

SESSION TWO

Investment Terms and Concepts

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FOR TODAY'S DISCUSSION

- Bond Basics
- Key Terms
- Key Concepts
- Bringing It All Together



BONDS 101

What Exactly Is A Bond?

WHAT IS A BOND?

Lender purchases a bond from Borrower



Borrower pays interest to Lender



At maturity, Borrower returns principal to Lender



WHAT IS A BOND?

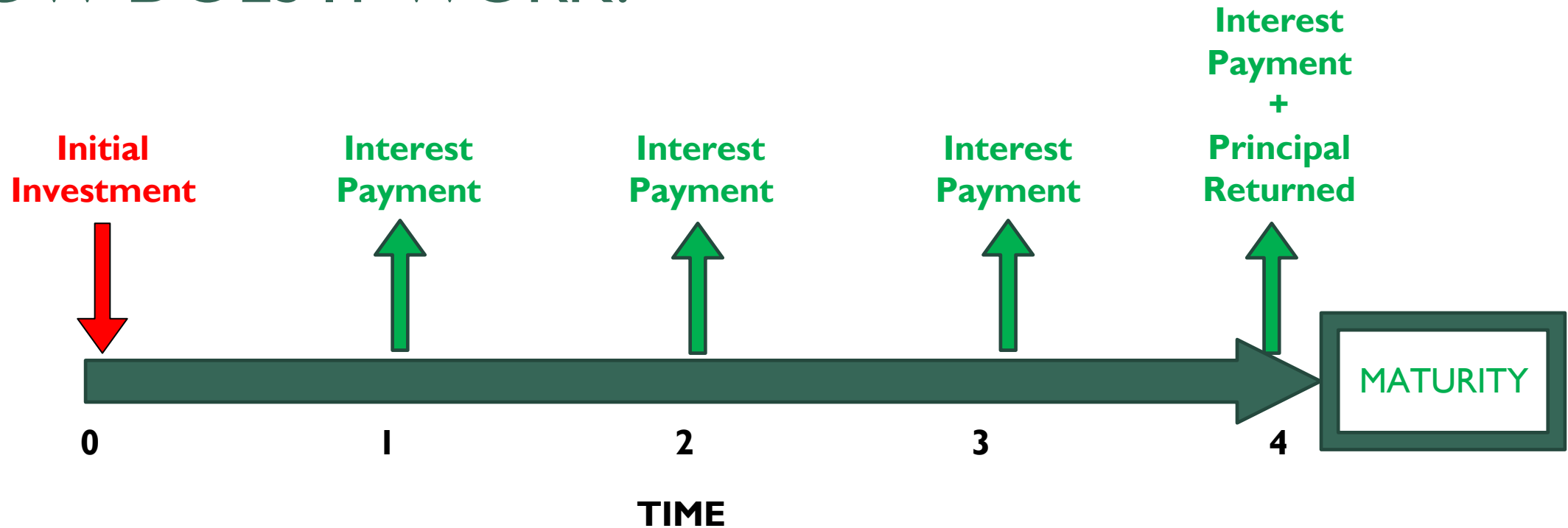
- Bonds are debt obligations
 - Referred to as fixed-income securities; offers a fixed stream of income

IOU

Issuer Promises to pay % annually
on \$\$ and repay principal by
MM/DD/YYYY

- Types of Bonds
 - *Treasury Bonds*
 - *Federal Agency Bonds*
 - *Municipal Bonds*
 - *Investment-grade Corporate Bonds*
 - *High-yield Corporate Bonds*
 - *Asset-backed Bonds*
 - *Mortgage-backed Bonds*
 - *Convertible bonds*
 - *Foreign Bonds*

HOW DOES IT WORK?



- Simply buy securities
- Hold them until maturity
- Reinvest maturing funds into new security
- ***But is there more to it?***

HOW THE BOND MARKET WORKS

- Not centrally exchanged
- Broker prices differ
- Prices depend on:
 - Market forces
 - Rate levels
 - Trading volume
 - Relationships
 - Broker inventory
- All this means you should shop around



USING BOND MARKET LANGUAGE

Key Terminology

BOND TERMINOLOGY—ALL THESE VALUES!

- **Par Value**—Face value of bond—it is the amount upon which coupon is calculated, and the amount you receive at maturity
- **Original Cost**—The price you paid for a bond—it can be above, below, or at par value
- **Premium or Discount**—The amount above or below par value paid for a bond
- **Amortized Cost (Book Value)**—The carrying value of the bond on your books (original cost +/- premium amortized or discount accreted to date)
- **Market Value**—The amount someone else is willing to pay for your bond

BOND TERMINOLOGY

- Basis point (1/100 of 1% or .0001)
- Spread
 - Difference between yields on differing debt instruments
 - Treasury yield is 1.00%;
 - Agency yield is 1.30%
 - **Spread = 1.3 – 1.0 = 30 bps**

BOND TERMINOLOGY

- **Yield**—Annual rate at which you are expected to earn interest income assuming same rate reinvestment
- **Return**—Rate you actually earned for a specific holding period
 - Total Return = Interest Income + Realized Gains/Losses + Unrealized Gains/Losses
 - Book Return = Interest Income + Realized Gains/Losses ONLY (no marking to market)

Yield and Return do not necessarily mean the same thing!

INVESTMENT CONCEPTS: RETURN IMPACTS

- Income: **Budget** and **ACFR**
- Fair Value Change: **ACFR** only

PROFIT AND LOSS BY MONTH

January 1 - May 21, 2019

	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 1-21, 2019	TOTAL
► Income	\$391.25	\$521.00	\$1,917.00	\$7,371.52	\$0.00	\$10,200.77
► Cost of Goods Sold	\$0.00	\$0.00	\$0.00	\$405.00	\$0.00	\$405.00
GROSS PROFIT	\$391.25	\$521.00	\$1,917.00	\$6,966.52	\$0.00	\$9,795.77
► Expenses	\$0.00	\$408.08	\$511.68	\$3,921.16	\$96.39	\$4,937.31
NET OPERATING INCOME	\$391.25	\$112.92	\$1,405.32	\$3,045.36	\$ -96.39	\$4,858.46
► Other Expenses	\$0.00	\$0.00	\$250.00	\$2,666.00	\$0.00	\$2,916.00
NET OTHER INCOME	\$0.00	\$0.00	\$ -250.00	\$ -2,666.00	\$0.00	\$ -2,916.00
NET INCOME	\$391.25	\$112.92	\$1,155.32	\$379.36	\$ -96.39	\$1,942.46

