

**2022**  
**HOUSTON**

**Let's Make a Deal:  
Securing the Best Prices  
in a Volatile Market**



**OCTOBER 22 - 25 ANNUAL CONFERENCE & SHOWPLACE**



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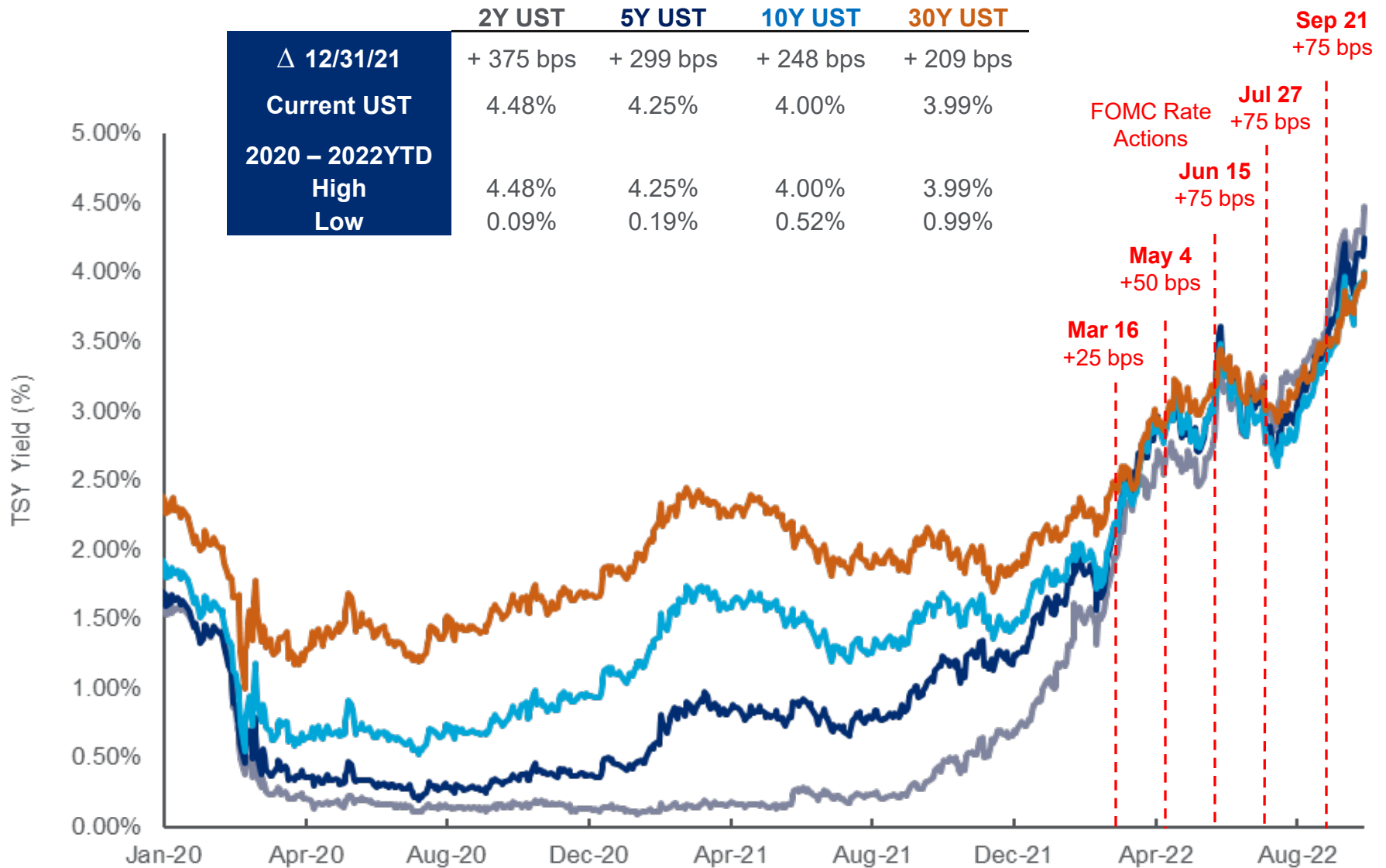
October 24, 2022



# Let's Make a Deal: Securing the Best Prices in a Volatile Market

*Market Backdrop*

# Treasury Market Performance (2020 - 2022YTD)



Source: Thomson Reuters as of October 14, 2022 and [www.federalreserve.gov](http://www.federalreserve.gov)

# Municipal Market Performance (2020 - 2022YTD)

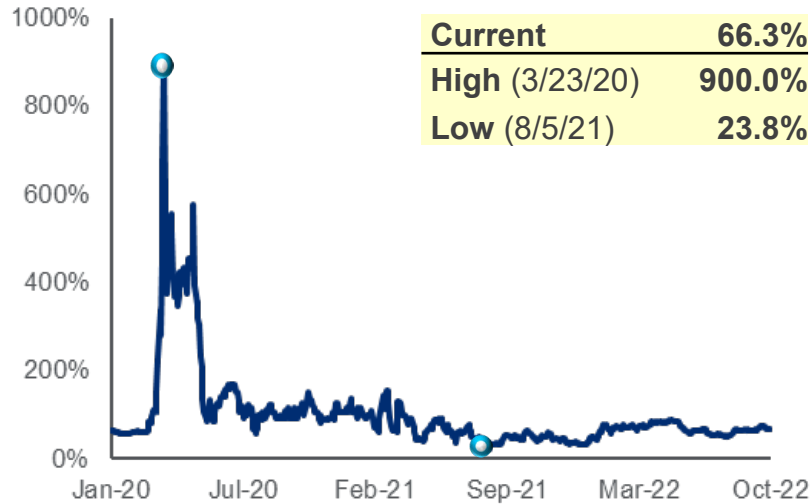


Weekly Mutual Fund Flows → **+\$40.6 billion in 2020**      **+\$101.7 billion in 2021**      **-\$100.4 billion in 2022YTD**

Source: Thomson Reuters as of October 14, 2022; Lipper fund flows as of October 12, 2022 (-\$47.5bn of outflows during 3/11/2020 – 4/8/2020).

# Tax-Exempt / Taxable Ratios (2020 - 2022YTD)

## 2-Year MMD / UST Ratio



## 5-Year MMD / UST Ratio



## 10-Year MMD / UST Ratio



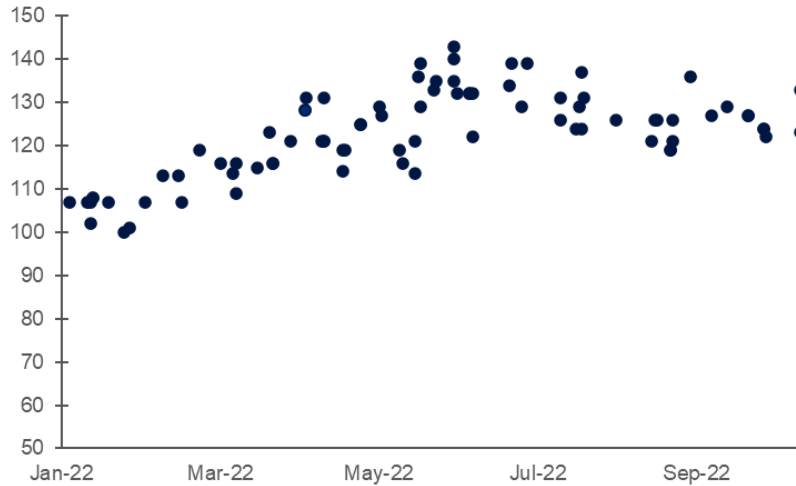
## 30-Year MMD / UST Ratio



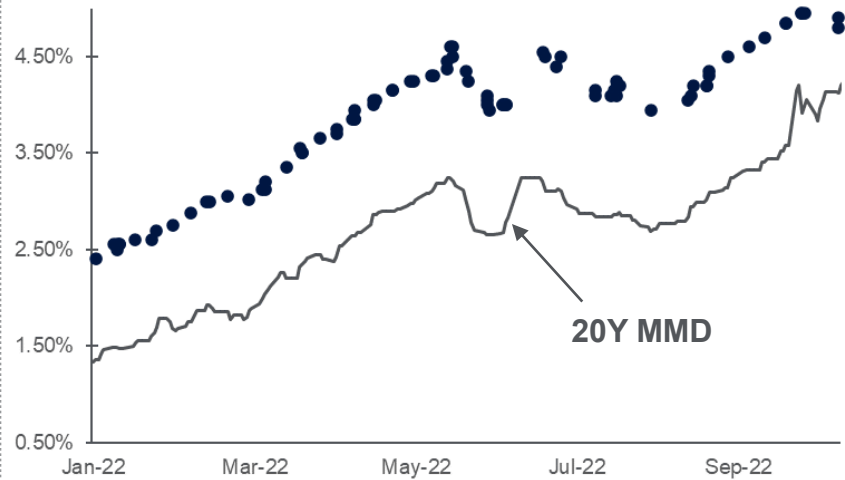
Source: Thomson Reuters as of October 14, 2022.

