
Oregon Investment Council

September 19, 2018
9:00 AM

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

Rukaiyah Adams
Chair

John Skjervem
Chief Investment Officer

Tobias Read
State Treasurer





OREGON INVESTMENT COUNCIL

Agenda

September 19, 2018
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 August 8, 2018	Rukaiyah Adams <i>OIC Chair</i>	1
9:05-9:10	2. Committee Reports and CIO Remarks	John Skjervem <i>Chief Investment Officer</i>	2
9:10-9:20	3. Policy Updates <i>OIC Orientation Manual</i>	Jennifer Peet <i>Corporate Governance Director</i>	3
	<u>B. Information Items</u>		
9:20-9:55	4. McKinsey Survey Results <i>OST Investment Division</i>	Bryce Klempner <i>Principal, McKinsey & Company, Inc.</i> Elizabeth Skovira <i>Associate Partner, McKinsey & Company, Inc.</i>	4
9:55-10:30	5. Equity Market Update and Discussion	Ronald Temple, CFA <i>Managing Director, Co-Head of Multi-Asset and Head of U.S. Equity,</i> <i>Lazard Asset Management</i>	5
10:30-10:45	----- BREAK -----		
10:45-11:05	6. Q2 2018 Performance & Risk Report <i>OPERF</i>	Karl Cheng <i>Senior Investment Officer, Portfolio Risk & Research</i> Janet Becker-Wold <i>Senior Vice President, Callan Associates</i>	6

11:05-11:45	7. CEM Benchmarking Report <i>OPERF</i>	Karl Cheng Mike Heale <i>Principal, CEM</i>	7
11:45-12:05	8. Oregon Savings Growth Plan <i>Annual Review and Update</i>	Michael Viteri <i>Senior Investment Officer, Public Equity</i> Wil Hiles <i>Investment Analyst II, Public Equity</i> Uvan Tseng <i>Senior Vice President, Callan Associates</i>	8
12:05-12:10	9. Asset Allocations & NAV Updates a. Oregon Public Employees Retirement Fund b. SAIF Corporation c. Common School Fund d. Southern Oregon University Endowment Fund	John Skjervem	9
	10. Calendar — Future Agenda Items		10
12:10	11. Open Discussion	Council Members Staff Consultants	

C. Public Comment Invited
10 Minutes

TAB 1 – REVIEW & APPROVAL OF MINUTES

August 8, 2018 Regular Meeting



STATE OF OREGON
OFFICE OF THE STATE TREASURER
16290 SW UPPER BOONES FERRY ROAD
TIGARD, OREGON 97224

OREGON INVESTMENT COUNCIL
AUGUST 8, 2018
MEETING MINUTES

Members Present: John Russell, Tobias Read, Rex Kim and Kevin Olineck

Staff Present: John Skjervem, Darren Bond, Perrin Lim, David Randall, John Hershey, Deena Bothello, Karl Cheng, Tony Breault, Anna Totdahl, Austin Carmichael, Kim Olson, David Elott, May Fanning, Amanda Kingsbury, Jen Plett, Dana Millican, Ben Mahon, Garrett Cudahey, Joe Hutchinson, Ricardo Lopez, Angela Schaffers, Eric Messer, Mark Selfridge, Michael Langdon, Michael Viteri, Jennifer Peet, Ahman Dirks, William Hiles, Michael Mueller, Dmitri Palmateer, Emily Nash, Paul Koch, Kristel Flores, Jackie Steffens, Kelly Cook, James Sinks, Susan Wilson, Lisa Pettinati, Caitlyn Wang, Amy Wojcicki, Michael Kaplan, Tiffany Zhuge, Steve Kruth, Robin Kaukonen, Geoff Nolan, Ryan Mann, and Chris Ebersole

Consultants Present: Tom Martin and Tyler Van Der Schaaf, (TorreyCove); Allan Emkin, Christy Fields and Brandon Ross (PCA); Janet Becker-Wold, Uvan Tseng, and Jim Callahan (Callan)

Legal Counsel Present: Steven Marlowe, Department of Justice

The August 8th, 2018 OIC meeting was called to order at 9:00 am by John Russell, OIC Vice Chair. Mr. Russell officially introduced Mr. Kevin Olineck who recently succeeded Steve Rodeman as the Executive Director of PERS. Mr. Olineck has enjoyed a distinguished career in the Canadian pension fund industry, most recently serving as Vice President of Member Services at the British Columbia Employees Retirement System Pension Corporation in Victoria, B.C.

I. 9: 00am Review and Approval of Minutes

MOTION: Vice Chair Russell moved approval of the June 6th, 2018 OIC regular meeting minutes. Member Kim moved motion, Treasurer Read noted a spelling error on page two of Ms. Anna Totdahl's name, then seconded the motion which then passed by a 3/0 vote.

II. 9:05 am Committee Reports and CIO Update

Committee Reports: Mr. Skjervem gave an update on the following committee actions taken since the June 6th, 2018 OIC meeting:

Private Equity Committee

July 23, 2018	GGV Capital VII	\$60M
	GGV Capital VII Plus	\$15M
	GGV Discovery II	\$25M

August 7, 2018

Hellman & Friedman Capital Partners IX

\$350M

Alternatives Portfolio Committee

None

Opportunity Portfolio Committee

None

Real Estate Committee

July 27, 2018

Harrison Street Core Property Fund

\$150M

In accordance with Section 6, OST Staff Authority, of INV 501: Acquiring and Managing Equity Real Estate, staff approved a \$50 million recap to Lionstone Oregon Real Estate One, LP (separate account).

Mr. Skjervem then provided opening remarks which included an introduction of Larry Fink, Co-Founder, Chairman and CEO, Blackrock, Inc., a summary of staff's proposed Private Equity recommendation, the Opportunity Portfolio Review, and a Corporate Governance update. Mr. Skjervem also introduced a group of newly hired OST employees, including Lisa Pettinati, Deputy General Counsel, Joe Hutchinson, Investment Accountant, Kristel Flores, Executive Support Specialist, Robin Kaukonen, Investment Officer, Public Equity, Chris Ebersole, Investment Officer, Real Estate, Steve Kruth, Compliance Manager, Justin Southard, Help Desk Analyst, and Geoff Nolan, Senior Investment Officer, Fixed Income.

III. 9:59 am Global Markets Overview

Larry Fink, Co-Founder, Chairman and CEO, Blackrock, Inc. provided the Council with an overview of global capital markets. He also spoke about his firm's efforts to improve retirement security.

IV. 10:38 am Vista Equity Partners VII, L.P. – OPERF Private Equity Portfolio

Michael Langdon, Senior Investment Officer, Private Equity, recommended approval of an up to \$500 million capital commitment to Vista Equity Partners Fund VII, L.P. ("VEPF VII" or "Fund VII") as part of the OPERF private equity portfolio. Approval of the proposed commitment would continue OPERF's existing relationship with Vista Equity Partners Management, a relationship that dates back to 2007 and includes \$1.2 billion of aggregate capital commitments across six previous partnerships.

Mr. Langdon then introduced Robert F. Smith, Founder, Chairman and CEO, Vista Equity Partners, who provided the Council with a presentation on his firm, its investment strategy and historical performance record.

MOTION: Treasurer Read moved approval of staff's recommendation, and Mr. Russell seconded the motion which then passed by a 3/0 vote.

V. 11:37 am Opportunity Portfolio Review – OPERF Opportunity Portfolio

John Hershey, Director of Alternative Investments delivered an update on and 2017 review of the OPERF Opportunity Portfolio. Mr. Hershey's remarks included a summary of past and current investment strategy as well as a select review portfolio mandates.

VI. 12:15 pm Corporate Governance Update – Annual Report

Jennifer Peet, Corporate Governance Director, provided an overview of proxy votes cast on behalf of the state of Oregon during the 2018 proxy season as well as commentary on current corporate governance trends.

Ms. Peet then introduced Kern McPherson, Senior Director, North American Proxy Research, Glass Lewis who provided the Council with his firm's 2018 "Mid-Season Review" which included, among other items, an OIC voting summary, shareholder proposal highlights, and comments on executive compensation.

VII. 12:17 pm Asset Allocation & NAV Updates

Mr. Skjervem reviewed asset allocations and NAVs across OST-managed accounts for the period ended June 30, 2018.

VIII. 12:17 pm Calendar — Future Agenda Items

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

IX. 12:17 pm Open Discussion

None

12: 18 pm Public Comments

1. Douglas Berg, a private citizen from Eugene, OR, spoke in favor of maximizing OPERF investment returns which he deemed imperative relative to the state's large, unfunded PERS liability.
2. Michelle Perez, Tina Sturmer and Elizabeth Marin, former Toys "R" Us & Babies "R" Us employees, shared their personal stories as examples of the financial hardship they and many other former employees have suffered since losing their jobs due to the company's bankruptcy and wholesale store closures. Mses. Perez, Sturmer and Marin urged the Council to encourage all the company's owners to contribute to the Toys "R" Us Family Fund as KKR and Bain Capital had done.

Mr. Russell adjourned the meeting at 12:31 pm.

Respectfully submitted,



May Fanning
Executive Support Specialist

TAB 2 – Committee Reports and CIO Remarks

Opening Remarks

John D. Skjervem, Chief Investment Officer

September 19, 2018



Oregon State Treasury

September 19, 2018 OIC Meeting

Policy

- New OIC Member Orientation Manual

McKinsey Survey

- How does the Investment Division rank in terms of “organizational health”

Equity Market Update

- What inning are we in, Ron?

Risk & Return

- Q2 2018 OPERF results

Annual CEM Benchmarking Report

- OPERF’s expense profile in both absolute and relative terms

OSGP Annual Review

- Update on the State’s 457 Plan

Still More Boots on the Ground

- David Elott, Assistant General Counsel

Kasey Krifka, Oregon Savings Network

TAB 3 – POLIC UPDATE

OIC Orientation Manual

2018

OREGON INVESTMENT COUNCIL MANUAL



State Treasurer Tobias Read
Oregon State Treasury

www.Oregon.gov/Treasury



CONTENTS, EXTERNAL LINKS, AND RESOURCES

Purpose: Oregon Investment Council (OIC) Manual

OIC Policy Framework

LINK: [Statement of Investment and Management Beliefs](#)

LINK: [Statement of Funds Governance](#)

LINK: [Statement of Investment Objectives and Policy Framework for OPERF](#)

[INV 101: OST Support for the OIC](#)

[INV 101 Appendix A: Rules for Conduct at OIC Meetings](#)

[INV 104: OIC Standard of Ethics](#)

[OIC Policy Supplement](#) (draft list of OIC policies)

*[Asset class allocations](#) (excerpt of *Statement of Investment Objectives and Policy Framework for OPERF*)*

OIC Member Information

[OIC biographical and contact information](#)

[OIC position descriptions](#)

Oregon State Treasury Investment staff and organizational structure

LINK: [Treasury staff bios and contact information](#)

[Executive Division Organizational Chart](#)

[Investment Division Organizational Chart](#)

OIC Statutory Authority and Requirements

Oregon Revised Statutes *[Chapter 293](#)* “Administration of Public Funds”

Oregon Revised Statutes *[Chapter 244](#)* “Oregon Government Ethics Law”

[Oregon Government Ethics Commission: A Guide for Public Officials](#)

Resources

[OIC Consultant list](#)

LINK: [OIC website](#)

LINK: [A Primer for Investment Trustees](#), Bailey, Phillips, and Richards, CFA Institute (Jan. 19, 2011)

Overview of the Oregon Public Employees Retirement System (PERS)

LINK - PERS Website: [State of Oregon: Public Employees Retirement System - PERS](#)

LINK: [PERS by the Numbers](#)

LINK: [PERS Facts](#)



STATE OF OREGON
OREGON STATE TREASURY
16290 SW Upper Boones Ferry Road
Tigard, OR 97224

Members of the Oregon Investment Council:


The Oregon Investment Council (OIC) is responsible for formulating policies that govern and guide the investment of all state and public trust fund moneys including the Oregon Public Employees Retirement Fund. In their discharge of these responsibilities, OIC members serve the state of Oregon, its citizens and trust fund beneficiaries including current and retired public employees, school children, and injured state workers.

The State Treasurer is established in Oregon law as the OIC's investment officer and with express authority to hire and direct staff to invest state moneys in accordance with OIC policy.

Treasury staff created this orientation manual as a resource to assist you in your role as an OIC member and public fund fiduciary. The manual contains links to various on-line resources, including investment-related statutes and Ethics Commission materials. We have also included relevant policies, reference materials, organizational charts and personnel contact information.

Service on the OIC is a significant responsibility, and my staff and I deeply appreciate the time and energy you devote to this important role. We hope these materials prove helpful to you, and please do not hesitate to contact me with any questions regarding these or related matters.

Sincerely,



John D. Skjervem
Chief Investment Officer



Origination:	04/2007
Last Approved:	04/2018
Last Revised:	04/2018
Next Review:	04/2019
Owner:	<i>John Skjervem: Chief</i>
Policy Area:	<i>Investments</i>
References:	<i>OST Policy 4.00.00</i>

INV 101: Oregon State Treasury Support for the Oregon Investment Council

INTRODUCTION & OVERVIEW

Summary Policy Statement

The Oregon Investment Council ("OIC" or "Council") formulates broad policies for the investment and reinvestment of moneys in the investment funds and the acquisition, retention, management, and disposition of investments in the investment funds (the "Fund" or "Funds"). The voting members of the Council include the State Treasurer and four appointees of the Governor. The Public Employees Retirement System (PERS) Director is an ex officio, non-voting member of the Council. The OIC is responsible for approving and revising policies. The Chief Investment Officer, working with Investment Division staff, is responsible for approving and revising procedures, developing OIC meeting agendas, and drafting OIC resolutions. OST Investment Division staff provide administrative and research support to the Council, and are responsible for recording, transcribing, and distributing OIC meeting minutes.

Authority

ORS 182.010-020, ORS 293.721-726, ORS 293.731

POLICY PROVISIONS

Policy Statements

Develop OIC Meeting Agendas

The Chief Investment Officer (CIO), in coordination with the OIC Chair and State Treasurer, is responsible for constructing an agenda for each OIC meeting.

The CIO shall produce the agenda established in (a) and distribute it and any pertinent documents or supporting materials to Council members at least one week prior to any regularly-scheduled OIC meeting.

Any Council member may at any time request that the OIC Chair place one or more items on a forthcoming OIC meeting agenda. To provide staff with sufficient preparation time to comply with (b) above, such additional agenda item requests should be sent to the OIC Chair no less than two weeks in advance of the next regularly-scheduled OIC meeting.

Record, Transcribe and Distribute OIC Meeting Minutes

A member of the Investment Division staff shall record and distribute OIC meeting minutes. Approved minutes, except those taken during executive session, shall be posted to the OST website along with a corresponding audio recording.

Draft OIC Resolutions

The CIO or staff may draft policies or resolutions for OIC action upon request. All advisors to the Council, including but not limited to investment advisors, OST staff members and legal counsel, when practicable, shall submit to the Council for its consideration written recommendations, whenever OST staff and legal counsel determine Council action is required.

From these written recommendations, OST staff shall have prepared for the Council's consideration appropriate forms of motion. Whenever practicable, OST staff shall review and advise the Council in writing whether proposed Council action concerning investments falls within or outside of existing investment policies, and, if within, shall identify the applicable policy or policies.

Staff and Research Support

Should the OIC wish to investigate or research a matter related to current or potential investment activities, OST Investment Division staff shall provide support and assistance as required .

Exceptions

None.

PROCEDURES and FORMS

Rules of Conduct at Oregon Investment Council Meetings

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 OST 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.

Attachments:	Rules of Conduct at Oregon Investment Council Meetings
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OREGON INVESTMENT COUNCIL POLICY

Rules for Conduct at OIC Meetings

Appendix A to INV 101

- 1.** These rules apply to convened meetings, regular and special, of the Oregon Investment Council (“OIC” or “Council”).
- 2.** In consultation and coordination with the Chief Investment Officer (the “CIO”) of the Oregon State Treasury (OST), the OIC Chair will schedule approximately eight Council meetings during each calendar year. The OIC Chair may call additional, special or informal meetings as deemed necessary or advisable, and may hold these or regularly-scheduled meetings by telephone. OIC meetings held in Executive Session shall be conducted in accordance with ORS 192.660.
- 3. Chair:** The Chair will coordinate with the CIO and Treasurer as they develop OIC meeting agendas. Additionally, the Chair shall preside over all OIC meetings, regular and special. The primary roles of the Chair are to a) ensure OIC meetings are as efficient and productive as possible and b) facilitate communication among OIC members, OST staff and other constituents and stakeholders.
- 4. Meeting Notice and Agenda:** The CIO shall provide notice of meetings in compliance with ORS 192.610-690, and such notice shall contain a copy of the meeting agenda setting forth, with reasonable clarity, the matters scheduled for OIC members’ review and discussion.
- 5. Quorum:** Three of the Council’s five voting members shall constitute a quorum.
- 6. Majority Vote:** An affirmative vote of three of the Council’s five voting members is required for Council approval of recommendations and resolutions.
- 7. Conflict of Interest:** As defined in ORS 244.120, rules promulgated by the Oregon Government Ethics Commission and other related Council policies, Council members shall announce any and all potential or actual conflicts of interest prior to taking action on an issue, recommendation or resolution that is presented to the Council for its consideration or approval. Announced conflicts should be recorded as provided in Oregon Revised Statutes 244.130 (see also: INV 104 OIC Standards of Ethics). For purposes of this policy, “take action” means to vote, debate, recommend or discuss.
- 8. Voting:** Except in the case of an actual conflict of interest, OIC members, when present, shall vote either aye or nay on any issue, recommendation or resolution presented to the Council for its consideration or approval. If such an actual conflict of interest exists, the affected member shall make a declaration of the conflict and excuse him or herself from the corresponding Council vote or discussion.
- 9. Record of Votes:** The OIC’s legal representative shall tally member votes through an oral roll call process.

10. Recess or Adjournment: Given a quorum, either the Chair or a majority vote among the Council's voting members may recess or adjourn any Council.

11. **Council Elections:** The Council shall elect a Chair and Vice Chair at the last regularly scheduled Council meeting in each odd-numbered calendar year. The Chair and Vice Chair shall both serve two-year terms and may be reelected to consecutive terms provided that, per ORS 293.711, no member may serve as Chair for more than four years in any consecutive 12-year period.

Between biennial elections, and with at least one week's notice, a majority of the Council's voting members may request a special election, held at the next regularly-scheduled Council meeting, to select officers for vacancies in an otherwise unexpired term.

In the event that a Chair or Vice Chair resigns, is removed, or whose service on the Council ends, the Council, at its next regularly-scheduled meeting, shall elect a successor.

Current Status: *Active*

PolicyStat ID:

1485021



Origination:	12/2010
Last Approved:	12/2010
Last Revised:	12/2010
Next Review:	07/2015
Owner:	<i>John Skjervem: Chief</i>
Policy Area:	<i>Investments</i>
References:	<i>OST Policy 4.00.03</i>

INV 104: OIC Standard of Ethics

POLICY

OIC members shall conduct themselves in conformity with applicable law and the code of ethics outlined below. OIC members shall, at a minimum, disclose actual and potential conflicts of interest.

PROCEDURES

PERFORMANCE

No member of or appointee to the Oregon Investment Council (Council), nor any candidate for State Treasurer, nor any officer or employee in the Office of the State Treasurer (OST), nor any contractor providing investment-related services to the Council or to the State Treasurer in his or her capacity as Investment Officer shall solicit or receive, or induce others to solicit or receive, political campaign contributions to or for any member of or appointee to the Oregon Investment Council, or any candidate for State Treasurer, or any officer or employee of the OST from:

A contractor that is then providing services to the Council or to the Investment Officer;

A contractor that the Council or the Investment Officer is then considering retaining for provision of services to the Council or to the Investment Officer;

A person in or with whom, or a company in or with which, moneys of the state Investment Funds are then invested, excluding investments that were made by investment managers without direction or influence from the Council, Council members, or officers or employees of the Office of the State Treasurer relating to the investment;

A person in or with whom, or a company in or with which, the Council or Investment Officer is then considering investing moneys of the Investment Funds.

The Council is principally a policy-making body and shall not impinge on operating or administrative functions reserved to the State Treasurer.

Members of the Council shall use discretion and restraint in their dealings with investment manage-

ment companies and shall respect the privacy and integrity of those companies. Conduct by OIC members shall, at a minimum, be in compliance with applicable law.

Any information or contact of a material nature relevant to the investment or reinvestment of funds that may come to the attention of a member of the Council from one of the investment management companies or another source shall be promptly reported to the State Treasurer for evaluation by the State Treasurer's office.

No member of the Council shall use or attempt to use the member's official position to obtain financial gain or avoidance of financial detriment for the member or for a relative, or member of the household, of the member that would not otherwise be available but for the member's holding of the official position. This prohibition shall extend to any business with which the member or a relative, or member of the household, of the member is associated. Additional actions contained in ORS 244.040 shall also be prohibited regardless of whether actual conflicts of interest or potential conflicts of interest are announced or disclosed pursuant to ORS 244.120, as discussed below.

All members of the Oregon Investment Council shall comply with the applicable ethics requirements for public officials or for OIC members particularly, including gift or honoraria limits, and entertainment prohibitions, as described in ORS chapter 244, ORS chapter 293 and the administrative rules of the Oregon Government Ethics Commission.

If an OIC member has knowledge that a Placement Agent has been engaged by an investment entity being considered by the OIC, then any contact between an OIC member and such Placement Agent, shall be disclosed by the member prior to any vote on the investment.

APPOINTMENTS

In accordance with ORS 293.706(7), no person may be appointed to serve as a member of the Council for more than two full four-year terms in any 12-year period.

In accordance with ORS 293.711(4), no person is eligible to be chairperson of the Council for more than four years in any 12-year period.

ADDITIONAL ECONOMIC AND OTHER DISCLOSURE REQUIREMENTS

In accordance with ORS 244.050(1)(p)(J), each member of the Oregon Investment Council is required to file an annual statement of economic interest with the Oregon Government Ethics Commission.

In accordance with ORS 293.708(2), when a member of the Oregon Investment Council becomes aware that action on a matter pending before the Council might lead to private pecuniary benefit or detriment to the person, to a relative of the person or to a business with which the person or a relative of the person is associated, the member shall notify in writing the State Treasurer or the Deputy State Treasurer that any action, decision or recommendation by the member might constitute an actual or potential conflict of interest. The member shall provide the notice not later than three business days after the member becomes aware of the possibility of an actual or potential conflict. This paragraph does not apply if the pecuniary benefit or detriment arises out of circumstances described in Section 7, subsection K. 1. to 3. below.

