

# PALISADES

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PROPRIETARY & CONFIDENTIAL

## HOUSING & RESIDENTIAL CREDIT

MARKET INSIGHTS

4Q | 2022



## Forward-Looking Statements & Other Important Disclosures

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## Topics of *conversation*

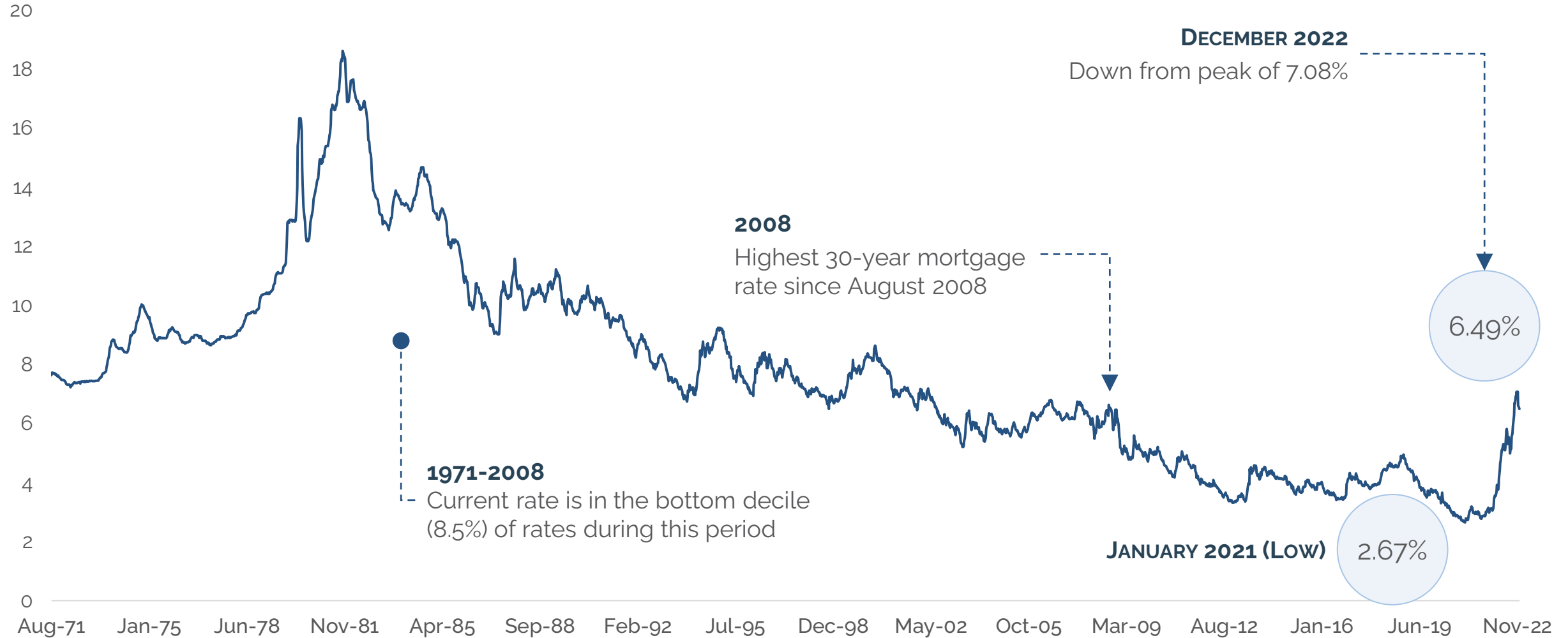
- Introduction to Palisades
- What do the headlines tell us?
- What does the data show?
- Housing supply & inventory
- Housing demand
- Housing affordability
- Housing transaction activity
- Mortgage interest rate universe & 'rate lock-in' effect
- Mortgage credit performance (delinquency activity)
- Market themes
- Credit spreads
- Investment landscape

## Key *takeaways*

- Housing inventory levels are low → likely to get worse
- Affordability is low → likely to get better
- Family formation will continue → creating pent-up demand
- Short term rates likely to remain elevated → carry trade
- Credit spreads are high → likely to tighten
- Credit risk in housing is limited (equity, underwriting)
- **Investors are shunning good assets, at good prices, in part because current financing does not pencil out**

*Rising interest rates* have shocked an otherwise overheated mortgage finance and housing market

### 30-Year Fixed Rate Mortgage (%)

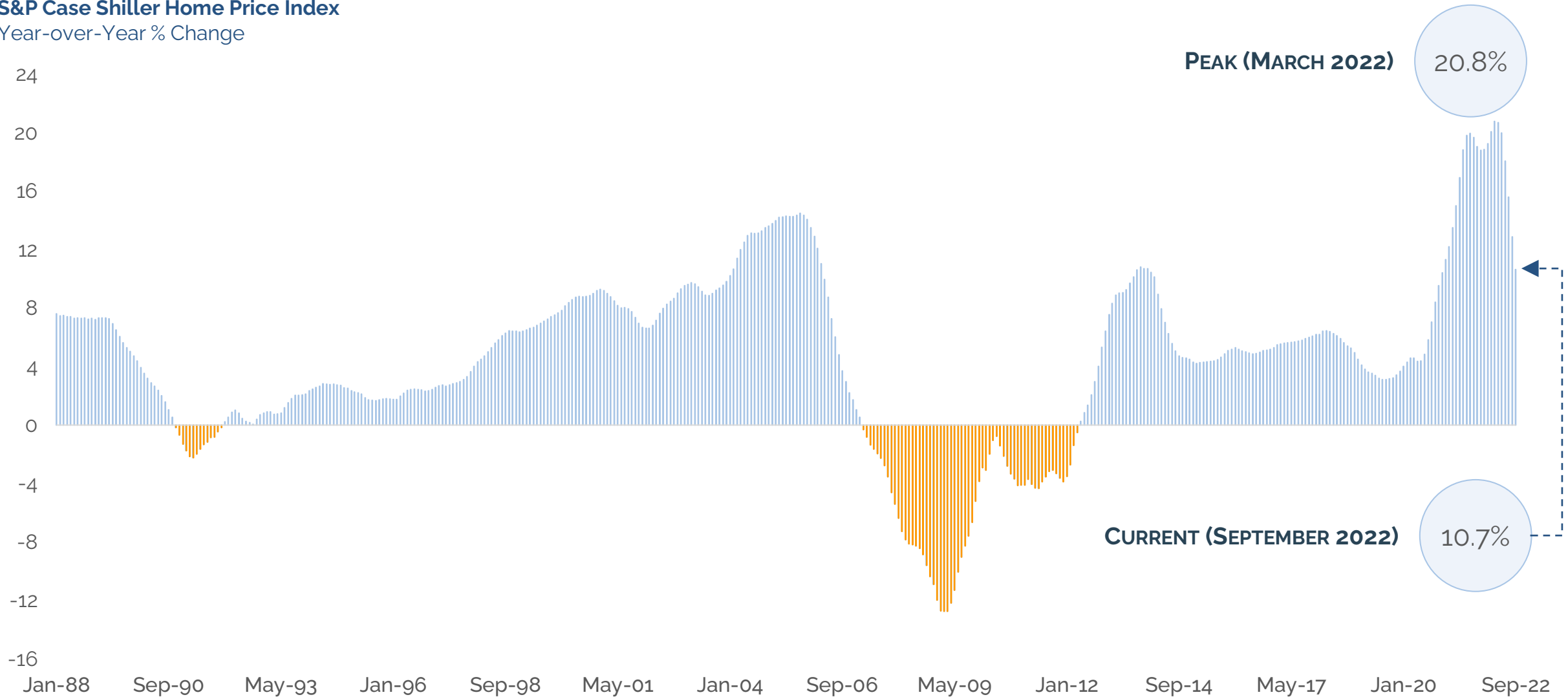


Source: St. Louis Fed

*Home values* surged as pent-up demand encountered low inventory levels

### S&P Case Shiller Home Price Index

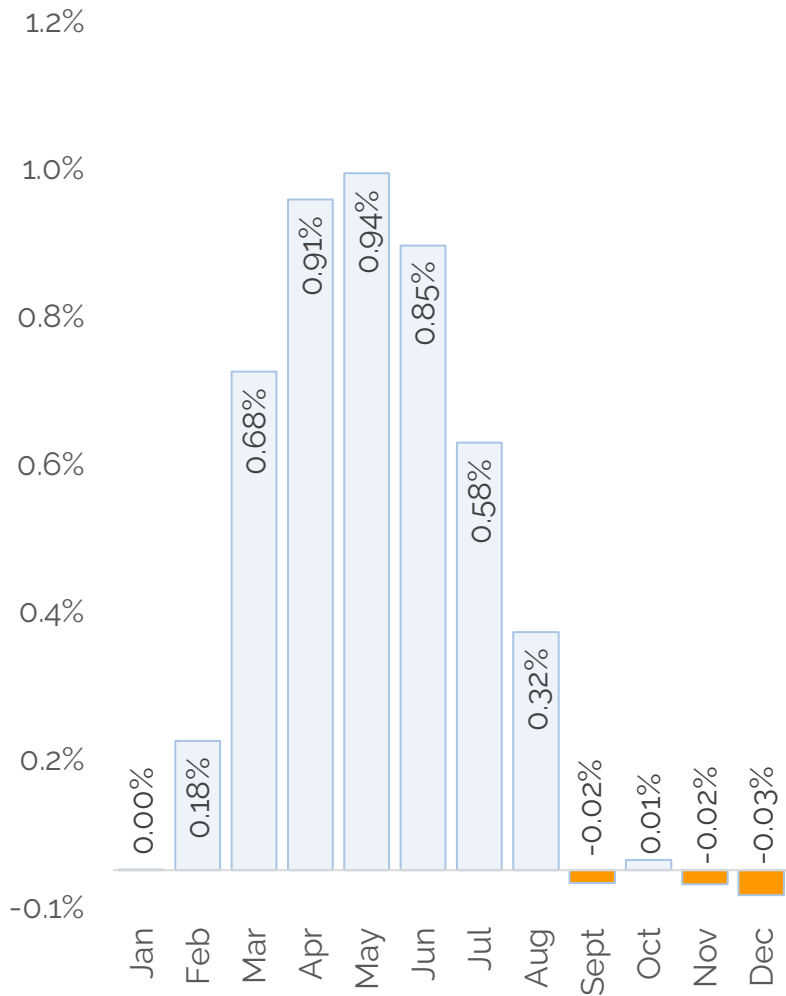
Year-over-Year % Change



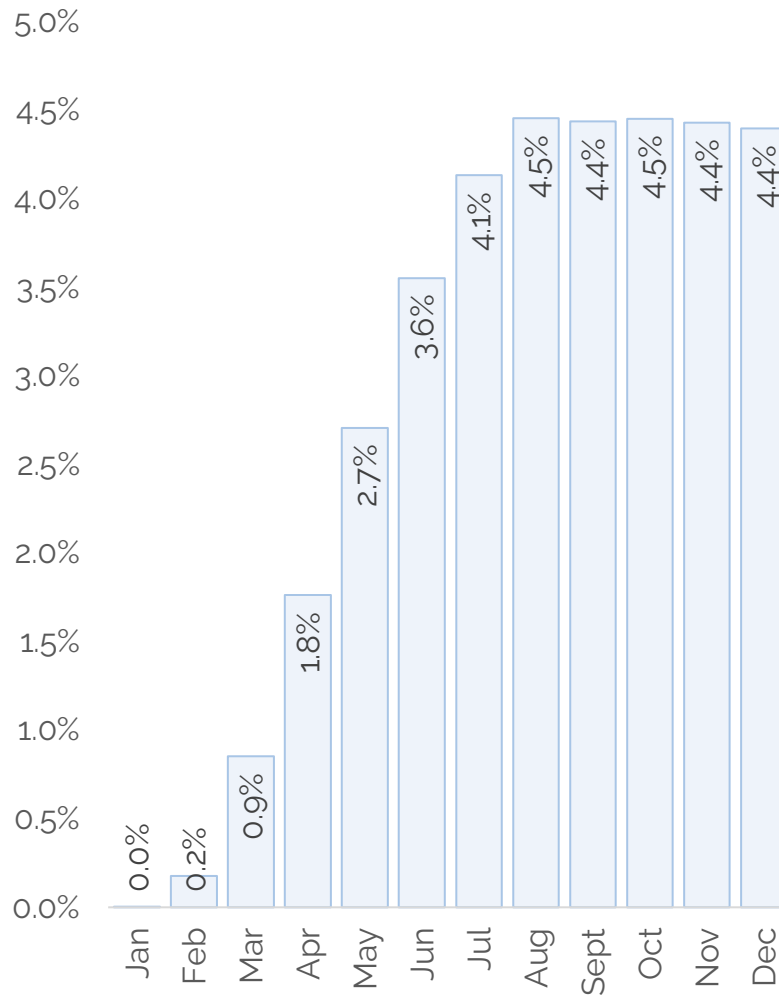
Source: S&P Case Shiller

~94% of annual home price appreciation occurs in the first 7 months of the year

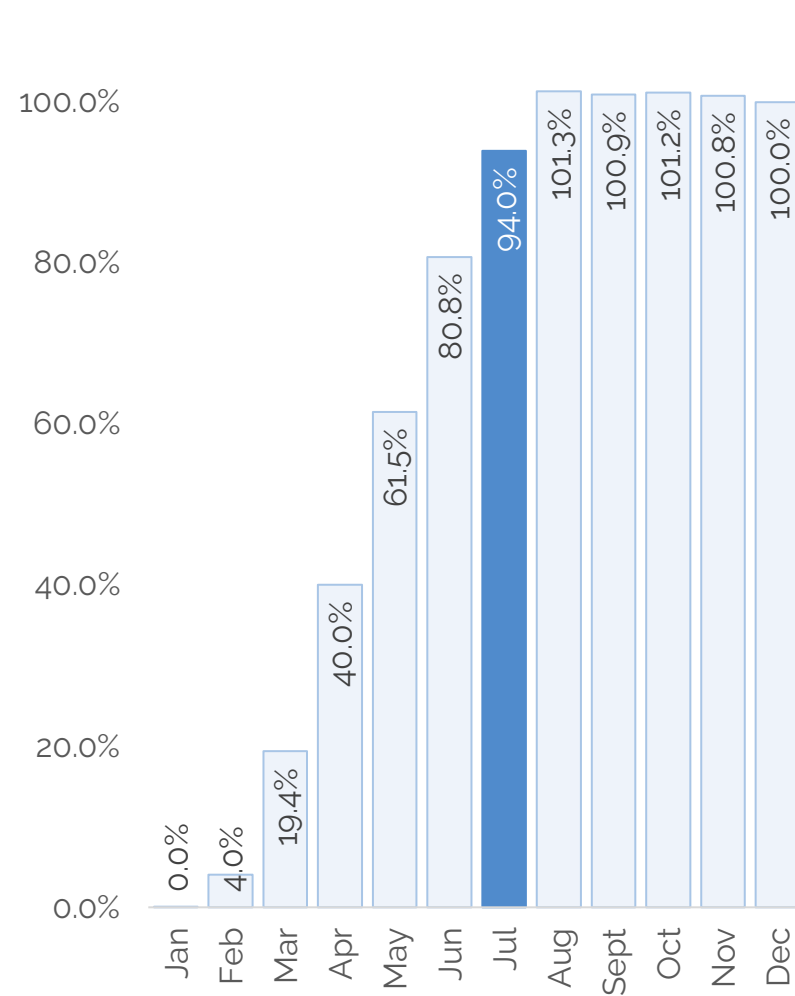
**Historical Average Monthly Home Price Appreciation % by Month**