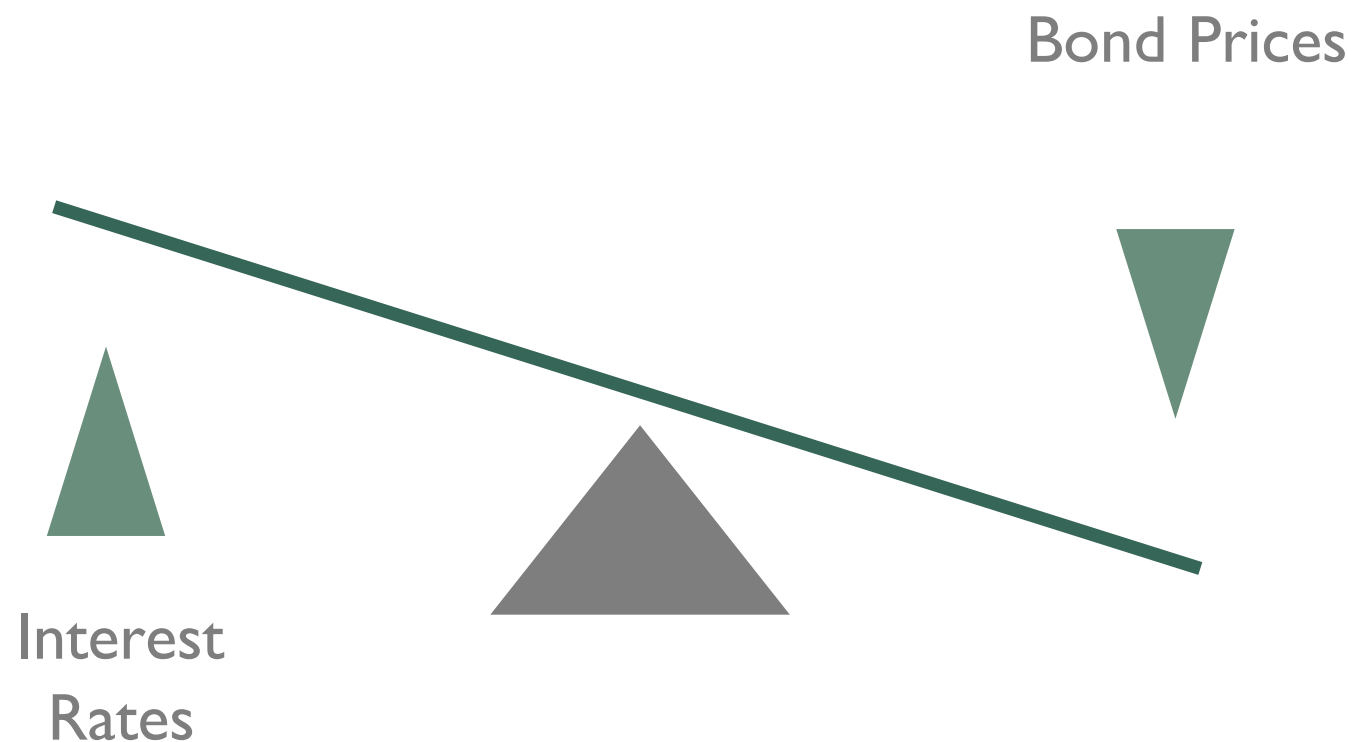
	FY 2017 Total Activity	FY 2018 Total Activity	FY 2019 Amended Budget	FY 2020 Proposed Budget
REVENUES				
Taxes				
Property Taxes	\$ 3,523,943	\$ 14,971,071	\$ 16,745,358	\$ 16,735,220
Sales & Use	12,025,807	15,852,753	15,740,000	16,090,000
Taxes	2,963,708	3,207,190	3,195,138	3,384,000
Business & Other Taxes	616,148	628,090	650,832	614,650
Licenses & Permits	561,373	773,062	1,355,819	805,528
Intergovernmental Revenues	2,846,330	2,718,438	2,632,681	2,420,920
Charges for Services	494,891	422,670	364,825	380,000
Fines & Forfeitures	127,672	508,452	966,136	701,000
Fines & Forfeitures	40,281	47,383	38,331	17,000
Investment Income	190,689	164,808	204,921	108,726
Contributions & Donations				
Miscellaneous Revenue	\$ 23,390,841	\$ 39,291,896	\$ 41,894,041	\$ 41,237,044
subtotal				
Other Financing Sources	\$ 13,079	\$ 31,240	\$ 164,500	\$ 10,000
Proceeds From Sale Of	25,376,842	-	19,106,563	-
Assets Bond Proceeds	4,942,408	3,416,353	9,043,255	5,057,611
Interfund Transfers In	-	-	38,946,688	1,742,496
Budgeted Fund Balance	\$ 30,332,329	\$ 3,447,593	\$ 67,261,006	\$ 6,810,107
subtotal				
TOTAL REVENUES	\$ 53,723,169	\$ 42,739,489	\$ 109,155,047	\$ 48,047,151
EXPENDITURES (by Function)				
General Government	\$ 9,284,620	\$ 4,134,131	\$ 21,243,262	\$ 4,807,700
Judicial	279,811	411,898	463,582	470,202
Public Safety	11,782,028	12,509,445	19,294,736	14,826,023
Public Works	3,034,654	6,290,486	24,465,749	12,772,762
Culture & Recreation	1,696,271	7,187,011	29,594,099	3,092,515
Housing & Development	1,233,965	1,441,510	2,488,554	1,733,317
Debt Service	1,208,834	1,584,128	2,561,811	2,891,076
Contingency	-	-	-	411,898
Initiatives	-	-	-	1,875,827
subtotal	\$ 28,520,183	\$ 33,558,409	\$ 100,111,792	\$ 42,881,320
Other Financing Uses				
Interfund Transfers Out	\$ 4,942,408	\$ 3,416,353	\$ 9,043,255	\$ 5,057,611
Restricted Fund Balance	-	-	-	108,220
subtotal	\$ 4,942,408	\$ 3,416,353	\$ 9,043,255	\$ 5,165,831
TOTAL EXPENDITURES	\$ 33,462,591	\$ 36,974,762	\$ 109,155,047	\$ 48,047,151

UNDERSTANDING BOND MARKET CONCEPTS

Key Concepts

KEY CONCEPT #1—PRICE AND RATE MOVE OPPOSITE ONE ANOTHER

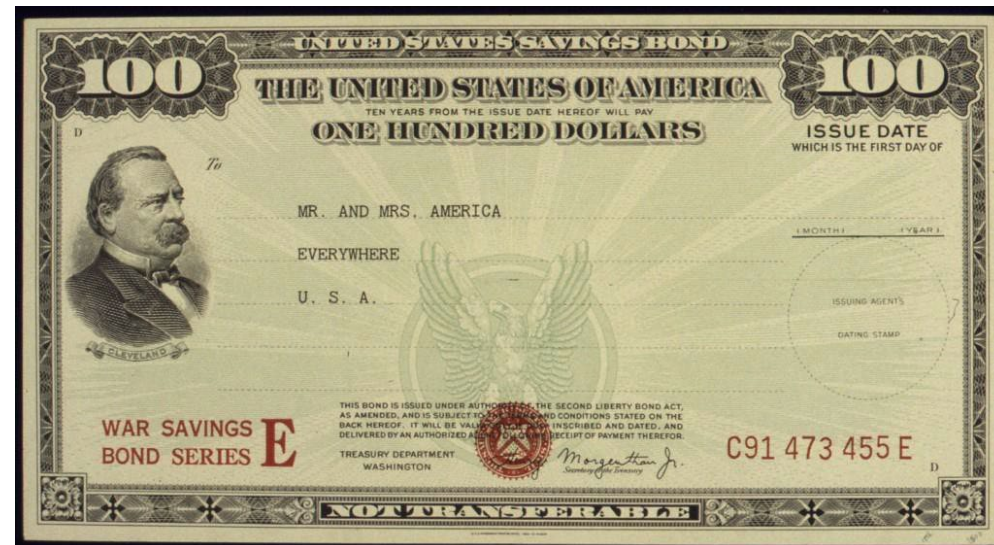
Bond prices and interest rates have an inverse relationship



HOW DOES THIS WORK?

You purchase on 6/30/2025:

Par	Credit Quality	Coupon	Maturity	Income	Yield	Price
\$1 million	AAA	5%	6/30/2026	\$50,000	5%	100.000



IMPACT OF RISING RATES

Rates rise on 7/1/2025, and someone else purchases a newly-issued security similar to yours, but with a higher coupon:

Your Bond	Credit Quality	Coupon	Maturity	Income	Yield	Price
\$1 million	AAA	5%	6/30/2025	\$50,000	5%	100.000

Their Bond	Credit Quality	Coupon	Maturity	Income	Yield	Price
\$1 million	AAA	6%	6/30/2025	\$60,000	6%	100.000

IMPACT OF RISING RATES

Here's some math to contemplate:

	Par	Income	Yield
Their Bond	\$1 million	\$60,000	6%
Your Bond	\$1 million	- \$50,000	5%
		= \$10,000	

Your security would have to
be sold at approximately
\$990K to make up for the
rise in interest rates



\$1,000,000
-\$10,000
\$990,000

IMPACT OF RISING RATES

Good News:
Interest income
will increase.

- Reinvestment depends on length of average maturity
- Budgets will benefit from increased cash flow

Bad News: The
value of bonds
will go down.

- Sales before maturity
- GASB 31 and the ACFR

KEY CONCEPT #2: DURATION

- **Duration** is a direct measure of exposure to market risk in a fixed maturity bond
 - A better measure of the sensitivity to changes in interest rates.
 - A close approximation of the percent change in the price of a bond for a given change in yield.
 - Securities with equal maturity dates may not have equal interest rate risk—duration quantifies the difference.
- **The higher the duration of a bond or fixed income portfolio, the more its price will drop as interest rates rise.**

DURATION—FOR MATH FANS

$$Duration = \sum_{t=1}^n t \left(\frac{\frac{C_t}{(1+k)^t}}{B_0} \right) + n \left(\frac{\frac{M}{(1+k)^n}}{B_0} \right)$$



WHAT EXACTLY IS HAPPENING?

n	Years to Maturity	10 years
C	Coupon Payment	\$50
k	Market Rate of Interest (YTM)	7%
M	Maturity (Par) Value	\$1,000
B ₀	Bond Price (PV of Bond)	\$859.53

Year	Cash Flow	PV of CF	PV/B ₀	Year*(PV/B ₀)
1	\$50	\$46.73	0.0544	0.0544
2	\$50	\$43.67	0.0508	0.1016
3	\$50	\$40.81	0.0475	0.1425
4	\$50	\$38.14	0.0444	0.1775
5	\$50	\$35.65	0.0415	0.2074
6	\$50	\$33.32	0.0388	0.2326
7	\$50	\$31.14	0.0362	0.2536
8	\$50	\$29.10	0.0339	0.2709
9	\$50	\$27.20	0.0316	0.2848
10	\$50	\$25.42	0.0296	0.2957
10	\$1,000	\$508.35	0.5914	5.9143
		Σ = \$859.53	Σ = 7.9351 Years	

Duration = 7.9351 Years

GENERAL RULE FOR DURATION

“As a general rule, for every 1% increase or decrease in interest rates, a bond’s price will change approximately 1% in the opposite direction for every year of duration”

Example using the “General Rule”:

- A bond with a duration (modified) of 3.2 will go up about 3.2% in price if it’s yield drops by 1% (100 basis points), and down about 3.2% if it’s yield rises 100 basis points.

