

APOLLO

# US Housing Outlook: High mortgage rates slowing demand. But housing supply remains very low.

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**Apollo Global Management**

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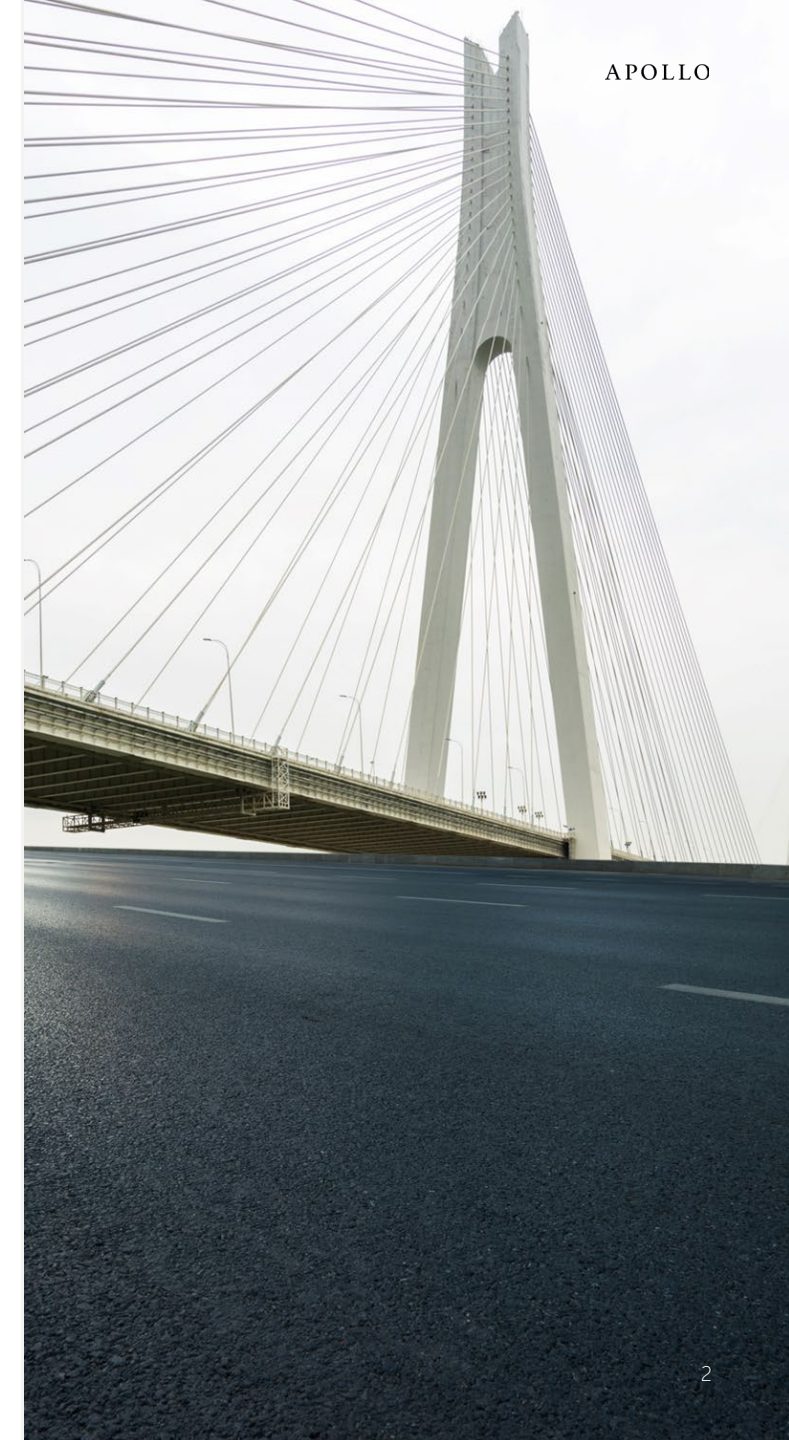
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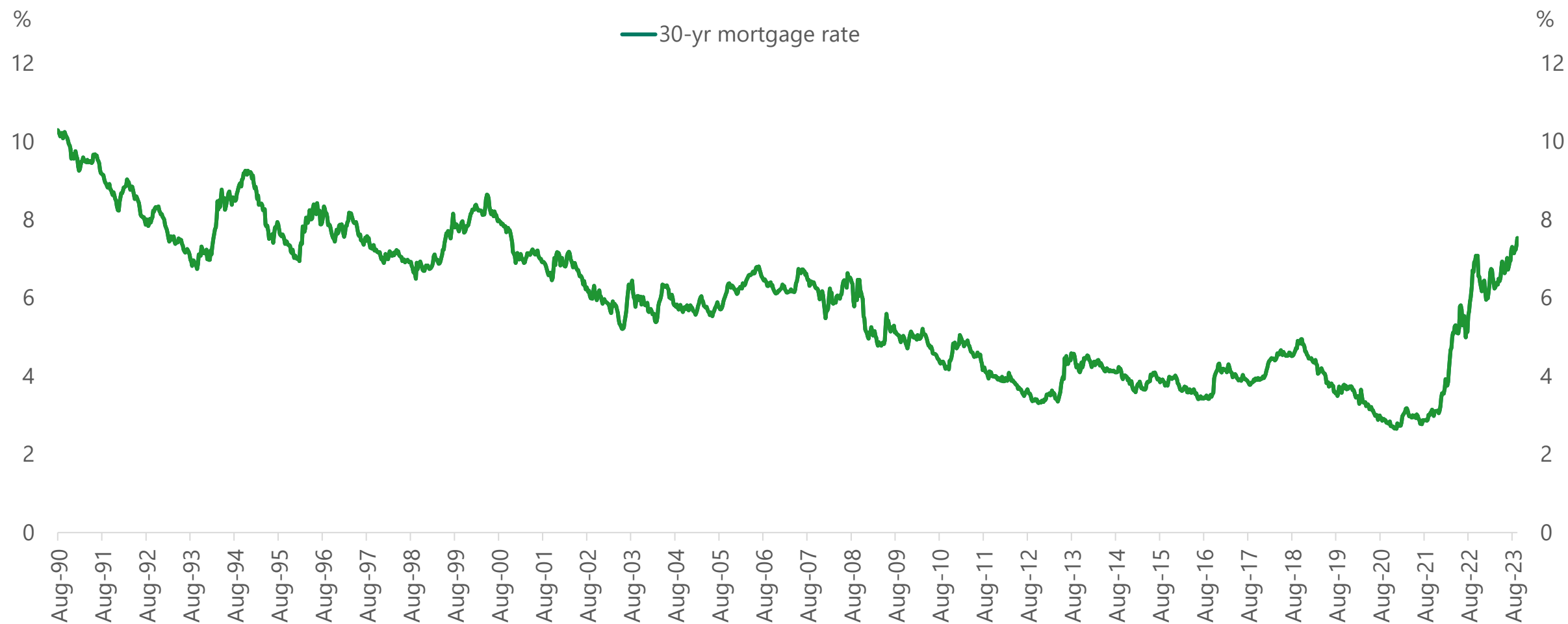


# Why is housing still doing well despite higher mortgage rates?

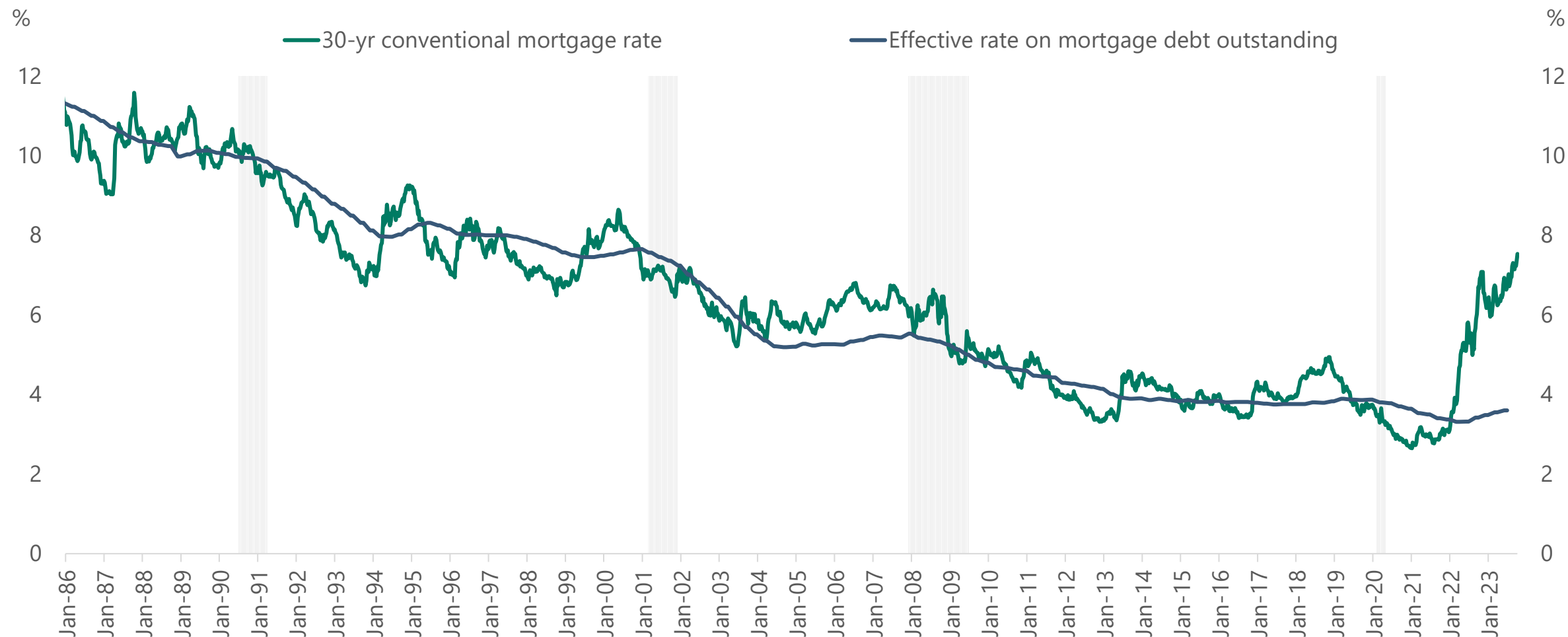
1. Low housing supply
2. Decent job growth
3. Robust wage growth
4. Still some excess savings left

# Leading indicators of the housing market

# 30-year mortgage rates now at 7.8%

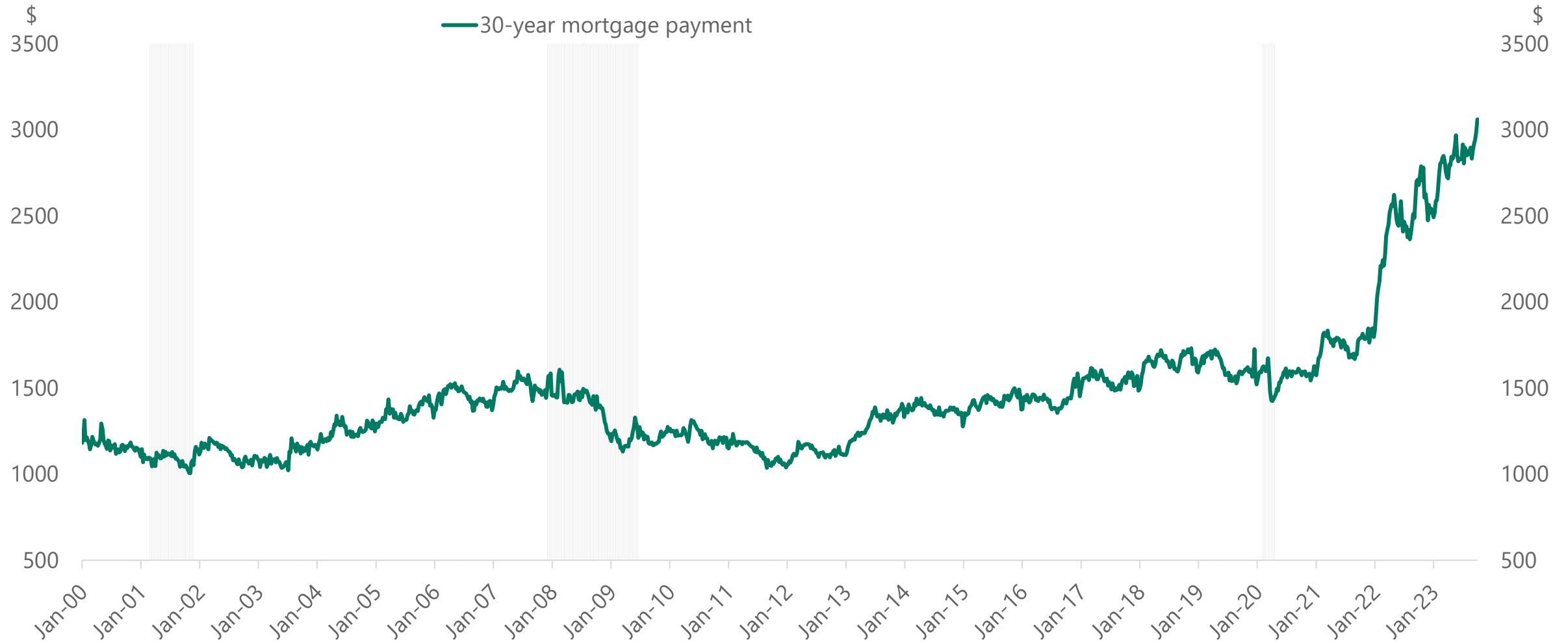


# Effective outstanding mortgage rate is 3.6%



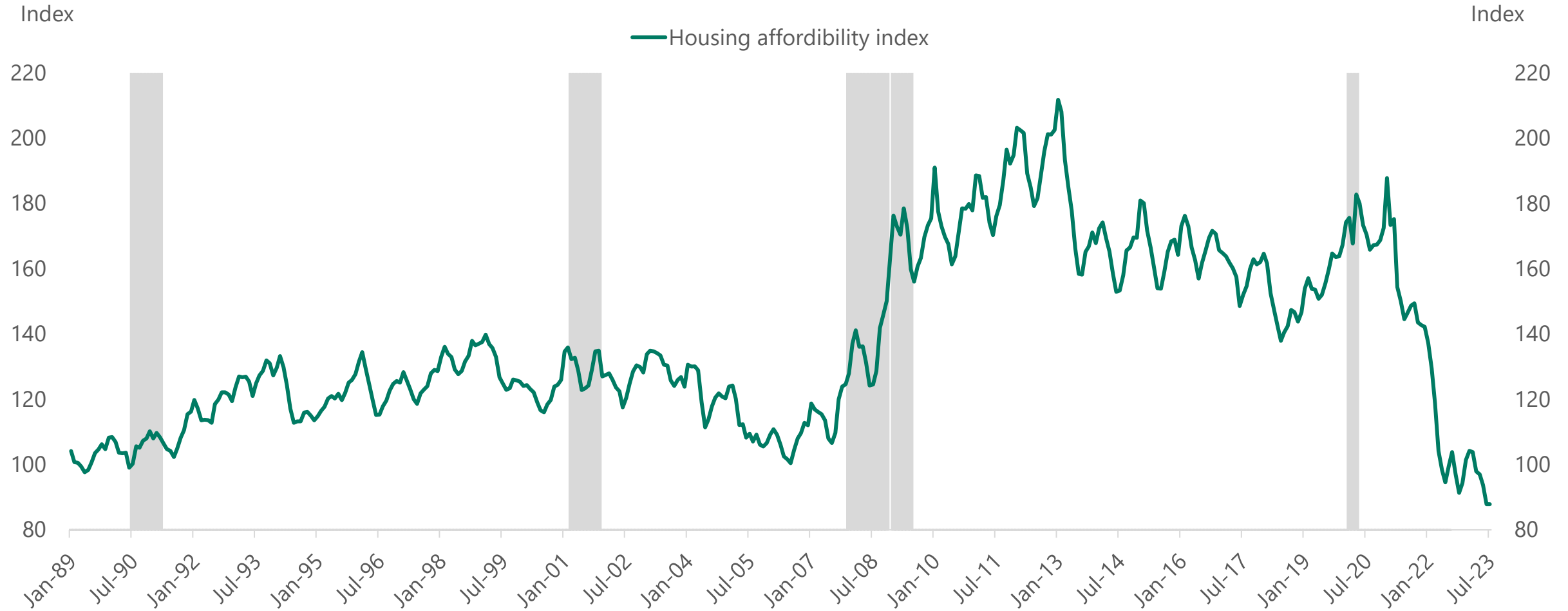
Source: Freddie Mac, BEA, Bloomberg, Apollo Chief Economist. The effective interest rate (%) reflects the amortization of initial fees and charges over a 10-year period, which is the historical assumption of the average life of a mortgage loan.

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



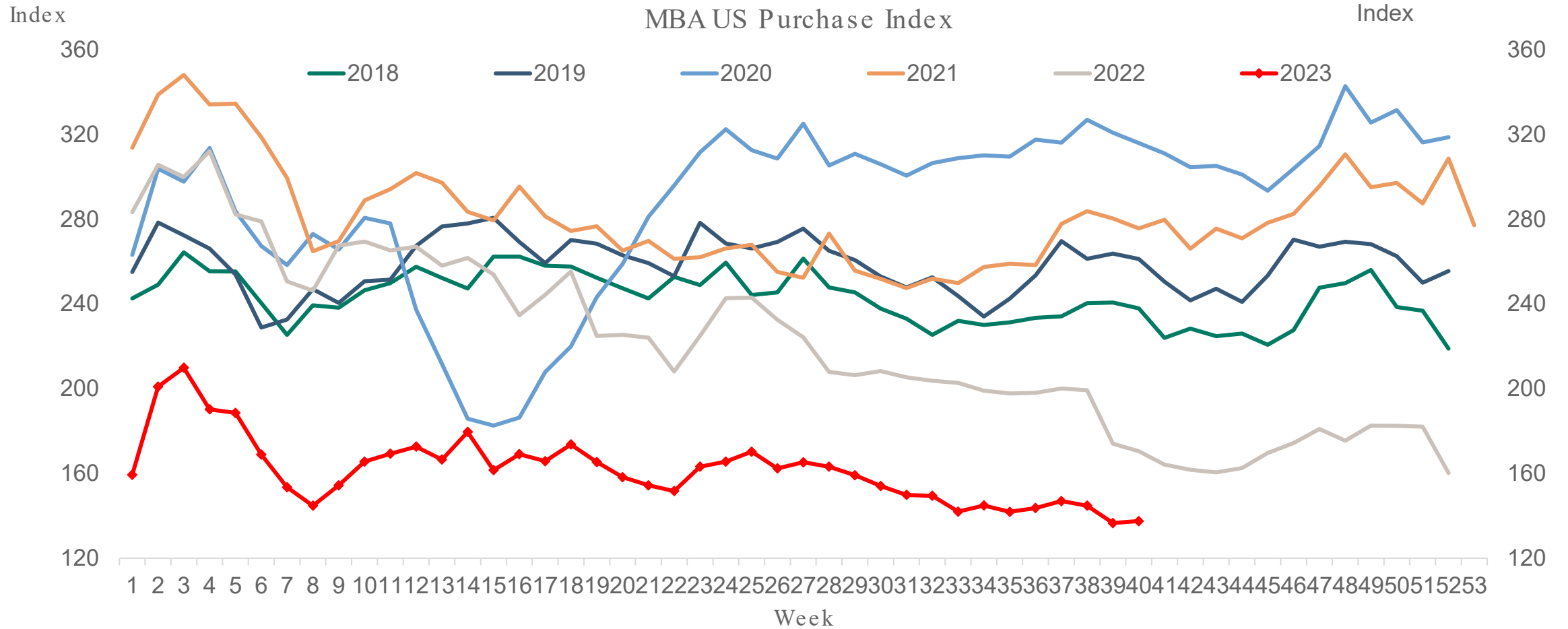
Source: Bloomberg L.P., Apollo Chief Economist (Note: Calculation of monthly payment using the 30-year purchase loan application size and the 30-yr effective rate.)

# Housing affordability below 2007 levels





# Mortgage purchase applications very weak because of high mortgage rates

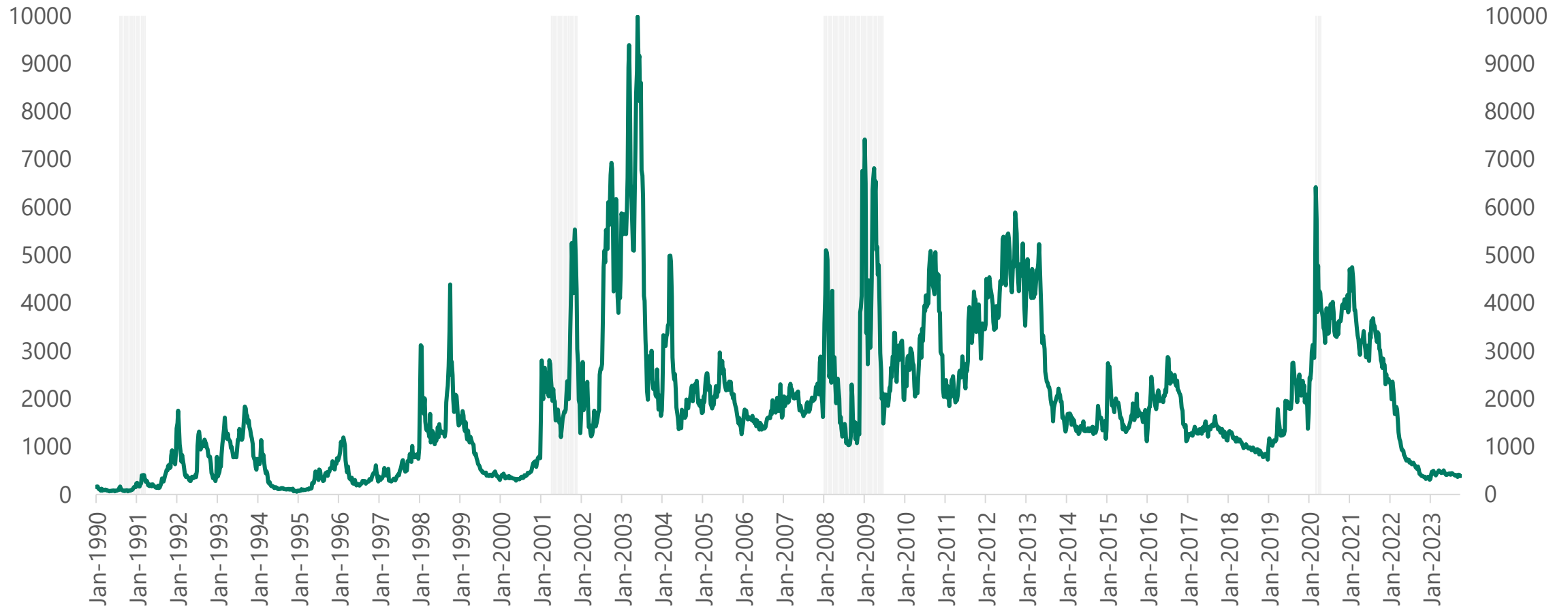


# Record-low number of homeowners are refinancing their mortgage at the moment

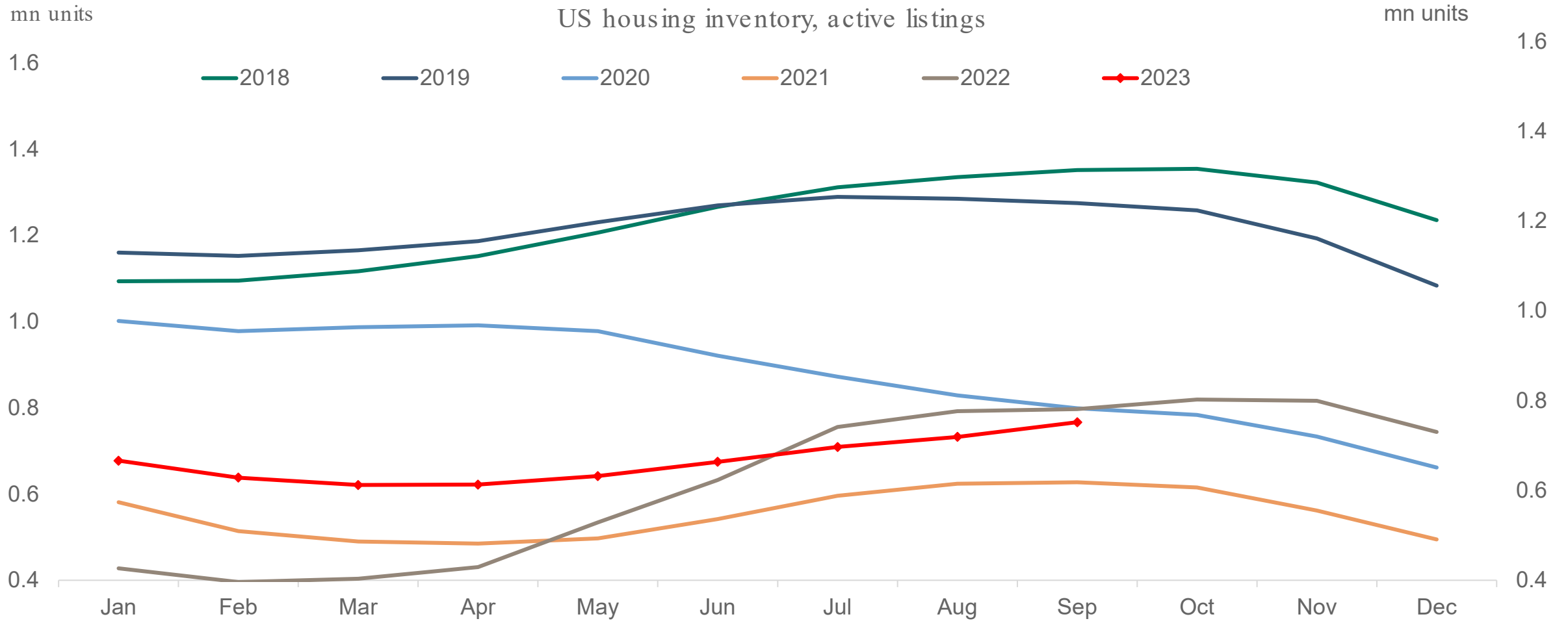
Index, Mar 1990 = 100

— Mortgage loan applications for refinancing

Index, Mar 1990 = 100



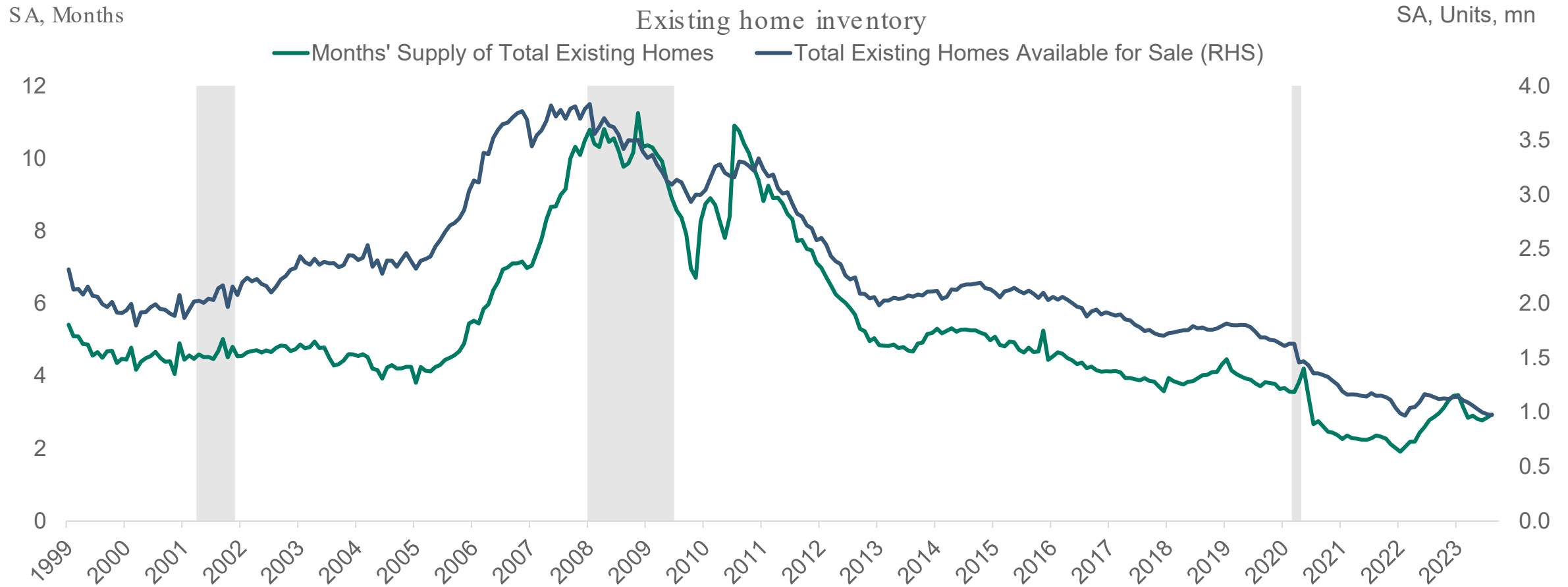
# Very low inventory of homes for sale



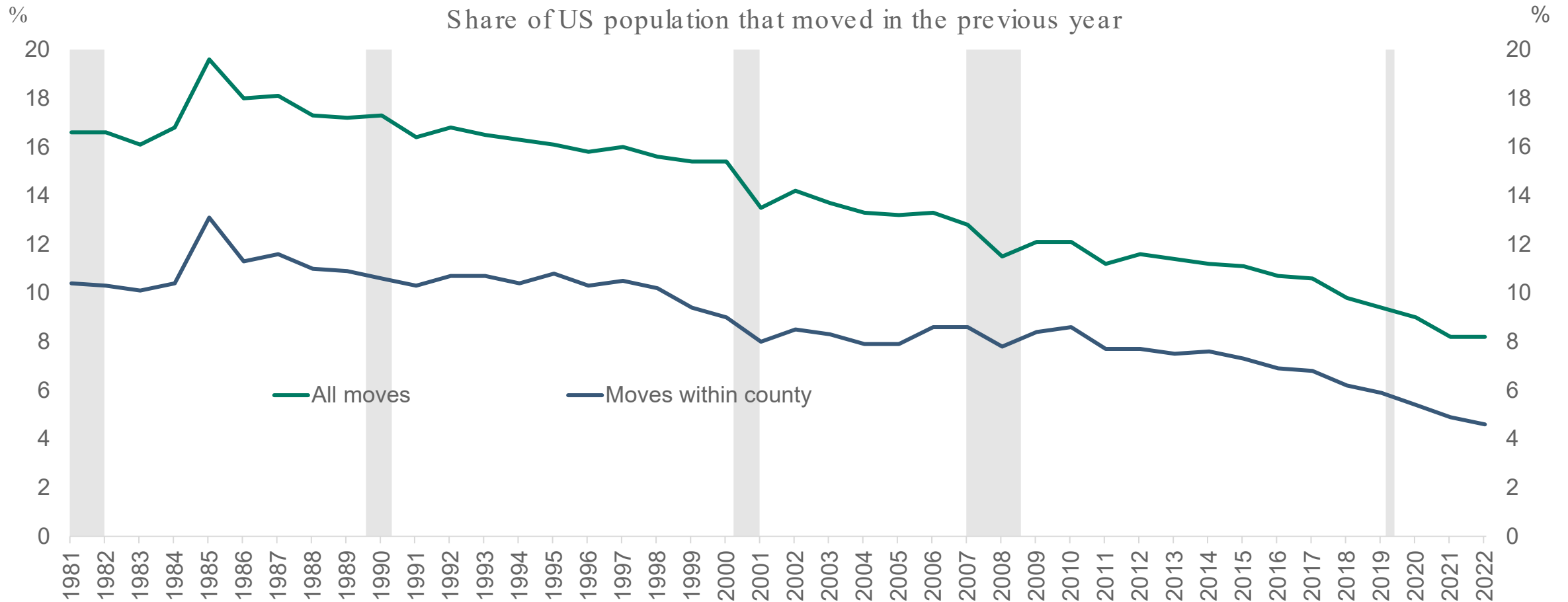
# Fewer people listing their home for sale at the moment



