

Investments 101

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Introductions

Christine Green: Moderator - *Director of Business Services, CSBO, Lake Zurich CUSD 95*

Matt Hanigan: Speaker – *Senior Managing Consultant, PFM Asset Management LLC*

Jeff Schroeder: Speaker – *Managing Director, PFM Asset Management LLC*



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Today's Agenda

- Investment Basics
- Risks Associated with Investing in Fixed Income Securities
- Designing a Strong Investment Program
- Investment Strategies in Today's Interest Rate Environment

Investment Basics

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Permitted Investments

- Define in Investment Policy
- Complies with the Illinois Public Funds Investment Act (30 ILCS 235)
- Set diversification limits
 - Term
 - Sector
 - Credit Quality
- Restrictive clauses
- Corporate obligations are limited to 1/3rd of the total portfolio, per 30 ILCS 235

Sector	Allowed
LGIPs / Bank Accts / MMAs	Yes
FDIC CDs	Yes
U.S. Treasuries	Yes
U.S. Agencies	Yes
Instrumentalities (Supras)	Yes
Municipal Bonds (taxable)	Yes
Commercial Paper	Yes
Corporate Notes	Yes
Negotiable CDs	Yes
Mutual Funds (Stocks)	NO

Fixed Income Securities

- Definition: a bond, debt obligation of a corporate, governmental entity, or trust. May provide periodic coupon payments based on a fixed or floating interest rate. Upon maturity, the face value or principal of the security is redeemed to the investor.
- Advantages
 - Competitive rates of return
 - Opportunity to realize capital gains
 - Fixed maturity value if held to maturity
 - Set coupons create predictable cash flow
- Disadvantages
 - Loss of value possible if interest rates increase
 - Rating agency downgrade can negatively effect value

The “Income” in Fixed Income

Par Value (Face Value) – principal amount of the bonds

- Amount that will be repaid by issuer
- Price may be above (premium) or below (discount) the face amount

Coupon Rate (Nominal Yield) – stated interest rate

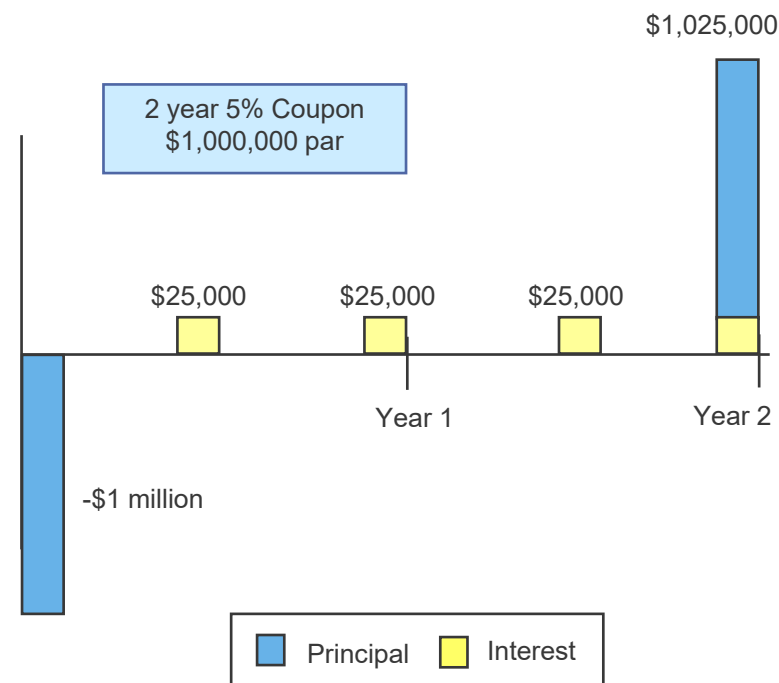
- Expressed as a fixed percentage of par

Coupon Payment – dollar value of interest payment

- Multiply the coupon rate by par value
- Typically paid semi-annually
- Last interest payment is made when the bond matures
- ***(Coupon ÷ Market Price) = Current Yield***

Maturity – end of investment period

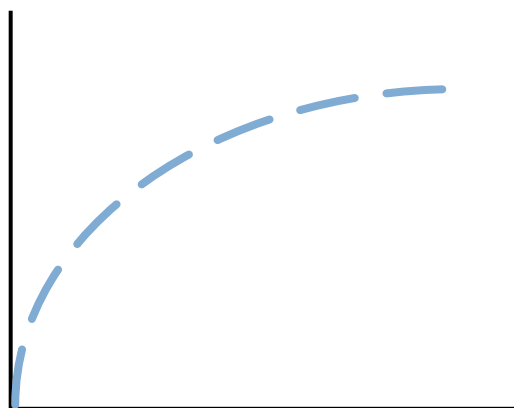
- The length of time until the principal is scheduled to be repaid



Yield Curves

- Shows the relationship between yield and maturity.
- Rates at the short end of the curve (under 1 year) are directly correlated to the federal funds rate established by the Federal Open Market Committee.
- The longer end of the curve typically reflects investor expectations.
- There are three types of curves:

Normal



Flat



Inverted



Term to Maturity

Pop Quiz

- 1) Which of the following investments are not permitted for IL schools?
 - A. Apple Stock
 - B. 2-Year Apple Corporate Note
 - C. 10-Year US Treasury Note
 - D. Corporate Bond Fund

- 2) Describe a “normal” yield curve.