# Housing Bond Pricing Spreads and Yields 2022YTD

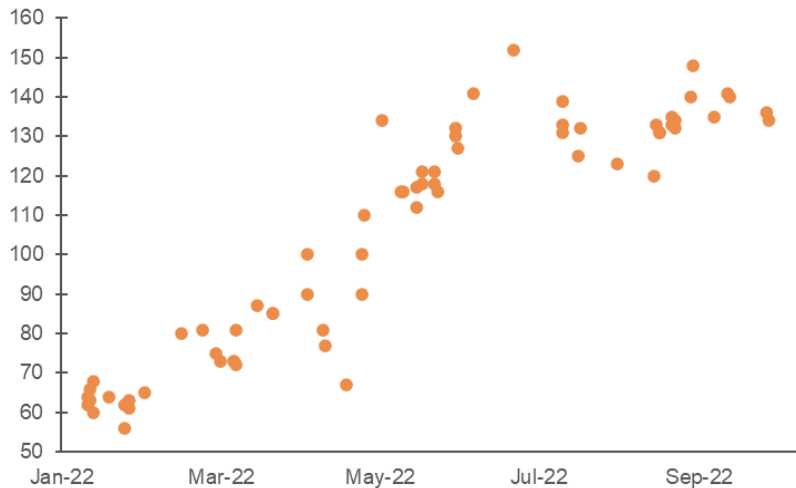
## 20Y Tax-Exempt MRB Spreads (bps)



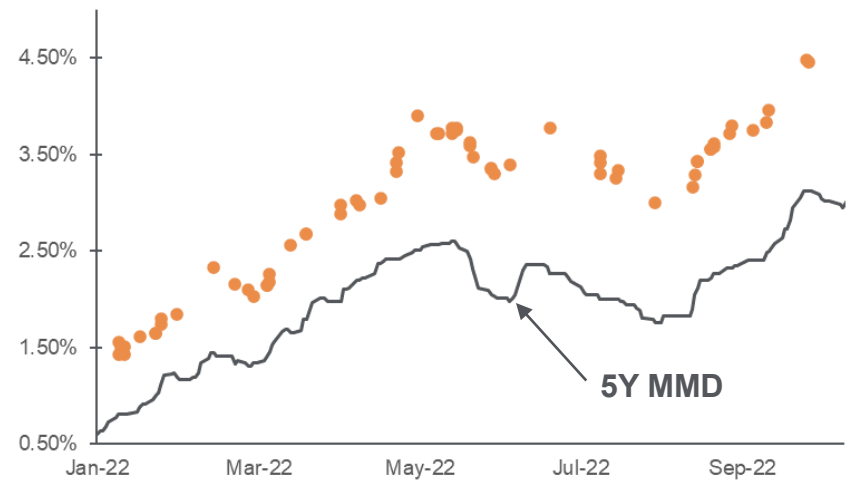
## 20Y Tax-Exempt MRB Yields



## PAC Tax-Exempt Spreads (bps)



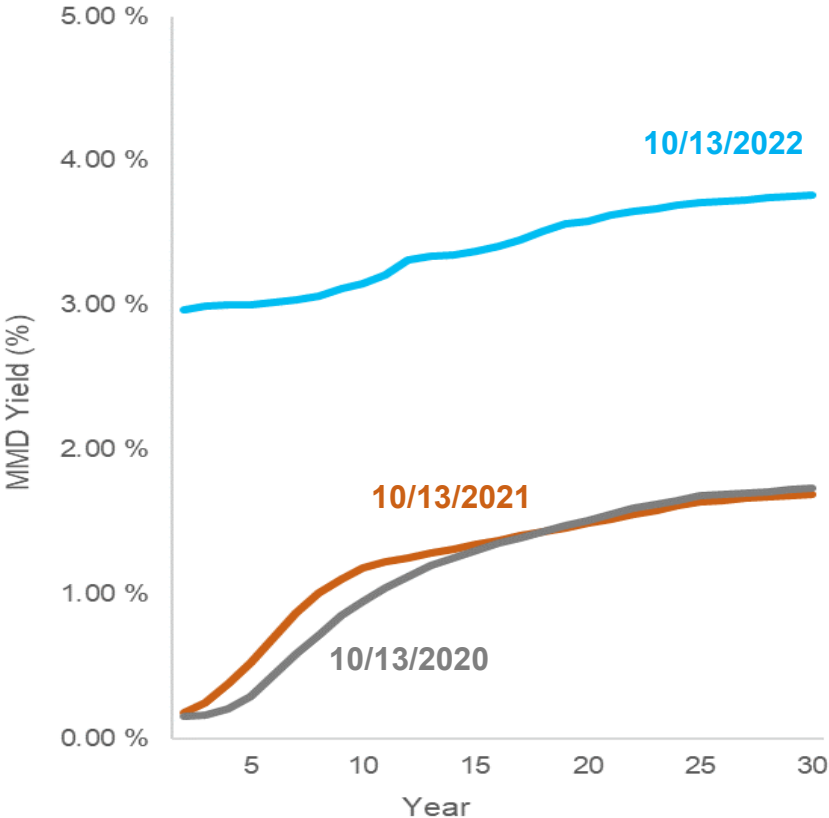
## PAC Tax-Exempt Yields



Notes: Rates for past transactions calculated using MMD sourced from Thomson Reuters Municipal Market Data (MMD). Distribution of MMD data is prohibited. Yields and spreads primarily for 5Y average life PAC Bonds.

