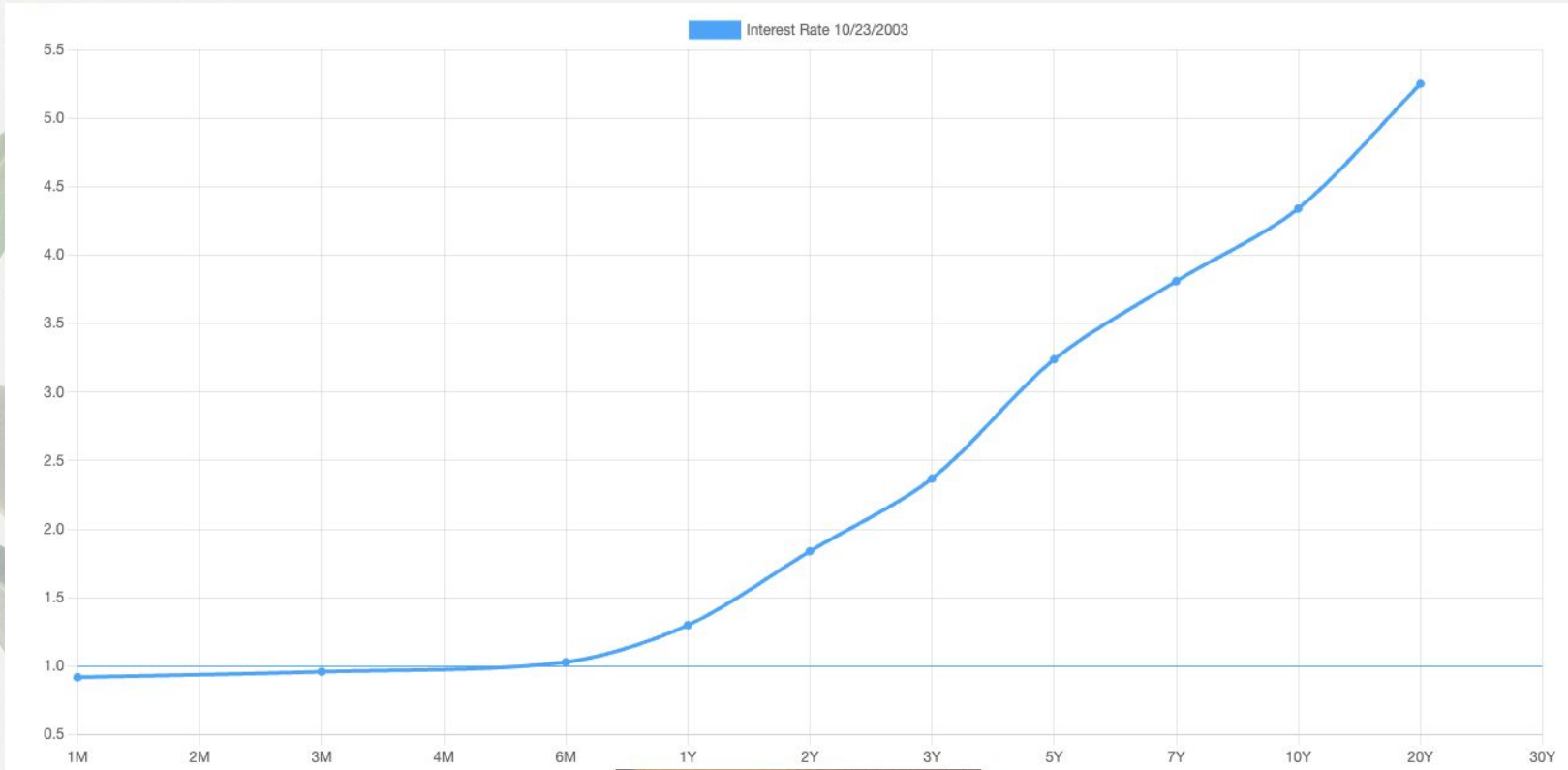



$$PV = FV / (1 + i)^n$$

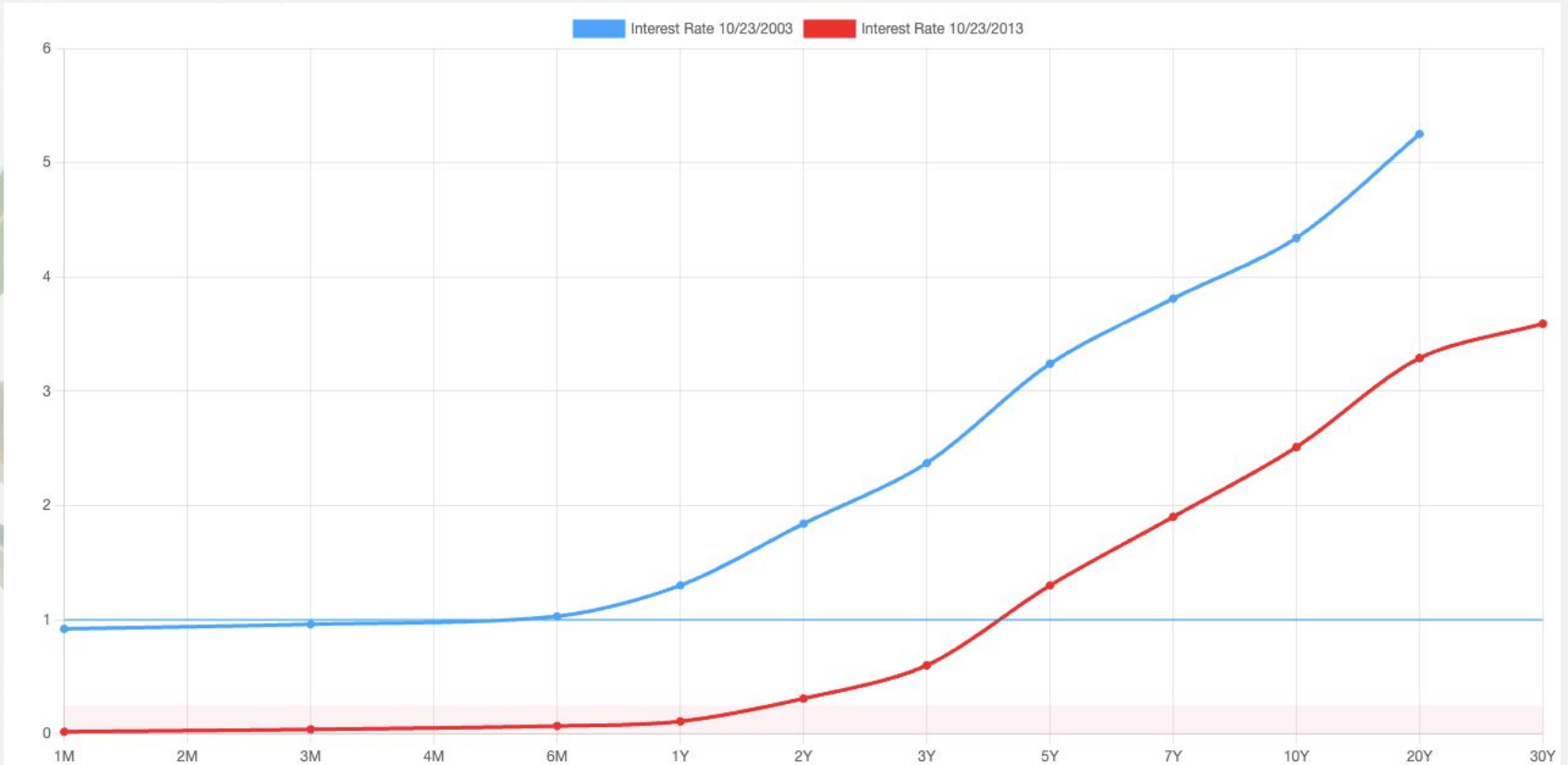
---

Leonard M. Golub, CFA