IMPACT OF DURATION

Portfolio #1: \$50 million and 2.0 duration

- If rates increase 1.25%, then **(\$1,250,000) Loss**
 $\$50 \text{ million} \times 2 \times 1.25\% \times -1 = \$50 \text{ million} \times -2.5\% = \textbf{(\$1,250,000)}$
- If rates decrease 1.25%, then **\$1,250,000 Gain**
 $\$50 \text{ million} \times 2 \times 1.25\% \times 1 = \$50 \text{ million} \times 2.5\% = \textbf{\$1,250,000}$

Portfolio #2 = \$50 million and 1.0 duration

- If rates increase 1.25%, then **(\$625,000) Loss**
 $\$50 \text{ million} \times 1 \times 1.25\% \times -1 = \$50 \text{ million} \times -1.25\% = \textbf{(\$625,000)}$
- If rates decrease 1.25%, then **\$625,000 Gain**
 $\$50 \text{ million} \times 1 \times 1.25\% \times 1 = \$50 \text{ million} \times 1.25\% = \textbf{\$625,000}$

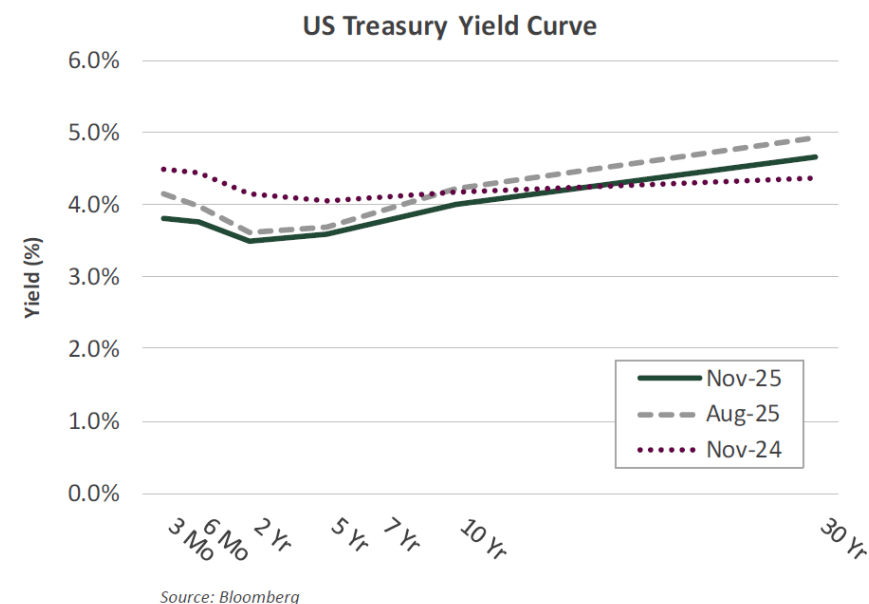
IS DURATION THE SAME THING AS WAM?

- Weighted Average Maturity (WAM) is the average time until the securities in a portfolio mature, weighted by their market value (or sometimes par value).
- **Focus:** It looks at the **final maturity dates** of the bonds, not the timing of interim cash flows.
- Duration measures the weighted average time to receive all cash flows (coupons + principal), discounted by present value.
- **Focus:** Captures **interest rate risk**, not just maturity.

<u>Feature</u>	<u>WAM</u>	<u>Duration</u>
Considers Coupons?	No	Yes
Risk Captured	Reinvestment & liquidity timing	Interest rate sensitivity
Calculation Basis	Final maturity dates	All cash flows (weighted by PV)
Common Use	Regulatory, liquidity metrics	Risk management, hedging, pricing

KEY CONCEPT #3—TREASURY YIELD CURVE (TERM STRUCTURE OF INTEREST RATES)

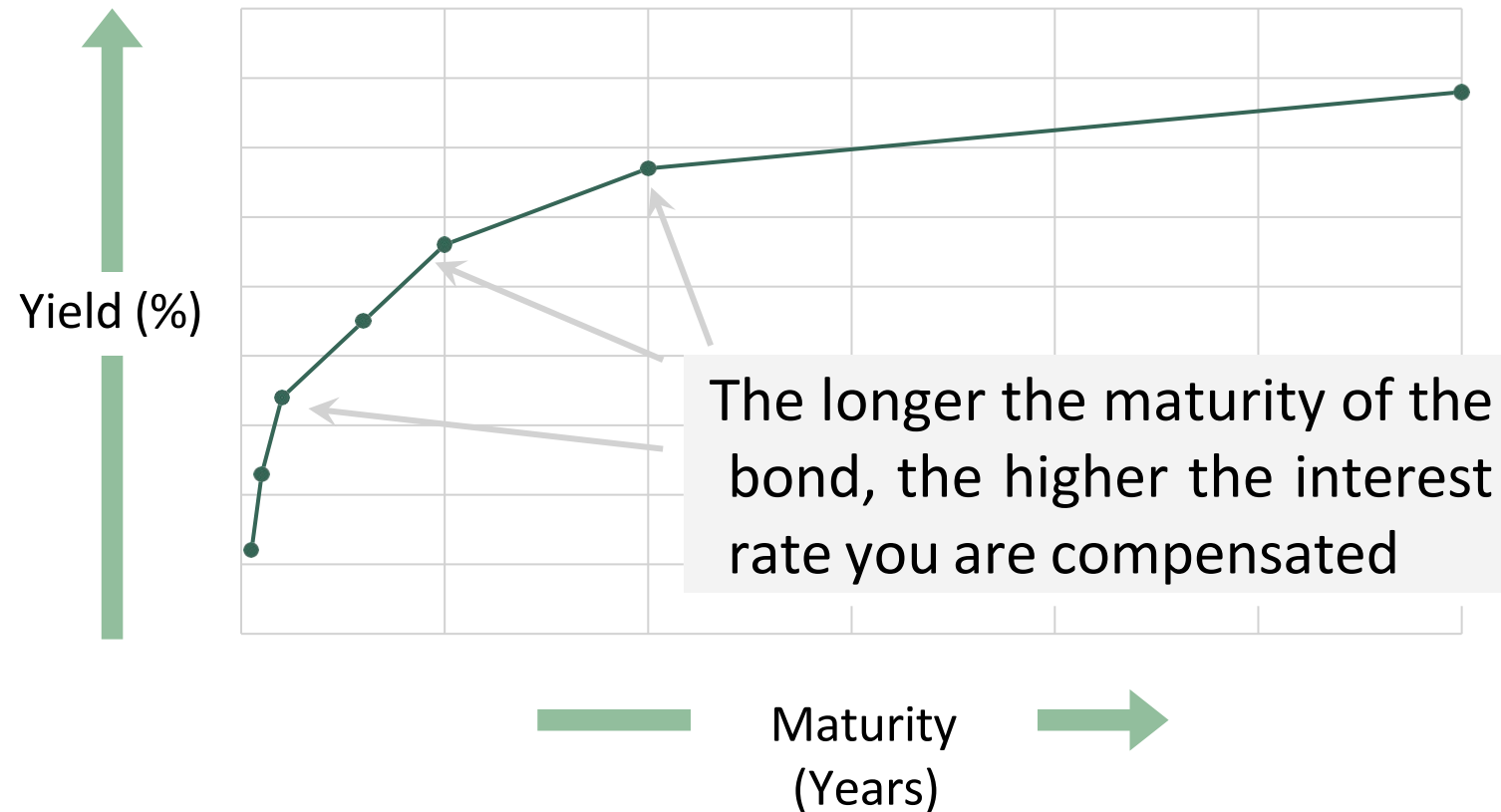
Treasuries are government IOUs that pay interest, and different interest rates for different time periods



- Treasuries are considered among the safest bond investments due to government backing.
- Yield curves are graphs depicting the yields of bonds of various maturities.
- The shape and direction of the Treasury yield curve is closely watched by economists and investors.

