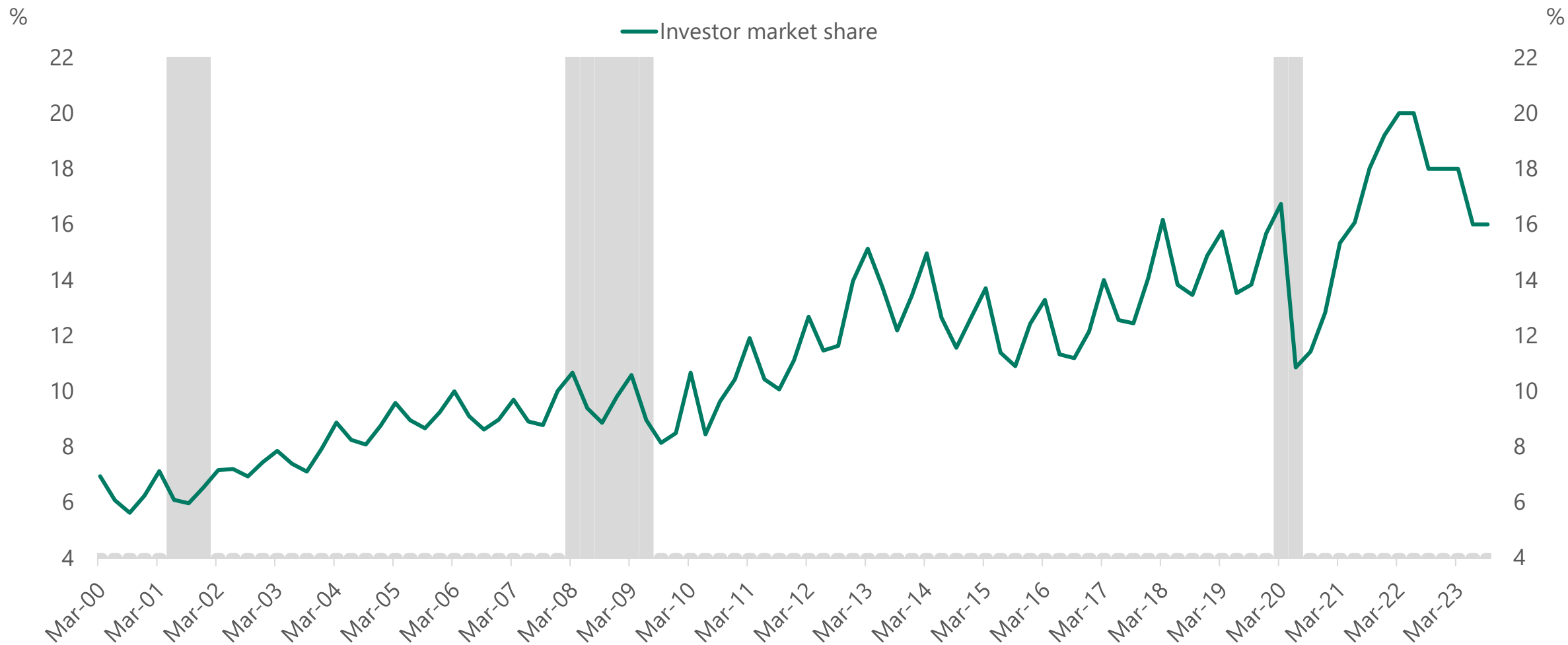
# If homebuilder confidence rebounds over the coming months because of the Fed pivot, residential investment will also rebound



# Very low inventory of homes for sale

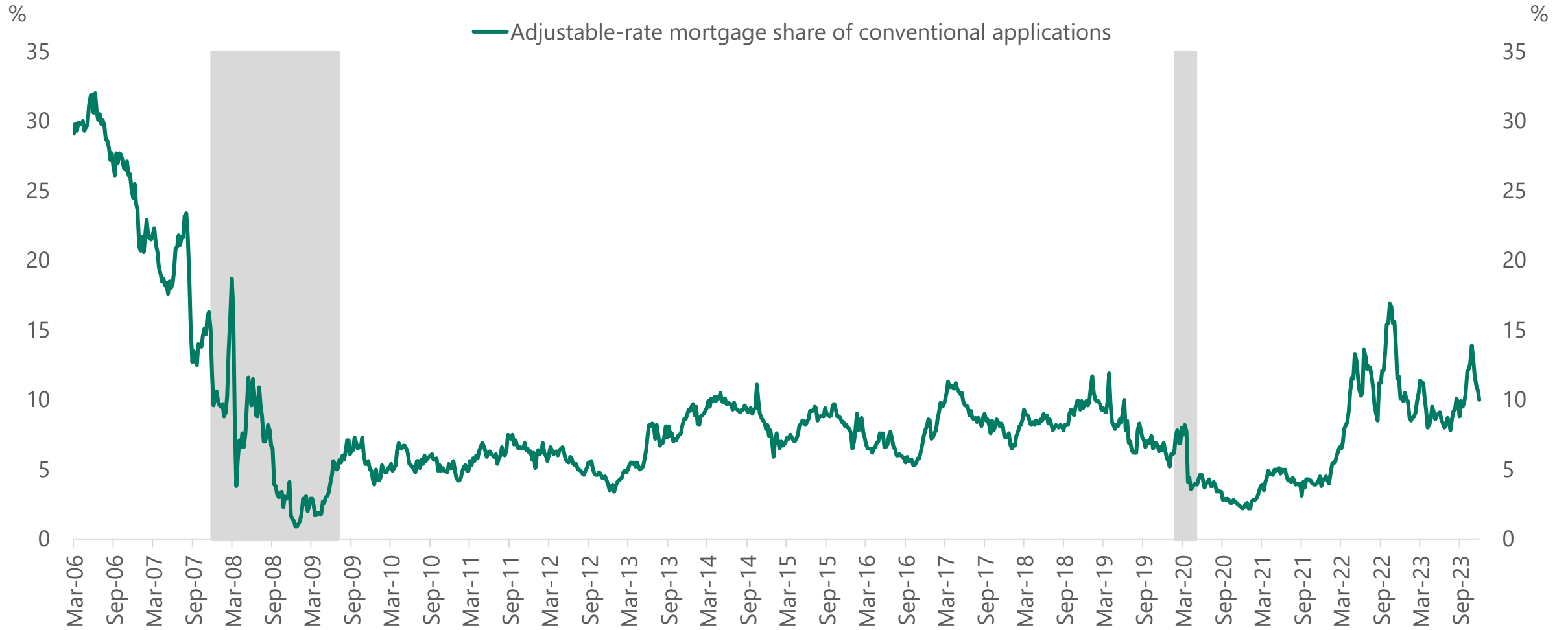


# Investors account for 16% of all home purchases, down from 20% in 2022



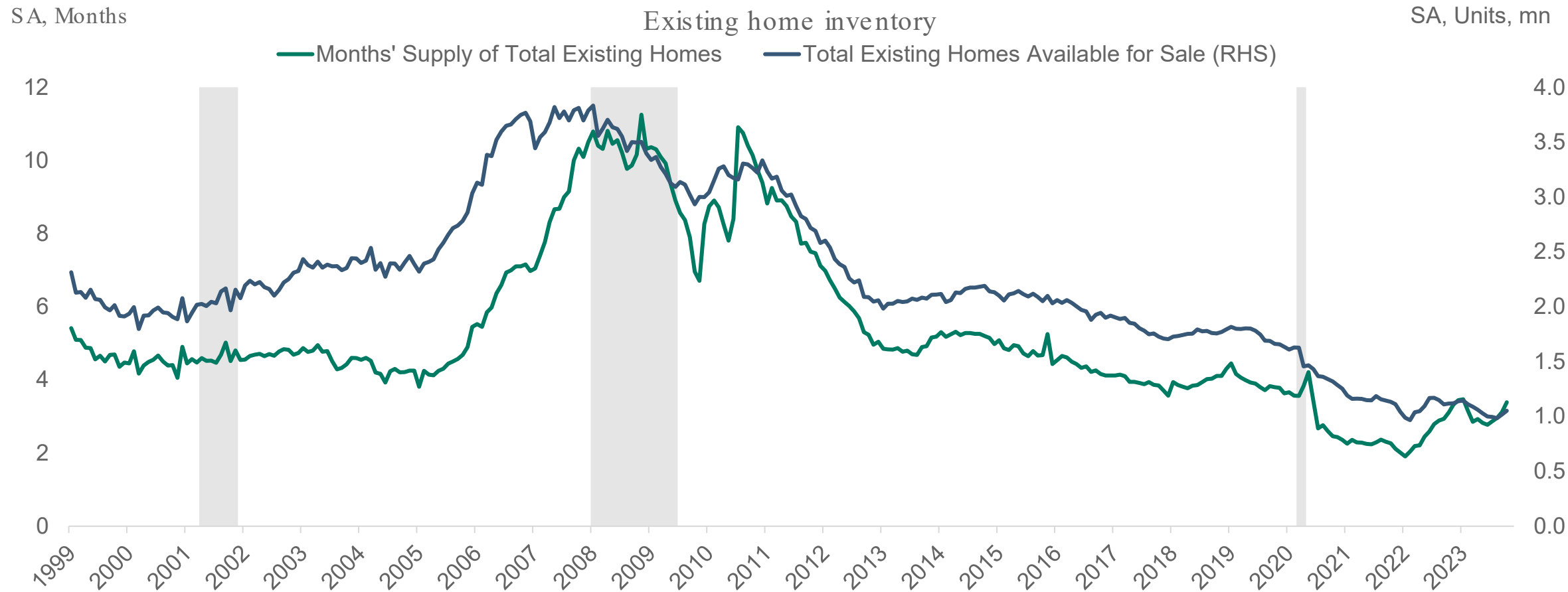
Source: Redfin, Apollo Chief Economist. Definition of Investor market share: the percentage of total home sales in which an investor was the buyer.

# 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

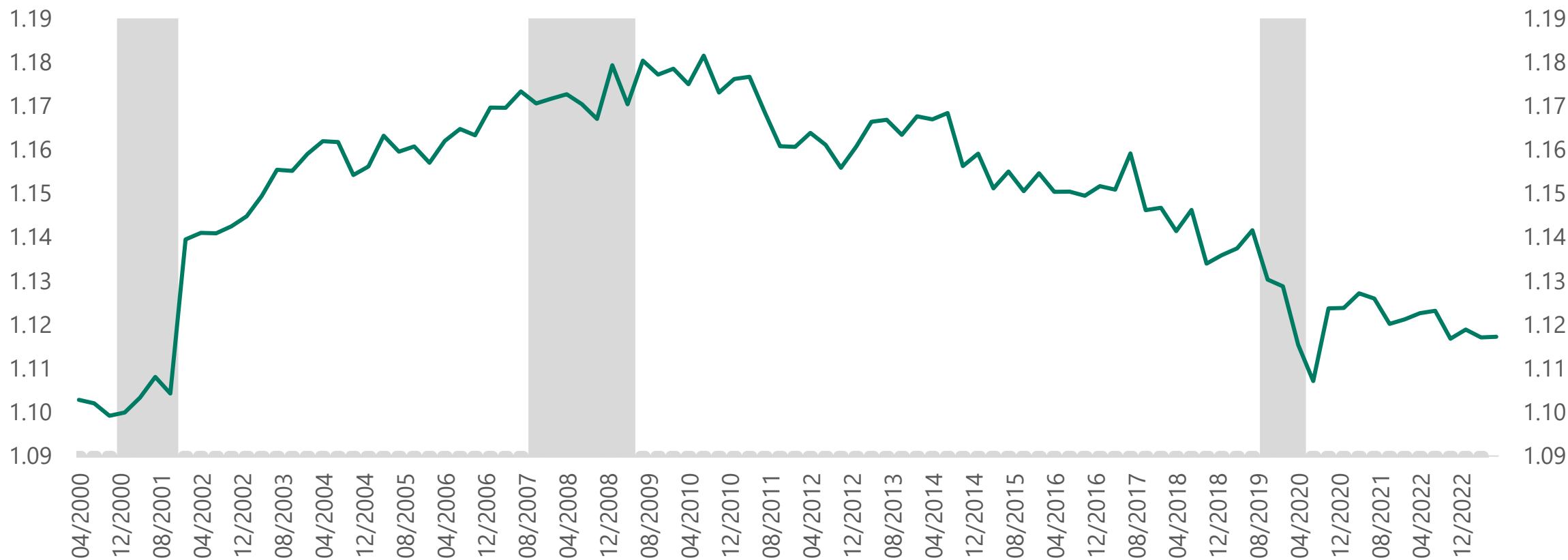


# Total housing inventory per person continues to decline

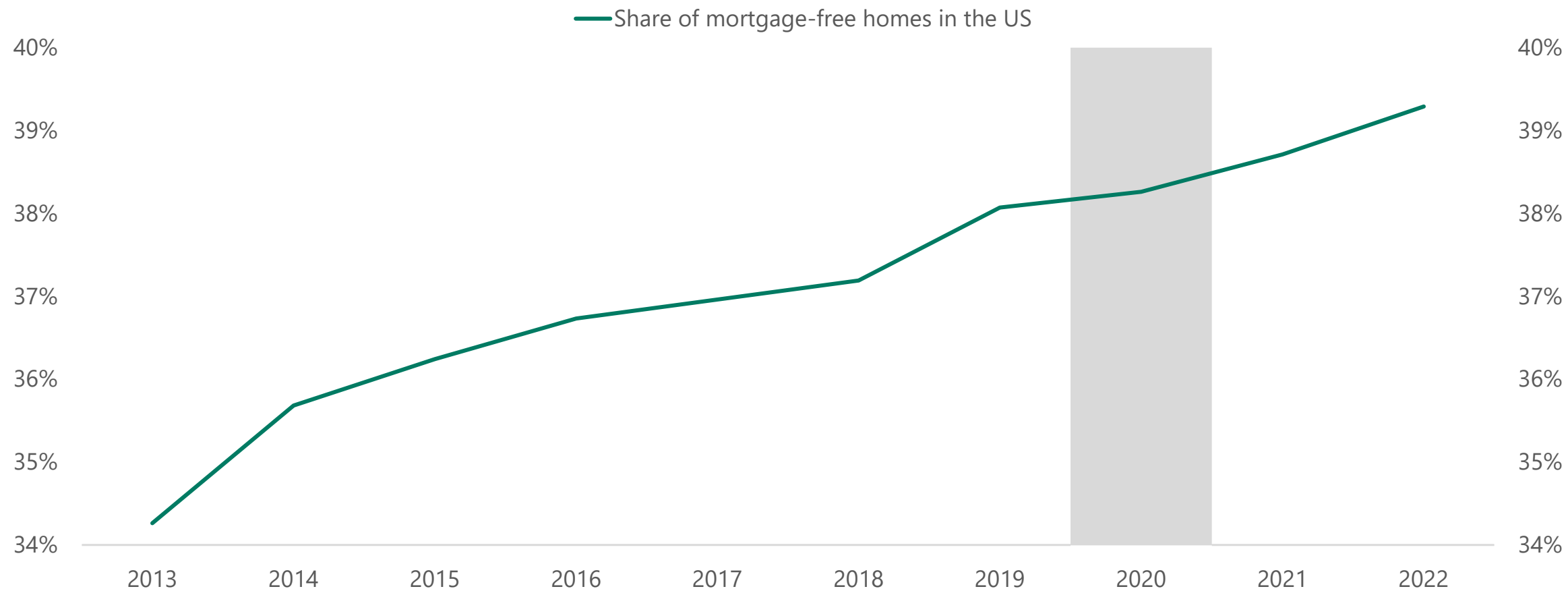
Units per person

Housing inventory estimate: Total housing units/Household

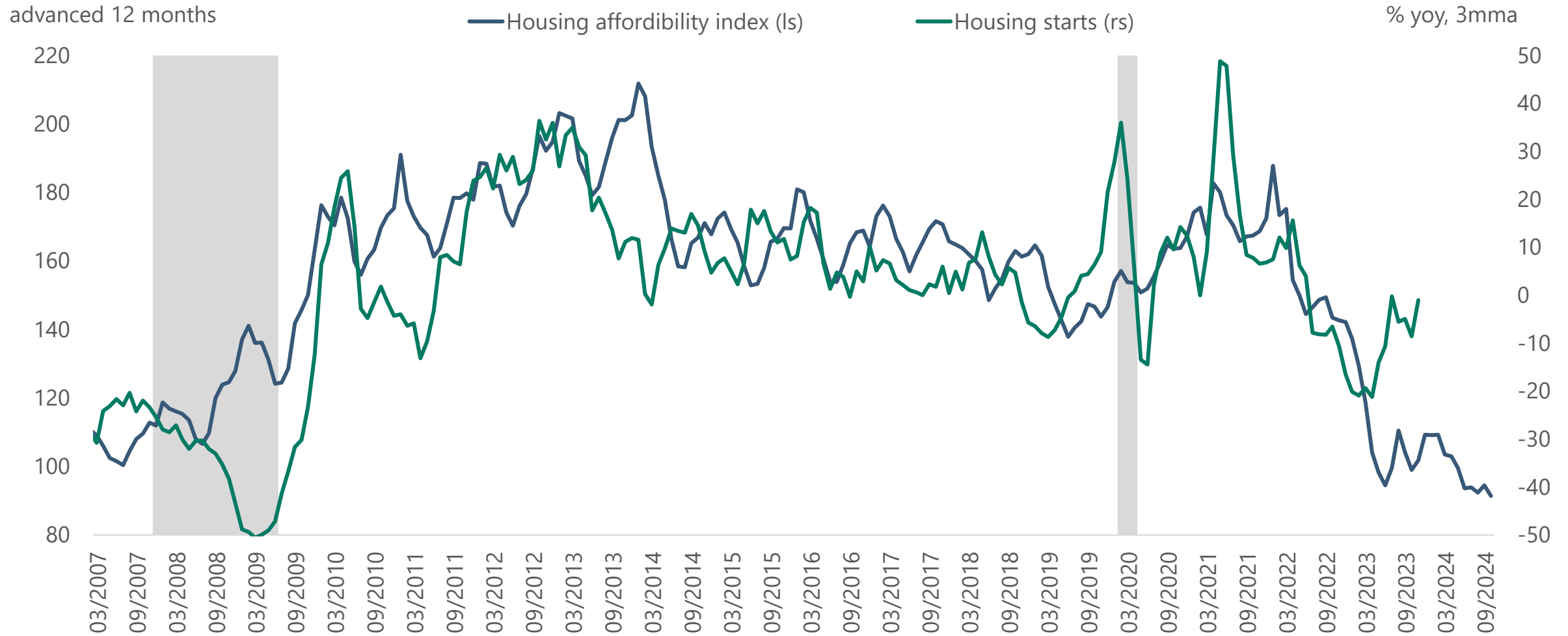
Units per prson



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



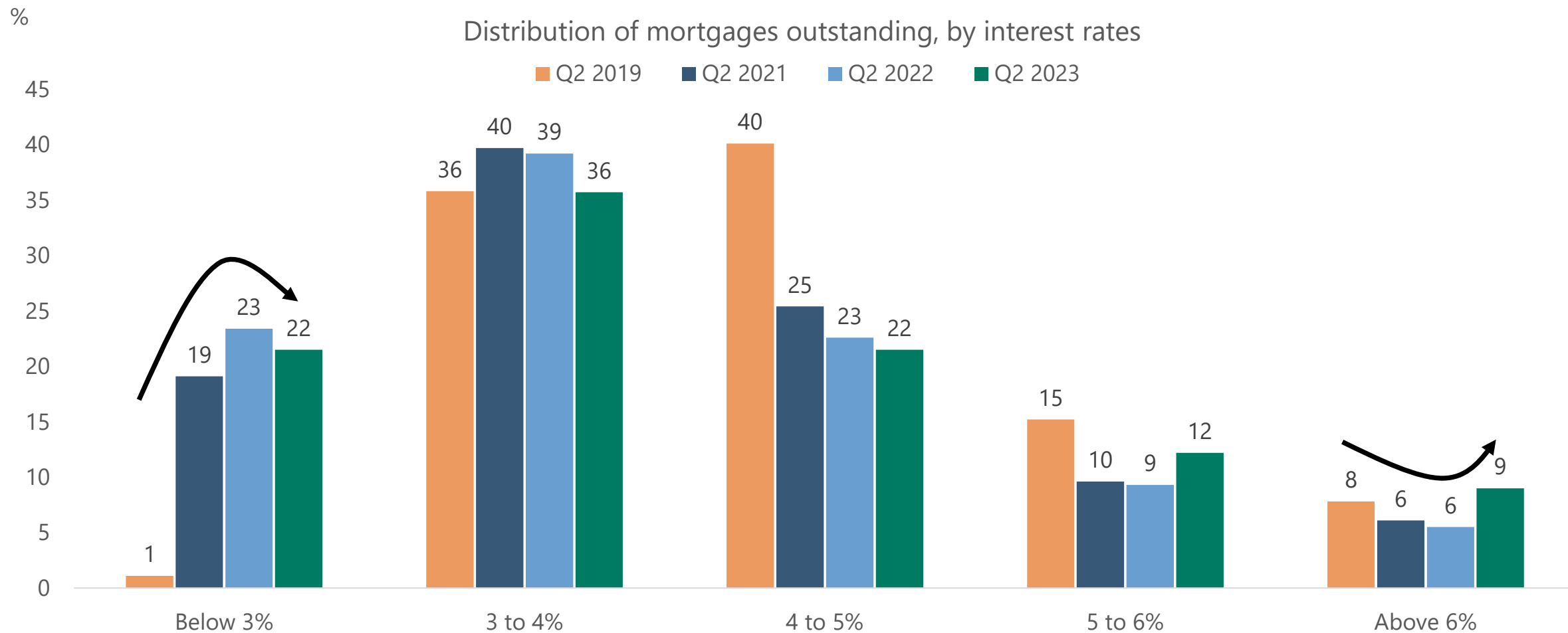
# Low inventory boosting housing starts despite low affordability



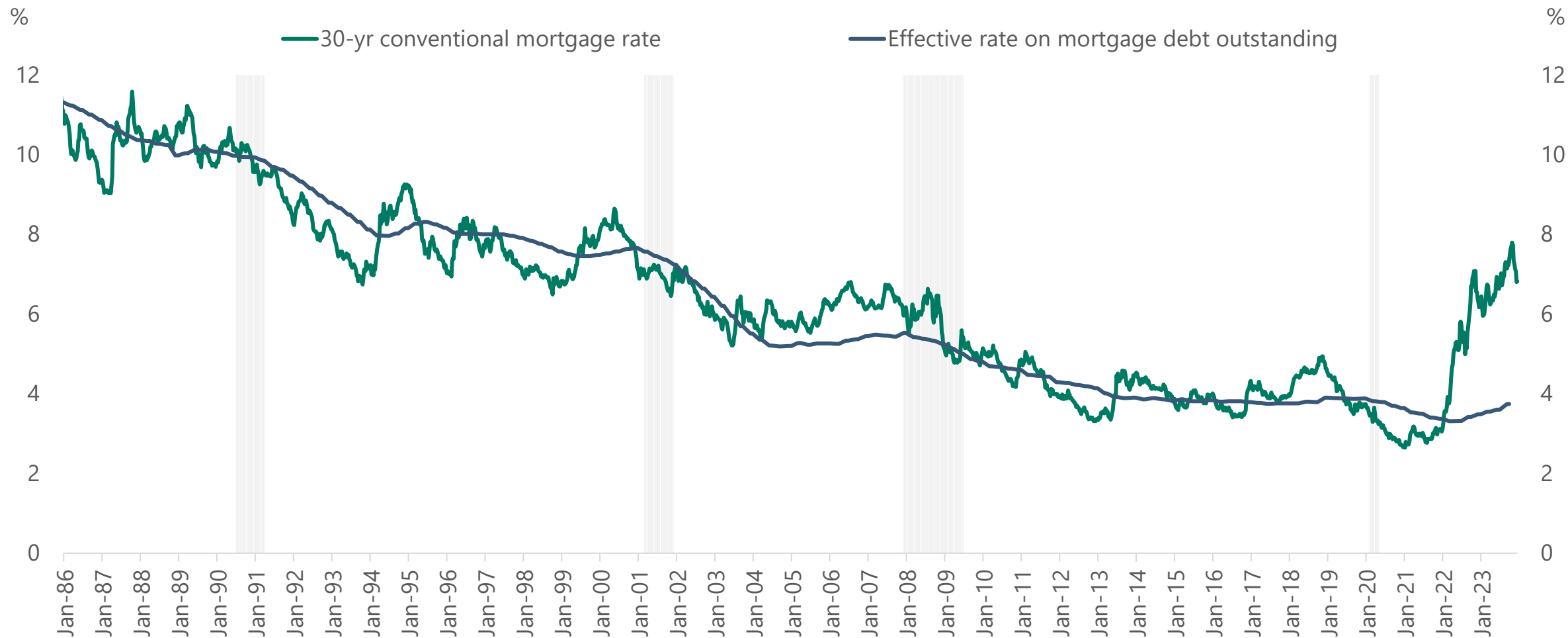
Source: Bloomberg, Apollo Chief Economist



# Distribution of interest rates on outstanding mortgages

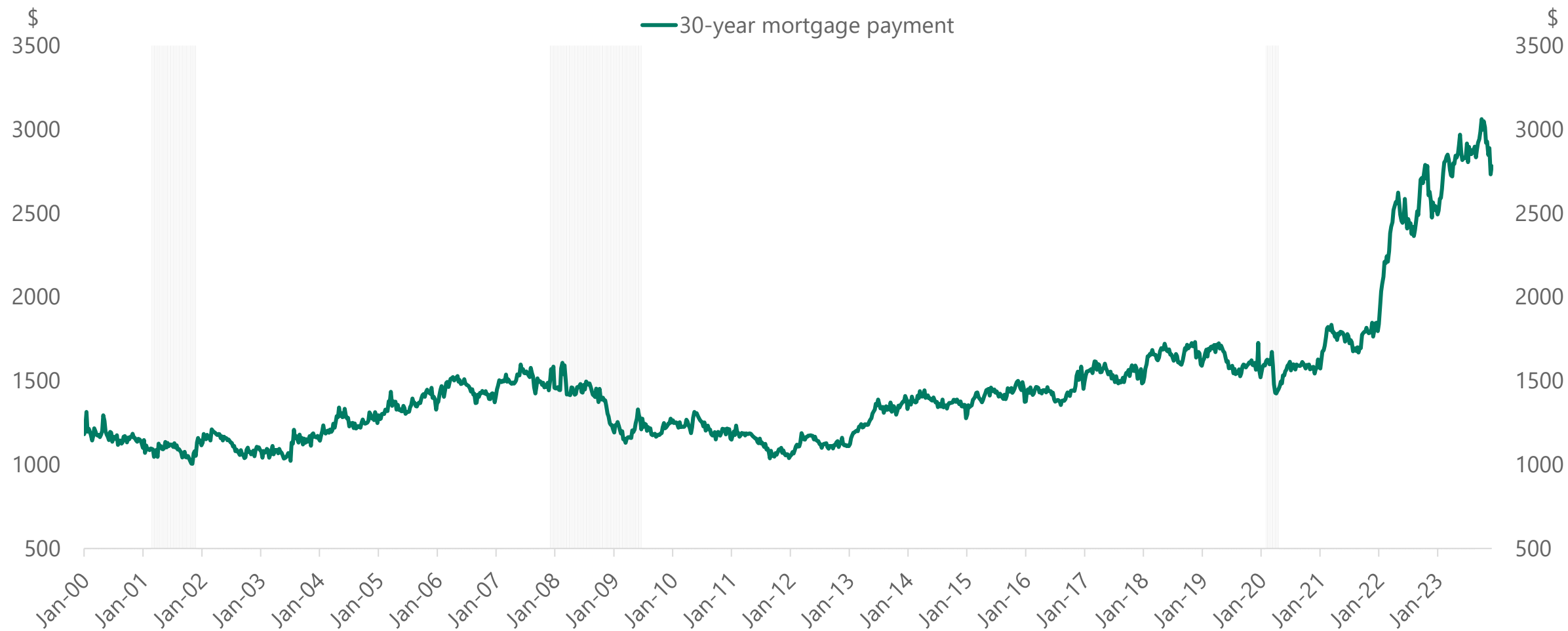


# Effective outstanding mortgage rate is 3.7%



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



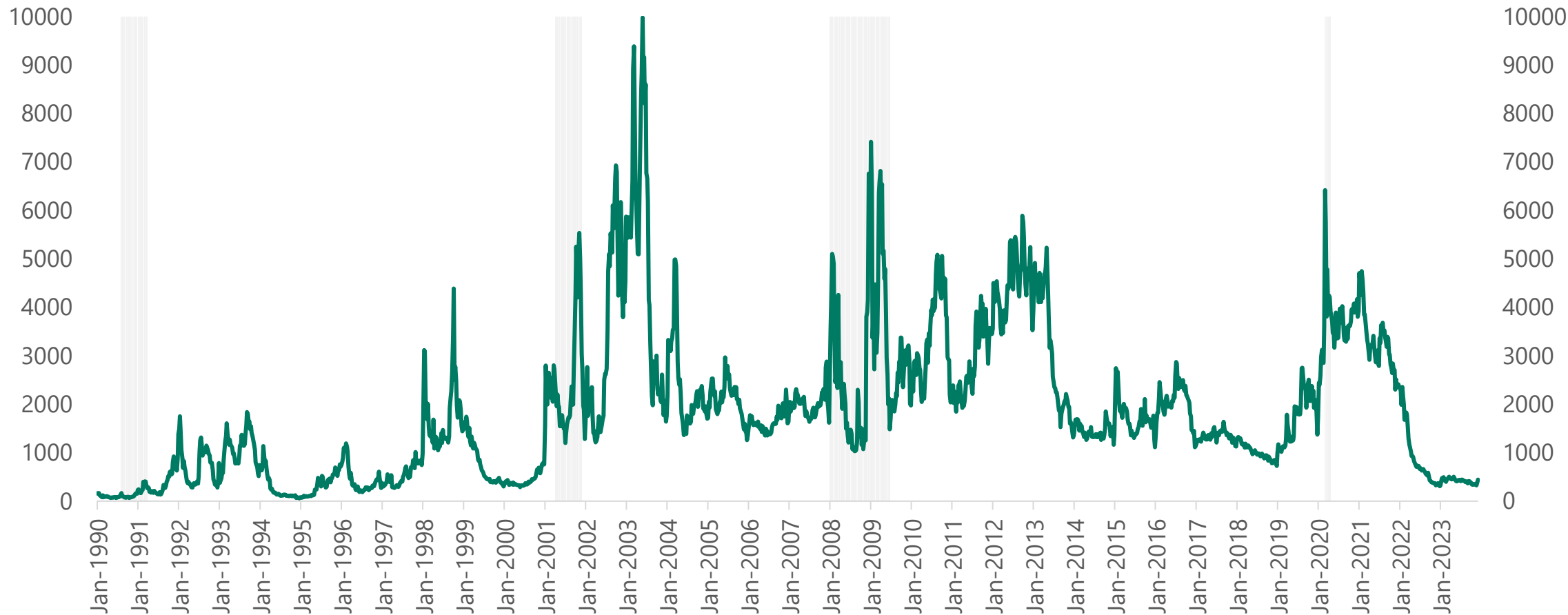
Source: Bloomberg L.P., Apollo Chief Economist (Note: Calculation of monthly payment using the 30-year purchase loan application size and the 30-yr effective rate.)