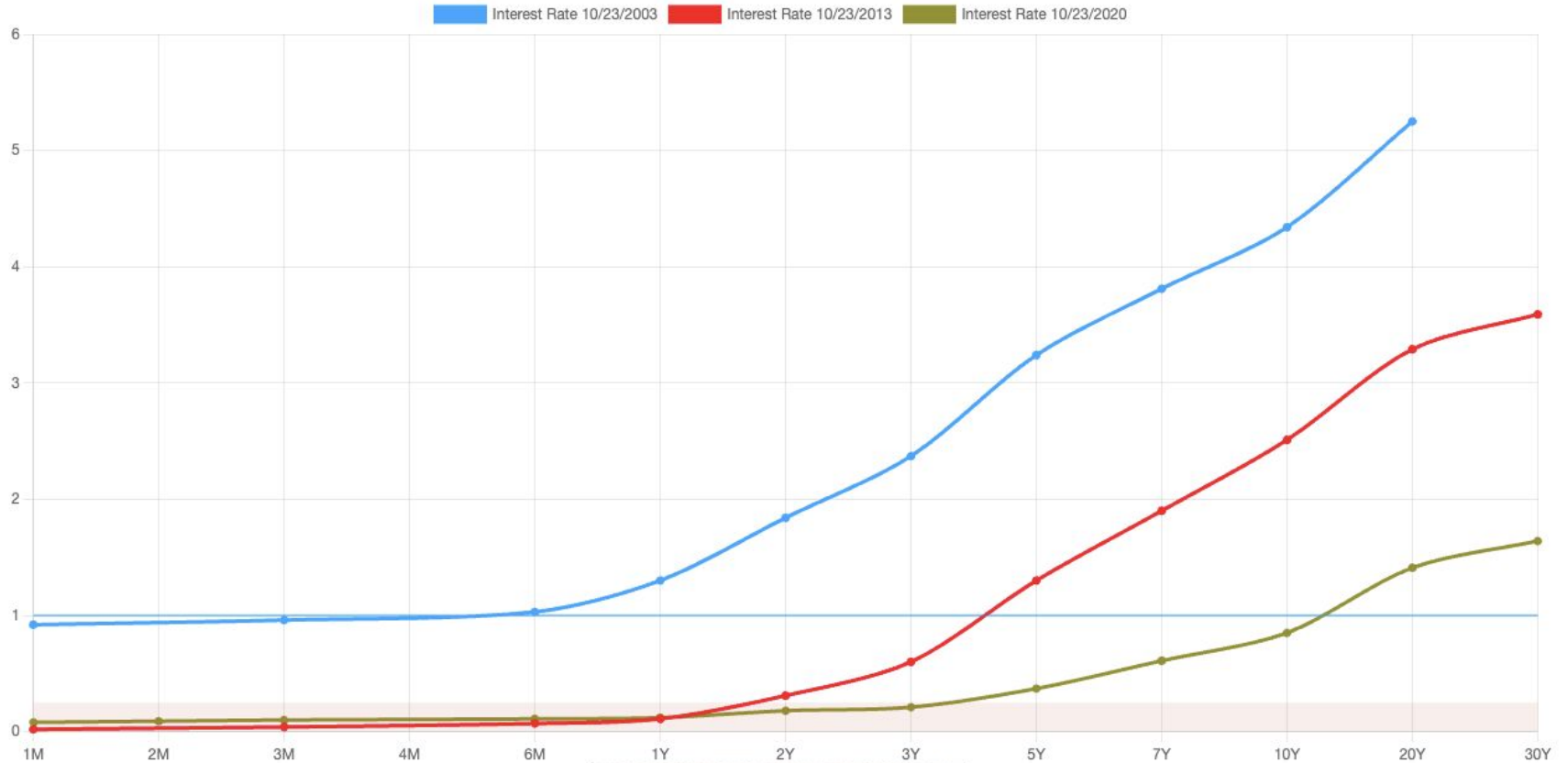
# US Treasury Yield Curve: October 2003



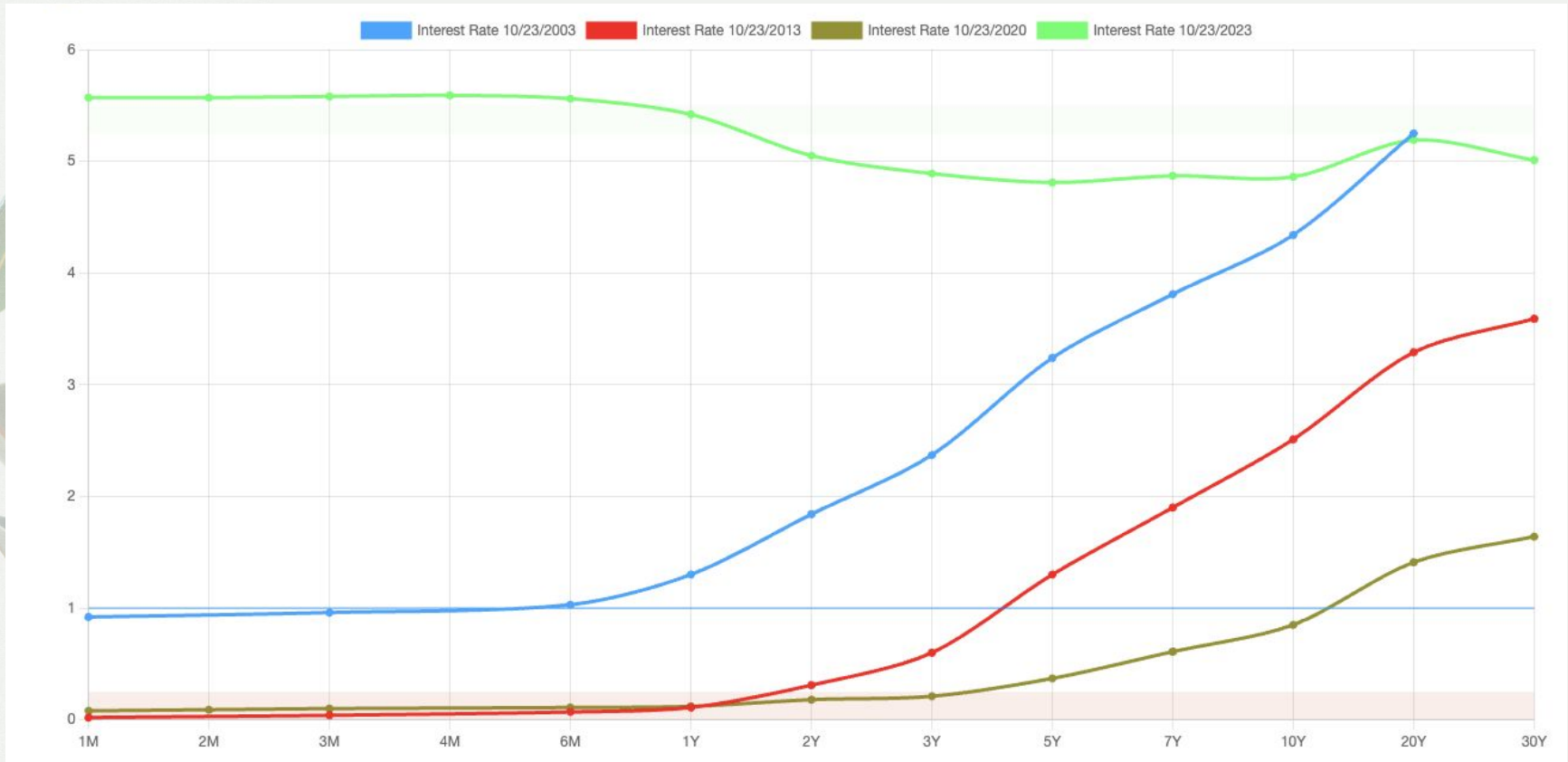
# US Treasury Yield Curve: October 2003 & 2013