KEY CONCEPTS: THE TREASURY YIELD CURVE

■ Term Structure of Interest Rates



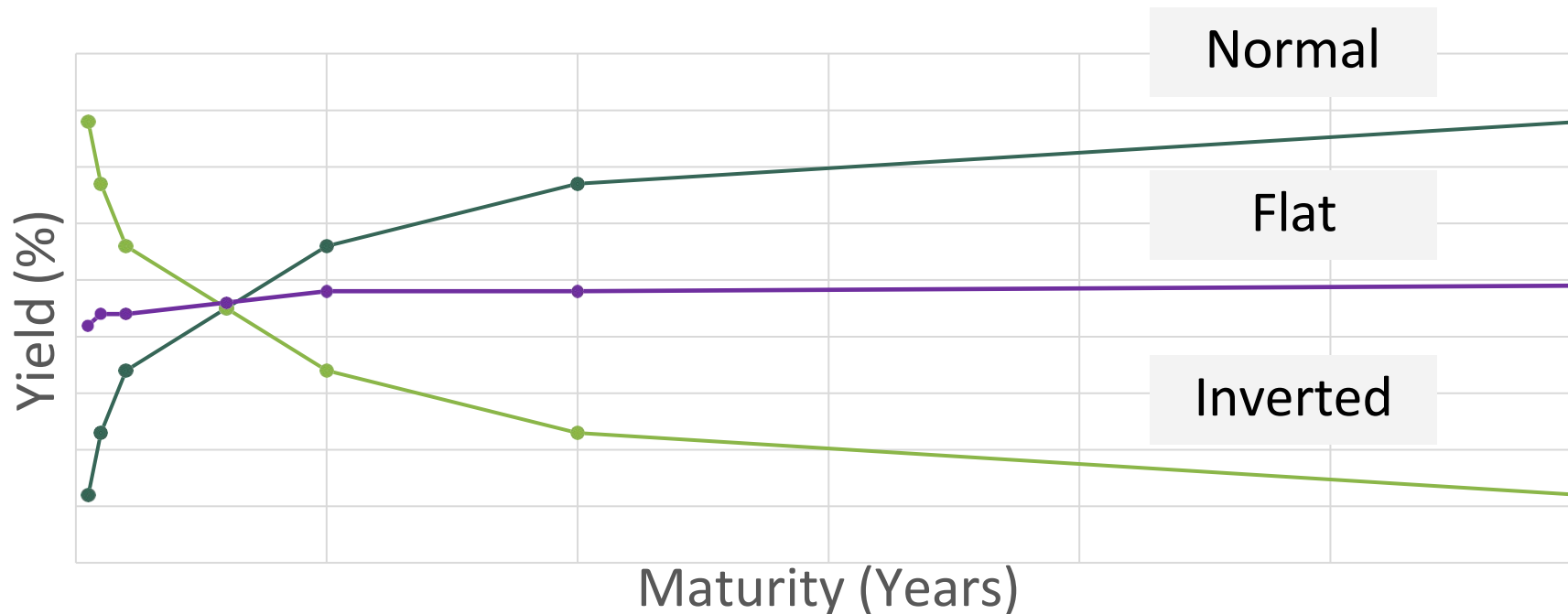
However, there are times when this is not true!

WHAT DETERMINES THE SHAPE OF THE YIELD CURVE?

- **Expectations Hypothesis:** Equilibrium long-term rate is the rate long-term investors would expect to earn through successive investments in short-term bonds over the term to maturity of the long-term bond.
- **Liquidity Preference Hypothesis:** Lenders prefer short-term loans, and to induce them to lend long-term, it is necessary to offer higher yields.
- **Segmented Market Hypothesis:** Shape of the yield curve is a function of the policies of institutional investors/major financial institutions.
- Other forces?

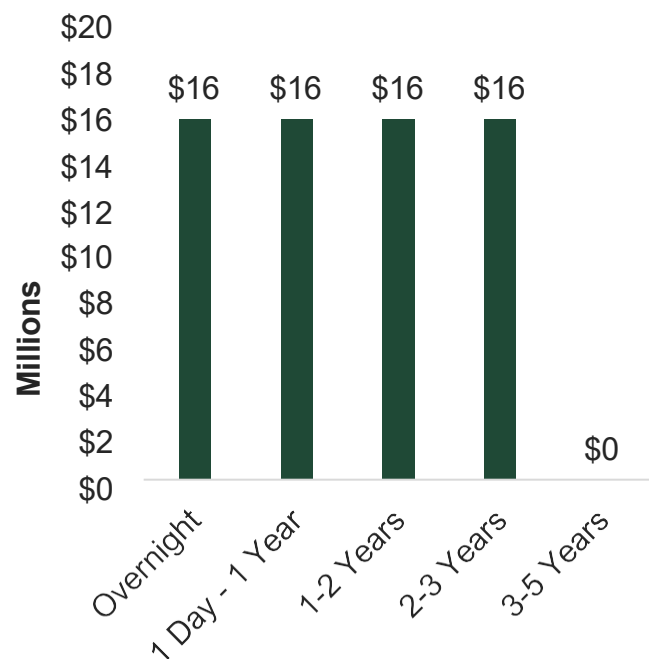
DIFFERENT YIELD CURVES FOR DIFFERENT ENVIRONMENTS

■ The Holy Grail of Investment Indicators?



- It is possible for long-term rates to fall below short-term rates. This is an “inverted yield curve.”
- Inverted yield curves have historically been associated with possible future recessions.

DIFFERENT YIELD ENVIRONMENTS CALL FOR DIFFERENT TERM STRUCTURES



Ladder

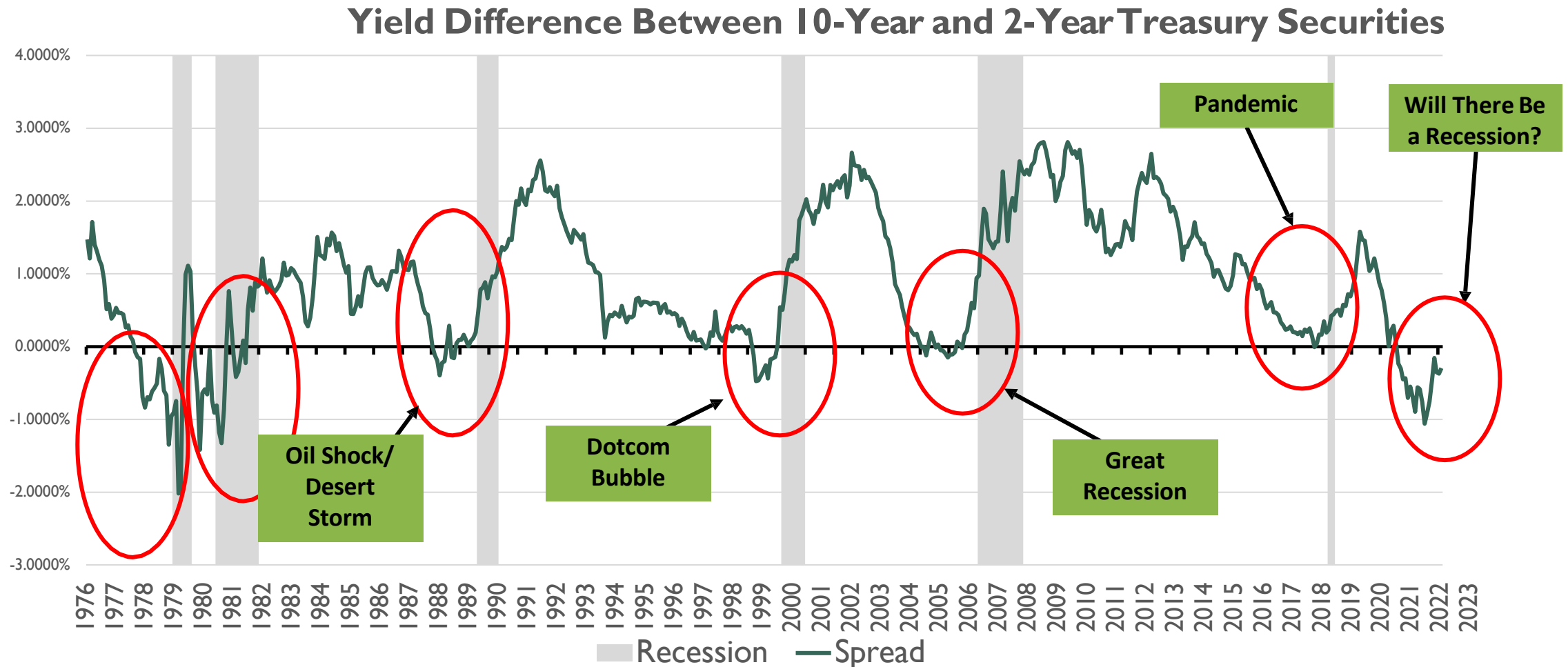


Bullet



Barbell

BEWARE OF THE INVERSION!



KEY CONCEPT #4: CALLABLE STRUCTURES

- **Callable is two securities**

- 1. Issuer sells fixed income security to investor

- Value = present value of stream of cash flows

- 2. Investor sells option to call to issuer

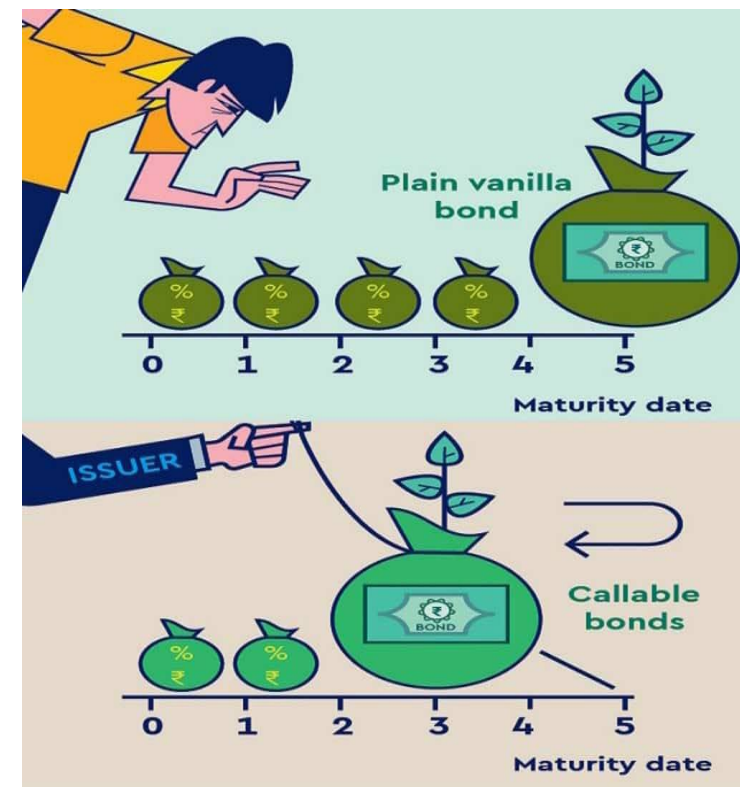
- Value = probability of being exercised based upon current yield curve, a rate of volatility, and time to exercise date

- **Lock-out period**

- Call protection; initial period during which issuer can't call bonds

UNDERSTANDING CALLABLE STRUCTURES

- **Federal Agency Callables:** Issuer has option to buy back the bond at a predetermined price and date
 - European—One time call
 - Bermudan—Callable quarterly or semi-annually
 - American—Callable any time after a specific date
 - Canary—Callable until first step, then becomes bullet
 - Verde—Bermuda to first step, callable on step dates
- Make-whole calls—not a federal agency callable!
- When do callables make sense?



