

Asset Owners Round Table 2021

*Succeeding Through
Fiduciary Leadership*



“Insights and Innovation”

Stephen Campisi, CFA

www.thepensargrp.com

Baker's Dozen of Critical Questions

Holding your fiduciary feet to the fire

Goals and Investment Strategy

Is your asset allocation really *diversified*, or does it simply appear to be diversified?

Does your asset allocation *hides substantial risks*?

Can you evaluate the *likelihood* and *severity* of the risk of *mission failure* over time?

Why do some portfolios beat their benchmarks but fail to meet *asset owner's goals*?

Is your *active process* as efficient as your asset allocation process?

What is your objective basis for *use of indexes* instead of active funds - or v.v.?

Execution and Evaluation

Why do some *portfolios of lower Info Ratio funds outperform* others with higher IR funds?

Should you use the *same manager lineup* across different strategies ?

How *efficient* are each of your *active decisions* being employed?

How does each active *decision* affect *portfolio total risk* and return?

What *relationship* do your active decisions have to each other?

Can you present performance in the context of the asset owner's *reasons for investing*:

- **withdrawing** funds
- **growing** the portfolio value
- using *monetary outcomes*, not statistics
- showing how each decision **contribution** to success

The Most Important Question

*Do you have a **process and tools**
to answer these questions?*

The Blueprint

Market Expectations, Risk and Asset Allocation

World's Favorite Benchmark

Market Assumptions	Compound Return	Volatility	Weight
Large Cap US Equity	7.20%	14.34%	60%
Aggregate Bonds	2.80%	3.42%	40%
Total	5.67%	8.51%	100.0%

- Many use this benchmark as a “standard” or “starting point”
- This reflects a “layman’s” level of knowledge
 - *Weighted average asset return: 5.44%*
 - *Weighted average volatility: 9.97%*

Pretty Good Results?

Market Assumptions	Compound Return	Volatility	Weight	Percent Contribution to Return
Large Cap US Equity	7.20%	14.34%	60%	80%
Aggregate Bonds	2.80%	3.42%	40%	20%
Total	5.67%	8.51%	100.0%	100%

- **Equity** looks very good:
 - *60% of the assets contribute 80% of the total return*
- This makes **Bonds** look bad:
 - *40% of the assets contribute only 20% of the total return*

Look Again

Market Assumptions	Compound Return	Volatility	Weight	Percent Contribution to Return	Percent Contribution to Risk
Large Cap US Equity	7.20%	14.34%	60%	80%	102%
Aggregate Bonds	2.80%	3.42%	40%	20%	-2%
Total	5.67%	8.51%	100.0%	100%	100%

- Focus must be on **Risk vs Return**
 - *Not Money vs Return*
- Typical view delivers the **WRONG** conclusion
 - *Equity is inefficient: 80% of the return and 102% of the risk*
 - *Bonds are super-efficient: 20% of the return and they subtract risk*

Unconstrained Strategies

Market Assumptions	Compound Return	Volatility	Weight	Percent Contribution to Return	Percent Contribution to Risk
Large Cap US Equity	7.20%	14.34%	1%	1%	1%
Foreign Equity	9.20%	16.81%	3%	5%	6%
Aggregate Bonds	2.80%	3.42%	16%	8%	3%
Long Treasuries	2.47%	12.75%	16%	9%	6%
High Yield	6.90%	8.22%	57%	71%	79%
Hedge Funds	4.24%	7.50%	6%	5%	4%
REITS	8.00%	15.42%	1%	1%	1%
Total	5.67%	5.48%	100.0%	100%	100%

Focus on Volatility

Market Assumptions	Arithmetic Return	Compound Return	Volatility	Weight	Percent Contribution to Return	Percent Contribution to Risk
Large Cap US Equity	8.14%	7.20%	14.34%	3%	4%	5%
Foreign Equity	10.46%	9.20%	16.81%	13%	23%	30%
Long Treasuries	3.28%	2.47%	12.75%	19%	11%	9%
High Yield	7.21%	6.90%	8.22%	27%	33%	30%
REITS	9.07%	8.00%	15.42%	7%	11%	14%
Total	5.84%	5.67%	5.84%	100.0%	100%	100%

Focus on Risk Concentration

Constrained Strategy #1

Market Assumptions	Compound Return	Volatility	Weight	Percent Contribution to Return	Percent Contribution to Risk
Large Cap US Equity	7.20%	14.34%	9%	12%	16%
Foreign Equity	9.20%	16.81%	13%	23%	30%
Aggregate Bonds	2.80%	3.42%	28%	14%	4%
Long Treasuries	2.47%	12.75%	16%	9%	6%
High Yield	6.90%	8.22%	11%	13%	11%
Hedge Funds	4.24%	7.50%	10%	8%	6%
REITS	8.00%	15.42%	13%	20%	28%
Total	5.67%	6.29%	100.0%	100%	100%

Minimizing Volatility, Risk Concentration, BIG Bonds:

- ***22% Equity***
- ***55% Bonds***
- ***23% Alternatives***

Constrained Strategy #2

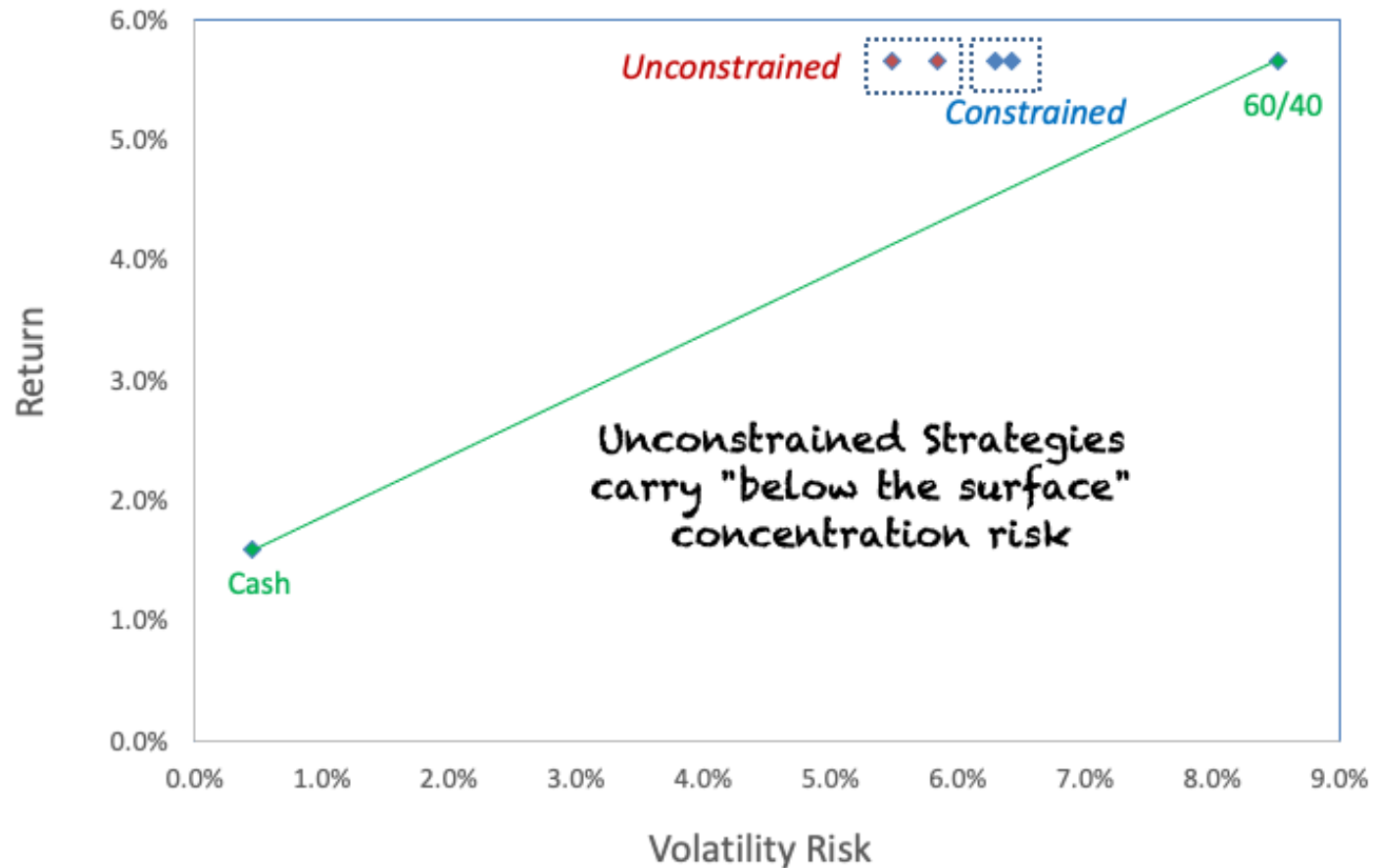
Market Assumptions	Compound Return	Volatility	Weight	Percent Contribution to Return	Percent Contribution to Risk
Large Cap US Equity	7.20%	14.34%	6%	8%	11%
Small Cap	7.20%	18.95%	6%	9%	14%
Foreign Equity	9.20%	16.81%	12%	22%	27%
Aggregate Bonds	2.80%	3.42%	25%	13%	4%
Long Treasuries	2.47%	12.75%	18%	10%	6%
High Yield	6.90%	8.22%	11%	13%	10%
Hedge Funds	4.24%	7.50%	10%	8%	6%
REITS	8.00%	15.42%	11%	16%	22%
Total	5.67%	6.43%	100.0%	100%	100%

Minimizing Volatility, Risk Concentration, BIG Bonds, Diversifying US Equity, Balancing US vs Foreign Equity:

- **24% Equity**
- **54% Bonds**
- **21% Alternatives ***

** Due to Rounding*

Diversifying Strategies



Setting Expectations

Redefining Risk as “Mission Failure”

Goals-Based Risk Analysis

(\$10 Million Portfolio)

Goals:

- **Withdraw 3.5%** of average portfolio value annually over **30 years**
- **Grow withdrawals** with inflation across all markets
- **Grow portfolio** by inflation net of withdrawals

Most important investment decision:

Given my strategy, what is a sustainable withdrawal rate?

Forward-Looking Goals Analysis

Asset Allocation Comes to Life

Portfolio is global mix of 25% equity, 21% alternatives and 54% fixed income
(*Forecast YoY return is 5.7% with 6.4% volatility and inflation of 2 percent*)

Monte Carlo in a nutshell:

We project **15,000 random trials**, using portfolio's expected return and risk

- Projects random returns over investment horizon
- Grow starting value by that period's return
- Take withdrawal
- Net amount is beginning value for next period