# US Treasury Yield Curve: October 2003, 2013 & 2020



# US Treasury Yield Curve: October 2003, 2013, 2020 & 2023



# Time Value of Money Formula


$$\text{Present Value} = \frac{\text{Future Value (Cash Flow)}}{(1 + \text{interest rate})^{\text{Number of Periods}}}$$

## Time Value of Money Formula: Real Estate


$$\text{Present Value} = \frac{\text{Rents}}{(1 + \text{interest rate})^{\text{Number of Periods}}}$$

## Time Value of Money Formula: **Stocks**

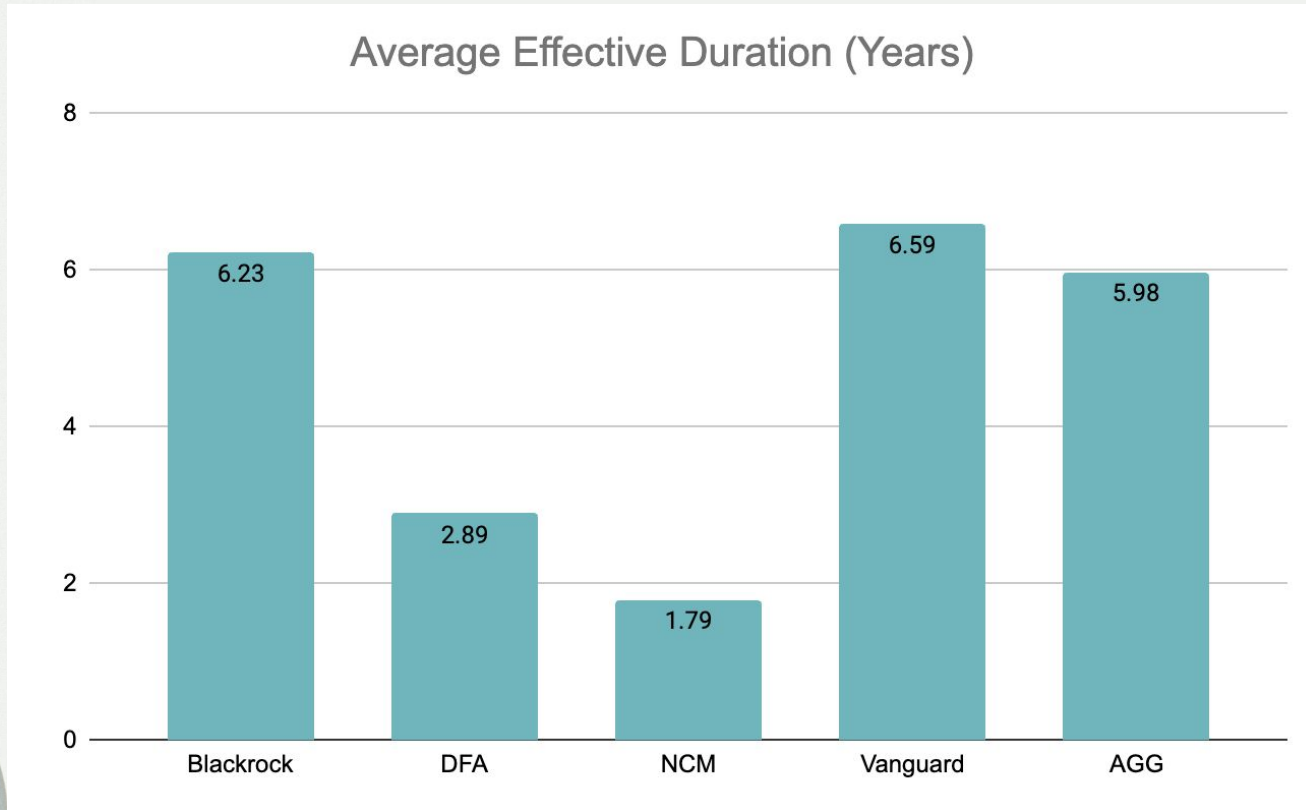

$$\text{Present Value} = \frac{\text{Profits}}{(1 + \text{interest rate})^{\text{Number of Periods}}}$$



## Time Value of Money Formula: **Bonds**

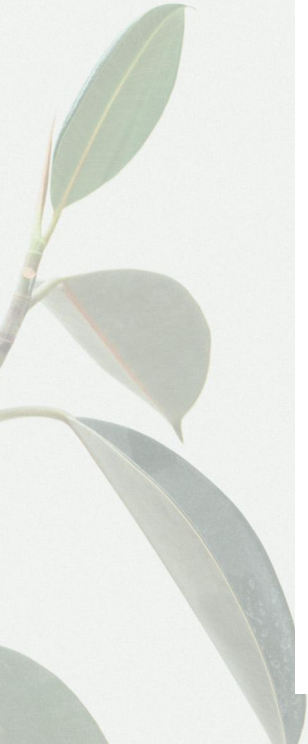

$$\text{Present Value} = \frac{\text{Interest \& Principal}}{(1 + \text{interest rate})^{\text{Number of Periods}}}$$