CALLABLES AND DURATION

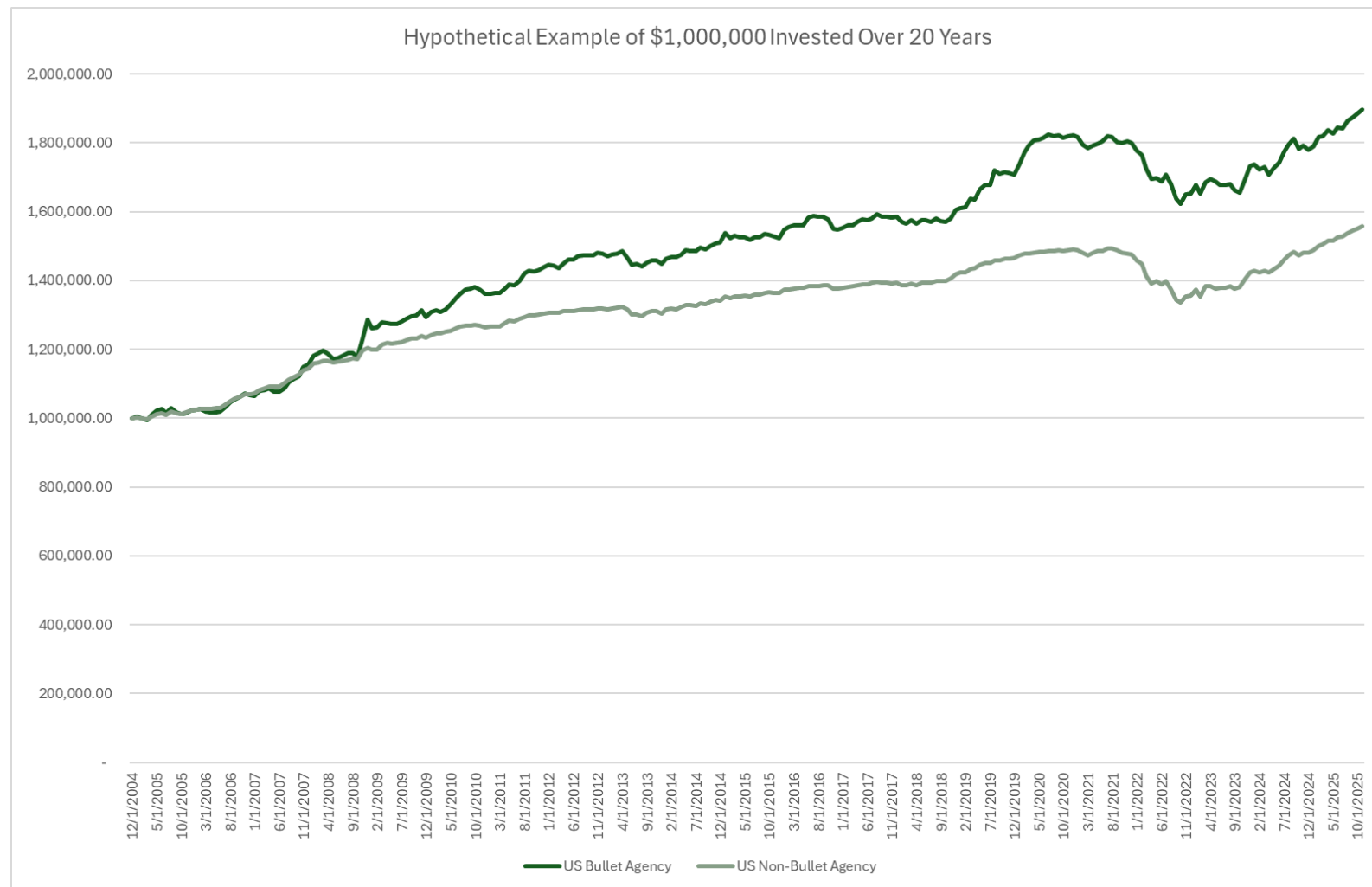
- **Call features reduce effective maturity of bond and therefore reduce effective duration**
- **Callable bonds have several possible durations**
 - Duration to maturity
 - To final maturity (option not expected to be exercised)
 - Duration to call
 - To the first call date (option expected to be exercised)
 - Effective duration is option adjusted
 - Duration of bond expressed as level of interest rate volatility and resulting probability option will be exercised
 - Effective duration lies between duration to first call and duration to maturity

HOW ARE CALLABLES PRICED?

- Priced at spread to Treasuries
- Yield to Worst (YTW)
 - Which is lesser: Yield to Maturity or Yield to Call
- Option Adjusted Spread (OAS)
 - Creates synthetic “bullet”
 - Compare spread from OAS analysis to historical spread for non-callable securities from same market sector

AGENCY CALLABLES vs. NON-CALLABLES

- Historically, non-callable agencies have outperformed callable agencies over time.
- Over the past 20 years the earnings difference for an agency bullet versus a callable agency portfolio was about \$338,305 per \$1,000,000 invested.



Source: Bloomberg ICE BofA US Bullet Agency Index (GOPB) and ICE BofA US Non-Bullet Agency Index (GOPC).

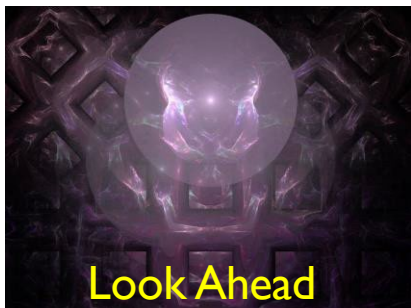
KEY CONCEPT #4: INVESTING IN CREDIT

- WHAT: Exposure to non-governmental issuers
- WHY: Investors receive higher yields when they purchase securities from lower rated issuers
 - Agencies vs. Treasuries
 - Corporates vs. Agencies
 - “A” vs. “AAA”
- Credit ratings change over time
- Yield spreads among different quality and sectors vary over time

BOND CREDIT RATINGS

Moody's		S&P		Fitch		Rating description	
Long-term	Short-term	Long-term	Short-term	Long-term	Short-term		
Aaa	P-1	AAA	A-1+	AAA	F1+	Prime	Investment-grade
Aa1		AA+		AA+		High grade	
Aa2		AA		AA			
Aa3		AA-		AA-			
A1	P-2	A+	A-1	A+	F1	Upper medium grade	
A2		A		A			
A3	P-2	A-	A-2	A-	F2	Lower medium grade	
Baa1		BBB+		BBB+			
Baa2	P-3	BBB	A-3	BBB	F3		
Baa3		BBB-		BBB-			

