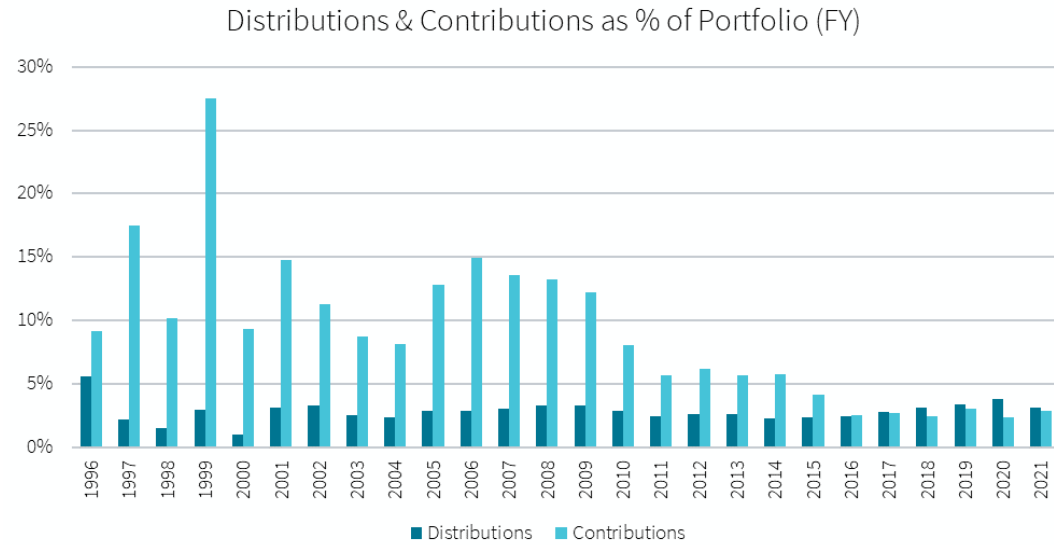
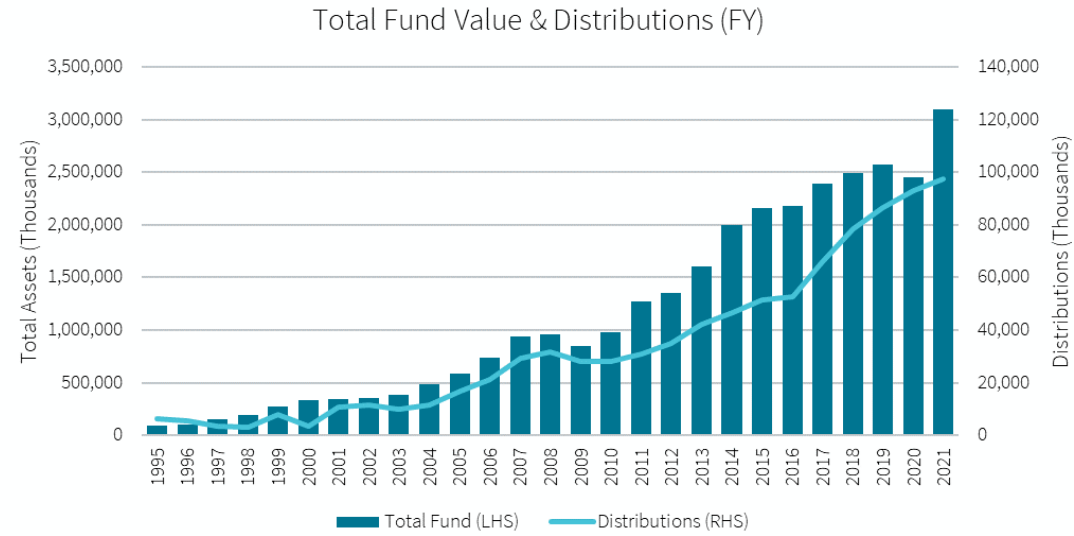


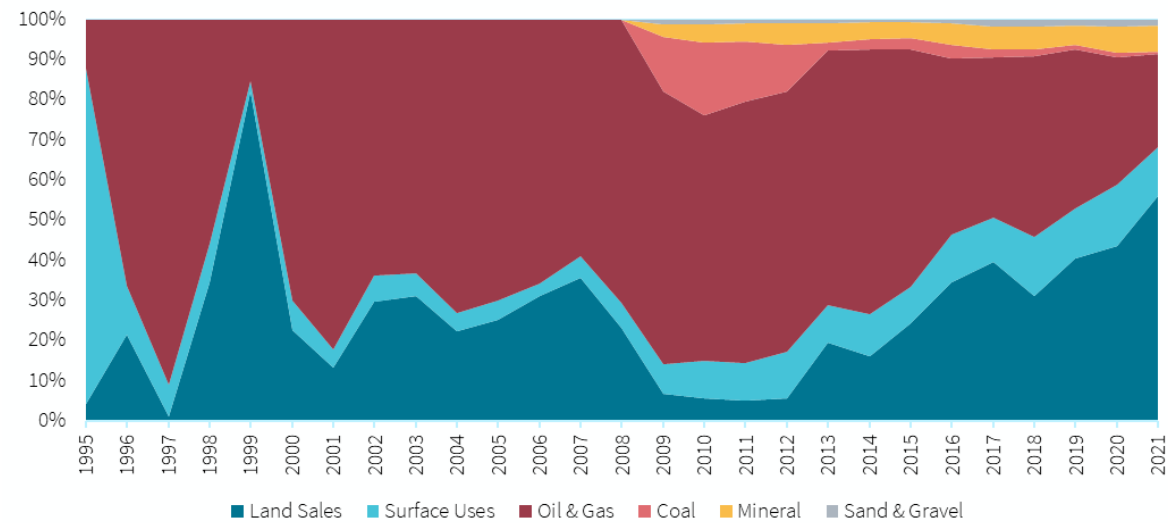


Introduction

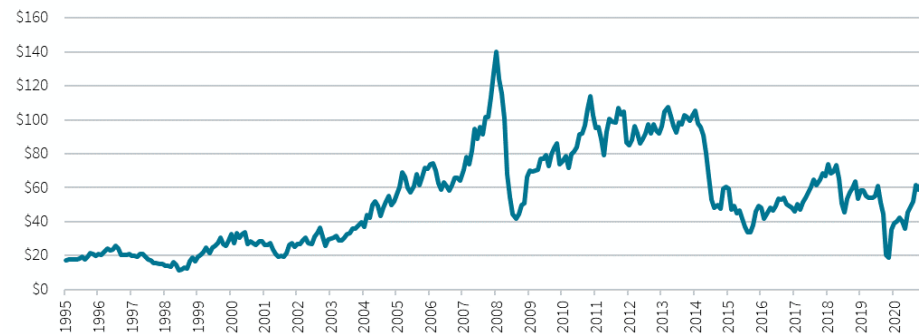


Introduction

Sources of Contributions*



WTI Crude Oil Prices

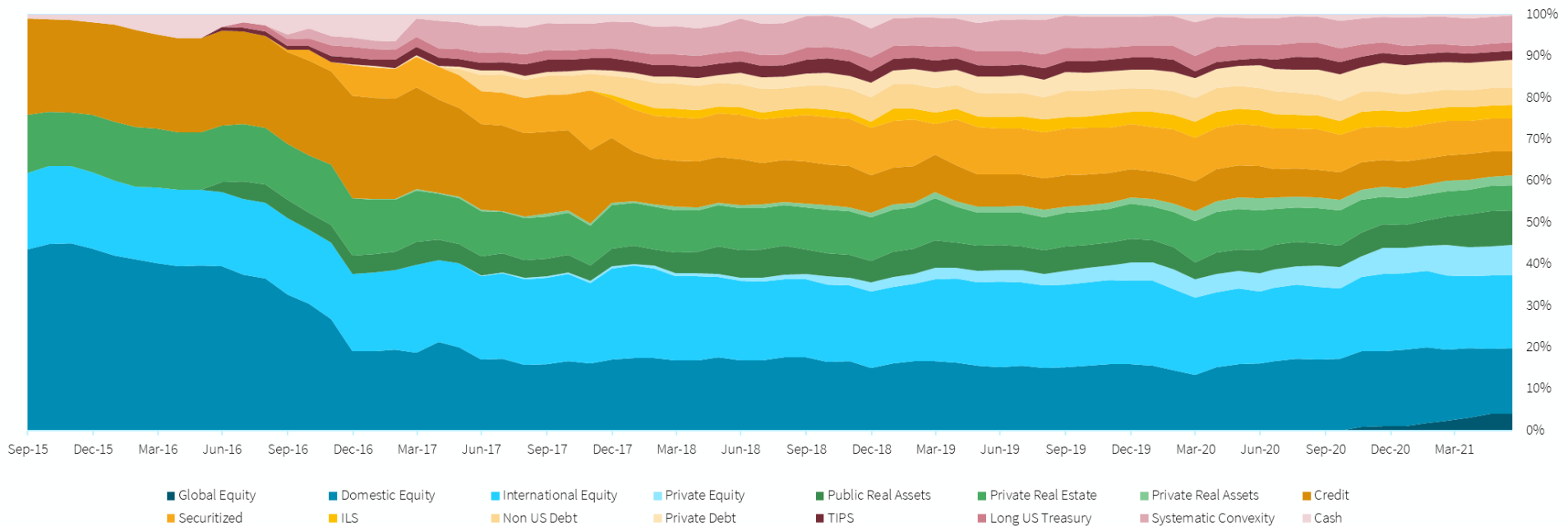


Natural Gas Prices



Introduction

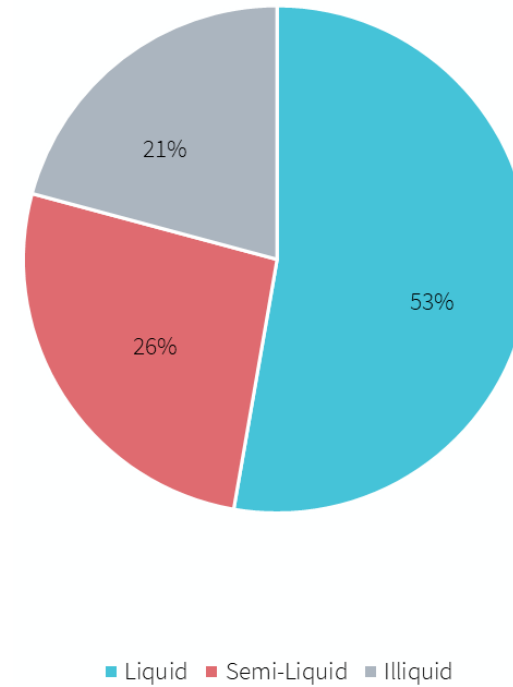
Rolling 5-Year Performance vs. Investment Objective



Introduction

	Target %	Interim %	Current %
Growth	43.5	43.5	42.6
Global Equity	10.0	5.0	4.4
US Large Cap	8.0	8.0	8.1
US Small Cap	2.5	7.0	5.9
International Developed Equity	5.5	7.5	8.0
Emerging Markets Equity	4.5	8.5	8.7
Private Equity	13.0	7.5	7.3
Real Assets	17.5	17.5	16.8
Public Real Assets	2.5	10.5	9.8
Private Real Estate	7.5	4.0	3.9
Private Real Assets	7.5	3.0	3.0
Income	27.0	27.0	27.0
Credit	5.0	6.0	6.5
Securitized	5.0	6.5	7.4
Insurance Linked Securities	3.5	3.5	3.0
Non-US	3.5	4.0	3.8
Private Debt	10.0	7.0	6.1
Defensive	12.0	12.0	11.8
Short-Term TIPS	2.5	2.5	2.1
Long US STRIPS	2.5	2.5	1.9
Systematic Convexity	7.0	7.0	7.0
Cash	0.0	0.0	0.7

Liquidity Overview



October 2021

Investment Process Overview



State of Utah, School & Institutional
Trust
Funds Office

Introduction

Mission and Purpose

- Our mission is to responsibly maximize the return on the invested principal of the School and Institutional Trusts for the current and future benefit of Utah's education programs.
- We are an independent team of outcome-oriented investors. We aim to carry our fiduciary responsibility forward to assist in the creation of a brighter future for Utah's public education programs. We consider education to be an invaluable public resource and believe the School and Institutional Trusts are an enduring investment in our community as a whole.
- We aim to ground our decision-making in objective research and sound portfolio theory. We value long-term growth over short-term gains, impartial analysis over conventional wisdom, and will always conduct investment decisions outside the reach of political influence and act with undivided loyalty to the schools, universities and state institutions for which we serve.
- Our values include
 - **Steady** – We value dependable, long-term growth. As an institution with an infinite horizon, we will weather volatility and illiquidity in the short-term to better the interest of our long-term goals.
 - **Innovative** – We are vigilant of an industry and markets that are always in a state of flux; we are adaptive to changes and comfortable exploring both uncommon investment opportunities, and new ways to improve our processes, with whatever tools are at our disposal.
 - **Transparent** – We are working in service of the public good and strive to translate the detail and portfolio complexity into useful and digestible reports for general consumption.
 - **Principled** – We are fluent in the strengths and weaknesses of modern portfolio theory and actively avoid the pitfalls of behavioral finance through strategic checks and balances, rigorous analysis, and personal humility.
 - **Open-minded** – We consider all investment prospects on an objective basis, and therefore neither automatically forego unorthodox opportunities, or select commonplace opportunities, based on conventional wisdom, prevailing headlines, or emotional biases.
- We invest School and Institutional Trust Lands Administration revenues in a manner that supports the distribution policy in perpetuity while providing for intergenerational equity between current and future beneficiaries. In addition to the School Trust Fund, there are 10 additional trusts.

Governance

Board of Trustees

MARLO OAKS, CFA CAIA - *Chair, Board of Trustees*

Marlo was appointed Utah State Treasurer after a 25-year career in investment banking and investment management. He oversaw institutional portfolios at Farmers Insurance Group (\$24 billion) and Intermountain Healthcare (\$7.5 billion). Marlo holds the CFA and CAIA credentials.

KENT A. MISENER, CFA - *Vice Chair, Board of Trustees*

Kent Misener, CFA serves on several Boards and Investment Committees representing multiple billions of dollars. He managed \$9 billion in benefits-related assets as the Chief Investment Officer of Desert Mutual Benefit Administrators (DMBA). Kent has an MBA in Business Administration and operates Verapath Global Investing LLC.

DAVID R. NIXON – *Board of Trustees*

David worked at Coopers & Lybrand and as Assistant Treasurer and Director of Global Investments at EDS, responsible for assets totaling \$15 billion. David has an accounting MBA. His extensive international experience includes work in both developed and emerging markets and living in Colombia, Belgium, and England.

JOHN LUNT, CFA – *Board of Trustees*

John serves on the investment committee for the \$8 billion Utah Educational Savings Plan (UESP) and was board president of Utah Retirement Systems. He has an MBA in Finance and International Business and is the Founder and President of Lunt Capital Management, Inc.

JASON GULL – *Board of Trustees*

Jason worked as head of secondary investments at Adams Street Partners with \$30 billion of assets under management. He serves as a member of the BYU Cougar Capital Advisory Board and the BYU Marriott School National Advisory Board. Jason has an MBA from Yale.

Resources

SITFO Staff

PETER MADSEN – *Executive Director, Chief Investment Officer*

Peter was brought on by SITFO in 2015 and has been critical in establishing the direction of the organization. Working in the investment management industry since 1999, his most recent experience includes Managing Director of Cube Capital, an investment group in London. His career includes a range of experience in global investing for large institutional clients such as pension funds and endowments, as well as permanent school fund experience from another state. Peter holds a Bachelor of Arts degree from the University of Utah in International Political Economy and Russian. He also holds an MBA focused in International Finance from the Middlebury Institute of International Studies.

SCOTT DAY – *Investment Officer*

Scott joined SITFO in 2020 to support asset allocation decisions, provide capital market and portfolio research, and perform manager due diligence. With over 25 years investment experience, his most recent experience includes serving as Managing Director at Goldman Sachs and Verus Investments where he was the OCIO for a \$15 billion pension fund. Over the course of his career, he has led capital market investment strategy, developed and implemented asset allocation and capital market assumption studies, led public and private market manager due diligence, and internally managed \$25 billion in global fixed income assets for Microsoft and \$8 billion for the Employees Retirement System of Texas. Scott holds a Bachelor of Science in Accounting from George Mason University and received the Chartered Financial Analyst (CFA) designation in 2001.

RYAN KULIG – *Finance and Operations Officer*

Ryan joined SITFO in 2016 to manage office operations, portfolio administration, and investment analysis. Before joining SITFO, he worked for Sax Angle Partners, specializing in fundamental and technical analysis of equity investment opportunities. Prior to that, he performed financial analysis of federal grant activity at MRK Advisors. Ryan holds a Bachelor of Business Administration in Global Business with an Emphasis in Finance and a Minor in Economics from the University of Portland and an MBA from the University of Southern California.

JOHNNY LODDER – *Investment Analyst*

Johnny joined SITFO in 2019 to support in the evaluation, due diligence and ongoing monitoring of investments. He previously performed manager research across a variety of alternative investment strategies for Aksia, an international alternatives consultant. Prior to that, Johnny spent time with Sorenson Impact where he collaborated with venture funds and foundations to identify and fund socially impactful businesses. Johnny earned a Bachelor of Science in Finance from the University of Utah.

Resources

SITFO Staff *(continued)*

CARSON MONSON – *Investment Analyst*

Carson joined SITFO in 2020 to support in the evaluation, due diligence, and ongoing monitoring of investments. He previously worked for Greenspring Associates, a venture capital-focused fund of funds, where he performed both manager and direct investment research and due diligence across a variety of sectors and geographies. Prior to that, Carson spent time with IDEA Fund Partners, a seed stage venture capital firm, and Fisher Investments, a public equities investment advisory firm. Carson holds a Bachelor of Arts Degree in European Studies with an emphasis in European Economics from Brigham Young University and an MBA focused on Venture Capital from the University of North Carolina.

HAYDEN BERGESON – *Assistant Investment Analyst*

Hayden joined SITFO in 2021 to assist in establishing risk and reporting frameworks in support of the ongoing evaluation, due diligence, and monitoring of investments. He was previously an Intern for SITFO from 2020-2021 where he supported the team in a variety of functions. Hayden earned a Bachelor of Science in Financial Economics from Brigham Young University Idaho and a MSF from the University of Utah.

TATIANA MAKRANSKY – *Finance and Operations Analyst*

Tatiana joined SITFO in 2021 to assist in portfolio finance and operations. She previously worked in finance operations at Goldman Sachs in support of client on-boarding, KYC (know your customer), and anti-money laundering initiatives. Prior to that, Tatiana worked in non-profit fundraising for the University of Utah and People Helping People. Tatiana holds a Bachelor of Arts in Political Science and a Minor in Public Policy from Georgia State University.

SYMONE CALDWELL – *Assistant Administrative Analyst*

Symone joined SITFO in 2021 to support all facets of the non-investment agency affairs. She previously worked at Verizon Wireless as a Global Enterprise Advisor, where she managed a portfolio of business and government multimillion dollar accounts. Prior to that, she began her professional career at Utah State University, where she worked as a Teaching Fellow for the Department of Anthropology, Recruitment Fellow for the Center of Women and Gender and a Diversity Coordinator at the Museum of Anthropology. Symone holds a Bachelor of Science in Anthropology, a Minor in Women and Gender Studies and a Museum Certificate.

Resources

Advisors and Vendors

INVESTMENT & RISK CONSULTANTS - *RVK and Albourne*

RVK and Albourne were hired in 2020 to assist with all aspects of SITFO's activities. RVK is a generalist consultant providing support and services in areas ranging from governance, asset allocation, and manager research. Albourne is a specialist consultant providing support in areas such as strategy research and manager selection in alternative asset classes. Each firm is a top-rated consultant with global resources and capabilities.

INDEPENDENT RESEARCH AND DATA - *Bloomberg, eVestment, BCA, Preqin, Top Down*

These partners and advisors facilitate the provision of raw data as well as its objective interpretation.

FUND MANAGERS - *Strategy Specific Investment Advisory Relationships*

The buying and selling of individual securities is carried out by best in class, specialized, investment managers. These investment managers are highly scrutinized before and after selection.

CUSTODIAN BANK - *Northern Trust*

Northern Trust is one of the largest global custodian banks . They were hired in 2016 to institutionalize custody of assets and to provide an independent accounting of the trusts.

RISK MANAGEMENT- *MPI, Bloomberg, and internal tools*

SITFO avails itself of software services such as MPI and Bloomberg to provide quantitative risk management analysis. In addition, SITFO utilizes its independent consultants' tools and staff to provide performance analysis and contribute to risk reporting.

Operations

Organization Structure



OST (Office of State Treasurer)

- The elected state treasurer acts as ex officio chairperson of the SITFO board
- Provides accounting support for the SITFO office



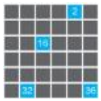
SCT (School Children's Trust)

- Oversees the work of SITLA and SITFO on behalf of School Fund
- Administers the distribution for the School Fund, 95% of the trust



Land Trusts Protection and Advocacy Office

- New office in the works to oversee the distribution of earnings to the 11 trusts



SITLA (School & Institutional Trust Lands Administration)

- SITLA manages Utah's 3.5 million acres of trust land generating revenue through oil, gas, and mineral leases, real estate sales, etc.
- All proceeds are deposited into permanent endowments for each beneficiary (the 11 trust funds)



SITFO (School & Institutional Trust Funds Office)

- SITFO invests the endowments from SITLA, and annual interest and dividends are distributed to each beneficiary
- The (11) trusts are managed based on an asset allocation formula with similar asset allocations because return and risk objectives are the same

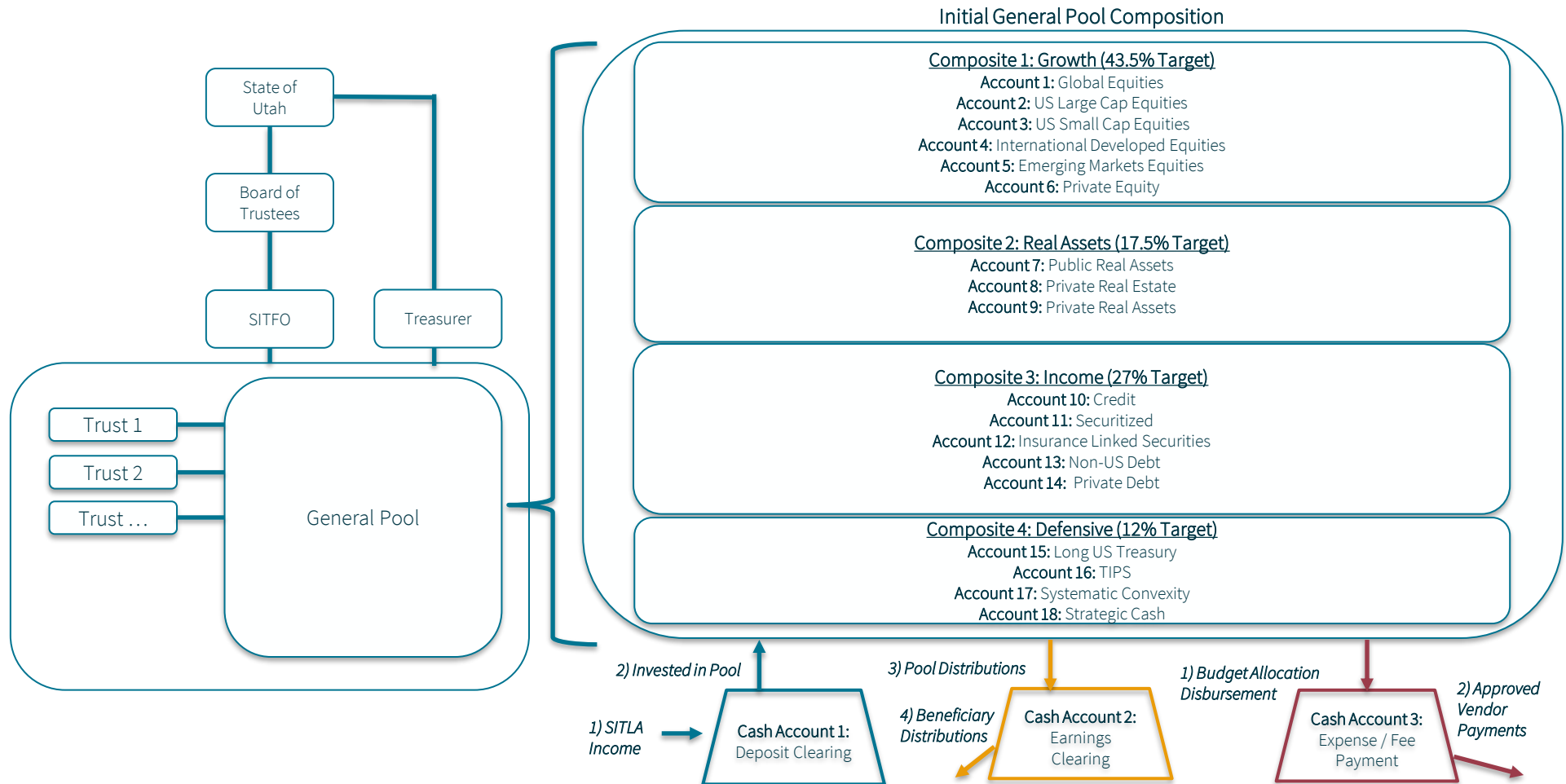


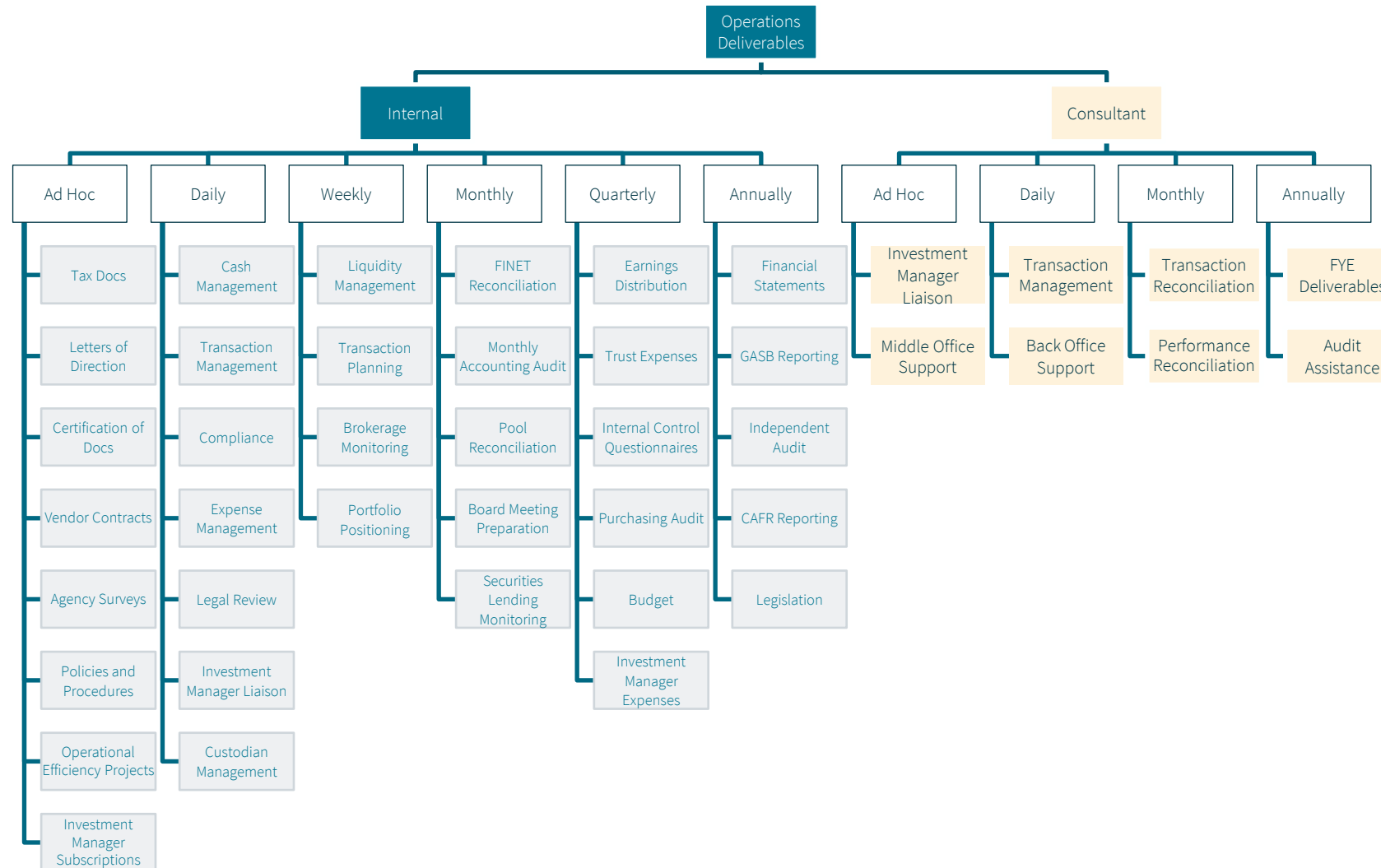
Beneficiaries

11 Trust Funds: School Trust, Miners Hospital, Institute for the Blind, Reservoirs Fund, Normal School, University of Utah, School of Mines, Utah State University, Utah State Hospital, Deaf School Fund, State Industrial School

