



**OREGON
STATE
TREASURY**

Oregon Investment Council

September 9, 2020

John Russell
Chair

Rex Kim
Chief Investment Officer

Tobias Read
State Treasurer



Investment Division
16290 SW Upper Boones Ferry Road
Tigard, OR 97224
503.431.7900

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350 Winter Street, Suite 100
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OREGON INVESTMENT COUNCIL

Agenda

September 9, 2020
9:00 AM

Oregon State Treasury
Investment Division
16290 SW Upper Boones Ferry Road
Tigard, OR 97224

<u>Time</u>	<u>A. Action Items</u>	<u>Presenter</u>	<u>Tab</u>
9:00-9:05	1. Review & Approval of Minutes July 22, 2020	John Russell <i>OIC Chair</i>	1
9:05-9:10	2. Opening Remarks and Committee Reports	Rex Kim <i>Chief Investment Officer</i>	2
9:10-10:00	3. ESG Investment Strategy	Christian Sinding <i>CEO & Managing Partner, EQT Partners</i> Therése Lennehag <i>Head of Sustainability, EQT Partners</i> Anna Sundell <i>Managing Director - Infrastructure, EQT Partners</i> Magnus Tornling <i>Partner - Equity, EQT Partners</i>	3
10:00-10:30	4. Investments Beliefs; Environmental, Social, Governance	Anna Totdahl <i>Investment Officer, ESG & Sustainability</i> Janet Becker-Wold <i>Senior Vice President, Callan LLC</i> Allan Emkin <i>Managing Principal, Meketa Investment Group, Inc.</i>	4
10:30-10:40	5. OPERF Fixed Income Recommendation	Geoff Nolan <i>Senior Investment Officer, Fixed Income</i>	5

John Russell
Chair

Patricia Moss
Vice-Chair

Cara M. Samples
Member

Monica Enand
Member

Tobias Read
State Treasurer

Kevin Olineck
PERS Director

10:40-11:20	6. Alternatives Portfolio Review	Ben Mahon <i>Senior Investment Officer, Alternatives</i> James Callahan <i>President, Callan LLC</i> Tom Martin <i>Head of Private Equity, Real Assets Research, Aksia, Torrey Cove Partners LLC</i>	6
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B. Information Items

11:20-11:45	7. OPERF Q2 Performance Review	James Callahan Janet Becker-Wold	7
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11:45-11:55	8. Asset Allocation & NAV Updates	Rex Kim	8
	a. Oregon Public Employees Retirement Fund		
	b. SAIF Corporation		
	c. Common School Fund		
	d. Southern Oregon University Endowment Fund		

	9. Calendar — Future Agenda Items	Rex Kim	9
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11:55	10. Open Discussion	OIC Members Staff Consultants	
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C. Public Comment

TAB 1 – REVIEW & APPROVAL OF MINUTES

July 22, 2020 Regular Meeting



**OREGON
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State of Oregon

Office of the State Treasurer

16290 SW Upper Boones Ferry Road
Tigard, Oregon 97224

OREGON INVESTMENT COUNCIL

July 22, 2020

Meeting Minutes

Members Present: John Russell, Tobias Read, Patricia Moss, Cara Samples, Monica Enand and Kevin Olineck

Staff Present: Rex Kim, David Randall, Debra Day, Kristi Jenkins, Geoff Nolan, Michael Viteri, Wil Hiles, May Fanning

Staff Participating virtually: Jeremy Knowles, Ryan Man, Michael Langdon, Andrey Voloshinov, Eric Messer, Aliese Jacobsen, Ian Huculak, Ahman Dirks, Paul Koch, Fawn Hubbard, Perrin Lim, Robin Kaukonen, Sam Spencer, Steve Kruth, John Hershey, Mark Selfridge, Amanda Kingsbury, Amy Bates, Tyler Bernstein, Anna Totdahl, Jen Plett, Sommer May, Austin Carmichael, David Elott, Roy Jackson, Mike Mueller, Chris Ebersole, Dana Millican, Deena Bothello, Faith Sedberry, Kenny Bao, Claire Illo, John Lutkehaus, Will Hampson, Sam Spencer, Lisa Pettinati, Krystal Korthals, Karl Cheng, Mohammed Quraishi, Anthony Breault, Joe Hutchinson, Jo Recht, Monique Sadegh, Tiffany ZhuGe, Caitlyn Wang, Michael Kaplan, Andrew Coutu, Ahman Dirks, Andrew Hillis,

Consultants Present: Allan Emkin & David Glickman (Meketa Investment Group, Inc.); Jim Callahan, Janet Becker-Wold & Uvan Tseng (Callan LLC); David Fann (TorreyCove Capital Partners)

Legal Counsel Present: Steven Marlowe, Department of Justice

Before proceeding with the OIC meeting, Chief Investment Officer, Rex Kim provided a disclosure pertaining to the virtual set-up of this OIC meeting, informing those in attendance (virtual and in person) of the guidelines in which this meeting will proceed.

The July 22nd, 2020 OIC meeting was called to order at 9:00 am by John Russell, OIC Chair. Chair Russell then officially welcomed new Council member, Monica Enand, to the Oregon Investment Council and asked Treasurer Read who's had the chance to meet her in person, to provide a short intro about Ms. Enand's experience and accomplishments.

I. 9:01 am Review and Approval of Minutes

MOTION: Chair Russell asked for approval of the June 3rd, 2020 OIC regular meeting minutes. Treasurer Read moved approval at 9:04 am, and Ms. Samples seconded the motion which then passed by a 5/0 vote.

II. 9:04 am Committee Reports and Opening Remarks

Committee Reports: Mr. Kim, gave an update on the following committee actions taken since the June 3, 2020 OIC meeting:



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Opportunity Portfolio Committee

June 4, 2020	Sixth Street Partners Specialty Lending Europe II, L.P.	\$125M
July 9, 2020	Oak Hill Advisors Tactical Investment Fund Owl Rock Capital Corporation III	\$300M \$150M

Private Equity Committee

June 25, 2020	OCM Opportunities Fund XI, L.P. TPG Growth V, L.P.	\$350M \$250M
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Alternatives Portfolio Committee

July 9, 2020	FORT Global Trend, L.P.	\$250M
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Real Estate Committee

None

Mr. Kim also provided opening remarks with a preview of the Market Commentary from the Co-Chairman at Oaktree Capital Management LP, Fixed Income Manager & OSGP Consultant Recommendations. In addition to that, he went over the review items that included, Securities Lending and the Annual Operations updates.

III. 9:06 am Market Environment

Chair Russell introduced, Mr. Howard Marks, Co-Chairman, Oaktree Capital Management LP, who provided a presentation focusing on the current market environment. He also spent some time sharing his investment philosophy and how that has guided Oaktree Capital Management over the years, in addition to briefly going over a few other topics.

IV. 10:03 am OPERF Fixed Income Recommendation

Chair Russell deferred this agenda item to the September meeting.

V. 10:04 am OSGP Consultant Recommendation

Michael Viteri, Senior Investment Officer, Public Equity and Wil Hiles, Investment Officer, Public Equity, addressed the Council with the Oregon Savings Growth Plan general consulting contract, which expires on August 31, 2020.

Callan LLC (Callan) was initially retained with a three-year contract that began on September 1, 2017. Under OST Policy INV 210: Consulting Contracts, new contracts are awarded for three-year periods and a) can be renewed no more than twice and b) are limited to a final expiration date no more than four years beyond the contracts' original expiration date. At the end of seven years, contracts must be re-bid and a new seven-year cycle can begin. Additionally, the OIC retains the contractual right to terminate such contracts, at any time, upon written notice.

In recognition of the contributions made by Callan, Staff proposes that the OIC extend its current contract, subject to satisfactory negotiation of all terms and conditions, for a two-year period beginning September 1, 2020

MOTION: Treasurer Read, moved approval at 10:07 am, to extend the current contract for a two-year period beginning September 1, 2020, and Ms. Moss seconded the motion which then passed by a 5/0 vote.

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Geoff Nolan, Senior Investment Officer, Fixed Income, introduced Johnson Shum, Vice President, State Street Global Markets and Tom Connelley, Vice President, State Street Global Markets who then provided a presentation that included an overview of Securities Lending, the role of State Street Global Advisors Cash Management Team in the Securities Lending program, a Securities Lending Market Update and Performance Review in addition to the Securities Lending Cash Collateral Portfolio Review and Market Update.

VII. 10:59 am Annual Operations Update

David Randall, Director of Investment Operations, Debra Day, Investment Reporting Manager and Kristi Jenkins, Investment Operations Manager, gave an update on the Investment Operations that included an executive summary of their group's various activities and accomplishments and an updated OST Investment Division Org Chart.

VIII. 11:31 am Asset Allocation & NAV Updates

Mr. Kim reviewed asset allocations and NAVs across OST-managed accounts for periods ended May 31, 2020.

IX. 11:32 am Calendar – Future Agenda Items

A calendar listing of future OIC meetings and scheduled agenda topics was included in the Council's meeting material.

X. 11:33 am Open Discussion

Chair Russell opened the discussion by highlighting the importance of reserving time after the meeting to have conversations, not necessarily for the purpose of a resolution but rather to bring up topics that might not come up periodically in meetings. He then brought up these three important and difficult questions:

- 1) Whether and to what extent the OIC invests in Oregon.
- 2) Whether and to what extent the OIC invests in Venture Capital and Angel Funds.
- 3) How to know if the Council is abiding by the wishes of the beneficiaries?

Ms. Enand agreed on the importance of the Venture Capital and Angel Funds conversation, as she referred back to the earlier Market Environment presentation by Mr. Marks. She is looking forward to future in-depth discussions.

Ms. Samples referred to the upcoming ESG Update topic for the September OIC meeting, she acknowledged the ongoing conversations that have been taking place, nevertheless had two requests:

- 1) Provide the Council enough time in the event their input on this topic is requested, as it's necessary to be able to reflect and think about this important matter before being able to have a well-rounded conversation during the actual meeting.
- 2) Request the Council and Staff to make it a priority to have and, implement a Policy Statement as a Council on the ESG or possibly part of the Investment Beliefs and Framework.

Continuing the ESG conversation, Ms. Moss provided her thoughts on the importance of starting at the philosophical belief statement level rather than implementation. She trusts that making this a priority will subsequently help the Council avoid being at risk of repeatedly having to interject and answer questions. Also, in relation to this, Chair Russell circled back to his initial question about finding a way to determine beneficiaries needs. Treasurer Read believes the Council is on very solid ground with respect to beneficiaries. He sees that by paying attention to ESG issues, quantifying them, managing and monitoring them leads to better returns, and that is something one can reasonably assume, beneficiaries have as an interest.



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11:39 am Public Comments

None

Mr. Russell adjourned the meeting at 11:39 am.

Respectfully submitted,

May Fanning

May Fanning
Executive Support Specialist

DRAFT

TAB 2 – Opening Remarks and Committee Reports

September 9, 2020

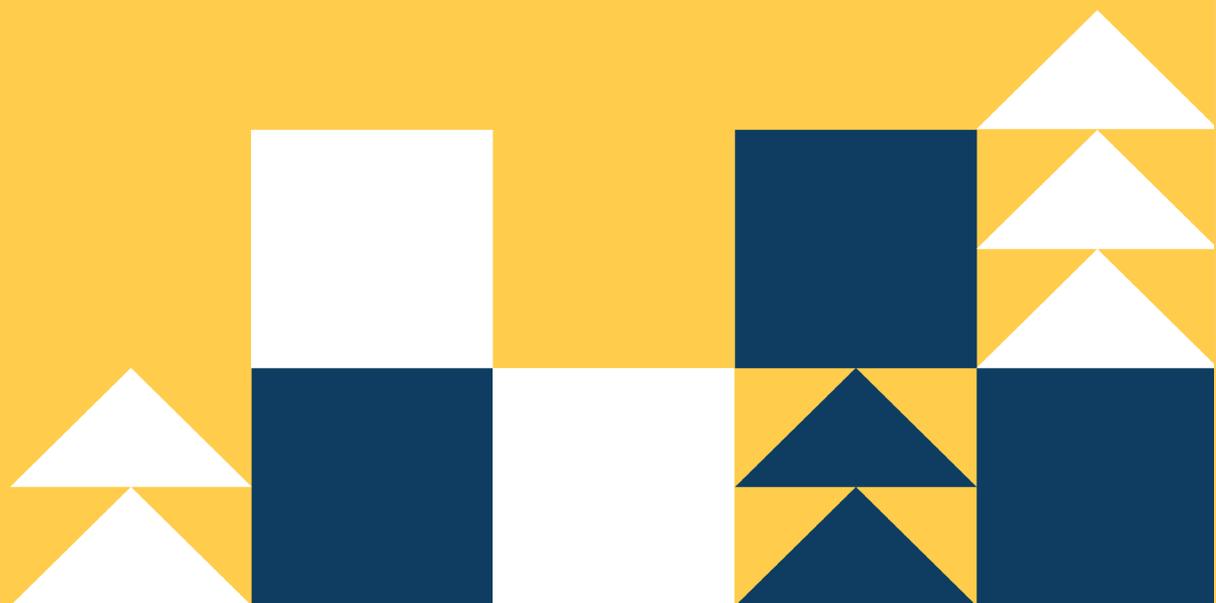
Oregon Investment Council

Opening Remarks

Rex T. Kim, Chief Investment Officer

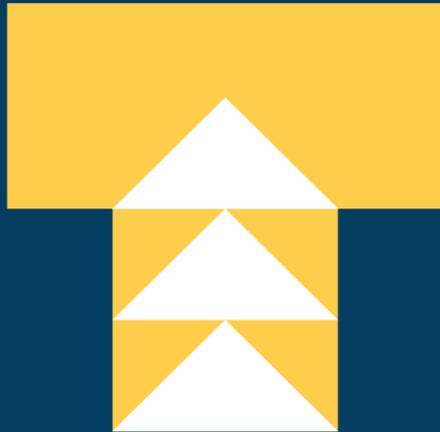


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Agenda:

- EQT Partners on Integrating ESG
- Action Items: OIC Investment Beliefs; Fixed Income Manager Recommendation
- Review Items: Alternatives Portfolio Annual Review, Q2 OPERF Performance Review, Asset Allocation, NAV, and a look into future meetings



OREGON STATE TREASURY

Tobias Read
Oregon State Treasurer

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TAB 3 – ESG Investment Strategy

Confidential Document

TAB 4 – Investments Beliefs; Environmental, Social, Governance



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Origination: 10/2013
Last Approved: N/A
Last Revised: 08/2020
Next Review: 1 year after approval
Owner: Rex Kim: Chief Investment Officer
Policy Area: Investments
References:

INV 1201: Statement of OIC Investment and Management Beliefs

Contents

Preamble

1. The OIC Sets Policy and is Ultimately Responsible for the Investment Program
2. Asset Allocation Drives Risk and Return
3. The Equity Risk Premium Will Be Rewarded⁵
4. Private Market Investments Can Add Significant Value and Represent a Core OIC/OST Competency
5. Capital Markets Have Inefficiencies That Can Be Exploited
6. Costs Directly Impact Investment Returns and Should Be Monitored and Managed Carefully
7. Fair and Efficient Capital Markets are Essential for Long-Term Investment Success
8. The Integration of Environmental, Social and Governance (ESG) Factors, Similar to Other Investment Factors, May Have a Beneficial Impact on the Economic Outcome of an Investment and Aid in the Assessment of Risks Associated with that Investment.
9. Diversity, in All Aspects, is Accretive to Meeting OIC Objectives

Preamble

This Statement of Investment and Management Beliefs (the "Beliefs") enumerates fundamental investment and management principles that guide the Oregon Investment Council ("Council" or "OIC") in performing its fiduciary and statutory obligations which include establishing policies for the investment and management of "investment funds" as defined in 293.701(2). The Oregon State Treasurer, largely through the Investment Division of the Office of the State Treasurer ("Treasurer" or "OST"), provides staff support for the Council and, as the Council's statutorily designated "investment officer" (together with such other persons determined qualified by the Council to conduct investment and management functions on its behalf), invests and manages in accordance with Council policy those moneys made available by the Council for such purposes. The Treasurer may also adopt additional policies governing its investment and management functions. The OIC and OST recognize that their respective authority to establish and implement such policies is grounded in and bounded by fiduciary and statutory foundations to their authority which charge them with exercising a duty of exclusive loyalty to fund beneficiaries by ensuring that related moneys are invested as efficiently and productively as possible while adhering to applicable standards of prudent judgment and care. Accordingly, the

following statements and accompanying OIC policies are intended to be in harmony with and promote the fulfillment of such obligations.

OREGON INVESTMENT COUNCIL

Statement of Investment and Management Beliefs

1.) THE OIC SETS POLICY AND IS ULTIMATELY RESPONSIBLE FOR THE INVESTMENT PROGRAM

A. Investment management is dichotomous -- part art and part science.

- To calibrate both governance and daily operating activities with the appropriate balance between art and science, the Beliefs will be anchored where and whenever possible to industry best practices as illuminated by academic research and experiential rigor.

B. The OIC is a policy-setting council that largely delegates investment management activities to the OST and qualified external fiduciaries.

- The OIC sets strategic policy which includes, but is not limited to, Asset Allocation, Portfolio Construction, Risk Measurement and Performance Monitoring. The OIC's purview also includes establishing and defining its philosophy as manifest in this Statement of Investment and Management Beliefs.
- The OIC tasks OST staff, external managers, consultants and other service providers with policy implementation.

C. The OIC is vested with the authority to set and monitor portfolio risk. Both short-term and long-term risks are critical.

- The OIC must weigh the short-term risk of principal loss against the long-term risk of failing to meet return expectations.

D. To exploit market inefficiencies, the OIC should be long term, contrarian, innovative, and opportunistic in its investment approach.

- The OIC should generally prepare for and accept periods of extreme price/valuation volatility and/or related market dislocations and endeavor to act expeditiously during such periods if and when deemed advantageous.

2.) ASSET ALLOCATION DRIVES RISK AND RETURN

A. Asset allocation is the OIC's primary policy tool for managing the investment program's long-term risk/return profile.

- Decisions regarding strategic asset allocation will have the largest impact on the investment program's realized return and risk and hence will be made judiciously and receive special emphasis and attention.
- The timing and magnitude of projected employer contributions and future benefit payments have significant cash flow implications and thus will receive explicit consideration during the OIC's asset allocation decision-making process.

B. Portfolio construction, including diversification and correlation considerations, is essential to maximizing risk-adjusted returns.

- Empirical rigor, coupled with sound judgment, is required in the portfolio construction process to

effect true diversification, while discipline is required to maintain diversification through and across successive market cycles.

- Risk is multi-faceted and may include, but is not limited to, the following types of specific risks: principal loss; opportunity cost; concentration risk; leverage and illiquidity risk; volatility and valuation risk; interest rate and inflation risk; and environmental, social and governance (ESG) risks.¹

3.) THE EQUITY RISK PREMIUM WILL BE REWARDED

A. Over the long-term, equity-oriented investments provide reliable return premiums relative to risk-free investments.

- Although returns for risk taking are not always monotonic or consistently rewarded over time, bearing equity risk commands a positive expected return premium provided such risk is reasonably priced.

4.) PRIVATE MARKET INVESTMENTS CAN ADD SIGNIFICANT VALUE AND REPRESENT A CORE OIC/OST COMPETENCY

A. The OIC can capitalize on its status as a true, long-term investor by making meaningful allocations to illiquid, private market investments.

- Private markets provide a diversifying risk/return profile relative to public market analogues.
- Private markets offer excess return opportunities that may be exploited by patient, long-term investors.

B. Dispersion in private market investment returns is wide; accordingly, top-quartile manager selection, diversification across vintage year, strategy type, and geography, and careful attention to costs are paramount.

- Private market investment success is predicated on identifying skilled managers and developing long-term investment relationships with those managers that enable the application of skill to manifest in the form of excess returns.
- Proper investment pacing, including deliberate vintage year diversification is also an integral element of superior private market investment results.

5.) CAPITAL MARKETS HAVE INEFFICIENCIES THAT CAN BE EXPLOITED

A. Inefficiencies that can be exploited by active management may exist in certain segments of the capital markets.

- While largely efficient, select segments of the capital markets can sometimes be successfully exploited by skilled active management.
- The nature (i.e., perceived magnitude and likely duration) of such inefficiencies should inform the proposed active management strategy (e.g., discretionary or systematic).

B. Passive investment management in public markets will outperform the median active manager in those markets over time.

- Active management should therefore be a deliberate choice and applied only to those public market strategies/managers in which the OIC enjoys a high degree of confidence that such strategies/managers will be sufficiently rewarded on a risk-adjusted basis and net of all fees, factor exposures and related transactions costs.

6.) COSTS DIRECTLY IMPACT INVESTMENT RETURNS AND SHOULD BE MONITORED AND MANAGED CAREFULLY

- A. All fees, expenses, commissions, and transaction costs should be diligently monitored and managed in order to maximize net investment returns.
- While all costs should be monitored and controlled, these costs should also be evaluated relative to both expected and realized net returns.
- B. External incentive structures should be carefully evaluated to ensure proper alignment with investment program objectives.
- Fee and incentive structures drive both individual and organizational behavior.
 - These structures (particularly in private market strategies) should be carefully evaluated and monitored to ensure that the goals and incentives of individual investment professionals and their respective organizations are well aligned with the specific investment objectives established by the OIC and/or OST staff.

7.) FAIR AND EFFICIENT CAPITAL MARKETS ARE ESSENTIAL FOR THE LONG-TERM SUCCESS OF ~~OIC~~/OST INVESTMENT ACTIVITIES

- A. The OIC recognizes that the quality of regulation and corporate governance can affect the long-term value of its investments.
- The Council ~~promotes~~ supports competitive and transparent market structures to ensure accurate and timely price discovery/asset valuation.
- B. ~~The OIC also recognizes that voting rights have economic value and therefore must be treated as a fund or beneficiary asset.~~
- ~~The OST shall vote shares in its capacity as fiduciary and based solely on the economic merits of specific proxy proposals.~~
- The OIC also recognizes that voting rights have economic value.
- Voting rights should be exercised in accordance with applicable law and policy.

8.) THE INTEGRATION OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS, SIMILAR TO OTHER INVESTMENT FACTORS, MAY HAVE A BENEFICIAL IMPACT ON THE ECONOMIC OUTCOME OF AN INVESTMENT AND AID IN THE ASSESSMENT OF RISKS ASSOCIATED WITH THAT INVESTMENT.

- A. The consideration of ESG factors within the investment decision-making framework is important in understanding the near-term and long-term impacts of investment decisions.
- The OIC believes that understanding how social and environmental factors impact investments is an important step towards building a more sustainable portfolio.
- B. Over time, there has been an evolution of multi-factor, or more holistic approaches, to identify opportunities and remediate risks, in a large globally-diversified investment portfolio.
- ESG data collection aligns our ability to prudently measure and monitor risks and returns. Once identified, ESG risk mitigation strategies can be implemented and proactive ESG transition strategies pursued, subject to statutory fiduciary obligations.

89.) DIVERSITY, IN ALL ASPECTS, IS ACCRETIVE TO MEETING OIC OBJECTIVES

A. By embracing and enhancing diversity and inclusion efforts, the OIC ensures that the investment program will be exposed to and informed by a wide range of perspectives, ideas and opinions.

- The OIC believes a wide range of perspectives, ideas and opinions will ultimately produce better investment outcomes.

¹ Concepts of risk and associated measurement techniques are evolving. Heretofore underdeveloped, the identification and measurement of ESG risks is improving which will enable new risk management applications in both security selection and portfolio construction processes.

Attachments

No Attachments

Approval Signatures

Step Description	Approver



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No Attachments

Approval Signatures

Step Description	Approver	Date
PolicyStat Admin	Carmen Leiva: Operations Analyst	pending

TAB 5 – OPERF Fixed Income Recommendation

September 9, 2020

Fixed Income Portfolio

Structured Credit Products Manager Recommendations

Geoff Nolan, Senior Investment Officer



OREGON
STATE
TREASURY



Agenda

1. 2020: Structured Credit Products Manager Recommendation

2. 2020: External Manager Overviews

3. Appendix: Key Highlights of 2019 Fixed Income Strategic Review

2020: Structured Credit Products Manager Recommendations

- Background
 - In December 2019, the Oregon Investment Council approved the Fixed Income Strategic Review in which the fixed income portfolio would be further de-risked so as to more closely align the portfolio with the objectives laid out policy INV401. (For reference, key highlights from the Strategic Review are in the appendix.)
 - Fixed Income's role is to (1) provide diversification to the OPERF portfolio in general and to equity securities in particular; and, (2) provide liquidity to help meet OPERF's cash flow needs.
 - Today's recommendations are a continuation of the new manager recommendation & approval process that began at the June 3rd, 2020 OIC meeting in which 2 global sovereign and 3 emerging market debt managers were approved.
- Structured Products Manager Recommendations
 - OIC Board Members have additional manager background information included in their packets.
 - Mandate: Structured Credit Products (USD).
 - Guggenheim Partners Investment Management, LLC ("Guggenheim"), Putnam Investments ("Putnam") and Schroders Investment Management North America, Inc. ("Schroders")
 - Total Mandate Funding Amount:
 - Combined up to 12.8% of OPERF fixed income AUM.
 - \$1.8BN based upon 6/30/20 AUM.
 - Split evenly amongst Schroders, Guggenheim Partners, and Putnam.
 - Up to \$600MM to each manager.

Notes:

- Selections subject to satisfactory negotiation of all terms and conditions.
- Percentage funding amounts are from the approved asset allocation portfolio.
- Funding amounts not to exceed the percentage amounts noted above, but absolute dollar amounts may be less depending upon funding requirements to meet OPERF needs and capital calls associated with OST private markets activities.

Portfolio Realignment to Occur Over the Next 3-6 Quarters

Agenda

1. 2020: Structured Credit Products Manager Recommendations

2. 2020: External Manager Overviews

3. Appendix: Key Highlights of 2019 Fixed Income Strategic Review

2020: External Manager Overviews

OIC Board Members have additional manager background information included in their packets.

- Guggenheim
 - Firm:
 - \$205BN AUM (3/31/20) with \$38BN in structured credit products AUM.
 - 200 fixed income investment professionals.
 - Team:
 - 9 structured credit portfolio managers and 24 structured credit researchers supported by broader fixed income team.
 - Lead PM's are Steve Brown (Head of Total Return) and Adam Bloch.
 - Mandate Strategy:
 - Total return strategy investing in structured fixed income securities that can offer favorable risk/reward characteristics while maintaining a minimum weighted average of investment grade quality. Invest primarily across ABS with a secondary focus on commercial mortgage-backed securities and non-agency residential mortgage-backed securities.
- Putnam
 - Firm:
 - \$149BN AUM (3/31/20) with \$28BN in structured credit products AUM.
 - 169 investment professionals with 37 being fixed income.
 - Team:
 - 3 structured credit portfolio managers and 8 structured credit researchers supported by broader fixed income team.
 - Team based PM structure with Michael Salm (Co-Head of Fixed Income) working with Jatin Misra and Brett Kozlowski.
 - Mandate Strategy:
 - Strategy focusing on high conviction ideas, seeking above average returns by identifying market inefficiencies through a proprietary model-driven investment & research process.

2020: External Manager Overviews

OIC Board Members have additional manager background information included in their packets.

- Schroders
 - Firm:
 - Schroders plc (the parent) is a public company listed on the London Stock Exchange with overall AUM of \$583BN as of 3/31/2020.
 - The North America unit (which will manage the strategy) has \$108BN AUM (3/31/20) with \$12BN in structured credit products AUM.
 - 120 fixed income investment professionals.
 - Team:
 - 4 structured credit portfolio managers and 10 structured credit researchers supported by broader fixed income team.
 - Lead PM is Michelle Russell-Dowe (Head of Securitized Credit) with supporting portfolio managers Jeffery Williams, Chris Ames and Anthony Breaks.
 - Mandate Strategy:
 - Total return strategy seeking exposure across securitized assets with the ability to access prepayment, credit and liquidity risk premiums.

Agenda

1. 2020: Structured Credit Products Manager Recommendations

2. 2020: External Manager Overviews

3. Appendix: Key Highlights of 2019 Fixed Income Strategic Review

Background / Objectives

Putting Fixed Income in Context

- Oregon Investment Council (OIC) Oversight
 - The OIC sets policy and is ultimately responsible for the Investment Program
 - The OIC is a policy-setting council that largely delegates investment management activities to the Oregon State Treasury (OST) and qualified external fiduciaries.
 - The OIC has authority to set and monitor portfolio risk. Both short term and long term risks are critical.
- Role of Fixed Income in Oregon Public Employees Retirement Fund (OPERF) = Diversification & Liquidity
 - The role of fixed income investments, pursuant to policy INV 401:
 - provide diversification to the OPERF portfolio in general and to equity securities in particular; and
 - provide liquidity to help meet OPERF's cash flow needs.
- Fixed Income Strategic Review Objective = Enhance Diversification & Liquidity
 - Objective: determine whether the fixed income portfolio asset allocation can be enhanced to improve upon current diversification & liquidity benefits.
- OST staff worked with BlackRock on the Strategic Review
 - OST provided inputs, feedback & guidance on preferred model portfolios.
 - BlackRock ran the asset allocation analytics given OST's guidance.
 - Callan and Guggenheim Partners also undertook an independent analysis.

Fixed Income's Role: Providing Diversification and Liquidity for OPERF

2019 Strategic Review: Executive Summary

- Further De-Risk Fixed Income Portfolio To Enhance Diversification & Liquidity
 - Diversification & liquidity benefits can be enhanced by de-risking. De-risking entails:
 - Lowering non-investment & investment grade credit exposure;
 - Increasing US Treasury exposure;
 - Increasing Global Sovereign exposure (ex-US; hedged back to USD); and
 - Adding an OPERF Liquidity Fund “OLF” (high quality portfolio, internally managed)
 - Additional benefit of de-risking: reduced drawdown & improved credit loss stress scenarios.
- Further De-Risking Comes with Trade-Offs
 - While de-risking improves fixed income’s role within the OPERF portfolio, it comes with trade-offs:
 - Increased expected long term volatility (→ higher rate risk); and
 - Lower expected long term returns & carry (→ up in quality, shifting away from higher yielding assets).
- Leverage Helps Mitigate Some of the Trade-Offs of De-Risking & Provides a Safety Buffer in Down Markets
 - Addition of leverage (~12.5% at asset level) improves return potential & Sharpe ratio
 - Additional leverage (~12.5% at asset level) can act as a safety buffer for scenarios such as the following:
 - extended down market timeframes; and
 - capital calls associated with OST Private Market activities.

Further De-Risk Fixed Income Portfolio To Enhance Diversification & Liquidity
Add Leverage to Help Mitigate Some Trade-Offs & Provide a Safety Buffer

2019 Strategic Review: What Was Approved

Portfolio Asset Allocation

- Target Portfolio 2 (Please see next page for details)
- Additional Leverage of 12.5% (total 25% at asset class level)
 - Remaining leverage (~12.5%) to be reserved for scenarios such as the following:
 - extended down market timeframes; and
 - capital calls associated with OST Private Markets activities.
 - Use of leverage above 12.5% would require the approval of:
 - Chief Investment Officer; and
 - Director of Capital Markets.

Policy Benchmark

- Bloomberg Barclays US Aggregate Bond Index for Portfolio 2 (Leveraged 12.5%) with a return target expectation of 15 basis points above the Policy Benchmark over a market cycle.