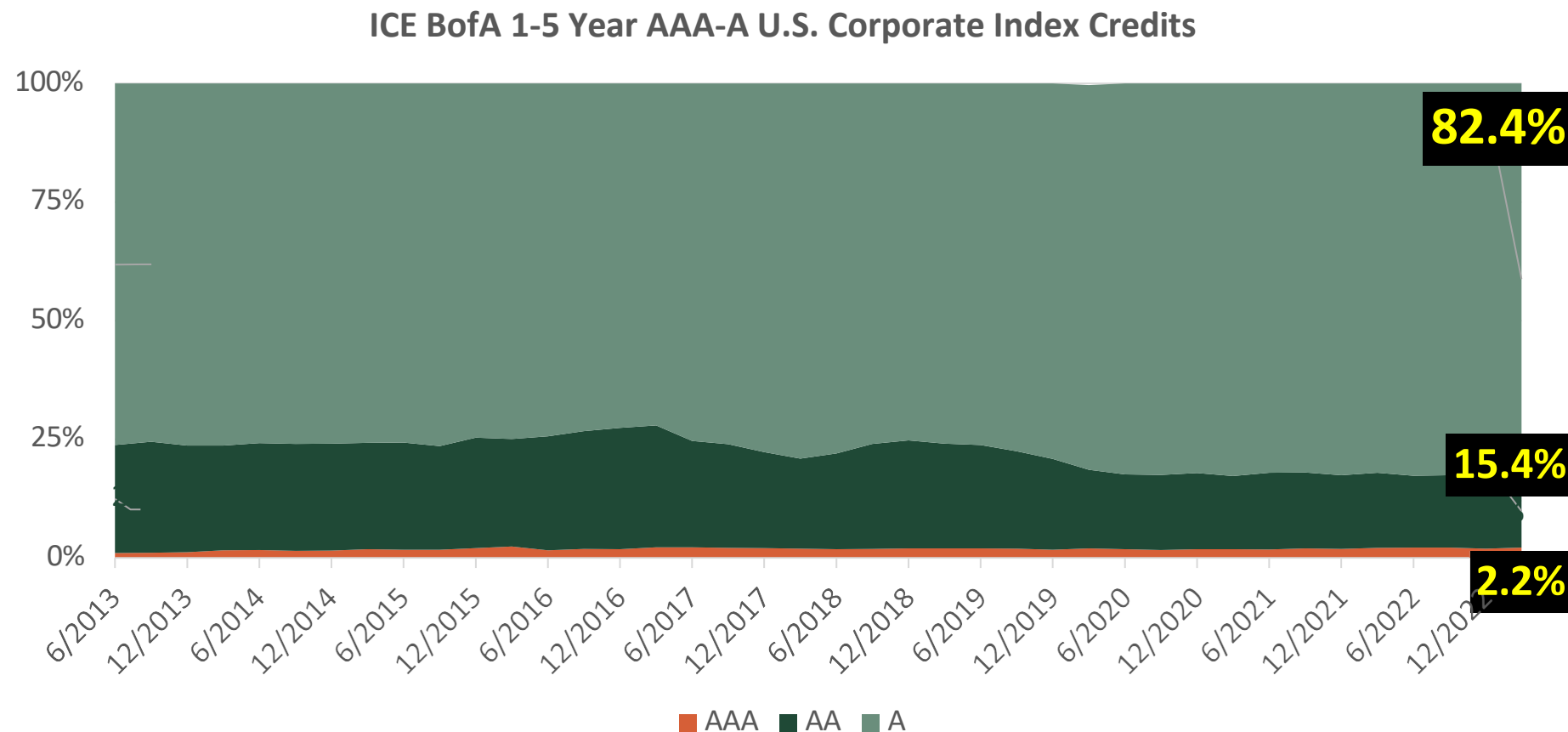
Source: Standard & Poor's, Moody's, Fitch Ratings



- **Credit Outlook:** Evaluates the financial condition of the issuer in relation to the economic environment
- **Credit Watch:** Formal warning of the possible deterioration or upgrade of the financial strength and ability of the issuer to meet their debt obligations

CREDITS ELIGIBLE FOR CA LOCAL GOVERNMENTS

Few credit options for investors limited to rating categories of AA or higher.



QUANTITATIVE RISKS

■ Examples:

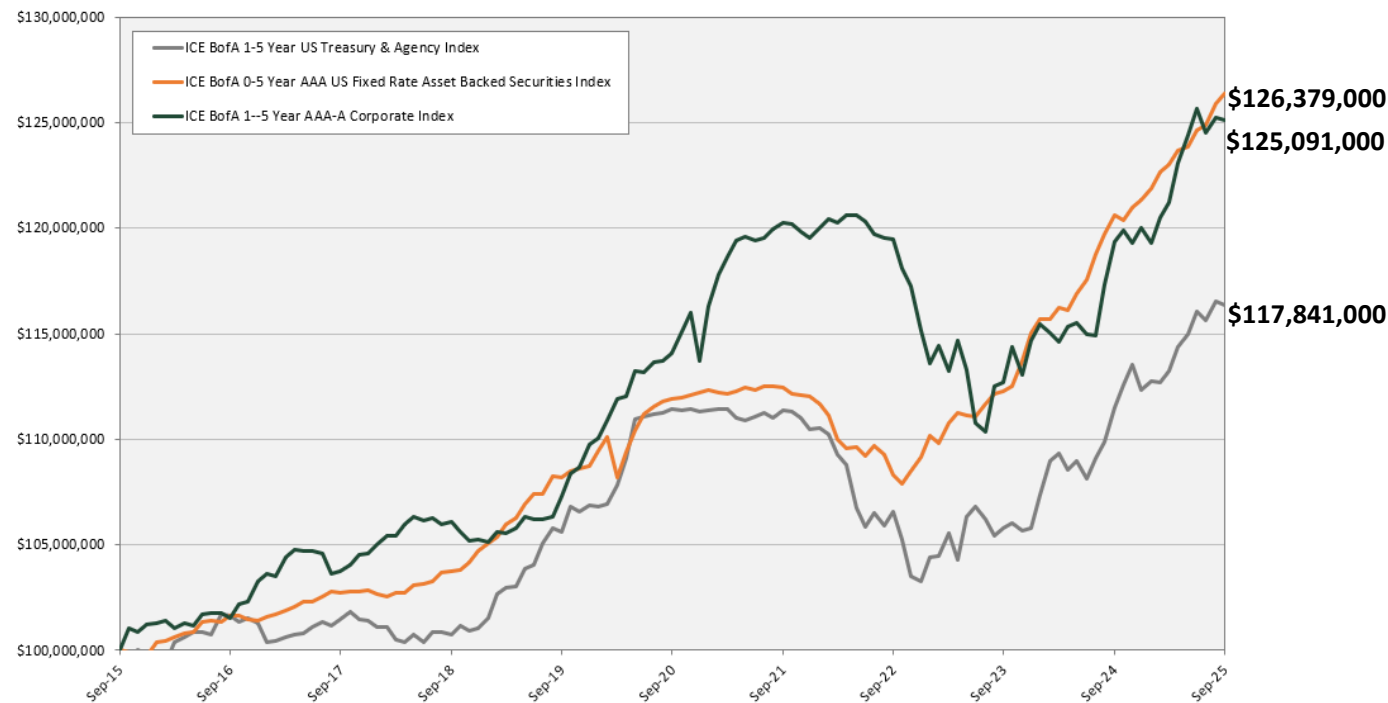
- Liquidity
- Solvency
- Leverage
- Profitability
- Operating Efficiency
- Industry Specific Ratios
(e.g., reserve replacement ratio)

■ Sources for Financial Evaluation:

- 10K/10Q/20F
- Balance Sheet, Income Statement, Statement of Cash Flows, Statement of Shareholder's Equity
- Footnotes
- Management Discussion and Analysis
- Auditor's Report / Opinion
- Bloomberg, FactSet, Reuters
- Rating Agencies
- Industry and Company Websites

WHY INVEST IN CREDIT SECURITIES?

HYPOTHETICAL EXAMPLE: GROWTH OF \$100 MILLION OVER 10 YEARS

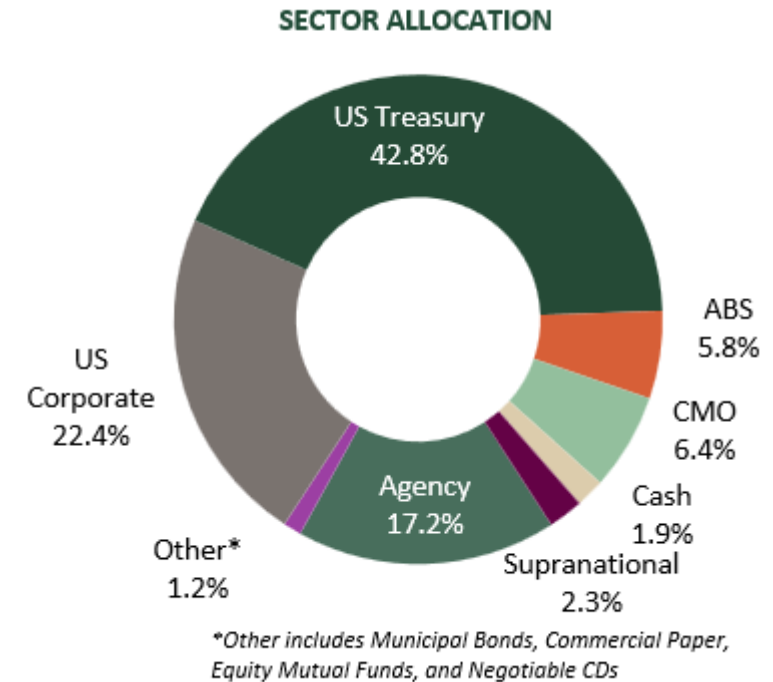


Value on 9/30/2025 of \$100 Million invested on 9/30/2015		
	9/30/2025	Annualized Return
I-5y Treasury & Agency	\$117,841,000	0.84%
0-5y AAA Fixed Rate ABS	\$126,379,000	1.37%
I-5y AAA-A Corporate	\$125,091,000	1.61%

Source: Bloomberg. Graph demonstrating the performance of commonly used benchmarks among our clients. Historical benchmark performance data for the 1-5 year Treasury & Agency, 0-5 year AAA Fixed Rate ABS, and 1-5 year AAAA-A Corporate indices sourced from Bloomberg AIM. Index returns assume reinvestment of all distributions. Historical performance results for investment indexes generally do not reflect the deduction of transaction and/or custodial charges or the deduction of an investment management fee, the incurrence of which would have the effect of decreasing historical performance results. It is not possible to invest directly in an index. Please see important hypothetical disclosures at the end of this presentation.