Operations

Custodial Structure





Operations

Back/Middle Office Support

- Integrated back and middle office support from Albourne
- Investment managers/funds transaction management including the coordination of capital calls for private investments
- Movement of cash between investment accounts and custodians, as directed by client
- Middle office support includes legal review of fund documents relative to ILPA standards, side letter negotiation support, and assistance with the preparation and population of subscription documents
- Coordination of new investment manager onboarding
 - Side letter
 - Sub-docs
 - Wire funding
 - Continued support
- While Albourne sets up the requested transaction(s) at the custodian, strict controls are in place to ensure that SITFO reviews and approves everything entered before the transaction is processed
 - All transactions are subject to dual approval by SITFO staff

Operations

Back/Middle Office Support (*continued*)

Login ID	Name	Trade Approvals	Permission Access Level
SITFO3C7	Dafnis Papadopoulos	Dual Approval	Entry Only
SITFO610	Giorgos Kourtidis		Entry Only
SITFO8Q	Ryan Fitzgerald		Entry Only
SITFO8Q8	Christia Nearchou		Entry Only
SITFOAC	Athanasia Charidimou		Entry Only
SITFOAD1	Andre Do		Entry Only
SITFOAE	Antreas Evangelou		Entry Only
SITFOAI	Alexandros Iliadis		Entry Only
SITFOAM	Andreas Moyseos		Entry Only
SITFOAT	Athanasios Tsoris		Entry Only
SITFOCE	Christina Efstathiou		Entry Only
SITFOCZ	Christos Zannetti		Entry Only
SITFOEG	Elena Georgiou		Entry Only
SITFOEK	Eleftherios Kouppas		Entry Only
SITFOJL	Jonathan Lodder		Entry and Restricted Approval
SITFOPM	Peter Madsen		Entry and Restricted Approval
SITFOQB	Tatiana Makransky		Entry and Restricted Approval
SITFORK	Ryan Kulig		Entry and Restricted Approval
SITFORL	Rowan Levy		Entry Only
SITFOSR	Sotiris Rigas		Entry Only
SITFOV9	Alexi Pitsillis		Entry Only
SITFOY6	Khazak Maroukian		Entry Only

Operations

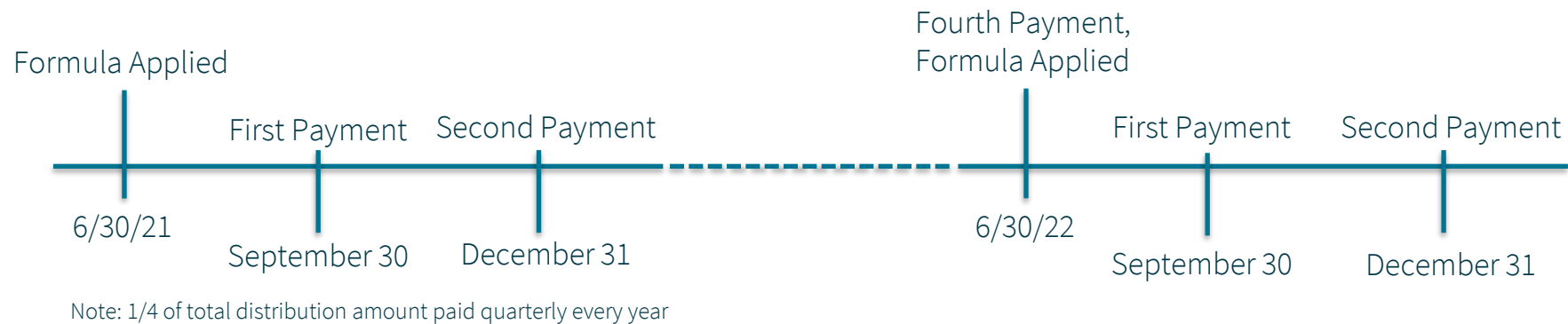
Back/Middle Office Support *(continued)*

Login ID	Name	Access Type	Access Authority	Wire Out	ACH Out	Expected Payments In	Check Payment	Approve	Void	Transfer Between Accounts	Standard View
SITFO3C7	Dafnis Papadopoulos	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFO610	Giorgos Kourtidis	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFO8Q	Ryan Fitzgerald	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFO8Q8	Christia Nearchou	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOAC	Athanasia Charidimou	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOAD1	Andre Do	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOAE	Antreas Evangelou	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOAI	Alexandros Iliadis	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOAM	Andreas Moyseos	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOAT	Athanasios Tsois	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOCE	Christina Efstathiou	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOCZ	Christos Zannetti	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOEG	Elena Georgiou	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOEK	Eleftherios Kouppas	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOJL	Jonathan Lodder	All Accounts	Repetitive Instructions	X	X	X	X	X	X	X	X
SITFOPM	Peter Madsen	All Accounts	Repetitive Instructions	X	X	X	X	X	X	X	X
SITFOQB	Tatiana Makransky	All Accounts	Repetitive Instructions	X	X	X	X	X	X	X	X
SITFORK	Ryan Kulig	All Accounts	Repetitive Instructions	X	X	X	X	X	X	X	X
SITFOAR	Allen Rollo	All Accounts	Create Profiles	X	X	X	X			X	X
SITFOKS	Kirt Slauch	All Accounts	Create Profiles	X	X	X	X			X	X
SITFORL	Rowan Levy	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOSR	Sotiris Rigas	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOV9	Alexi Pitsillis	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X
SITFOY6	Khazak Maroukian	All Accounts Except Cash Accounts 1,2,3	Repetitive Instructions	X	X	X	X		X	X	X

Operations

Distribution Policy

- FY21 distributed \$92,842,753.62
- FY22 distribution for School Trust based on policy
 - 50% (1 + CPI + Enrollment Growth) x Previous Year Distribution
 - 50% (1 + 4.5% CPI + (-.2%) enrollment) x \$92.84MM prior year distribution = \$48.4MM
 - 50% (4% x 12Q average)
 - 50% (4% x \$2.4B) = \$47.9MM
 - Subject to a cap of 4% against 12Q average (\$95.8MM)
 - \$95,849,770.37 to be distributed FY22 (3.3% of the trust's market value)
- FY21 distribution for other trusts based on new policy
 - Other trusts historically receive distributions throughout the year
 - Quarterly distributions (based on 4% x 12Q average at previous fiscal year end)
 - 4% x 12Q average as of June 30, 2019
- Total beneficiary distribution in FY22 **\$100,491,386.08**



Investment Process

Objectives and Governance

- Investment objective: CPI +5%
 - 10-year inflation estimate at ~2.2% (long term average ~3.3%) = 7% - 8%
 - SITFO's focus is on achieving the target return with the least risk necessary
- Risk objective:
 - In discussions with the trustees, SITFO considers the volatility of a 70% / 30% portfolio as a reference when determining asset allocation. This is not a benchmark for performance, it is a proxy for risk.
 - Given the above, SITFO estimates annualized volatility of as much as ~15% is acceptable. This leads to an expectation of a ~35% drawdown
 - There is a minimum of 15% required to be held in daily liquidity
- Given 70/30 historical return and trustees' stated drawdown tolerance, we estimate annualized volatility of ~14% is acceptable (-3std ~35% drawdown, if 7-8% expected return)
- Trustees' primary investment responsibility is setting the asset allocation and risk tolerance.
- Trustees' other responsibilities include:
 - Establishing and reviewing agency policies (IPS, distribution, etc.)
 - Reviewing the budget
 - Performance monitoring
 - Maintaining an understanding of the investment process including asset allocation, manager selection, and risk management
 - Reviewing the annual audit
 - Hiring or termination of consultants and custodian

Investment Process

Resources and Framing

- Foundational Elements:
 - Investment beliefs – establish in advance agreed upon principles for guidance and direction
 - Investment policies – outline specifics of governance, responsibility, authority
 - Investment process – disciplined practices built on the foundational elements above
- Balance and alignment of organization and asset allocation/portfolio construction with risk and complexity:
 - Balance the need for return with sustainability of returns
 - Align resources/capabilities with complexity
 - Tolerance for risk, illiquidity, and the appropriate time horizon



Investment Process

Resources and Framing

INVESTMENT BELIEFS

This document contains our guiding principles, which inform our decision-making and governance. While not a policy or procedural manual, it gives an overview of who we are, what our mission is, and how we aim to achieve it.

[Download PDF](#)

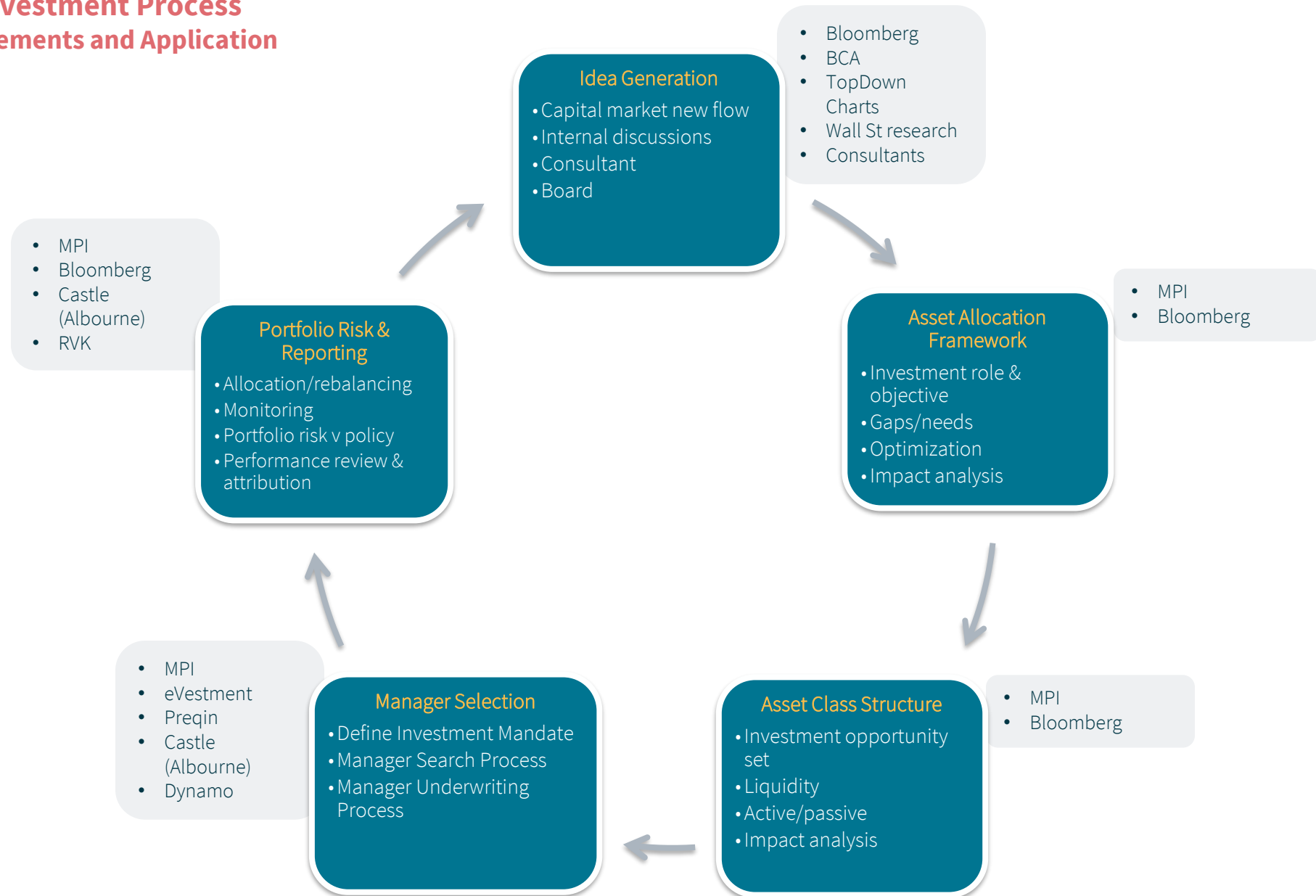
INVESTMENT POLICY

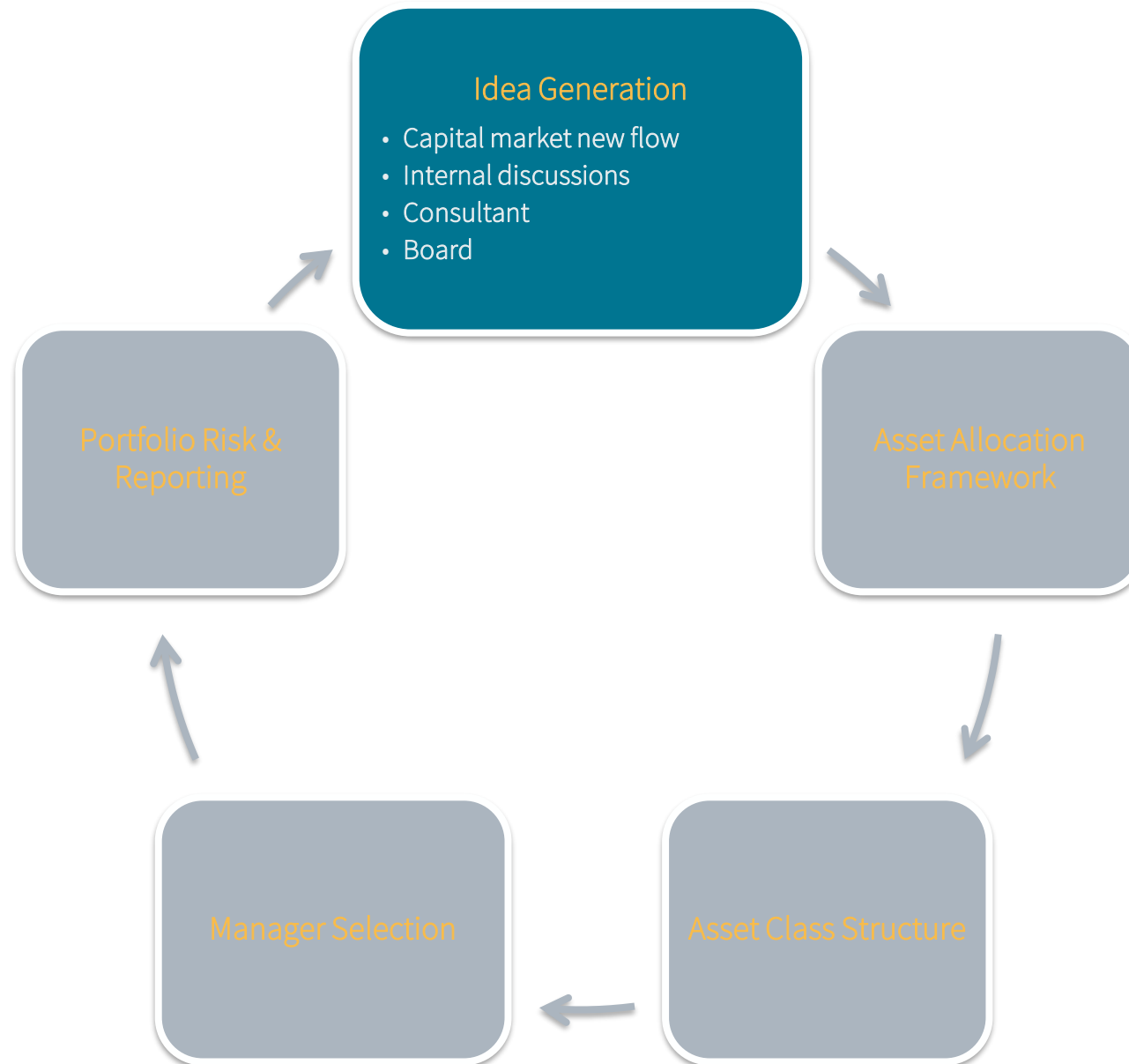
This policy outlines the governing framework within which SITFO operates. It was created in conjunction with the SITFO Board to assist in effectively supervising, monitoring and evaluating the investment of assets.

[Download PDF](#)

- I. Who We Are
 - A. Characteristics
 - B. Behavioral
 - C. Price and Opportunity Cost Awareness
 - D. Governance and Management
 - E. Performance Measure
 - II. Efficient Markets Response
 - A. Passive Management
 - B. Active Management
 - C. Rule-Based Management
 - III. Risk
 - A. Defining Risk
 - B. Risk Management
 - C. Risk Tolerance
 - IV. Asset Allocation
 - A. Defining an Asset Class
 - B. Defining an Asset Class
 - C. Diversification
 - D. Ranges and Rebalancing
 - E. Valuations
 - F. Evolutions
 - V. Manager Structure and Selection
 - A. Structure and Bias
 - B. Manager Diversification
 - C. Manager Selection
- 1 Introduction
 - 1.1 Authority and Beneficiaries
 - 1.2 Purpose and Fiduciary Duty
 - 2 Duties and Responsibilities
 - 2.1 Creation and Membership of the Board
 - 2.2 Duties and Responsibilities of the Board
 - 2.3 Duties and Responsibilities of SITFO
 - 2.4 Duties and Responsibilities of the Consultants
 - 2.5 Duties and Responsibilities of the Investment Managers
 - 2.6 Duties and Responsibilities of the Custodian (Custody Policy)
 - 3 Statement of Risk and Return Objectives
 - 4 Distribution Policy
 - 5 Asset Allocation
 - 5.1 Time Horizon
 - 5.2 Portfolio Rebalancing
 - 6 Risk Tolerance Guidelines
 - 6.1 Volatility
 - 6.2 Liquidity
 - 6.3 Strategic Asset Allocation Benchmark
 - 6.3a Strategic Asset Allocation Table
 - 6.4 Interim Benchmark
 - 6.5 Actual Allocation Benchmark
 - 6.6 Position Sizing
 - 7 Reporting & Communication
 - 7.1 Risk Dashboard
 - 7.2 Performance Measurement and Portfolio Reporting
 - 7.3 Asset Class Structure Reporting

Investment Process Elements and Application





Investment Process

Idea Generation

SITFO Internal



Software (e.g., MPI, eVestment, Bloomberg)



Independent Research Providers

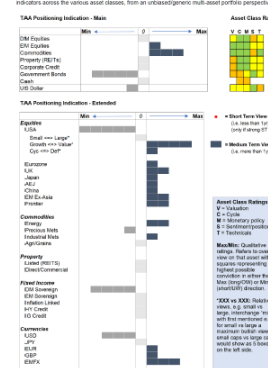
5. Positioning/Summary

Summary view across asset classes (global unless otherwise noted)

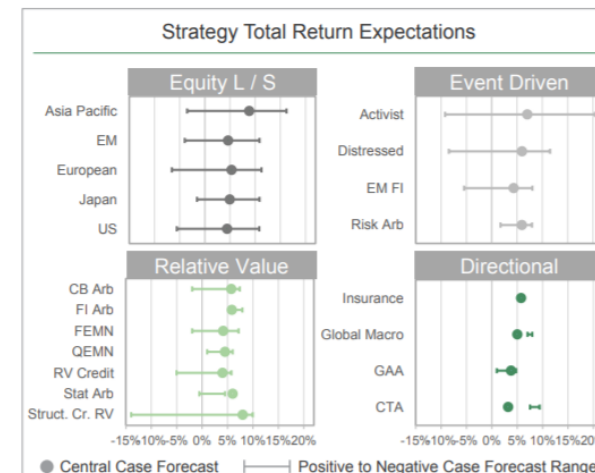
Asset Class	Short-Term View	Medium-Longer Term View
DM Equities	ERP positive (but shrinking), significant snapback in absolute valuations and sentiment. MT technicals by and large look OK, but ST technicals mixed.	Favour DM ex-US on relative value. Reasonable absolute valuations across DM ex-US help underpin the medium-term case (more so on an ERP basis).
EM Equities	Sentiment has reset from previous extremes, but technicals still mixed, and short-term recovery is complicated by virus resurgence and policy picture.	Relative value vs DM (US) and reasonable absolute valuations a positive. EM looks attractive longer term. Aligns with medium-term bearish base case for USD.
Commodities	Sentiment/positioning stretched, but strong momentum, and very strong medium-term upside case.	Bullish medium-term as supply reverts (weak supply), cheap valuations, and monetary/fiscal tailwinds = normalization.
Property	REITs acting less like bond proxy, more like covid proxy. Expect normalization to be a net-positive. Yet absolute valuations expensive.	Still high absolute valuations and reliance on low yields is an issue. Some uncertainty on longer term effects of the pandemic (changes in behaviour, tenant stress).
Corp. Credit	Spreads now increasingly expensive – credit risk as spreads tighten, sentiment mixed. Macro still supportive though.	Diminishing margin of safety for taking on credit risk as spreads tighten, monitoring for weak spots as recovery progresses.
Govt Bonds	Sentiment increasingly bearish. QE programs a tailwind, but valuations expensive and numerous macro market indicators point to higher yields.	Low bond yields = low expected returns for buy and hold. Despite overvaluation (which is now extreme), bonds retain some value as a diversifying asset.
Cash	Low cash rates = expect negative real returns. Yet, short-term cash remains a reliable means of capital preservation.	Cash rates globally increasingly anchored to zero. Forward guidance suggests lower for longer for short-term rates globally.
US Dollar	Medium-term bear case remains intact, but short-term Fed wake up call and tapered positioning/government driving a short-term rebound in the USD.	Remain bearish on a medium/longer term basis as longer-term cycles play out, valuations overvalued to downside, yield support removed, fiscal outlook negative.

Asset Class Ratings and TAA Overlay

As a reminder, we do not encourage any investor to provide personal financial advice, nor offer investment. The purpose of the following tables is to provide a high-level positioning preference based on our analysis and indicators across the various asset classes, from an ultra-long-term, multi-asset portfolio perspective.