**Historical Average Monthly Cumulative HPA**



**Historical Average Monthly Cumulative % of Total Annual HPA**



Source: S&P Case Shiller

*Housing affordability* has reached *historic lows* driven by *rising home values* and *rising interest rates*

### Housing Affordability

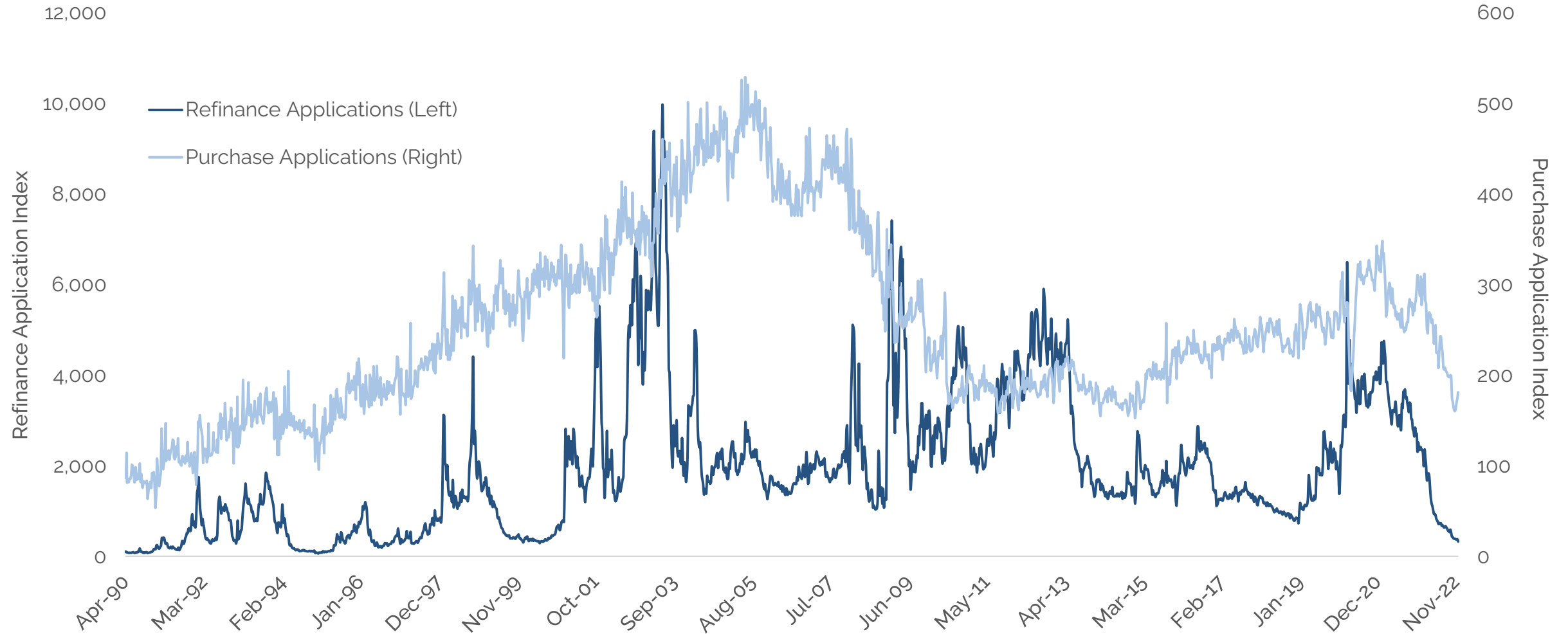


**2022**  
Housing affordability reaches historic low

Source: National Association of Realtors

*Demand*, as seen through *mortgage applications*, have *declined* with refinance activity virtually non-existent

### Mortgage Applications



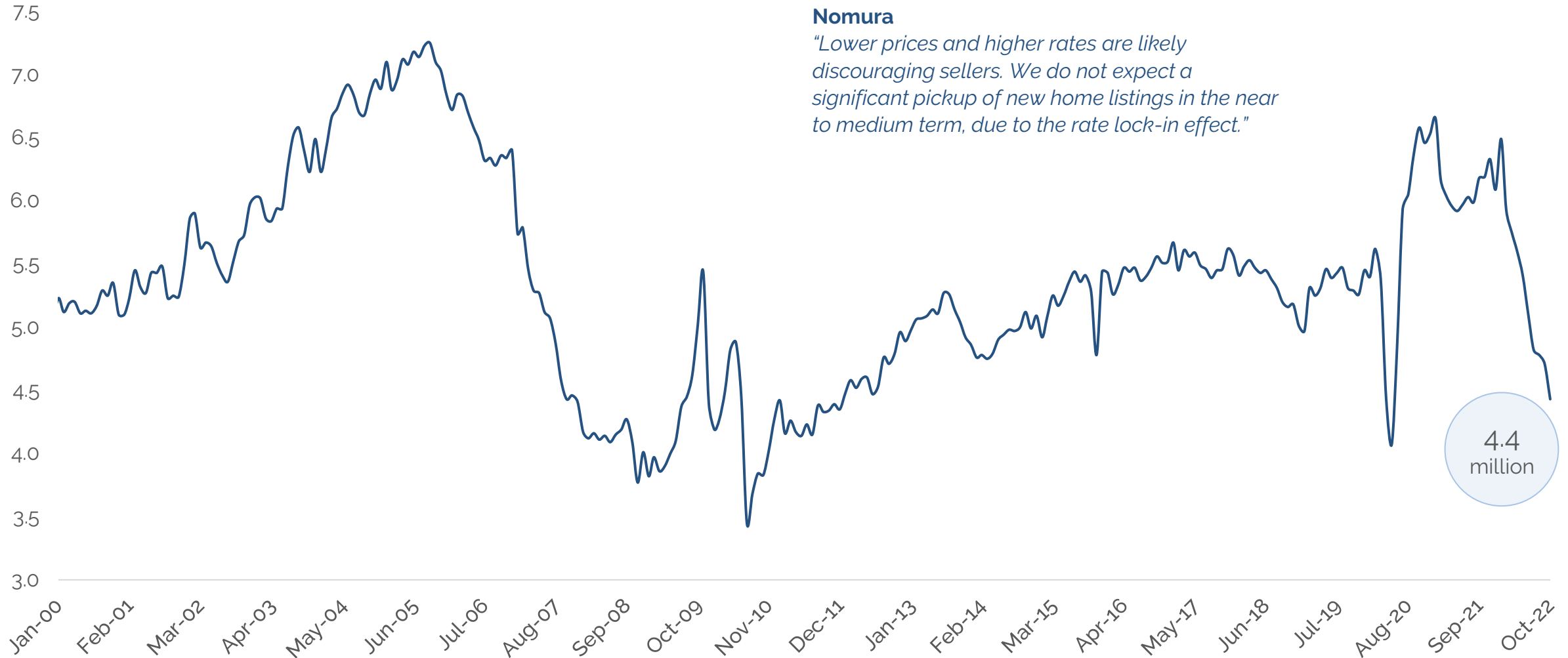
Source: Mortgage Bankers Association



Housing transactions related to *existing homes* are *down ~34%* since post-COVID peak; *likely to fall below 4MM*

### Existing Home Sales

Seasonally Adjusted Annual Rate, in Millions

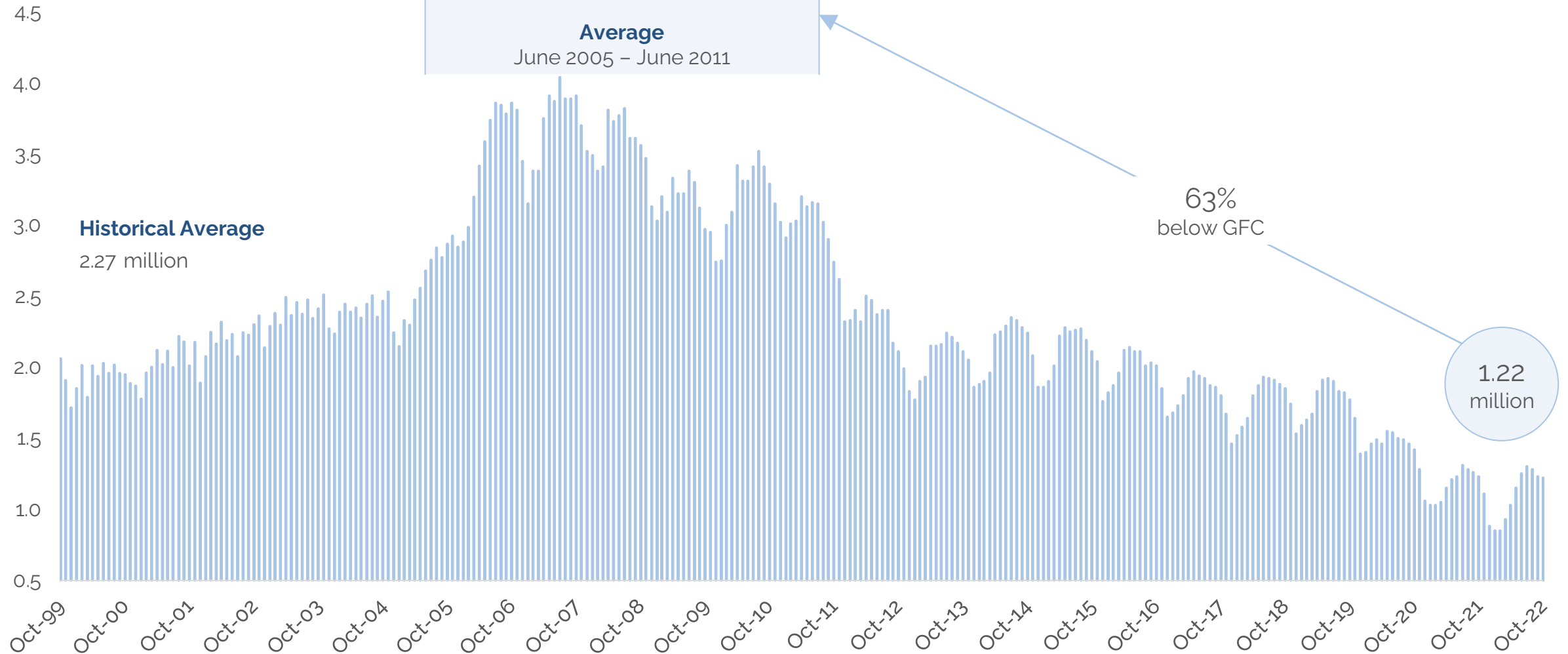


Source: National Association of Realtors

## Existing home inventory is at historic lows

### Existing Home Inventory

Non-Seasonally Adjusted, Millions



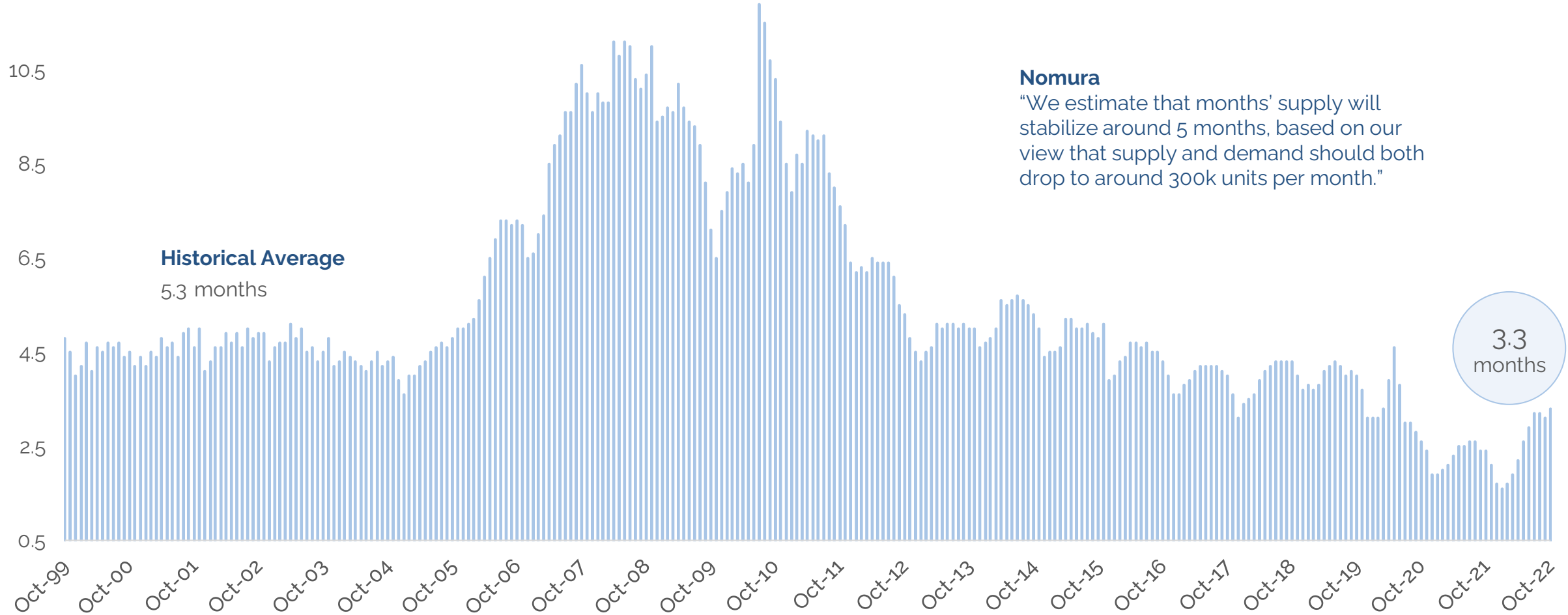
Source: National Association of Realtors