Risks Associated with Investing in Fixed Income Securities

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Types of Bond Risks

Liquidity Risk

- Inability to sell portfolio holdings at a competitive price

Credit Risk

- Risk of default or decline in security value due to conditions outside investor's control

Reinvestment Risk

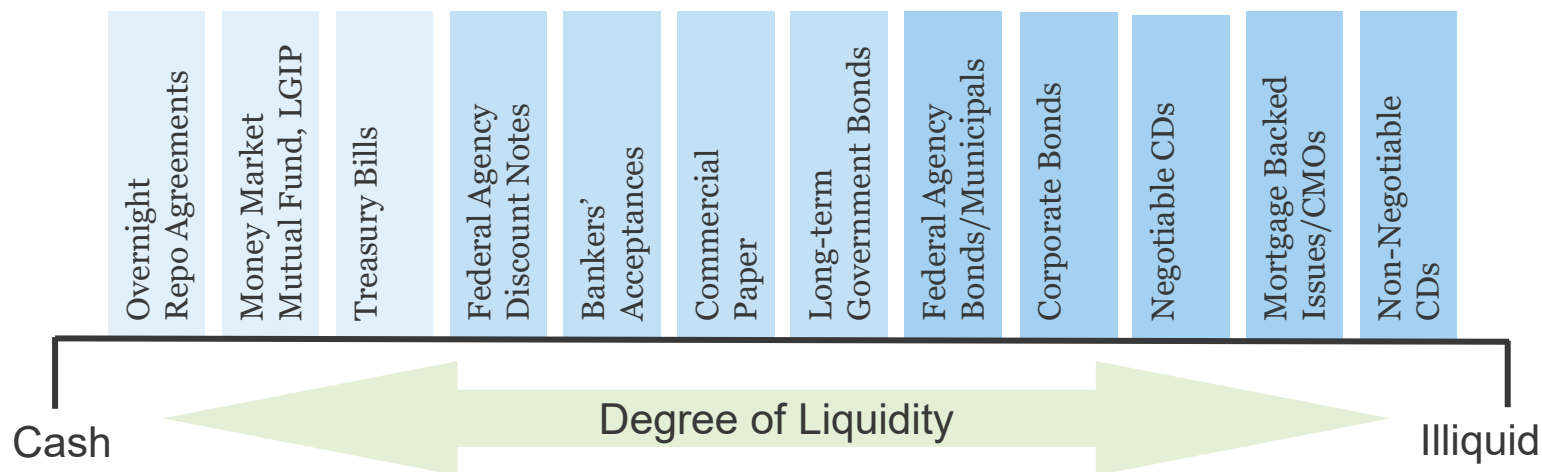
- The risk that a security's cash flow will be reinvested at a lower rate of return

Interest Rate Risk

- Variability of return/price related to changes in interest rates

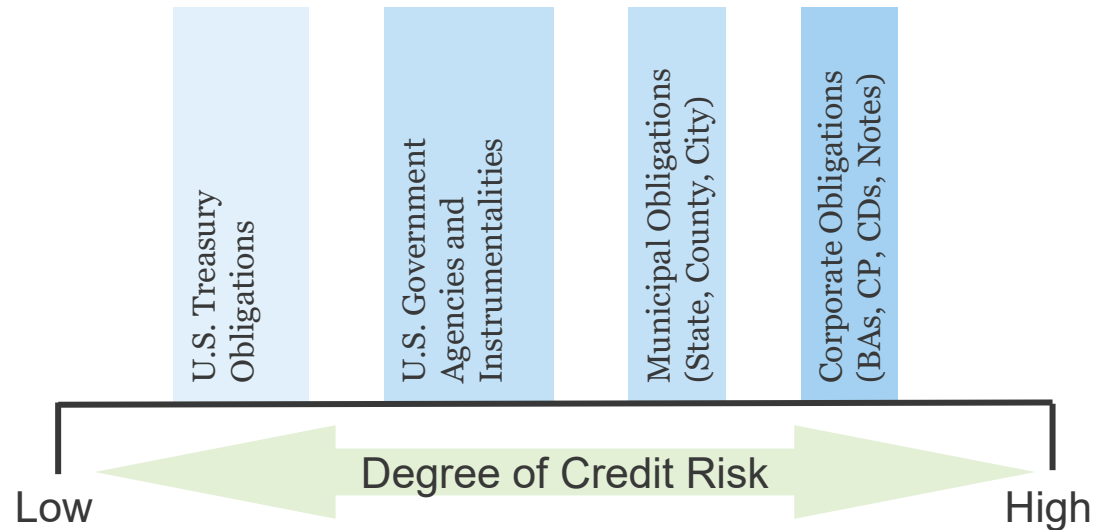
Liquidity Risk

- Inability to sell portfolio holdings at a competitive price
 - Potential penalty for earlier withdrawal (CDs)
 - Capital losses if interest rates have gone up



