




Asset Allocation

FPPTA Intermediate

January 2025

A photograph of a modern building with a glass facade, reflecting the sky and clouds. The building is on the right side of the image, and the sky is a clear, deep blue.

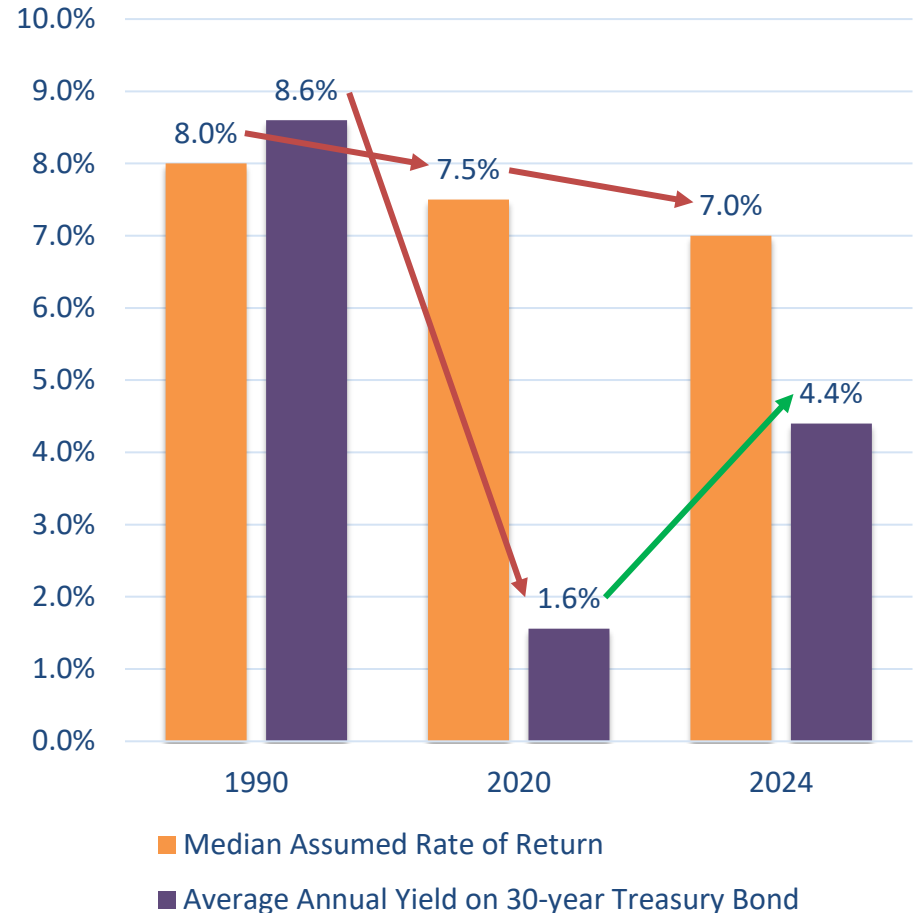
Presented by: Mitchel Brennan, Senior Consultant
Burgess Chambers & Associates, Inc.
315 E. Robinson Street, Suite 690. Orlando, FL 32801

BACKGROUND

Pension plans were designed to achieve an expected rate of return with a high degree of probability.

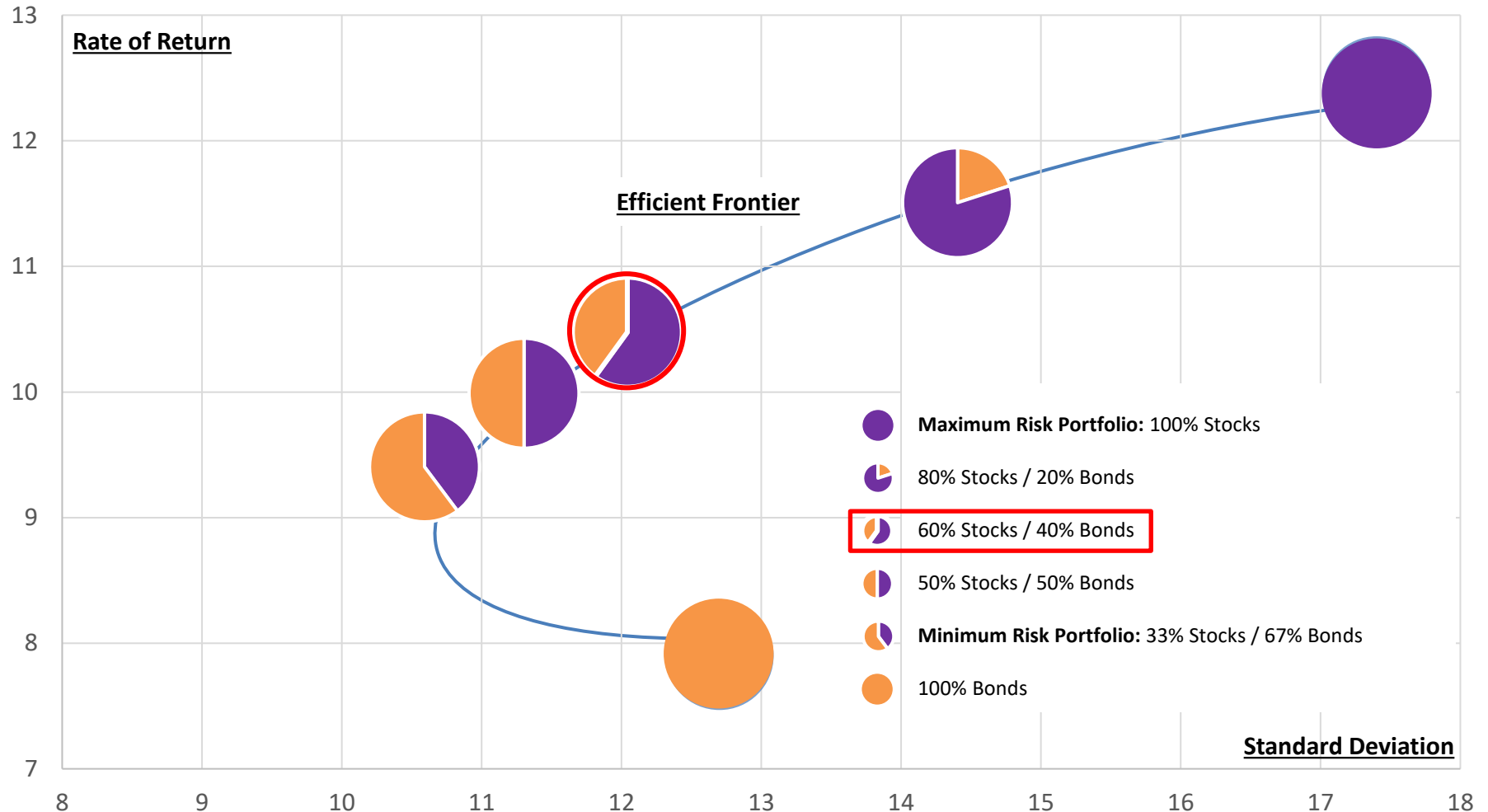
When fixed income securities produced a yield above the assumed rate of return, pension plans invested mostly in fixed income assets.

In contrast, the low interest environment from the 2010s through 2022 forced pension plans into risk-on assets, to achieve the expected rate of return. Lower assumption rates and higher yields reduced the gap with assumption rates, allowing pensions to actively derisk portfolios back to bonds.



MODERN PORTFOLIO THEORY (MPT)

MPT shows that an investor can construct a portfolio of multiple assets that will maximize returns for a given level of risk. MPT promoted the **60/40** portfolio.