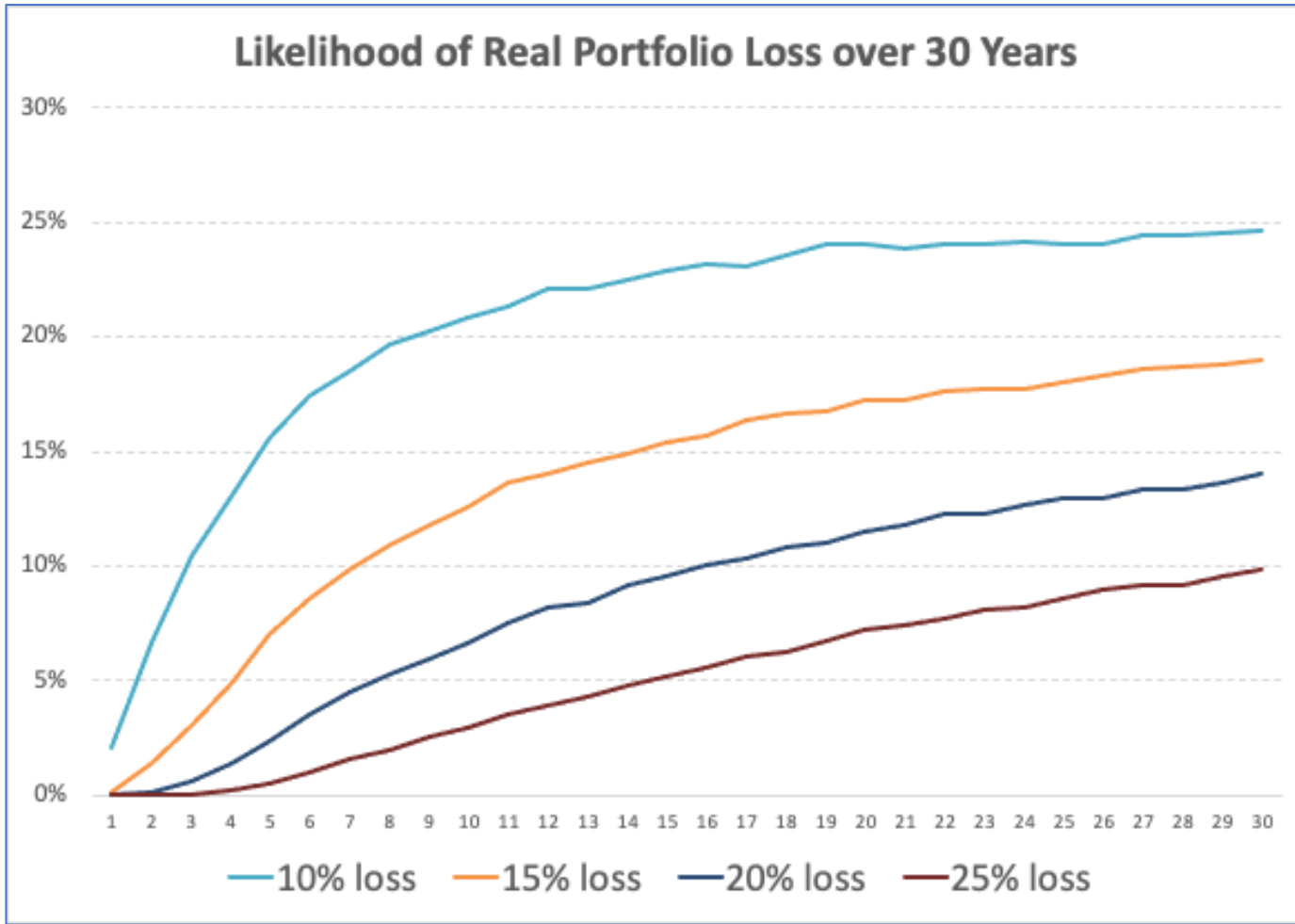
- Summarize results at end

Expected Results vs Goals

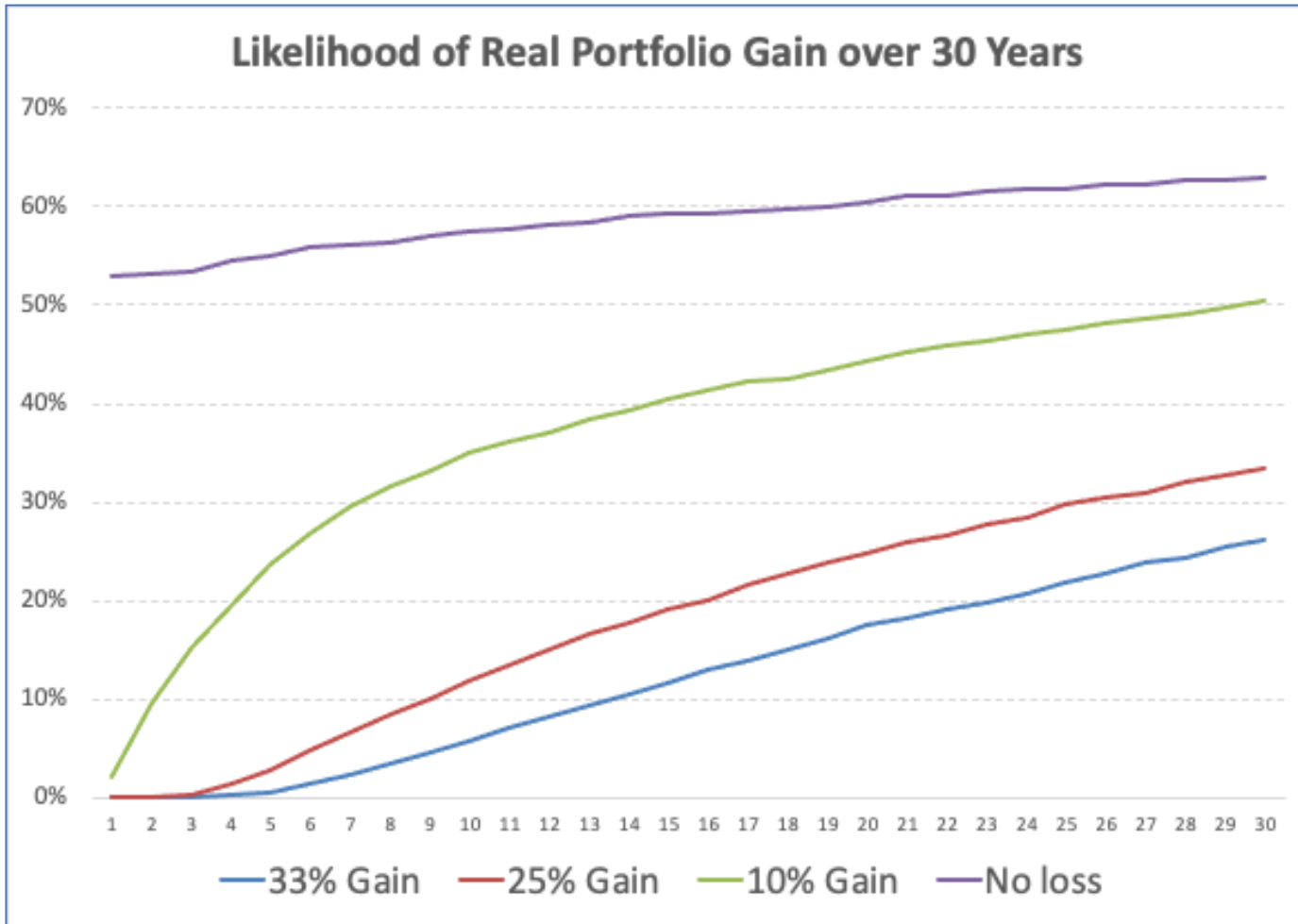
Goals-Based Attribution	Portfolio	Goal	Excess
Real Withdrawals	10,503,859	10,294,682	209,177
Real Ending Value	11,458,556	10,000,000	1,458,556
Real Total Value	21,962,414	20,294,682	1,667,733