CREDIT SECURITIES CONTINUED

- Rotating sectors can enhance return.
- Constant monitoring of spreads between sectors identifies opportunities.



Sample asset allocation. For illustrative purposes only.

KEY CONCEPT #6: BENCHMARKING

What is Benchmarking?

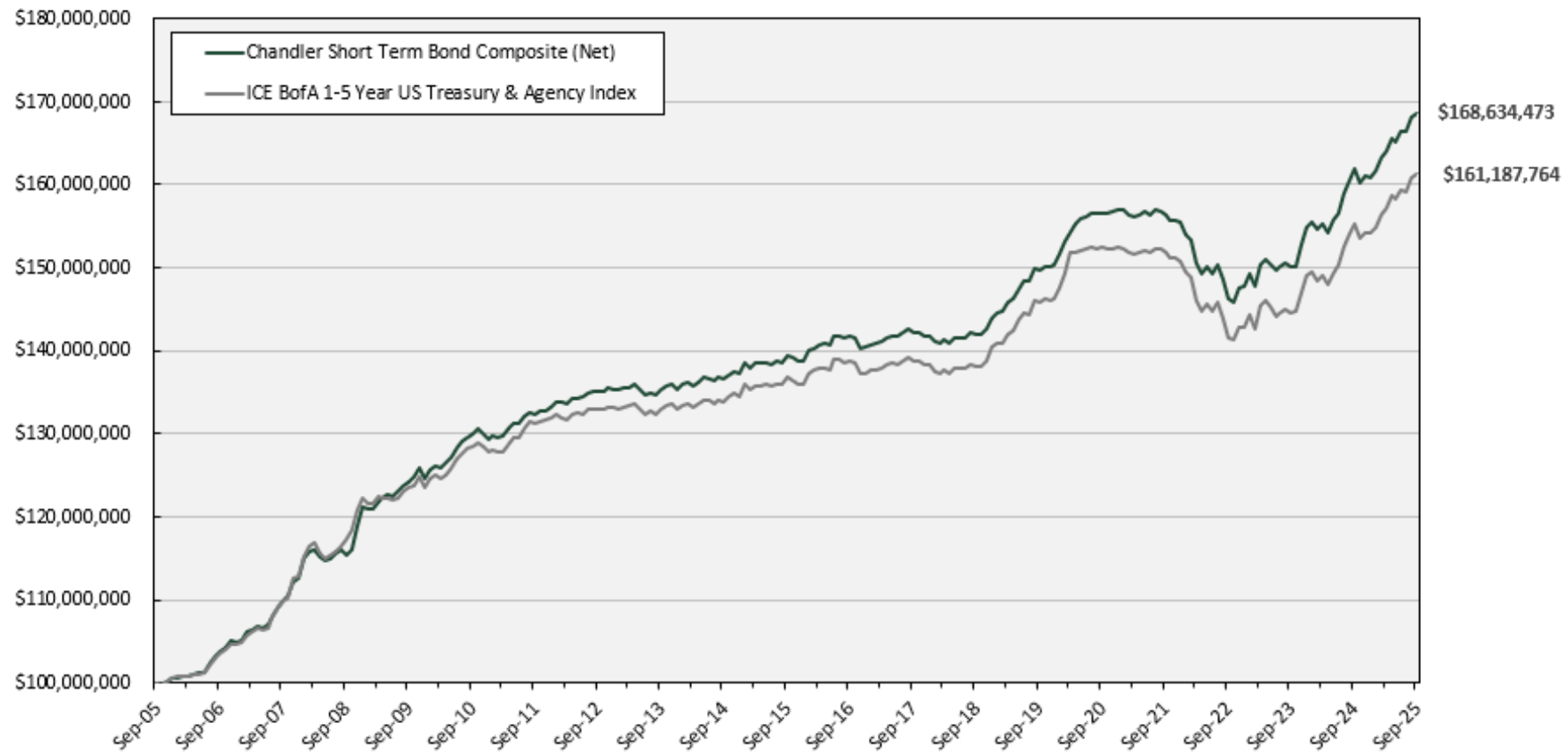
Benchmarks serve as a critical standard for measuring an asset's value or other metrics over time. It is a comparative tool for investors.

- Some examples of top fixed income benchmarks include the:
 - Bloomberg Aggregate Bond Index (known as the Agg)
 - Bloomberg Capital U.S. Corporate High Yield Bond Index
 - ICE BofA U.S. Treasury Bond Index



HISTORICAL INDEX PERFORMANCE

Hypothetical Example: Investment of \$100 Million Over 20 Years Generated \$7.2 Million in Excess Returns



Source: Bloomberg. Graph demonstrating the performance of commonly used benchmarks among our clients. Historical benchmark performance data for the 1-5 Year Treasury & Agency indices sourced from Bloomberg AIM. Index returns assume reinvestment of all distributions. Historical performance results for investment indexes do not reflect the deduction of transaction and/or custodial charges or the deduction of an investment management fee, the incurrence of which would have the effect of decreasing historical performance results. It is not possible to invest directly in an index. Past performance is not indicative of future performance. Please see important hypothetical disclosures at the end of this presentation.

BENCHMARKING CONTINUED

Why do Benchmarking?

1. Serves as a Performance Measurement

Without a benchmark, it's hard to determine whether returns are due to skill or market conditions.

Example:

Q: If your portfolio returns 4%, is that good?

A: It depends on the context – did the benchmark return 3%, 4%, or 5%?

2. Proves Risk Alignment

Fixed income portfolios can vary widely in duration, credit quality, and sector exposure and a benchmark can ensure the portfolio risk profile aligns with its stated objectives.

BENCHMARKING CONTINUED

What else about Benchmarking?

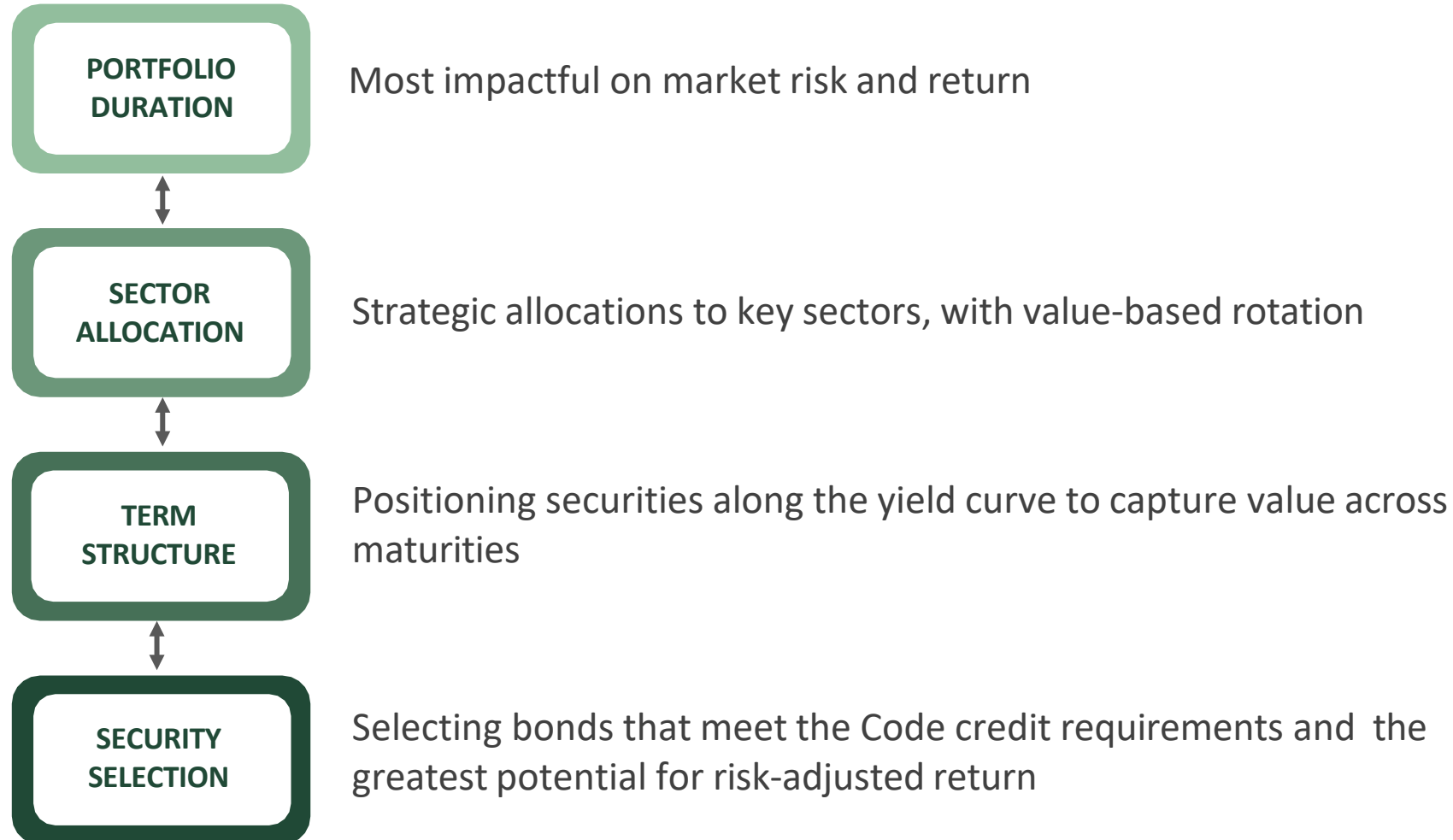
- Creates Accountability, Transparency & Guides Portfolio Strategy
 - They allow clients, boards, or regulators to see if the manager is adding value versus a passive alternative.
- Offers Opportunity for Attribution Analysis
 - What factor(s) drove the excess over a benchmark?
 - Was it duration positioning, sector allocation, security selection, dumb luck, etc.?