CORRELATION

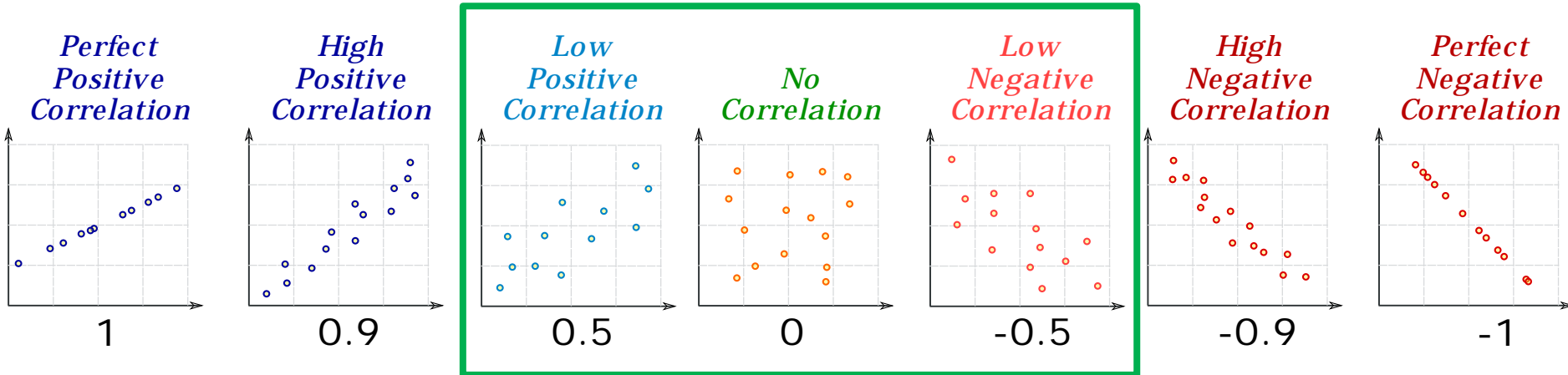
The correlation between two assets can range between -1.0 and +1.0.

Portfolio risk may be reduced if two or more **uncorrelated** assets are combined.

Small Stocks	1.00					
Large Stocks	0.79	1.00				
Long-Term Corporate Bonds	0.08	0.21	1.00			
Long-Term Government Bonds	-0.07	0.05	0.90	1.00		
Intermediate-Term Government Bonds	-0.08	-0.01	0.85	0.87	1.00	
Treasury Bills	-0.08	-0.02	0.16	0.19	0.47	1.00
	Small Stocks	Large Stocks	LT Corporate Bonds	LT Govt Bonds	IT Govt Bonds	Treasury Bills

CORRELATION

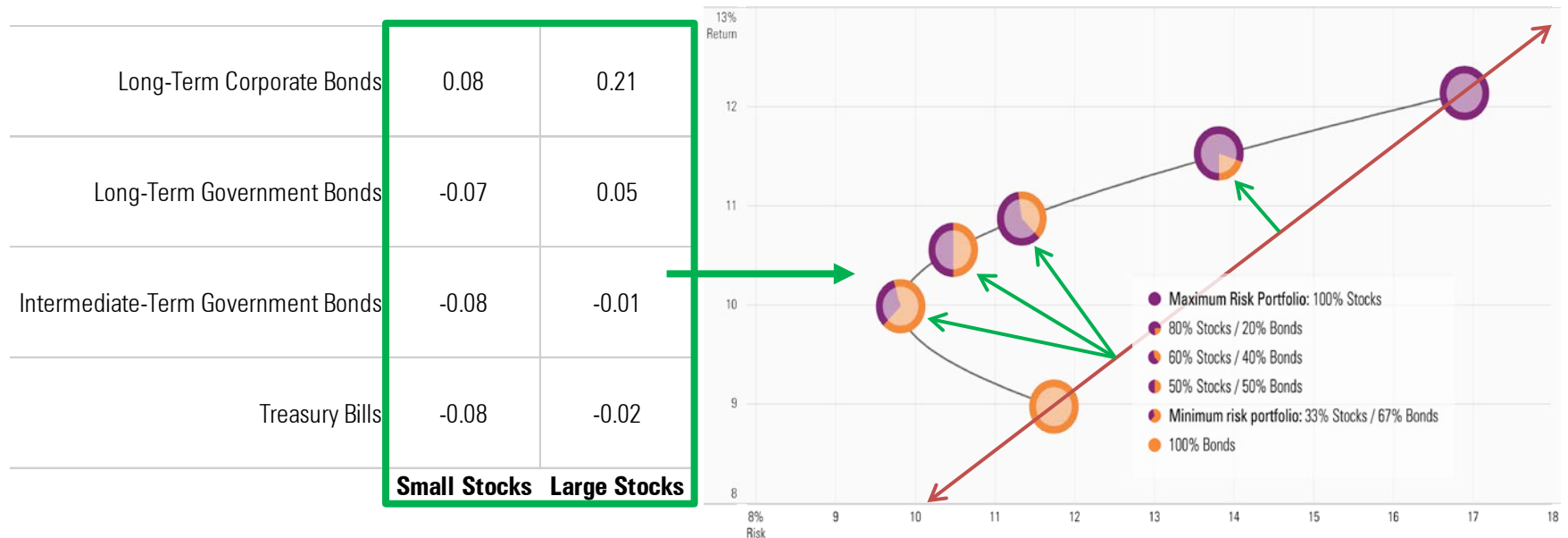
The **ideal correlation range** for two asset classes to create a diversified portfolio and generate better risk-adjusted returns is **between +0.5 and -0.5**.



Most investors want an investment that is **positively correlated when markets rise** and **negatively correlated when markets fall**. As of today, that investment does not exist.

CORRELATION

Stocks and Bonds have a low correlation to one another. That is why when paired, they significantly reduce a Portfolio's risk/volatility and generate **better risk-adjusted returns**.