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

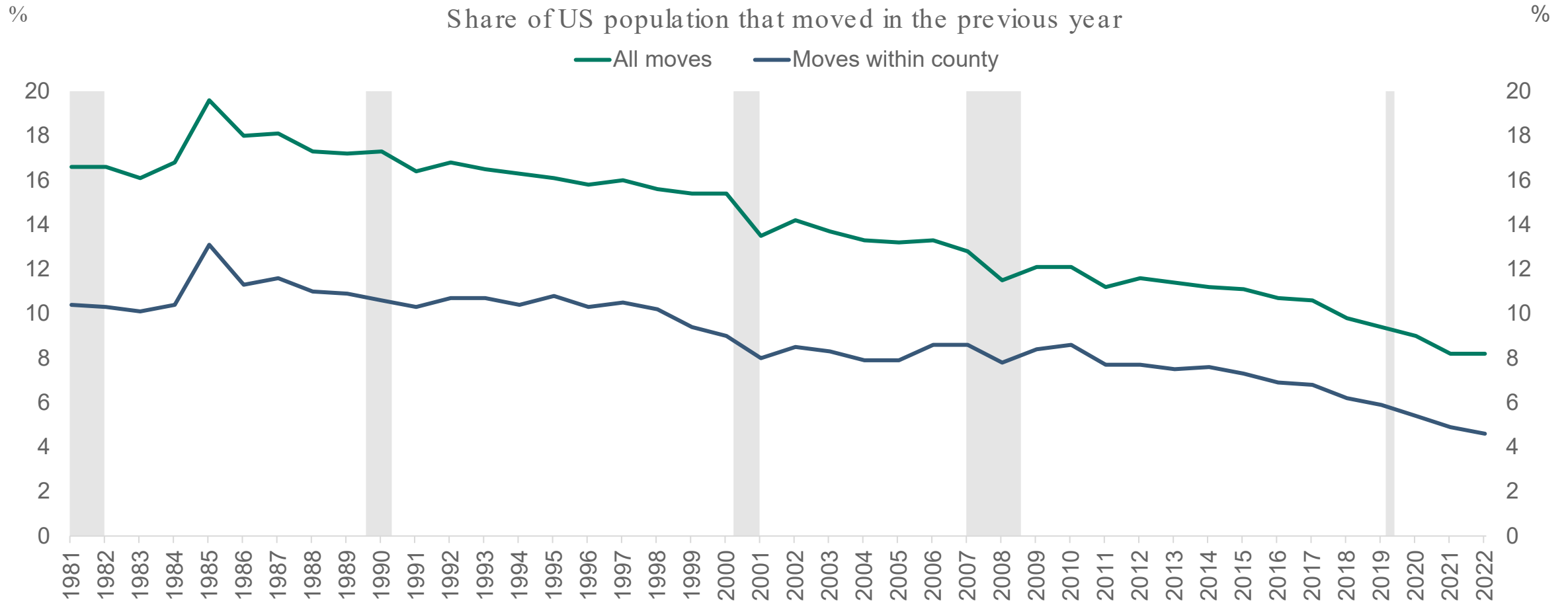
Index, Mar 1990 = 100

— Mortgage loan applications for refinancing

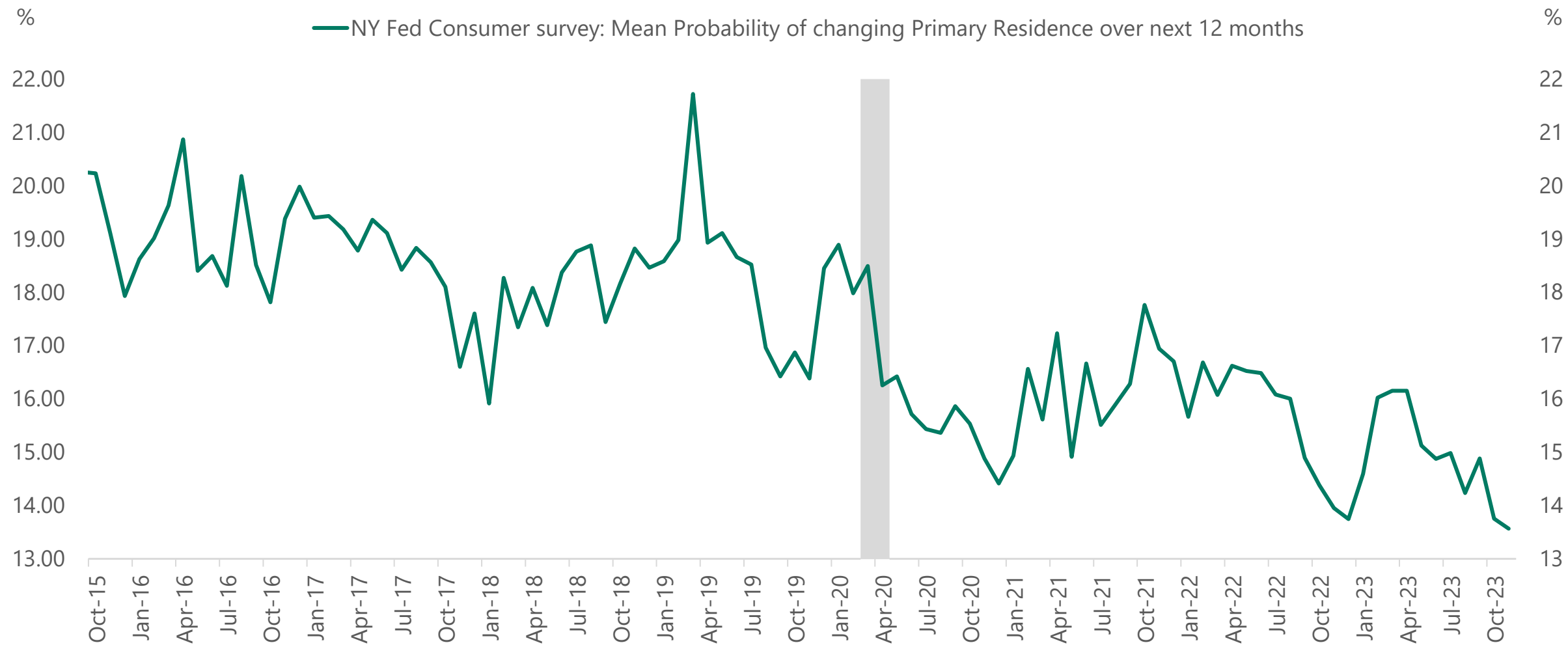
Index, Mar 1990 = 100



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

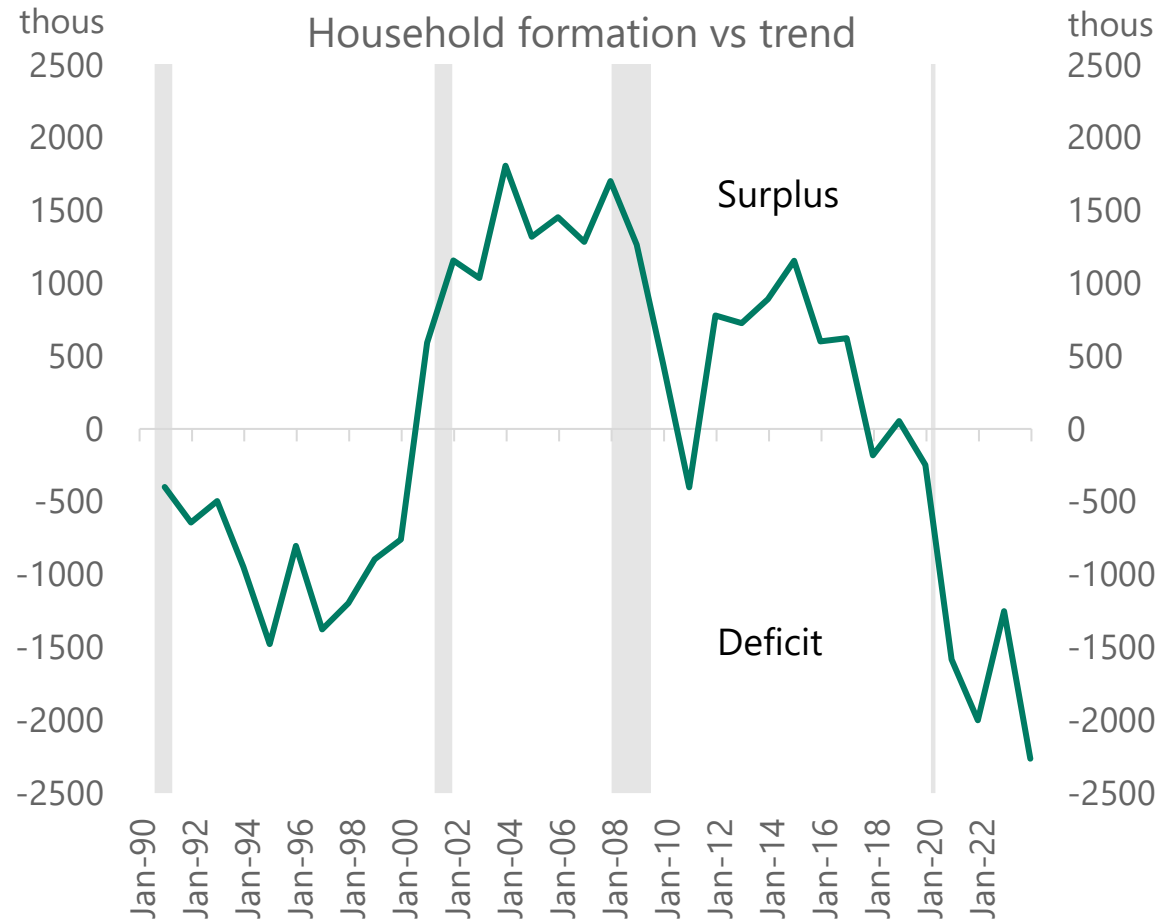
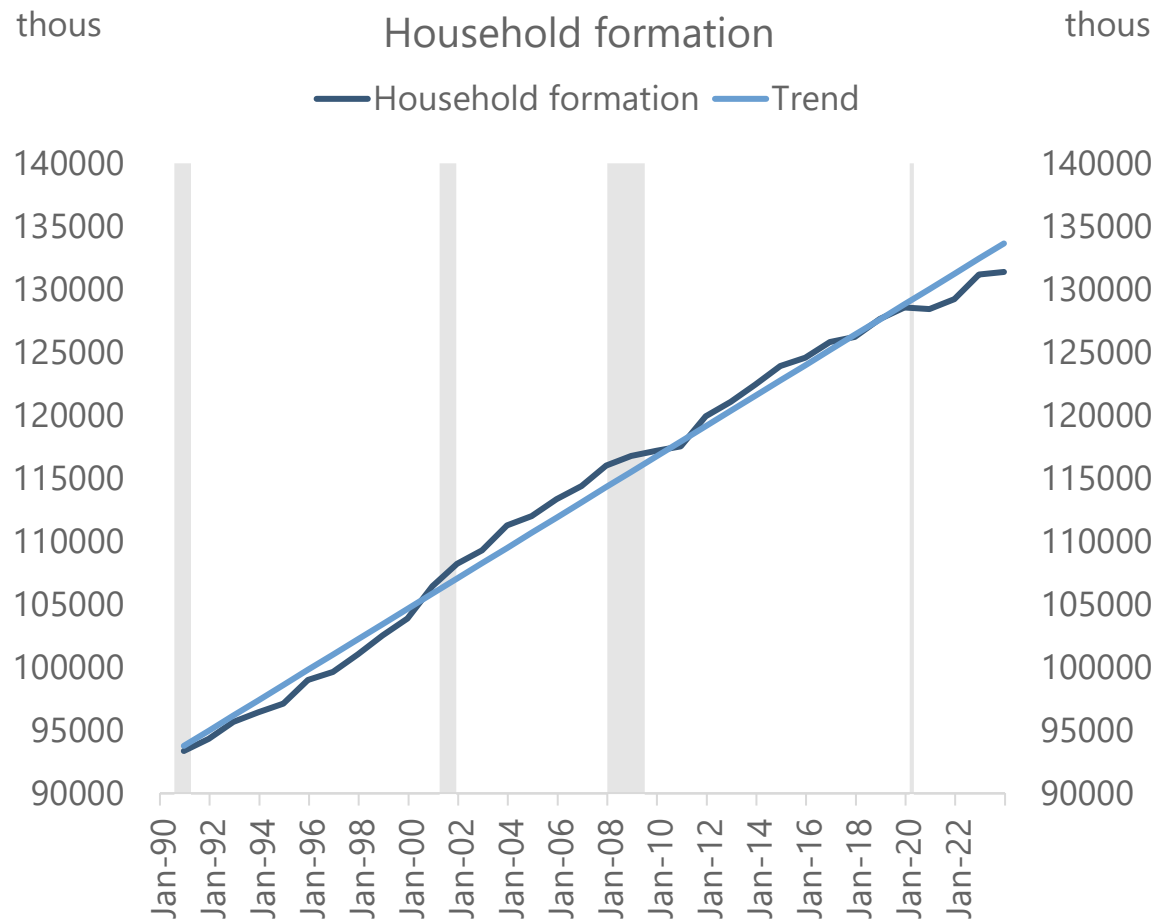


# A very low share of households are planning to move



Source: FRB of NY, Haver Analytics, Apollo Chief Economist

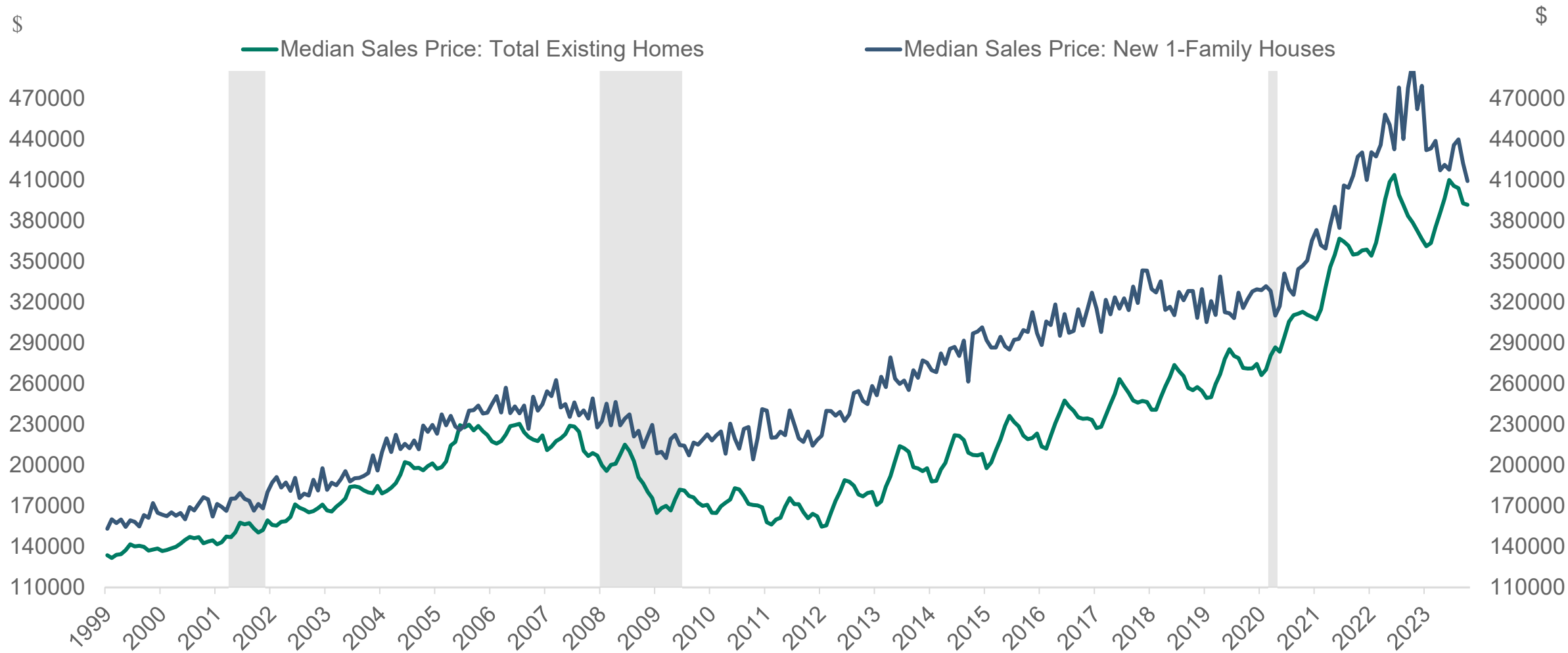
# US has an estimated deficit of 2.5mn homes



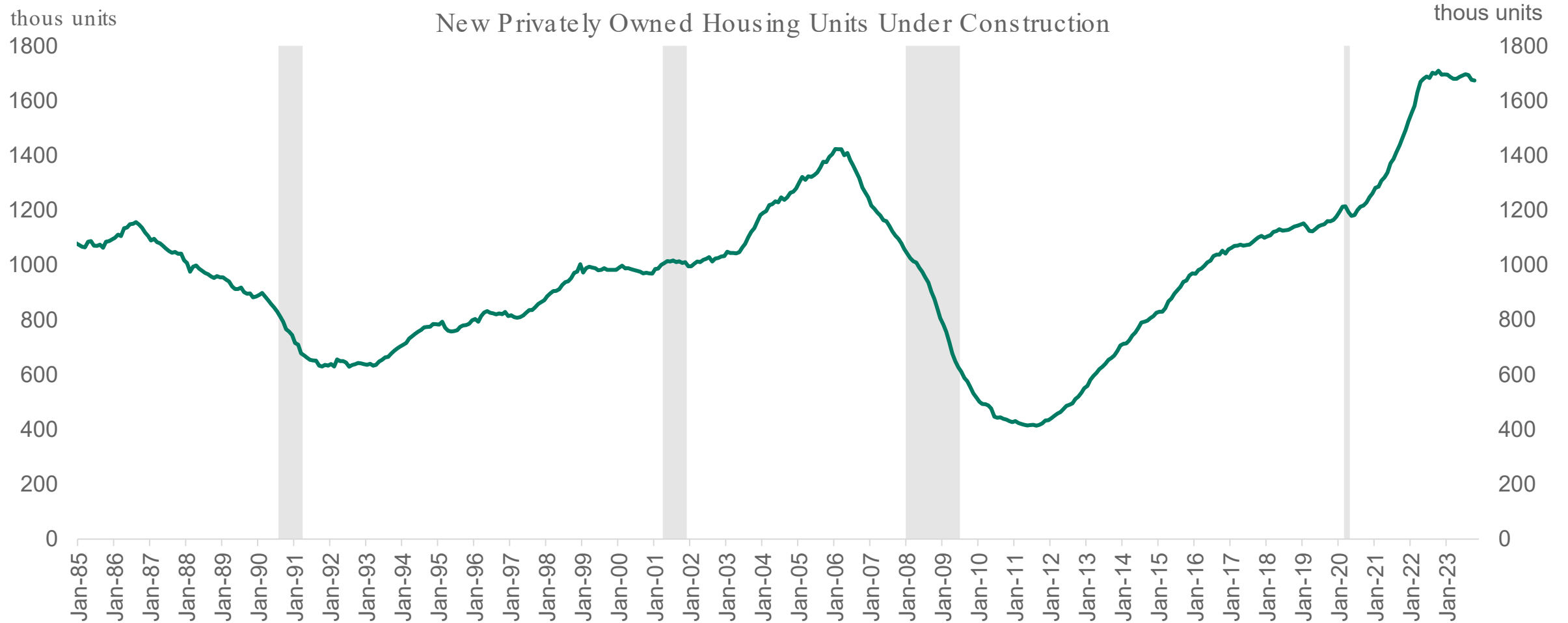
# New versus existing homes



# House prices for new homes and existing homes



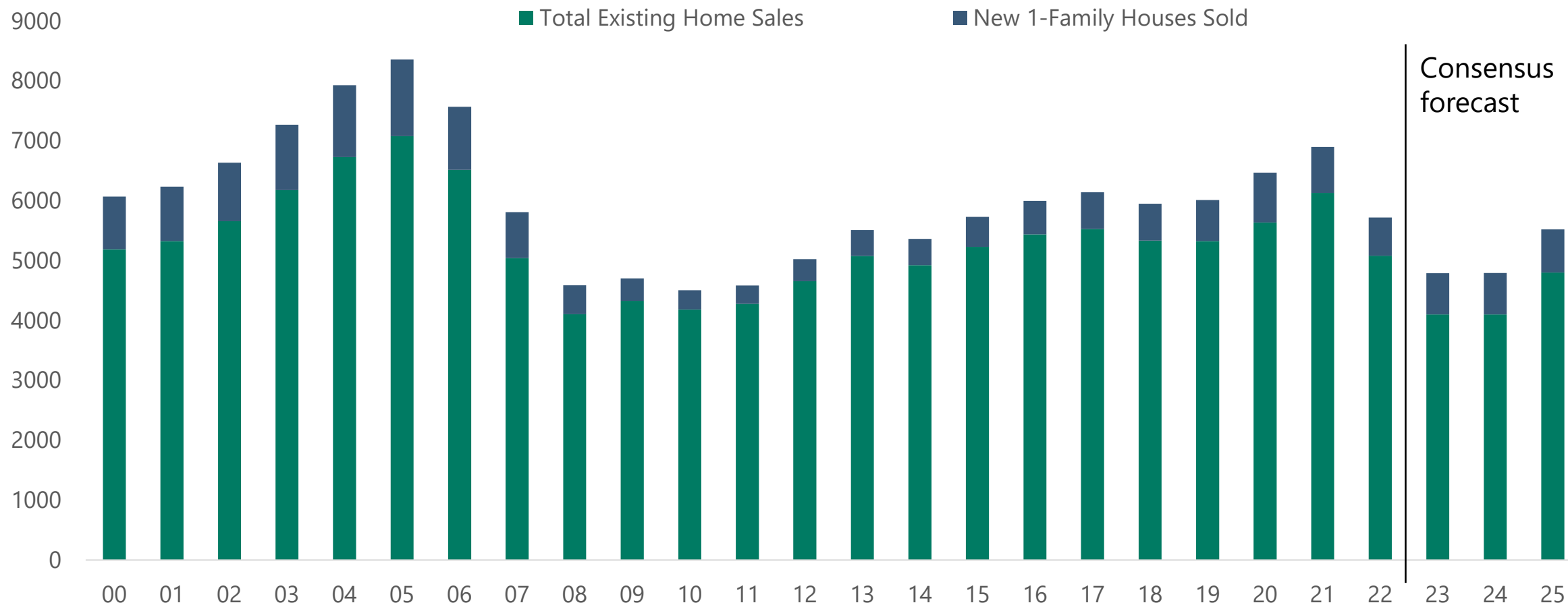
# New privately owned housing units under construction starting to peak



Source: Census Bureau, Haver Analytics, Apollo Chief Economist

# Consensus is forecasting a modest rebound in home sales

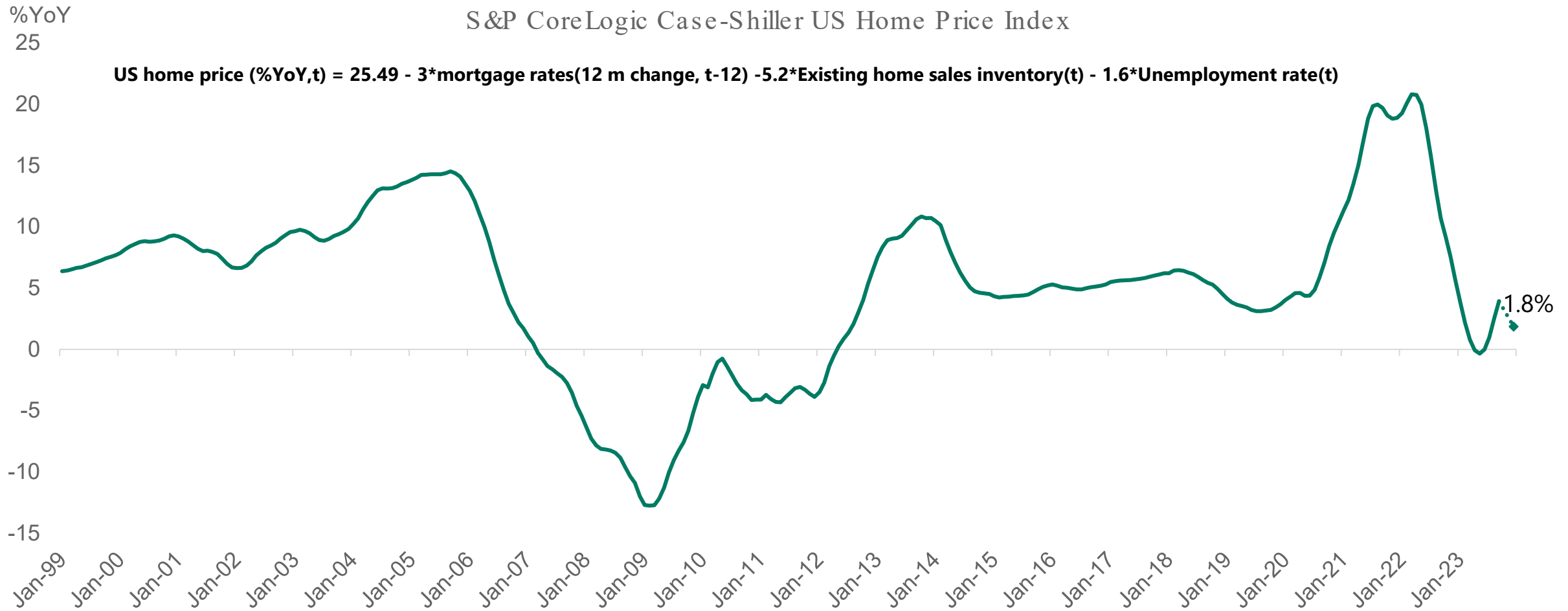
SAAR, thous.