Consultants

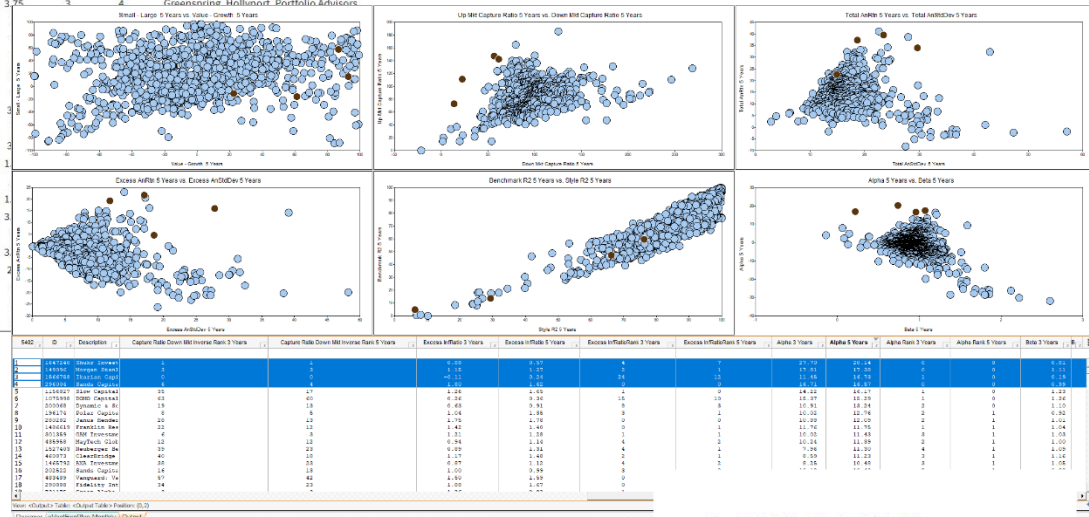


Investment Process

Idea Generation

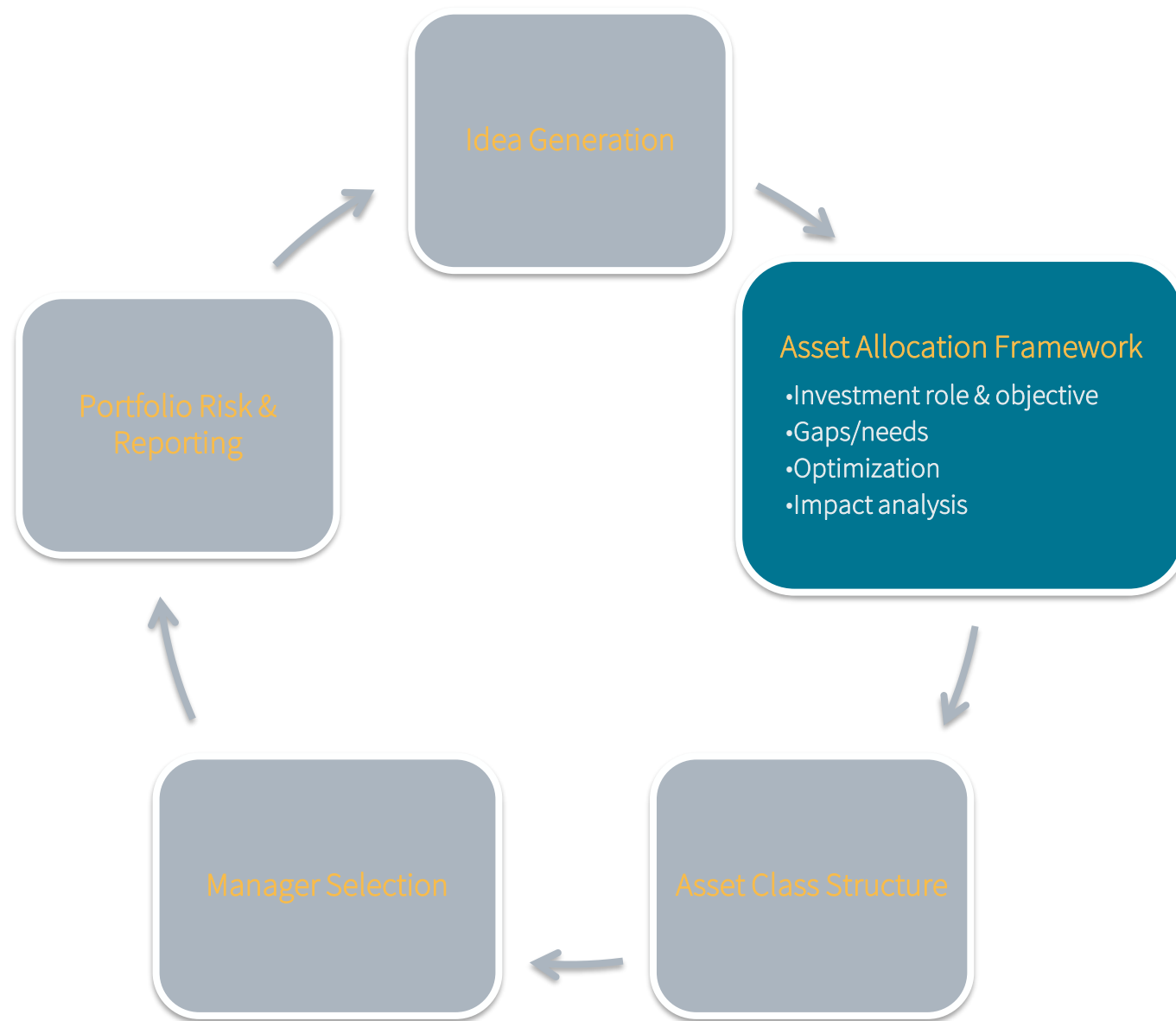
[4=High, 0=Low, Risk and Correl use inverted] Try to include half point and when necessary take to the extreme 0 or 4 as we could use some dispersion in the rankings

Date of Scoring	Coverage	Priority	Category	Asset Class	Strategy	Target Returns	Target Risk	Target Correl	Portfolio Gap	Current Valuations	Speed to Deploy	SITFO Short List	Consultant Short List
3/29	RK	2.7	Real Assets	Private Real Assets	Mining Finance	2.5	2	3	4	2.5	2	Sprott	Red Kite (open); Orion; Sprott (2021), Nebari (2021)
3/29	PM/CM	2.3	Growth	EAFE	Activist (Japan? Europe?)	3	1	2	3	2.5	2.5	Taiyo, Cevian	
4/7	PM/RK	2.5	Real Assets	Public Real Assets	Diversified Active	2.5	2.5	2.5	2.5	2.5	2.5	GMO, KBI	
3/31	CM	2.3	Growth	Private Equity	Healthcare Venture	3.75	0.75	2.5	4	2.5	0.5	Alta; Cologn Group; Frasier	
3/31	CM	3.4	Growth	Private Equity	Venture Secondaries	3.75	2.5	3.5	3.75	2	4	Greenoaks; Hollmancourt; Portfolio Advisors	
3/31	CM	2.9	Growth	Private Equity	US MM Buyout	3.5	2.5	2	3	2.5	2		
3/31	CM	2.8	Growth	Private Equity	Europe MM Buyout	3.5	2.5	2	3	2.5	2		
3/31	CM	3.0	Growth	Private Equity	Developed Asia PE (Japan/Korea)	3.5	2.5	3	3	2.5	3		
3/31	CM	2.6	Growth	Private Equity	Crypto/Blockchain/NFT PE	4	0.25	4	4	0.25	4		
3/31	CM	2.9	Growth	Private Equity	Sports PE	3.5	3	3.5	3	3	3.5		
3/31	CM	2.5	Growth	Private Equity	Food/Bev/Ag PE	3.25	2	3	3	2	3		
5/6	RK	2.4	Income	Private Debt	GP Stakes	3	2.5	2.5	3	2.5	2.5		
3/18	JL/PM	2.3	Income	Non-US Debt	China Bonds	1	2.5	3	1	2.5	3		
3/18	JL	2.3	Real Assets	Private Real Assets	Value-Add / Opp. Infrastructure	2.75	2.5	2.5	2	2.75	2.5		
3/18	JL	2.4	Real Assets	Private Real Estate	Asia	2.25	2.5	3	2	2.25	2.5		
3/18	JL	2.0	Real Assets	Private Real Estate	Real Estate Lending	2	2.25	2.25	2	2	2.25		
3/18	JL	2.4	Income	Private Credit	Spec. Finance (IP / Litigation Finance)	2.25	2	3	2	2.25	3		
3/29	JL	2.4	Income	Private Credit	Direct Lending	2	2	2.5	2	2	2.5		
3/29	JL	2.7	Real Assets	Private Real Assets	Drug Royalties	2.75	2	3	2	2.75	2		
3/29	JL	2.4	Real Assets	Private Real Assets	Media/Content Royalties	2.25	2.25	3	2	2.25	3		
3/18	JL	2.0	Real Assets	Private Real Assets	Energy Transition/Renewables	2.25	2	3	2	2.25	2		
3/29	RK	2.4	Real Assets	Private Real Assets	Opportunistic Resources	3	2	2	3	2	2		
3/18	JL	2.3	Real Assets	Private Real Assets	Core Infra/debt	2	3	2.5	2	2	2.5		



20082009201020112012201320142015201620172018Aug 2021											
3Y											
3Y ver											
3Y Sharpe											
3Y Excess Return vs MSCI World TR Gross											
OD											
Date											
13.8%	25.0%	0.5	-1.8%	B	2						
14.8%	15.6%	0.9	-0.8%	N/A							
8.5%	22.7%	0.3	-7.1%	A	5						
20.1%	21.3%	0.9	4.5%	A	5						
22.9%	32.2%	0.7	7.4%	C	0						
				A	3						
				B	1						
				A	3						
				B	2						
				B	3						
				B	4						
17.8%	26.9%	0.6	2.3%								
				B	3						
5.9%	27.6%	0.2	-9.7%	B	4						
31.5%	18.0%	1.7	15.9%								
25.1%	17.2%	1.4	9.5%	A	3						
14.4%	10.7%	1.2	-1.2%	A	4						
9.3%	21.6%	0.4	-6.2%	B	2						
6.1%	33.5%	0.1	-9.5%								
				N/A	N/A						
16.7%	18.7%	0.8	1.1%								

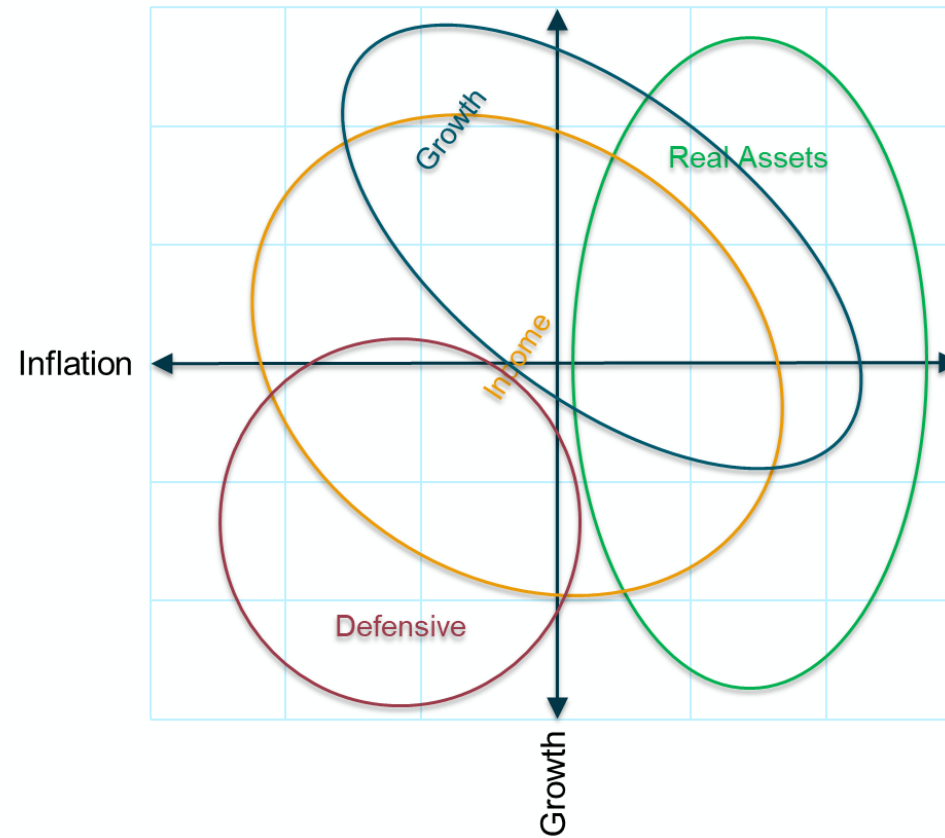
- ❖ ARGA: Global Equity
- ❖ Artisan: Global Value
- ❖ Dodge & Cox: Global Equity
- ❖ FPA: Contrarian Value
- ❖ GMO: Global All Country
- ❖ Harris: Global All Cap
- ❖ Kopernik: Global All-Cap
- ❖ LSV: Global ACWI
- ❖ Pzena: Global Value-ACWI
- ❖ Wellington: Global Opp Value



Investment Process

Asset Allocation

- Framing the portfolio in order to diversify across fundamental, long-term factors
- Simplify thinking for clarity and communication
- Heuristic for answering the question “how much risk are we taking and where are we taking it?”



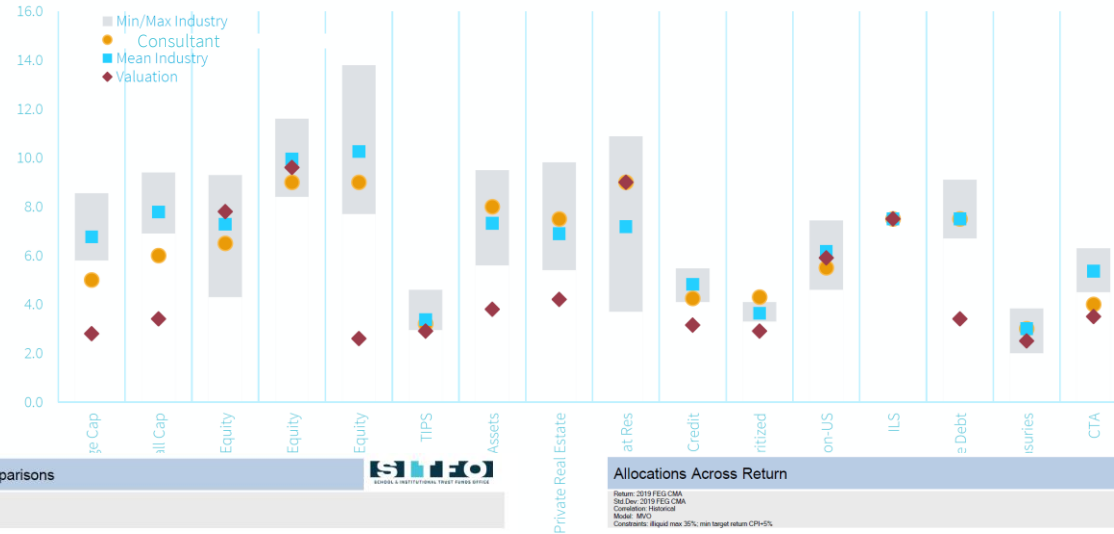
Investment Process

Asset Allocation

- Target returns by category:
 - **Growth:** CPI + 6%
Expected to provide the strongest positive returns during periods of sustained economic growth, as well as presenting the highest expected risk (e.g., stocks, private equity).
 - **Real Assets:** CPI + 5.5%
Inflation oriented and typically backed by hard assets (e.g., real estate, infrastructure, commodities, etc.). Real assets may present characteristics of income and growth, and thus have a moderate risk profile (e.g., commercial real estate, natural resources).
 - **Income:** CPI + 4.5%
Income is expected to generate positive returns during a range of economic growth scenarios via an income stream. Although this category is not expected to contribute as much risk as growth, it is still considered a risk-taking investment (e.g., corporate bonds, asset backed securities).
 - **Defensive:** CPI +2.5%
The investments in this grouping are intended to do well in negative economic scenarios or periods of market stress (e.g., cash, government bonds, hedging strategies). We do not categorize corporate bonds, or other assets that rely on economic growth, as defensive.

Investment Process

Asset Allocation Framework: Blend Quantitative and Qualitative Judgement

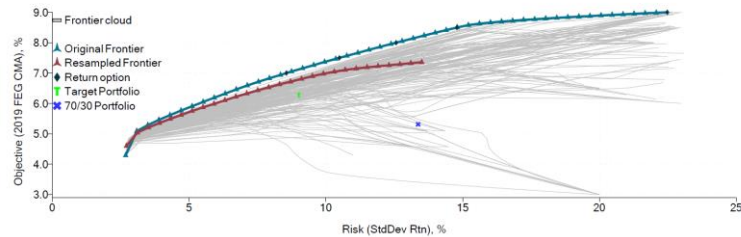


Efficient Frontiers and Weighting Comparisons

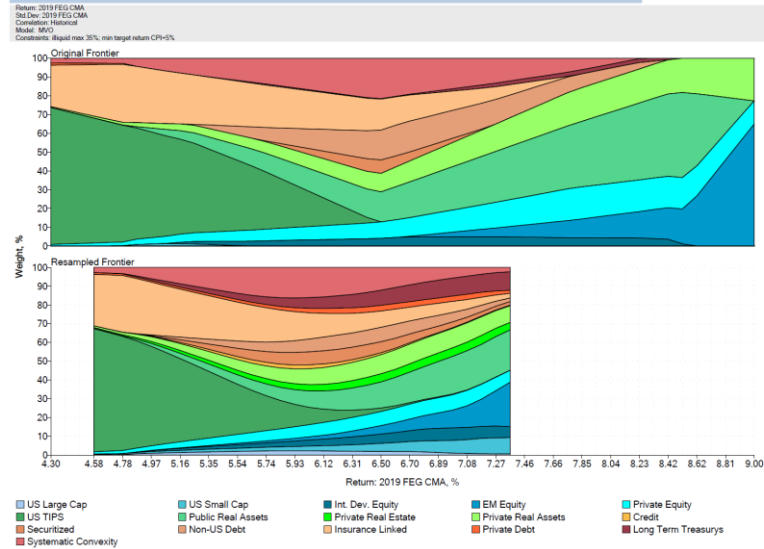
Return: 2019 FEQ CMA
Std Dev: 2019 FEQ CMA
Correlation: Historical
Model: MVO
Constraints: Equal max 30%, min target return CFI=5%

Asset Class Weights Per Return Target

	Original	7.00	7.50	8.00	8.50	9.00	Resampled	Target Portfolio
US Large Cap	0.0	0.0	0.0	0.0	0.0	0.0	1.0	7.5
US Small Cap	0.0	0.0	0.0	0.0	0.0	0.0	6.9	7.5
Int. Dev. Equity	4.8	4.6	4.3	2.0	0.0	0.0	6.6	7.5
EM Equity	2.6	6.8	11.7	18.0	55.0	10.0	7.5	7.5
Private Equity	11.9	15.2	17.0	16.7	12.3	8.2	7.0	7.0
US TIPS	0.0	0.0	0.0	0.0	0.0	0.3	3.0	3.0
Public Real Assets	23.3	30.2	37.3	44.9	0.0	20.5	4.0	4.0
Private Real Estate	0.0	0.0	0.0	0.0	0.0	4.5	9.0	9.0
Private Real Assets	13.0	16.1	18.0	18.3	22.7	10.4	4.0	4.0
Credit	0.0	0.0	0.0	0.0	0.0	0.3	7.0	7.0
Securitized	2.1	0.0	0.0	0.0	0.0	2.9	8.0	8.0
Non-US Debt	14.8	10.9	5.8	0.0	0.0	4.9	4.0	4.0
Insurance Linked	10.1	3.7	0.0	0.0	0.0	5.7	5.0	5.0
Private Debt	0.0	0.0	0.0	0.0	0.0	2.9	7.0	7.0
Long Term Treasuries	1.3	2.1	0.0	0.0	0.0	9.6	5.0	5.0
Systematic Convexity	16.0	10.5	3.7	0.0	0.0	5.4	7.0	7.0

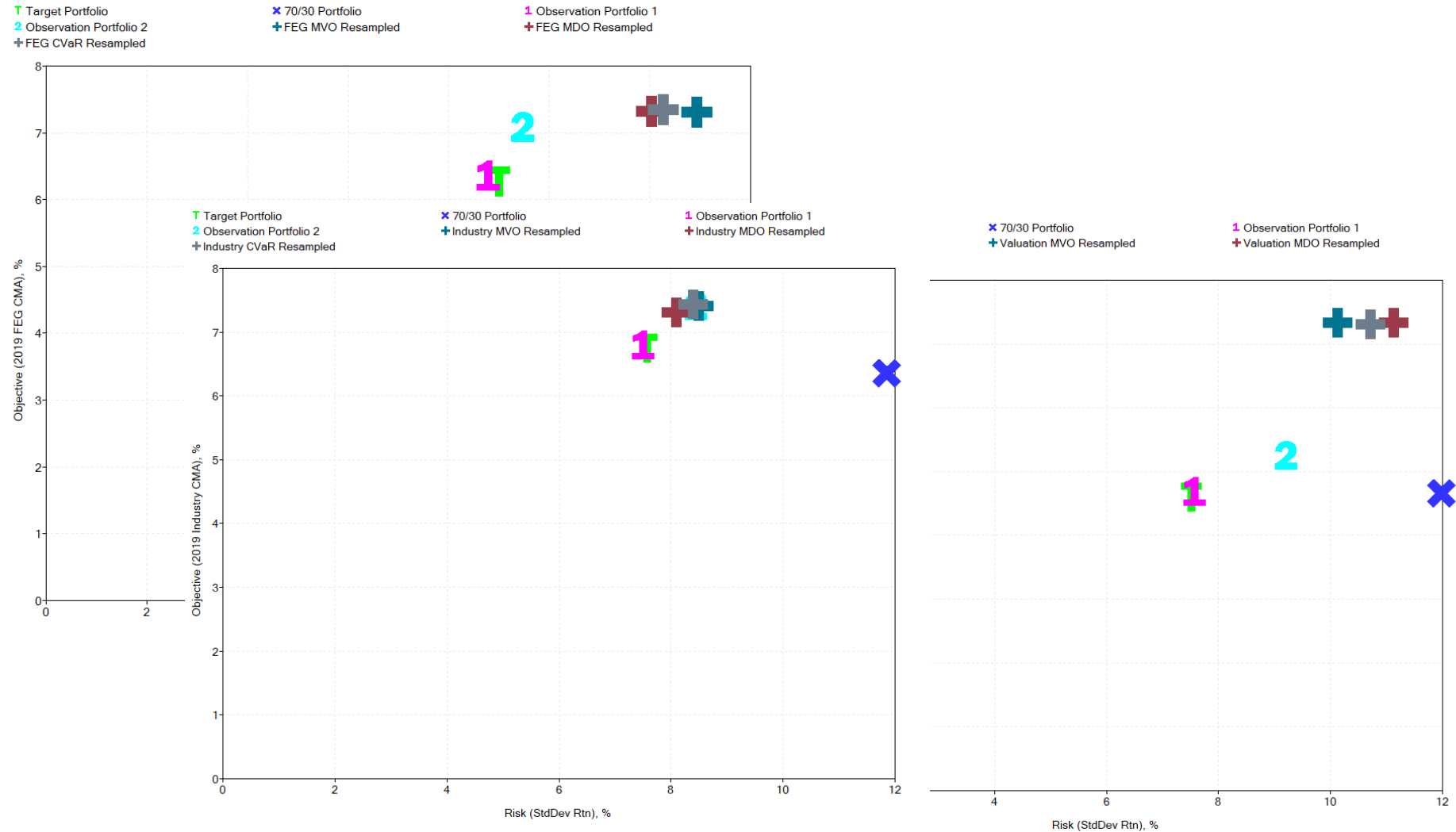


Allocations Across Return



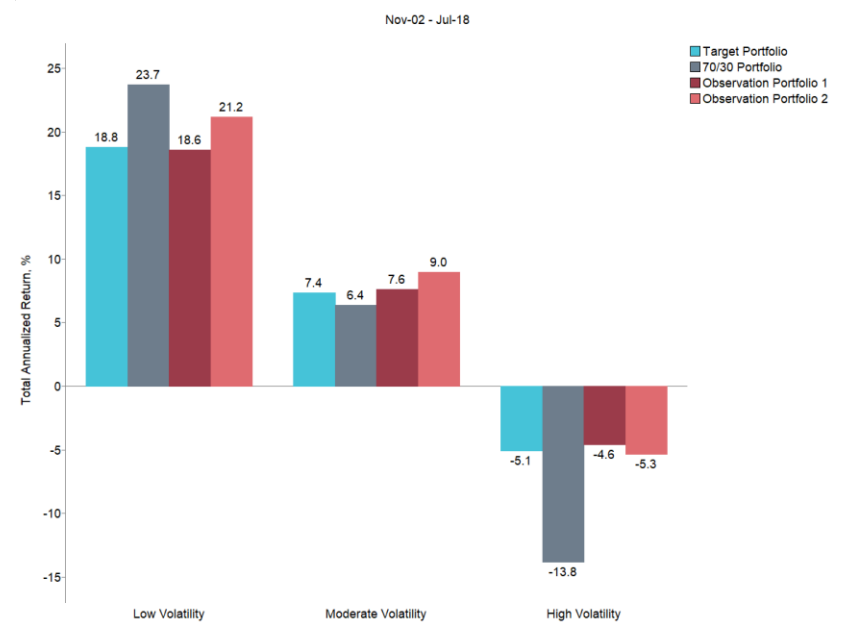
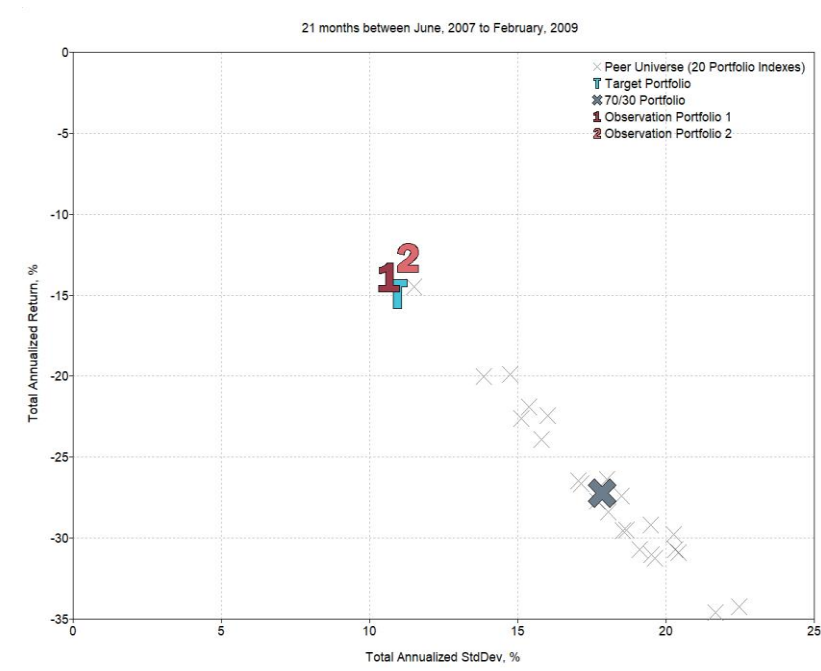
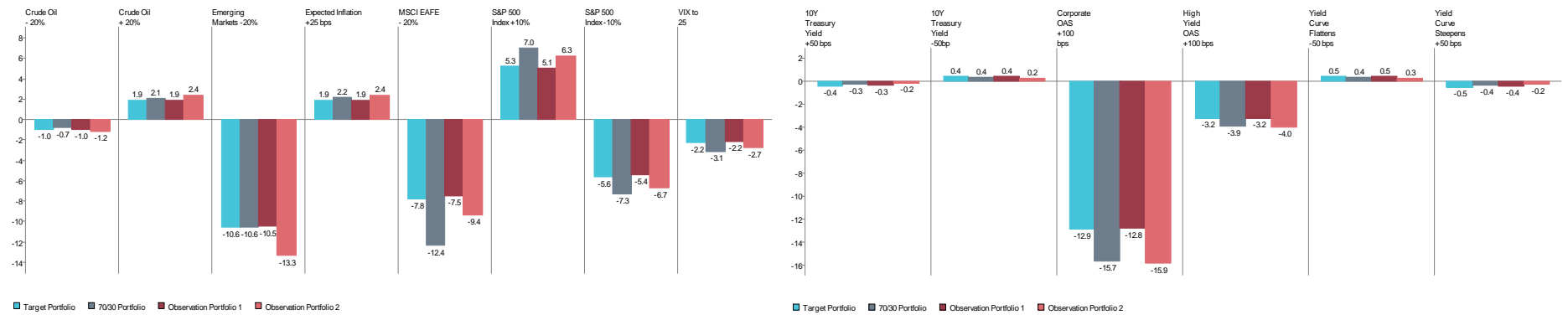
Investment Process