In accordance with ORS 244.120(2), each member of the Oregon Investment Council shall announce publicly the nature of any potential conflict of interest prior to taking any action thereon in the capacity of a public official. With respect to such matters for which a member has publicly announced the nature of any potential conflict of interest, the member shall endeavor to otherwise participate fully in Council action with respect to such matters except as proscribed in subsection E of this section.

When met with an actual conflict of interest, the member shall announce publicly the nature of the actual conflict and:

Except as provided in subparagraph (2) of this paragraph, refrain from participating as a public official in any discussion or debate on the issue out of which the actual conflict arises or from voting on the issue.

If any public official's vote is necessary to meet a requirement of a minimum number of votes to take official action, be eligible to vote, but not to participate as a public official in any discussion or debate on the issue out of which the actual conflict arises. (From ORS 244.120(2)(b) (B)).

SERVICE BY MEMBERS OF THE COUNCIL ON BOARDS OF DIRECTORS

A member of the Council shall receive the approval of a majority of the other members of the Council before accepting appointments to the board of directors of any company in which the State of Oregon has an investment.

Council members shall not accept compensation (except per diem and reimbursement for travel expenses consistent with law) for services on the board of directors of any business in which the State has an equity interest, other than publicly traded common stock. (From ORS 293.713).

RELATIONSHIP TO STATE AND FEDERAL STATUTES, RULES OR POLICIES

This Standard of Ethics for the OST and the Oregon Investment Council is in addition to, and not in lieu of, any statutes, rules or policies of the State of Oregon or the United States of America. Nothing in this Standard is intended to relieve the State Treasurer or any member of the Council from any duty, obligation or prohibition contained in any state or federal statute, rule or policy.

OIC CONTRACTORS

Every contract for investment management services, investment counseling services, or mortgage services whether by the OIC or by the State Treasurer as Investment Officer shall include a provision that reads: "Contractor shall disclose to the council, at the council's next regular meeting, knowledge of any attempt at solicitation of, offer of, or assistance in obtaining, political campaign contributions to or for any member or appointee of the Oregon Investment Council, any candidate for State Treasurer, or any officer or employee of the Office of the State Treasurer. Failure to make such a disclosure may result in termination of the contract, in the sole discretion of the council."

DEFINITIONS:

As used in sections 1 through 6, unless the context clearly requires otherwise:

"Actual conflict of interest" means any action or any decision or recommendation by a person acting in a capacity as a public official, the effect of which *would be* to the private pecuniary benefit or detriment of the person or the person's relative or any business with which the person or a relative of the person is associated unless the pecuniary benefit or detriment arises out of circumstances described in subsection (12). (From ORS 244.020(1)).

"Business" means any corporation, partnership, proprietorship, firm, enterprise, franchise, association, organization, self-employed individual and any other legal entity operated for economic gain but excluding any income-producing not-for-profit corporation that is tax exempt under Section 501(c) of the Internal Revenue Code with which a public official or a relative of the public official is associated only as a member or board director or in a nonremunerative capacity. (From

ORS 244.020(2)).

"Business with which the person is associated" means:

Any private business or closely held corporation of which the person or the person's relative is a director, officer, owner or employee, or agent or any private business or closely held corporation in which the person or the person's relative owns or has owned stock, another form of equity interest, stock options or debt instruments worth \$1,000 or more at any point in the preceding calendar year. (From ORS 244.020(3)(a)).

Any publicly held corporation in which the person or the person's relative owns or has owned \$100,000 or more in stock or another form of equity interest, stock options or debt instruments at any point in the preceding calendar year. (From ORS 244.020(3)(b)).

Any publicly held corporation of which the person or the person's relative is a director or officer. (From ORS 244.020(3)(c)).

Any business listed as a source of income as required on the statement of economic interest. (From ORS 244.020(3)(d)).

"Campaign contribution" includes payment, loan, gift, for giving of indebtedness, or furnishing without equivalent compensation or consideration, of money, services other than personal services for which no compensation is asked or given, supplies, equipment, or any other thing of value, to or on behalf of a candidate or political committee or measure; and any unfulfilled pledge, subscription, agreement or promise, whether or not legally enforceable, to make a contribution. (Excerpted from ORS 260.005 (3), see statute for entire definition).

"Candidate" means an individual whose name is printed on a ballot, or whose name is expected to be or has been presented, with the individual's consent, for nomination or election. (Excerpted from ORS 260.005(1), see statute for entire definition).

"Council" means the Oregon Investment Council created under ORS 293.706.

"Member of the household" means any person who resides with the public official or candidate. (From ORS 244.020(10)).

"Person" means an individual, corporation, limited liability company, labor organization, association, firm, partnership, joint stock company, club, organization or other combination of individuals having collective capacity. (From ORS 260.005(16)).

"Placement Agent" includes any third party, whether or not affiliated with an investment manager, investment advisory firm, or a general partnership, that is a party to an agreement or arrangement (whether oral or written) with an investment manager, investment advisory firm, or a general partnership for the direct or indirect payment of a Placement Fee in connection with an OIC investment.

"Placement Fee" includes any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent.

"Political committee" means a combination of two or more individuals, or a person other than an individual, the primary or incidental purpose of which is to support or oppose any candidate. (Excerpted from ORS 260.005(18), see statute for entire definition).

"Potential conflict of interest" means any action or any decision or recommendation by a person acting in a capacity as a public official, the effect of which *could be* to the private pecuniary benefit or detriment of the person or the person's relative, or a business with which the person or the

person's relative is associated, unless the pecuniary benefit or detriment arises out of the following: (From ORS 244.020(12)).

An interest or membership in a particular business, industry, occupation or other class required by law as a prerequisite to the holding by the person of the office or position. (From ORS 244.020(12(a)).

Any action in the person's official capacity which would affect to the same degree a class consisting of all inhabitants of the state, or a smaller class consisting of an industry, occupation or other group including one of which or in which the person, or the person's relative or business with which the person or the person's relative is associated, is a member or is engaged. (From ORS 244.020(12(b)).

Membership in or membership on the board of directors of a nonprofit corporation that is tax-exempt under section 501(c) of the Internal Revenue Code. (From ORS 244.020(12(c)).

"Public official" means any person who, when an alleged violation of ORSs chapter 244 occurs, is serving the State of Oregon or any of its political subdivisions or any other public body, as defined in ORS 174.109, as an elected official, appointed official, employee, or agent, irrespective of whether the person is compensated for the services. (From ORS 244.020(14)).

"Relative" means:

The spouse of the public official or candidate;

Any children of the public official or of the public official's spouse;

Any children of the candidate or of the candidate's spouse;

Siblings, spouses of siblings or parents of the public official or of the public official's spouse;

Siblings, spouses of siblings or parents of the candidate or of the candidate's spouse;

Any individual for whom the public official or candidate has a legal support obligation;

Any individual for whom the public official provides benefits arising from the public official's public employment or from whom the public official receives benefits arising from that individual's employment; or

Any individual from whom the candidate receives benefits arising from that individual's employment (from ORS 244.020(15)).

SAMPLE FORMS, DOCUMENTS, OR REPORTS (Attached)

None



OIC Policy Supplement

1. Board Member Education and Core Competencies Matrix
2. Confidential Information
3. Consulting Contracts
4. Delegation of Authority
5. Material Non-Public Information
6. Pay to Play Rule Compliance and Reporting
7. Personal Trading
8. Placement Agent Compliance
9. Private Partnership Principles
10. Public Records and Meetings
11. Referral of Investment Opportunities
12. Risk Management
13. Strategic Planning
14. Travel Rules for the State Treasurer, OST, Council, Board and Commission Members

ASSET CLASS ALLOCATION AND STRATEGY

1. After careful consideration of OPERF's investment objective, *liability* structure, *funded status* and liquidity needs, as well as the return, risk and *diversification* characteristics of different asset classes, the Council's approved asset mix policy for the Regular Account is summarized in Exhibit 1.
2. Of total Fund assets, 55 percent of OPERF is targeted for investment in *equities*, inclusive of *private equity*. Equity investments have generated the highest returns over long time periods, but can also produce low and even negative returns over shorter time periods.
3. The risk of low returns over shorter time periods makes 100% equity policies unsuitable for most pension funds, including OPERF. By investing across multiple equity asset classes, and in lower return but less risky *fixed income*, *real estate* and *alternatives* asset classes, the Council manages and diversifies the Fund's overall risk.
4. Specific asset class exposures are maintained within the ranges outlined below.

Exhibit 1: Policy Mix and Return Expectations for the OPERF Regular Account

Asset Class	Target Allocation (%)	Re-balancing Range (0%)	Expected Annual Policy Return (%)
Public Equity	37.5	32.5-42.5	7.1
Private Equity	17.5	14.0-21.0	9.5
Total Equity	55.0	50.0-60.0	
Fixed Income	20.0	15.0-25.0	3.0
Real Estate	12.5	9.5-15.5	6.7
Alternatives	12.5	0.0-12.5	6.3
Total Fund	100.0		7.1

5. The policy mix's 7.1% average annual return expectation was developed with reference to observed long-term relationships among major asset classes, adjusted to account for current market conditions. The Council believes this return expectation is reasonable, but recognizes that *realized* returns can deviate significantly from expectations – both positively and negatively.
6. The OIC has allocated up to 3.0% of total Fund assets for investment in an *Opportunity*

Portfolio, the objective of which is to enhance OPERF returns and/or diversification. Investments in the Opportunity Portfolio are expected to comprise a combination of both shorter-term (1-3 year) and longer-term holdings. The Opportunity Portfolio has no strategic target since, by definition, eligible investments are only pursued on an opportunistic or episodic basis; moreover, the Opportunity Portfolio allocation shall not result in an allocation range breach for any of the other five, primary asset class allocations.

7. OPERF cash balances are invested in the *Oregon Short Term Fund* and managed to levels that are deliberately minimized but still sufficient to cover OPERF's short-term cash flow needs.
8. In an effort to minimize cash balances at both the Fund and manager level, the OIC has retained an overlay manager to more closely align the actual Fund portfolio with the approved policy mix, generally through the purchase and sale of futures contracts to increase or decrease specific asset class exposures, as necessary.
9. The Council reviews, at least biennially, its expectations for asset class and active management performance, and assesses how the updated expectations affect the probability that the Regular Account will achieve its investment objective.

PUBLIC EQUITY STRATEGY

1. OPERF's public equity allocation is managed with the objective of earning at least **50 basis points** in annualized net excess return relative to the *MSCI All Country World Investable Market Index (ACWI IMI – net)* (unhedged) over rolling, consecutive five-year periods. **Relative to that same benchmark, active risk shall be managed to a 0.75 to 2.0 percent annualized tracking error target.**
2. Key elements of the strategy include the following:
 - a. In an effort to enhance return, strategy will include maintaining an over-weight to small capitalization stocks and other well supported sources of return premia. These strategic overweights or "tilts" are based on and supported by robust empirical research that historically links persistent and pervasive evidence of excess returns to systematic "factor exposures" such as size (i.e., small cap), value and momentum. Implementation of other factor tilts may be considered at the manager, strategy or mandate level upon approval of both the Chief Investment Officer (CIO) and OIC.
 - b. Multiple, specialist active managers with complementary investment styles are employed. For example, some OPERF managers focus on growth stocks, some on value stocks, some on large capitalization stocks and others on small capitalization stocks. This diversified approach produces more excess return opportunities and minimizes the Fund's exposure to any single investment organization.
 - c. Active management is more common within OPERF's non-U.S. equity allocation because non-U.S. markets appear to provide more opportunities for the successful application of manager skill.
 - d. Managers with skills in security selection and country allocation are utilized as these attributes have historically been the principal sources of excess returns in non-U.S. equity portfolios. In addition, managers who have demonstrated an ability to add value through currency management are permitted to do so.
 - e. Aggregate exposures to countries, economic sectors, investment styles and market capitalization tiers are monitored and managed relative to corresponding benchmark exposures.

FIXED INCOME STRATEGY

1. OPERF's fixed income allocation is managed with the objective of earning **25 basis points** in annualized, net excess returns relative to a blended benchmark comprised of 46% *Bloomberg Barclays U.S. Aggregate Index*, 37% *Bloomberg Barclays U.S. Treasury Index*, 13% *S&P/LSTA Leveraged Loan Index* and 4% *Bank of America Merrill Lynch High Yield Master II Index* over rolling, consecutive five-year periods. **Relative to the above-described benchmark, active risk within the OPERF fixed income allocation is managed to a 0.5 to 1.0 percent annualized tracking error target.**
2. Key elements of the strategy include the following:
 - a. A significant proportion of the OPERF fixed income allocation is actively managed due to performance and cost considerations. Specifically, excess returns from active fixed income management are likely as many investors hold fixed income securities to meet regulatory and liability matching objectives, and hence are not total return oriented. This market dynamic produces systematic mis-pricings of fixed income securities that skilled investment managers can exploit. Active fixed income management fees are also much lower than active equity management fees.
 - b. Multiple active generalist managers will be used for a majority of the fixed income asset class, rather than the specialist manager approach used within OPERF's public equity allocation. However, the OIC may utilize specialist fixed income managers as warranted or necessary, although fixed income manager mandates generally have little impact on the Fund's total risk due to fixed income's lower overall Fund allocation and fixed income managers' generally low tracking error.
 - c. Fixed income managers are selected for their skills in issue selection, credit analysis, sector allocations and duration management.
 - d. Aggregate exposures to duration, credit and sectors are monitored and managed relative to corresponding exposures in the fixed income allocation benchmark.

REAL ESTATE STRATEGY

1. OPERF's real estate allocation is managed with the objective of earning at least **50 basis points** in annualized, net excess returns relative to the *NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE)*, net of management fees, over rolling, consecutive five-year periods. Because 80% of the Fund's real estate investments are illiquid and/or traded infrequently, passive management approaches and conventional risk budget concepts are generally not applicable.
2. Key elements of the strategy include the following:
 - a. Real Estate is 100% actively managed because a passive replication of the full breadth and depth of the real estate asset class is not viable.
 - b. *Core* property investments represent 55% of the Fund's real estate allocation, with a range of 45% to 65%. Specialist managers are utilized. Risk is diversified by investing across the following major property types: office; apartments; retail; and industrial. The OPERF real estate allocation may also include structured investments in alternative property types with Core-like risk and return attributes.
 - c. Exchange traded real estate investment trusts (REITs) represent 5% of the Fund's real estate allocation, with a range of 0% to 10%. Active management will include style and capitalization specialists, as well as broad market managers. Up to 50% of the REIT

exposure may be invested in markets outside the United States.

- d. *Value Added* property investments represent 20% of the OPERF real estate allocation, with a range of 10% to 30%, and may include direct investments in each of the property types listed above, as well as structured investments in alternative property types. Risk is diversified by property type and geography.
- e. *Opportunistic* property investments represent 20% of the OPERF real estate allocation, with a range of 10% to 30%. Relative to Core and Value Added strategies, real estate investments will be characterized as "opportunistic" based on higher risk/return expectations and other prevailing market conditions.
- f. Within its real estate allocation, the Fund may participate in *co-investment* opportunities.

PRIVATE EQUITY STRATEGY

1. OPERF's private equity allocation is managed with the objective of earning at least **300 basis points** in annualized, net excess returns relative to the Russell 3000 Index over very long time horizons, typically rolling, consecutive 10-year periods. Because private equity investments are often illiquid and/or traded infrequently, passive management approaches and conventional risk budget concepts are generally not applicable.
2. Key elements of the strategy include the following:
 - a. Private Equity is 100% actively managed because private equity index funds are not available.
 - b. Risk within OPERF's private equity allocation is diversified by investing across different fund types and strategies including *venture capital*, *leverage buyout*, *mezzanine debt*, *distressed debt*, *sector funds*, *secondaries* and *fund-of-funds*.
 - c. OPERF's private equity allocation is further diversified by investing across *vintage year*, industry sectors, investment size, development stage and geography.
 - d. OPERF's private equity investments are managed by external managers operating as general partners. Considerations for private equity manager selection include access to transactions (i.e., "deal flow"), specialized areas of operating expertise, established or promising net of fees performance track records, unique or differentiated investment methodologies and transparent/verifiable reporting processes.
 - e. Within its private equity allocation, the Fund may participate in co-investment opportunities.

ALTERNATIVES STRATEGY

1. OPERF's allocation to Alternatives is managed with the objective of earning at least **400 basis points** in annualized, net excess returns relative to *CPI* over rolling, consecutive ten-year periods. Because 80% of the OPERF alternatives allocation is illiquid and/or traded infrequently, passive management approaches and conventional risk budget concepts are generally not applicable.
2. Key elements of the strategy include the following:
 - a. Alternatives are 100% actively managed because index funds replicating the broad alternatives market are not available.
 - b. *Infrastructure* investments represent 25% of the Fund's alternatives allocation, with a range of 20% to 30%. Specialist managers are utilized, and risk is diversified by investment type, size and geography. Specific infrastructure sector exposures will likely

include energy, transportation, ports and water in both domestic and international markets and comprising both mid-size and large capitalization enterprises.

- c. *Natural Resource* investments represent 35% of the Fund's alternatives allocation, with a range of 30% to 40%. Risk is diversified by investing across multiple industry sectors including oil and gas, agriculture, timberland, mining and commodities. Specialist managers are utilized in both domestic and international markets and across both active and some passive strategies.
- d. *Diversifying Strategies* represent 40% of the Fund's alternatives allocation, with a range of 35% to 45%. Diversifying Strategies investments may include relative value, macro, arbitrage and long/short equity strategies. The objective of this sleeve is to invest in strategies with returns uncorrelated with those of the broader Fund. Risk is diversified by investing in multiple managers and across several strategies.
- e. *Other* investments may represent 5% of the Fund's alternatives allocation, with a range of 0% to 10%. Investment strategies will be characterized as "other" based on prevailing market conditions as well as a specific strategy's unique "value proposition" or investment thesis.
- f. Within its alternatives allocation, the Fund may also participate in *co-investment* opportunities.

Chair

1. **Election.** Pursuant to ORS 293.711, during the last regular meeting of each odd-numbered year, the Council shall, on a majority vote of all members entitled to vote, elect one of its members to serve as Council Chair (“Chair”). The Chair shall serve at the pleasure of the Council for a two-year term beginning on the first day of the following calendar year. No Council member may serve as Chair for more than four years in any 12-year period.
2. **Removal and Replacement.** The Council Chair may be removed and replaced between biennial elections, upon a majority vote of all Council members entitled to vote, at a special meeting convened with at least one week's advance written notice provided to the Council by a majority of its members. The new Chair shall be elected on a majority vote of all Council members entitled to vote. In the event of an unexpected vacancy during a term, the Vice Chair shall assume the interim duties and responsibilities of the Chair. A new, successor Chair shall be subsequently elected at a special or regular meeting. This successor Chair shall serve at the pleasure of the Council for the remainder of the unexpired two-year term. If the successor Chair serves fewer than six months of the unexpired two-year term, that service will not count against the maximum four years the member may serve as Chair in any 12-year period. If the successor Chair serves greater than six months of the unexpired two-year term, that service will count as a full year for the purpose of calculating the maximum four years the member may serve as Chair in any 12-year period.
3. **Duties.** The Chair shall lead the Council in the conduct of its business. In addition to responsibilities assigned to the Chair by Council actions, policies, and the Statement of Fund Governance, the Chair shall perform the following:
 - a. Preside over all regular and special Council meetings. Apply the Council's rules for conducting meetings, and ensure meetings are as efficient and productive as possible. Encourage respectful, frank, impartial, responsible, and collegial interactions among Council members, OST staff, external managers and other related parties or stakeholders;
 - b. Provide feedback to the Chief Investment Officer regarding proposed meeting agendas and objectives. Modify meeting agendas at a Council meeting if necessary by asking for majority approval among voting Council members;
 - c. Facilitate two-way communication between Council members and the Chief Investment Officer and Treasury staff. With input from other Council members, the Chair shall serve as liaison to the Chief Investment Officer regarding the form and content of Council reports so that such reports are timely, complete, understandable, succinct, and relevant to Council responsibilities;
 - d. Set the tone for Council deliberation and focus its efforts on policymaking, strategic planning, oversight, and the proper discharge of Council responsibilities, while avoiding diversions into areas statutorily delegated to OST staff (such as operating issues) or otherwise delegated to consultants or other interested parties;
 - e. Oversee the Council's self-evaluation, skills development, and education process pursuant to Oregon statute and OIC policy;
 - f. Represent, or designate other members to represent, the Council with the Legislature, Public Employees Retirement System, and other external groups and constituencies;
 - g. Execute agreements, documents, and certifications which require the signature of the Council Chair.
4. **Council Member Discipline.** In the event of alleged misconduct and/or a Council policy violation by a Council mem-

ber, the Chair may conduct an inquiry or request an investigation by an appropriate authority. If the Chair determines, in the exercise of reasonable discretion, that misconduct and/or a violation did occur, the Chair may announce the findings and impose discipline on the member at an ensuing Council meeting. The Chair shall consider the nature, severity, and frequency of misconduct and/or violation(s) in imposing discipline. Disciplinary sanctions imposed by the Chair may include admonishment, censure, temporary suspension of Council travel privileges, or required participation in additional training. The Chair may also refer the matter to outside enforcement authorities and/or seek the Council member's removal by the Governor.

Vice Chair

1. **Election.** In conjunction with an election of the Chair, the Council shall select one of its members to serve as Vice Chair on a majority vote of all members entitled to vote. The Vice Chair shall serve at the pleasure of the Council for a two-year term corresponding to the regular biennial term of the Chair.
2. **Removal and Replacement.** The Council Vice Chair may be removed and replaced between biennial elections pursuant to the same process that applies to removal and replacement of the Chair.
3. **Duties.** In the absence or incapacity of the Chair, the Vice Chair shall have the duties and responsibilities of the Chair. Upon the death or resignation of the Chair or other vacancy in the Chair position, the Vice Chair shall also assume the duties and responsibilities of the Chair. In the event that the approval of the Council Chair is required by Council members under applicable law or policy and the Chair seeks that approval as a Council member, the Vice Chair shall exercise responsibilities of the Chair with regard to consideration of the Chair's approval request. The Vice Chair shall also exercise authority of the Chair with regard to consideration of an investigation of or disciplinary sanctions against the Chair for alleged misconduct and/or Council policy violations.

