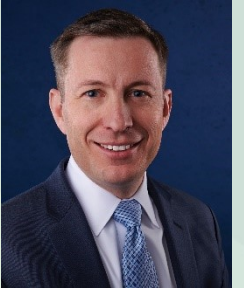




Spring 2022 Conference

Navigating High Inflation – Part I



Brian Hextell

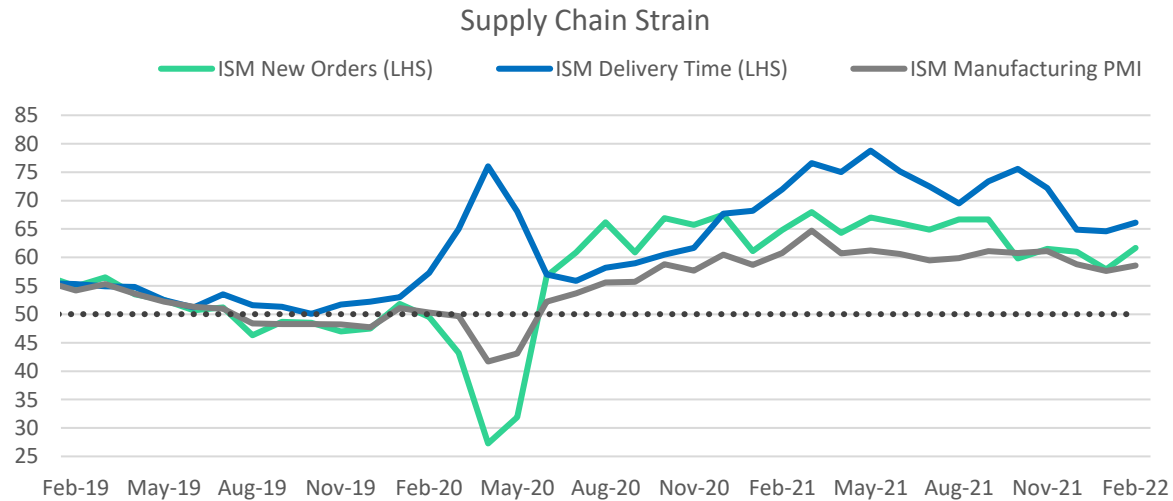
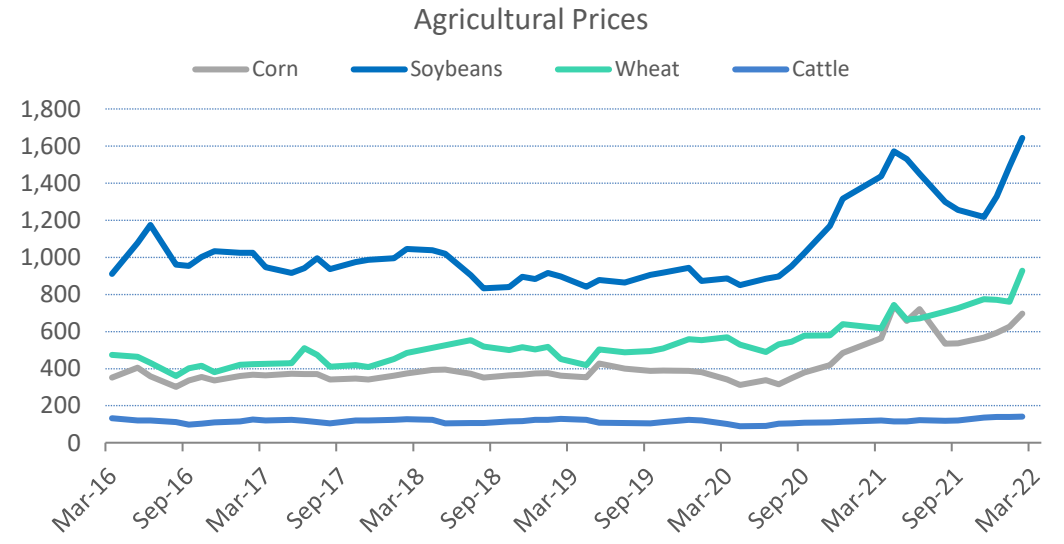
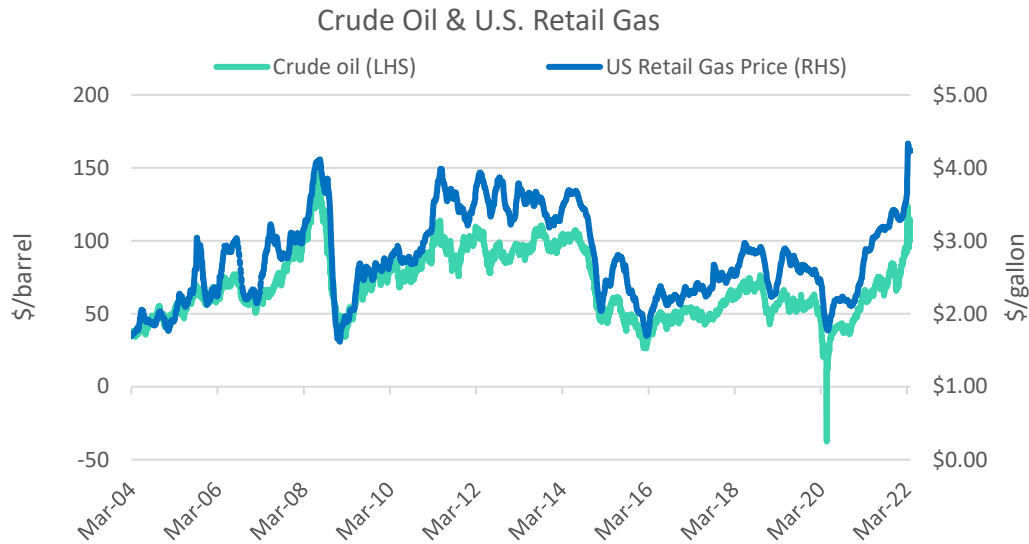
Senior Vice President
Institutional Portfolio Manager
PMA Asset Management

April 21, 2022

CPI and Interest Rate Forecast



A Mix of Inflationary Forces



Source: Bloomberg



What Drives Interest Rates?

- ▶ A LOT of things
- ▶ In general:
 - ▶ Short-term rates are impacted by:
 - ▶ Federal Reserve Monetary Policy
 - ▶ Business cycle
 - ▶ Long-term rates are impacted by:
 - ▶ Growth expectations
 - ▶ Inflation expectations
 - ▶ Uncertainty / Term premium
 - ▶ The Federal Reserve through Quantitative Easing (buying long-term bonds)
 - ▶ Issuance of bonds (supply) & investment in bonds (demand)



Federal Reserve Policy Tool Kit

Policy Tool (Tightening Monetary Policy)	Risks
Raise Fed Funds Rate	Economic Slowdown
	Higher Unemployment
	Recession
Slow Asset Purchases (or Sell Bonds)	Rising Rates
	Slower Housing
	Fiscal Pressure
	Corporate Earnings Pressure
	Reduced Market Liquidity
Reduce Forward Guidance	Less Certainty