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



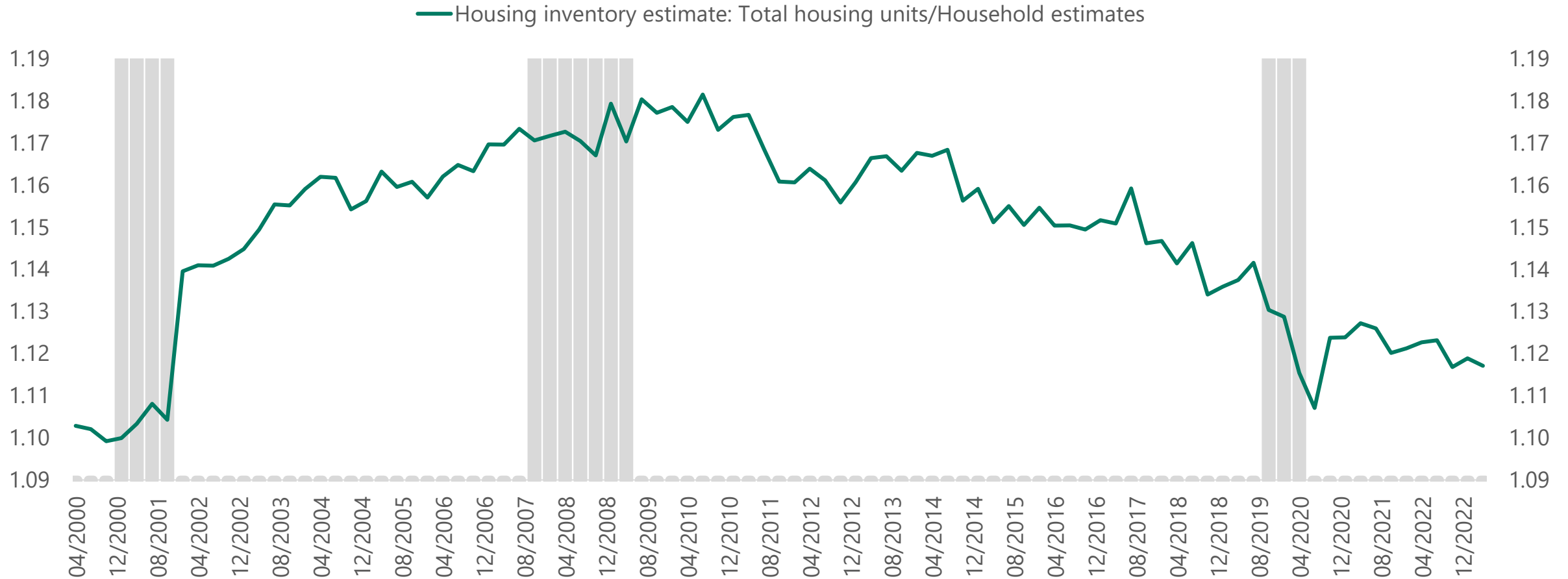
# Structural decline in the share of the US population moving to a new address



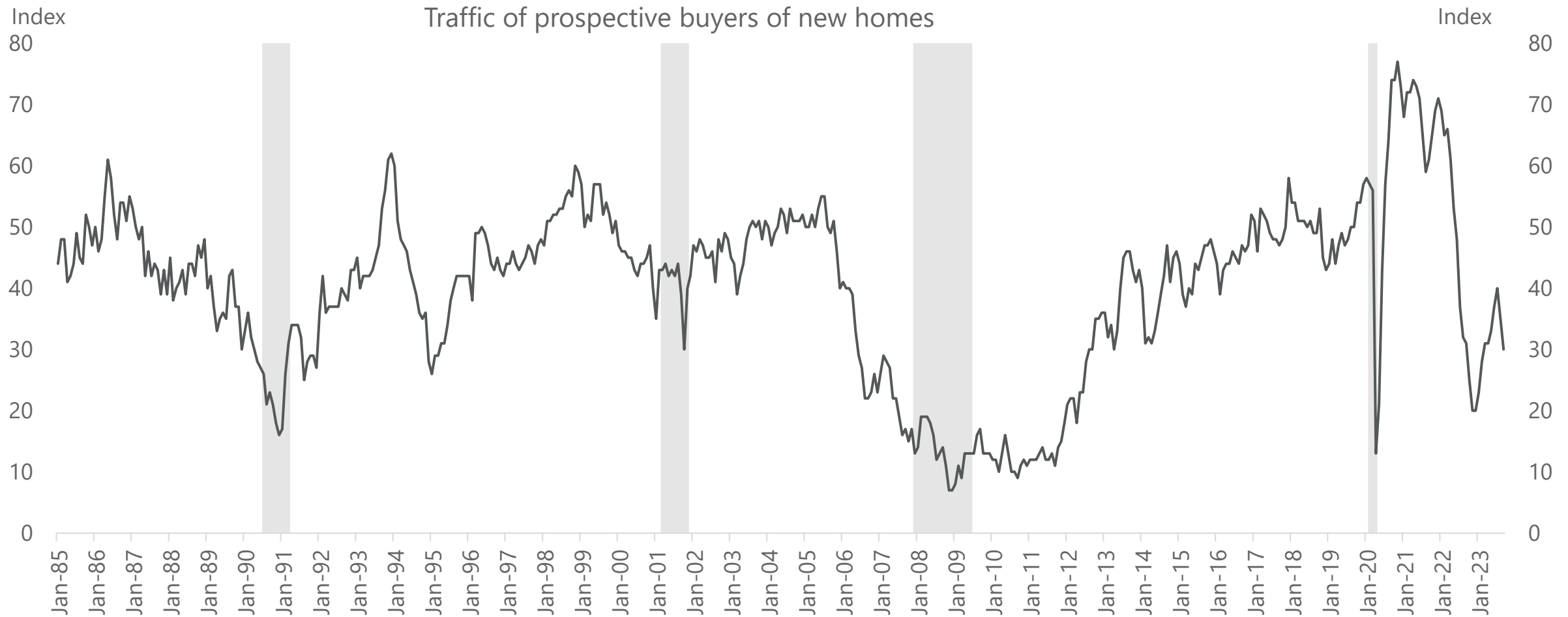
# The total housing inventory per person continues to decline

Units per person

Units per person

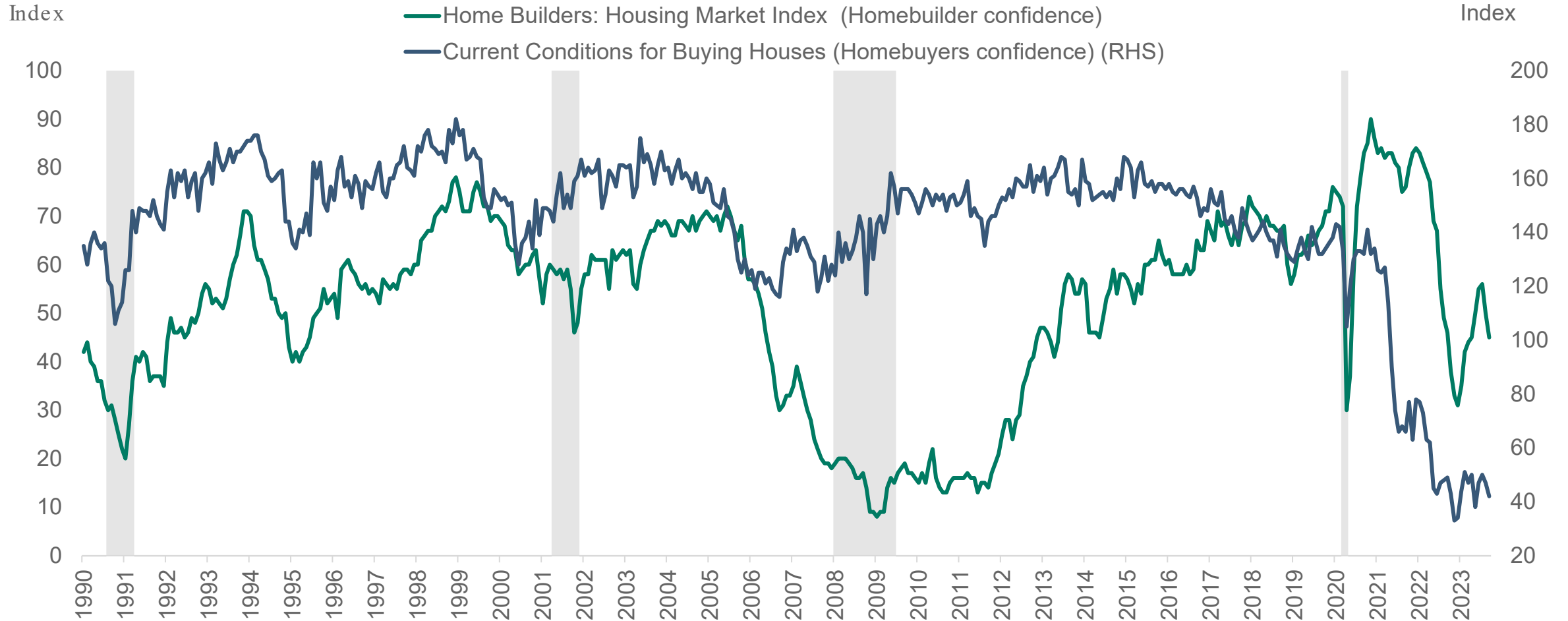


# Traffic of prospective homebuyers negatively impacted by higher mortgage rates

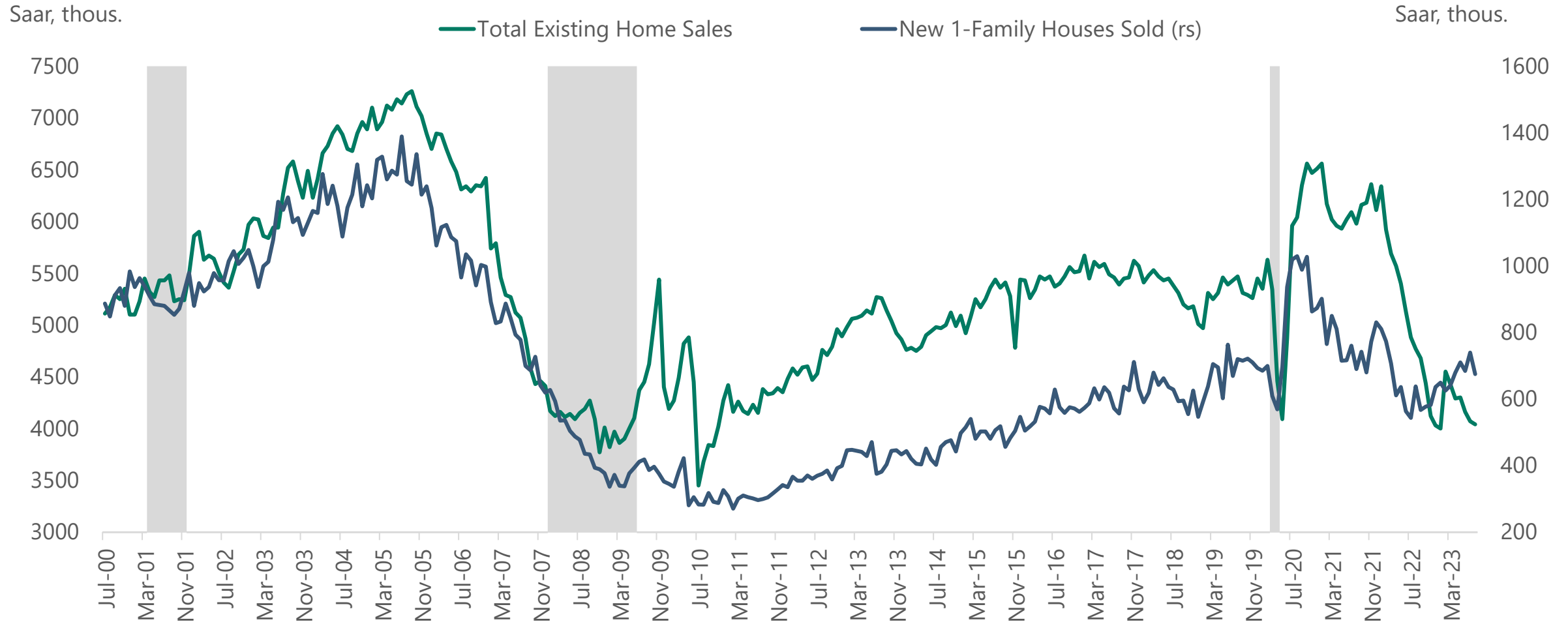




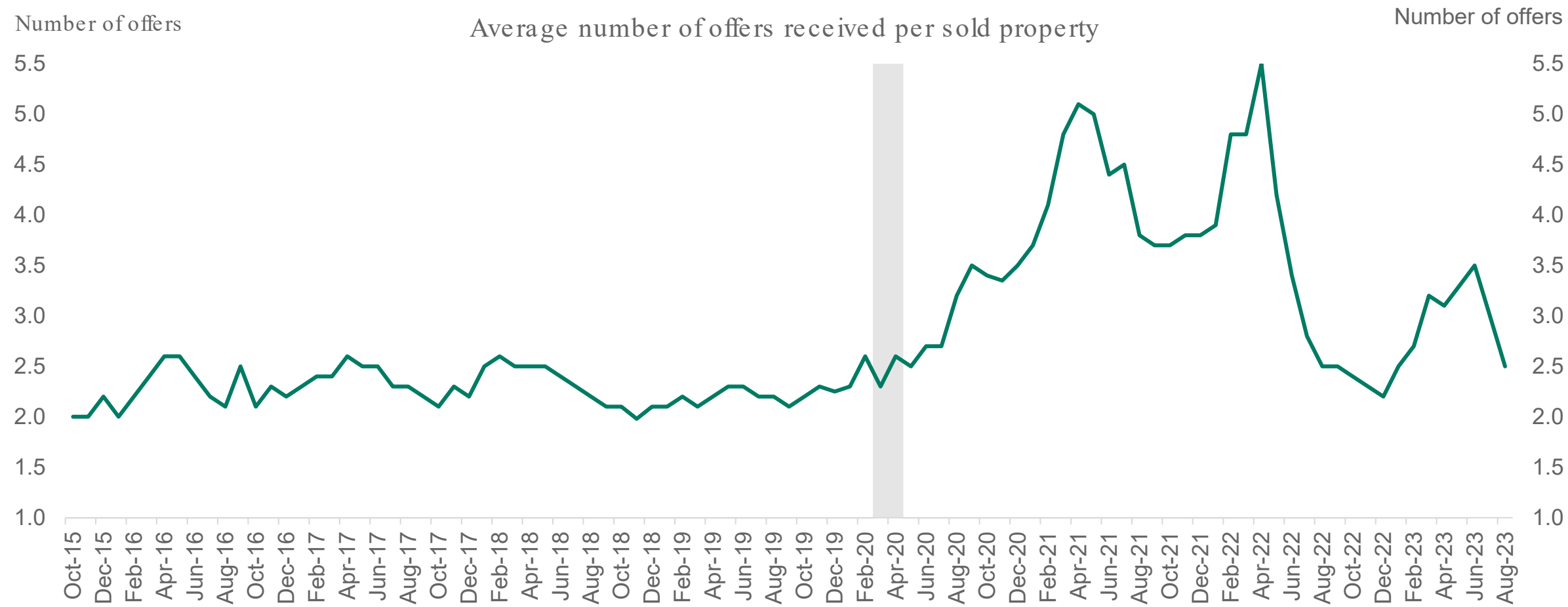
# Higher mortgage rates also having a negative impact on homebuyer and homebuilder confidence



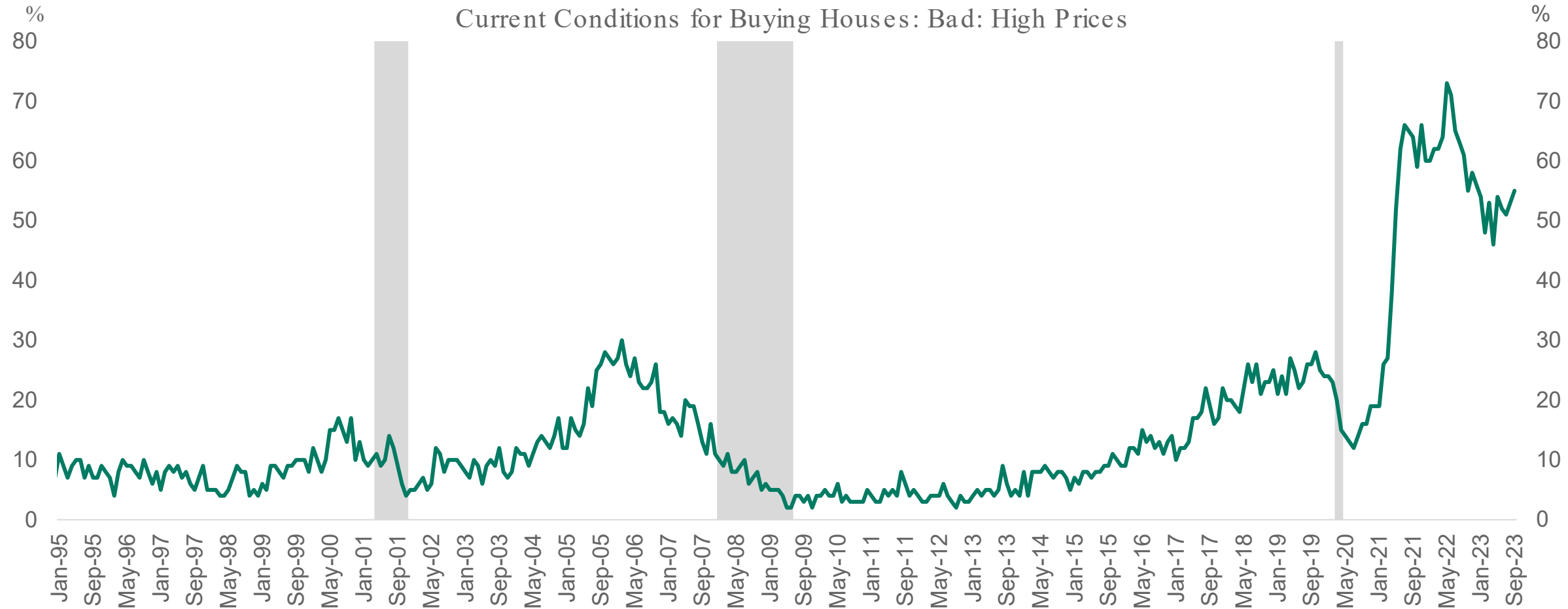
# Existing home sales negatively impacted by higher mortgage rates



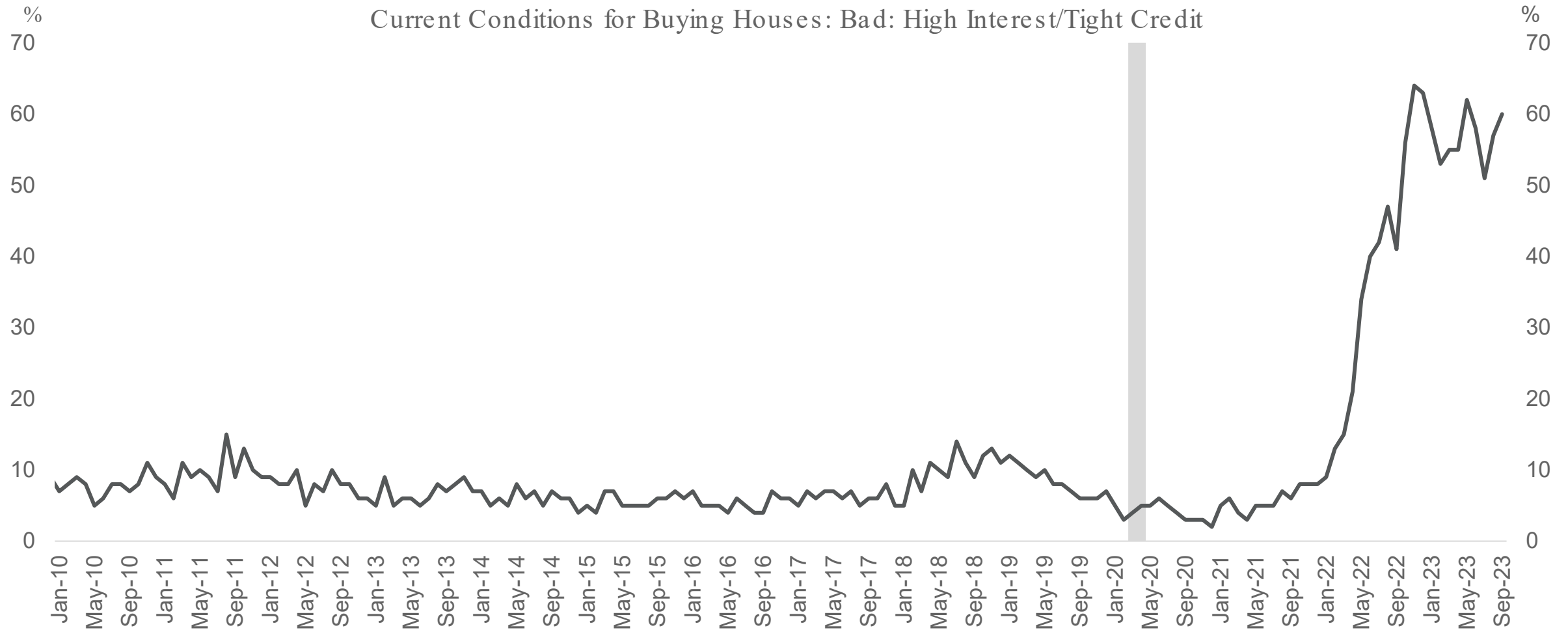
# Fewer bidding wars recently because of higher mortgage rates



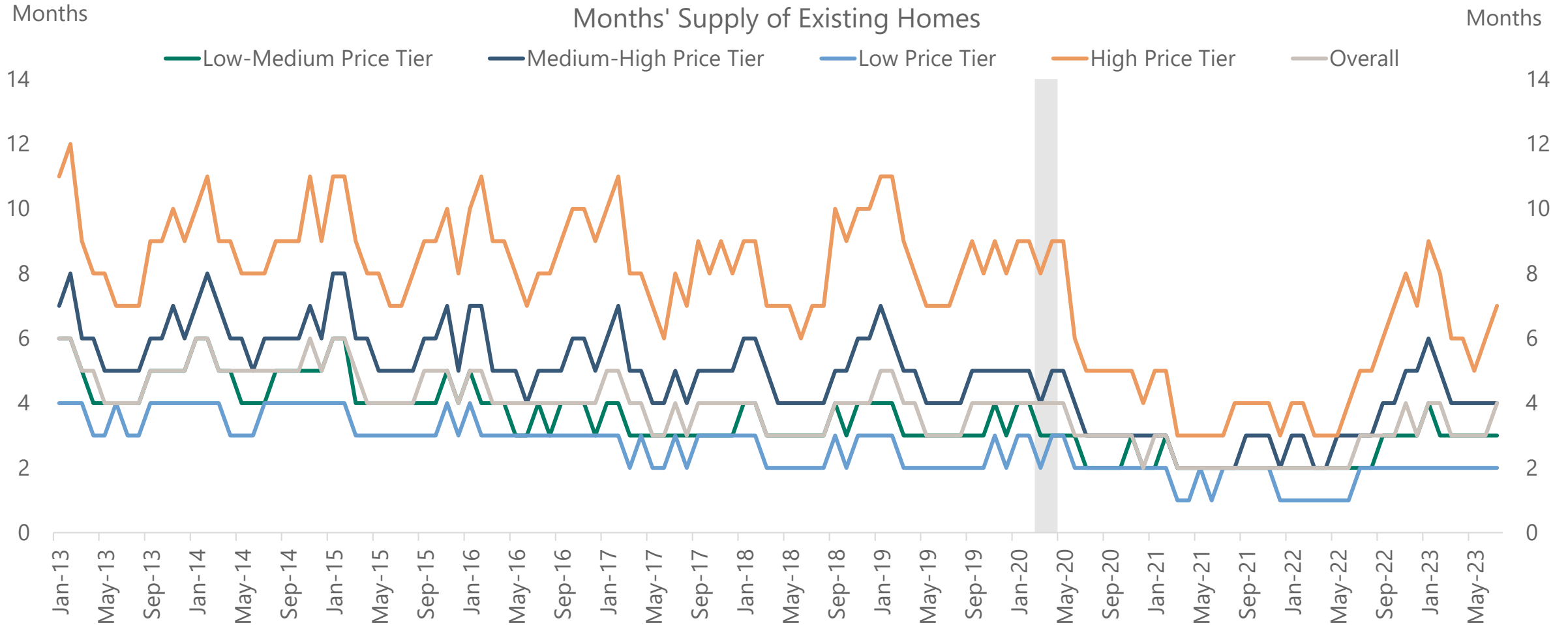
# Homebuyer sentiment deteriorating again



