Setting your return assumptions for financial planning (for future needs)

Rob Brown, PhD, CFA

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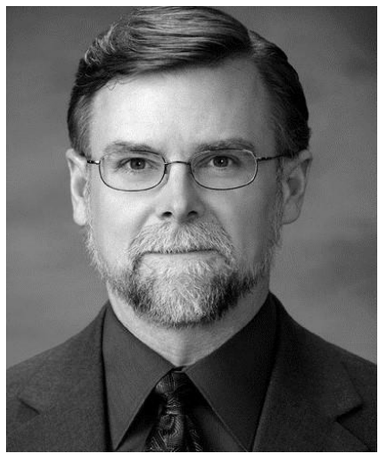

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Episodic . . . What does it mean?

- **Traditional view**
  - Harks back to Harry Markowitz . . . . Early 1950s
  - Basis for mean variance portfolio construction
  - Basis for ***"MPT"*** . . . Modern Portfolio Theory
  - Basis for all financial planning portfolio construction software . . . . All of them
    - Riskalyze
    - MoneyGuidePro
    - FinancialEngines

- **Traditional view . . . . Makes an incredibly bold assumption**
  - All asset class returns follow
    - A lognormal return distribution . . . Or similar probability distribution
    - Distribution is fully described by . . . . . A simple **mean**, **standard deviation**, and **correlation matrix**

- **Critical distinction . . . . Critical flaw**
  - Returns have NO time series properties . . . . i.e., past returns don't and can't affect future returns
  - As a consequence . . . bull and bear markets don't and can't exist
  - One can't have extreme events . . . . Such as an asset category returning a negative return for 30 years

Episodic . . . What does this mean?

- If asset class returns are episodic . . . How does this change things?

- Traditional view
  - The asset class . . . always experiences an **average** return "of +7%"

- Episodic understanding
  - The asset class switches between eras . . . Between **long-lasting** episodic eras
  - During the "favorable era" . . . . It's average return "is +15%"
  - But . . . During the "unfavorable era" . . . . It's average return "is -1%"

- Episodic understanding
  - It's not just that there are bull and bear markets
  - It's far worse than that
  - It's that . . . . . Asset categories proceed through long-lasting eras . . . . When their returns
    - Suck big time
    - Or are exceptionally attractive

Do the most informed experts . . . agree?

- Recent 2023 CFA Institute Research Monograph . . . Page 51
  - Rob Arnott . . . *"Just a quick observation: Empirically, mean reversion in returns is weak"*
  - Arnott is saying that "mean reversion" doesn't really even exist, not at all
  - Thomas Philips . . . *"It probably doesn't exist at all. It's really a reflection of moving from one expected return regime to another. The transition induces a realized return that is different from the return that you expected. It's not that returns are mean reverting; it's that expected returns are unstable and move around a lot."*
  - Philips is saying that returns are incredibly episodic . . . Always have been . . . Always will be
- Also reference . . . . *Philips, Thomas K. 1999. "Why Do Valuation Ratios Forecast Long-Run Equity Returns?" Journal of Portfolio Management 25 (3): 39–44*

Or what the experts say . . . .

- Same 2023 CFA Institute Research Monograph

- Dimson . . . *"Exhibit 12 shows how markets performed over the 20th century, the 21st century through 2020, the period since the Global Financial Crisis, and last year (2020). The United States "won" the last century. It won this competition against other major groupings such as Japan, Great Britain, Europe, the world ex–United States, and the world. The United States looks great. It looks great in the post-financial crisis period and great over the long term, so the United States has truly been exceptional. If we teach using the assumption that the United States represents the world as a whole, we are NOT teaching accurately."*

- Dimson is saying that . . . the post-industrial U.S. experience is brutally non-representative and non-repeatable

Solution . . . use seriously forward-looking CMAs

Capital Market Assumptions

Problem

- BUT . . . It's NOT in the interest of CMA providers to actually be forward-looking
- Instead . . . . It's in their interest to tightly hug the long-term historical averages
- Which is exactly what they do

The Emperor's New Clothes - Balanced Portfolio Construction

Forthcoming in ***The Journal of Investing***

July 23, 2023

Rob Brown, PhD, CFA - Rob Brown is the Chief Investment Officer and a Senior Vice President for Integrated Financial Partners and Integrated Wealth Concepts, and an Advisory Board member for Julex Capital Management

1. INTRODUCTION

There's a generally accepted approach[1] (often titled "Modern Portfolio Theory" or "MPT") by which 60/40 portfolios[2] are constructed. The effectiveness of this approach, relies upon a set of assumptions regarding the inherent behavioral attributes of the asset categories utilized. If these assumed attributes hold, then the generally accepted approach works, and adds significant value.

The objective of this article is to provide significant evidence that these assumptions do not hold. That the underlying asset categories, just flat out, lack the assumed (and required) behavioral attributes. If true, then the generally accepted approach is suspect and probably misleading. Perhaps, we reached this unfortunate circumstance through myopic thinking . . . decisioning based on:

- **Cherry Picking**. We cherry-picked both an isolated time period (from out of history) and restricted ourselves to a non-repeatable and non-representative geography. We narrowed our vision (myopia) to U.S. asset class returns during the post-industrial era (the last 74 years). Which diverge shockingly from returns representing the great breadth of geographies over the entirety of capital market history. The data[3] speaks for itself. (Dimson, Marsh, and Staunton 2023), (Siegel and McCaffrey 2023).
- **Business Practicalities**. We need to sell. This earn-a-living practicality drives a business requirement for simple, easy, cheap, shiny bobbles. We seek technical solutions that readily produce an easily-communicated and resonate story, offering immediately supportive collateral (charts, graphs, metrics, wins and losses, and especially, simple-scoring), and the supposed deep relevance provided by numerous academic accolades and the occasional Nobel prize[4]. (MoneyGuidePro 2023).

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[1] When I use the words "*generally accepted approach*", I am referring to the broadly accepted/utilized process, techniques, and approach by which most ultra-diversified end-client aggregate portfolios are constructed and maintained. I am referring here not to a slice or a segment of an end-client aggregate investment needs, but instead the totality of their investment needs.

[2] When I use the words "*60/40 portfolios*" I am using that as a short-hand label for ultra-diversified portfolios that the end-client uses as their final and complete solution. In other words, such a portfolio is viewed to be a nutritious meal as opposed to an ingredient. Obviously, I am not restricting the discussion to a portfolio allocated 60% to stocks and 40% to bonds, but am instead using that label as shorthand for ultra-diversified comprehensive client solutions. Solutions that may or may not include alternatives, and would span a vast range of risk levels. The key element here is that this article is referencing final aggregate end-client portfolios of varying risk levels.