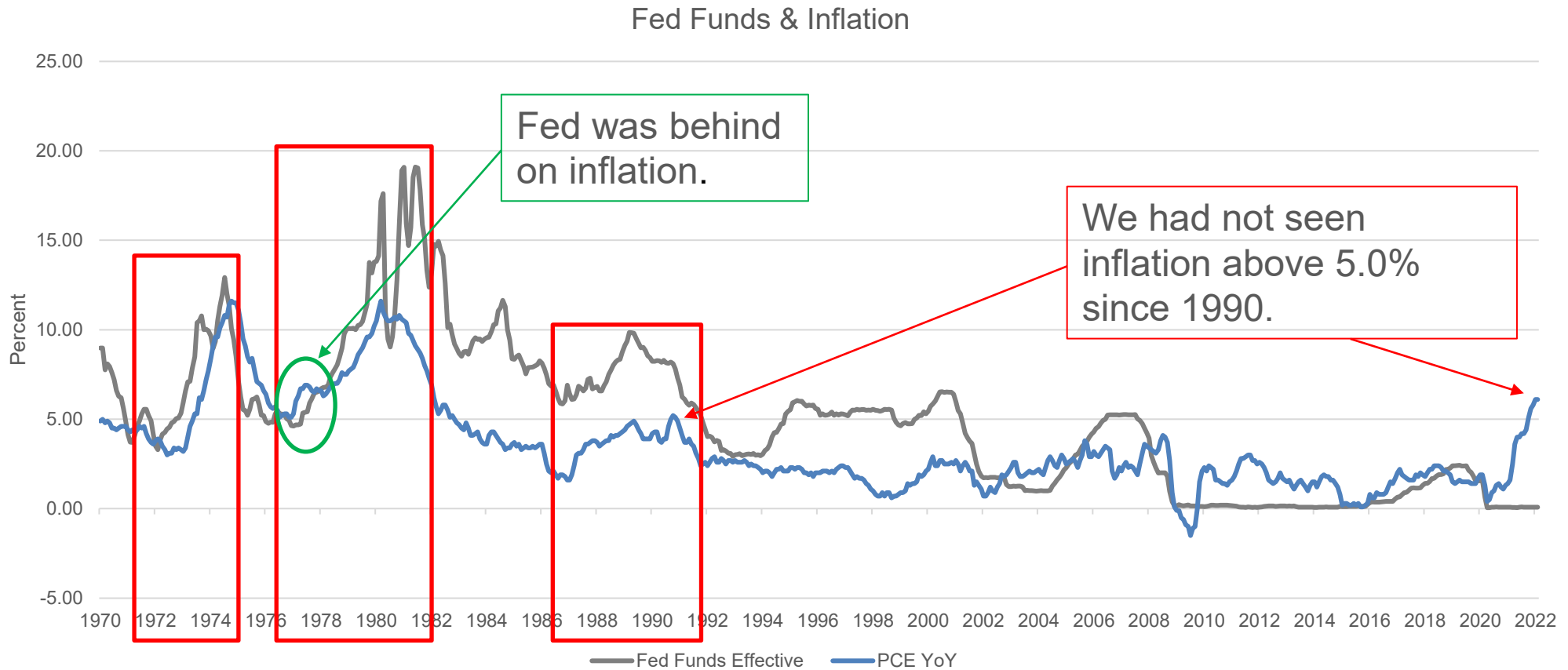


What Are The Challenges of Investing With High Inflation?

- ▶ Inflation erodes the value of a bond's coupon
 - ▶ Real interest rates (bond yield minus inflation) can turn negative
- ▶ Inflation can cause short-term and long-term rates to rise
 - ▶ Rising rates put downward pressure on bond prices
- ▶ Interest rates can move quickly and unexpectedly
- ▶ Inflation can have negative impacts on issuers' credit quality