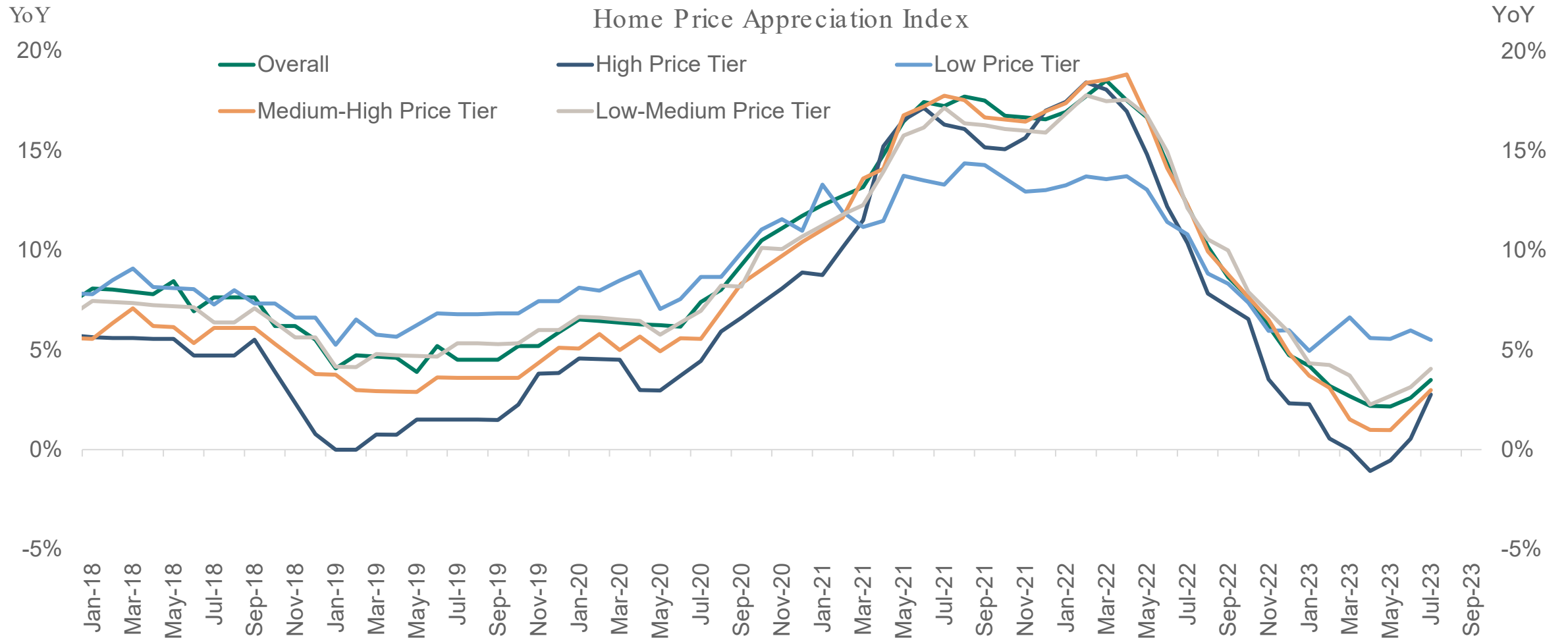
60% of consumers are saying that this is a bad time to buy a house because of high mortgage rates and tight credit



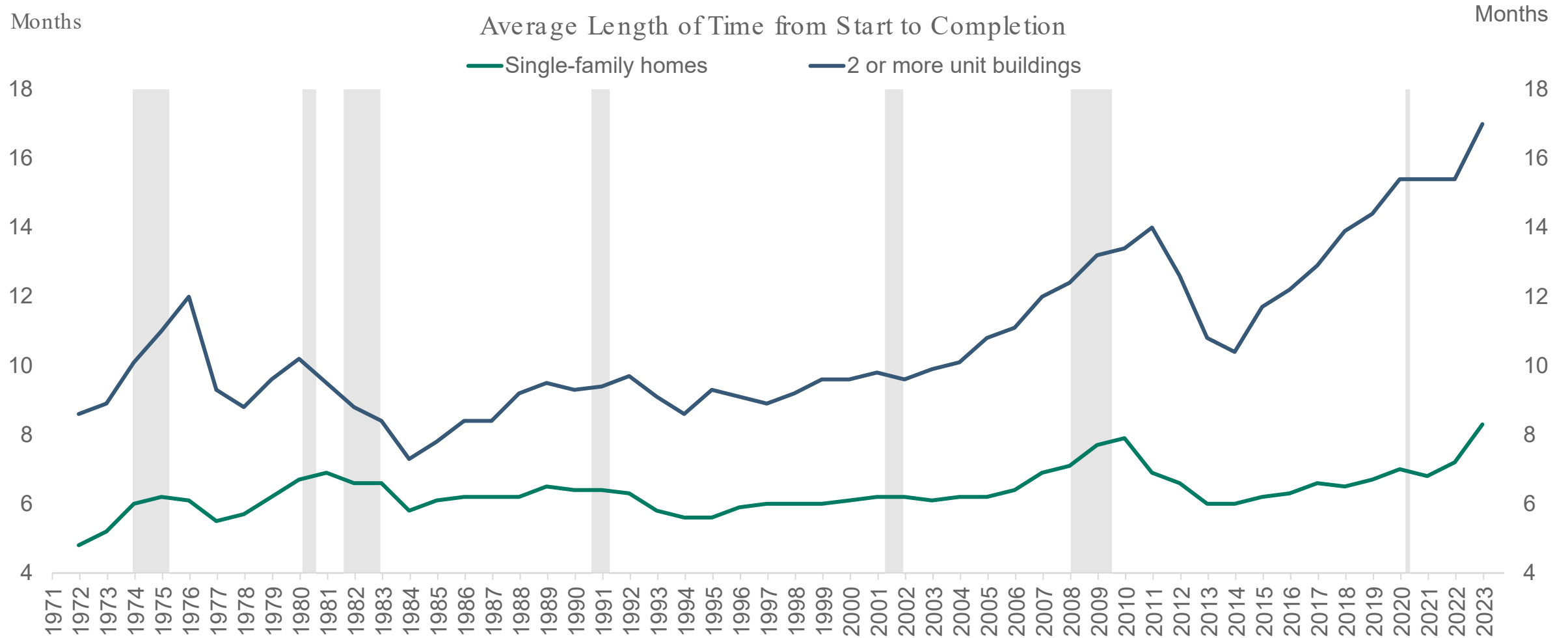
# Inventory of expensive homes rising in recent months



# Higher mortgage rates not yet weighing on home price inflation

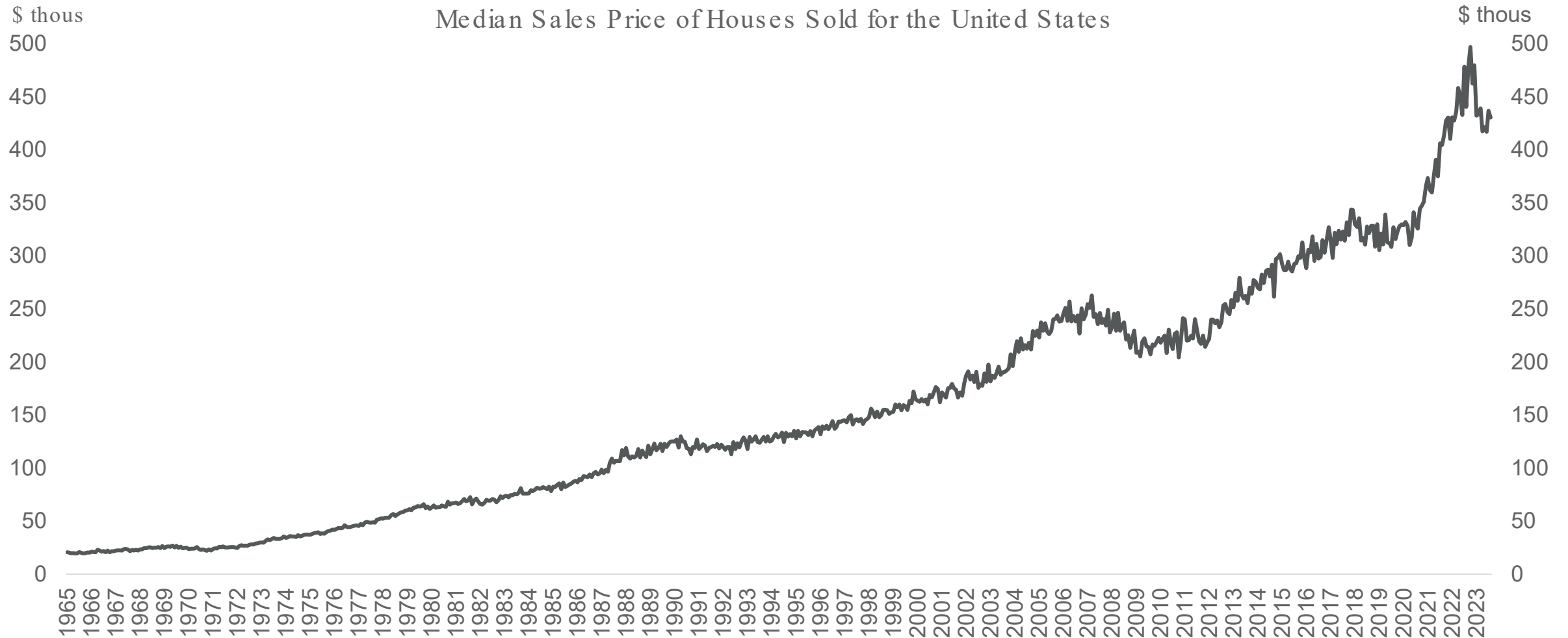


# It currently takes 8 months on average to build a single-family house

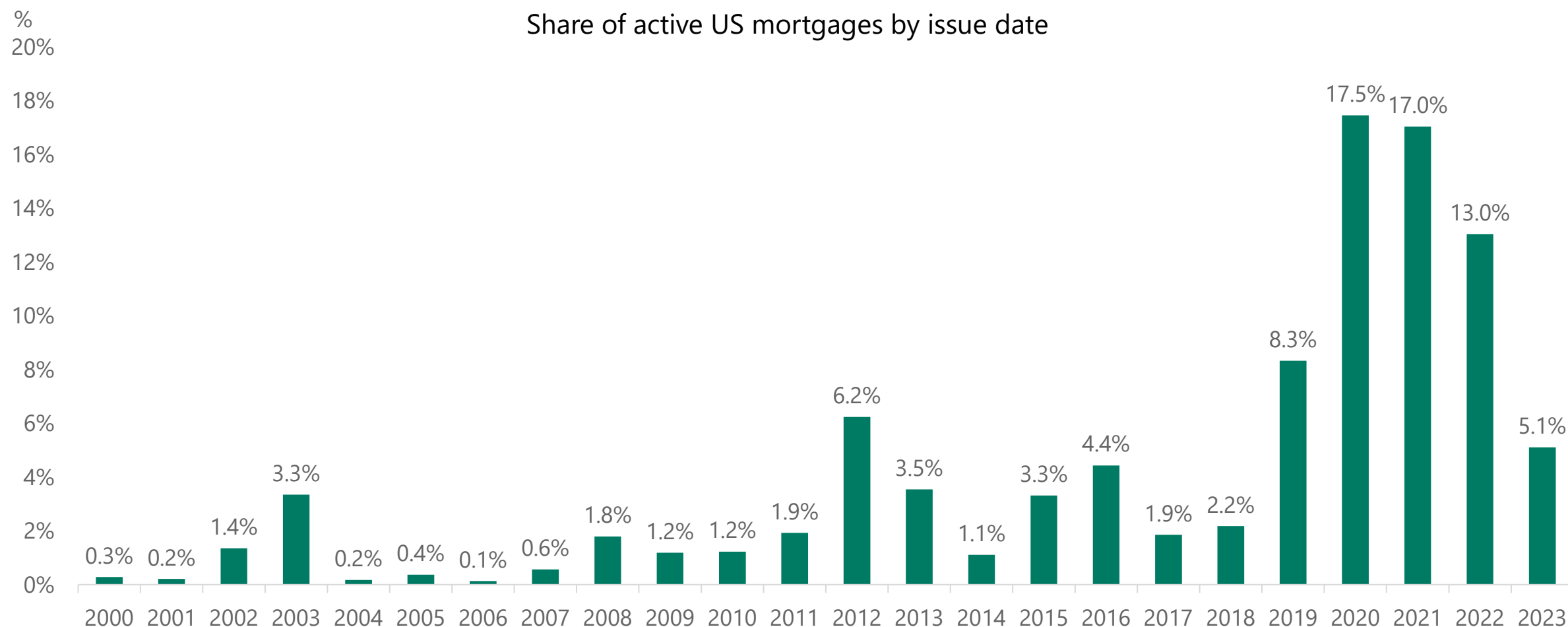




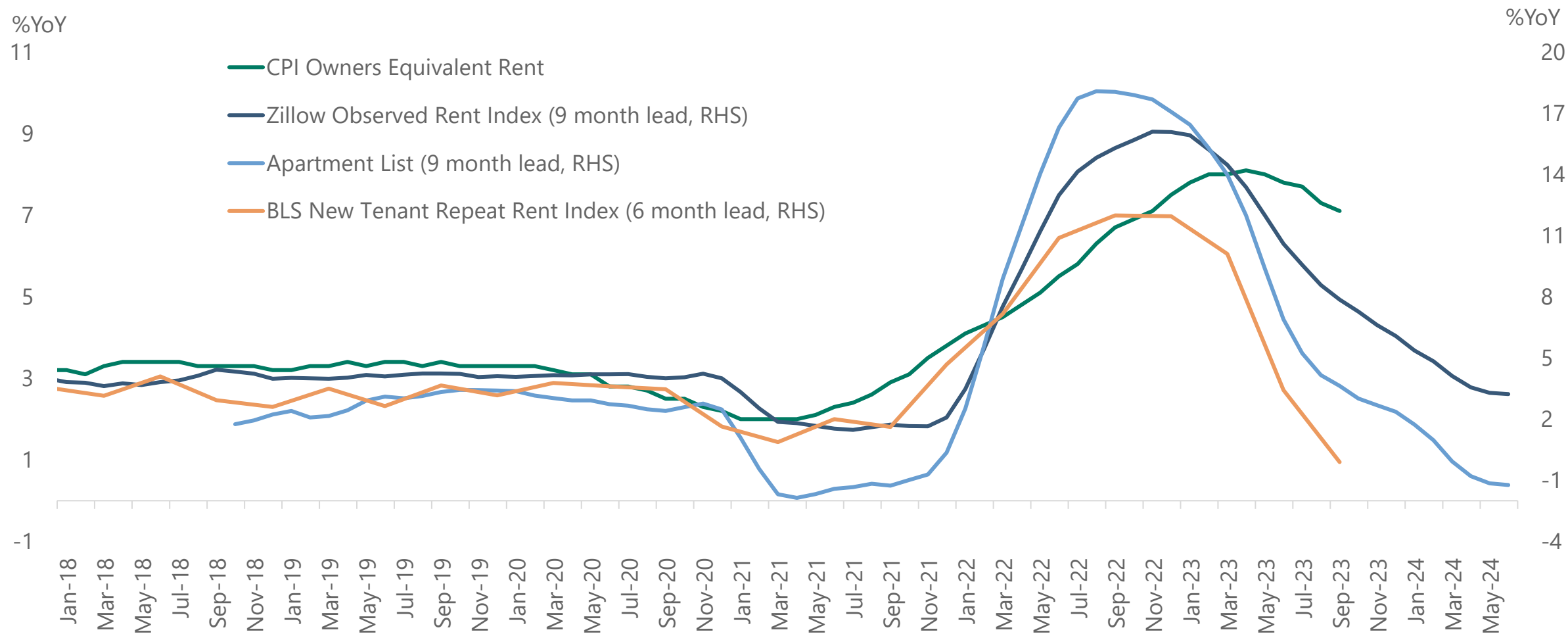
# Median home sales price now \$430K



# 63% of all mortgages outstanding were issued after 2018

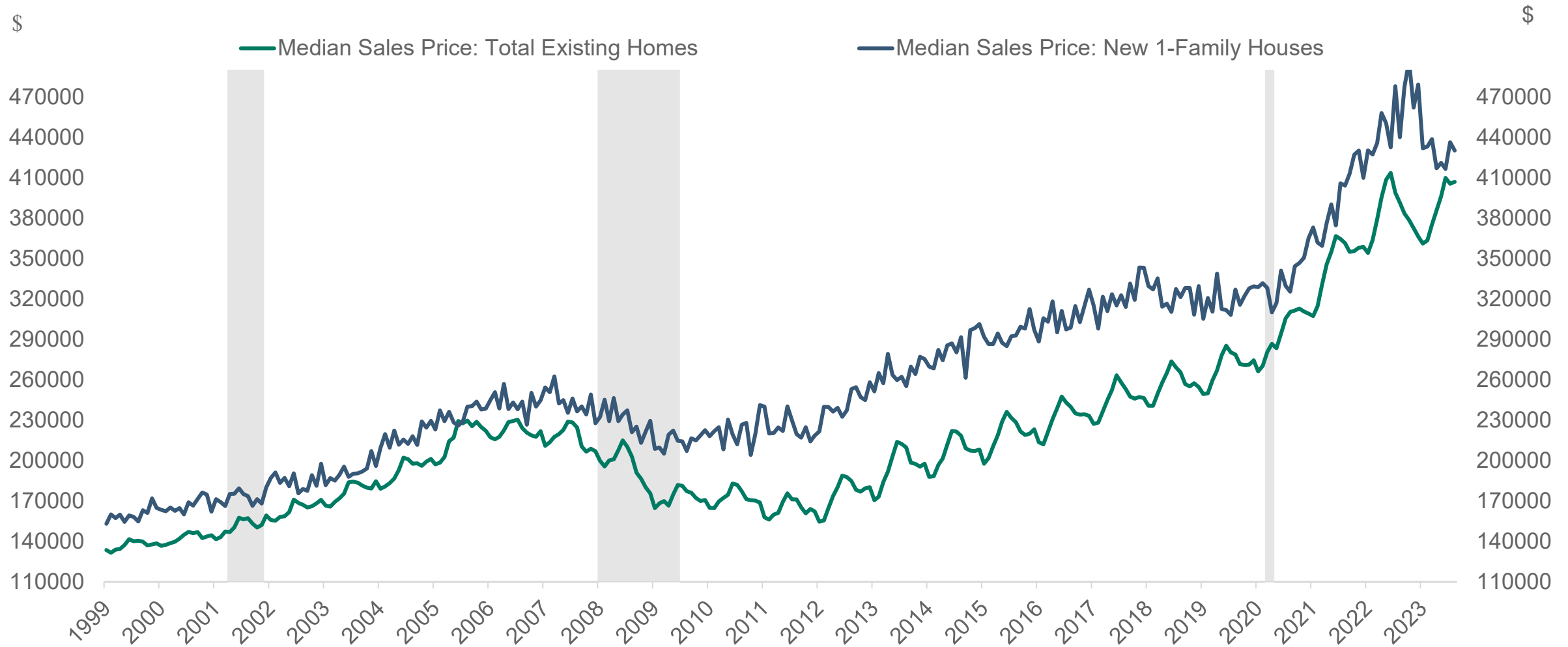


# Housing inflation likely to continue to decline

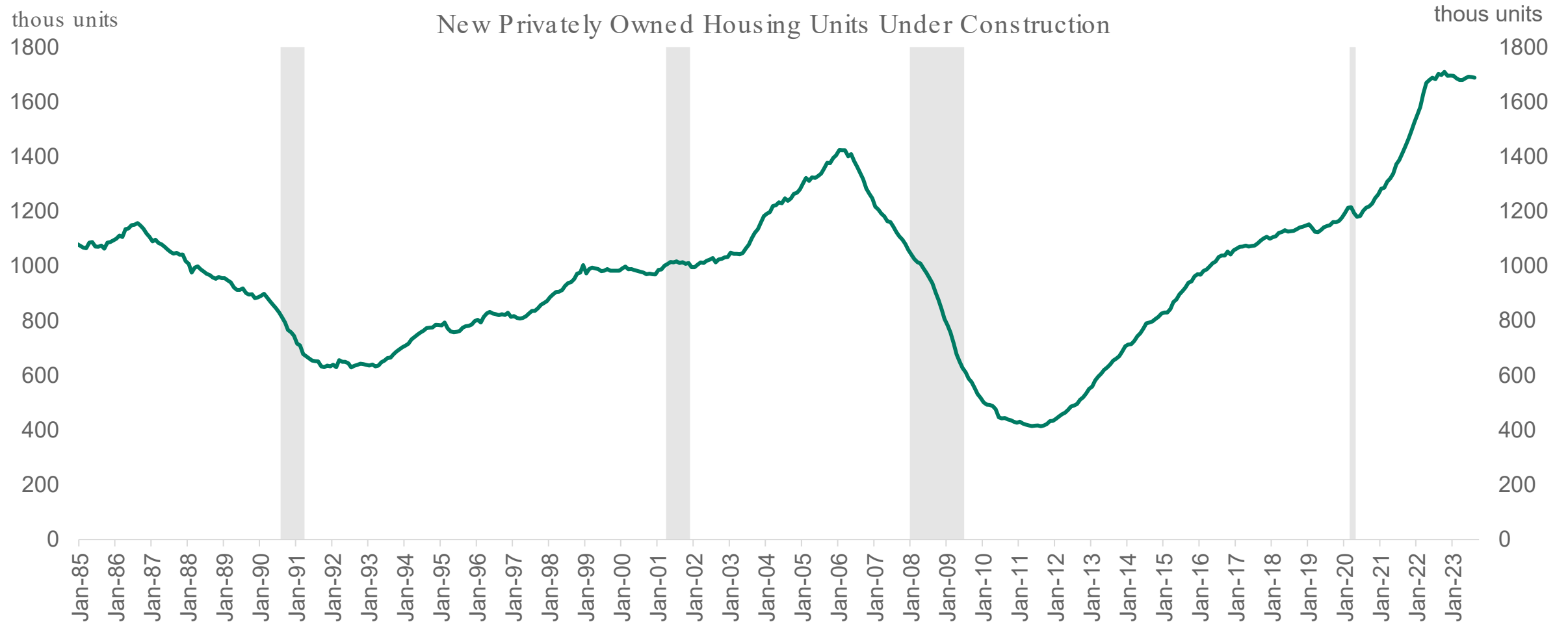


New versus existing homes

# House prices are down a bit for new homes but up for existing homes

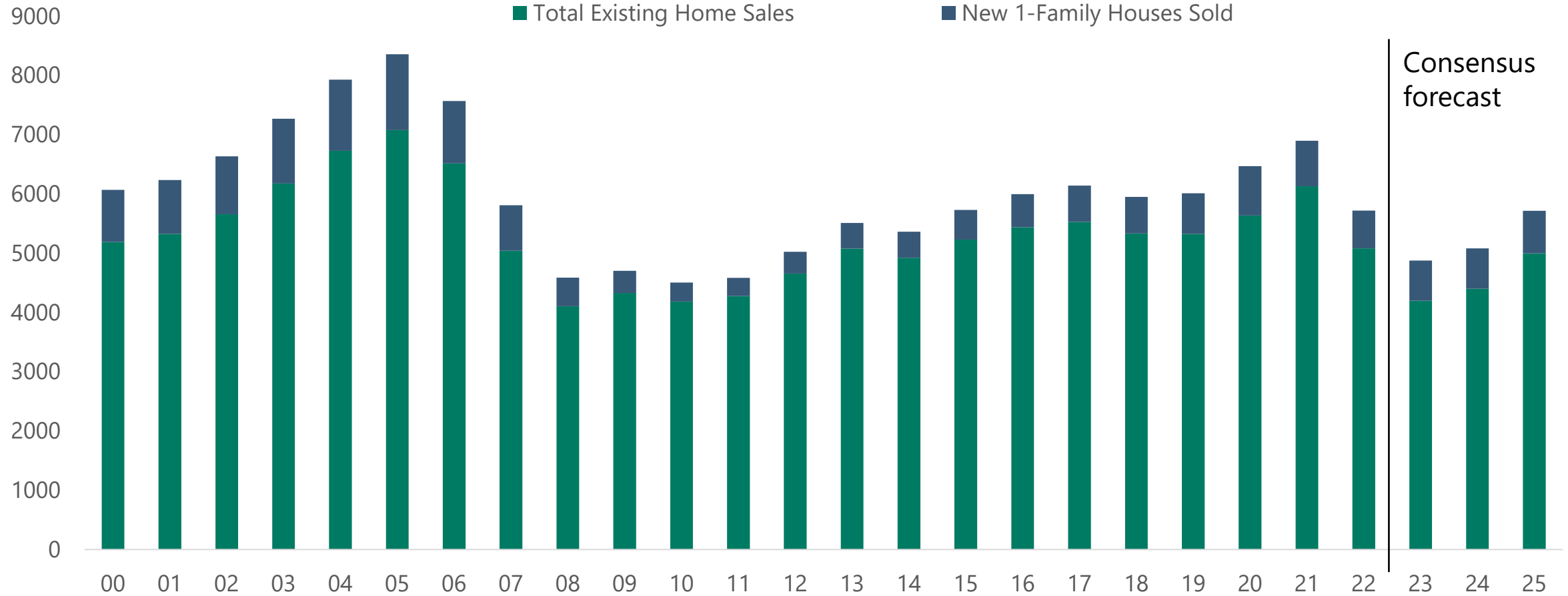


# New privately owned housing units under construction starting to peak



# Consensus is forecasting a modest rebound in home sales

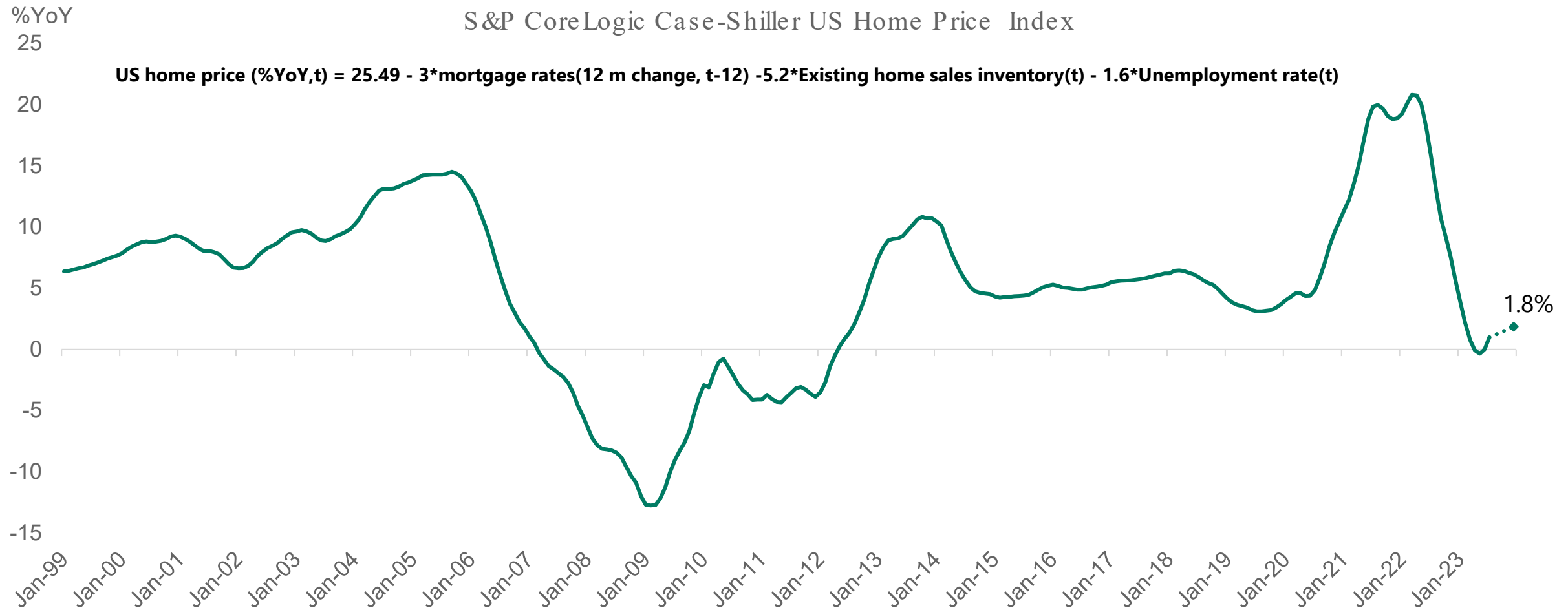
SAAR, thous.