Council Members

Council members have fiduciary duties in connection with their investment fund(s) oversight responsibilities in accordance with ORS 293.726 and as otherwise provided by law. Serving as a Council member is a position of public trust which requires adherence to a high level of integrity and attention to the following obligations:

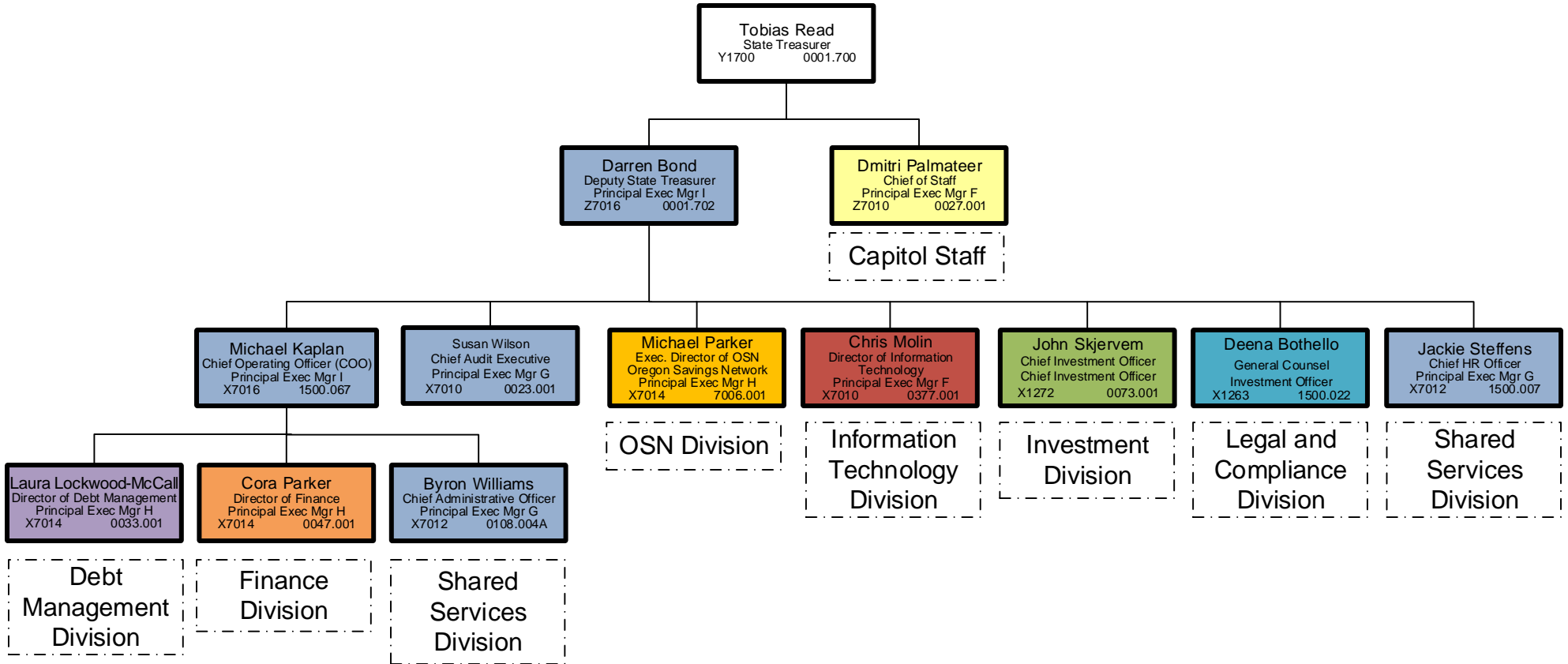
1. Become familiar with and follow policies, standards of conduct, and legal requirements applicable to the Council and its members;
2. Attend Council and applicable committee meetings. Read materials in advance and come to meetings prepared to participate in and contribute to the Council's discussion and decision-making processes;
3. Identify and disclose potential conflicts of interest. Request advice on adhering to standards of conduct whenever needed. Be aware of and observe ethics code limitations on gifts, favors, political contributions, travel, entertainment, meals, and other gratuities. Seek to avoid even the appearance of impropriety. Report any instances of misconduct and potential breaches of fiduciary duty to the Chair, Chief Investment Officer, or assigned legal counsel;
4. Exercise independent judgment on all issues presented to or confronted by the Council and its members. Ask questions and pursue additional information when necessary to better or more fully understand an issue or recommended investment. When in possession of information that is material to a Council decision or responsibility that has not yet otherwise been disclosed, make such information known as soon as reasonably possible so that all other Council members may also consider such information;
5. Participate in the Council's Skills/Needs Analysis process and educational opportunities, and fulfill all related Council and member training and education expectations and requirements. Identify areas of additional benefit

for further education or skill building, and pursue opportunities to obtain additional training in accordance with Council policies;

6. Make every effort to engage in collegial deliberations, and maintain an atmosphere in which a) diversity of opinion is respected, b) meeting participants can exercise candor, c) ethical conduct is required, d) thorough analysis is expected, and e) discussions remain germane and salient;
7. Maintain confidentiality of material nonpublic information and do not disclose the nature or content of closed-session Council deliberations without permission. Do not speak on behalf of the Council unless authorized to do so by the Chair, and with prior notice to the Chief Investment Officer. Refer media inquiries related to the Council to the Treasury Communications and Stakeholder Relations Manager (CSR);
8. Observe the distinction between a) the policymaking and monitoring roles of the Council, and b) the administrative and management functions delegated to the Chief Investment Officer (“CIO”), staff, and external service providers. The CIO is the Council’s primary point of contact with Treasury. Refer to the CIO all contacts from prospective service providers (including investment managers), and all inquiries of Treasury staff or existing service providers. The CIO will consider requests for customized reports or special information in the context of relevance to Council duties and available staff resources, and will distribute final materials to all Council members if prepared;
9. Notify the Chair or Chief Investment Officer of any circumstances likely to compromise, interfere with, or place into question the ability to independently, faithfully, and competently perform Council member duties. For example, serious illness, relocation, financial hardship, or bankruptcy should be disclosed so that appropriate precautions, changes in assignments, or transitions can be considered; and
10. Upon joining the Council and periodically thereafter, sign any required affirmations or certifications pertaining to participation in any and all required training, familiarity with fiduciary responsibilities, good faith observation of Council Member Position Description duties, and compliance with all applicable statutes, policies, standards of conduct, and ethics code requirements.

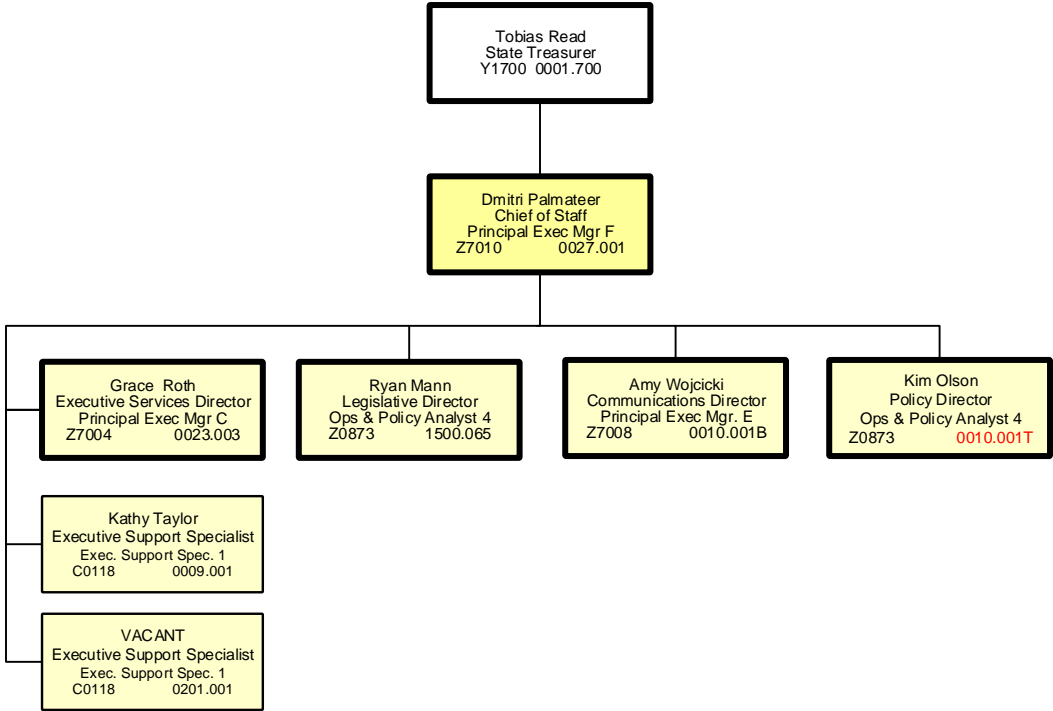
Oregon State Treasury

Executive Team



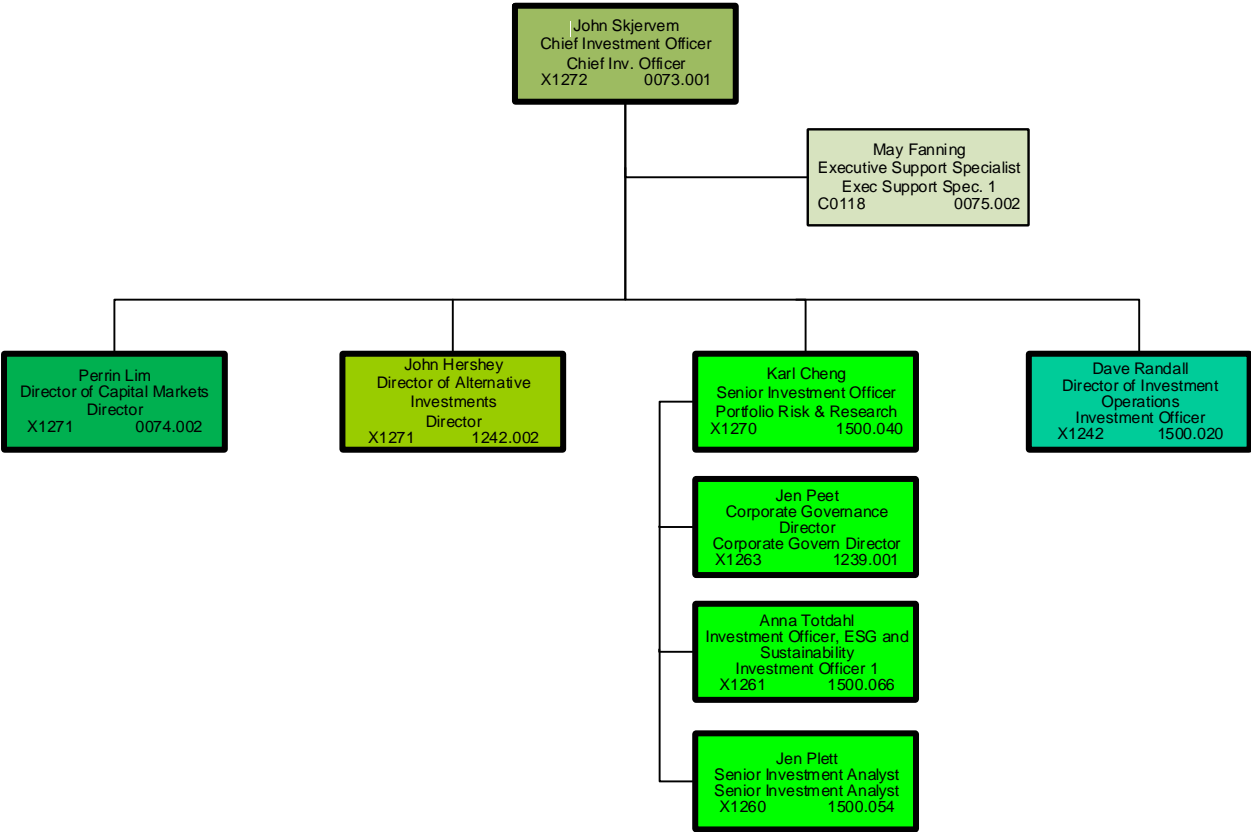
Oregon State Treasury

Capitol Staff



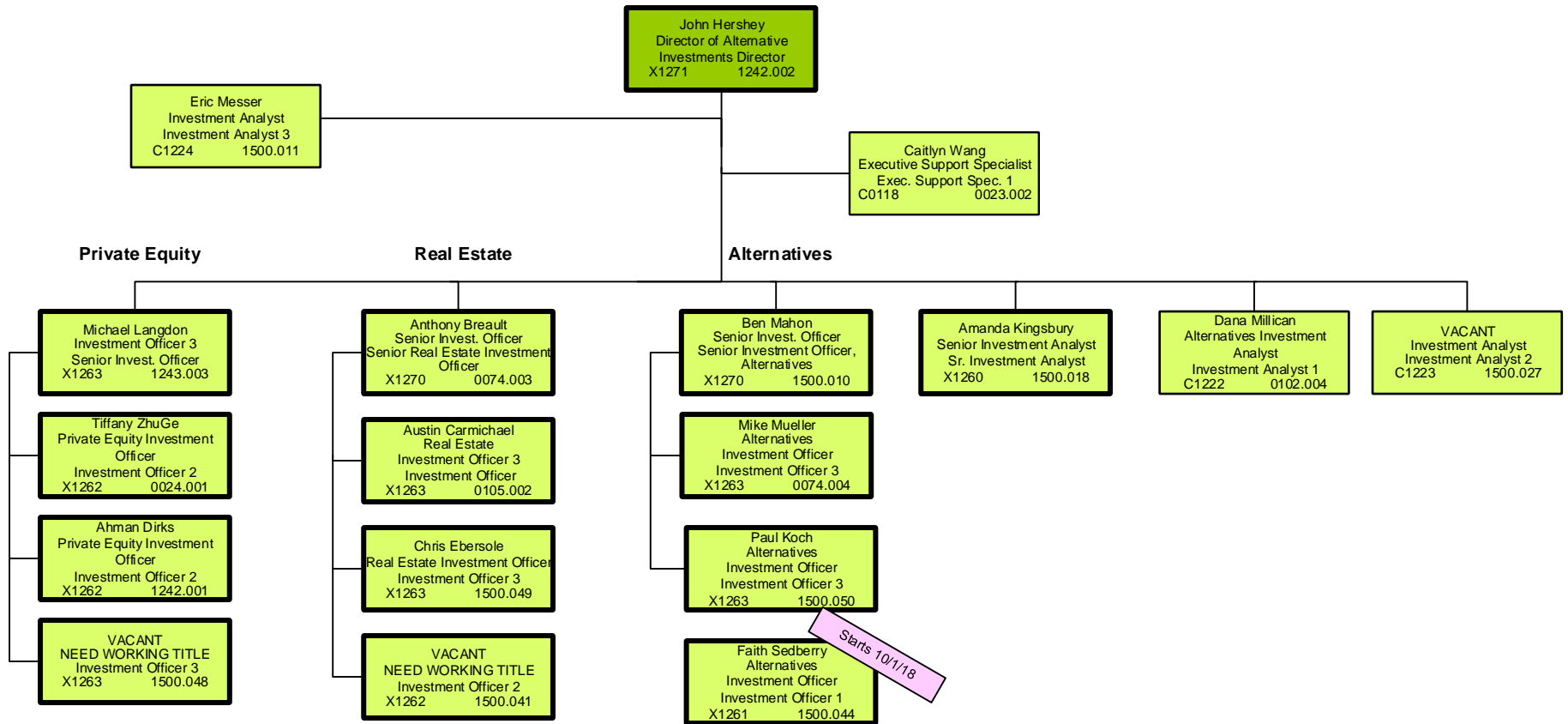
Oregon State Treasury

Investment Division



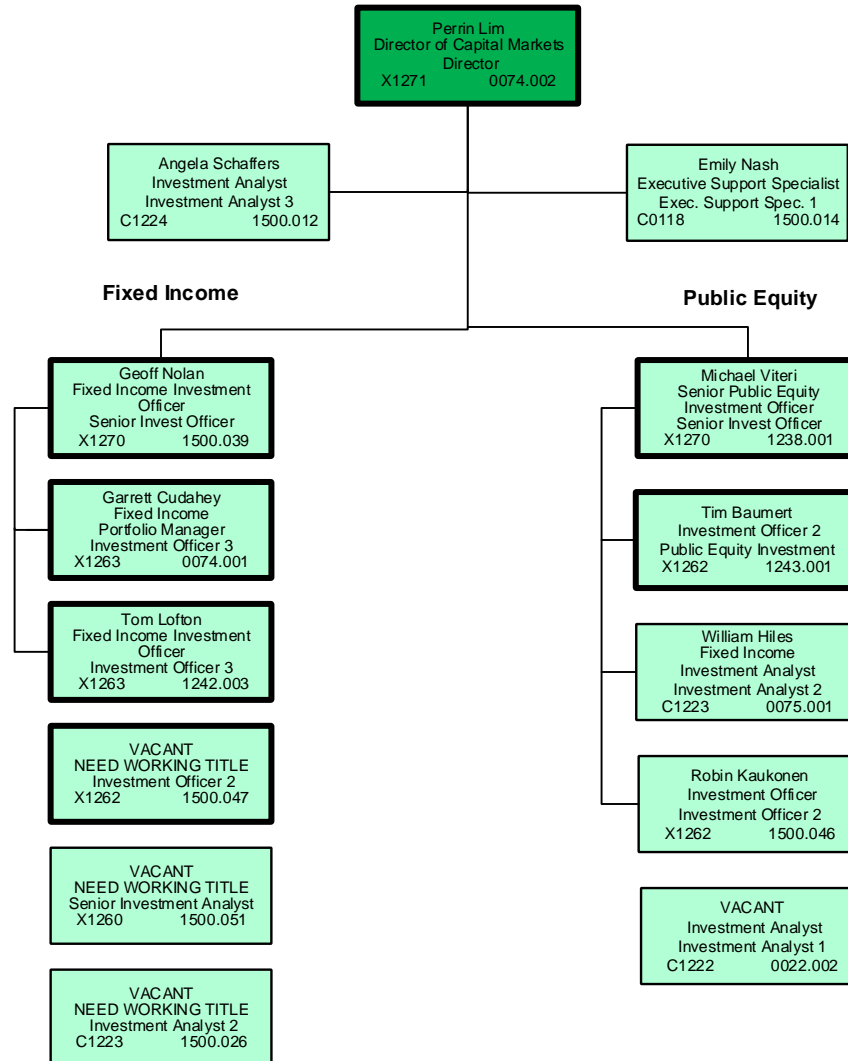
Oregon State Treasury

Investment Division – Alternative Investments



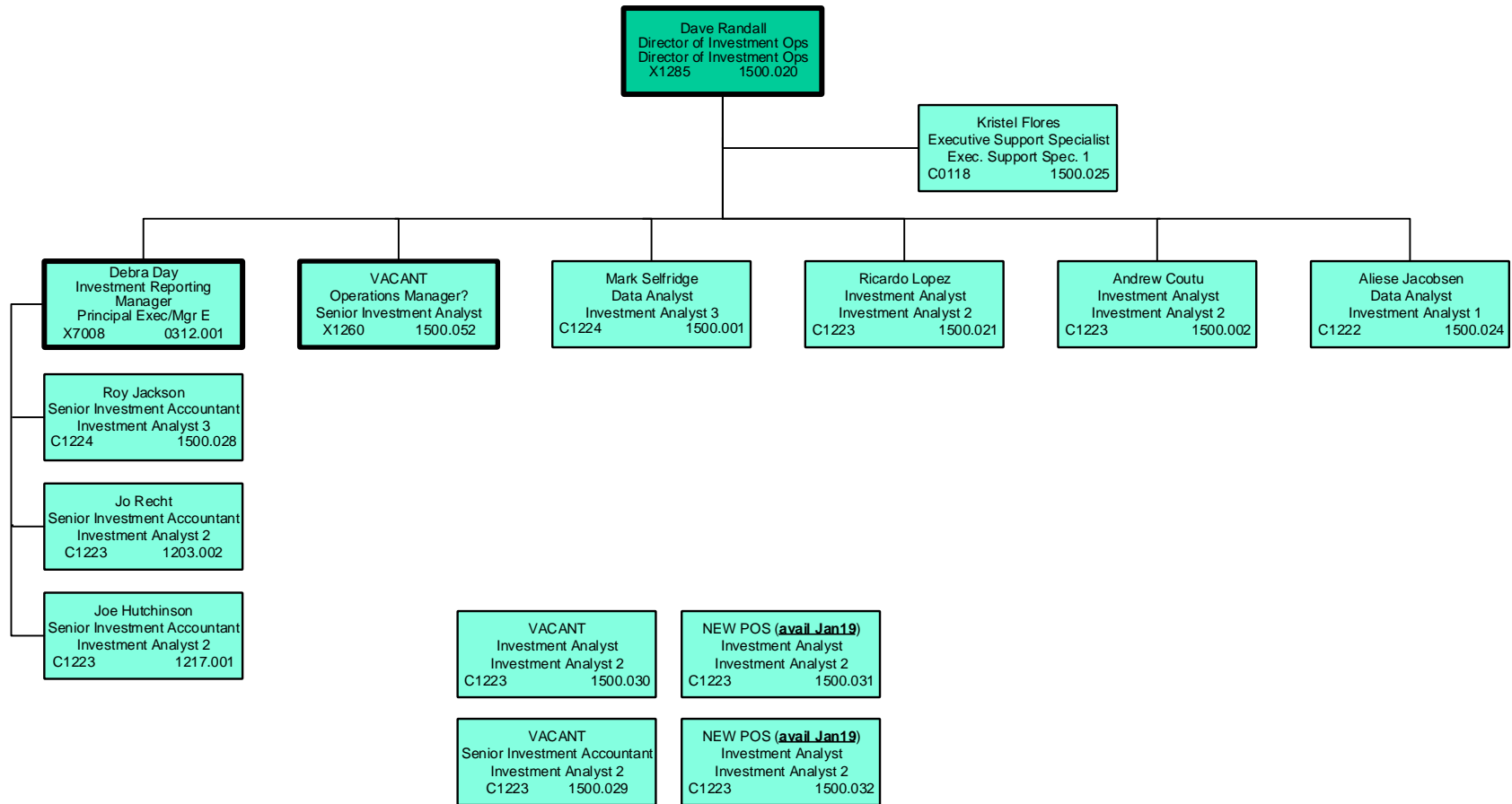
Oregon State Treasury

Investment Division – Capital Markets



Oregon State Treasury

Investment Division - Investment Operations



Allan Emkin

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Governance and Asset Allocation

Janet Becker-Wold

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Asset Allocation, Capital Markets and Alternatives Portfolio Investments