# Model Portfolios: Bond Duration

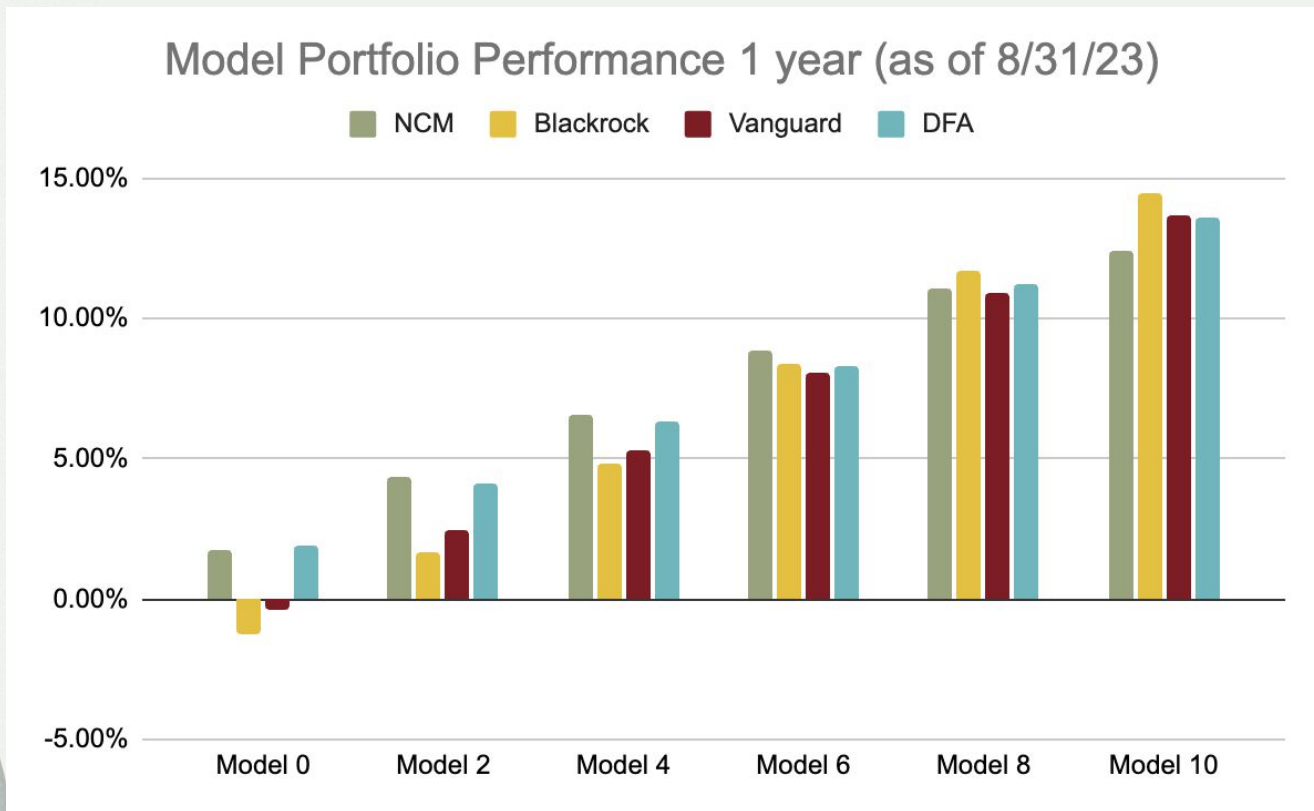


# Performance as of September 30, 2023

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
1 Year	STOCKS				BONDS	
	20.46%	24.00%	11.70%	2.03%	0.64%	2.99%
						