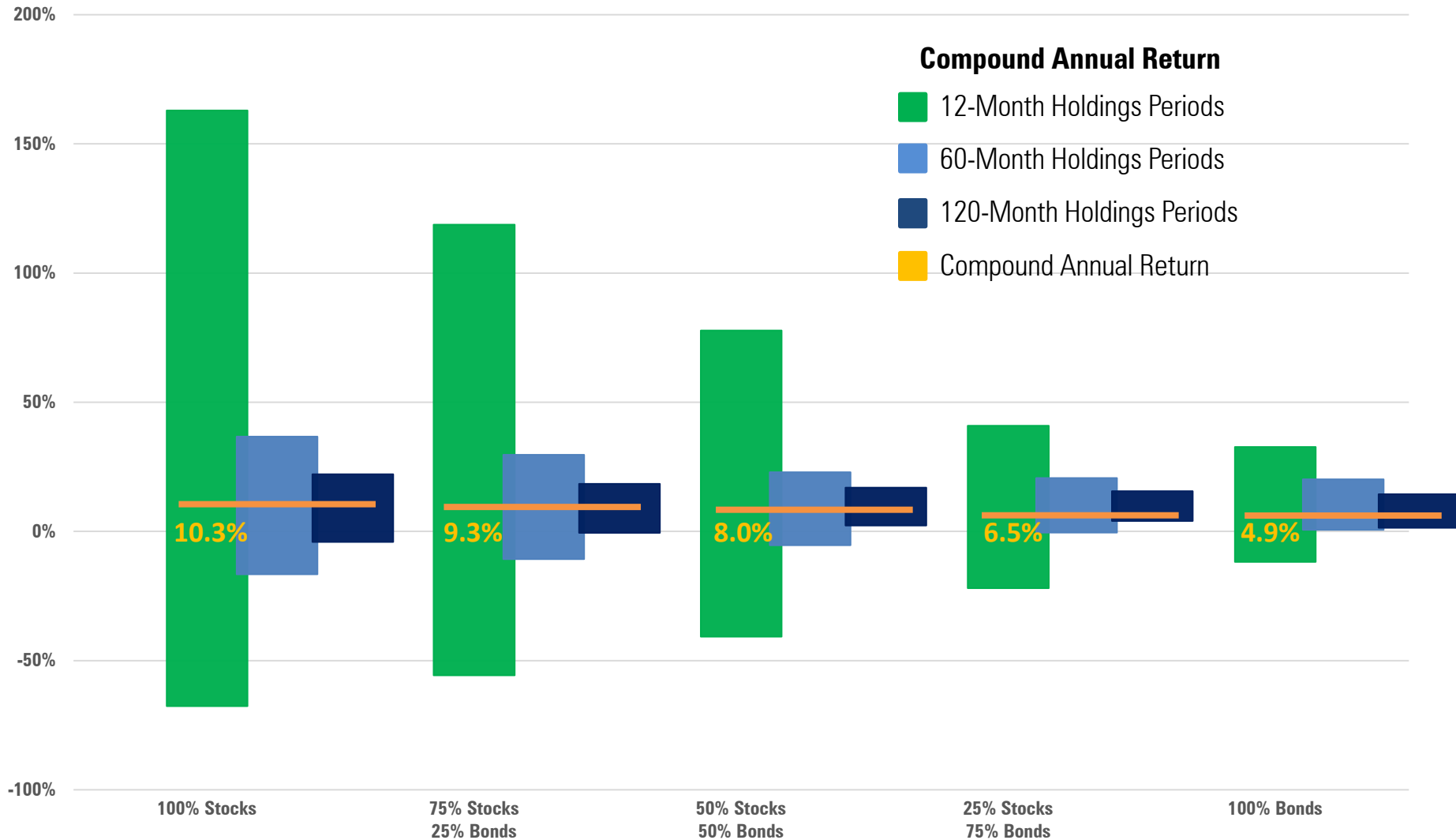
TIME HORIZON & RISK PROFILE

A **long-term** perspective can reduce the risk of loss.
Portfolio risk appears to **diminish** over long time periods.

		12-Month Holding Period				60-Month		120-Month			
Stocks											
100%		10.3%	162.9%	-67.6%	24.6%	36.1%	-17.4%	11.6%	21.4%	-4.9%	5.0%
75% 25%		9.3%	118.7%	-55.7%	22.3%	29.0%	-11.5%	6.8%	17.7%	-1.3%	0.9%
50% 50%		8.0%	77.8%	-40.7%	18.1%	22.2%	-6.1%	4.3%	16.2%	1.5%	0.0%
25% 75%		6.5%	40.9%	-22.0%	11.2%	20.0%	-1.2%	0.3%	14.9%	3.3%	0.0%
100%		4.9%	32.7%	-11.8%	12.4%	19.5%	-0.2%	0.2%	13.7%	0.6%	0.0%
Bonds											
		Annual Return	Highest Return	Lowest Return	Negative Return	Highest Return	Lowest Return	Negative Return	Highest Return	Lowest Return	Negative Return

TIME HORIZON & RISK PROFILE

The expected return profile becomes more **predictable** over time.



TRADITIONAL INVESTMENTS

EQUITY:

Domestic Equity

- Growth
- Value
- Large Cap
- Mid Cap
- Small Cap

Foreign Equity

- Developed
- Emerging Market

FIXED INCOME:

Core Fixed Income

- Short-Term
- Intermediate
- Long-Term

High Yield

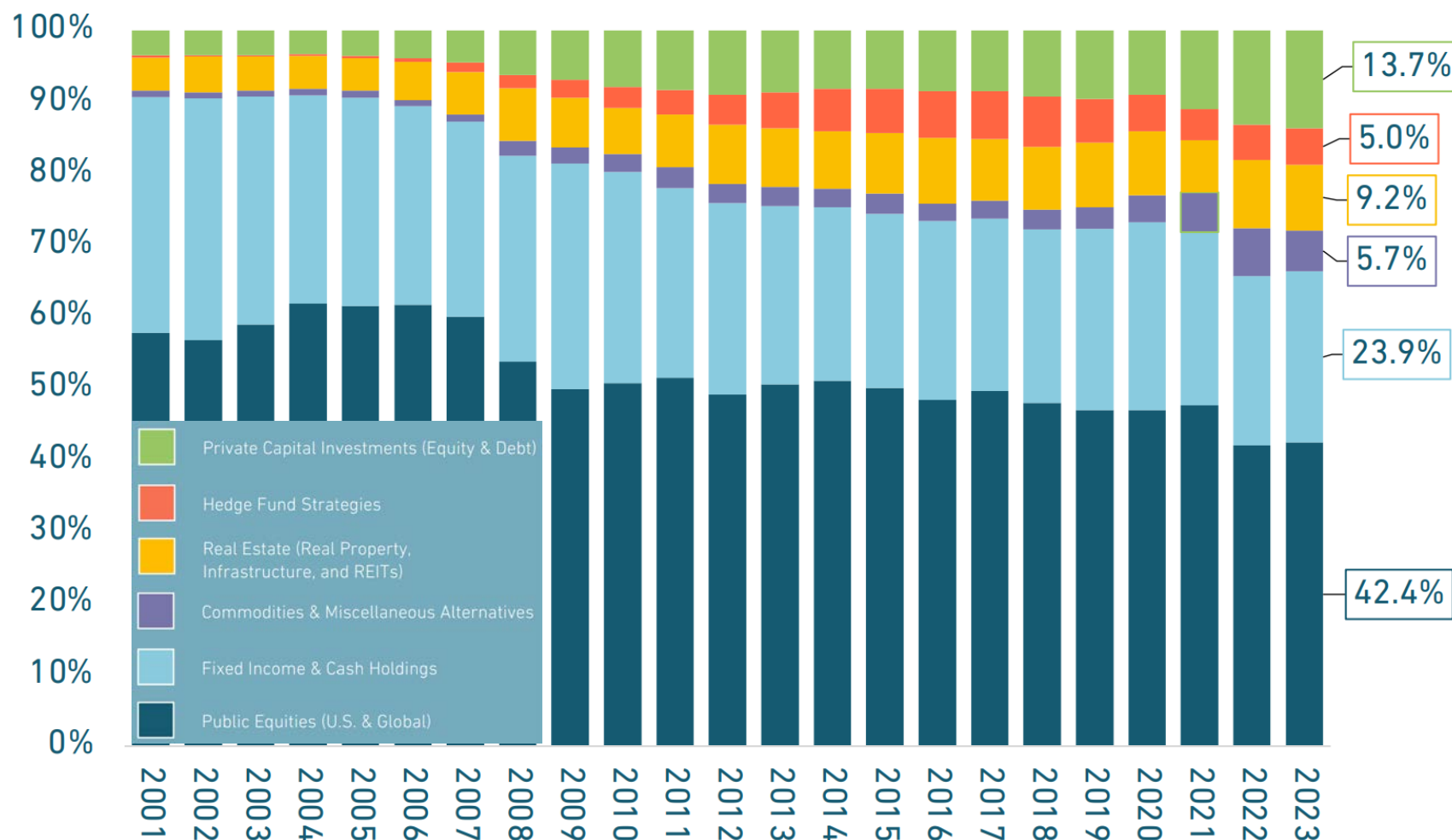
Foreign Debt

Bank Loans

Treasury Inflation-Protected Securities / TIPS

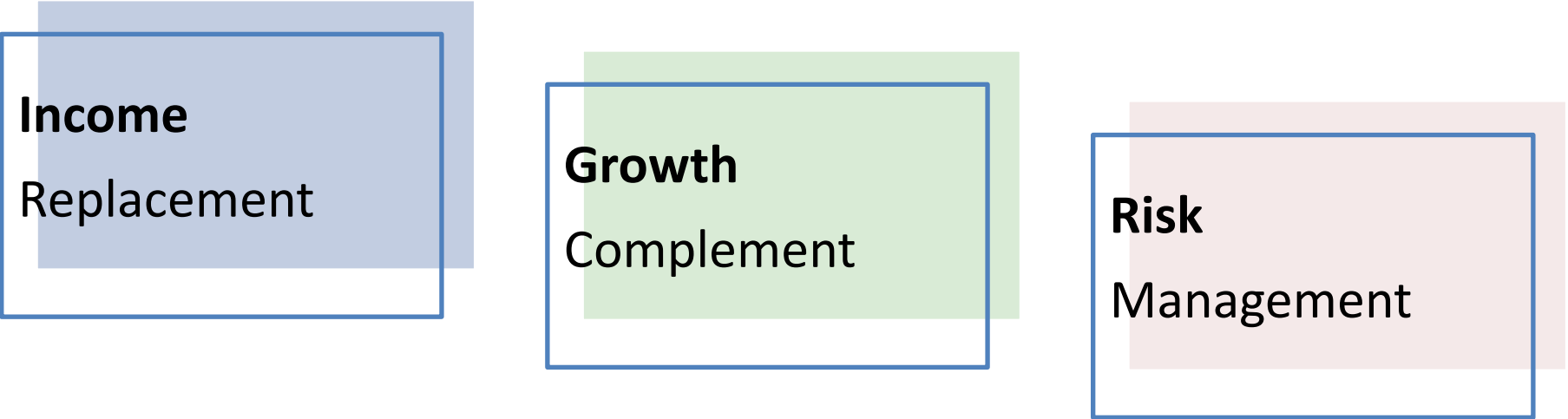
ALTERNATIVE INVESTMENTS

Low interest rates pushed investors to diversify further into alternatives.
Most portfolios today are made up of 70% risk on (equity and alternatives)
and 30% risk off (bonds and alternatives) assets.