[3] In (Siegel and McCaffrey 2023) on Page 11, Roger Ibbotson states: *"I will admit that there's a selection bias with my data because I was looking at the United States. It's obviously . . . may not be representative of the future of other places around the world, or even the United States, of course . . . no question about it."*

[4] Harry Markowitz was awarded the 1990 Nobel Prize in Economics for having developed the theory of portfolio choice (based on his publications from the early-1950s).

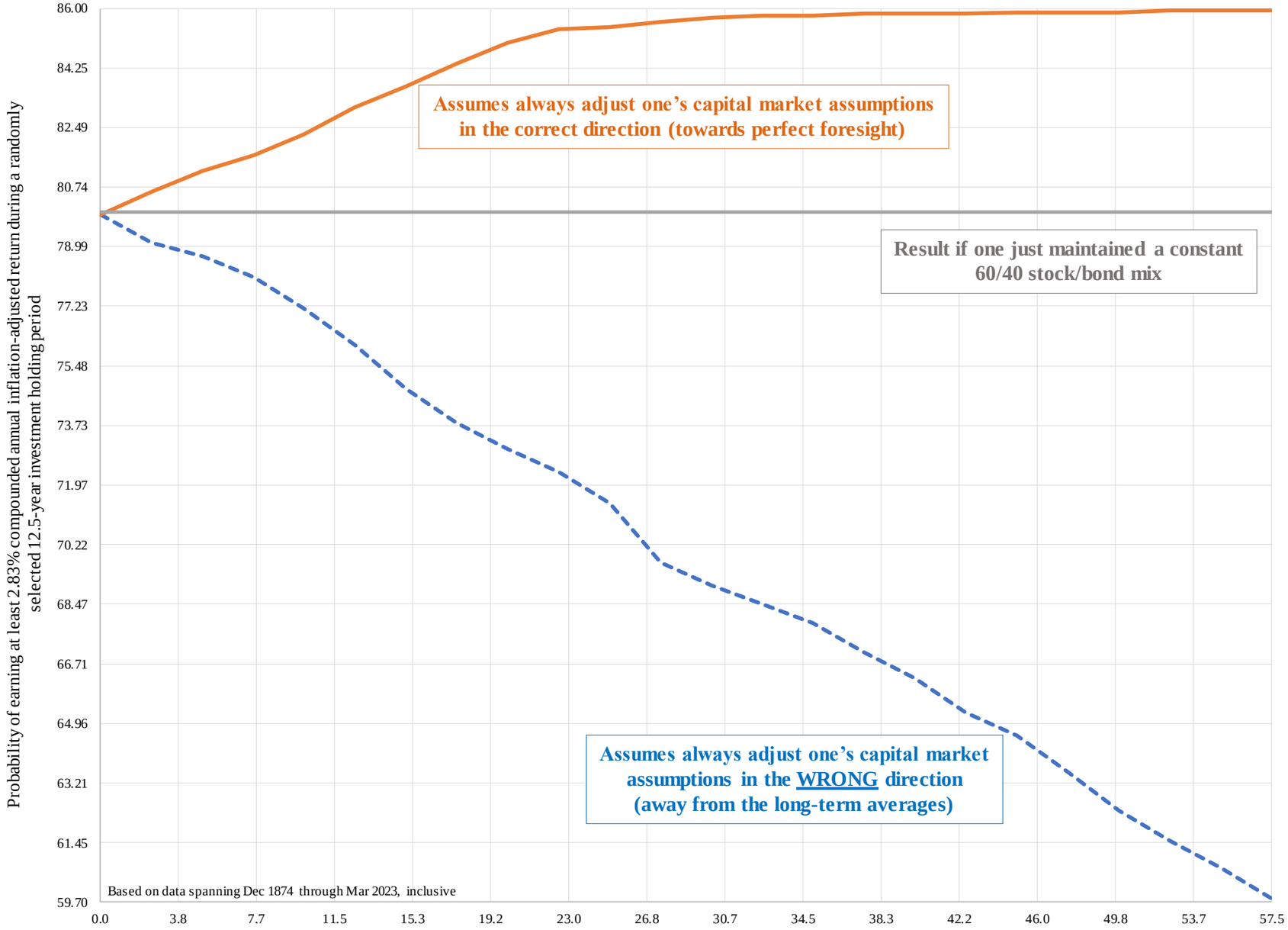
13. OUR INDUSTRY'S PUSHBACK

The standard pushback to this line of thinking is provided by Wayne Gretzky, who apparently said: *"I skate to where the puck is going to be, not where it has been."* In other words, our industry's promotion of proprietary "capital market assumptions". This is our industry's attempt to finesse the arguments made above, i.e., to overcome the extreme trending, momentum, episodic, non-positive, bear/bull nature of asset class returns. Their claim is that they're basing their portfolio construction approach not on past asset class behaviors, but instead on more relevant forecasts of the future. Nice concept, but impossible, unless one has a sufficiently accurate and consistent (dependable) crystal ball.

Think back to March 9, 2020 when the nominal yield on a 10-year Treasury fell below 50bps (with the rest of the term structure following suit). And yet, the majority (almost all) of the largest institutional investment management firms with "10-year" forward looking capital market assumptions were showing expected returns for the S&P 500 of between 5% and 10%.

Just how relevant are our industry's capital market assumptions? Are they forward looking or are they backward looking? Do they do nothing more than tightly hug long-term historical averages, while delivering a compelling narrative? We can examine this question by exploring the benefits of being right versus the costs of being wrong (with respect to their capital market assumptions). Exhibit 14 provides the results.