# Our US house price model

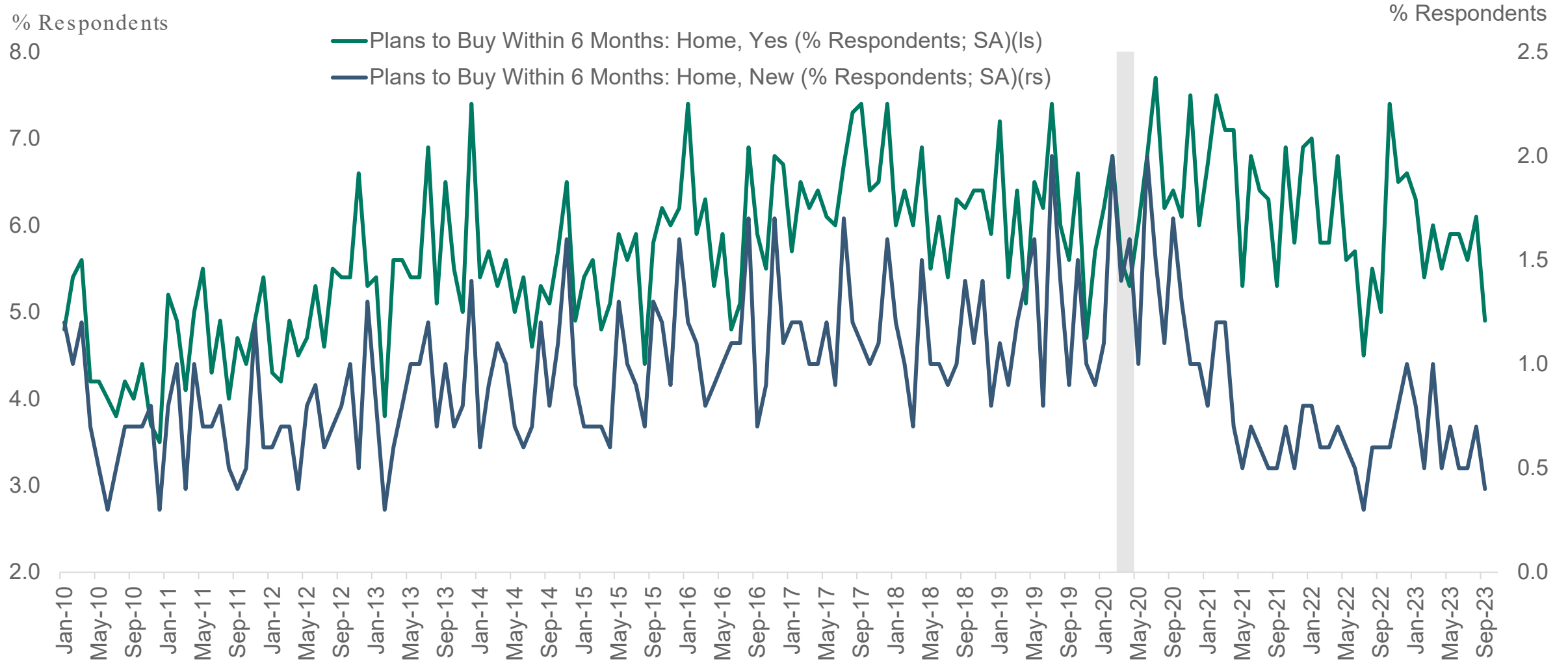


US house price model: High mortgage rates pushing home prices down. Low inventory pushing home prices higher.

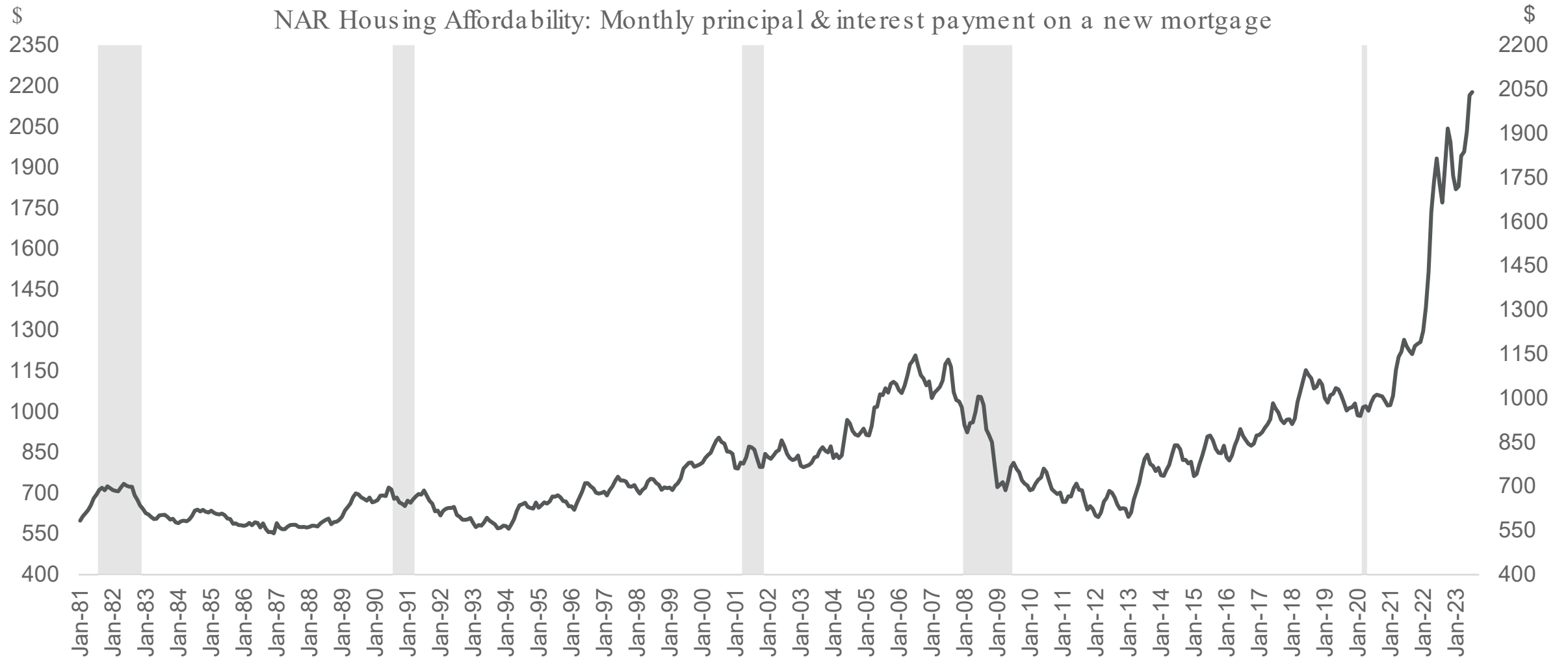


1) Housing Demand: Higher mortgage rates and high home prices slowing demand

# Home buying plans stable despite high mortgage rates



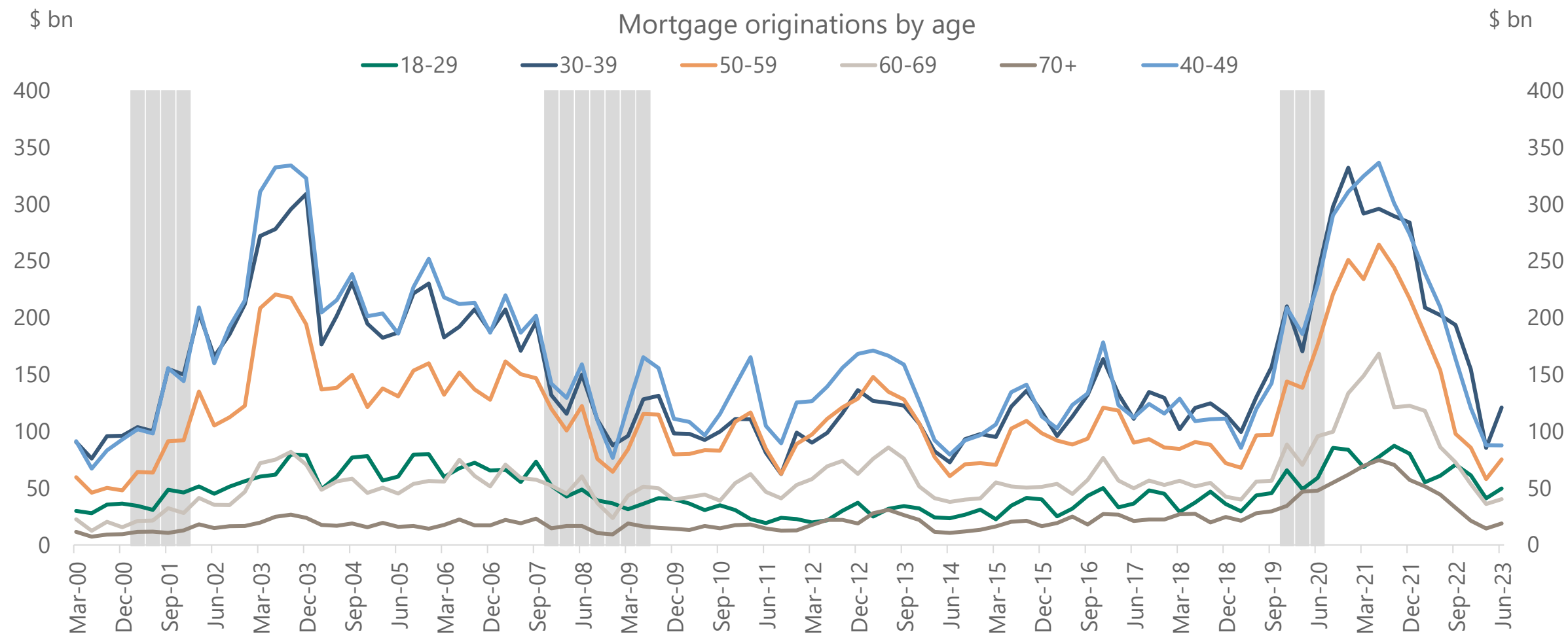
# Monthly mortgage payments on new mortgages have doubled since 2021



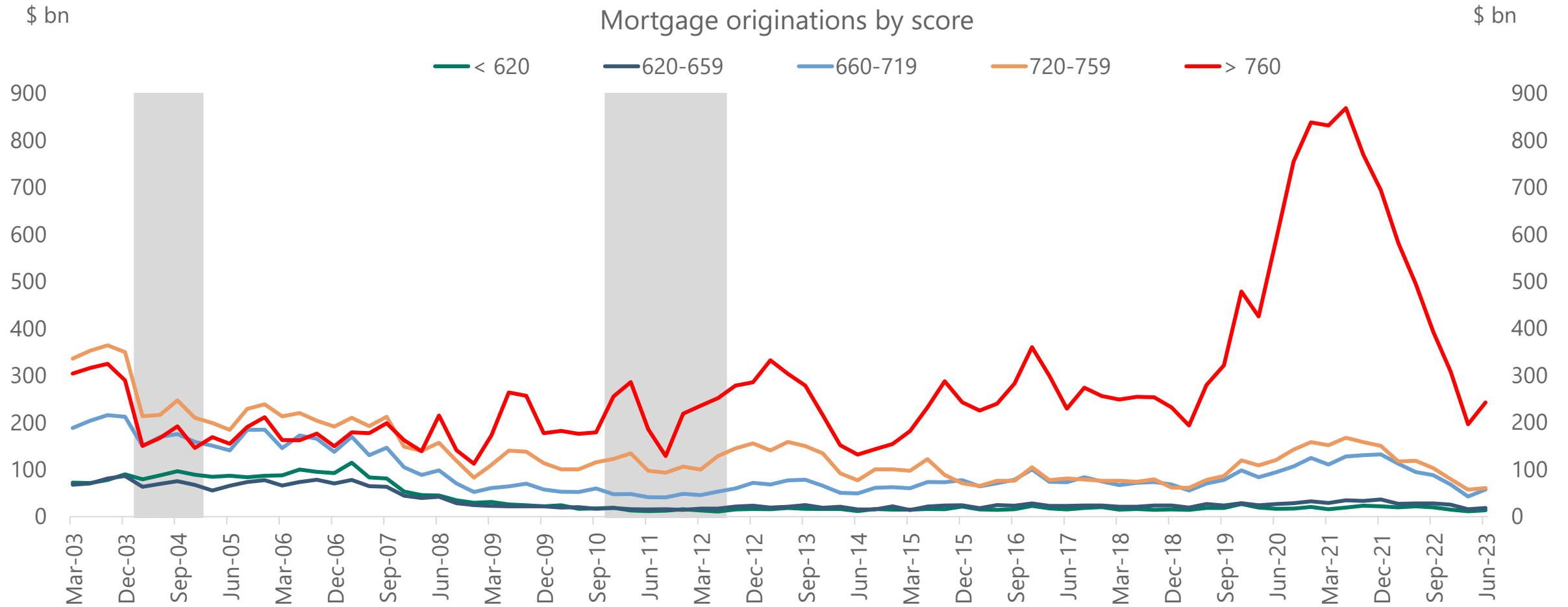
# Availability of mortgage credit continues to tighten



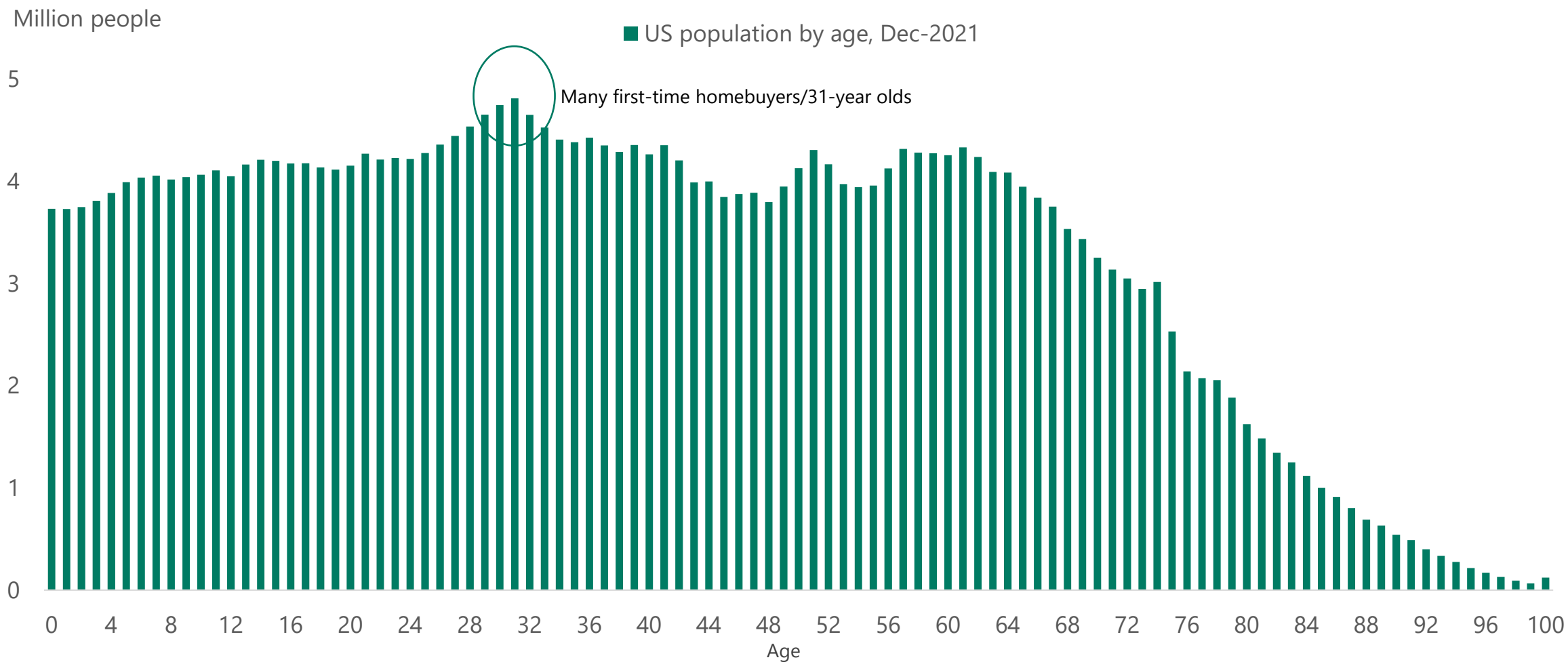
# Mortgage originations back at pre-pandemic levels