Fed Fights Inflation by Hiking the Fed Funds Rate

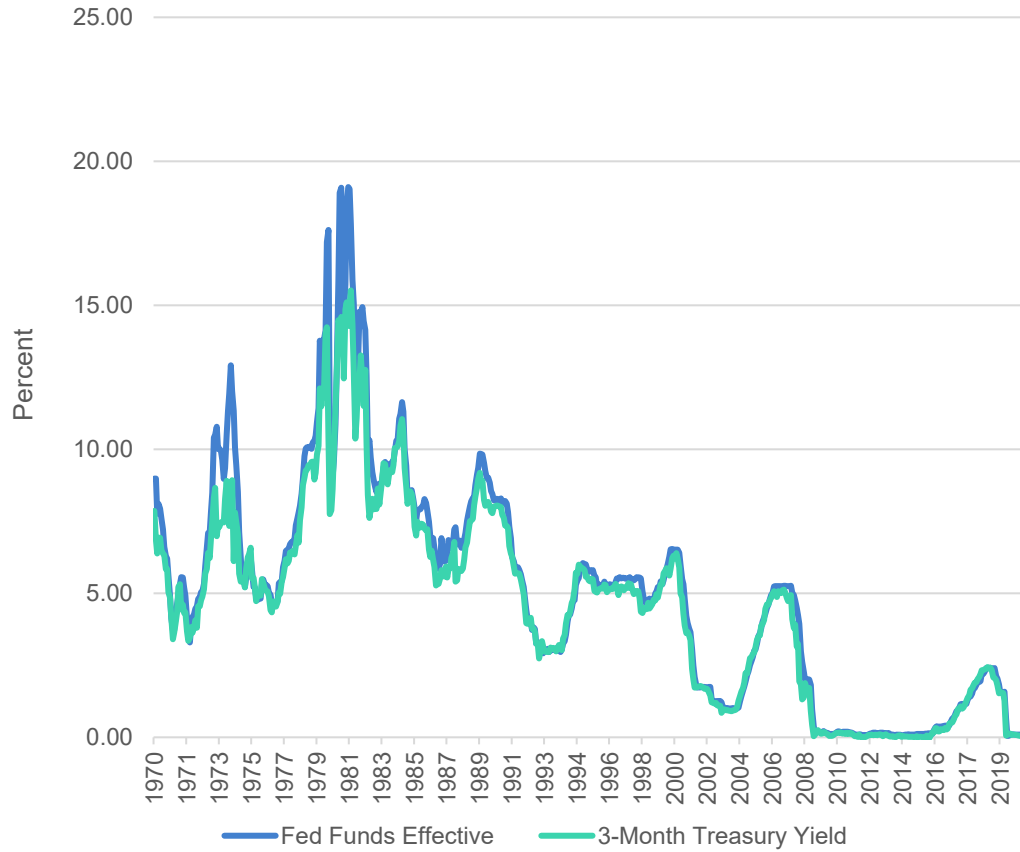


Sources: Bloomberg, PMA Asset Management

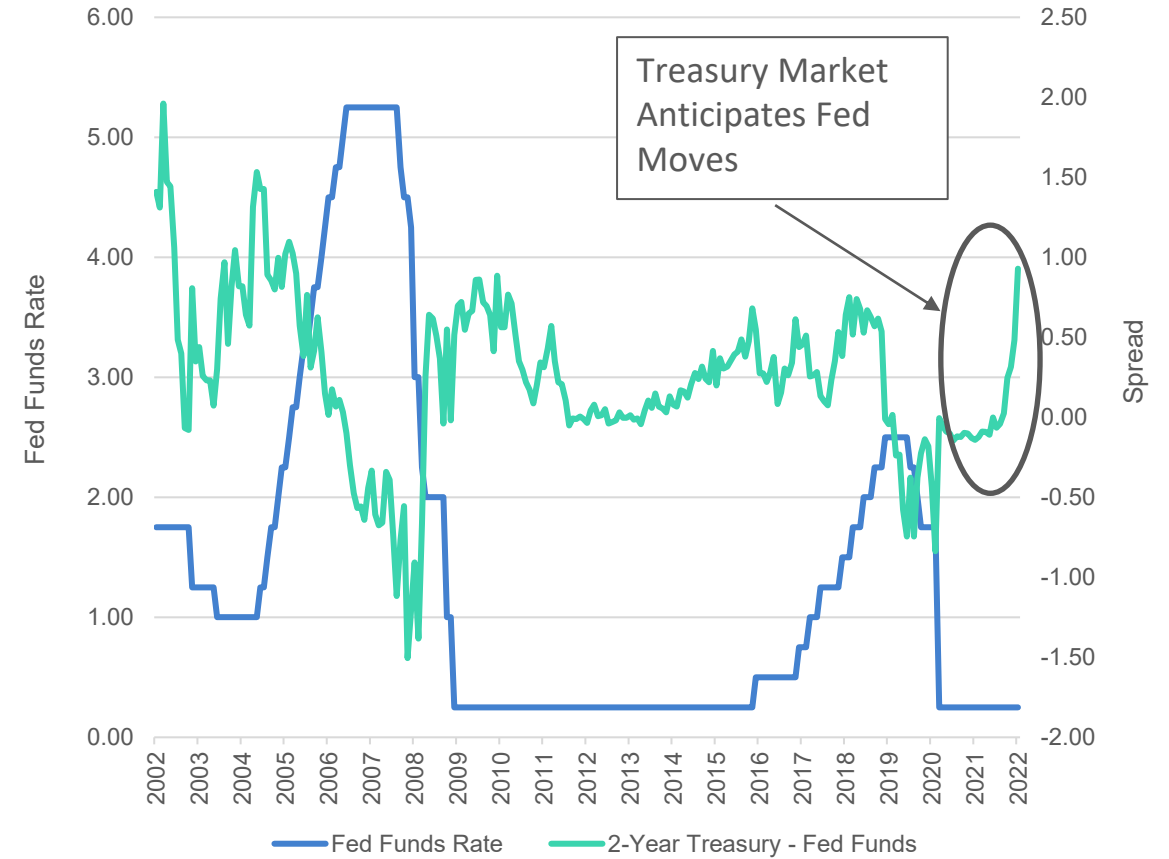


Short-Term Interest Rates

Fed Funds & 3-Month Treasury Yields



2-Year Treasury Spread to Fed Funds Rate

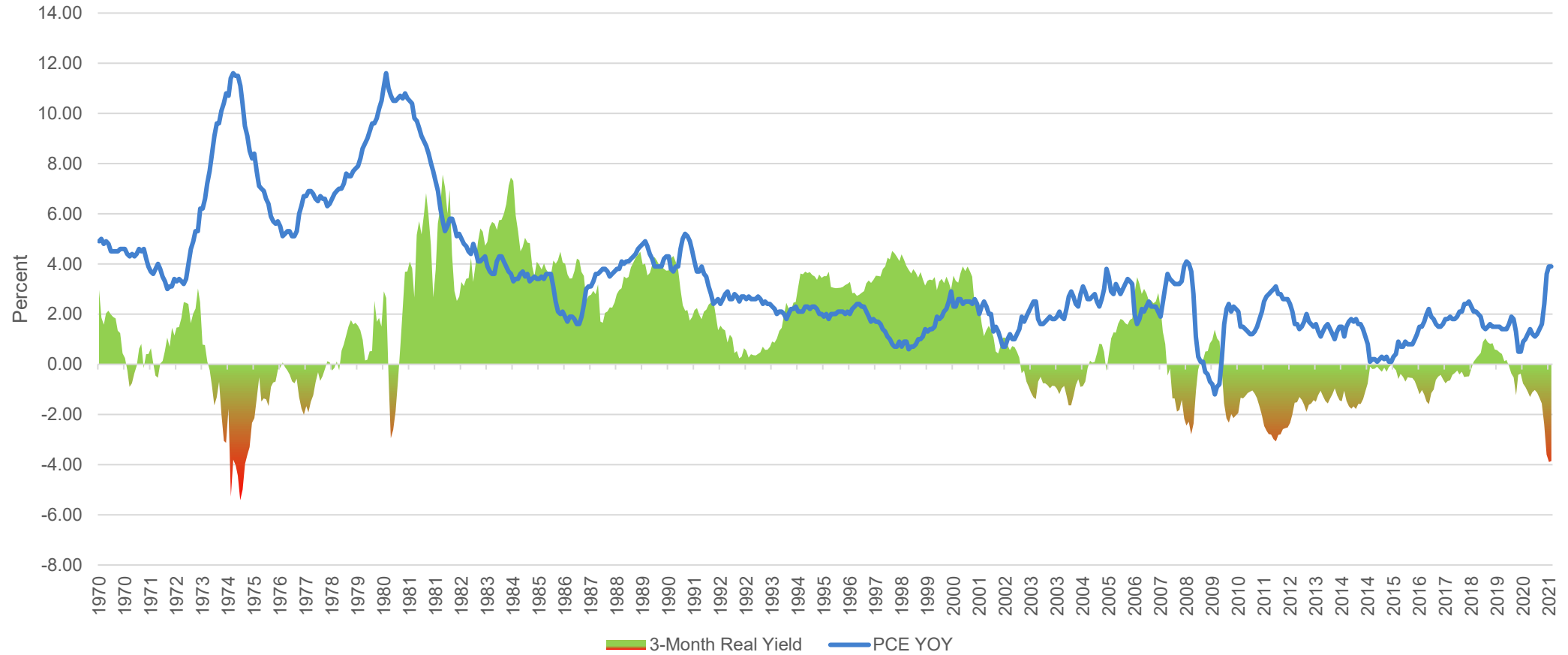


Sources: Bloomberg, PMA Asset Management



Erosion of Short-Term Coupon (Yield)