“Attribution that Matters”

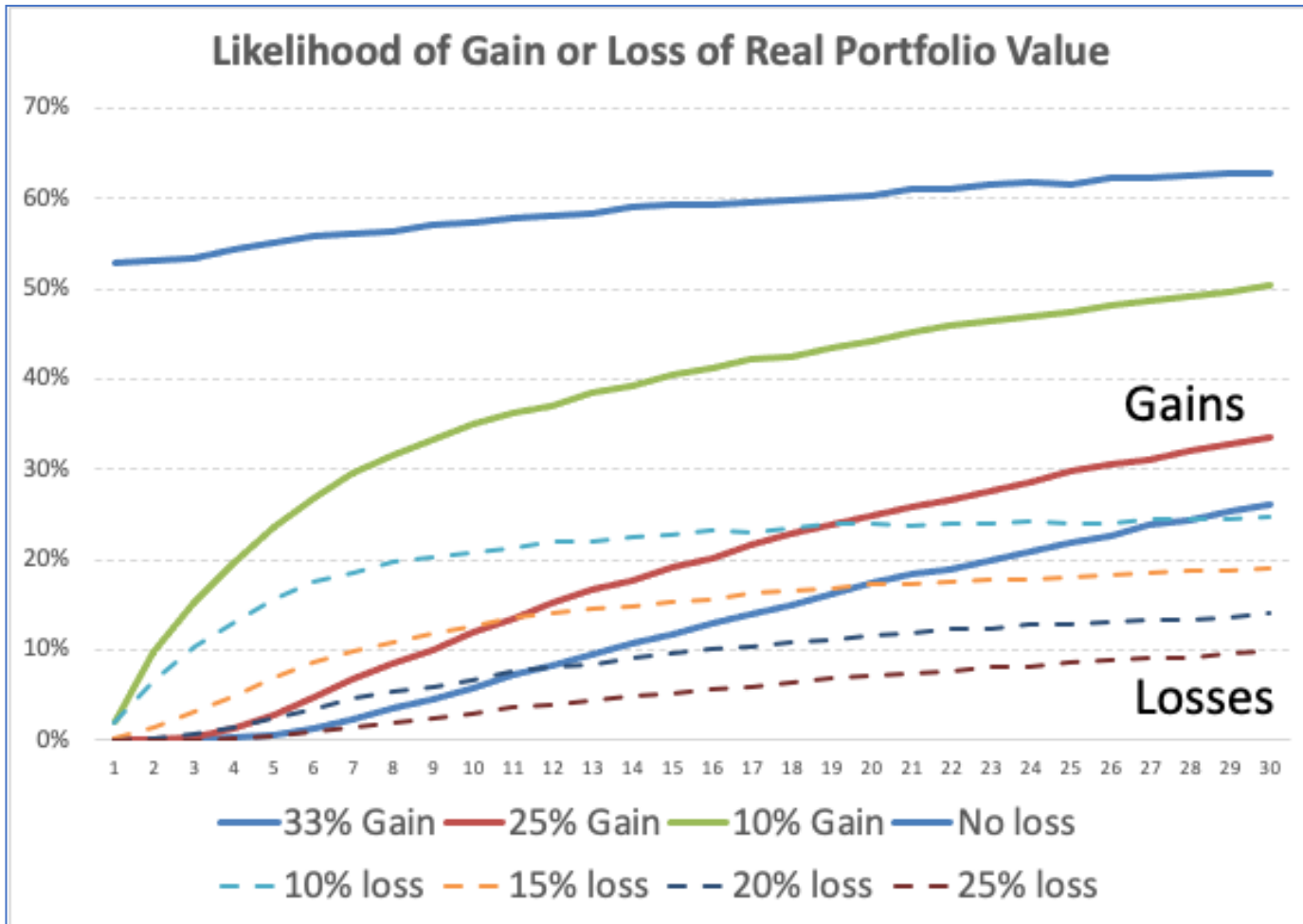
Risk over Time



Opportunity over Time



Goals-Based Upside vs Downside



Real Ending Values and Their Probabilities

+50%	14%
+45%	17%
+40%	21%
+35%	24%
+30%	29%
+25%	34%
+20%	39%
+15%	44%
+10%	50%
+5%	57%
0%	63%