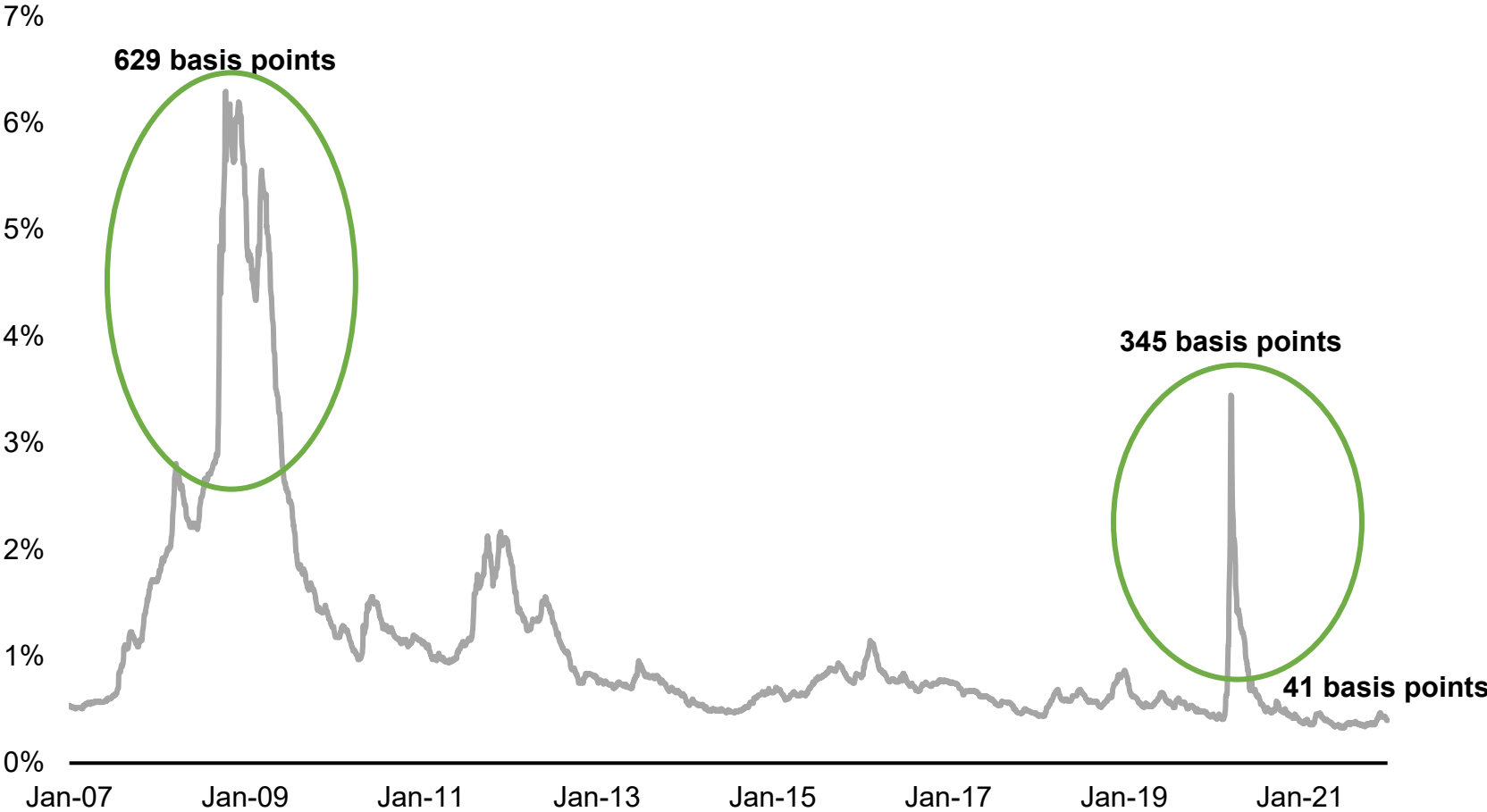
Credit Risk

- Risk of default or decline in security value due to credit deterioration of the issuer
 - Bankruptcy
 - Rating agency downgrades
 - Regulatory changes



Corporate Spreads Widen During Periods of Stress

Corporate Notes A-AAA Yield Spreads (OAS)



Source: Bloomberg, as of 12/31/2021

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Monitoring Credit Risk

- Nationally Recognized Statistical Rating Organizations (NRSRO)
 - Designated by the SEC
- Largest and most active NRSROs
 - Standard & Poor's
 - Moody's Investors Service
 - Fitch Ratings

Actions	Definition
Credit Rating	<ul style="list-style-type: none">• Reflection of the probability of default (default rate) & loss to investor (loss rate)
Rating Watch	<ul style="list-style-type: none">• Indication that the NRSRO is reassessing the rating in response to a material change to the credit quality of the issuer• Potential upgrade or downgrade may occur within 3 months
Rating Outlook	<ul style="list-style-type: none">• Longer-term projection of a possible ratings change• Potential upgrade or downgrade may occur 6 months – 2 years

Importance of Monitoring Holdings

Boeing
Purchased July 2019

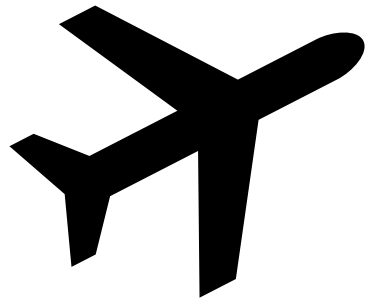
Sector: Aerospace
S&P: A
Moody's: A2
Fitch: A-

In January 2020

Moody's
downgraded to
Baa1

In March 2020

S&P downgraded to
BBB-
Fitch downgraded to
BBB



Boeing
March 31, 2020

S&P: BBB-
Moody's: Baa1
Fitch: BBB

Source: Bloomberg. Credit ratings as of March 31, 2020.

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Long-Term Credit Ratings

S&P	Moody's	Explanation of Rating
AAA	Aaa	High quality. Smallest degree of investment risk.
AA	Aa	High quality. Differs only slightly from highest-rated issues.
A	A	Adequate capacity to pay interest and repay principal.
BBB	Baa	More susceptible to adverse effects of changes in economic conditions.
BB	Ba	Has speculative elements; future not considered to be well-assured.
B	B	Generally lack characteristics of desirable investment.
CCC	Caa	Poor standing. Vulnerability to default.
C	C	Extremely poor prospect.
D	D	In default.

For additional information and detail regarding ratings criteria, you can visit S&P (https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352) and Moody's (https://www.moody.com/Pages/amr002002.aspx?stop_mobi=yes).

Short-Term Credit Ratings

S&P	Moody's	Explanation of Rating
A-1+	P-1	High quality. Smallest degree of investment risk.
A-1	P-1	High quality. Differs only slightly from highest-rated issues.
A-2	P-2	Adequate capacity to pay interest and repay principal.
A-3	P-3	More susceptible to adverse effects of changes in economic conditions.
B	Not Prime	Highly speculative; future not considered to be well-assured.
C	Not Prime	Poor standing. Vulnerability to default.
/	/	In default.

For additional information and detail regarding ratings criteria, you can visit S&P (https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352) and Moody's (https://www.moody.com/Pages/amr002002.aspx?stop_mobi=yes).