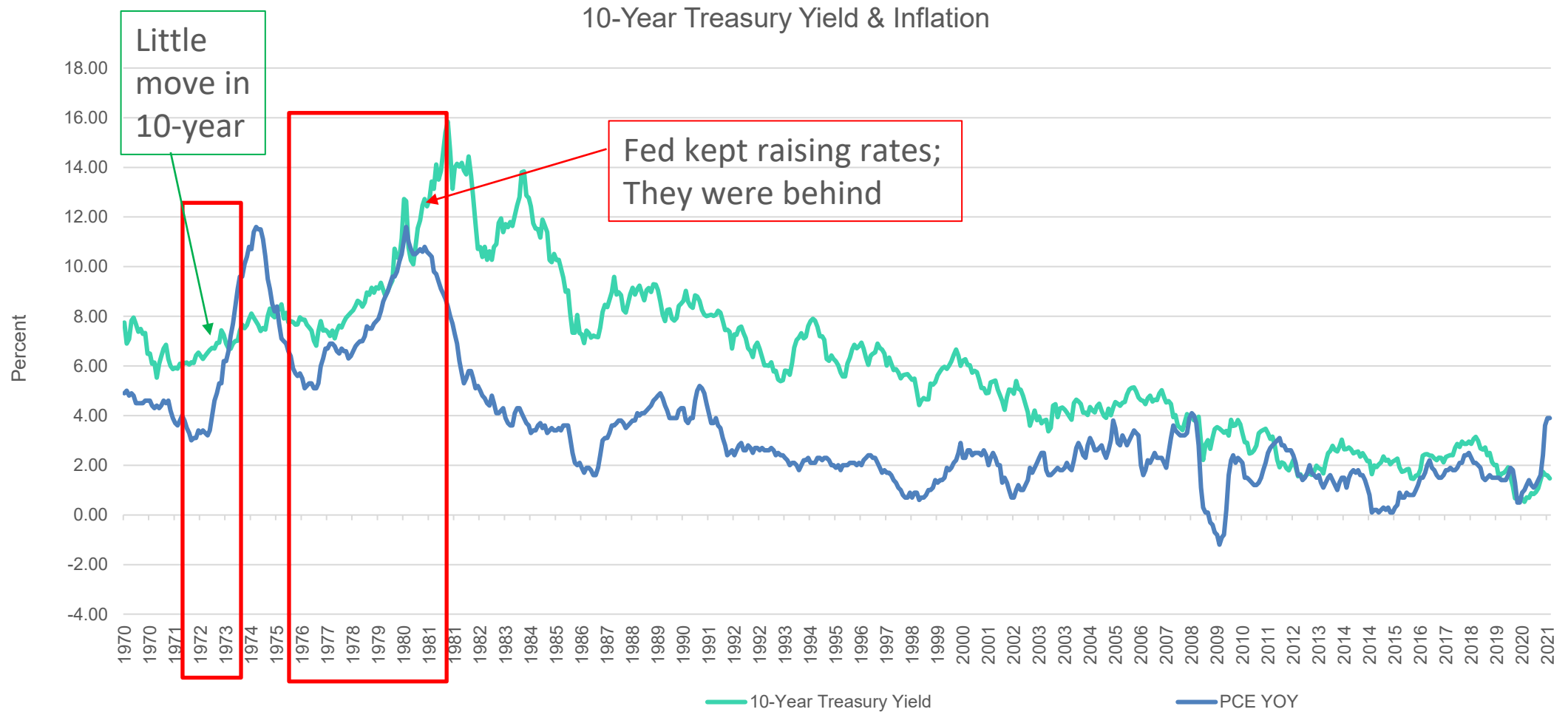
3-Month Real Yield & Inflation



Sources: Bloomberg, PMA Asset Management



Long-Term Interest Rates

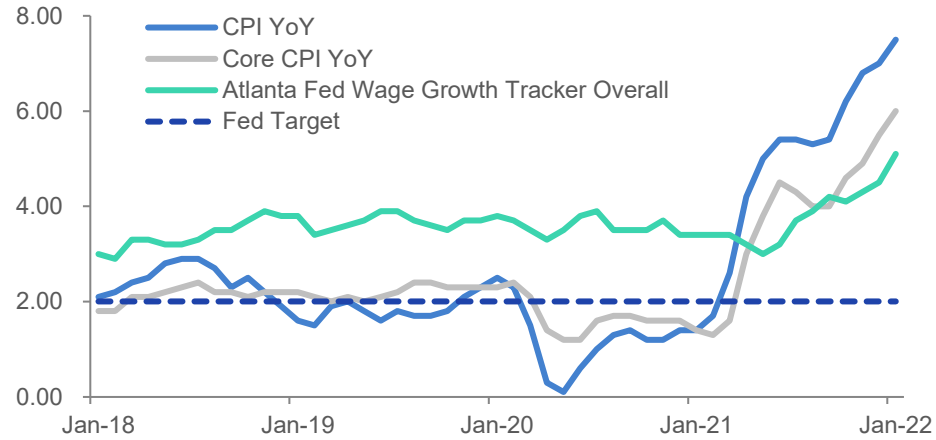


Sources: Bloomberg, PMA Asset Management

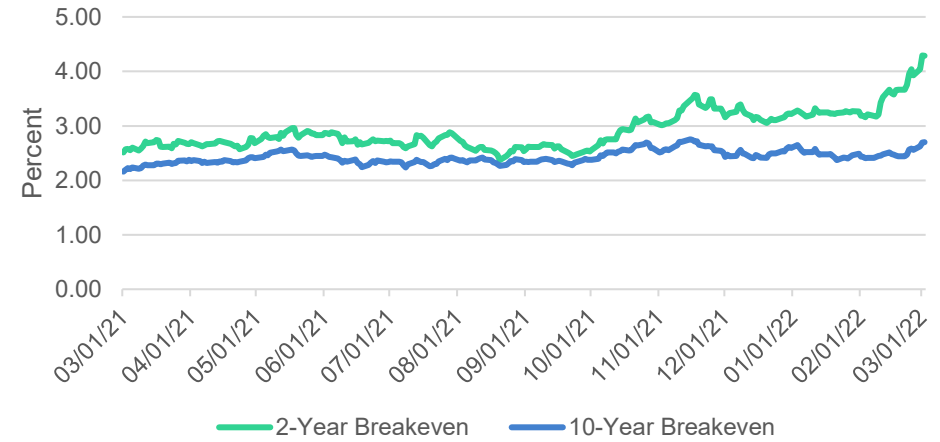


Elevated Inflation: Persistent, not Permanent

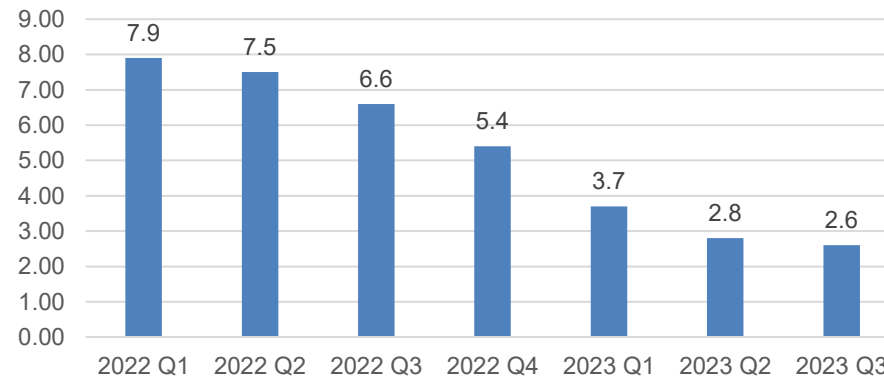
Inflation and Wage Growth



Inflation Expectations



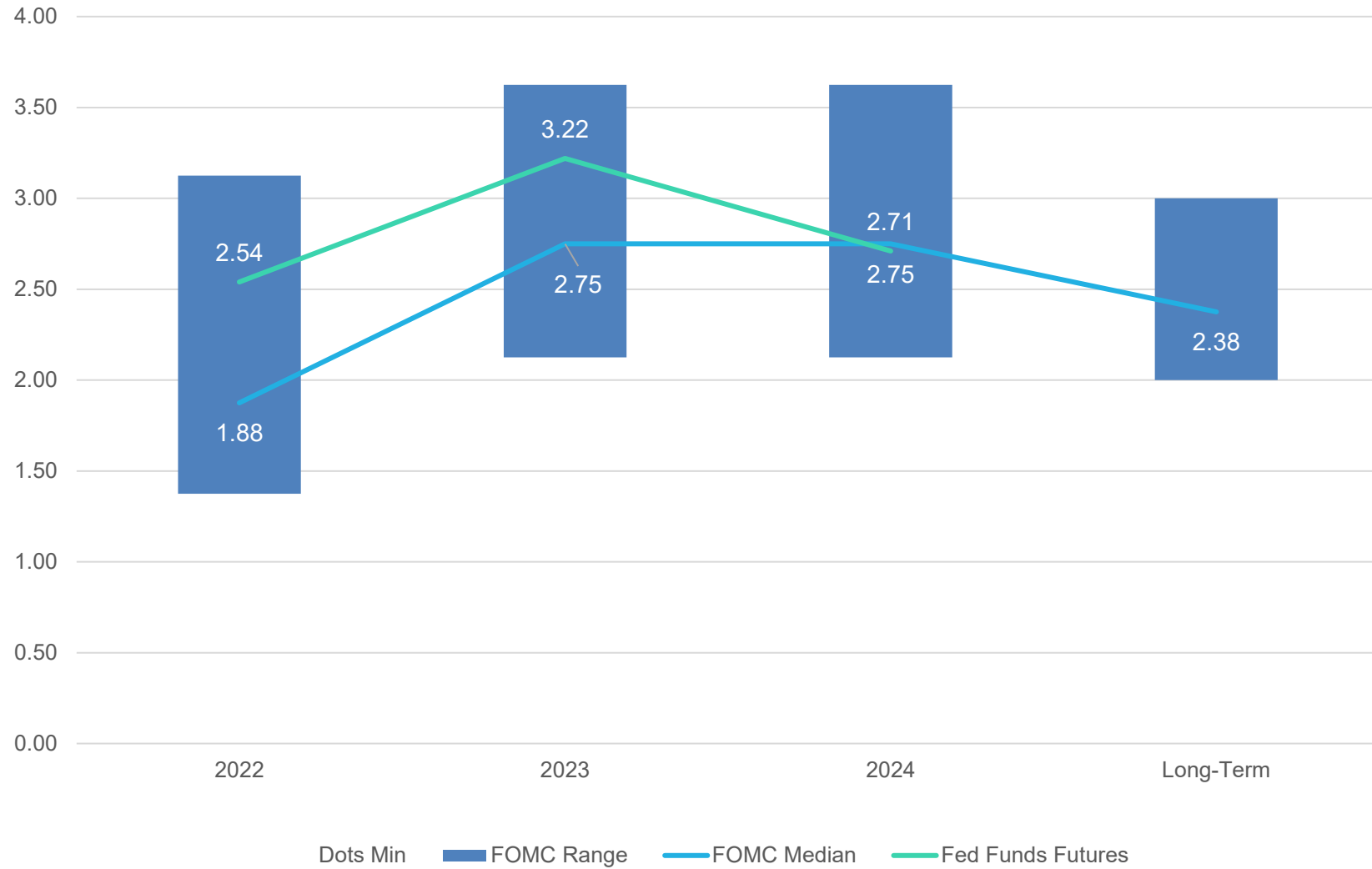
Quarterly CPI Forecast (YoY%)



Source: Bloomberg; As of: 4/8/22