OST Policy INV 401

- Amend “Section A, Policy Statement” return target expectation to 15 from 25 basis points over a market cycle.
- Amend “Section A, Policy Statement” Policy Benchmark per the above.
- Amend “Section B, (1)” limiting portfolio risk, as measured by tracking error, to “up to 1.0 percent” from “0.5-1.0 percent”.

2019 Strategic Review: Asset Allocation Portfolios

Portfolio 2 was Approved with ability to move to portfolio 3, subject to certain conditions.

Exposure movements refer to changes from Actual Portfolio to Unlevered and Leveraged 12.5% allocations, respectively.

Fixed Income Asset Classes	Policy Benchmark	Actual Portfolio	Unlevered	Leveraged 12.5%	Leveraged 25%
			1	2	3
Cash / OPERF Liquidity Fund (OLF)	0.0%	4.9%	18.9%	24.1%	28.8%
ABS (Credit cards, Autos, Student Loans)	0.2%	4.4%	1.9%	1.6%	1.8%
Agency MBS	12.8%	13.7%	3.7%	5.5%	6.2%
CMBS	1.0%	2.4%	5.7%	5.6%	5.7%
<i>Subtotal Securitized</i>	<i>14.0%</i>	<i>20.5%</i>	<i>11.3%</i>	<i>12.8%</i>	<i>13.7%</i>
IG Corporate 1-5	5.5%	5.6%	0.6%	1.3%	1.5%
IG Corporate 5-10	3.8%	5.9%	1.3%	1.7%	1.6%
IG Corporate 10+	4.3%	2.8%	0.0%	0.0%	0.0%
<i>Subtotal IG Corporate</i>	<i>13.5%</i>	<i>14.2%</i>	<i>2.0%</i>	<i>3.0%</i>	<i>3.1%</i>
US Treasuries 1-10	45.7%	32.4%	35.9%	38.6%	43.8%
US Treasuries 10+	9.6%	10.2%	15.0%	14.3%	14.0%
<i>Subtotal US Treasuries</i>	<i>55.3%</i>	<i>42.6%</i>	<i>50.9%</i>	<i>52.9%</i>	<i>57.8%</i>
TIPS	0.0%	1.3%	1.4%	1.6%	1.6%
Global Sovereign (ex-US) (USD Hedged)	0.0%	1.0%	5.7%	8.1%	9.3%
High Yield	4.0%	3.9%	5.2%	4.8%	5.1%
Bank Loans	13.0%	11.2%	2.1%	2.5%	2.7%
<i>Subtotal Non Investment Grade</i>	<i>17.0%</i>	<i>15.2%</i>	<i>7.4%</i>	<i>7.3%</i>	<i>7.8%</i>
EM Debt (Hard Dollar)	0.0%	0.4%	2.6%	2.7%	2.8%
Total	100%	100%	100.0%	112.5%	125.0%

Add OPERF Liquidity Fund exposure of ~14% to ~19%.

Reduce IG exposure from ~14% to ~2-3%.

Increase US Treasury exposure from ~43% to ~51-53%.

Increase Global Sovereign exposure from ~1% to ~6-8%.

Reduce Non-IG exposure from ~15% to ~7%.

Note: Policy Benchmark refers to the Portfolio's disaggregated benchmark per OIC policies.

Further De-Risking the Fixed Income Portfolio



2019 Strategic Review: Implementation Guidelines

- Given the complexity of and amount of fund movements involved in the portfolio realignment, implementation of changes from the Strategic Review would take place at a measured pace over the next 3-6 quarters.
- Internally-managed mandates:
 - US treasuries; US treasury futures; and US TIPS and OPERF Liquidity Fund.
- Step 1 – Manager Searches
 - Initiate searches for new mandates: Global Sovereign /EMD (Hard Currency); Securitized (ABS, Agency MBS, CMBS); and High yield / bank loan. Incumbent managers may be included in searches.
- Step 2 - Funding New Mandates (without using leverage)
 - Depending on timing of onboarding of new managers, funding of mandates may be run in parallel.
 - Global Sovereign / EMD expected to be largely funded with proceeds from reduction in high yield / bank loan mandates.
 - Securitized, OPERF Liquidity Fund, US Treasuries & TIPS expected to be funded with proceeds from a combination of a reduction in investment grade core mandates.
- Step 3 – Leverage
 - Leverage to be added through use of US treasury futures.
 - Given current cash allocation to US treasuries (internally managed and embedded within external core manager portfolios), sales of US treasuries to reach the asset allocation target may be modest.
 - Leverage would be added upon completion of ramp in of US treasury cash portfolio.
- Other
 - To minimize the costs of the realignment, in-kind transfers (to internal or new external managers) and arms-length crossing trades within managers may be considered.

Portfolio Realignment to Occur Over the Next 3-6 Quarters

2019 Strategic Review: Additional Leverage Guidelines

- Utilization of Additional Leverage beyond 12.5%
 - Remaining leverage of ~12.5% to be reserved for scenarios such as the following:
 - extended down market timeframes; and
 - capital calls associated with OST Private Markets activities.
 - For governance and control purposes, use of leverage above 12.5% would require the approval of:
 - Chief Investment Officer; and
 - Director of Capital Markets.
- Leveraging Sequencing Guidelines
 - Given the uncertainty surrounding forecasting down markets (e.g., timing, depth, duration, etc.), OPERF plan needs at the time as well as future fixed income and OPERF portfolio composition, a pre-set proscribed leveraging sequence is not advisable.
 - However, in an extended down market scenario, the following factors would need to be considered:
 - Expected length and/or severity of the downturn;
 - Amount of US treasuries (most liquid, easily sold assets) as well as leverage to hold in reserve in case market downturn extends and/or becomes more severe;
 - Ease and practicality of selling cash securities vs. leveraging via US treasury futures; and
 - Maintaining a reasonable risk level at the asset class and total plan level.

Additional Use of Leverage Warrants Appropriate Controls by Senior Management



Fixed Income Manager Recommendations



OREGON STATE TREASURY

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Executive Summary
Fixed Income
OPERF - Structured Credit Products
Staff Recommendation

Purpose

Within the OPERF Fixed Income portfolio, Oregon State Treasury Staff recommends hiring Guggenheim Investments (“Guggenheim”), Putnam Investments (“Putnam”) and Schroders Investment Management North America Inc. (“Schroders”) to each manage up to 4.27% (up to 12.8% across all three managers) of OPERF Fixed Income AUM in separately managed accounts “SMA”. This equates to ~\$0.6BN (as of 6/30/20) for each manager.

Background

Pursuant to INV401, Oregon Public Employees Retirement Fund (OPERF) fixed income investments are to provide diversification from equity exposure and liquidity to meet OPERF’s cash flow needs. The Oregon Investment Committee (OIC) directed Oregon State Treasury (OST) staff to conduct a strategic review of the fixed income portfolio based on these two objectives. OST staff worked with BlackRock, Inc to develop model portfolios, with independent analysis by Callan and Guggenheim, both of which undertook the review prior to the December 2019 approval.

From this output, in December 2019, Staff proposed de-risking holdings by, among other initiatives, lowering exposure to US corporate debt, adding emerging markets debt, global sovereigns and expanding holdings in structured credit products. The objective of this structured credit mandate is to provide a sleeve of structured debt securities that, on a portfolio basis along with the other mandates approved in the 2019 review, would provide for a lower correlation to the US equity markets.

The model portfolio used the Bloomberg Barclays US Securitized as its benchmark. The index is composed of asset-backed securities (ABS), mortgage-backed securities (MBS), and commercial mortgage-backed securities (CMBS).

The selection began by screening the long-term performance of potential managers for 1) consistent outperformance relative to the benchmark, 2) top relative performance against the peer group.¹ Given the severe market disruptions due to the once-in-a-lifetime Covid-19 pandemic, OST staff, while taking into consideration the impact that it had on overall manager performance, placed more emphasis on results as of 4Q19. Candidates that met the performance hurdle were evaluated on ability to articulate the investment process as applied to specific, recent examples, and synchronicity between portfolio managers, traders, strategists, and researchers. Of the initial pool of nearly one hundred candidates, four were selected for further due diligence.² Three managers, at the conclusion of satisfactory negotiations, will deploy capital according to the mandate.

¹ Analysis based on data in eVestments.

² On-site visits were canceled due to the Covid-19 pandemic and will be conducted when possible.

Summary Manager Discussion / Investment Considerations

Note: More detailed information on each of the recommended managers is provided in the separate Staff Memo on each manager.

Executive Summary: Guggenheim

- Guggenheim manages \$205BN (as of 3/31/20) in assets globally primarily focused on USD fixed income (93%), US domiciled clients (85%) and institutional investors (82%).
- Manages \$38BN in structured credit assets.

Team Overview

- 9 structured credit portfolio managers and 24 structured credit researchers supported by broader fixed income team.
- Lead portfolio managers are Steve Brown (Head of Total Return) and Adam Bloch.

Investment Philosophy

- Belief that strong long-term investment results can be achieved by capturing attractive yields while remaining focused on the preservation of capital. Core beliefs driving investment philosophy:
 - Fixed income markets are inefficient.
 - Indices are investable, but not designed to maximize risk-adjusted returns.
 - Investment decisions can be detrimentally influenced by behavioral biases.
 - Buy-to-own investing can help portfolios outperform.
 - Consistent investment income generates long-term benefits.
 - Over the long-term, capital preservation can be achieved without sacrificing income.

Investment Process

- Process seeks to eliminate behavioral biases in decision-making by drawing upon the expertise of entire investment organization:
 - Separating the overall investment team into four key functions: (1) macroeconomic research, (2) security research and selection, (3) portfolio construction, and (4) portfolio management.
 - Holding each function equally accountable for performance with investments being made only after taking input from all four groups.

Mandate Strategy

- Total return strategy investing in structured fixed income securities that can offer favorable risk/reward characteristics while maintaining a minimum weighted average of investment grade quality. Invest primarily across ABS with a secondary focus on commercial mortgage-backed securities and non-agency residential mortgage-backed securities.

Executive Summary: Putnam

- Putnam manages \$149BN (3/31/2020) of which 50% is institutional and 50% retail.
- \$73BN is fixed income with \$28BN in securitized credit.

Team Overview

- 3 structured credit portfolio managers and 8 structured credit researchers supported by broader fixed income team.

- Team based PM structure with Michael Salm (Co-Head of Fixed Income) working with Jatin Misra and Brett Kozlowski.

Investment Philosophy

- Belief that fixed income markets are inefficient at pricing risk and, by exploiting these inefficiencies through the disciplined and systematic application of a well-defined (quantitatively supported) investment process, alpha can be generated.

Investment Process

- Process is characterized by
 - Analyzing multiple sources of potential relative return with an eye on risk controls.
 - Continuous interaction of applying a consistent mathematical framework for quantifying optionality, interaction with macro views/risks, and potentially disruptive policy assessment.
- Relative returns analysis focuses on
 - Cash flow analysis (prepayments, collateral, deal structure, defaults, residential real estate market trends).
 - Understanding and taking advantage of mispriced optionality of mortgage derivatives within structures.

Mandate Strategy

- Strategy focusing on high conviction ideas, seeking above average returns by identifying market inefficiencies through a proprietary model-driven investment & research process.

Executive Summary: Schroders

- Schroders is a wholly owned subsidiary of Schroders plc. and, as of March 31, 2020, managed \$108BN in assets with \$12BN in securitized credit assets.

Team Overview

- 4 structured credit portfolio managers and 10 structured credit researchers supported by broader fixed income team.
- Lead PM is Michelle Russell-Dowe (Head of Securitised Credit) with supporting portfolio managers Jeffery Williams, Chris Ames and Anthony Breaks.

Investment Philosophy

- Schroders seeks to generate returns through understanding collateral and structure, with a particular focus on having a thorough understanding of collateral cash flow and the impact of structure as this is the key to generating returns.
- Analytics (particularly in higher income securities) and an understanding of cycles and capital structures are used to mitigate risk.

Investment Process

- Manages portfolios in a flexible, best ideas framework, risk management being an important step, focused on uncovering the most attractive return per unit of risk.
- Identify fundamental and technical factors that drive performance.
- Extensive qualitative and quantitative analysis is undertaken using substantial data analysis and proprietary systems.

Mandate Strategy

- Total return strategy seeking exposure across securitized assets with the ability to access prepayment, credit and liquidity risk premiums.

Issues to Consider

Pros

Strong Managers: After extensive discussions with each of the managers, staff has a high regard for each of them given their demonstrated ability to communicate their repeatable investment frameworks and processes as well as their ability to generate net excess returns.

Diversifying Strategy: Consistent with the approved realignment of the fixed income portfolio, the addition of the structured credit sleeve, when combined with the other approved strategies, should bring the portfolio more in line with its objectives: (1) diversification to public equities, and (2) liquidity for OPERF.

Strong Track Records: Despite periods of short-term volatility / drawdowns (e.g., 1Q20 COVID-19 environment), each of the managers has demonstrated strong long-term performance.

Cons

Current Macroeconomy is Highly Uncertain: Immediate first order effects of the COVID-19 have been countered with strong monetary and fiscal policy responses. This technical support for sectors that otherwise may have continued to trend downwards may result in a false sense of investing security. **Mitigant:** Each of the managers has a strong risk management and credit culture embedded within the investment process that provide multiple perspectives thus minimizing this risk.

Structured Credit Products Can Be Volatile: The asset class and selected strategies can experience significant volatility from time to time. **Mitigant:** Consistent with OPERF's long term investment horizon, which can weather periodic downturns, each of the managers has had strong long-term performance even including down quarters. Additionally, each of the managers process is nimble enough to adjust for errors that they have made.

Recommendation

Subject to the satisfactory negotiation of all terms and conditions, Oregon State Treasury staff recommends hiring Guggenheim, Putnam, and Schroders to each manage up to 4.27% (up to 12.8% across all three managers) of OPERF Fixed Income AUM in a separately managed account "SMA". This equates to ~\$0.6BN (as of 6/30/20) for each manager.

OPERF Structured Credit Product Fixed Income Manager Recommendation
Guggenheim Partners Investment Management, LLC

Purpose

Subject to the satisfactory negotiation of all terms and conditions, Oregon State Treasury staff recommends Guggenheim Partners Investment Management, LLC (“Guggenheim”) to manage up to 4.27% (up to 12.8% across all three managers) of OPERF Fixed Income AUM in a separately managed account “SMA”. This equates to ~\$0.6BN (as of 6/30/20) for each manager. This manager is to serve in one of three positions for the OPERF Structured Product Fixed Income Portfolio.

Background

Pursuant to INV401, Oregon Public Employees Retirement Fund (OPERF) fixed income investments are to provide diversification from equity exposure and liquidity to meet OPERF’s cash flow needs. The Oregon Investment Committee (OIC) directed Oregon State Treasury (OST) staff to conduct a strategic review of the fixed income portfolio based on these two objectives. OST staff worked with BlackRock, Inc to develop model portfolios, with independent analysis by Callan and Guggenheim, both of which undertook the review prior to the December 2019 approval.

From this output, in December 2019, Staff proposed de-risking holdings by, among other initiatives, lowering exposure to US corporate debt, adding emerging markets debt, global sovereigns and expanding holdings in structured credit products. The objective of this structured credit mandate is to provide a sleeve of structured debt securities that, on a portfolio basis along with the other mandates approved in the 2019 review, would provide for a lower correlation to the US equity markets.

The model portfolio used the Bloomberg Barclays US Securitized as its benchmark. The index is composed of asset-backed securities (ABS), mortgage-backed securities (MBS), and commercial mortgage-backed securities (CMBS).

The selection began by screening the long-term performance of potential managers for 1) consistent outperformance relative to the benchmark, 2) top relative performance against the peer group.¹ Given the severe market disruptions due to the once-in-a-lifetime Covid-19 pandemic, OST staff, while taking into consideration the impact that it had on overall manager performance, placed more emphasis on results as of 4Q19. Candidates that met the performance hurdle were evaluated on ability to articulate the investment process as applied to specific, recent examples, and synchronicity between portfolio managers, traders, strategists, and researchers. Of the initial pool of nearly one hundred candidates, four were selected for further due diligence.² Three managers, at the conclusion of satisfactory negotiations, will deploy capital according to the mandate.

Discussion/Investment Considerations

Firm Overview

- Guggenheim is the global asset management division of Guggenheim Partners, LLC which is the principal subsidiary of Guggenheim Capital, LLC established in 1999.
- Guggenheim manages \$205B (as of 3/31/20) in assets globally primarily focused on USD fixed income (93%), US domiciled clients (85%) and institutional investors (82%).

¹ Analysis based on data in eVestments.

² On-site visits were canceled due to the Covid-19 pandemic and will be conducted when possible.

- Guggenheim Investments manages \$38B in Structured Credit assets. The asset class has consistently been an integral allocation in every applicable portfolio.

Team Overview

- Scott Miner (Global CIO) and Anne Walsh (CIO – Fixed Income) lead the investment teams.
- Guggenheim’s fixed income investment process is decentralized to leverage the entire Fixed Income Team’s expertise (Macroeconomic and Investment Research, Sector / Security Research, Portfolio Construction, Portfolio Management).
- Each account’s portfolio management team, led by two primary portfolio managers, pull together views from throughout the firm to make informed relative value buy / sell decisions for their portfolios.
- Steve Brown, CFA, Senior Managing Director & Head of their Total Return Portfolio Management Team, and Adam Bloch, Managing Director will be the lead portfolio managers for this mandate. They are supported by 7 other portfolio managers and 24 structured credit sector research team members.

Investment Philosophy

Guggenheim believes capturing attractive yields, while remaining focused on the preservation of capital, is best for long-term investment results. These are their core beliefs and the actions they take throughout their investment process:

- Fixed income markets are inefficient
- Indices are investable but not designed to maximize risk-adjusted returns
- Investment decisions can be detrimentally influenced by behavioral biases
- Buy-to-own investing can help portfolios outperform
- Consistent investment income generates long-term benefits
- Capital preservation can be achieved without sacrificing income over the long-term

Investment Process

Process seeks to eliminate behavioral biases in decision-making and leverages the entire investment organization to achieve this endeavor. They separate their investment team into four functions that are all necessary for investments to be made: (1) macroeconomic research, (2) security research and selection, (3) portfolio construction, and (4) portfolio management. Each function is specialized and viewed as equally accountable for performance thus encouraging collaboration across teams.

Risk Management Strategy

- Risk management strategy is essential for the firm’s business, culture, processes, and investment approach.
- The Chief Risk Officer is responsible for overseeing the firm-wide risk management infrastructure.
- The Enterprise Risk Management Committee oversees, manages, and mitigates risk that may have material impact to the firm, its clients, and employees. Committee members include senior management personnel from key control functions across the firm.
- Review performance and attribution daily with extensive quarterly reviews to identify any possible issues or trends in the portfolio or market that the team should discuss.
- Stress test and analyze scenarios to determine downside risk and optimal allocations to avoid losses.

Attributes for this Mandate

- *Rigorous and repeatable process.* Through the segregation of specialized investment responsibilities, identify attractive credits on a risk-adjusted return basis, often in complex, underfollowed, misunderstood or esoteric parts of the market, particularly within structured credit. In these areas, they believe they can gain a distinct information advantage by doing the extra and difficult work necessary to uncover value.
- *Experience and expertise across asset types.* Guggenheim's Structured Credit Strategy is distinguished by a research and negotiation intensive approach that capitalizes on substantial sourcing, research, structuring and legal resources.

Performance

- Guggenheim has demonstrated strong long-term performance in the asset class.

Concerns

- *Current Macroenvironment is Highly Uncertain.* Markets and the economy face an unprecedented challenge with the impact of COVID-19. Maintaining normal business relations, operations, and safety are paramount for the success of any manager in these turbulent times. To minimize knock on effects from recent turbulence, Guggenheim is continuously reevaluating its assumptions about the macro-environment and its stress testing scenarios.
- *Exposure to airlines.* Guggenheim's investment in the airlines industry was negatively impacted by the COVID-19 environment and they are actively managing the situation.

Conclusion

Guggenheim has a dedicated securitized product team capable of making all the necessary investments in the upcoming evolving markets to determine undervalued securities while reducing downside risk and correlation with equity markets. OST recommends Guggenheim to partner on the structured credit product mandate due to the firm's strong culture, years of success in an ever-evolving market, and diligent process and approach to find exemplary deals.

OPERF Structured Credit Product Fixed Income Manager Recommendation

Putnam Investments

Purpose

Subject to the satisfactory negotiation of all terms and conditions, Oregon State Treasury staff recommends Putnam Investments (“Putnam”) to manage up to 4.27% (up to 12.8% across all three managers) of OPERF Fixed Income AUM in a separately managed account “SMA”. This equates to ~\$0.6BN (as of 6/30/20) for each manager. This manager is to serve in one of three positions for the OPERF Structured Credit Product Fixed Income Portfolio.

Background

Pursuant to INV401, Oregon Public Employees Retirement Fund (OPERF) fixed income investments are to provide diversification from equity exposure and liquidity to meet OPERF’s cash flow needs. The Oregon Investment Committee (OIC) directed Oregon State Treasury (OST) staff to conduct a strategic review of the fixed income portfolio based on these two objectives. OST staff worked with BlackRock, Inc to develop model portfolios, with independent analysis by Callan and Guggenheim, both of which undertook the review prior to the December 2019 approval.

From this output, in December 2019, Staff proposed de-risking holdings by, among other initiatives, lowering exposure to US corporate debt, adding emerging markets debt, global sovereigns and expanding holdings in structured credit products. The objective of this structured credit mandate is to provide a sleeve of structured debt securities that, on a portfolio basis along with the other mandates approved in the 2019 review, would provide for a lower correlation to the US equity markets.

The model portfolio used the Bloomberg Barclays US Securitized as its benchmark. The index is composed of asset-backed securities (ABS), mortgage-backed securities (MBS), and commercial mortgage-backed securities (CMBS).

The selection began by screening the long-term performance of potential managers for: 1) consistent outperformance relative to the benchmark, 2) top relative performance against the peer group.¹ Given the severe market disruptions due to the once-in-a-lifetime Covid-19 pandemic, OST staff, while taking into consideration the impact that it had on overall manager performance, placed more emphasis on results as of 4Q19. Candidates that met the performance hurdle were evaluated on ability to articulate the investment process as applied to specific, recent examples, and synchronicity between portfolio managers, traders, strategists, and researchers. Of the initial pool of nearly one hundred candidates, four were selected for further due diligence.² Three managers, at the conclusion of satisfactory negotiations, will deploy capital according to the mandate.

Discussion/Investment Considerations

Firm Overview

- Founded in 1937 by George Putnam, who launched one of the world’s first multi-asset funds.
- Headquartered in Boston with offices in London, Frankfurt, Tokyo, Singapore, and Sydney.

¹ Analysis based on data in eVestments.

² On-site visits were canceled due to the Covid-19 pandemic and will be conducted when possible.

- As of March 31, 2020, Putnam manages approximately \$149 BN split equally between institutional and retail. Approximately \$73 BN is in Fixed Income with \$28BN in securitized products.

Team Overview

- The Fixed Income team has a dedicated sector specialist structure organized across major risk categories: term structure, credit, prepayment, and liquidity.
- Securitized Markets team is led by Co-Head of Fixed Income, Michael V. Salm, and Portfolio Managers, Brett Kozlowski, CFA and Jatin Misra, Ph.D., CFA.
- The strategy is managed using a collaborative approach with Mr. Salm having ultimate decision-making authority. Mr. Salm partners with Dr. Misra to run the portfolio.

Investment Philosophy

- Fixed income markets are inefficient at pricing risk and this provides opportunities for a disciplined investment process.
- Their process utilizes multiple sources of potential relative return with inherent risk controls.
- Sector experts provide forward-looking return and risk distribution in portfolio construction.

Investment Process

- Project cash flows by understanding prepayments, collateral, deal structure, and relevant market trends.
- Understand optionality of mortgage derivatives and take advantage of mispriced optionality within structures.
- Maximize risk-adjusted OAS, because it quantifies the mispriced optionality.
- Assess optionality with a consistent mathematical framework for quantifying optionality, interaction with macro views/risks, and potentially disruptive policy assessment.

Risk Management Strategy

- Utilize a set of proprietary, internally developed risk models for each invested asset class.
- Models are combined within a proprietary risk calculation engine (“sKream”) for reporting risk metrics relevant to portfolio management.
- Provide risk engine data for the risk and investment teams along with necessary reports for each sector to inform the Portfolio and Sector decision-making processes, including trade sizing and portfolio composition.

Attributes for this Mandate

- *Modeling and research capabilities.* Proprietary and independent model-driven investment and research process enable Putnam to build models that help them understand strengths and weaknesses, as well as determine likely sensitivities to prepayment risk.
- *Experience and expertise across asset types.* The strategy has substantial flexibility across securitizes assets, and can access prepayment risk premium, credit risk premium, liquidity risk premium.

Performance

- Putnam has demonstrated strong long-term performance in the asset class.

Concerns

- *Current Macroenvironment is Highly Uncertain.* Markets and the economy face an unprecedented challenge with the impact of COVID-19. Maintaining normal business relations, operations, and safety are paramount for the success of any manager in these turbulent times.

- *Quantitatively driven.* Putnam has created powerful and descriptive models from their data, but this asset can also be problematic for extreme events such as the Coronavirus outbreak or the Great Financial Crisis. Their models have acceptable risk tolerances and wide margins for normal trading periods, but their investment style will encounter some issues during extremely abnormal events.

Conclusion

Putnam has a dedicated securitized product team capable of making all the necessary investments in the upcoming evolving markets to determine undervalued securities while reducing downside risk and correlation with equity markets. OST staff recommends Putnam to partner on the structured credit product mandate due to the firm's strong culture, years of success in an ever-evolving market, and a diligent process and approach to find exemplary deals.

OPERF Structured Credit Product Fixed Income Manager Recommendation

Schroder Investment Management North America Inc.

Purpose

Subject to the satisfactory negotiation of all terms and conditions, Oregon State Treasury staff selects Schroder Investment Management North America Inc. (“Schroders”) to manage up to 4.27% (up to 12.8% across all three managers) of OPERF Fixed Income AUM in a separately managed account “SMA”. This equates to ~\$0.6BN (as of 6/30/20) for each manager. This manager is to serve in one of three positions for the OPERF Structured Credit Product Fixed Income Portfolio.

Background

Pursuant to INV401, Oregon Public Employees Retirement Fund (OPERF) fixed income investments are to provide diversification from equity exposure and liquidity to meet OPERF’s cash flow needs. The Oregon Investment Committee (OIC) directed Oregon State Treasury (OST) staff to conduct a strategic review of the fixed income portfolio based on these two objectives. OST staff worked with BlackRock, Inc to develop model portfolios, with independent analysis by Callan and Guggenheim, both of which undertook the review prior to the December 2019 approval.

From this output, in December 2019, Staff proposed de-risking holdings by, among other initiatives, lowering exposure to US corporate debt, adding emerging markets debt, global sovereigns and expanding holdings in structured credit products. The objective of this structured credit mandate is to provide a sleeve of structured debt securities that, on a portfolio basis along with the other mandates approved in the 2019 review, would provide for a lower correlation to the US equity markets.

The model portfolio used the Bloomberg Barclays US Securitized as its benchmark. The index is composed of asset-backed securities (ABS), mortgage-backed securities (MBS), and commercial mortgage-backed securities (CMBS).

The selection began by screening the long-term performance of potential managers for: 1) consistent outperformance relative to the benchmark, 2) top relative performance against the peer group.¹ Given the severe market disruptions due to the once-in-a-lifetime Covid-19 pandemic, OST staff, while taking into consideration the impact that it had on overall manager performance, placed more emphasis on results as of 4Q19. Candidates that met the performance hurdle were evaluated on ability to articulate the investment process as applied to specific, recent examples, and synchronicity between portfolio managers, traders, strategists, and researchers. Of the initial pool of nearly one hundred candidates, four were selected for further due diligence.² Three managers, at the conclusion of satisfactory negotiations, will deploy capital according to the mandate.

Discussion/Investment Considerations

Firm Overview

- Schroders is a wholly owned subsidiary of Schroders plc. Schroders plc. has been a public company listed on the London Stock Exchange since 1959.

¹ Analysis based on data in eVestments.

² On-site visits were canceled due to the Covid-19 pandemic and will be conducted when possible.

- As of March 31, 2020, Schroder Investment Management North America Inc. (along with its affiliated entity, Schroder Investment Management North America Ltd.) managed over \$107.9BN in assets and is a fully resourced, fully integrated component of their global investment management services.

Team Overview

- Michelle Russell-Dowe, as Head of the Securitized Credit team, is the lead portfolio manager for all securitized strategies and is supported by portfolio managers Jeffery Williams, Chris Ames and Anthony Breaks, in addition to 10 other investment professionals within the securitized credit team. The team manages over \$11.9BN (3/31/2020) and the business was acquired by Schroders in 2016, from Brookfield.

Investment Philosophy

- Thorough understand collateral cash flow and the impact of structure is key to generate returns
- Utilize analytics to reduce risk for high reward securities
- Look for markets where capital provision is inefficient to earn excess return
- Understand cycles and capital structure to create opportunities and reduce risk

Investment Process

- Remain flexible to adjust allocations when opportunities present themselves
- Identify fundamental and technical factors that drive performance for the market and specific sectors
- Utilize qualitative and quantitative factors in models to compare yield profiles for each security across a range of scenarios
- Determine essential risks that they want to take on and then review market to find opportunities to access it.

Risk Management Strategy

- Identify factors that reveal a bond's cash flow sensitivity and calculate its magnitude.
- Diversify risk premium beyond prepayment risk premium. In addition to agency MBS (prepayment risk premium), they can use credit risk premium, or liquidity risk premium to achieve a more attractive risk and convexity profile to outperform the benchmark.

Attributes for this Mandate

- *Scale to be nimble and resources of a large manager.* Schroder Enhanced Securitized (benchmarked) targets outperformance relative to the Securitized index or a customized ABS, MBS, CMBS benchmark.
- *Experience and expertise across asset types.* The strategy has substantial flexibility across securitizes assets, and can access prepayment risk premium, credit risk premium, liquidity risk premium.

Performance

- Schroders has demonstrated strong long-term performance in the asset class.

Concerns

- *Current Macroeconomy is Highly Uncertain.* Markets and the economy face an unprecedented challenge with the impact of COVID-19. Maintaining normal business relations, operations, and safety are paramount for the success of any manager in these turbulent times. Schroders is working to uphold their pre-virus standards while offering the same quality of investments and communication.

Conclusion

Schroders has a dedicated securitized product team capable of making all the necessary investments in the upcoming evolving markets to determine undervalued securities while reducing downside risk and correlation with equity markets. OST staff recommends Schroders to partner on the structured credit product mandate due to the firm's strong culture, years of success in an ever-evolving market, and diligent process and approach to find exemplary deals.