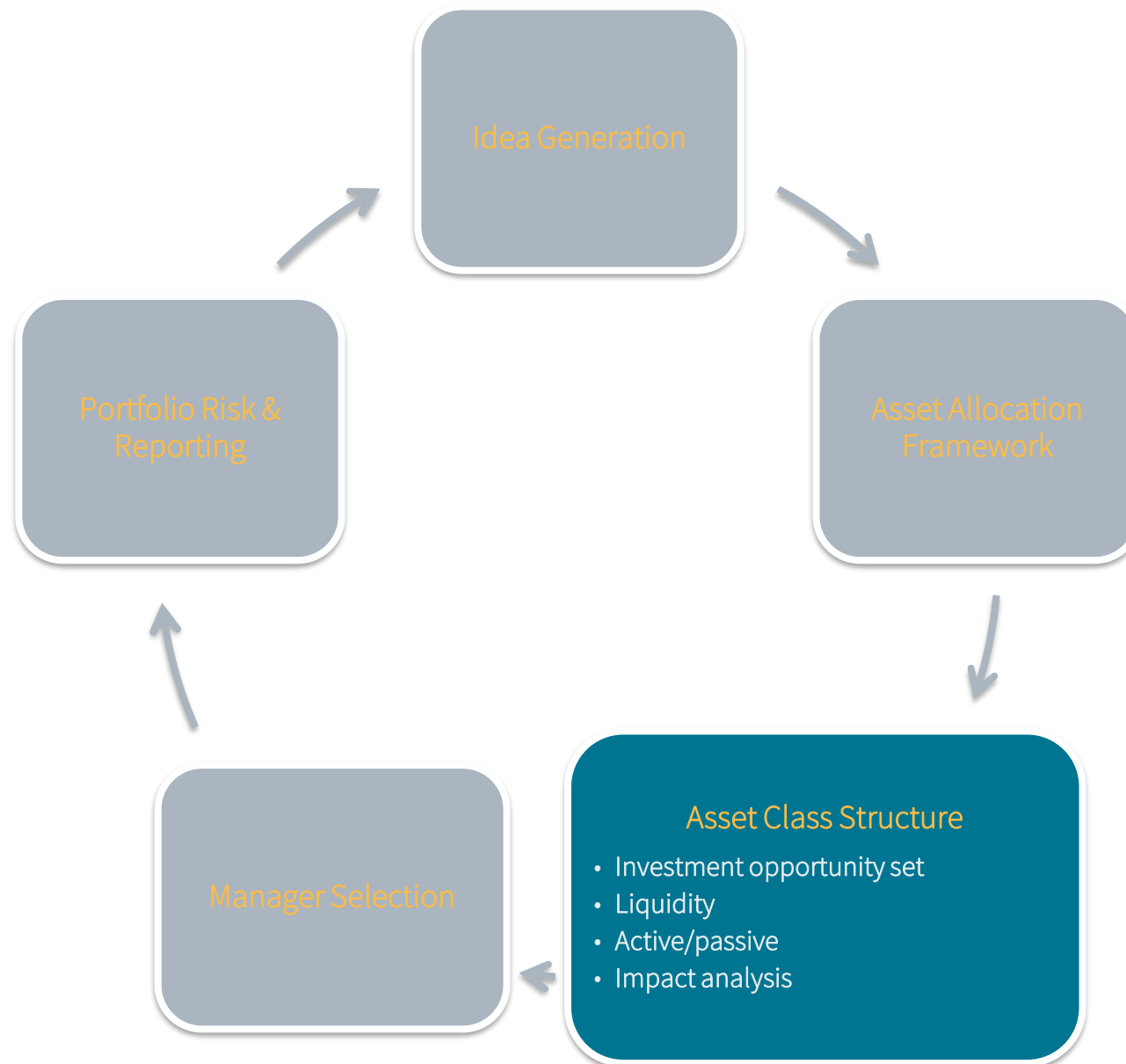
Asset Allocation Framework: Blend Quantitative and Qualitative Judgement



Investment Process

Asset Allocation

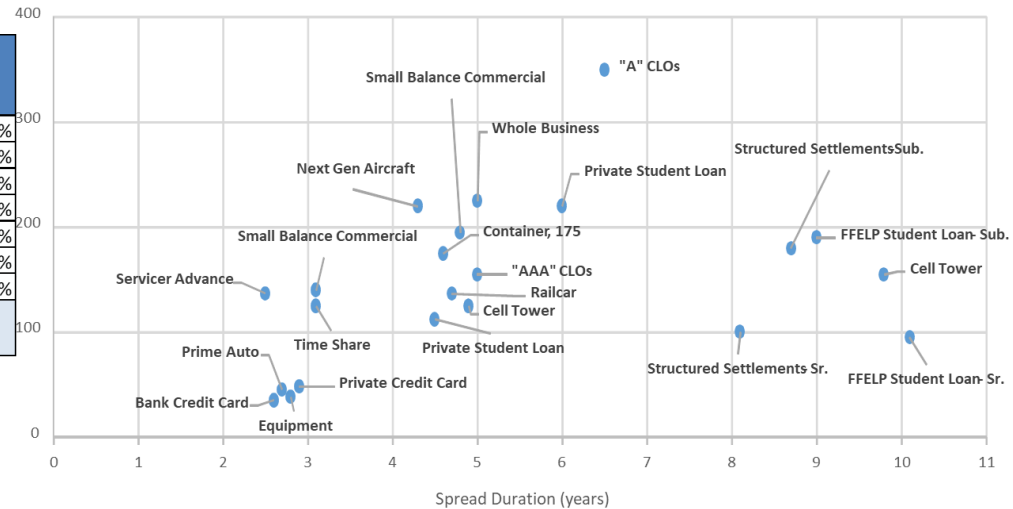




Investment Process

Asset Class Structure

Sector	Amount Outstanding (\$Billions)	% of US Bond Market
Municipal	\$ 3,715	9.3%
Treasury	\$ 13,192	33.0%
Mortgage	\$ 8,728	21.9%
Corporate	\$ 8,158	20.4%
Federal Agency	\$ 1,995	5.0%
Money Markets	\$ 2,807	7.0%
Asset-Backed	\$ 1,327	3.3%
Total	\$ 39,921	



Global Equity | Efficiency: Varies | Number of Countries: 49 | Number of Stocks: ~9,000 | % Top 10 Holdings: 13% | 10 Year Volatility: 14%

US Large & Mid Cap	Int'l Developed Large Cap	Emerging Markets All Cap	Frontier Markets
Efficiency: High Number of Countries: 1 Number of Stocks: ~1,000 % Top 10 Holdings: 25% 10 Year Volatility: 14%	Efficiency: High Number of Countries: 22 Number of Stocks: ~1,000 % Top 10 Holdings: 11% 10 Year Volatility: 15%	Efficiency: Low Number of Countries: 23 Number of Stocks: ~3,000 % Top 10 Holdings: 27% 10 Year Volatility: 18%	
US Small Cap	Int'l Developed Small Cap	China All Shares	
Efficiency: Low Number of Countries: 1 Number of Stocks: ~2,000 % Top 10 Holdings: 4% 10 Year Volatility: 18%	Efficiency: Low Number of Countries: 22 Number of Stocks: ~1,000 % Top 10 Holdings: 3% 10 Year Volatility: 16%	Efficiency: Low Number of Countries: 1 Number of Stocks: ~2,500 % Top 10 Holdings: 24% 10 Year Volatility: 22%	
US Micro Cap		India SMID	
Efficiency: Low Number of Countries: 1 Number of Stocks: ~1,000 % Top 10 Holdings: 7% 10 Year Volatility: 19%		Efficiency: Low Number of Countries: 1 Number of Stocks: ~250 % Top 10 Holdings: 20% 10 Year Volatility: 28%	

Global Growth Weights vs. SITFO Growth Target Weights

Asset Class	Market Size in USD (Trillions)	Global Growth Capital Market (%)	SITFO Target Growth Weight (%)	Difference (%)
Growth	73.1	100.0	100.0	
Public Equity*	69.6	95.3	81.1	-14.3
United States	26.9	36.8	50.0	13.2
Non-US	42.8	58.6	50.0	-8.6
China	5.4	7.4		
Japan	5.4	7.4		
United Kingdom	3.1	4.2		
India	2.1	2.8		
Other	26.9	36.8		
Private Equity**	3.4	4.7	18.9	14.3
North America	1.9	2.6	10.4	7.8
Europe	0.6	0.8	4.7	3.9
Asia	1.2	1.7	2.8	1.2
Rest of World	0.2	0.3	0.9	0.7

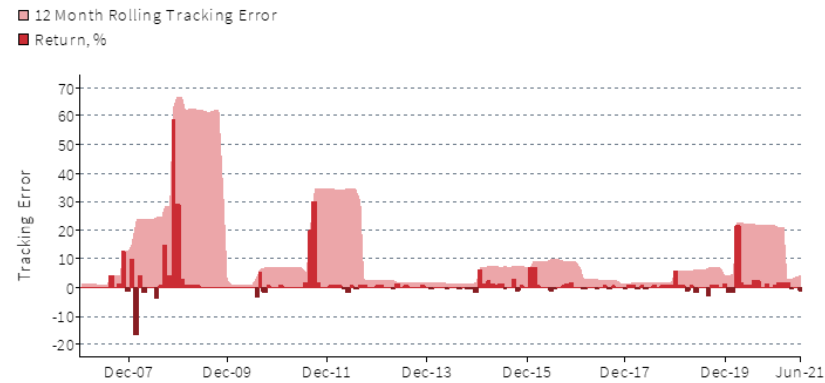
*All public equity figures are from Bloomberg as of 12/31/18.

**Private equity data from Preqin, McKinsey. Data as of 12/31/18.

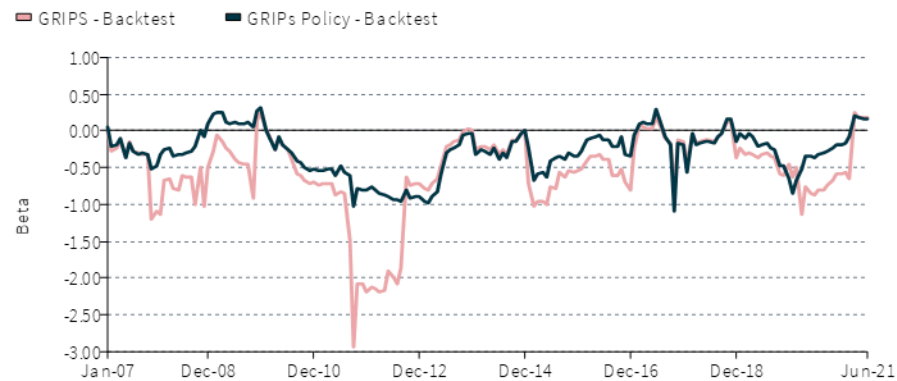
Investment Process

Asset Class Structure

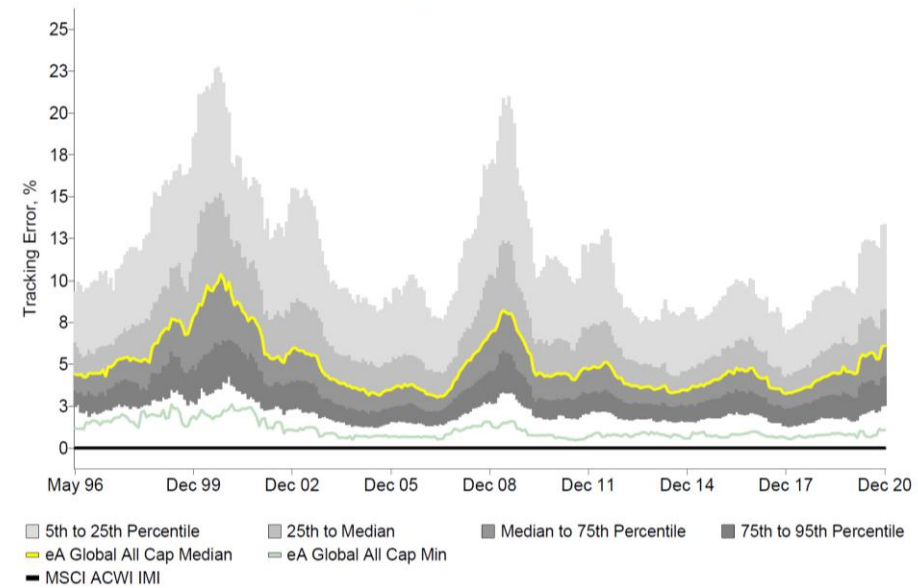
12 Month Tracking Error & Excess Return



12 Month Rolling Equity Beta



Tracking Error: 1 Year Rolling

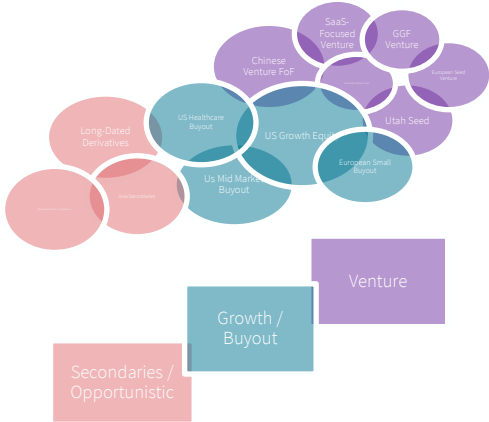
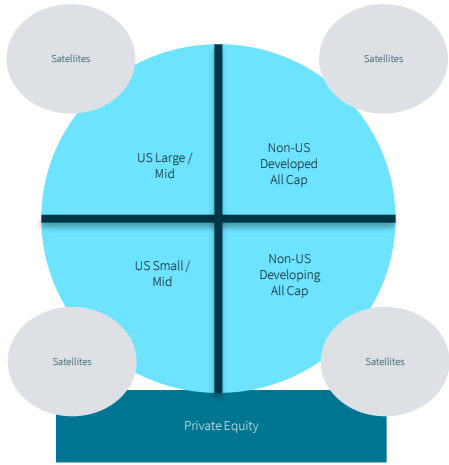
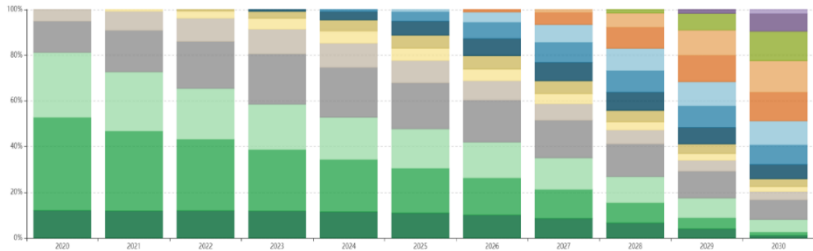
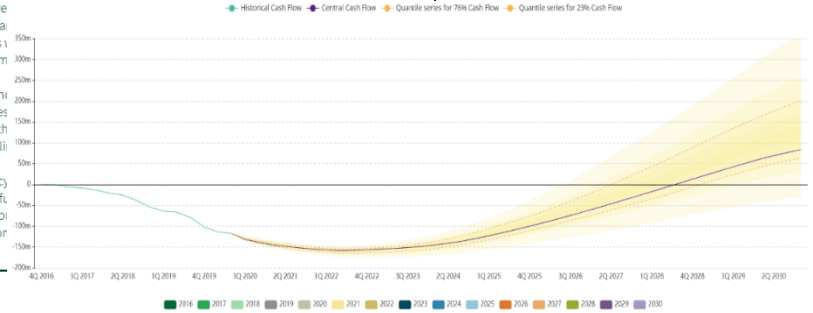
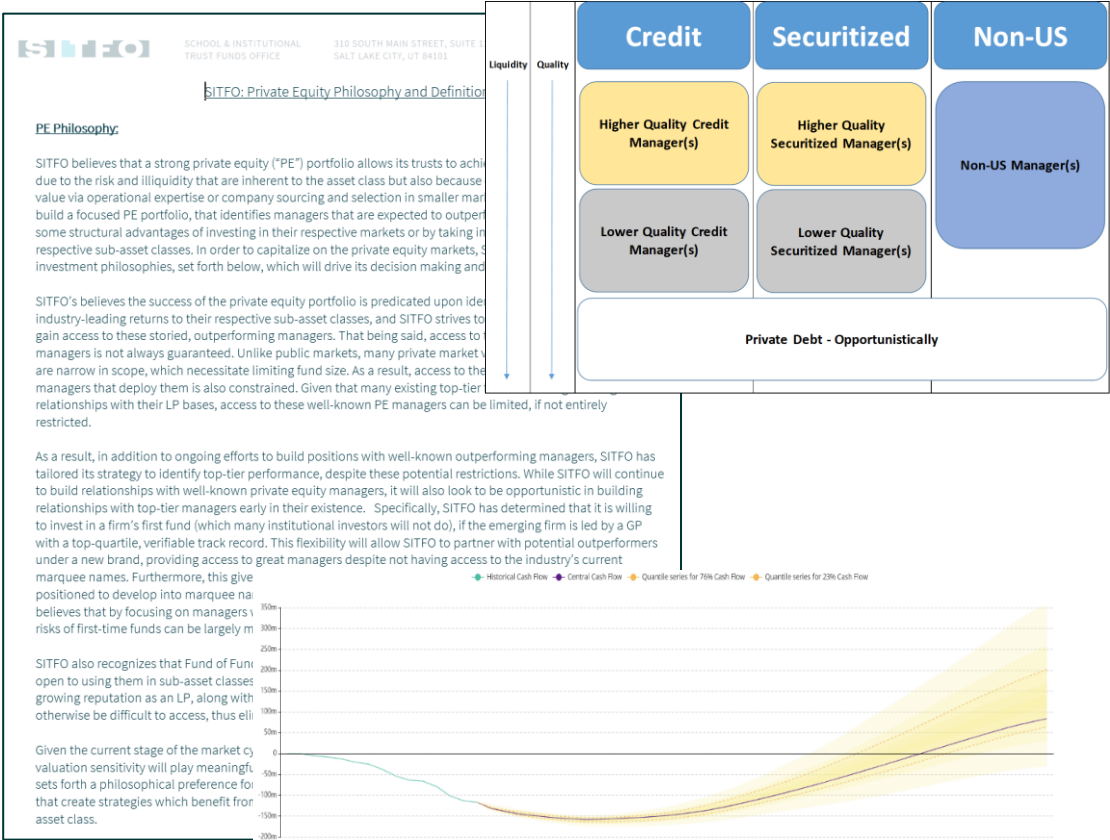


5th to 25th Percentile 25th to Median Median to 75th Percentile 75th to 95th Percentile
eA Global All Cap Median eA Global All Cap Min MSCI ACWI IMI

		Approved	CMA		Proposed	Weighted
		Asset	Assumed Geo		Tracking Error	
Benchmark		Allocation	Return	Volatility	Limit	Tracking Error
Total Portfolio						
Public Equity		33.5%	6.6%	20%	5.5%	5.4%
Global	ACWI IMI	2.0%	6.5%	18%	4%	0.2%
US Large Cap	S&P 500	8.0%	5.5%	16%	3%	0.7%
US Small Cap	Russell 2000	7.5%	6.2%	21%	7%	1.6%
International	EAFE	7.5%	7.1%	19%	4%	0.9%
Emerging Market	MSCI EM	8.5%	7.6%	25%	8%	2.0%

Investment Process

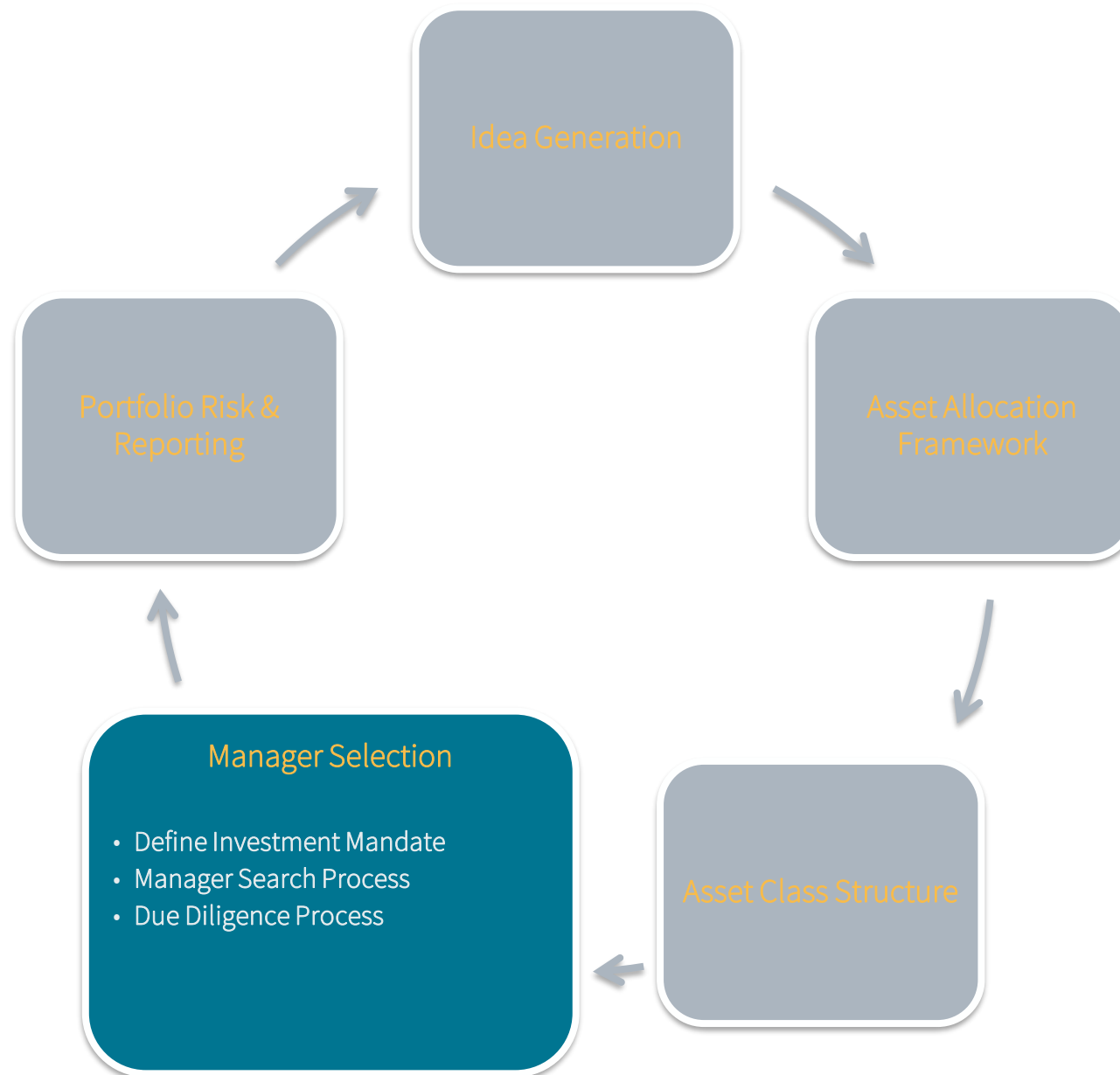
Asset Class Structure



Geographic Area	Target Ranges
U.S.	45%-65%
Europe	10%-30%
Asia	10%-30%
Other	0%-20%

Strategy	Portfolio Weight	# of GPs	FoFs	Target Return
Venture	35%-40%	8-10	0-2	20%-25%
Growth / Buyout	50%-55%	4-6	0-1	15%-20%
Opp / Second	5%-10%	1-5	0-1	10%-15%

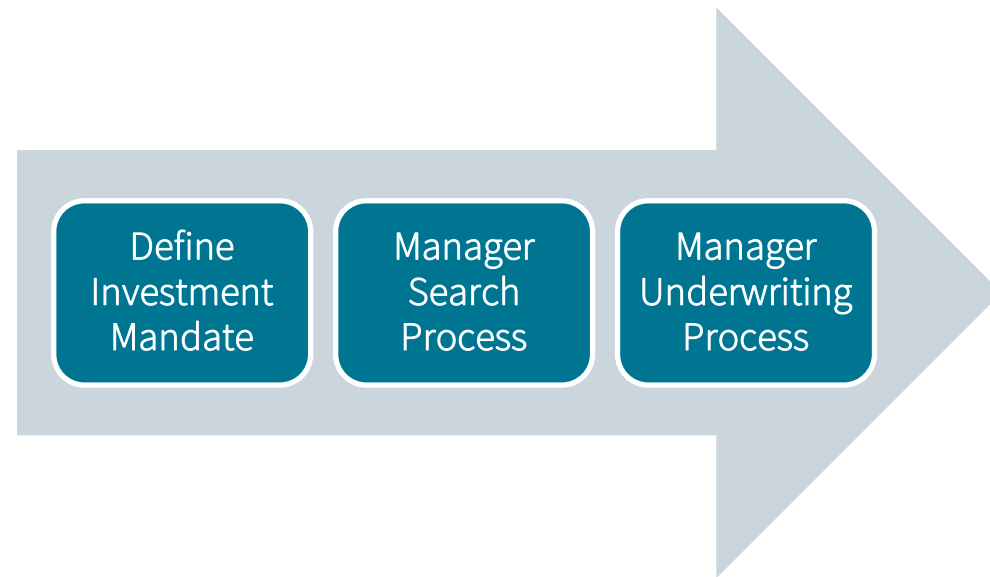




Investment Process

Manager Selection

- Broadly speaking, portfolio performance is a function of 1) asset allocation (majority), and 2) investment manager selection (minority). See slide number 46 for support.
- We're not interested in investing with an average manager. Our goal is to invest with the best managers within each asset class, highly aligned and transparent managers capable of achieving top quartile returns while concurrently minimizing operational risk.
- Investment managers should be selected and monitored using a thorough, repeatable, and well-defined process.



Investment Process

Define Investment Mandate

- New investment mandates are initiated by i) pre-determined asset allocation and pacing demands, and ii) opportunistic ideas generated by SITFO's investment consultants, staff, trustees, and research providers, among other sources.
- It is SITFO's expectation that staff play a proactive role in driving investment ideas, performing the requisite research required to build conviction in an idea and bring it to the team for further discussion.
- Potential investment mandates are tracked and discussed during weekly staff and consultant meetings in efforts to prioritize bandwidth and efforts towards the most pressing opportunities.