Tom Martin

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Christy Fields

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www.pensionconsulting.com/

Real Estate Portfolio Investments

Brenda Dulger-Sheikin

State Street Global Services

www.statestreet.com

Custodial, Record-keeping and Reporting Functions

TAB 4 – McKinsey Survey Results

OST Investment Division

(CONFIDENTIAL INFORMATION)

TAB 5 – Equity Market Update and Discussion

(CONFIDENTIAL INFORMATION)

TAB 6 – Q2 2018 Performance & Risk Report

OPERF

OPERF Risk Dashboard

2018 Q2

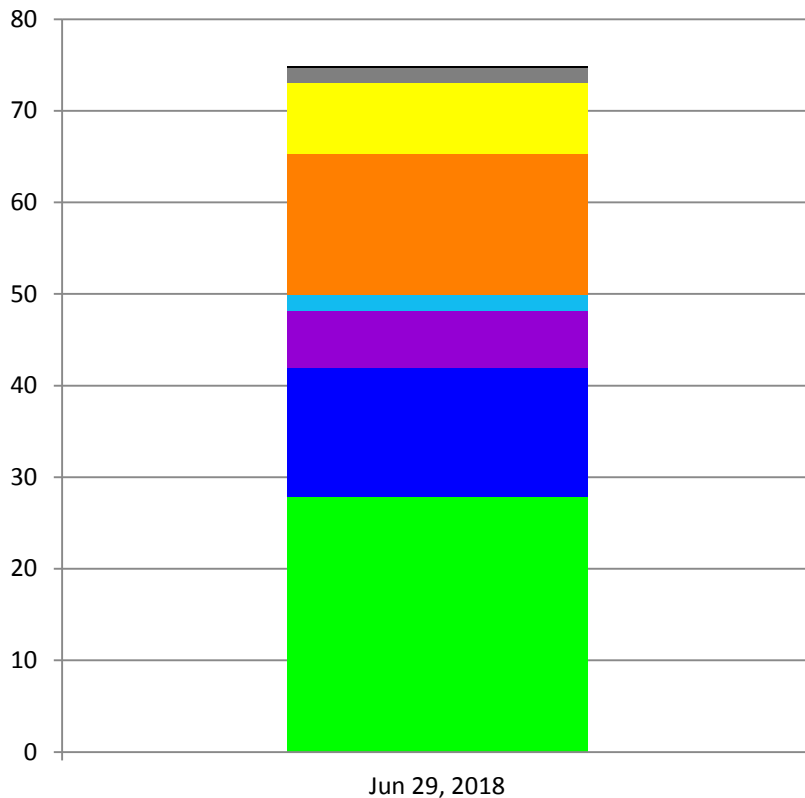
September 19, 2018



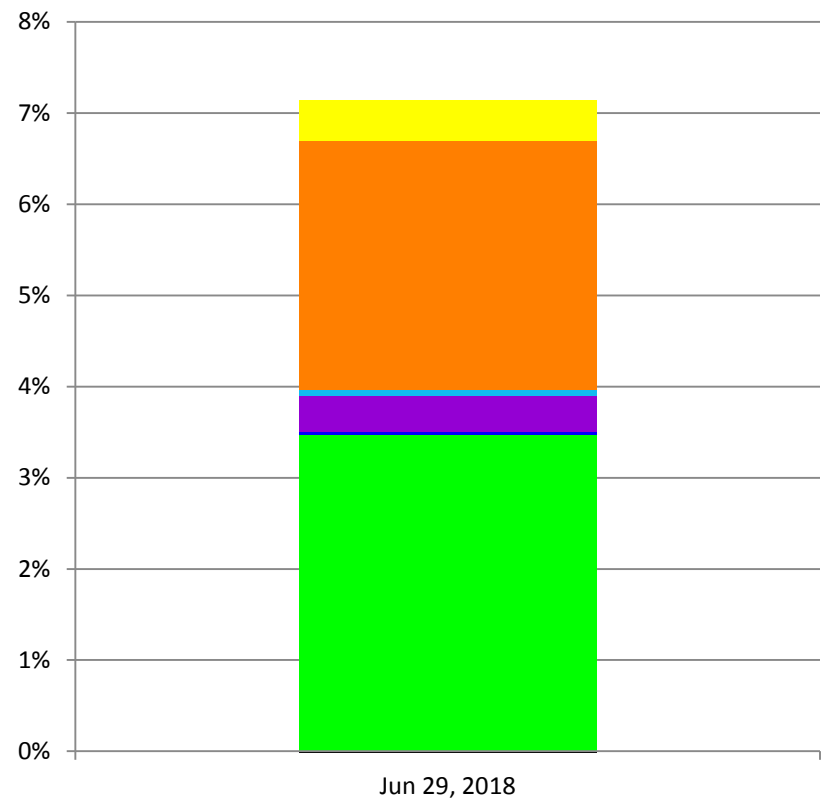
Oregon State Treasury

Allocation & Risk Contribution by Asset Class

Allocation in \$B

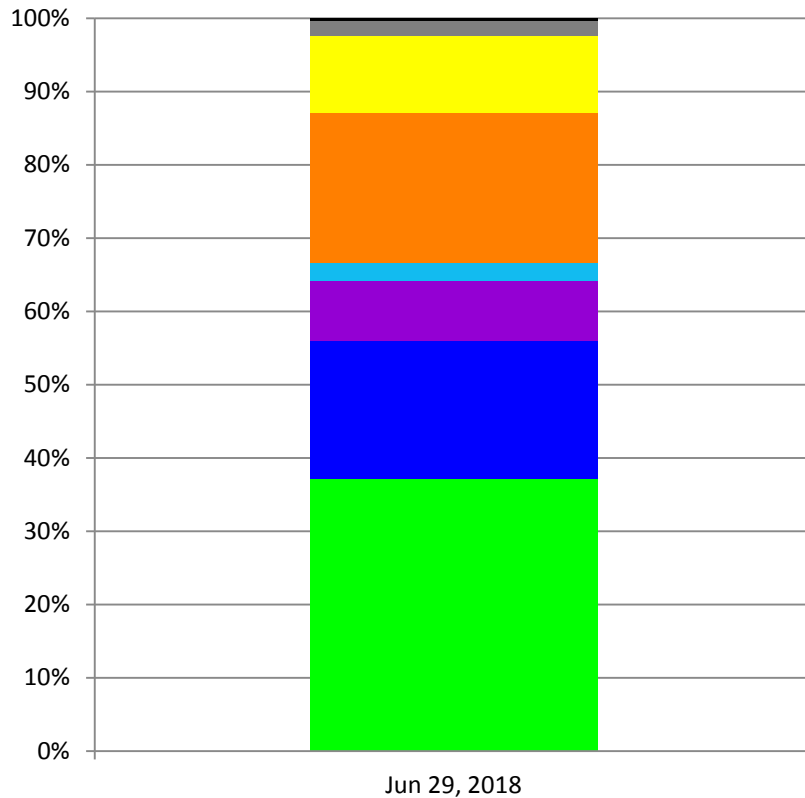


Risk Contribution

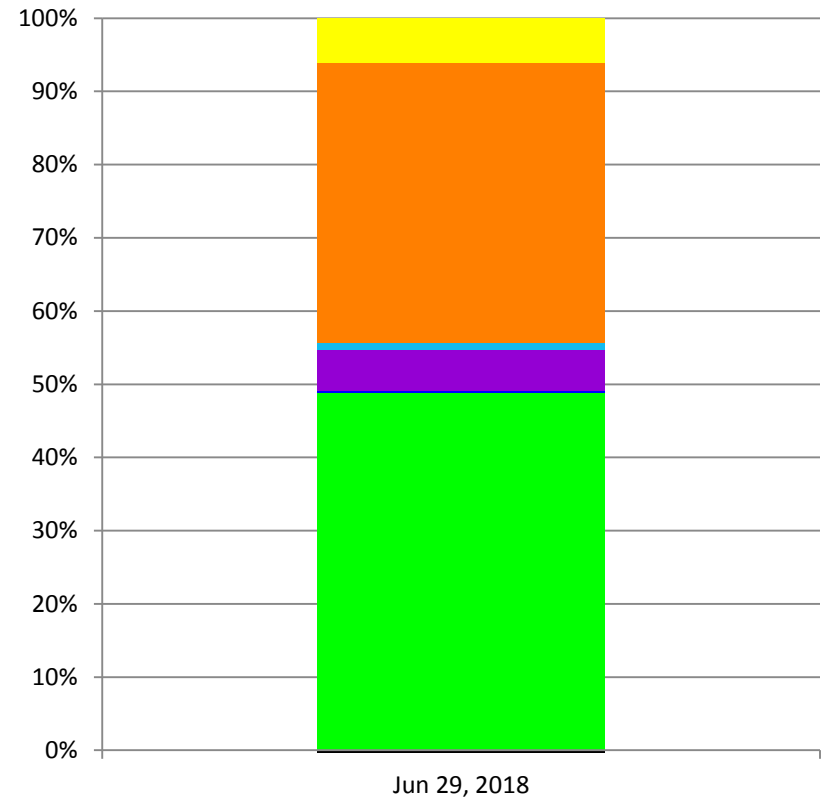


Allocation & Risk Contribution by Asset Class

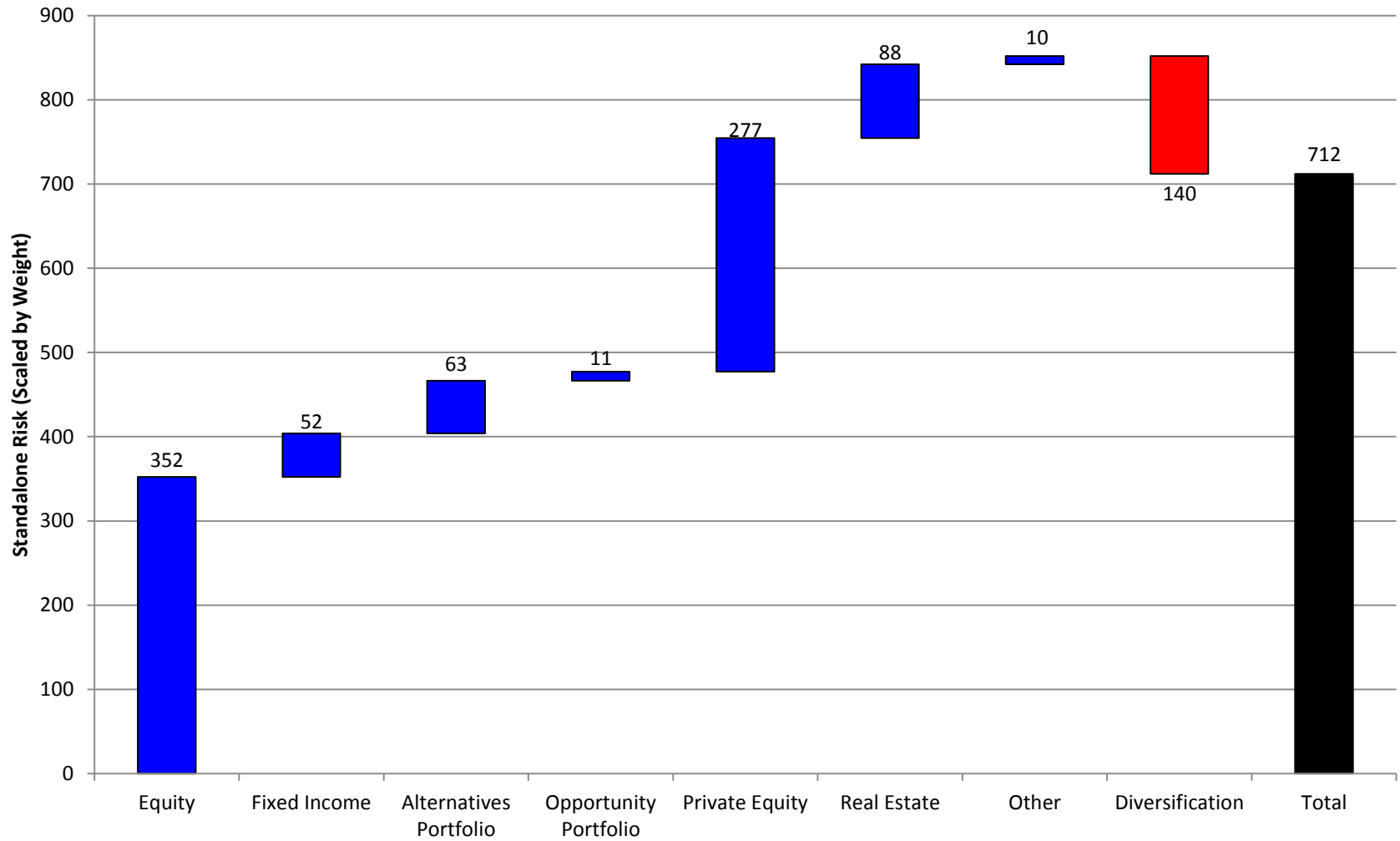
Allocation % of Total



Risk Contribution % of Total

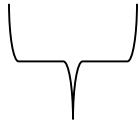


Stand-alone Risk by Asset Class

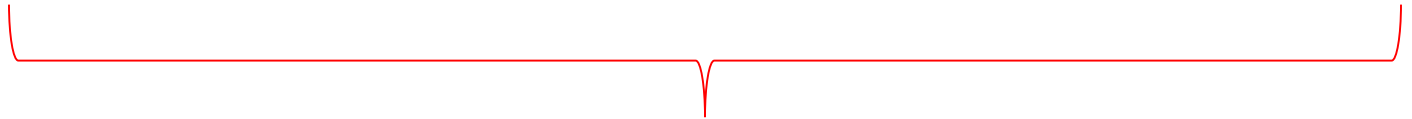


Correlation Matrix by Asset Class

Expected Return	Expected Risk	Predicted Risk ¹	Jun 29, 2018	Equity	Fixed Income	Alternatives Portfolio	Opportunity Portfolio	Private Equity	Real Estate	OPERF
7.1%	19.5%	9.7%	Equity	1.00	-0.08	0.54	0.56	0.93	0.34	0.97
3.0%	3.8%	2.5%	Fixed Income		1.00	0.13	-0.08	-0.11	0.41	0.05
6.8%	10.6%	6.2%	Alternatives Portfolio			1.00	0.42	0.54	0.30	0.63
		4.6%	Opportunity Portfolio				1.00	0.52	0.07	0.54
9.5%	26.3%	13.8%	Private Equity					1.00	0.36	0.96
6.6%	15.0%	8.6%	Real Estate						1.00	0.50
7.1%	14.1%	7.1%	OPERF							1.00

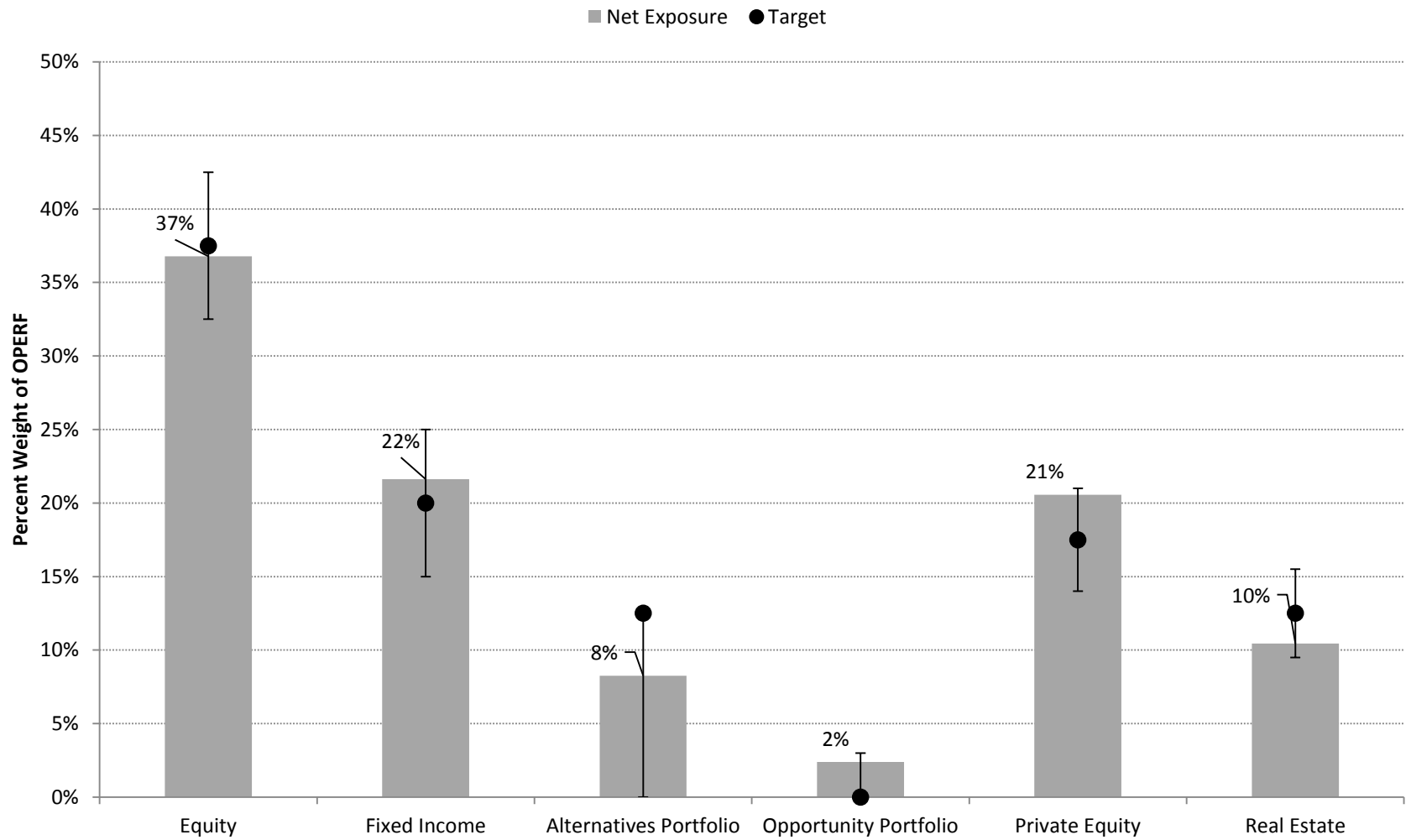


Capital Market Assumptions from Callan



¹Ex-Ante, holdings-based correlations between asset classes as estimated by Aladdin

OPERF Allocations



Liquidity Report

Asset Class	Liquidity (\$M)				∞	Uncalled Commitment	Next 12 Months
	1 Week	1 Month	1 Quarter				
Cash & Overlay	1,506						
Public Equity	24,503	2,001	1,271				
Fixed Income	11,614	2,463					
Private Equity				15,355	-10,080		
Real Estate	582			7,245	-2,253		
Alternatives	211	634		5,289	-2,779		
Opportunity				1,784	-694		
Proj PERS Cash Flow							-3,600
Total	38,416	5,098	1,271	29,673	-15,806		-3,600

Public Equity - 1 Month = AQR 130/30, Arrowstreet 130/30, & Callan US Micro Cap Value portfolios

Public Equity - 1 Quarter = Lazard Closed-End Fund portfolio

Fixed Income - 1 Month = Below Investment Grade

Real Estate - 1 Week = REIT composite

Alternatives - 1 Week = SailingStone

Alternatives - 1 Month = AQR, JP Morgan

- ▶ Table periods approximate the time required to liquidate different OPERF allocations.