TAB 6 – Alternatives Portfolio Review

September 9, 2020

OPERF Alternatives Portfolio

Annual Review and Forward Plan



OREGON
STATE
TREASURY



Executive Summary

- Primary role of the Alternatives Portfolio = diversification
 - Seeking less correlated and diversifying sources of returns as well as inflation hedges or inflation-sensitive returns.
- Portfolio still young and early in its build-out
 - Market value as of July 31, 2020 = \$7.9 billion (vs. \$11.3 billion target).
 - Market value as a % of OPERF as of July 31, 2020 = 10.5% (vs. 15.0% target).
 - ≈ 50% of total commitments authorized and capital contributed in past 3 years; Portfolio weighted-average age of ≈ 3 years.
 - “Sixth inning” of portfolio development.
- OST/Alternatives Portfolio team resource growth
 - Two Alternatives Portfolio team changes (both promotions): Amanda Kingsbury (investment officer) and Ian Huculak (investment analyst).
 - Continued expansion (and utilization) of broader OST resources.
- Dynamic market and evolving investment opportunity set
 - Steady flow of new managers, strategies, and structures.
 - Strong set of existing managers, offering opportunities to expand relationships.
- Portfolio development on track



Executive Summary, cont.

➤ Real Assets highlights

- Performance headwinds from commodities and commodity-linked exposures; especially acute for Natural Resources allocation. **See page 17.**
- Infrastructure performance overall fared better, buoyed by assets with contracted revenue or more inelastic demand patterns (e.g., renewables, telecoms, and utilities). **See page 18.**
 - Growing ability to scale: both closed-end and open-end infrastructure fund market continues to evolve, with the universe of investable funds steadily expanding as the sector matures. As a result, Infrastructure's share of the Real Assets universe continues to increase. **See pages 18 and 21.**
- Clarity around co-investment strategy. **See page 20.**

➤ Diversifying Strategies highlights

- Equity Value factor was yet again a material driver (and detractor) of returns. **See page 28.**
- With the April 2019 target allocation increase to 7.5% as the impetus, Portfolio analysis and evolution continues; development of "DSP 3.0" blueprint ongoing. **See page 25.**
- Search process for dedicated Diversifying Strategies consultant underway. **See page 29.**

➤ Single action item: approval for revisions and updates to INV 702

- Recommend eliminating Real Asset sub-sector target weightings and proceeding with an overall 7.5% Real Assets allocation inclusive of Infrastructure and Natural Resources strategies. Additional housekeeping updates included as well (mirroring Opportunity Portfolio housekeeping updates from January 2020 OIC meeting). **See pages 21-22.**

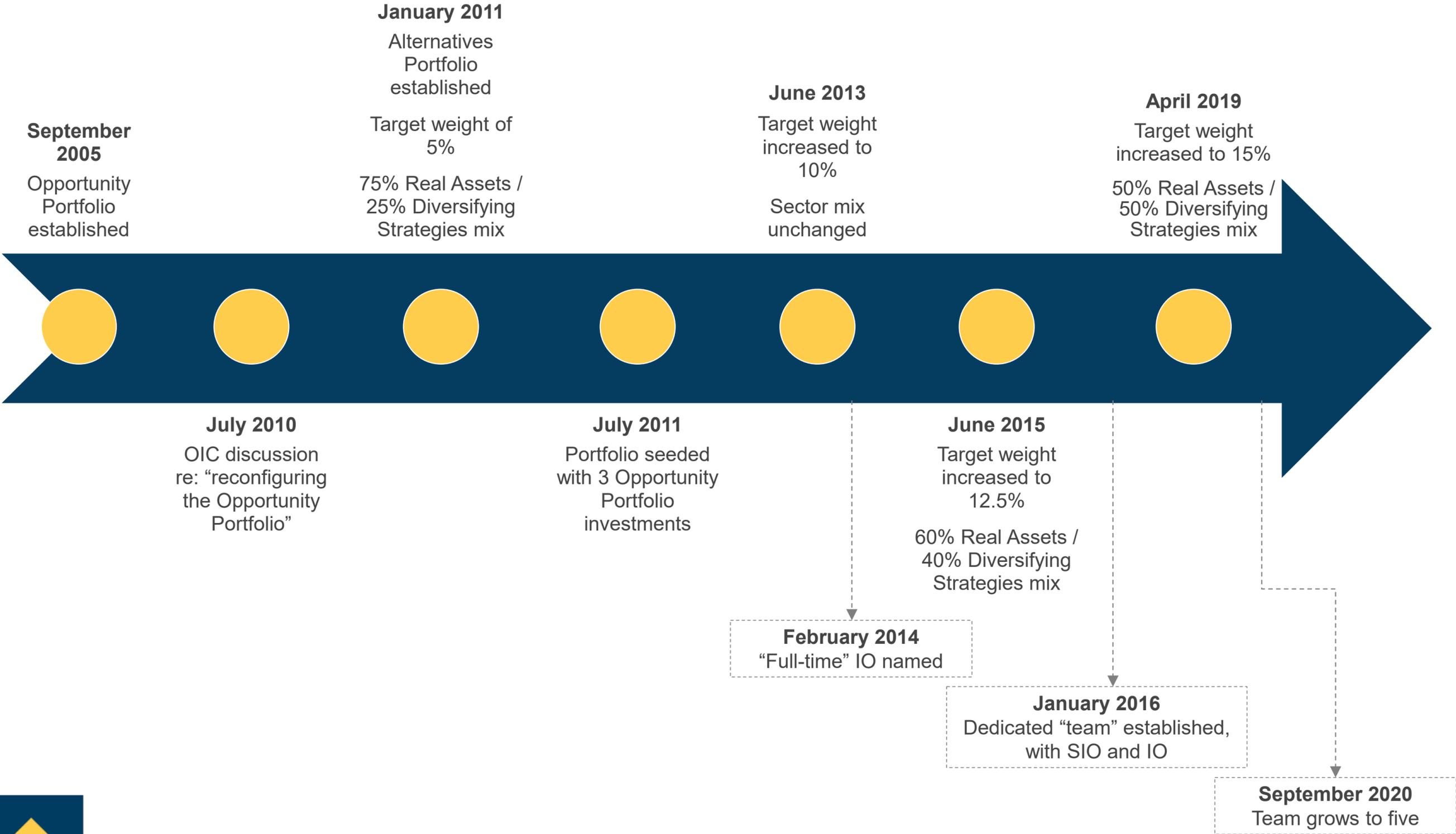


Topics

- 1. Overview**
2. Real Assets Portfolio (RAP) Update
3. Diversifying Strategies Portfolio (DSP) Update
4. Looking Forward
5. Appendix



Timeline



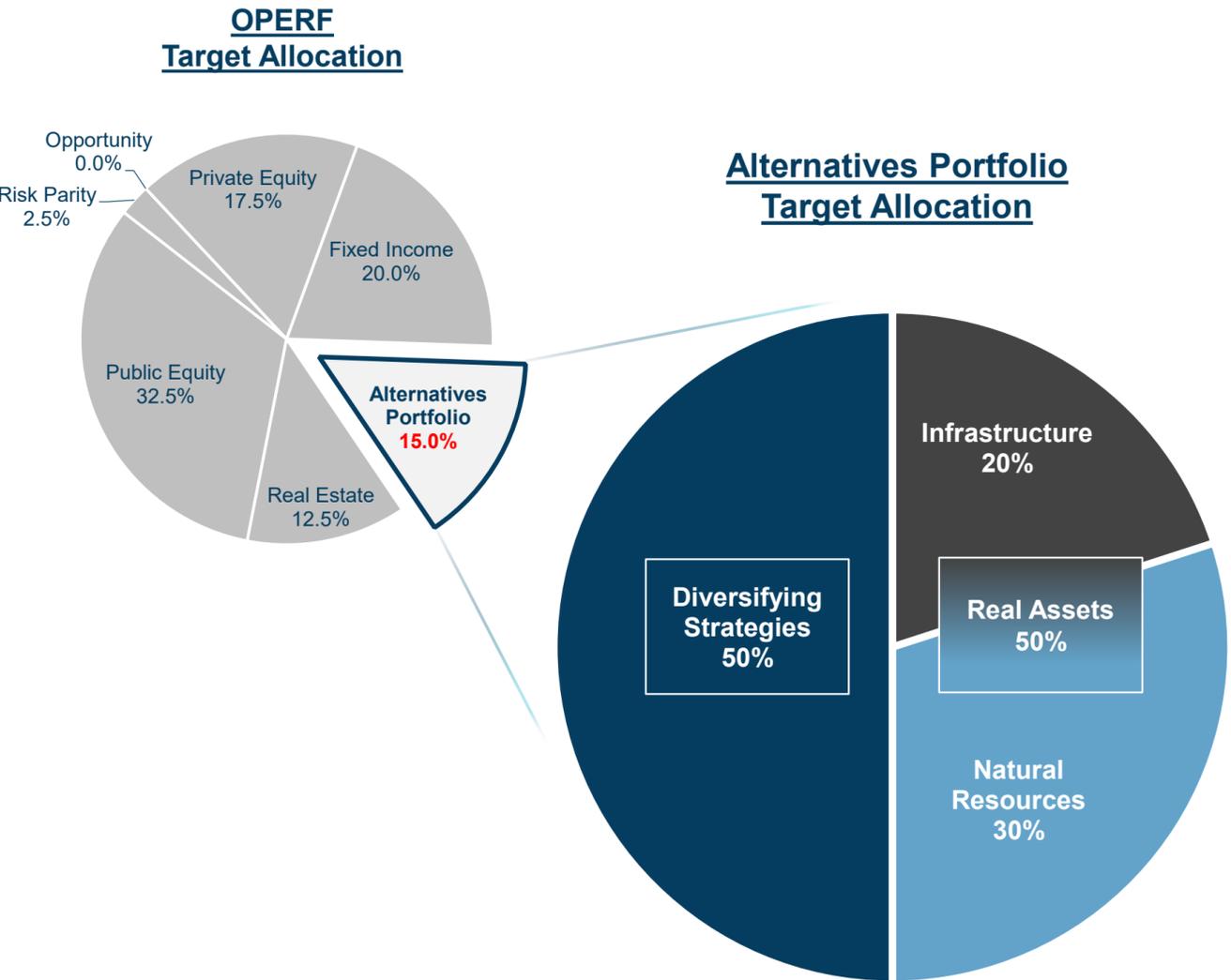
Background/Objectives

➤ Alternatives Portfolio background

- Alternatives Portfolio approved at January 2011 OIC meeting; seeded July 2011 with 3 investments from the Opportunity Portfolio.
- Target allocation for the Portfolio has increased **3** times since its inception:
 - From 5% to 10% in June 2013, from 10% to 12.5% in June 2015, and from **12.5% to 15.0% in April 2019**.
 - Actual allocation at July 31, 2020 was 10.5%.

➤ Alternatives Portfolio objectives

- Participate in attractive long-term investment opportunities.
- Diversify the overall OPERF investment portfolio.
- Seek non-real estate *real assets* and *diversifying strategies* exposures.
- Less correlated returns, diversifying risk premia.
- Includes inflation hedging objective.
- Performance objective: CPI + 4%.



Background/Objectives, cont.

➤ Portfolio objectives consistent over time

- From initial January 2011 recommendation presentation:

Current Issues:

- Existing OPERF portfolio performance highly tied to equity performance (90% beta to equity markets)
- Potentially vulnerable to large capital market downturns
- Little explicit allocation to assets that hedge unexpected inflation

Proposal:

- Create a real assets/real return oriented Alternatives Portfolio designed to exhibit low correlation to capital market returns
- 5% target allocation, but with a measured build up
- Diversify OPERF portfolio with risk reduction and tail risk benefits with an expectation of little to no return penalty

From "OPERF Alternatives Portfolio Proposal," January 2011.



Portfolio Construction: Putting It All Together

- Each Alternatives Portfolio sector plays a distinct role in achieving the objectives
 - By design, Infrastructure, Natural Resources, and Diversifying Strategies all provide diversification benefits for OPERF, and, notably, Infrastructure supports all four Portfolio objectives.

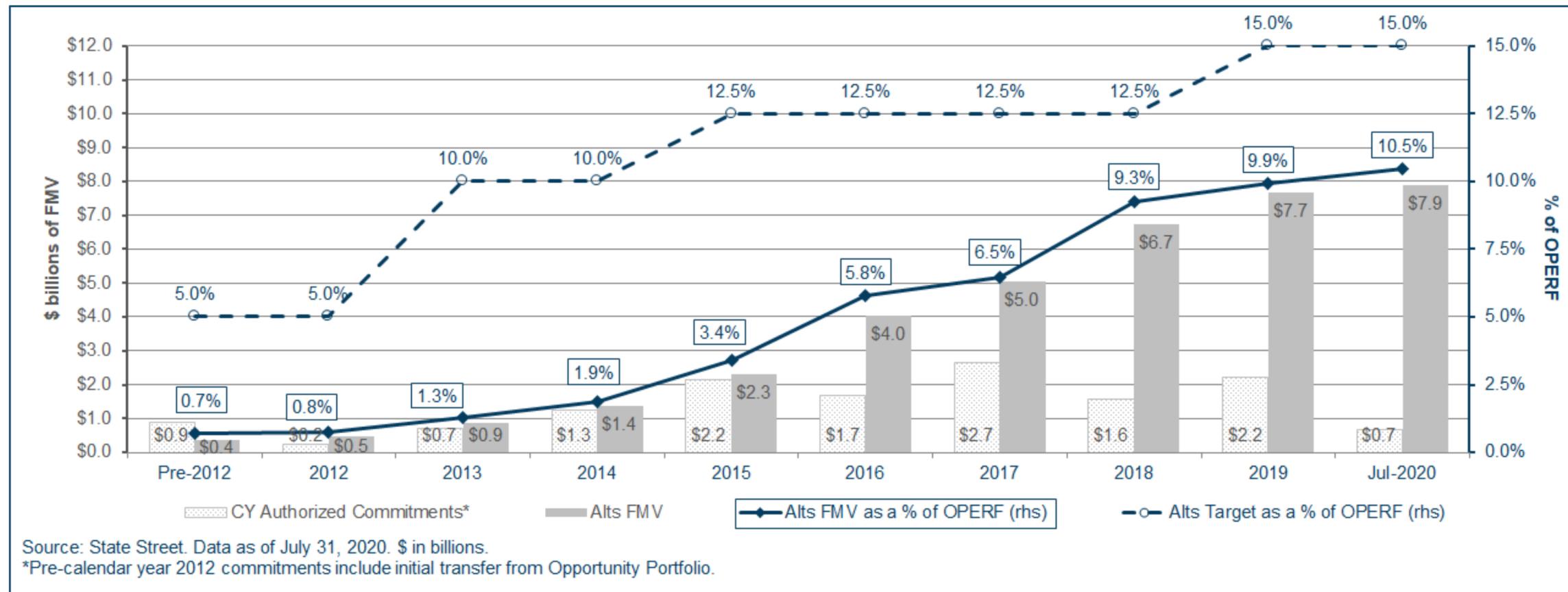
ASSET CLASS	ALLOCATION RANGE	SOURCES OF RETURN	MACROECONOMIC SENSITIVITIES	Capital Protection	Diversification	Current Income	Inflation-Linkage
Infrastructure	15-25%	Cash flows are generated by long-lived assets that deliver essential products or services. These cash flows tend to be a function of price (often tied to a regulatory or concession framework) and volume (throughput generally tied to underlying economic conditions). Additional sources of return through improvement and/or expansion to operations.	The cash flows from infrastructure assets tend to be contracted under terms with periodic price escalators tied to inflation. Since cash flows are generally contracted or feature monopolistic-like pricing power, and are therefore inelastic, infrastructure can be defensive in periods of economic contraction.	Primary	Primary	Secondary	Secondary
Natural Resources	25-35%	Cash flows are generally derived from the production, processing, and distribution of commodities or globally traded goods coming from these resources. Additional sources of return through resource expansion and/or improvement to operations.	The essential nature of natural resources (i.e., food) generally results in inelastic demand. Factors such as weather and overproduction, however, can significantly impact short-term supply and demand. Implicit inflation linkage arises because natural resources include many of the underlying components of inflation (i.e., the production inputs that determine the cost of many goods and services).	Not an objective	Primary	Secondary	Primary
Diversifying Strategies	45-55%	Combination of active management and systematic strategies. Systematic returns generated by following rules-based process of harvesting recognized and exploitable risk premia for which an economic or behavioral rationale exists, driving a positive expected return over time.	Owing to the use of alternative investment techniques such as shorting and leverage, sources of returns largely independent of the market environment.	Secondary	Primary	Not an objective	Not an objective

= Primary objective
 = Secondary objective
 = Not an objective



Commitments and Market Values

- Alternatives Portfolio weight steadily increasing as a percentage of OPERF
 - Through July 31, 2020, \$14.0 billion of investments have been authorized, with the majority (\$7.1 billion or $\approx 50\%$) over the past 3 years.
 - Target allocation increases have occurred relatively early in the Portfolio's lifecycle, extending the build-out timeframe (and elongating the J-curve effect).
 - Longer-term pacing has been measured, given entry point risk, research requirements, and resource constraints. At current pace, anticipate reaching target allocation in ≈ 4 years.



Sector Allocations

- Sector exposures currently outside targeted allocation ranges
 - While cognizant of allocation ranges, deviations are anticipated as the program scales.
 - Variances reflect:
 - Recent target allocation increase to Diversifying Strategies.
 - Relative outperformance of Infrastructure.
 - Slower deployment and commitment pacing to Natural Resources.

SECTOR	TARGET (\$)	TARGET (%)	TARGET RANGE (%)	MARKET VALUE (\$)	MARKET VALUE (%)
Infrastructure	\$2,259.2	20%	15-25%	\$2,946.7	37%
Natural Resources	\$3,388.8	30%	25-35%	\$1,484.4	19%
Diversifying Strategies	\$5,648.0	50%	45-55%	\$3,445.4	44%
TOTAL	\$11,296.0	100%		\$7,876.5	

Source: State State. Data as of July 31, 2020. \$ in millions.



Topics

1. Overview
- 2. Real Assets Portfolio (RAP) Update**
3. Diversifying Strategies Portfolio (DSP) Update
4. Looking Forward
5. Appendix



Defining Real Assets

- “Real Assets” are broadly defined as long-lived, capital intensive, physical or “hard” assets that provide essential products and services to the global economy or generally serve as the inputs to economic production. Real assets typically share three key characteristics:
 - Tangible, with intrinsic value
 - Relatively stable demand and/or revenue profile
 - Inflation-linkage
- Real Assets offer investment characteristics and risk profiles that are differentiated from other asset classes, and which therefore provide valuable diversification benefits. These differentiations include the potential for capital preservation, long-term growth, current income, low volatility, and inflation protection.
 - The primary driver for the low correlation of real assets to other asset classes is the relatively low cyclicality and volatility of their demand profiles, and the consequent stability of their cash flows and earnings. This stability is a function of the essential nature of real assets and their contracted, regulated, or commodity-linked revenues.
 - Underpinning their role in economic and social activity, real assets also stand to benefit from long-term macro trends such as population growth, urbanization, and economic development.



Defining Real Assets, cont.

- Composition of Real Assets universe is broad; sub-sectors themselves include a wide range of assets, characteristics, and risk profiles:

ASSET CLASS	ALLOCATION RANGE	SUB-SECTORS OF INTEREST	ASSET DESCRIPTIONS	GP EXAMPLES	
				generalists	specialists
Infrastructure	15-25%	Transportation	Assets and networks that move freight, bulk commodities, and passengers, including: airports, seaports, rail, toll roads, bridges, and tunnels	Brookfield EQT GIP Starwood Stonepeak Westbourne	Northern Shipping
		Power	Generation of electricity from renewable and conventional sources		LS Power
		Energy	Encompasses pipelines, processing, storage, and district energy systems		EnCap Flatrock
		Utilities	Transmit and distribute essential products and services, including: electricity transmission and distribution, natural gas, water processing and treatment, and waste management		
		Communication	Includes towers, fiber networks, distributed network systems, spectrum, subsea cables, and data centers		Digital Colony
		Social	Encompasses public transportation, housing, education and healthcare facilities		
Natural Resources	10-20%	Energy	Includes land, facilities, and related interests involved in the extraction of energy resources	Blackstone, NGP, Quantum, Warwick	
	0-10%	Metals & Mining	Companies or projects, with rights to extract metal and mineral resources	Appian, EMR, Silver Creek, Taurus	
	5-15%	Timber	Investment in the ownership or lease of timberland		Twin Creeks
		Agriculture	Encompasses land, production, processing, storage, and trading & distribution		Homestead, Teays River, Tillridge

RAP: Approvals

➤ Portfolio build-out continues on track

- During 2019, OIC/OST authorized \$1.2 billion in commitments across 7 investments.
 - 3 of the commitments were new relationships; 4 were “re-ups.”
 - Pacing was slightly slower than plan (\$1.5-2.0 billion per annum).
- Continued progress towards lower fees through tailored partnership structures, seed capital negotiations, and early close discounts. For 2019/YTD 2020 commitments, aggregate management fee and carried interest fee rates were 10% and 13%, respectively, below headline terms.
- Continued refinement to strategy and development of anchor positions complemented by specialist/next generation relationships. No shortage of deal flow!

INVESTMENT NAME	STRATEGY	AUTHORIZED DATE	FIRST OPERF DRAWDOWN	COMMITMENT AMOUNT
Bolt Energy LLC	Infrastructure	January 2019	February 2019	\$50.0
Brookfield Infrastructure Fund IV, L.P.	Infrastructure	January 2019	September 2019	\$400.0
Northern Shipping Fund IV, L.P.	Infrastructure	February 2019	July 2019	\$150.0
Silver Creek Aggregate Reserves Fund I, LLC	Natural Resources	May 2019	September 2019	\$150.0
Taurus Mining Finance Fund II, L.P.	Natural Resources	May 2019	July 2019	\$150.0
QL Capital Partners, L.P.	Natural Resources	June 2019	March 2020	\$200.0
Appian Natural Resources Fund II, L.P.	Natural Resources	July 2019	September 2019	\$100.0
2019 TOTAL				\$1,200.0
Bolt Energy LLC top-off	Infrastructure	February 2020	February 2019	\$12.0
Stonepeak Infrastructure Fund IV, L.P.	Infrastructure	March 2020	N/A	\$500.0
NGP Royalty Partners, L.P.	Natural Resources	May 2020	August 2020	\$150.0
YTD 2020 TOTAL				\$662.0

\$ in millions.



RAP: Cash Flow Activity

➤ Cash flow activity consistent with expectations

- As anticipated, Portfolio cash outflows have exceeded cash inflows by a meaningful amount with pace of contributions increasing as capital commitments are made. The weighted-average age of commitments has increased gradually through time, averaging approximately 3 years (representing the early stage of the Portfolio).
- As of July 31, 2020, OPERF has contributed \$6.4 billion in capital, funding approximately 65% of aggregate capital commitments. Approximately \$3.9 billion of capital commitments remain outstanding. Since inception, a total of \$2.2 billion has been distributed to OPERF.

Real Assets Portfolio	Pre-2012	2012	2013	2014	2015	2016	2017	2018	2019	Jul-2020
Authorized Commitments*	\$782.5	\$175.0	\$550.0	\$1,255.0	\$1,400.0	\$1,359.4	\$1,163.0	\$1,320.0	\$1,200.0	\$662.0
Contributions	\$295.6	\$119.7	\$219.3	\$558.1	\$563.7	\$1,227.2	\$763.2	\$1,011.4	\$1,099.1	\$647.5
Distributions	\$8.3	\$47.7	\$51.5	\$112.1	\$76.8	\$204.1	\$475.5	\$483.9	\$510.9	\$207.5
Net Cash Flow	-\$287.4	-\$72.0	-\$167.8	-\$446.0	-\$486.9	-\$1,023.2	-\$287.6	-\$527.5	-\$588.2	-\$439.9
Weighted Avg. Age of Commitments (yrs)	1.6	2.1	2.3	1.7	1.8	2.1	2.5	2.9	3.3	3.7

Infrastructure	Pre-2012	2012	2013	2014	2015	2016	2017	2018	2019	Jul-2020
Authorized Commitments*	\$450.0	\$100.0	\$200.0	\$400.0	\$800.0	\$834.4	\$713.0	\$1,120.0	\$612.0	\$500.0
Contributions	\$144.8	\$51.2	\$99.1	\$166.4	\$210.2	\$621.8	\$451.3	\$719.3	\$884.5	\$505.1
Distributions	\$2.5	\$13.6	\$29.3	\$89.2	\$49.5	\$124.9	\$371.8	\$356.3	\$375.0	\$125.4
Net Cash Flow	-\$142.3	-\$37.6	-\$69.8	-\$77.2	-\$160.7	-\$496.9	-\$79.5	-\$363.0	-\$509.5	-\$379.7
Weighted Avg. Age of Commitments (yrs)	1.4	1.8	2.4	2.2	1.8	1.9	2.2	2.3	2.9	3.2

Natural Resources	Pre-2012	2012	2013	2014	2015	2016	2017	2018	2019	Jul-2020
Authorized Commitments*	\$332.5	\$75.0	\$350.0	\$855.0	\$600.0	\$525.0	\$450.0	\$200.0	\$600.0	\$150.0
Contributions	\$150.8	\$68.5	\$120.2	\$391.7	\$353.5	\$605.4	\$311.9	\$292.1	\$214.6	\$142.3
Distributions	\$5.8	\$34.1	\$22.2	\$22.9	\$27.3	\$79.1	\$103.8	\$127.7	\$135.9	\$82.2
Net Cash Flow	-\$145.1	-\$34.4	-\$98.0	-\$368.7	-\$326.2	-\$526.3	-\$208.1	-\$164.5	-\$78.7	-\$60.2
Weighted Avg. Age of Commitments (yrs)	1.9	2.4	2.7	1.5	1.9	2.3	2.8	3.5	3.8	4.2

Source: Aksia. Data as of July 31, 2020. \$ in millions.



RAP: Performance Review

➤ Trailing performance (as of March 31, 2020)

- As noted, the Alternatives Portfolio is early in its build-out, and nearly all returns are unrealized; given the long-term nature of alternative investments, as well as the J-curve effect, performance to-date should not be considered meaningful.
- RAP performance relative to policy performance objective is challenged, but sector portfolios fare better relative to secondary benchmarks, with Infrastructure roughly inline with private market benchmarks (Burgiss) and both Infrastructure and Natural Resources outperforming public markets comparables.
- Impact of first quarter 2020 felt across the Portfolio.

IRR	1 Year	2 Year	3 Year	5 Year	7 Year	ITD	ITD - Prior Qtr
Real Assets Portfolio	-9.0%	-4.9%	-2.0%	1.0%	0.6%	0.6%	3.1%
CPI + 4%	5.5%	5.7%	5.9%	5.8%	5.5%	5.5%	5.5%
<i>Difference</i>	<i>-14.5%</i>	<i>-10.6%</i>	<i>-7.9%</i>	<i>-4.8%</i>	<i>-4.9%</i>	<i>-5.0%</i>	<i>-2.4%</i>

IRR	1 Year	2 Year	3 Year	5 Year	7 Year	ITD	ITD - Prior Qtr
Infrastructure	2.1%	5.6%	5.8%	7.1%	7.8%	7.5%	9.6%
CPI + 4%	5.5%	5.7%	5.9%	5.8%	5.5%	5.5%	5.5%
<i>Difference</i>	<i>-3.5%</i>	<i>-0.2%</i>	<i>-0.1%</i>	<i>1.3%</i>	<i>2.3%</i>	<i>2.0%</i>	<i>4.1%</i>
Burgiss Infrastructure	-0.7%	3.7%	7.1%	7.8%	8.2%	7.6%	8.6%
<i>Difference</i>	<i>2.8%</i>	<i>1.8%</i>	<i>-1.3%</i>	<i>-0.8%</i>	<i>-0.4%</i>	<i>0.0%</i>	<i>1.0%</i>
S&P Global Infrastructure	-21.9%	-8.1%	-4.2%	-1.3%	1.7%	2.1%	6.5%
<i>Difference</i>	<i>24.0%</i>	<i>13.6%</i>	<i>10.0%</i>	<i>8.3%</i>	<i>6.0%</i>	<i>5.4%</i>	<i>3.1%</i>

IRR	1 Year	2 Year	3 Year	5 Year	7 Year	ITD	ITD - Prior Qtr
Natural Resources	-23.0%	-16.3%	-10.4%	-5.3%	-6.2%	-6.1%	-2.7%
CPI + 4%	5.5%	5.7%	5.9%	5.8%	5.5%	5.5%	5.5%
<i>Difference</i>	<i>-28.5%</i>	<i>-22.0%</i>	<i>-16.3%</i>	<i>-11.1%</i>	<i>-11.6%</i>	<i>-11.7%</i>	<i>-8.3%</i>
Burgiss Natural Resources	-24.0%	-14.2%	-8.4%	-4.1%	-2.9%	-1.9%	0.9%
<i>Difference</i>	<i>1.0%</i>	<i>-2.1%</i>	<i>-2.0%</i>	<i>-1.3%</i>	<i>-3.2%</i>	<i>-4.3%</i>	<i>-3.6%</i>
S&P Global Natural Resources	-30.5%	-16.9%	-7.0%	-3.3%	-3.9%	-4.6%	-0.2%
<i>Difference</i>	<i>7.5%</i>	<i>0.6%</i>	<i>-3.4%</i>	<i>-2.0%</i>	<i>-2.3%</i>	<i>-1.5%</i>	<i>-2.5%</i>
S&P GSCI	-41.0%	-24.4%	-13.3%	-12.8%	-15.6%	-13.0%	-7.6%
<i>Difference</i>	<i>18.0%</i>	<i>8.1%</i>	<i>3.0%</i>	<i>7.5%</i>	<i>9.5%</i>	<i>6.9%</i>	<i>4.9%</i>

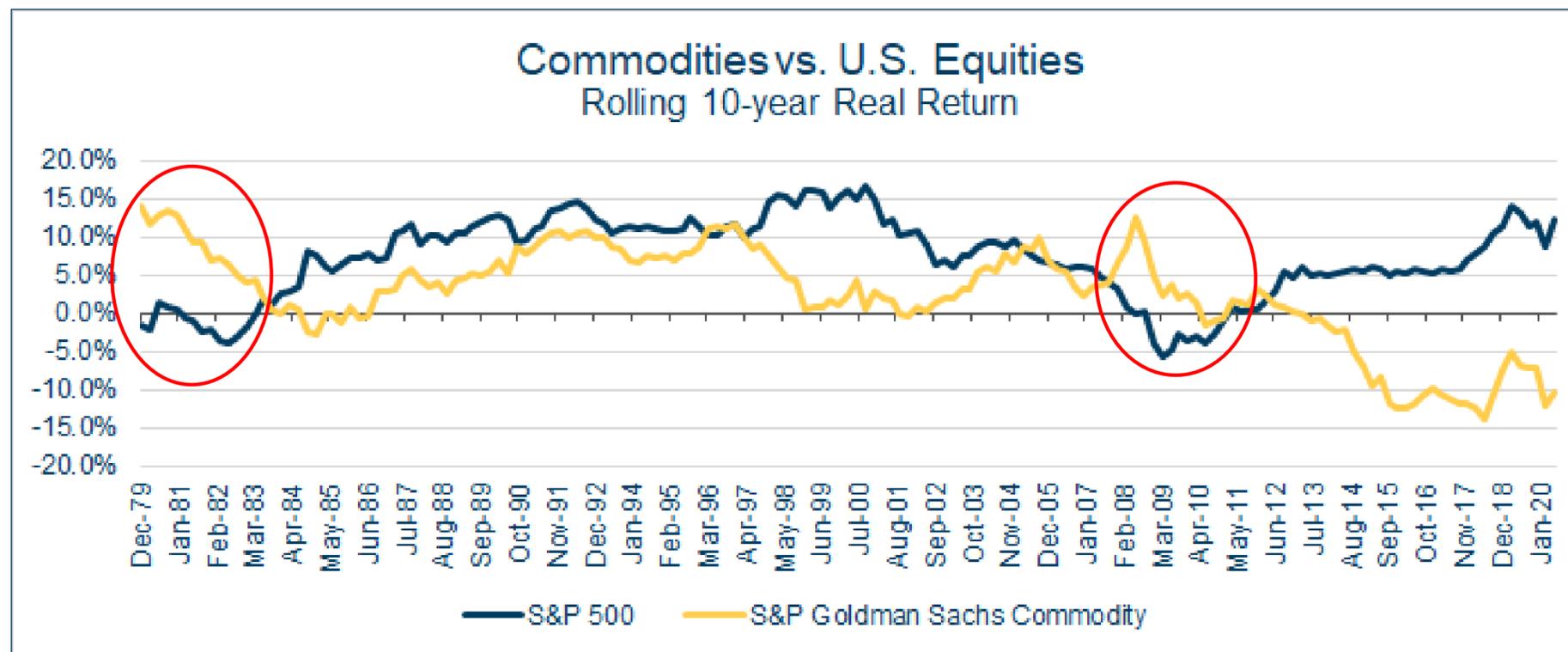
Source: Aksia, Burgiss, eVestment Alliance. Data as of March 31, 2020. Net of fees.