-5%	31%
-10%	25%
-15%	19%
-20%	14%
-25%	10%
-30%	6%
-35%	4%
-40%	2%
-45%	1%
-50%	0%

"Risk Analysis that Matters"

Less than 1-in-100
chance of losing half

Great upside/downside:

- 1-in-4 chance of gain of 35% vs loss of 10%

Portfolio Construction

Achieving your Goals via your Investments

Life Isn't Perfect: *Stated vs Effective Benchmarks*

Effective Exposures	Stated Benchmark Exposures	Effective Benchmark Exposures
RT200G	10%	10.5%
RT200V	10%	8.5%
RMCG	5%	3.3%
RMCV	5%	7.1%
RSCG	3%	3.5%
RSCV	2%	2.4%
EAFEG	10%	10.2%
EAFEV	10%	9.8%
EM	10%	10.0%
AGG	10%	7.9%
Long Duration	5%	5.7%
Fgn Bond	5%	5.8%
HY	5%	6.7%
Comm	5%	4.9%
RE	5%	3.7%

*Benchmark
Style Map*

Style analysis reveals Benchmark's long-Term exposures

"Effective Exposures" are used to analyze portfolio

“All-Star” Funds vs Optimized Funds

(5 years ending 2020)

	All-Star Portfolio	Optimized All-Active Portfolio
Excess Return	3.51	3.49
Tracking Error	2.09	1.15
Information Ratio	1.68	3.04
95% Confidence Excess Return	1.67	2.48
Percent #1 IR Funds	100%	43%
Weighting #1 IR Funds	100%	59%
Total Number of Active Funds	15	14

“Building a Team of Funds”

Key is fund interaction:

- Total market exposure
- Alpha Diversification

Fund Platform:

65 funds across 15 style mandates

Including Passive Funds

	All-Star Portfolio	Optimized All-Active Portfolio	Optimized Active w/Indexes Portfolio
Excess Return	3.51	3.49	3.50
Tracking Error	2.09	1.15	1.09
Information Ratio	1.68	3.04	3.22
95% Confidence Excess Return	1.67	2.48	2.54
Percent #1 IR Funds	100%	43%	55%
Weighting #1 IR Funds	100%	59%	44%
Total Number of Active Funds	15	14	13
Number Indexes			5
Weighting Indexes			20%

80/20 Active-Passive with Slightly better active results

- Greater liquidity
- Lower cost

“Looking Like” vs “Acting Like” the Benchmark

Effective Exposures	Effective Benchmark Exposures	All-Star Funds Portfolio	Highest IR with Same Total Return	All-Star Differences	High IR Differences
RT200G	10.5%	6.3%	14.4%	-4.3%	3.9%
RT200V	8.5%		1.7%	-8.5%	-6.8%
RMCG	3.3%	15.7%	6.4%	12.3%	3.0%
RMCV	7.1%	5.1%	15.4%	-2.0%	8.3%
RSCG	3.5%	7.9%	3.5%	4.4%	0.0%
RSCV	2.4%			-2.4%	-2.4%
EAFEG	10.2%	16.7%	8.4%	6.5%	-1.7%
EAFEV	9.8%	1.9%	7.7%	-7.9%	-2.1%
EM	10.0%	13.7%	13.2%	3.7%	3.1%
AGG	7.9%		11.8%	-7.9%	3.9%
Long Duration	5.7%	11.2%	8.2%	5.5%	2.5%
Fgn Bond	5.8%		0.1%	-5.8%	-5.7%
HY	6.7%	19.1%	5.5%	12.4%	-1.2%
Comm	4.9%	0.2%	3.8%	-4.7%	-1.1%
RE	3.7%	2.2%		-1.4%	-3.7%

Avg (-) Difference	-5.0%	-2.7%
Avg (+) Difference	7.5%	4.1%

All-Star portfolio deviates more from target;
Majority of tracking error is from misfit risk

Attribution of Active Results

	All-Star Portfolio	All-Active Portfolio	Active plus Passive Portfolio
<i>Effective Exposures</i>	2.47	2.68	1.67
<i>Active Strategy</i>	1.04	0.80	1.83
<i>Excess Return</i>	3.51	3.49	3.50

Unintentional
Benchmark
Misfit

Deliberate
Strategies

This is a "Structural vs Idiosyncratic" Decision-Based Analysis

Component Efficiency Contributions: *Total Return vs Active Return*

Optimized	LCG2	LCG3	LCV7	SCV3	INTG2	INTV4	EM1	EM2	AGG3	LD1	Comm2	Comm4	RE2
Total Return	-1.4%	-0.5%	1.7%	3.3%	0.5%	1.7%	0.7%	0.4%	-2.1%	-6.7%	1.6%	5.3%	0.9%
Active Return	-1.8%	-3.0%	3.4%	-1.3%	0.3%	-1.4%	-2.4%	-0.2%	15.4%	2.3%	0.0%	0.4%	-0.8%

All-Star	LCG2	LCV7	MCV1	SCG2	SCV4	INTG2	INTV1	EM1	AGG6	LD1	INTB2	HY3	Comm4	RE1
Total Return	-7.8%	0.1%	2.3%	-0.1%	0.9%	0.8%	5.7%	0.2%	-2.7%	-2.6%	0.2%	-0.3%	2.7%	2.6%
Active Return	-18.1%	4.6%	1.5%	0.0%	-0.4%	4.3%	-3.0%	2.9%	0.2%	0.3%	0.9%	1.1%	6.7%	-2.6%

All-Star Portfolio inefficiencies are greater

Enhanced Portfolio Construction

- Customize *“fund team”* to asset allocation
- *“Double-duty”* fund selection:
 - *Match aggregate exposures to Benchmark*
 - *Diversify alpha patterns*
- Consider active decision in context of total portfolio