5 Years						
	9.14%	3.44%	0.55%	0.01%	0.10%	0.83%
						
10 Years						
	11.28%	3.84%	2.07%	3.12%	1.13%	2.30%
						



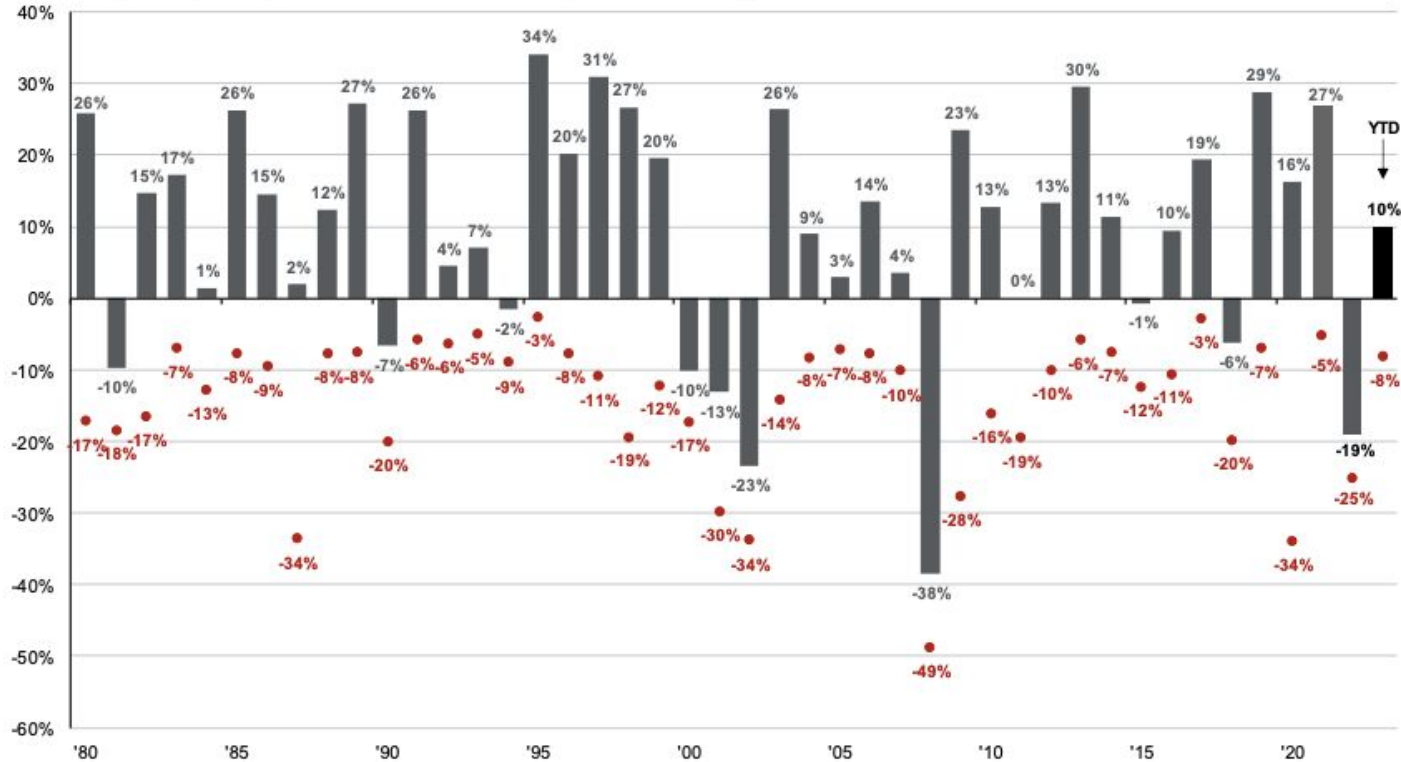
# Model Portfolios: Performance



# S&P 500 Intra Year Declines vs. Calendar Year Returns

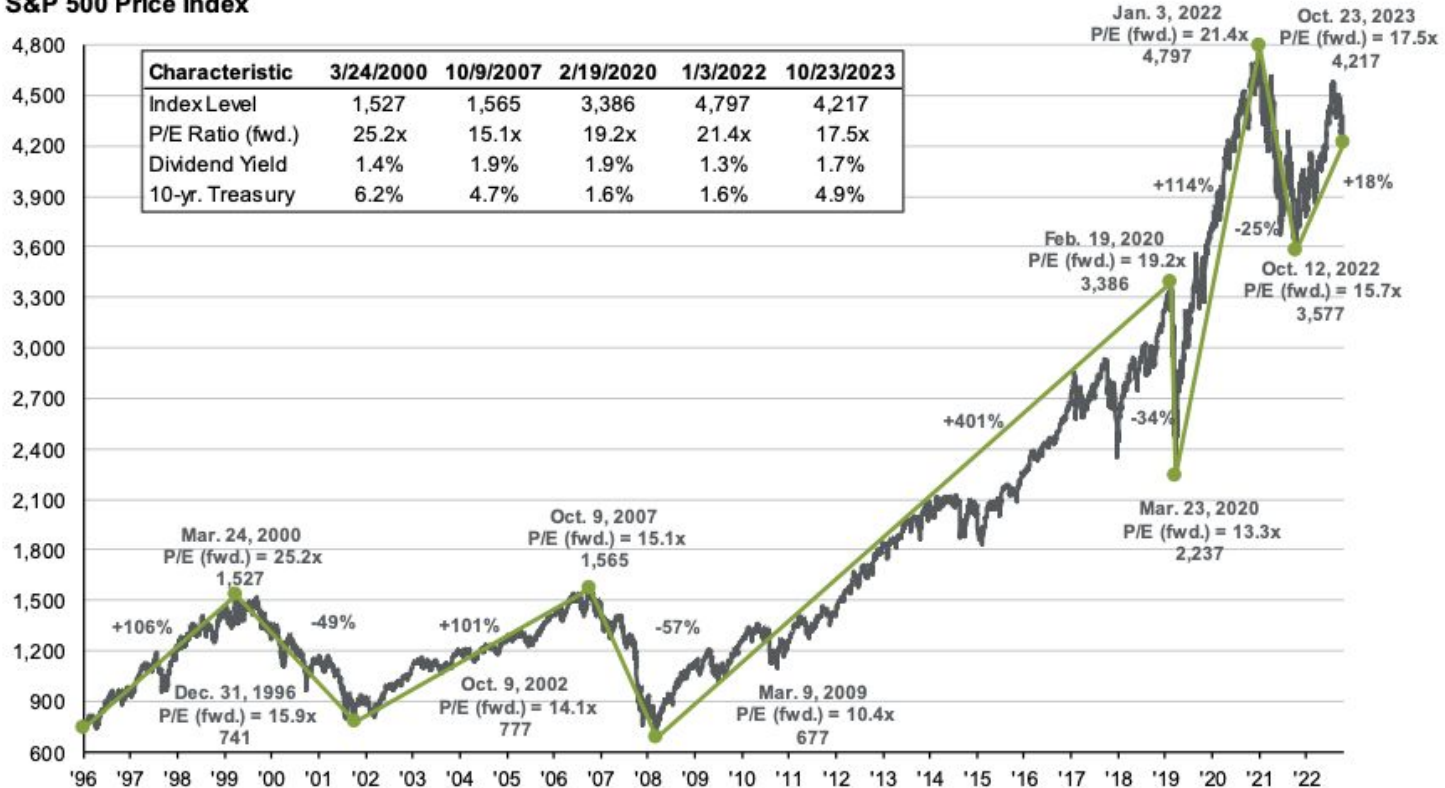
## S&P intra-year declines vs. calendar year returns

Despite average intra-year drops of 14.3%, annual returns were positive in 32 of 43 years



# S&P 500 as of October 23, 2023

## S&P 500 Price Index



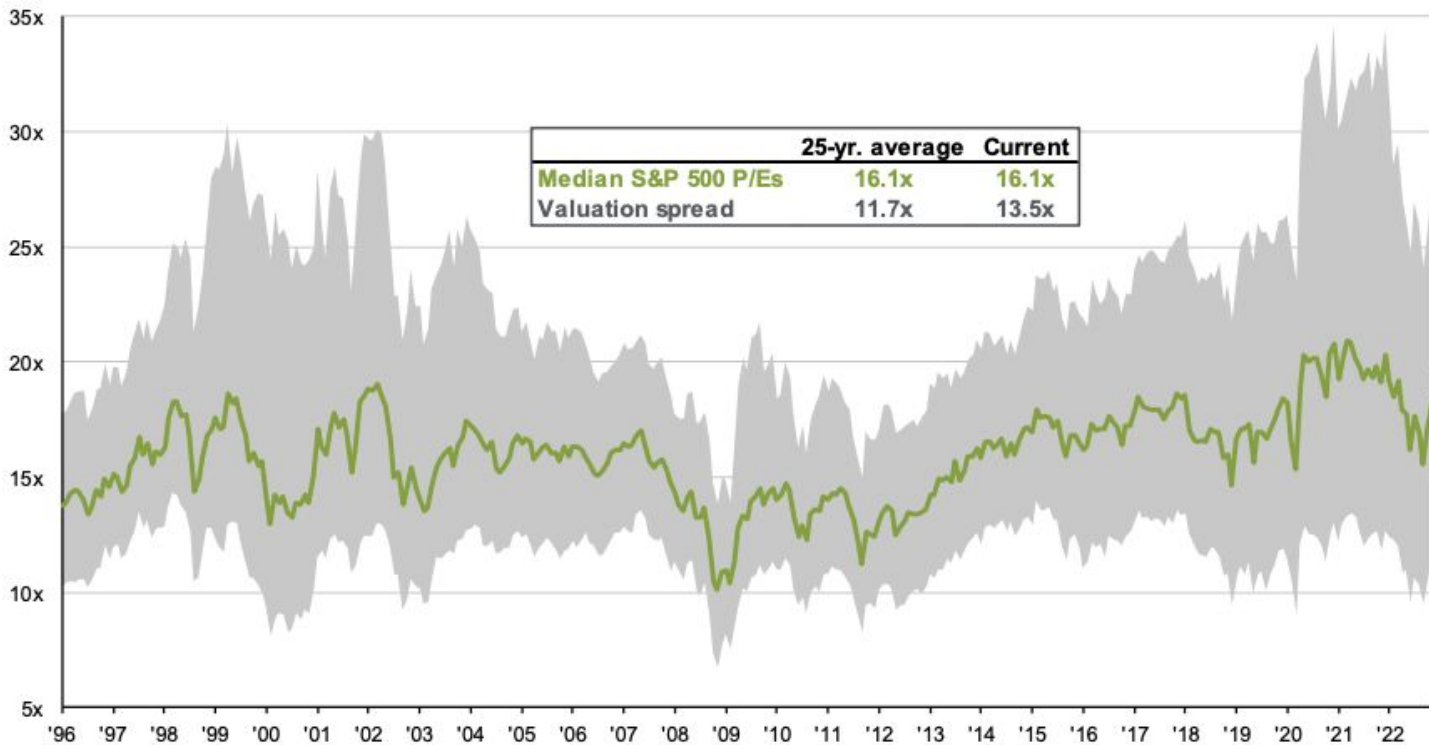
# S&P 500 as of October 23, 2023

## S&P 500 Index: Forward P/E ratio



# S&P 500 Valuation Dispersion

Valuation dispersion between the 20th and 80th percentile of S&P 500 stocks





# Valuations

## 10-year annualized

	Value	Blend	Growth
Large	7.6%	11.3%	14.0%
Mid	6.9%	8.1%	9.3%
Small	5.1%	5.6%	5.6%

## Since market peak (February 2020)

	Value	Blend	Growth
Large	15.3%	32.2%	42.8%
Mid	11.4%	13.5%	11.2%
Small	9.4%	3.3%	-5.1%

## YTD

	Value	Blend	Growth
Large	-1.9%	11.3%	24.6%
Mid	-4.3%	-0.7%	6.2%
Small	-6.7%	-4.3%	-2.2%

## Since market low (March 2020)

	Value	Blend	Growth
Large	86.4%	99.6%	108.4%
Mid	96.9%	90.1%	72.9%
Small	92.4%	74.1%	54.1%