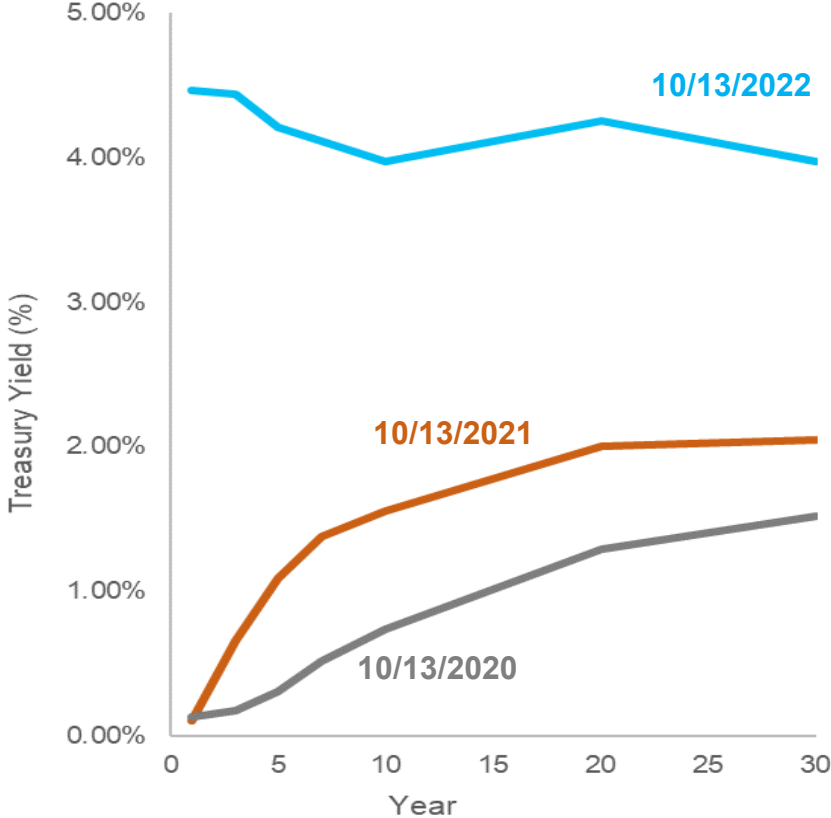
# MMD and Treasury Yield Curves

## MMD Yield Curves



**Current MMD Slope**  
**2Y – 30Y = +79 bps**

## UST Yield Curves



**Current UST Slope**  
**2Y – 30Y = -50 bps**

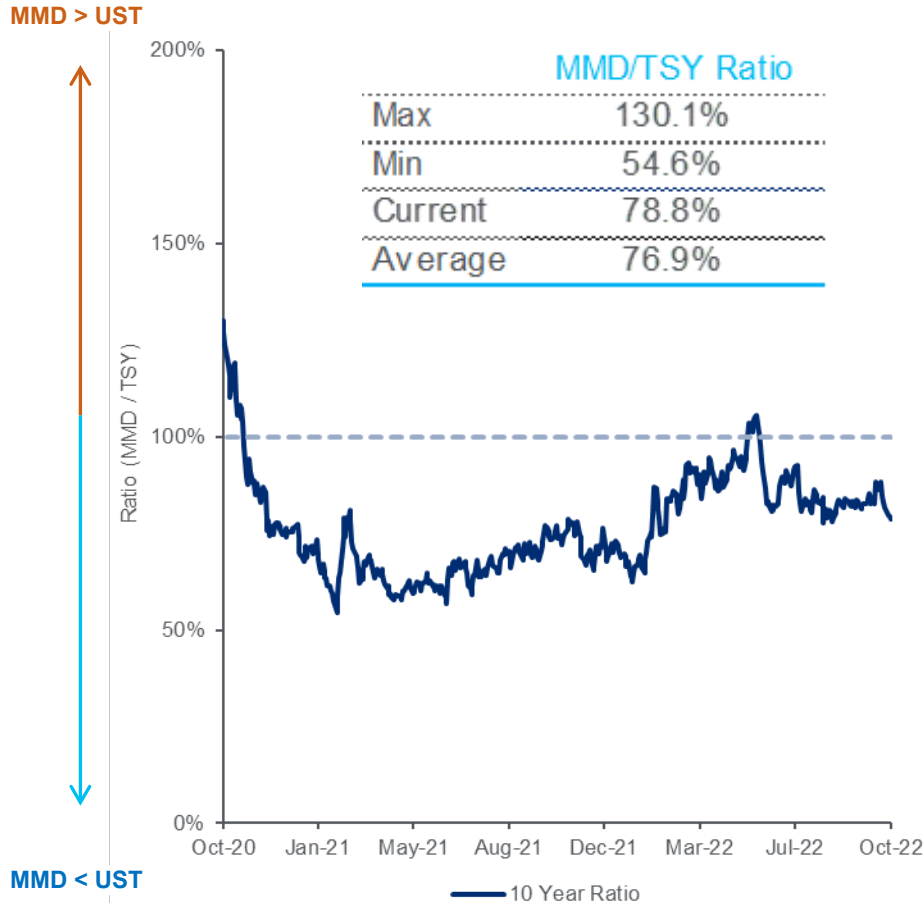
Source: Thomson Reuters as of October 14, 2022.



# Municipal Market Dynamics – Rates, Ratios and Demand

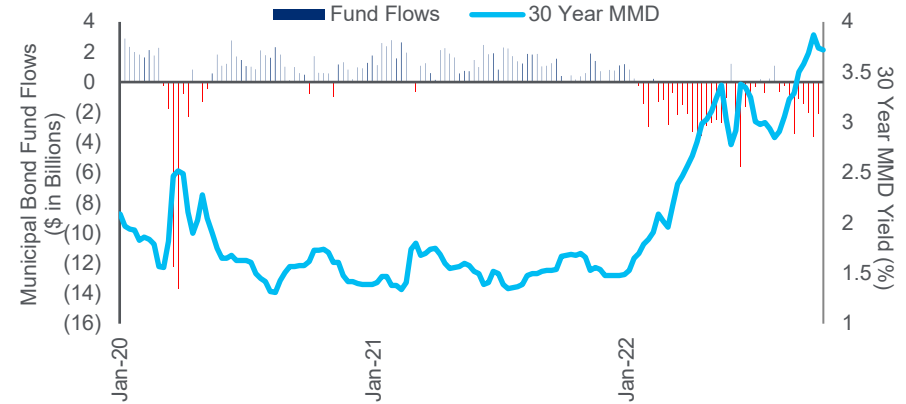
## 10Y MMD / Treasury Ratio

Trailing 2 Years



## Weekly Municipal Fund Flows<sup>1</sup>

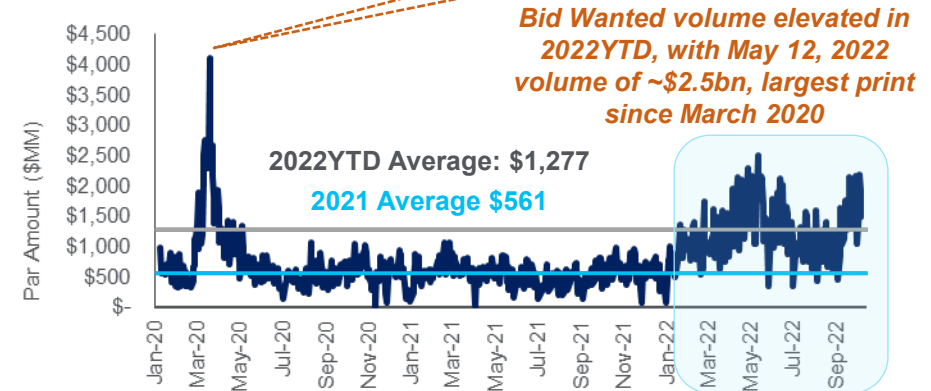
Trailing 5 Years; Fund Flows Move Inversely with MMD



## Municipal Bid Wanted<sup>2</sup>

Daily Values (since 2020)

March 18, 2020 posted largest bid wanted activity on record of \$4.1bn of total par



Source: Thomson Reuters as of October 14, 2022. (1) Lipper fund flows as of October 12, 2022 and (2) Bloomberg as of October 14, 2022

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## efficiency, renewable energy and mitigation