Top 10 Exposures by Investment Firm

Rank	Asset Manager	Mkt Val (\$mm)	Mkt Val Weight	Asset Class
1	Internally-Managed	14,032	18.7%	Cash, Fixed Income, Public Equity
2	Dimensional Fund Advisors	4,692	6.3%	Public Equity
3	AQR	3,493	4.7%	Alternatives, Public Equity
4	Arrowstreet Capital	2,981	4.0%	Public Equity
5	KKR	2,956	3.9%	Fixed Income, Private Equity
6	AllianceBernstein	2,366	3.2%	Fixed Income, Public Equity
7	Lazard	2,178	2.9%	Public Equity
8	Wellington	2,093	2.8%	Fixed Income, Public Equity
9	BlackRock	1,994	2.7%	Alternatives, Fixed Income
10	Acadian	1,718	2.3%	Public Equity



September 19, 2018



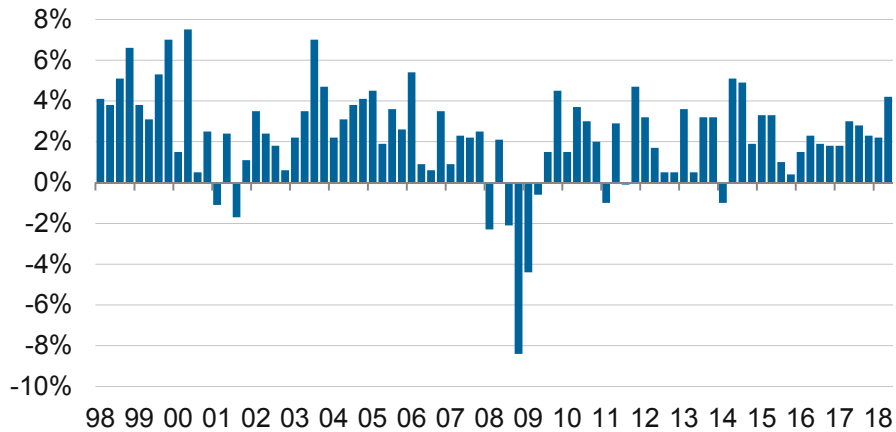
Oregon Investment Council

Second Quarter 2018
Performance Review

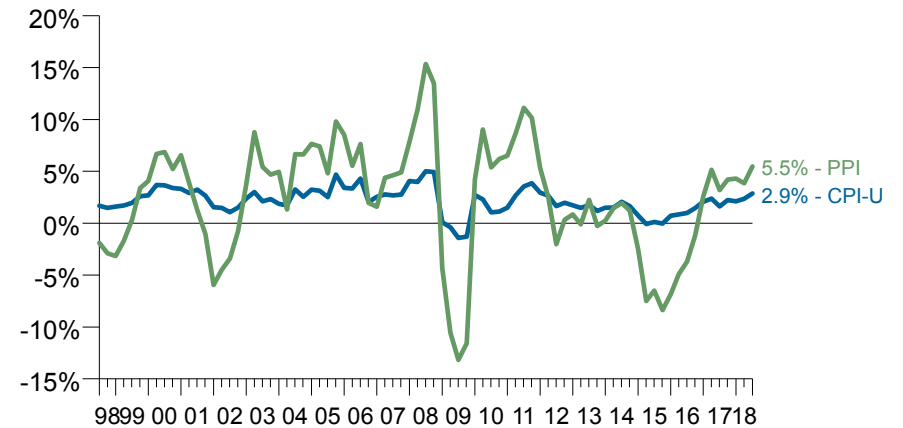
U.S. Economy

For periods ended June 30, 2018

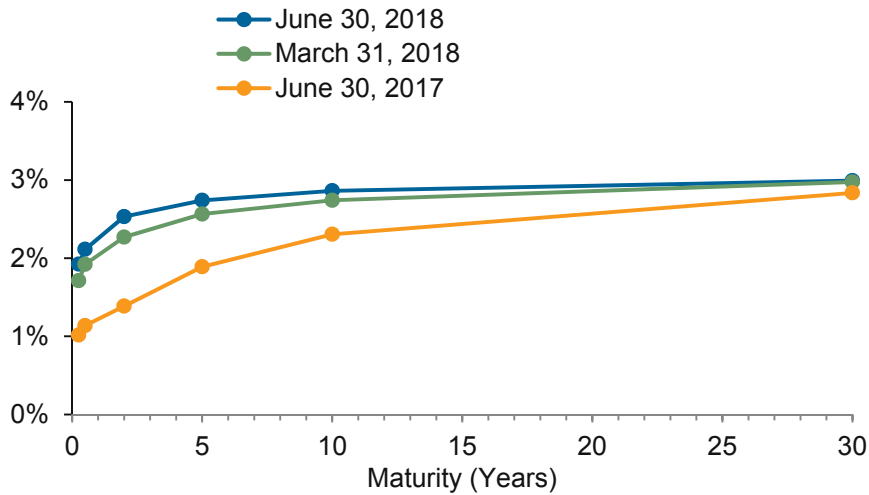
Quarterly Real GDP Growth (20 Years)



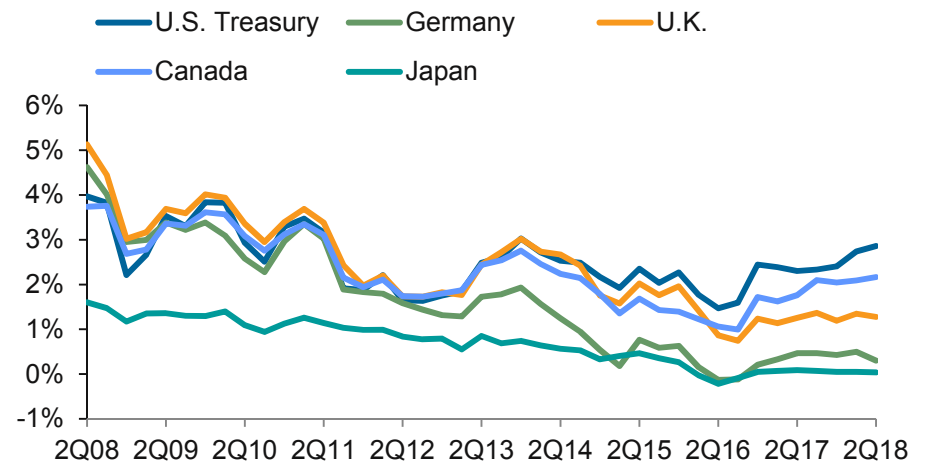
Inflation Year-Over-Year



U.S. Treasury Yield Curves



10-Year Global Government Bond Yields



Sources: Bureau of Labor Statistics, Bloomberg

Performance By Asset Class

Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell 2000 7.8%	Russell 2000 7.7%	Russell 2000 17.6%	S&P 500 11.9%	S&P 500 13.4%	Russell 2000 10.6%
Russell 3000 3.9%	NCREIF ODCE 4.3%	Russell 3000 14.8%	Russell 3000 11.6%	Russell 3000 13.3%	Russell 3000 10.2%
S&P 500 3.4%	Russell 3000 3.2%	S&P 500 14.4%	Russell 2000 11.0%	Russell 2000 12.5%	S&P 500 10.2%
NCREIF ODCE 2.1%	S&P 500 2.6%	MSCI Emerging Markets 8.6%	NCREIF ODCE 9.4%	NCREIF ODCE 11.0%	Merrill Lynch High Yield 8.0%
Merrill Lynch High Yield 1.0%	90 Day T-Bill 0.8%	NCREIF ODCE 8.4%	MSCI Emerging Markets 6.0%	MSCI ACWI ex-US 6.0%	NCREIF ODCE 5.3%
90 Day T-Bill 0.5%	Merrill Lynch High Yield 0.1%	MSCI ACWI ex-US 7.3%	Merrill Lynch High Yield 5.5%	Merrill Lynch High Yield 5.5%	Bloomberg Aggregate 3.7%
Bloomberg Aggregate (0.2%)	Bloomberg Aggregate (1.6%)	Merrill Lynch High Yield 2.5%	MSCI ACWI ex-US 5.1%	MSCI Emerging Markets 5.4%	MSCI Emerging Markets 2.6%
MSCI ACWI ex-US (2.6%)	MSCI ACWI ex-US (3.8%)	90 Day T-Bill 1.4%	Bloomberg Aggregate 1.7%	Bloomberg Aggregate 2.3%	MSCI ACWI ex-US 2.5%
MSCI Emerging Markets (7.9%)	MSCI Emerging Markets (6.5%)	Bloomberg Aggregate (0.4%)	90 Day T-Bill 0.7%	90 Day T-Bill 0.4%	90 Day T-Bill 0.4%

OPERF Total Regular Account

Performance Summary for the Second Quarter 2018

Total Fund:

In the second quarter of 2018, the Total Regular Account rose 1.22% (+1.13% net of fees), beating the 0.72% return of the Policy Benchmark, and ranked 21st percentile of Callan's \$10B+ public fund peer group. For the 12 months ended June 30, 2018, the Total Regular Account gained 9.89% (+9.40% net of fees), coming in ahead of the 9.19% return for the Policy Target, and ranked in the 12th percentile of Callan's \$10B+ public fund peer group. Longer term results trail the Policy Target but rank in the top third of the peer group.

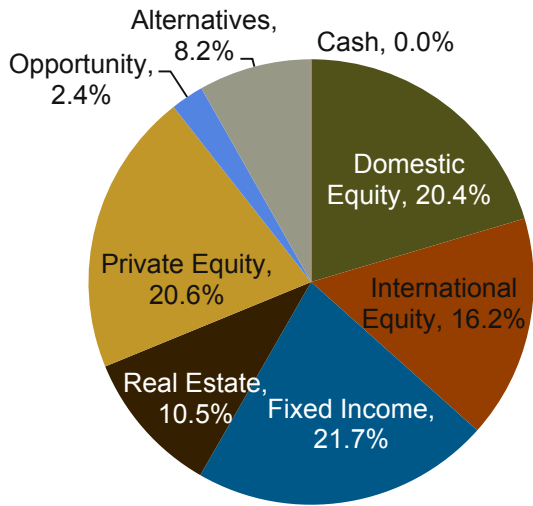
Asset Classes:

- **Total Fixed Income:** The Fixed Income Portfolio returned 0.08% (+0.05% net of fees) for the quarter versus a 0.10% increase for the Custom Fixed Income Benchmark, and ranked in the 24th percentile of Callan's Public Funds \$10+B US Fixed income (Gross) peer group. For the trailing year, the Portfolio gained 4.44% (+0.28% net of fees), beating the benchmark return of 0.24%, and ranked in the 41st percentile of the peer group. 10 year results remain well ahead of the benchmark and rank in the top quartile of the peer group.
- **Total Public Equity:** Total Public Equity portfolio increased 0.28% (+0.21% net of fees) for the quarter versus a gain of 0.72% for the MSCI ACWI IMI Net benchmark, and ranked in the 64th percentile of its peer group. For the trailing year, the portfolio appreciated 12.06% (+11.71% net of fees), easily beating the 11.14% return of the benchmark and ranked just above the median of the peer group.
 - **U.S. Equity:** The U.S. Equity Portfolio gained 3.72% (+3.70% net of fees) for the quarter, slightly trailing the 3.89% return of the Russell 3000 Index, and ranked in the 63rd percentile of Callan's Public Fund: \$10B+ Domestic Equity (gross) peer group. On a trailing 12 month basis, the Portfolio soared 15.15% (+15.01% net of fees) versus a return of 14.78% for the benchmark and ranked in the 39th percentile of the peer group. 10 year results are behind those of the benchmark (+9.86% net of fees versus +10.23%) and rank in the 60th percentile of the peer group.
 - **International Equity:** The International Equity Portfolio retreated 3.54% (-3.64% net of fees) for the quarter, lagging the 2.61% loss in the MSCI ACWI ex-U.S. IMI Index, and ranked in the 77th percentile of Callan's Public Fund: \$10B+ International Equity (gross) peer group. For the trailing year, the Portfolio posted gains of 9.45% (+8.88% net of fees) easily beating the 7.75% return for the benchmark, and ranked top decile of the peer group. 10 year results remain comfortably ahead of the benchmark (+4.29% net of fees versus +2.93%) and continue to rank in the top quartile of the peer group.
- **Total Real Estate:** The Real Estate Portfolio continues to show competitive absolute results over the last decade with an annualized return of 5.91% net of fees.
- **Opportunity Portfolio:** The Opportunity Portfolio's results over the last ten years continue to be favorable with an annualized return of 8.10% net of fees.
- **Alternative Portfolio:** The Alternative Portfolio has gained an annualized return of 3.42% net of fees over the last five years.
- **Total Private Equity:** The Private Equity Portfolio's returns remain strong with an annualized return of 9.63% net of fees over the last ten years.

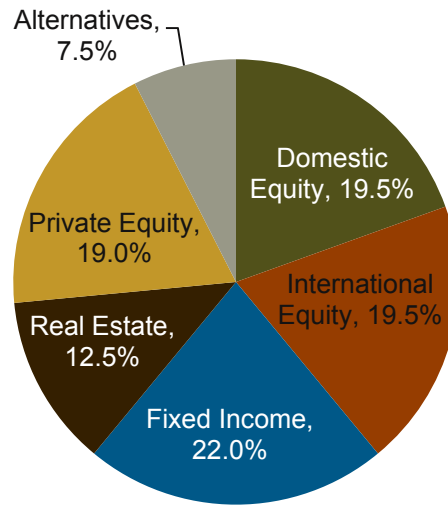
OPERF Total Regular Account

Asset Allocation as of June 30, 2018

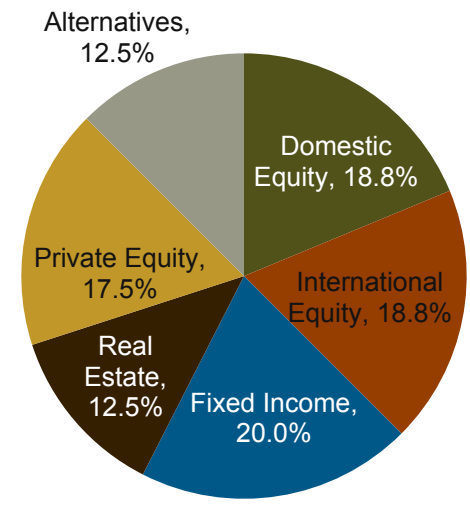
Actual Allocation



Interim Policy Target



Strategic Policy Target



Asset Class	\$000s** Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Total Fixed Income	16,138,819	21.7%	22.0%	(0.3%)	(256,687)
U.S. Equity Portfolio	15,168,182	20.4%	19.5%	0.9%	635,802
Non-U.S. Equity Portfolio	12,098,808	16.2%	19.5%	(3.3%)	(2,433,572)
Total Real Estate	7,823,365	10.5%	12.5%	(2.0%)	(1,492,264)
Opportunity Portfolio	1,783,751	2.4%	0.0%	2.4%	1,783,751
Alternative Portfolio	6,134,017	8.2%	7.5%	0.7%	544,640
Total Private Equity	15,355,148	20.6%	19.0%	1.6%	1,195,393
Cash	22,938	0.0%	0.0%	0.0%	22,938
Total	74,525,028	100.0%	100.0%		

*As of April 1, 2018, the Interim Policy Target was changed to 19% Russell 3000+300 Bps quarter lag, 22% Oregon Custom FI Benchmark, 12.5% Oregon Custom Real Estate Benchmark, 39% MSCI ACWI IMI Net and 7.5% CPI+4%.

**Totals provided by OST Staff

OPERF Total Regular Account

Net Cumulative Performance by Asset Class as of June 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
Total Regular Account	1.13	9.40	7.47	8.59	8.13	6.77
Total Regular Account ex-Overlay	1.12	9.55	7.38	8.51	8.04	6.77
OPERF Policy Benchmark*	0.72	9.19	7.83	9.21	8.69	7.30
Total Fixed Income	0.05	0.28	1.78	2.45	3.32	5.16
OPERF Total Custom FI Benchmark	0.10	0.24	1.43	2.01	2.79	3.88
Callan Public Fund \$10bn+ U.S. Fixed	-0.19	0.56	2.71	3.07	3.30	4.46
Total Public Equity	0.21	11.71	8.74	10.19	8.75	6.67
MSCI ACWI IMI Net	0.72	11.14	8.34	9.60	8.09	6.14
U.S. Equity	3.70	15.01	11.16	12.85	12.45	9.86
Russell 3000 Index	3.89	14.78	11.58	13.29	13.01	10.23
Callan Large Public > \$10bn U.S. Equity	3.93	14.89	11.59	13.24	12.69	10.32
Non-U.S. Equity	-3.64	8.88	6.59	7.65	5.53	4.29
MSCI ACWI ex USA IMI**	-2.61	7.75	5.46	6.39	4.08	2.93
Callan Large Public >\$10bn Non-U.S. Equity	-2.91	8.00	6.32	7.16	4.94	3.90
Total Real Estate	3.05	8.65	9.26	10.49	10.78	5.91
Total Real Estate ex REITs	2.67	8.99	10.45	11.66	11.77	5.53
OPERF Custom Real Estate Benchmark	1.97	7.11	8.66	9.96	10.53	6.07
Callan Public Plan - Real Estate	2.44	7.47	8.50	9.87	10.05	4.99
Opportunity Portfolio	3.52	7.28	6.61	7.45	7.70	8.10
Russell 3000 Index	3.89	14.78	11.58	13.29	13.01	10.23
CPI + 5%	2.31	8.09	6.74	6.37	6.46	6.36
Total Alternative	-1.74	4.45	4.79	3.42	2.99	--
CPI + 4%	1.97	6.98	5.90	5.59	5.64	--
Total Private Equity	3.59	17.75	11.49	12.51	11.69	9.63
OIC - Russell 3000 + 300 BPS Qtr Lag	0.09	17.19	13.51	16.39	15.73	13.28

*Policy Benchmark = 22.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 Index, 20.0% MSCI ACWI ex US IMI, 20.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 5.0% CPI + 400 bps.

**Non-US Equity Benchmark performance through May 31, 2008, is MSCI ACWI ex US Gross and is linked thereafter with the MSCI ACWI ex-US IMI Net Index.

OPERF Total Regular Account

Net Calendar Year Performance by Asset Class

	2 Qtrs. 2018	2017	2016	2015	2014	2013
Total Regular Account	1.75	15.39	7.11	2.01	7.29	15.59
Total Regular Account ex-Overlay	1.81	15.38	6.73	2.02	7.28	15.57
OPERF Policy Benchmark*	1.95	15.64	8.95	1.57	8.24	15.61
Total Fixed Income	-0.81	3.70	3.06	0.54	3.52	1.04
OPERF Total Custom FI Benchmark	-0.86	3.32	2.52	0.16	3.04	0.29
Callan Public Fund \$10bn+ U.S. Fixed	-1.39	4.99	5.25	-0.50	6.31	-1.79
Total Public Equity	-0.32	24.41	9.89	-1.75	3.31	26.68
MSCI ACWI IMI Net	-0.18	23.95	8.36	-2.19	3.84	23.55
U.S. Equity	2.59	20.40	14.90	-0.87	9.85	35.41
Russell 3000 Index	3.22	21.13	12.74	0.48	12.56	33.55
Callan Large Public > \$10bn U.S. Equity	3.47	20.80	13.66	0.06	11.78	33.51
Non-U.S. Equity	-3.54	30.23	4.67	-2.59	-2.88	18.62
MSCI ACWI ex USA IMI**	-3.65	27.81	4.41	-4.60	-3.89	15.82
Callan Large Public >\$10bn Non-U.S. Equity	-3.32	29.01	4.84	-3.58	-2.81	16.91
Total Real Estate	5.04	10.05	7.88	9.89	14.16	12.83
Total Real Estate ex REITs	5.45	11.19	10.01	12.67	12.01	15.79
OPERF Custom Real Estate Benchmark	3.85	6.70	8.88	13.48	11.26	11.00
Callan Public Plan - Real Estate	3.51	7.76	8.24	11.05	13.46	11.35
Opportunity Portfolio	3.79	10.47	6.12	2.14	8.81	15.00
Russell 3000 Index	3.22	21.13	12.74	0.48	12.56	33.55
CPI + 5%	4.77	7.18	6.99	5.39	5.33	6.46
Total Alternative	-0.29	8.30	6.61	-4.32	4.44	6.02
CPI + 4%	4.23	6.19	6.16	4.76	4.78	5.56
Total Private Equity	7.46	17.32	6.26	7.79	15.90	16.19
OIC - Russell 3000 + 300 BPS Qtr Lag	7.21	22.22	18.37	2.49	21.24	25.19

*Policy Benchmark = 22.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 Index, 20.0% MSCI ACWI ex US IMI, 20.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 5.0% CPI + 400 bps.

**Non-US Equity Benchmark performance through May 31, 2008, is MSCI ACWI ex US Gross and is linked thereafter with the MSCI ACWI ex-US IMI Net Index.

OPERF Total Regular Account

Gross Performance and Peer Group Rankings* as of June 30, 2018

Performance vs Large Public Funds (>10B) (Gross)

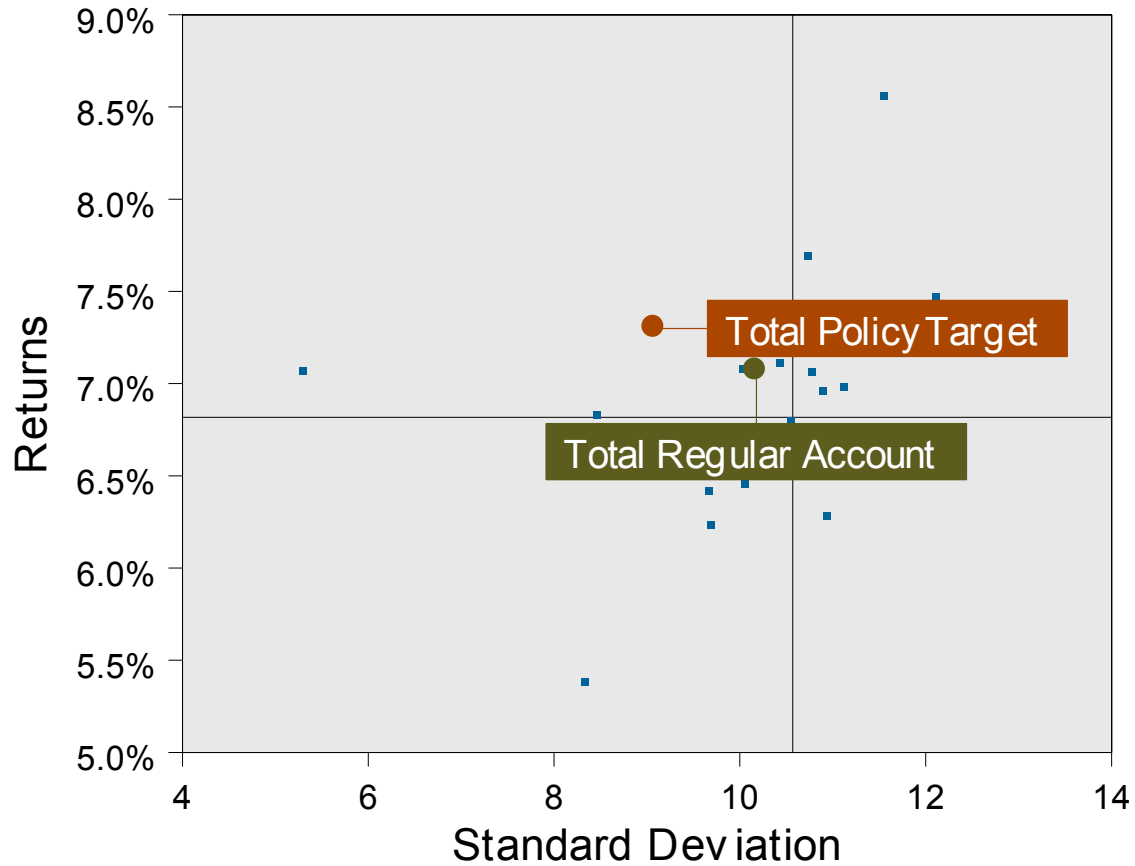


10th Percentile	1.34	9.96	8.43	9.43	8.78	7.63
25th Percentile	1.15	9.51	7.97	9.12	8.52	7.08
Median	0.89	8.89	7.56	8.71	8.12	6.82
75th Percentile	0.71	8.31	7.24	8.27	7.58	6.54
90th Percentile	0.11	7.26	7.09	8.04	7.35	6.23
Total Regular Account ●	1.22	9.89	7.86	8.92	8.45	7.07
Total Policy Target ▲	0.72	9.19	7.83	9.21	8.69	7.30

*Versus Callan's Very Large Public Funds (> \$10 billion) Peer Group, 31 funds.