EXHIBIT 14
Impact of Correct and Incorrect Estimates of Future Capital Market Assumptions



Result

- If you get your CMAs from
  - The largest
  - Most traditional
  - Brand and reputation driven firms
  - Those with well north of $1 trillion in $AUM

- You'll obtain nothing more than
  - Backward-looking CMA
  - That deviate very little from long-term historical averages

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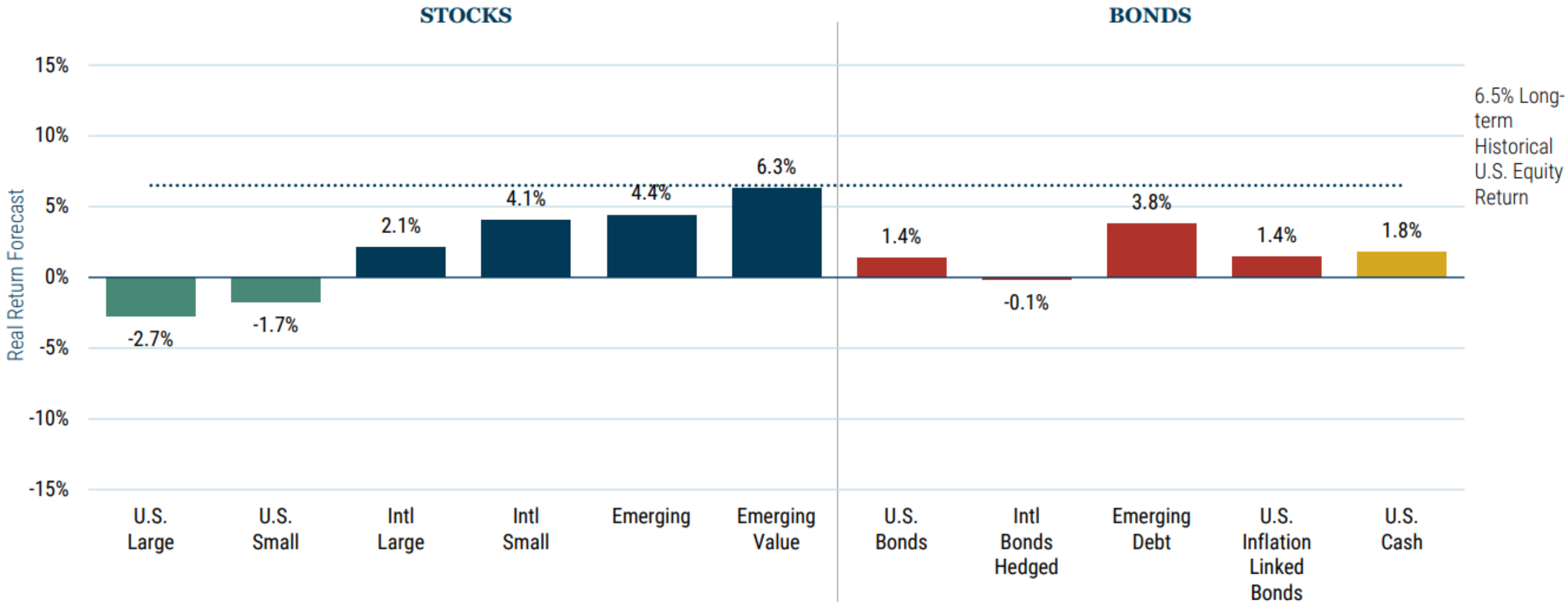
GMO 7-Year Asset Class Forecast | August 14, 2023

GMO 7-YEAR ASSET CLASS FORECAST: JULY 2023

As of July 31, 2023

7-YEAR ASSET CLASS REAL RETURN FORECASTS*

As of August 31, 2023



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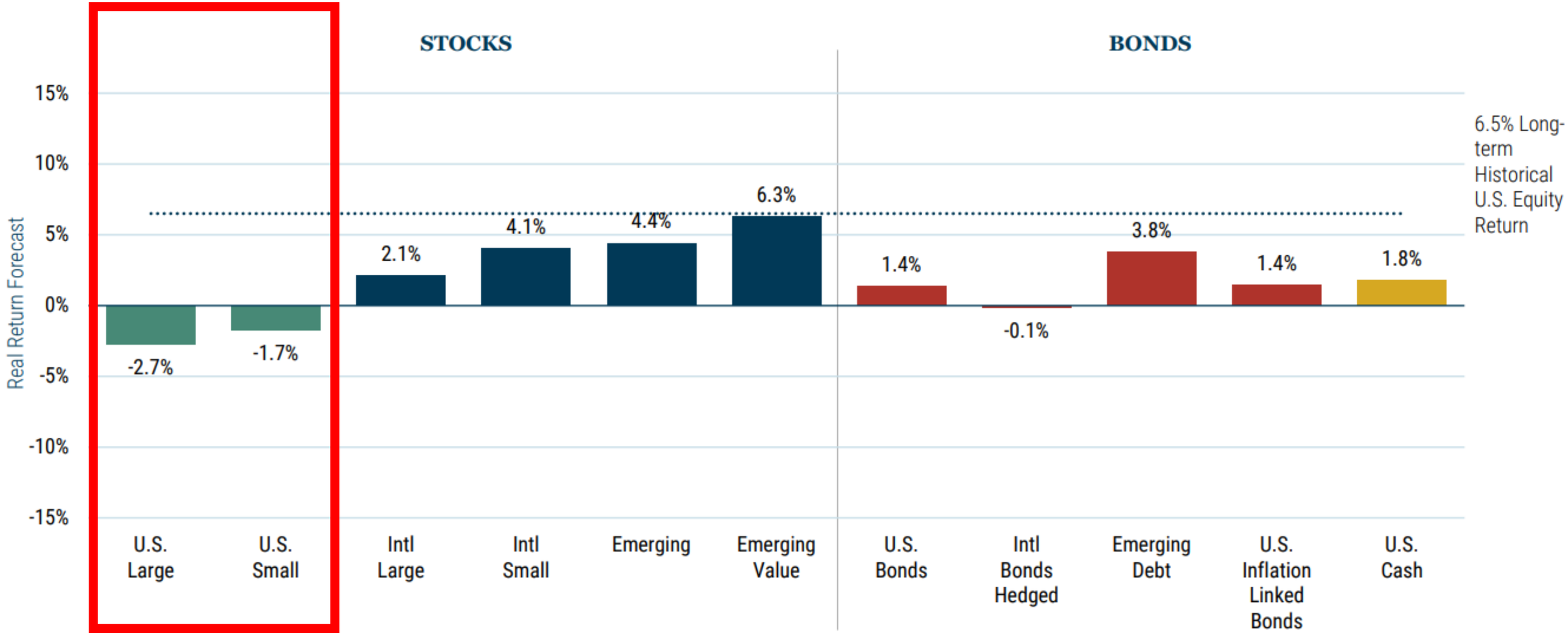