Months supply of existing homes has been increasing, but remains *well below historical parity* levels of 5-6 months

### Months Supply of Existing Home Inventory

Non-Seasonally Adjusted

12.5

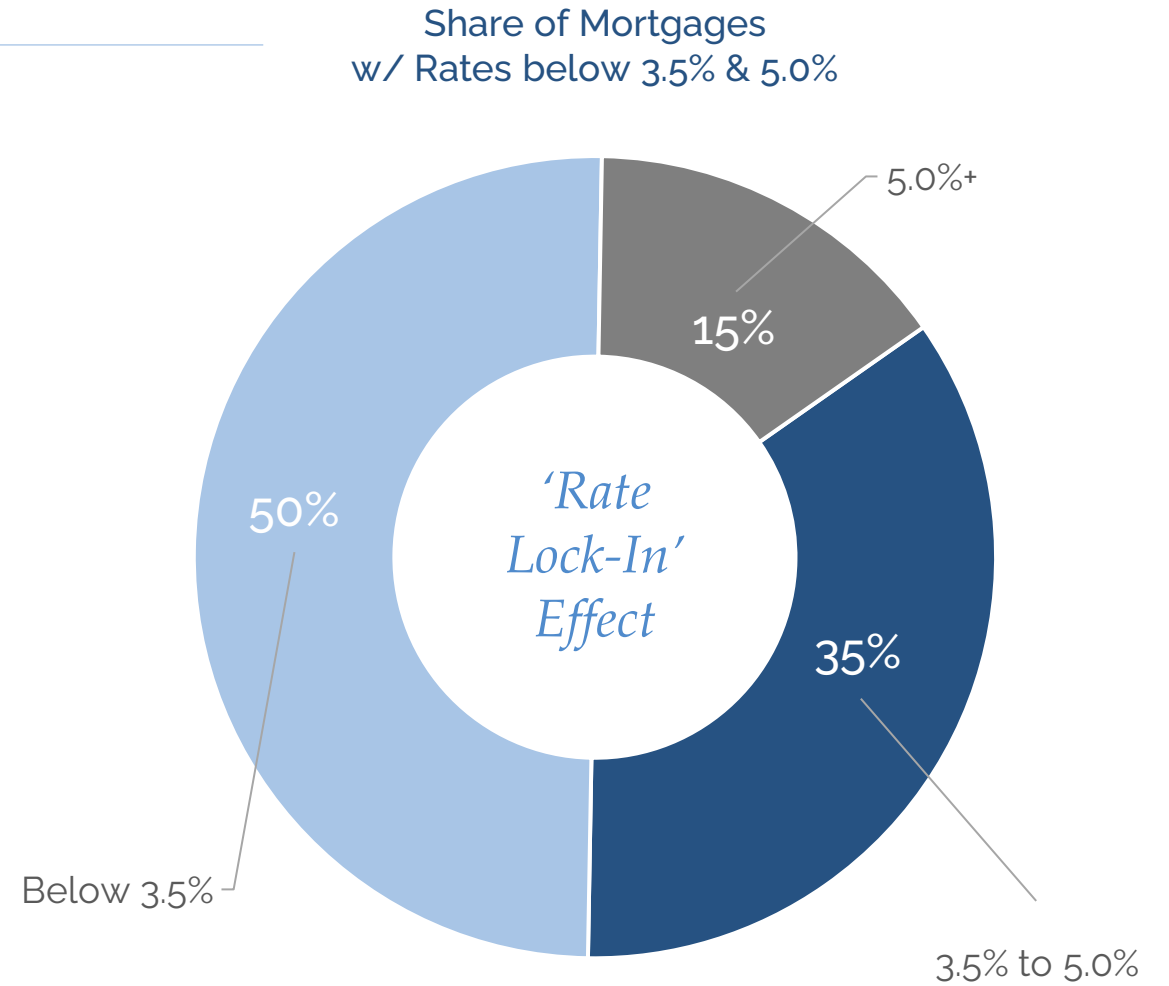


Source: National Association of Realtors

85% of existing mortgages have *rates below 5%* (~200 basis points out-of-the-money)

#### Rate Lock-In Effect

- Inventory is *unlikely* to come from existing housing stock
- Homeowners will not want to give up low-rate mortgages