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## NATIONAL COUNCIL OF STATE HOUSING FINANCE AGENCIES

### Let's Make a Deal: Securing the Best Prices in a Volatile Market

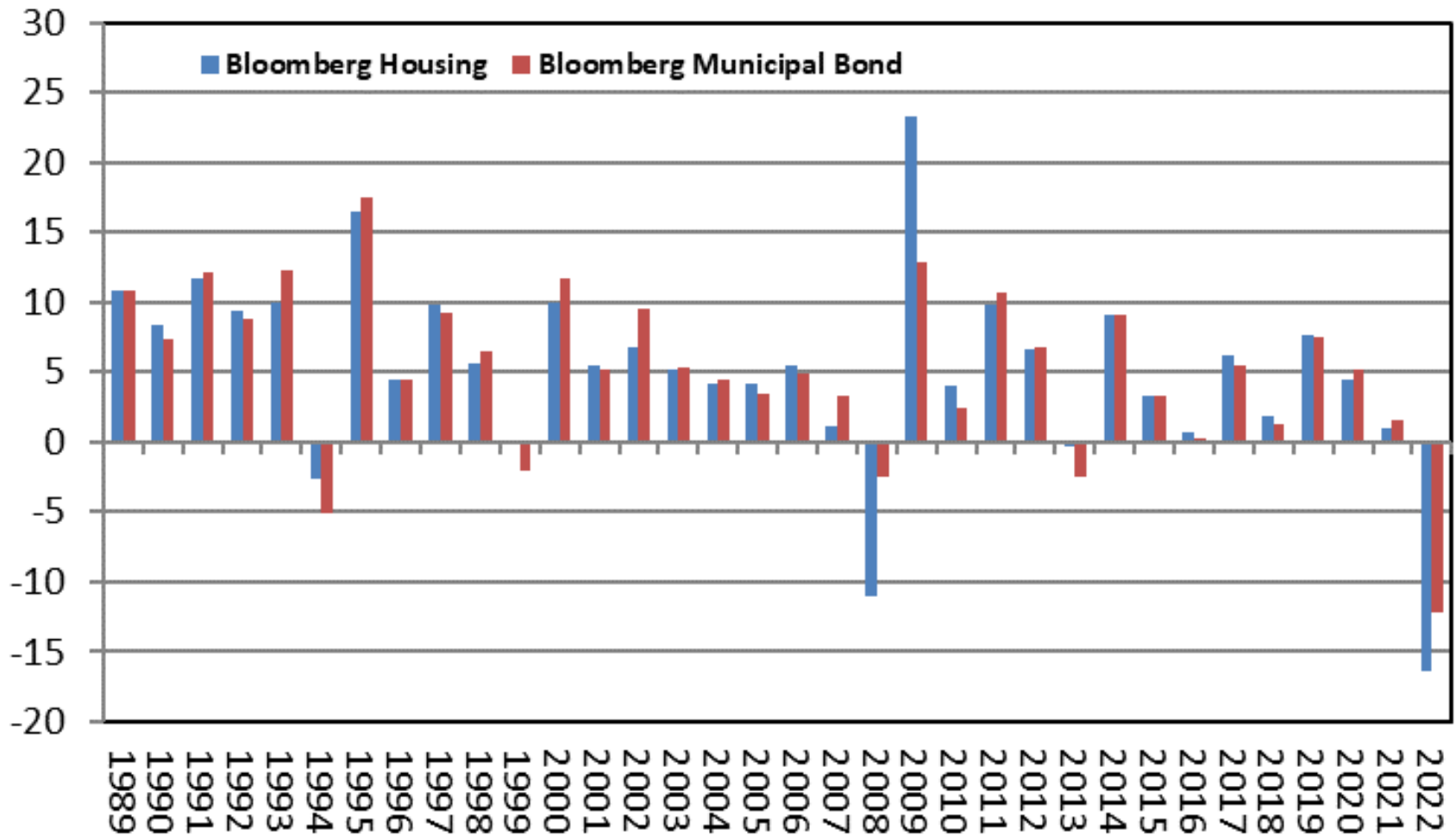
Monday, October 24, 2022  
Houston, Texas

Kurt van Kuller, CFA  
Portfolio Manager  
Sit Investment Associates

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## Annual Total Returns of Bloomberg Housing Index and Municipal Index 1989 to YTD 9/30/2022



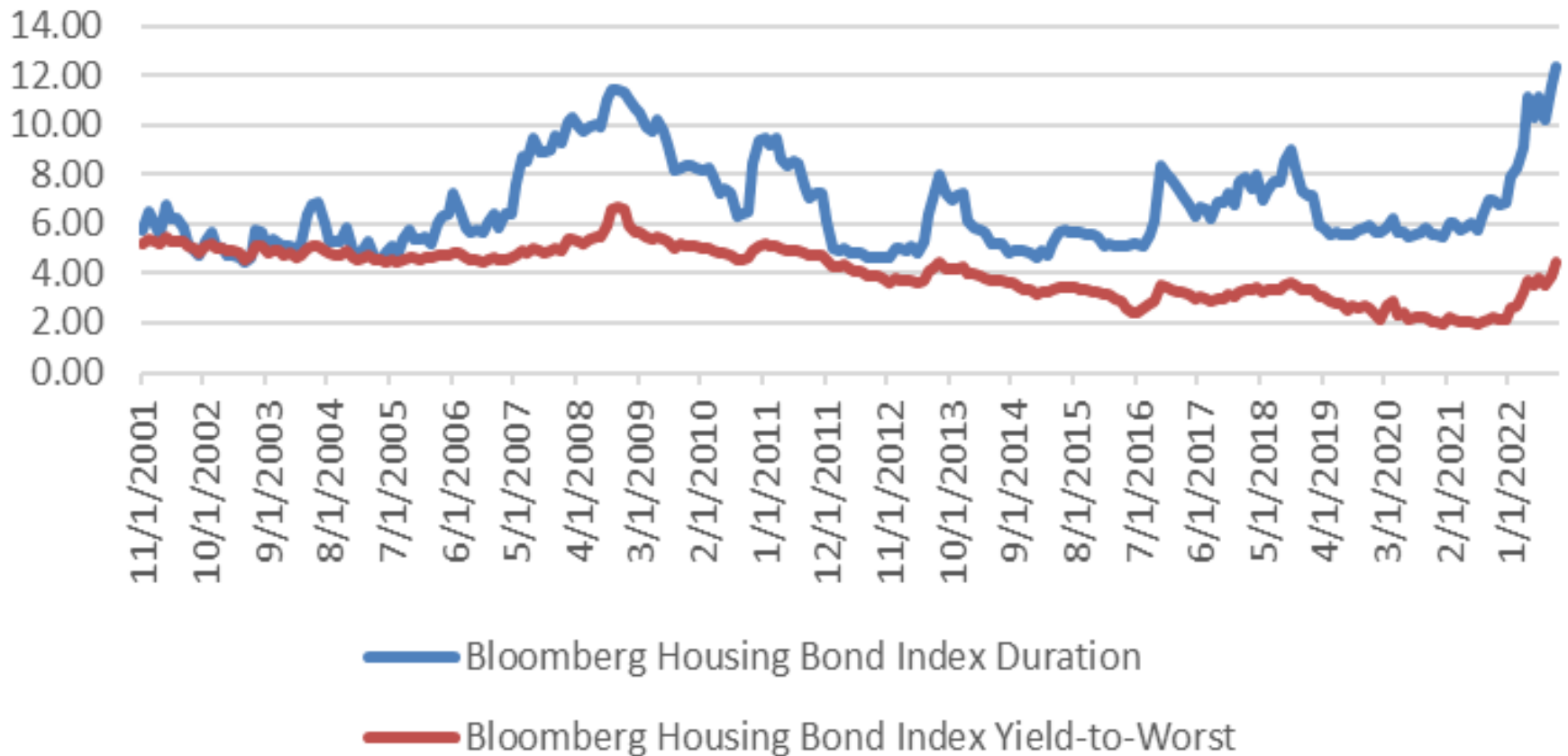
Source: Bloomberg

**BLOOMBERG MUNICIPAL INDICES**  
**YTD RETURNS and DATA as of 9/30/2022**

Bloomberg INDEX	YTD TOTAL RETURN (%)	DURATION (Years)	YIELD (%)	COUPON (%)
MUNICIPAL BOND	-12.13	7.15	4.04	4.48
GO BOND	-11.45	6.54	3.80	4.65
REVENUE BOND	-12.96	6.99	4.20	4.49
MUNI ELECTRIC	-10.68	6.59	3.94	4.61
MUNI HOSPITAL	-15.30	9.42	4.62	4.55
MUNI TRANSPORTATION	-12.55	7.72	4.31	4.63
<b>MUNI HOUSING</b>	<b>-16.33</b>	<b>12.32</b>	<b>4.42</b>	<b>3.30</b>
MUNI HIGH YIELD	-16.03	10.58	6.03	4.60
MUNI: LONG BOND (22+)	-19.74	13.32	4.82	4.33