# Mortgage originations normalizing for households with high credit scores

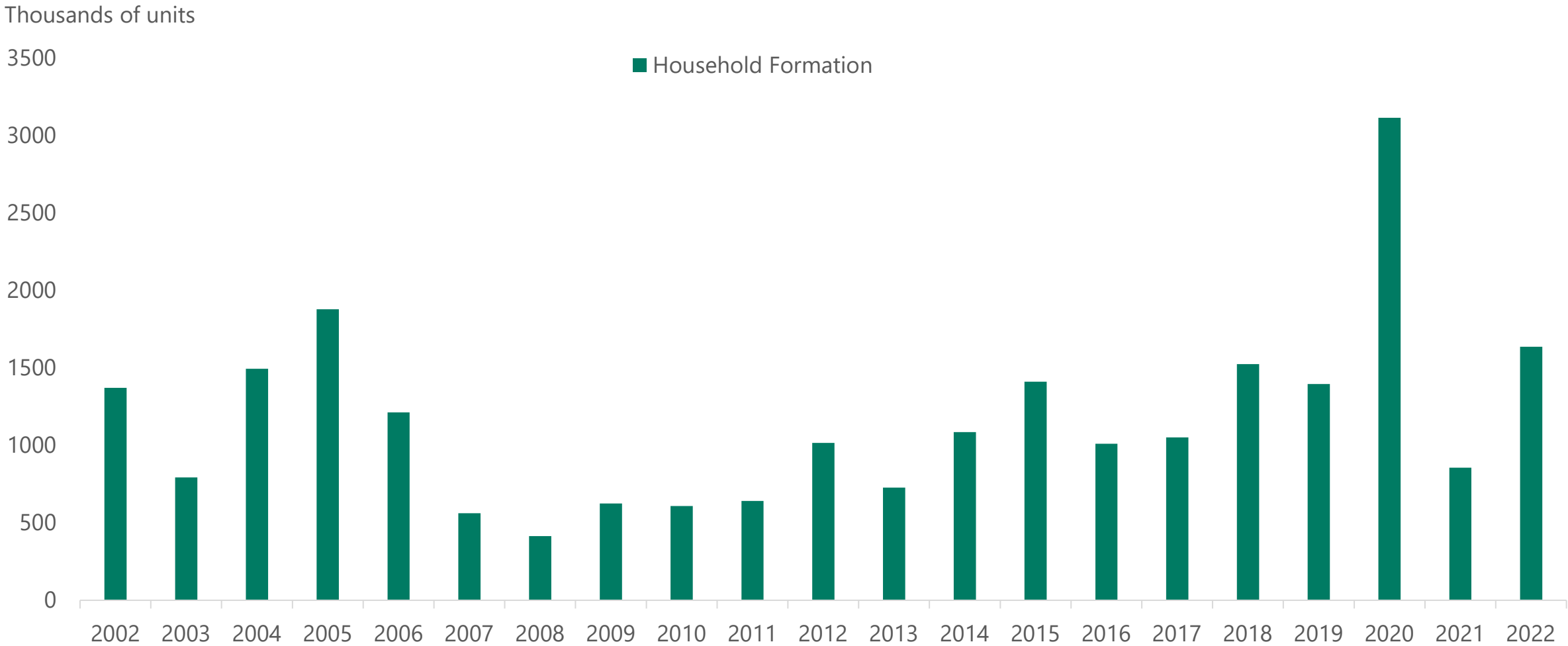


# Demographics are a tailwind to housing demand



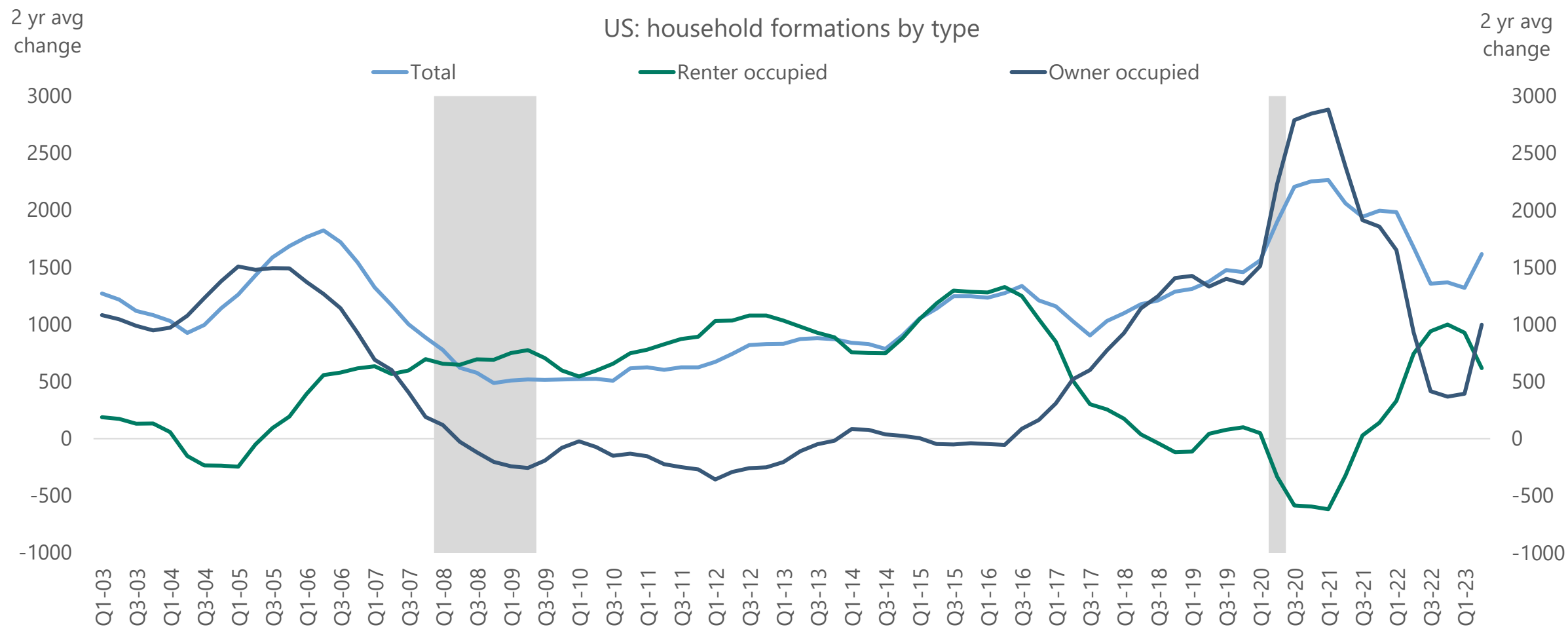


# Rebounding household formation is a tailwind to housing

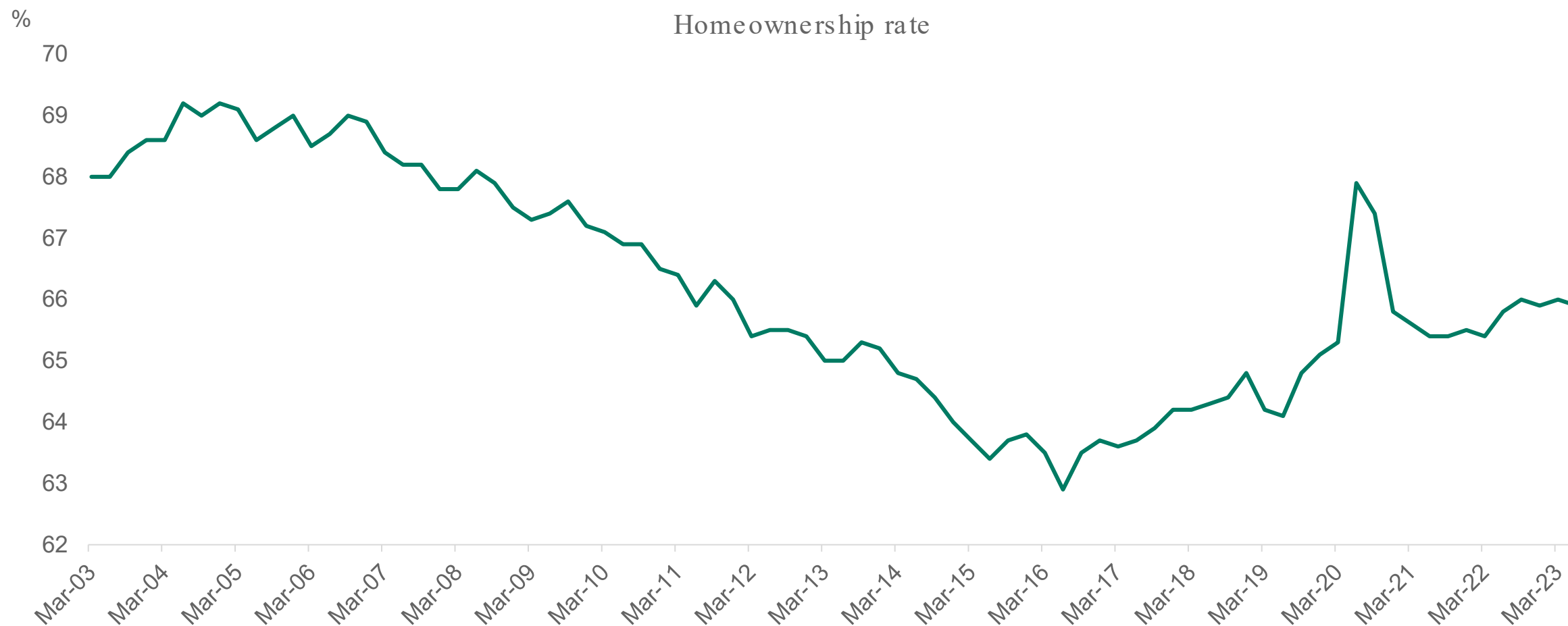


Source: Census Bureau, Haver, Apollo Chief Economist

# A rise in the number of renters recently



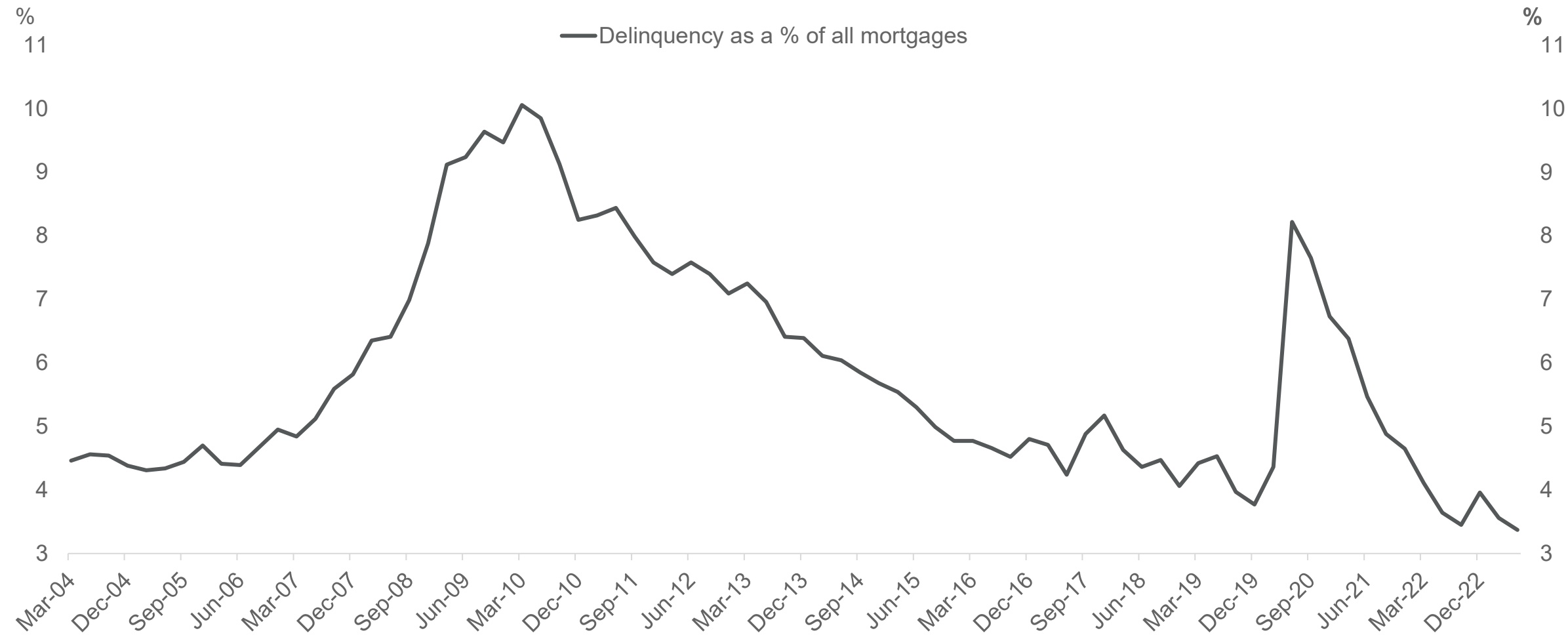
# Homeownership rate moving sideways



# Low unemployment is a tailwind to housing demand

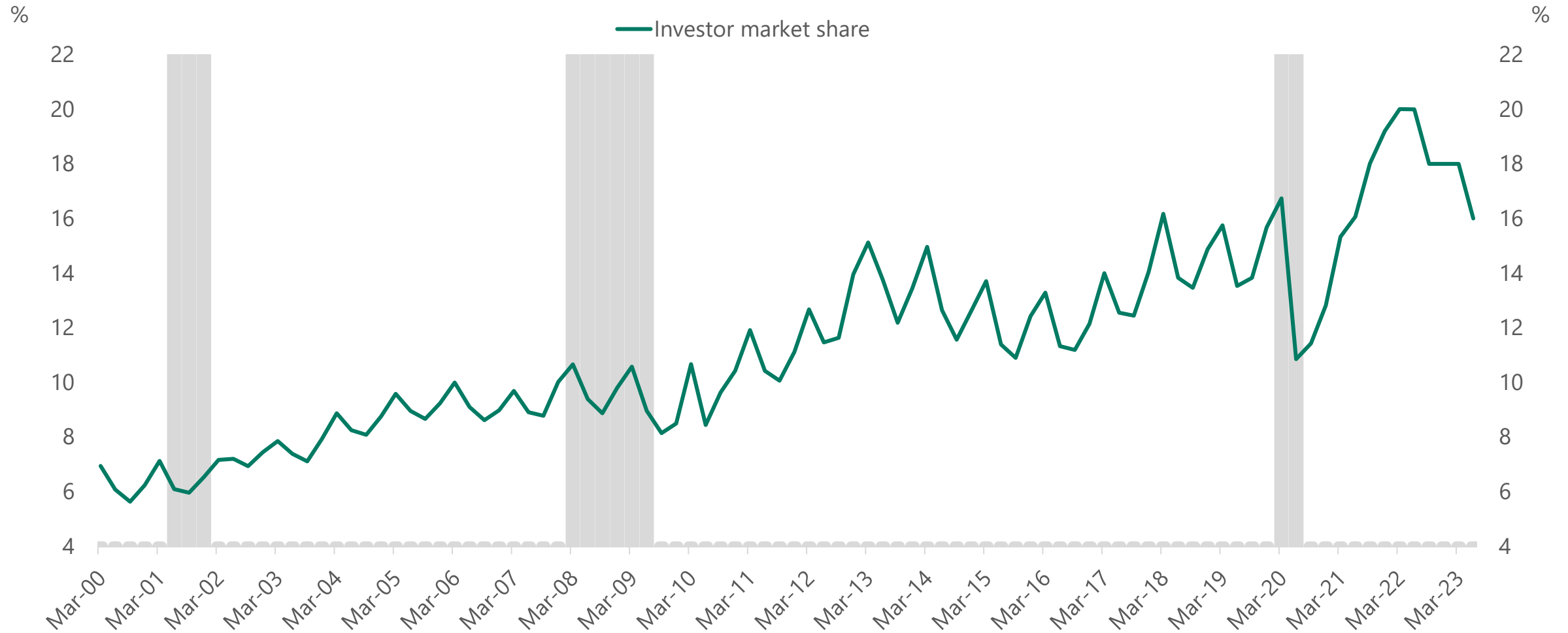


# Very few delinquent mortgages

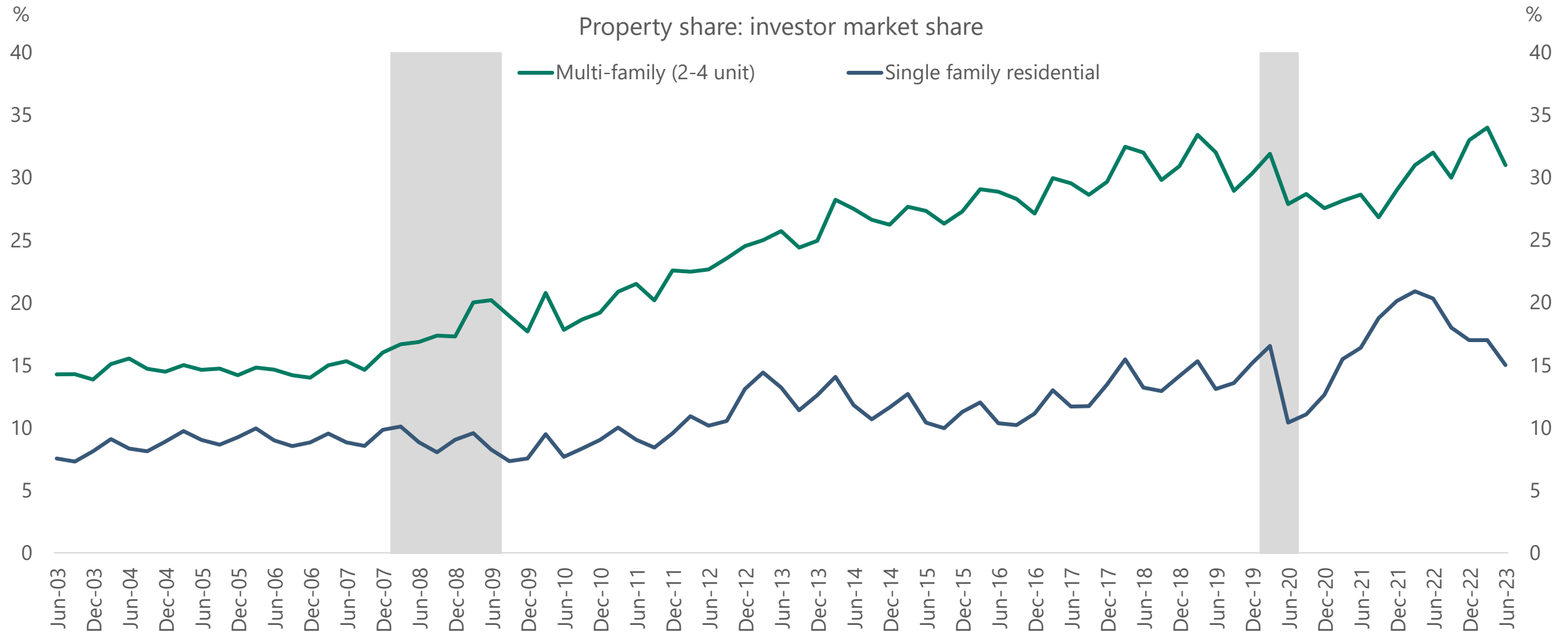


Source: Bloomberg, Apollo Chief Economist

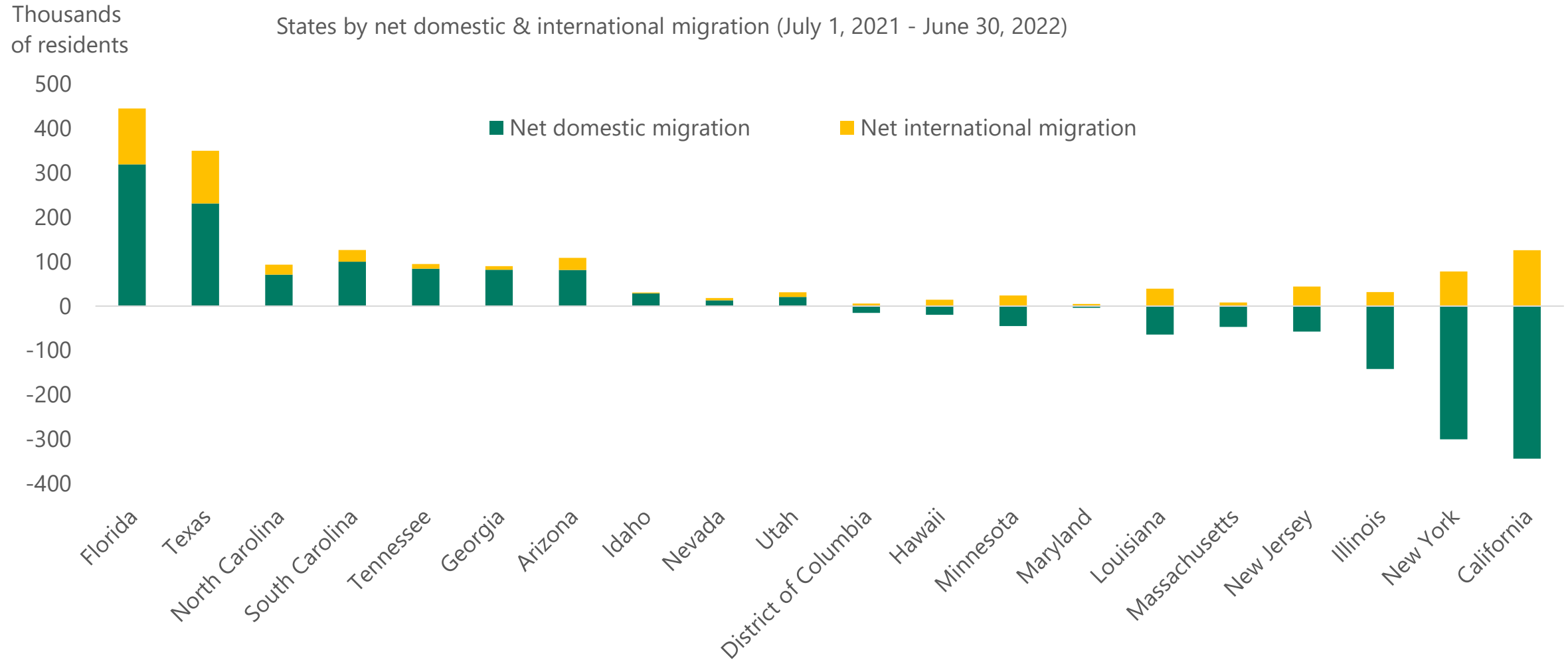
# Investors accounting for 16% of all home purchases



# Investor share of single-family is trending lower

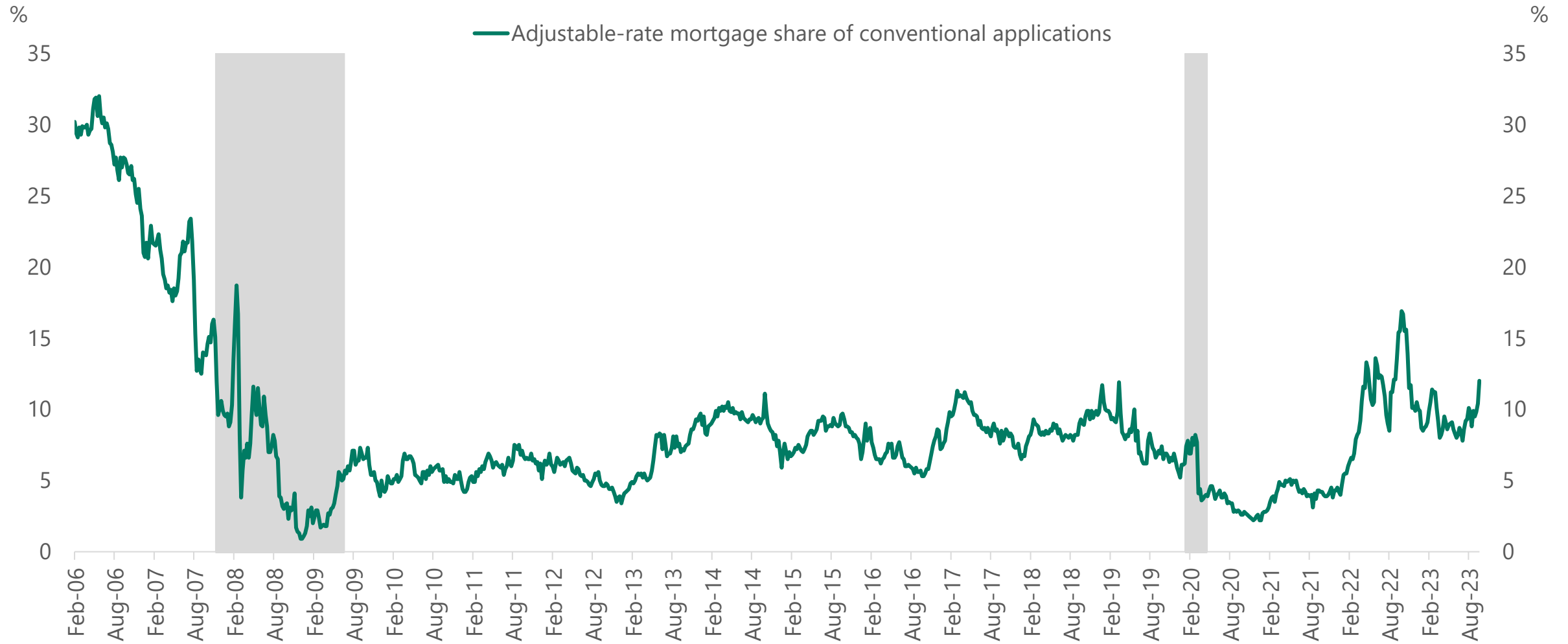


# Migration out of California and migration into Florida during the pandemic



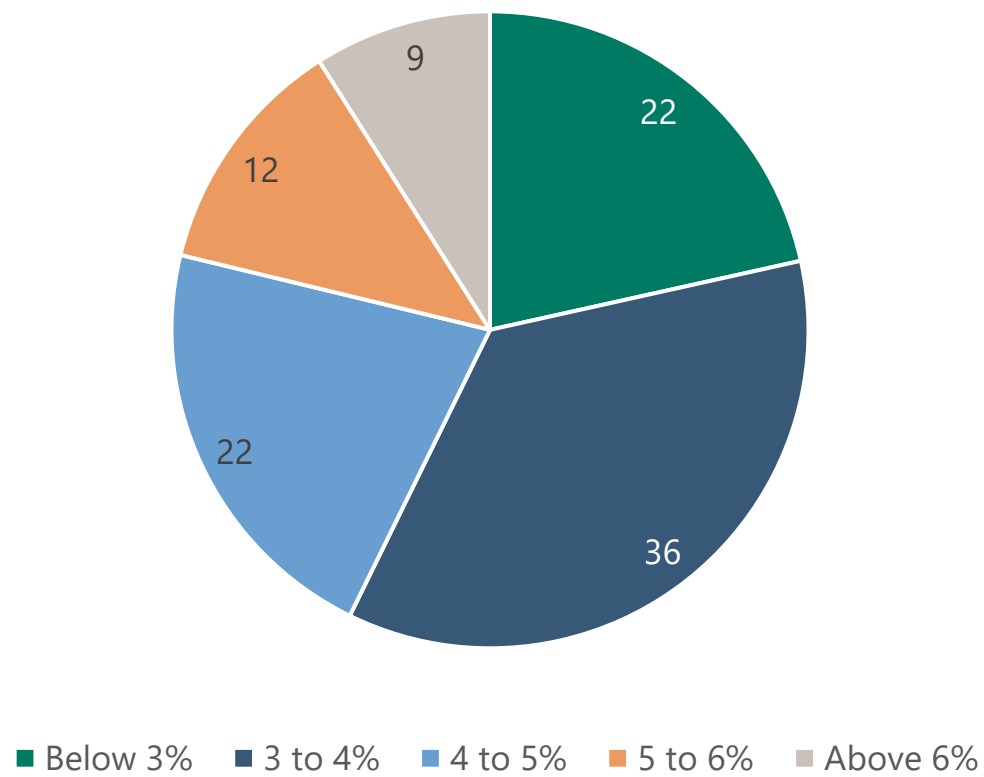


# ARM share of total mortgage applications at 12%

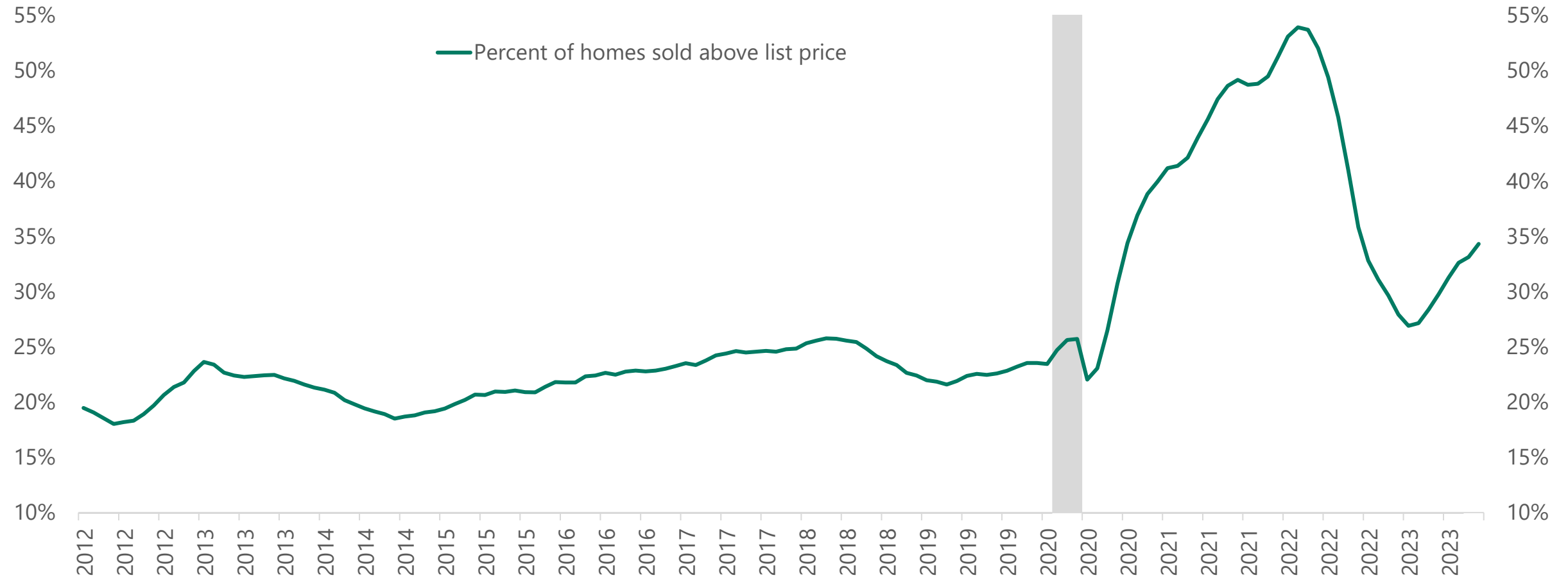


# Share of mortgages outstanding by interest rate

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

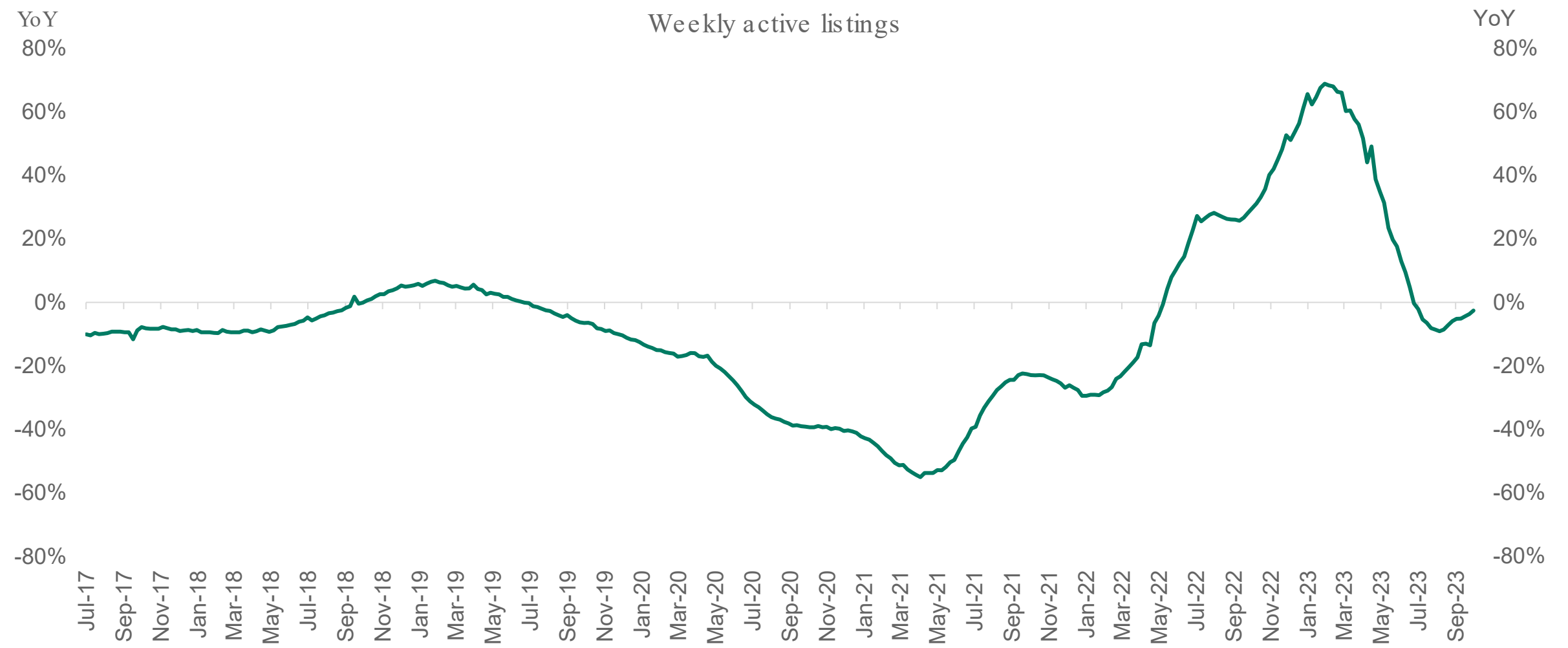


# Housing demand: 34% of homes sold above their list price

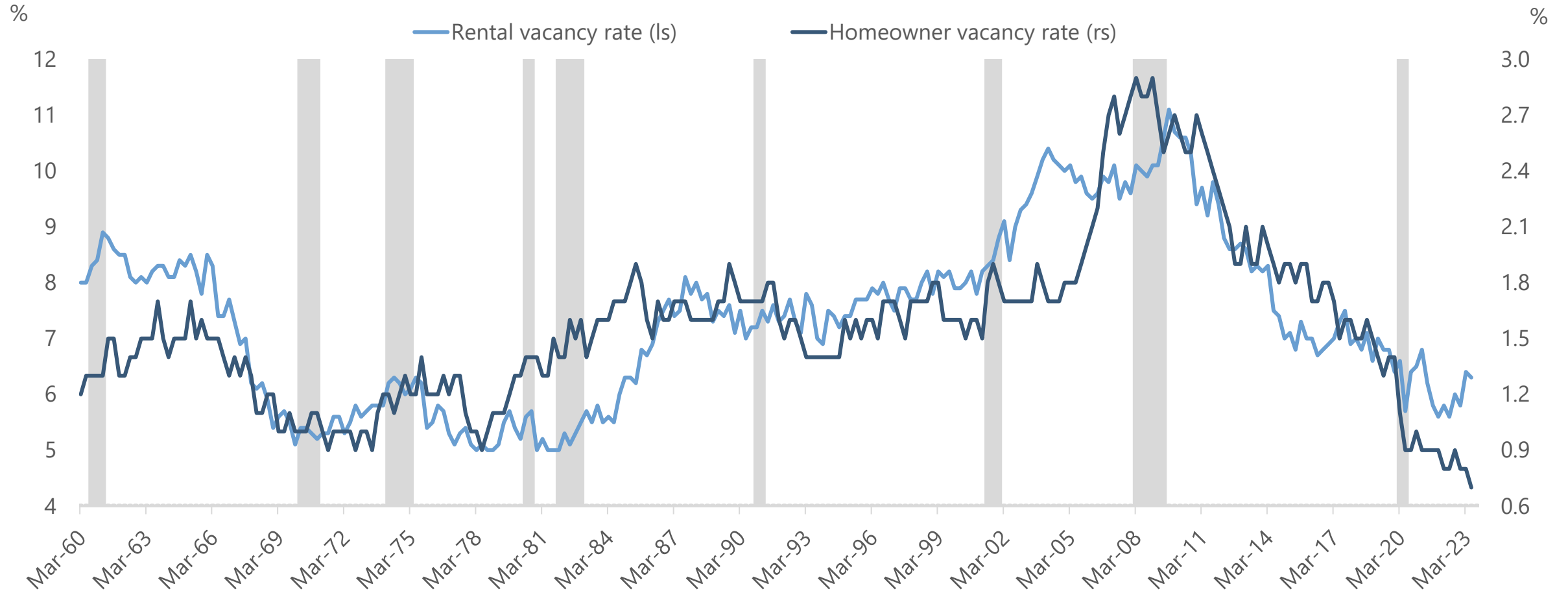


2) Housing Supply: Housing supply is low, construction coming down from record-high levels

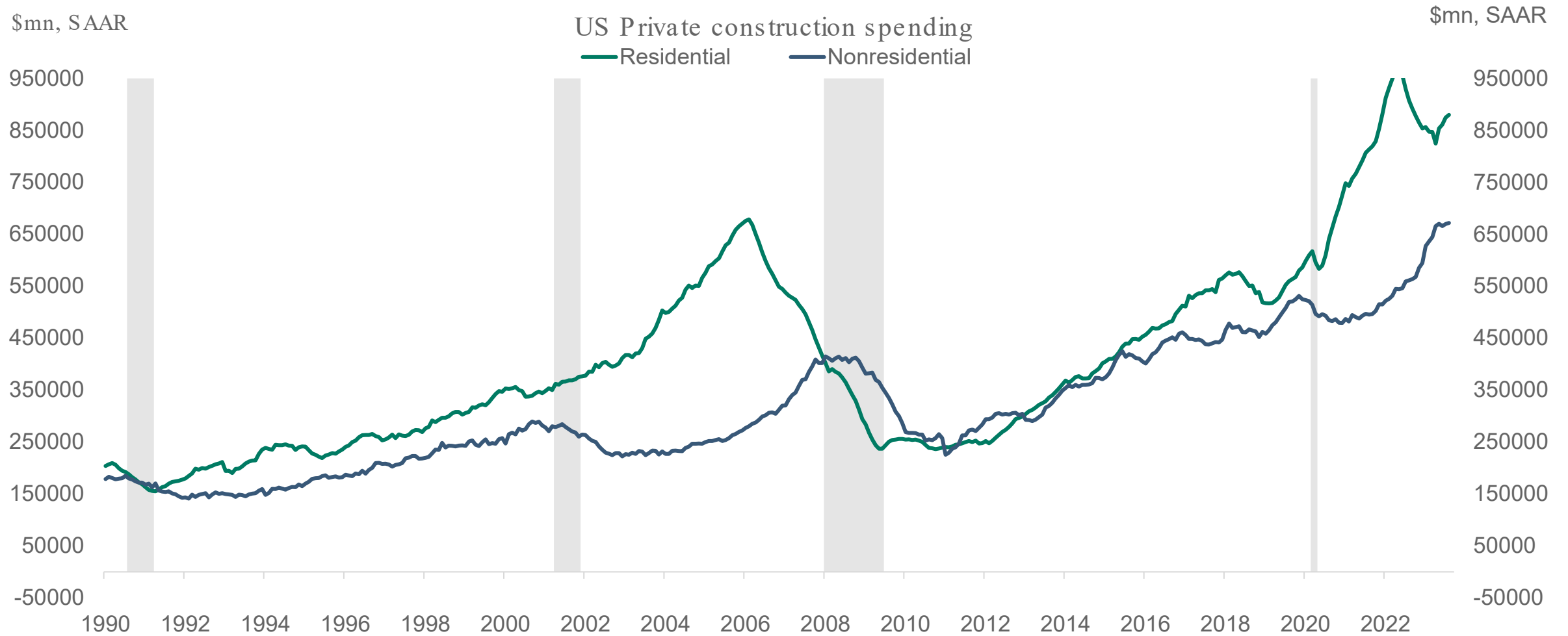
# Low inventory of homes for sale



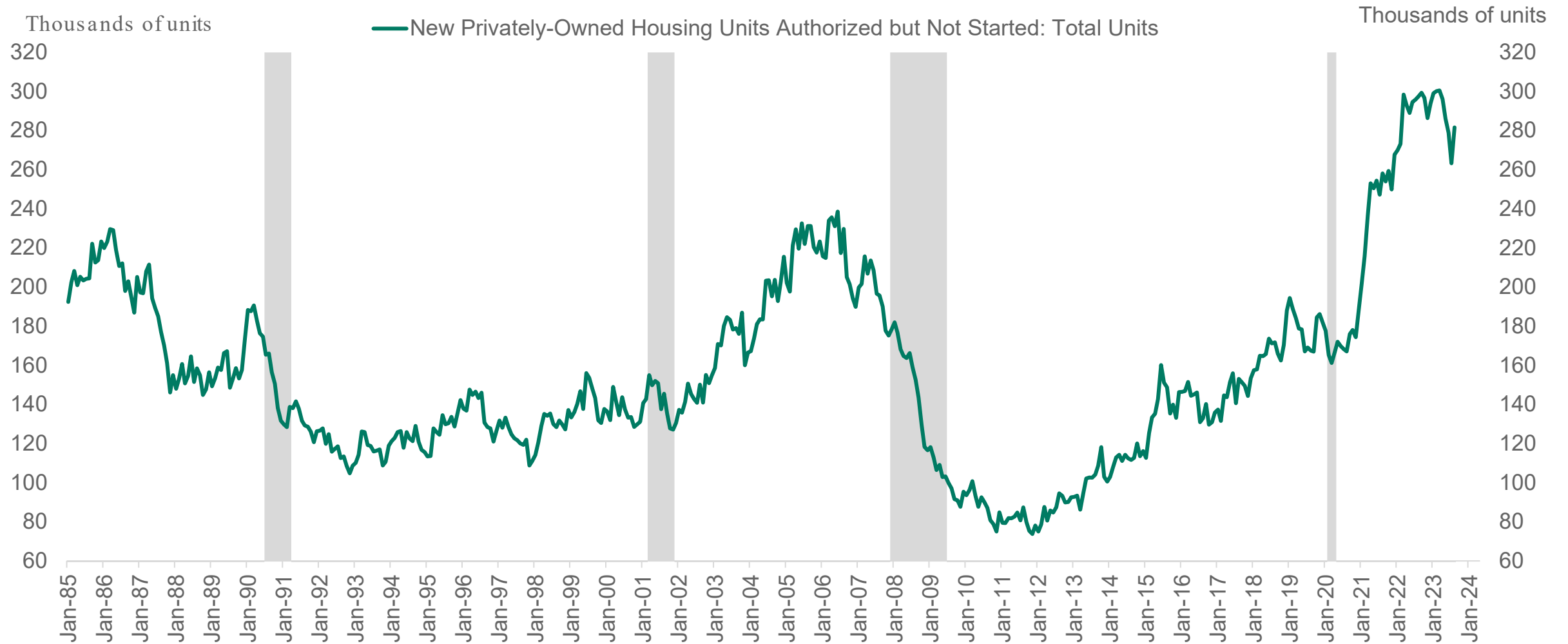
# Homeowner vacancy rate is at historical low level