RAP: Performance Review, cont.

➤ Commodity and commodity-linked impact on performance

- By design, the Real Assets Portfolio has exposure to commodities. Over the past decade, this exposure has served as a headwind, especially for earlier vintage years.
- Commodities have historically offered strong diversification benefits with differentiated sources of return and low correlations with other asset classes. Of note, the chart below illustrates **two** distinct trailing 10-year periods over which stocks generated negative real returns whereas commodities achieved positive real returns.
- However, this chart also highlights the relative underperformance of commodities versus U.S. equities over the past decade, during which commodities suffered their deepest drawdown since the Great Depression.



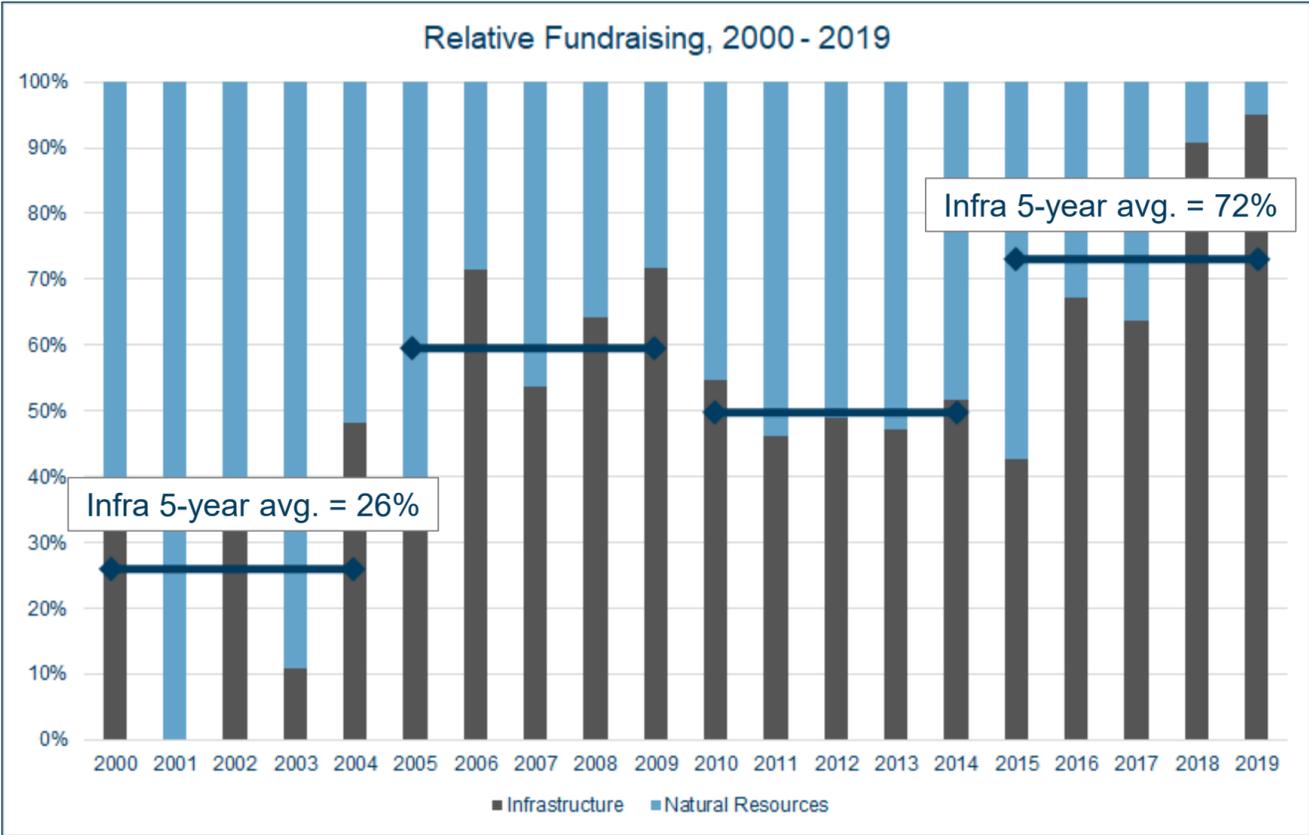
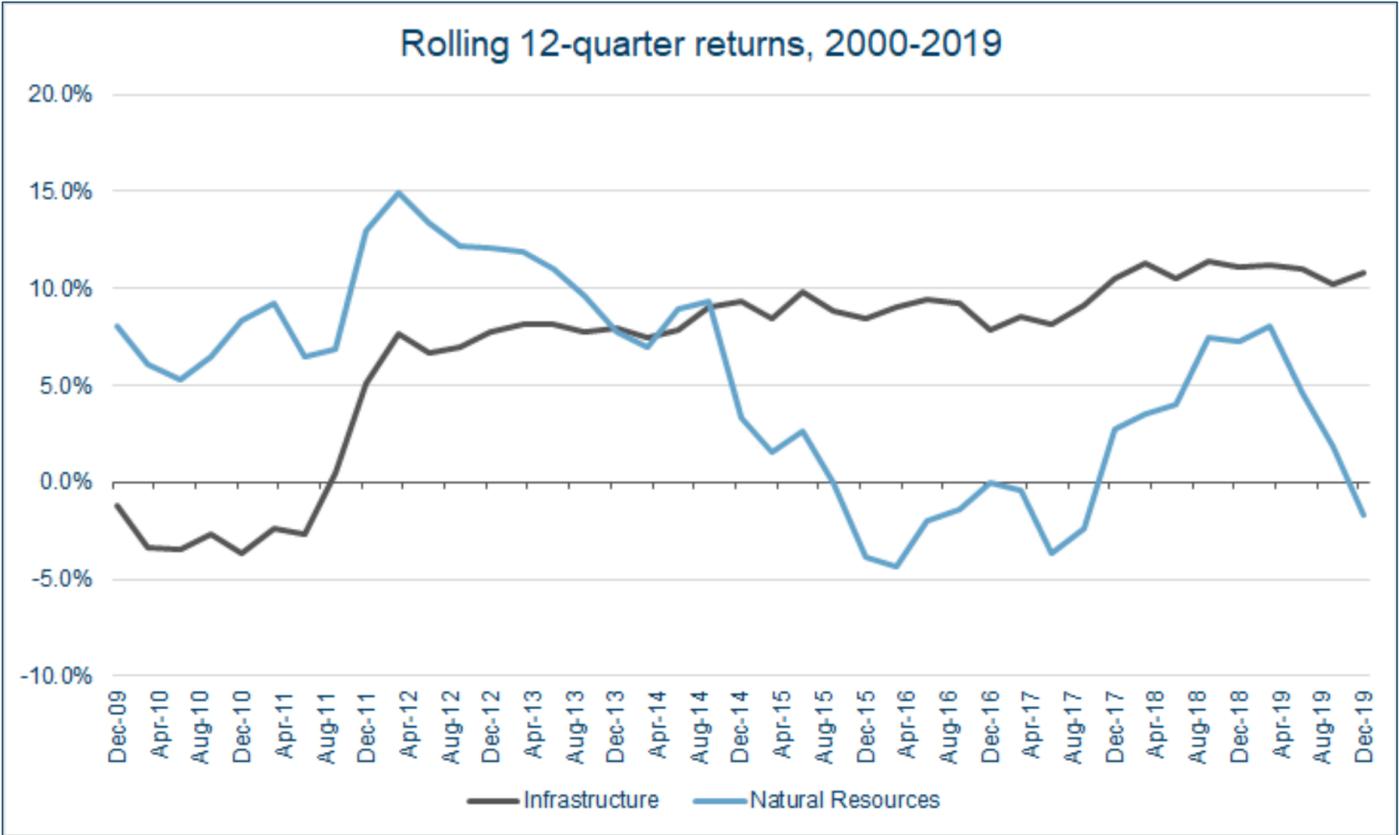
Source: eVestment Alliance. Chart data: January 1970 – June 2020. Inflation using U.S. CPI.



RAP: Performance Review, cont.

➤ Infrastructure performance and growth of the market

- In contrast to the uneven performance of Natural Resources over the past decade, Infrastructure's performance has been relatively consistent (*bottom left*). This likely reflects the sector's depth and diversity of strategies, sub-sectors, and GPs.
- As noted, Infrastructure's share of the Real Asset universe has increased dramatically over the past two decades, growing from an average of 26% between 2000-2004 to an average of 72% between 2015-2019 (*bottom right*). Since OPERF's first infrastructure commitment in 2008, aggregate capital raised has quintupled, growing from \$70 billion in 2008 to \$374 billion in 2019.



Source: Burgiss. Data calculated using the Burgiss Manager Universe, including vintage years 2000-2019.

RAP: Portfolio Priorities

1. 2020 commitment pacing
 - \$1.5 - \$2.0 billion in aggregate commitments.
 - In-line with \$1.75 billion annual pacing target.
 - 5-10 commitments with an average commitment size of \$150-\$250 million.
2. Co-investment
 - Execute on envisioned structure.
3. Monitoring and risk management
 - Continue to pursue enhancements to monitoring and risk management efforts.
 - Assist in formalization of ESG integration across the broader Alternatives Program.
4. Conduct research reviews of areas of interest
 - Communication infrastructure.
 - “Low risk” core infrastructure.
 - Energy natural resources.



RAP: Co-investment Implementation

➤ Co-investment program evaluation

- With the objective function of mitigating fee drag, Staff undertook a review of various co-investment program models.
- The evaluation included collecting and analyzing data related to historical deal flow, conducting informational meetings with our GPs to collect insights, and administering an exploratory DDQ with prospective third-party co-investment managers.
- While other structures were explored, Staff believes that creating a systematic co-investment program using structured sidecar¹ vehicles provides the greatest degree of confidence of fulfilling the co-investment program's objectives.
 - GPs expressed higher confidence of filling a co-investment side-car relative to a third-party manager implementation.
 - With a smaller portfolio and fewer deals (likely <10 a year), Staff believes a side-car implementation would be manageable.
 - Side-car implementation is consistent with existing (albeit limited) implementation (i.e., QLCP, Westbourne).
- Staff is envisioning a program where 10-20% of Real Asset Portfolio commitments might come via co-investment over the long-term. Approval for the side car vehicles will be contemplated as part of the primary fund recommendation or under Staff authority.

RAP: Sector Weighting Recommendation

➤ Background

- Since inception of the Alternatives Portfolio, the composition of the Real Assets allocation has remained unchanged, with sector weight targets of 60% Natural Resources (4.5% of OPERF) and 40% Infrastructure (3.0% of OPERF). Over the past decade, the Real Asset investment landscape has evolved meaningfully, with changes in market capitalization, product types, manager universes, etc. As a result, Staff believed it was appropriate to evaluate Real Asset sector weight targets.

➤ Key findings

- Relative to 2010 when the Real Asset blueprint was first laid out, market capitalization has shifted materially from Natural Resources to Infrastructure. Staff feels confident that the shift is secular rather than cyclical and highlights the challenges with implementing at the current allocation mix.
- Through experience, the Infrastructure opportunity set has generally been more attractive and diverse than Natural Resources (which is heavily weighted towards energy).
- Over the decade following inception of the Alternatives Portfolio, Infrastructure has generated attractive (and consistent) risk-adjusted returns, strongly aligning with the objectives of the Alternatives Portfolio. Staff believes this dynamic is likely to continue.
- While less consistent and scalable, the potential for strong performance and low correlations make Natural Resources worth continued consideration as part of the Real Asset allocation; however, volatile commodity price cycles, shifting supply-and-demand dynamics, leverage risk, etc., makes pacing flexibility paramount.



RAP: Sector Weighting Recommendation, cont.

➤ Key findings, cont.

- Under current policy, Staff and Consultant are compelled to assign an investment into the Natural Resources or Infrastructure allocation when in reality the specific fund may have exposure to both sectors or may definitionally be in a grey area (e.g. midstream agribusiness). Recent improvements to sector classifications, whereby Staff and Consultant classify holdings at the individual investment level, allows for better and more meaningful transparency into Portfolio weightings.

➤ Recommendation

- Staff and Consultant recommend eliminating target sector weightings and proceeding with an overall 7.5% Real Assets allocation inclusive of Infrastructure and Natural Resources strategies.
- Similar to other asset classes (Diversifying Strategies, Private Equity, etc.), a target sector allocation will be maintained (and reported), it will just be set at Staff discretion and not in policy.
- With removal of Infrastructure and Natural Resources targets, Staff can focus on building the highest conviction relationships and maintaining strong portfolio oversight. Managers would no longer be ranked as separate groups for quality and conviction.
- ***Updated policy attached for consideration.*** The update includes a number of housekeeping changes as well, all of which have been reviewed by counsel and the OIC's advisors and are consistent with updates presented at the Opportunity Portfolio annual review in January 2020.



Topics

1. Overview
2. Real Assets Portfolio (RAP) Update
- 3. Diversifying Strategies Portfolio (DSP) Update**
4. Looking Forward
5. Appendix



Defining Diversifying Strategies

- “Diversifying Strategies” nomenclature is intentional
 - Unlike a broad hedge fund program, focus is on strategies with low correlation to equity markets.
 - Universe is further narrowed by sharp attention to fees, transparency, and underlying liquidity, leading to a concentrated set of prioritized sub-sectors.
 - Initial implementation focuses on alternative beta, which are essentially the building blocks of returns, and which provide systematic explanations for returns. It is important to note that alternative beta investment strategies are not new: the majority of the relevant premia have been studied in academic literature and/or used by hedge funds for decades.

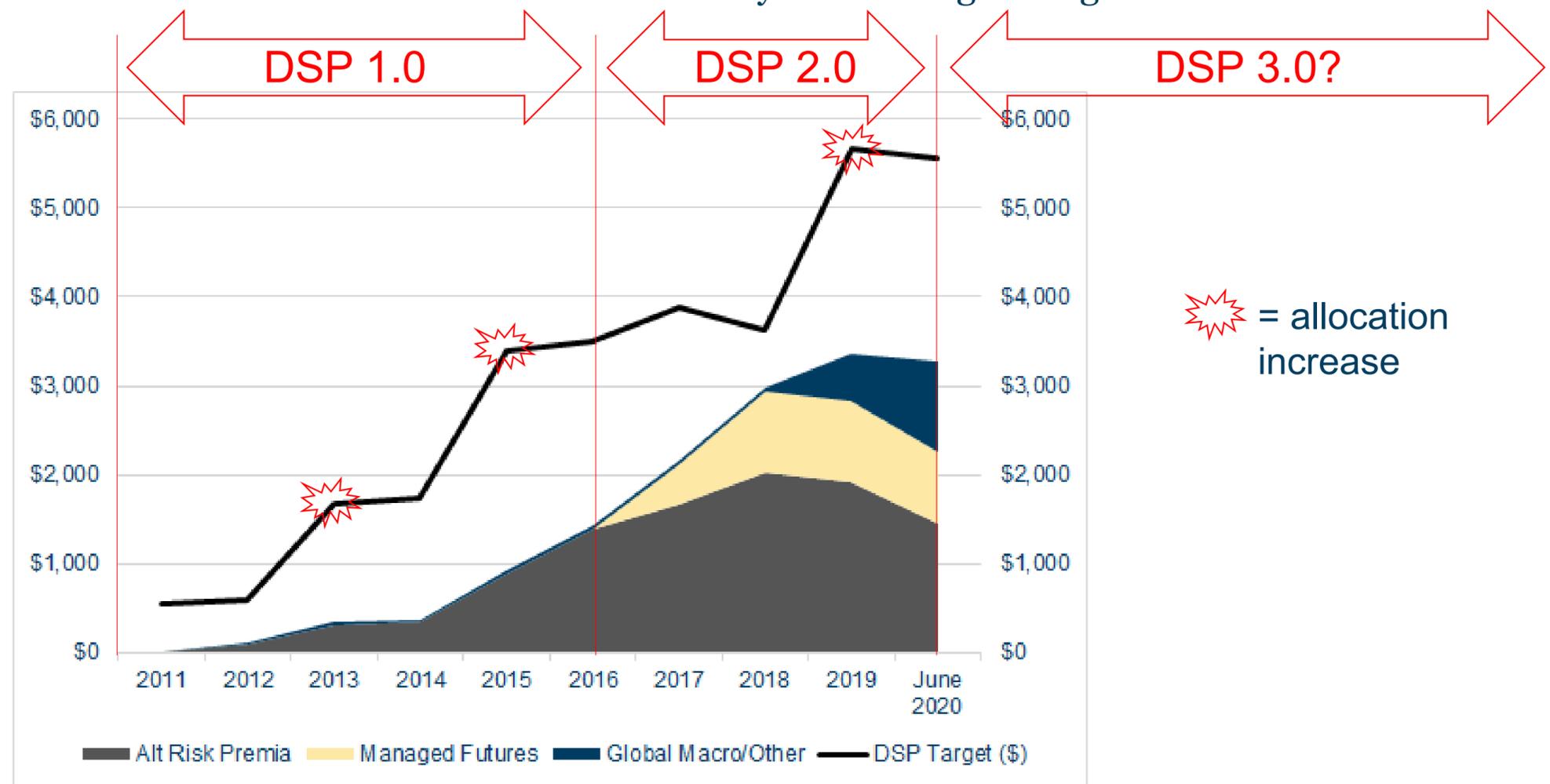
ASSET CLASS	ALLOCATION RANGE	SUB-SECTORS OF INTEREST	DESCRIPTION	ROLE	OPERF MANAGERS
Diversifying Strategies	45-55%	Alternative Risk Premia	Non-directional harvesting of style and strategy risk premia	Strong risk-adjusted returns with low correlations to traditional asset classes. Cost-efficient "structural" sources of return.	AQR Style Premia, AQR DELTA, Blackrock Style Advantage, JP Morgan Systematic Alpha
	20-30%	Managed Futures	Directional harvesting of momentum (trend-following) risk premia	Lower expected Sharpe ratios but with variable market beta that can provide downside protection.	AQR Managed Futures, FORT GT, Aspect Capital Core Diversified Programme
	20-30%	Global Macro/Other	Forecasting security or market direction based on movements in economic variables; aims to capture perceived mispricings	Active management. With heavy systematic elements in rest of the portfolio, meant to provide a buffer against regime shifts and premia decay.	GMO Systematic Global Macro, Bridgewater Optimal Portfolio



DSP: Portfolio Construction Evolution

➤ Portfolio composition through time

- Diversifying Strategies allocation has increased three times since inception, with each increase taking place early in the respective build-out of the allocation.
- Staff considers three distinct periods of Portfolio construction evolution:
 - DSP 1.0: sole focus on Alternative Risk Premia. “Putting our beach towels down,” establishing strategic partnership with AQR.
 - DSP 2.0: focused on expanding manager roster; established anchor relationships in Managed Futures and Global Macro/Other sectors.
 - DSP 3.0? New dedicated consultant to assist. Potentially broadening strategies of interest.



DSP: Approvals

➤ Portfolio build-out continues

- During 2019, OIC/OST authorized \$1.0 billion in commitments across 2 strategies.
 - Both were new relationships, representing the Portfolio’s initial exposure to the new Global Macro segment.
 - Top-offs occurred after allocation increase in April 2019.
- Continued refinement to strategy. After addition of third Managed Futures manager (FORT) in July 2020, await consultant input before advancing further manager recommendations.

INVESTMENT NAME	STRATEGY	AUTHORIZED DATE	FIRST OPERF DRAWDOWN	COMMITMENT AMOUNT
Bridgewater Optimal Portfolio	Global Macro	February 2019	May 2019	\$250.0
GMO Systematic Global Macro	Global Macro	February 2019	April 2019	\$250.0
Bridgewater Optimal Portfolio top-off	Global Macro	December 2019	March 2020	\$250.0
GMO Systematic Global Macro top-off	Global Macro	December 2019	February 2020	\$250.0
2019 TOTAL				\$1,000.0
FORT Global Trend	Trend Following	July 2020	August 2020	\$250.0
YTD 2020 TOTAL				\$250.0

\$ in millions.



DSP: Performance Review

➤ Trailing performance (as of June 30, 2020)

- DSP performance relative to policy performance objective and sector benchmarks is challenged, but reflective of initial concentrated manager and strategy allocation.
- Despite the Equity Value factor accounting for only ~30% of the Diversifying Strategies Portfolio's risk, it explains nearly all of its losses. Staff believes this reflects just how severe the value drawdown has been.

TWR	MRQ	1 Year	2 Year	3 Year	5 Year	7 Year	ITD
Diversifying Strategies Portfolio	-6.0%	-14.1%	-10.0%	-6.5%	-2.0%	0.2%	1.0%
CPI + 4%	0.9%	4.5%	5.0%	5.7%	5.4%	5.3%	5.5%
<i>Difference</i>	<i>-6.8%</i>	<i>-18.6%</i>	<i>-15.0%</i>	<i>-12.2%</i>	<i>-7.4%</i>	<i>-5.1%</i>	<i>-4.5%</i>

TWR	MRQ	1 Year	2 Year	3 Year	5 Year	7 Year	ITD
Alternative Risk Premia	-10.9%	-25.8%	-17.0%	-11.5%	-4.4%	-1.6%	-0.5%
CPI + 4%	0.9%	4.5%	5.0%	5.7%	5.4%	5.3%	5.5%
<i>Difference</i>	<i>-11.8%</i>	<i>-30.3%</i>	<i>-22.0%</i>	<i>-17.2%</i>	<i>-9.8%</i>	<i>-6.9%</i>	<i>-5.9%</i>
SG MARP Index	-4.3%	-11.6%	-5.8%	-3.3%			
<i>Difference</i>	<i>-6.6%</i>	<i>-14.2%</i>	<i>-11.2%</i>	<i>-8.3%</i>			

TWR	MRQ	1 Year	2 Year	3 Year	5 Year	7 Year	ITD
Managed Futures	-5.1%	0.7%	-1.3%	-1.3%			
CPI + 4%	0.9%	4.5%	5.0%	5.7%			
<i>Difference</i>	<i>-6.0%</i>	<i>-3.9%</i>	<i>-6.3%</i>	<i>-7.0%</i>			
SG Trend Index	-3.1%	0.8%	2.4%	2.6%			
<i>Difference</i>	<i>-2.1%</i>	<i>-0.1%</i>	<i>-3.7%</i>	<i>-3.9%</i>			

TWR	MRQ	1 Year	2 Year	3 Year	5 Year	7 Year	ITD
Global Macro	1.9%	-3.5%					
CPI + 4%	0.9%	4.5%					
<i>Difference</i>	<i>1.1%</i>	<i>-8.1%</i>					
HFRI Macro Total Index	1.0%	0.9%					
<i>Difference</i>	<i>0.9%</i>	<i>-4.5%</i>					

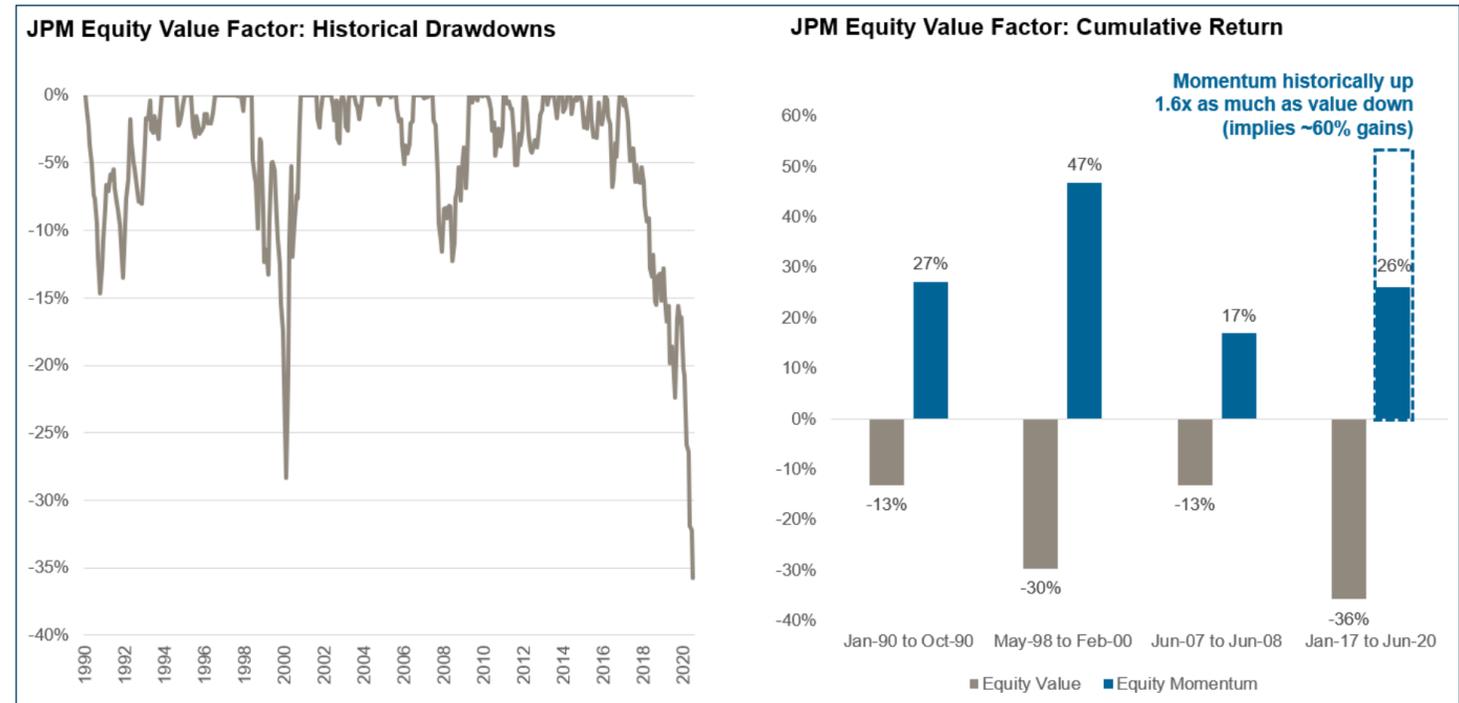
Source: Callan, eVestment Alliance, Bloomberg. Data as of June 30, 2020. Net of fees.



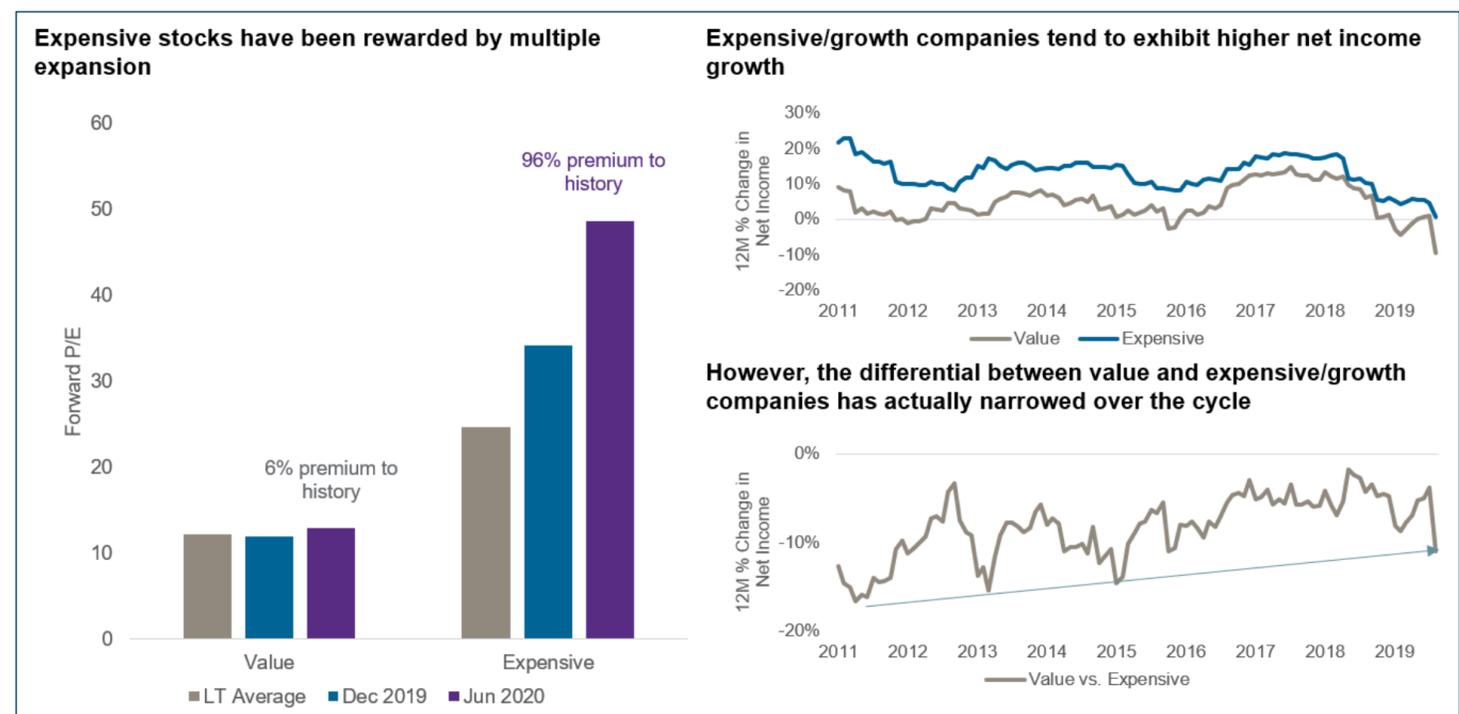
DSP: Performance Review, cont.

➤ Continued underperformance of the equity value factor

- The Equity Value factor is in the midst of a historic drawdown. Additionally, relative to past drawdowns, equity value losses have not been sufficiently offset by other factors.



- Value underperformance does not appear to be solely explained by fundamentals; it appears investors are simply paying way more than usual for the stocks they love versus the ones they hate and doing it in a highly diversified way up and down the cross-section of stocks. By various measures, value is now as cheap as it has ever been.



Source: J.P. Morgan Asset Management. Data as of July 31, 2020.