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

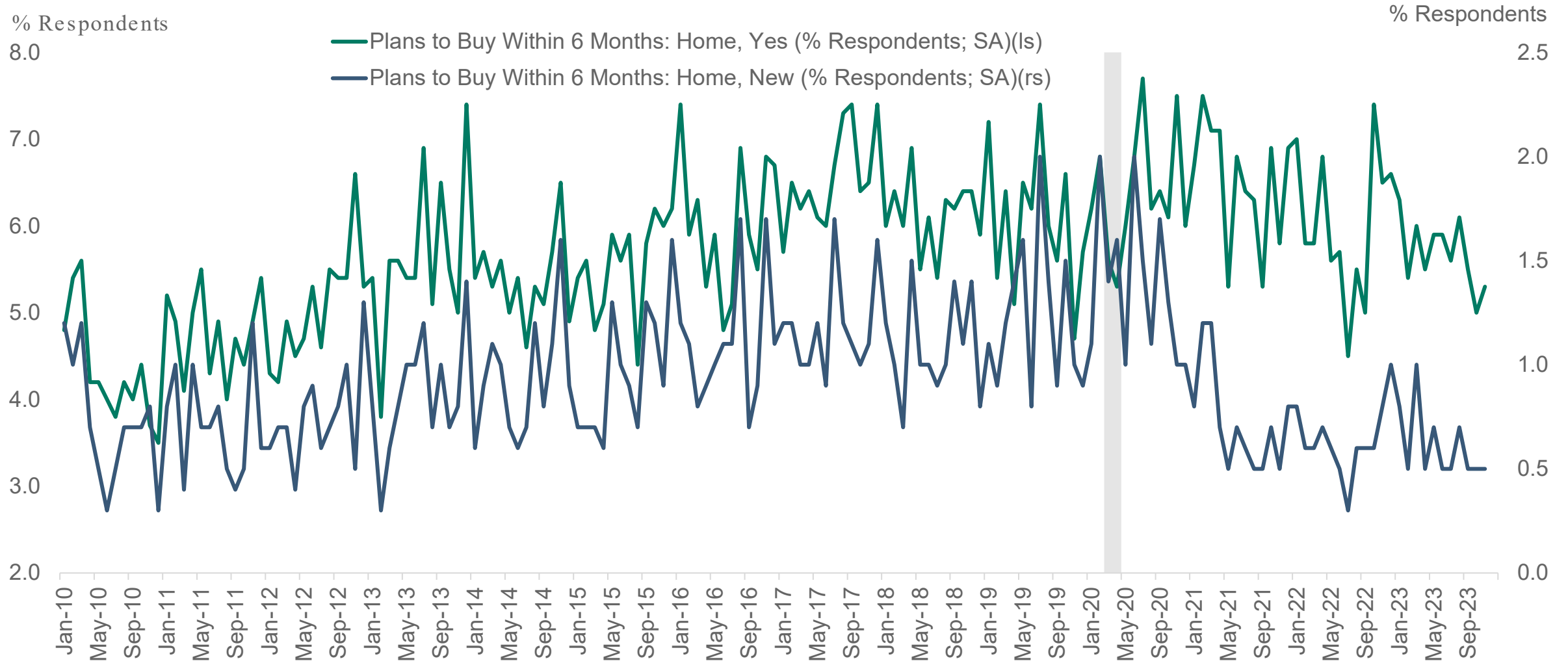
# Our US house price model

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

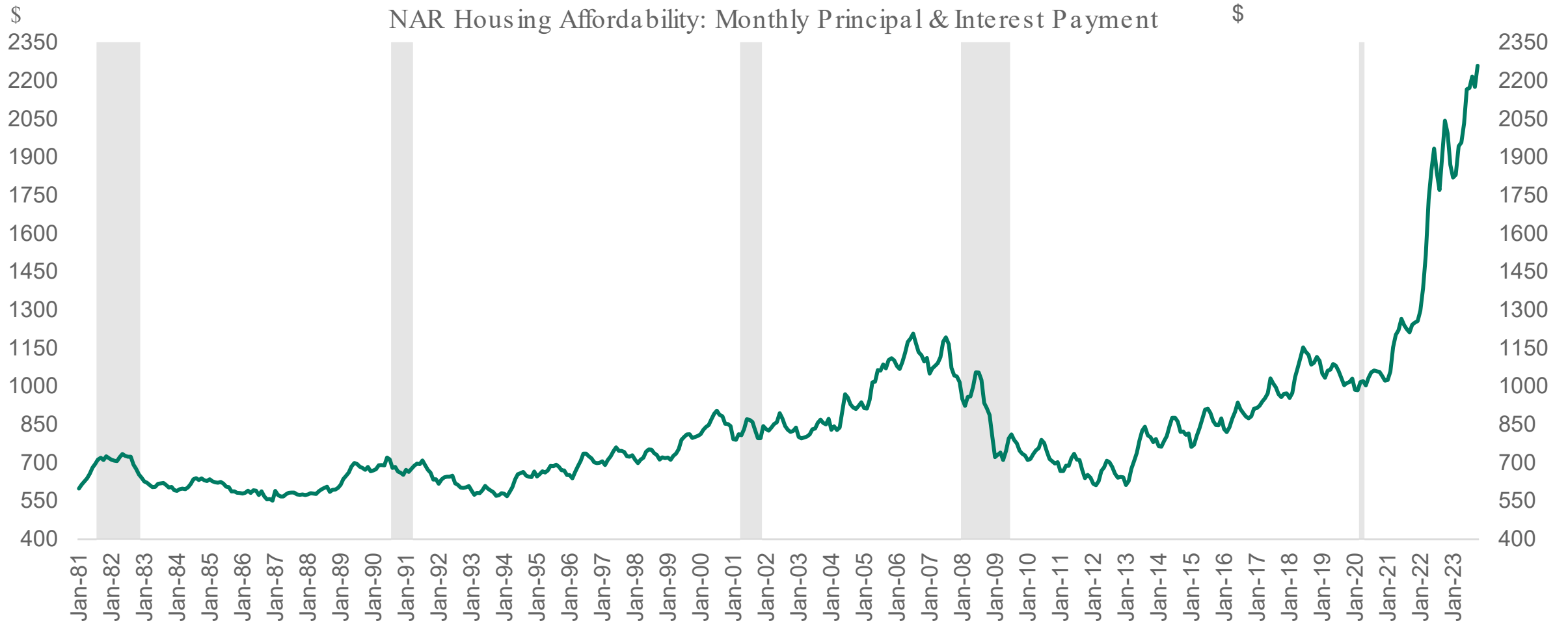


1) Housing Demand: Higher mortgage rates and high home prices slowing demand

# Home buying plans stable despite high mortgage rates



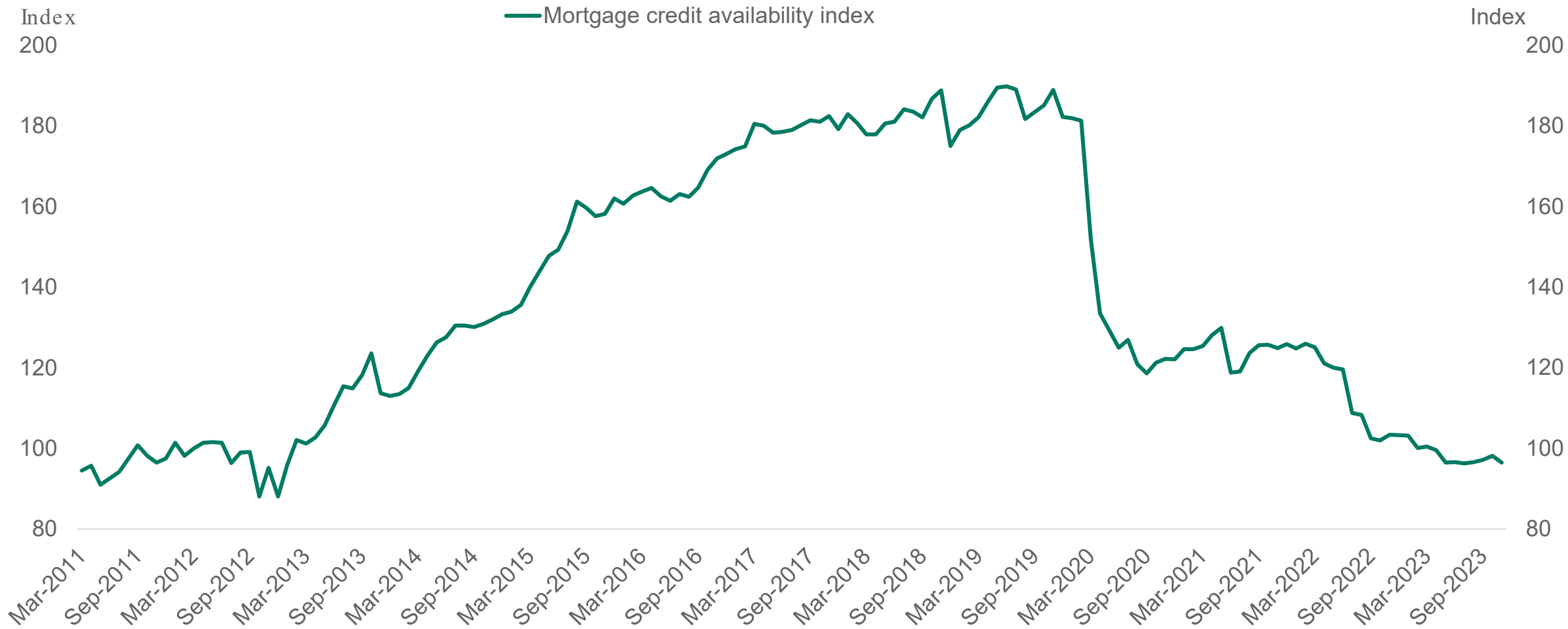
# Monthly mortgage payments on new mortgages have doubled since 2021



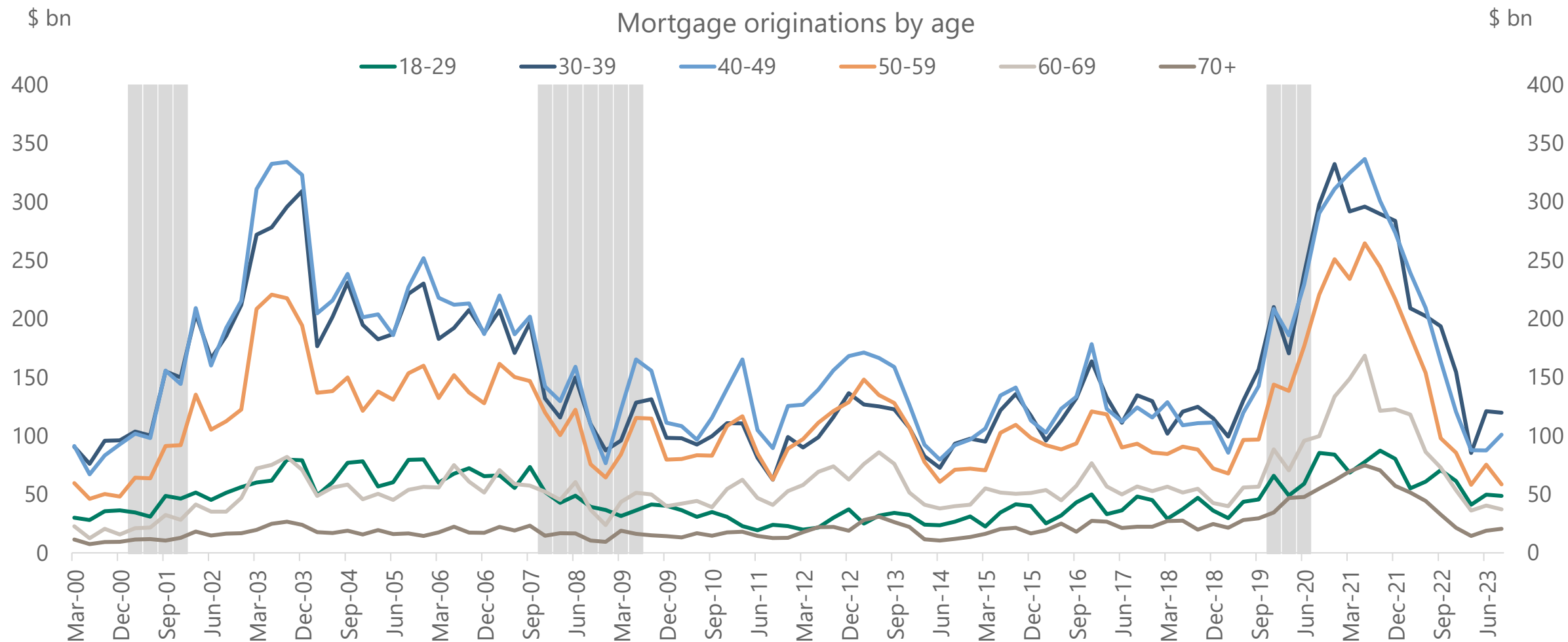
Source: NAR, Haver Analytics, Apollo Chief Economist



# Availability of mortgage credit at tight levels

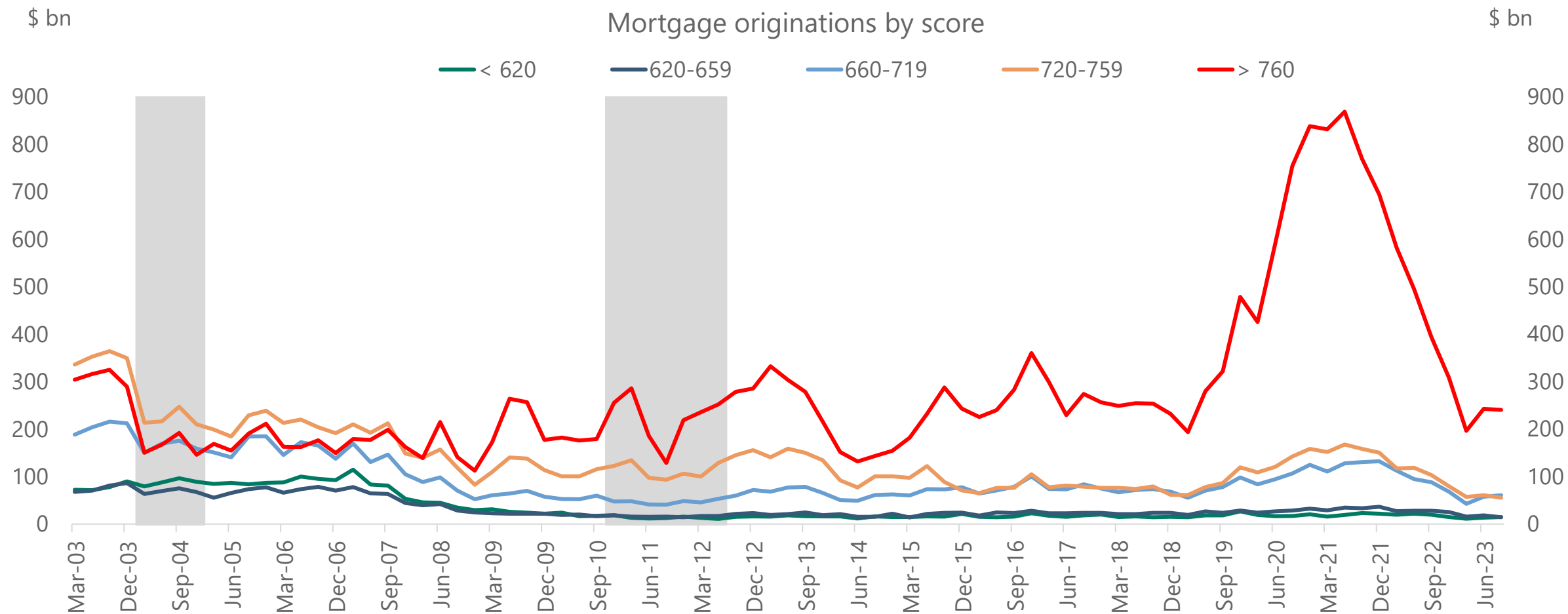


# Mortgage originations back at pre-pandemic levels



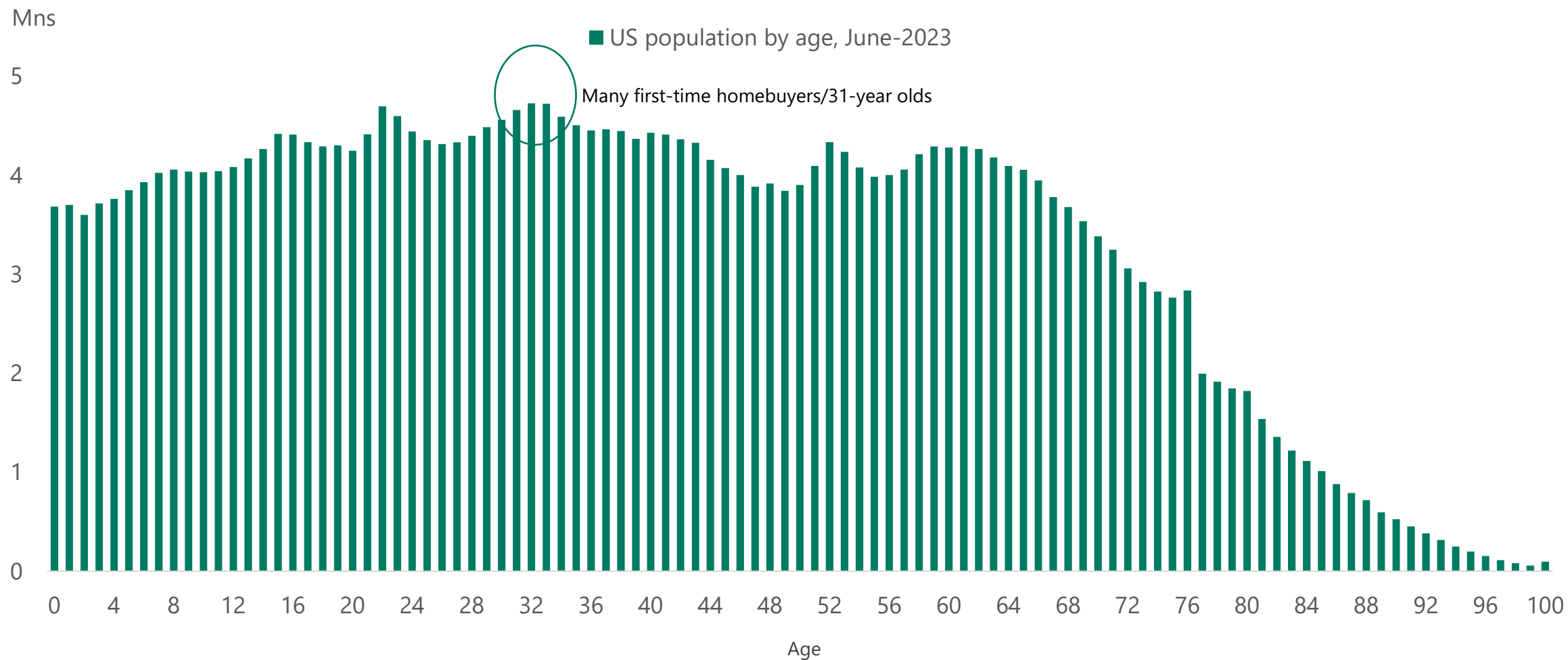
Source: NY Fed, Bloomberg, Apollo Chief Economist

# Mortgage originations normalizing for households with high credit scores



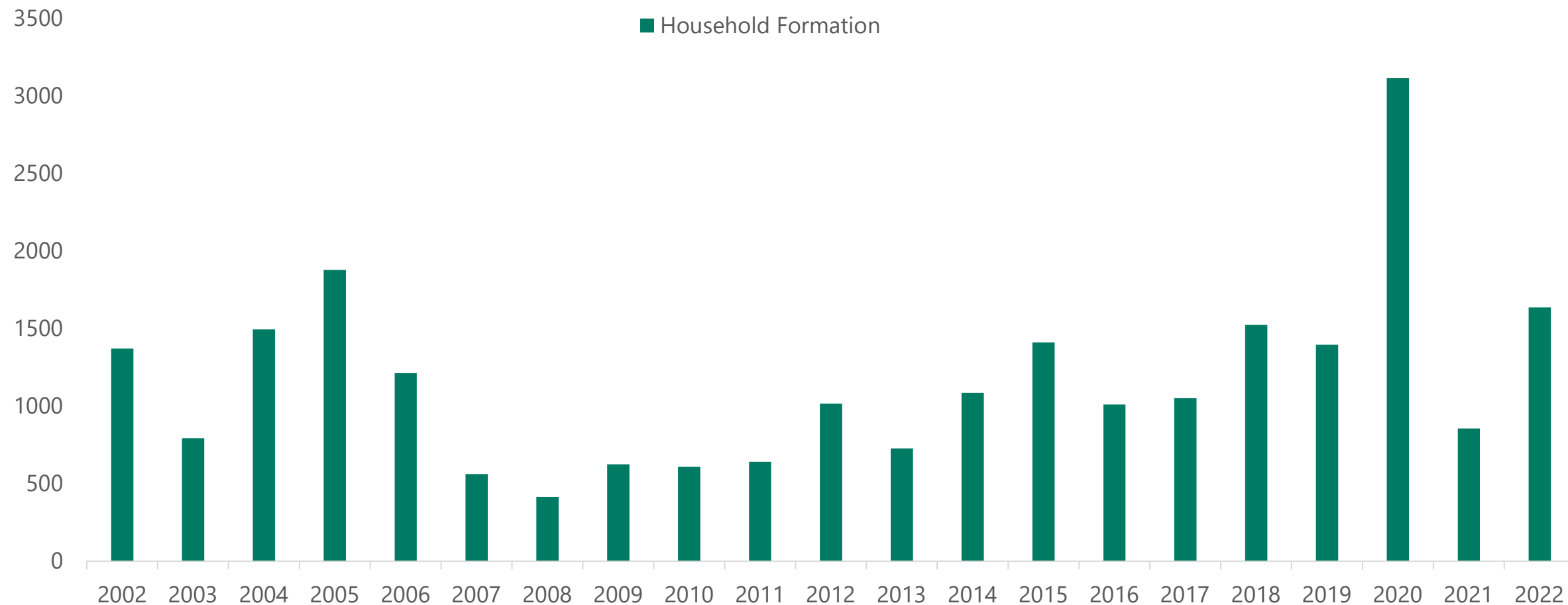
Source: NY Fed, Bloomberg, Apollo Chief Economist