FINAL THOUGHTS

Putting It Into Context

KEY ELEMENTS TO BUILD PORTFOLIOS



RISK MANAGEMENT

- Portfolio management is a specialized form of risk management
- Identifying risks and determining risk exposures
 - **Liquidity risk:** having funds available when needed for disbursements
 - **Credit risk:** deteriorating credit quality impacting the value of the bond, its credit rating and potential for default
 - **Market Risk:** change in interest rates that impacts value of security
 - Inverse relationship
 - The higher the duration, the greater the volatility
- Other risks
 - Reinvestment risk
 - Headline risk - political

QUESTIONS?

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Chandler Asset Management



GIPS® Compliant Verification Statement



Verification Report

Chandler Asset Management, Inc.

We have verified whether Chandler Asset Management, Inc. (the "Firm") has, for the periods from July 1, 1997 through December 31, 2023, established policies and procedures for complying with the Global Investment Performance Standards (GIPS®) related to composite and pooled fund maintenance and the calculation, presentation, and distribution of performance that are designed in compliance with the GIPS standards, as well as whether these policies and procedures have been implemented on a firm-wide basis. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.

The Firm's management is responsible for its claim of compliance with the GIPS standards and the design and implementation of its policies and procedures. Our responsibilities are to be independent from the Firm and to express an opinion based on our verification. We conducted this verification in accordance with the required verification procedures of the GIPS standards, which includes testing performance on a sample basis. We also conducted such other procedures as we considered necessary in the circumstances.

In our opinion, for the periods from July 1, 1997 through December 31, 2023, the Firm's policies and procedures for complying with the GIPS standards related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been, in all material respects:

- Designed in compliance with the GIPS standards, and
- Implemented on a firm-wide basis.

This report does not relate to or provide assurance on any specific performance report of the Firm or on the operating effectiveness of the Firm's controls or policies and procedures for complying with the GIPS standards.

ACA Group

ACA Group, Performance Services Division

January 3, 2025

GIPS® Composite Report: Short Term Bond

Annual Rates of Return 2014 through 2024

Year End	Returns			3 Year Annualized		Dispersion Asset Wtd Std. Dev.	Number of Portfolios	Assets		
	Total	Total	Index	Standard Deviation				Composite (MM)	% of Firm Assets	Firm (MM)
	Gross	Net		Composite	Index					
2014	1.42%	1.17%	1.24%	0.96%	0.99%	0.07%	40	2,325	26.14%	8,894
2015	1.15%	0.90%	0.96%	1.11%	1.18%	0.07%	44	3,403	28.97%	11,747
2016	1.30%	1.04%	1.08%	1.24%	1.39%	0.05%	49	4,131	32.07%	12,882
2017	1.08%	0.83%	0.67%	1.19%	1.34%	0.11%	48	3,783	27.62%	13,698
2018	1.53%	1.27%	1.55%	1.22%	1.40%	0.05%	48	3,485	21.06%	16,551
2019	4.55%	4.29%	4.19%	1.22%	1.39%	0.19%	55	5,199	26.59%	19,552
2020	4.43%	4.17%	4.22%	1.32%	1.70%	0.11%	59	6,234	28.05%	22,227
2021	-0.93%	-1.17%	-1.09%	1.33%	1.65%	0.04%	72	7,294	28.29%	25,785
2022	-4.82%	-5.06%	-5.25%	2.22%	2.42%	0.15%	75	8,221	28.70%	28,641
2023	4.83%	4.57%	4.32%	2.72%	2.86%	0.10%	81	9,207	25.72%	35,804
2024	3.86%	3.61%	3.42%	3.10%	3.25%	0.10%	92	10,538	25.34%	41,585

Chandler Asset Management claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards.

Chandler Asset Management has been independently verified by ACA Performance Services for the period of July 1, 1997 through December 31, 2023. The verification report is available upon request. A Firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report.

1. Chandler Asset Management is an independent investment adviser registered as such with the Securities and Exchange Commission under the Investment Adviser's Act of 1940. Registration with the SEC does not imply a certain level of skill or training. Since 1988, Chandler Asset Management has provided fixed income investment management services to the public sector, as well as to foundations, endowments, individuals and corporations. A complete list and description of all of the firm's composites is available upon request.
2. The Short Term Bond Composite is a composite of individually managed accounts with an average modified duration approximately equal to the modified duration of the ICE BofA 1-5 Year US Treasury & Agency Index and a maximum final stated maturity of individual securities of five years. The minimum account size required to be included in this composite is \$2 million. This composite was created in September 1995 and inceptioned September 1995. The name of this composite was changed from 1-5 Year Government Fixed Income effective September 30, 2009.
3. The ICE BofA 1-5 Year US Treasury & Agency Index tracks the performance of US dollar denominated US Treasury and nonsubordinated US agency debt issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch). Qualifying securities must have at least one year remaining term to final maturity and less than five years remaining term to final maturity, at least 18 months to maturity at time of issuance, a fixed coupon schedule, and a minimum amount outstanding of \$1 billion for sovereigns and \$250 million for agencies. Index calculations do not reflect fees, brokerage commissions or other expenses of investing. Investors may not make direct investments into any index. Index data contained herein (and all trademarks related thereto) are owned by the indicated index provider, and may not be redistributed. The information herein has not been approved by the index provider.
4. Valuations are computed and performance reported in U.S. Dollars.
5. Performance is calculated using a time-weighted total rate of return, which links performance monthly, and is reported gross of investment management fees and custodial fees, but after all trading expenses. Results reflect the reinvestment of income, dividends and other earnings, and include realized and unrealized gains and losses and interest accrued through the last day of each month. Results do not reflect the potential impact of taxes. Past performance is not indicative of future results. Fees charged by Chandler Asset Management will reduce performance.
6. Net-of-fees performance returns are calculated by reducing the monthly gross performance by one-twelfth (1/12) of the actual maximum applicable fee of 0.25%, which is reflective of our current fee schedule for this composite. These monthly returns are then geometrically linked to produce annual returns which are presented before custodial fees but after management fees and all trading expenses. Fees are negotiable and additional information regarding Chandler's fees is included in our Part 2A of Form ADV.
7. Dispersion is calculated using the asset weighted standard deviation of annual gross returns of those portfolios that were included in the composite for the entire year. For years when less than six portfolios were included in the composite for the full year, no dispersion measure is presented. The three-year annualized standard deviation measures the variability of the composite gross returns and the benchmark returns over the preceding 36-month period.
8. Policies for valuing investments, calculating performance, and preparing GIPS reports are available upon request.
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ICE BofA US Bullet Agency Index (G0PB)

ICE BofA US Bullet Agency Index is a subset of ICE BofA US Agency Index excluding all securities with embedded call or put options except those having passed their last exercise date.

ICE BofA US Optionable Agency Index (G0PC)

ICE BofA US Optionable Agency Index is a subset of ICE BofA US Agency Index including all securities with embedded call or put options except those having passed their last exercise date.

ICE BofA 1-5 Year US Treasury & Agency Index

The ICE BofA 1-5 Year US Treasury & Agency Index tracks the performance of US dollar denominated US Treasury and nonsubordinated US agency debt issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).

ICE BofA 0-5 Yr AAA US Fixed Rate Asset Backed Securities Index

ICE BofA 0-5 Year AAA US Fixed Rate Asset Backed Securities Index tracks the performance of US dollar denominated investment grade fixed rate asset backed securities publicly issued in the US domestic market with an average life less than 5 years and rated AAA. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch). In addition, qualifying securities must have a fixed rate coupon (including callable fixed-to-floating rate securities), at least one year remaining term to final stated maturity, at least one month to the last expected cash flow, an original deal size for the collateral group of at least \$250 million, a current outstanding deal size for the collateral group greater than or equal to 10% of the original deal size and a minimum outstanding tranche size of \$50 million for senior tranches and \$10 million for mezzanine and subordinated tranches. 144a securities qualify for inclusion in the index.

ICE BofA 1-5 Year AAA-A US Corporate & Government Index

The ICE BofA 1-5 Year AAA-A US Corporate & Government Index tracks the performance of US dollar denominated investment grade debt publicly issued in the US domestic market, including US Treasury, US agency, foreign government, supranational, and corporate securities. Qualifying securities must be rated AAA through A3 (based on an average of Moody's, S&P and Fitch). In addition, qualifying securities must have at least one year remaining term to final maturity and less than five years remaining term to final maturity, at least 18 months to final maturity at point of issuance, a fixed coupon schedule, and a minimum amount outstanding of \$1 billion for US Treasuries and \$250 million for all other securities.

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