DSP: Portfolio Priorities

1. Consultant search

- Since inception, Diversifying Strategies allocation has fallen under the purview of the OIC's general consultant. With growth of the Portfolio (from $\approx 1\%$ of OPERF to 7.5% target today), Staff felt it was prudent to add additional resources and expertise.
- RFP for dedicated Diversifying Strategies consultant commenced July 1, with the intention of bringing forward a recommendation later in 2020.
- Member Cara Samples to serve as OIC representative.

2. DSP 3.0 evaluation

- Once newly hired consultant is onboarded, engage on development of "DSP 3.0" blueprint.

3. Monitoring and risk management

- Continue to pursue enhancements to monitoring and risk management efforts.

4. Continue Equity Value (and general factor) research



Topics

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5. Appendix



Key Takeaways

- Primary role of the Alternatives Portfolio = diversification
- Portfolio still young and early in its build-out
- OST/Alternatives Portfolio team Resource growth
- Dynamic market and evolving investment opportunity set
- Real Assets highlights
 - Performance headwinds from commodities and commodity-linked exposures; relative strength from Infrastructure allocation.
 - Additional flexibility from overall 7.5% Real Assets allocation, providing for continued refinement of approach.
 - Clarity around co-investment strategy.
- Diversifying Strategies highlights
 - Performance headwinds from Equity Value factor.
 - Dedicated DSP consultant search underway; crafting of “DSP 3.0” blueprint ongoing.

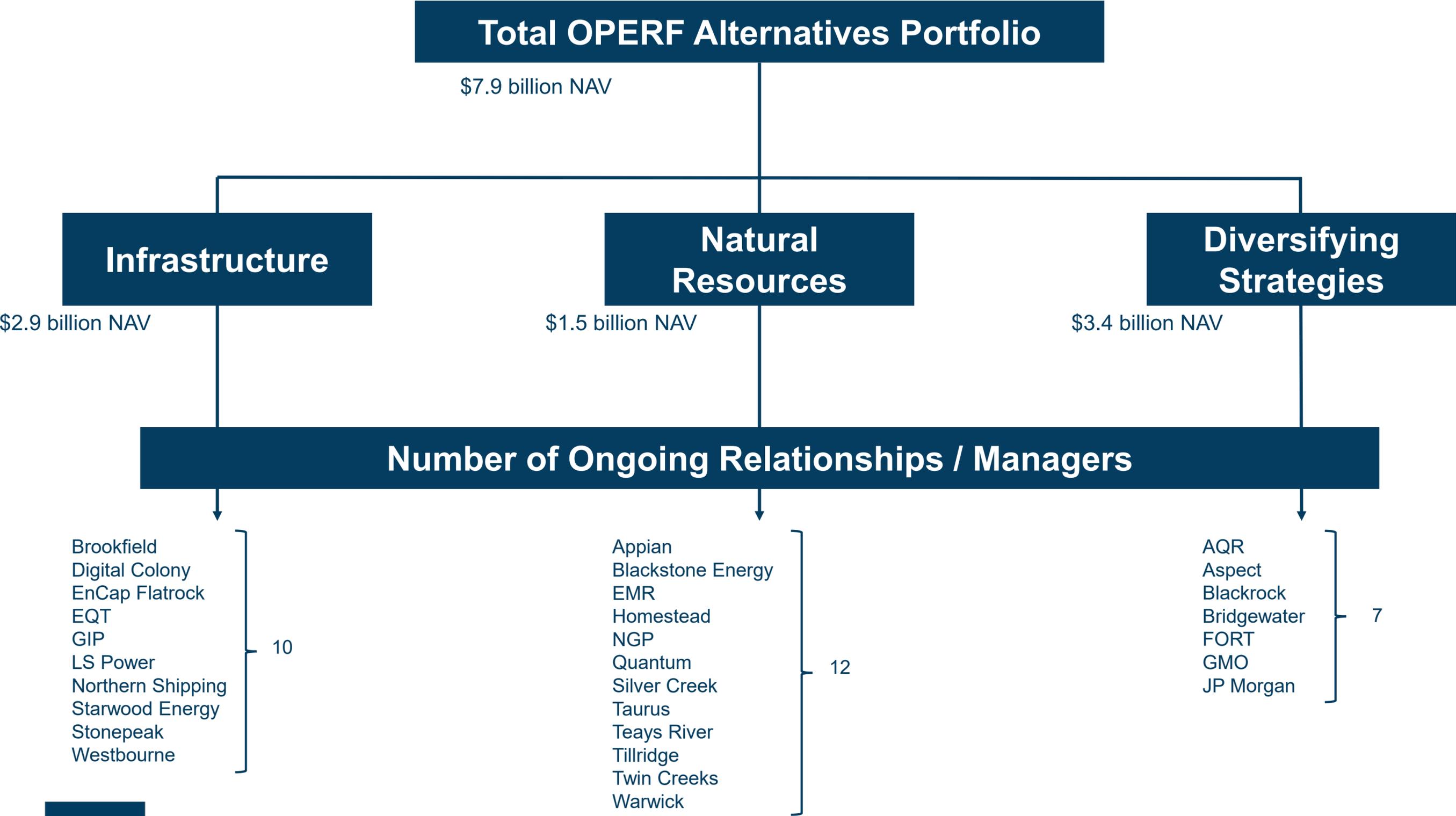


Topics

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Appendix: Portfolio Structure/Relationships



Appendix: Portfolio Structure/Relationships **Vision**

Goals:

- Target ≈ 30-40 active relationships
- Use for priority setting
- Assess current targets – are they reasonable?

Total OPERF Alternatives Portfolio

\$7.9 billion NAV
 \$11.3 billion target
 \$4.0 billion unfunded

Infrastructure

\$2.9 billion NAV
 \$2.3 billion target
 \$2.5 billion unfunded

Natural Resources

\$1.5 billion NAV
 \$3.4 billion target
 \$1.3 billion unfunded

Diversifying Strategies

\$3.4 billion NAV
 \$5.4 billion target
 \$125 million unfunded

Number of Ongoing Relationships / Managers

Brookfield
 Digital Colony
 EnCap Flatrock
 EQT
 GIP
 LS Power
 Northern Shipping
 Starwood Energy
 Stonepeak
 Westbourne

10

- Envision 10-12 relationships
- Larger fund sizes and manager universe, so average commitment larger

Appian
 Blackstone Energy
 EMR
 Homestead
 NGP
 Quantum
 Silver Creek
 Taurus
 Teays River
 Tillridge
 Twin Creeks
 Warwick

12

- Envision 14-16 relationships
- Smaller fund sizes and manager universe, so average commitment smaller

AQR
 Aspect
 Blackrock
 Bridgewater
 FORT
 GMO
 JP Morgan

7

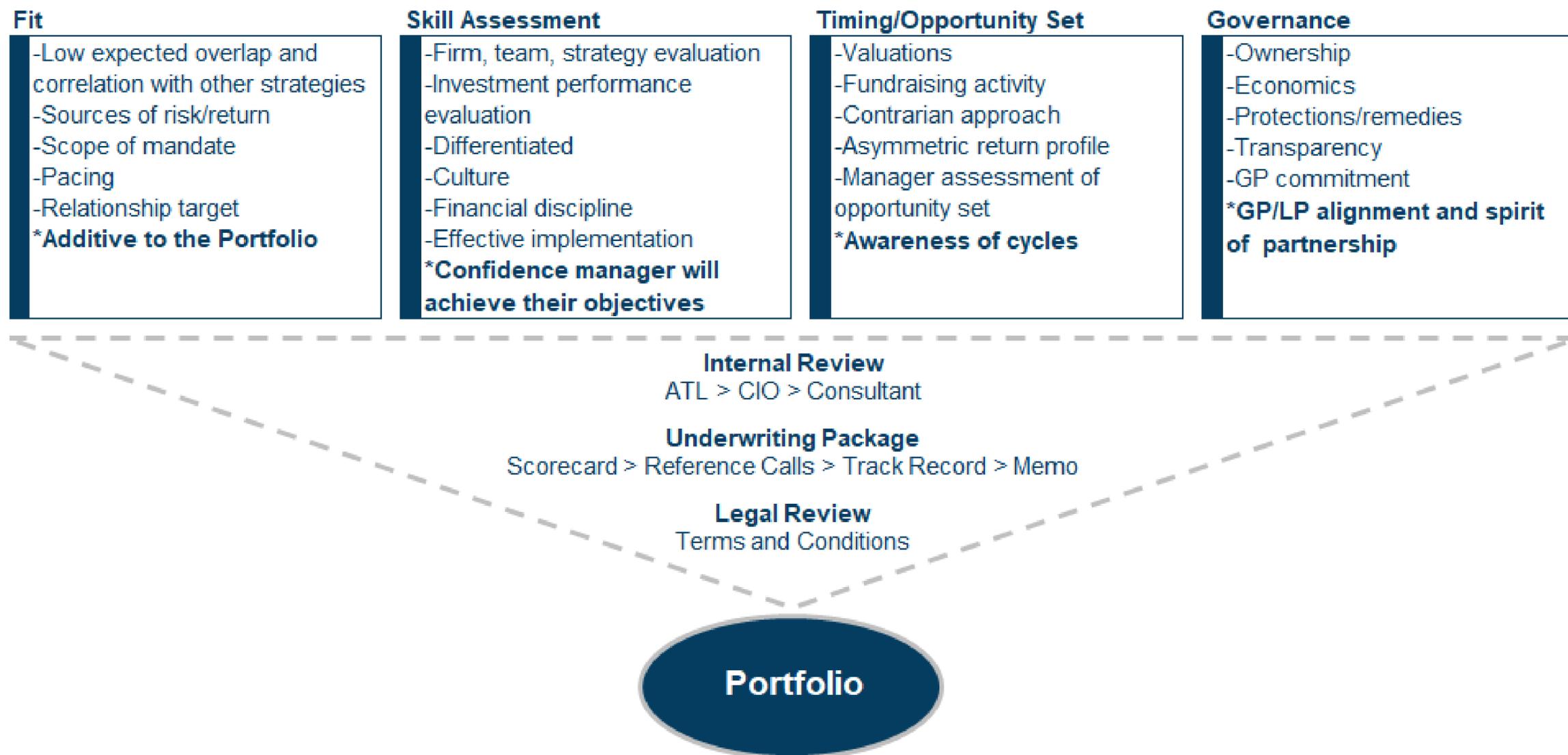
- Envision 10-12 relationships
- Maintain style and strategy premia bias



Appendix: Investment Process

➤ Evaluation framework

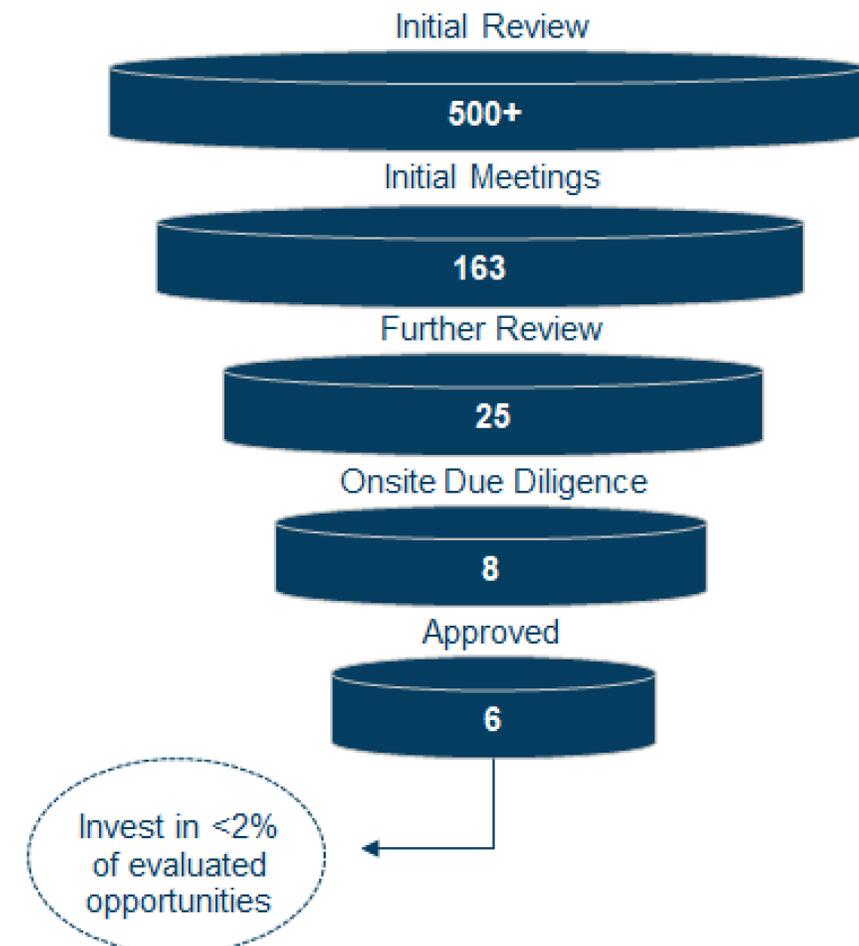
- Very high-level summary of Alternatives Portfolio investment evaluation framework below
- In practice, many more variables, non-linear, and with numerous feedback channels



Appendix: Investment Process, cont.

➤ Trailing twelve months of Alternatives Portfolio meeting activity

- Began formally tracking meeting count in 2016.
- Scale, brand, and open door policy leveraged to foster deal flow.
 - E.g., among U.S. defined benefit plans, OPERF ranks (by assets) in the top 5 in infrastructure, the top 10 in energy and commodities, and the top 20 in hedge funds*.
- Nearly 4,000 notes and other correspondence deposited in research management system.
- After screening approximately 500 opportunities, held initial meetings (in-person or telephonic) with 163 distinct prospective managers/investments.
- “Deep dives” on 25 opportunities.
- Ultimately sought approval for 6 investments.



*Source: P&I. Market values as of September 30, 2019.





OREGON STATE TREASURY

Tobias Read
Oregon State Treasurer

350 Winter St NE, Suite 100
Salem, OR 97301-3896

INTRODUCTION & OVERVIEW

Summary Policy Statement

To accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council ("OIC" or "Council"), Oregon State Treasury ("OST") created the Alternatives Portfolio (~~hereinafter referred to as the "Portfolio") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (as an investment strategy within the Oregon Public Employees Retirement Fund ("OPERF" or the "Fund"),~~) to participate in attractive long-term investment opportunities and ~~b) diversify the overall OPERF investment portfolio.~~ To date, Portfolio investments have included participation in diversifying assets and strategies in areas such as infrastructure, oil and gas, agriculture, timberland, hedge funds and other special situations. After its initial build-out period, the Portfolio's current allocation target is ~~42.5~~15.0 percent of total OPERF asset value, with an expected duration of three to ten years. As opportunities become available, OST ~~will invest Portfolio assets~~investment staff ("Staff") prudently, and productively and invests Portfolio assets in a manner consistent with the Portfolio's objectives, OIC and OST policies and applicable law. The Portfolio is subject to the specific, strategic target allocations established in Policy INV ~~245~~1203.

Purpose and Goals

The goal of this policy is to provide guidance to ~~OST staff~~Staff and advisors regarding the Portfolio and its investment objectives.

Applicability

Classified represented, management service, unclassified executive service

Authority

ORS 293.726 ~~Standard of judgment and care in investments; investment in corporate stock.~~

- ~~1.—The investment funds shall be invested and the investments of those funds managed as a prudent investor would do, under the circumstances then prevailing and in light of the purposes, terms, distribution requirements and laws governing each investment fund.~~
- ~~2.—The standard stated in subsection (1) of this section requires the exercise of reasonable care, skill and caution, and is to be applied to investments not in isolation but in the context of each investment fund's investment portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the particular investment fund.~~
- ~~3.—In making and implementing investment decisions, the Oregon Investment Council and the investment officer have a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so.~~
- ~~4.—In addition to the duties stated in subsection (3) of this section, the council and the investment officer must:
 - ~~a.—Conform to the fundamental fiduciary duties of loyalty and impartiality;~~
 - ~~b.—Act with prudence in deciding whether and how to delegate authority and in the selection and supervision of agents; and~~~~

~~c.—Incur only costs that are reasonable in amount and appropriate to the investment responsibilities imposed by law.~~

~~5.—The duties of the council and the investment officer under this section are subject to contrary provisions of privately created public trusts the assets of which by law are made investment funds. Within the limitations of the standard stated in subsection (1) of this section and subject to subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.~~

~~6.—Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.~~

~~7.—Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]~~

ORS 293.731 ~~**Council to formulate and review investment policies; exception.**~~ Subject to the objective set forth in ORS 293.721 and the standards set forth in ORS 293.726, the Oregon Investment Council shall formulate policies for the investment and reinvestment of moneys in the investment funds and the acquisition, retention, management and disposition of investments of the investment funds. The council, from time to time, shall review those policies and make changes therein as it considers necessary or desirable. The council may formulate separate policies for any fund included in the investment funds. This section does not apply to the Oregon Growth Account, the Oregon Growth Fund, the Oregon Growth Board, the Oregon Commercialized Research Fund, the Oregon Innovation Fund or the Oregon Innovation Council. [1967 c.335 §8; 1993 c.210 §20; 1999 c.42 §1; 1999 c.274 §18; 2001 c.835 §9; 2001 c.922 §§15a,15b; 2005 c.748 §§15,16; 2012 c.90 §§22,32; 2013 c.732 §8]

ORS 293.736 ~~**Duties of investment officer.**~~

~~1.—Except as provided in ORS 293.741, in amounts available for investment purposes and subject to the policies formulated by the Oregon Investment Council, the investment officer shall invest and reinvest moneys in the investment funds and acquire, retain, manage, including exercise of any voting rights, and dispose of investments of the investment funds.~~

~~2.—Subject to the direction of the council, the investment officer shall perform the functions described in subsection (1) of this section with respect to the investment in mutual funds of moneys in the Deferred Compensation Fund. The council must approve all mutual funds in which Deferred Compensation Fund moneys are invested. [1967 c.335 §9; 1997 c.179 §23; 2005 c.295 §1]~~

POLICY PROVISIONS

Definitions

Advisor: One or more independent, third party (consultant) firms retained by the OIC and working in concert with OST staff to provide expert investment counsel, due diligence, and ongoing portfolio

monitoring.

Benchmark: The Consumer Price Index plus a premium defined as 400 basis points.

Policy Statements

- I. Portfolio investments provide an appropriate complement to OPERF's investment portfolio, and are consistent with OPERF's general objectives, including:
 - A. Providing a means to pay benefits to OPERF participants and their beneficiaries;
 - B. Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
 - C. Attaining an adequate real return over the expected rate of inflation; and
 - D. Complying with all applicable laws and regulations concerning the investment of pension assets.

Portfolio investments should exhibit differentiated (i.e., less correlated) returns relative to other Fund assets and therefore the Portfolio is expected to provide diversification benefits to the Fund.

Staff and the Advisor will furnish the OST and OIC with an annual Portfolio investment review and strategy plan.

II. OBJECTIVES

A. Portfolio Investment Performance Objectives

The Portfolio's investment performance objective is to generate long-term net returns to OPERF (i.e., after management fees and general partners' carried interest) above a benchmark comprised of the Consumer Price Index ("CPI") plus ~~an appropriate~~ the Benchmark. The premium to compensate portion of the Benchmark compensates for illiquidity, principal risk and related investment costs and expenses. ~~Specifically, the Portfolio's performance objective is a return equivalent to CPI plus 400 basis points, and may vary by investment type (e.g., infrastructure or timberland). OST staff (hereinafter referred to as "Staff") will periodically evaluate the Portfolio's performance objective, and assigned benchmark~~ the Benchmark.

B. Diversification

Diversification reduces risk among the Portfolio's investments, and Staff should consider the following types of diversification, including, but not limited to:

1. Strategy. The Portfolio will include a variety of alternative investment strategies, including real assets (i.e., infrastructure, natural resources (including, commodities, etc.) and other diversifying strategies. The allocation ranges and targets for various types of investments are as follows:

Investment Type	Target Allocation
<u>Real Assets</u>	<u>45-55%</u>
Infrastructure	20-30%
Natural Resources	30-40%

Diversifying Strategies ~~35-45%~~45-55%

Other	0-10%
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G.

2. Industry Sectors. Investments will be diversified among various industry groups.
3. Investment Size. Investments will be diversified among a range of commitment sizes, generally with a minimum commitment size of \$75 million. Such commitments may comprise as much as 25% of a particular co-mingled partnership, when appropriate. Staff will document and report any deviations from these guidelines to the OIC.
4. Geography. Staff should consider geographical diversification in investment selection; ~~moreover, and to~~. To the extent appropriate, commitments may be considered that benefit the overall economic health of Oregon so long as and only if such commitments otherwise meet the investment criteria ~~and~~, quality of the Portfolio and are consistent with Staff's fiduciary obligations.
5. Time. Staff will endeavor to invest OPERF assets in a consistent manner over time, unless market conditions appear uniquely favorable or unfavorable.

C. D. ~~Total Portfolio Diversification.~~ A lower correlation between Program investment returns and other Fund assets is expected, and the Program is therefore expected to provide an added measure of diversification to overall Fund returns.

III. ALTERNATIVES PORTFOLIO COMMITTEE

- A. The Alternatives Portfolio Committee ~~or~~ ("Committee") acts on behalf of, and subject to the review of, OST. The Committee is comprised of the following individuals: the Deputy State Treasurer; the Chief Investment Officer ("CIO"); and an OIC member invited by the OST to participate as a voting member on the Committee. OST will consider input from the OIC in extending such invitations.
- B. OST, through the Committee, may invest OPERF amounts up to and including \$250 million per investment for new general partner, fund sponsor or manager relationships, and an amount up to and including \$350 million for existing relationships, consistent with OIC policies (see Appendix B.A). If consideration of a particular investment opportunity is deemed urgent or otherwise less suited for presentation to the OIC, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.
- C. The Committee will only exercise its investment authority by unanimous vote and acting upon a favorable due diligence determination by the Advisor. The Committee may only consider proposed investments or partnership commitments if agreement exists between the Advisor and Staff that the proposed investment or partnership commitment is consistent with Portfolio standards including, but not limited to, the applicable sector plan and strategy. Proposed investments or partnership commitments presented to the Committee are subject to review by OST, which may choose to cancel or refer such proposed commitments to the OIC for broader review and consideration.
- D. In connection with a proposed investment or partnership commitment, Staff shall furnish any favorable due diligence determination, including the underlying rationale, market

conditions and portfolio impact, to the OIC as soon as practical and at least ~~two weeks~~one week prior to a Committee meeting called for purposes of considering the proposed investment or partnership commitment. If OST objects to the proposed investment or partnership commitment or is advised by any OIC member that he or she objects to the proposed investment or partnership commitment, OST will cancel the proposed investment or partnership commitment and determine whether or not Staff will bring same as a separate agenda item at a subsequent OIC meeting.

E. Staff shall report any investment or partnership commitment made by the Committee at the next, most feasible OIC meeting.

IV. OST STAFF AUTHORITY. The CIO, upon a favorable recommendation from both the Director of Alternative Investments and the Advisor, has authority to accomplish the following:

A. Approve OST administrative activities and guideline exceptions if a plan is established to conform the ~~[project/investment/partnership]~~ exceptions to applicable guidelines within a reasonable period of time;

B. Acquire, retain, manage and dispose of investment or partnership interests consistent with the authority granted to the Office of the State Treasurer pursuant to ORS 293.736. Review and approve other activities as necessary to further the interests of the Portfolio consistent with its standards; and

C. Approve up to an additional \$50 million, per action, to an existing investment or partnership commitment for the following purposes: (1) recapitalize the investment or partnership with additional equity; (2) acquire all or part of another manager's or limited partner's interest in an investment or partnership; (3) re-balance between or among investments or partnership commitments; or (4) co-invest alongside a partnership in an individual investment.

~~D.~~ Any such additional investments or partnership commitments shall be on terms equal to or better than the existing terms.

D. Staff shall report any of the foregoing activities at the next, most feasible OIC meeting.

V. ADVISOR AND OST REQUIREMENTS

~~OST Staff~~ manages the Portfolio ~~using a hybrid Staff/in collaboration with the~~ Advisor ~~model~~. ~~Specifically, and subject~~ Subject to budget limitations, OST will assign an appropriate number of Staff to manage Portfolio design and portfolio construction, the Portfolio's investment decision-making schedule and process, and the Advisor's contract. The OIC will retain a qualified, independent Advisor and will delegate to that Advisor substantial duties such as performing due diligence on investment opportunities, monitoring Portfolio investments, performing Portfolio analytics and valuation analyses and preparing ~~current historical~~ performance reports.

Staff retains the primary responsibility to ensure that Portfolio investments and prospective investments receive appropriate due diligence, monitoring, and valuation analyses. ~~While some of these duties may be delegated to the Advisor, Staff will conduct and document sufficient reviews and tests of the Advisor's work as necessary to conclude that such delegated duties are performed consistently and appropriately by the Advisor.~~

~~VI. LEGAL COUNSEL~~

~~Staff will obtain relevant legal services from internal legal staff and/or Oregon Department of Justice (DOJ) personnel. However, due to the complex nature of Portfolio investments, OIC, OST and/or Staff will recommend internal legal and/or DOJ collaboration with expert, external legal counsel when deemed necessary or appropriate.~~

VI. ~~VII.~~ MONITORING

A. Reports

The Advisor will furnish Portfolio activity and performance reports to Staff on both a quarterly and annual basis.

B. Adherence to Strategy

Staff and the Advisor will evaluate the actual strategy employed by investment managers and general partners relative to stated objectives, strategies and other industry standards. The Advisor will interact with the investment managers and general partners periodically and as necessary to verify adherence to such objectives, strategies and standards.

Exceptions

None.

Failure to Comply

Failure to comply with this policy may be cause for disciplinary action up to and including dismissal.

PROCEDURES and FORMS

Appendix A: ~~OIC Document: Alternative Investments Valuation Policy~~

~~Appendix B: OIC Document:~~ OIC/OST Alternative Investments Authority

Appendix CB: OST Procedure for INV 702

ADMINISTRATION

Feedback

Your comments are extremely important to improving the effectiveness of this policy. If you would like to comment on the provisions of this policy, you may do so by e-mailing the Policy Analyst. To ensure your comments are received without delay, *please list the policy number and name in your e-mail's subject*. Your comments will be reviewed during the policy revisions process and may result in changes to the policy.

Document comparison by Workshare Compare on Monday, August 24, 2020
9:47:50 AM

Input:	
Document 1 ID	file://C:\Users\hillisa\Desktop\702\702 Current 8.24.docx
Description	702 Current 8.24
Document 2 ID	file://C:\Users\hillisa\Desktop\702\8.24.2020 w Legal Comments.docx
Description	8.24.2020 w Legal Comments
Rendering set	Standard

Legend:	
Insertion	
Deletion	
Moved from	
<u>Moved to</u>	
Style change	
Format change	
Moved deletion	
Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

Statistics:	
	Count
Insertions	47
Deletions	76
Moved from	2
Moved to	2
Style changes	0
Format changes	0
Total changes	127

INTRODUCTION & OVERVIEW

Summary Policy Statement

To accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council (“OIC” or “Council”), Oregon State Treasury (“OST”) created the Alternatives Portfolio (the "Portfolio") as an investment strategy within the Oregon Public Employees Retirement Fund (“OPERF” or the “Fund”) to participate in attractive long-term investment opportunities and diversify the overall OPERF investment portfolio. To date, Portfolio investments have included participation in diversifying assets and strategies in areas such as infrastructure, oil and gas, agriculture, timberland, hedge funds and other special situations. After its initial build-out period, the Portfolio's current allocation target is 15.0 percent of total OPERF asset value, with an expected duration of three to ten years. As opportunities become available, OST investment staff (“Staff”) prudently and productively invests Portfolio assets in a manner consistent with the Portfolio's objectives, OIC and OST policies and applicable law. The Portfolio is subject to the specific strategic target allocations established in Policy INV 1203.

Purpose and Goals

The goal of this policy is to provide guidance to Staff and advisors regarding the Portfolio and its investment objectives.

Applicability

Classified represented, management service, unclassified executive service

Authority

ORS 293.726
ORS 293.731
ORS 293.736

POLICY PROVISIONS

Definitions

Advisor: One or more independent, third party (consultant) firms retained by the OIC and working in concert with OST staff to provide expert investment counsel, due diligence, and ongoing portfolio monitoring.

Benchmark: The Consumer Price Index plus a premium defined as 400 basis points.

Policy Statements

- I. Portfolio investments provide an appropriate complement to OPERF's investment portfolio, and are consistent with OPERF's general objectives, including:
 - A. Providing a means to pay benefits to OPERF participants and their beneficiaries;
 - B. Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
 - C. Attaining an adequate real return over the expected rate of inflation; and
 - D. Complying with all applicable laws and regulations concerning the investment of pension assets.

Portfolio investments should exhibit differentiated (i.e., less correlated) returns relative to other Fund assets and therefore the Portfolio is expected to provide diversification benefits to the Fund.

Staff and the Advisor will furnish the OST and OIC with an annual Portfolio investment review and strategy plan.

II. OBJECTIVES

A. Portfolio Investment Performance Objectives

The Portfolio's investment performance objective is to generate long-term net returns to OPERF (i.e., after management fees and general partners' carried interest) above a benchmark comprised of the Consumer Price Index ("CPI") plus the Benchmark. The premium portion of the Benchmark compensates for illiquidity, principal risk and related investment costs and expenses. Staff will periodically evaluate the Portfolio's performance objective and the Benchmark.

B. Diversification

Diversification reduces risk among the Portfolio's investments, and Staff should consider the following types of diversification, including, but not limited to:

1. Strategy. The Portfolio will include a variety of alternative investment strategies, including real assets (i.e., infrastructure, natural resources, commodities, etc.) and other diversifying strategies. The allocation ranges and targets for various types of investments are as follows:

Investment Type	Target Allocation
------------------------	--------------------------

Real Assets	45-55%
--------------------	---------------

Diversifying Strategies 45-55%

2. Industry Sectors. Investments will be diversified among various industry groups.

3. Investment Size. Investments will be diversified among a range of commitment sizes, generally with a minimum commitment size of \$75 million. Such commitments may comprise as much as 25% of a particular co-mingled partnership, when appropriate. Staff will document and report any deviations from these guidelines to the OIC.

4. Geography. Staff should consider geographical diversification in investment selection. To the extent appropriate, commitments may be considered that benefit the overall economic health of Oregon so long as and only if such commitments otherwise meet the investment criteria, quality of the Portfolio and are consistent with Staff's fiduciary obligations.

5. Time. Staff will endeavor to invest OPERF assets in a consistent manner over time, unless market conditions appear uniquely favorable or unfavorable.

C. Total Portfolio Diversification. A lower correlation between Program investment returns and other Fund assets is expected, and the Program is therefore expected to provide an added measure of diversification to overall Fund returns.

III. ALTERNATIVES PORTFOLIO COMMITTEE

A. The Alternatives Portfolio Committee ("Committee") acts on behalf of, and subject to the review of, OST. The Committee is comprised of the following individuals: the Deputy State Treasurer; the Chief Investment Officer ("CIO"); and an OIC member invited by the OST to participate as a voting member on the Committee. OST will consider input from the OIC in extending such invitations.