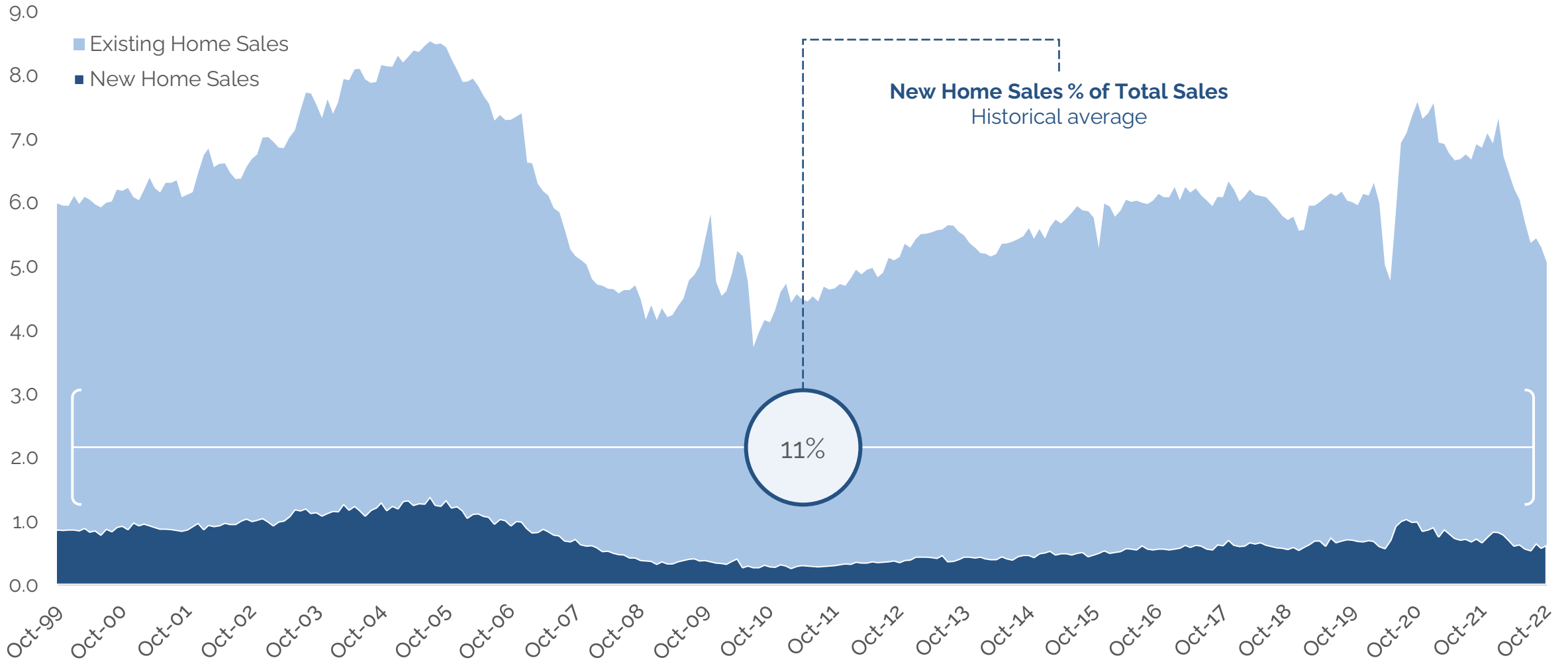


Source: Black Knight

## Total home sales have declined led by existing homes

### Existing & New Homes Sales (Stacked)

Seasonally Adjusted Annual Rate, in Millions



Source: Census Bureau

# Months supply of new homes is often quoted, but the *data is misleading*

## Months Supply of New Home Inventory

Seasonally Adjusted

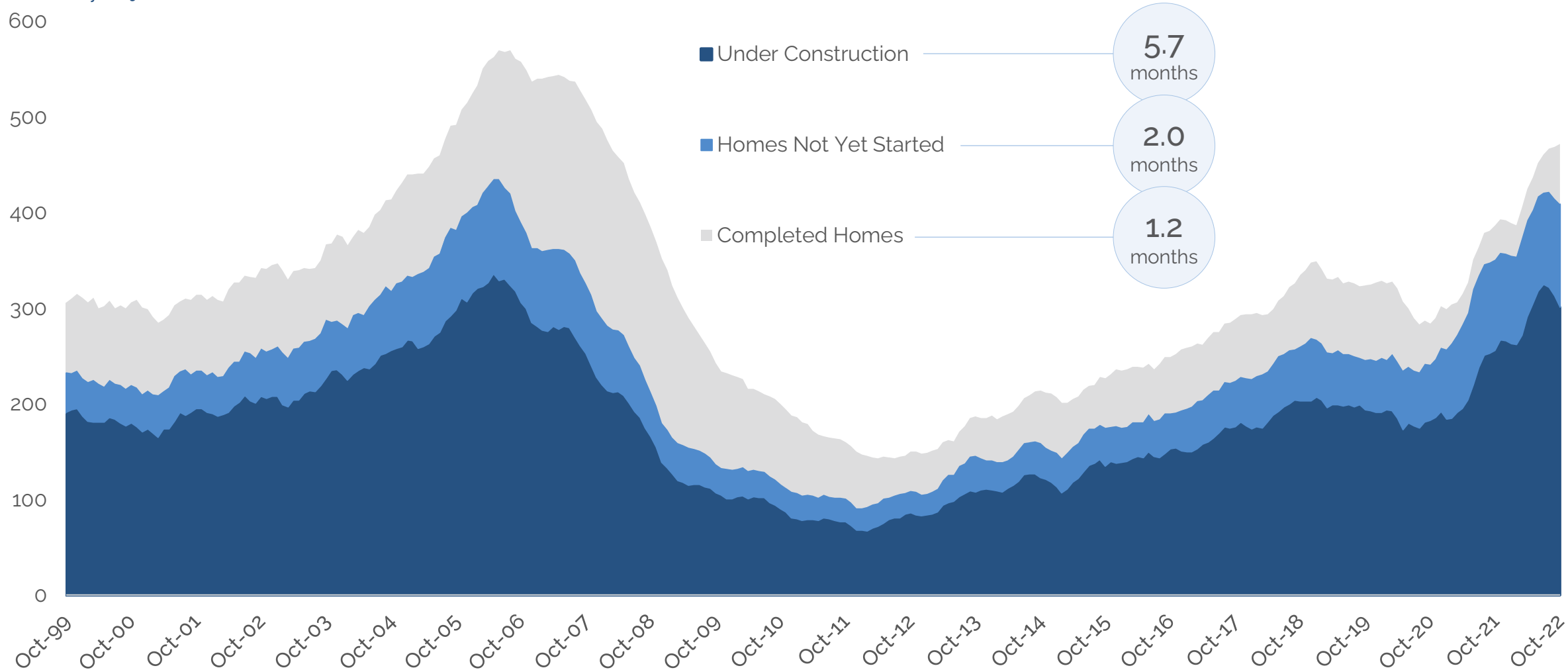


Source: Census Bureau

Only ~13% of new home inventory is represented by *completed homes*

### New Homes Inventory

Seasonally Adjusted Annual Rate, Thousands

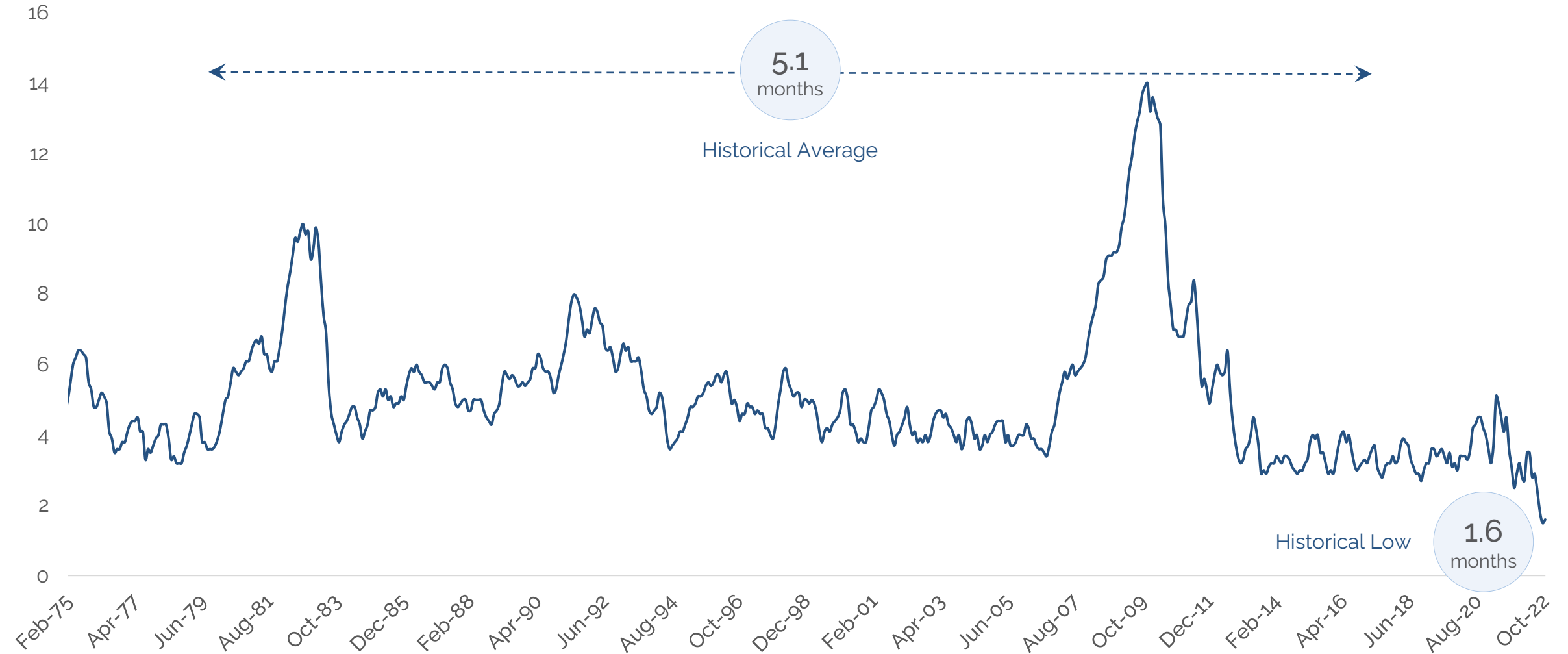


Source: Census Bureau

Slowing demand for housing is *overshadowed by the lack of inventory*

### Months to Sale Since Completion

Non-Seasonally Adjusted, Months



Source: Census Bureau

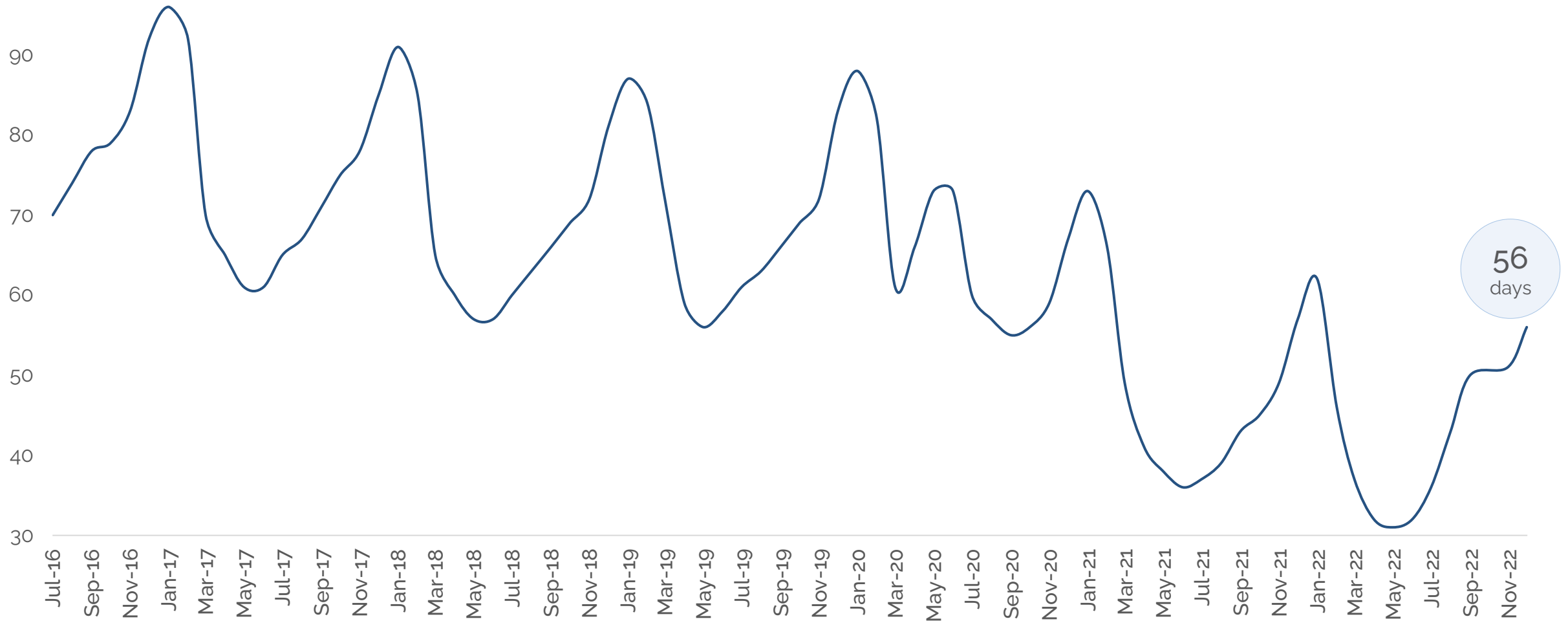


*Average days on market* for home listings remains low at *56 days*

### Median Days on Market

Non-Seasonally Adjusted, Days

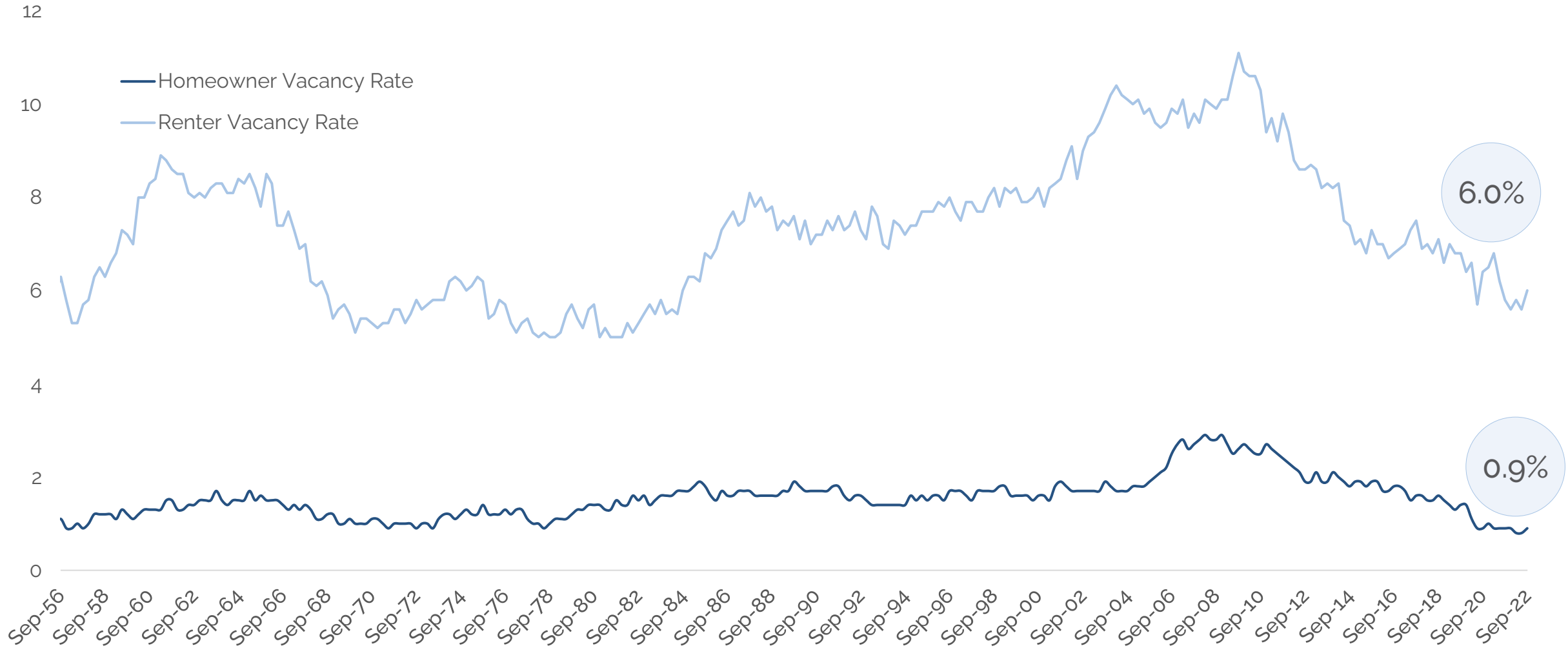
100



Source: St. Louis Fed

Vacancy levels across both owner and tenant occupied housing is at *historic lows due to undersupplied housing market*

### Homeowner & Renter Vacancy Rates (%)

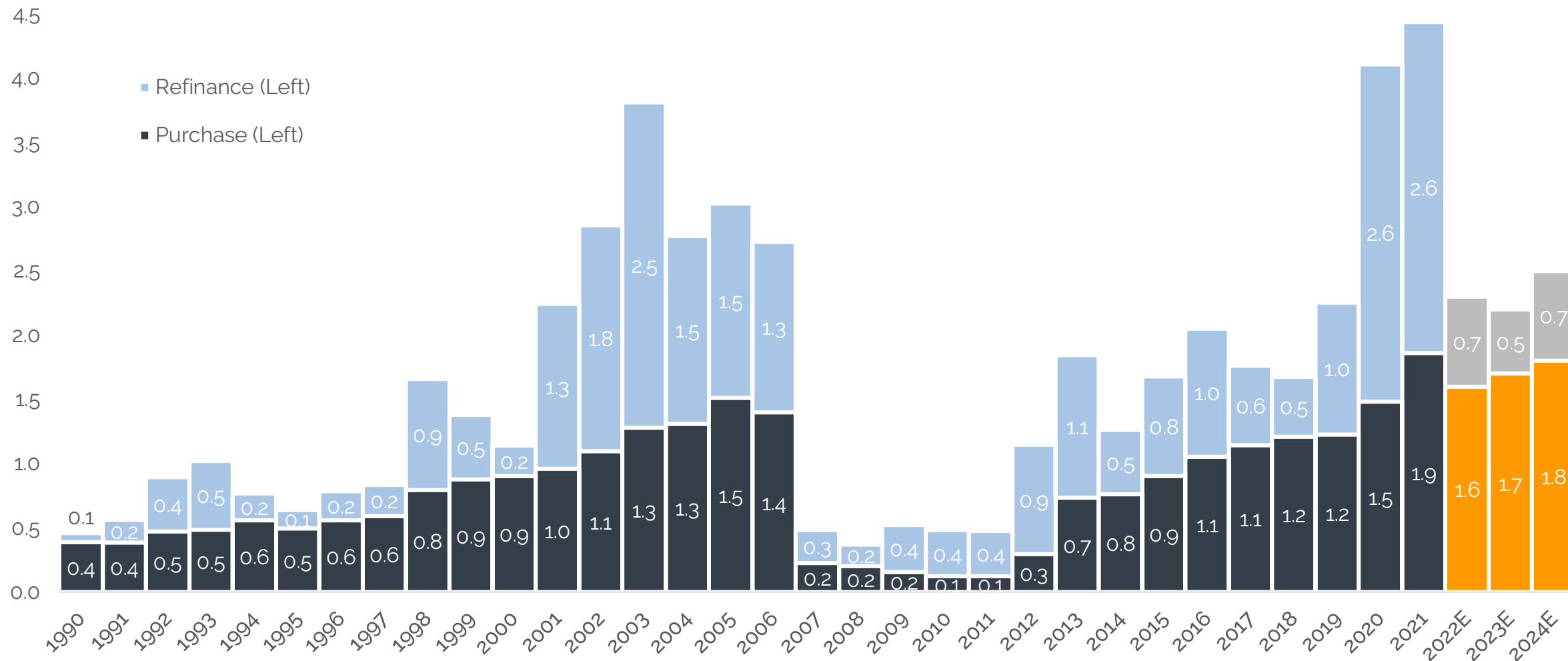


Source: Census Bureau

# Mortgage origination surged in COVID-era low-rate environment both for purchase and refinance activity

## Mortgage Origination Activity & Forecast

(\$ in billions)



Source: Mortgage Bankers Association

Mortgage payment to disposable income is at *historic lows (everyone bought or refinanced into low interest rate loans)*