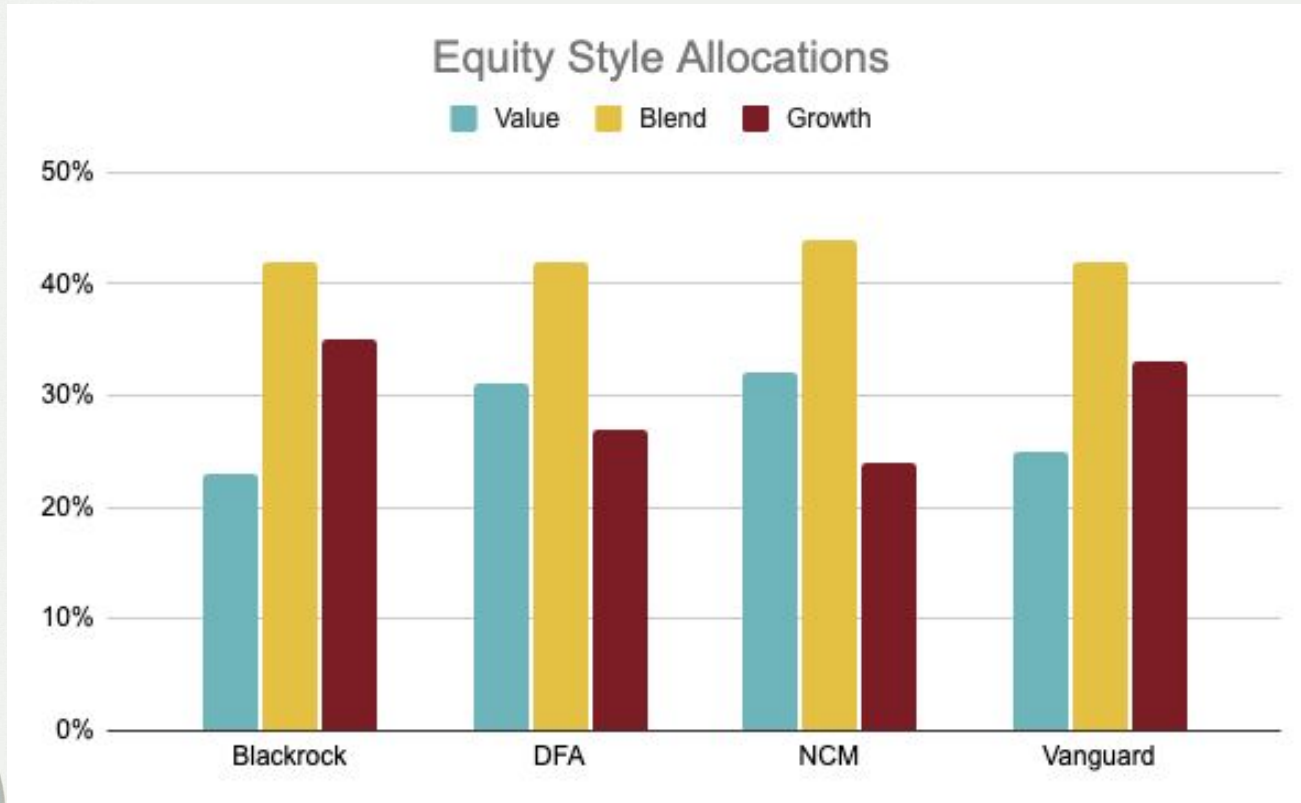
## Current P/E vs. 20-year avg. P/E

	Value	Blend	Growth
Large	13.3 / 13.7	17.5 / 15.6	24.1 / 18.8
Mid	12.8 / 14.5	14.7 / 16.4	23.0 / 20.5
Small	13.2 / 16.7	17.9 / 21.4	28.8 / 33.1

## Current P/E as % of 20-year avg. P/E

	Value	Blend	Growth
Large	96.9%	112.6%	128.0%
Mid	88.4%	89.8%	112.3%
Small	78.9%	83.9%	87.0%

# Model Portfolios: Equity Style Allocation



# International Equities vs. US

## International: Price-to-earnings discount vs. U.S.

MSCI All Country World ex-U.S. vs. S&P 500, next 12 months



## International: Difference in dividend yields vs. U.S.

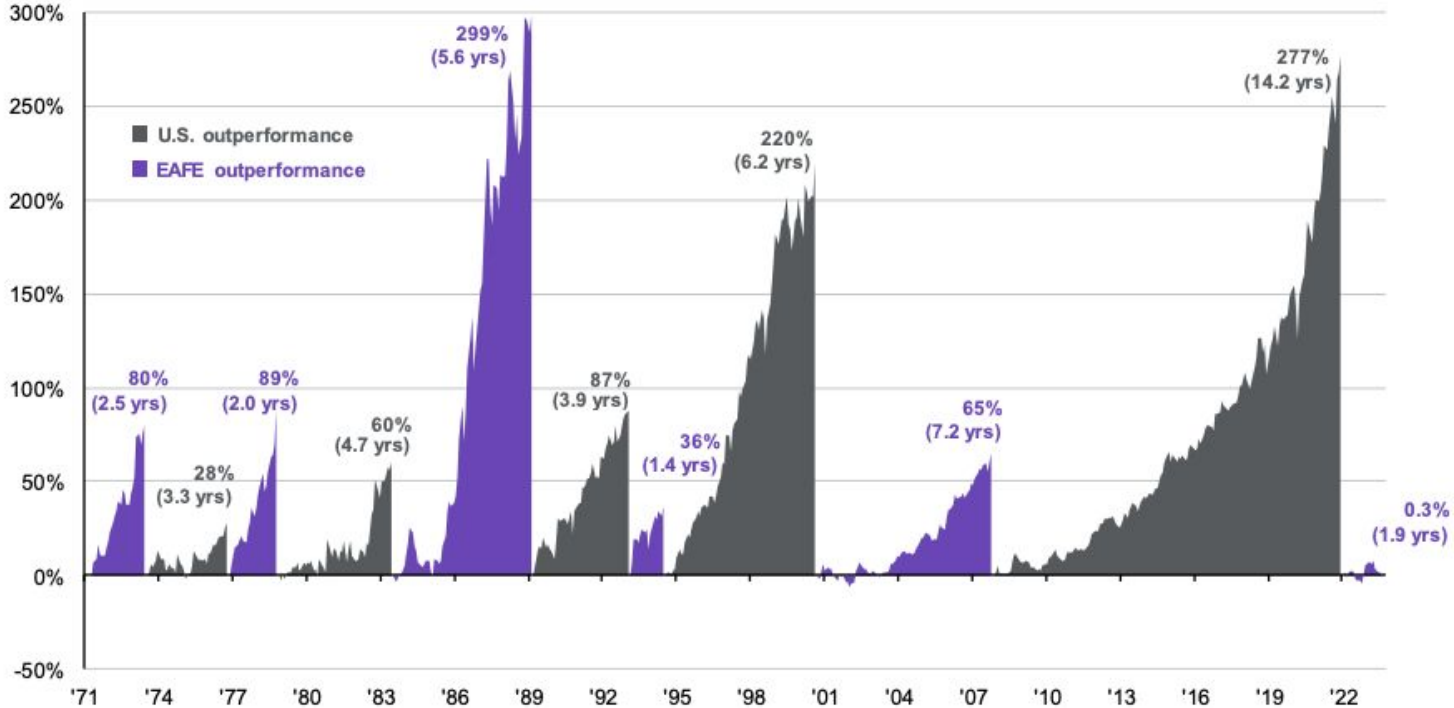
MSCI All Country World ex-U.S. minus S&P 500, next 12 months