Source: Bloomberg

# Bloomberg Housing Index Yield and Duration 11/1/2001 - 9/30/2022



Source: Bloomberg

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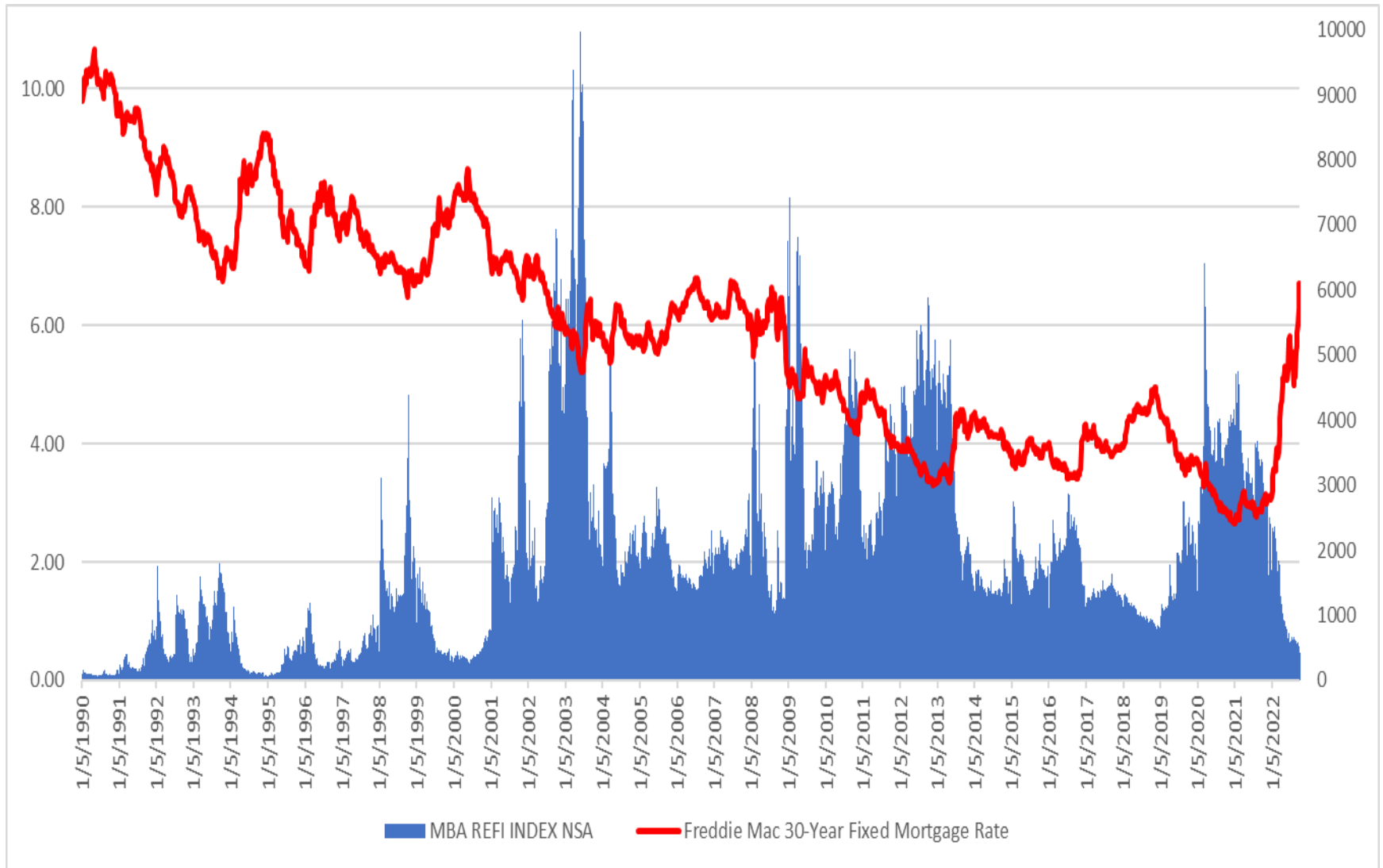
## UNDERSTANDING HOUSING BOND SPREADS

- ALL PAR BONDS HAVE MUCH WIDER SPREADS IN 2022
- PAR BOND STRUCTURE ACCOUNTS FOR 40% to almost 50% of Housing Bond Spread

### TERM BOND SPREAD COMPARISONS (non-AMT bonds)

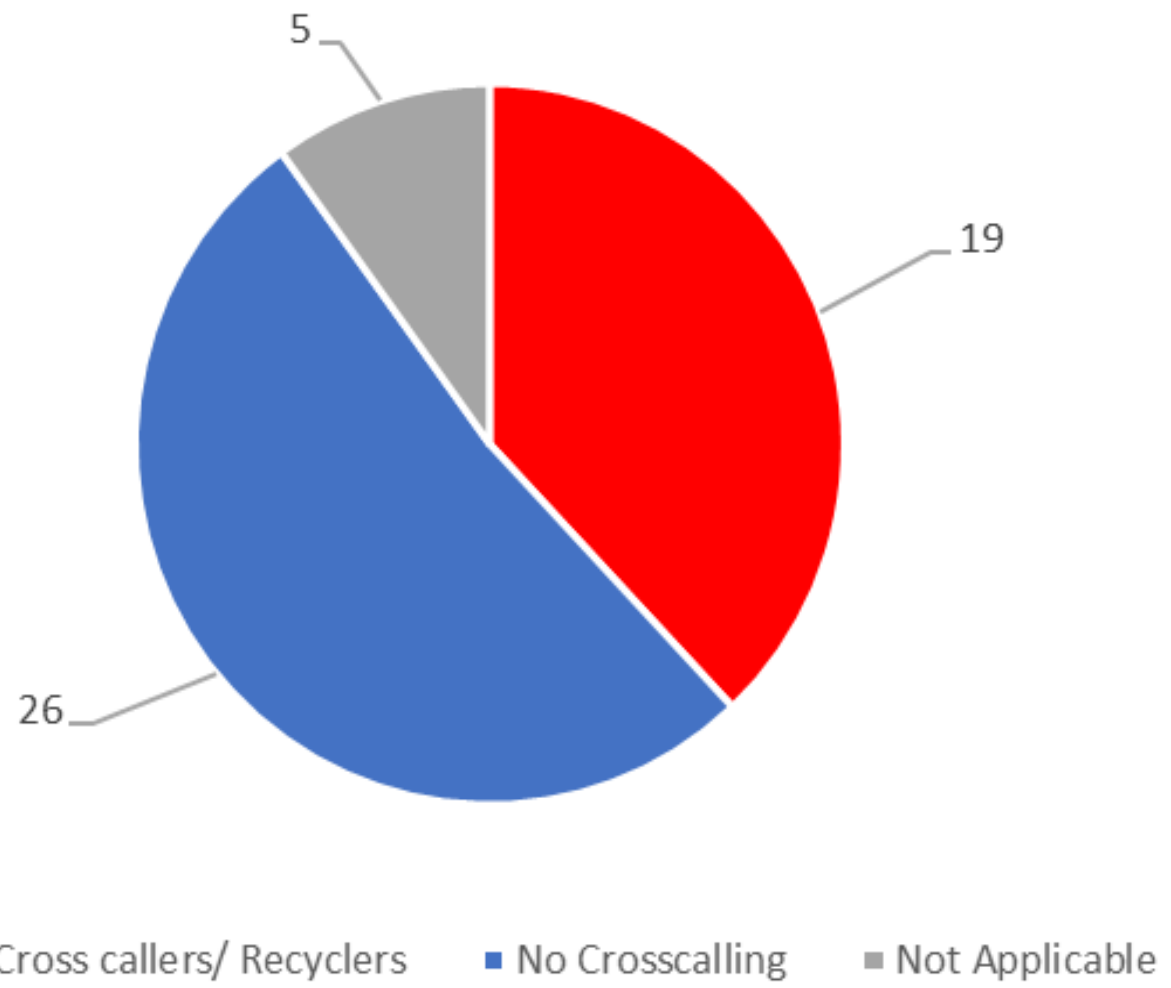
- 1) NORTHEAST STATE HFA MULTIFAMILY AA2/NR  
Coupon: 5.10                      Maturity: 2052                      PRICED 10/11/2022 at PAR
- **+136 to MMD 5% coupon yield curve**
  - **+85 to MMD 4% coupon yield curve**
  - **+76 to MMD 3.5% coupon yield curve**
- 2) NORTHEAST STATE HFA MULTIFAMILY (COMBINED INDENTURE) Aaa/AAA  
Coupon: 5.00%                      Maturity: 2052                      PRICED 10/11/2022 at PAR
- +126 to MMD 5% coupon yield curve**
  - +75 to MMD 4% coupon yield curve**
  - +66 to MMD 3.5% coupon yield curve**
- 3) SOUTHERN STATE HFA SINGLE FAMILY Aa1/AA+  
Coupon: 5.05%                      Maturity 2048                      PRICED 10/3/2022 at PAR
- **+125 to MMD 5% coupon yield curve**
  - **+74 to MMD 4% coupon yield curve**
  - **+66 to MMD 3.5% coupon yield curve**