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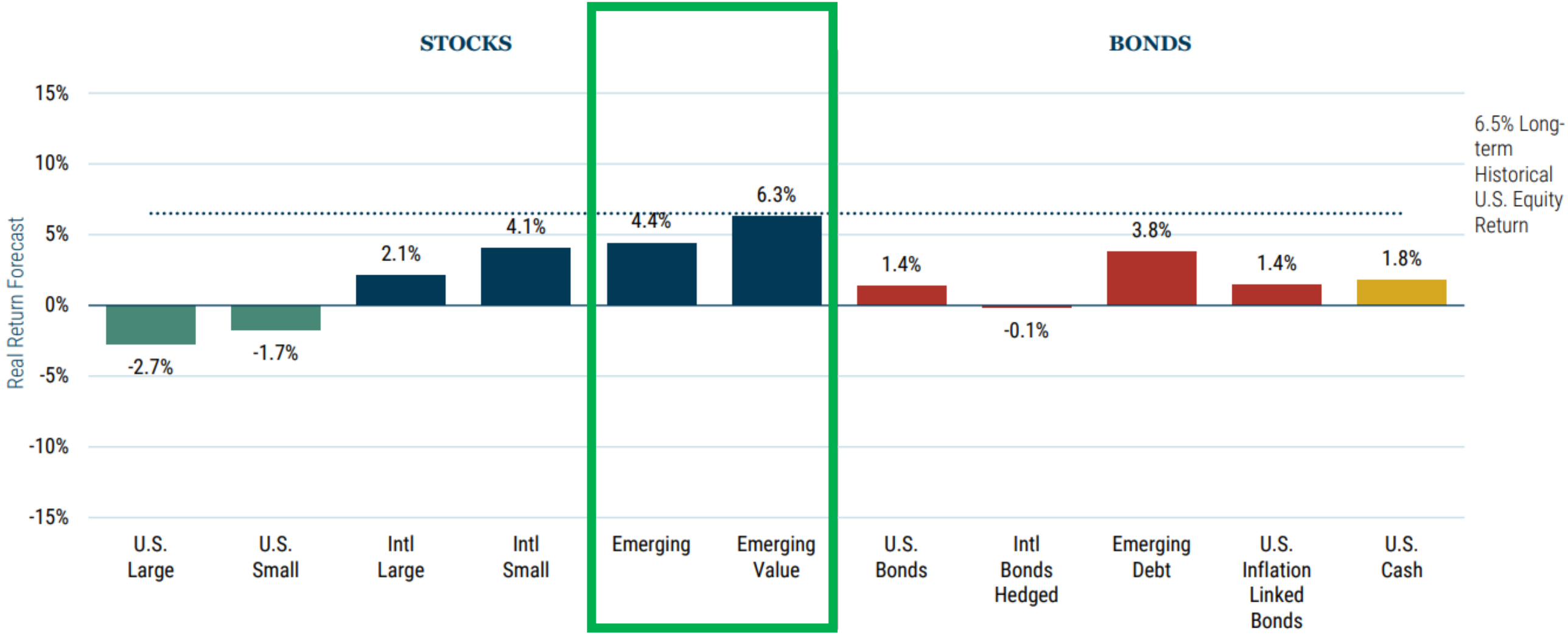

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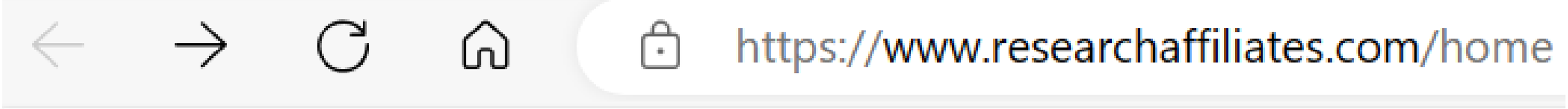

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Insights Solutions Tools

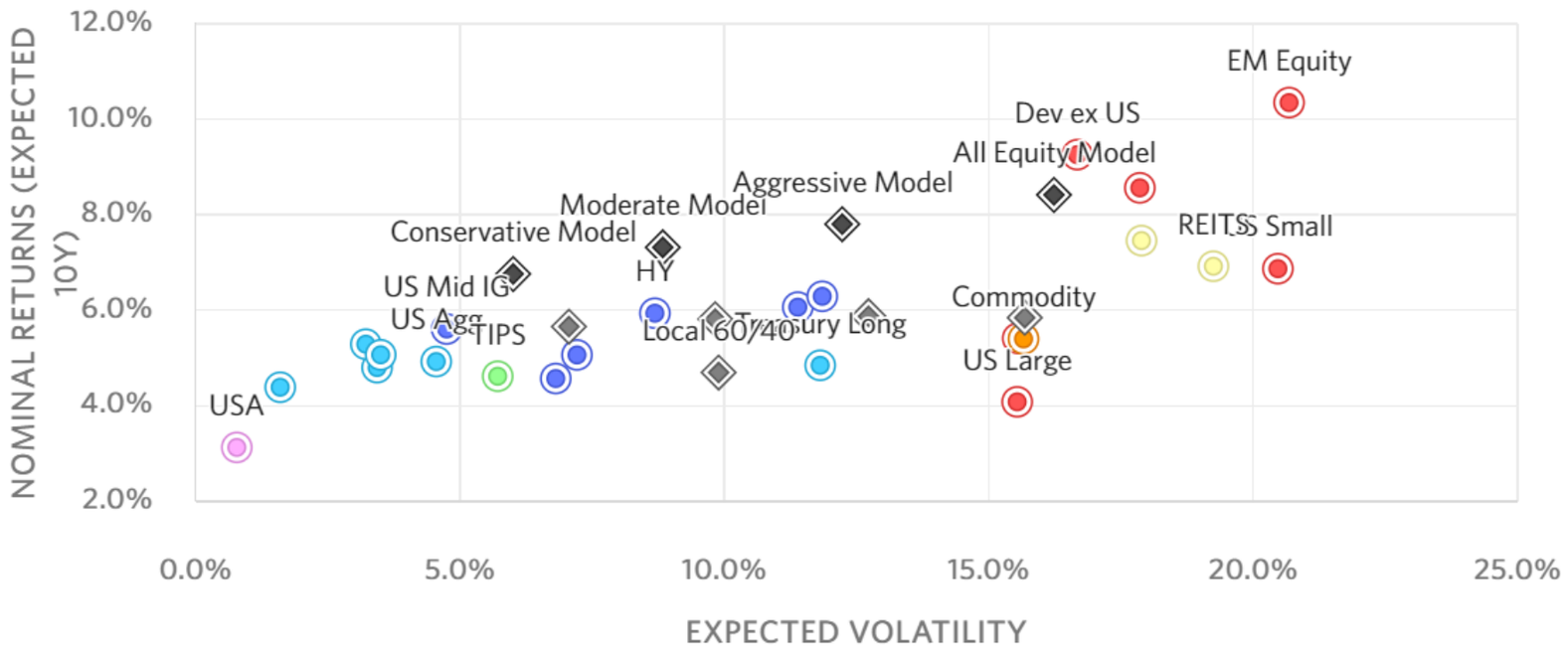
Asset Allocation INTERACTIVE

As of 08/31/2023 | USD | Expected Returns Model: Valuation Dependent | Hello, Rob

PORTFOLIOS, ASSETS, & COUNTRIES

Returns vs. Risk

Expected 10Y, Nominal Terms, No Benchmark



Note: This interactive tool generates outcomes that are hypothetical in nature and does not recommend securities. Results may vary with each use and over time.