# Demographics are a tailwind to housing demand

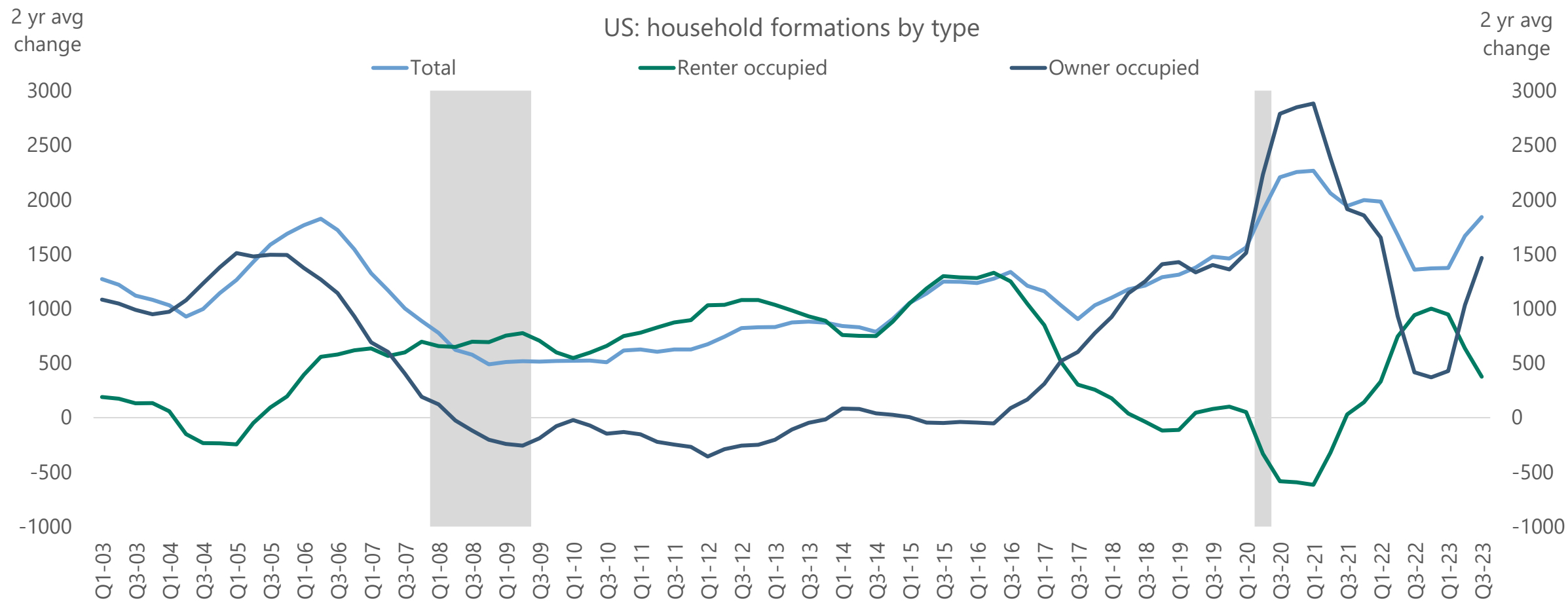


# Rebounding household formation is a tailwind to housing

Thousands of units

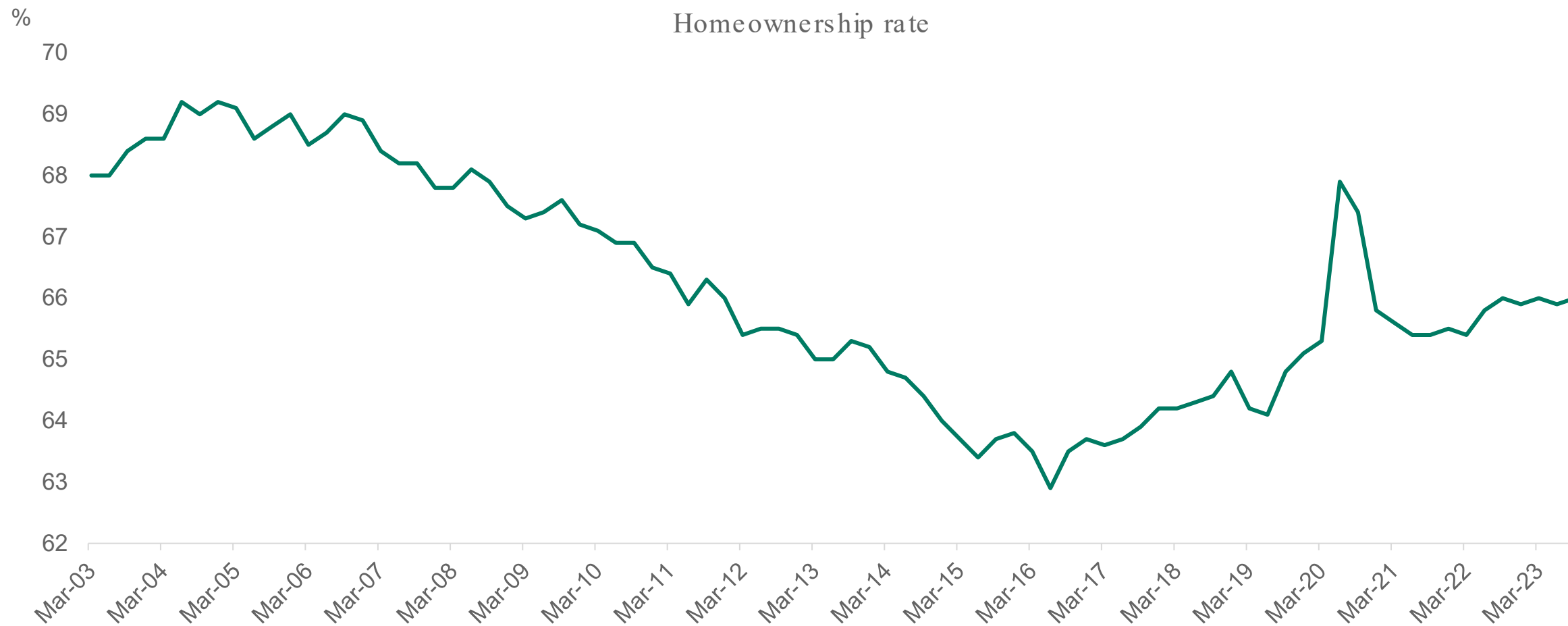


# A rise in the number of renters recently



Source: Census Bureau, Haver, Apollo Chief Economist

# Homeownership rate moving sideways

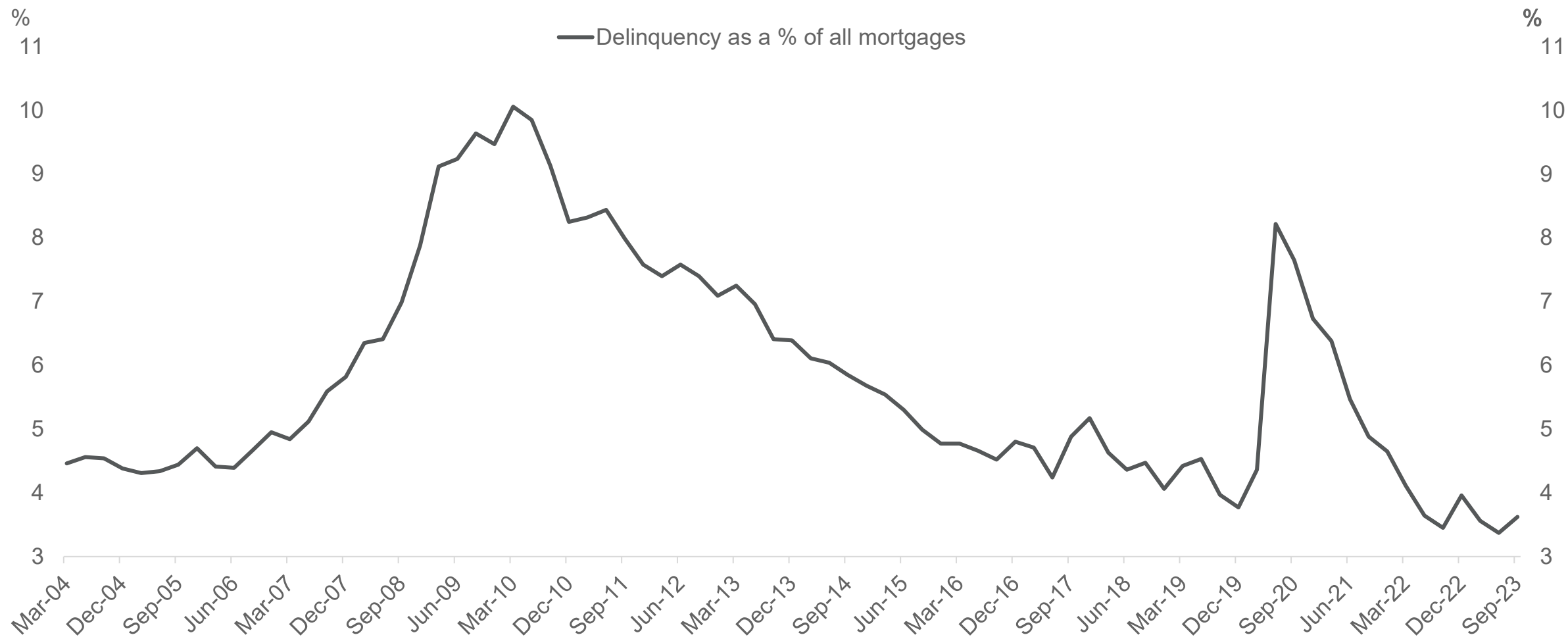


# Low unemployment is a tailwind to housing demand

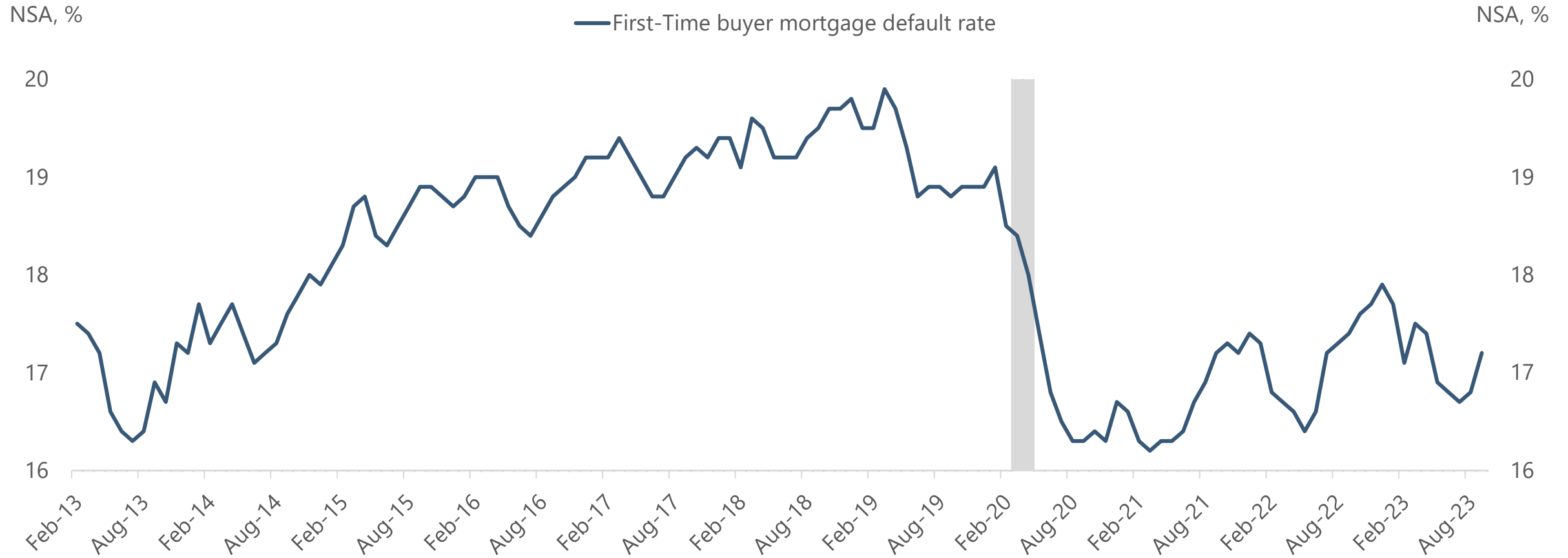




# Very few delinquent mortgages

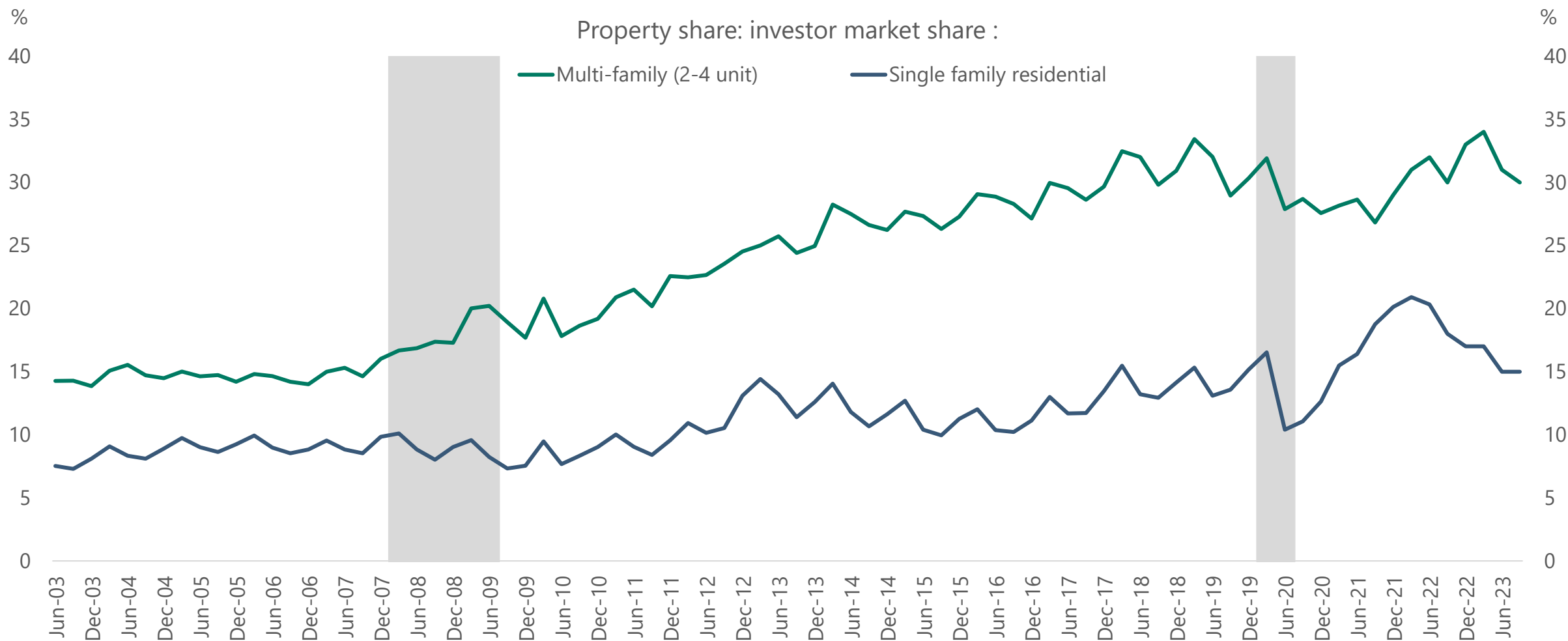


# First time homebuyers are feeling pinch of high interest rates



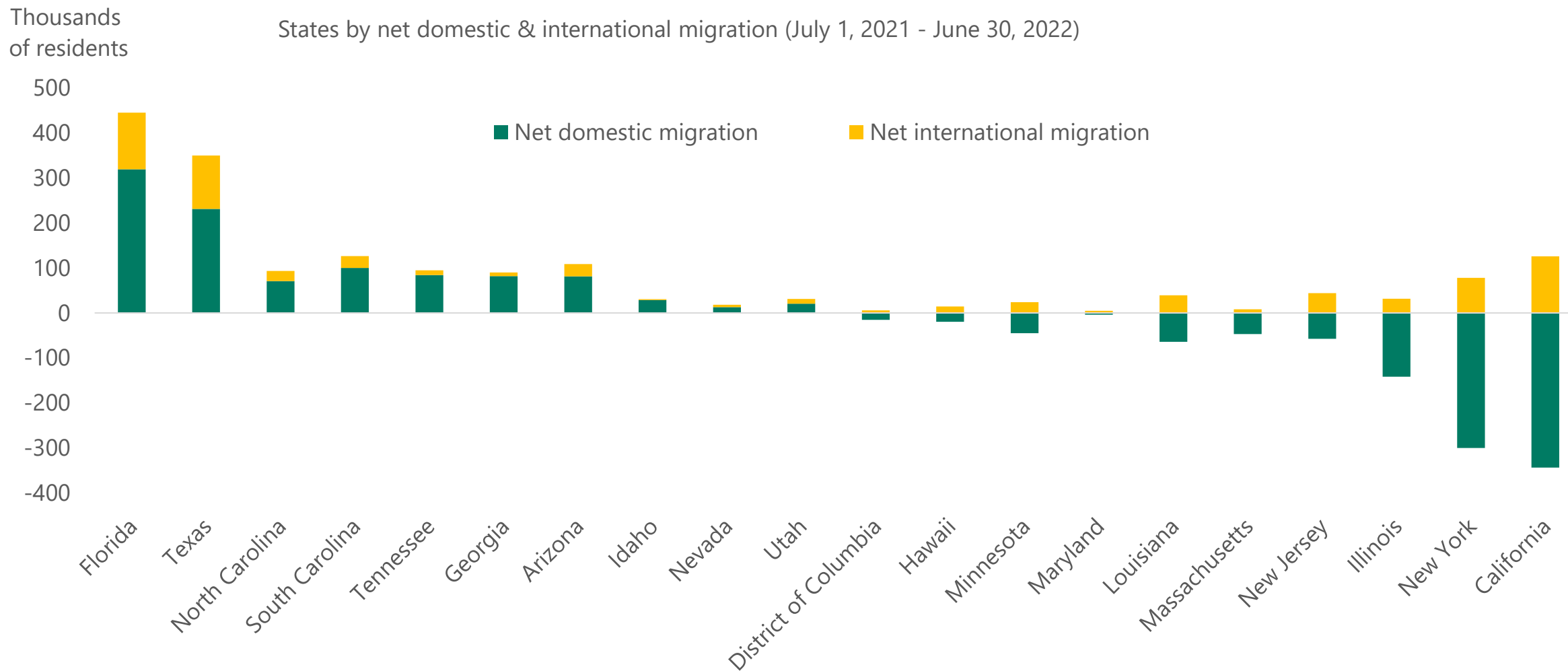
Source: American Enterprise Institute, Haver Analytics, Apollo Chief Economist (Note: The First-time Buyer Mortgage Default Rate (FBMDR) is calculated using the same methodology as for the National Mortgage Default Rate (NMDR). The only difference is that the set of included loans is restricted to first-time 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



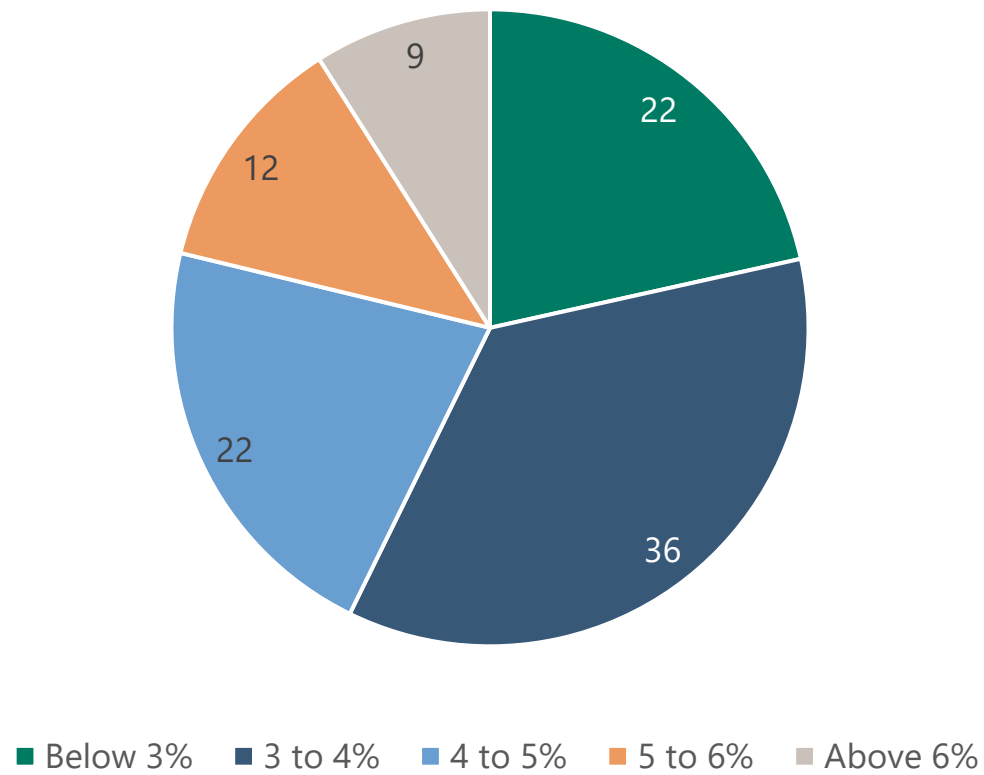
Source: Redfin, Apollo Chief Economist (Definition of Investor market share: the percentage of total home sales in which an investor was the buyer)

# Migration out of California and migration into Florida during the pandemic

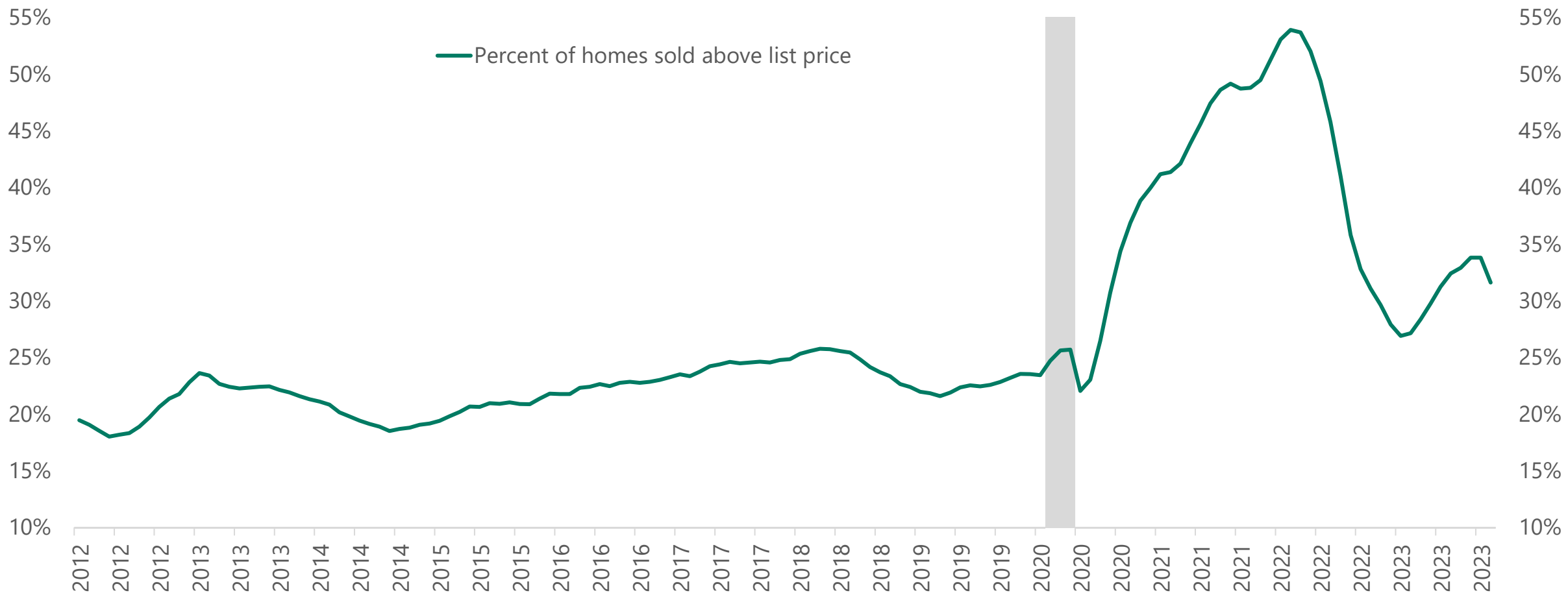


# Share of mortgages outstanding by interest rate

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

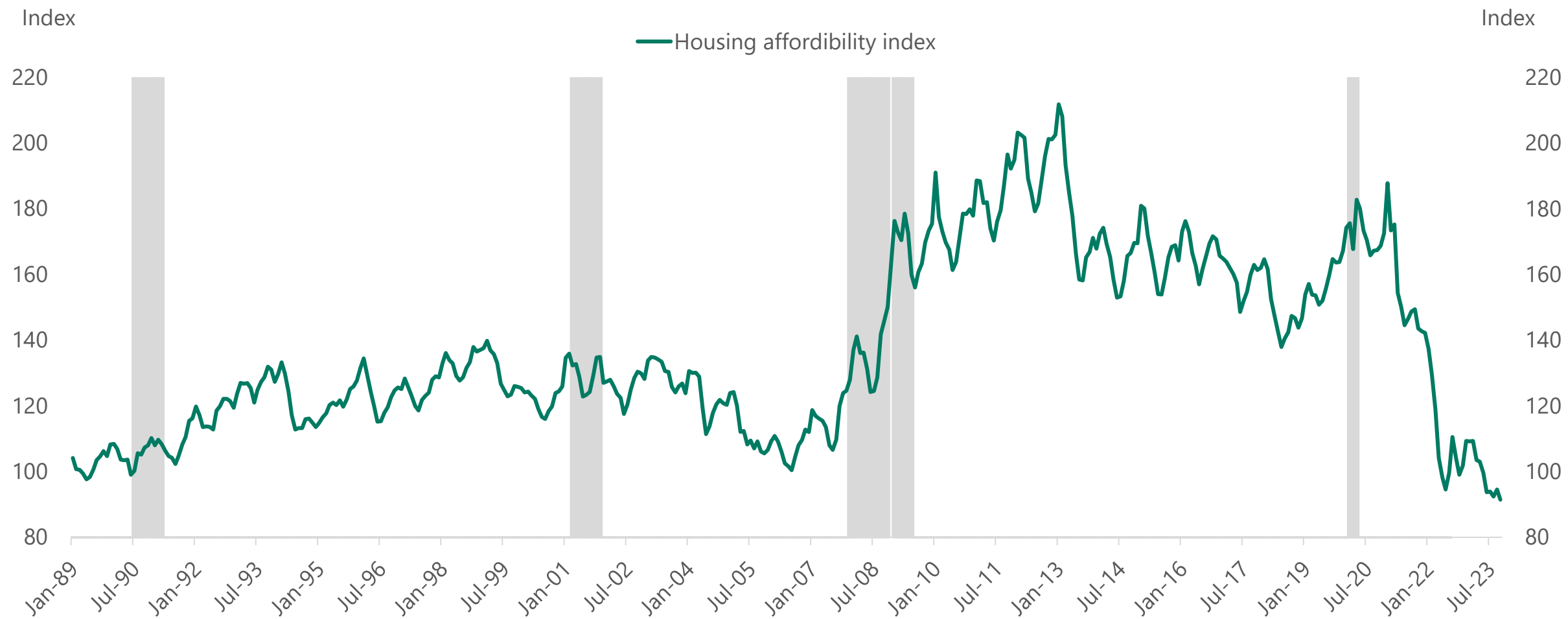


# Despite high mortgage rates, 32% of homes sold above their list price

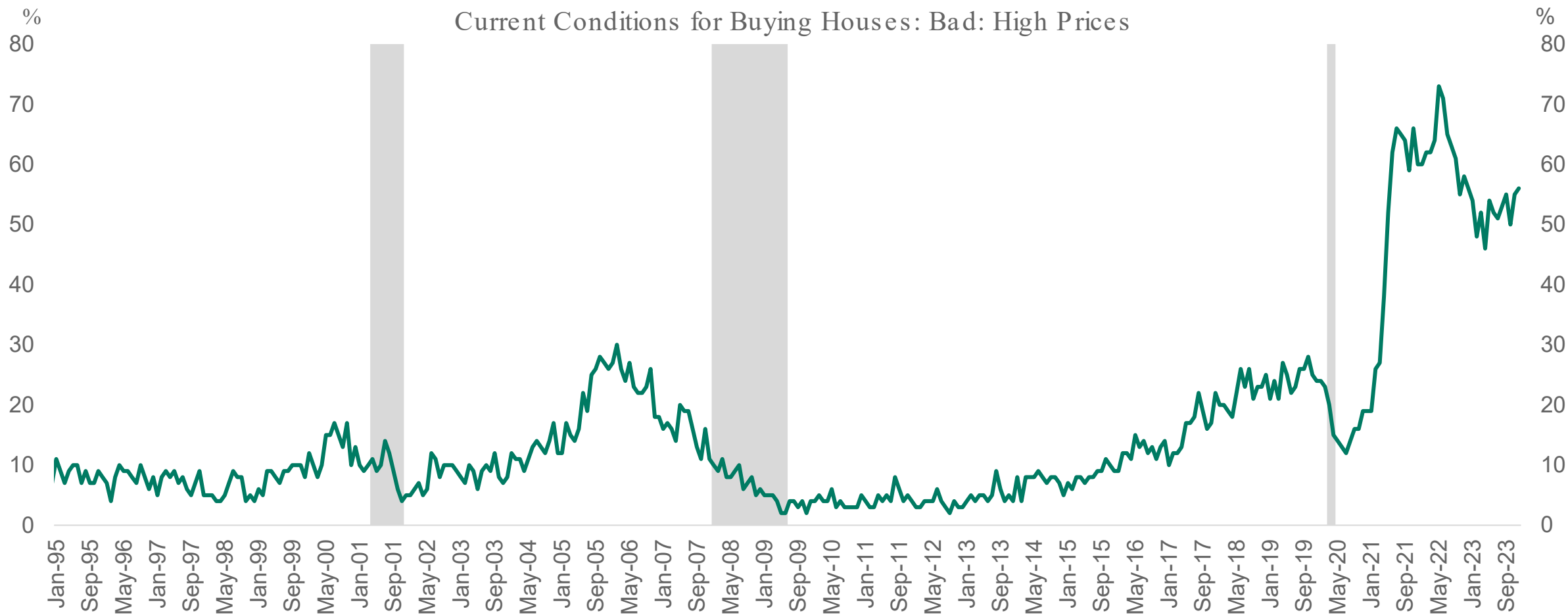


Source: Redfin, Apollo Chief Economist

# Housing affordability near record lows



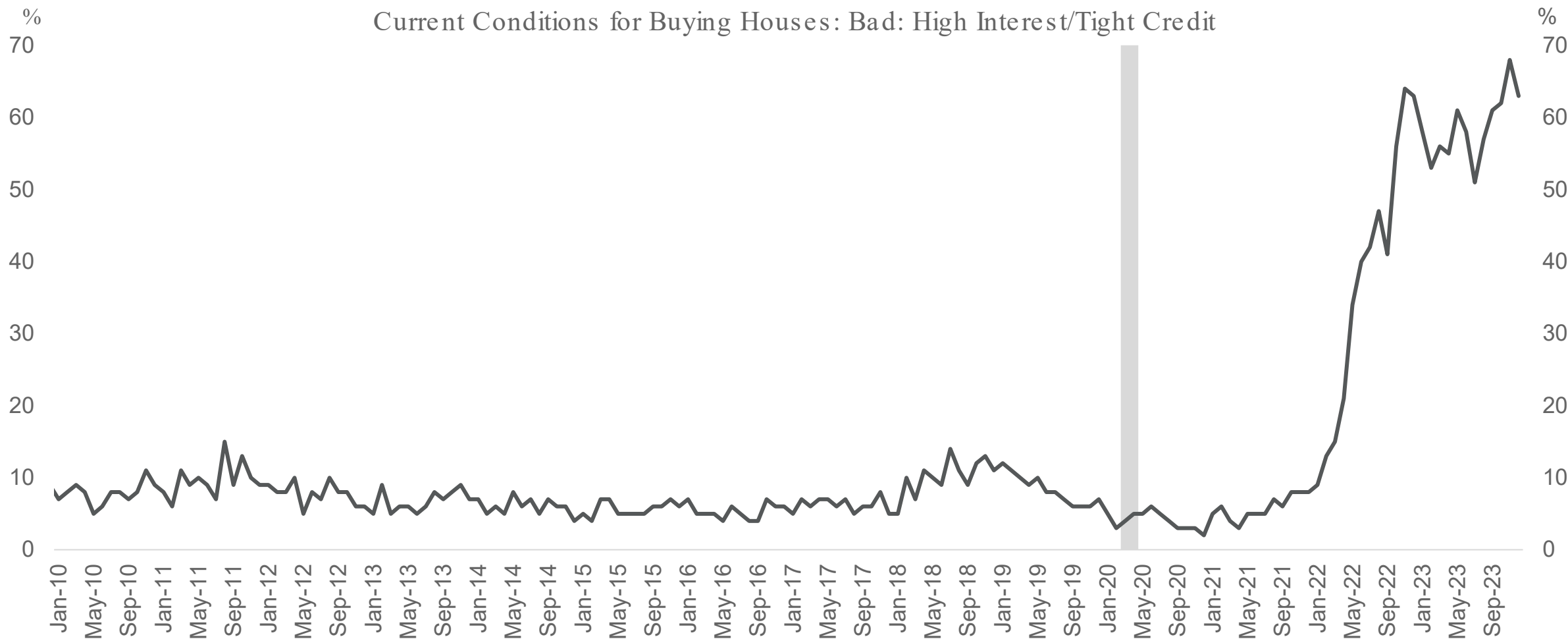
# Homebuyer sentiment





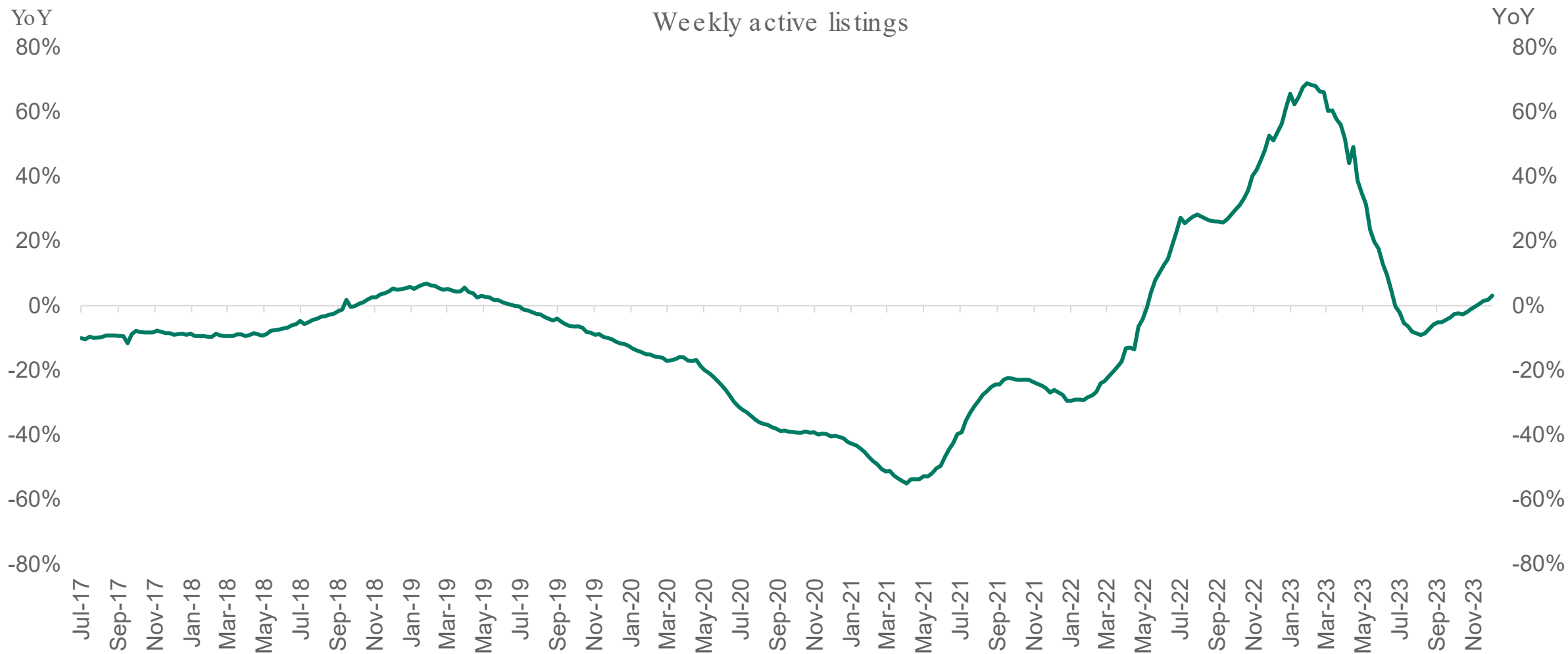
# 63% of consumers are saying that this is a bad time to buy a house because of high mortgage rates and tight credit