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Exceptions

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Appendix A: OIC/OST Alternative Investments Authority

Appendix B: OST Procedure for INV 702

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TAB 7 – OPERF Q2 Performance Review

Callan



September 9, 2020

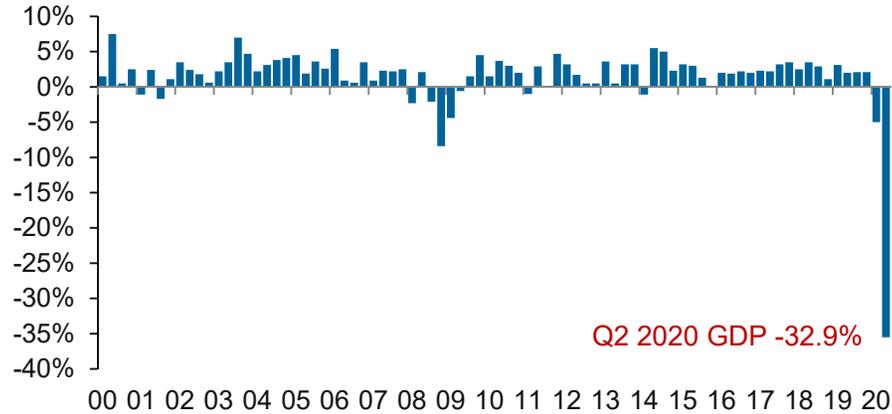
Oregon Investment Council

Second Quarter 2020
Performance Review

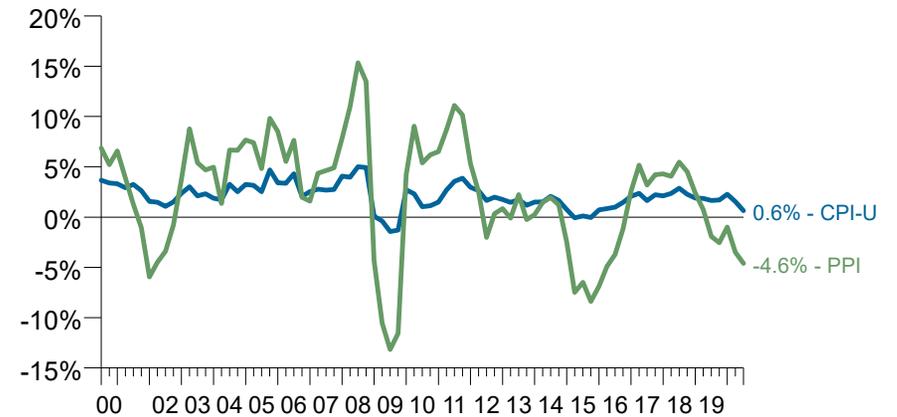
U.S. Economy—Summary

For periods ended June 30, 2020

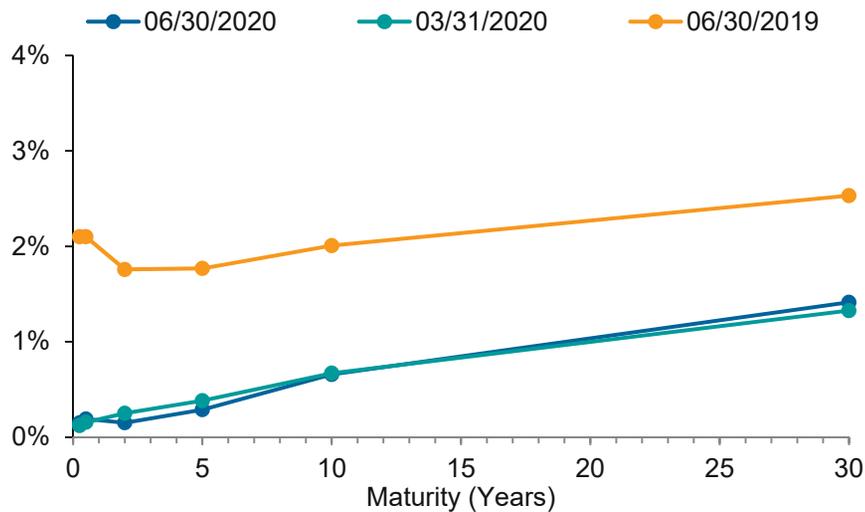
Quarterly Real GDP Growth*



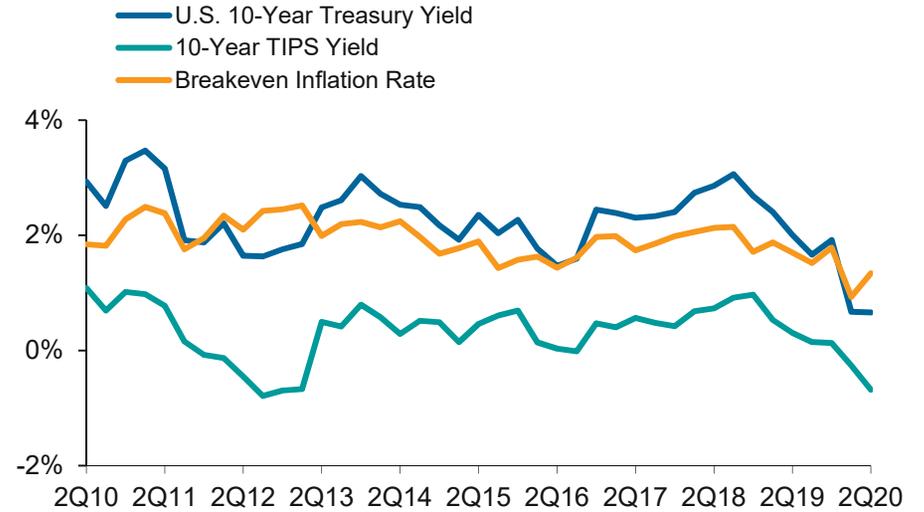
Inflation Year-Over-Year



U.S. Treasury Yield Curves



Historical 10-Year Yields



*Preliminary estimate for 2Q20. Sources: Bloomberg, Bureau of Labor Statistics, Callan, HIS Markit

Stunning Recovery in Global Equity Markets in 2Q20

V-shaped equity rebound, ahead of the global economy

Global equity rally after March market bottom

- S&P -33% from peak (02/19/20) to low on 3/23/20
- Sharp rebound since March, suggesting broad-based recovery, but YTD results concentrated in a few stocks
- Fed cut rates to zero, commenced QE, instituted multiple facilities to backstop money markets, credit markets, and economy.
 - *Fed expects to get paid back*
 - *Further fiscal stimulus expected*
- Congress passed fiscal stimulus (CARES) to carry the economy through the crisis.
- Economic recovery will be uncertain as COVID-19 infections continue; re-openings may be reversed.

Returns for Periods ended June 30, 2020

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	22.03	6.53	10.03	13.72	9.28
S&P 500	20.54	7.51	10.73	13.99	9.27
Russell 2000	25.42	-6.63	4.29	10.50	8.16
Global ex-U.S. Equity					
MSCI World ex USA	15.34	-5.42	2.01	5.43	4.68
MSCI Emerging Markets	18.08	-3.39	2.86	3.27	--
MSCI ACWI ex USA Small Cap	22.83	-4.34	2.50	6.05	5.51
Fixed Income					
Bloomberg Barclays Aggregate	2.90	8.74	4.30	3.82	5.36
90-day T-Bill	0.02	1.63	1.19	0.64	2.37
Bloomberg Barclays Long Gov/Credit	6.23	18.91	8.98	7.84	7.72
Bloomberg Barclays Global Agg ex-US	3.38	0.71	2.89	1.98	3.73
Real Estate					
NCREIF Property	0.71	4.46	7.13	9.89	9.22
FTSE Nareit Equity	11.82	-13.04	4.06	9.05	9.48
Alternatives					
CS Hedge Fund	6.20	-0.73	1.55	3.83	7.49
Cambridge Private Equity*	5.36	16.14	12.64	13.57	15.29
Bloomberg Commodity	5.08	-17.38	-7.69	-5.82	0.75
Gold Spot Price	12.77	27.36	8.97	3.75	6.36
Inflation - CPI-U	-0.12	0.65	1.56	1.69	2.12

*Cambridge PE data through 12/31/19

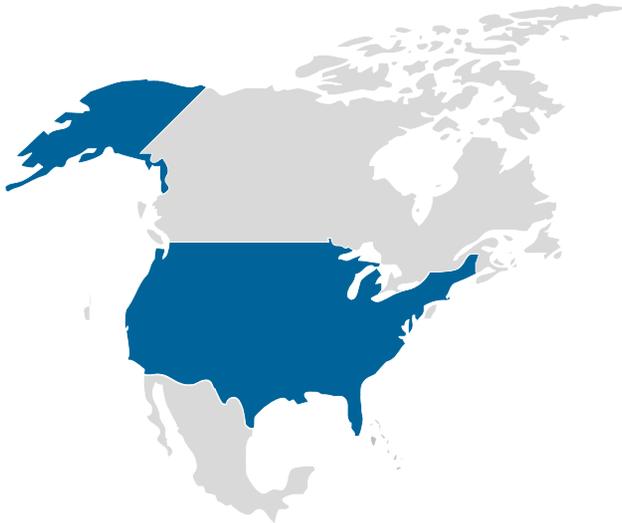
Sources: Bloomberg, Bloomberg Barclays, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

Market Environment: 2Q20

High degree of uncertainty

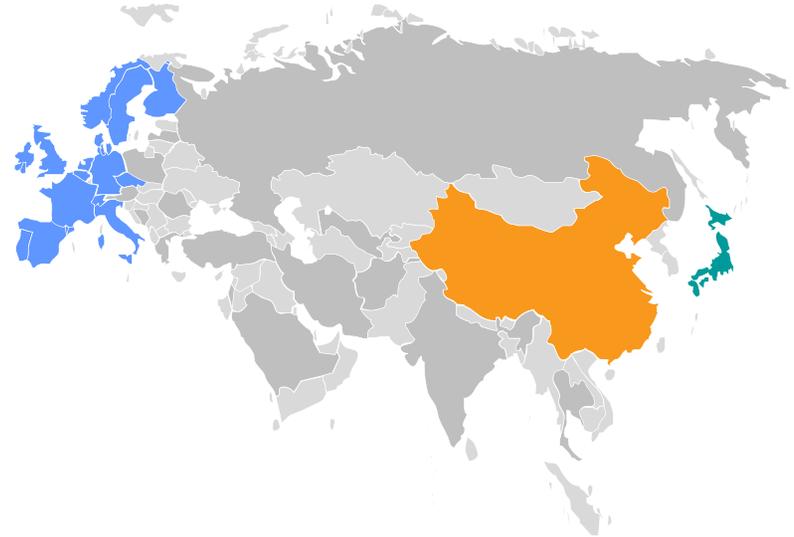
U.S.

- GDP contracted 5.0% annualized in 1Q and 32.9% in 2Q
- After a plunge of 16.4% in April, retail sales rebounded in May (+17.7%) and June (+7.5%) – all shown MOM
- Unemployment in July fell to 10.2% from 11.1% in June
- Housing benefited from relatively low mortgage rates
- Fed left rates close to 0% and expects to be on hold until at least 2022



Overseas

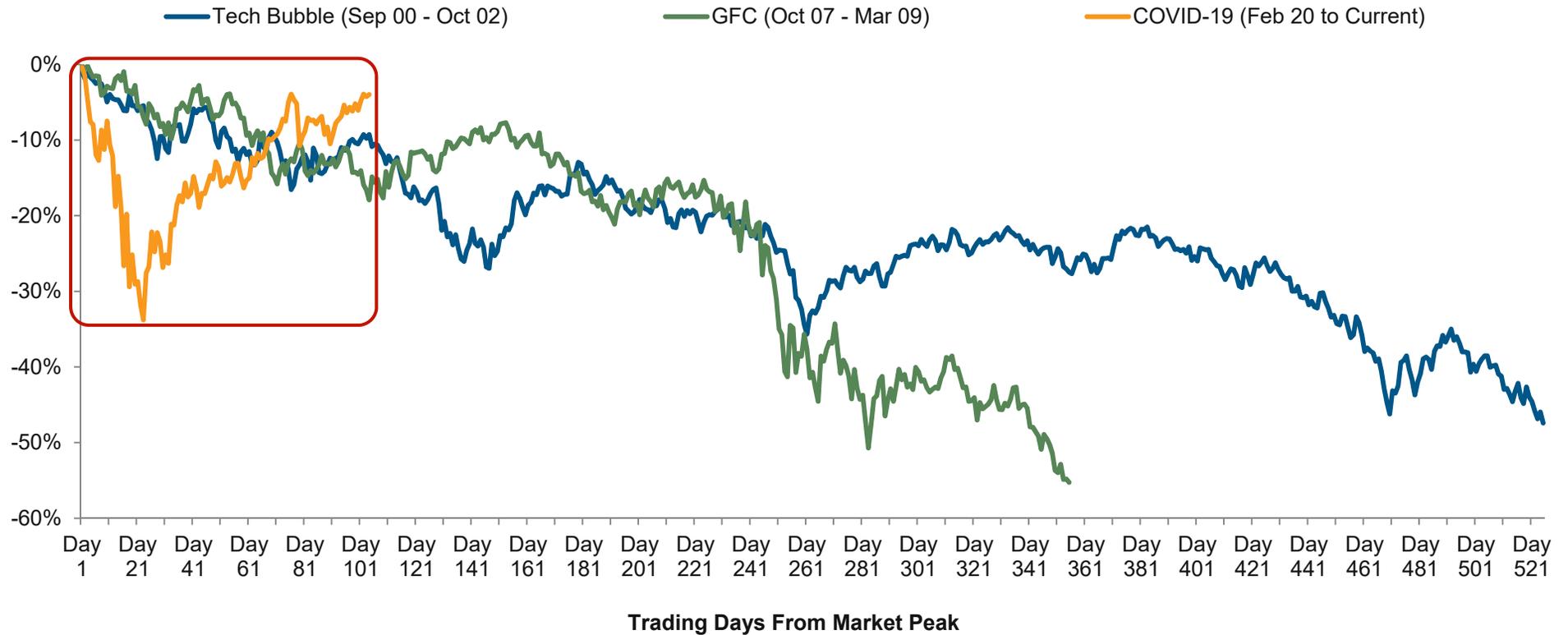
- Euro zone 1Q GDP contracted 3.8%; down 12.1% in 2Q
- U.K. GDP sank 20.4% in 2Q
- Japan's economy shrank 27.8% annualized in 2Q, -7.8% (QOQ)
- China's GDP fell 6.8% in 1Q first contraction in 28 years. Second quarter showed an improvement, +3.2%
- *Chinese government unveiled fiscal stimulus of US\$506 bn, bringing budget deficit to a record high of 3.6% of GDP.*



Unprecedented Shock to Global Capital Markets

'Global Hurricane' in the form of a pandemic

S&P 500 Index Cumulative Returns
Market Peak-to-Trough for Recent Corrections vs.
Current Path of COVID-19 Correction Through 7/17/20

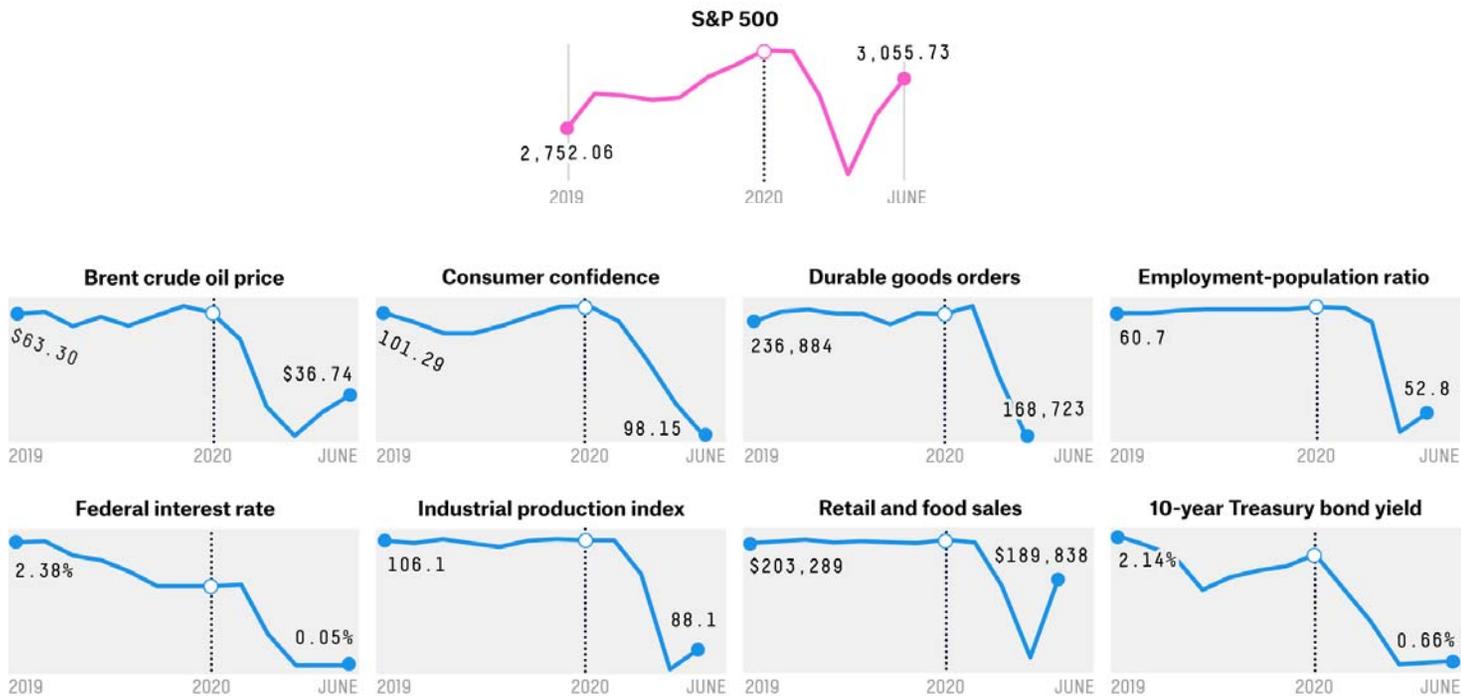


The sharpest and fastest equity market decline ever: 16 trading days to reach bear market; -33% after just 23 days

Swift Recovery for Equities; Did Investors Get Ahead of Themselves?

The stock market is up while most economic indicators are down

Various economic indicators, reported at one-month intervals, June 2019 through June 2020



Any economic indicator reported more frequently than once a month is charted here using data from the first day of each month.

FiveThirtyEight

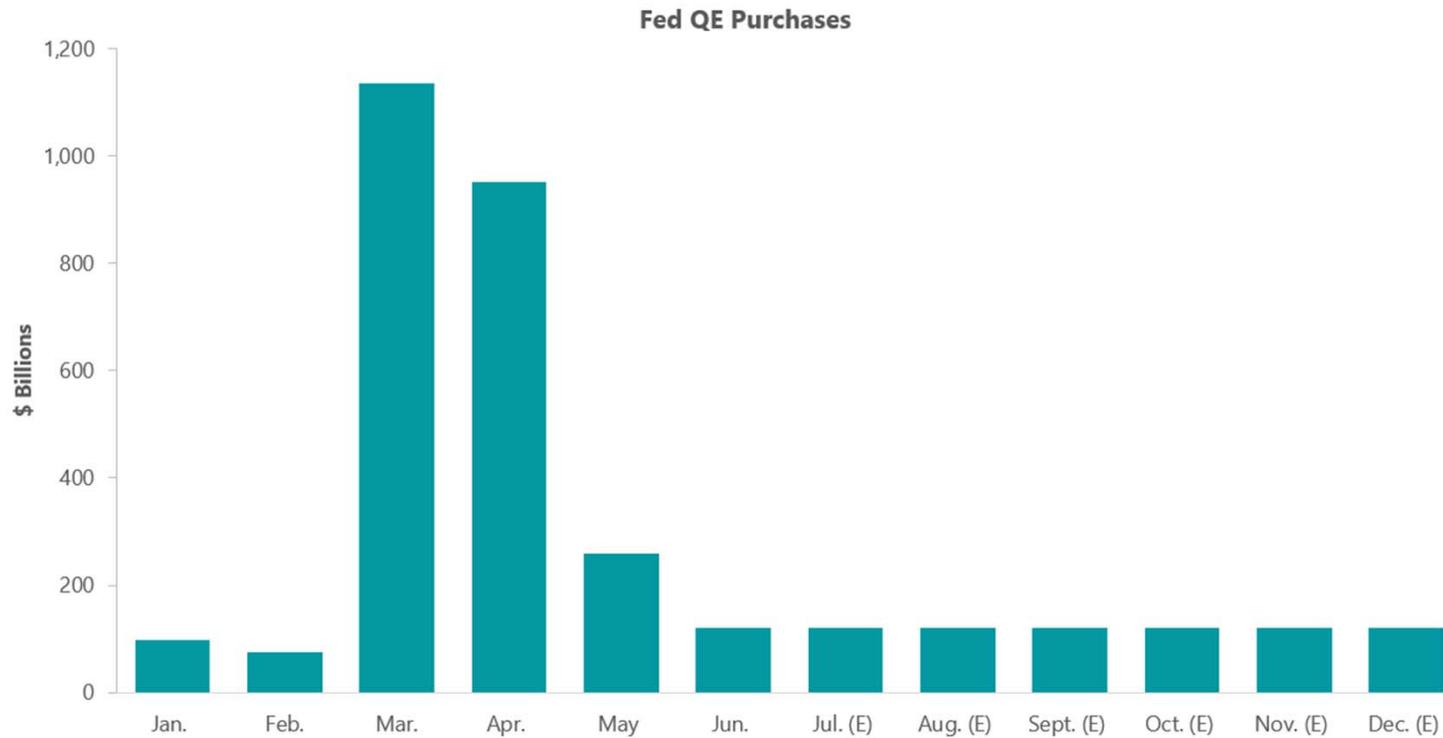
SOURCES: YAHOO FINANCE, OECD, FEDERAL RESERVE BANK OF ST. LOUIS

As of July 17, U.S. stock market recouped its YTD loss—how can that be?

- Supreme confidence in efficacy of monetary and fiscal policy
- Apple, Alphabet (Google), Microsoft, Facebook, Amazon are up 35% in 2Q20 and made up 30% of the S&P 500 return, even though they represent 20% of market cap.

Stock market is not the economy

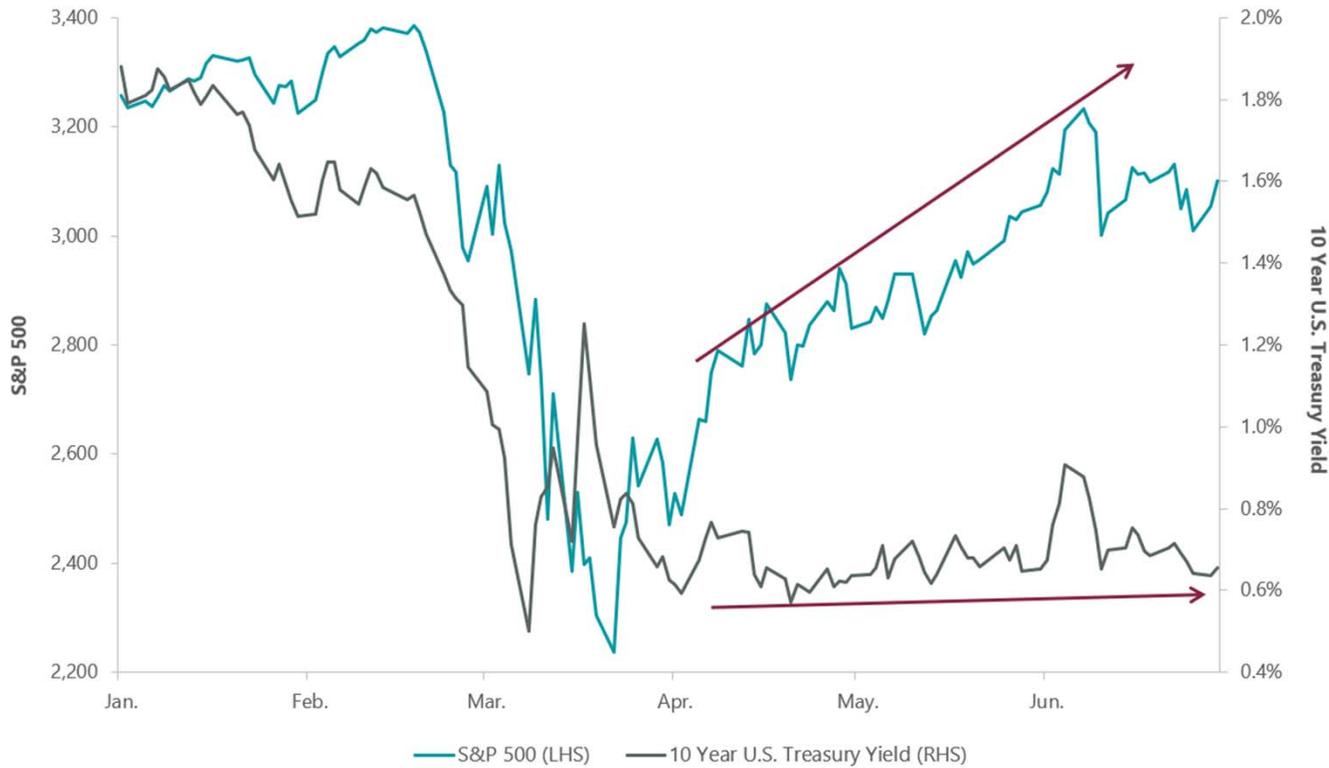
Fed Supplied a Tsunami of Liquidity



- The Fed’s ~\$3T increase in its balance sheet has buoyed markets.
- Going forward, ~\$225B in monthly Treasury issuance will be a liquidity drag vs. \$120B in expected monthly QE.

Sources: ClearBridge Investments, Federal Reserve Bank of New York
(E) represents estimated Fed QE purchases, data as of 6/30/20.

Not All Markets Have Priced in a Recovery



- Treasuries began to sell off before equities in response to coronavirus risks.
- Yields have remained near trough levels through the stock market rally.

Data as of 6/30/20
Sources: ClearBridge Investments, FactSet.

OPERF Total Regular Account

Performance Summary for the Second Quarter 2020

Total Fund:

For the quarter ended June 30, 2020, the Total Regular Account rose 3.08% (+2.95% net of fees), lagging behind the 3.76% return of the Policy Benchmark, and ranked in the fourth quartile of Callan's \$10B+ public fund peer group. For the twelve months ended June, the Total Regular Account gained 1.02% (+0.52% net of fees), short of the return for the Policy Target, and ranked in the fourth quartile of Callan's \$10B+ public fund peer group. Longer term results against the Policy Target and peer group ranks were mixed.

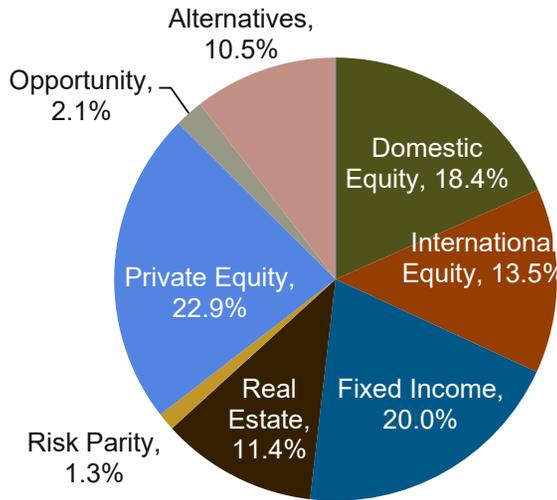
Asset Classes:

- **Total Fixed Income:** The Fixed Income Portfolio added 3.98% (+3.94% net of fees) for the quarter versus a gain of 3.13% for the Custom Fixed Income Benchmark, and ranked in the 64th percentile of Callan's Public Funds \$10B+ US Fixed income (Gross) peer group. For the trailing year, the Portfolio rose 7.90% (+7.75% net of fees), ahead of the 7.70% return of the benchmark, and ranked in the 32nd percentile of the peer group. 10 year results were ahead of the benchmark and ranked in the 28th percentile of the peer group.
- **Total Public Equity:** Total Public Equity portfolio returned 18.40% (+18.34% net of fees) for the quarter versus 19.83% increase in the MSCI ACWI IMI Net benchmark, and ranked in the 60th percentile of its peer group. For the trailing year, the portfolio decline 1.53% (-1.74% net of fees), behind the 1.17% return of the benchmark and ranked in the 69th percentile of peer group.
 - **U.S. Equity:** The U.S. Equity Portfolio increased 20.63% (+20.61% net of fees) for the quarter, lagging the Russell 3000 Index return of 22.03%, and ranked in the 71st percentile of Callan's Public Fund: \$10B+ Domestic Equity (gross) peer group. On a trailing 12 month basis, the Portfolio rose 0.26% (+0.20% net of fees) versus a return of 6.53% for the benchmark and ranked in the 80th percentile of the peer group. 10 year results of 12.57% (+12.38% net of fees) lagged the benchmark return of 13.72% and ranked in the 82nd percentile of the peer group.
 - **International Equity:** The International Equity Portfolio registered returns of 17.80% (+17.69% net of fees) for the quarter, ahead of the 16.96% return of the MSCI ACWI ex-U.S. IMI Index, and ranked in the 13th percentile of Callan's Public Fund: \$10B+ International Equity (gross) peer group. For the trailing year, the Portfolio returned -3.83% (-4.21% net of fees) outperforming the benchmark return of -4.74%, and ranked in the 41st percentile in the peer group. 10 year results remained comfortably ahead of the benchmark (+6.26% net of fees versus +5.11%) and continued to rank in the top quartile of the peer group.
- **Total Real Estate:** The Real Estate Portfolio continued to show competitive absolute results over the last decade with an annualized return of 10.60% net of fees.
- **Opportunity Portfolio:** The Opportunity Portfolio's results over the last ten years continued to be favorable with an annualized return of 7.83% net of fees.
- **Alternative Portfolio:** The Alternative Portfolio returned 0.20% per annum net of fees over the last five years.
- **Total Private Equity:** The Private Equity Portfolio's returns remained strong with an annualized return of 11.83% net of fees over the last ten years.