Decision-Based Performance Evaluation

Answers to Critical Questions about Investment Process

Asset Owner Performance

- **Long-term** focus on decisions and outcomes
- See **trends**, not short-term noise
- Execute with **trustworthy methods**
- **Flexible** - because the questions are always evolving

Aligns with Fiduciary Duties:

- Loyalty
- Prudence
- Care

Case Study

5 Years ending 2016

Benchmark:

65% Global Equity + 35% Global Bonds
(rebalanced annually)

Actively managed:

tactical shifts + fund selection

Asset Allocation Hierarchy

Equity:

- **51% US**
 - *30% Large*
 - *12% Mid*
 - *9% Small*
- **14% Foreign**
 - 10% Developed
 - 4% Emerging

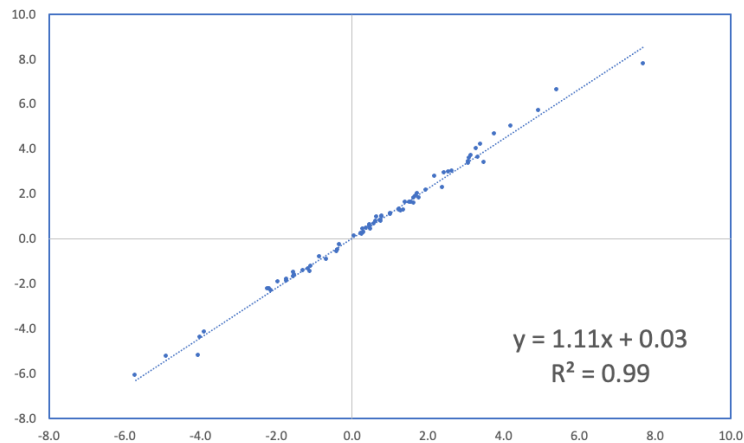
Bonds:

- **26% US**
 - *22% HQ*
 - *4% HY*
- **9% Foreign**
 - 6% HQ
 - 3% HY

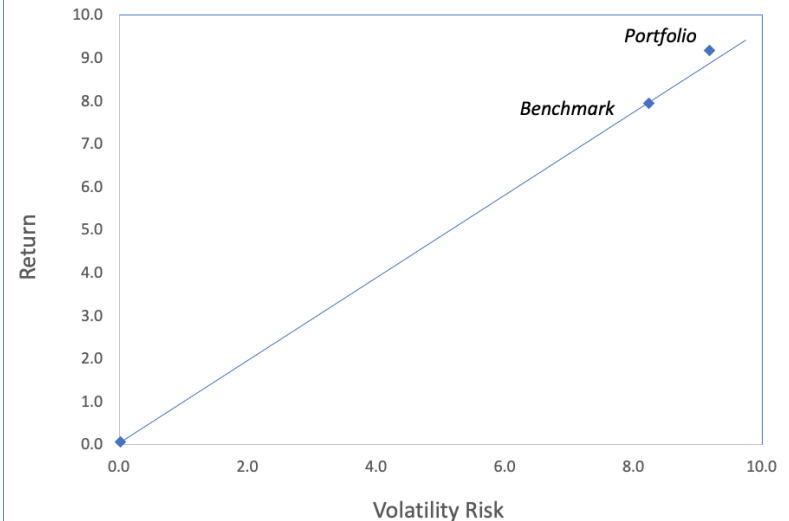
Traditional Performance Metrics

Performance Statistics	Benchmark	Portfolio
Geometric Return	7.88	9.10
Standard Deviation	8.24	9.18
Excess Return (Arithmetic)		1.22
Tracking Error		1.20
Information Ratio		1.02
RSQ		0.993
Beta		1.11
<i>Sharpe Ratio</i>	0.96	0.99
<i>Alpha (Vol-adjusted)</i>		0.33
<i>Alpha (Beta-adjusted)</i>		0.36

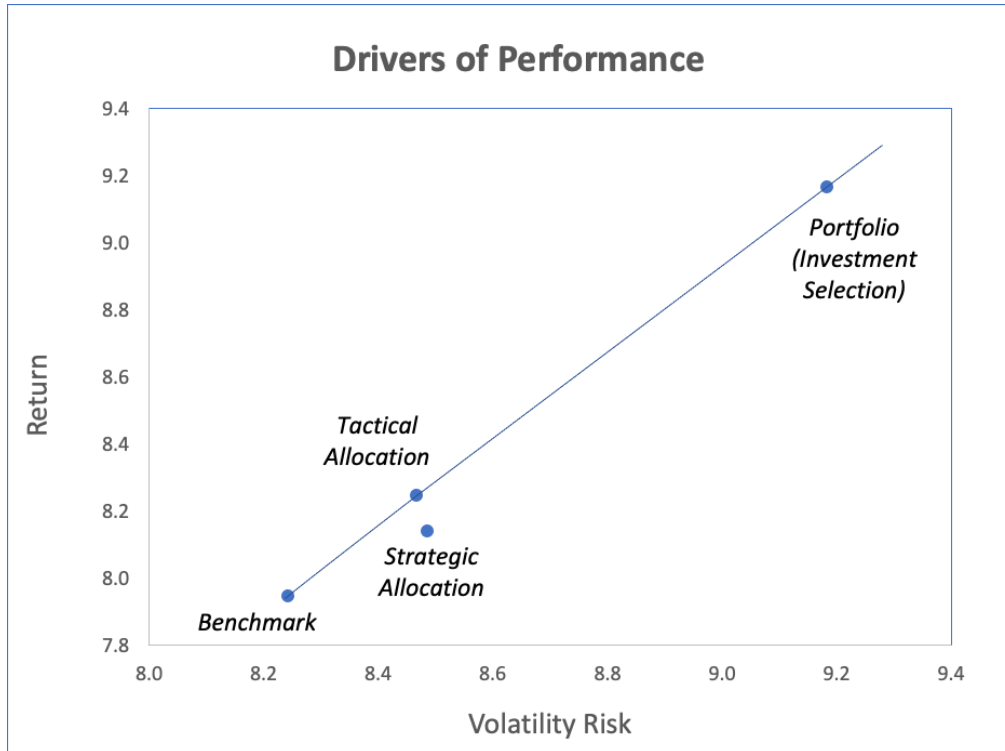
Monthly Portfolio Returns vs Benchmark
2011 - 2016