# 30-Year Fixed Conventional Mortgage Rates and MBA Refi Index NSA, 1/1990-10/22



Source: MBA, FHLMC

## State HFA Crosscalling Status



Source: Compiled by Sit Investment Associates

## Single Family Bond Secondary Market Pricing Examples

ISSUER: MIDWEST STATE HFA SINGLE FAMILY MRB SERIES 2021A  
DATED: 4/22/2021 COUPON: 2.45% MATURITY: 9/1/2051  
(PAC BOND IN SERIES RECEIVES FIRST 100% PSA)

### PRICED TO MATURITY (RECYCLING/CROSS CALLING)

<u>Current Price</u>	<u>YTM</u>
60	5.11%

<u>AVE LIFE YIELD @ 200%PSA PRO-RATA CALLS</u>	<u>AVE LIFE</u>
60	9/1/2031
81.2	9.10%
86.4	5.10%
	4.30%

<u>AVE LIFE YIELD @ 300%PSA PRO-RATA CALLS</u>	<u>AVE LIFE</u>
60	9/1/2028
86.6	12.12%
91.2	5.10%
	4.10%

October 24, 2022



# Let's Make a Deal: Securing the Best Prices in a Volatile Market

# Key Issuer Considerations in the Current Market

## In Volatile, Rising Rate Environment...

- Market uncertainty combined with upward trending rates generally dictate **smaller, more frequent bond issues**
- Consider taking advantage of available resources such as zero percent participations and bond indenture strength
- Early preparation and timing
  - Pre-funding vs post-funding
  - Required bond resolution approvals, TEFRA, other
  - Bond structure and sizing alternatives
    - Be prepared in advance to restructure, downsize, or upsize to improve cost of funds
- **Plan carefully and maintain timing flexibility**
  - Caution around Fed meeting weeks and release of major economic indicators (especially CPI, jobs report, etc.) as **these events can drive rapid market moves**
  - **Technicals matter (supply / demand dynamics)**
- Close coordination and communication with underwriting team and working group

## Investor Considerations

- Pre-marketing with preliminary scale
  - Provides valuable information about the live market and leads the way to maximizing retail
- **Retail outperformance as rates continue to rise**
  - Housing bonds typically structured as par coupon bonds and highly rated
- **Benefit of PAC Bonds decline as yield curve flattens** therefore utilize PACs:
  - To generate bond premium
  - For bond diversification
  - If limited cross-calling or recycling

## Opportunities

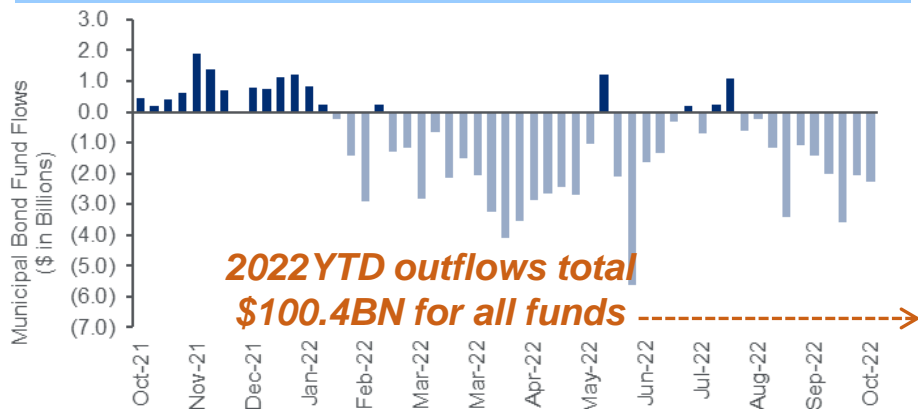
- Inverted Treasury yield curve + favorable MMD/UST ratio on the shorter end present reinvestment opportunities
  - **Negative arbitrage is mitigated (and select opportunities to earn potential retainable arbitrage)**
- For single family, re-build balance sheets with viable bond-funded lending (mortgage rates have increased and MBS prices have deteriorated)

# Retail Performance Counters Muni Fund Outflows

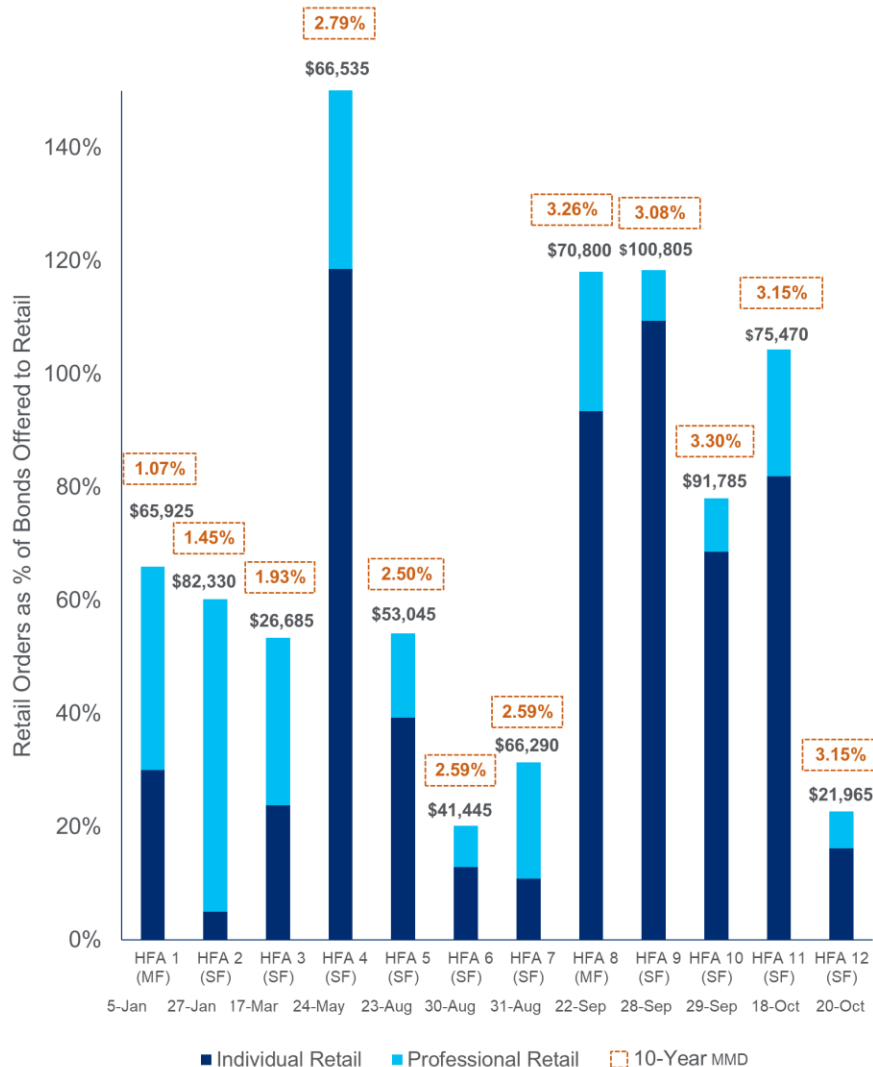
## 2022 Rate Volatility

- Since January 1, 10-yr MMD and TSY have increased by 230 and 259 bps, respectively
- Mutual fund flows have seen outflows of \$100 billion (surpassing taper tantrum outflows)
- Enticed by higher absolute rates, **one significant bright spot has been renewed participation of the retail investors**
  - In a number of recent cases, retail orders have exceeded the total transaction size