DIVERSIFICATION

For alternative investments, it is important to **define the role** an alternative will serve within a portfolio and **establish appropriate expectations** to gauge the investment's effectiveness.



The diagram consists of three colored rectangular boxes arranged horizontally. The first box on the left is light blue and contains the text 'Income Replacement'. The middle box is light green and contains the text 'Growth Complement'. The third box on the right is light pink and contains the text 'Risk Management'. Each box is outlined with a thin blue border and is slightly offset from the background of the same color.

Income
Replacement

Growth
Complement

Risk
Management

ALTERNATIVE INVESTMENTS

EQUITY SUBSTITUTES:

Convertible Securities

Real Estate Investment Trust / REIT

Commodities

Listed Infrastructure

Preferred Stock

Private Equity & Venture Capital

Private Real Estate (Opportunistic)

Equity Hedge Fund

Private Infrastructure

Derivatives

FIXED INCOME SUBSTITUTES:

Core Private Real Estate

Long/Short Credit

Market Neutral Hedge Fund

Private Credit

Private Infrastructure

RISK PREMIUM

More Risk = More Reward?

Market Risk Premium

$$\text{Market Risk Premium Formula} = \text{Expected Return} - \text{Risk-Free Rate}$$



Risk vs. Reward is typically not symmetrical.

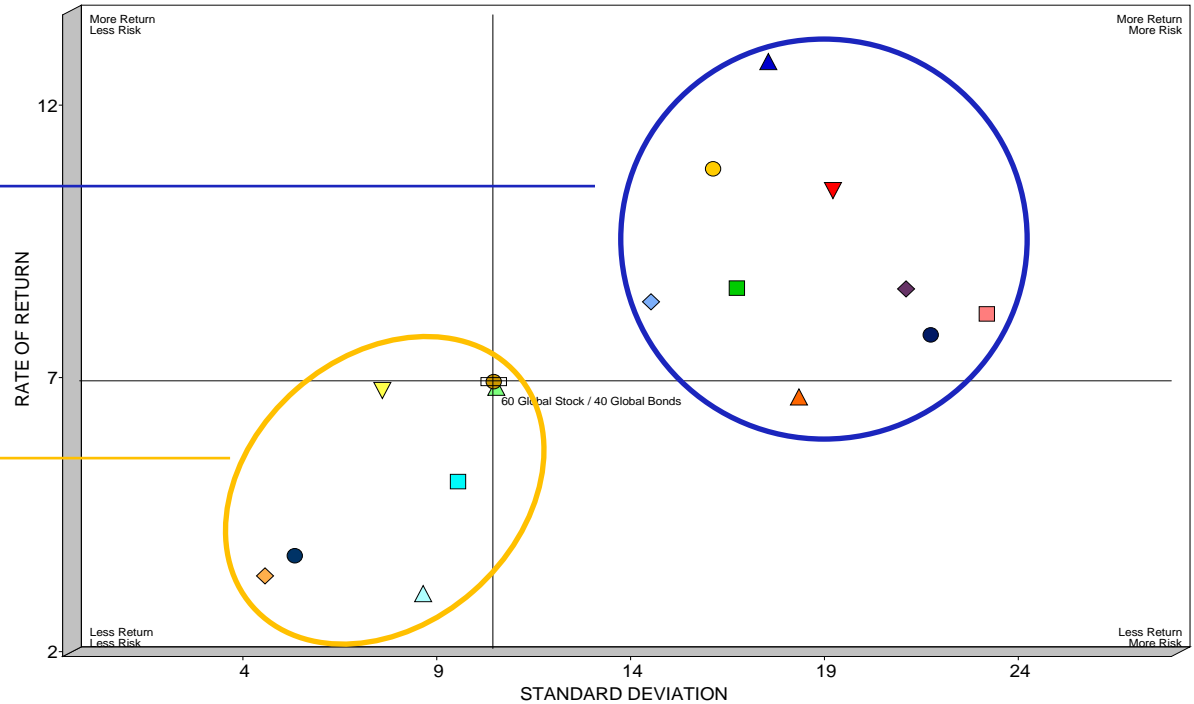
Investors should demand a premium for additional risks like illiquidity and leverage.

DIVERSIFICATION

SEPTEMBER 30, 2004 TO SEPTEMBER 30, 2024

Higher Volatility / High Return
Equity Substitutes

Lower Volatility / Low Return
Fixed Substitutes

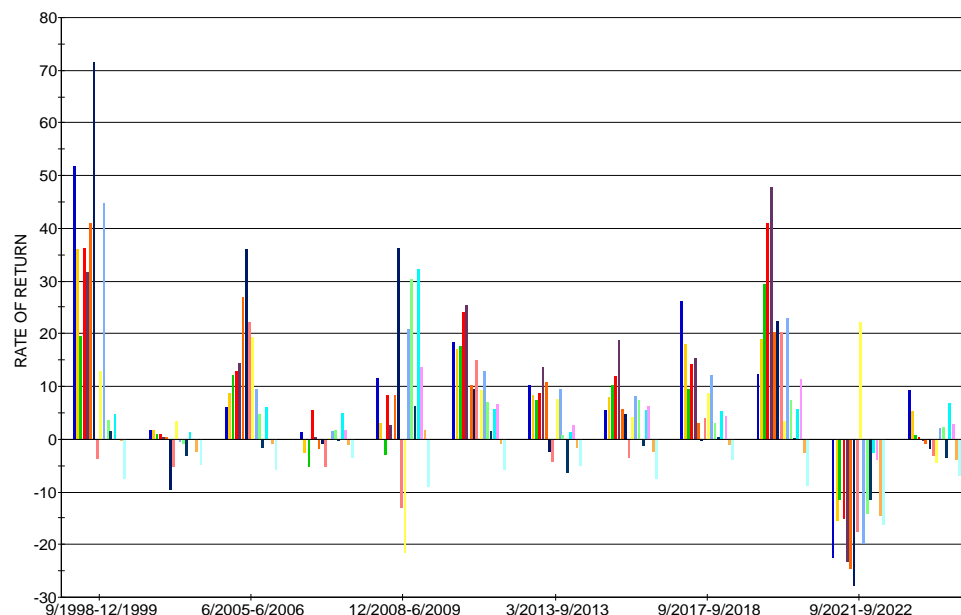


	ROR	Std Dev Pop	Alpha	Beta	R-Squared
▲ Russell 1000 Growth	12.67	17.35	3.35	1.57	0.85
● Standard & Poor's 500	10.71	15.87	1.76	1.48	0.90
■ Russell 1000 Value	8.53	16.51	-0.15	1.48	0.83
▼ Standard & Poor's 400 Mid Cap	10.31	18.99	0.68	1.71	0.84
◆ Russell 2000	8.49	20.88	-1.21	1.82	0.78
▲ MSCI EAFE Gross	6.51	18.14	-3.01	1.71	0.92
● MSCI Emerging Markets	7.67	21.50	-2.08	1.86	0.78
■ Wilshire REIT	8.05	22.96	-0.33	1.69	0.56
▼ NCREIF ODCE NCREIF ODCE	6.62	7.40	5.48	-0.04	0.00
◆ ICE BofA US Convertibles	8.25	14.29	0.36	1.27	0.81
▲ Bloomberg High Yield US Corporate	6.68	10.32	0.72	0.85	0.70
● Bloomberg US Treasury Inflation Notes	3.61	5.12	1.22	0.16	0.10
■ Morningstar LSTA US Leveraged Loan	4.98	9.32	0.26	0.63	0.46
▼ HFRI Credit	N/A	N/A	N/A	N/A	N/A
◆ Bloomberg Aggregate	3.22	4.35	1.12	0.10	0.06
▲ FTSE 10-Yr Treasury Benchmark	2.90	8.41	2.69	-0.19	0.05
● 60 Global Stock / 40 Global Bonds	6.80	10.21	0.00	1.00	1.00

Disclosure: for illustrative purposes only. Source: PSN.