Views | Details

DASHBOARDS

- Country View

RETURNS (Expected & Trailing)

- Returns vs. Risk
- Returns Comparison
- Returns vs. Bond Duration
- Sharpe Ratio

VALUATIONS

- Equity Market CAPE (boxplot)
- Equity Market CAPE (time)
- Commodity Carry

RISK

- Expected Correlations

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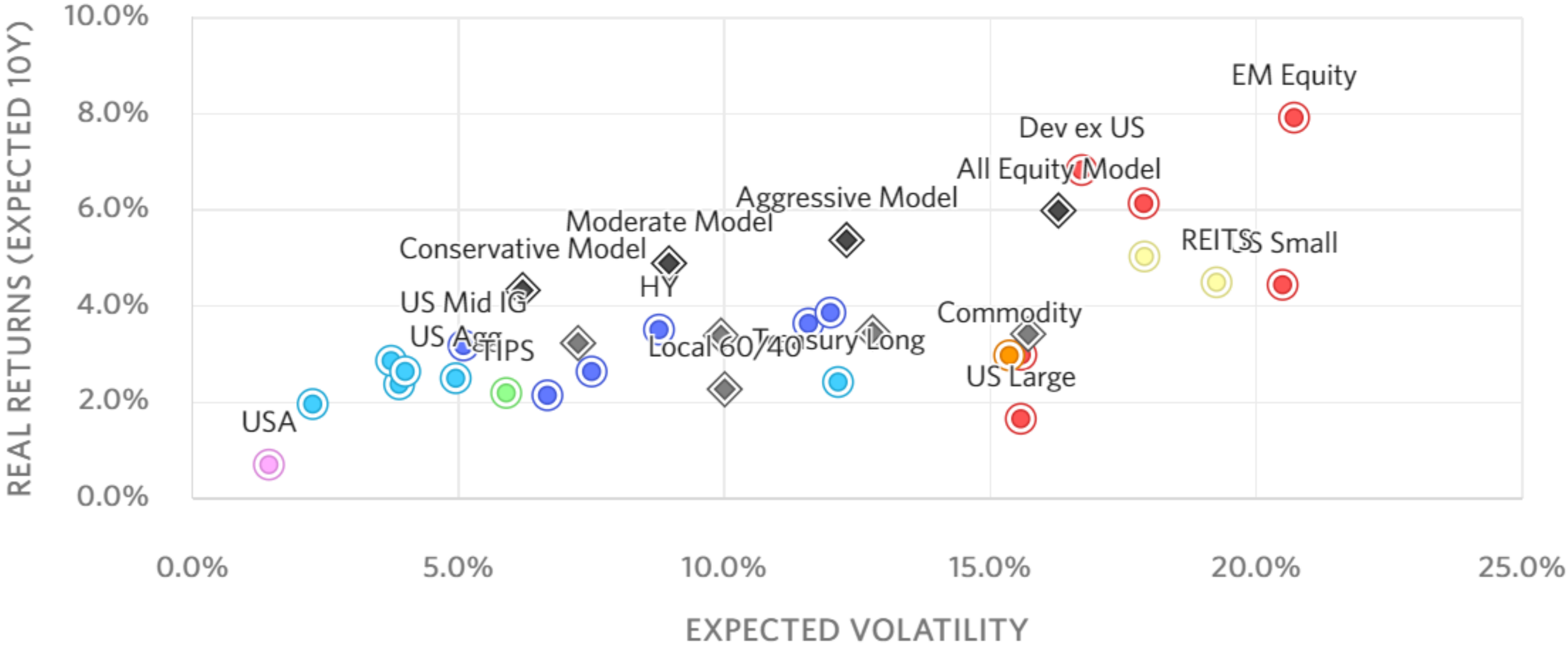
Asset Allocation Interactive

Expected Returns (Core Assets)

Asset Type	Category	Asset Class	Nominal Return (Expected 10Y)	Real Return (Expected 10Y)	Yield
Government T-Bills	Multi-Country	**EM Cash**	4.6%	2.2%	5.9%
Government T-Bills	Developed Markets	**United States Cash**	3.1%	0.7%	5.5%
Core Bonds	Multi-Country	**Global Aggregate (Hedged)**	5.1%	2.6%	5.3%
Core Bonds	Multi-Country	**Global ex US Aggregate (Hedged)**	5.3%	2.9%	5.7%
Core Bonds	Multi-Country	**Global ex US Treasury**	5.7%	3.3%	3.1%
Core Bonds	Developed Markets	**US Aggregate**	4.9%	2.5%	4.9%
Core Bonds	Developed Markets	**US Treasury Intermediate**	4.8%	2.4%	4.0%
Core Bonds	Developed Markets	**US Treasury Long**	4.8%	2.4%	4.0%
Core Bonds	Developed Markets	**US Treasury Short**	4.4%	2.0%	3.9%
Inflation Linked Bonds	Developed Markets	**US TIPS**	4.6%	2.2%	1.8%
Credit Bonds	Emerging Markets	**Emerging Market (Local)**	6.3%	3.9%	6.7%
Credit Bonds	Emerging Markets	**Emerging Market (Non-Local)**	6.1%	3.6%	8.0%
Credit Bonds	Investment Grade	**Global Corporates**	5.1%	2.6%	5.6%
Credit Bonds	Investment Grade	**US Corporate Intermediate**	5.6%	3.2%	5.4%
Credit Bonds	Non-Investment Grade	**Bank Loans**	4.6%	2.1%	9.1%
Credit Bonds	Non-Investment Grade	**US High Yield**	5.9%	3.5%	8.9%
Commodities	Multi-Commodity	**Commodities**	5.4%	3.0%	5.4%
Public Equity	Multi-Country	**All Country**	5.8%	3.4%	2.1%
Public Equity	Multi-Country	**Dev ex US**	9.3%	6.8%	3.1%
Public Equity	Multi-Country	**Dev ex US Growth**	6.0%	3.6%	1.8%
Public Equity	Multi-Country	**Dev ex US Small**	9.8%	7.4%	3.1%
Public Equity	Multi-Country	**Dev ex US Small Growth**	6.6%	4.2%	1.9%
Public Equity	Multi-Country	**Dev ex US Small Value**	11.5%	9.1%	4.2%
Public Equity	Multi-Country	**Dev ex US Value**	11.3%	8.8%	4.5%
Public Equity	Multi-Country	**Developed Markets**	5.4%	3.0%	2.0%
Public Equity	Multi-Country	**Emerging Markets**	10.4%	7.9%	3.1%
Public Equity	Multi-Country	**Europe**	8.6%	6.1%	3.2%
Public Equity	Developed Markets	**US Large**	4.1%	1.7%	1.5%
Public Equity	Developed Markets	**US Large Growth**	3.0%	0.6%	0.7%
Public Equity	Developed Markets	**US Large Value**	6.5%	4.1%	2.4%
Public Equity	Developed Markets	**US Small**	6.9%	4.4%	1.7%
Public Equity	Developed Markets	**US Small Growth**	4.4%	2.0%	0.7%
Public Equity	Developed Markets	**US Small Value**	8.1%	5.7%	2.6%