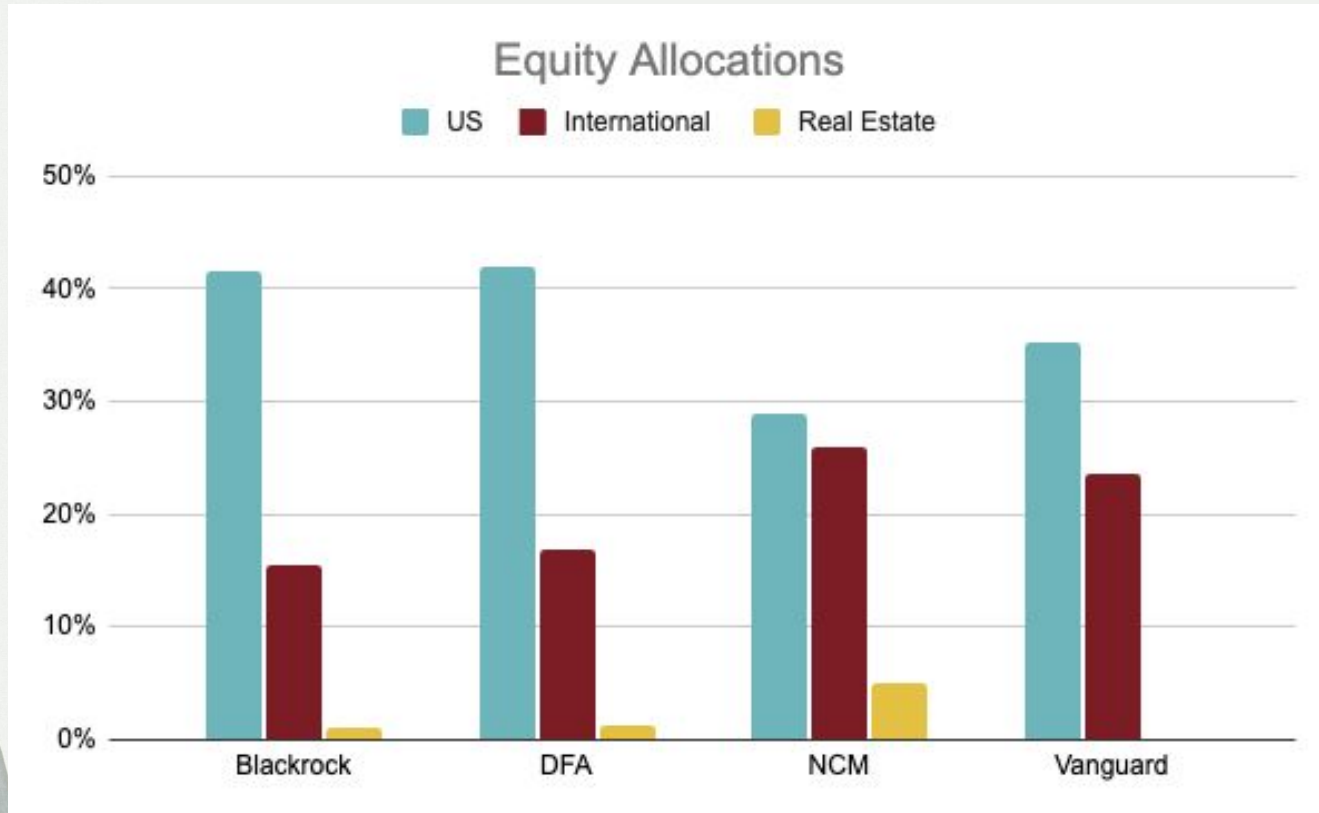
# Cycles of Performance: US v International

## MSCI EAFE and MSCI USA relative performance

U.S. dollar, total return, cumulative outperformance



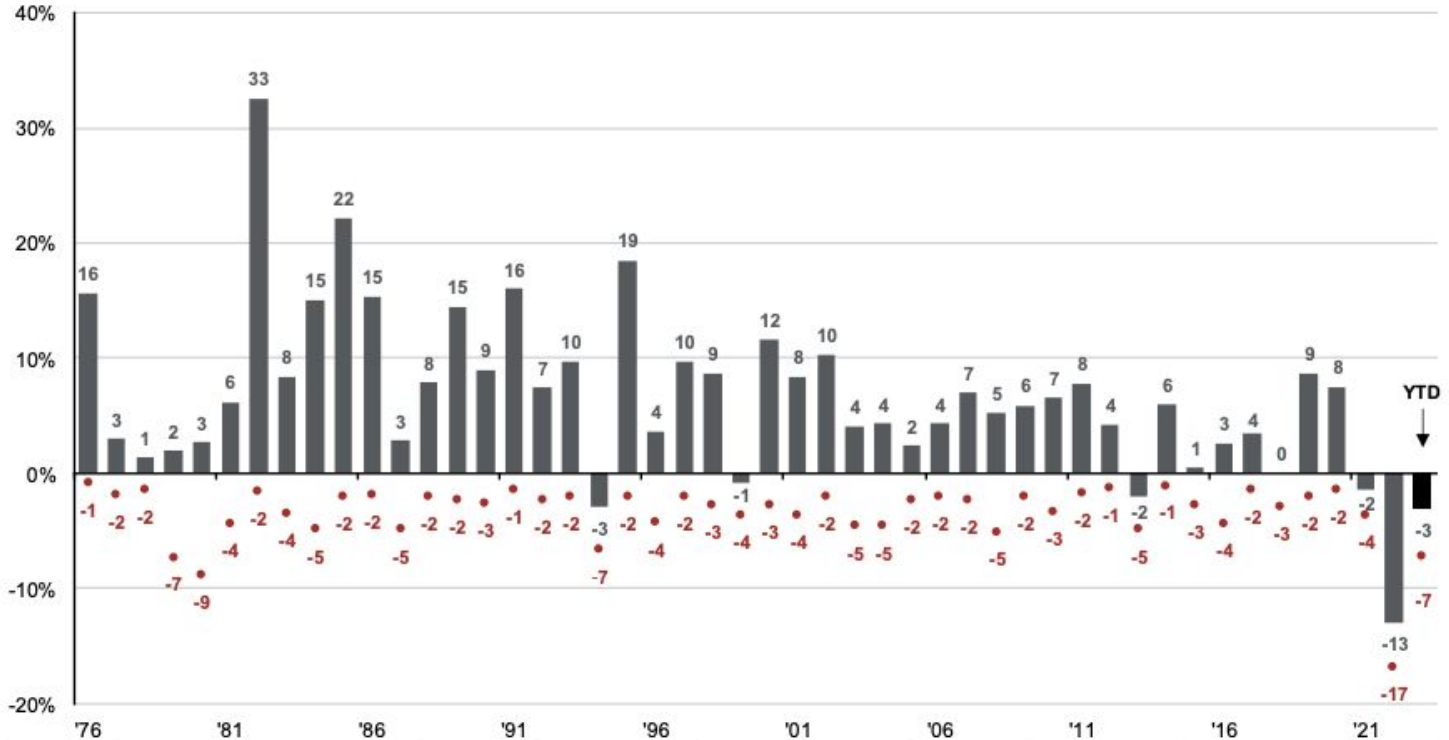
# Model Portfolios: Equity Allocation



# Barclays Aggregate Index Annual and Intrayear

## Bloomberg U.S. Aggregate intra-year declines vs. calendar year returns

Despite average intra-year drops of 3.3%, annual returns positive in 42 of 47 years