# Residential construction spending starting to rise again



# New housing units authorized but not started



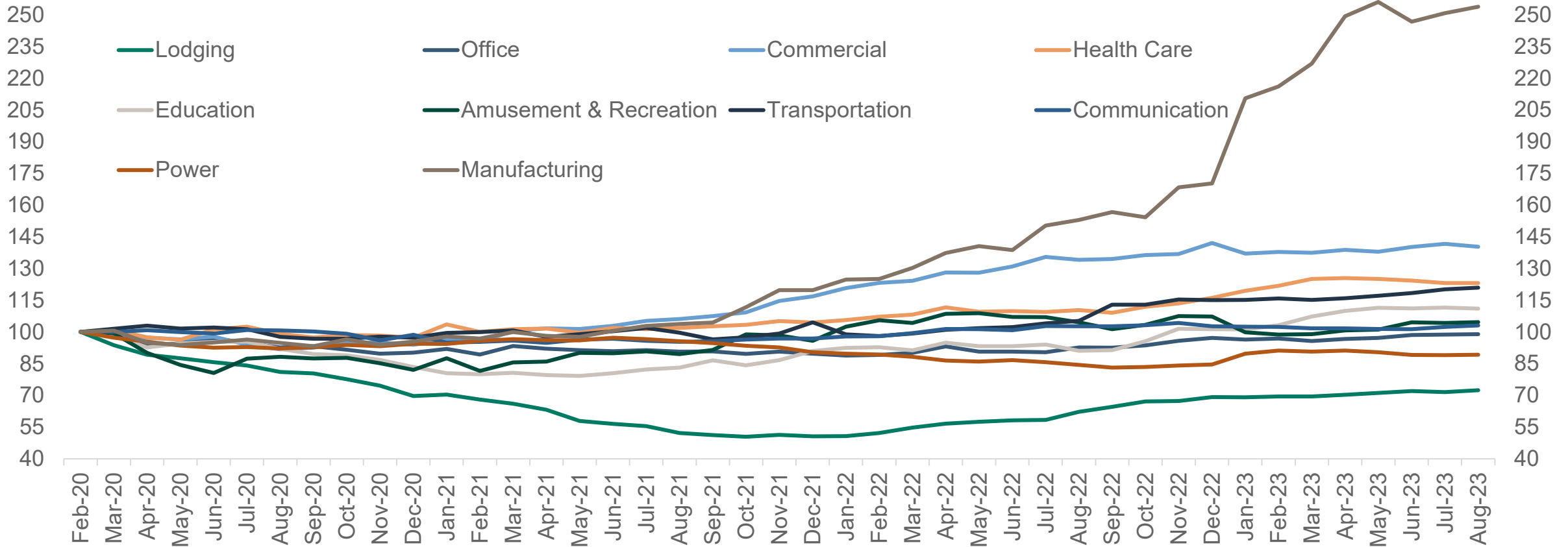


# The biggest increase in non-residential construction has been in manufacturing

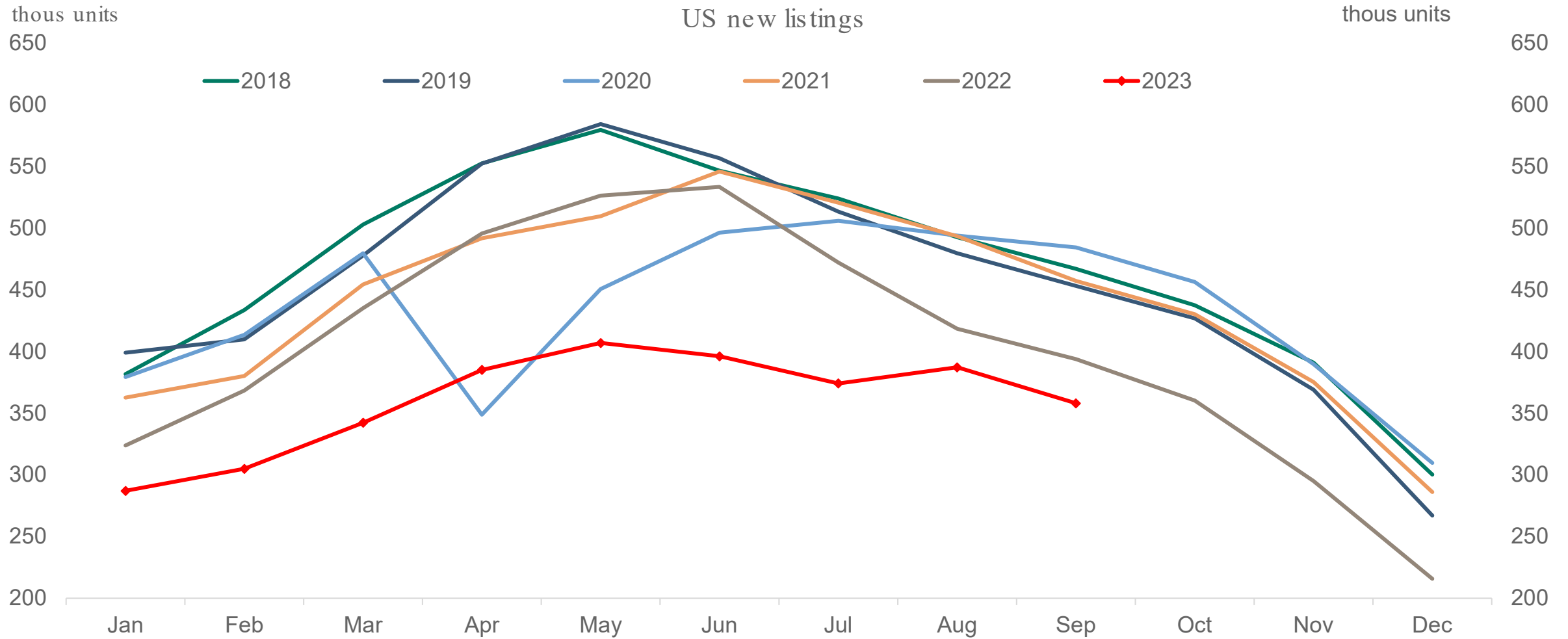
Feb 2020=100

## Private non-residential construction spending

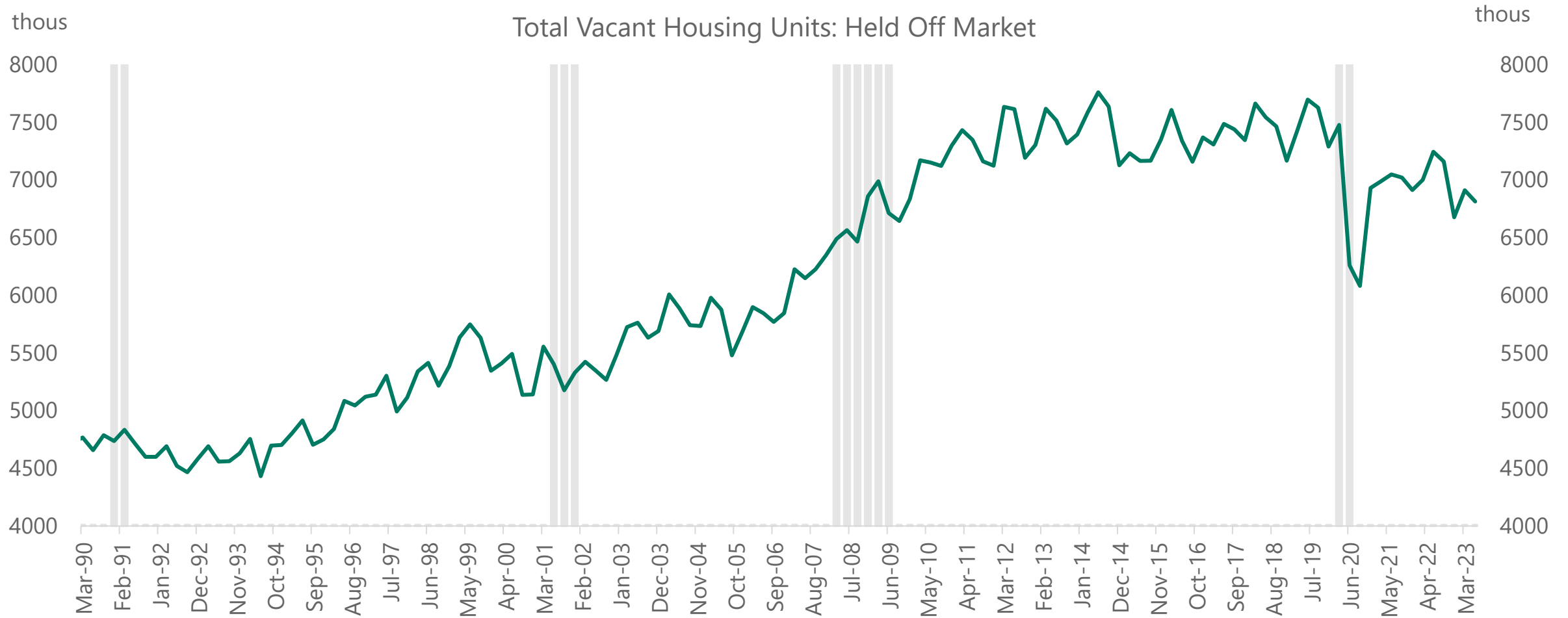
Feb 2020=100



# Newly listed homes very low



# Vacant housing units held off market coming down

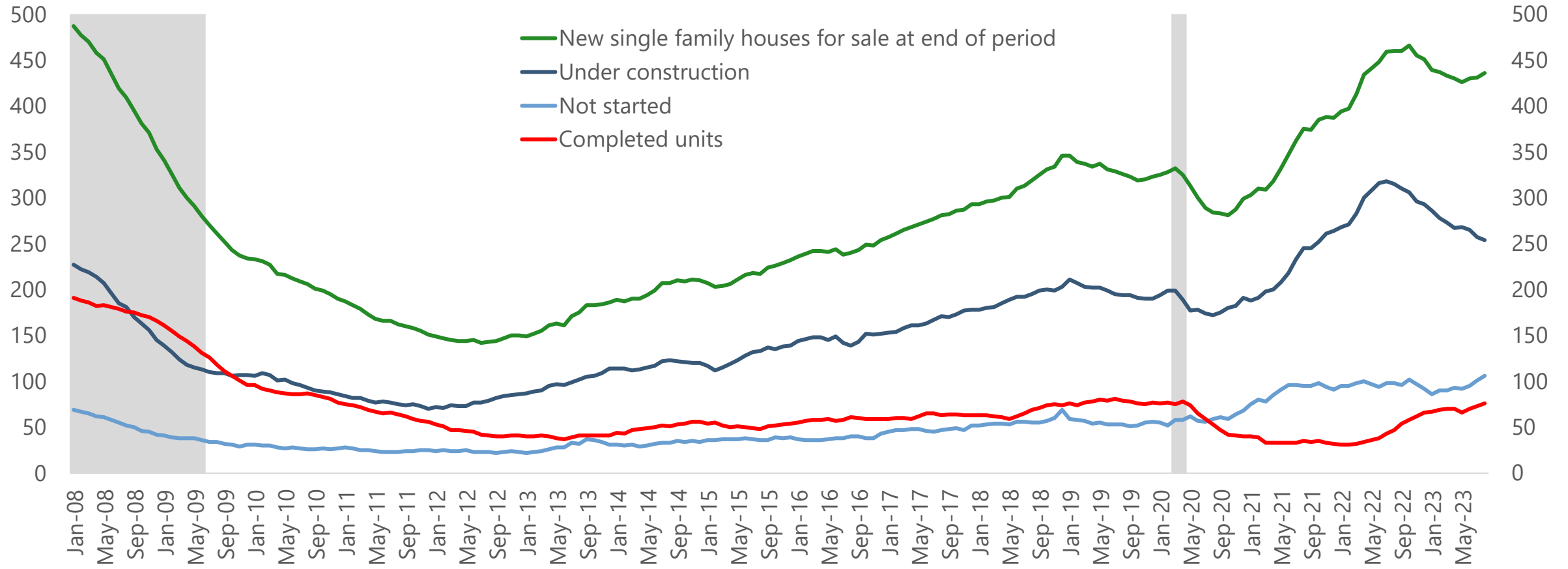


# Decline in the number of new houses for sale under construction

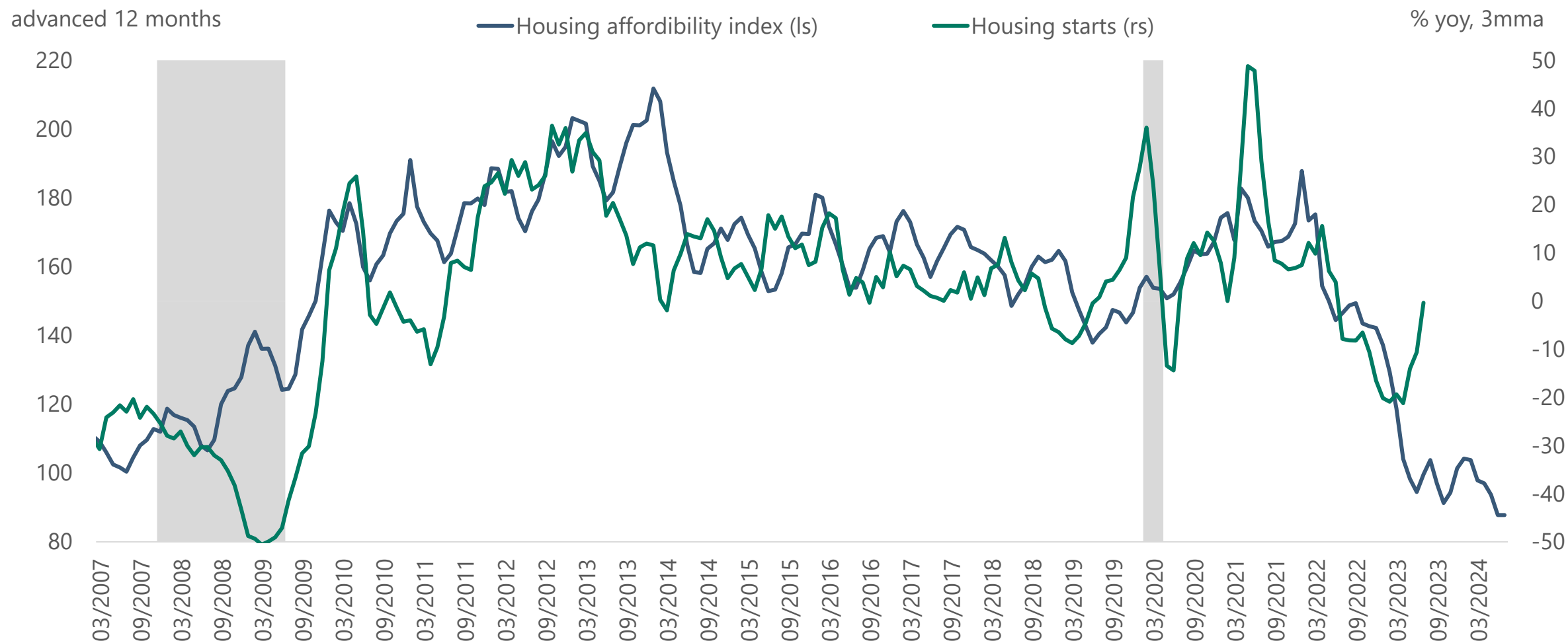
Thousands of units

Number of new houses for sale

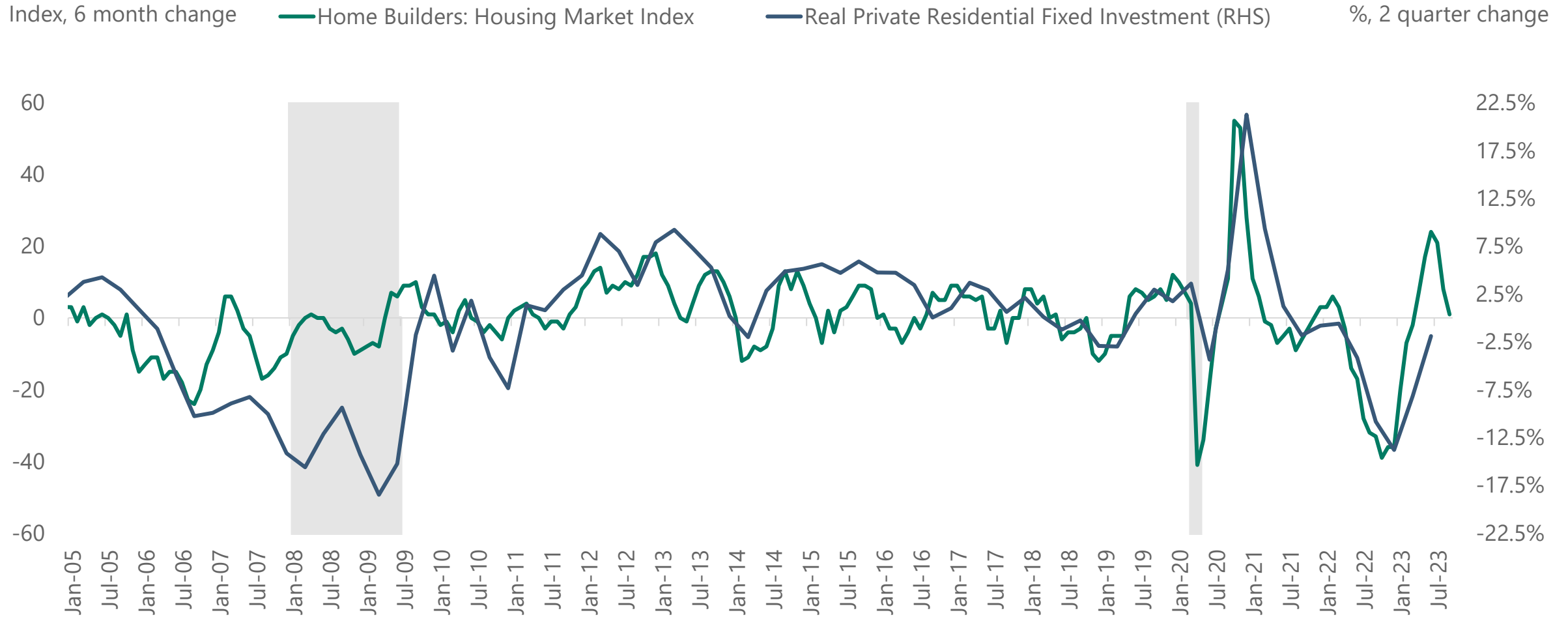
Thousands of units



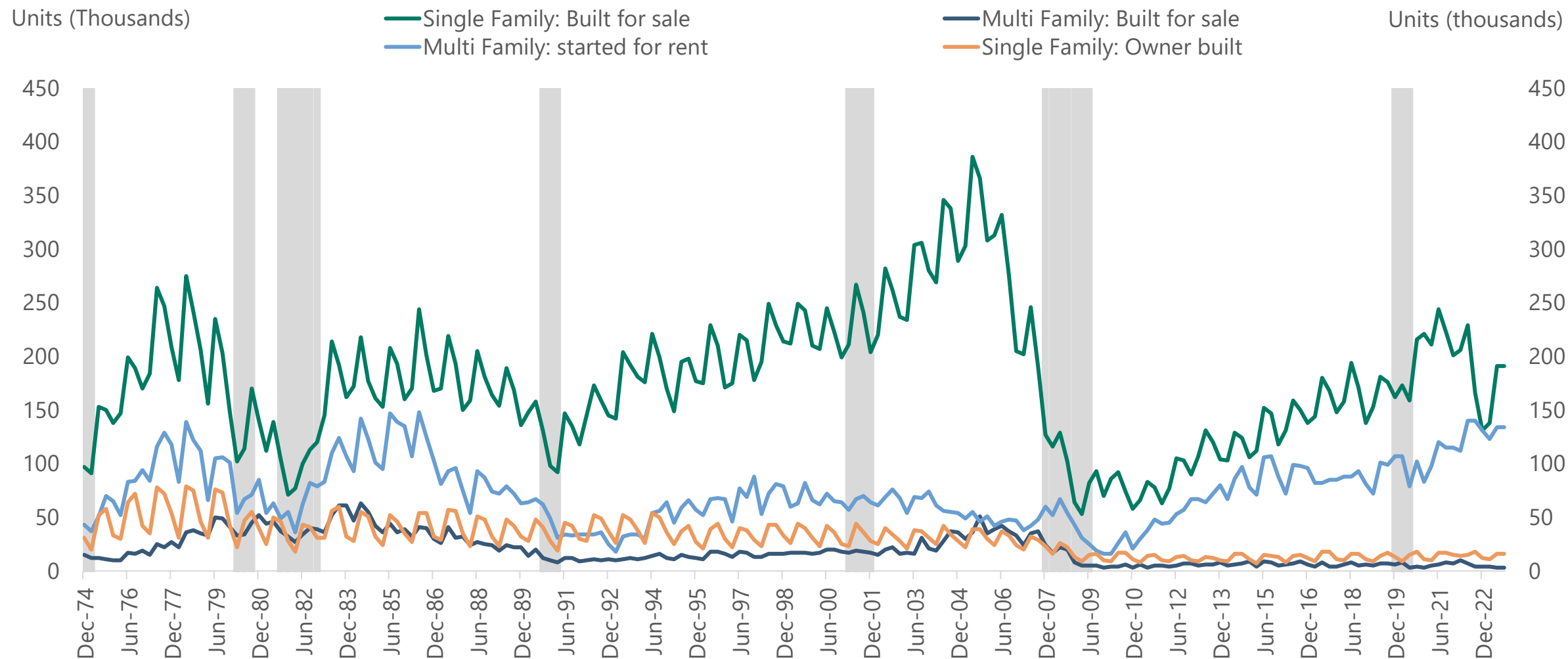
# Housing starts high despite low affordability



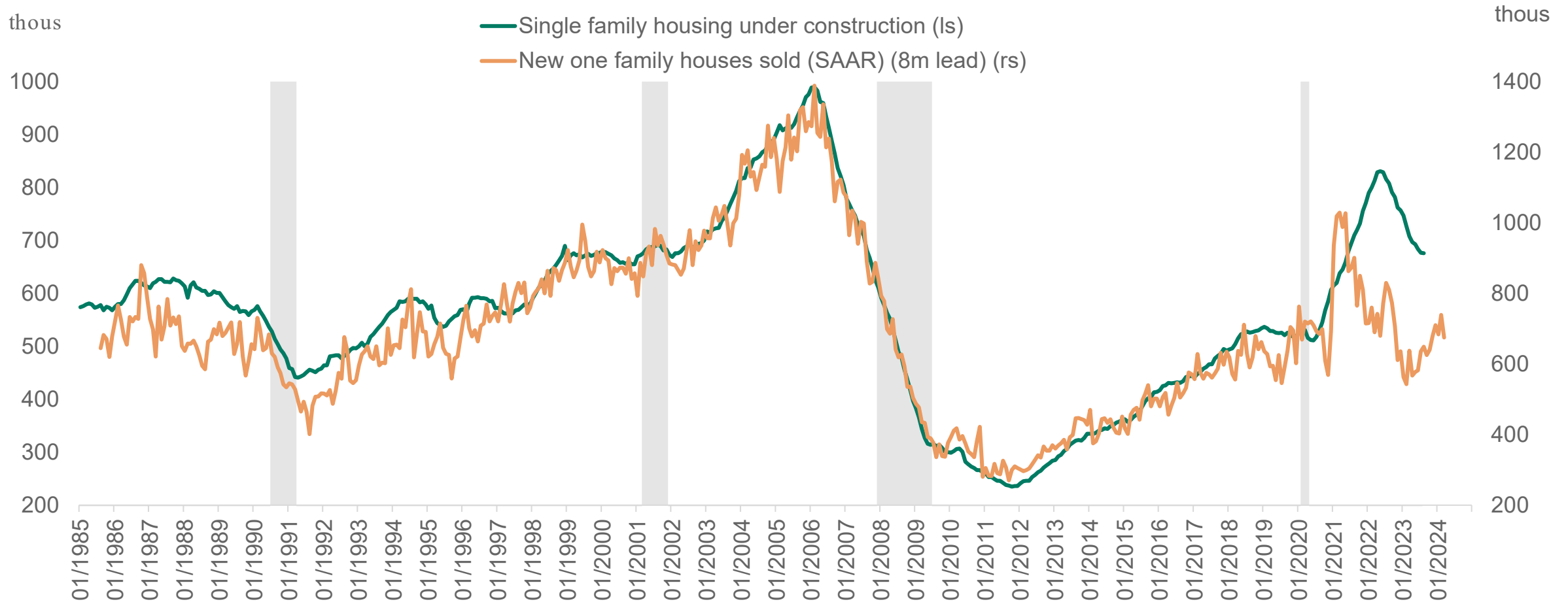
# Homebuilder confidence highly correlated with residential investment