FIXED & SUBSTITUTES: INTEREST RATE SENSITIVITY

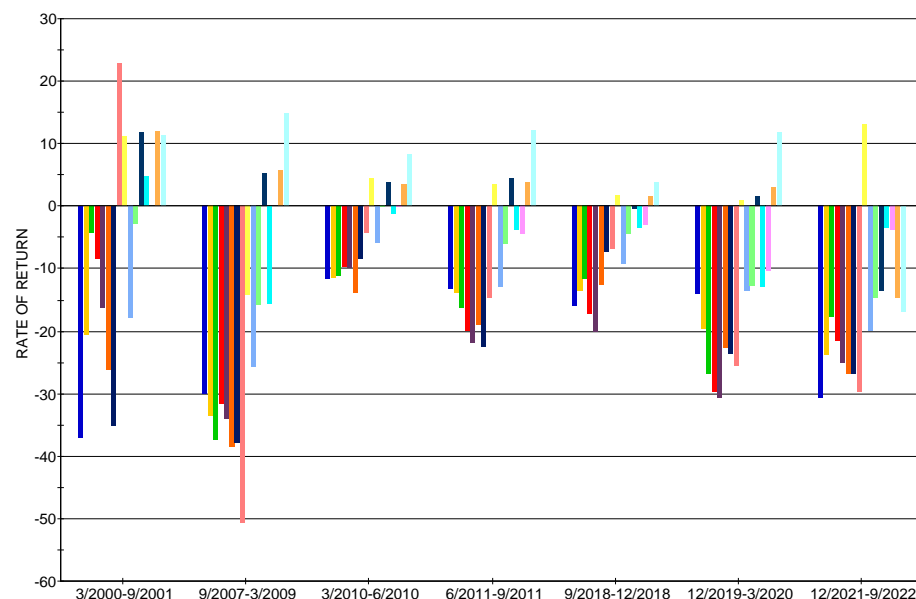
- Understand the potential impact to fixed income securities.
- Understand how asset classes behave during rising interest rate environments.
- Understand the impact of inflation.



	9/1998-12/1999	3/2004-6/2004	6/2005-6/2006	3/2008-6/2008	12/2008-6/2009	9/2010-3/2011	3/2013-9/2013	6/2016-12/2016	9/2017-9/2018	9/2020-3/2021	9/2021-9/2022	3/2023-9/2023
Russell 1000 Growth	51.99	1.94	6.12	1.25	11.53	18.57	10.34	5.64	26.30	12.44	-22.59	9.28
Standard & Poor's 500	35.96	1.72	8.63	-2.73	3.16	17.31	8.31	7.82	17.91	19.07	-15.47	5.18
Russell 1000 Value	19.68	0.88	12.10	-5.31	-2.87	17.68	7.27	10.39	9.45	29.34	-11.36	0.78
Standard & Poor's 400 Mid Cap	36.15	0.97	12.98	5.43	8.47	24.13	8.62	11.87	14.21	41.13	-15.25	0.45
Russell 2000	31.66	0.47	14.58	0.58	2.64	25.48	13.61	18.68	15.24	48.05	-23.50	-0.19
MSCI EAFE Gross	41.05	0.44	27.07	-1.93	8.42	10.33	10.79	5.78	3.25	20.27	-24.75	-0.95
MSCI Emerging Markets	71.56	-9.58	35.91	-0.80	36.22	9.61	-2.52	4.70	-0.44	22.58	-27.80	-1.78
Wilshire REIT	-3.72	-5.42	22.09	-5.39	-12.98	15.13	-4.37	-3.47	3.98	20.37	-17.61	-3.31
NCREIF ODCE NCREIF ODCE	12.91	3.28	19.18	0.32	-21.48	9.20	7.56	4.20	8.68	3.44	22.09	-4.62
ICE BofA US Convertibles	44.76	-0.57	9.37	1.52	21.01	12.90	9.54	8.25	12.15	23.10	-20.01	1.99
Bloomberg High Yield US Corporate	3.64	-0.96	4.82	1.75	30.43	7.23	0.81	7.40	3.05	7.36	-14.14	2.21
Bloomberg US Treasury Inflation Notes	1.52	-3.10	-1.65	-0.28	6.21	1.42	-6.40	-1.47	0.41	0.12	-11.57	-3.55
Morningstar LSTA US Leveraged Loan	4.71	1.23	6.08	4.94	32.18	5.70	1.39	5.41	5.19	5.66	-2.59	6.72
HFRI Credit	N/A	N/A	N/A	1.74	13.86	6.55	2.58	6.39	4.45	11.22	-3.92	2.96
Bloomberg Aggregate	-0.40	-2.44	-0.81	-1.02	1.91	-0.88	-1.77	-2.53	-1.22	-2.73	-14.60	-4.05
FTSE 10-Yr Treasury Benchmark	-7.45	-4.79	-5.77	-3.49	-8.94	-5.93	-5.17	-7.51	-4.00	-8.86	-16.21	-6.92

EQUITY & SUBSTITUTES: MARKET STRESS TEST

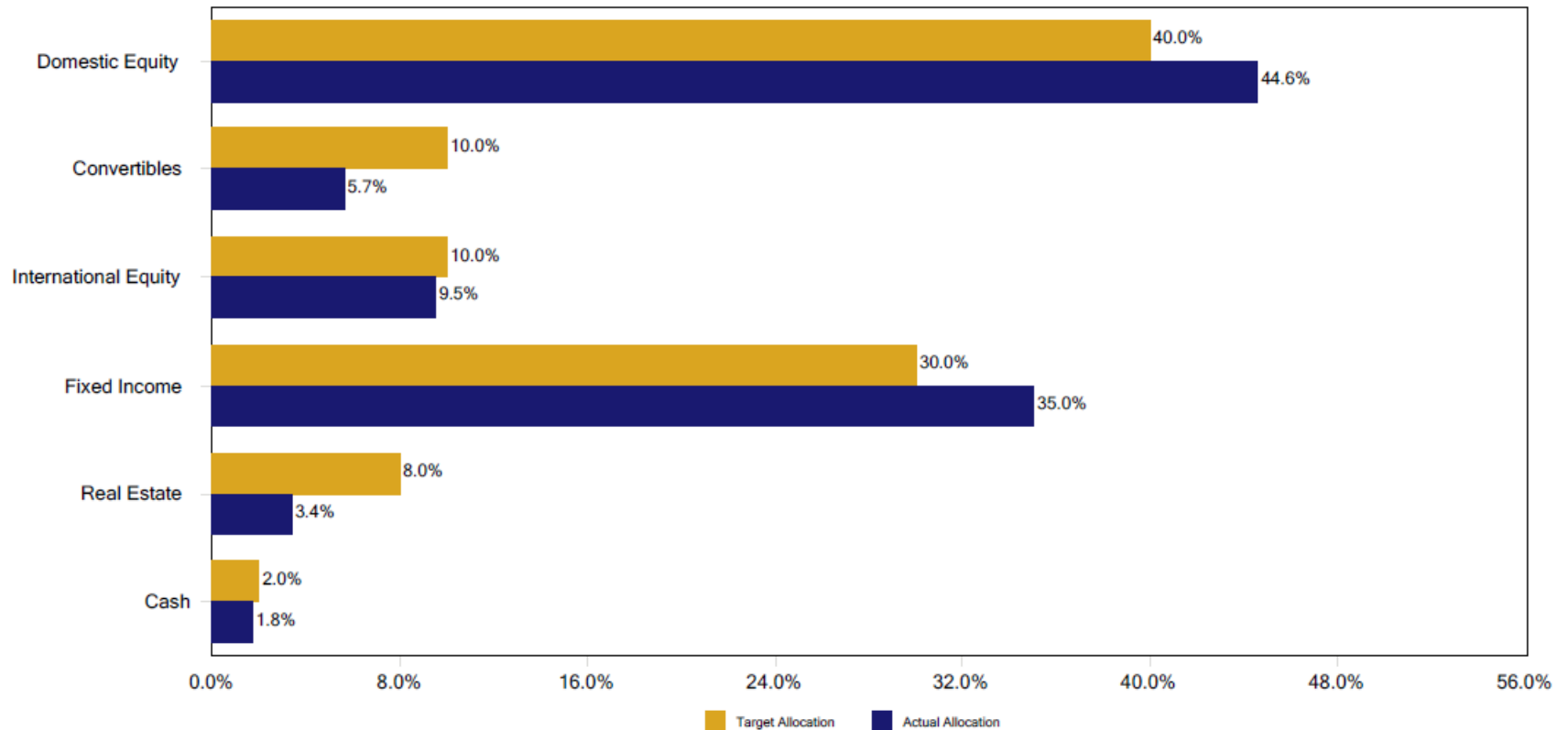
- Understand the worst-case scenario of equity & substitutes.
- Understand how asset classes behave during market duress.
- Understand the correlation during bull and bear markets.