Reinvestment Risk

- The risk that a security's cash flow will be reinvested at a lower rate of return than what is being earned by the security.
- Exposure to reinvestment risk
 - Callable securities
 - Asset- and mortgage-backed securities
 - Securities with larger earlier cash flows (high coupon bonds)

Interest Rate Risk

- Market values and interest rate movements are inversely related.
- Longer maturity = Greater risk.



Duration is the metric for interest rate risk on individual securities and your portfolio.



How to Mitigate Risk

- Diversification
 - Asset class
 - Issuer
 - Maturity
- Purchase securities with an active secondary market
- Match portfolio to expected cash flow requirements

Pop Quiz

- 1) True or False? Callable securities have reinvestment risk.
- 2) Which type of fixed income security has the least amount of credit risk?
- 3) All else held equal, if interest rates fall, the market value of your portfolio will _____ (increase/decrease).

Designing a Strong Investment Program

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Building Blocks for a Strong Investment Program



Developing a Strong Investment Policy

- An Investment Policy should be structured to place the highest priority on the:
 - **Safety** of principal
 - **Liquidity** of funds
- The optimization of **returns** shall be secondary (yet important—maximize earnings through diversification)
- Compliance with legal restrictions/regulations
- Flexibility/Simplicity
- Provides a roadmap during periods of volatility

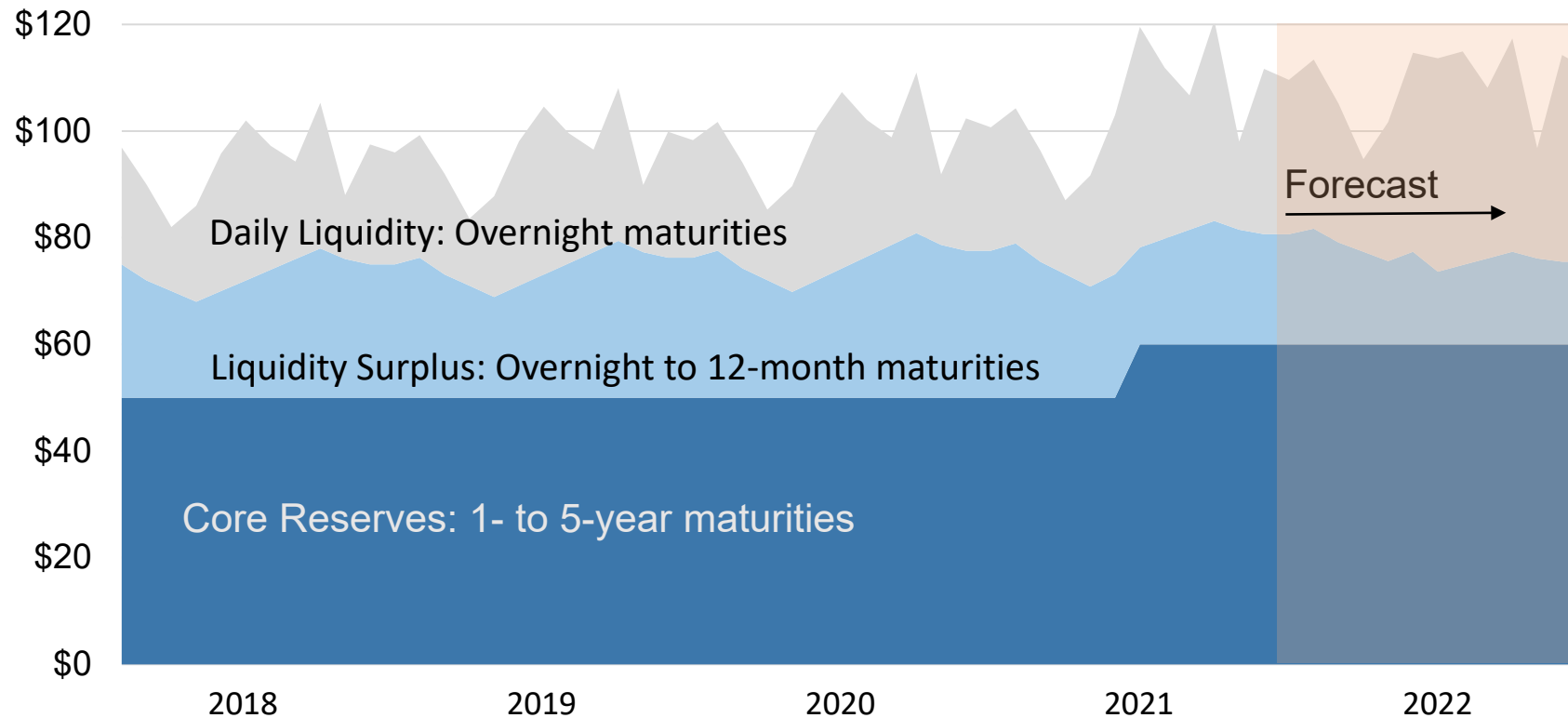


Investment Policy Best Practices

- ✓ Update language to meet current industry standards and best practices
- ✓ Update language to conform to current Code requirements
- ✓ Reevaluate use of different investment sectors
- ✓ Reevaluate maturity limits
- ✓ Incorporate diversification and maturity standards
- ✓ Strengthen controls
- ✓ Establish an appropriate benchmark

The Importance of Knowing Your Cash Flows

- Understanding your liquidity needs is vital to define investment strategies.
- There are opportunity costs to excess, as well as insufficient, liquidity.



Investment Opportunities in Longer Maturities

- Once core funds are identified, a recommended strategy is to invest in a longer-term investment strategy
- Longer strategies can increase earnings potential, however they also come with increased risk.