## Weekly Mutual Fund Flows<sup>3</sup> (Trailing 12-Months)



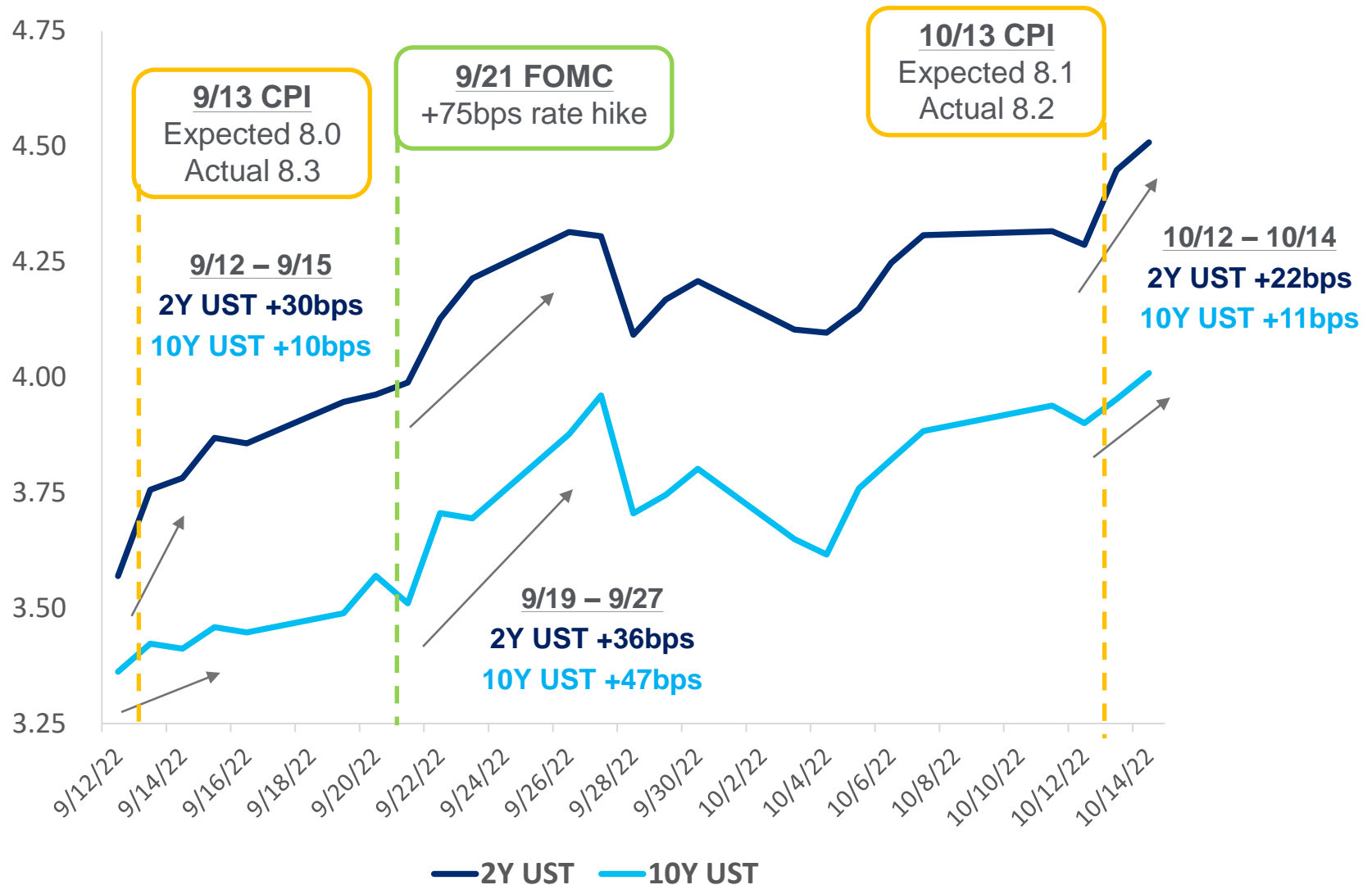
## 2022 Individual and Professional Retail



1. Lipper fund flows as of October 12, 2022; Citi

# Interest Rate Moves Around Recent CPI Releases and FOMC

## 2Y and 10Y Treasury Yields (9/12/22 – 10/14/22)



# Citi HFA Recent Experience – Case Study



**\$140,000,000**

Homeowner Mortgage Revenue Bonds  
2022-3 (NAMT) (**Social Bonds**)

Pricing: 9/28/2022    Rating: Aaa    Bond Yield: 4.86%

## Execution & Pricing Success in a Deteriorating Market

- **Pre-Marketing (Monday):** Originally went to market with \$125mm in bonds to support its FTHB program
  - Turbulent time to price as Hurricane Ian was approaching
  - Ultimately pricing was not delayed; delaying raised further risk than Ian
  - Significant Treasury sell-off (up to +19bps) following surge in global sovereign yields (led by market reaction to the UK fiscal package)
  - MMD outperformed, however still off up to +10bps
- **Retail Order Period (Tuesday):** Robust retail demand \$100mm
  - \$93mm in individual retail orders and \$7mm in professional retail
- **Institutional Order Period (Wednesday):** Garnered \$270mm in institutional orders, including \$150mm for the PAC Bond
  - With a strong order book in a difficult market
    - (i) Spreads improved by 7-17bps from Retail Order Period to Final Pricing
    - (ii) FHFC upsized the bond issue to \$140mm

### Market Conditions

Week's supply in line with recent averages ~\$7.7bn (neg+comp) including \$394mm in housing bonds

~\$87.9bn of outflows 2022YTD for weekly and monthly reporting funds

Elevated sell pressure and Treasury sell-off continued to weigh on the municipal market, coming into the week after Fed meeting and rate action on September 21

# Citi HFA Recent Experience – Case Study



CONNECTICUT  
HOUSING FINANCE  
AUTHORITY

**\$117,815,000**

Housing Mortgage Finance Program Bonds  
2022 E-1 (NAMT) **(Social Bonds)**

Pricing: 10/18/2022    Rating: Aaa/AAA

## Accelerating Pricing to Avoid Overnight Rate Risk

- **Pre-Marketing (Monday):** After CHFA priced its \$55.2mm 2022D multifamily bonds on October 12, went out with a Pre-Marketing scale for its 2022E-1 single family issue
  - Following significant rate moves prior week due to higher than expected CPI print, relatively stable interest rate market during Pre-Marketing
  - Treasuries were mixed; MMD decreased by 2bps
- **Retail Order Period (Tuesday):** Strong **retail demand \$75mm**
  - \$59mm in individual retail orders and \$16mm in professional retail
  - Although institutional feedback not finalized and unclear if sufficient orders at original levels, **CHFA wanted to avoid overnight rate risk**
- **Institutional Order Period (Tuesday):** Accelerated pricing well received
  - **Nearly \$100mm in institutional orders from 16 institutions**
  - Spreads decreased by 5bps on 2023 serials; spreads/yields maintained on the rest
- **Following Day (Wednesday):** MMD increased by 3 - 5bps

### Market Conditions

Week's supply heavier than recent averages ~\$9.4bn (neg+comp) including \$678mm in housing bonds

Largest issue expected for the week was \$1.14bn State of Connecticut

~\$100.4bn of outflows 2022YTD for weekly and monthly reporting funds

US equities and Treasuries mixed as inflation pressures continued to weigh on risk sentiment

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## Agency MBS: 2022

### Benefits of issuing via MBS in a volatile and liquidity constrained world:

- Agency MBS market is one of the most liquid bond markets in the world; commensurate with US Treasuries.
- You can issue bonds at regular intervals or at a moments notice, with sizes ranging from 1MM up to 1BN.