OPERF Total Regular Account

Large Public Funds (>10B) (Gross) Annualized Ten Year Risk vs Return





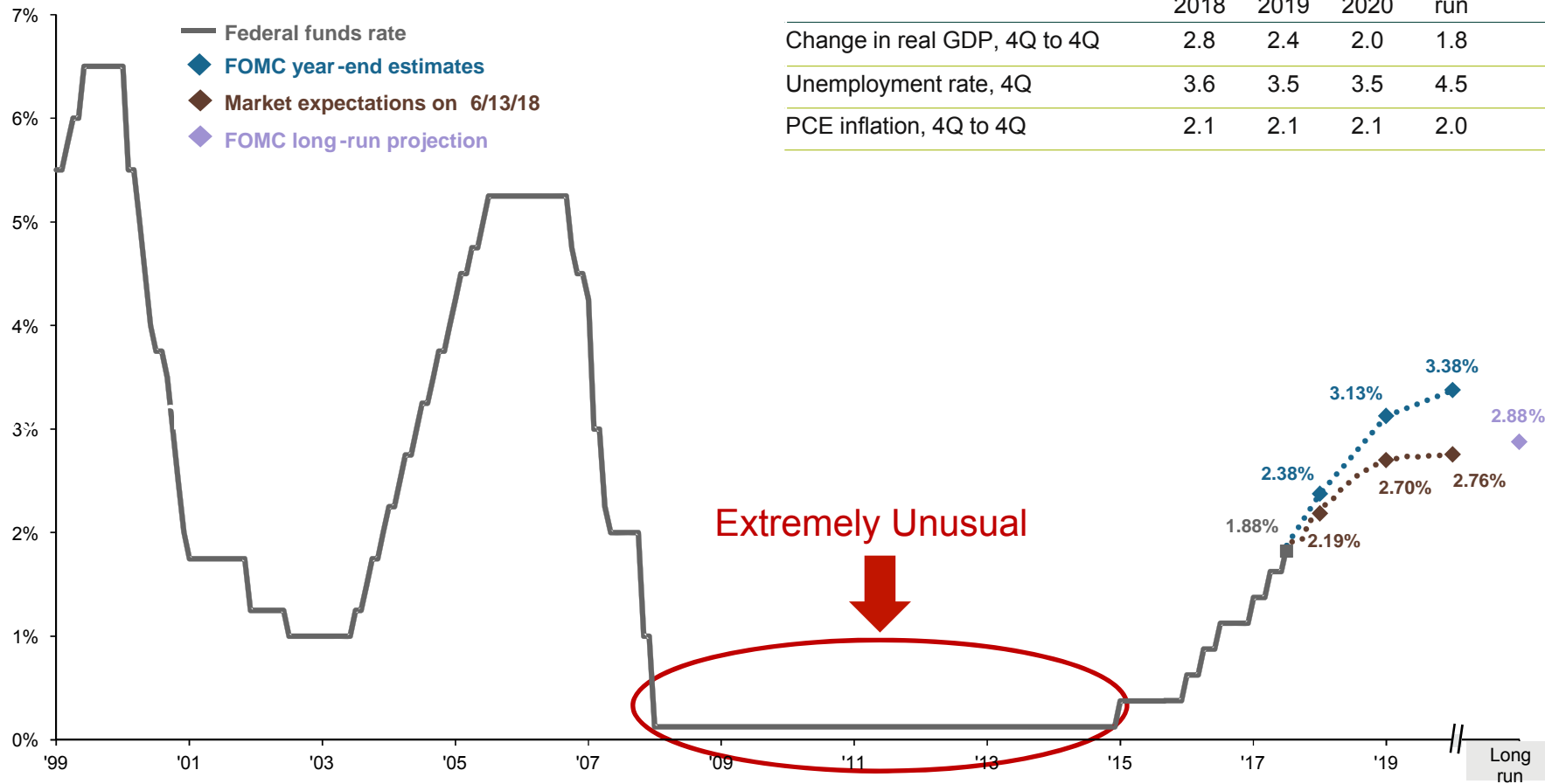
Appendix

Unprecedented Policy Response Is Finally Over

Fed moves toward normalization with four rate hikes expected in 2018

Federal funds rate expectations

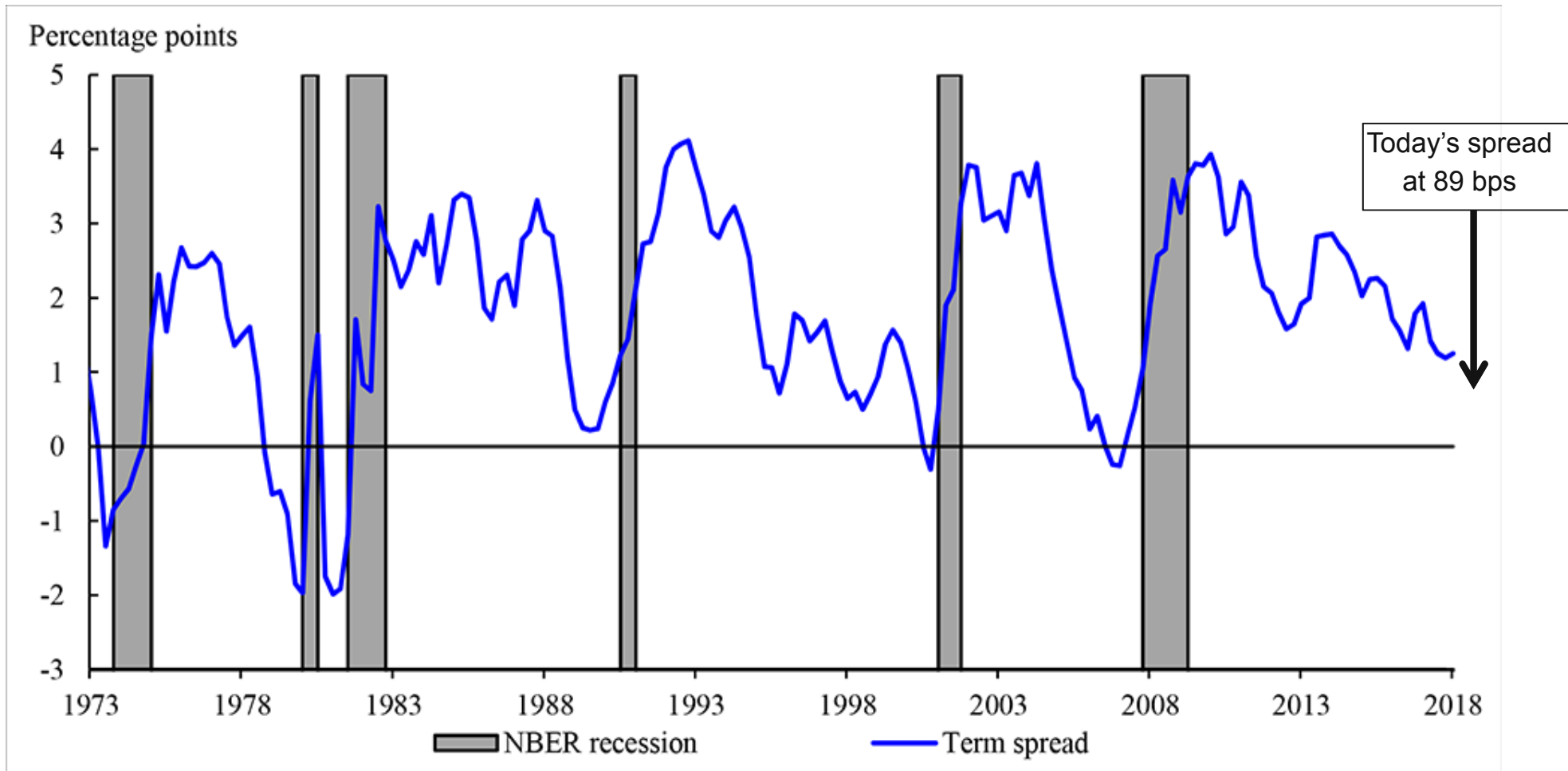
FOMC and market expectations for the fed funds rate



Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.
 Market expectations are the federal funds rates priced into the fed futures market as of the date of the June 2018 FOMC meeting.
 Guide to the Markets – U.S. Data are as of June 30, 2018.

Source: J.P. Morgan Asset Management.

Ten Year Treasury minus Three-month Term Spread and NBER-dated Recessions



Note: The term spread is the ten-year minus the three-month yield. The figure shows quarterly average values of the spread (the value for 2018Q1 is the average to February 26, 2018). The gray shaded areas indicate quarters in which there was an NBER-dated recession at any point in the quarter. A negative yield curve has predicted a recession in advance of 5 out of the last 6 recessions within a 6 to 24 months period.

Sources: Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, NBER, and Board staff calculations.

U.S. Equity Market Environment

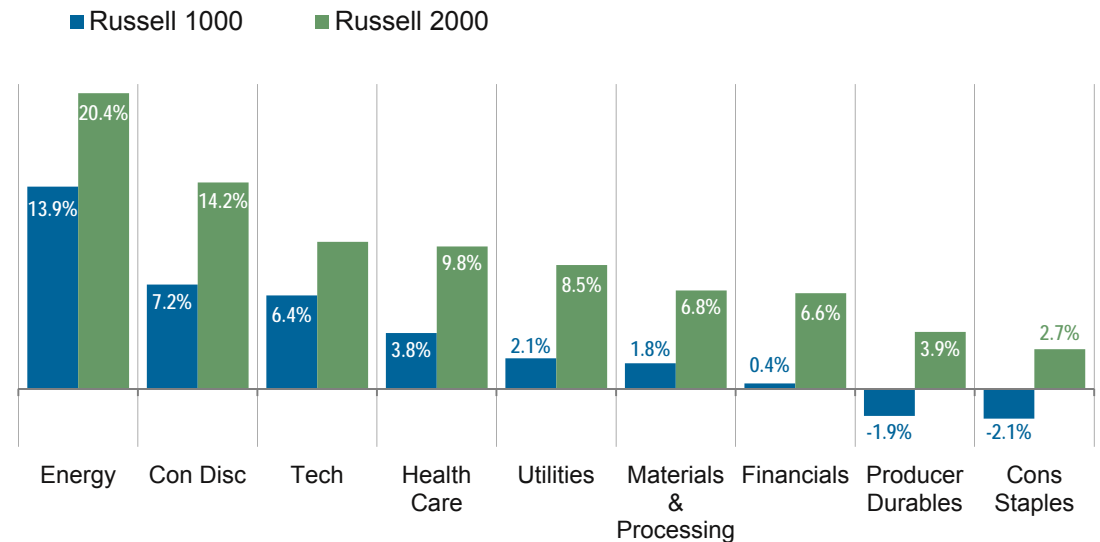
For the Periods Ended June 30, 2018

- U.S. equities (S&P 500 +3.4%) rose on a strong earnings season and positive economic data.
 - Energy was the best-performing sector (+13.5%) as oil prices trended higher after U.S. withdrew from Iran nuclear accord.
- Small cap (+7.8%) outperformed large cap (+3.6%) on trade war fears. Large cap companies derive big portion of revenues from foreign markets (S&P 500 aggregate is ~40%) and are more negatively impacted compared to their domestically focused small cap peers.
- Growth (+5.8%) continued to outperform Value (+1.2%) due to strong results in Tech (+7.1%) and Consumer Discretionary (+8.2%).
- Concentration of returns within broad indexes remains a concern. Excluding FAANG stock performance, S&P 500 performance was negative.

For Periods ended June 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Large Cap Equity						
Russell 1000 Growth	5.76	22.51	14.98	16.36	11.83	10.30
Russell 1000 Value	1.18	6.77	8.26	10.34	8.49	8.63
Mid Cap Equity						
Russell Midcap Growth	3.16	18.52	10.73	13.37	10.45	11.07
Russell Midcap Value	2.41	7.60	8.80	11.27	10.06	11.04
Small Cap Equity						
Russell 2000 Growth	7.23	21.86	10.60	13.65	11.24	10.95
Russell 2000 Value	8.30	13.10	11.22	11.18	9.88	9.93

Economic Sector Quarter Performance as of June 30, 2018



Source: Callan, Russell Investment Group

FAANG: Facebook, Apple, Amazon, Netflix, Google/Alphabet

Non-U.S. Equity Market Environment

For the Periods Ended June 30, 2018

- Non-U.S. markets ended in the red as trade war talk moved into action. Although initial tariffs levied by the U.S. were targeted, retaliatory actions and supply chain disruptions broadened their effects.
 - Growth outpaced value—although no factor category showed significant strength.
 - Cyclical sectors were hurt later in the quarter as the prospect of slower growth led to reduced expectations.
 - The U.S. dollar was up, hurting non-U.S. returns. The euro and British pound were hit especially hard with the rise of populism and Brexit turmoil.
- Emerging markets sold off significantly led by China and Latin America.
 - Fears of increasing debt burdens and trade war effects impacted China.
 - Brazil affected by slower global growth, and falling sentiment hit energy and financials hard.
- Frontier markets impacted by Argentina (-42%) on continuing political unrest, severe drought, and a devaluing currency.

For Periods ended June 30, 2018

Non-U.S. Equity	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
MSCI ACWI ex USA	-2.61	7.28	5.07	5.99	2.54	7.74
MSCI ACWI ex USA Growth	-1.42	9.90	6.56	7.18	3.01	7.91
MSCI ACWI ex USA Value	-3.84	4.64	3.51	4.75	2.03	7.50
MSCI EAFE	-1.24	6.84	4.90	6.44	2.84	7.26
MSCI EAFE (local)	3.47	6.12	5.18	8.93	4.98	7.01
Regional Equity						
MSCI Europe	-1.27	5.28	4.22	6.21	2.36	7.07
MSCI Europe (local)	4.08	4.30	5.69	8.71	5.42	7.23
MSCI Japan	-2.84	10.51	6.25	7.37	3.54	6.62
MSCI Japan (local)	1.20	8.94	2.78	9.73	4.00	6.05
MSCI Pacific ex Japan	1.77	8.68	6.57	6.04	4.64	10.42
MSCI Pacific ex Japan (loc)	4.50	11.15	7.51	9.05	6.30	9.59

Emerging/Frontier Markets	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
MSCI Emerging Markets	-7.96	8.20	5.60	5.01	2.26	10.70
MSCI Emerging Markets (loc)	-3.51	10.47	7.48	8.45	5.23	11.57
MSCI Frontier Markets	-15.19	1.69	2.15	4.55	-2.52	6.70
Non-U.S. Small Cap Equity						
MSCI EAFE Small Cap	-1.57	12.45	10.09	11.32	6.81	10.69
MSCI Em Mkts Small Cap	-8.60	5.64	2.55	4.32	4.44	11.30

Sources: Callan, MSCI

Fixed Income Overview

For the Periods Ended June 30, 2018

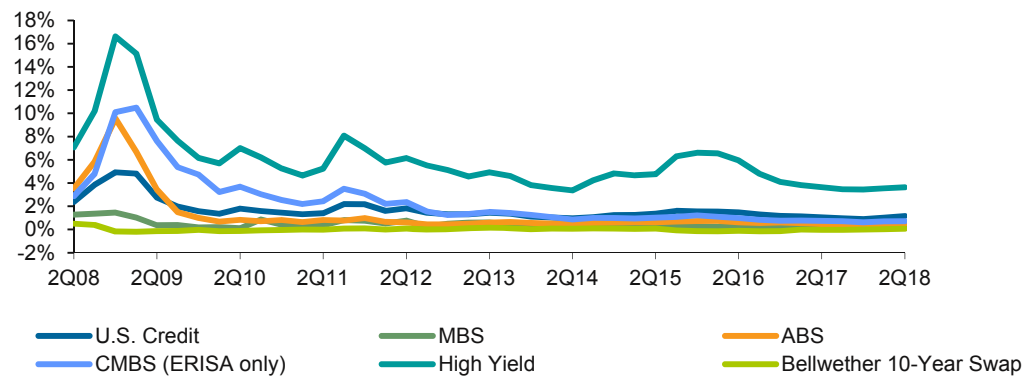
- Fixed Income markets grappled with multiple issues, resulting in continued volatility.
 - Trade conflicts due to imposition of tariffs, EM elections, and rising U.S. dollar contributed to the unstable environment.
- U.S. rates rose in the second quarter and the yield curve continued its flattening trend.
 - The spread between the 2-year and 10-year ended at its lowest level (33 bps) in more than 10 years.
- Investment grade corporates faced increased headwinds during the quarter, dragging returns lower.
 - Concerns over potential trade wars and rising rates increasingly weighed on IG credit despite rising earnings and revenues.
- High yield corporates rebounded in Q2 pushing year-to-date returns into positive territory.
 - CCC-rated credits continued to outperform higher-rated credits within high yield.
 - Earnings growth remains strong and defaults remain benign amid positive economic outlook.

Source: Callan, Bloomberg

For Periods ended June 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Broad Fixed Income						
BB Barclays Aggregate	-0.16	-0.40	1.72	2.27	3.72	3.77
BB Barclays Gov/Credit	-0.33	-0.63	1.83	2.29	3.78	3.71
BB Barclays Government	0.10	-0.63	1.02	1.48	2.91	3.20
BB Barclays Credit	-0.88	-0.65	2.86	3.37	5.15	4.52
BB Barclays Corporate High Yld	1.03	2.62	5.53	5.51	8.19	7.77
Long-Term						
BB Barclays Long Gov/Credit	-1.45	-0.78	4.34	5.10	6.79	5.84
BB Barclays Long Government	0.26	-0.13	3.40	4.56	6.02	5.57
BB Barclays Long Credit	-2.65	-1.30	4.95	5.48	7.30	5.99
Intermediate-Term						
BB Barclays Interm Aggregate	0.09	-0.32	1.27	1.83	3.29	3.47
BB Barclays Interm Gov/Credit	0.01	-0.58	1.16	1.60	3.08	3.21
Short-Term						
Money Market Funds (net)	0.38	1.06	0.44	0.27	0.23	1.11
ML Treasury 1-3 Year	0.22	0.08	0.42	0.58	1.24	1.92
90-Day Treasury Bills	0.45	1.36	0.68	0.42	0.35	1.29

Effective Yield Over Treasuries

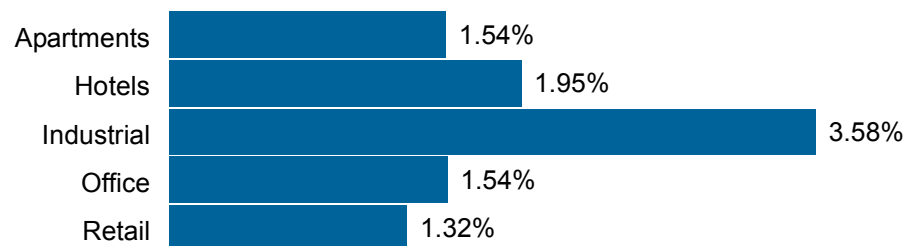


Real Estate Overview

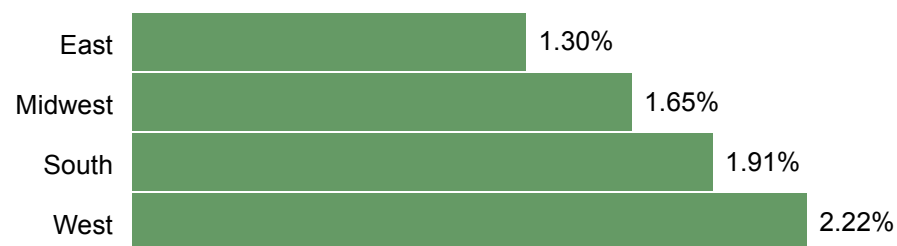
For the Periods Ended June 30, 2018

U.S. Private Real Assets	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Real Estate ODCE Style	1.60	3.67	7.55	8.85	10.19	4.53	7.18
NFI-ODCE (value weight net)	1.81	3.82	7.47	8.38	10.03	4.33	7.29
NCREIF Property	1.81	3.54	7.19	8.25	9.77	6.22	8.98
NCREIF Farmland	1.13	2.46	6.55	7.58	10.25	11.73	14.61
NCREIF Timberland	0.48	1.41	3.57	3.43	6.00	4.00	7.45
Public Real Estate							
Global Real Estate Style	4.50	0.75	7.53	6.73	7.58	6.61	10.38
EPRA/NAREIT Developed	5.12	0.36	5.64	5.71	5.97	4.88	--
Global ex-U.S. Real Estate Style	0.44	0.72	11.45	5.36	6.24	5.08	10.31
EPRA/NAREIT Developed ex US	0.55	0.03	9.77	5.67	5.69	4.27	9.59
U.S. REIT Style	8.57	1.30	4.48	8.47	8.91	8.66	10.94
NAREIT Equity REITs	10.04	1.02	3.50	8.06	8.31	7.94	10.02

Sector Quarterly Returns by Property Type



Sector Quarterly Returns by Region



- U.S. core real estate returns continue to moderate and shift toward income. The limited appreciation that did occur in the second quarter came from net operating income growth rather than further cap rate compression.
- Supply and demand fundamentals are balanced but peaking. Supply is in check and aided by strict commercial real estate lending standards. Demand continues on the back of synchronized domestic growth.
- The industrial sector performed the strongest, benefiting as structural shifts in the economy, property markets, and consumer habits continue to dampen demand for traditional retail space. The Western region continues to lead other regions.

Sources: Callan, FTSE Russell, NAREIT, NCREIF

Hedge Funds Overview

For the Periods Ended June 30, 2018

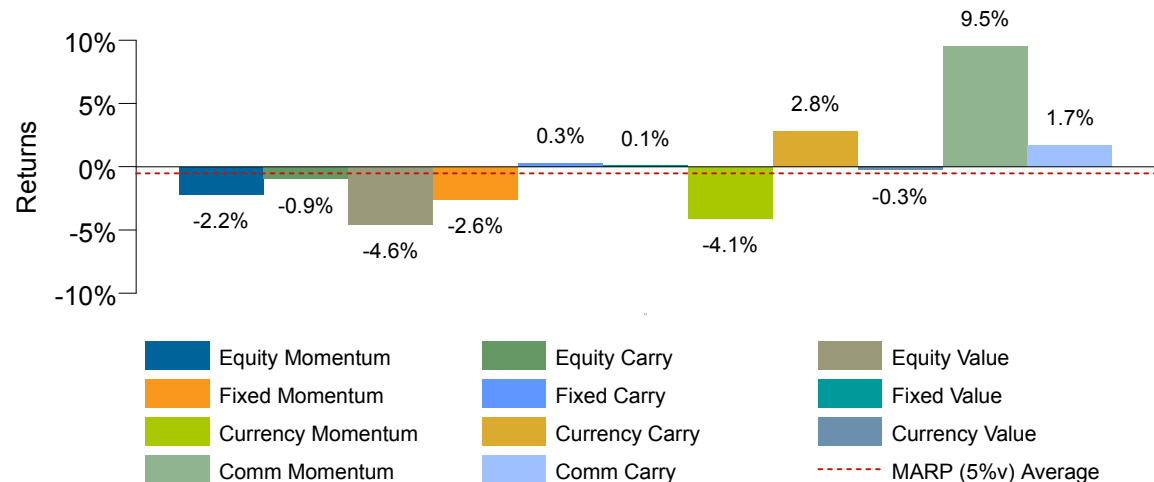
- Given trade war threats and other geopolitical events, hedge funds across most strategies struggled for traction.
- Strong M&A activity provided support to event-driven strategies, but regulatory risk remains notably uncertain in deal approvals.
- Credit opportunities are limited in a still-durable economy, leaving FOFs and event-driven funds at low end of target allocations.
- Momentum, or trend, lost more ground last quarter with markets flip-flopping, adding to the prior quarter's sting from February's market reversal.
- As the FAANG stocks continued to gain popularity last quarter, the value risk premia was left more unappreciated. Flashback of memories from the late 90s?
- Both large and small hedge funds yielded similar middling results, on average. FOFs earned their fees last quarter with performance matching that of the underlying indexes.