Risk/Return of Various Investment Strategies 20 Years Ended December 31, 2021				
Bank of America Merrill Lynch Treasury Index	Duration (years)	Annualized Total Return	Cumulative Value of \$30 Million	Quarters With Negative Return
3M T Bill	0.24	1.29%	\$38,758,139	1 out of 80
1 Yr Treasury	1.00	1.67%	\$41,829,196	8 out of 80
1-3 Treasury	1.88	2.16%	\$46,040,710	15 out of 80
1-5 Treasury	2.64	2.65%	\$50,605,118	23 out of 80
1-10 Treasury	3.92	3.25%	\$56,847,146	26 out of 80

Source: Bloomberg, Bank of America / Merrill Lynch Global Indices; based on historical results – future results may vary. As of December 31, 2021.

The Importance of Diversification

Index	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
U.S. Treasury	14.35%	6.33%	3.66%	6.46%	1.29%	2.18%	1.54%	2.30%	2.36%	1.85%	6.56%	5.52%	0.34%
Bullet Agencies	9.29%	5.43%	3.36%	4.33%	1.24%	2.06%	1.51%	1.93%	1.94%	1.79%	5.64%	4.83%	-0.63%
Callable Agencies	6.95%	5.42%	3.36%	2.81%	0.91%	1.92%	1.45%	1.32%	1.51%	1.68%	5.60%	4.71%	-0.69%
Corporate AAA	5.98%	4.81%	3.15%	1.63%	0.70%	1.38%	1.28%	1.19%	1.46%	1.53%	5.40%	4.25%	-0.75%
Corporate AA	5.56%	3.61%	2.62%	1.61%	0.41%	1.30%	1.20%	1.09%	1.00%	1.52%	4.20%	4.15%	-0.86%
Corporate A	2.53%	3.54%	2.59%	1.52%	0.03%	1.29%	1.12%	0.81%	0.83%	1.38%	3.95%	3.17%	-0.92%
Municipals	2.14%	1.85%	2.32%	0.91%	-0.01%	1.24%	0.98%	0.19%	0.82%	1.36%	3.65%	2.76%	-1.10%
MBS 0-3	0.23%	1.24%	1.67%	0.85%	-0.19%	1.10%	0.90%	0.16%	0.65%	1.08%	3.16%	1.25%	-1.88%

Source: Bloomberg. Annual returns of 1-5 Year ICE BofAML Indices unless specified otherwise.



Monitoring Your Investment Program

- Quarterly Performance Report
 - Performance relative to the markets
 - Investment Policy compliance
 - Credit ratings
- Custody Statement
 - Official books and records
 - Ensure holdings consistent with internal records



Pop Quiz

- 1) What are the three key investment objectives for school districts?
- 2) True or False? Corporate notes produce higher returns than Treasuries all the time because of their higher yields.

Investment Strategies in Today's Interest Rate Environment

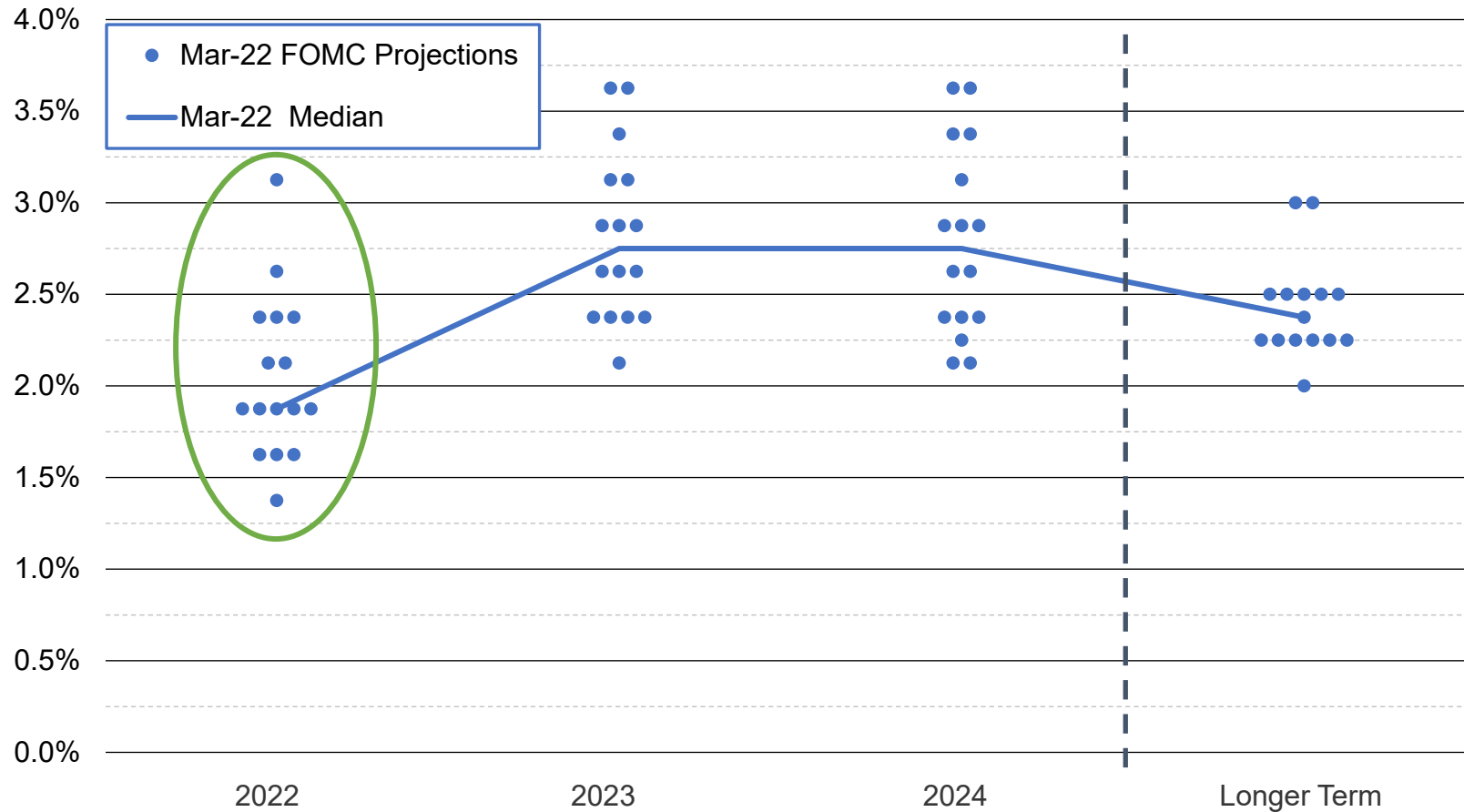
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The Fed Is Poised for More Rate Hikes in 2022