Current Conditions for Buying Houses: Bad: High Interest/Tight Credit

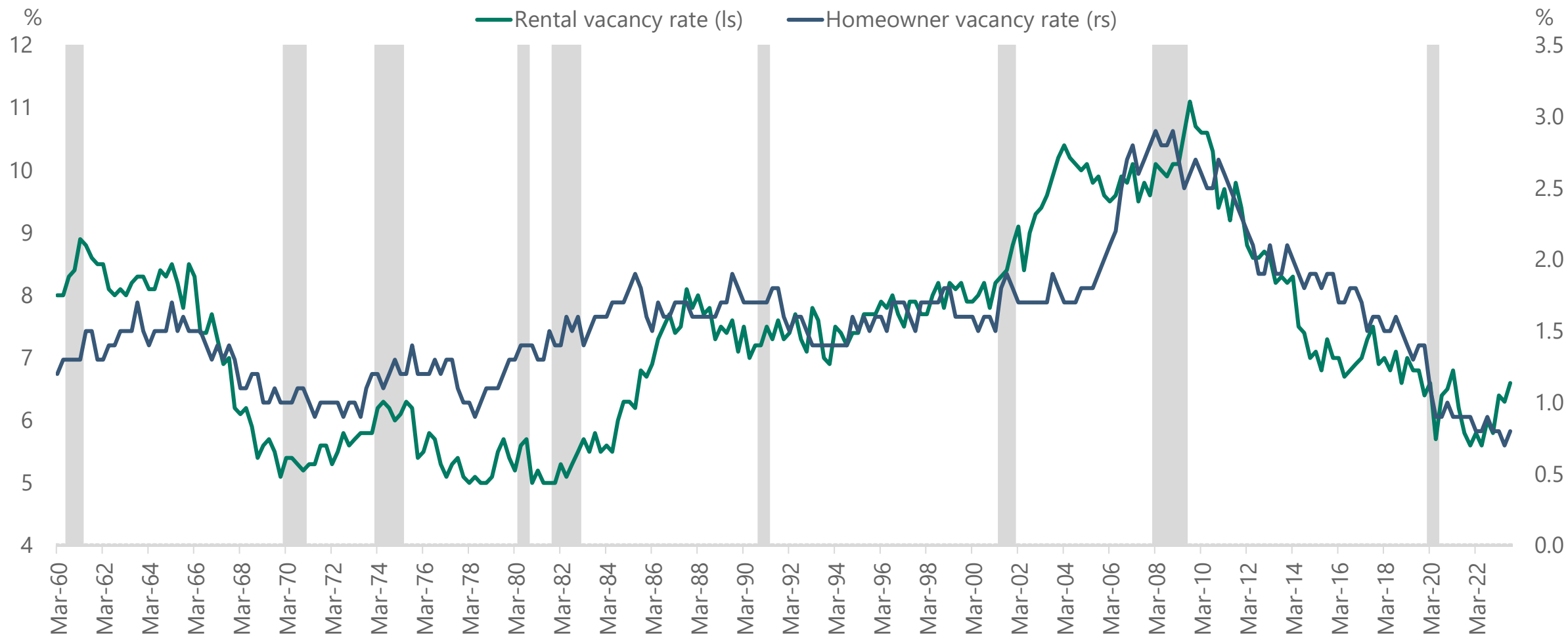


2) Housing Supply: Housing supply is low, construction coming down from record-high levels

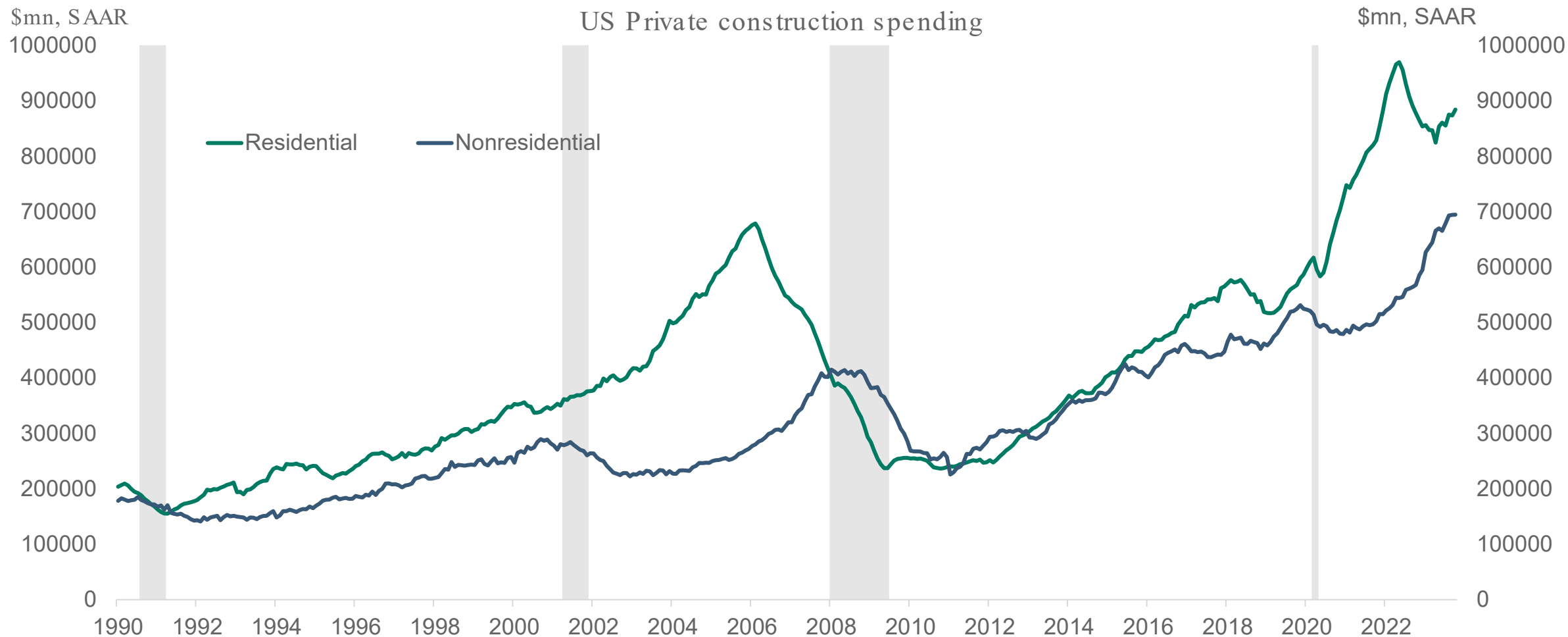
# Listings starting to rise



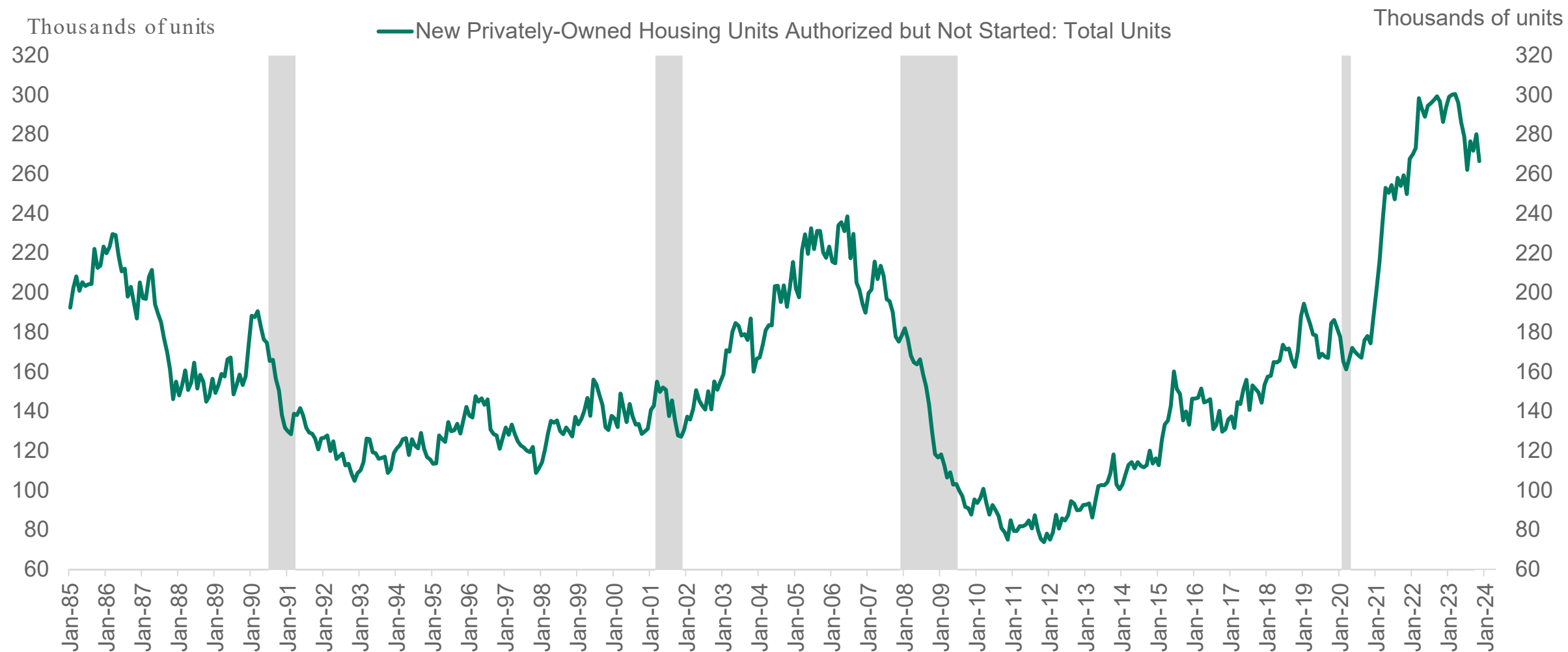
# Homeowner and rental vacancy rates at very low levels



# Residential construction spending starting to rise again

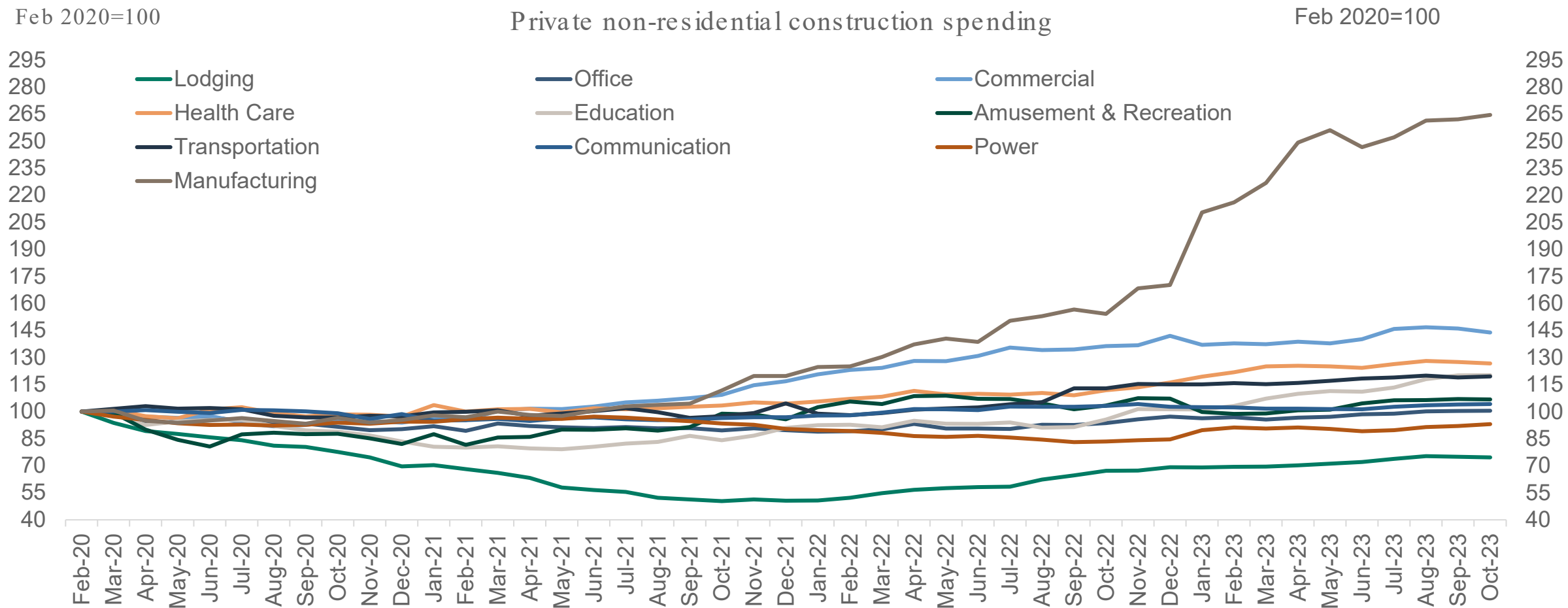


# New housing units authorized but not started

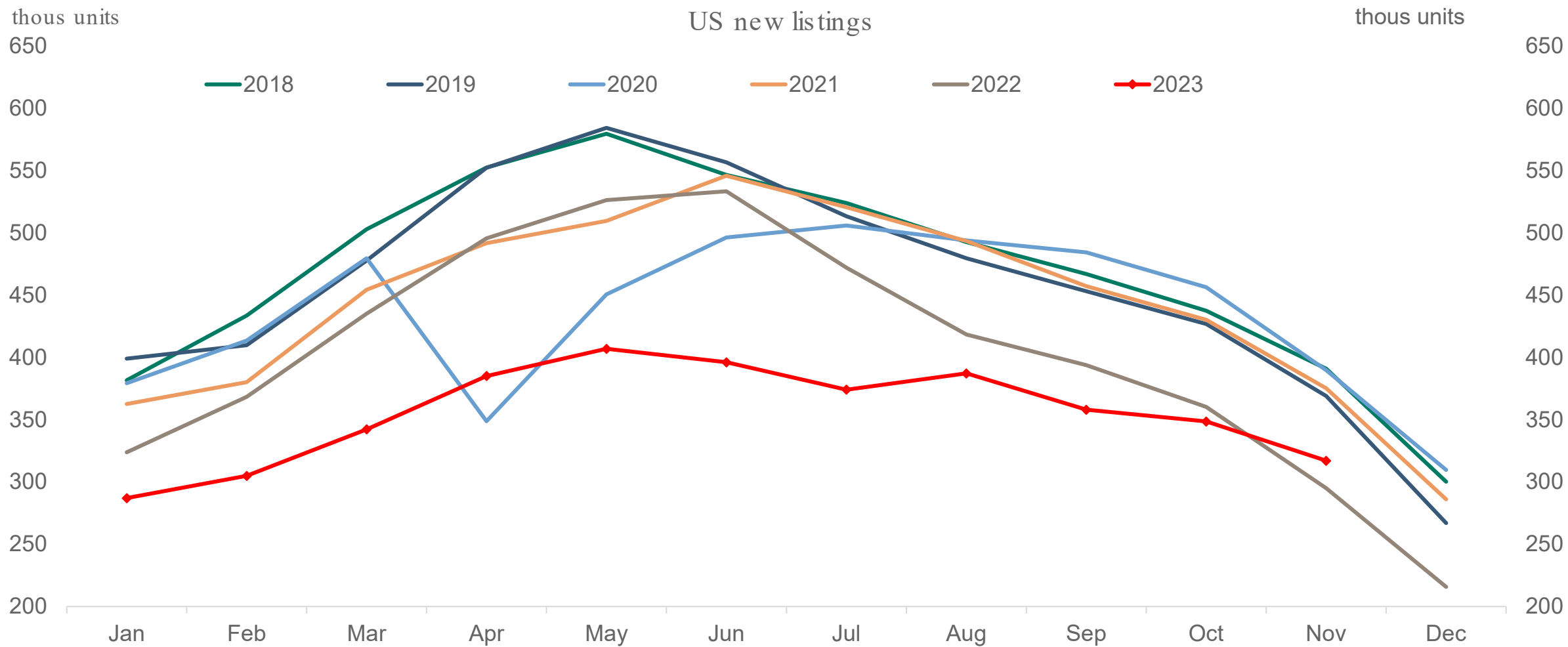


Source: FRED, Apollo Chief Economist

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

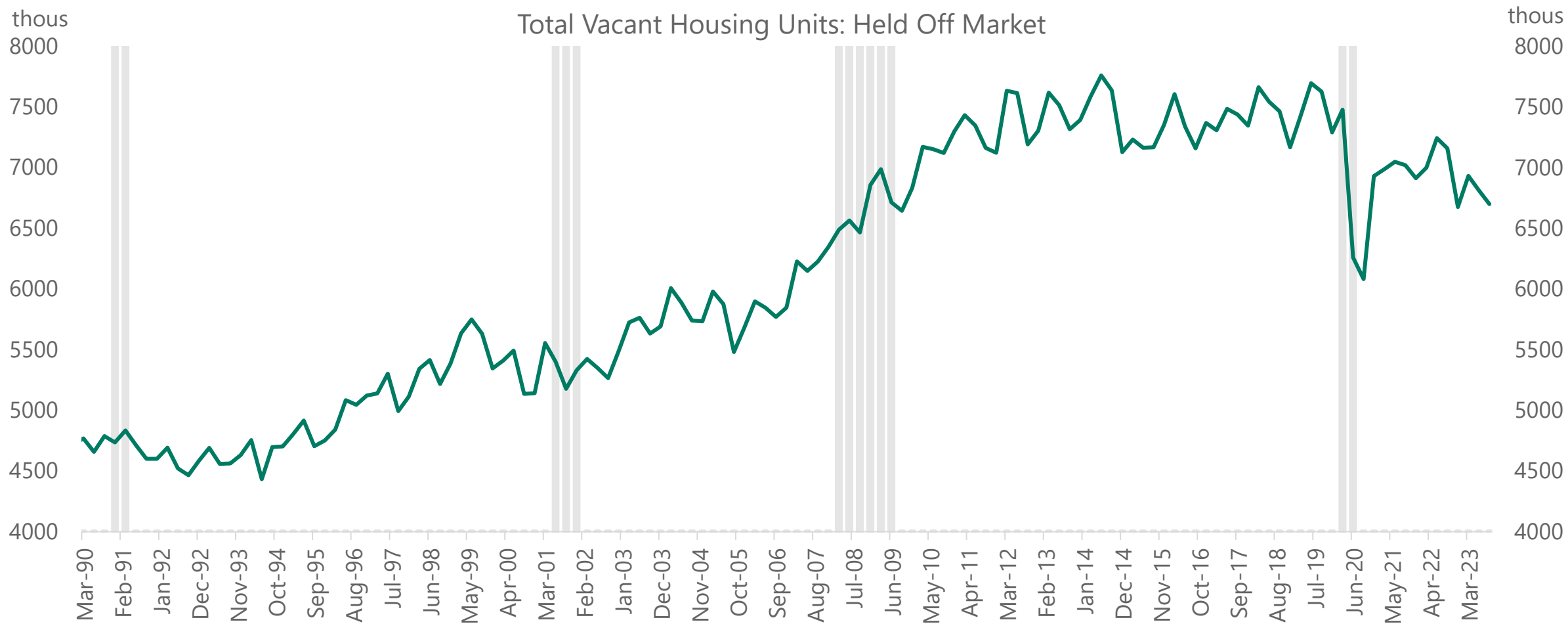


# Newly listed homes very low



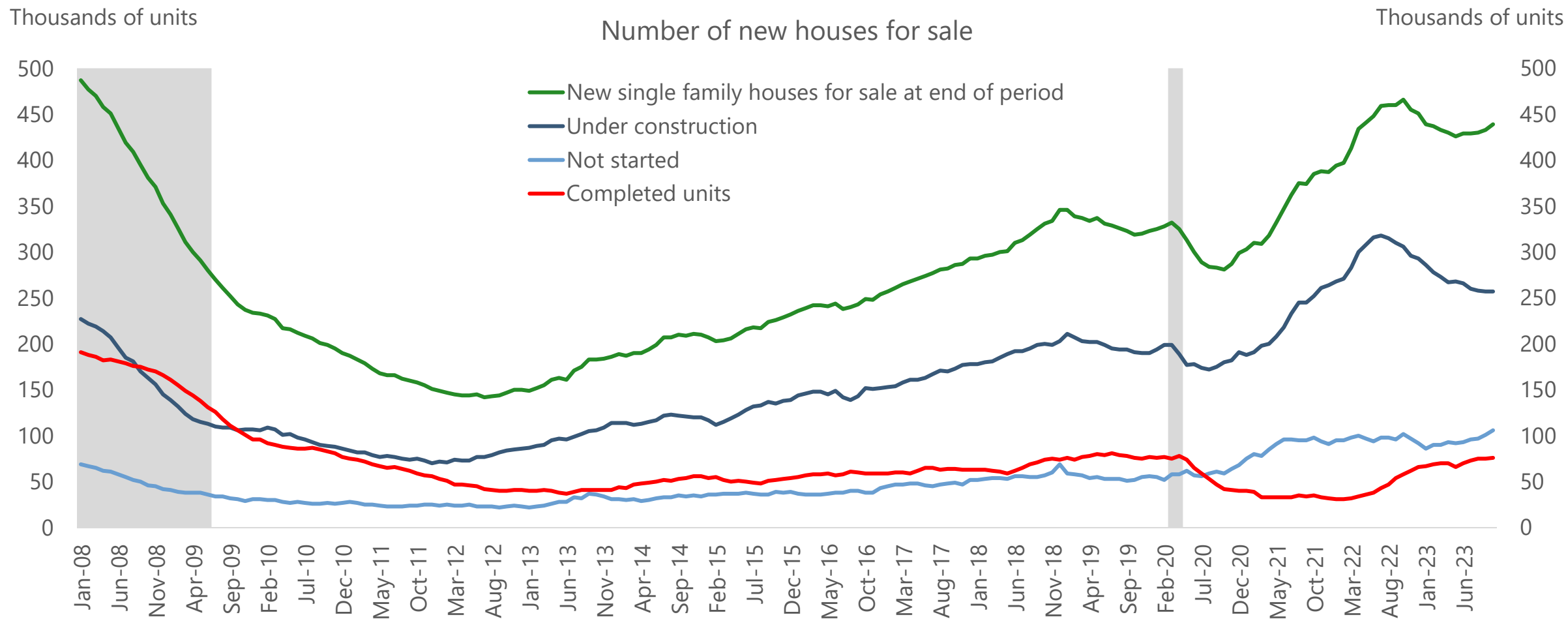


# Vacant housing units held off market coming down

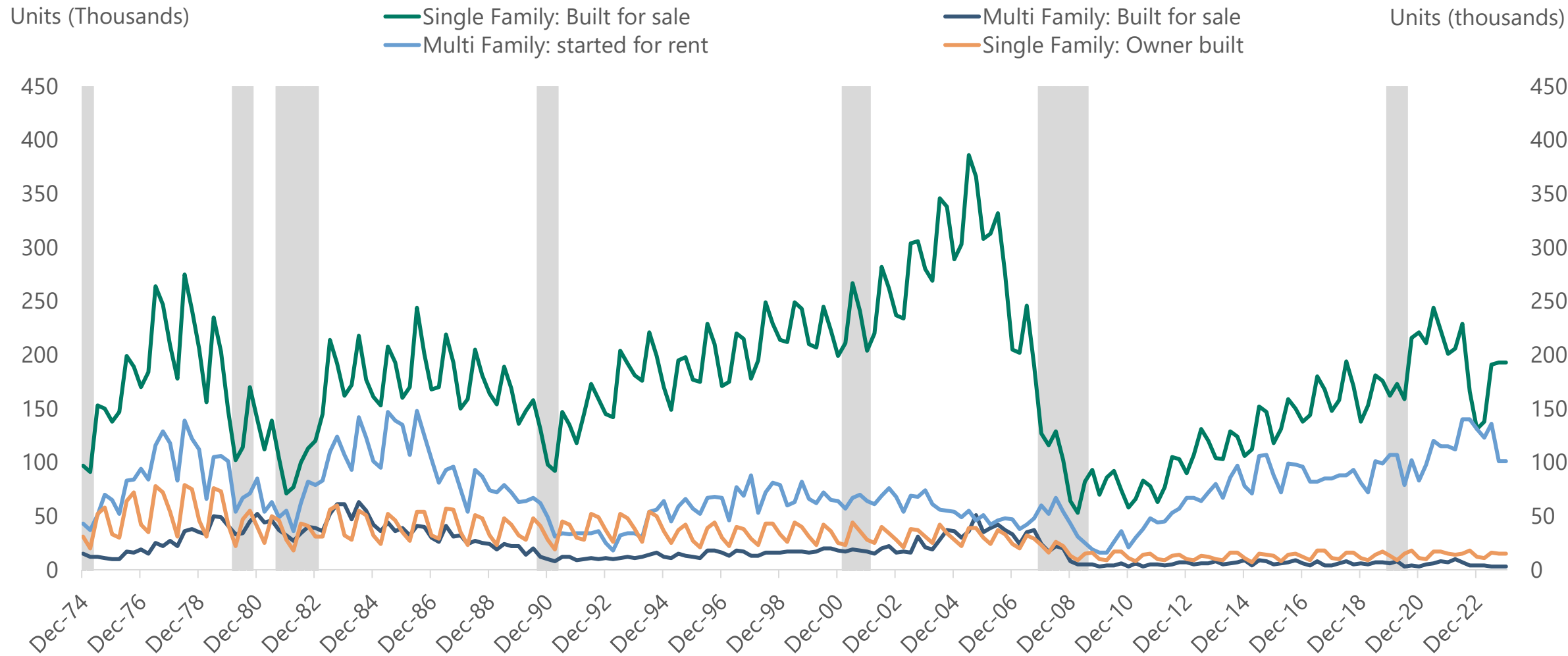


Source: Census Bureau, Haver Analytics, Apollo Chief Economist

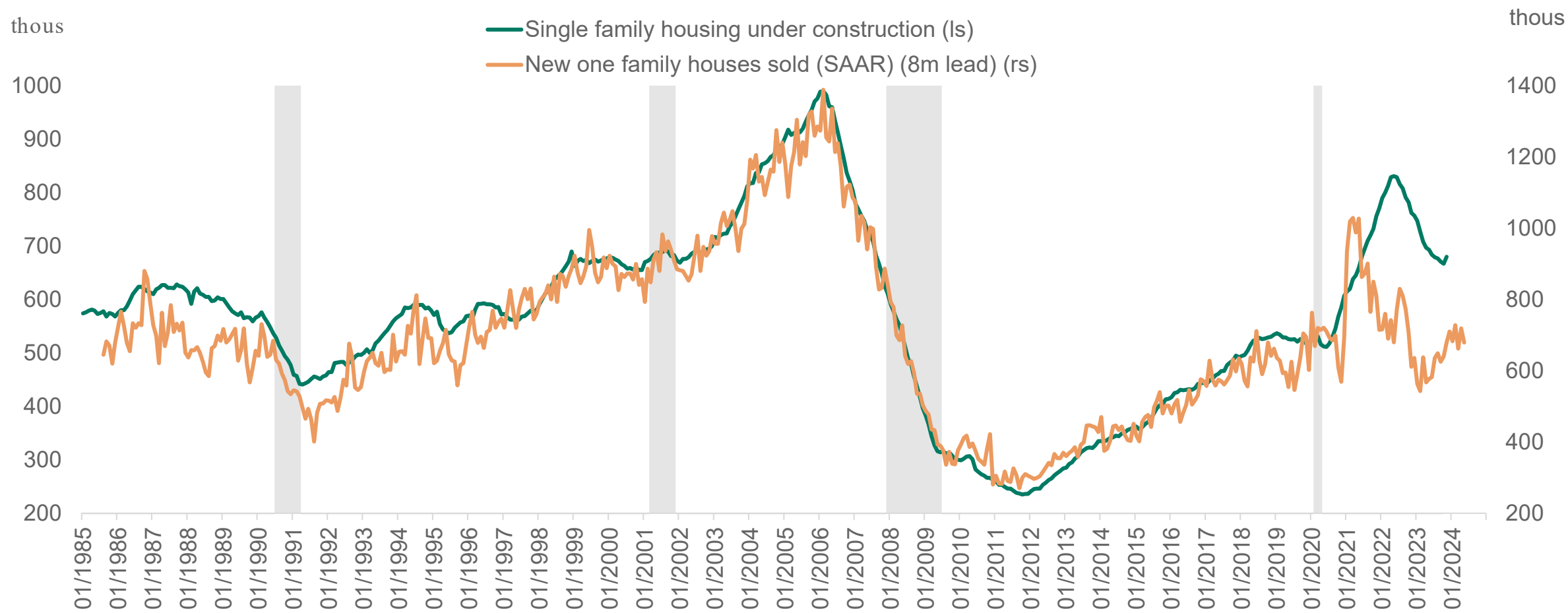
# Decline in the number of new houses for sale under construction