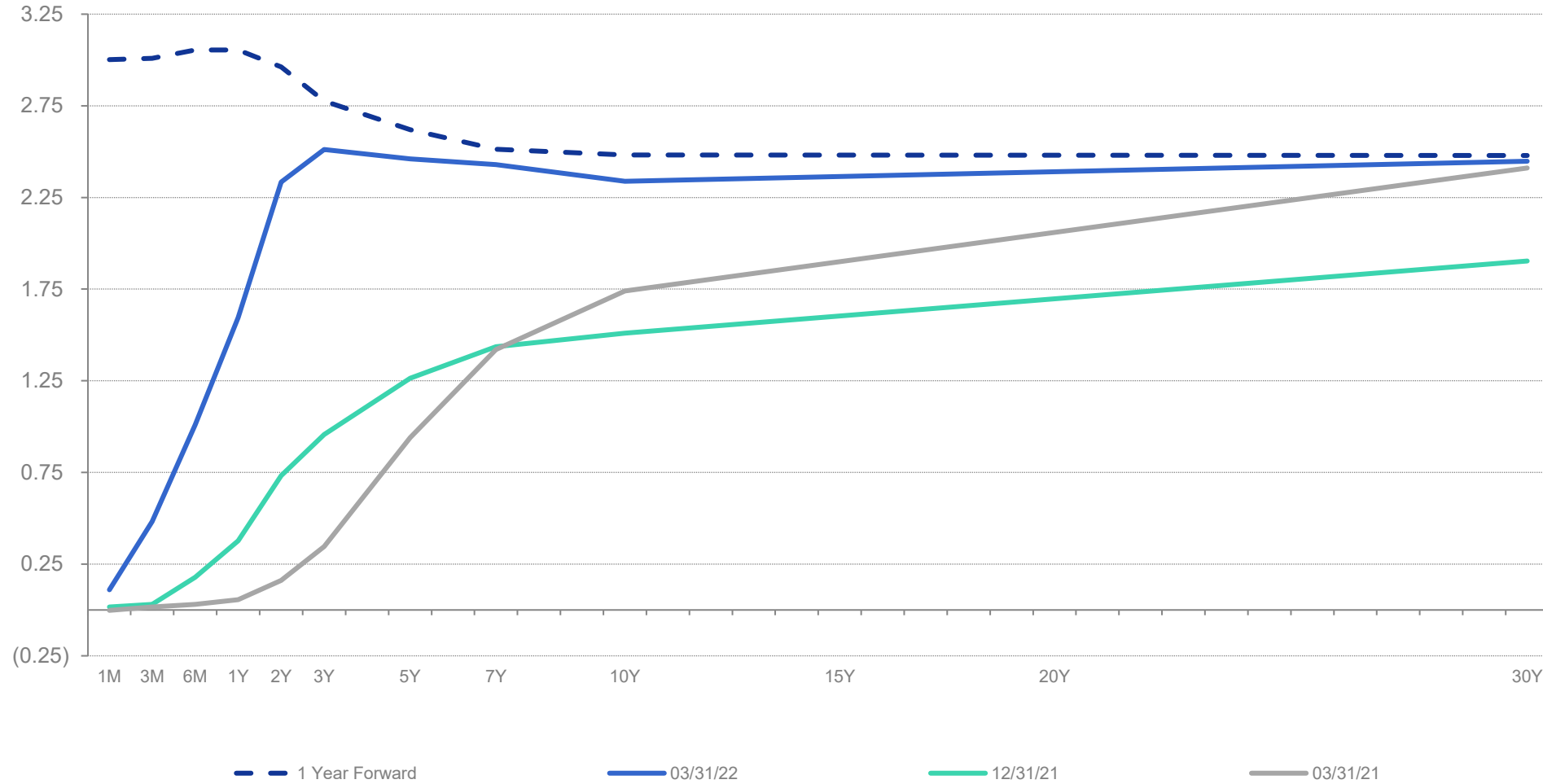
Fed Funds Rate Expectations



Source: Bloomberg; As of April 8, 2022



US Treasury Curve and Forward Rates



Sources: Bloomberg



PMA Market Outlook

- ▶ Tighter Monetary Policy in 2022
- ▶ Strong Economic Growth and Persistent Inflation
- ▶ Corporate Credit and Earnings Remain Strong
- ▶ Political and Geopolitical Risks Elevated
- ▶ Market Volatility Creates Opportunities for Active Managers
- ▶ Wider Range of Potential Returns in 2022 for Stocks and Bonds