Fed Participants' Assessments of 'Appropriate' Monetary Policy



Source: Federal Reserve and Bloomberg. Individual dots represent each Fed members' judgement of the midpoint of the appropriate target range for the Federal Funds rate at each year-end.

Interest Rates Are Already Pricing In the Hikes



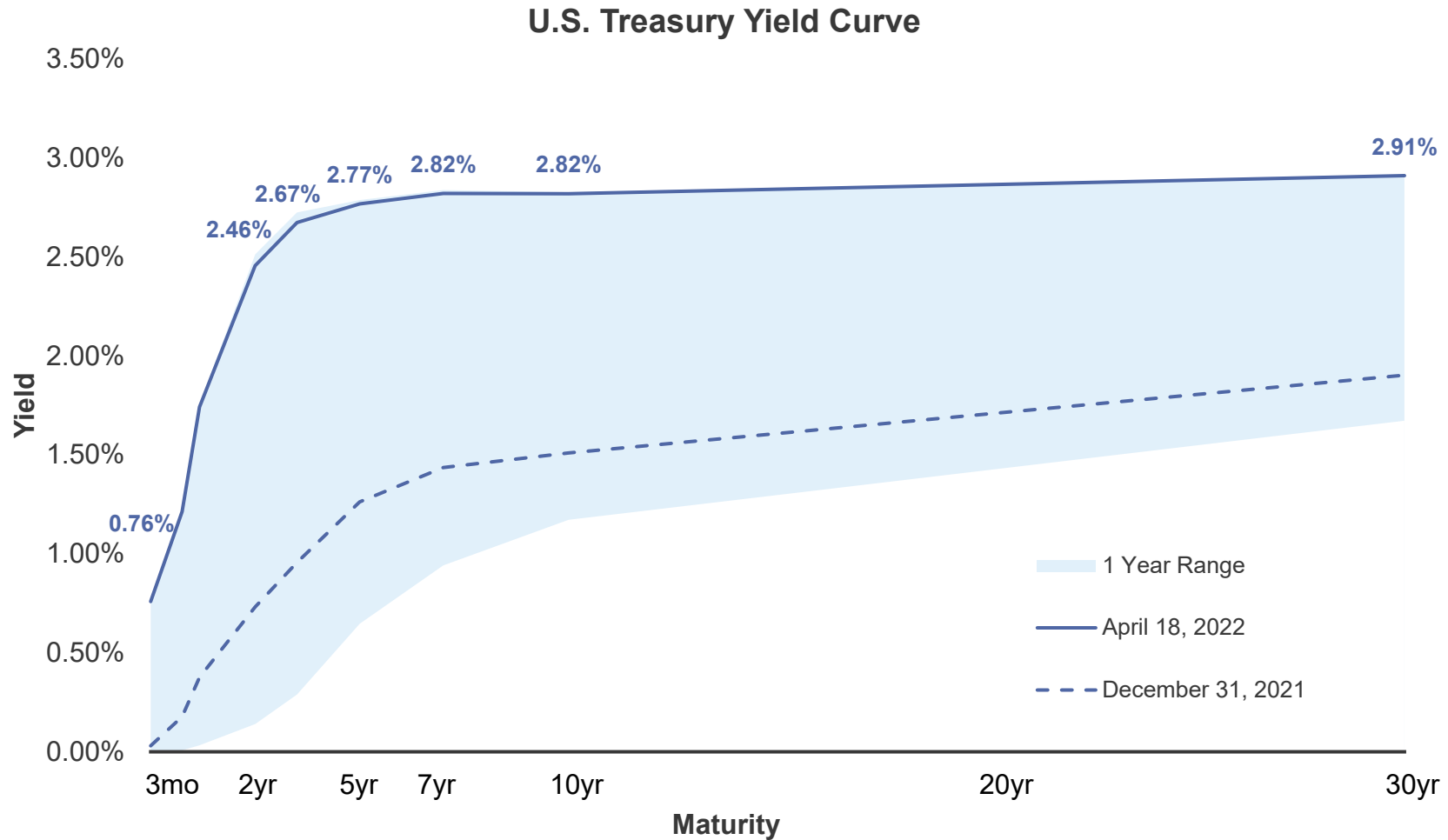
Source: Bloomberg, as of 4/18/2022.

What Do You Do?!

Some options to consider with rates on the rise:

- Freak out and sell everything!
- Shorten your portfolio's duration
- Maintain a diversified portfolio
- Capture value offered by steep yield curve