Returns vs. Risk

Expected 10Y, Real Terms, No Benchmark



Asset Type	Category	Asset Class	Nominal Return (Expected 10Y)	Real Return (Expected 10Y)	Yield	Volatility	Sharpe Ratio
Core Bonds	Developed Markets	US Treasury Short	4.4	2.0	3.9	1.6	0.79
Core Bonds	Multi-Country	Global ex US Aggregate (Hedged)	5.3	2.9	5.7	3.2	0.67
Core Bonds	Multi-Country	Global Aggregate (Hedged)	5.1	2.6	5.3	3.5	0.55
Hedge Funds	Strategies	US Long/Short Equity	7.7	5.2	2.3	8.6	0.53
Credit Bonds	Investment Grade	US Corporate Intermediate	5.6	3.2	5.4	4.7	0.52
Core Bonds	Developed Markets	US Treasury Intermediate	4.8	2.4	4.0	3.4	0.49
Public Equity	Multi-Country	Dev ex US Small Value	11.5	9.1	4.2	17.9	0.47
Public Equity	Multi-Country	Dev ex US Value	11.3	8.8	4.5	17.6	0.46
Core Bonds	Developed Markets	US Aggregate	4.9	2.5	4.9	4.5	0.40
Public Equity	Multi-Country	Dev ex US	9.3	6.8	3.1	16.7	0.37
Public Equity	Multi-Country	Dev ex US Small	9.8	7.4	3.1	18.4	0.36
Public Equity	Multi-Country	Emerging Markets	10.4	7.9	3.1	20.7	0.35
Credit Bonds	Non-Investment Grade	US High Yield	5.9	3.5	8.9	8.7	0.32
Core Bonds	Multi-Country	Global ex US Treasury	5.7	3.3	3.1	8.4	0.31
Public Equity	Multi-Country	Europe	8.6	6.1	3.2	17.9	0.30
Credit Bonds	Investment Grade	Global Corporates	5.1	2.6	5.6	7.2	0.27
Credit Bonds	Emerging Markets	Emerging Market (Local)	6.3	3.9	6.7	11.8	0.27
Inflation Linked Bonds	Developed Markets	US TIPS	4.6	2.2	1.8	5.7	0.26
Credit Bonds	Emerging Markets	Emerging Market (Non-Local)	6.1	3.6	8.0	11.4	0.26
Public Equity	Developed Markets	US Small Value	8.1	5.7	2.6	20.4	0.25
Real Estate and Infrastructure	Real Estate	Global REITS	7.5	5.0	4.4	17.9	0.24
Public Equity	Developed Markets	US Large Value	6.5	4.1	2.4	15.7	0.21
Credit Bonds	Non-Investment Grade	Bank Loans	4.6	2.1	9.1	6.8	0.21
Real Estate and Infrastructure	Real Estate	REITS	6.9	4.5	4.1	19.2	0.20
Government T-Bills	Multi-Country	EM Cash	4.6	2.2	5.9	7.7	0.19
Public Equity	Multi-Country	Dev ex US Small Growth	6.6	4.2	1.9	18.2	0.19
Public Equity	Developed Markets	US Small	6.9	4.4	1.7	20.5	0.18
Public Equity	Multi-Country	All Country	5.8	3.4	2.1	15.7	0.17
Public Equity	Multi-Country	Dev ex US Growth	6.0	3.6	1.8	16.7	0.17
Public Equity	Multi-Country	Developed Markets	5.4	3.0	2.0	15.5	0.15
Core Bonds	Developed Markets	US Treasury Long	4.8	2.4	4.0	11.8	0.15
Commodities	Multi-Commodity	Commodities	5.4	3.0	5.4	15.7	0.15
Public Equity	Developed Markets	US Large	4.1	1.7	1.5	15.5	0.06
Public Equity	Developed Markets	US Small Growth	4.4	2.0	0.7	21.7	0.06
Private Equity	Venture Capital	US Venture Capital	4.5	2.1	0.6	30.2	0.05
Private Equity	Public to Private	US LBO	3.6	1.2	1.3	22.2	0.02
Government T-Bills	Developed Markets	United States Cash	3.1	0.7	5.5	0.8	0.00
Public Equity	Developed Markets	US Large Growth	3.0	0.6	0.7	17.3	-0.01