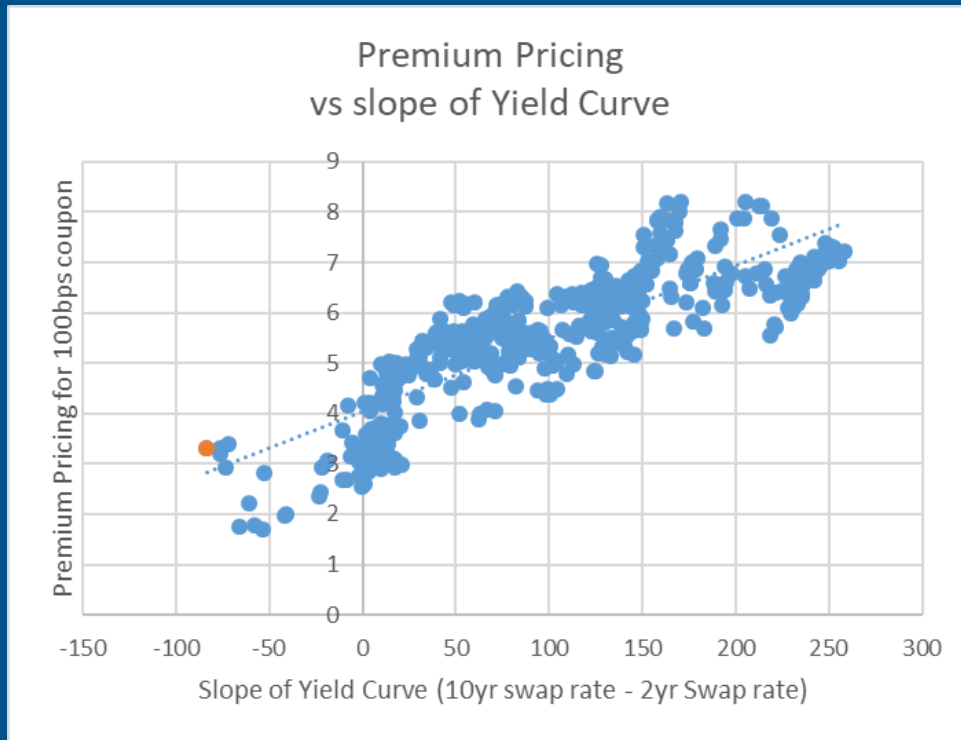
### Current Environment:

- As the yield curve has flattened and even inverted, premiums in TBA pricing have been under significant pressure.
- Pressure in TBA premium pricing has made it difficult for HFAs to post a full suite of DPA options on a daily basis.
- The combination of rising interest rates and the inability to offer all levels of DPA has impacted borrowers' ability to qualify.



## The inverted Yield Curve has pressured Premium Pricing

- In mortgages, higher coupons are “shorter bonds” because they prepay faster. When the yield curve is inverted, shorter bonds trade to “higher” yields, thus putting pressure on their dollar prices.
- The chart below shows how premium pricing (extra price per 100bps of extra coupon) has reduced as the Yield Curve inverted.



- Premium pricing hit a two decade low in August 2022 (\$1.75 per 100bps coupon), and has been rebounding since (\$3.25 per 100bps coupon).
- However it will remain pressured until the yield curve steepens.

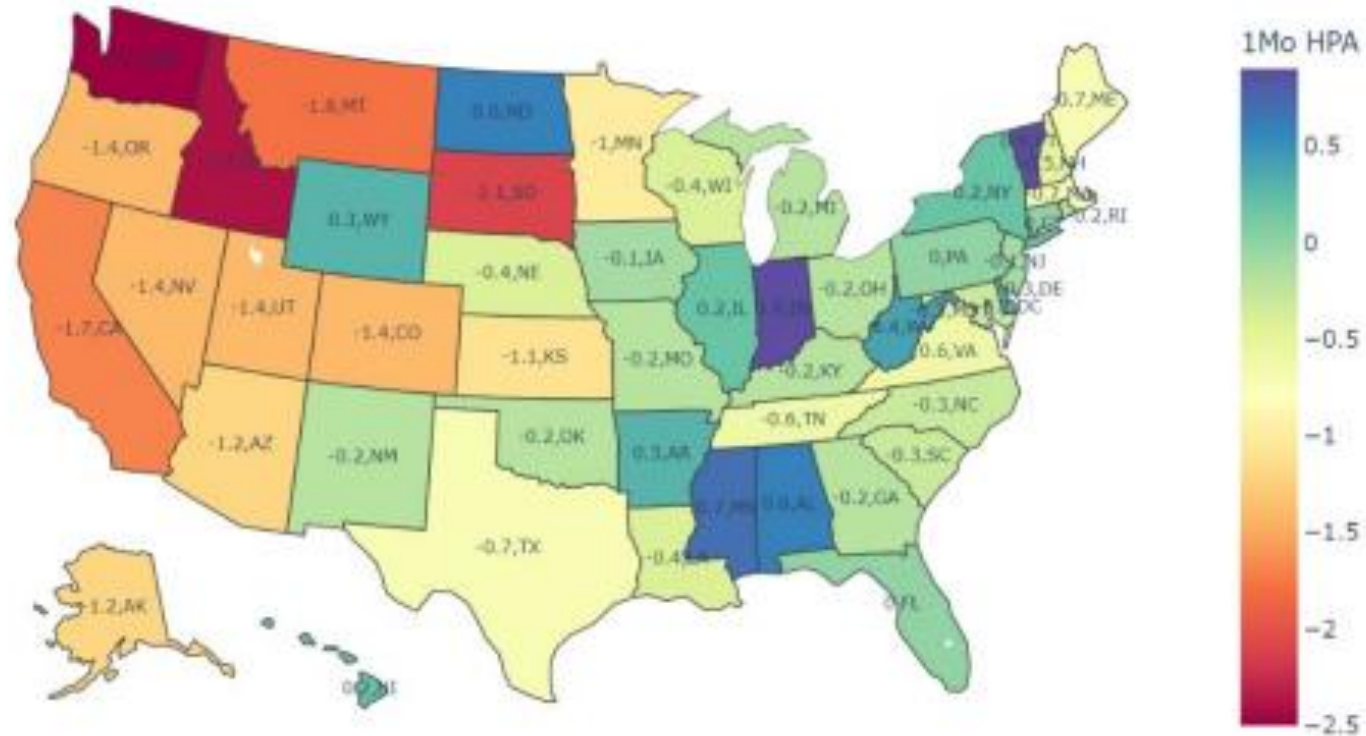


## Home price declines (HPD) are increasing investor appetite for MBS off HFA collateral

- If a borrower has a 2<sup>nd</sup> lien that does not allow re-subordination, that borrower must repay the 2<sup>nd</sup> lien when they refinance.
- The easiest way to repay that 2<sup>nd</sup> lien is to do a limited cash-out refinance (use accumulated equity in your home to pay off the 2<sup>nd</sup> lien during the refinance process).
- During times of extremely strong HPA (2020-2021), many HFA borrowers achieved substantial gains in home equity, and they were choosing to cash-out refinance. As a result, many HFA bonds that were expected to prepay only marginally, prepaid quite fast. This was starting to reduce investor appetite for the bonds.
- However, now that home prices have stabilized (and started to go down), investors are once again starting to look for newly originated HFA collateral. If home prices decline, the borrower would have to pay-off the second lien with outside funds (not home equity) in order to refinance. This creates a large dis-incentive to refinance.

## Home prices are starting to decline...

Figure 11: Home Price Index Month-Over-Month Change by State (NSA, %)



Source: CoreLogic, Credit Suisse; Observation: August 2022

## Yield Book Model Updates

- The majority of fixed income investors use “Yieldbook” to value their mortgage bonds.
- Historically, the Yieldbook model has not been favorable to HFA bonds, as the model would assume prepayments that were faster than actual experience.
- In September 2022, Yieldbook released a major update to their HFA prepayment model.
- The model change increases valuations of MBS with 2<sup>nd</sup> lien by multiple points.
- This has been filtering through the HFA market since August, as investors began to anticipate the model change.

## Looking ahead

### HFAs have the ability to directly benefit from premium paid by investors on Specified HFA Pools:

- Down Payment Assistance (DPA) is frequently funded with premium pricing via the TBA market.
- When incorporating the specified payup into daily pricing, this creates additional premium resulting in higher “all-in” daily pricing.
- Obtaining higher “all-in” pricing drives the ability to offer higher levels of DPA at a lower cost/rate to the borrower.

### What does this mean for borrowers and the HFA mission?

- HFAs achieve their mission of providing homeownership to low to moderate income borrowers by offering multiple DPA options at lower rates.