	3/2000-9/2001	9/2007-3/2009	3/2010-6/2010	6/2011-9/2011	9/2018-12/2018	12/2019-3/2020	12/2021-9/2022
Russell 1000 Growth	-36.96	-29.99	-11.75	-13.14	-15.89	-14.10	-30.66
Standard & Poor's 500	-20.61	-33.53	-11.43	-13.87	-13.52	-19.60	-23.87
Russell 1000 Value	-4.28	-37.41	-11.15	-16.20	-11.72	-26.73	-17.75
Standard & Poor's 400 Mid Cap	-8.28	-31.53	-9.59	-19.88	-17.28	-29.70	-21.52
Russell 2000	-16.24	-33.90	-9.92	-21.87	-20.20	-30.61	-25.10
MSCI EAFE Gross	-26.19	-38.51	-13.75	-18.95	-12.50	-22.72	-26.76
MSCI Emerging Markets	-35.13	-37.82	-8.29	-22.46	-7.40	-23.57	-26.89
Wilshire REIT	22.93	-50.59	-4.23	-14.64	-6.93	-25.63	-29.66
NCREIF ODCE NCREIF ODCE	11.07	-14.31	4.32	3.52	1.76	0.98	13.08
ICE BofA US Convertibles	-17.99	-25.79	-5.80	-12.94	-9.31	-13.62	-19.98
Bloomberg High Yield US Corporate	-2.73	-15.81	-0.11	-6.06	-4.53	-12.68	-14.74
Bloomberg US Treasury Inflation Notes	11.88	5.36	3.82	4.51	-0.42	1.69	-13.61
Morningstar LSTA US Leveraged Loan	4.85	-15.45	-1.28	-3.85	-3.45	-13.05	-3.31
HFRI Credit	N/A	N/A	-0.05	-4.38	-2.94	-10.30	-3.87
Bloomberg Aggregate	11.90	5.61	3.49	3.82	1.64	3.15	-14.61
FTSE 10-Yr Treasury Benchmark	11.30	14.86	8.32	12.19	3.85	11.69	-16.85

DIVERSIFICATION IN PRACTICE

Actual vs. Target Asset Allocation
September 30, 2024



	Market Value Actual \$	Percent Actual	Percent Target	Percent Difference
Total Fund	5,293,890	100.0	100.0	0.0
Domestic Equity	2,360,662	44.6	40.0	4.6
Convertibles	300,292	5.7	10.0	-4.3
International Equity	503,808	9.5	10.0	-0.5
Fixed Income	1,853,130	35.0	30.0	5.0
Real Estate	182,242	3.4	8.0	-4.6
Cash	93,756	1.8	2.0	-0.2

Disclosure: for illustrative purposes only. Source: BCA.

DIVERSIFICATION IN PRACTICE

September 30, 2024

	Market Value	QTD ROR - Rank	1 Year ROR - Rank	3 Year ROR - Rank	5 Year ROR - Rank
Total Fund	5,293,890	6.1 (21)	22.1 (27)	4.0 (69)	9.0 (27)
Strategic Model		6.3	21.7	4.0	8.1
Equity	3,164,762	6.6	28.7	6.3	13.2
Domestic Equity	2,360,662	7.1	32.6	9.4	14.4
Vanguard Equity Income Fund (MF)	370,508	8.4	26.7	10.9	11.7
Vanguard Equity Income Index		8.8	28.0	10.9	11.1
Fidelity Large Cap Value (MF)	338,943	9.4	27.8	9.2	11.0
Russell 1000 Value Index		9.4	27.8	9.0	10.7
Fidelity Large Cap Growth (MF)	794,160	3.2	42.2	12.2	20.0
Russell 1000 Growth Index		3.2	42.2	12.0	19.7
Fidelity Mid Cap (MF)	573,661	9.2	29.3	5.9	11.5
Russell Midcap Index		9.2	29.3	5.8	11.3
Vanguard Small-Cap Value (ETF)	144,160	10.5	28.7	8.2	11.6
Vanguard Small Cap Value Index		10.5	28.7	8.2	11.6
Fidelity Small Cap Index (MF)	139,230	9.3	26.9	2.0	N/A
Russell 2000 Index		9.3	26.8	1.8	9.4
Convertibles	300,292	7.1	15.8	-1.6	11.7
iShares Convertible Bond (ETF)	300,292	7.1	15.8	-1.6	N/A
ICE BofA All Convertibles Excl. 144A All Qualities		4.7	15.9	0.7	11.4
International Equity	503,808	5.5	25.4	0.5	8.0
Am Funds EuroPacific Growth R6 (MF)	503,808	5.5	25.4	0.5	8.0
MSCI AC World ex USA index		8.2	26.0	4.7	8.1

Disclosure: for illustrative purposes only. Source: BCA.