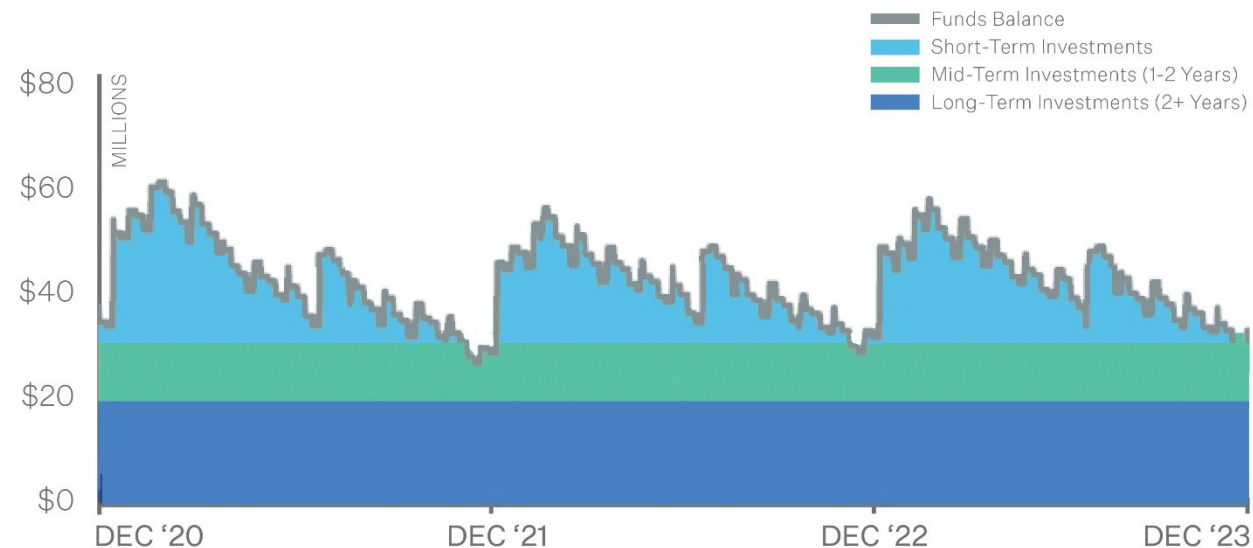
Investment Planning



Cash Flow Planning

- ▶ Formal organization and documentation of projected inflows/outflows
- ▶ Optimize your investment earnings
 - ▶ Asset-Liability matching and extending portfolio duration
- ▶ Determine excess reserves / short-term borrowing needs

Sample Cash Flow Analysis





Time Value of Money

- ▶ Should I wait to invest until rates rise?
- ▶ Time in the market is more important than timing the market
- ▶ The value of time – don't try to time the market

Invest	\$ 10,000,000	\$ 10,000,000
Yield	1.56%	1.66%
Period	365	335
Income	\$ 156,000	\$ 152,356



Interest Rate and Inflation Takeaways

- ▶ Fed drives short-term rates
- ▶ Fed is expected to hike rates multiple times in 2022
- ▶ Longer-term securities are pricing in rate hikes
- ▶ Inflation is backward looking
- ▶ Inflation expectations are priced into the curve
- ▶ Real short-term rates can turn deeply negative
- ▶ Exposure across the curve provides diversification
- ▶ Don't try to time the market

– Client Service Focus

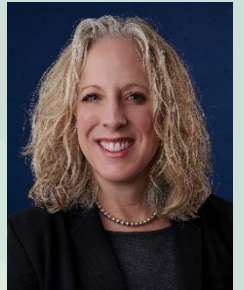
– Disciplined Investment Philosophy

– Strategic Portfolio Allocation

– Experienced Investment Team



Navigating High Inflation – Part II



Tammie Beckwith Schallmo
Senior Vice President,
Managing Director
PMA Securities, LLC

April 21, 2022



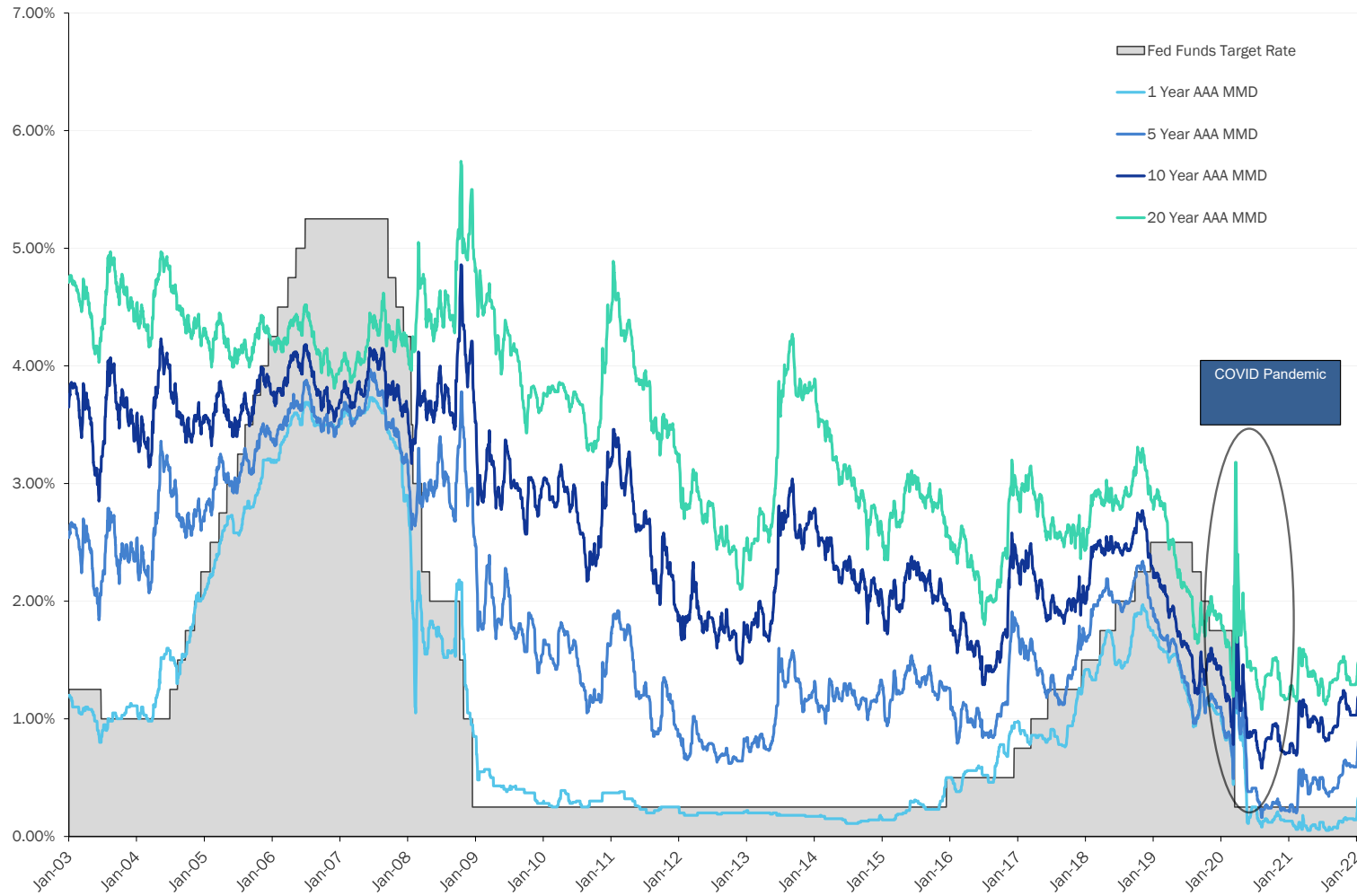
Today's Capital Markets Discussion Topics