A Steep Yield Curve Is Your Friend



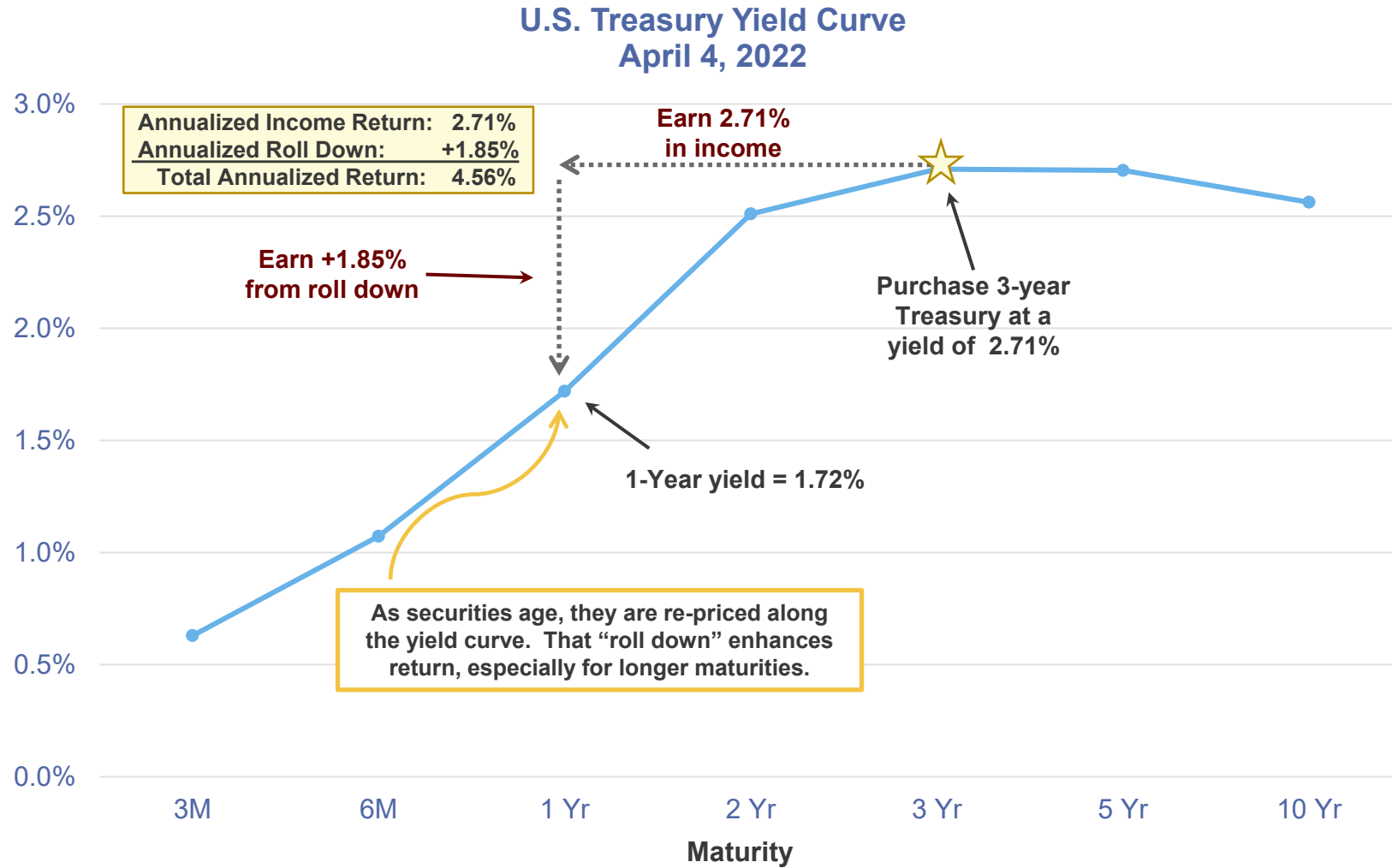
Source: Bloomberg, as of 4/18/2022.

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Rolling Down the Yield Curve