Attractive Investments/ Strategies	Role within a Portfolio	Duration of the Opportunity	Expected Net Return Range ¹	Unlevered Expected Risk ²	Correlation to Equities	Correlation to Investment Grade debt
Aviation Leasing	Income	Medium Term	10% to 14%	MEDIUM to HIGH	LOW	LOW
NAV Lending	Income/ Diversification	Short to Medium	9% to 12%	MEDIUM to LOW	LOW	LOW
Global Macro	Diversification	Short to Long Term	5% to 12%	MEDIUM	VARIES	LOW
Asia Pacific Long/Short Equity	Growth	Medium to Long Term	10% to 15%	MEDIUM	VARIES	LOW
Asian Private Credit	Income/ Diversification	Long Term	10% to 15% ⁴	MEDIUM	LOW	LOW
Select Infrastructure	Inflation	Medium Term	10% to 14%	LOW	LOW	LOW
Mining Financing	Income	Long Term	10% to 18%	MEDIUM	VARIES	LOW

2021						
	1Q	2Q	3Q	4Q		
Infrastructure Re-Ups	Manager X	\$15,000,000				
Infrastructure New				New Infra Mandate	\$15,000,000	
Deployed		\$15,000,000	\$0	\$0		\$15,000,000
Annual Shortfall		\$8,200,000	\$8,200,000	\$23,600,000		-\$6,800,000
Natural Resources Re-Ups						
Natural Resources New				New Mining Mandate	\$20,000,000	
Deployed		\$0	\$0	\$0		\$0
Annual Shortfall		\$20,300,000	\$20,300,000	\$20,650,000		\$300,000
Esoteric Re-Ups		Manager Y	\$15,000,000			
Esoteric New						
Deployed		\$0	\$15,000,000	\$0		\$0
Annual Shortfall		\$14,500,000	-\$500,000	-\$500,000		-\$500,000

Investment Process

Manager Search Process

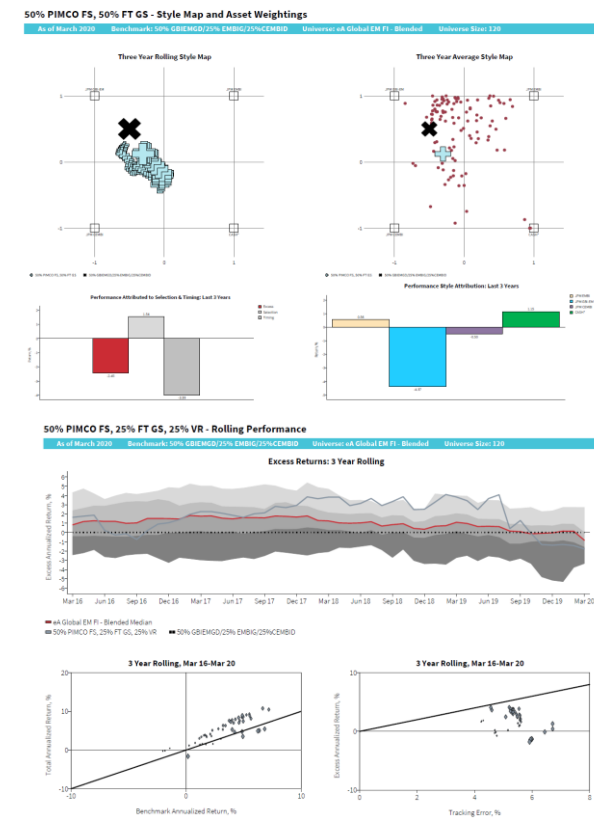
- Once an idea is sourced, SITFO staff will determine certain high-level criteria for inclusion in the manager search (e.g., AUM of less than \$1b, 5-year track record, sector specific v. sector diversified).
- Together with the investment consultants, SITFO staff will work to develop a landscape map of managers and strategies that fit the desired mandate. This is performed by casting a wide net, often headlined by a quantitative screens generated from one of SITFO's various data providers, including eVestment, The Castle, Preqin, and Dynamo.
- Efforts are tracked and in an internal spreadsheet, or "Landscape Map". SITFO may avail itself of a scoring matrix as part of the landscape map to initiate the funnel process and begin to zero in on top candidates.

Firm	Target Fund Size	Fund Life	Albourne Rating	Investment Team Size	Target Return (net)	Strategy	Sector Exposure	Illiquid / Liquid	Breadth of Strat	Geography	Breadth of Geo	Terms	Terms	Stability (Firm/Team)	Track Record	Aggregated Score	Albourne Strengths	Albourne Weaknesses
<i>Lean Distressed</i>																		
PAG	\$500m	6 years	A4 06/2020	35	18%	50% rescue lending and special situations financings; 30% opportunistic credit (NPLs, dislocated bonds); 20% single credit distressed (acquisition of assets from forced sellers)	80% real estate; 20% corporate (diversified)	80 / 20	3	40% China; 40% Australia; 10% Japan; 10% Korea	3	2%; 20% (8%) Fund-Level WF	2	4	3.5	15.50	Team; Quality of Investor Base; Track Record; Scale; Local Presence	Potential Allocation Issues w/ Fund III; Lower Recycling Pace; Increasing Competition in Their Space
Varde	\$750m	7 years	B3 12/2018	36	18%	50% liquid credit (dislocated or stressed corporate credit); 40% Special Situations lending (leans towards distressed/rescue type deals but do traditional direct lending as well); 10% Opportunistic Real Estate (primarily via RE backed Debt)	55-75% corporate; 20-40% real estate; 5-10% financial services	90 / 50	3.5	35% India; 30% Australia; 30% Indonesia; 5% China	3	1.75%; 20% (8%) Fund-Level WF	2.5	3.5	2.5	15.00	Long-Standing Asia Presence; CIO Based in Singapore; Expertise in Liquid and Illiquid; Firm Culture and Stability; Track Record	One Team For All Vehicles Approach; Longer Fund Term
<i>Lean Performing</i>																		
SSG	\$1.5b	6 years	B4 04/2020	45	11-12%	100% first and second lien direct lending to large market companies	30-40% real estate; 60-70% corporate (diversified)	100 / 0	2.5	40-50% India; 30-40% China; remainder SE Asia (Australia, Indonesia, Singapore)	3	1.5%; 20% (7%) Fund-Level WF	3	4	3	15.50	Team; Local Presence; Track Record in Distressed Strategy; Downside protection; Income/Yield; Opportunity Set	Uncertainty of Ares Acquisition; Fund Size Increasing; Conflict/Overlap with Distressed Strategy; Transparency
KKR	\$1b	8 years	Report due in August	130 (including PE team here)	12%	30-40% first lien direct lending; 40-50% second lien lending or junior capital; 10-20% asset backed finance (potentially NPL/distressed exposure here but limited)	70% corporate (diversified); 30% real estate	100 / 0	2.5	25-45% Australia and NZ; 10-20% Singapore; 10-20% Emerging SE Asia; 10-20% India; 5-10% China; 5-10% Japan and Korea	3.5	1.5%; 15% (hurdle); Fund Level WF; 50 bps first close discount	3.5	2.5	2.5	14.50	N/A	N/A
TOR	\$750m	5 years	B3 01/2020	15	15%	80-90% direct lending; 10-20% special situations (e.g. rescue lending, acquisition of assets from forced or non-economics sellers, limited NPLs)	25% real estate; 15% consumer discretionary; 15% industrials; 10% energy; 10% consumer staples; 10% digital infra, remainder HC and financials	90 / 10	3	40% Aust, Hong Kong, UAE, NZ, Singapore; 15% India; 10% China; 10% Philippines; 15% Indonesia, Thailand and Malaysia	3.5	2%; 18% (7%) Fund-Level WF	2.5	3	3	15.00	Team Experience/Breadth; Increased sector and Geography Diversification; Sourcing/Structuring; Scale	Recent Poor Performance in HF; Past Analyst Turnover; Disproportionate Equity Split Between Co-Founders
Dignari	\$750m	4 years	B1 03/2018	9	15%	50% direct lending; 50% special situations (e.g. relief capital in liquidity crunches, acquisition of assets from forced or non-economic sellers, dislocated public bonds, NPLs)	50% real estate; 20% healthcare; 20% technology and other; 10% consumer and financial services	90 / 10	3	Will look across Asia for projects but all loans underwritten to Chinese entities	2.5	1.75%; 20% (8%) Fund-Level WF	2.5	4	3.5	15.50	CIO (Grace), Stable Team, Barrier of Entry in China, Transparent GP, Sophistication of LPs	Small Team, China Risk, Concentrated LP Base
Avenue Fund VI	\$750m	6 years	B2 01/2020	10	20%	45% direct lending; 45% special situations (e.g. acquisition of assets from forced or non-economic sellers), 10% opportunistic liquid credit	50% real estate (residential bias); 20 Financial services; 15% Infrastructure, Water, Mining; 15% diversified other	90 / 10	3	50% Developing Asia (India, China, Indonesia); 50% Developed Asia (Singapore, Hong Kong, Korea, Australia)	3	1.5%; 20% (8%) Fund-Level WF	3	3	3	15.00	PM's Recent Success Turning Around Strategy; Recent Performance; Targetting Attractive Opportunity Set	Nascent Team; PM Led Shipping at PAG Which Was Their Worst Sector; Prior Fund Blow-Up; Potential Conflicts with Firm's Equity Business

Investment Process

Manager Search Process

- SITFO performs quantitative analysis on each manager as part of this stage. Quantitative analysis evaluates i) the historical track record, ii) relevant risk factors and portfolio fit.
- Consultant analysis maybe be relied on and/or integrated as needed. Examples of various analysis can be found below, the majority of which are generated from MPI.



Investment Process

Manager Search Process

- Once a short list has been identified as previously discussed, SITFO staff will look to hold calls/meetings with each of the investment managers and evaluate them on a host of quantitative metrics and qualitative elements. This analysis will be compiled and delivered through a “Screen & Score Memo” as seen to the right, evaluating the following characteristics on a scale of 1 - 4:

- Organization
- People
- Philosophy/Strategy
- Process
- Performance
- Risk
- Other Considerations (e.g., portfolio fit, consultant support, references)
- Terms



Category: Income

Asset Class: Private Debt

Sub-Asset: Opportunistic

XYZ Dislocation Fund

Investment Thesis

COVID-19 catalyzed market dislocations present compelling opportunities across global credit rivaling the scale seen during the GFC. Most of the high yield market is currently trading sub-90 and an analysis of historical performance following similar spreads suggests annualized performance (5 years) of approximately 10 – 20%. SITFO's current pacing suggests an allocation to private credit at present, creating an attractive opportunity to pursue a closed-end credit dislocation fund.

Investment Opportunity

Total Score: 27/32

XYZ Investment Manager is launching a dislocation fund to invest in short-dated investments alongside its flagship private debt fund and credit hedge funds. The strategy aims to exploit opportunities across potential phases of the recently catalyzed credit cycle (see Philosophy/Strategy section below). The fund will rely on the greater XYZ platform to evaluate relative value across transaction types, asset types and geographies over an 18-month investment period. The strategy is anticipated to comprise approximately 50% liquid and 50% illiquid credit.

Organization

3.5

The firm was founded in 1997 and today manages approximately \$9.4 billion in AUM across credit hedge funds (15%), SMAs (15%), closed-end private debt and real estate funds (50%) and closed-end specialty finance funds (20%). The firm has 297 employees in 9 global offices (headquartered in New York City) and is 100% owned by its 10 internal partners. XYZ brings credibility as an established and multi-cycle credit investor with broad global resources and a deep talent pool.

People

3.0

XYZ operates as a single team collectively responsible for the management of the firm's various investment vehicles. The 85-member investment team is led by John Smith (CIO) and Jack Black (Deputy CIO). In early 2017, XYZ announced that Mason Sanders would step back from his co-CIO role effective 1Q 2019 to pursue a better work/life balance. As a potential replacement to Sanders, the firm promoted Black as Deputy CIO. The quality of senior investment professionals under Smith and Black appears experienced and robust and the team has extensive history of investing within the opportunity set.

Philosophy/Strategy

3.5

XYZ is a value oriented and opportunistic manager with a history of opportunistic credit investing. The firm targets complexity and inefficient markets as it searches for relative value and catalysts for active management to add value. The fund will initially target investment grade credit before pivoting into high yield and levered loans as part of phase 1 of the investment period. As the path of the credit cycle comes in focus, the fund is anticipated to target structured credit and private credit as part of phase 2. The manager anticipates commitments to include: US (40%), Europe (40%) and Asia (20%). The strategy has historically been heavy in cyclical, although management anticipates less energy exposure moving forward.

Process

3.0

Investments are analyzed for portfolio fit and valuations. Analysts will develop a framework for adding or unlocking value and potential exits. Deals are sourced through the broker/dealer community, financial advisors, legal advisors, servicers, other firms, and direct relationships of the investment team. All investments require majority approval from XYZ's 12-member investment committee, as well as the underlying sub-investment committee. Deals are structured internally and will be allocated pro-rata alongside XYZ's evergreen credit funds and flagship closed-end funds. Illiquid investments are expected to be monetized from cash flows, sales, and corporate events. The manager has a number of longstanding third-party servicer relationships which will be leveraged along the way.

Performance

3.5

XYZ's private credit track record spans 11 vintages dating back to 2002. The manager's pre-GFC vintage generated modest returns largely near the peer group median, with net IRRs 5-7%, negatively affected primarily by poor performance within the real estate sector. Performance post-GFC has been more notable, with more recent vintages all marking net IRRs of 8-15% and at or above the median in nearly all relevant metrics. As the fund is further anticipated to hold traded credit, SITFO reviewed XYZ's traded credit track record, which outperforms the benchmark and peer group but fails to meet the returns generated by ABC's traded credit platform (see MPI study for details).

Risk

2.5

The fund is expected to be long biased w/ minimal hedges outside of currency. Further, portfolio leverage is not expected to be material and is limited by the fund's offering documents to 20% at the portfolio level. Key person clauses are in place should three senior investment professionals depart during the investment period; nonetheless, this is broad and leaves the door open for significant departures. XYZ and key employees will commit no less than 1% of the total fund raise.

Other Considerations

3.5

The XYZ Dislocation Fund is a 'Top Pick' of Investment Consultant and will be subject to an aggregated consultant client management fee discount (TBD on size). Investment Consultant has performed full IDD on the strategy. SITFO has familiarity with XYZ and has a current relationship with the GP's closed-end specialty finance strategy in which SITFO is invested.

Terms

3.0

Strategy Inception	2002	Management Fee	TBD*
Target Fund Size	\$1.5 billion	Carried Interest	20%, 8% preferred (60/40 catch up)
Current Fund Size	TBD	Target Return (Net)	15 - 17% IRR; 1.5 - 1.7x MOIC
Target Final Close	May 2020	Fund Term	18-months
Target # of Positions	20 - 40	Investment Period	5-years

*The management fee is subject an aggregated consultant client discount which has yet to be determined and may alter the current 'Terms' score of 3.0

Appendix - Track Record

Please see the related MPI study titled *Investment Manager Search – Credit Dislocation Fund* for an analysis of XYZ's corporate and traded credit track record. An overview of performance from the firm's flagship private credit funds over the most recent credit cycle can be found in the related *Excel Benchmarking Analysis*.

Investment Process

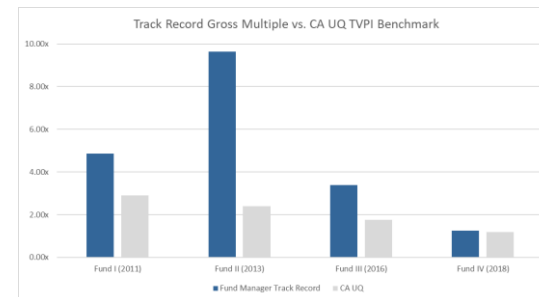
Manager Search Process

- The resulting Screen & Score Memo along with the applicable landscape map and quantitative analysis deliverables will be distributed, discussed, and evaluated amongst SITFO staff, consultants, and Trustees.
- This step is intended to provide an overview and opportunity for all involved (including Trustees) to raise questions and concerns before a full product underwriting process is to begin.
- Ultimately, a manager(s) will be identified for potential investment and further work at this stage.

Fund Manager Track Record	# of Co's	Total Cost	% of Total Cost	Total Value	% of Total Value	Gross Multiple	Realized Cost	Realized Value	% of Realized Value	Realized Multiple	>3x Deals
Baseball Analysis											
Home Runs (3x+)	18	\$12,337.1	18.0%	\$118,660.3	62.4%	9.62x	-	-	-	-	18
Hits (2.0x to 2.9x)	2	4,775.0	7.0%	11,513.1	6.1%	2.41x	-	-	-	-	-
Walks (1x to 1.9x)	28	45,077.1	65.8%	58,769.7	30.9%	1.30x	-	-	-	-	-
Strikes (less than 1.0x)	5	6,267.4	9.2%	1,349.0	0.7%	0.22x	50.0	-	-	-	-
TOTAL	53	\$68,456.6	100.0%	\$190,292.1	100.0%	2.78x	\$50.0	-	-	-	18
F/P/U											
Fully Realized	1	50.0	0.1%	-	-	-	50.0	-	-	-	-
Partially Realized	-	-	-	-	-	-	-	-	-	-	-
Unrealized	52	68,406.6	99.9%	190,292.1	100.0%	2.78x	-	-	-	-	18
TOTAL	53	\$68,456.6	100.0%	\$190,292.1	100.0%	2.78x	\$50.0	-	-	-	18
Industry											
Consumer	27	40,937.1	59.8%	119,297.4	62.7%	2.91x	-	-	-	-	27
B2B	19	20,499.5	29.9%	56,999.4	30.0%	2.78x	-	-	-	-	19
B2C	-	-	-	-	-	-	-	-	-	-	-
B2B2C	7	7,020.0	10.3%	13,995.3	7.4%	1.99x	50.0	-	-	-	-
TOTAL	53	\$68,456.6	100.0%	\$190,292.1	100.0%	2.78x	\$50.0	-	-	-	46
Lead Investor											
Partner A	-	-	#DIV/0!	-	#DIV/0!	-	-	-	-	-	-
TOTAL	-	-	#DIV/0!	-	#DIV/0!	-	-	-	-	-	-

Note: \$ in thousands.

Performance Summary							
Fund	Vintage	Capital Deployed ¹	Realized Value	% of Value Realized	Unrealized Value	% of Value Unrealized	Total Value
Fund Manager Track Record	2012	\$68,456.6	-	0.0%	\$190,292.1	100.0%	\$190,292.1



Johnny Lodder <lodder@utah.gov>
to School <[redacted]>

Sep 10, 2021, 3:05 PM

Trustees - SITFO's private real estate portfolio now represents roughly 4% of the total portfolio, nearing closer to the long-term target of 5%. This has resulted in a slow-down in pace commitments, with our updated pacing model calling for roughly \$40mm (roughly two commitments) across each of the next three years. This allows us to hit the target allocation of 5 without overshooting. At present, our private real estate portfolio is allocated roughly 8% to Asia, well below our target for the region of 15 - 25%. Current exposure comes via a single investment in [redacted] which we committed \$25mm to in 2016.

As our real estate portfolio continues to mature, we are once again looking to add a dedicated Asia commitment to keep up with the portfolio's geographical targets and pacing demand led to a search process which we kicked off in 10/2021. The goal of this search was to identify a manager which could provide pan-Asia exposure, meeting the various preferences a demands outlined in our [private real estate due diligence memo](#), while also providing upper quartile return potential and a strong link to inflation. As part of this search, we have spoken to several contenders who are currently raising a fund or expected to be raising a fund in the upcoming year. These names can be found in the landscape map attached below. Ultimately, these names that stood out, those being [redacted]. I have attached screen memos for each opportunity I reviewed.

As you'll see in the screen memos, we are planning to move forward with an allocation to [redacted] at this time. The strategy is diversified across both countries and sector types and is most levered real estate platforms in Asia. The team is tried and tested, following a thoughtful approach to deal selection and risk mitigation, while also being supported by industry tie and resources made possible by the broker [redacted]. Further, the strategy track record has been strong in recent vintages, with our 2016 allocation to the platform market top quartile across all relevant performance metrics. Ultimately, we believe that LaSalle continues to provide the best risk-adjusted return among the peer group and anticipate a \$20 allocation to the fund at its September 30th first close.

Albourne has been highly involved in this search process and has also recommended we move forward with [redacted] at this time. We will be supported by Albourne with full investor diligence, operational due diligence, and legal/sub-doc reviews on the investment. I will plan on circulating the full underwriting packet in a week or two with additional support for the investment.

Kind regards,

Johnny Lodder
[redacted]
Utah School & Institutional Trust Funds Office
310 S Main St, Suite 1250
Salt Lake City, UT 84101
e: 801-853-8339 | m: 385-438-8775
[utah.gov](#)

7 Attachments

Private Real Estate Due Diligence Memo
Landscape Map
Screen Memo - [redacted]
Screen Memo - [redacted]
Screen Memo - [redacted]
Screen Memo - [redacted]
Screen Memo - [redacted]

Investment Process

Manager Selection: Underwriting Process

Once an investment manager has been determined for a potential investment, SITFO, together with its investment consultants, will underwrite the investment opportunity.

The majority of investments pursued by SITFO will be tracked and/or recommended by one of Albourne or RVK. That said, there will be instances where Albourne or RVK have not fully underwritten an investment. Consultants will be commissioned to performed due diligence where applicable.

The resulting due diligence packet is extremely thorough will be distributed to Trustees prior to investment for additional analysis and discussion. This packet may exceed 100 pages in total of analysis and insight, and includes the below:

- Screen & Score Memos (including applicable quantitative analysis)
- Investment Due Diligence Memo (performed by SITFO and/or one of RVK or Albourne)
- Thesis Memo (performed by SITFO)
- Operational Due Diligence Memo (performed by SITFO and/or one of RVK or Albourne)
- Legal Terms Review (performed by Albourne)



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Investment Due Diligence Memo

Värde Dislocation Fund ("Credit Dislocation Fund")

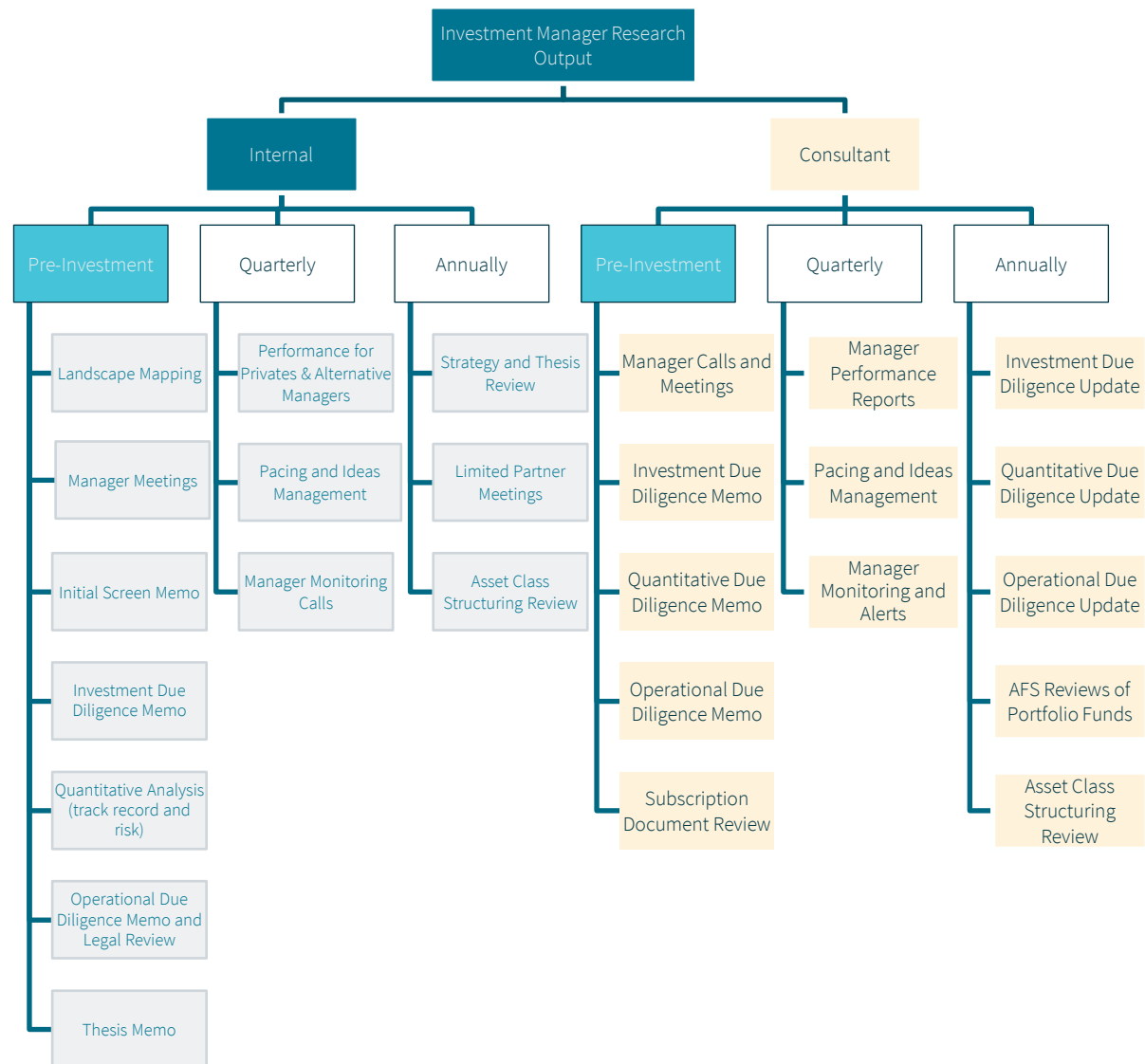
Manager	Värde Management, L.P.	Strategy Inception	1993
Product	Värde Dislocation Fund	Final Close	TBD
Category	Income	Target Fund Size / Hard Cap	\$1 billion / N/A
Asset Class	Private Debt	Investment Size / Portfolio Weight	\$15 million / 0.7%
Sub-Asset Class	Opportunistic	Target IRR / Multiple (net)	15 – 17% / 1.5 – 1.7x
Strategy	Dislocated Credit	Investment Period	18 months
Benchmark / Peer Group	BAML Global HY / HFRI ED: Distressed	Fund Term	5-years (two optional one-year extensions at LPAC consent)
Management Fee	0.80%	Primary Risks and Betas	Credit and illiquidity
Incentive Fee	20%; 8% preferred (60/40 catch-up)	Co-Investments	No
Waterfall	European (fund-level)	Analyst	Johnny Lodder