# Intent of housing starts

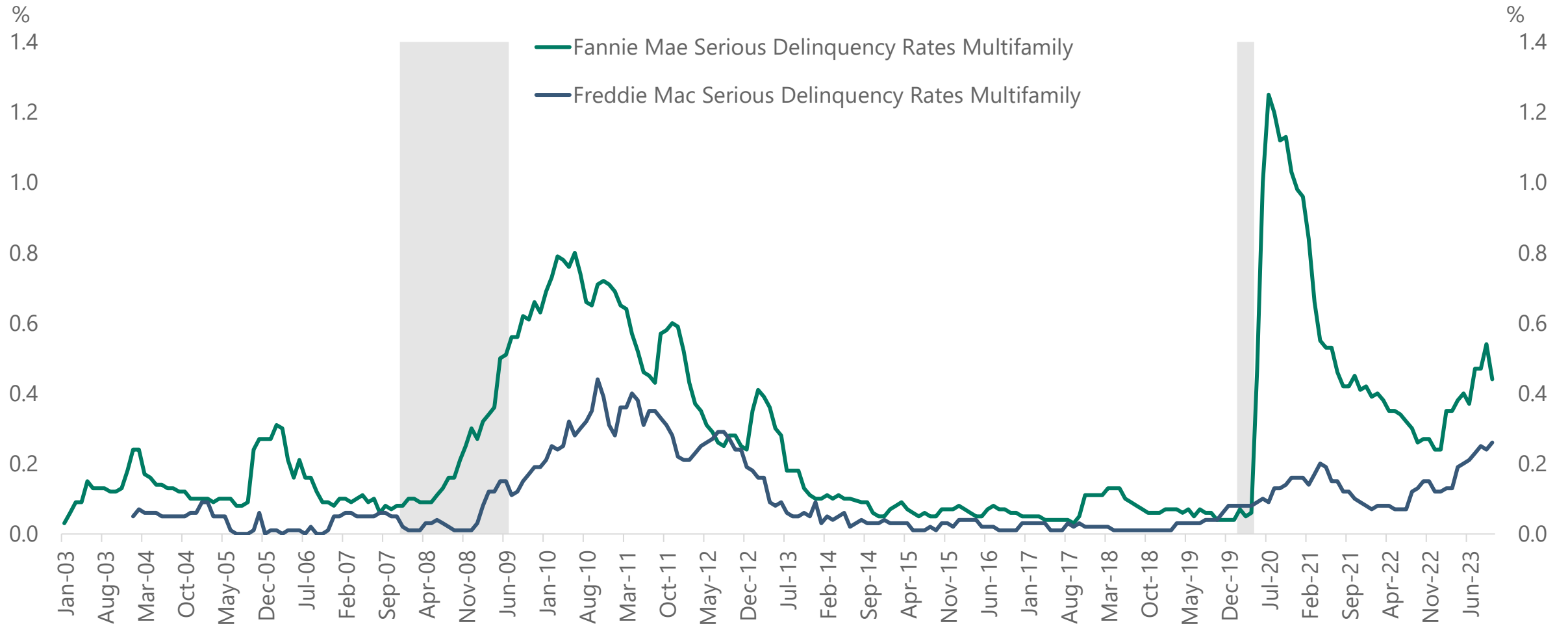


# Some disconnect between housing under construction and new homes sold

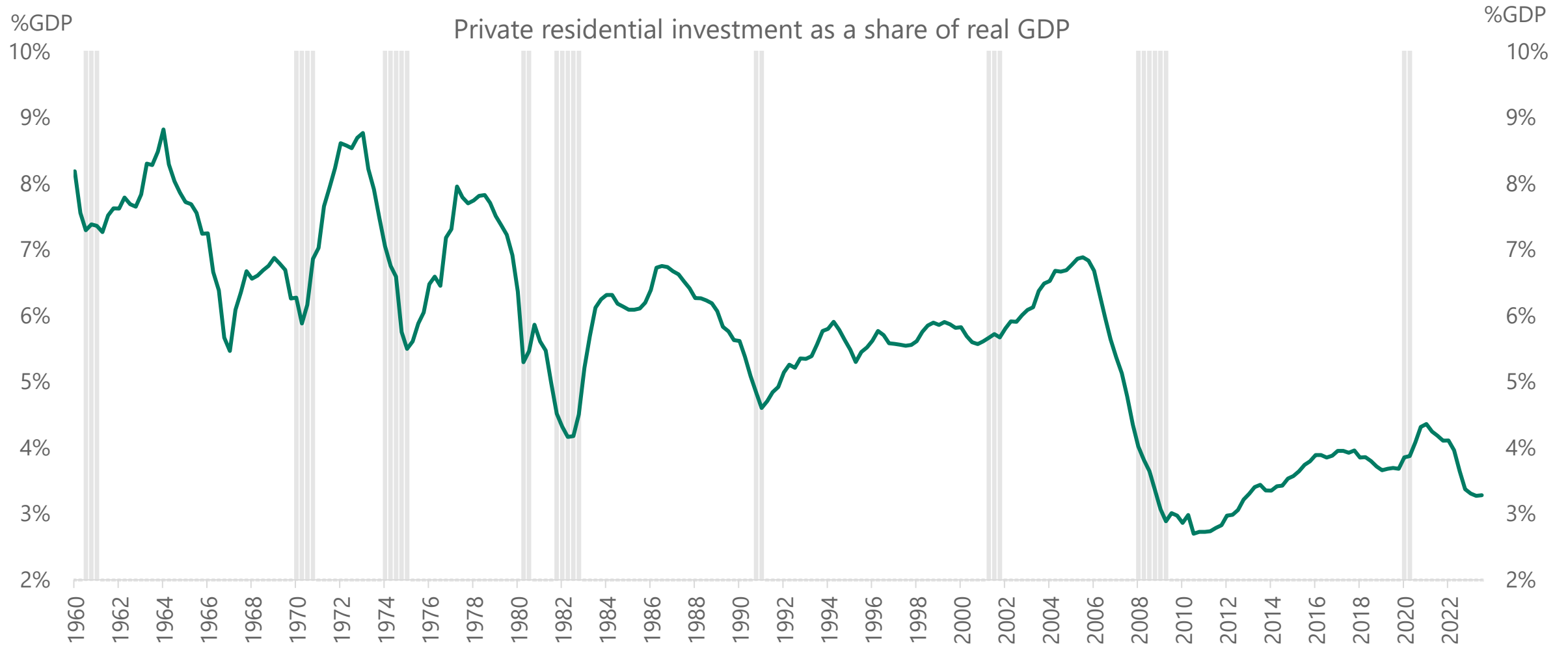


Source: Census Bureau, Bloomberg, Apollo Chief Economist.

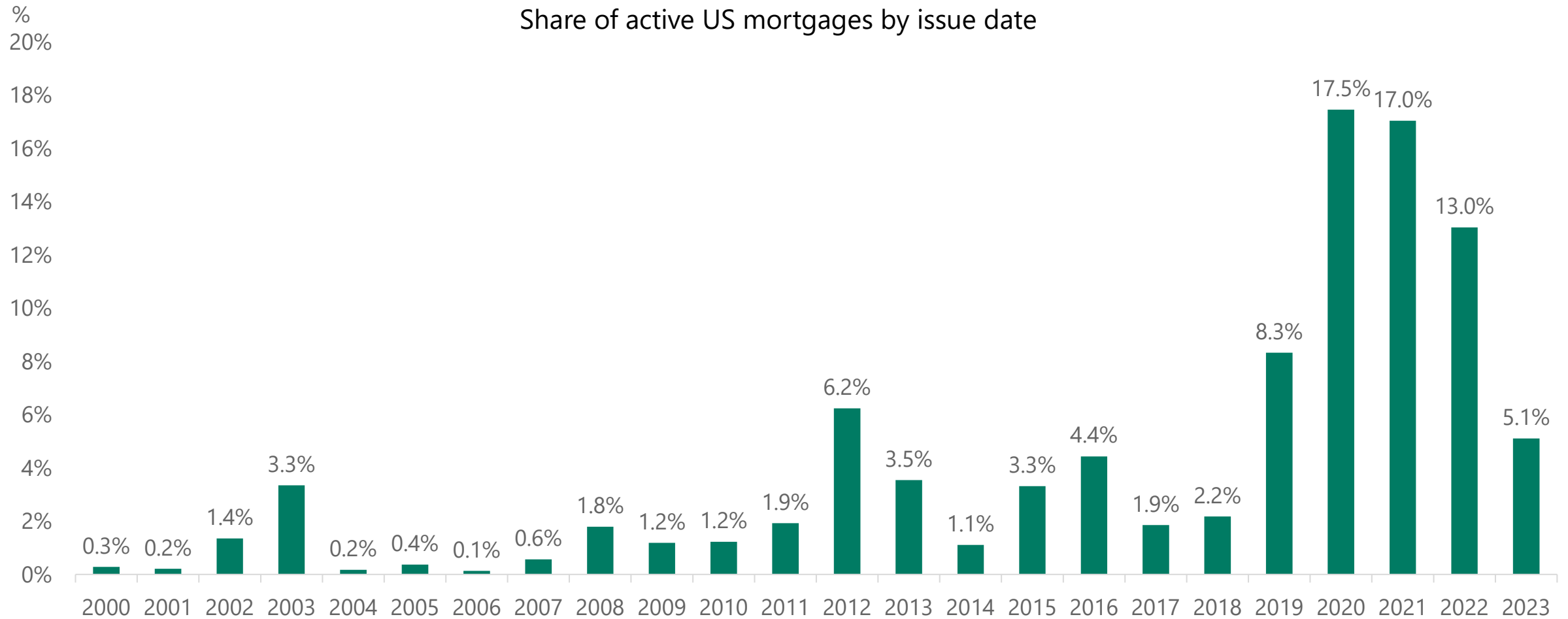
# Multifamily delinquencies rising



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

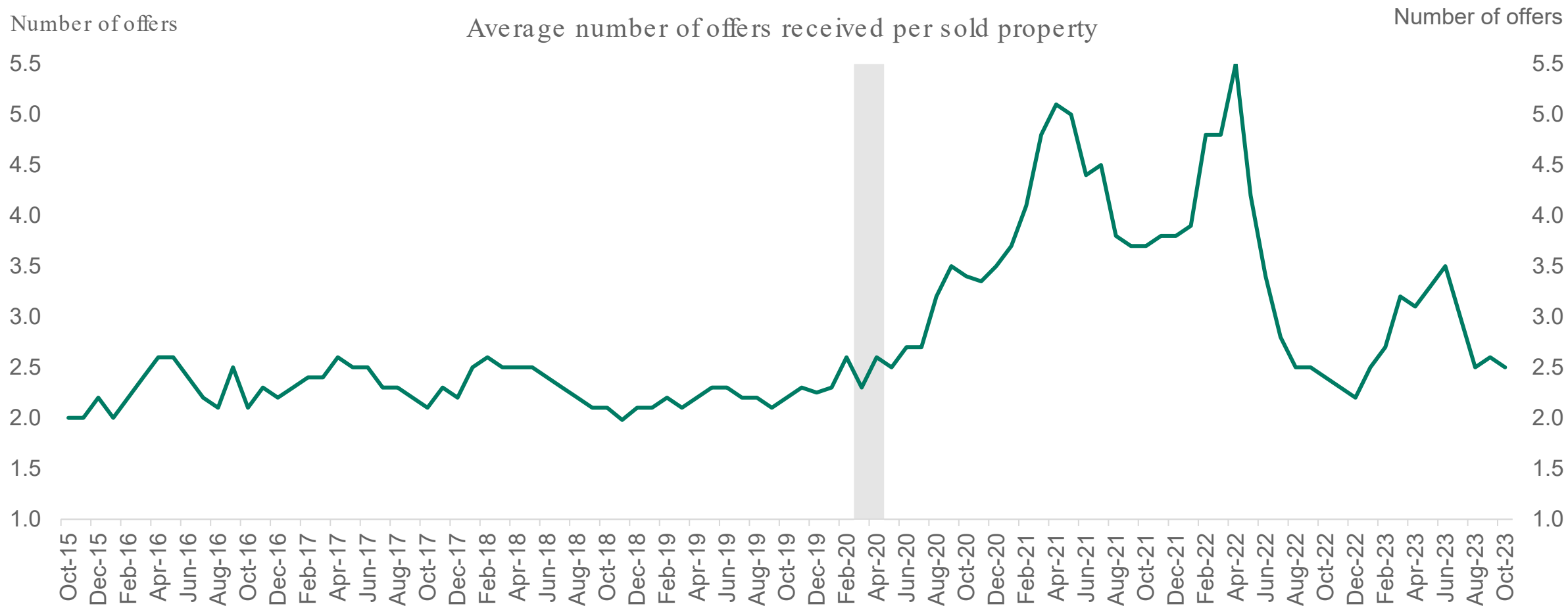


# 63% of all mortgages outstanding were issued after 2018



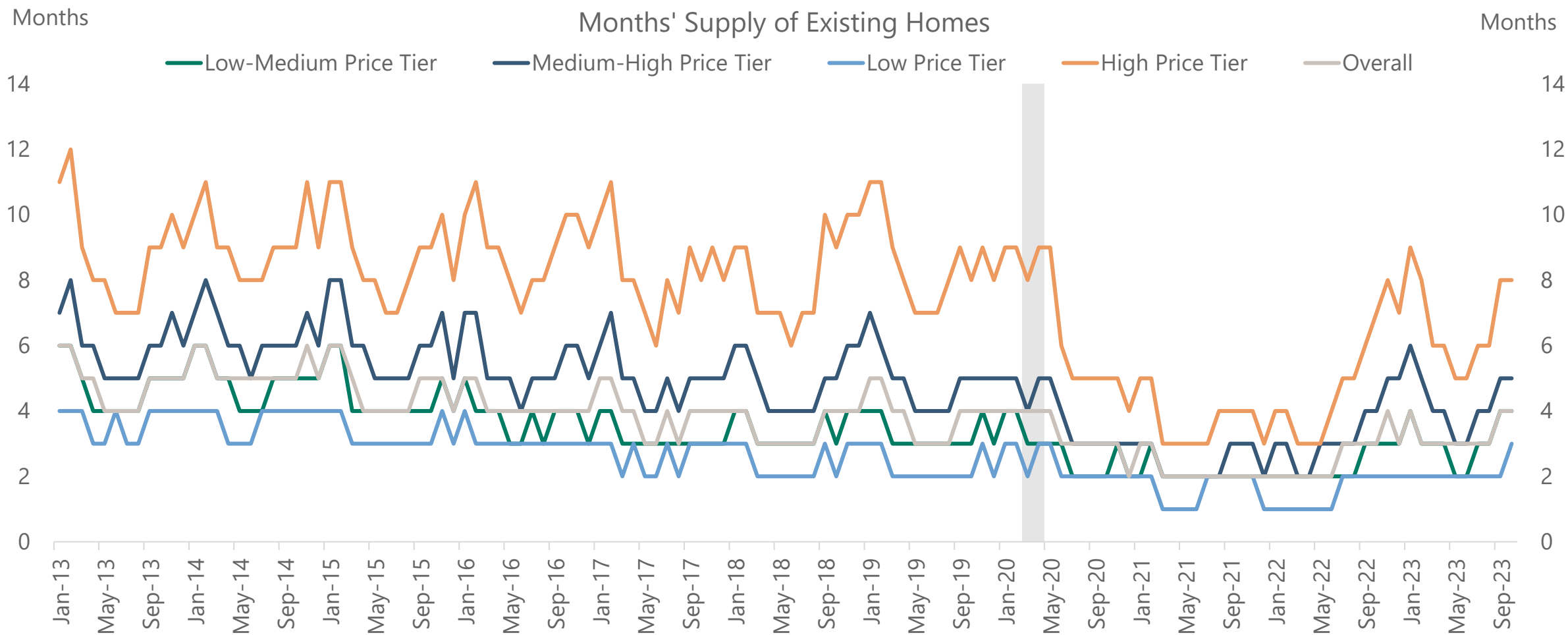
Source: Bloomberg, Apollo Chief Economist. Note: Data comes from MTGS <GO> screen on Bloomberg

# Fewer bidding wars recently



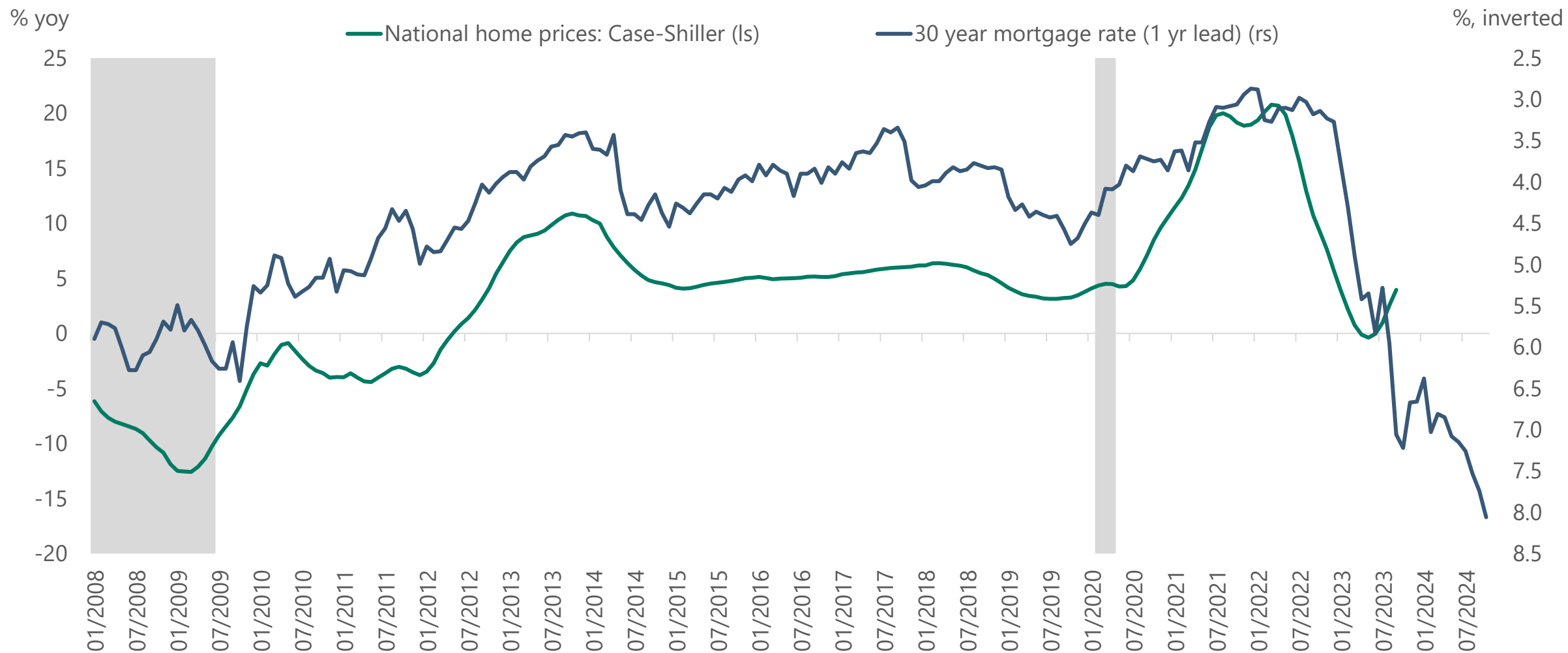


# Seasonal increase in the inventory of homes for sale

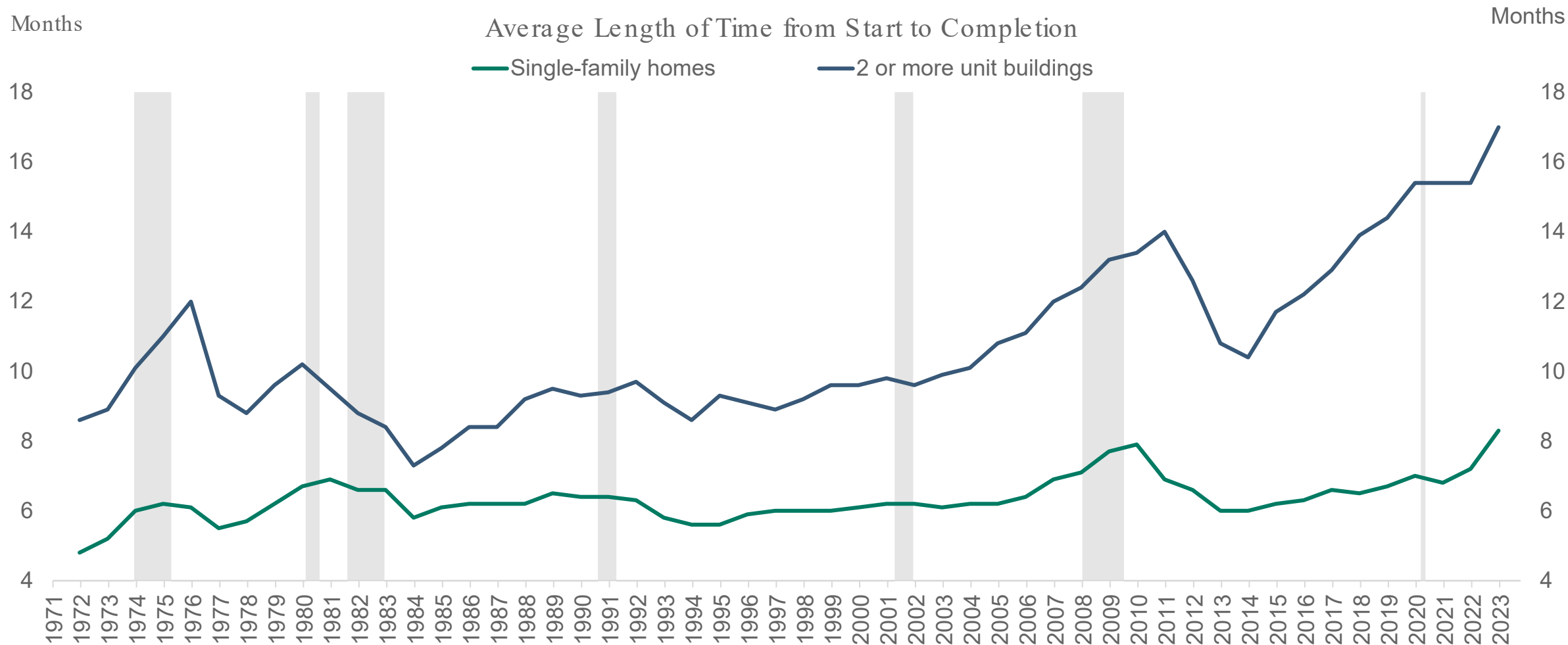


Source: American Enterprise Institute, Haver, Apollo Chief Economist

# If mortgage rates stay high home prices will start falling



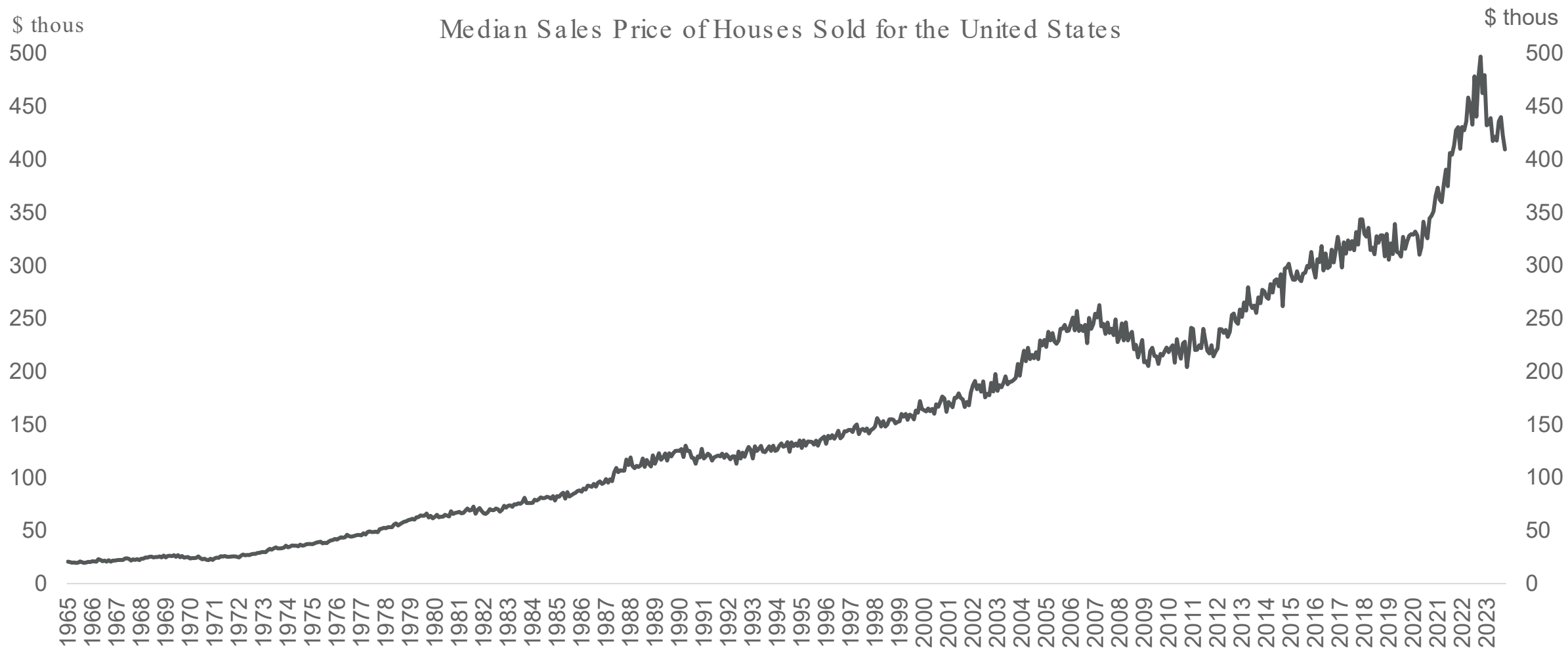
# It currently takes 8 months on average to build a single-family house



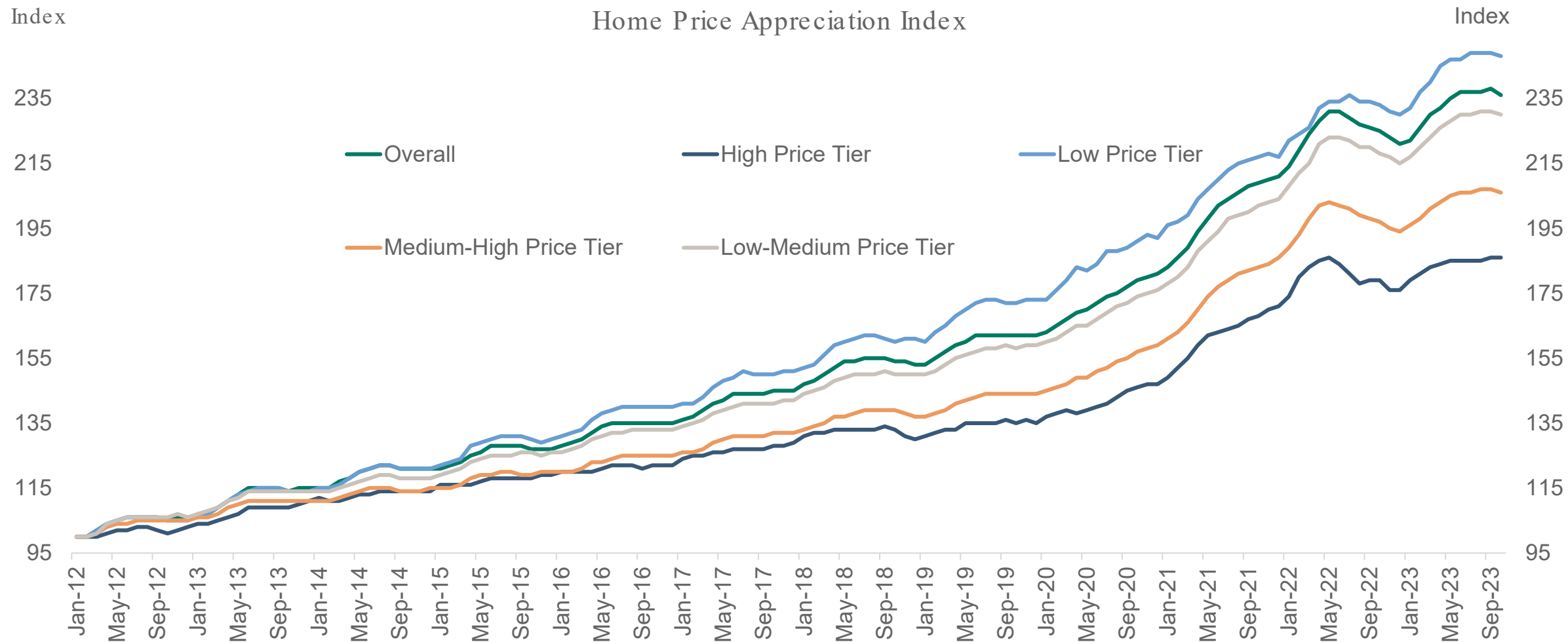
Source: Census, Haver Analytics, Apollo Chief Economist. Note: Single family homes are 1 unit buildings