- ▶ Bond Market Update
- ▶ Managing Interest Rate Risk for a Refunding

Bond Market Update



Historical Interest Rates*

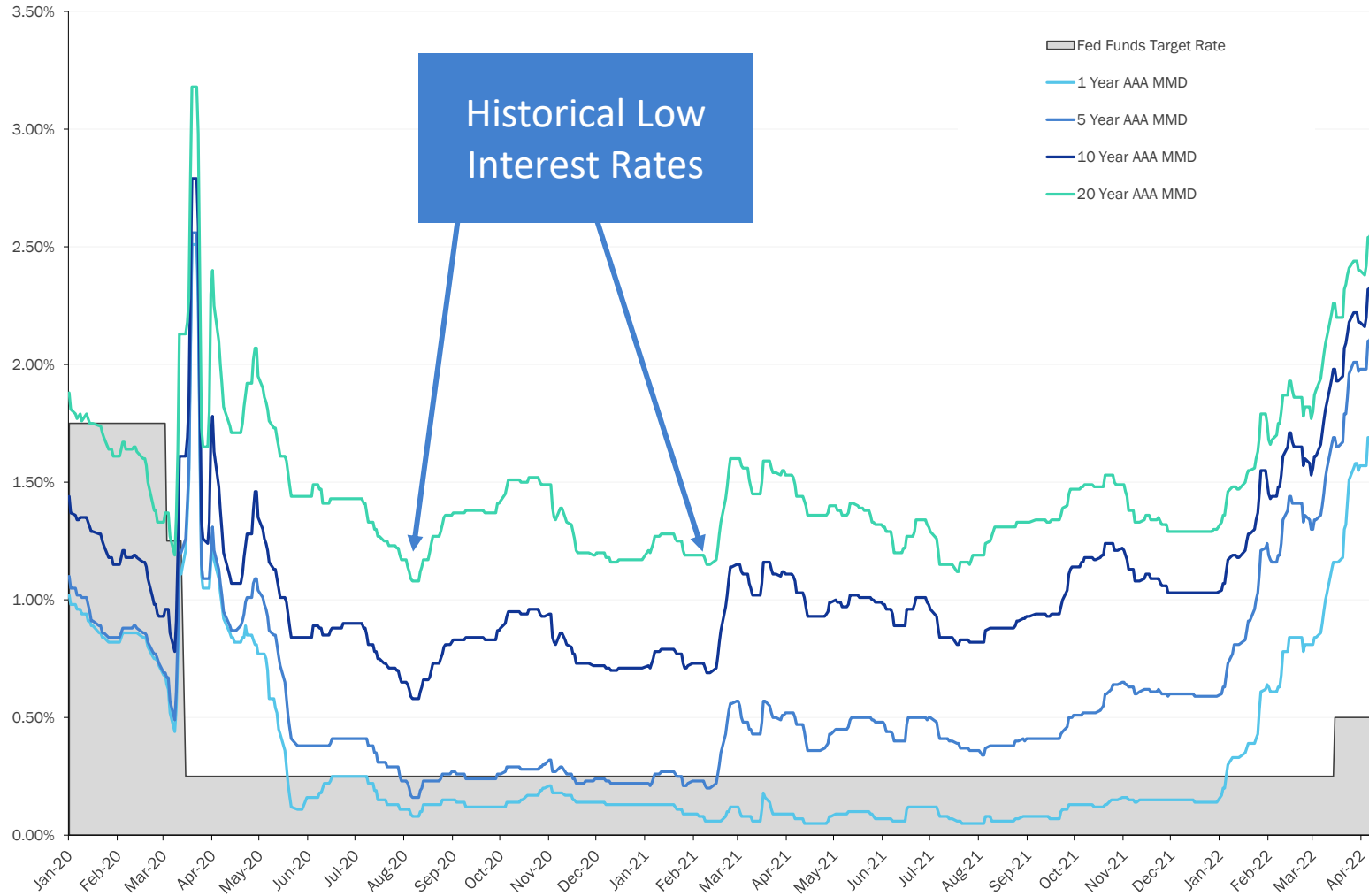


- ▶ The chart to the left is a “AAA” rated index known as the “MMD”
- ▶ An issuer’s bonds sell at a “spread” to the index due to its own credit rating and the “Illinois Premium”

*The Municipal Market Data “MMD” is a AAA municipal bond market index produced by TM3. As of April 11, 2022.



Historical Interest Rates*



▶ Since January 3, 2022 rates in the MMD have increased as follows:

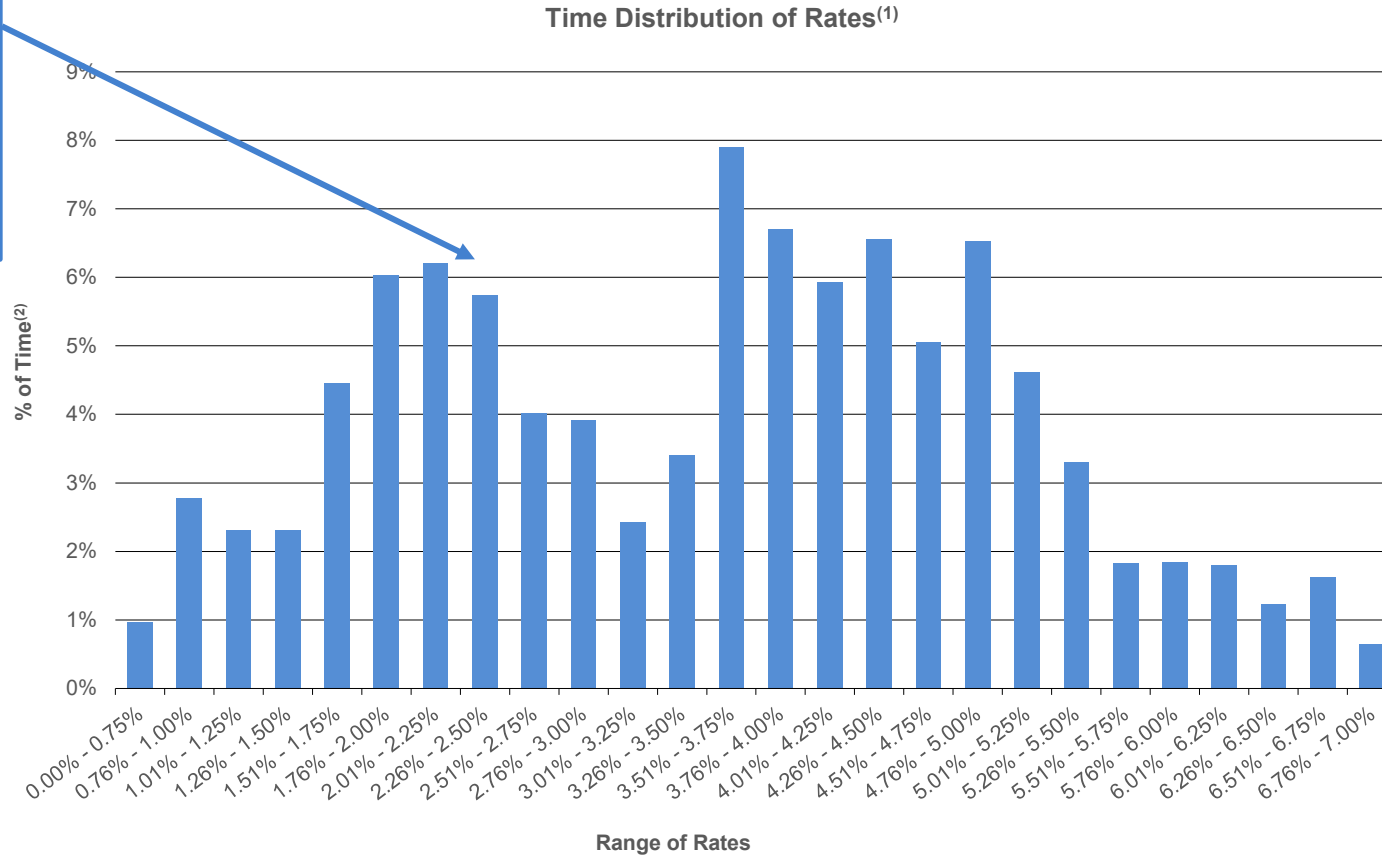
- 5-year: 1.61%
- 10-year: 1.39%
- 20-year: 1.34%