# Intent of housing starts

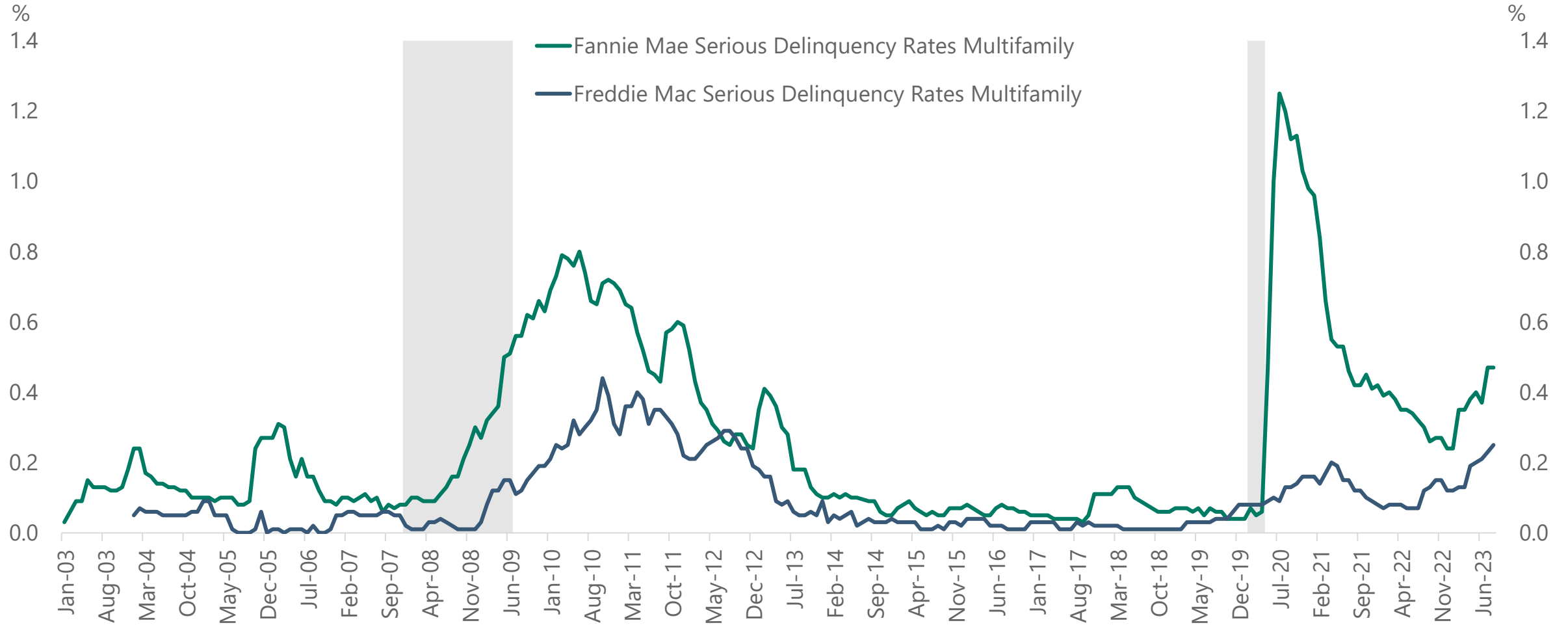


# Some disconnect between housing under construction and new homes sold



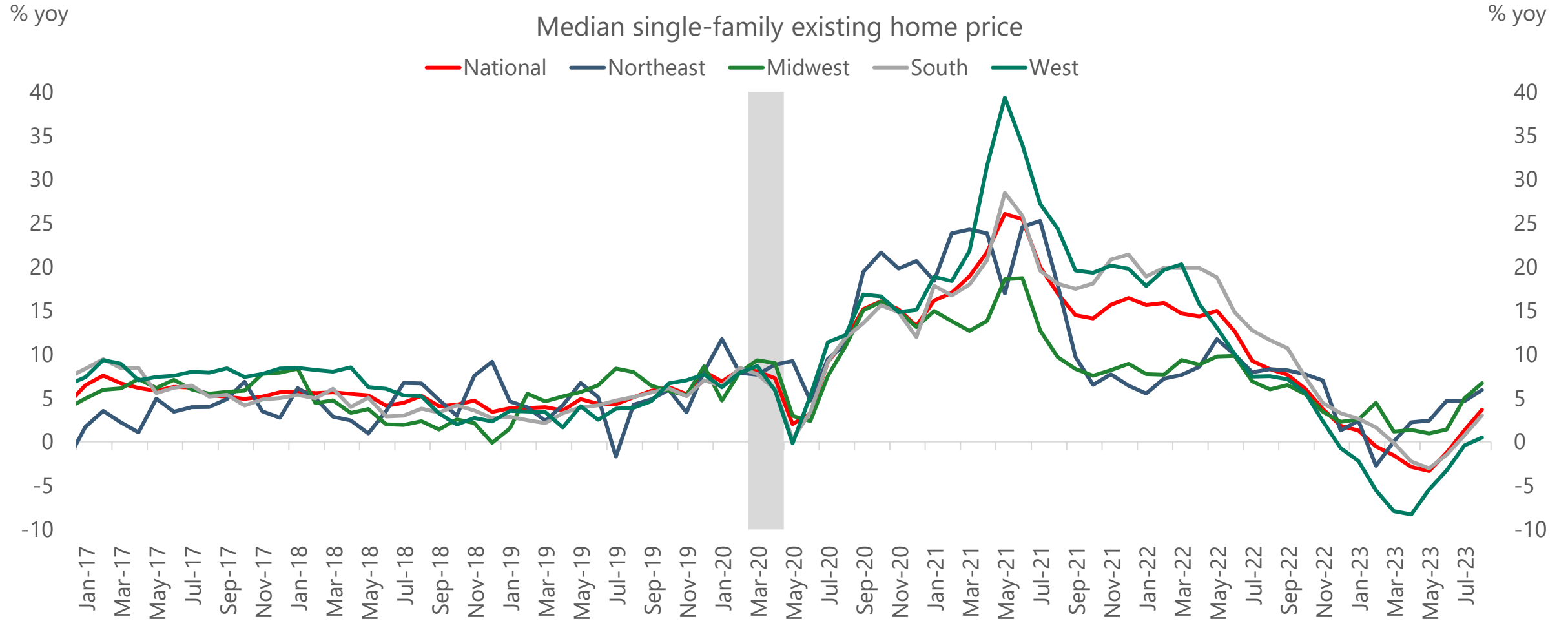


# Multifamily delinquencies rising

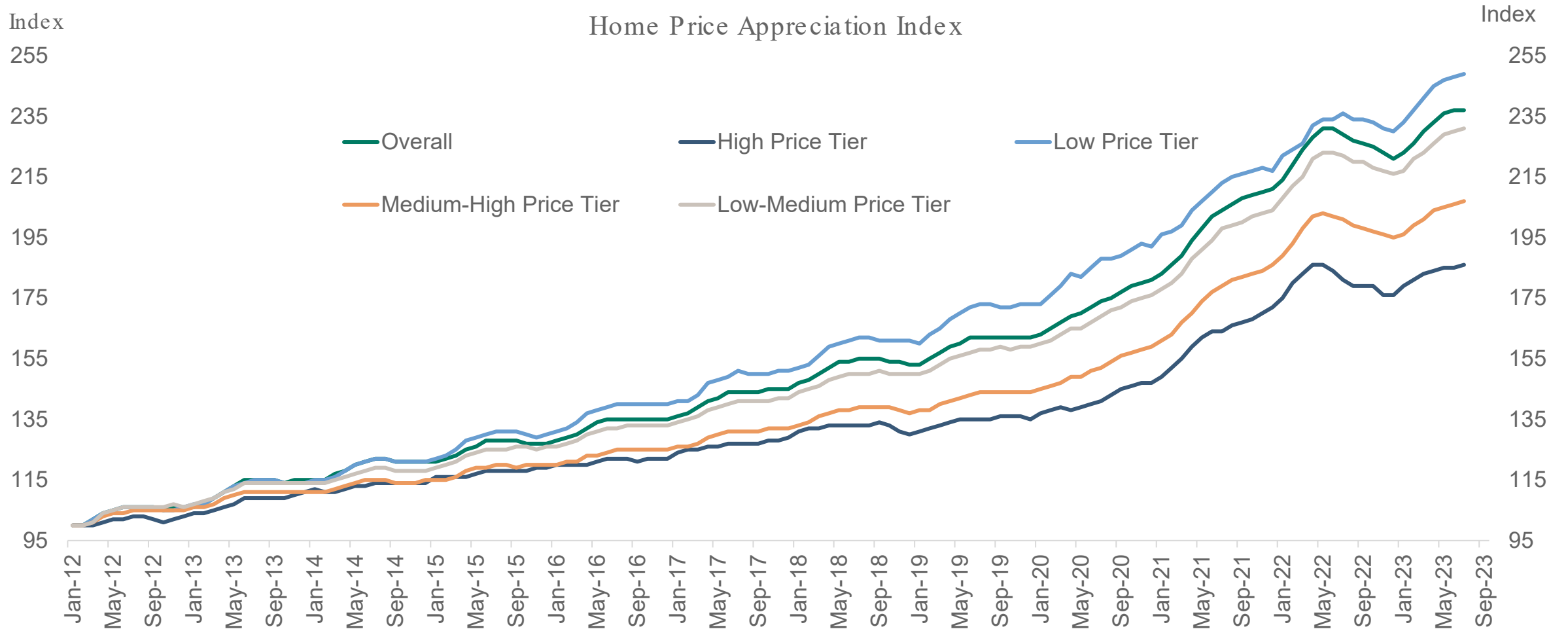


3) House Prices: Home price inflation not yet impacted by higher mortgage rates

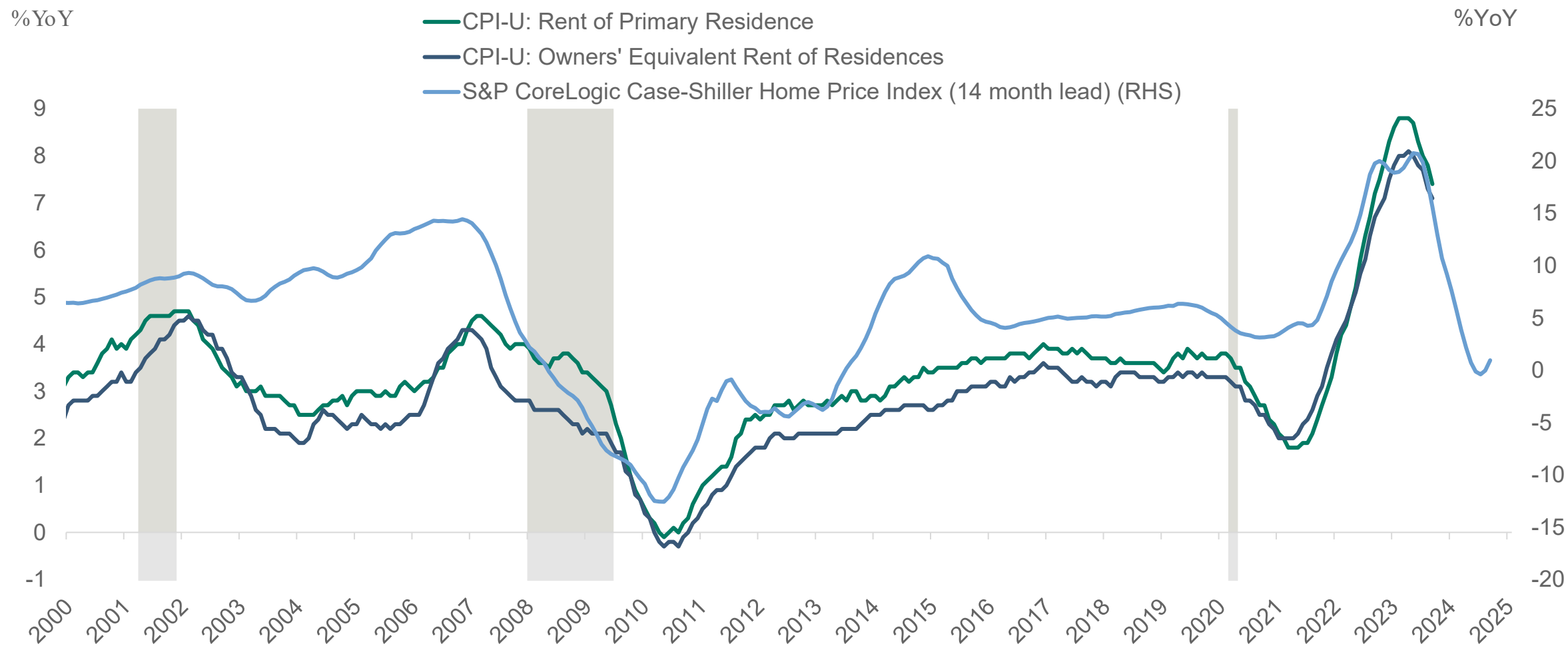
# Higher mortgage rates will weigh on home prices



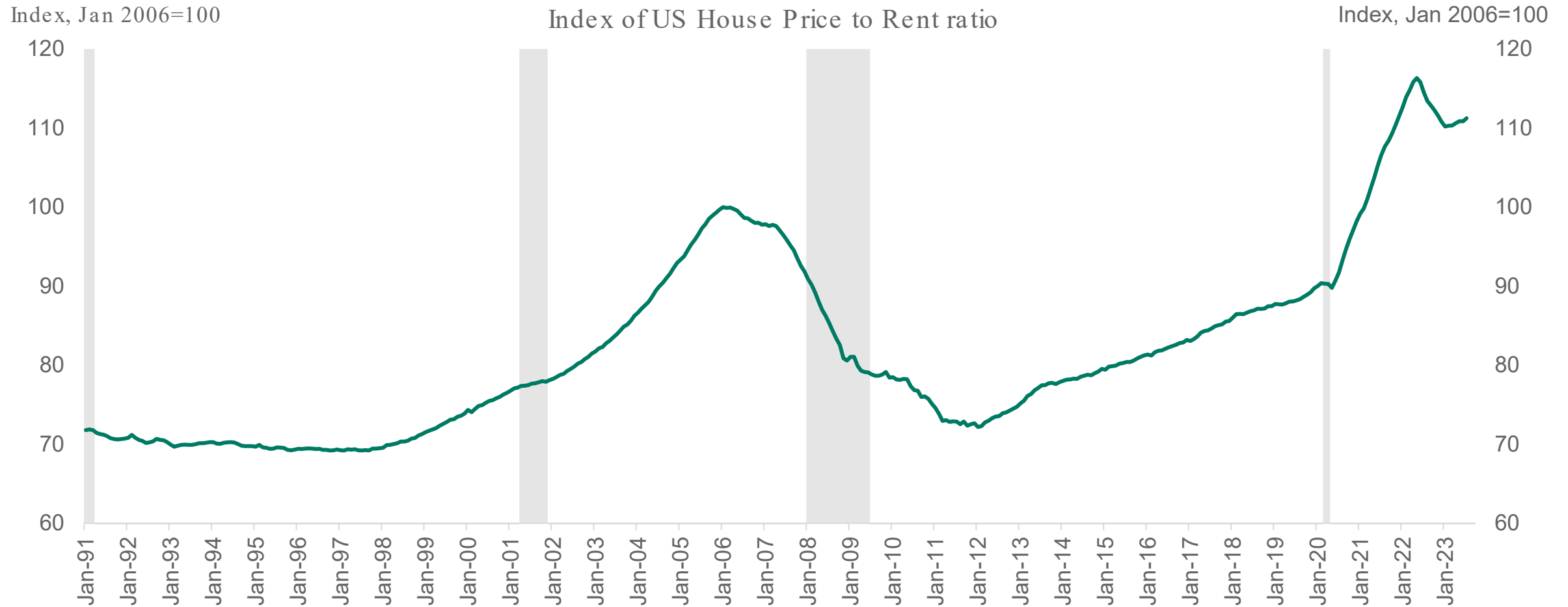
# House price inflation stabilizing across price tiers



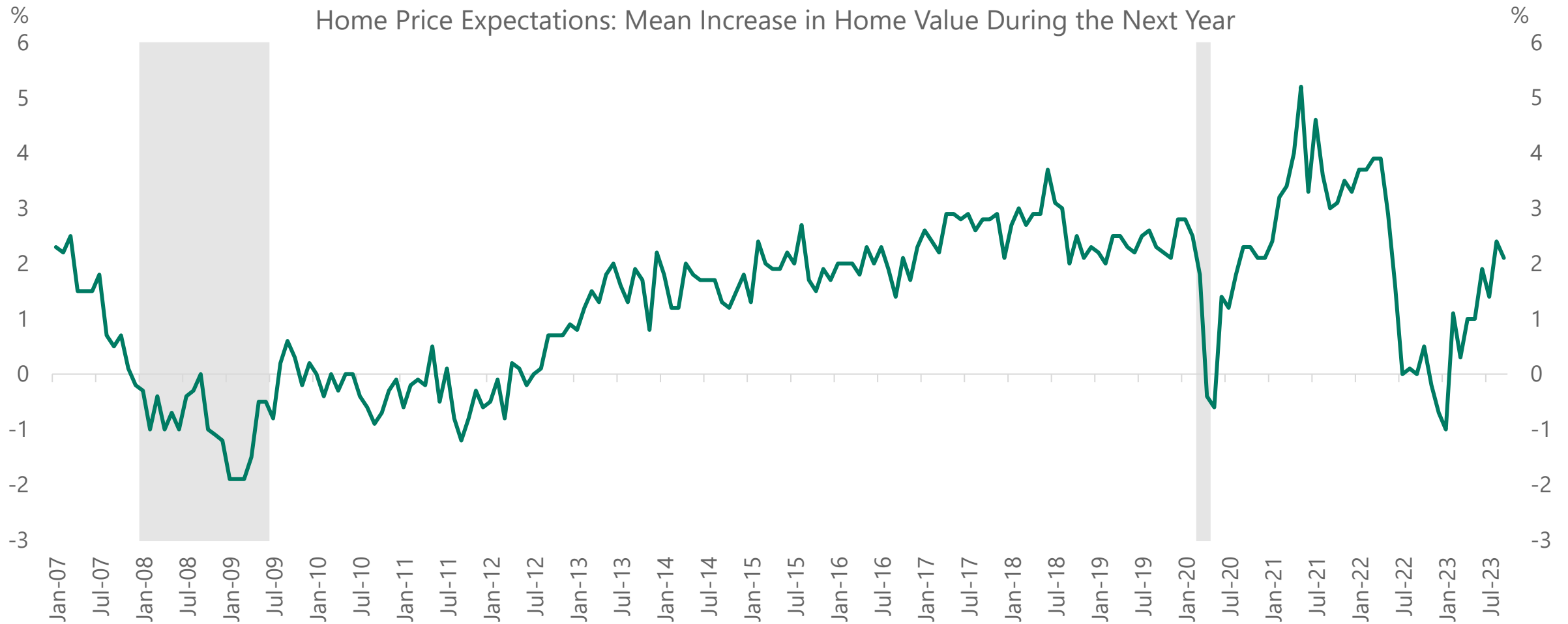
# Home price inflation has peaked



# Home price to rent ratio significantly above 2006 levels



# Steady increase in consumers' expectations to home price inflation



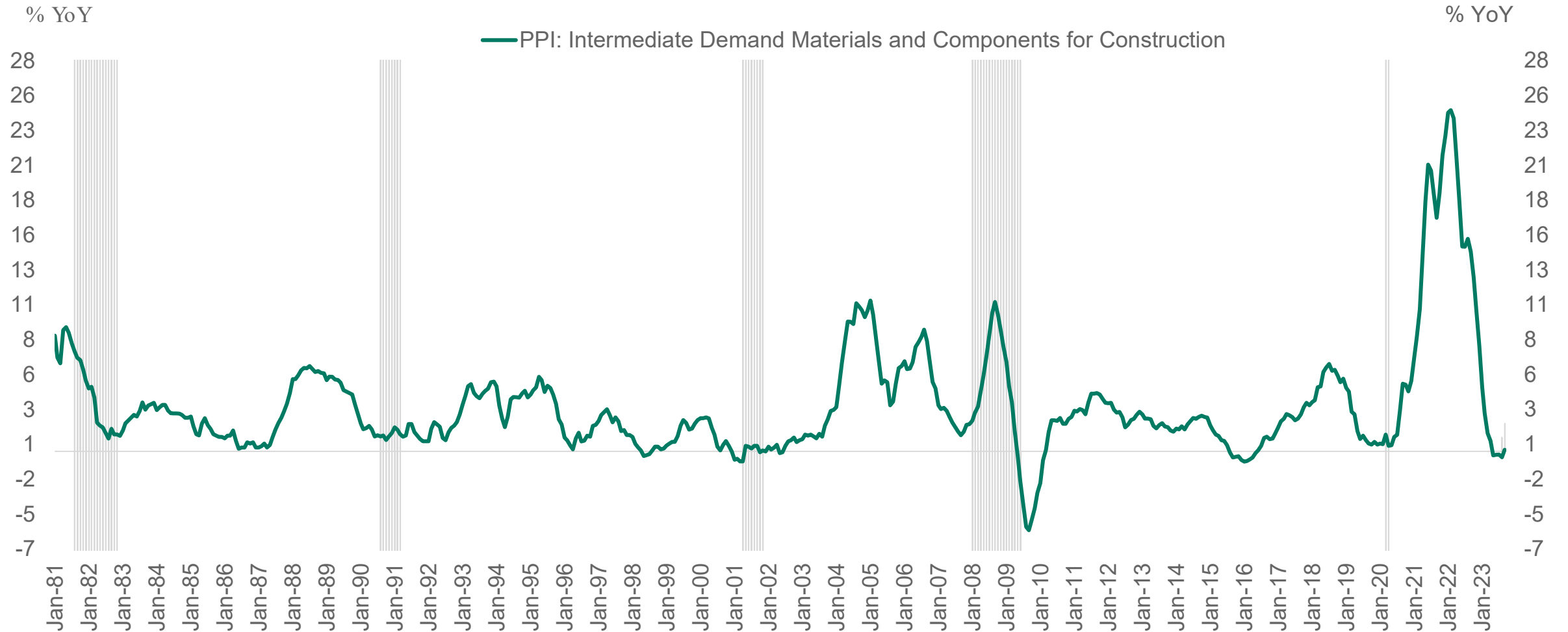
4) Housing Outlook: **High mortgage rates, high home prices, strong supply pipeline, and high building costs are risks to this housing cycle**



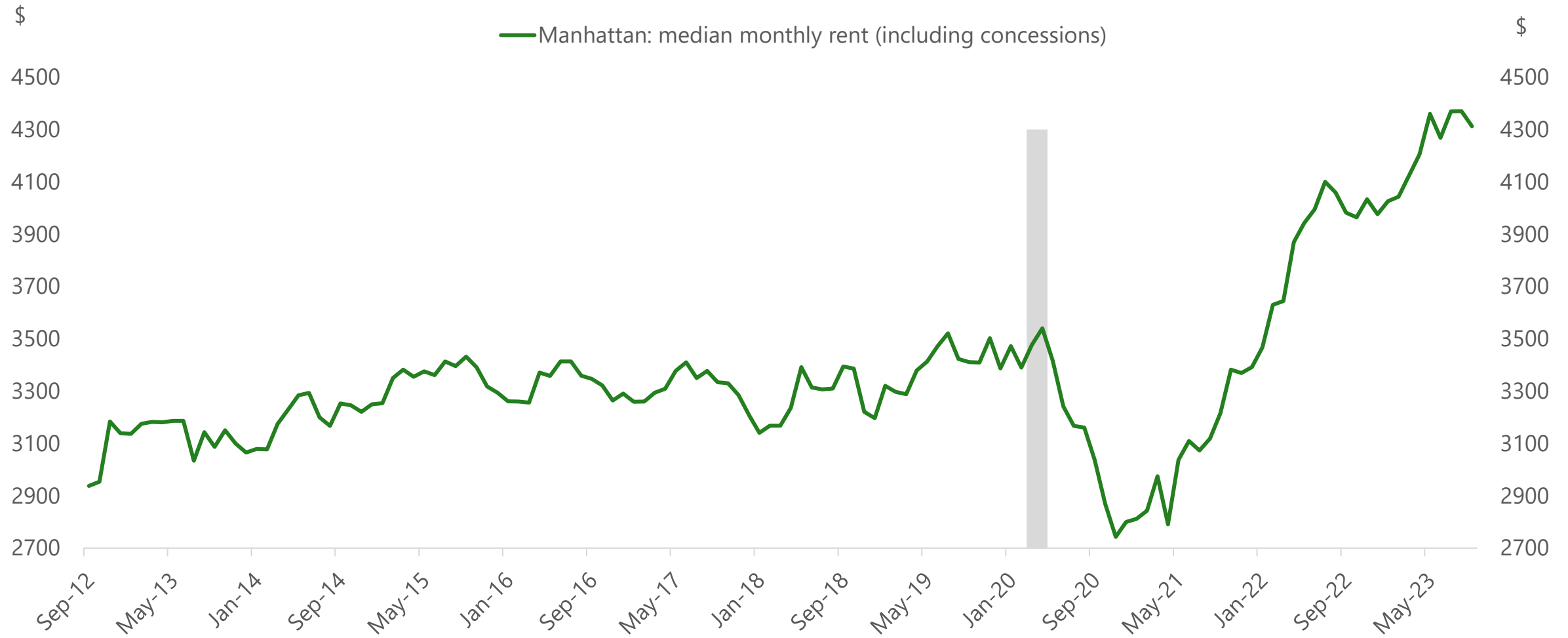
# Housing construction costs are high



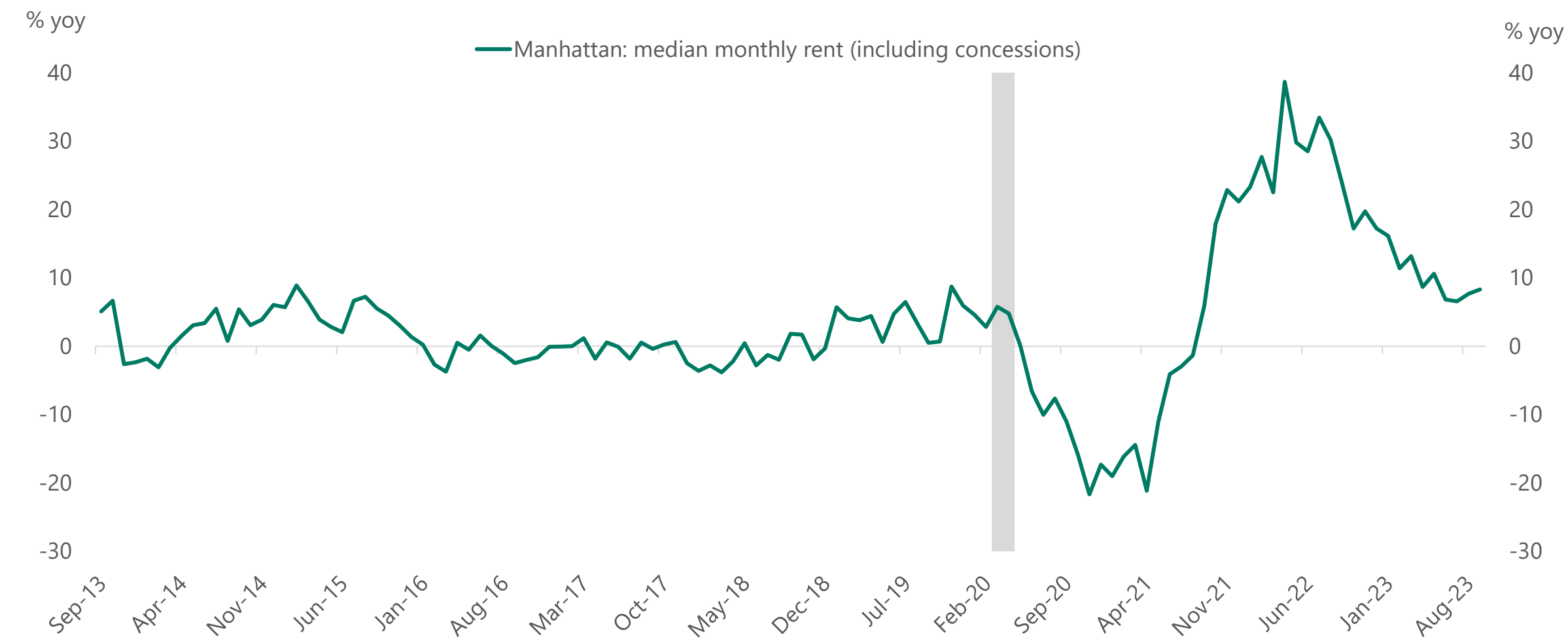
# Inflation in input costs for home builders declining