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

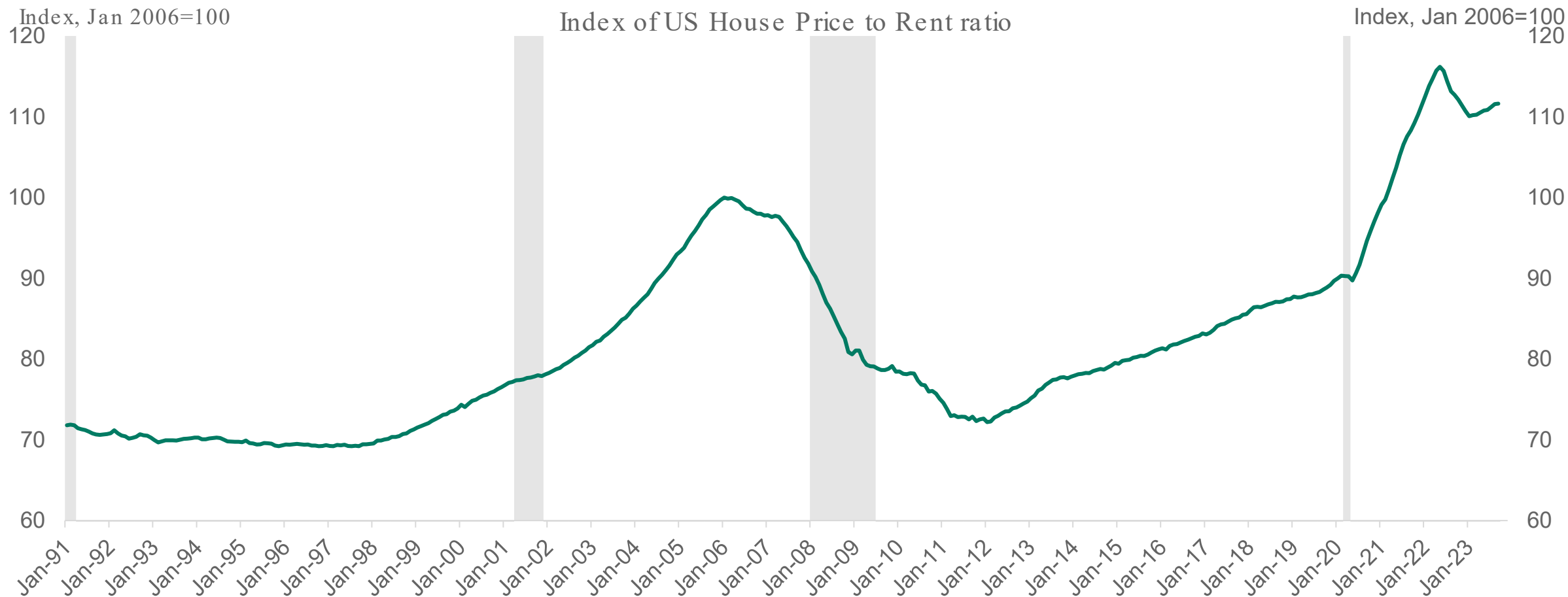
# Median home sales price now \$409K



# House price inflation stabilizing across price tiers

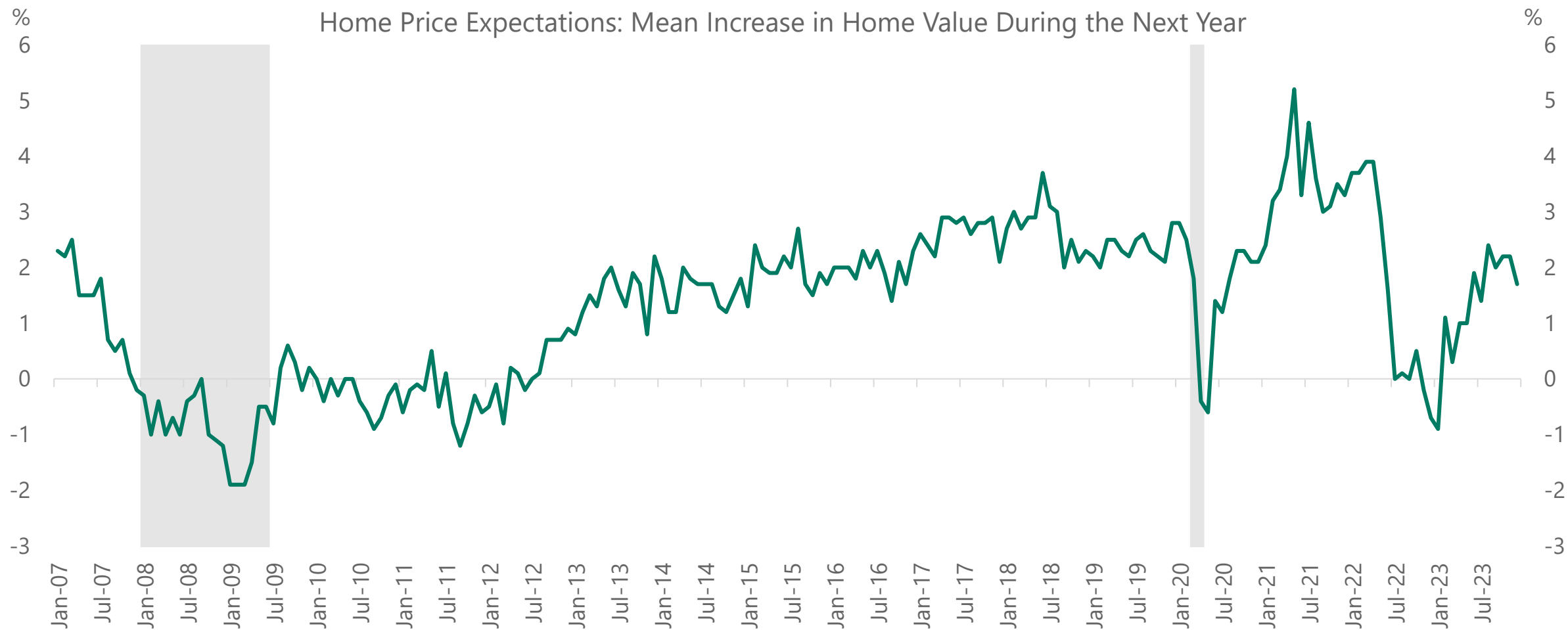


# Home price to rent ratio significantly above 2006 levels



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.

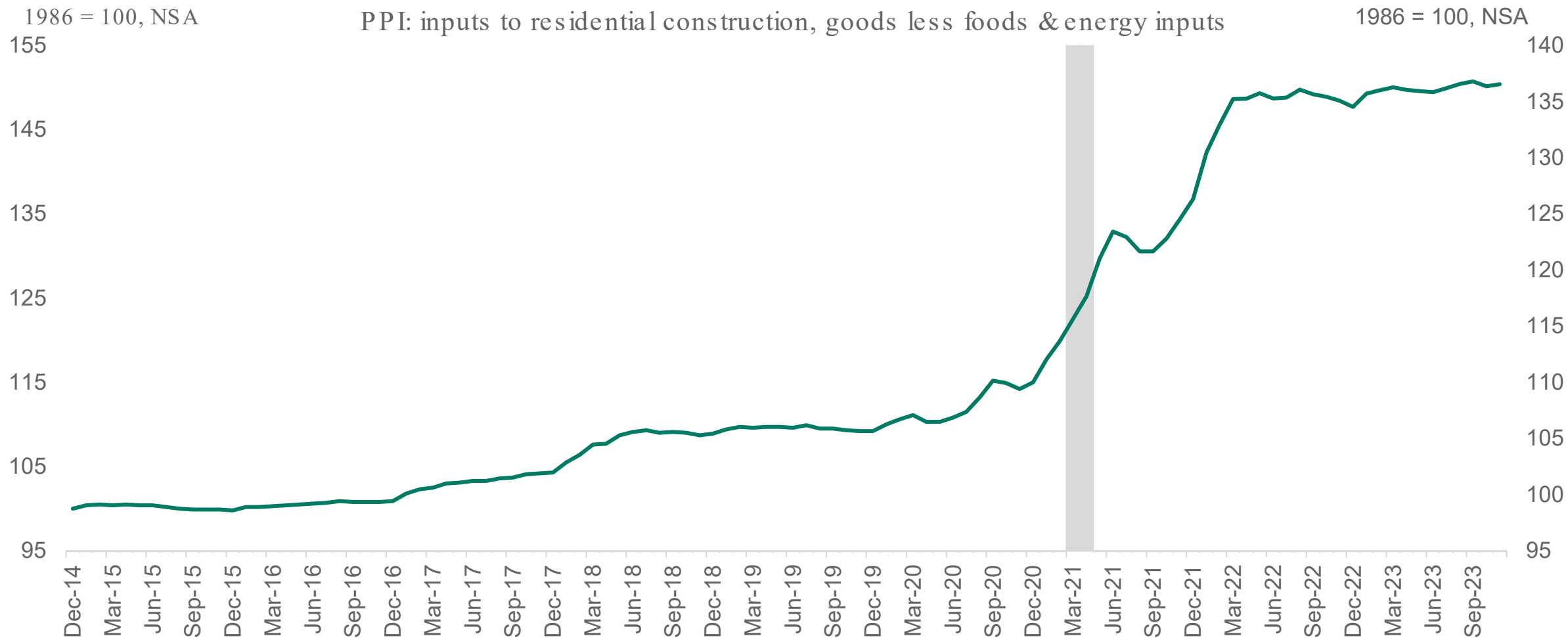
# Consumers' expectations of home price inflation





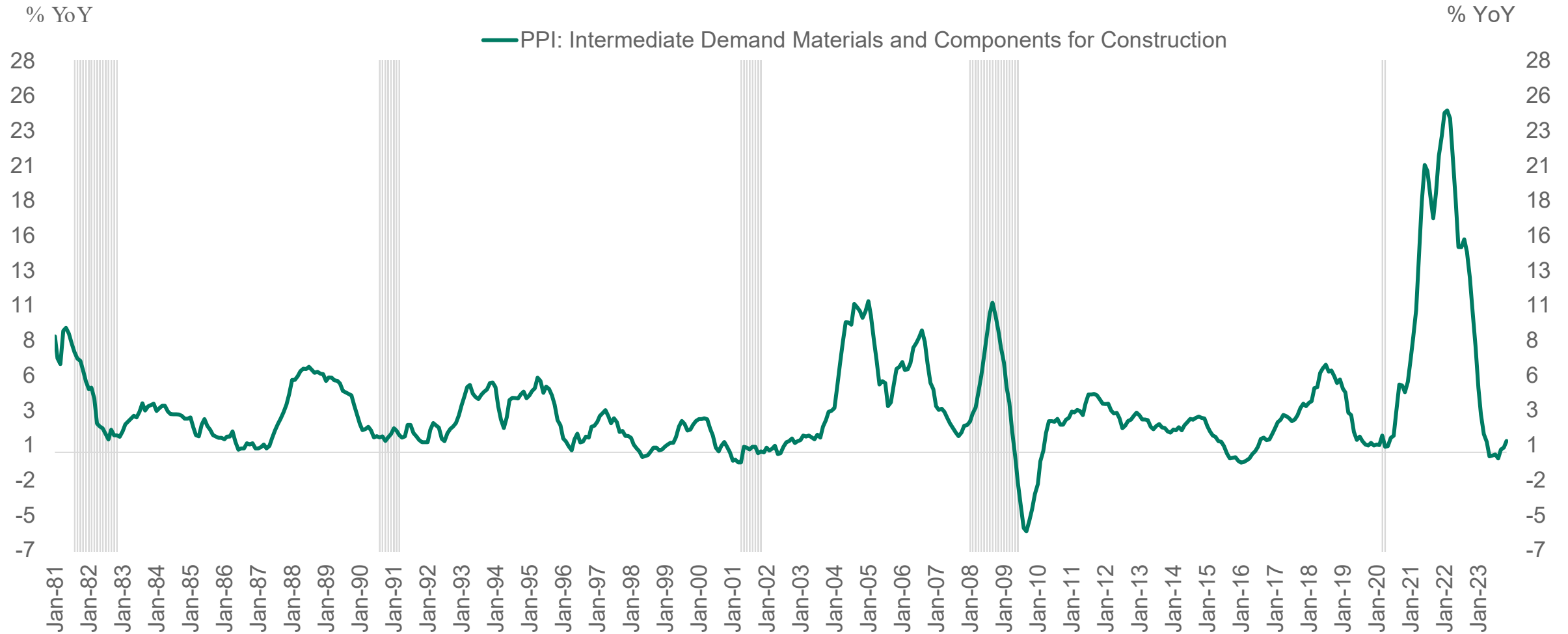
4) Housing Outlook: **High mortgage rates, high home prices, strong supply pipeline, and high building costs are risks to this housing cycle**

# Housing construction costs are high



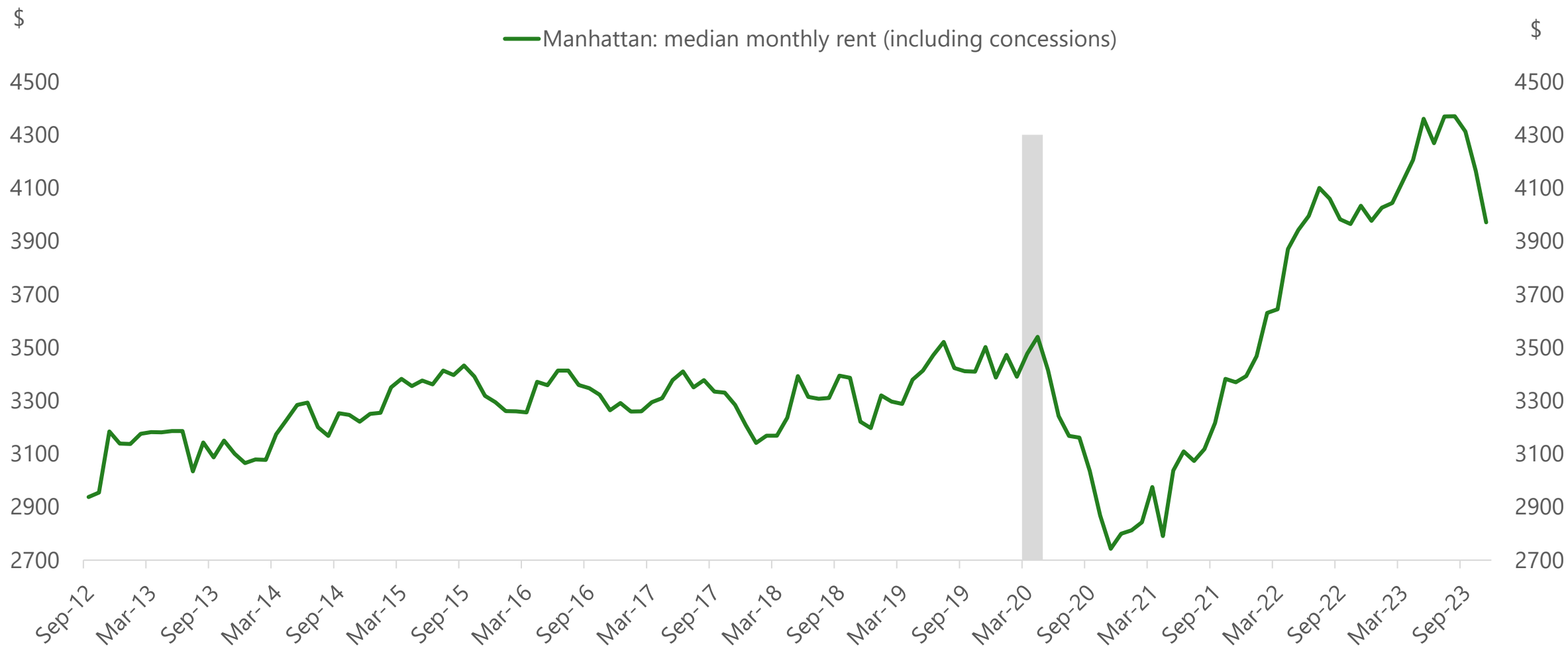
Source: Bureau of Labor Statistics, Apollo Chief Economist

# Inflation in input costs for home builders declining

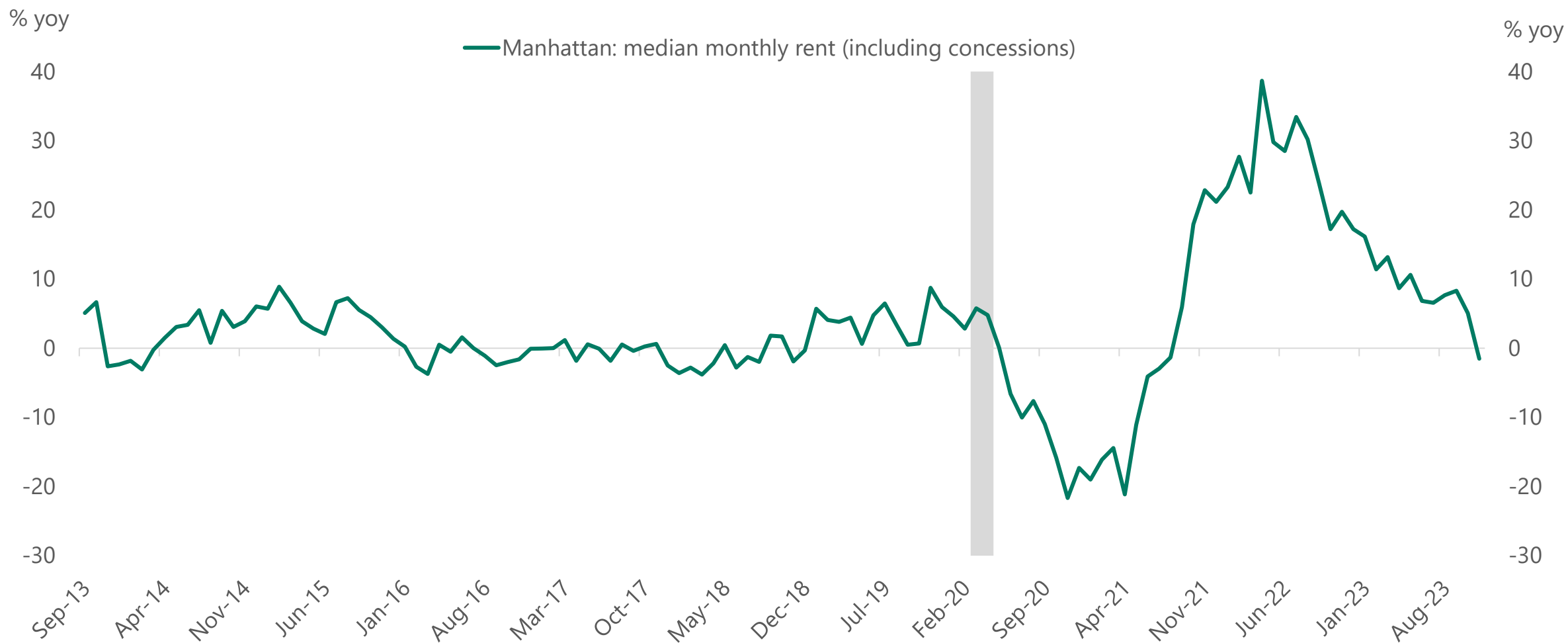


Source: Bureau of Labor Statistics, Apollo Chief Economist

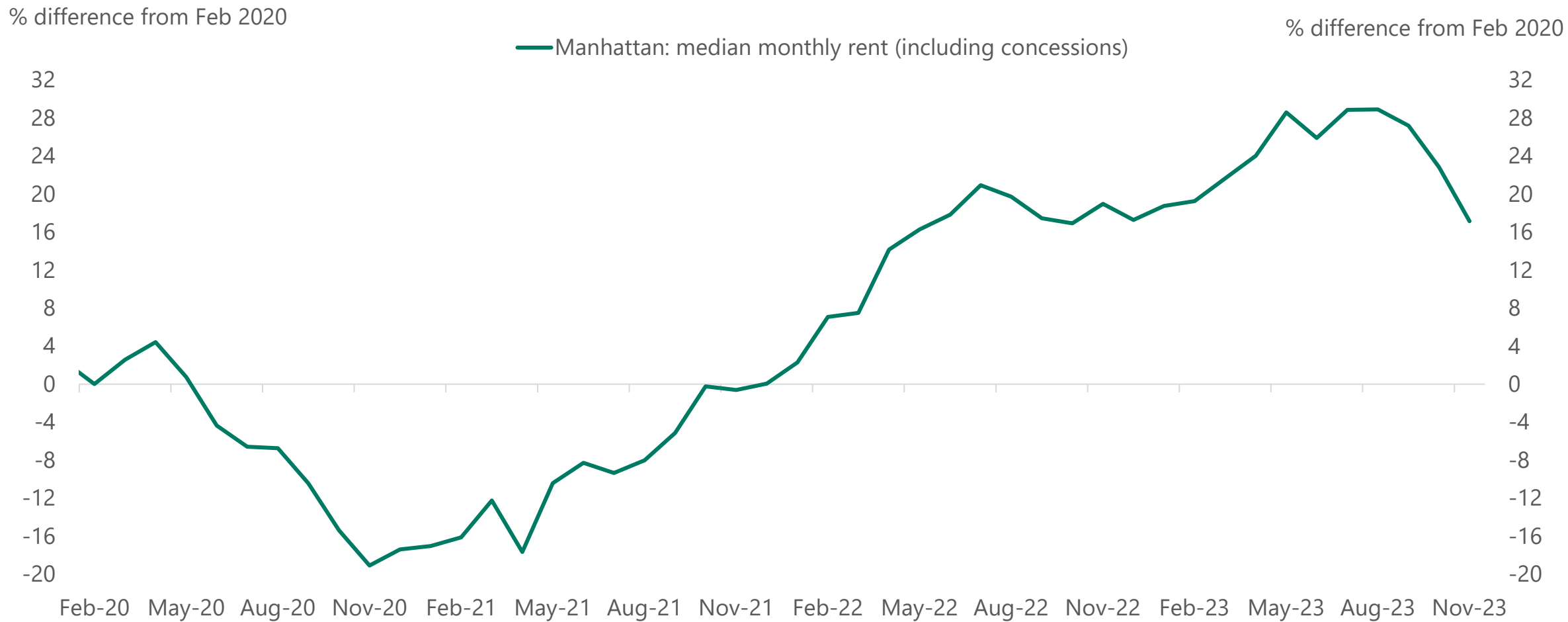
# Manhattan median rent declined to \$3971 in November 2023



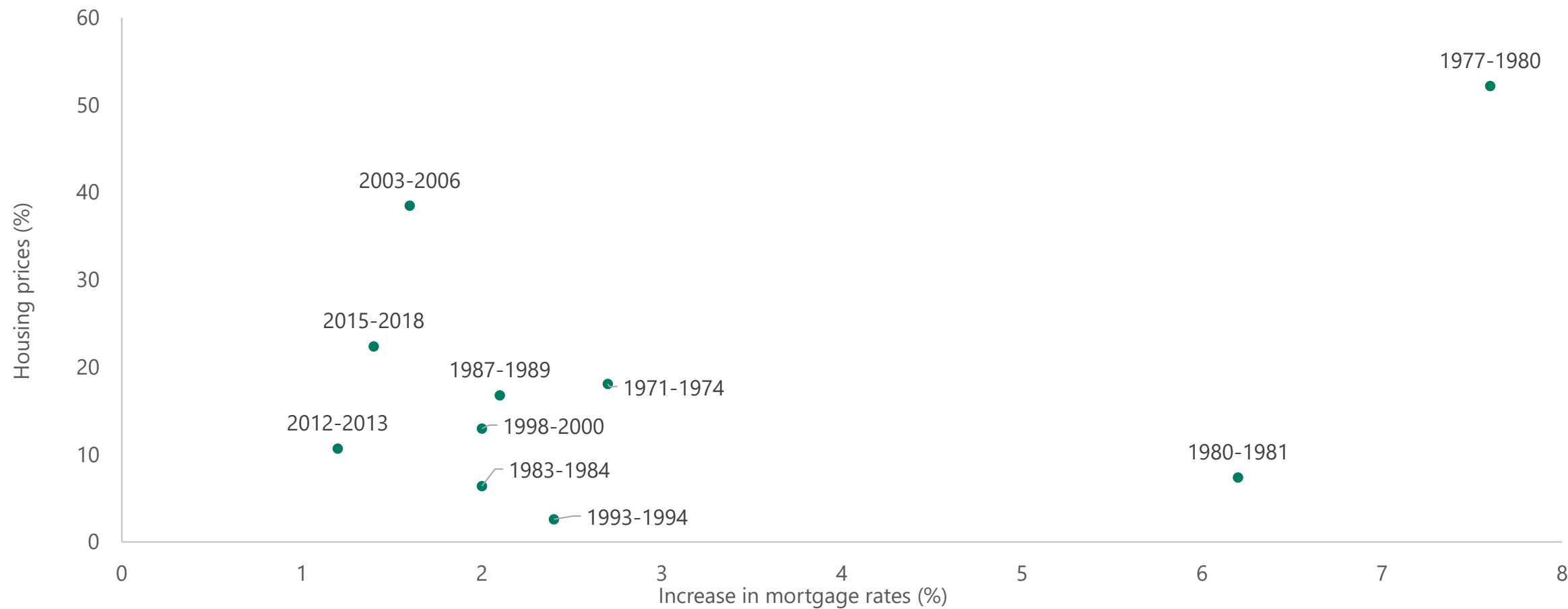
# Manhattan rent growth slowing



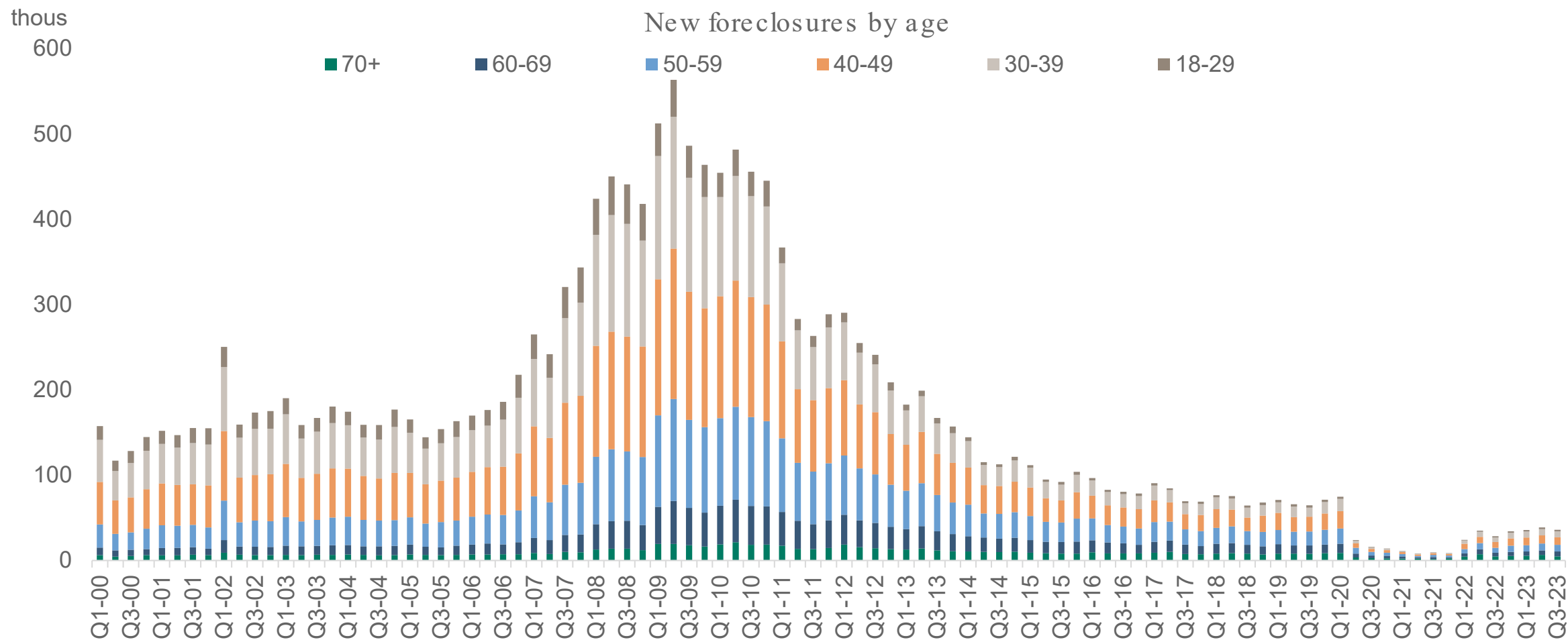
# Manhattan rents still above pre-pandemic levels