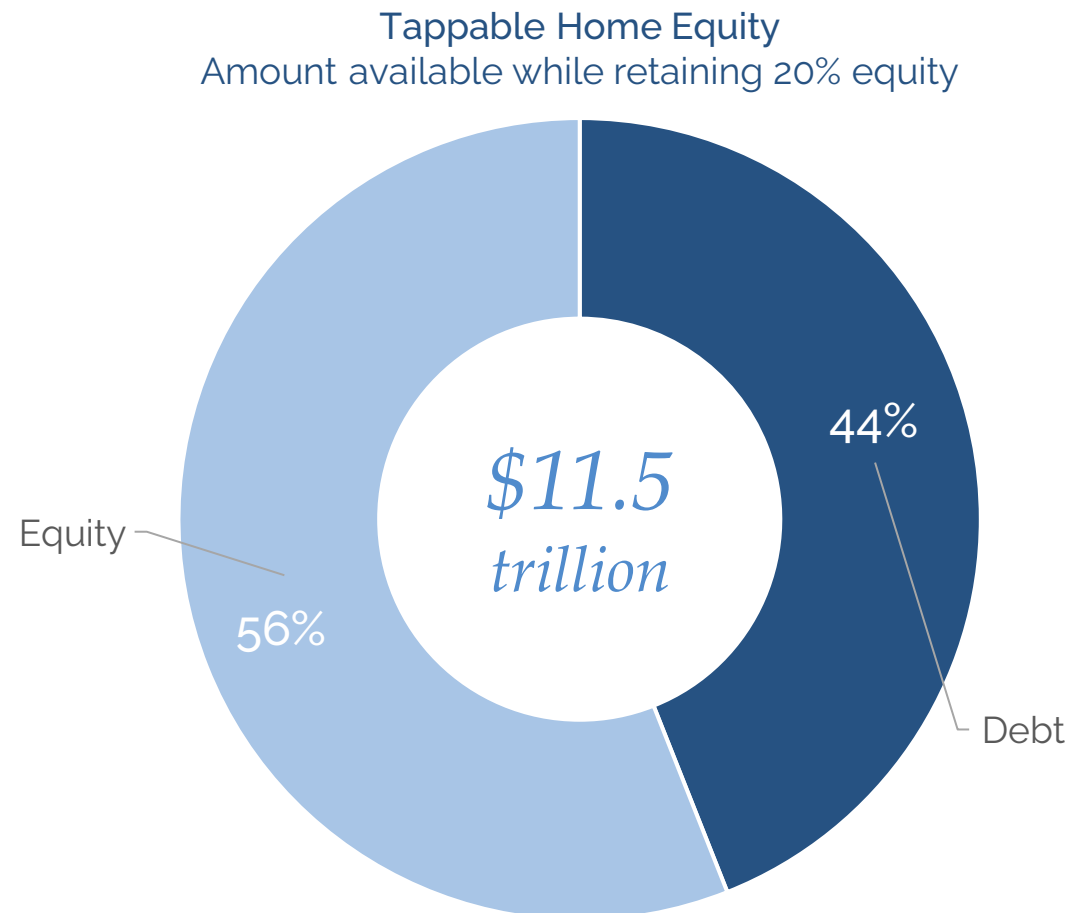
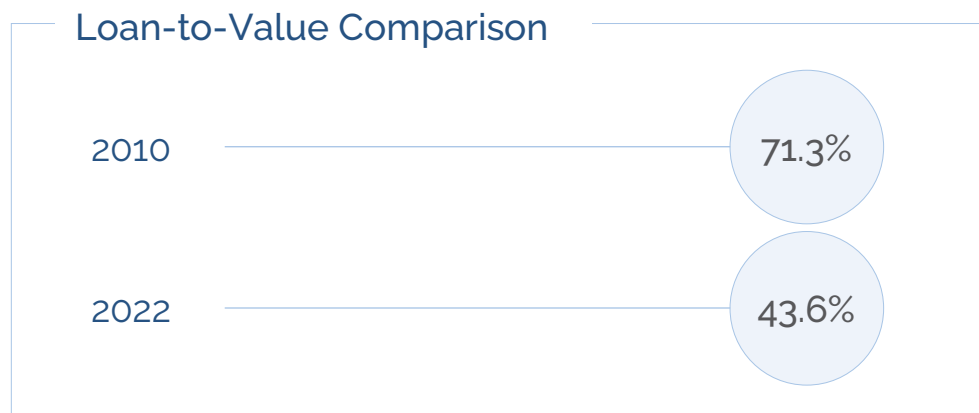
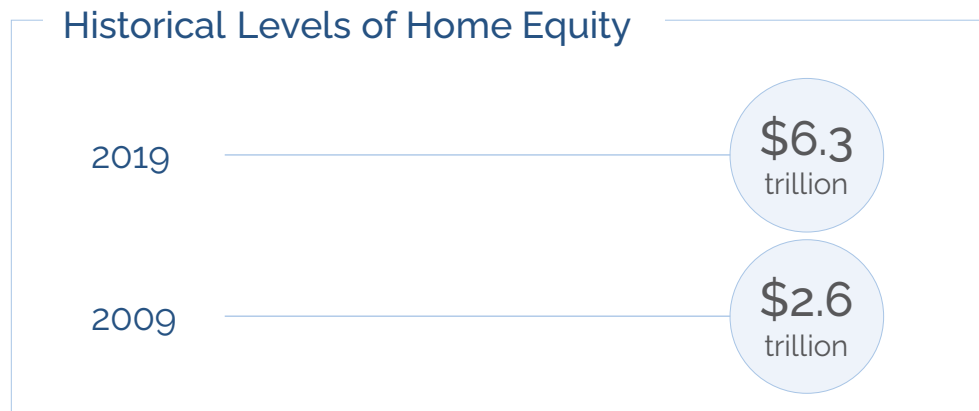
### Mortgage Debt Service Payments as % of Disposable Income

Seasonally Adjusted



Source: St. Louis Fed

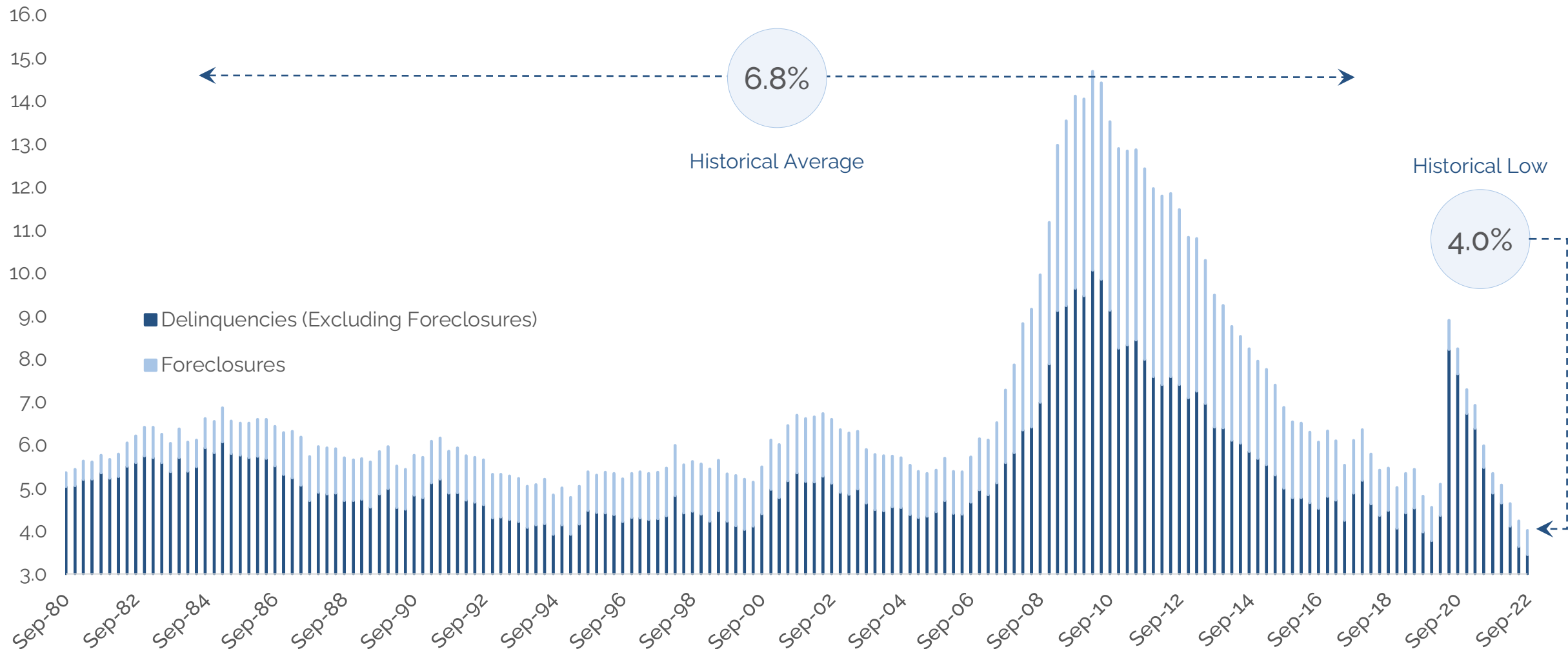
Historically high levels of *home equity provides cushion* against recession driven credit risk



Roughly *3.6% of the 53 million mortgages* outstanding in the U.S. have *10% equity or less*.

Delinquent loans and those in foreclosure are *trending at historic lows*

### Delinquencies & Foreclosures as % of Total Loans

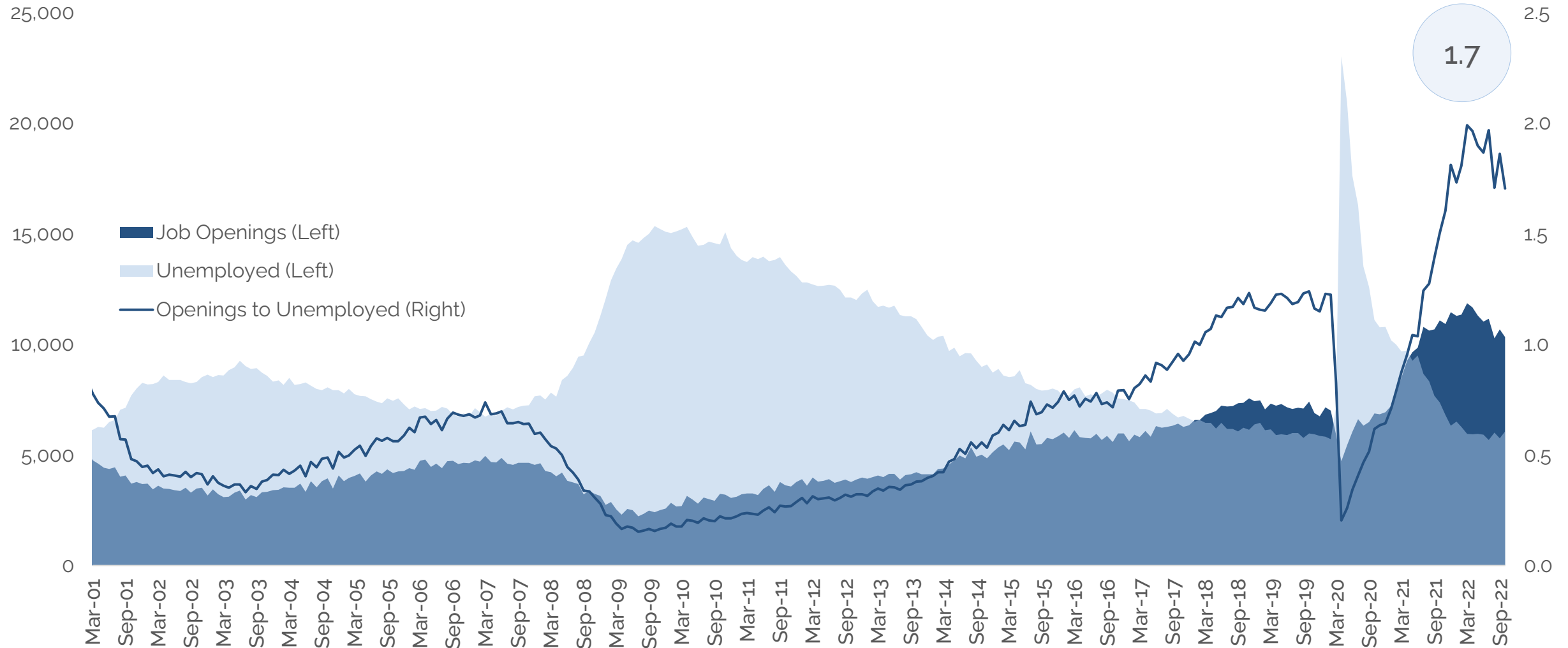


Source: Mortgage Bankers Association

# Nearly *2 job openings* for every *unemployed worker* in the US

## Job Openings per Unemployed Worker (Seasonally Adjusted)

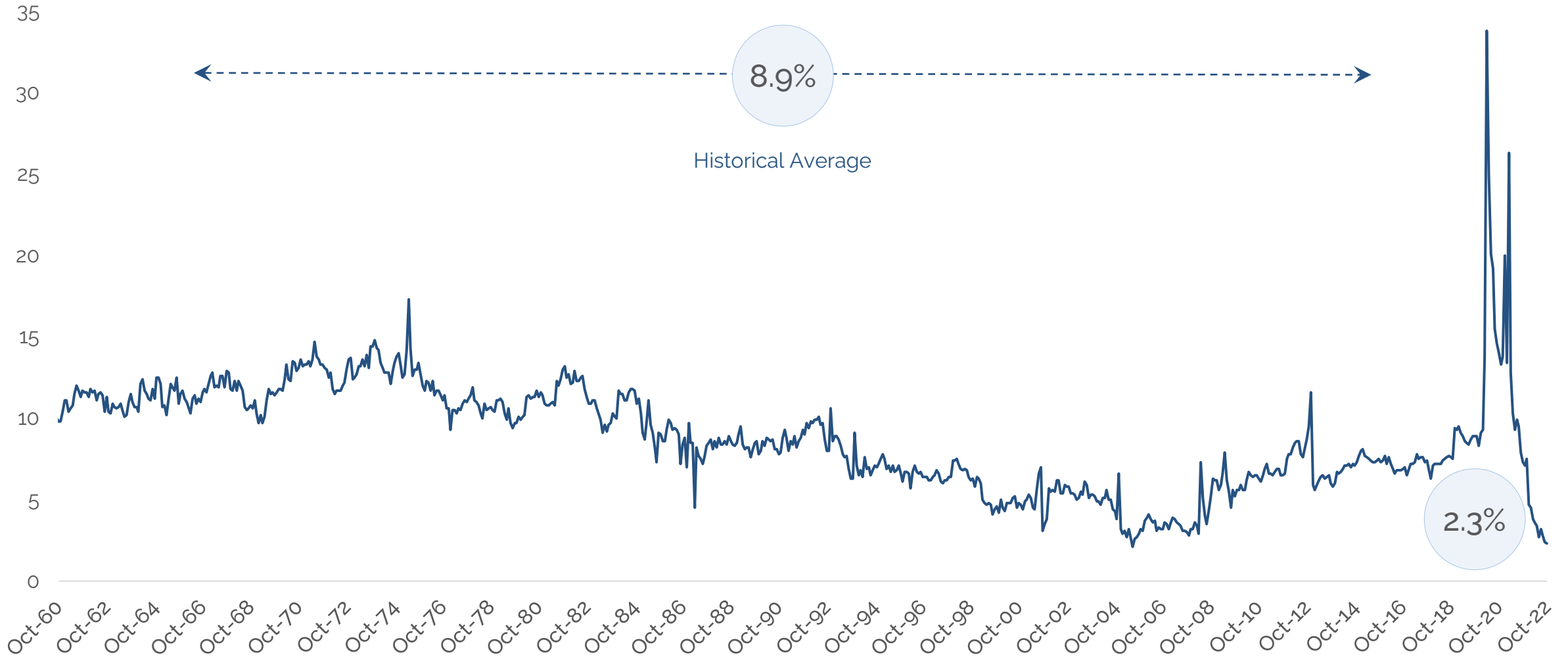
Left Axis: # in Thousands; Right Axis: Ratio