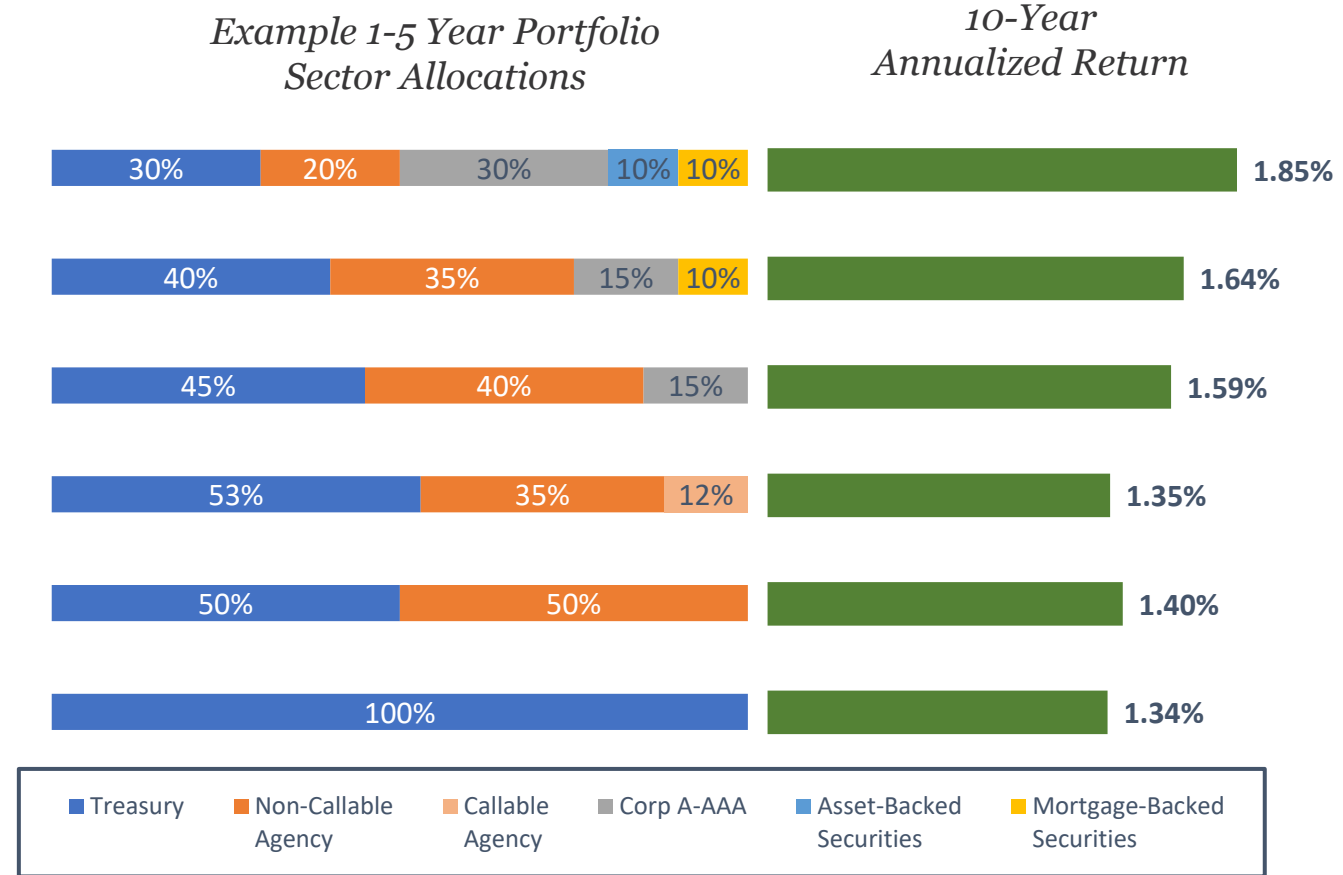


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Source: Bloomberg. Assumes positively sloped, static yield curve

Benefits of Diversification

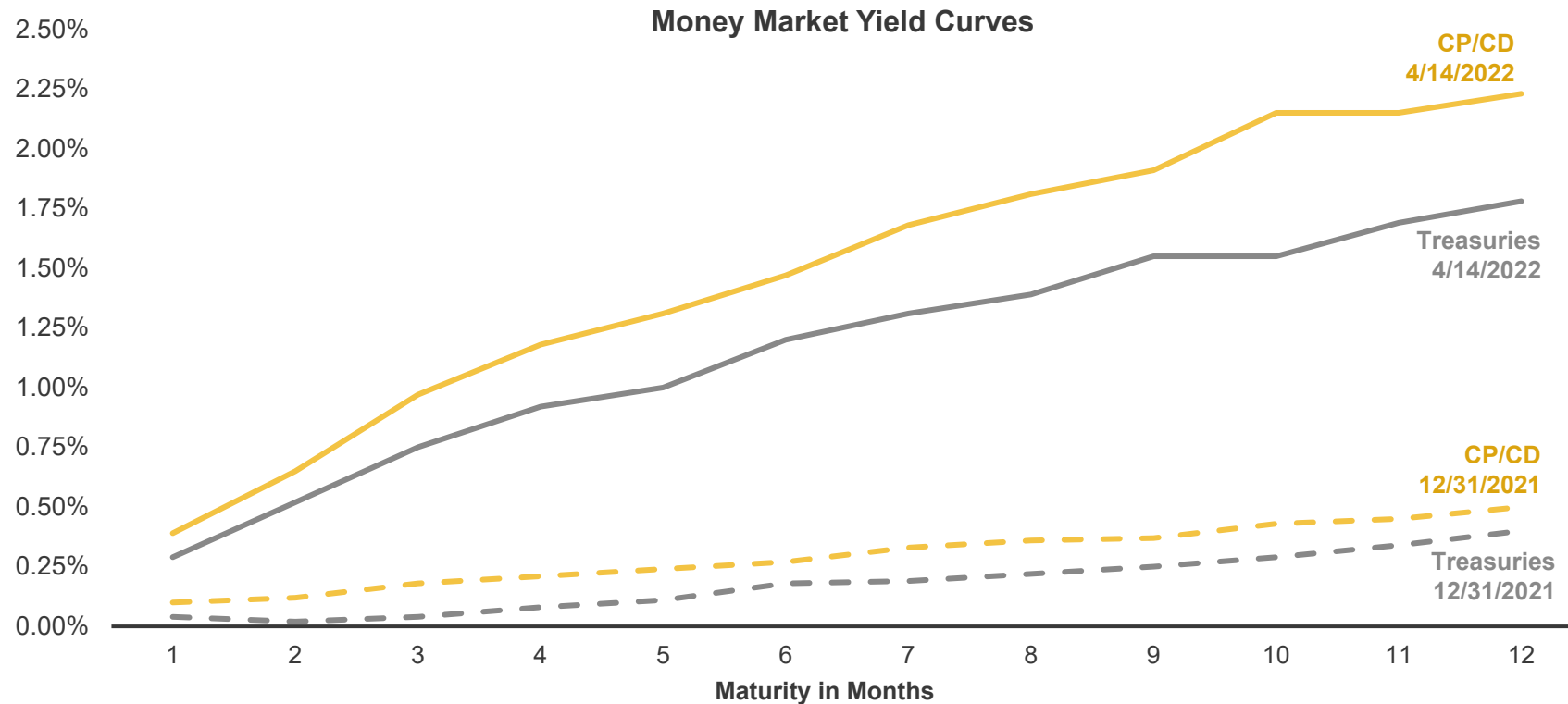
A diversified portfolio seeks to reduce earnings volatility and enhance portfolio returns



Source: Bloomberg, as of 12/31/21. Sample portfolio returns are based on the ICE BofAML 1-5 Year Indices. MBS and ABS are 0-5 year, based on weighted average life. Total return and standard deviation are annualized.

Rise in Rates Creates Opportunities in Short-Term Market

- Evaluate all your options for cash and short-term investments
 - Bank Deposits and earnings credit rates
 - Investment Pools (LGIPs)
 - Short-Term Securities (Portfolio)



Source: PFMAM Trading Desk, as of 4/18/2022. Yields are for indicative purposes only; actual yields may vary by issue.

Pop Quiz

True or False? It is a fact that the Fed will raise interest rates exactly 7 times in 2022.

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Questions and Answers

We thank you for your time!

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