Asset Type	Category	Asset Class	Nominal Return (Expected 10Y)	Real Return (Expected 10Y)	Yield	Volatility	Sharpe Ratio
Core Bonds	Developed Markets	US Treasury Long	4.8	2.4	4.0	11.8	0.15
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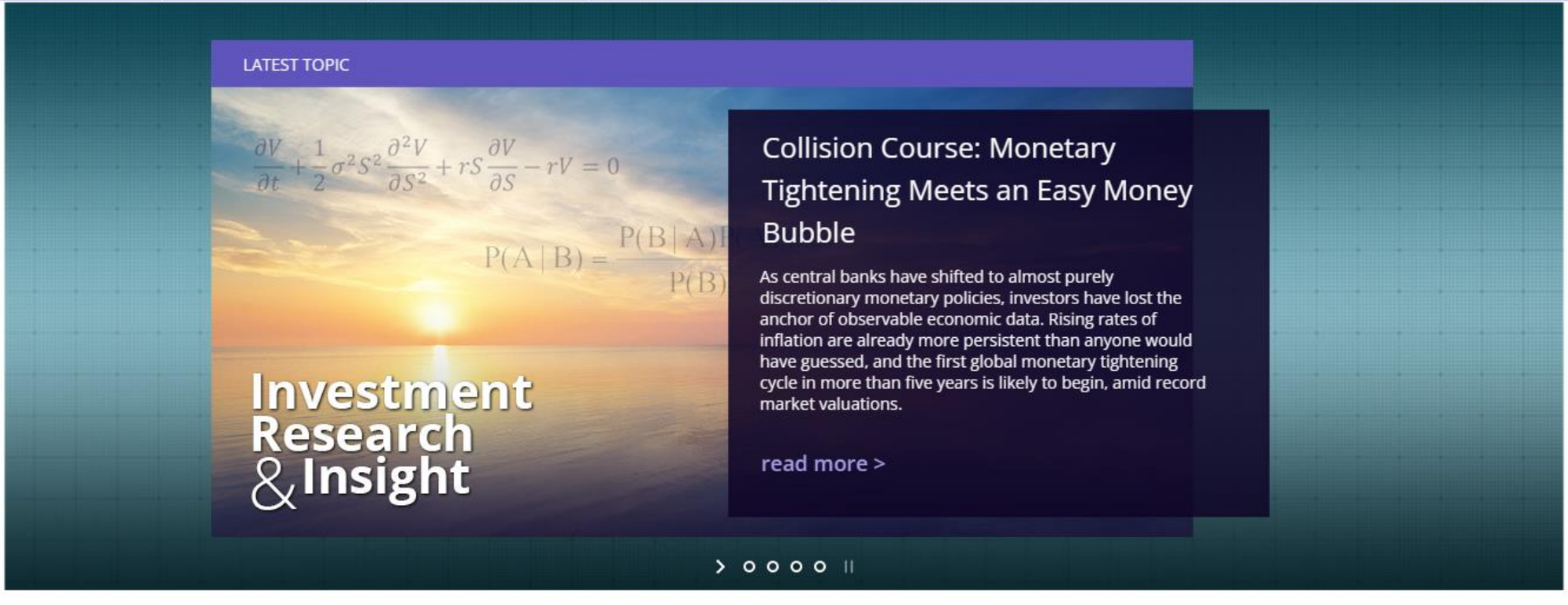

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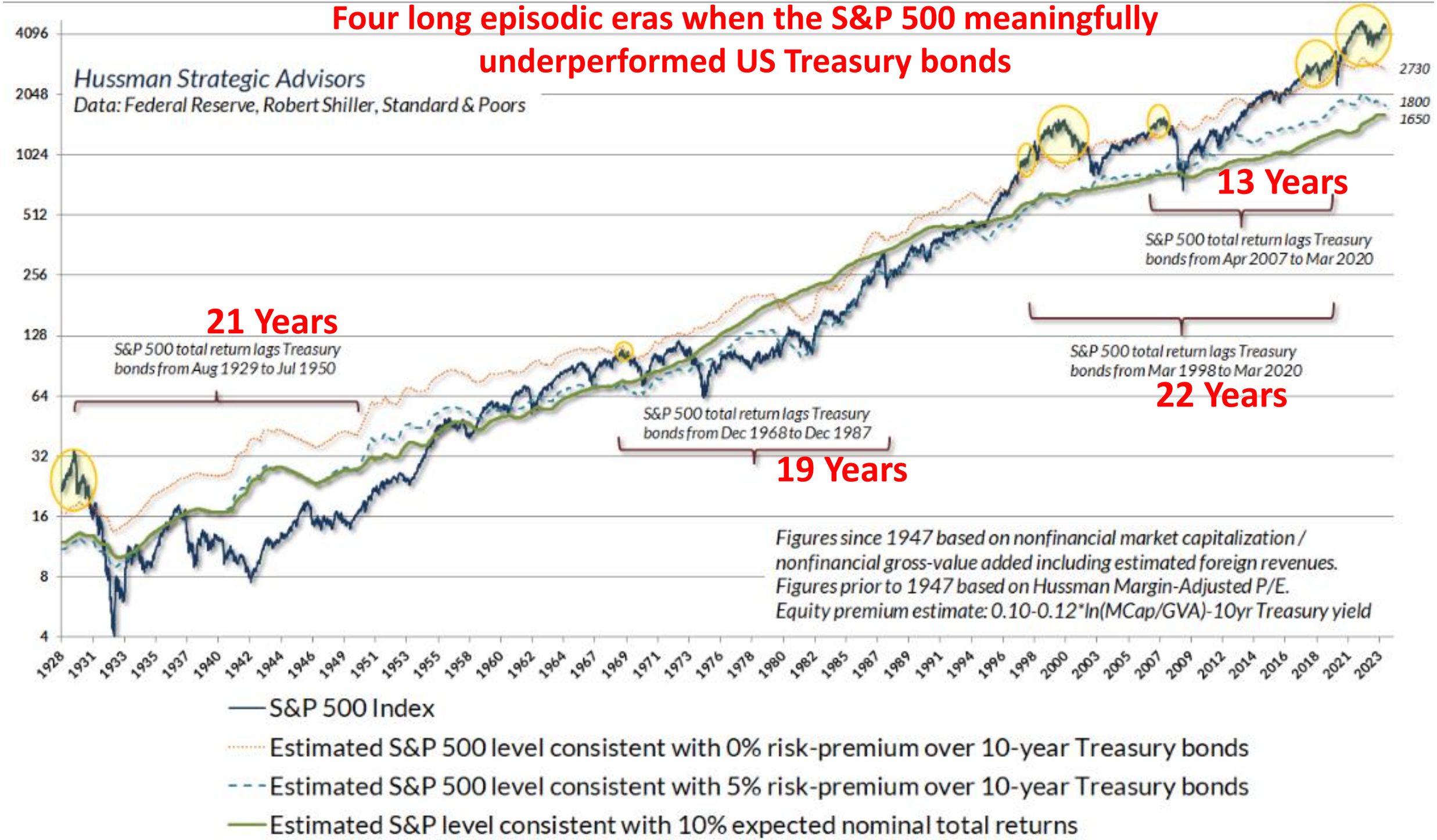
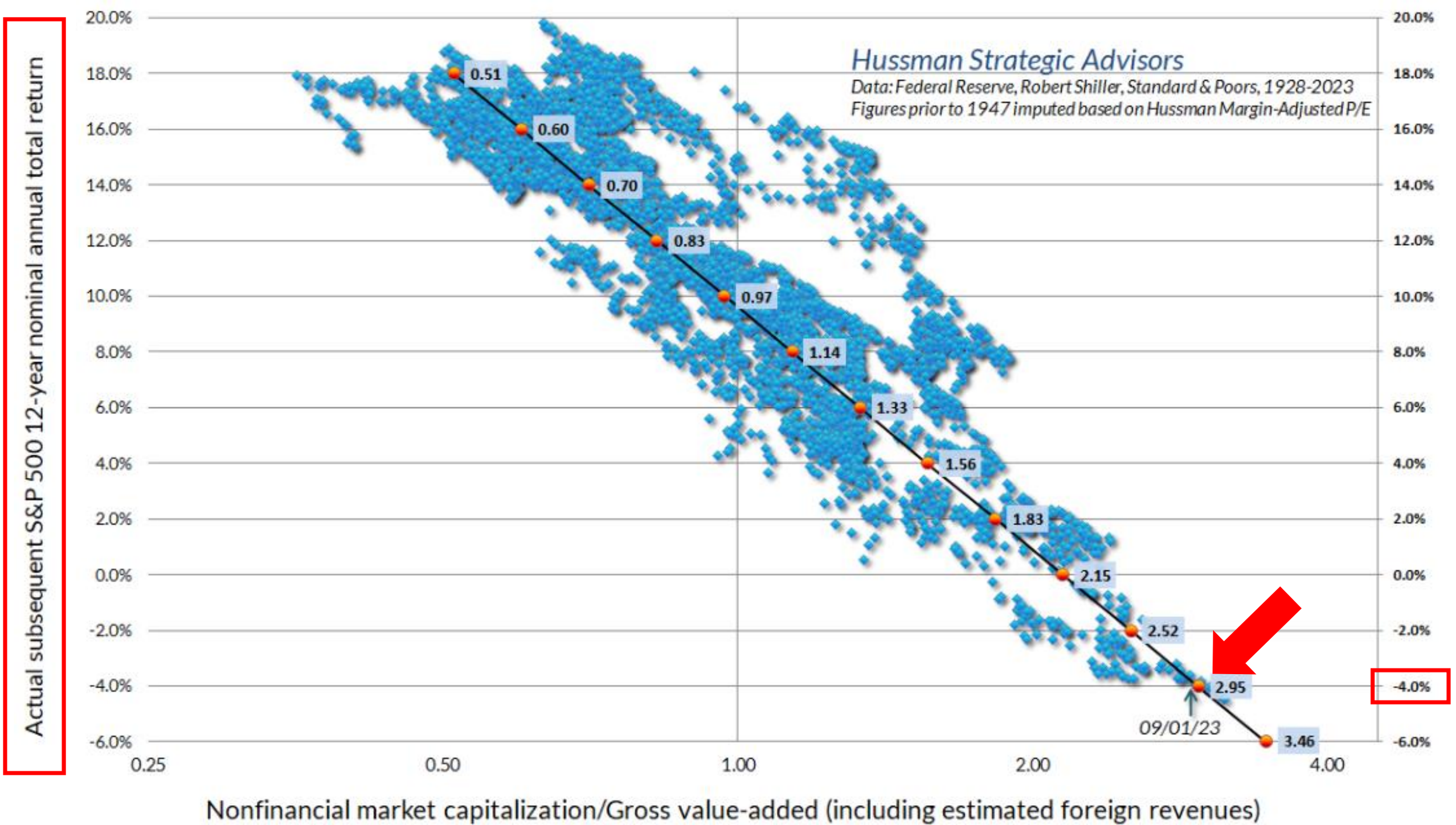
John P. Hussman, Ph.D.
President, Hussman Investment Trust