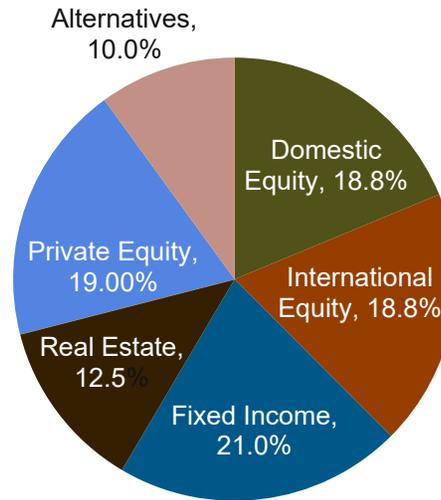
OPERF Total Regular Account

Asset Allocation

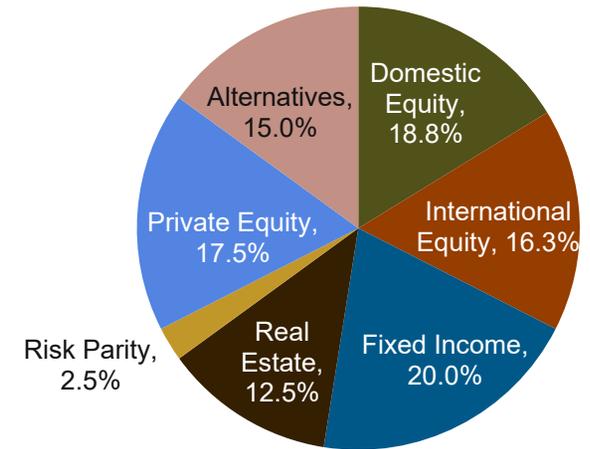
Actual Allocation as of 6/30/2020



Interim Policy Target*



Strategic Policy Target**



Asset Class	\$000s Actual	Weight*** Actual	Target	Percent Difference	\$000s Difference
Total Fixed Income	14,810,555	20.0%	21.0%	(1.0%)	(740,546)
U.S. Equity Portfolio	13,625,945	18.4%	18.8%	(0.3%)	(258,967)
Non-U.S. Equity Portfolio	9,981,570	13.5%	18.8%	(5.3%)	(3,903,342)
Total Real Estate	8,413,752	11.4%	12.5%	(1.1%)	(842,856)
Risk Parity	930,526	1.3%	0.0%	1.3%	930,526
Opportunity Portfolio	1,588,113	2.1%	0.0%	2.1%	1,588,113
Alternative Portfolio	7,773,697	10.5%	10.0%	0.5%	368,411
Total Private Equity	16,923,076	22.9%	19.0%	3.9%	2,853,031
Cash	5,632	0.0%	0.0%	0.0%	5,632
Total	74,052,866	100.0%	100.0%		

*Interim policy target adopted January 1, 2019

**Strategic policy target adopted April 24, 2019

***Totals provided by OST Staff

OPERF Total Regular Account

Net Performance by Asset Class as of June 30, 2020

	Last Quarter	Fiscal Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Regular Account	2.95%	0.52%	5.42%	5.86%	8.51%
Total Regular Account ex-Overlay	2.77%	0.51%	5.38%	5.75%	8.39%
OPERF Policy Benchmark*	3.76%	2.59%	6.30%	6.64%	9.02%
Total Fixed Income	3.94%	7.75%	5.06%	4.04%	4.69%
Custom FI Benchmark	3.13%	7.70%	4.97%	3.78%	3.83%
Callan Public Fund > \$10bn U.S. Fixed	4.39%	7.38%	4.84%	4.53%	4.41%
Total Public Equity	18.34%	-1.74%	4.39%	5.54%	9.25%
MSCI ACWI IMI Net	19.83%	1.17%	5.55%	6.11%	9.10%
Total Real Estate	-1.94%	4.57%	6.34%	7.62%	10.60%
Total Real Estate ex REITs	-2.22%	5.63%	6.86%	8.57%	11.07%
Oregon Custom Real Estate Benchmark	0.75%	3.93%	5.85%	7.27%	9.98%
Callan Public Plan - Real Estate	0.22%	2.43%	5.87%	7.40%	10.54%
Opportunity Portfolio	-5.23%	-0.34%	3.45%	4.57%	7.83%
CPI + 5%	1.11%	5.53%	6.68%	6.44%	6.62%
Alternative Portfolio	-6.13%	-9.84%	-2.85%	0.20%	-
CPI + 4%	0.86%	4.67%	5.78%	5.62%	-
Total Private Equity	-8.06%	1.07%	11.04%	10.01%	11.83%
OIC - Russell 3000 + 300 BPS Qtr Lag	-20.26%	-6.37%	7.12%	8.93%	13.43%

*Current Policy Benchmark = 37.5%, MSCI ACWI IMI, 21.0% OPERF Custom Total FI Benchmark, 19.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 10.0% CPI + 400 bps Target 12/18= 39.0%, MSCI ACWI IMI, 22.0% OPERF Custom Total FI Benchmark, 19.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 7.5% CPI + 400 bps

Public Equity Performance – US Equity

Periods Ending June 30, 2020

	Last Quarter	Fiscal Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Public Equity	18.34%	-1.74%	4.39%	5.54%	9.25%
MSCI ACWI IMI Net	19.83%	1.17%	5.55%	6.11%	9.10%
U.S. Equity	20.61%	0.20%	6.66%	7.70%	12.38%
Russell 3000 Index	22.03%	6.53%	10.04%	10.03%	13.72%
Lg Public >10 B DE	21.61%	2.89%	8.47%	9.07%	13.14%
Market Oriented	20.62%	2.61%	8.08%	8.69%	12.85%
Russell 3000 Index	22.03%	6.53%	10.04%	10.03%	13.72%
CAI All Cap: Broad DB	22.52%	4.27%	9.23%	8.75%	12.45%
Large Cap Value	15.81%	-12.93%	-0.29%	2.23%	9.16%
Russell 1000 Value Index	14.29%	-8.84%	1.82%	4.64%	10.41%
CAI Large Cap Value Style	16.59%	-7.79%	2.44%	4.90%	10.65%
Small Cap Growth	40.05%	5.80%	12.25%	7.24%	12.98%
Russel 2000 Growth Index	30.58%	3.48%	7.86%	6.86%	12.92%
CAI Sm Cap Growth Style	34.50%	8.05%	13.89%	10.31%	14.72%
Small Cap Value	19.49%	-18.66%	-5.38%	0.63%	7.29%
Russell 2000 Value Index	18.91%	-17.48%	-4.35%	1.26%	7.82%
CAI Small Cap Value Style	21.19%	-17.15%	-3.96%	1.27%	9.03%

Public Equity Performance – Non-US and Global Equity

Periods Ending June 30, 2020

	Last Quarter	Fiscal Year	Last 3 Years	Last 5 Years	Last 10 Years
Non-U.S. Equity	17.69%	-4.21%	1.54%	3.09%	6.26%
MSCI ACWI ex-US IMI Index (Net) (5)	16.96%	-4.74%	0.96%	2.30%	5.11%
Lg Public >10 B IE	16.40%	-4.30%	1.50%	3.15%	5.88%
International Market Oriented (Core)	17.29%	-4.48%	2.35%	3.44%	6.87%
MSCI World ex-US IMI Net	16.21%	-5.11%	0.80%	2.22%	5.67%
CAI Core Int'l Equity	16.35%	-4.03%	0.94%	2.49%	6.57%
International Value	14.32%	-11.72%	-2.02%	1.17%	5.41%
MSCI ACWI ex-US IMI Value	13.45%	-14.83%	-3.91%	-1.01%	3.06%
CAI Core Value Int'l Equity Style	14.42%	-9.58%	-2.38%	0.27%	5.16%
International Growth	14.73%	8.58%	9.63%	7.65%	8.15%
MSCI World ex US Growth	17.89%	4.25%	5.93%	5.29%	7.36%
CAI Core Growth Int'l Equity Style	18.30%	2.75%	5.14%	5.14%	8.05%
International Small Cap	23.24%	-9.71%	-4.90%	0.12%	5.63%
ACWI Sm Cap ex US	22.83%	-4.34%	-0.17%	2.50%	6.05%
CAI Int'l Small Cap Style	21.53%	-4.00%	0.26%	3.49%	8.89%
Emerging Markets	21.10%	-0.12%	1.90%	3.00%	4.62%
EM IMI Index	18.93%	-3.97%	1.35%	2.35%	3.11%
CAI Emerging Markets Equity DB	20.62%	-1.36%	2.93%	4.09%	4.93%
Global Equity	13.64%	-2.13%	4.06%	4.52%	8.84%
MSCI ACWI Value Net Index (14)	12.74%	-11.83%	-1.02%	1.90%	6.15%
CAI Global Eq Broad Style	19.76%	3.23%	6.88%	7.16%	10.43%

Fixed Income Performance

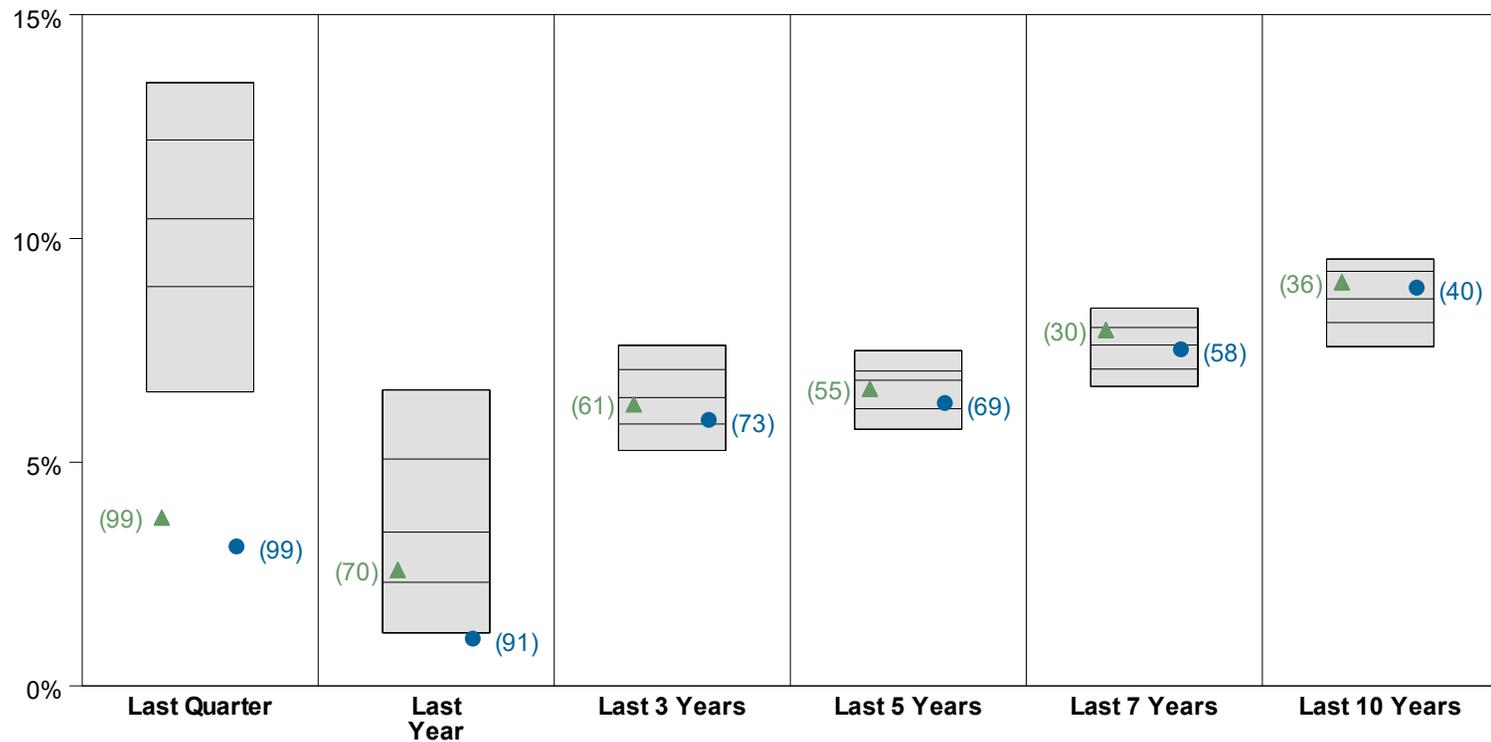
Periods Ending June 30, 2020

	Last Quarter	Fiscal Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Fixed Income	3.94%	7.75%	5.06%	4.04%	4.69%
Oregon Custom FI Benchmark (15)	3.13%	7.70%	4.97%	3.78%	3.84%
Lg Public >10 B DF	4.65%	7.22%	4.94%	4.49%	4.44%
Core Fixed Income	5.16%	8.97%	5.64%	4.75%	4.83%
AllianceBernstein	4.39%	7.73%	5.10%	4.32%	4.42%
BlackRock	4.45%	9.45%	5.62%	4.55%	4.59%
Wellington	4.98%	9.76%	5.89%	5.03%	5.11%
Western Asset	6.84%	8.27%	5.75%	4.97%	5.21%
Oregon Custom FI Benchmark (16)	2.90%	8.74%	5.32%	4.30%	4.09%
CAI Core Bond Style	4.35%	9.41%	5.75%	4.76%	4.45%
US Government*	0.25%	10.50%	5.61%	-	-
Blmbg Treasury	0.48%	10.45%	5.57%	4.07%	3.41%
Callan Core Bond FI	4.35%	9.41%	5.75%	4.76%	4.45%
Non-Core Fixed Income	9.58%	-1.63%	2.12%	3.42%	5.58%
Leveraged Loans & Bond Idx (23)	9.68%	-1.77%	2.30%	3.32%	4.75%
KKR Credit Advisors	9.42%	-4.27%	0.62%	2.34%	5.26%
Leveraged Loans & Bond Idx (17)	9.67%	-1.68%	2.38%	3.49%	4.98%
Oak Hill	9.72%	0.93%	3.58%	4.53%	5.71%
Leveraged Loans & Bond Idx (18)	9.69%	-1.86%	2.21%	3.15%	4.51%
Leveraged Bank Loans	7.75%	-1.99%	2.12%	3.03%	4.57%

OPERF Total Regular Account

Gross Performance and Peer Group Rankings* as of June 30, 2020

Performance vs Callan Public Fund Spons- V Lg DB (>10B) (Gross)



10th Percentile	13.48	6.62	7.61	7.50	8.45	9.54
25th Percentile	12.20	5.07	7.07	7.04	8.01	9.27
Median	10.44	3.44	6.44	6.84	7.62	8.65
75th Percentile	8.93	2.32	5.86	6.20	7.08	8.12
90th Percentile	6.57	1.18	5.27	5.74	6.70	7.58
Total Regular Account	● 3.08	1.02	5.91	6.29	7.48	8.86
Policy Target	▲ 3.76	2.59	6.30	6.64	7.96	9.02

*Versus Callan's Very Large Public Funds (> \$10 billion) Peer Group (36 funds)

What a Difference a Quarter Makes

Net of Fees

3/31/20	Quarter	Year	5 years	10 years
Total Fund	-7.2 (9 th)	0.7% (8 th)	5.5% (3 rd)	7.8% (1 st)
Public Equity (27.3%)	-23.5%	-14.3%	2.2%	6.1%
Fixed Inc (20.2%)	1.1%	6.8%	3.2%	4.5%
Real Estate (12.0%)	2.3%	7.8%	8.0%	11.0%
Private Eq (25.0%)	3.5%	16.4%	12.6%	13.2%

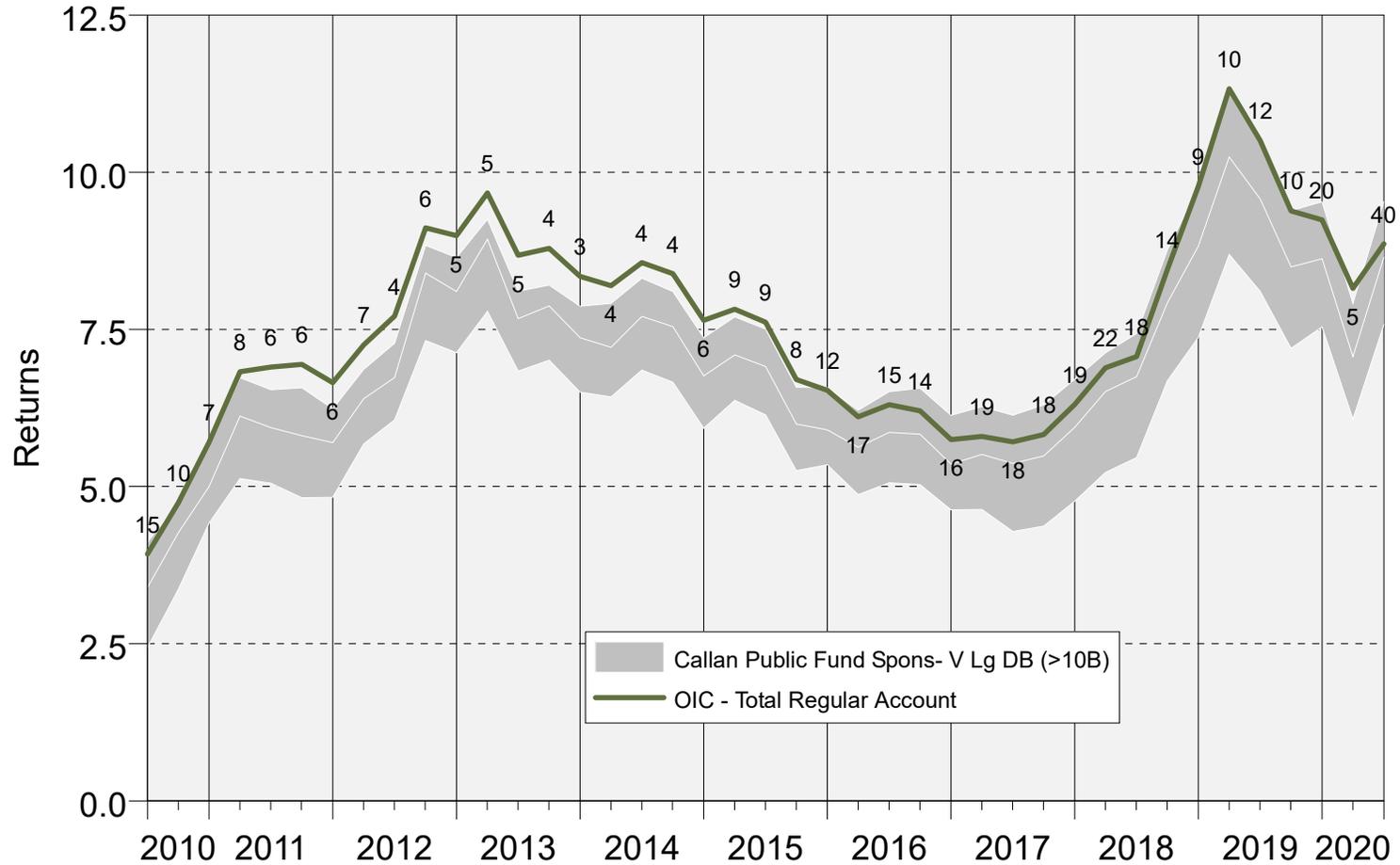
6/30/20	Quarter	Year	5 years	10 years
Total Fund	3.0% (99 th)	0.5% (91 st)	5.9% (69 th)	8.5% (40 th)
Public Equity (31.2%)	18.3%	-1.7%	5.5%	9.3%
Fixed Inc (19.2%)	3.9%	7.8%	4.0%	4.7%
Real Estate (11.4%)	-1.9%	4.6%	7.6%	10.6%
Private Eq (22.9%)	-8.1%	1.1%	10.0%	11.8%

- Quarter and year ending March had very high rankings
 - Median public fund returned -11.8% and -3.0% respectively (more public equity)
- Quarter and year ending June had poor rankings
 - Median public fund returned 8.9% and 3.4% for quarter and year respectively
- Difference in rankings is primarily attributable to the difference in OPERF allocations to public (lower) and private equity (higher) relative to peers
 - OPERF's rankings are better when public equity performs poorly relative to private equity

- Note – 10 year period ended June rolled off 1Q10 (ACWI +3.1%) and added 2Q20 (ACWI + 19.2%)

OPERF Rolling 10 Year Returns and Rankings

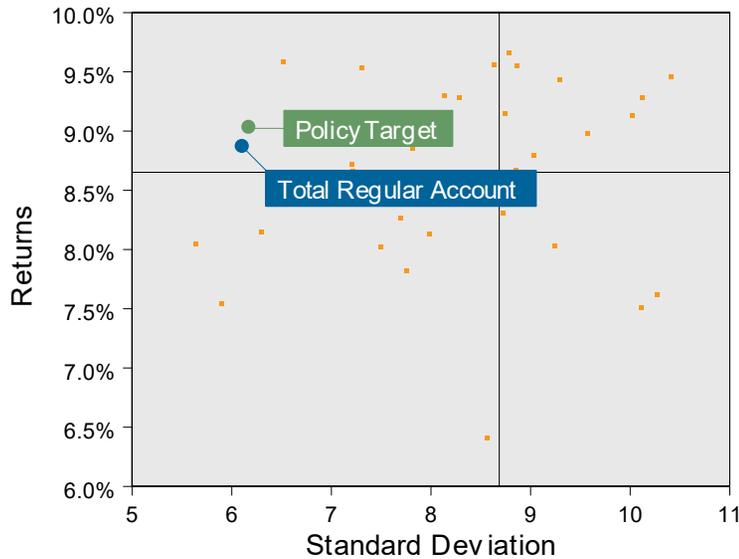
Rolling 40 Quarter Gross of Fee Returns
for 10 Years Ended June 30, 2020



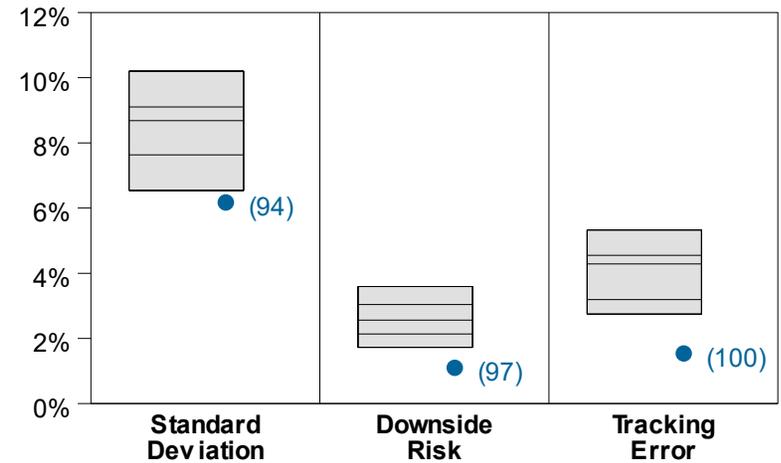
OPERF Total Regular Account

Risk vs Return

Callan Public Fund Spons- V Lg DB (>10B) (Gross)
Annualized Ten Year Risk vs Return



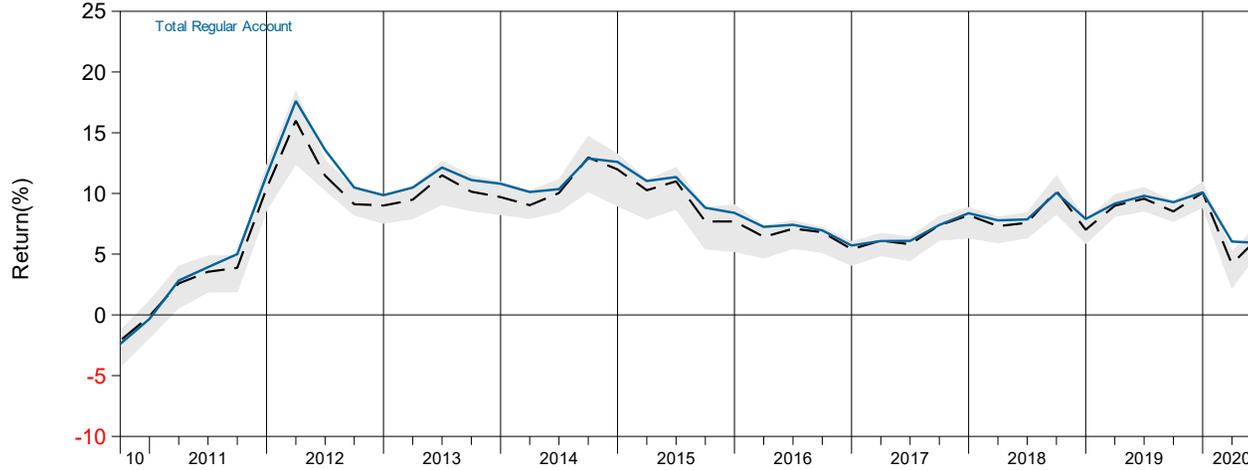
Risk Statistics Rankings vs Policy Target
Rankings Against Callan Public Fund Sponsor- V Lg DB (>10B) (Gross)
Ten Years Ended June 30, 2020



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	10.20	3.59	5.33
25th Percentile	9.10	3.05	4.55
Median	8.69	2.56	4.29
75th Percentile	7.63	2.14	3.20
90th Percentile	6.54	1.73	2.75
Total Regular Account	6.12	1.05	1.48

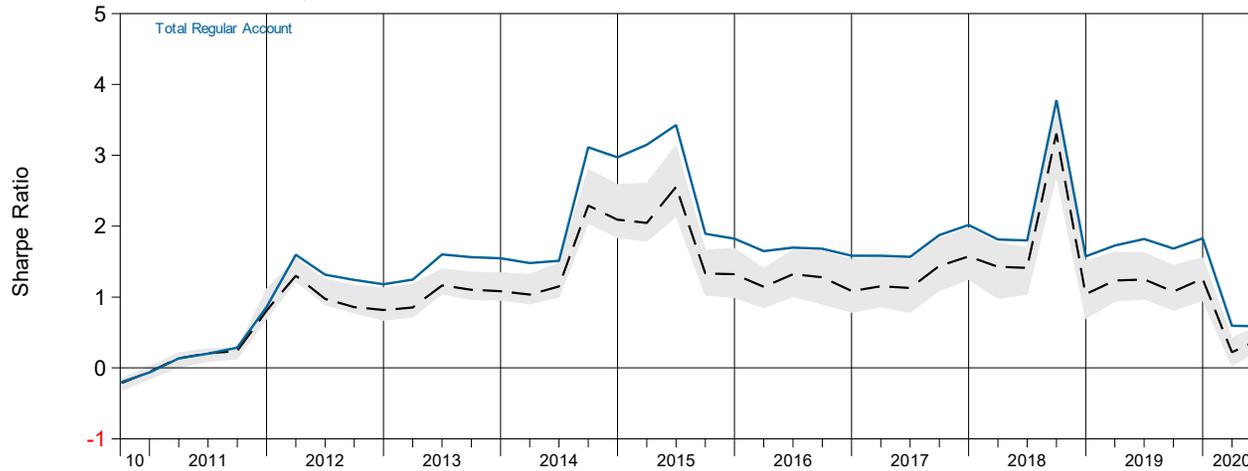
Total Fund Consistency

**Rolling Three Year Return(%) Relative to Policy Target
Ten Years Ended June 30, 2020**



Rolling Three Year Period Analysis	Median	Portfolio
Average Annual Return(%)	7.96%	8.53%
% Positive Periods	95%	95%
Average Ranking	50	31

**Rolling Three Year Sharpe Ratio Relative to Policy Target
Ten Years Ended June 30, 2020**



Rolling Three Year Period Analysis	Median	Portfolio
Average Annual Sharpe Ratio	1.15%	1.57%
% Positive Periods	95%	95%
Average Ranking	50	11

Callan



Appendix

OPERF Total Regular Account

Net Calendar Year Performance by Asset Class

	YTD	2019	2018	2017	2016
Total Regular Account	-4.50%	13.56%	0.48%	15.39%	7.11%
Total Regular Account ex-Overlay	-4.37%	13.19%	0.45%	15.38%	6.73%
OPERF Policy Benchmark*	-2.81%	13.99%	1.22%	15.64%	8.95%
Total Fixed Income	5.13%	8.84%	0.25%	3.70%	3.06%
Custom FI Benchmark	5.34%	8.27%	0.31%	3.32%	2.52%
Callan Public Fund > \$10bn U.S. Fixed	4.51%	9.61%	-0.58%	4.61%	4.82%
Total Public Equity	-9.48%	25.25%	-10.47%	24.41%	9.89%
MSCI ACWI IMI Net	-7.06%	26.35%	-10.08%	23.95%	8.36%
U.S. Equity Portfolio	-8.92%	28.99%	-7.87%	20.40%	14.90%
Russell 3000 Index	-3.48%	31.02%	-5.24%	21.13%	12.74%
Callan Large Public > \$10bn U.S. Equity	-4.70%	30.34%	-5.66%	21.28%	12.60%
Non-U.S. Equity Portfolio	-11.12%	22.61%	-14.88%	30.23%	4.67%
MSCI ACWI ex-US IMI Index	-11.24%	21.63%	-14.76%	27.81%	4.41%
Callan Large Public > \$10bn Non-U.S. Equity	-11.24%	22.98%	-14.09%	29.70%	5.16%
Total Real Estate	0.36%	7.25%	8.03%	10.05%	7.88%
Total Real Estate ex REITs	1.10%	7.27%	8.87%	11.19%	10.01%
Oregon Custom Real Estate Benchmark	2.03%	4.64%	7.71%	6.70%	8.88%
Callan Public Plan - Real Estate	-0.38%	6.86%	7.98%	7.70%	8.50%
Opportunity Portfolio	-4.67%	6.15%	5.85%	10.47%	6.12%
CPI + 5%	2.71%	7.32%	6.77%	7.18%	6.99%
Alternative Portfolio	-9.09%	-1.32%	-2.44%	8.30%	6.61%
CPI + 4%	2.31%	6.37%	5.98%	6.19%	6.16%
Total Private Equity	-4.82%	11.10%	18.15%	17.32%	6.26%
OIC - Russell 3000 + 300 BPS Qtr Lag	-12.38%	6.00%	21.06%	22.22%	18.37%

*Current Policy Benchmark = 37.5%, MSCI ACWI IMI, 21.0% OPERF Custom Total FI Benchmark, 19.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 10.0% CPI + 400 bps Target 12/18= 39.0%, MSCI ACWI IMI, 22.0% OPERF Custom Total FI Benchmark, 19.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 7.5% CPI + 400 bps

U.S. Equity: V-Shaped Snap Back

U.S. equity bounced back from March lows

- Best quarterly performance for S&P 500 since 1998
- Returns in excess of 30% for three sectors
- Tech a top performer—still
 - “FAAMG” stocks up 35%
- Energy stocks higher after production cuts buoyed oil prices

Small cap outgains large cap

- One of three best quarters for Russell 2000 after worst quarterly performance in 1Q20
 - Still lags Russell 1000 on a YTD and trailing one-year basis
- Investment sentiment in favor of small cap after better-than-expected economic data and Fed actions

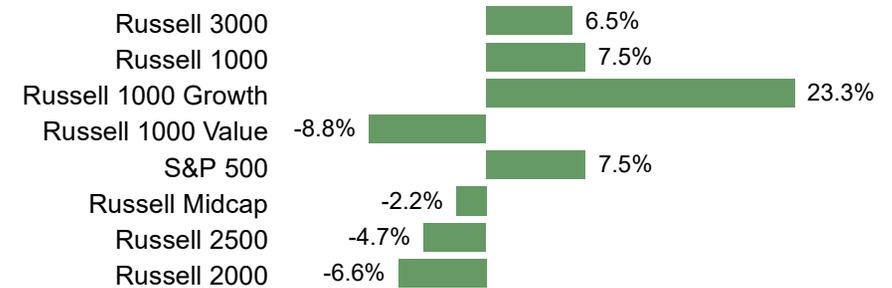
Growth outpaces value across market capitalizations

- During both 1Q20 market decline as well as 2Q20 market recovery

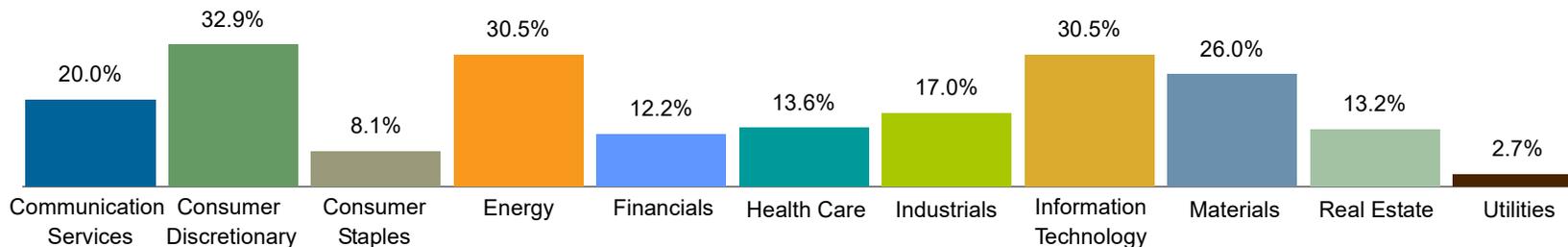
U.S. Equity: Quarterly Returns



U.S. Equity: One-Year Returns



Industry Sector Quarterly Performance (S&P 500)



Sources: FTSE Russell, S&P Dow Jones Indices

Global ex-U.S. Equity Performance

Second quarter recovery

- Accommodative monetary policies, fiscal stimulus a boost for the market
- COVID-19 cases slowed; economies started reopening.
- Strongest quarterly gains in more than a decade for EM over optimism for a global recovery
- Small caps outperformed large as lockdowns eased and business confidence improved.