*The Municipal Market Data "MMD" is a AAA municipal bond market index produced by TM3. As of April 11, 2022.



Dispersion of Historical Interest Rates by Range*

Current 10-year rate of 2.42% falls within this range



- ▶ Since January 1, 1990, the 10-year MMD has been lower than it is today **25%** of the time
- ▶ Two months ago, the 10-year MMD had been lower **6%** of the time

⁽¹⁾Current Rate is the MMD 10-year rate as of 04/11/22.

⁽²⁾Data encompasses MMD 10-year rates between 01/02/90 and 04/11/22. Past performance does not guarantee future results.

*The Municipal Market Data "MMD" is a AAA municipal bond market index produced by TM3. As of April 11, 2022.



Managing Interest Rate Risk for a Refunding



Tools to Manage Market Risk for Refunding Tax-Exempt Debt

1. Taxable Advance Refunding

- ▶ An advance refunding is a refunding that closes more than 90 days before the call date
- ▶ A Federal tax law change is necessary to allow for a tax-exempt advance refunding for bonds originally issued for new money

2. Tax-Exempt Current Refunding

- ▶ Within 90 days of the call date

3. Forward Settlement Tax-Exempt Current Refunding

- ▶ See next slide for more details



What is a Forward Settlement Current Refunding?

- ▶ In a Forward, the interest rate is set in the present, but the bonds close in the future
- ▶ This strategy allows a College to lock-in a rate above the current market, mitigating market risk
 - ▶ Allows refunding bonds to be issued tax-exempt
 - ▶ The escrow is more efficient
 - ▶ Reduces the Break-Even Market Movement
- ▶ Large commercial banks may propose different terms that are not in a typical public offering
 - ▶ For example, a “default rate” and a “taxable rate”



Disclaimer

PMA Asset Management, LLC. ("PMA") is an investment adviser registered with the U.S. Securities and Exchange Commission. The information presented herein is for general information purposes only and is not a specific/buy sell recommendation. The analysis or information presented in this presentation is based upon hypothetical projections and/or past performance that may have certain limitations and is solely intended to suggest/discuss potentially applicable financing applications or investment strategies with you. Any terms discussed herein are preliminary until confirmed in a definitive written agreement.

Investment in securities involves risks, including the possible loss of the amount invested. In addition, past performance is no indication of future performance and the price or value of investments may fluctuate. Asset allocation does not assure or guarantee better performance and cannot eliminate the risk of investment losses. You should consider certain economic risks (and other legal, tax, and accounting consequences) prior to entering into any type of transaction with PMA Asset Management, LLC and its employees do not offer tax or legal advice. You should consult with your tax and/or legal advisors before making any tax or legal related investment decisions.

Securities, public finance and institutional brokerage services are offered through PMA Securities, LLC, PMA Securities, LLC is a broker-dealer and municipal advisor registered with the SEC and MSRB, and is a member of FINRA and SIPC. PMA Asset Management, LLC, an SEC registered investment adviser, provides investment advisory services to separately managed accounts and local government investment pools. All other products and services are provided by PMA Financial Network, LLC, PMA Securities, LLC and PMA Asset Management (collectively "PMA") are under common ownership. Securities and public finance services offered through PMA Securities, LLC are available in CA, CO, FL, IL, IN, IA, MI, MN, MO, NE, NY, OH, OK, PA, SD, TX and WI. This document is not an offer of services available in any state other than those listed above, has been prepared for informational and educational purposes and does not constitute a solicitation to purchase or sell securities, which may be done only after client suitability is reviewed and determined.

©2022 PMA Asset Management, LLC. All rights reserved. For institutional use only.



Disclosure

This presentation has been prepared by PMA Securities, LLC for informational and educational purposes to units of local government without regard to any particular entity's investment objectives, financial situation or means. The content of this presentation is not to be construed as a recommendation, solicitation or offer to engage in an issuance, or to buy or sell any security, financial product or instrument, or to participate in any particular trading strategy in any jurisdiction in which such an offer or solicitation, or trading strategy would be illegal. Nor does it constitute any legal, tax, accounting or investment advice of services regarding the suitability or profitability of any security or investment. PMA and its employees do not offer tax or legal advice and any entity should consult with its own tax and/or legal advisors before making any tax or legal related investment decisions.

Although the information contained in this presentation has been obtained from third-party sources believed to be reliable, PMA cannot guarantee the accuracy or completeness of such information. It is understood that PMA is not responsible for any errors or omissions in the content in this document and the information is being provided to you on an "as is" basis without warranties or representations of any kind. The analysis or information presented in this presentation is based upon current market conditions which are subject to change. There is no guarantee that the projected yield will be realized and the actual yield will depend on the available investment product and market conditions at the time of investment.

This presentation is solely intended to suggest/discuss potentially applicable financing applications or investment strategies. Any terms discussed herein are preliminary until confirmed in a definitive written agreement. Although market value, market analytics and other information contained in this presentation have been obtained from third-party sources believed to be reliable, PMA cannot guarantee the accuracy or completeness of such information. No representation is made that any results indicated herein will be achieved. Changes to any prices, levels, or assumptions contained herein may have a material impact on results. Any estimates or assumptions contained herein represent our best judgment as of the date indicated and are subject to change without notice. Examples are merely representative and are not meant to be all-inclusive. All investments mentioned herein may have varying levels of risk, and may not be suitable for every investor. Investment in securities involves risks, including the possible loss of the amount invested. In addition, past performance is no indication of future results and the price or value of investments may fluctuate. Asset allocation does not assure or guarantee better performance and cannot eliminate the risk of investment losses.

Securities, public finance services and institutional and municipal advisory brokerage services are offered through PMA Securities, LLC. PMA Securities, LLC is a broker-dealer and municipal advisor registered with the SEC and MSRB, and is a member of FINRA and SIPC. PMA Asset Management, LLC, an SEC registered investment adviser, provides investment advisory services to local government investment pools and separate accounts. All other products and services are provided by PMA Financial Network, LLC. PMA Financial Network, LLC, PMA Securities, LLC, and PMA Asset Management, LLC (collectively "PMA") are under common ownership.

© 2022 PMA Securities, LLC

v01.08.21