Returns for Periods ended June 30, 2018

Hedge Fund Universe	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
HFRI Asset Wtd Composite	0.87	5.31	2.68	4.17	3.52	--
HFRI Fund Weighted Index	0.84	5.67	3.63	4.44	3.45	5.57
.HFRI Equity Hedge	0.85	8.22	4.85	5.84	3.69	5.66
.HFRI Event-Driven	2.15	5.79	4.63	4.80	4.67	6.57
.HFRI Macro	-0.16	1.17	0.17	1.23	1.13	3.88
.HFRI Relative Value	1.12	3.91	3.74	4.38	5.11	5.76
3 Month T-Bill	0.45	1.36	0.68	0.42	0.35	1.29
Liquid Alternatives Universe						
S&P 500	3.43	14.37	11.93	13.42	10.17	9.30
Bloomberg Barclays Aggregate	-0.16	-0.40	1.72	2.27	3.72	3.77
60% S&P 500/40% BC Aggr	1.99	8.34	7.88	8.97	7.84	7.30
CS NB MARP Index (5%v)	-0.51	-1.03	2.79	2.99	6.31	--
SG Trend Index	-1.34	2.90	-2.27	2.11	1.16	3.34

* Gross of fees

Alternative Risk Factor Breakdown—Last Quarter ended June 30, 2018



Source: Credit Suisse Neuberger Berman Multi-Asset Risk Premia Index

TAB 7 – CEM Benchmarking Report
OPERF

2017 OPERF Cost Study

Purpose

To present the OPERF investment cost analysis performed by CEM Benchmarking Inc. (“CEM”) for both the calendar and five-year period ended December 31, 2017.

Background

Beginning in 2003, Treasury staff provided the OIC with an independent assessment of various costs incurred for OPERF management (e.g., asset management, custody and consulting fees), and how those costs and resultant net OPERF performance compare with other institutional investors.

CEM is recognized as the foremost, independent, third-party provider of cost analysis services to the defined benefit and defined contribution plan community. Using the firm’s unique database, CEM has provided defined benefit fund sponsors with net return and cost insights since 1990. That database includes 156 U.S. pension funds (including 57 public funds), valued at approximately \$3.5 trillion.

Similar to previous years’ analyses, staff provided CEM with updated OPERF cost and operating data. For the calendar year ended December 31, 2017, OPERF’s total investment costs (including asset management, custody, consulting and other fees) were approximately 72 basis points, a 6.5% reduction from the 77 bps reported for calendar year 2016.

OPERF’s custom peer group for benchmarking purposes is comprised of 18 U.S. public funds ranging in asset size from \$28 billion to \$146 billion. In terms of asset size, the peer group’s median fund was \$53 billion, and within the peer group, OPERF was the 8th largest fund. Based on CEM’s analysis, and given OPERF’s asset mix and implementation profile, total costs were lower than “expected” by approximately \$29.5 million or 3.9 basis points.

Staff Recommendation

None, information only. Report findings will be presented by CEM.

CEM Investment Benchmarking Analysis for: Oregon Public Employees Retirement Fund

Key takeaways

Returns

- Your 5-year net total return was 9.3%. This was above the U.S. Public median of 9.0% and above the peer median of 9.0%.
- Your 5-year policy return was 9.5%. This was above the U.S. Public median of 8.7% and above the peer median of 8.6%.

Value added

- Your 5-year net value added was -0.2%. This was below the U.S. Public median of 0.2% and below the peer median of 0.2%.

Cost

- Your investment cost of 72.4 bps was below your benchmark cost of 76.3 bps. This suggests that your fund was slightly low cost compared to your peers. Your fund was slightly low cost because you paid less than peers for similar services.

This benchmarking report compares your cost and return performance to other funds in CEM's extensive pension database.

- 156 U.S. pension funds participate. The median U.S. fund had assets of \$10.7 billion and the average U.S. fund had assets of \$22.6 billion. Total participating U.S. assets were \$3.5 trillion.

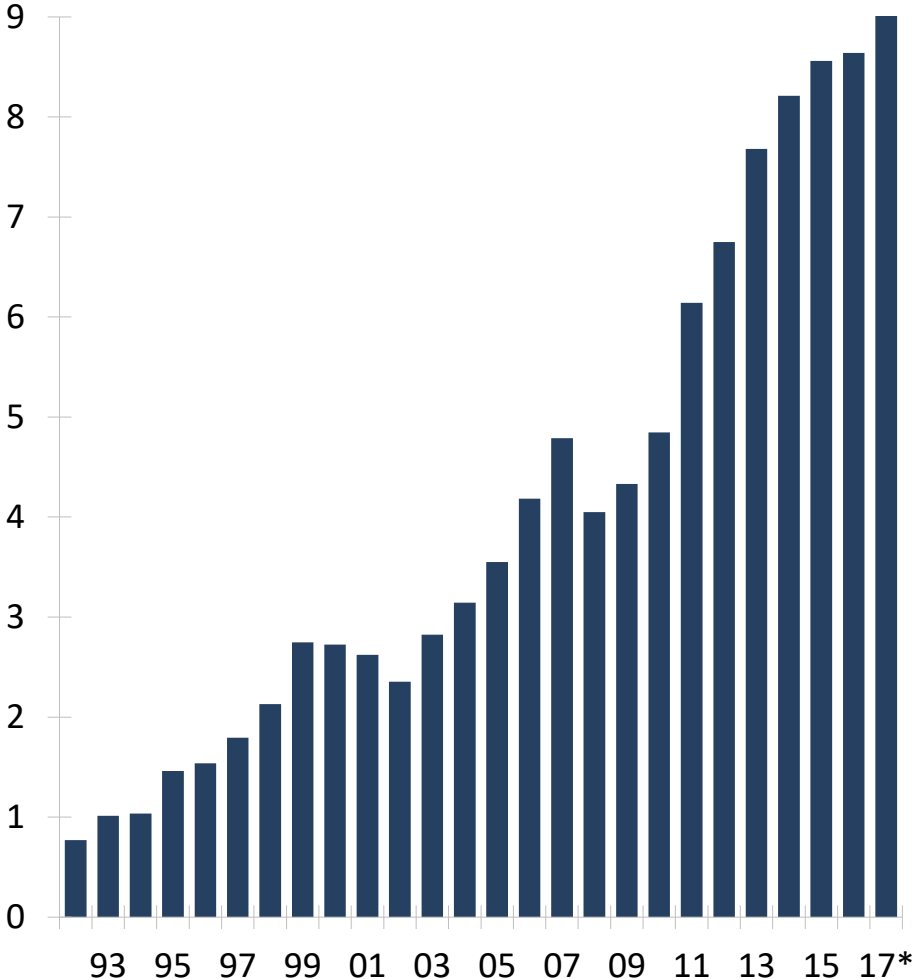
- 74 Canadian funds participate with assets totaling \$1,358.7 billion.

- 37 European funds participate with aggregate assets of \$2.7 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the U.K.

- 8 Asia-Pacific funds participate with aggregate assets of \$1,043.8 billion. Included are funds from Australia, New Zealand, China and South Korea.

The most meaningful comparisons for your returns and value added are to the U.S. Public universe, which consists of 57 funds.

Participating assets (\$ trillions)

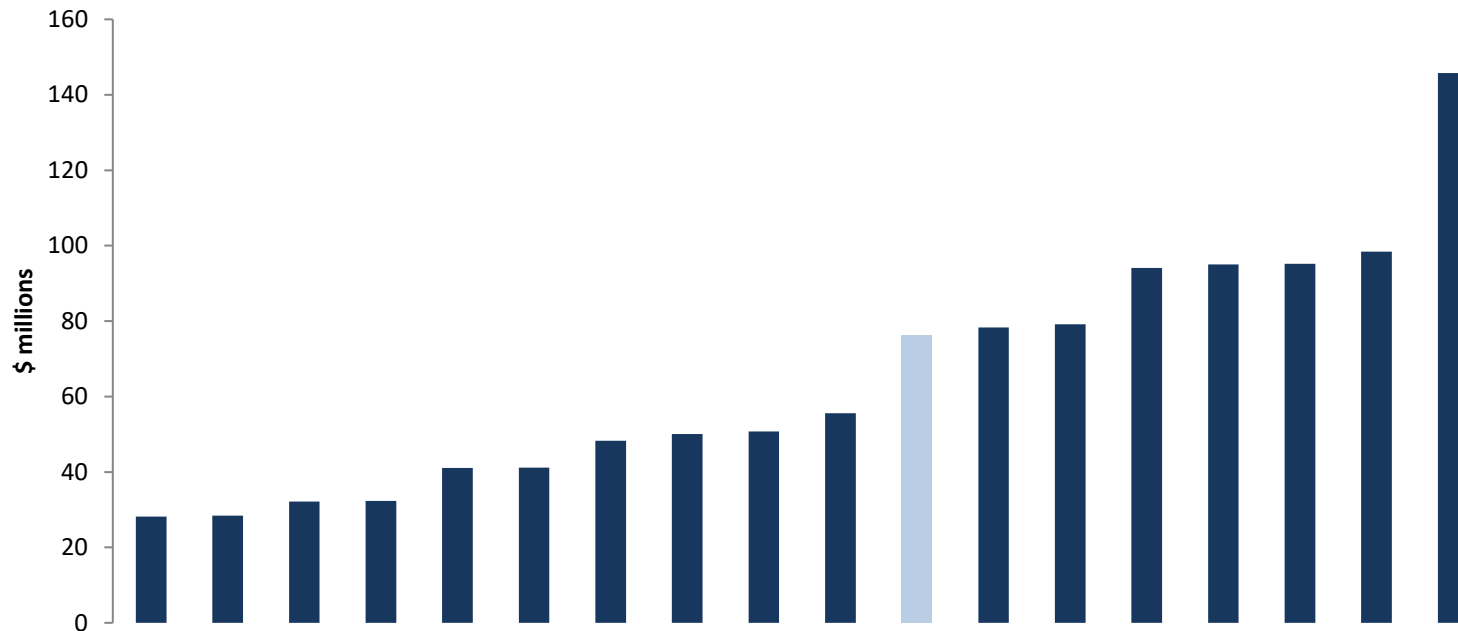


*2017 assets includes both received and expected data.

The most valuable comparisons for cost performance are to your custom peer group because size impacts costs.

Peer group for Oregon Public Employees Retirement Fund

- 18 U.S. Public public sponsors from \$28.2 billion to \$145.7 billion
- Median size of \$53.2 billion versus your \$76.2 billion



To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document.

What gets measured gets managed, so it is critical that you measure and compare the right things:

1. Returns

Why do total returns differ from other funds? What was the impact of your policy mix decisions versus implementation decisions?

2. Net value added

Are your implementation decisions adding value (i.e., mostly the effectiveness of active management, as well as the amount of active management versus passive management)?

3. Costs

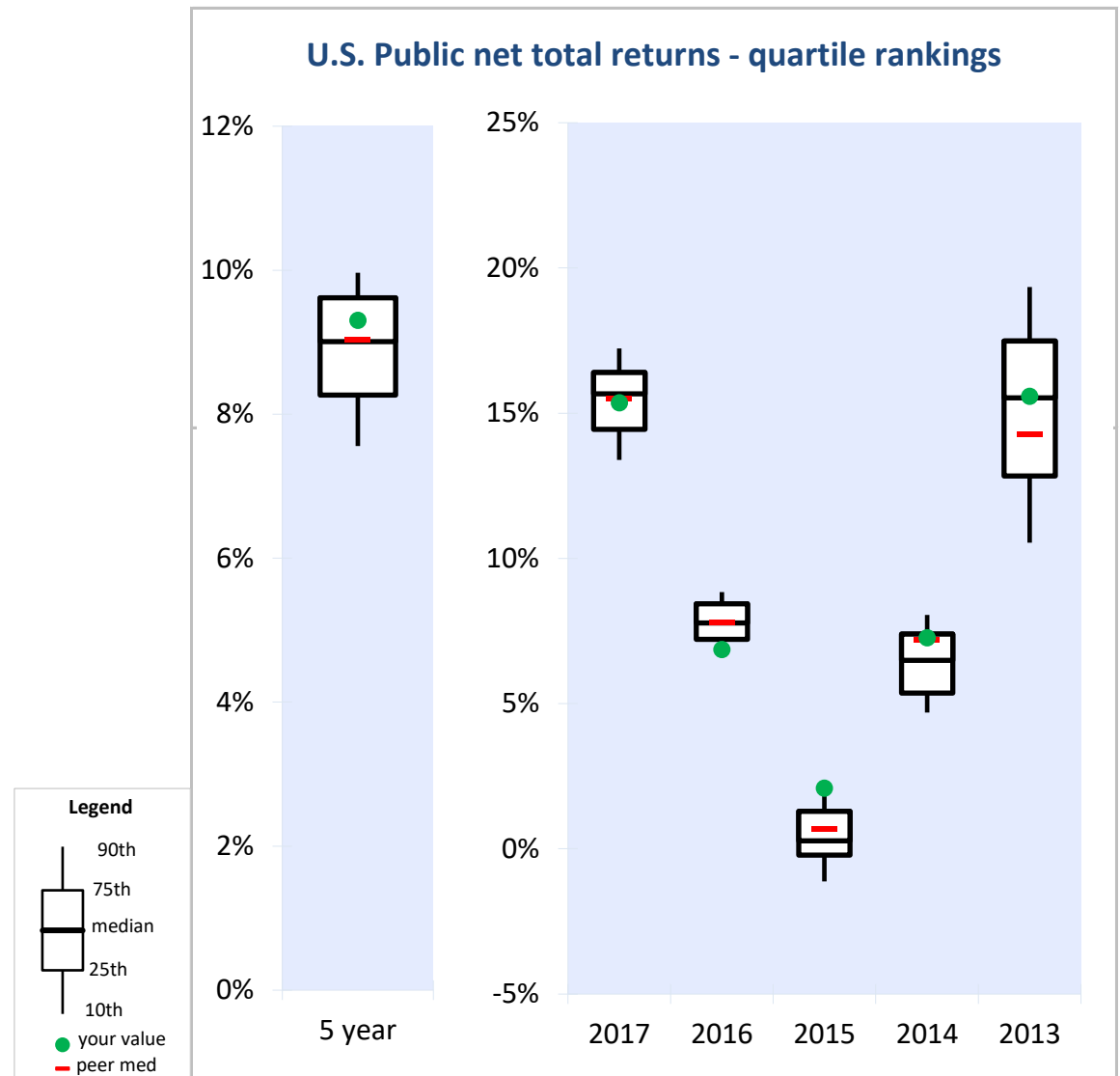
Are your costs reasonable? Costs matter and can be managed.

Your 5-year net total return of 9.3% was above both the U.S. Public median of 9.0% and the peer median of 9.0%.

Total returns, by themselves, provide little insight into the reasons behind relative performance. Therefore, we separate total return into its more meaningful components: policy return and value added.

	Your 5-year
Net total fund return	9.3%
- Policy return	9.5%
= Net value added	-0.2%

This approach enables you to understand the contribution from both policy mix decisions (which tend to be the board's responsibility) and implementation decisions (which tend to be management's responsibility).



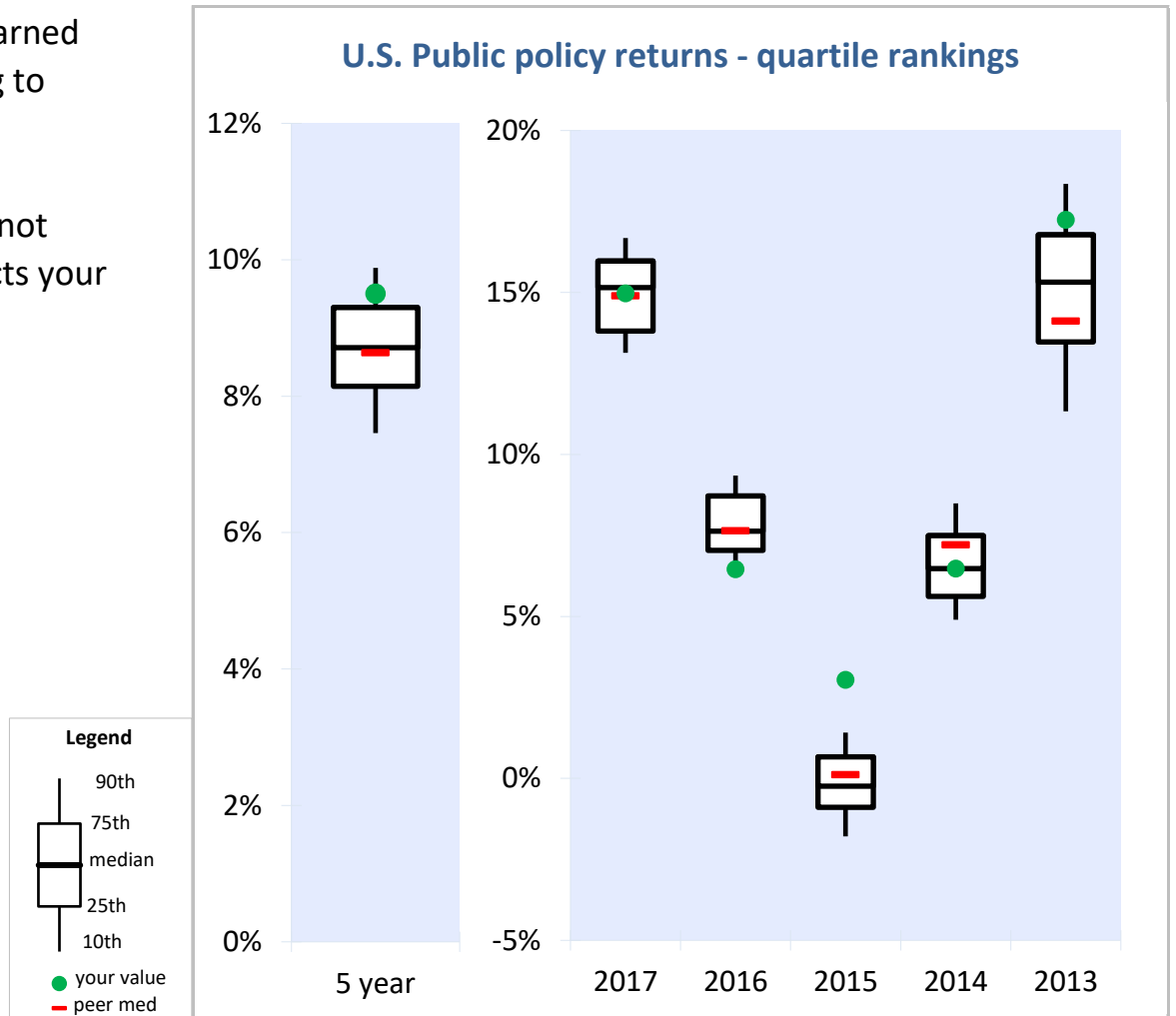
Your 5-year policy return of 9.5% was above both the U.S. Public median of 8.7% and the peer median of 8.6%.

Your policy return is the return you could have earned passively by indexing your investments according to your policy mix.

Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- Long term capital market expectations
- Liabilities
- Appetite for risk

Each of these three factors is different across funds. Therefore, it is not surprising that policy returns often vary widely between funds.



To enable fairer comparisons, the policy returns of all participants, including your fund, were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Prior to this adjustment, your 5-year policy return was 9.9%, 0.4% higher than your adjusted 5-year policy return of 9.5%. Mirroring this, your 5-year total fund net value added would be 0.4% lower.

Your 5-year policy return of 9.5% was above the U.S. Public median of 8.7% primarily because of:

- The positive impact of a higher allocation towards Real Estate (your 11% 5-year average weight versus a U.S. Public average of 8%) and Private Equity (your 20% 5-year average weight versus a U.S. Public average of 9%). Both these asset classes performed well over the last 5 years.
- The positive impact of your lower weight in one of the worst performing asset classes of the past 5 years: Hedge Funds. U.S. Public funds invested an average of 5% of their assets in Hedge Funds, you did not invest in Hedge Funds at all.
- The above was partly offset by your lower weight in Total Stock (your 41% 5-year average weight versus a U.S. Public average of 49%).

	5-Year average policy mix ¹			5-year policy return	
	Your Fund	U.S. Public Avg.	More/Less	Your Fund	U.S. Public Avg.
U.S. Stock	0%	21%	-21%	15.5%	15.5%
EAFE Stock	0%	5%	-5%	n/a ³	8.1%
ACWIXUS Stock	0%	9%	-9%	7.0%	7.3%
Global Stock	41%	10%	31%	11.0%	10.9%
Other Stock	0%	5%	-5%	n/a ³	n/a ³
Total Stock	41%	49%	-8%	11.0%	11.8%
U.S. Bonds	22%	17%	4%	1.9%	2.2%
Other Fixed Income ²	1%	9%	-7%	n/a ³	n/a ³
Total Fixed Income	23%	26%	-3%	2.2%	2.8%
Hedge Funds	0%	5%	-5%	n/a ³	4.8%
Real Estate ex-REITs	11%	8%	4%	10.2%	10.7%
Other Real Assets ²	5%	4%	1%	n/a ³	n/a ³
Private Equity	20%	9%	11%	15.6%	15.1%
Total	100%	100%	0%		

1. 5-year weights are based only on plans with 5 years of continuous data.

2. Other fixed income includes Inflation Indexed and Global bonds.

Other real assets includes commodities, natural resources, infrastructure and REITS.

3. A value of 'n/a' is shown if asset class return are not available for the full 5 years or if they are broad and incomparable.