Source: Bureau of Labor Statistics

*Signs of stress* may be emerging as *savings rates decline*

### U.S. Personal Savings as % of Disposable Income



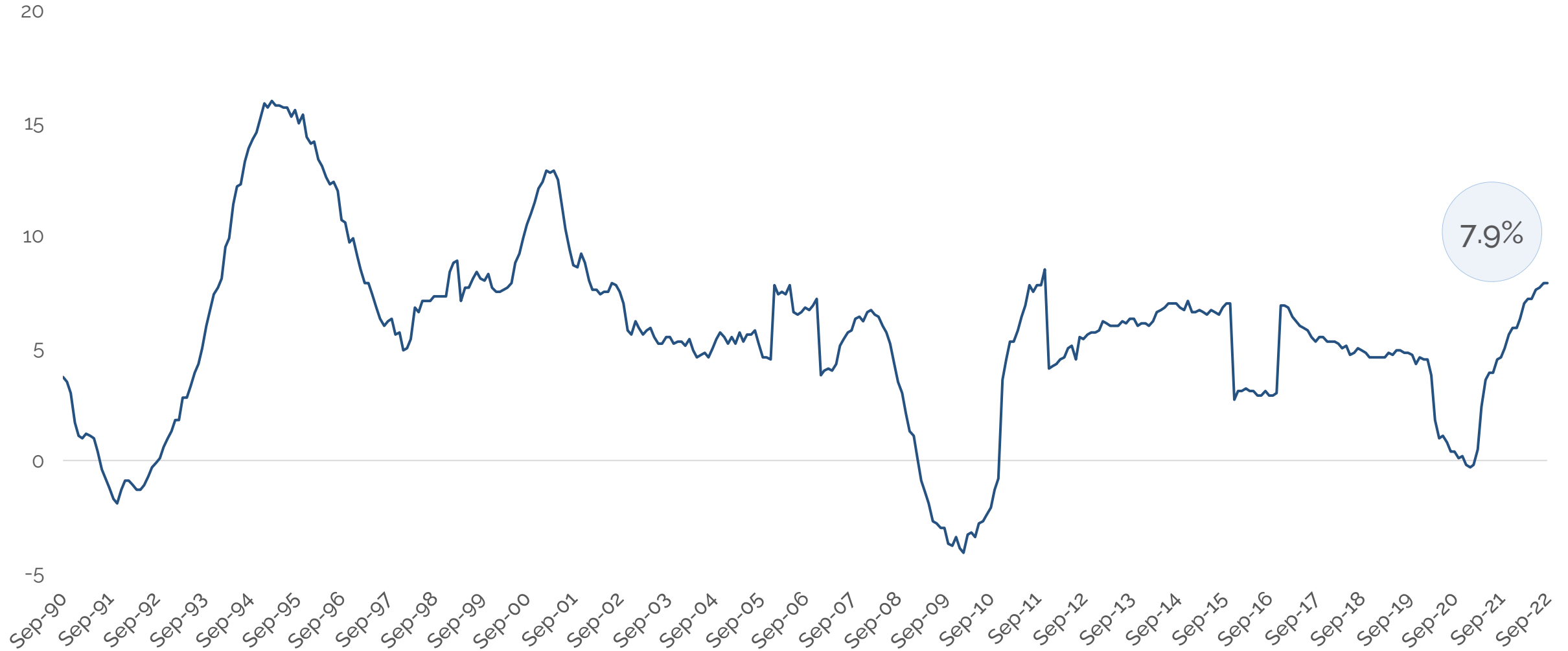
Source: Bureau of Economic Analysis



# Consumers have gone back to the well on *credit card spending*

## Consumer Credit Outstanding

Year-over-Year % Change, Seasonally Adjusted

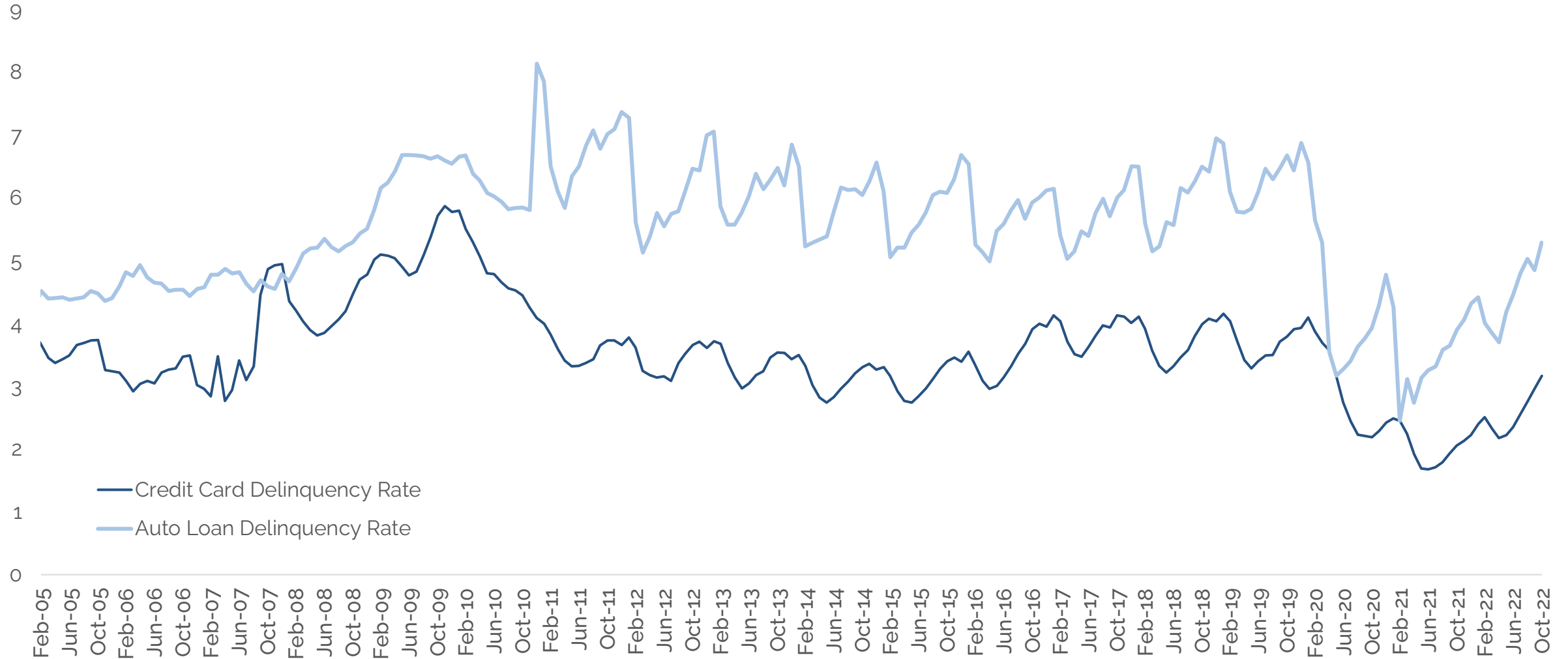


Source: Federal Reserve

*Credit card* and *auto loan delinquencies* are showing signs of weakness and delinquencies are on the rise

### Capital One Credit Card & Auto Loan Delinquencies

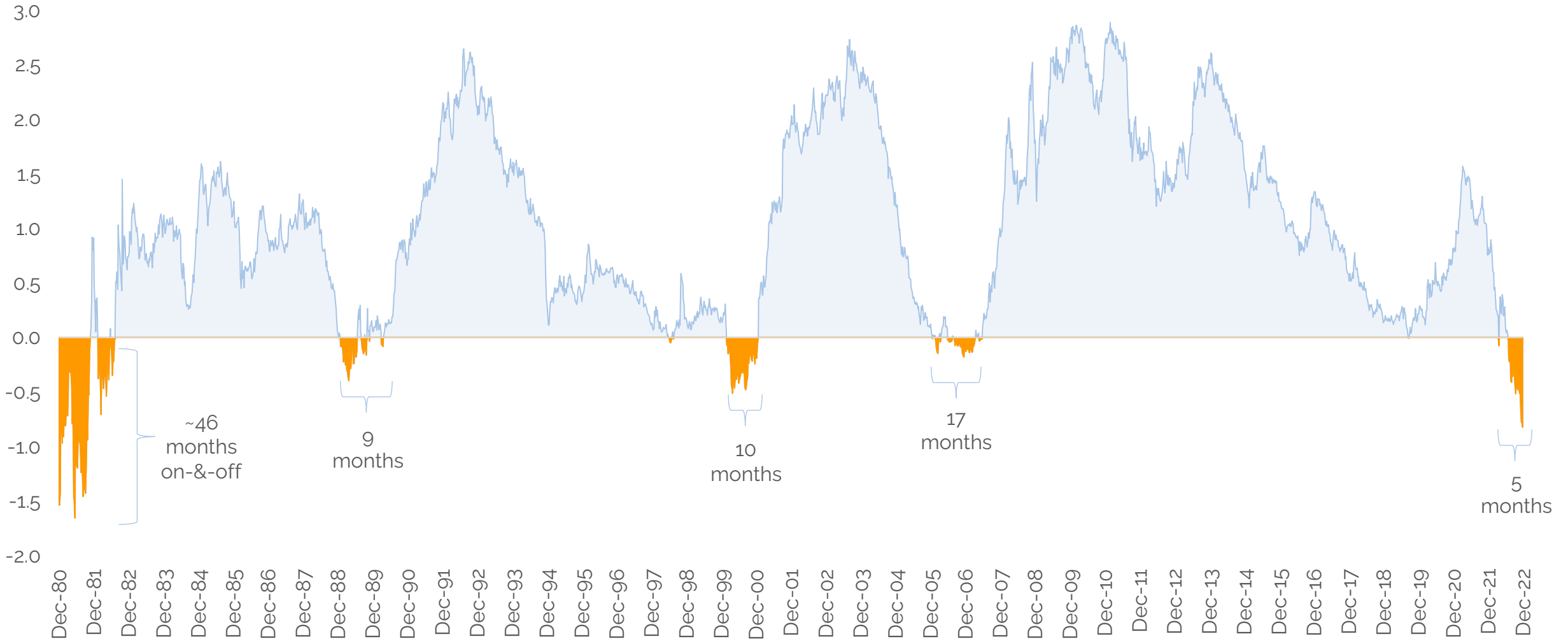
30+ Days Past Due (% of Total Loans)



Source: Capital One

*Inverted yield curve* creates *challenging* environment for levered strategies

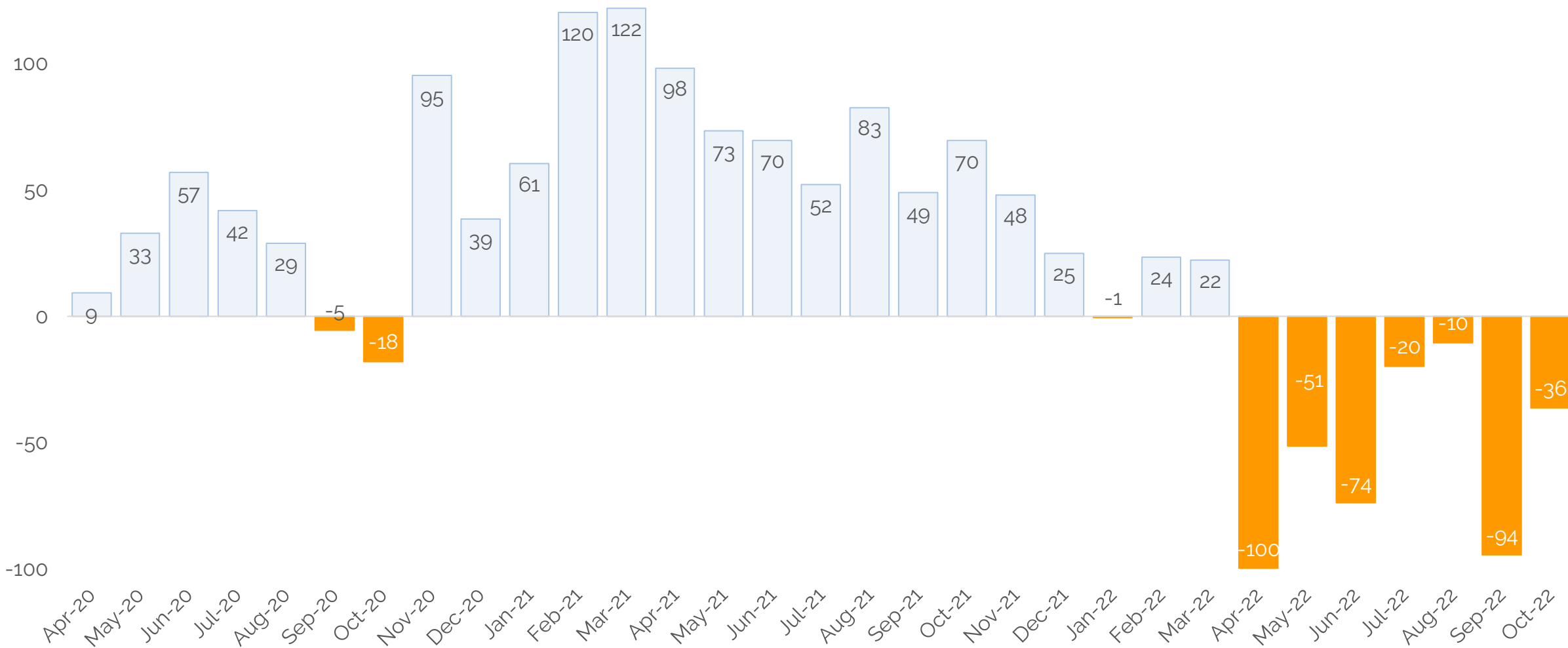
**Yield Curve Spreads**  
**10-Year vs 2-Year UST (%)**