# Manhattan median rent near all-time highs at \$4312 in September 2023

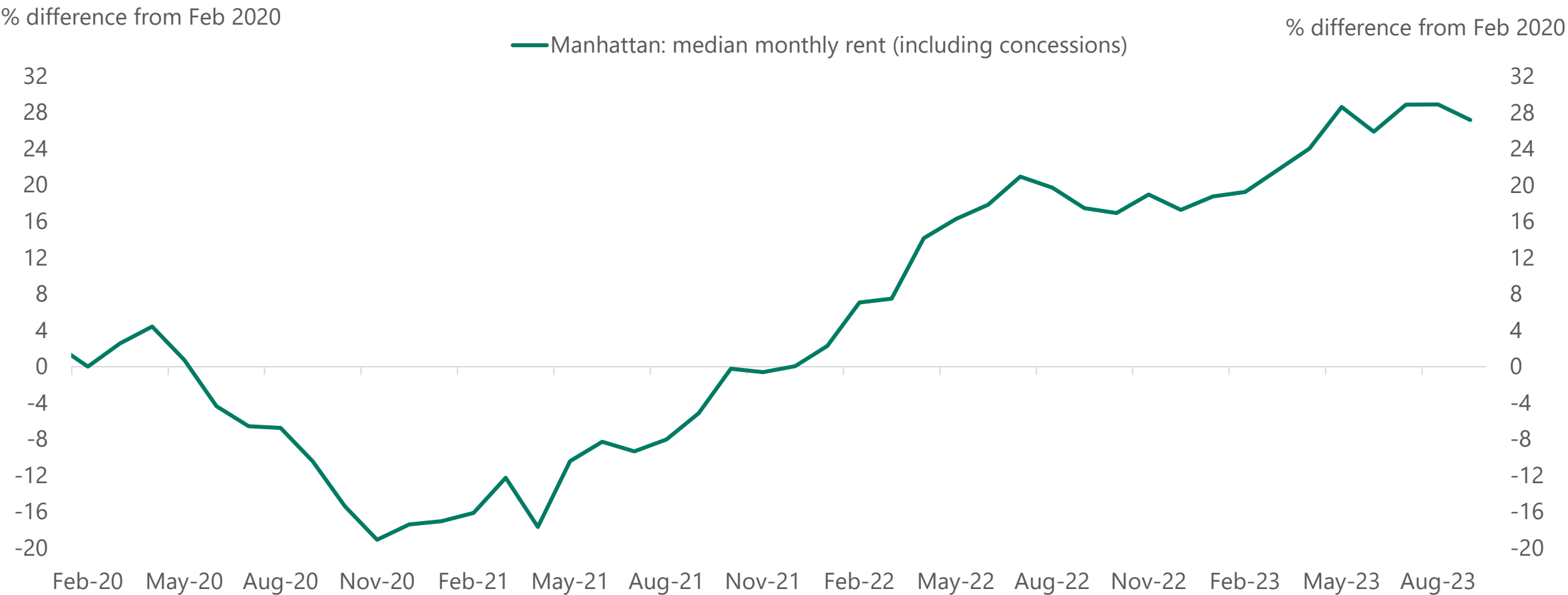


# Manhattan rent growth slowing



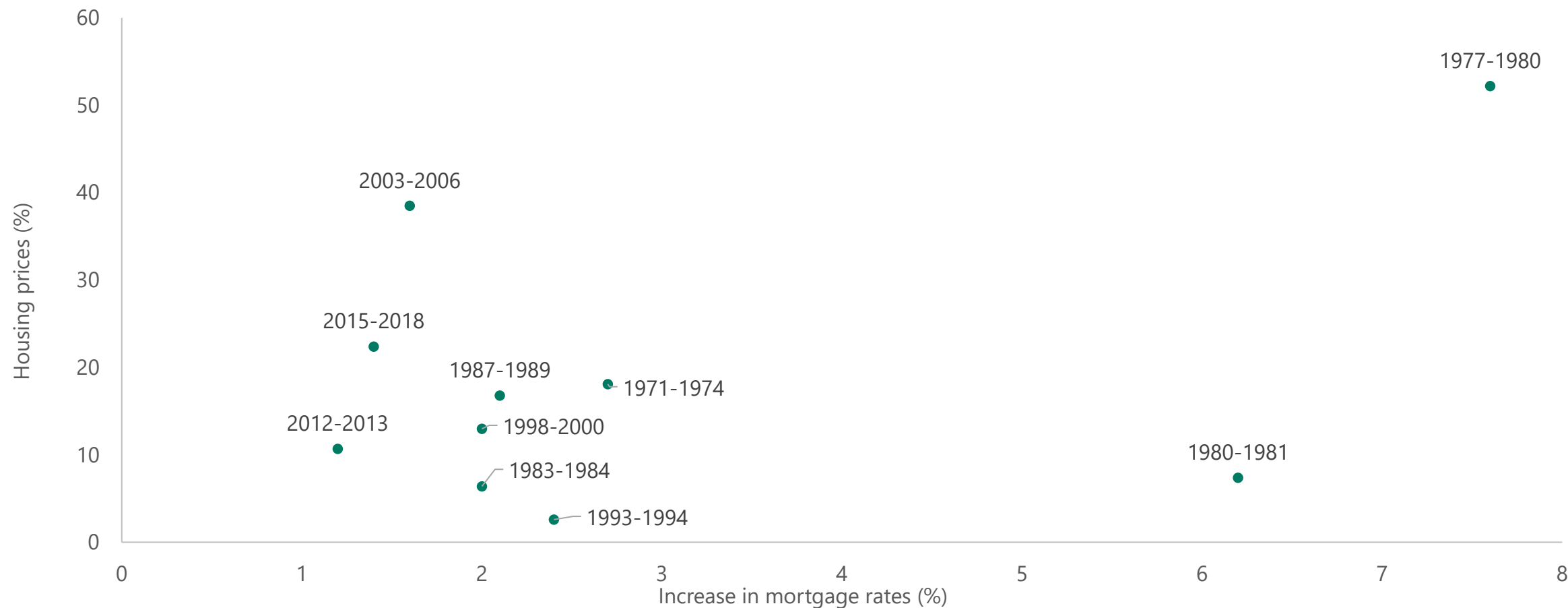
Source: Elliman, Apollo Chief Economist

# Manhattan rents above pre-pandemic levels

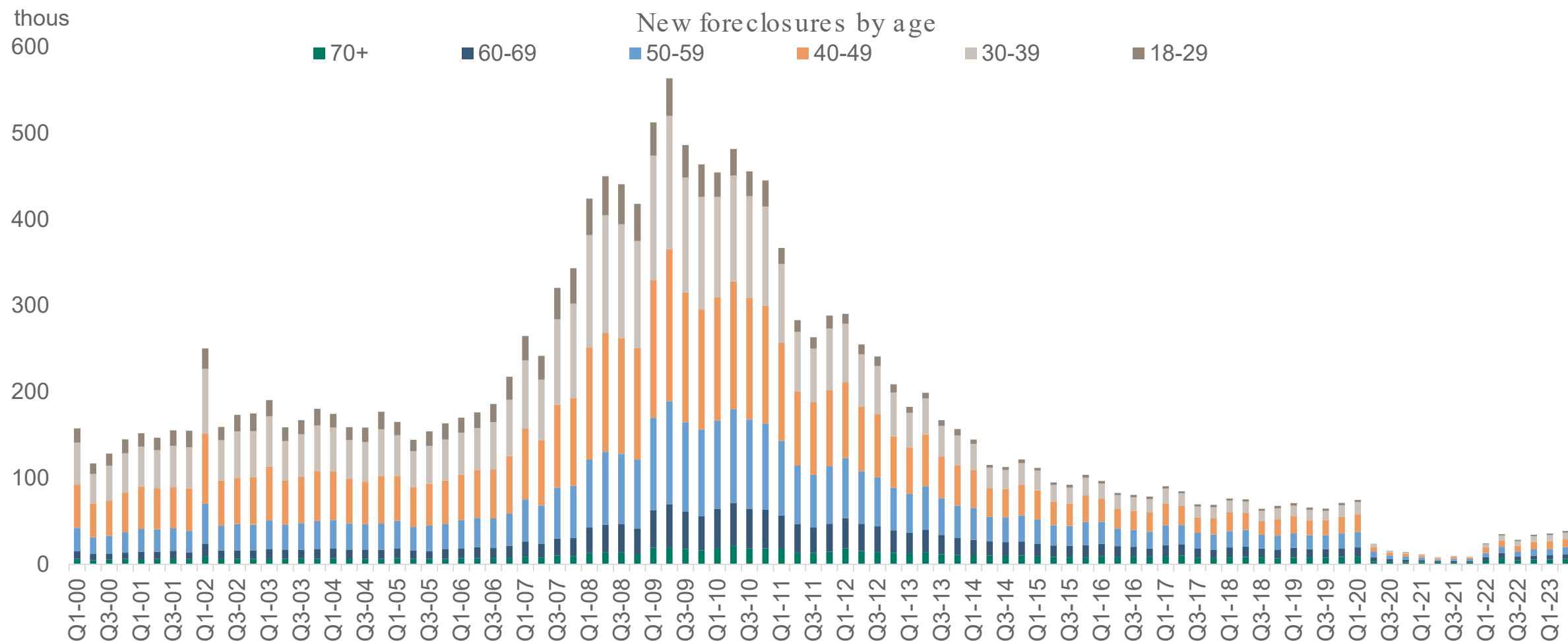


Source: Elliman, Apollo Chief Economist

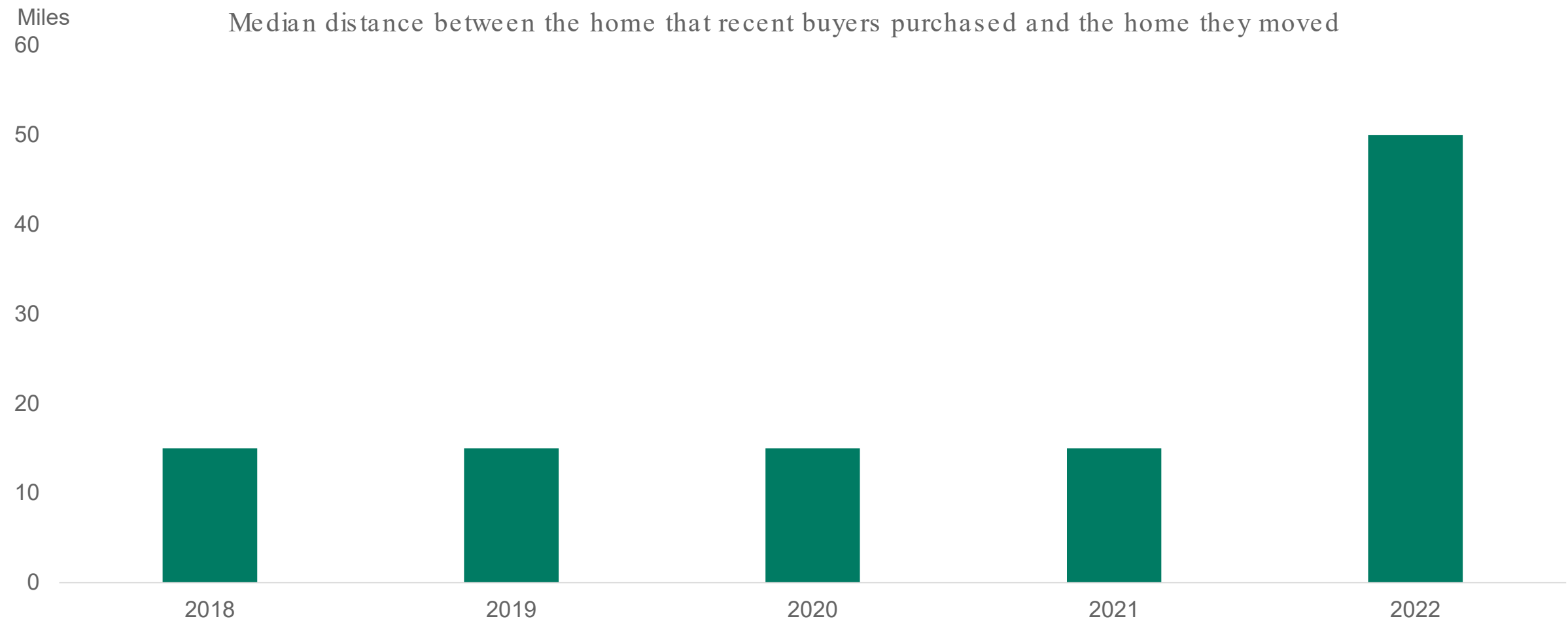
# Rising mortgage rates generally associated with lower home price inflation



# New foreclosures, by age of homeowner

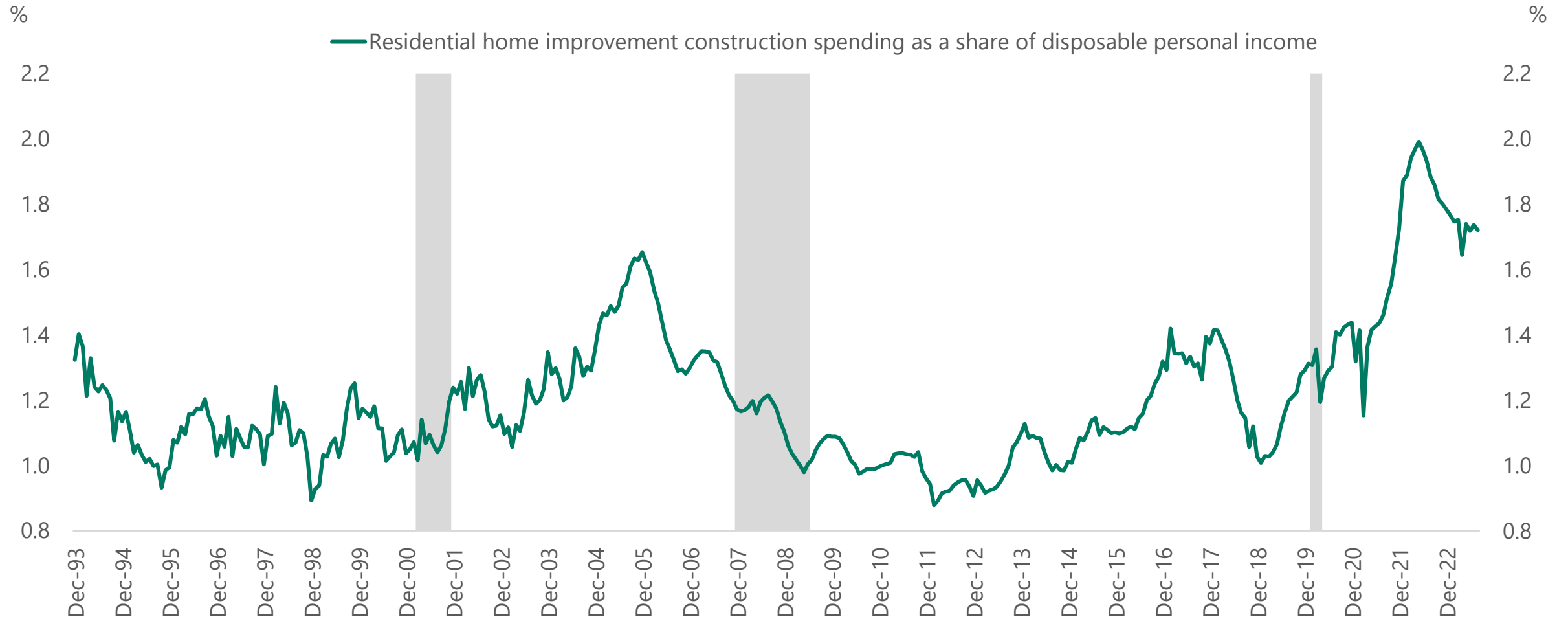


# Median distance between the home that recent buyers purchased and the home they moved from at 50 miles in 2022

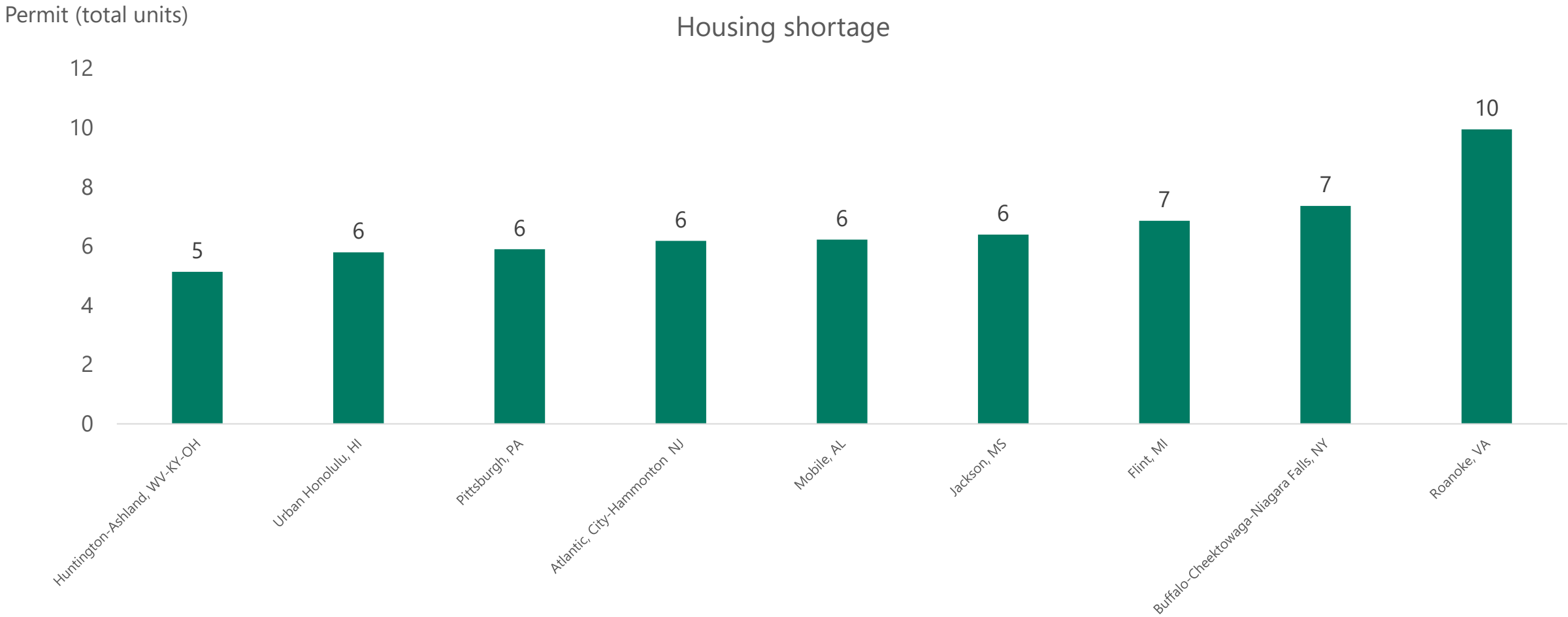




# Home improvement spending remains at high levels

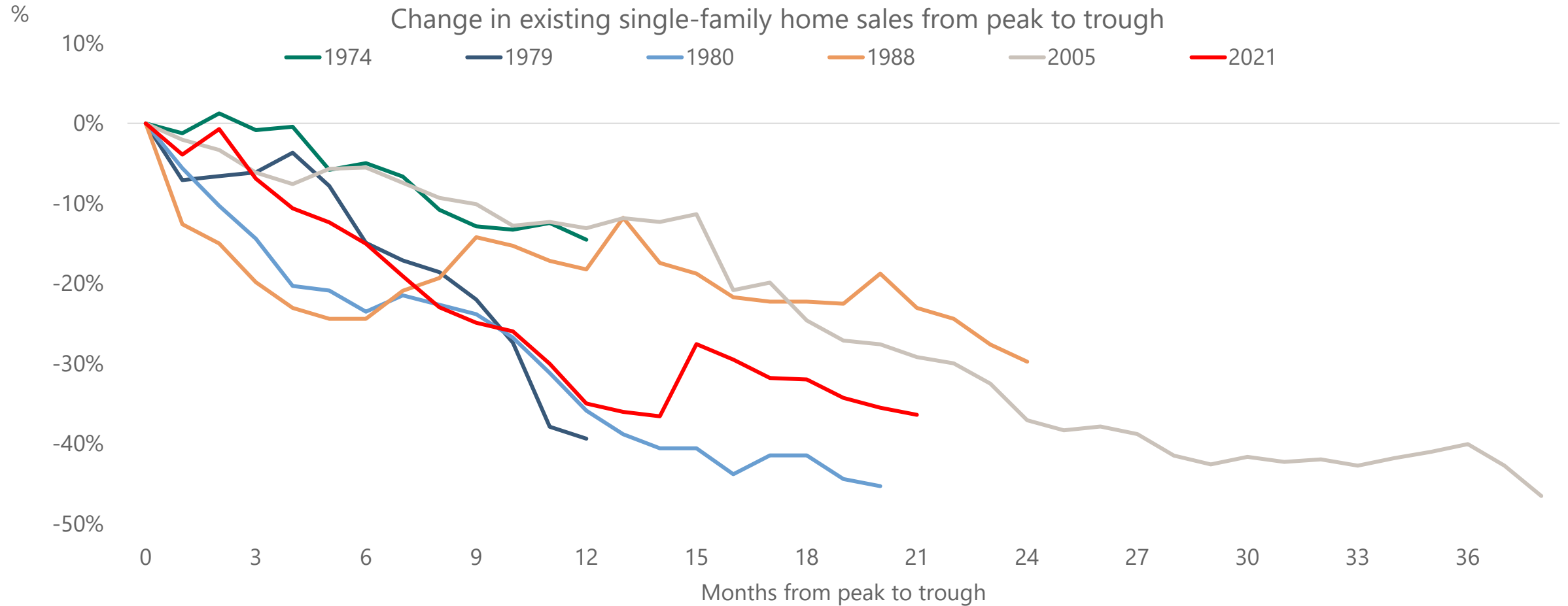


# Areas that need to build more houses in order to keep up with the increased demand

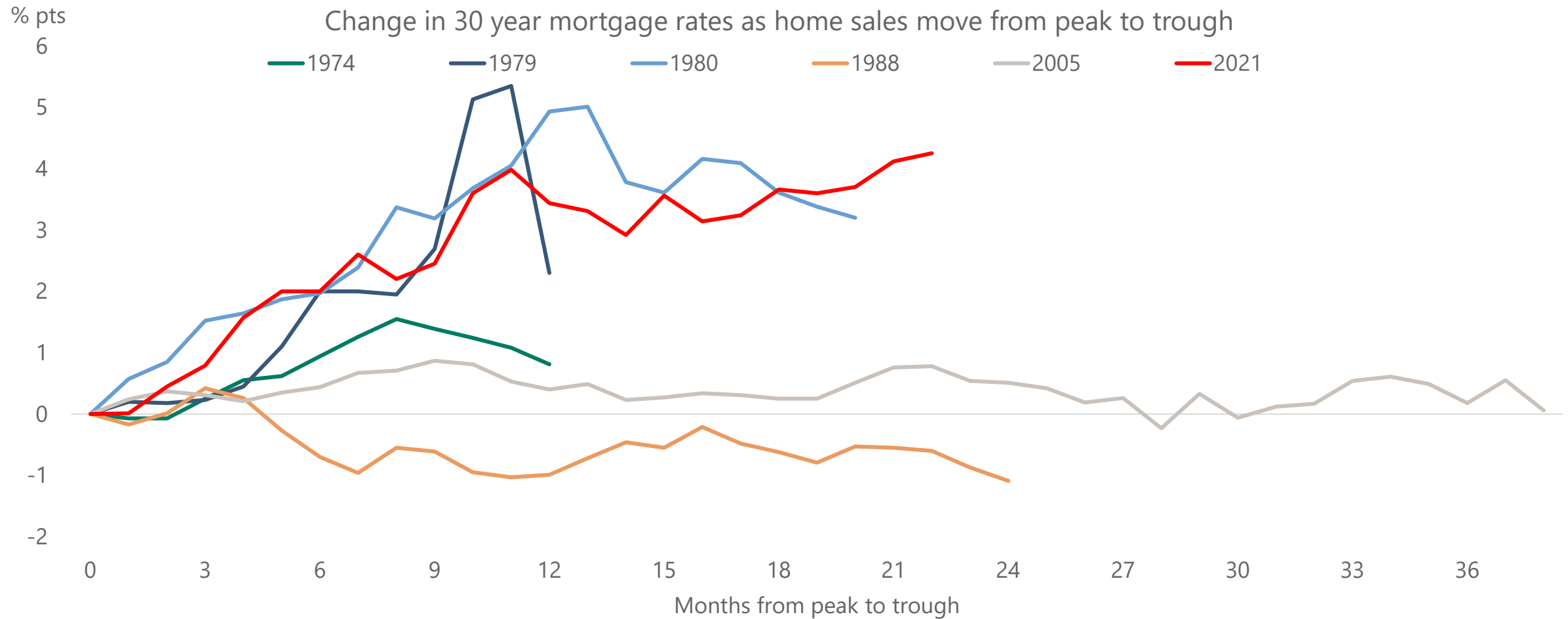


Comparing the current housing slowdown to previous housing slowdowns

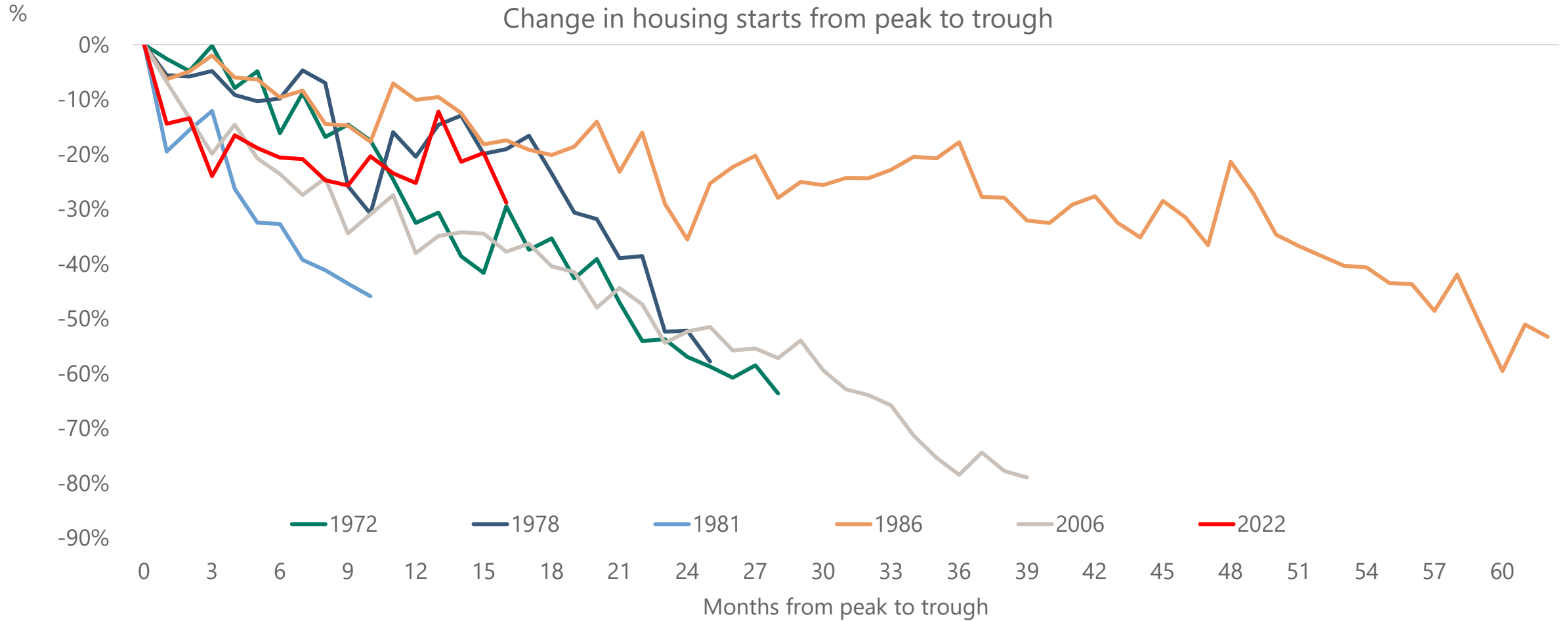
# The current decline in existing home sales is in line with previous housing slowdowns



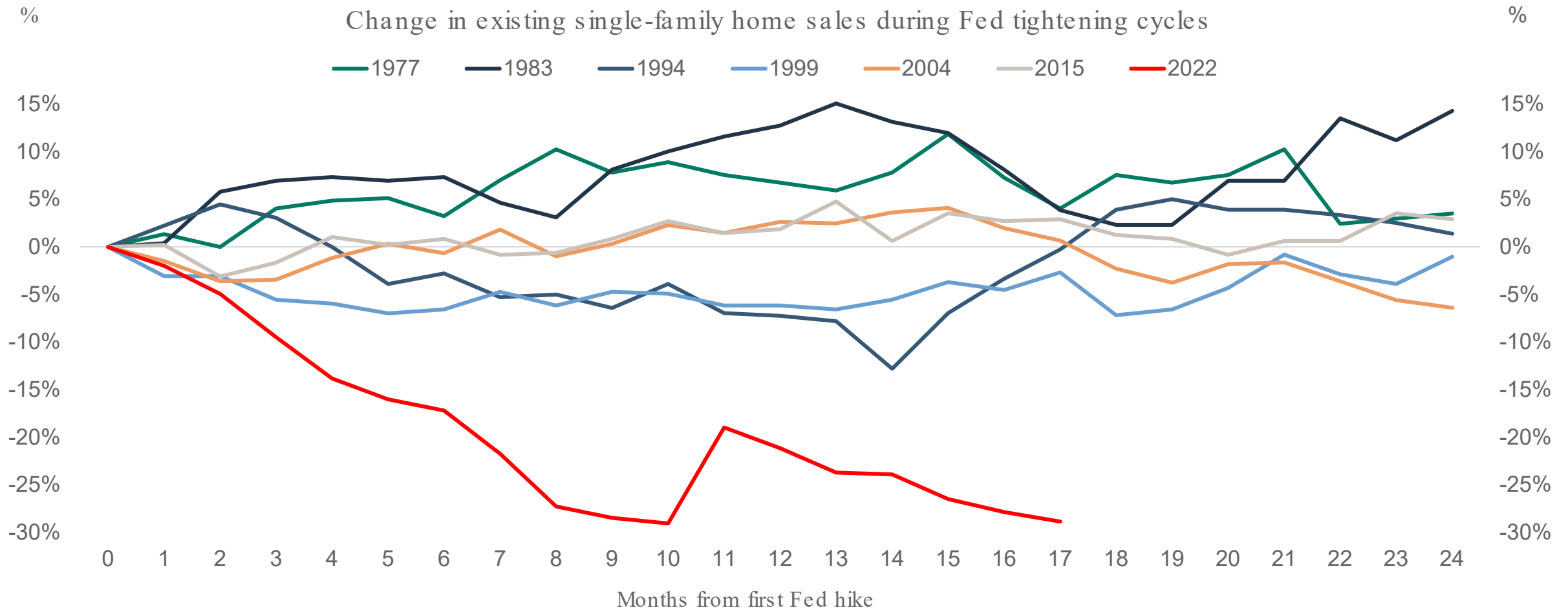
The current rise in mortgage rates is similar to what we saw during the Volcker disinflation



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



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





# Torsten Slok, Ph.D.

## Chief Economist

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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.