Portfolio vs Benchmark



Decisions at a Glance



1. Good strategy (Benchmark)
2. Long-term allocation lowered risk slightly (relative to CML, the Capital Market Line)
3. Tactical allocation provided extra return at lower risk
4. Selection moved portfolio out on CML

Single-step analysis provides wealth of risk information

Top-Level Attribution Total Return

Correlation to Portfolio Total Return and Risk	
Alpha	0.811
Beta	0.996

* Excess return stream
* Benchmark return stream

	Risk Contribution (bps)	Risk Contribution (%)	Return Contribution (%)	Efficiency
Benchmark (Beta)	8.21	89%	87%	-3%
Active (Alpha)	0.97	11%	13%	3%
Total Vol	9.18			

These are great results!

Contribution to Risk:
Weight x Individual Risk x Correlation to Portfolio

Decision Results at a Glance

	Return	Volatility Risk	Sharpe Ratio	95% Minimum Expected Return
Benchmark	7.95	8.24	0.96	1.35
Strategic Mix	8.14	8.49	0.96	1.35
Tactical Mix	8.25	8.47	0.97	1.47
Portfolio	9.16	9.18	1.00	1.82

} Better
Downside
Expectations

Focus on outcomes:

- Better higher-confidence return
- True "downside risk" analysis

Decision-Based Alpha Analysis

	Return	Alpha Contribution (bps)	Percent Contribution
Benchmark	7.95		
Strategic Mix	8.14	0.19	16%
Tactical Mix	8.25	0.11	9%
Portfolio (Selection)	9.16	0.92	75%

Each allocation decision is represented by an index return stream

Detailed Alpha Attribution

Active Attribution	Strategic Mix	Tactical Mix	Selection
% Active Return	16%	9%	75%
% Active Risk	8%	0%	92%
Efficiency	8%	9%	-18%

Efficiency: equalizing risk and return contributions

Market Attribution

Asset Class	Equity	Bonds
Alpha	75%	25%
Tracking Error	94%	6%
Efficiency	-19%	19%

Equity is a less-Efficient Alpha Generator

- Higher alpha contribution, but...
- MUCH higher active risk contribution

Asset Class Level Attribution

Asset Class	Equity	Bonds
Alpha	75%	25%
Tracking Error	94%	6%
Efficiency	-19%	19%

Market Segment	US Equity	Foreign Equity	US Bonds	Foreign Bonds
Alpha	81%	-6%	15%	10%
Tracking Error	79%	16%	4%	2%
Efficiency	3%	-22%	11%	9%

Foreign equity is source of inefficiency

Bonds are efficient across their segments

Attribution Hierarchy

Asset Class	Equity	Bonds
Alpha	75%	25%
Tracking Error	94%	6%
Efficiency	-19%	19%

- US has inefficient MC
- Fgn Dev is inefficient
- HY is inefficient across both segments

Market Segment	US Equity	Foreign Equity	US Bonds	Foreign Bonds
Alpha	81%	-6%	15%	10%
Tracking Error	79%	16%	4%	2%
Efficiency	3%	-22%	11%	9%

Sector	US-LC	US-MC	US-SC	Eqty-Fgn-Dev	Eqty-Fgn-EM	Bond-US-HQ	Bond-US-HY	Bond-Fgn-HQ	Bond-Fgn-HY
Alpha	74%	-19%	27%	-4%	-2%	7%	8%	6%	4%
Tracking Error	58%	9%	11%	14%	1.5%	1.2%	3%	1.4%	0.2%
Efficiency	16%	-29%	16%	-18%	-3%	6%	5%	5%	4%

Goals-Based Performance

Showing how you accomplished the Mission

Goals-Based Attribution

- Withdraw 5% annually increasing with inflation
- Maintain and grow real portfolio value
- These are MONETARY goals... not RETURN goals

Targets		5-year Investment Results		
Portfolio Value	10,000,000		Portfolio	Benchmark
Annual Spending Rate	5.0%	Mean Return	9.16%	7.95%
Inflation	1.62%	Return Cushion	2.46%	1.25%
Target Mean Return	6.70%			

The right context for excess return

Summary Monetary Results

Summary Monetary Results	Cumulative Spending	Ending Portfolio Value	Total Earned Value	Multiple
Goal	3,064,755	11,015,893	14,080,648	1.41
Benchmark	3,079,711	11,916,393	14,996,104	1.50
Portfolio	3,121,644	12,830,527	15,952,172	1.60

Good Strategy

Good Execution

The right questions:

- Did we meet the goals
- Did we validate our process?