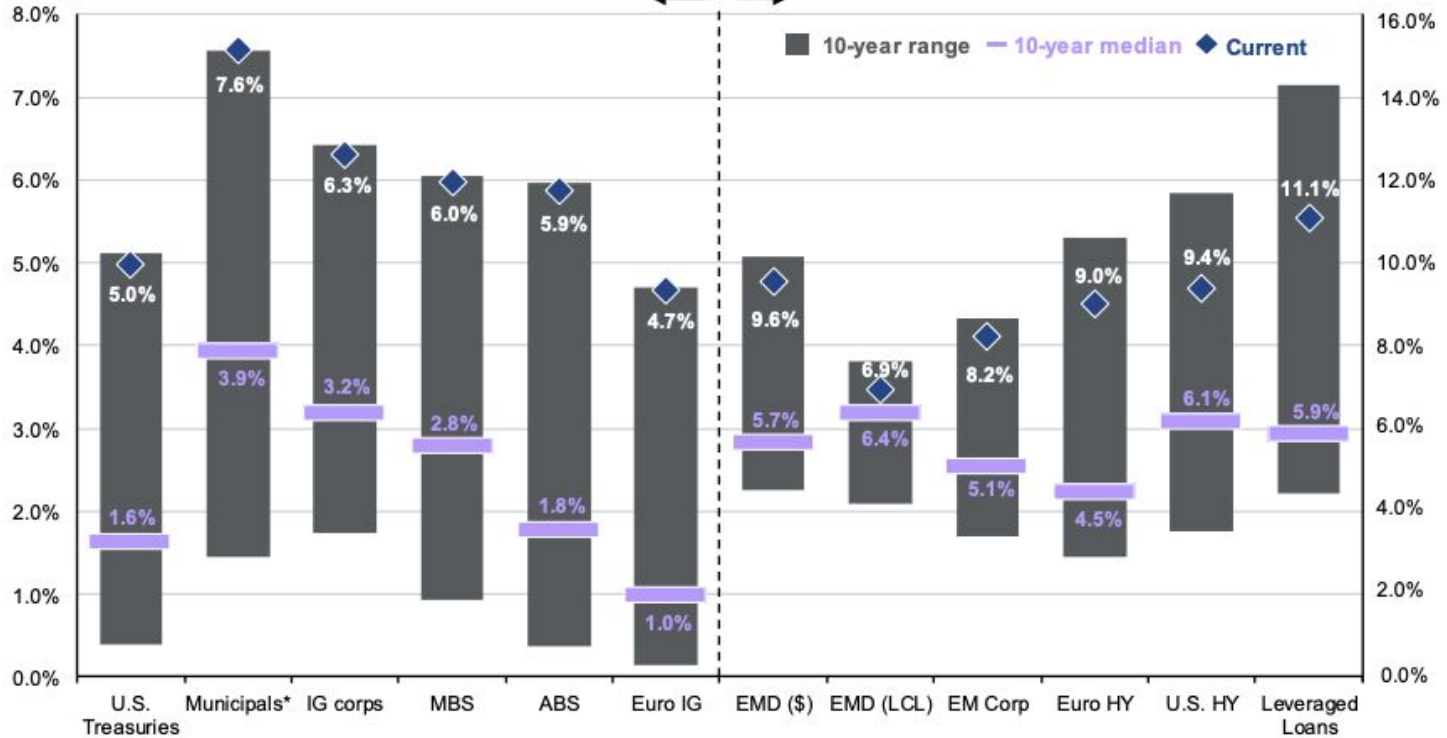


Source: Bloomberg, FactSet, J.P. Morgan Asset Management

# Yields Across Bond Sectors

## Yield-to-worst across fixed income sectors

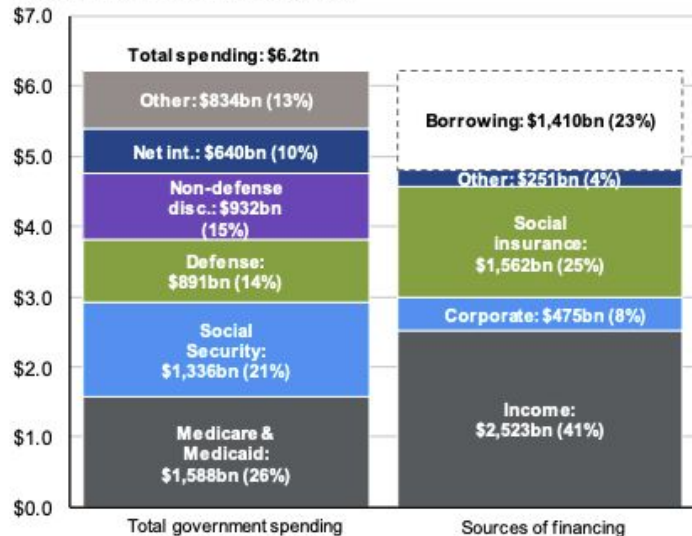
Percent, past 10 years



# Federal Finances

## The 2023 federal budget

CBO Baseline forecast, USD trillions

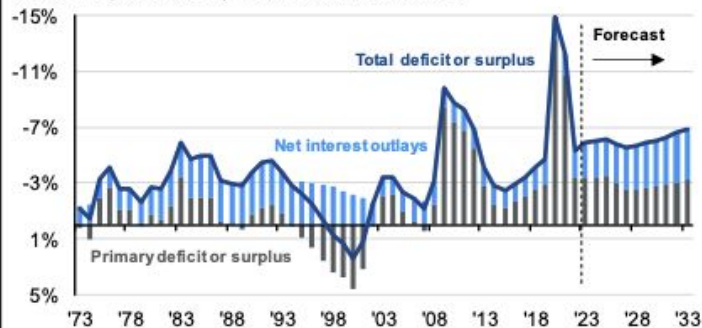


### CBO's Baseline economic assumptions

	2023	'24-'25	'26-'27	'28-'33
Real GDP growth	0.9%	2.0%	2.4%	1.9%
10-year Treasury	4.0%	3.8%	3.8%	3.8%
Headline inflation (CPI)	3.3%	2.5%	2.1%	2.2%
Unemployment	4.1%	4.6%	4.5%	4.5%

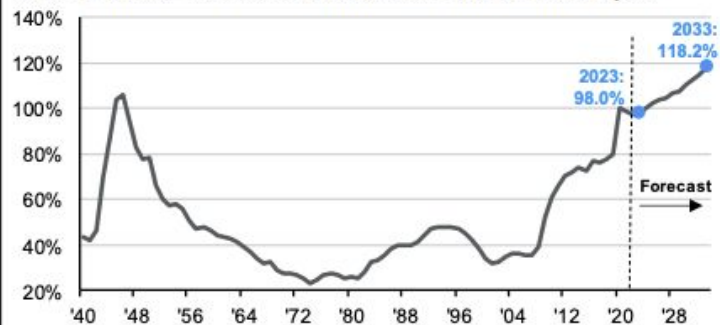
## Federal deficit and net interest outlays

% of GDP, 1973-2033, CBO Baseline Forecast



## Federal net debt (accumulated deficits)

% of GDP, 1940 - 2033, CBO Baseline Forecast, end of fiscal year







# Themes


---

# Themes: Conference 2021 (Lookback)

- ✓ Shifting to Defense
- ✓ ✓ Inflation (and Rate) Risk
- ✓ Political Risk
- ✓ Valuation Risk



# Themes: Conference 2022 (Lookback)

- 
- ✓ Gingerly Shifting to Offense
  - ✓ ✓ Keeping duration short
  - ✗ Recession Risk
  - ✓ Political Risk

# Themes: Conference 2023

Beginning to add duration back

Valuations attractive in bonds, International, Value, Real Estate

Political Risk

Geopolitical Risk





# Q&A + LUNCH BREAK

---

The next presentation will begin at 12:30 pm