DIVERSIFICATION IN PRACTICE

September 30, 2024

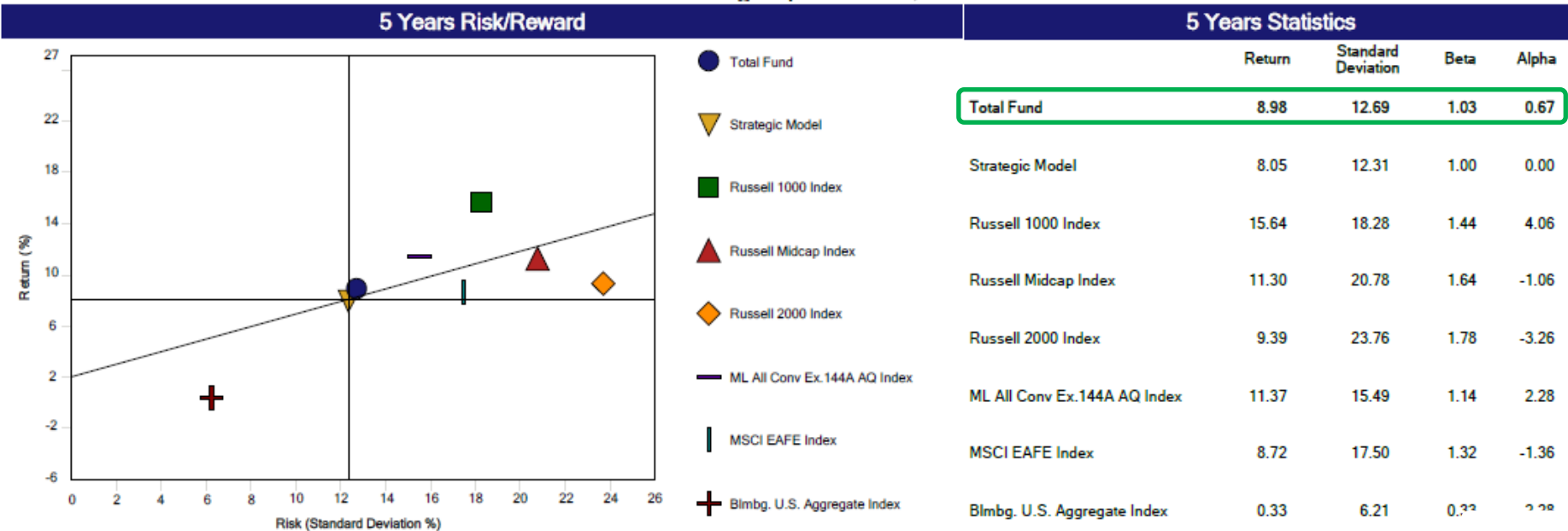
	Market Value	QTD ROR - Rank	1 Year ROR - Rank	3 Year ROR - Rank	5 Year ROR - Rank
Total Fund	5,293,890	6.1 (21)	22.1 (27)	4.0 (69)	9.0 (27)
Strategic Model		6.3	21.7	4.0	8.1
Fixed Income	1,853,130	5.1 (81)	13.0 (18)	0.0 (8)	1.8 (9)
Blmbg. U.S. Aggregate Index		5.2	11.6	-1.4	0.3
Vanguard Intermediate Term Bond (MF)	667,688	5.6	12.3	-1.2	0.8
Vanguard Blmbg. Barc. US5-10YGv/Cr FI Adj		5.6	12.3	-1.2	0.8
Vanguard Interm Term Inv Grade Fund (MF)	679,446	5.9	15.0	-0.2	1.9
Blmbg. U.S. Credit 5-10 Year Index		5.8	14.6	-0.4	1.6
Vanguard High Yield Corp Bond (MF)	245,974	4.4	14.6	3.0	4.1
Blmbg. U.S. Corp: High Yield Index		5.3	15.7	3.1	4.7
Vanguard Short-Term Corporate Bond (ETF)	260,021	3.8	9.8	1.6	2.2
Blmbg. U.S. Aggregate 1-3 Yrs		3.0	7.2	1.5	1.6
Real Estate	182,242	7.8	12.6	N/A	N/A
Blmbg. U.S. Aggregate Index		5.2	11.6	-1.4	0.3
Fidelity Real Estate Income Fund (MF)	182,242	7.8	20.1	N/A	N/A
Fidelity RE Inc Comp Index		11.9	26.2	2.8	4.1
Cash	93,756	1.3	5.4	3.5	2.3
Regions Fds Account Cash Sweep (MF)	93,756	1.3	5.4	3.5	2.3
ICE BofA 3 Month U.S. T-Bill		1.4	5.5	3.5	2.3

DIVERSIFICATION IN PRACTICE

The goal of asset allocation is to optimize risk/return.

Positive Alpha = Higher Return than expected for Risk taken.

Period Ending September 30, 2024



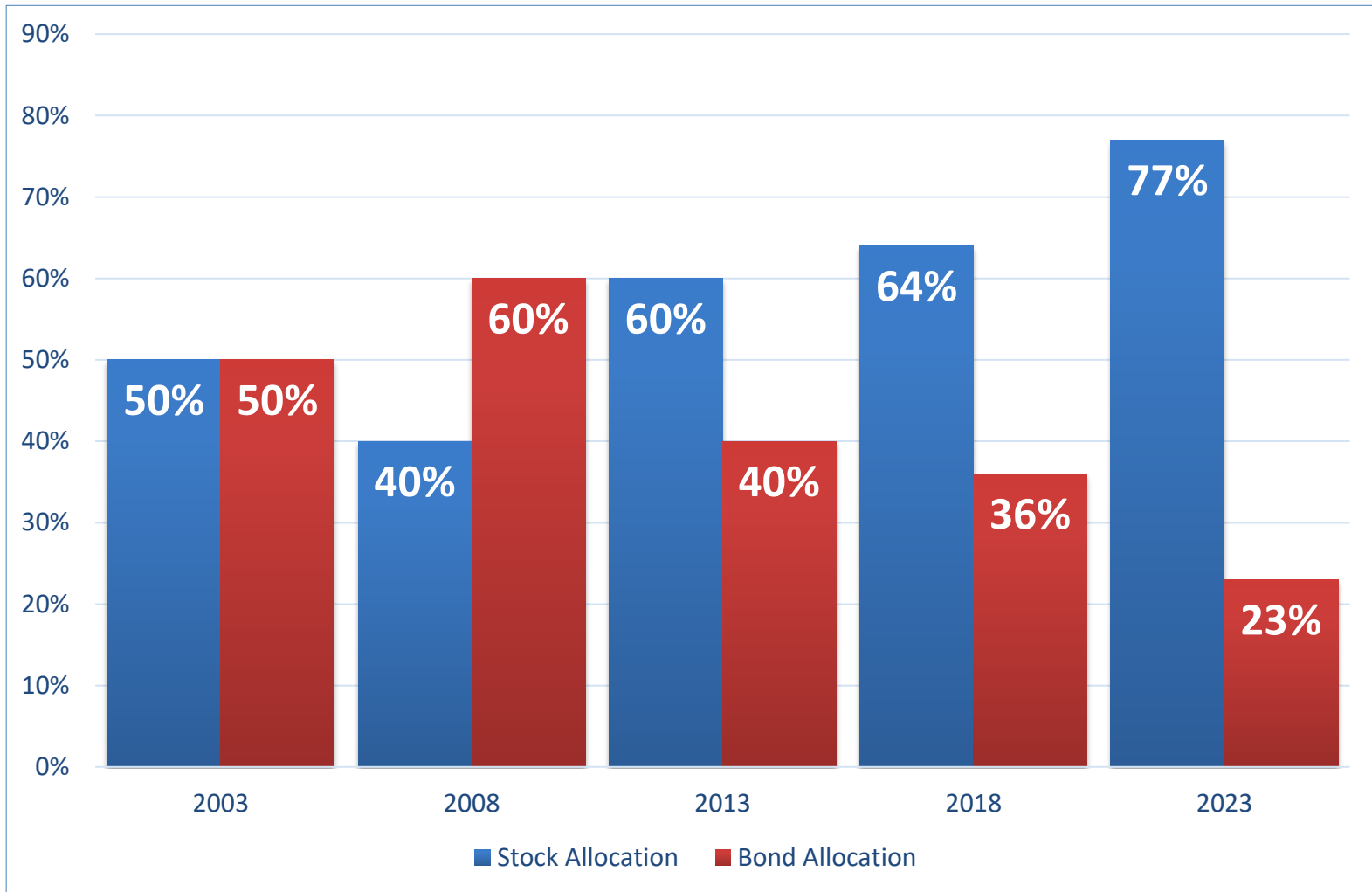
DISCIPLINE IN PRACTICE

Establishing **Asset Allocation Targets** and **Ranges** in the Investment Policy Statement (IPS) can help plans and Boards stay systematically disciplined when markets become extremely volatile.