Monetary Results

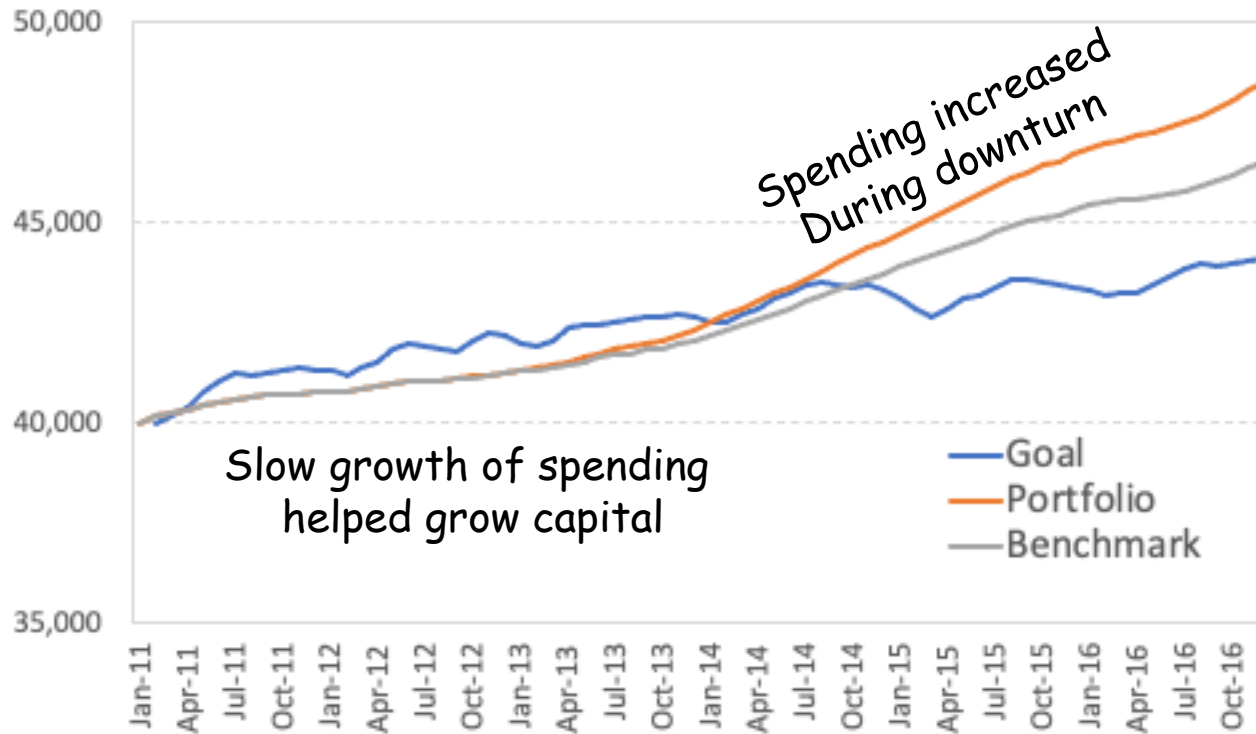
Attribution vs Goals	Cumulative Spending	Ending Portfolio Value	Total Earned Value
Portfolio	56,889	1,814,634	1,871,523
Benchmark	14,956	900,500	915,456

Contributions from Strategy and Active Process

Active process provided greater benefit than Strategy:

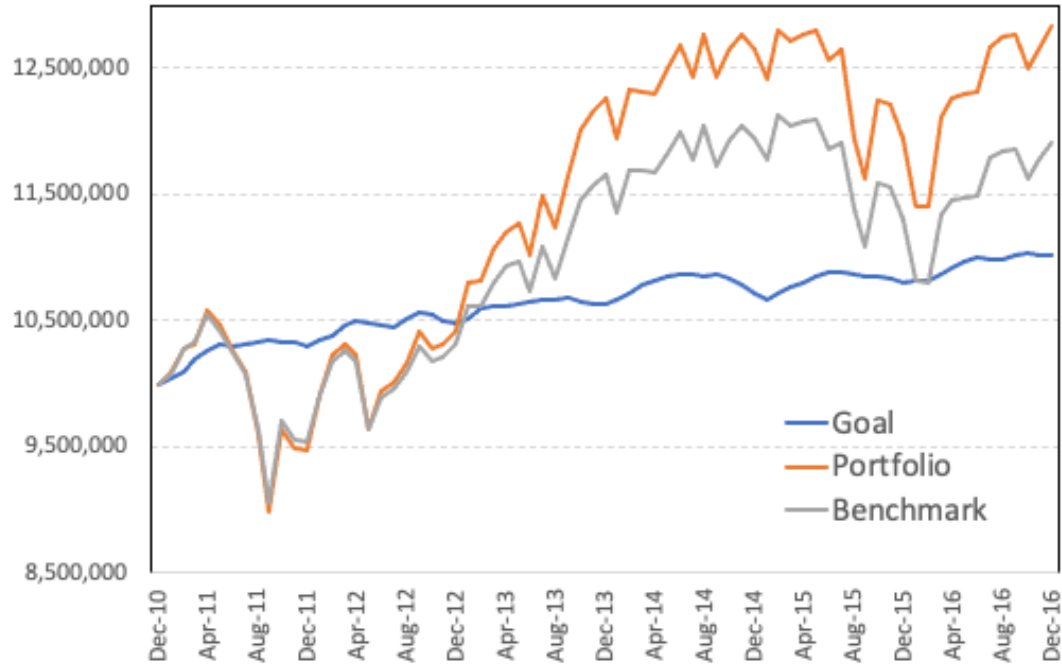
- 2x on portfolio growth and total goal
- Almost 4x on spending

Performance vs Spending Goal



- Spending initially lags goal due to "smoothing" of market value
- Growing capital led to increased spending

Performance vs Growth Goal



- Need “return cushion” to overcome volatility
- Portfolio maintained a comfortable surplus, even after market decline
- Active management needed to manage “true downside risk”

Summary Insights

- **Understand how each decision contributes:**
 - *To return*
 - *To risk*
 - *To meeting asset owner's goals*
- **Have a consistent and holistic view of risk**
 - *Market risk exposure*
 - *Active risk*
- **Performance evaluation is investing in reverse**
 - *And the reverse is true as well*
- **Translate robust analytics into compelling statements**
 - *"Saying it plain" shows that you really know it*

Contact Information:

Stephen Campisi, CFA

Managing Director

The Pensar Group

860.214.7504

www.thepensargrp.com

stevecampisicfa@comcast.net