Cyclical sectors rebound

- Materials, Industrials, and Consumer Discretionary outperformed as consumption and production resumed.
- Factor performance led by momentum (rebound) and volatility (risk-on market mentality).

U.S. dollar vs. other currencies

- Dollar flat relative to the British pound and Japanese yen
 - *Depreciated against euro, Australian dollar, and Canadian dollar as these regions successfully managed COVID-19*

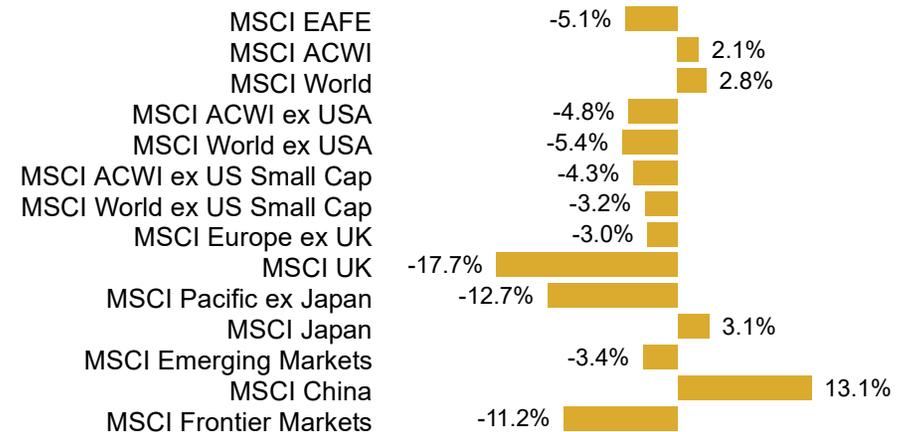
Growth vs. value

- Growth continued to outperform value
 - *Support from Technology (due to stay-at-home trends) and Health Care*

Global Equity: Quarterly Returns



Global Equity: Annual Returns



Source: MSCI

U.S. Fixed Income Performance

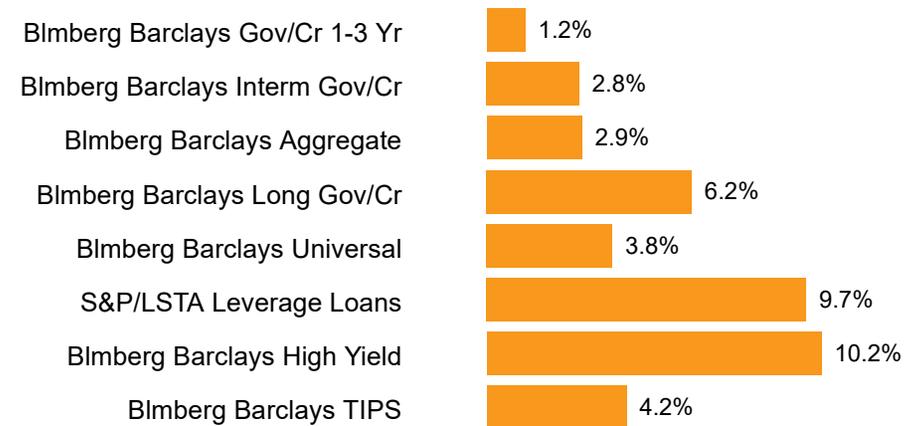
Treasury yields were range-bound

- 10-year U.S. Treasury yield reached 0.91% in June before closing 2Q20 at 0.66%, down slightly from 1Q20.
- Fed left rates at 0% – 0.25% for the foreseeable future, anchoring the low end of the yield curve.

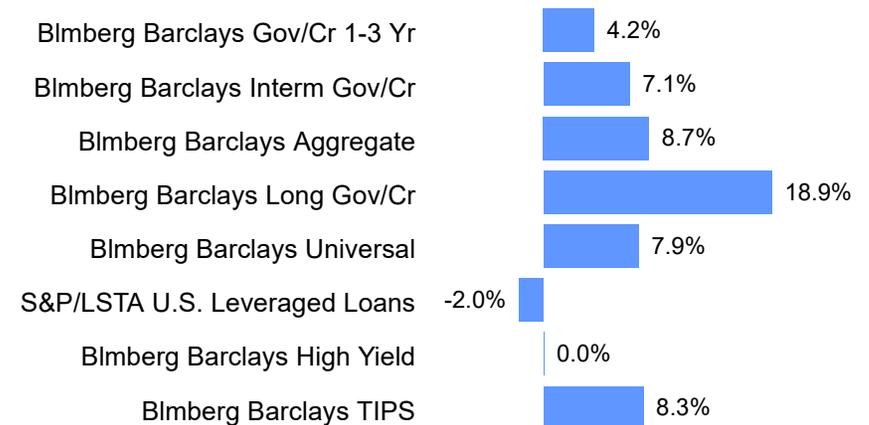
Credit rallied due to spread narrowing

- Corporate credit rebounded amid improving investor confidence and economic data. But fallen angels continued to spark concern, with nearly half of the IG corporate market rated BBB.
- IG corporate spreads narrowed by 122 bps to 150 bps despite companies issuing record debt totaling \$1.4 trillion (+9.0%).
- High yield corporates posted double-digit returns (+10.2%).

U.S. Fixed Income: Quarterly Returns



U.S. Fixed Income: Annual Returns



Sources: Bloomberg Barclays, S&P Dow Jones Indices

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TAB 8 – Asset Allocation & NAV Updates

Asset Allocations at July 31, 2020

OPERF	Regular Account						Target Date Funds	Variable Fund	Total Fund	
	Policy	Target ¹	\$ Thousands	Pre-Overlay	Overlay	Net Position	Actual	\$ Thousands	\$ Thousands	\$ Thousands
Public Equity	27.5-37.5%	32.5%	23,844,082	31.7%	(402,769)	23,441,313	31.1%	1,154,447	393,999	24,989,759
Private Equity	13.5-21.5%	17.5%	17,350,948	23.0%		17,350,948	23.0%			17,350,948
Total Equity	45.0-55.0%	50.0%	41,195,029	54.7%	(402,769)	40,792,260	54.2%			42,340,707
Opportunity Portfolio	0-5%	0.0%	1,622,345	2.2%		1,622,345	2.2%			1,622,345
Fixed Income	15-25%	20.0%	13,952,950	18.5%	1,323,093	15,276,043	20.3%	1,718,820		16,994,863
Risk Parity	0.0-2.5%	2.5%	1,254,861	1.7%		1,254,861	1.7%			1,254,861
Real Estate	9.5-15.5%	12.5%	8,470,499	11.2%	(2,300)	8,468,199	11.2%			8,468,199
Alternative Investments	7.5-17.5%	15.0%	7,876,485	10.5%		7,876,485	10.5%			7,876,485
Cash ²	0-3%	0.0%	934,465	1.2%	(918,024)	16,442	0.0%		6,953	23,394
TOTAL OPERF		100%	\$ 75,306,635	100.0%	\$ -	\$ 75,306,635	100.0%	\$ 2,873,267	\$ 400,952	\$ 78,580,854

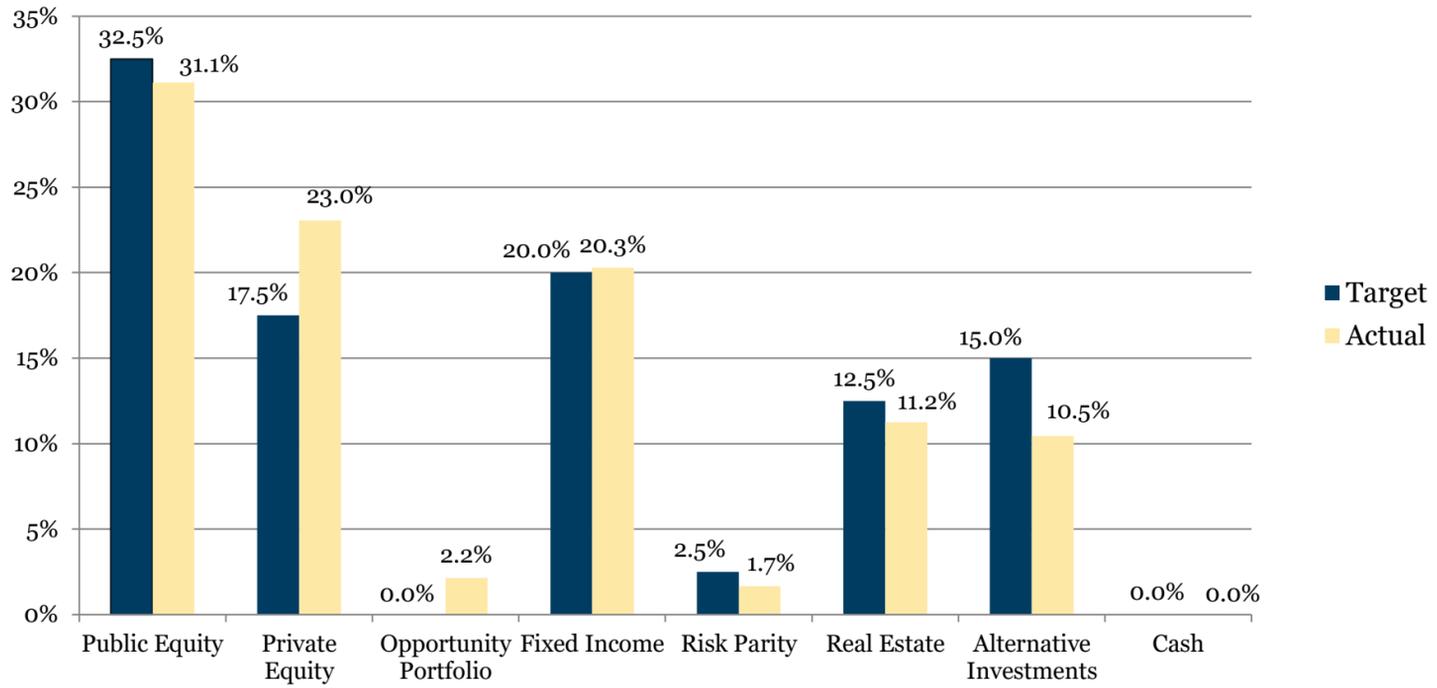
¹Targets established in April 2019. Interim policy benchmark effective July 1, 2020, consists of: 33.5% MSCI ACWI IMI Net, 20% Custom FI Benchmark, 19% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), 12.5% CPI+400bps, & 2.5% S&P Risk Parity - 12% Target Volatility.

²Includes cash held in the policy implementation overlay program.

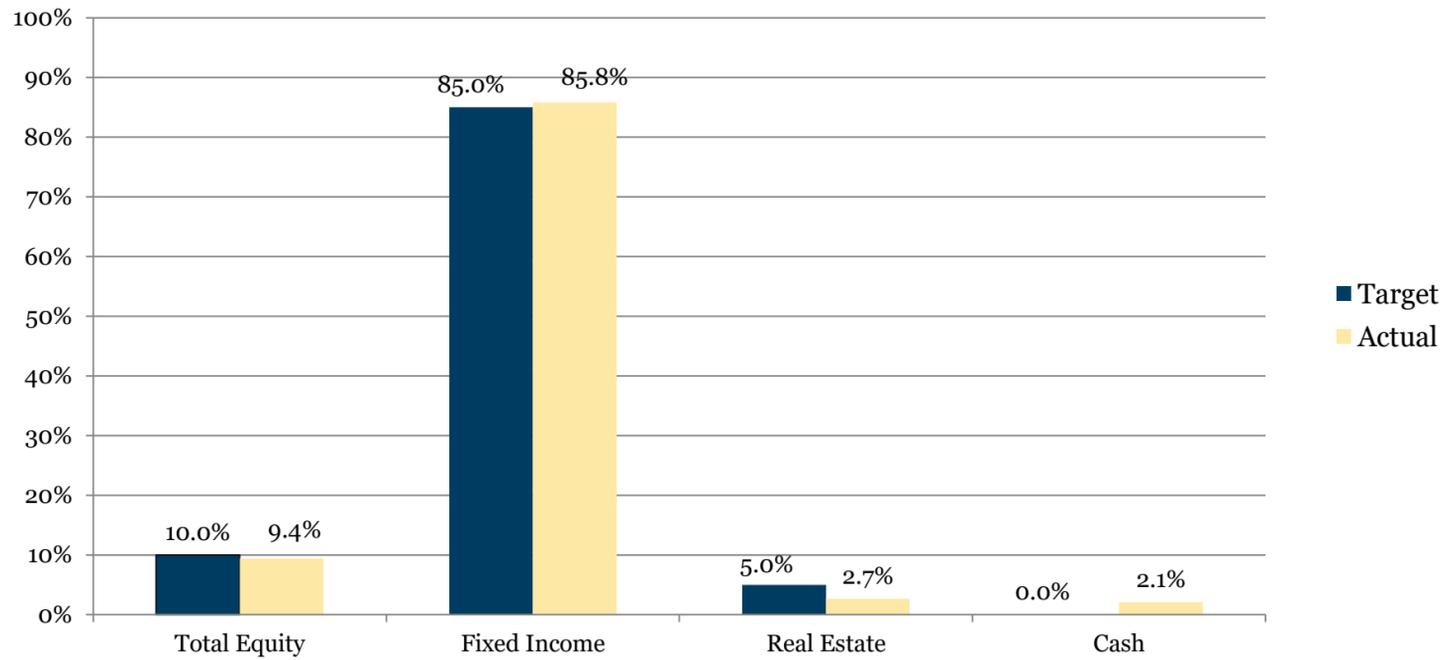
SAIF	Policy	Target	\$ Thousands	Actual
Total Equity	7-13%	10.0%	482,654	9.4%
Fixed Income	80-90%	85.0%	4,414,621	85.8%
Real Estate	0-7%	5.0%	138,204	2.7%
Cash	0-3%	0.0%	108,588	2.1%
TOTAL SAIF			\$ 5,144,068	100.0%

CSF	Policy	Target	\$ Thousands	Actual
Global Equities	40-50%	45.0%	793,871	44.7%
Private Equity	8-12%	10.0%	182,747	10.3%
Total Equity	58-62%	55.0%	976,618	55.0%
Fixed Income	25-35%	25.0%	525,836	29.6%
Real Estate	8-12%	10.0%	130,108	7.3%
Alternative Investments	8-12%	10.0%	119,625	6.7%
Cash	0-3%	0.0%	24,156	1.4%
TOTAL CSF			\$ 1,776,343	100.0%

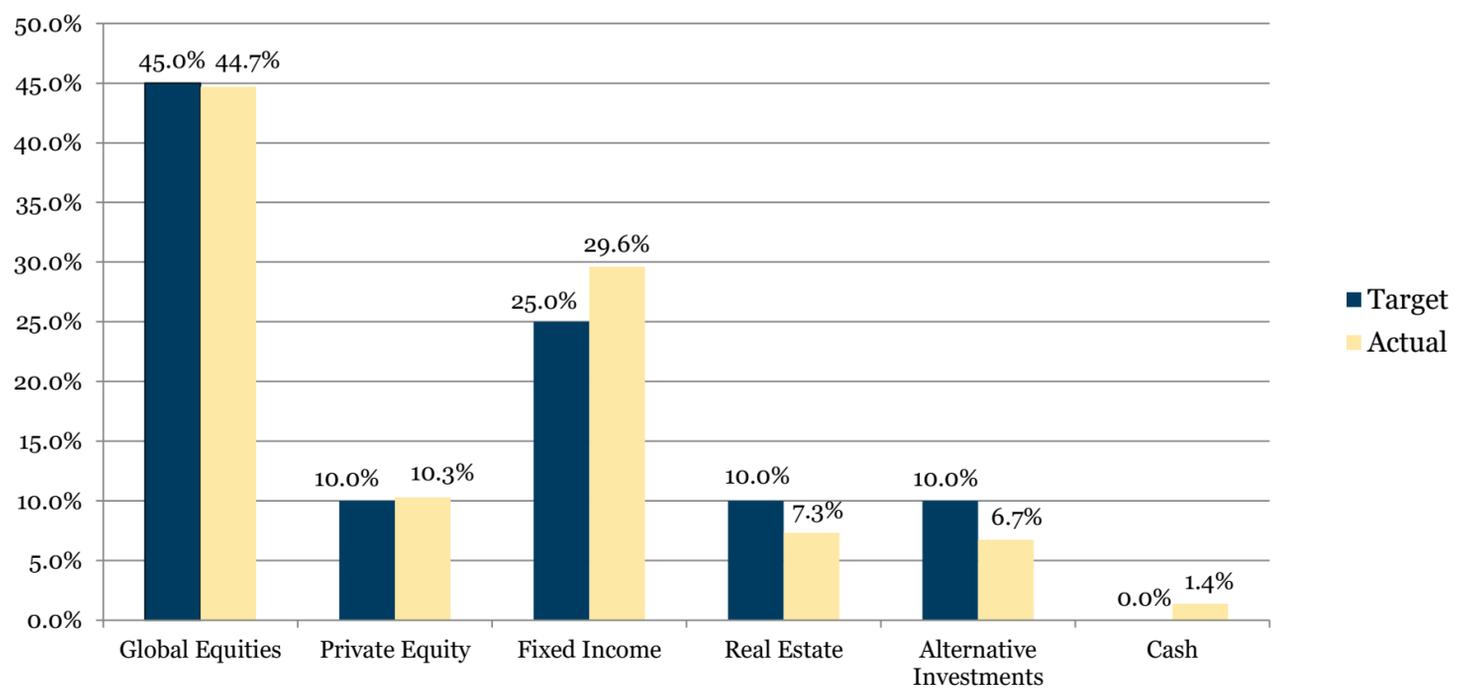
OPERF Asset Allocation



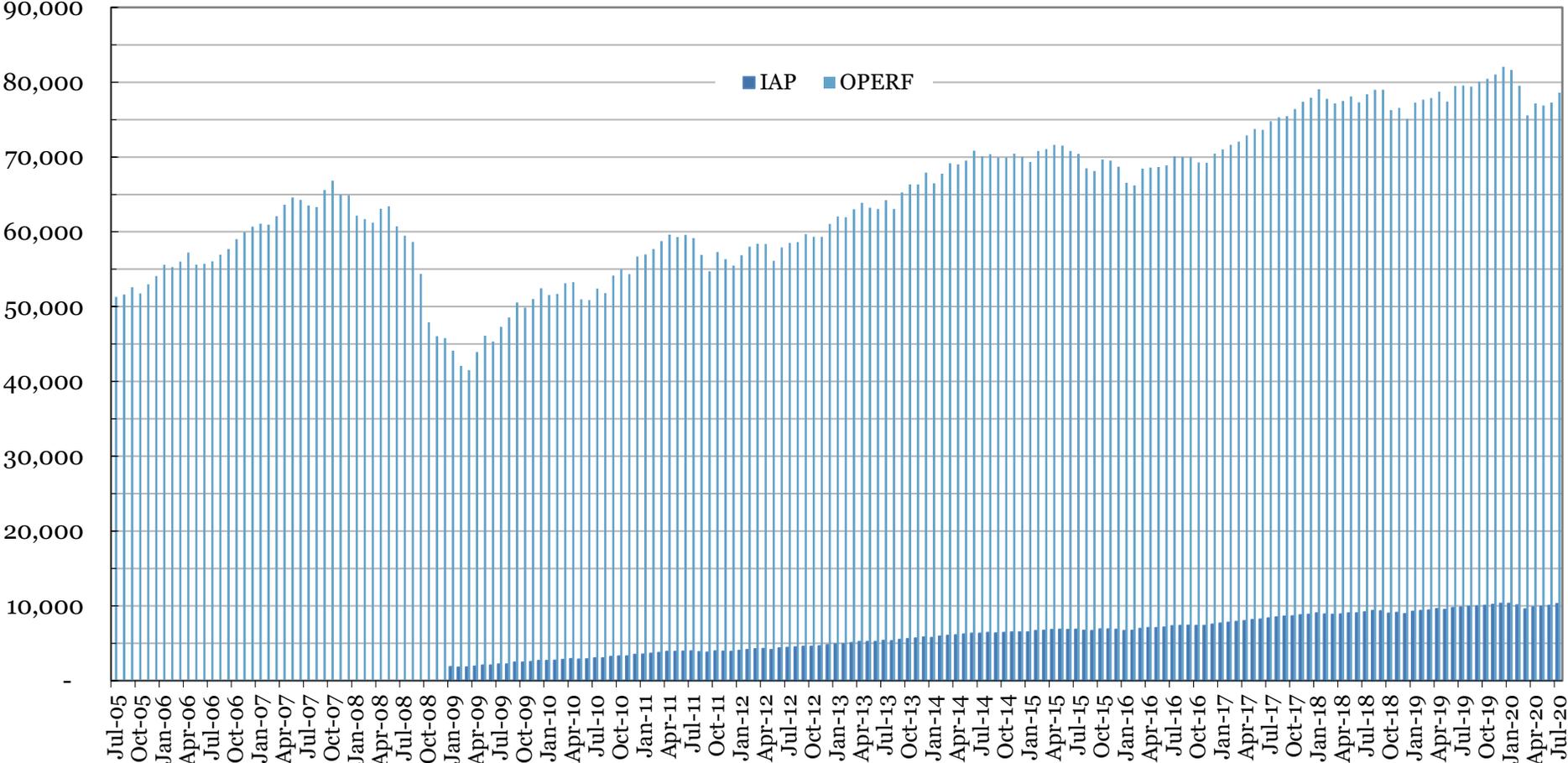
SAIF Asset Allocation



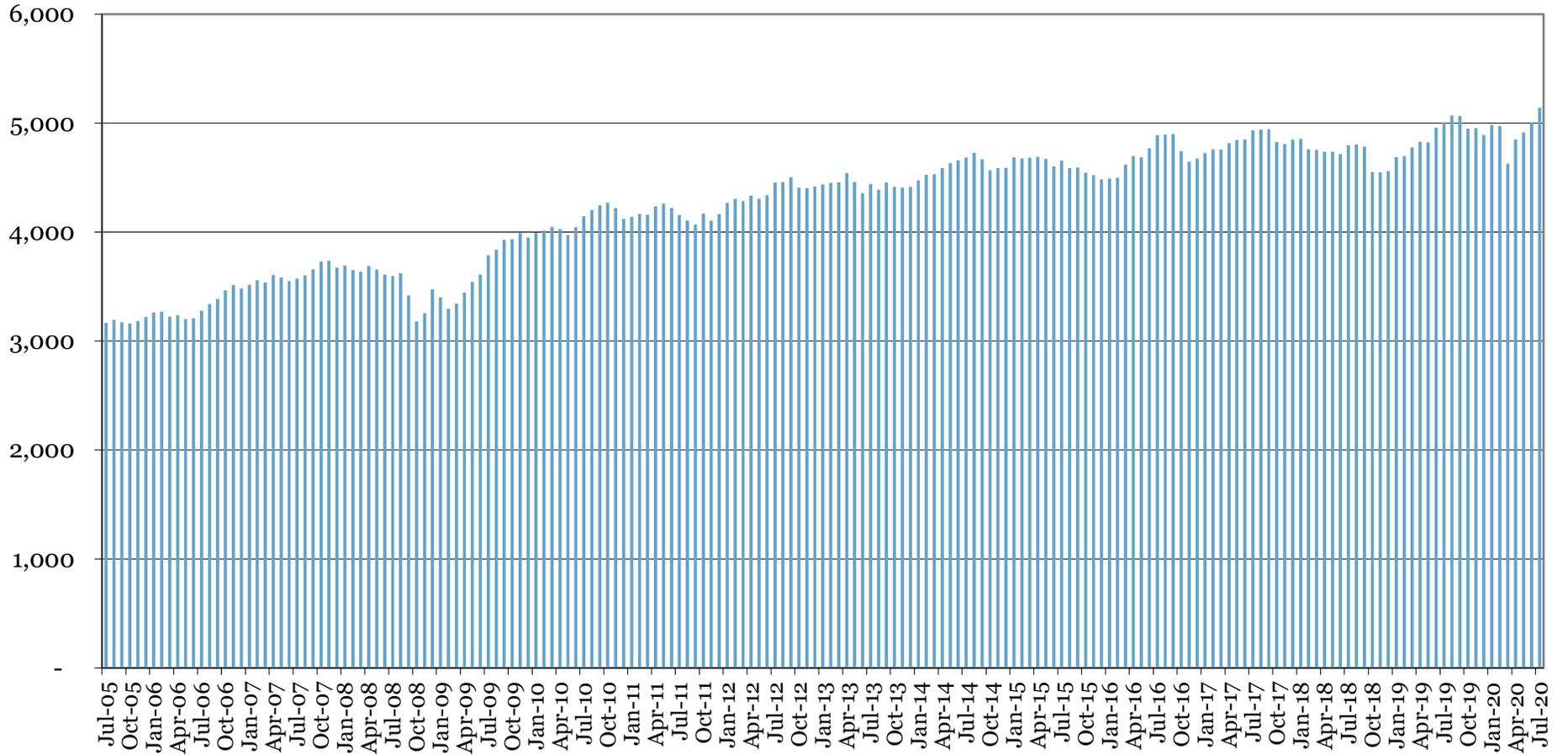
CSF Asset Allocation



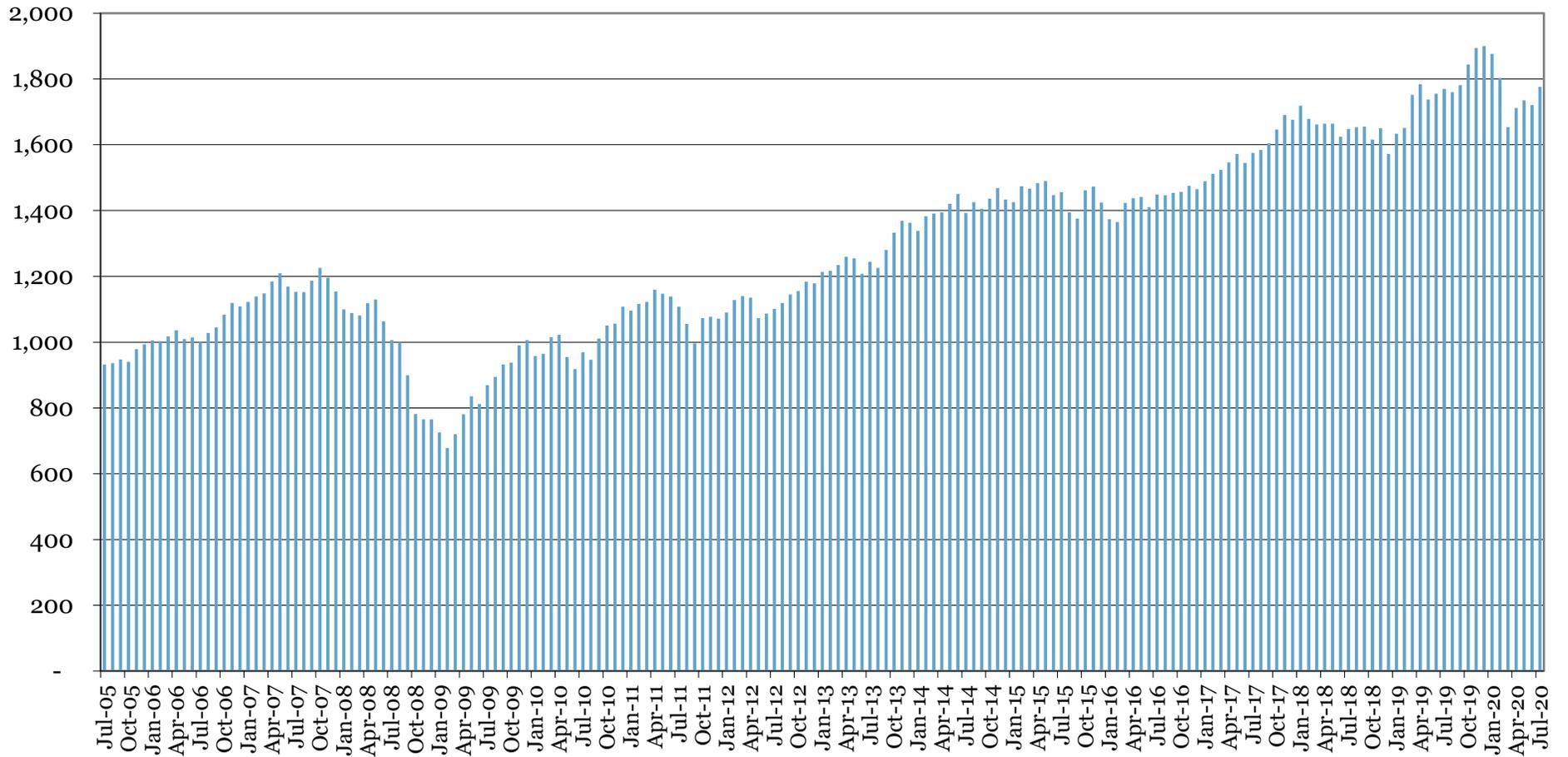
OPERF NAV
15 years ending July 31, 2020
(□ in Millions)



SAIF NAV
15 years ending July 31, 2020
(□ in Millions)



CSF NAV
15 years ending July 31, 2020
(□ in Millions)



TAB 9 – Calendar – Future Agenda Items

2020/21 OIC Forward Calendar and Planned Agenda Topics

October 28, 2020	SAIF Annual Review OSGP Annual Review Corporate Governance, Proxy Voting
December 9, 2020	Public Equity Program Review Fixed Income Program Review Q3 OPERF Performance
January 28, 2021	Private Equity Program Review Opportunity Portfolio Program Review Placement Agent Report 2022 OIC Calendar Approval
March 10, 2021	Real Estate Portfolio Review Alternatives Program Review Q4 OPERF Performance
April 21, 2021	OPERF Asset Allocation & Capital Market Assumptions Update Risk Review (Risk Parity, Currency, Overlay) Operational Annual Review
June 2, 2021	OIC, PERS Joint Session IAP Program Review CEM Benchmarking Q1 OPERF Performance
September 8, 2021	Common School Fund Annual Review ESG Annual Review Corporate Governance, Proxy Voting Securities Lending Q2 OPERF Performance