Source: Bloomberg

Mutual fund & ETF *outflows* have left a significant *gap in liquidity* across fixed income markets

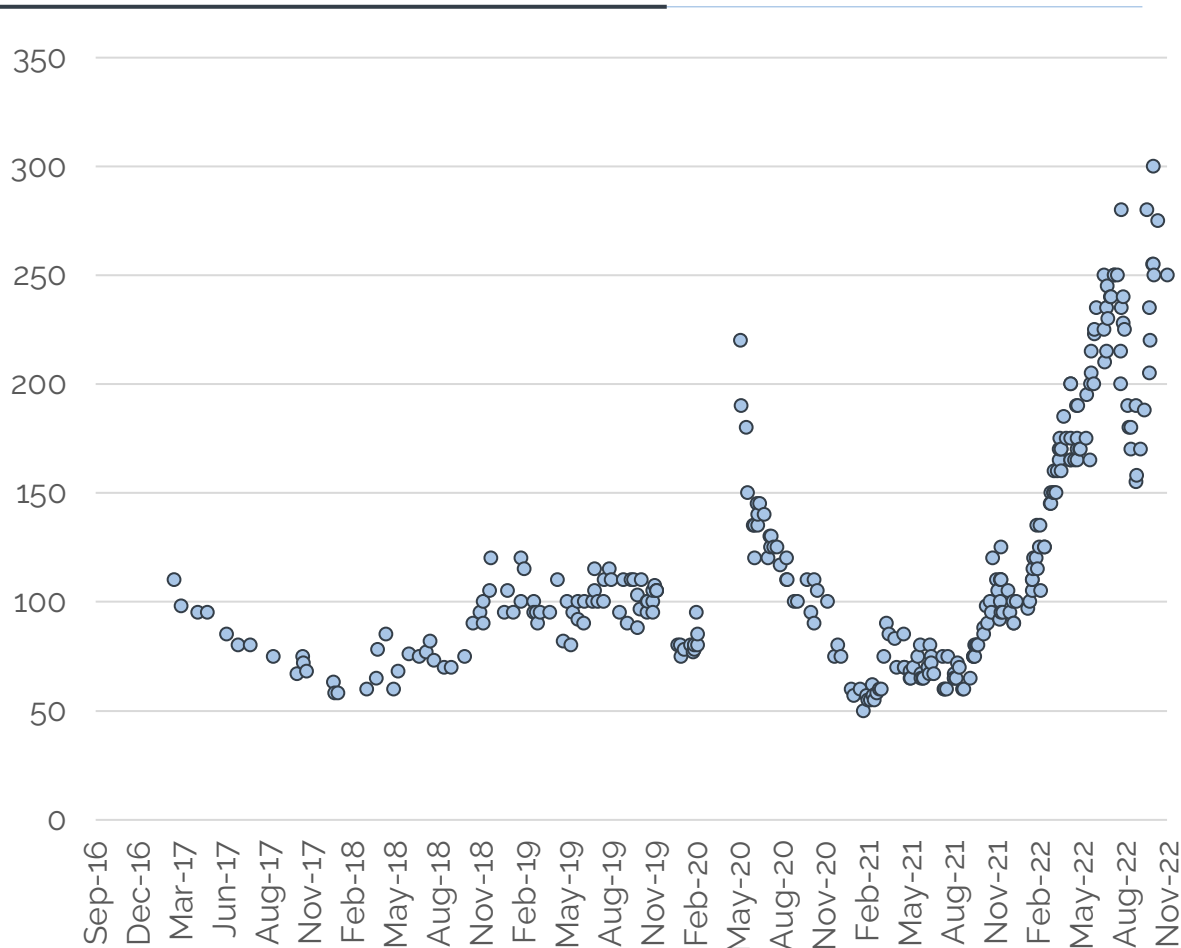
**US Mutual Fund and ETF Flows**  
\$ in Billions



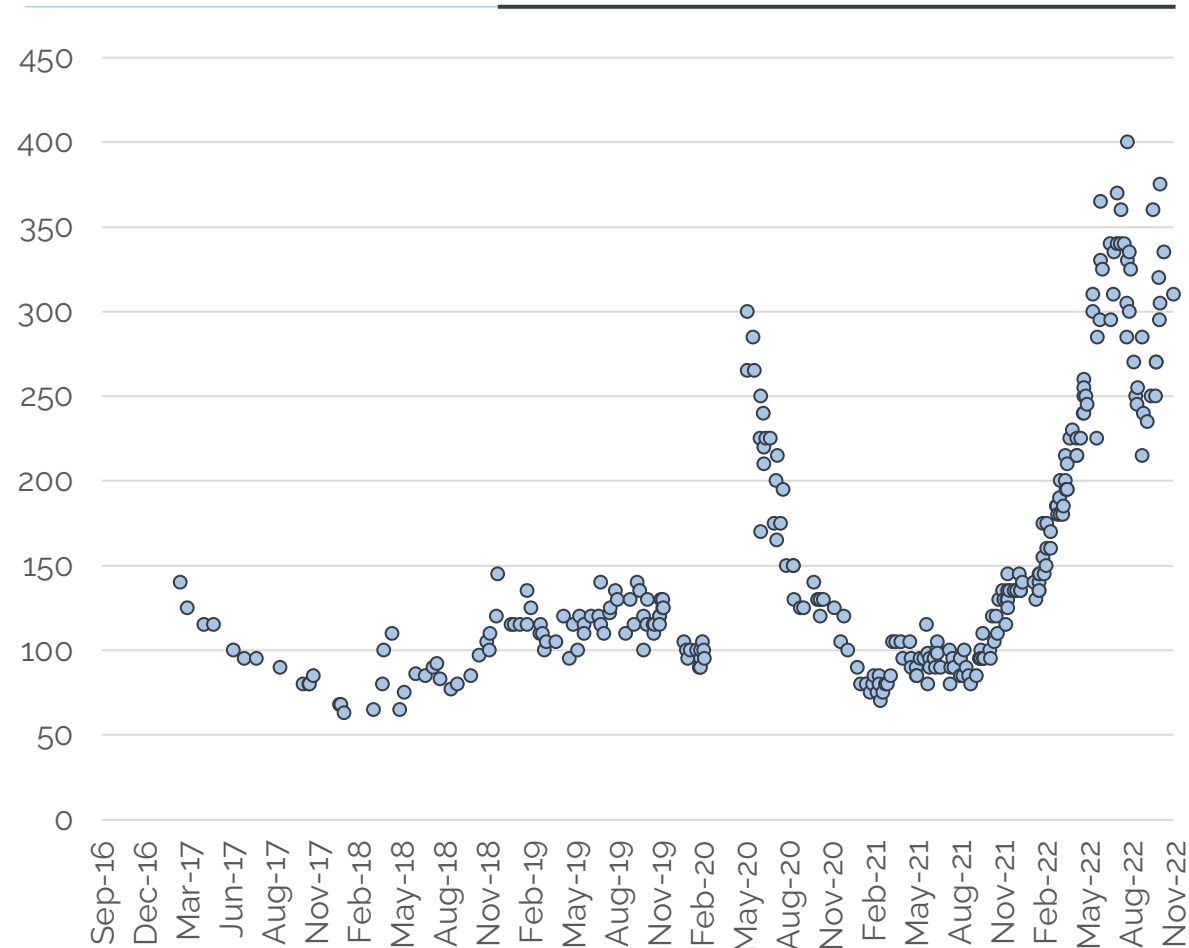
Source: Investment Company Institute

Widening of credit spreads on top of benchmark rates has created *attractive absolute bond yields*

NON-QM AAA  
CREDIT SPREADS (BASIS POINTS)

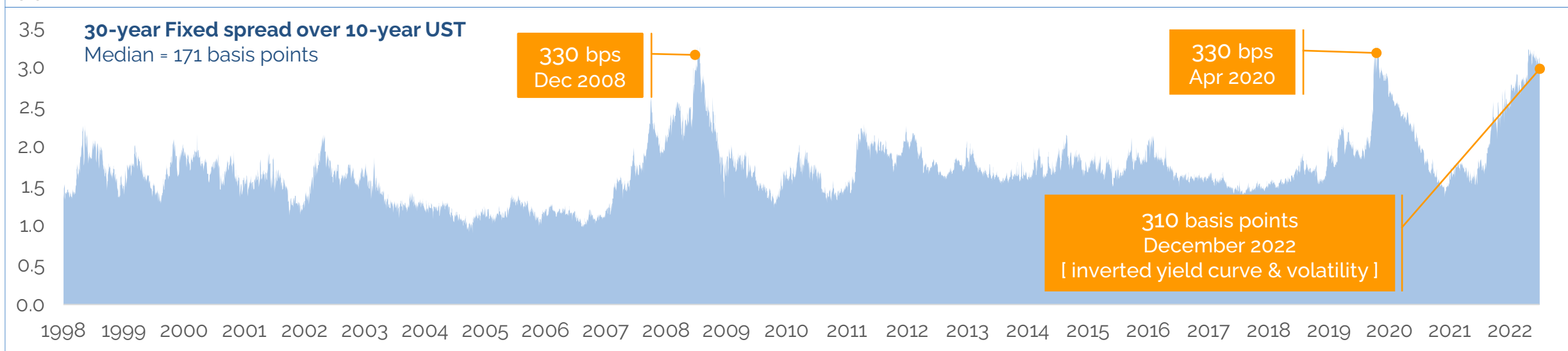
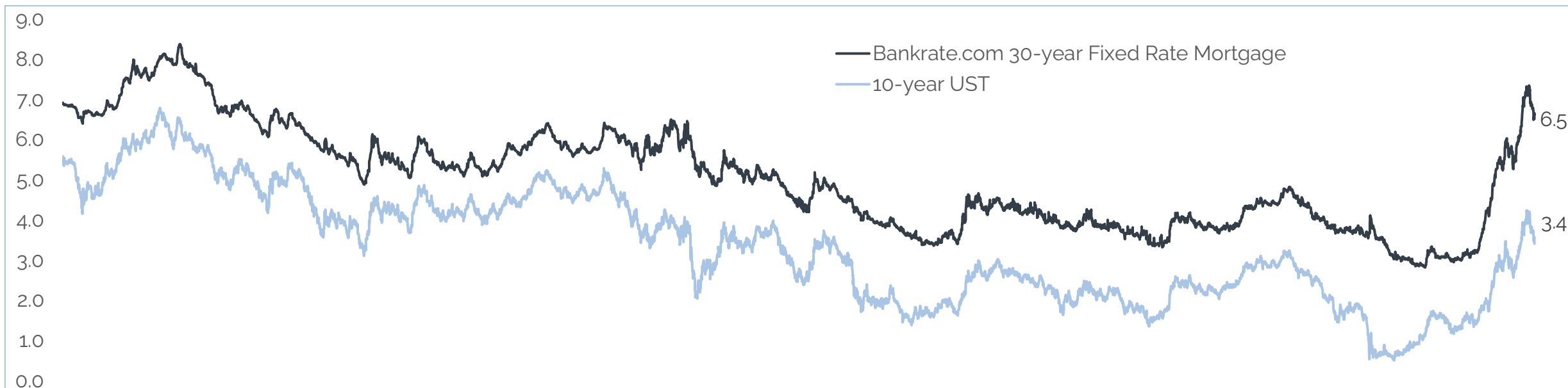


NON-QM AA  
CREDIT SPREADS (BASIS POINTS)



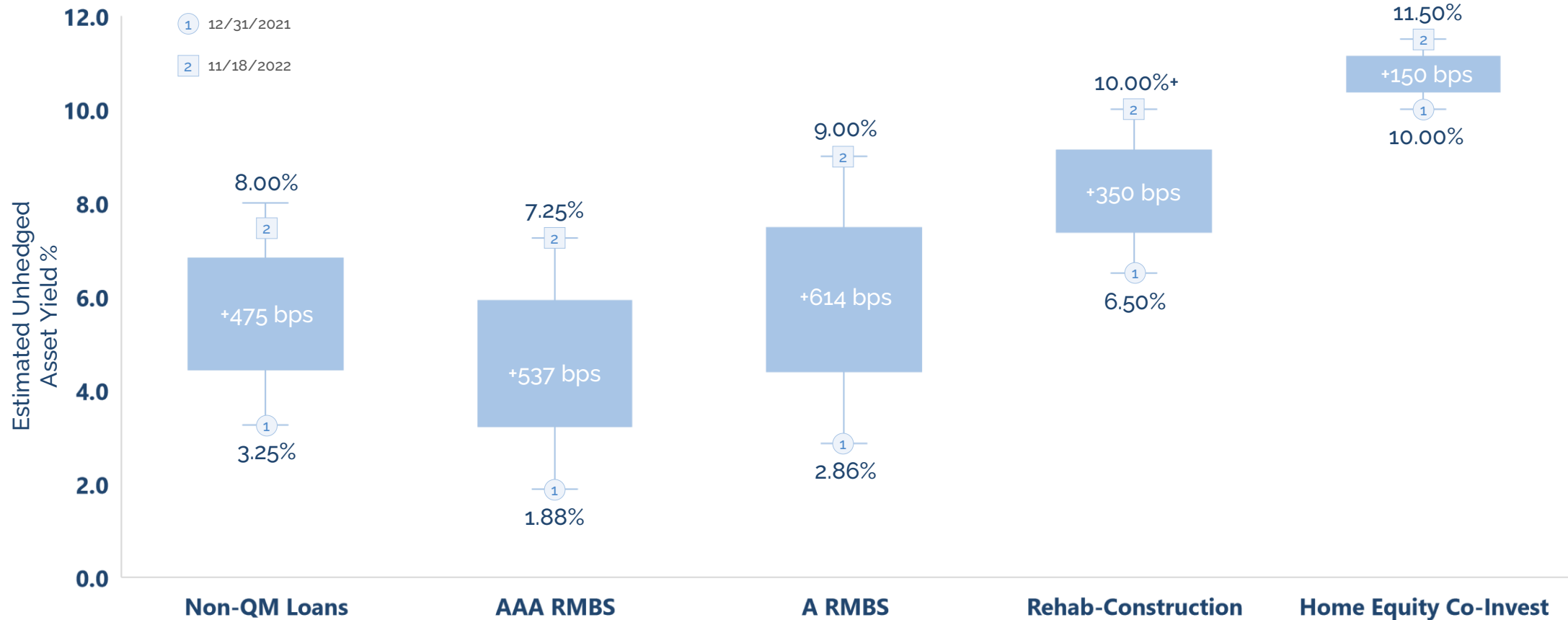
Source: Nomura

30-year fixed rate mortgage *spread* of 10-year Treasury is at *historically wide levels*