September 2023

> Systematic monetary policy means a framework where tools such as the level of the Fed funds rate and the size of the Federal Reserve's balance sheet maintain a reasonably stable and predictable relationship with observable economic data such as output, inflation, employment, and the 'gap' between real gross domestic product and its estimated full-employment potential. Departures from systematic monetary policy distort behavior in ways that cause *misalignments between financial quantities and real economic quantities*, and as a result, they invariably produce damage as the two are ultimately realigned.
>
> Systematic policy recognizes that the 'Phillips Curve' is an observation about the relationship between unemployment and real wages, not a 'tradeoff' that can be manipulated. It recognizes that suppressing interest rates and drowning banks in liquidity has weak and unreliable effects on real economic activity and employment, but massive effects on

Four long episodic eras when the S&P 500 meaningfully underperformed US Treasury bonds




Hussman Strategic Advisors
Data: Federal Reserve, Robert Shiller, Standard & Poors, 1928-2023
Figures prior to 1947 imputed based on Hussman Margin-Adjusted P/E
Actual subsequent S&P 500 12-year nominal annual total return
Nonfinancial market capitalization/Gross value-added (including estimated foreign revenues)
0.51
0.60
0.70
0.83
0.97
1.14
1.33
1.56
1.83
2.15
2.52
2.95
3.46
09/01/23
20.0%
18.0%
16.0%
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
-2.0%
-4.0%
-6.0%
0.25
0.50
1.00
2.00
4.00

Again, forcing the public to choke down 36% of GDP in zero-interest liquidity did encourage unprecedented speculation. Yet amid this speculation, extreme valuations still imply poor *long-term* returns and steep *full-cycle* losses. Meanwhile, low-yielding Fed liquidity is only treated as an "inferior" asset when investors are inclined to speculate. When investors are risk-averse, they treat that same liquidity as a desirable safe-haven. We can't rule out future episodes of policy recklessness, but *the appropriate response will still require attention to valuations and market internals*.

Central bankers wandering in the woods

> One Jackson Hole attendee compared the job facing central banks to hiking a mountain where the trail disappears above the tree line: 'You know where you want to go. You know where the summit is. But there are no more markers, and you have to feel your way.'
>
> – *Nick Timiraos, The Wall Street Journal*

Recommendation

Recommendation

- Remain humble

- Ignore the largest investment management organizations
- Start with long-term global averages
  - Long-term means 1914-present
  - Do not rely on the post-industrial era
- Rely heavily on the most forward-looking organizations
  - Those who have no problem stepping away from the crowd
  - But are also super serious, deep experts
  - GMO
  - Research Affiliates
  - Hussman

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Bull and bear markets for stocks, bonds, commodities, gold

Friday

September 29th

11:00 a.m. EASTERN

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