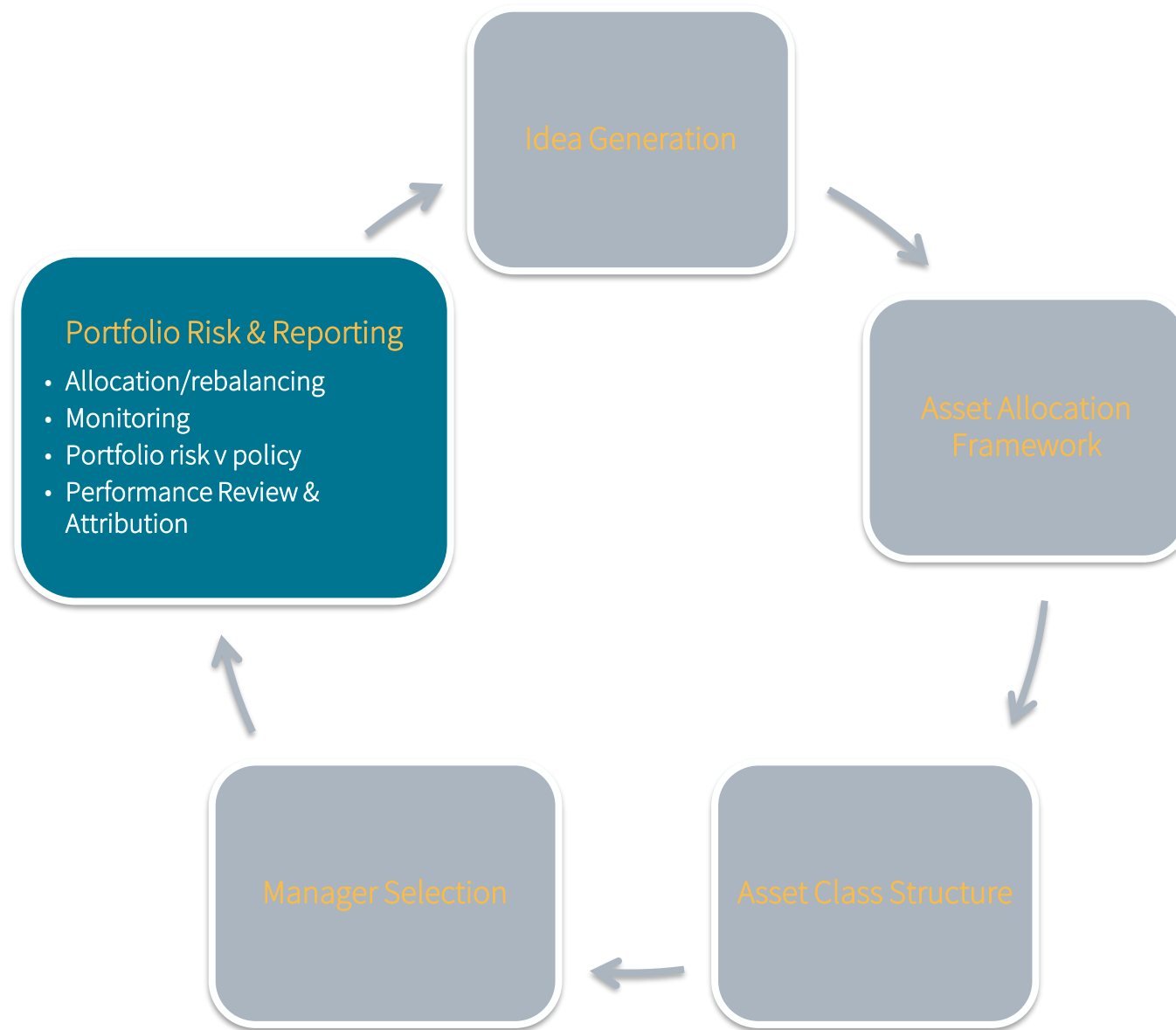
The Credit Dislocation Fund provides SITFO with a unique opportunity to exploit the current opportunity set catalyzed by the COVID-19 pandemic, highlighted by its ability to pivot across the distressed credit cycle and within various sectors, liquidity profiles and geographies. The strategy is supported by the greater Värde platform which has established itself as a distinguished value-oriented manager with broad global resources and is overseen by a robust and experienced team that has generated relative outperformance across a variety of liquid and illiquid credit-centric strategies. Central risks to the opportunity include the greater market volatility and unknowns associated with the COVID-19 pandemic, as well as a historical sector reliance by the investment team. Värde has also experienced a large increase in AUM in recent years as well as the loss of a Co-CIO. To their defense, it appears the firm has successfully mitigated these changes, having groomed impressive talent, broadened its scope and infrastructure within reason, and continued to successfully deploy capital to date. Please see the Thesis Memo provided for further details on the opportunity's risks and merits.

Management Company

Overview Värde Management, L.P. ("Värde") was founded in 1993 by George Hicks (Co-CEO), Marcia Page (since retired), and Gregory McMillan (since retired). The firm has since established itself as a distinguished value-oriented manager with broad global resources, a deep talent pool and a history of distressed credit investing over multiple credit cycles, having invested over \$68 billion since formation.

The firm employs approximately 315 full-time professionals across 13 global offices at present, including London, Dublin (non-investment personnel only), Luxembourg (non-investment personnel only), Madrid, Milan, Singapore, Hong Kong, Mumbai, Sydney, Tokyo, Houston, New York and Minneapolis (headquarters).





Investment Process

Portfolio and Risk Reporting

It is *possible* to manage risk, but *virtually impossible* to manage returns

SITFO risk and reporting is designed to both *keep the board informed* and focus on information that can help *lead to better decisions* with three primary components:

1. Asset Allocation

- Asset allocation typically drives 90+% of return and risk
- What are the allocation by GRID bucket and asset class? How are they different than policy?

2. Active Risk

- Where is the portfolio different than the policy?
- What are the risk attributes of the differences between the portfolio and policy?
 - VaR (Contribution to VaR)
 - Tracking Error
 - Risk factors – equity, rates, credit, inflation, currency

3. Performance

- Did the portfolio → GRID bucket → asset class → manager meet the objective? If not, why?
- What are the positive/negative contribution to both absolute and relative returns.

Investment Process

Portfolio and Risk Reporting

According to academic studies and empirical evidence, asset allocation drive approximately 90% of an institutional portfolio's risk and return

Strategic Asset Allocation

Manager Selection

Rebalancing &
Tactical Asset
Allocation

Investment Process

Portfolio and Risk Reporting: Sample Rebalancing



Category	Interim Target	Q4/21 NAV	Q4/21 Current
Growth	43.5%	43.6%	43.5%
Global Equity	5.0%	4.5%	4.5%
			1.9%
			2.6%
US Equity	15.0%	14.8%	14.8%
US Large Cap	8.0%	8.5%	8.5%
US Small Cap	7.0%	6.3%	6.3%
US Small Cap			4.5%
Microcap			1.8%
International Equity	16.0%	16.9%	16.7%
International Developed Equity	7.5%	8.0%	8.0%
Emerging Markets Equity	8.5%	8.9%	8.7%
Emerging Market			5.8%
India SMID			2.0%
China			0.3%
China A			0.6%
Private Equity	7.5%	7.4%	7.4%
Private Equity Buyout			2.9%
Private Equity Venture			4.5%
Opportunistic/Special Situations			0.0%
Real Assets	17.5%	16.7%	16.8%
Public Real Assets	10.5%	9.9%	9.9%
MLP			3.0%
Natural Resources			2.7%
Infrastructure			2.4%
Real Estate			1.9%
Private Real Estate	4.0%	4.0%	4.0%
Private Real Assets	3.0%	2.9%	2.9%
Income	27.0%	27.1%	27.1%
Credit	6.0%	6.5%	6.5%
Securitized	6.5%	7.4%	7.4%
Insurance Linked Securities	3.5%	3.1%	3.1%
Non-US	4.0%	3.9%	3.9%
Private Debt	7.0%	6.1%	6.1%
Defensive	12.0%	12.7%	12.7%
TIPS	2.5%	2.2%	2.2%
Long US Treasury	2.5%	2.0%	2.1%
Systematic Convexity	7.0%	6.0%	6.0%
Cash	0.0%	2.4%	2.4%



SITFO Pro-Forma Cash Flows as of 09/24/21					
Cash Inflows	9/20/2021	9/27/2021	10/4/2021	10/11/2021	10/18/2021
Cash Accounts					
Beginning Cash Balance	\$ 61,827,006	\$ 60,991,600	\$ 85,248,347	\$ 89,248,347	\$ 93,818,593
SITFA Contributions	\$ -	\$ -	\$ 2,000,000	\$ -	\$ -
Securities Lending Income	\$ -	\$ -	\$ -	\$ 50,000	\$ -
Additional Income	\$ -	\$ -	\$ 2,000,000	\$ -	\$ -
Redemptions					
123 Asset Manager	\$ 10,000,000				
PDQ Capital Partners	\$ 10,000,000			\$ 5,000,000	
Total Redemptions	\$ 20,000,000	\$ -	\$ -	\$ 5,000,000	\$ -
Total Cash and Redemptions	\$ 41,827,006	\$ 60,991,600	\$ 89,248,347	\$ 94,298,347	\$ 93,818,593
Cash Outflows	9/20/2021	9/27/2021	10/4/2021	10/11/2021	10/18/2021
Distributions					
Quarterly Distribution & Expense Draw	\$ -	\$ 25,000,000	\$ -		
Subscriptions					
Total Subscriptions	\$ -	\$ -	\$ -		
Total Distributions and Subscriptions	\$ -	\$ 25,000,000	\$ -		
Capital Activity	9/20/2021	9/27/2021	10/4/2021		
Distributions					
Placeholder					
Total Distributions	\$ -	\$ -	\$ -		
Total Earnings Distributions - HIDE	\$ -	\$ -	\$ -		
Total Earnings Distributions Check - HIDE	\$ -	\$ -	\$ -		
Capital Calls					
Placeholder					
XYZ Opportunities Fund	\$ (300,000)				
Rock Razor Edge Partners	\$ (1,254,974)				
Bottom Line Opportunities	\$ (6,784,567)				
Spitfire Ventures	\$ (2,485,840)				
Rainer Fund		\$ (578,458)			
Short Pier Partners		\$ (164,795)			
Mountain Peak Partners					
Total Capital Calls	\$ (10,835,406)	\$ (743,253)	\$ -		
Net Capital Activity	\$ (10,835,406)	\$ (743,253)	\$ -		
End NET Cash Balance	\$ 60,991,600	\$ 85,248,347	\$ 89,248,347		
Cash Balance as a % of AA	1.54%	0.64%	0.77%		

RUSSELL 2000 - S&P 500, 3yr Rolling Total Return, Weekly



RUSSELL 2000 - S&P 500, 3yr Rolling Total Return, Weekly



Valuation & Momentum Report

9/16/2021

	Current	Interim Benchmark	Current Less
Systematic Convexity	6.03%	7.00%	-0.97%
US Small Cap	6.30%	7.00%	-0.70%
Public Real Assets	9.83%	10.50%	-0.67%
Global Equity	4.53%	5.00%	-0.47%
Long US Treasury	2.09%	2.50%	-0.45%
Insurance Linked Securities	3.06%	3.50%	-0.44%
TIPS	2.16%	2.50%	-0.34%
Non-US	3.92%	4.00%	-0.08%
Emerging Markets Equity	8.69%	8.50%	0.19%
US Large Cap	8.51%	8.00%	0.51%
International Developed Equity	8.04%	7.50%	0.54%
Credit	6.55%	6.00%	0.55%
Securitized	7.42%	6.50%	0.92%

Growth	Composite	Value	Momentum
MSCI Japan Index	0.72	0.44	1.00
MSCI Emerging Markets Europe Middle East and Africa Inc	0.68	0.38	1.00
MSCI EAFE Index	0.67	0.34	1.00
MSCI Japan SMID Cap Index	0.65	0.31	1.00
S&P 800 Financials Sector GICS Level 1 Index	0.64	0.29	1.00
S&P 800 Energy Sector GICS Level 1 Index	0.60	0.59	0.80
S&P 800 Health Care Sector GICS Level 1 Index	0.55	0.30	0.80
MSCI Europe Index	0.55	0.30	0.80
MSCI Europe SMID Cap Local Index	0.50	0.20	0.80
MSCI India Index	0.50	0.00	1.00
Vanguard Total World Stock ETF	0.50	0.00	1.00
S&P 800 Real Estate Sector GICS Level 1 Index	0.50	0.00	1.00
S&P 800 INDEX	0.50	0.00	1.00
S&P 800 Communication Services Sector GICS Level 1 Index	0.50	0.00	1.00
S&P 800 Information Technology Sector GICS Level 1 Index	0.50	0.00	1.00
Russell 2000 Index	0.50	0.00	1.00
MSCI FM FRONTIER MARKETS	0.50	0.00	1.00
MSCI India Small Cap USD	0.50	0.00	1.00
S&P 800 Consumer Discretionary Sector GICS Level 1 Index	0.50	0.00	1.00
S&P 800 Consumer Staples Sector GICS Level 1 Index	0.40	0.00	0.80
S&P 800 Utilities Sector GICS Level 1 Index	0.40	0.00	0.80
MSCI Emerging Markets Latin America Index	0.38	0.52	0.20
S&P 800 Industrials Sector GICS Level 1 Index	0.30	0.00	0.80
Russell 2000 Index	0.30	0.00	0.80
S&P 800 Materials Sector GICS Level 1 Index	0.20	0.00	0.40
Russell Microcap Index	0.20	0.00	0.40
MSCI China Index	0.19	0.38	0.00
MSCI CHINA A ONSHORE Index Local	0.17	0.34	0.00
MSCI Emerging Markets Index	0.11	0.23	0.00
MSCI EM Asia Index	0.00	0.00	0.00

Real Assets	Composite	Value	Momentum
Bloomberg Commodity Index	0.67	0.33	1.00
S&P Global Natural Resources Total Return Index	0.66	0.71	0.60
FTSE NAREIT Timber REITs Index USD	0.61	0.61	0.60
S&P North American Natural Resources Sector Total Return	0.56	0.53	0.60
Alerian MLP Index	0.55	0.71	0.40
Generic 1st 'CO' Future	0.50	0.00	1.00
Generic 1st 'NG' Future	0.50	0.00	1.00
Generic 1st 'CL' Future	0.50	0.00	1.00
Alerian MLP Infrastructure Index	0.48	0.56	0.40
MSCI US REIT Index	0.40	0.00	0.80
Bloomberg E&E Energy Subindex	0.35	0.30	0.40
FlexShares STOXX Global Broad Infrastructure Index Fund	0.34	0.28	0.40
GOLD SPOT \$/OZ	0.30	0.00	0.20

Income	Composite	Value	Momentum
Bloomberg Non-Agency Investment Grade CMBS: Bob To	0.67	0.34	1.00
Bloomberg: EM USD Aggregate: Corporate	0.64	0.28	1.00
Bloomberg Municipal Bond Index Total Return Index Valu	0.50	0.00	1.00
Bloomberg Pan-European Aggregate Corporate Statistics	0.50	0.00	1.00
Bloomberg Pan-European Aggregate: Credit Statistics Ind	0.50	0.00	1.00
Bloomberg CMBS Investment Grade Statistics Index	0.50	0.00	1.00
Bloomberg US Convertibles Preferreds Total Return Unh	0.38	0.33	0.40
Bloomberg US Convertibles Composite Total Return Unh	0.31	0.22	0.40
Bloomberg US Corporate Statistics Index	0.20	0.00	0.40
Bloomberg US Corporate High Yield Statistics Index	0.20	0.00	0.40
Bloomberg Pan-European High Yield Statistics Index	0.20	0.00	0.40
Bloomberg US Agg ABS Statistics Index	0.20	0.00	0.40
Bloomberg EM USD Aggregate Statistics Index	0.20	0.00	0.40
Bloomberg US Aggregate Statistics Index	0.20	0.00	0.40
Bloomberg EM Local Currency Government Statistics Ind	0.10	0.00	0.20
Bloomberg US MBS Index Statistics Index	0.10	0.00	0.20

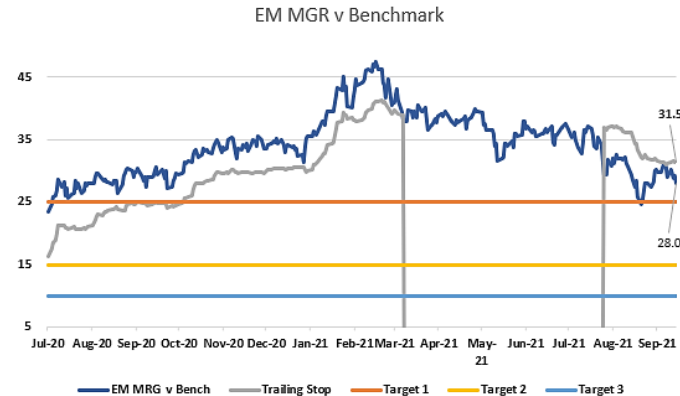
Defensive	Composite	Value	Momentum
SG Short-Term Traders Index	0.78	0.78	0.80
TSY INFL IX N/B	0.60	0.41	0.80
TSY INFL IX N/B	0.54	0.47	0.80
China Govt Bond Generic Bid Yield 10 Year	0.40	0.00	0.80
US TREASURY N/B 10YR	0.40	0.00	0.80
Bundesrepublik Deutschland Bundesanleihe	0.40	0.00	0.80
SG CTA Index	0.35	0.50	0.20
SG Trend Index	0.35	0.50	0.20
US TREASURY N/B 10YR	0.30	0.00	0.80
India Govt Bond Generic Bid Yield 10 Year	0.23	0.25	0.20
Japan Government Ten Year Bond	0.20	0.00	0.40
Treasury Bill (U.S.) 90 DAY (Y)	0.20	0.00	0.40
United Kingdom Gilt	0.10	0.00	0.20

Investment Process

Portfolio and Risk Reporting: Sample Implementation

Emerging Market Equity

With the declines in China, EM MGR outperformed the benchmark by ~1.2% yesterday.



Notional	\$ 269,071,325						
Asset Allocation				Trade Plan			
Manager	Current Allocation	Target Allocation	Distance from Target	-25% Cuml. Relative Performance*	-15% Cuml. Relative Performance*	-10% Cuml. Relative Performance*	Next 5% move in either direction*
EM MGR	70%	47%	\$ 61,886,405	\$ (15,471,601)	\$ (15,471,601)	\$ (15,471,601)	\$ (15,471,601)
Dull	5%	18%	\$ (34,979,272)				Have to determine if want to O/W
Don Juan	5%	18%	\$ (34,979,272)	\$ (15,471,601)	\$ (15,471,601)		Don Juan or add to Dull
Untied	22%	18%	\$ 10,762,853				

*Based upon cumulative relative performance of PPA v Benchmark (tracked in daily commentary)

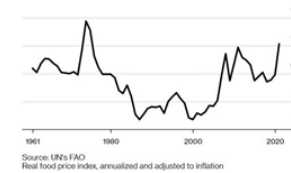
Morning Comment

While I don't observe the Yom Kippur holiday, a friend once told me it is inappropriate to wish someone a "Happy Yom Kippur". The customary greeting is "May you be sealed in the Book of Life."

Yesterday was an interesting trading day as the market staged a late morning/mid-day rally that was broadly held thru the close. The market pushed higher until 30 minutes before the VIX fix and then went lower. Given Yom Kippur falls on a Thursday this year, the idea floating around is yesterday's price action was due to many traders taking a long weekend (if they observe the holiday or not) and putting thru their trades yesterday. In the commodity complex, oil and gas soared yesterday on unexpected declines in oil as well as gas & distillates inventories. More news stories floating around about inflation as the idea all price increases won't be transitory. One of the more interesting articles comes from Bloomberg showing the average grocery bill is the most expensive since the 1970s (<https://www.bloomberg.com/news/articles/2021-09-15/grocery-food-price-1970s-is-a-big-challenge-for-governments>).

Grocery Bills

Food is more expensive than almost anytime in the past 60 years



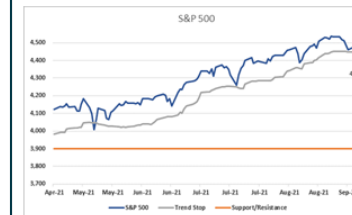
Overnight China reported several disappointing developments. First, retail sales growth came in well below expectations at just 2.5% vs. 7% expected. Also missing expectations was Industrial Production, reporting 5.5% growth vs. 5.8% expected. Further, China told banks Evergrande will not be able to pay interest next week. Evergrande is sitting on more than \$300B in debt and Chinese authorities appear to be laying the groundwork for a debt restructuring. Both GS and JPM have come out with statements that Evergrande debt problems will have spillover risks. These problems pushed equity futures lower in early trading today until the U.S. retail sales report was released.

U.S. retail sales came in better than expected, rising 0.7% vs. expectations of a 0.7% decline. Core retail sales also beat expectations, gaining 1.8% vs flat expectations. The better-than-expected report helped futures recover some of their losses - with the Dow moving into positive territory but both the NASDAQ and EM futures remain negative.

Let's see what today brings.

S&P 500

S&P 500 gained 0.9% yesterday but is 0.3% lower to start the day today. Let's see if the market either pushes away from the trend stop or breaks thru.



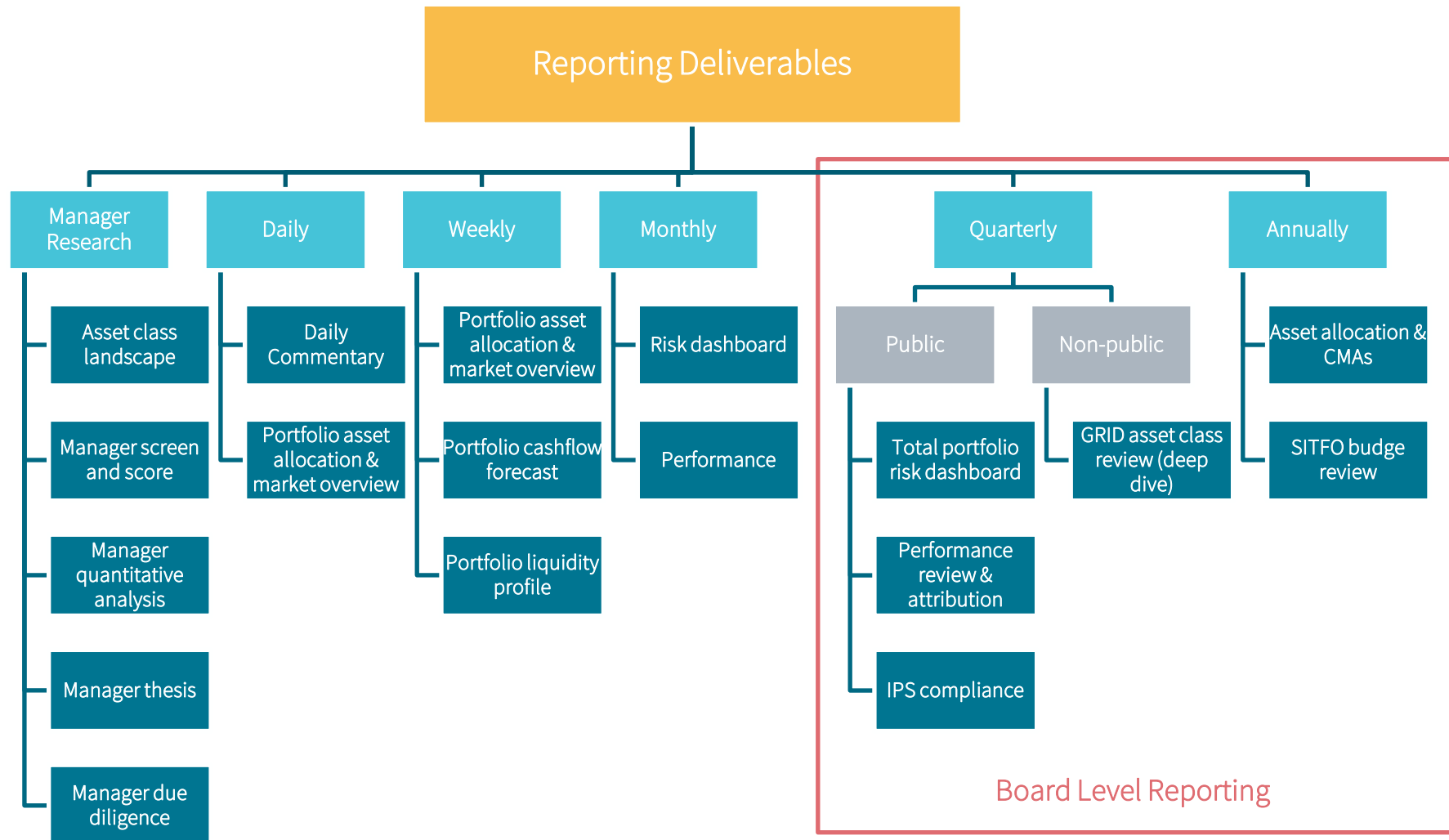
Russell 2000

R2K was 1% higher yesterday.