ASSET ALLOCATION				
Asset Class	Benchmark	Target	Minimum	Maximum
Equities	S&P 500	60%	50%	70%
Fixed Income	Bbg Aggregate	40%	30%	50%

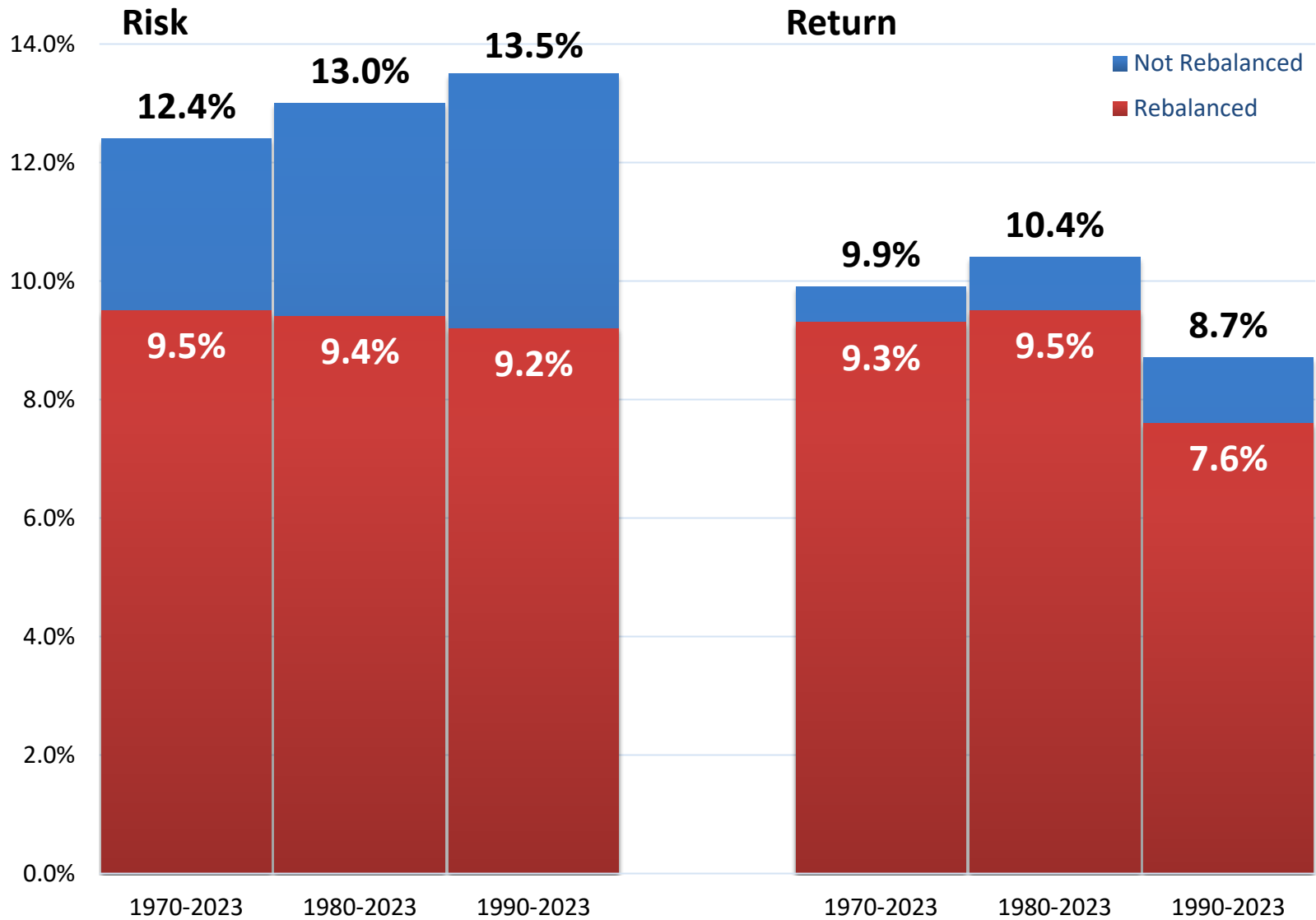
DISCIPLINE IN PRACTICE

Periodic **rebalancing** ensures that the current asset allocation do not skew too far from the target asset allocation established in the Investment Policy Statement.



DISCIPLINE IN PRACTICE

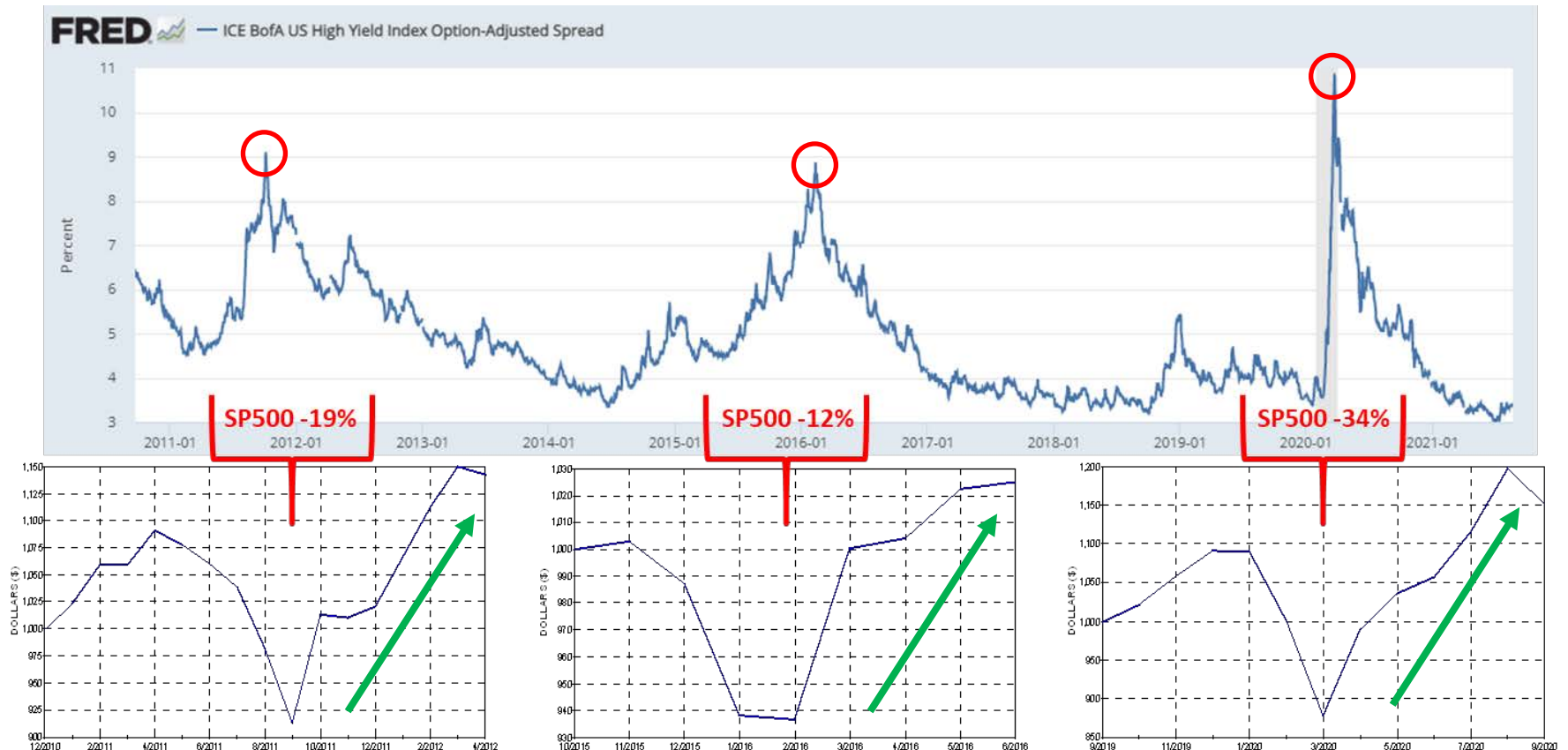
Rebalanced vs. Non-rebalanced Portfolios



Disclosure: for illustrative purposes only. Source: Morningstar.

DISCIPLINE IN PRACTICE

Numerous market factors can signal opportunities to rebalance/de-risk. High yield spreads have historically been one of the most useful tools in evaluating intrinsic risk in the market and a leading indicator to rebalance.



DISCIPLINE IN PRACTICE

“be fearful when others are greedy and greedy when others are fearful.”

-Warren Buffett

Consumer Sentiment Index and subsequent 12-month S&P 500 returns