# Rising mortgage rates generally associated with lower home price inflation



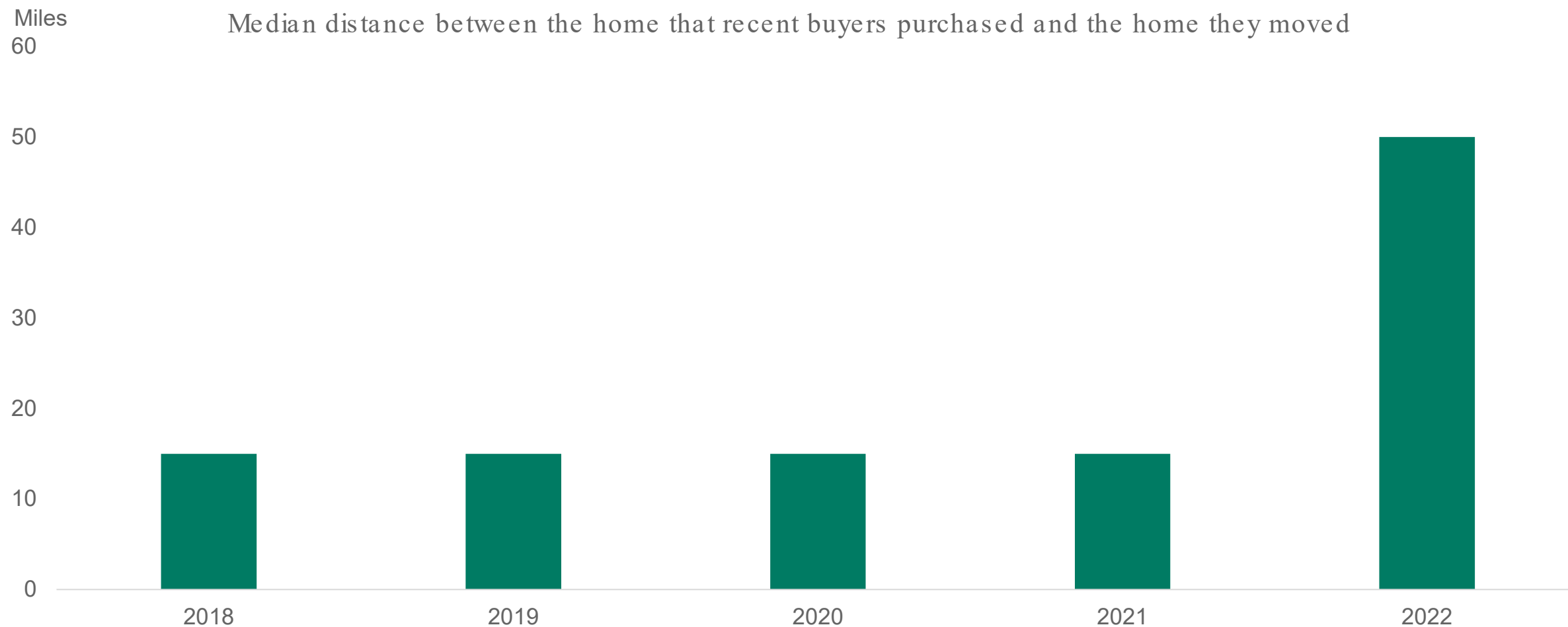
# New foreclosures, by age of homeowner



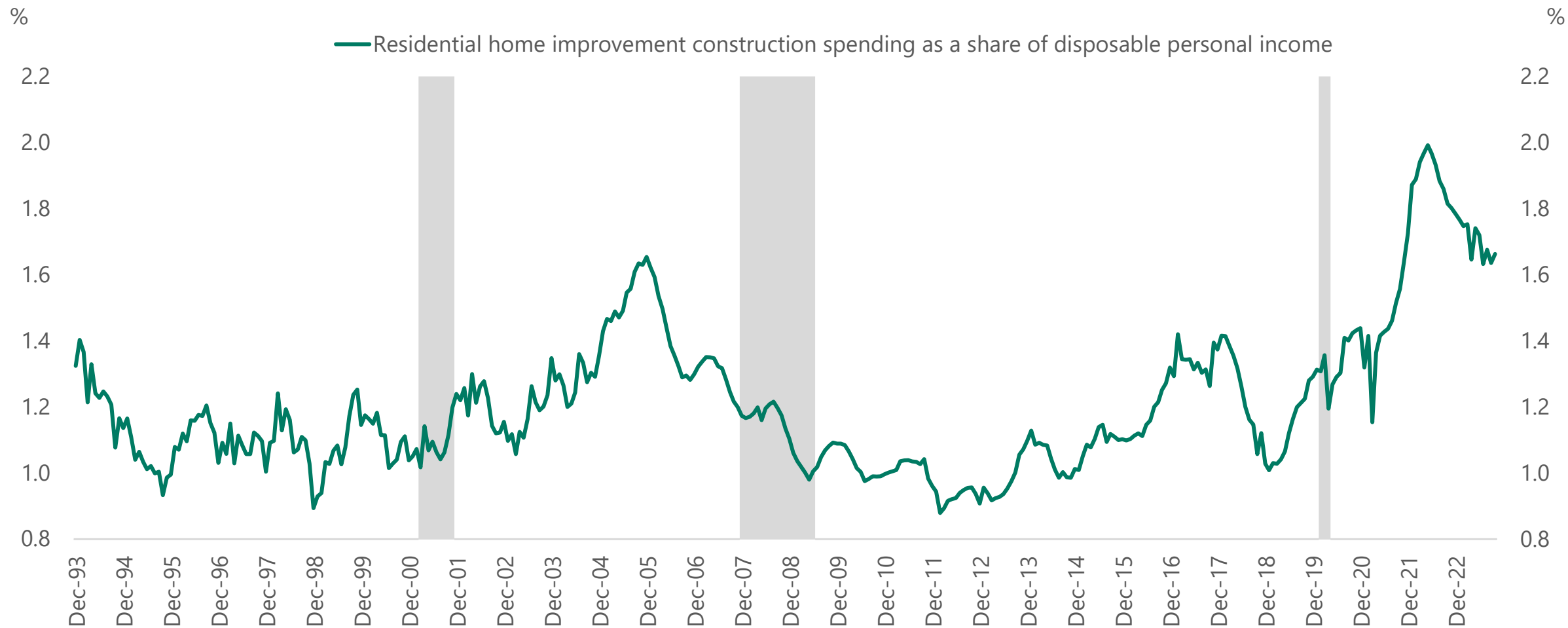
Source: FRBNY Consumer Credit Panel, Equifax, Haver Analytics, Apollo Chief Economist



# 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

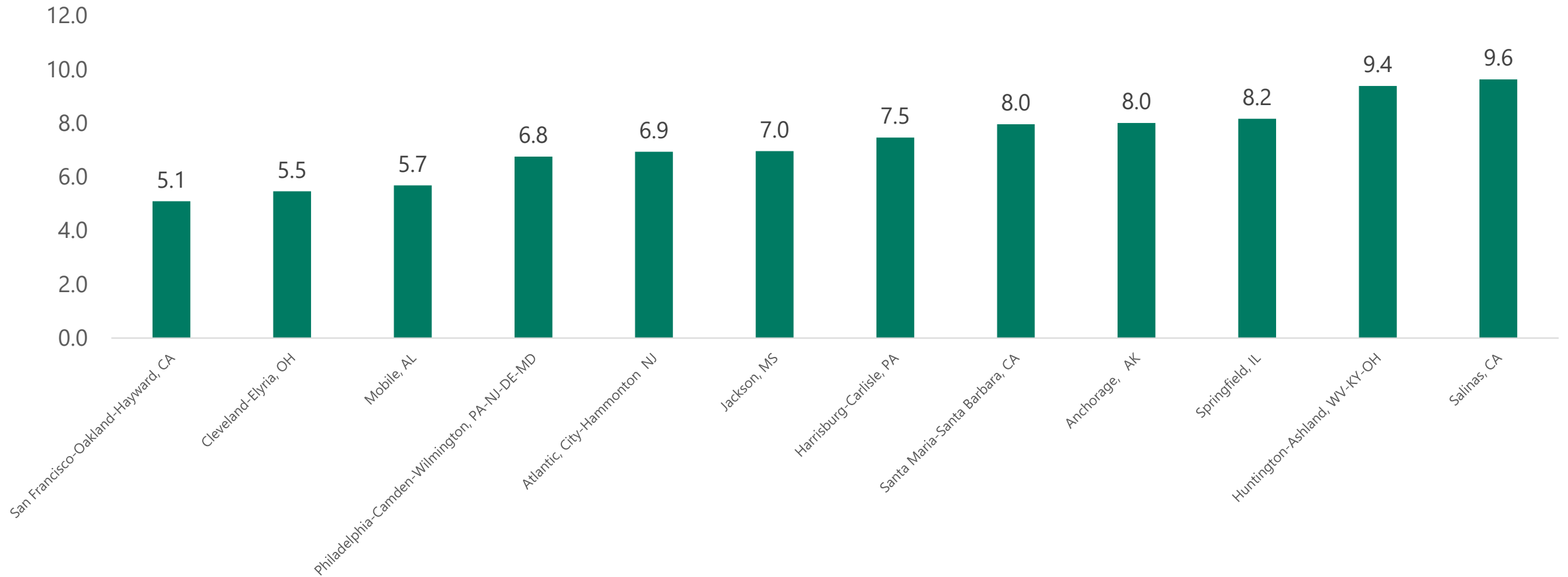


Source: Census Bureau, BEA, Bloomberg, Apollo Chief Economist

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

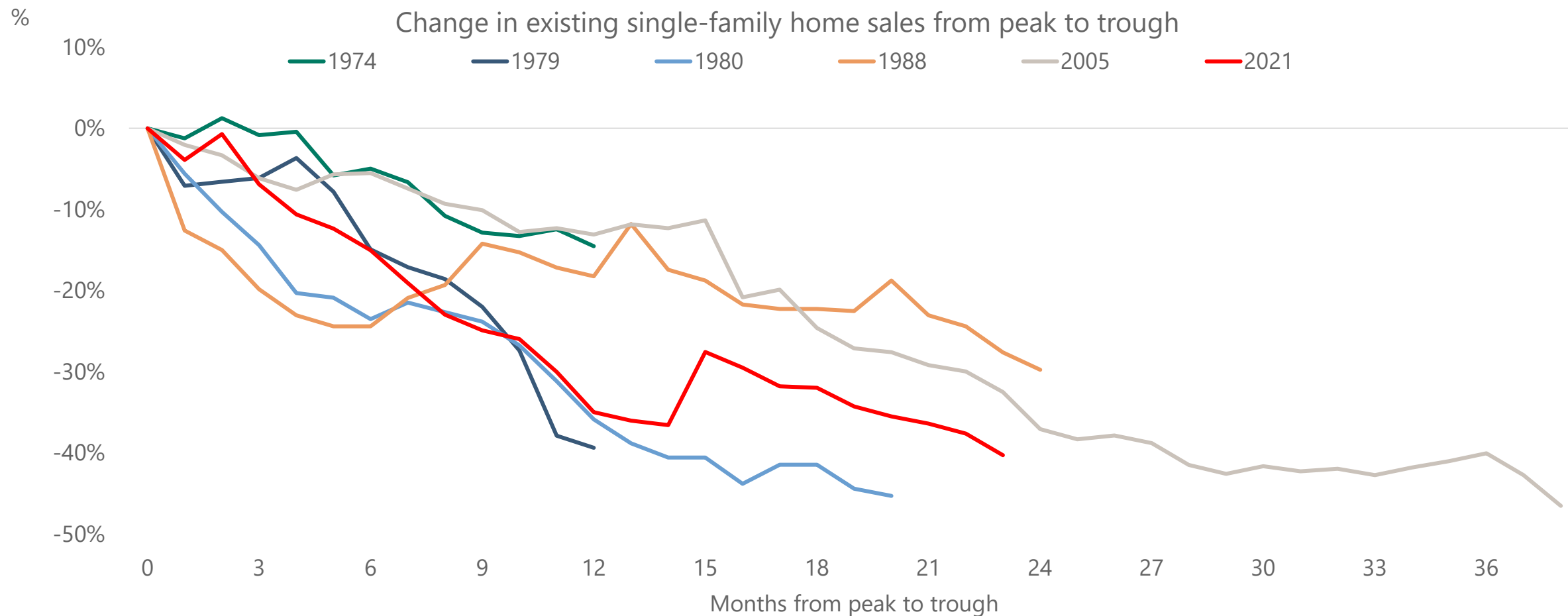
Permit (total units, thous)

Housing shortage (Sep-23)

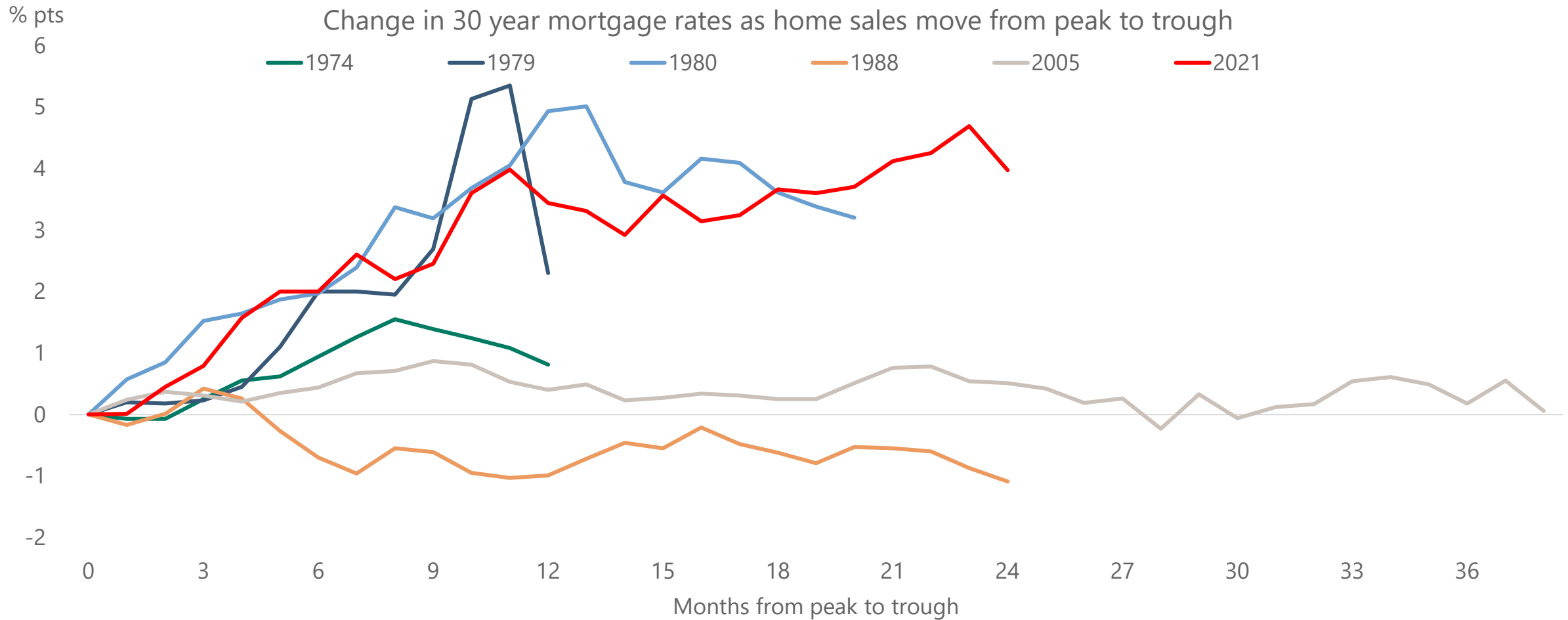


Comparing the current housing slowdown to previous housing slowdowns

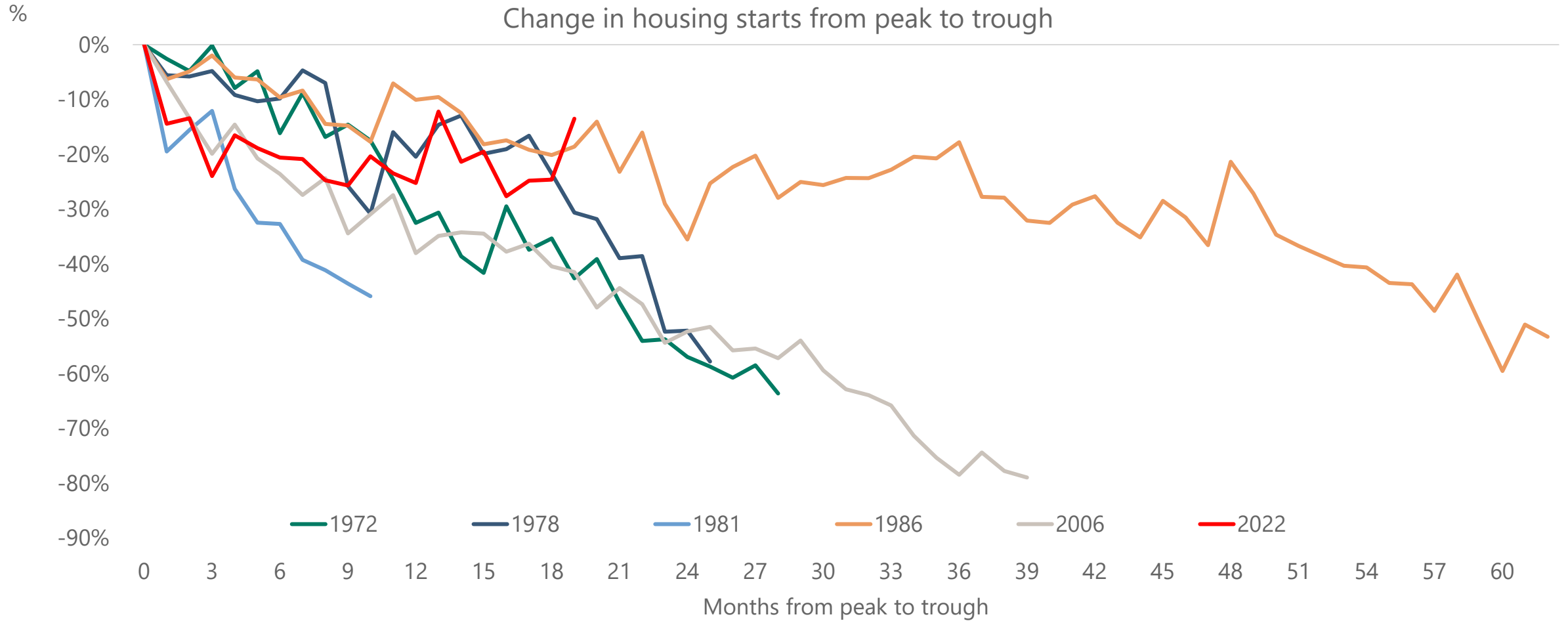
# The current decline in existing home sales is in line with previous housing slowdowns



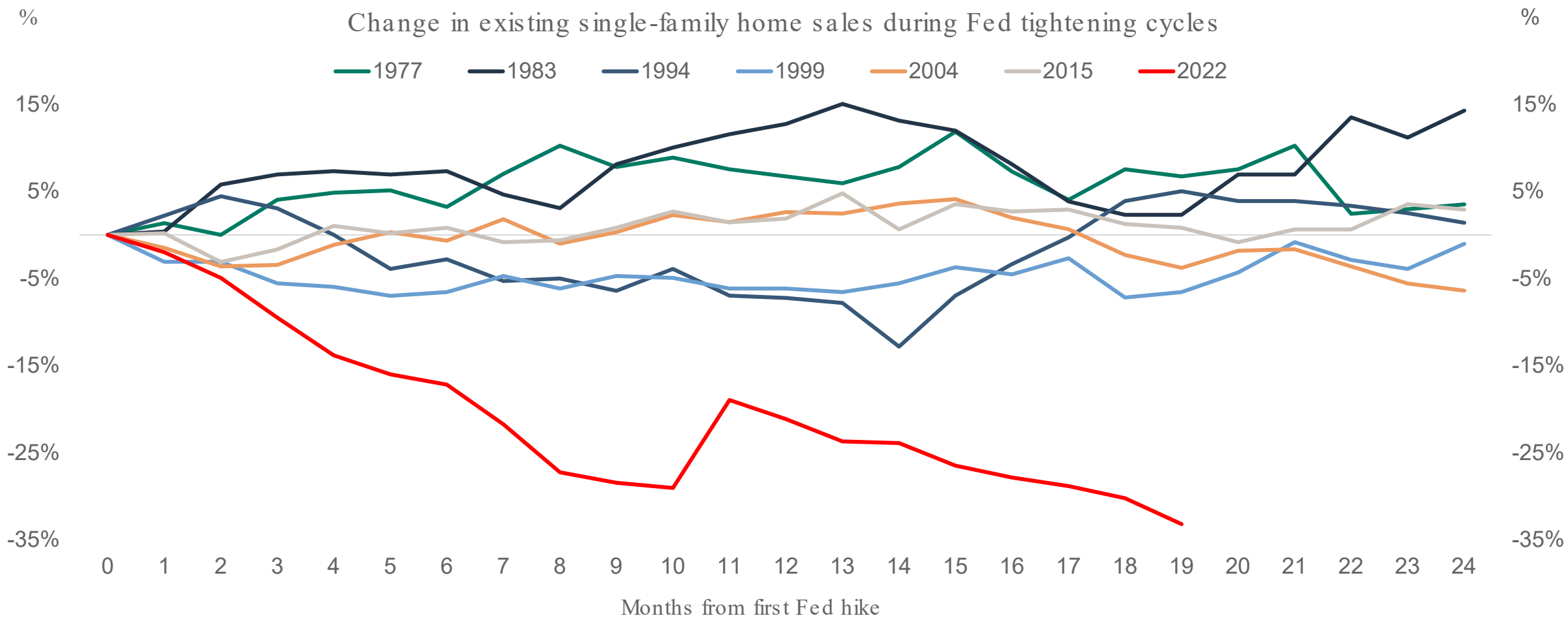
# The current rise in mortgage rates is similar to what we saw during the Volcker disinflation



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

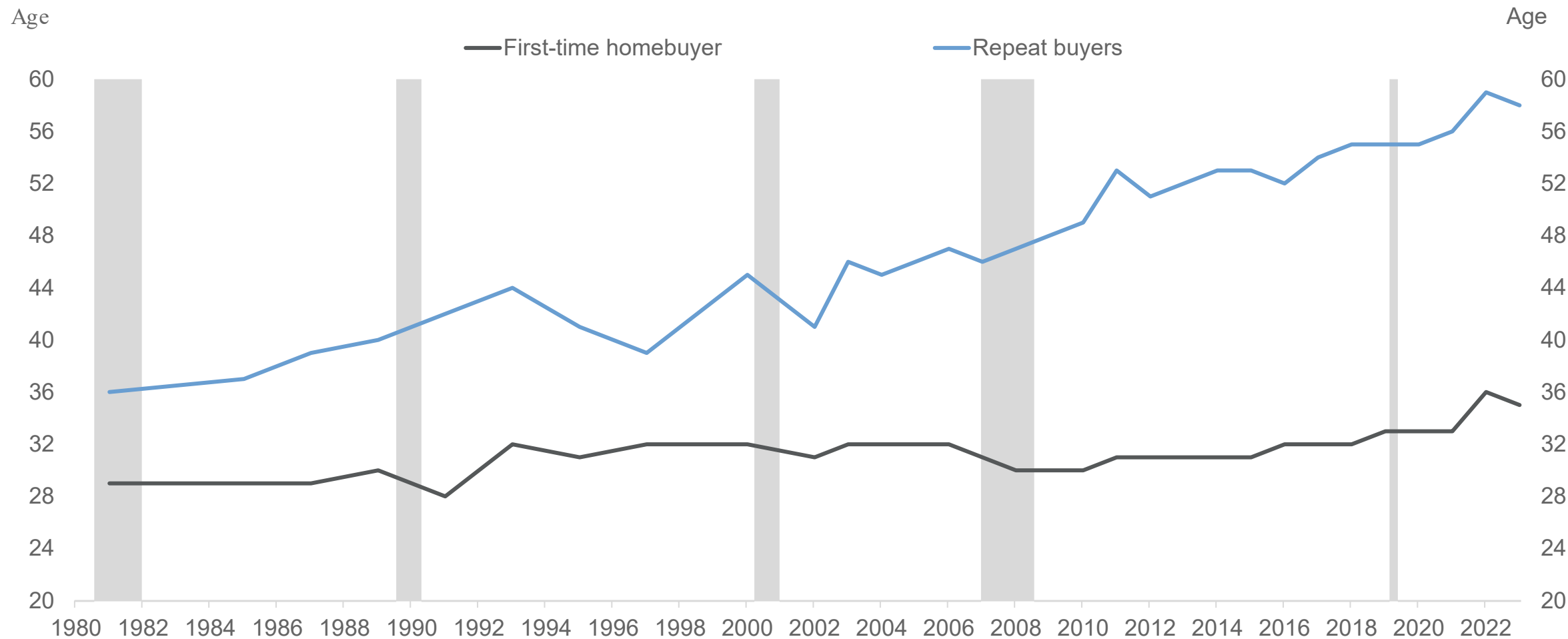


# This is the fastest Fed-driven housing slowdown on record

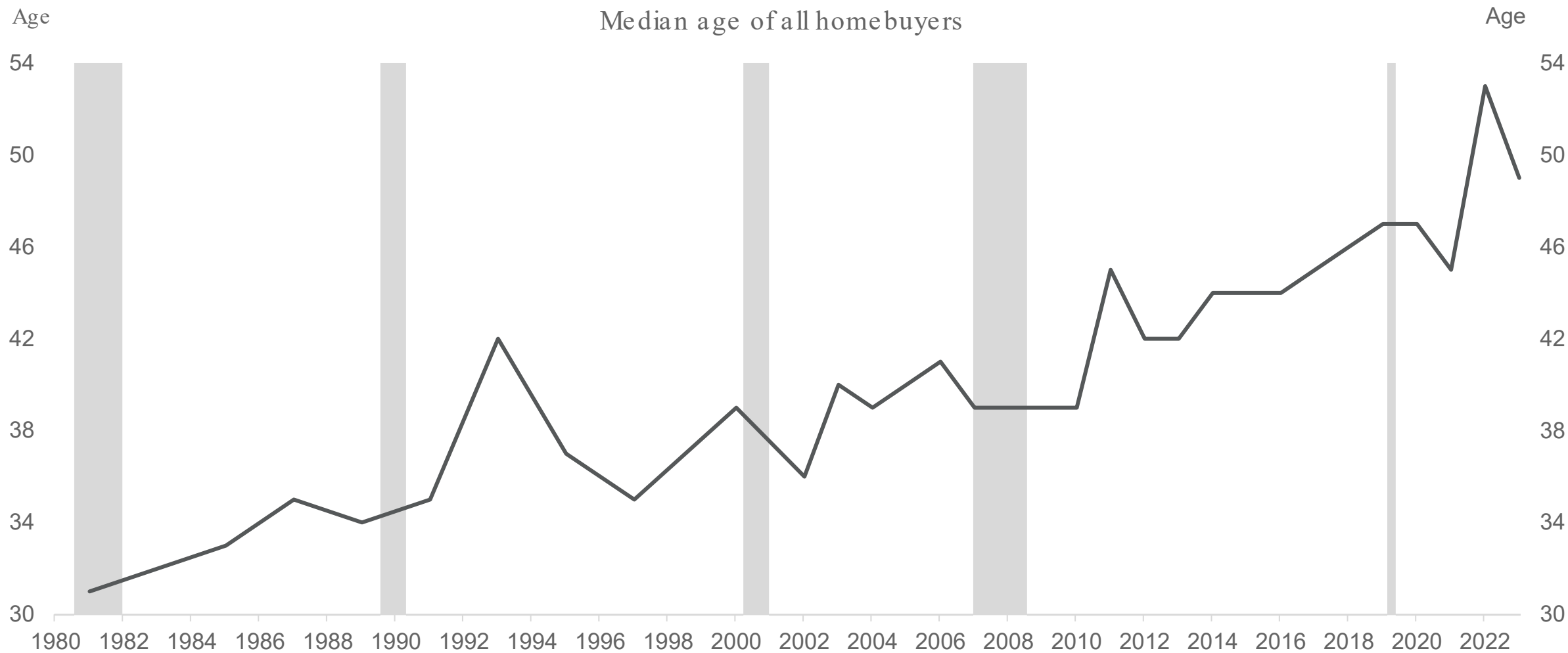




# Homebuyers are getting older



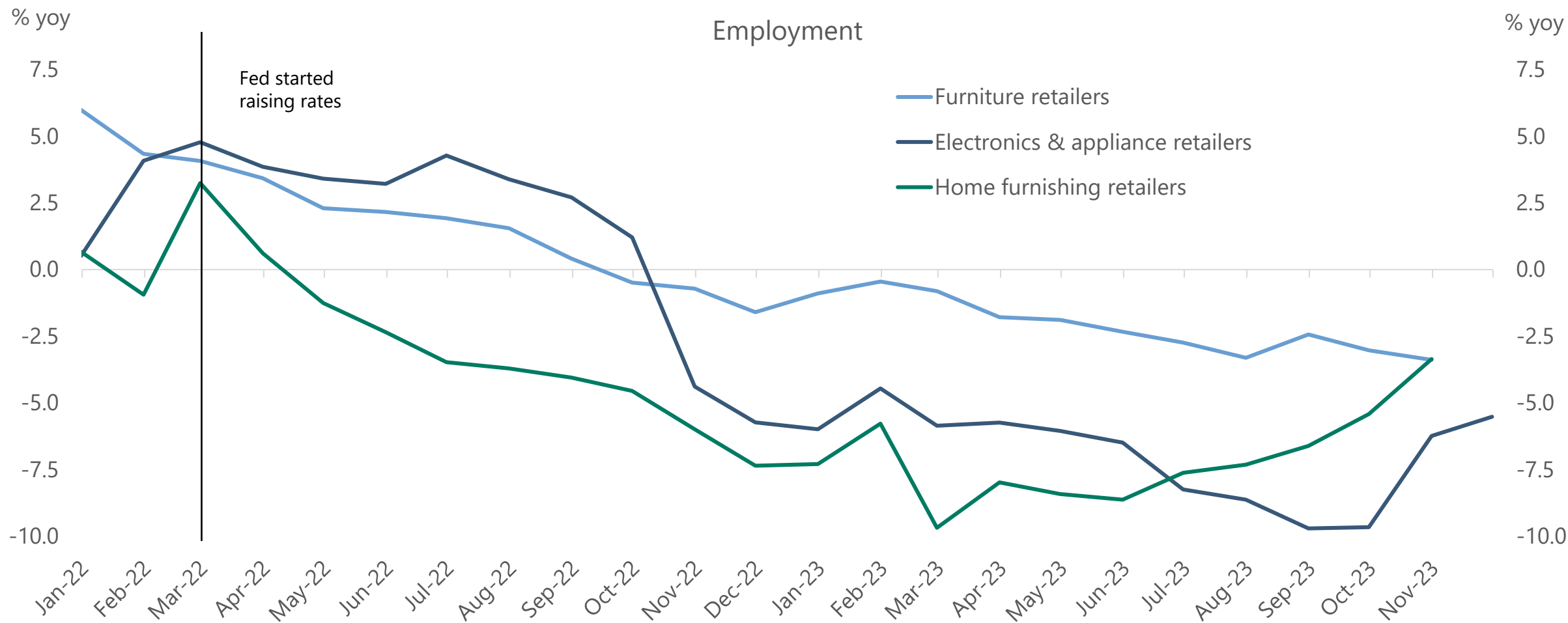
# The median age of all homebuyers is now 49 years old, up from 31 in 1981



# Apartment vacancies are back above pre-pandemic levels



# Employment in retail trade continued to decline





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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.

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