Source: Bankrate.com, Bloomberg

*Duration risk* has been re-priced with both benchmark rates and *credit spreads widening*



Source: Palisades, Nomura

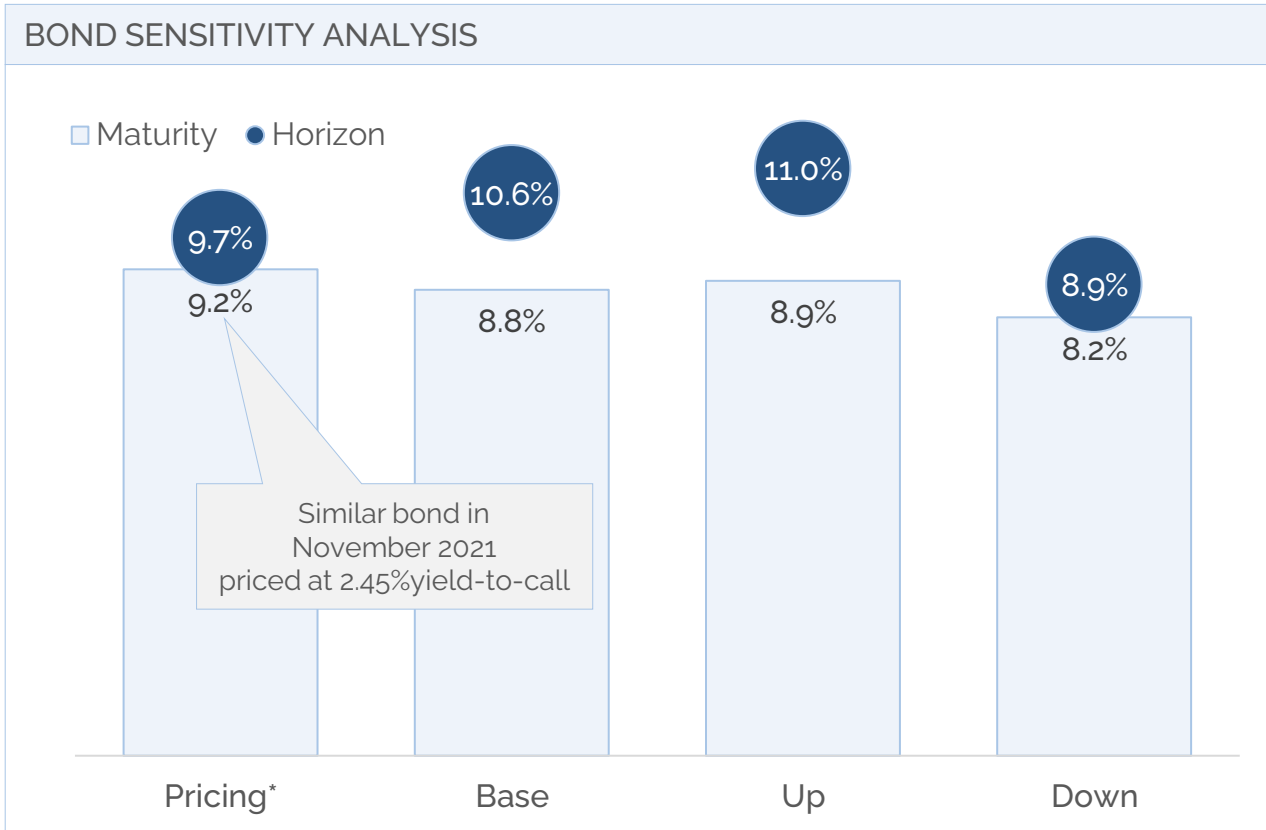
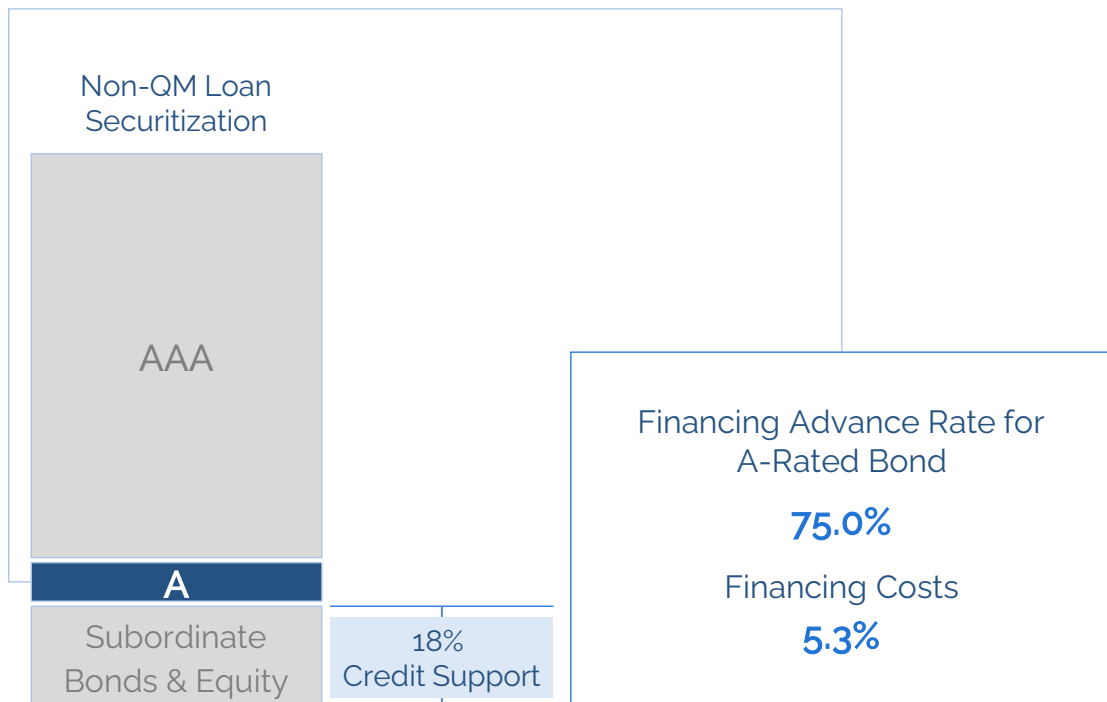


- What is most interesting in residential credit products today?
  - *RMBS*
  - *Non-qualified mortgages*
  - *Scratch-n-dent loans*
  - *Rehab/construction loans*



High grade RMBS presents *definable downside risk* with significant *upside skew*

IMPRL 2022-NQM7	
Collateral Type	Non-QM Loans / DSCR
WA Mortgage Rate	7.964%
WA Credit Score	745
WA LTV	72.1%



### BOND LEVERED EQUITY SENSITIVITY ANALYSIS

20.8%	19.2%	19.9%	17.2%
23.1%	26.5%	28.3%	19.6%

\* Pricing scenario run to issuer's optional call.

## Agency Loan Underwriting Defects (*Scratch-n-Dent*)

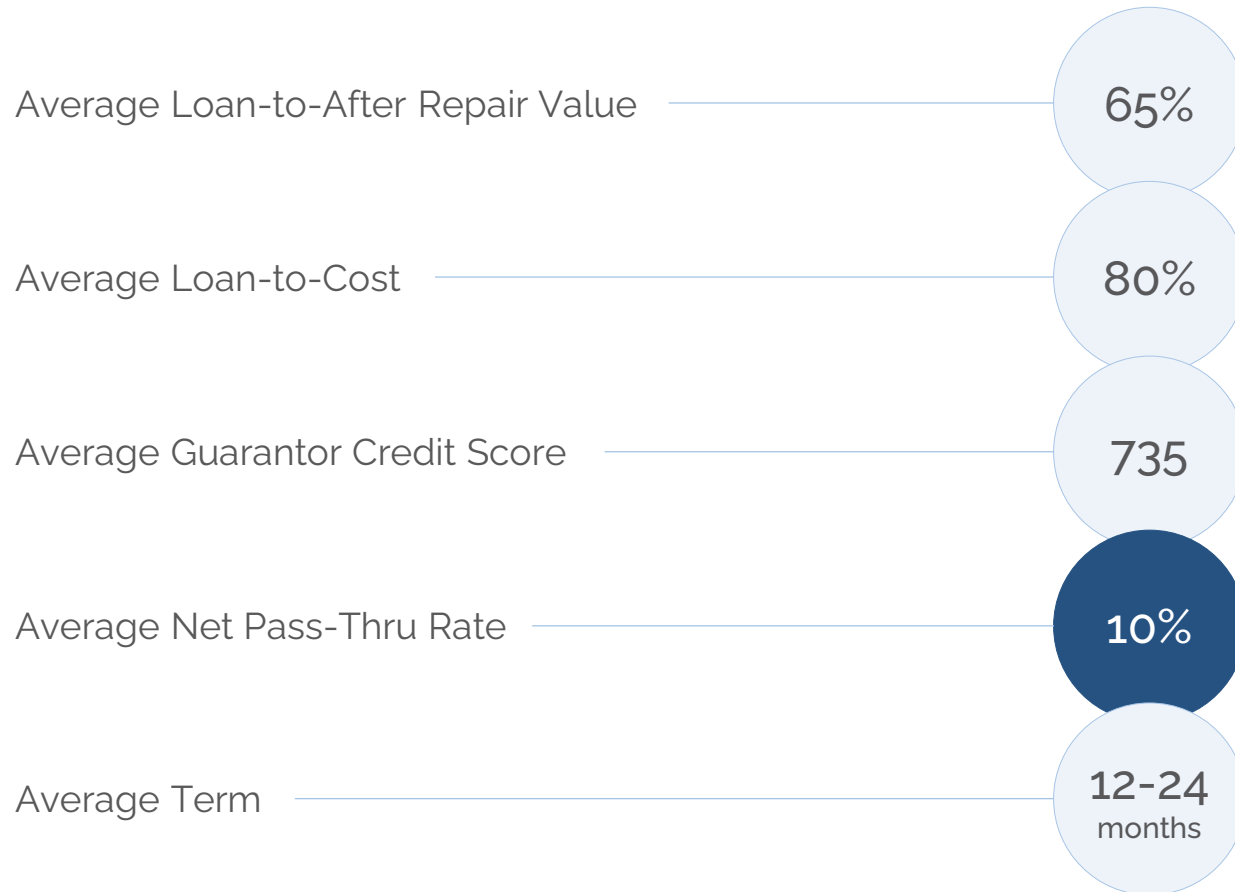
- **Product:** 30-year fixed consumer loans originated in 2020-2022 (low interest rates)
- **Eligibility Breaches:** income documentation, title, or other underwriting defects
- **Credit Risk:** significant equity and super prime borrower credit profile reduces default risk
- **Collateral Protection:** purchase price attaches at ~40-50% of property value; 50-60% cushion

COLLATERAL CHARACTERISTICS	
Seller	Money Center Bank
Amount	\$375 million
WA Mortgage Rate	3.43%
WA Credit Score	766
WA LTV	55.6%
Fixed Rate %	96.0%
Owner Occupied %	83.4%
WA Loan Age	36 months
Judicial State %	55.2%
Delinquency %	0.5%
Top State %	NY-31%; CA-16%
Clean Pay (24 / 12 months)	14.5% / 62.9%

SCENARIO----->	BASE	UP	DOWN	TRADE <sup>(1)</sup>
Assumed Price	<b>70% (30% discount to loan balance)</b>			
Prepayment Speed	6.00	9.00	5.00	6.00
Default Rate	1.25	1.25	3.00	1.25
Loss Severity	15.00	15.00	25.00	15.00
Cumulative Defaults	11.12%	8.96%	25.55%	11.12%
Cumulative Loss	1.67%	1.34%	6.36%	1.67%
Advance Rate	80.0%	80.0%	80.0%	80.0%
Avg. Forward SOFR	4.0%	4.0%	4.0%	4.0%
Spread	2.5%	2.5%	2.5%	2.5%
<b>Cost of Funds</b>	<b>6.5%</b>	<b>6.5%</b>	<b>6.5%</b>	<b>6.5%</b>
<b>Asset Sensitivity</b>	<b>9.00%</b>	<b>10.36%</b>	<b>8.38%</b>	<b>11.10%</b>
<b>Levered Asset Sensitivity</b>	<b>19.08%</b>	<b>25.88%</b>	<b>15.98%</b>	<b>29.58%</b>

(1) Assumes loans are sold in Month #24 at 8% yield, or 75.2% of loan pool balance.

## Short Duration Rehab & Construction Loans



- *Borrowers*: professional builders and experienced developers
- *Collateral Protection*: significant cushion to final property value
- *Credit Risk*: mitigated by experience and credit quality of borrowers
- *Interest Rate*: short duration loans with limited rate risk

## What we are seeing...

### Residential Credit Products

- Ability to buy *well-protected collateralized credit* and *cash flows* at attractive risk-adjusted returns
- *Duration risk* is much more balanced today than 12 months ago (positively skewed in the investor's favor)
- *Credit spreads* are more likely to compress than widen
- *Default risk* is manageable and, in some cases, can be accretive to returns

### Housing

- *Catalysts for Current Market Disfunction*: materially different than 2008 housing and financial crisis
  - **2008 (Credit Risk Environment)**: Leveraged credit bubble with excess housing inventory
  - **2022 (Rate Risk Environment)**: Contained credit risk and undersupply of housing units
- *Distressed Supply*: unlikely given current credit quality and home equity
- *Housing Inventory Levels*: Likely to remain below equilibrium due to 'rate lock-in' effect and homebuilders pulling back
- *Mortgage rates* have the potential to tighten further
- *Pent-up Demand*: Ongoing family formation expected to eventually be released in the form of excess demand

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