Investment Process

Portfolio and Risk Reporting: Reporting Deliverable



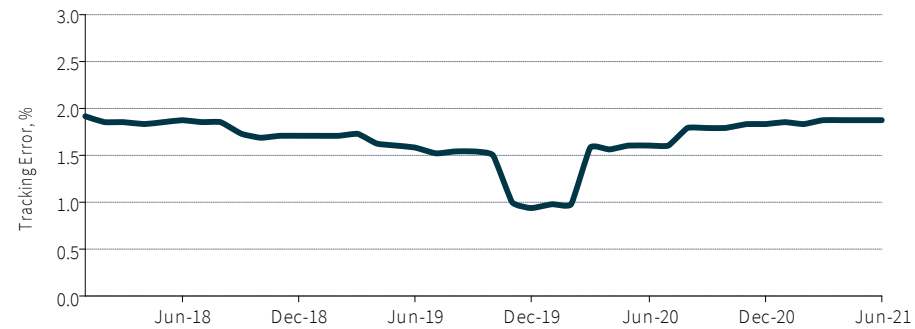
Total Portfolio Risk Report

Investment Process

Portfolio and Risk Reporting: Total Portfolio Risk Dashboard

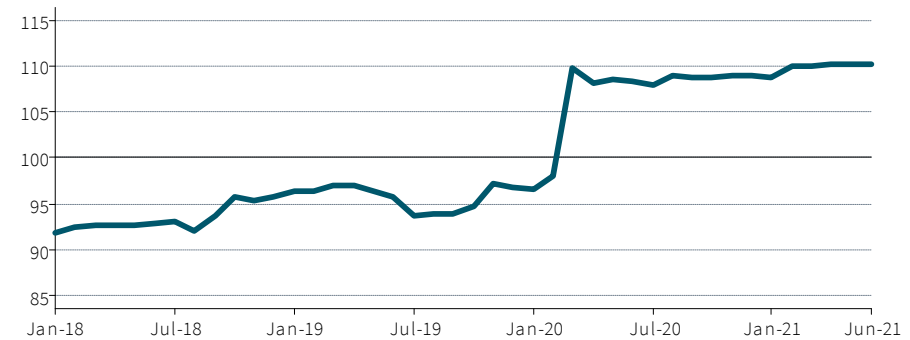
3 Year Rolling Tracking Error

Total Portfolio (Interpolated)
■ Tracking Error



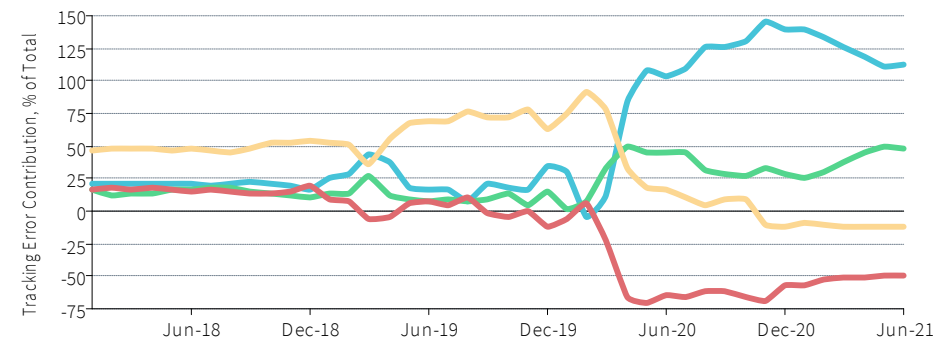
3 Year Rolling Relative VaR (95%)

■ RVAR



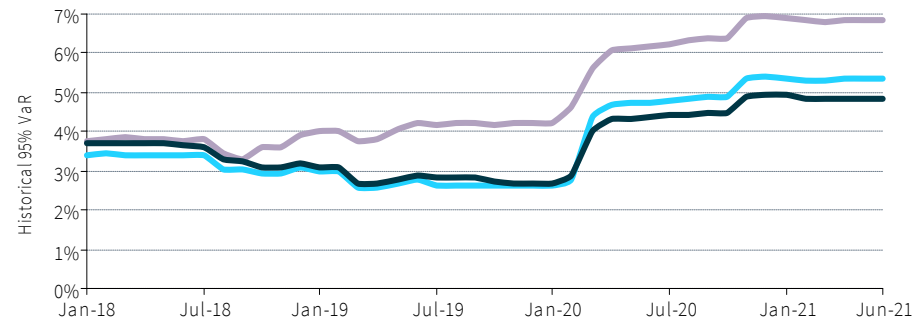
3 Year Rolling Scaled Contributions to Tracking Error

Total Portfolio (Interpolated)
■ Growth ■ Real Assets ■ Income ■ Defensive



3 Year Rolling Historical VaR (95% VaR)

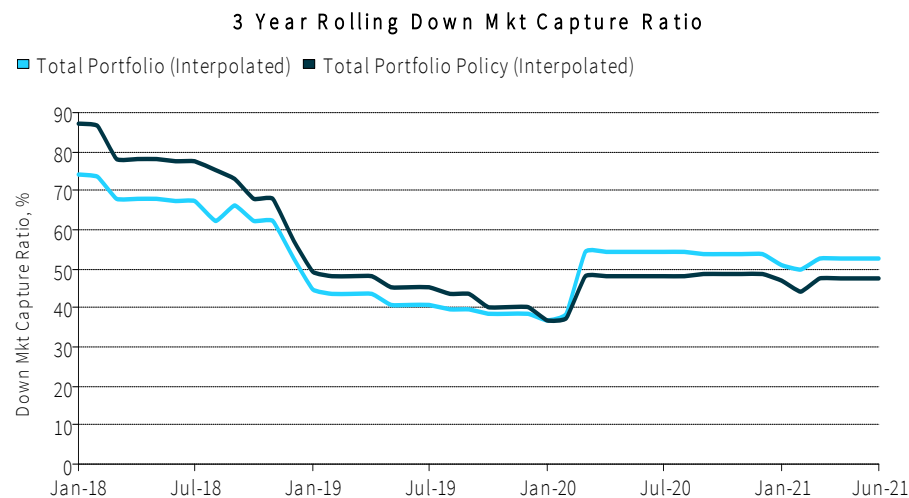
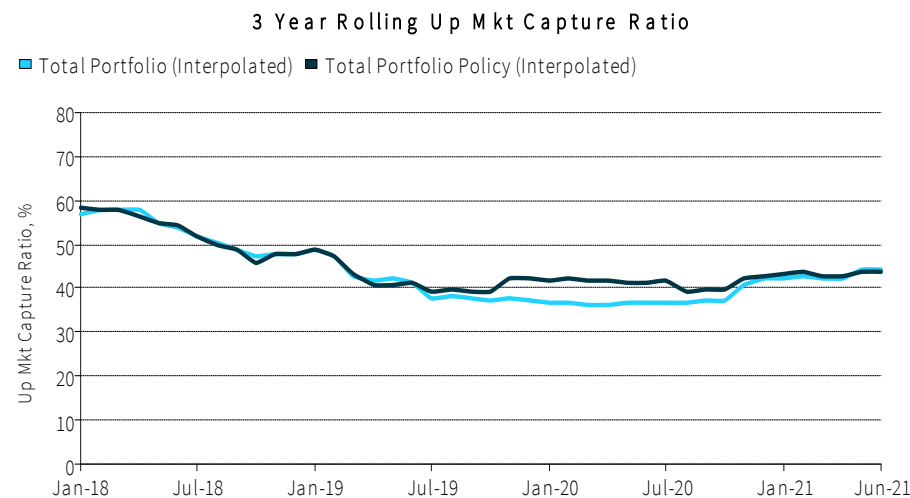
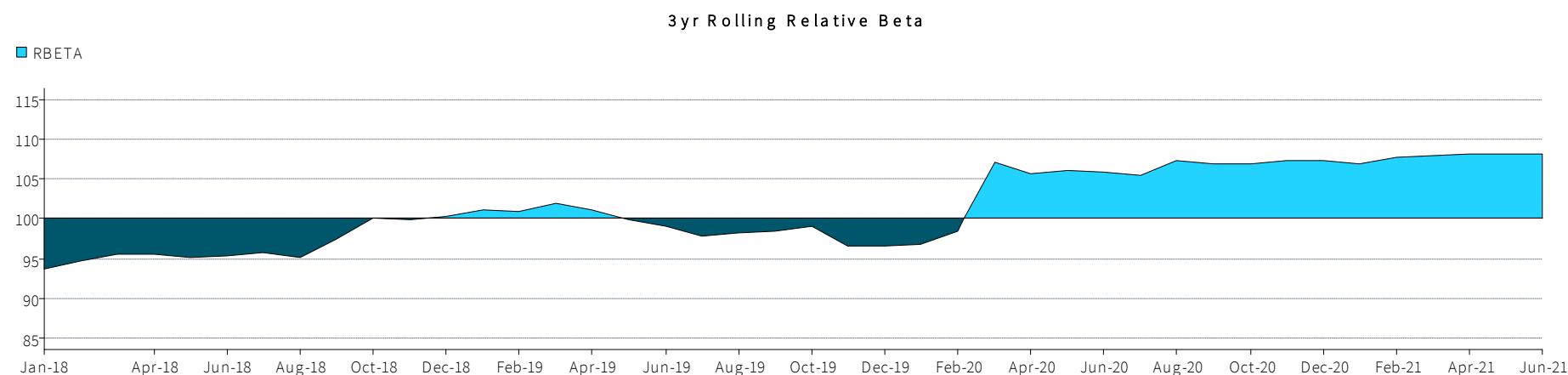
■ 70/30 ■ Total Portfolio (Interpolated) ■ Total Portfolio Policy (Interpolated)



Distr: Normal; entire exposure window

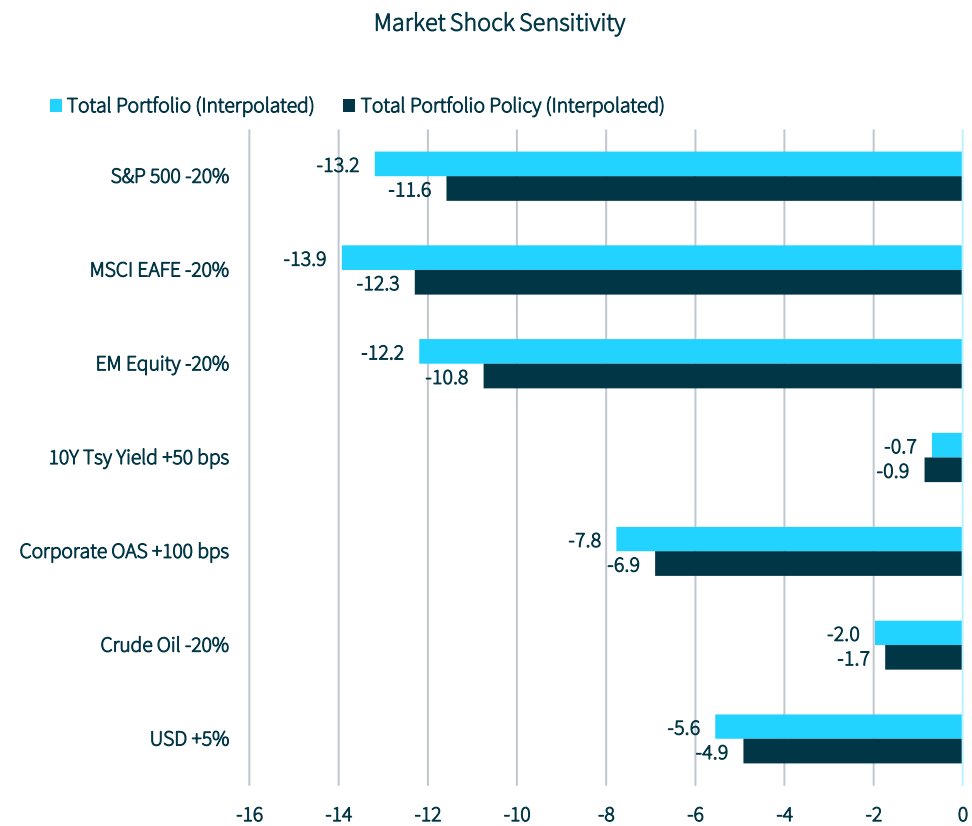
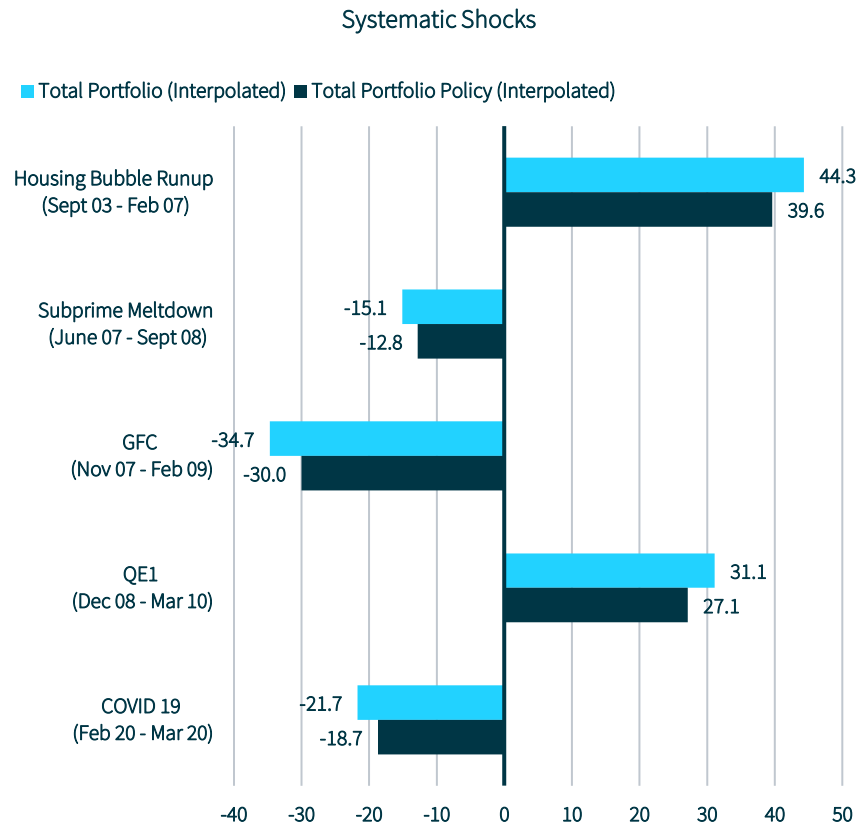
Investment Process

Portfolio and Risk Reporting: Total Portfolio Risk Dashboard



Investment Process

Portfolio and Risk Reporting: Total Portfolio Risk Dashboard



Non-Public Reports – Asset Class Reporting Quarterly by Category

Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

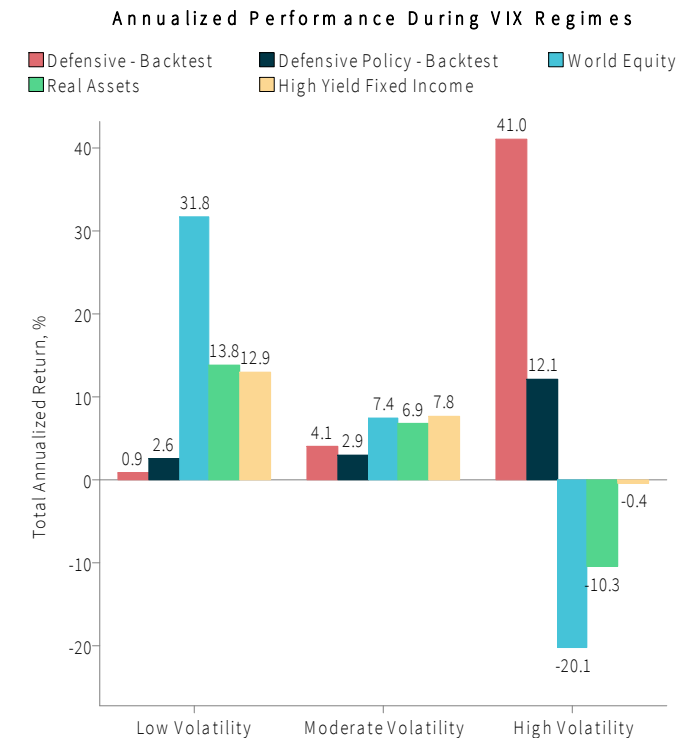
Asset Class	Role	Manager	Benchmark	Policy Weight	Asset Class Weight	CMA Expected Return
Long Duration Treasuries	Downside protection via interest rate duration and “flight to quality”	Sunny Days Management	Bloomberg 20 – 30 Year STRIP	2.5%	20.8%	1.1%
Short Term TIPs	Downside protection via stable return, deflation floor, and inflation hedge	Sunny Days Management	Bloomberg 0 – 5 Year US TIPs	2.5%	20.8%	1.2%
Systematic Convexity	Downside protection via systematic strategies that provide convexity	YDM Group	40% SG Trend 40% HFRI Macro Index 20% EurekaHedge Long Volatility	7.0%	58.3%	3.6%

Role:

- Given that equity is the largest risk factor in the portfolio, the allocation to defensive provides the primary ballast against downside equity volatility.

Objectives

- Target return of CPI + 2.5%; SAA benchmark allocation of 12%
- Current expected returns of 2.6% or CPI + 0.6%
- Total portfolio return objective is demanding, positive return with zero equity beta
- Time horizon and risk tolerance should allow for volatility and negative performance in any short-term period
- Looking for convexity and liquidity, not Sharpe ratio

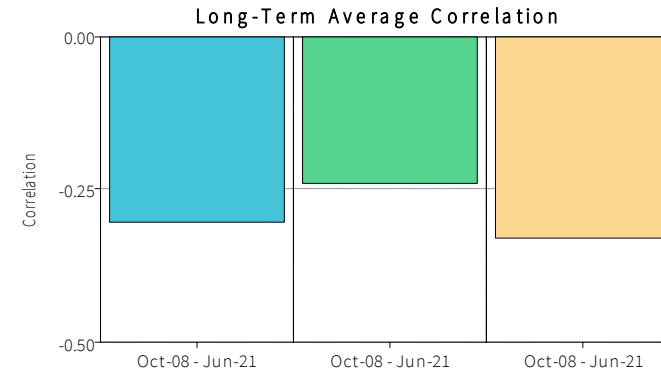


Investment Process

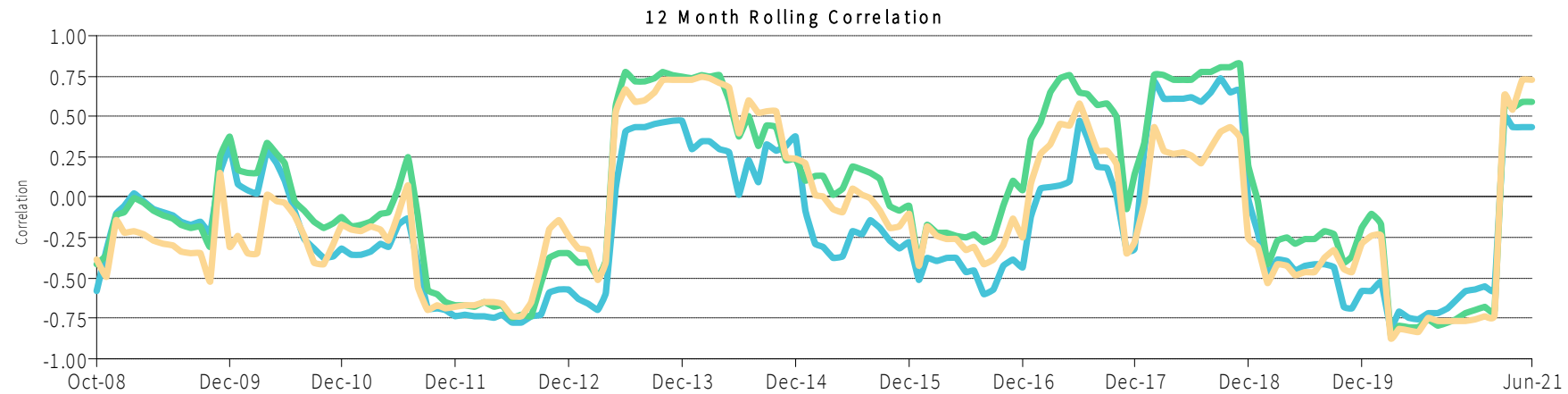
Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

Role of Allocation

- To provide the desired hedge against broad market risks, defensive should have a low to negative correlation to other assets within the portfolio.
- While correlations vary over time, the defensive allocation has a long-term negative correlation to the other GRID allocations/risk factors.
- Given equity beta is embedded throughout the portfolio and is the largest contribution to risk, the negative correlation to equity risk is important to monitor.
- Defensive is least negatively correlated to the Real Assets as some of the assets have duration and inflation sensitivities (REITs, MLPs, others)



World Equity Real Assets High Yield Fixed Income



Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

Exposure Summary

- Defensive has 3 asset classes: long duration U.S. Treasuries (STRIPS), short-term Treasury Inflation Protected Securities (TIPs), and systematic convexity.
- While STRIPS and TIPs have important differences, the allocations are combined for analysis purposes as both programs are utilized to support the Defensive Risk Premium (DPR) program – described more fully in the GRIPs section. As such, the exposure is divided into 2 segments, GRIPs (Government Related Investment Products) and systematic convexity.
- Despite systematic convexity having a larger allocation, defensive is dominated by interest rate risk given the high volatility of STRIPS and the DPR.

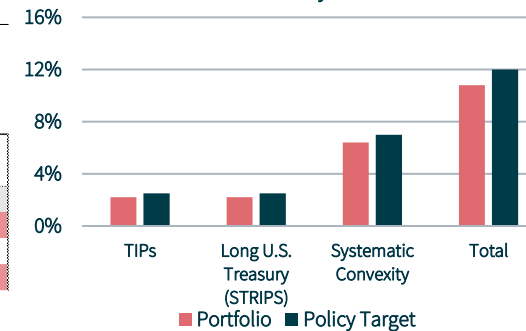
Market Value

\$ 350,463,277

Risk Summary

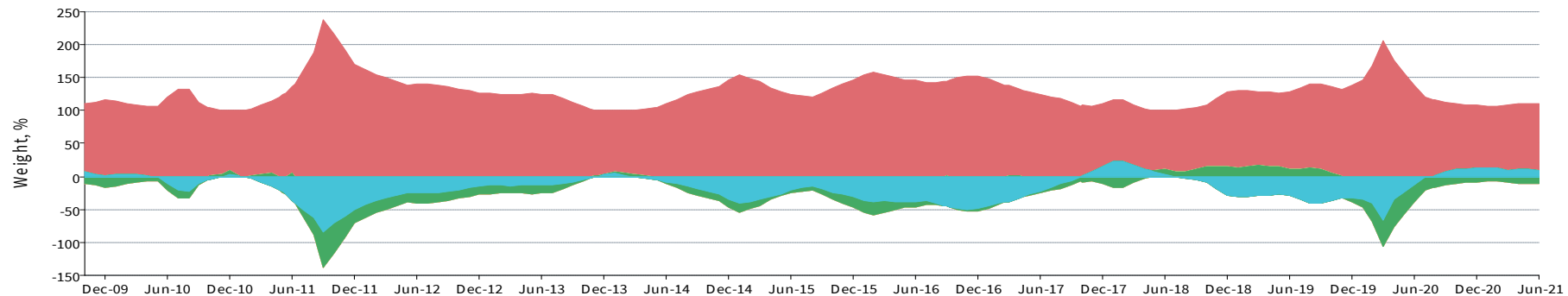
Statistic	Portfolio	Interim Target
Tracking Error	1.91	
VaR (95%)	2.81	2.54
Duration	13.94	15.49
Equity Beta	0.16	0.15

Asset Allocation vs. Policy Benchmark



Defensive - Backtest

Interest Rates Credit Commodities Equity



USD, DSA, Smooth: Auto

Government Related Investment Products (GRIPs)

Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

GRIPs Exposure Summary

- While GRIPs includes an allocation to TIPs, the exposure is dominated by long duration government securities. As noted in the asset loading graphic, the exposure can include leverage as part of the Defensive Risk Premium (DRP) which extends duration during times of market stress.
- The current portfolio duration is slightly short of the interim target due to the underweight allocation in STRIPs.
- The current 12 month tracking error (TE) is modest at 3.67, reflecting the DRP is NOT active at present but has been active in the measurement period. It is worth noting that the TIPS and STRIPS underlying are managed passively.

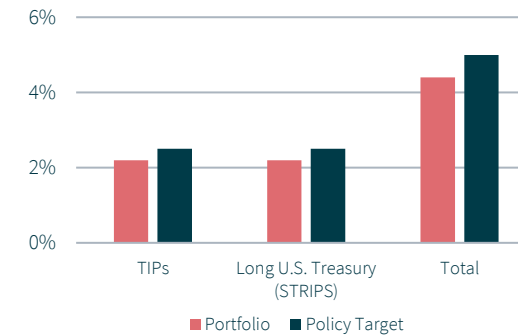
Market Value

\$ 132,533,441

Risk Summary

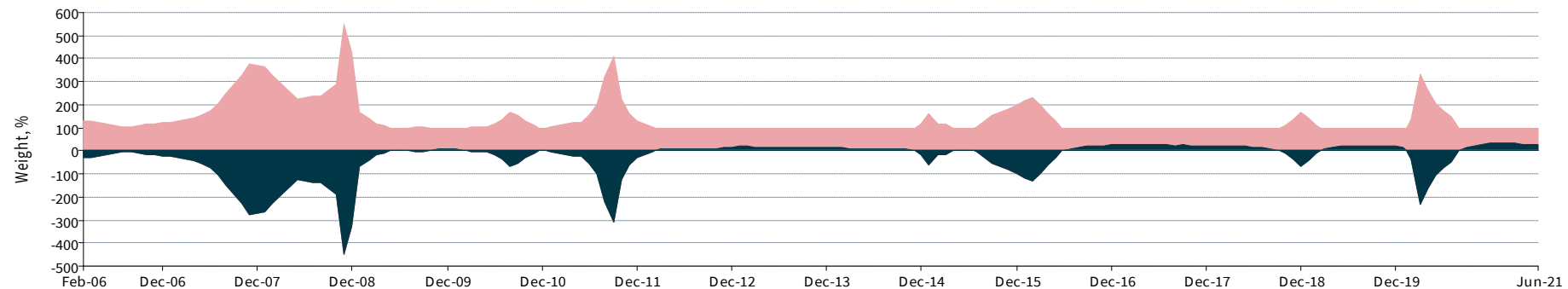
Statistic	Portfolio	Interim Target
Tracking Error	3.67	
VaR (95%)	4.09	5.54
Duration	13.94	15.49
Equity Beta	0.18	0.16

Asset Allocation vs. Policy Benchmark



GRIPs - Backtest

Long Duration Government Cash



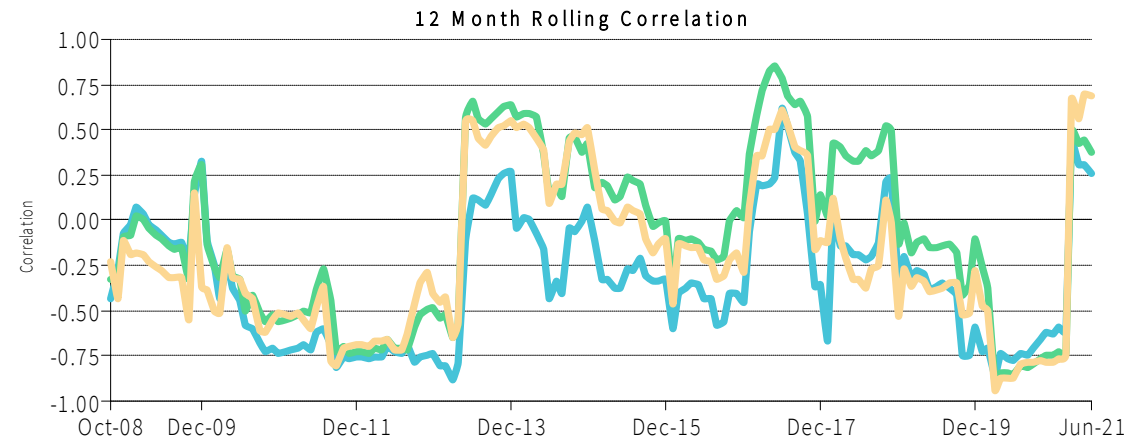
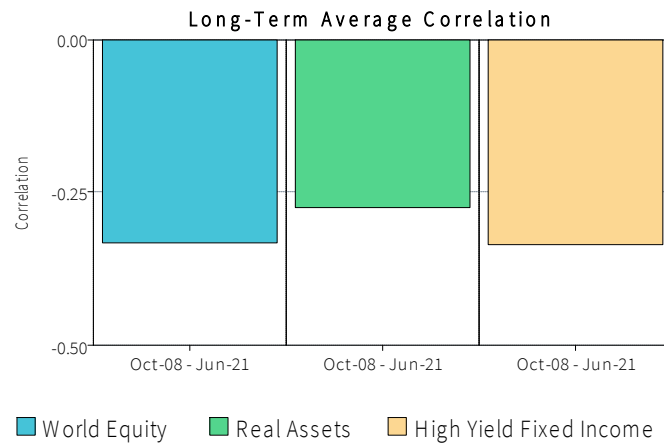
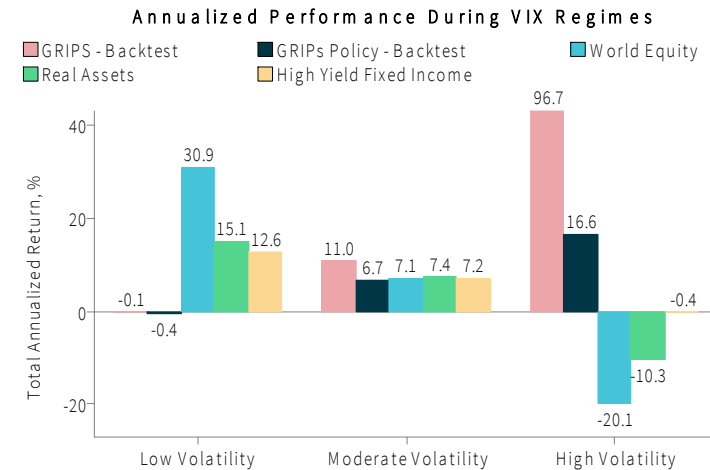
USD, DSA, Smooth: Auto

Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

Role of GRIPs Allocation

- GRIPs have historically provided the desired hedge against broad market risks by producing significantly positive returns during high volatility environments.
- With the trend toward secular disinflation and lower interest rates, GRIPs has produced a positive return even during times of moderate volatility.
- GRIPs has a low correlation to the other GRID buckets/risk factors, with the least negative correlation to real assets, due to allocations with duration and inflation sensitivities (REITs, MLPs, others).
- As noted with the Defensive Composite, the correlations vary over time, but are negatively correlated over the long-term and during periods of higher volatility/financial stress.



Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

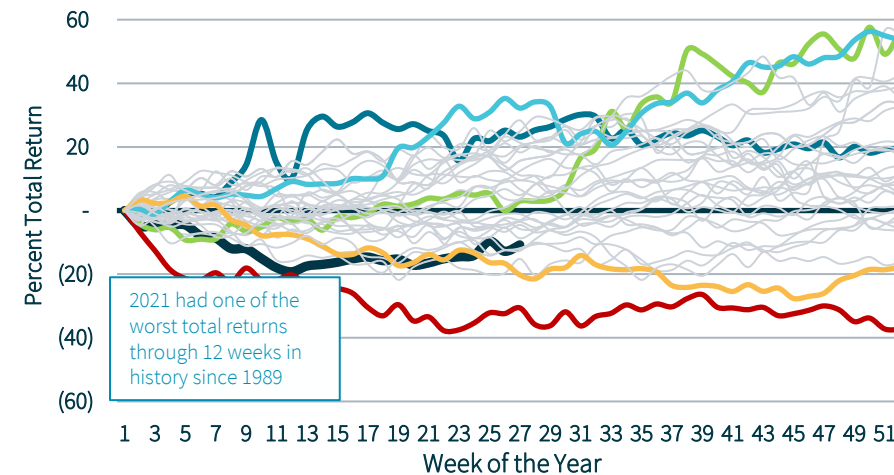
Interest Rate Market Review

- Rates have been in a downtrend since the '80s. Many have believed a bottom in rates was imminent, only to see yields ever lower. Many believed rates had a 0% floor, limiting potential return but those beliefs were shattered as global central bank policy pushed rates below 0%.
- Since the low of 0.7% in March 2020, 30-year rates moved 1.8% higher to 2.5% a year later. While the recent high does not appear to be material, through the first 12 weeks of 2021, the total return of -17% was one of the worst since 1989.
- Since the March 2021 peak of 2.5%, 30-year rates have moved lower, recovering some of the losses. Through the first 27 weeks of the year, returns have recovered enough where 2021 would be considered just an average year compared to years where more significant losses occurred (1994 and 2009).
- While many consider USTs a boring asset class – the total return variability of long duration USTs paint a story akin to equities.

U.S. 30-Year Interest Rate Market



25 Year STRIP Total Return by Week for Each Year since 1989



Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

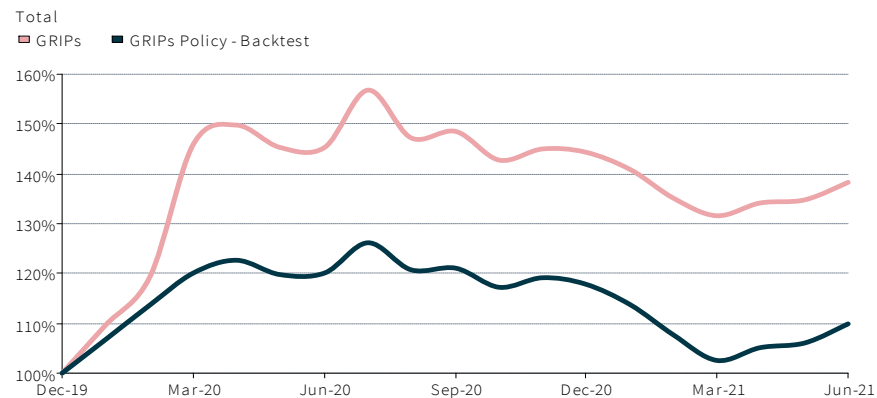
GRIPs Performance Summary

- The GRIPs portfolio has consistently outperformed the benchmark.
- Although the benchmark allocation is equally split between STRIPS and ST TIPs, both absolute and excess returns for the GRIPs portfolio are dominated by the STRIPS allocation. With a portfolio duration of nearly 14, the recent rise in interest rates has resulted in a negative return in both the YTD and 1-year timeframes. The 50% allocation to TIPs has helped to offset some of the negative STRIPS returns over the past year.
- Much of the excess return can be attributed to the duration extension of the DRP program during the COVID crisis in 2020. The lack of excess return in TIPs is due to the passive implementation.
- These equity-like changes in total return reflect the power and impact of duration.

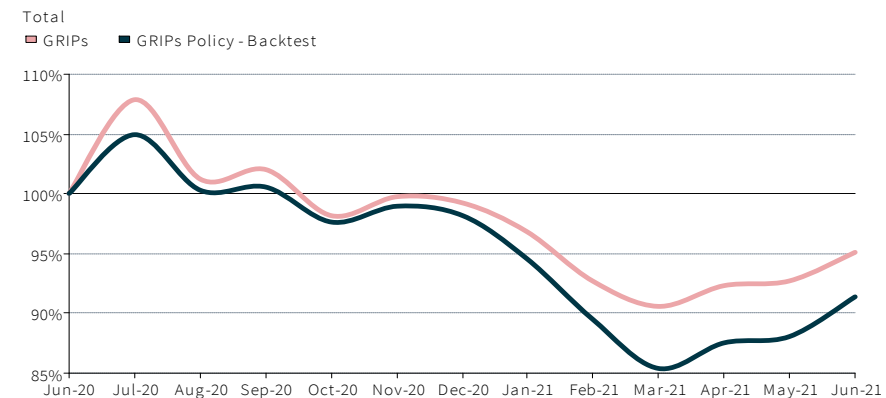
GRIPs Performance Summary (as of 06/30/2021)

		YTD	1 Year	3 Year	5 Year	Since Inception
Long U.S. Treasury	2.0%	(11.00)	(12.62)	13.13	5.82	5.92
Bloomberg 20 - 30 Yr STRIPS	2.5%	(10.87)	(13.79)	9.79	3.72	3.02
Difference		(0.13)	1.17	3.34	2.10	2.90
Short Term TIPs	2.3%	2.81	6.04	3.45	2.37	2.37
Bloomberg US 0-5 Yr TIPs	2.5%	2.78	5.95	4.19	2.84	2.84
Difference		0.03	0.09	(0.74)	(0.47)	(0.47)

Cumulative Return History Since 2020



Cumulative Return History Prior Year



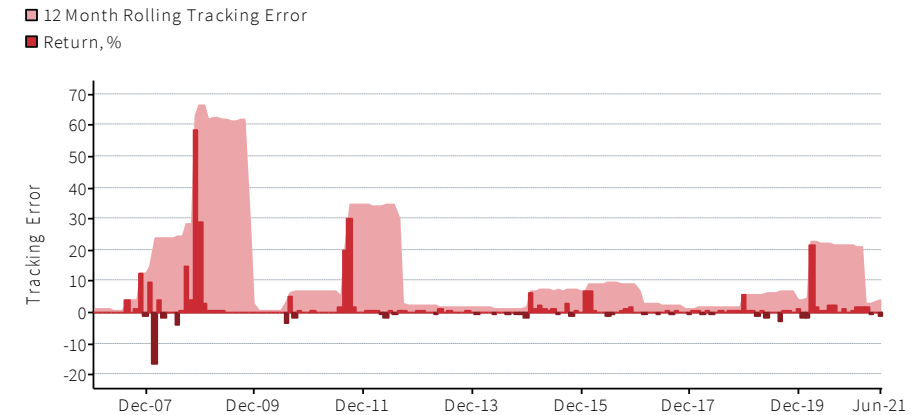
Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

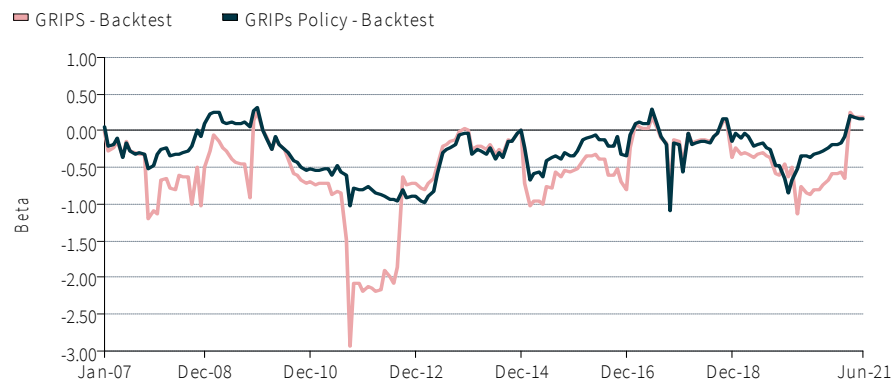
GRIPs Risk Summary

- The current TE of 3.67 is relatively modest in comparison to times when the DRP is active, and the TE expands rapidly. It's important to note, when the DRP is active and the TE moves significantly higher, it has also been associated with significant excess returns.
- Unsurprisingly, the GRIPs portfolio and benchmark has a low to negative equity beta. Equally unsurprising is the GRIPs portfolio has a lower equity beta than the benchmark, particularly during times of market stress as the DRP is activated.
- In contrast, when the DRP is active, portfolio VaR is higher than the benchmark. Once the DRP is inactive, TE, equity beta, and VaR return toward benchmark.

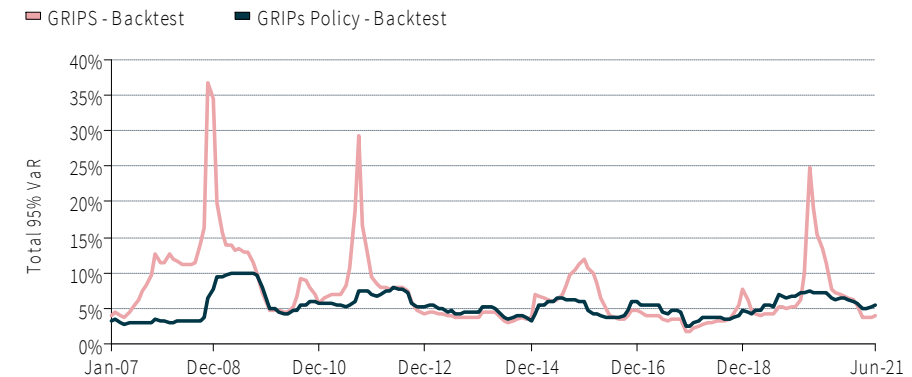
12 Month Tracking Error & Excess Return



12 Month Rolling Equity Beta



12 Month Rolling VaR (95%)



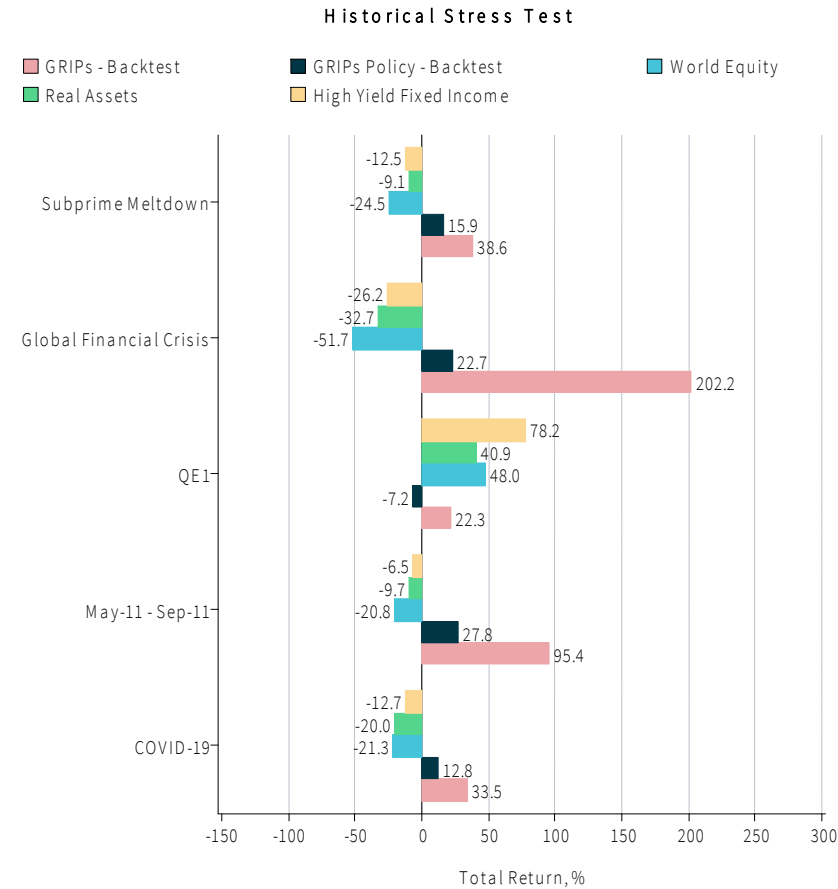
Distr: Normal; entire exposure window

Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

GRIPs Risk Summary

- How did the GRIPs portfolio perform during historical market stress events?
- By design, the GRIPs portfolio provides the ballast against market stress environments, so it's not surprising to see the portfolio and benchmark perform well in the stress events.
- Interestingly, during a positive market event (QE1), the GRIPs portfolio produced a positive return due to the DRP becoming active and interest rate trending both lower and higher.
- It is important to note, while both the GRIPs benchmark and portfolio produced positive returns, the portfolio significantly outperformed during periods of extended market stress (e.g., during the GFC).
- The portfolio outperformance relative to the benchmark in the stress event is due to the DRP program and the duration extension.



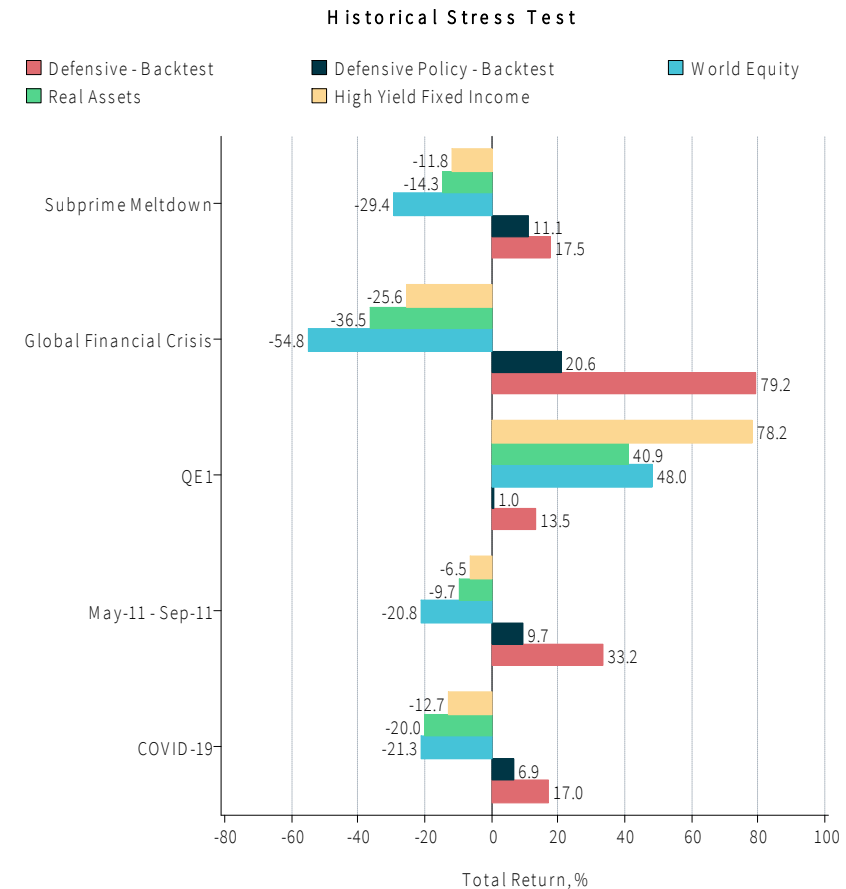
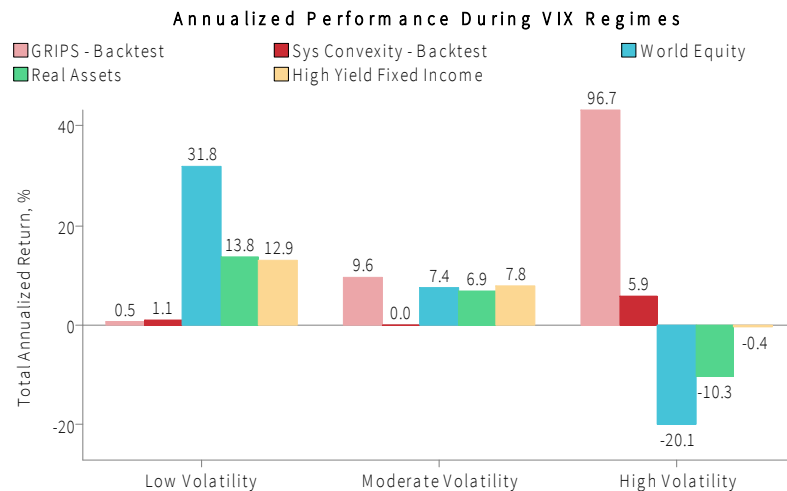
Defensive Composite Risk & Return Summary

Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

Defensive Composite Risk & Return Summary

- The defensive composite has historically provided the desired hedge against equity drawdowns by producing significantly positive returns during these environments.
- The defensive composite not only produces a positive return under each stress event, but significantly outperforms the benchmark due to the DRP.
- The overall risk profile and returns are dominated by the GRIPs allocation, with systematic convexity providing an important balance, less volatile returns that are positive in both high and low volatility environments. As the primary contributor to both risk and return, the GRIPs allocations will be the primary driver of tracking error, equity beta, and VaR.



Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

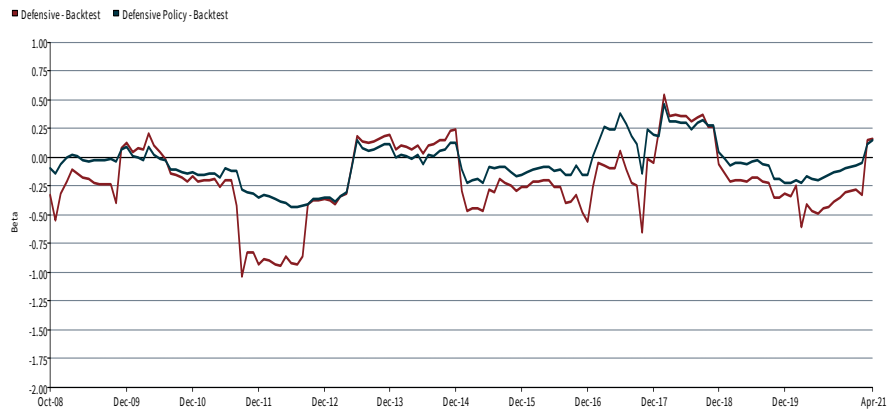
Defensive Composite Risk Summary

- Given GRIPs dominate influence on overall Defensive risk, the TE, beta and VaR will all resemble GRIPs with some moderation due to systematic convexity
- As noted with GRIPs, Defensive composite TE will expand rapidly when the DRP is active, but is associated with positive excess returns
- Overall equity beta is low to negative with portfolio beta more negative during times of financial stress
- Defensive VaR tends to be higher than the benchmark due to the duration extension aspect of the DRP program.

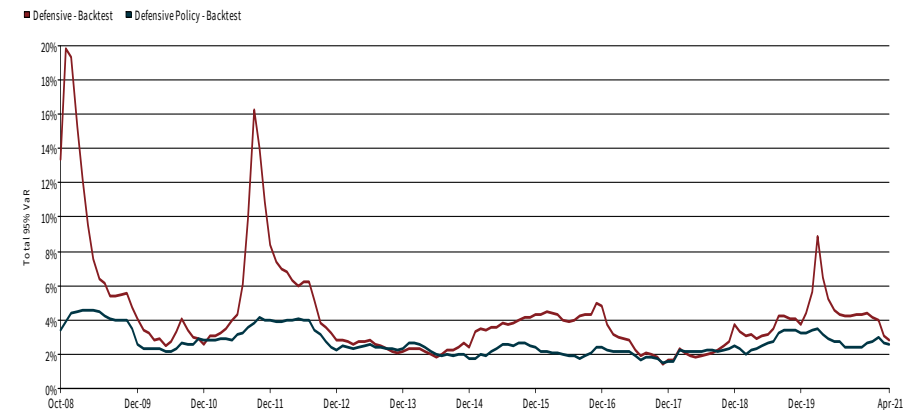
12 Month Rolling Tracking Error & Excess Return



12 Month Rolling Equity Beta



12 Month Rolling VaR (95%)



Investment Process

Portfolio and Risk Reporting: Non-public Asset Class Review – Defensive Bucket Example

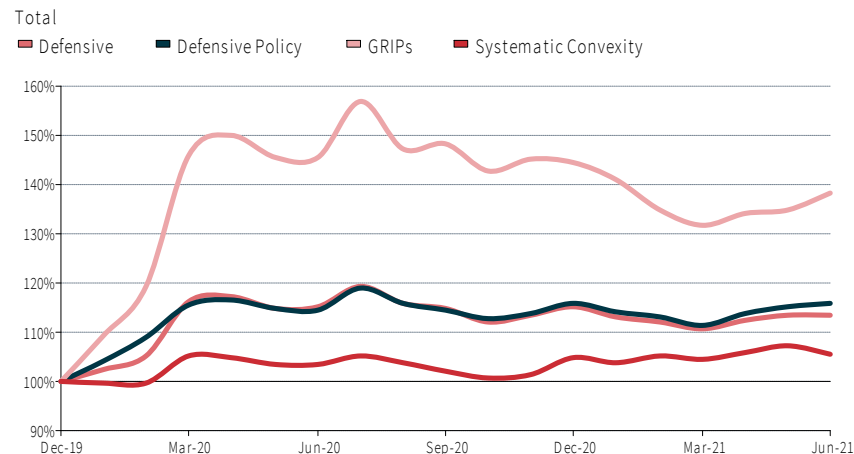
Defensive Composite Performance Summary

- While producing positive absolute returns over the 3-year, 5 year, and since inception (S.I.), the defensive composite has underperformed the benchmark across all time frames.
- Underperformance in the defensive bucket is attributed to the systematic convexity allocation which has consistently underperformed the benchmark due to YDM fund/strategy selection.
- While tempting to view GRIPs favorably and systematic convexity unfavorably from both an absolute and excess return basis, the performance over the past year highlights the value of the systematic convexity allocation.
- Systematic convexity not only fills the role of offsetting portfolio equity beta risk, but also produces a more stable, less volatile return profile compared to GRIPs.

Defensive Composite Performance Summary (as of 06/30/2021)

	Allocation	YTD	1 Year	3 Year	5 Year	Since Inception
Defensive Composite	10.7%	(1.18)	(1.06)	5.08	1.61	1.02
Interim Benchmark	12.0%	(0.01)	1.25	8.44	3.08	1.28
Difference		(1.17)	(2.31)	(3.36)	(1.47)	(0.26)
Long U.S. Treasury	2.0%	(11.00)	(12.62)	13.13	5.82	5.92
Bloomberg 20 - 30 Yr STRIPS	2.5%	(10.87)	(13.79)	9.79	3.72	3.02
Difference		(0.13)	1.17	3.34	2.10	2.90
Short Term TIPs	2.3%	2.81	6.04	3.45	2.37	2.37
Bloomberg US 0-5 Yr TIPs	2.5%	2.78	5.95	4.19	2.84	2.84
Difference		0.03	0.09	(0.74)	(0.47)	(0.47)
Systematic Convexity	6.4%	0.75	1.87	2.33		(2.09)
40% Trend; 40% Macro; 20% Long Vol	7.0%	5.05	9.88	5.94		3.44
Difference		(4.30)	(8.01)	(3.61)		(5.53)

Cumulative Return History Since 2020



Cumulative Return History Prior Year