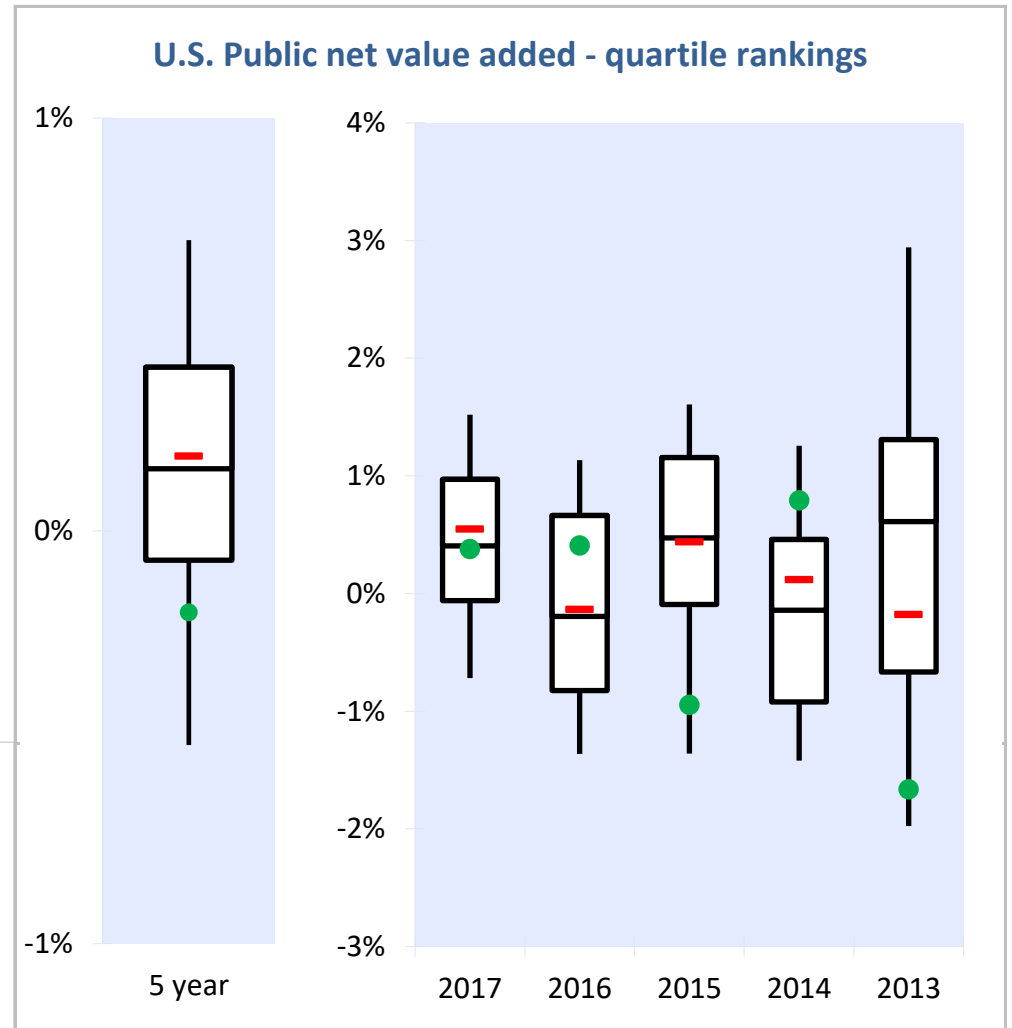
Net value added is the component of total return from active management. Your 5-year net value added was -0.2%.

Net value added equals total net return minus policy return.

Value added for Oregon Public Employees Retirement Fund

Year	Net Return	Policy Return	Net value Added
2017	15.4%	15.0%	0.4%
2016	6.9%	6.5%	0.4%
2015	2.1%	3.0%	-0.9%
2014	7.3%	6.5%	0.8%
2013	15.6%	17.2%	-1.7%
5-Year	9.3%	9.5%	-0.2%

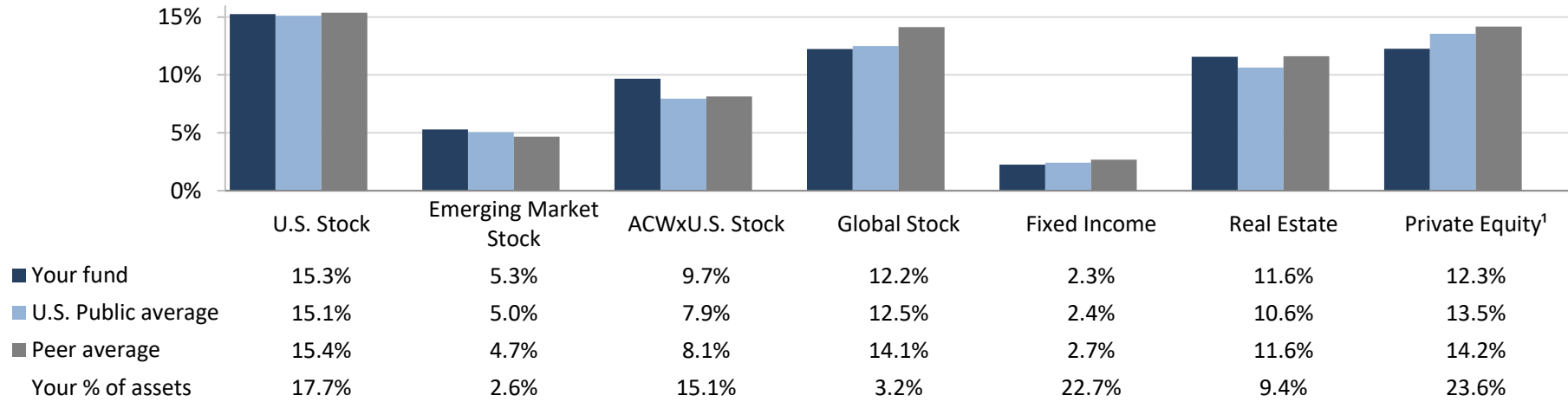
Your 5-year net value added of -0.2% compares to a median of 0.2% for your peers and 0.2% for the U.S. Public universe.



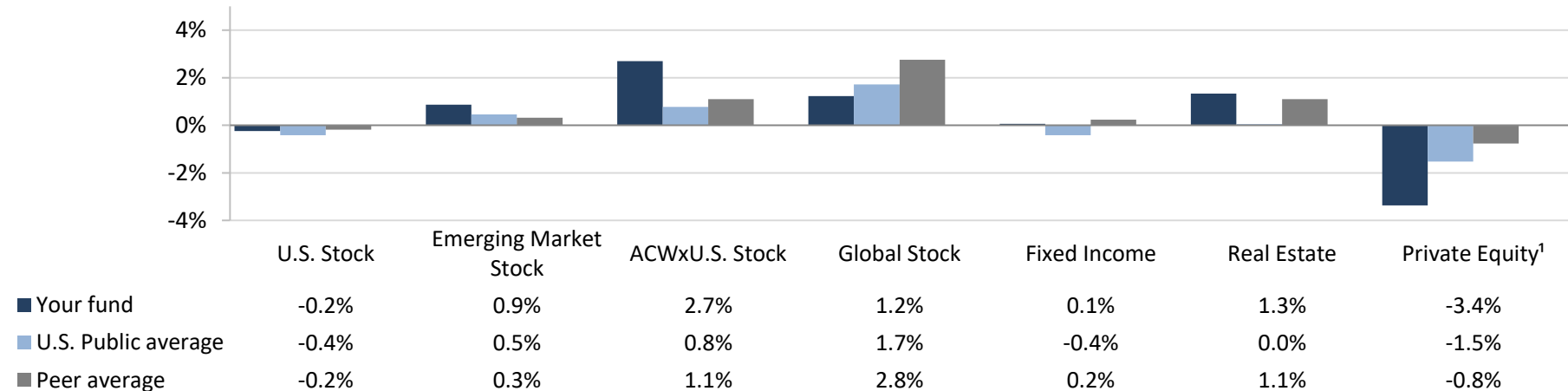
To enable fairer comparisons, the value added for each participant including your fund was adjusted to reflect private equity benchmarks based on investable public market indices. Prior to this adjustment, your fund's 5-year total fund net value added was -0.6%.

Comparisons of your 5-year net return and net value added by major asset class.

5-year average net return by major asset class



5-year average net value added by major asset class



1. To enable fairer comparisons, the private equity benchmarks of all participants, including your fund were adjusted to reflect lagged, investable, public-market indices.

Prior to this adjustment, your fund's 5-year private equity net value added was -5.3%.

Your investment costs were \$551.7 million or 72.4 basis points in 2017.

Asset management costs by asset class and style (\$000s)	Internal Management			External Mgmt		Total ³	
	Passive	Active	Overseeing of external	Passive fees	Active base fees		
Stock - U.S. Broad/All	1,754					1,754	
Stock - U.S. Large Cap			527		5,501	6,028	
Stock - U.S. Small Cap			158		10,676	10,834	
Stock - Emerging			377		13,278	13,655	
Stock - Global			863		11,873	12,736	
Stock - ACWI x U.S.			846		36,437	37,283	
Fixed Income - U.S.			885		6,374	7,259	
Fixed Income - U.S. Gov't		946	113		945	2,003	
Fixed Income - Other			650		11,963	12,613	
Cash		452				452	
REITs			136		6,029	6,165	
Real Estate ex-REITs ³			2,029		27,832	29,861	
Real Estate - LPs ³			1,898		33,745	35,643	
Other Real Assets ³			1,827		52,348	54,175	
Diversified Private Equity - LPs ^{1 3}			6,828		256,670	263,498	
Diversified Private Equity - Co-Invest. ³			165			165	
Diversified Private Equity - FoFs ^{2 3}			394		22,826	23,220	
Other Private Equity - LPs ^{1 3}			1,302		28,418	29,720	
Derivatives/Overlays			514	674		1,188	
Total excluding private asset performance fees						548,255	72.0bp
Oversight, custodial and other costs							
Oversight & consulting						2,750	
Trustee & custodial						225	
Audit						53	
Other						424	
Total oversight, custodial & other costs						3,452	0.5bp
Total investment costs (excl. transaction costs & private asset performance fees)						551,707	72.4bp

Footnotes

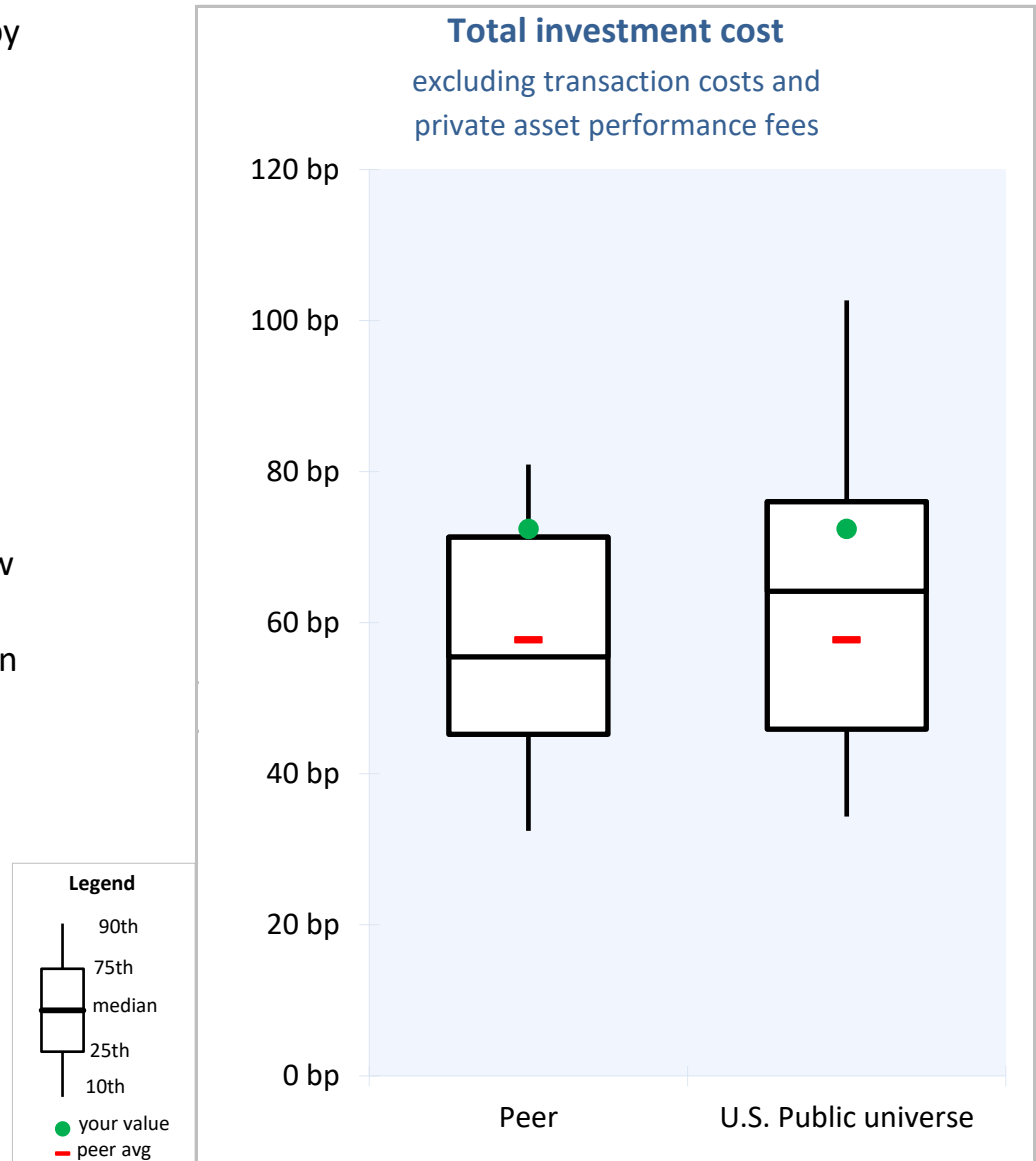
1. Fees are the weighted average management cost calculated using the detailed limited partnership survey provided.
2. Default underlying costs were added: Diversified Private Equity - FoFs 157 bp. Refer to Appendix A for full details regarding defaults.
3. Total cost excludes carry/performance fees.

Your total investment cost of 72.4 bps was above the peer median of 55.5 bps.

Differences in total investment cost are often caused by two factors that are often outside of management's control:

- Asset mix, particularly holdings of the highest cost asset classes: real estate (excl REITS), infrastructure, hedge funds and private equity. These high cost assets equaled 33% of your assets at the end of 2017 versus a peer average of 25%.
- Fund size. Bigger funds have advantages of scale.

Therefore, to assess whether your costs are high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. This analysis is shown on the following page.



Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was slightly low cost by 3.9 basis points in 2017.

Your benchmark cost is an estimate of what Your cost would be given your actual asset mix and the median costs that your peers pay for similar services. It represents the cost your peers would incur if they had your actual asset mix.

Your total cost of 72.4 bp was slightly below your benchmark cost of 76.3 bp. Thus, your cost savings was 3.9 bp.

Your cost versus benchmark

	\$000s	basis points
Your total investment cost	551,707	72.4 bp
Your benchmark cost	581,183	76.3 bp
Your excess cost	-29,477	(3.9) bp

Your fund was slightly low cost because you paid less than peers for similar services.

Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Higher cost implementation style		
• More external active management (less lower cost passive and internal)	39,018	5.1
• Less fund of funds	-15,178	(2.0)
• Less overlays	-126	(0.0)
• Other style differences	-226	(0.0)
	<u>23,489</u>	<u>3.1</u>
2. Paying less than peers for similar services		
• External investment management costs	-49,308	(6.5)
• Oversight, custodial & other costs	-3,657	(0.5)
	<u>-52,966</u>	<u>(7.0)</u>
Total savings	-29,477	(3.9)

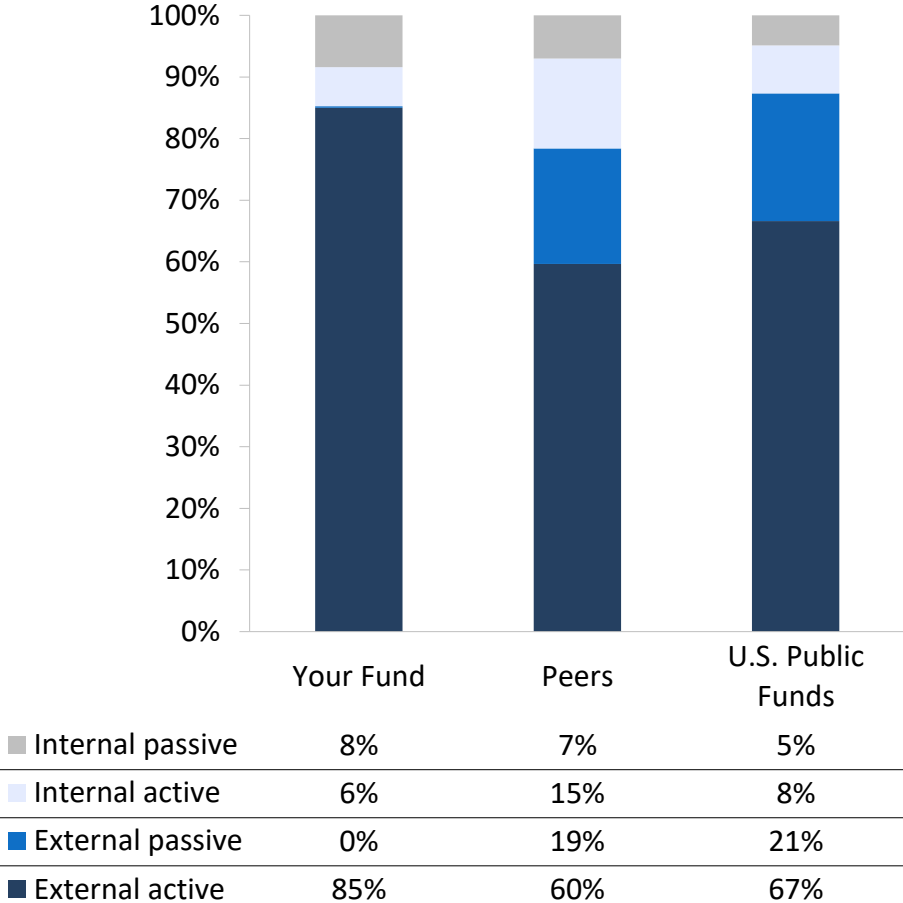
Differences in cost performance are often caused by differences in implementation style.

Implementation style is defined as the way in which your fund implements asset allocation. It includes internal, external, active, passive and fund of funds styles.

The greatest cost impact is usually caused by differences in the use of:

- External active management because it tends to be much more expensive than internal or passive management. You used more external active management than your peers (your 85% versus 60% for your peers).
- Within external active holdings, fund of funds usage because it is more expensive than direct fund investment. You had less in fund of funds. Your 3% of hedge funds, real estate and private equity in fund of funds compared to 10% for your peers.

Implementation style¹



1. The graph above does not take into consideration the impact of derivatives.

Differences in implementation style cost you 3.1 bp relative to your peers.

Calculation of the cost impact of differences in implementation style

Asset class*	Your avg holdings in \$mils (A)	% External active			Premium vs passive & internal ¹ (C)	Cost/ (savings)	
		You	Peer average	More/ (less) (B)		\$000s (A X B X C)	bps
Stock - U.S. Broad/All	6,397	0.0%	20.3%	(20.3%)	34.9 bp	-4,528	
Stock - U.S. Large Cap	5,768	100.0%	22.1%	77.9%	27.7 bp	12,468	
Stock - U.S. Small Cap	1,728	100.0%	81.3%	18.7%	56.8 bp	1,840	
Stock - Emerging	2,060	100.0%	69.1%	30.9%	50.8 bp	3,237	
Stock - Global	4,722	100.0%	63.3%	36.7%	37.8 bp	6,554	
Stock - ACWI x U.S.	9,253	100.0%	66.3%	33.7%	36.3 bp	11,308	
Fixed Income - U.S.	6,557	100.0%	50.1%	49.9%	11.0 bp	3,615	
Fixed Income - U.S. Gov't	5,174	32.3%	5.9%	26.4%	3.1 bp	425	
Fixed Income - Other	2,410	100.0%	50.1%	49.9%	11.0 bp	1,329	
REITs	567	100.0%	72.5%	27.5%	41.1 bp	642	
Real Estate ex-REITs	7,187	100.0%	95.3%	4.7%	61.3 bp	2,054	
Diversified Private Equity	21,109	100.0%	100.0%	0.0%	127.0 bp	74	
Impact of more/less external active vs. lower cost styles						39,018	5.1 bp
						Premium vs. external active¹	
		<u>LPs % of external active</u>					
Real Estate ex-REITs	7,187	41.2%	43.7%	(2.4%)	42.9 bp	-748	
Impact of more/less partnerships as a percentage of external active						-748	(0.1) bp
						Premium vs. direct LP¹	
		<u>Fund of funds % of LPs</u>					
Real Estate ex-REITs	2,964	0.0%	1.8%	(1.8%)	49.7 bp	-259	
Diversified Private Equity	21,109	4.9%	14.2%	(9.4%)	75.4 bp	-14,919	
Impact of more/less fund of funds vs. direct LPs						-15,178	(2.0) bp
Impact of higher use of portfolio level overlays						-126	(0.0) bp
Impact of mix of internal passive, internal active, and external passive ²						522	0.1 bp
Total impact of differences in implementation style						23,489	3.1 bp

Footnotes
*Asset classes where you are implemented the same as peers (i.e. style impact is zero) are not shown.
1. The cost premium is the additional cost of external active management relative to the average of other lower cost implementation styles - internal passive, internal active and external passive.

The net impact of paying more/less for external asset management costs saved 6.5 bps.

Cost impact of paying more/(less) for external asset management

	Style	Your avg holdings in \$mils (A)	Cost in bps			Cost/ (savings) \$000s (A X B)
			Your Fund	Peer median	More/ (less) (B)	
External asset management						
Stock - U.S. Large Cap	active	5,768	10.5	29.6	(19.2)	-11,054
Stock - U.S. Small Cap	active	1,728	62.7	63.8	(1.1)	-198
Stock - Emerging	active	2,060	66.3	58.7	7.5	1,552
Stock - Global	active	4,722	27.0	44.1	(17.2)	-8,099
Stock - ACWI x U.S.	active	9,253	40.3	40.3	0.0	0
Fixed Income - U.S.	active	6,557	11.1	13.9	(2.9)	-1,871
Fixed Income - U.S. Gov't	active	1,670	6.3	5.6	0.7	121
Fixed Income - Other	active	2,410	52.3	13.9	38.4	9,258
REITs	active	567	108.7	46.1	62.6	3,552
Real Estate ex-REITs	active	4,224	70.7	63.2	7.5	3,171
Real Estate ex-REITs	LP	2,964	120.3	105.3	15.0	4,447
Other Real Assets	active	4,783	113.3 ¹	128.5	(15.2)	-7,290
Diversified Private Equity	FoF	1,026	69.3	71.0	(1.6)	-169
Underlying base fees	FoF	1,026	157.0	157.0	0.0	0
Diversified Private Equity	LP	20,083	131.3	152.6	(21.3)	-42,731
Other Private Equity	LP	1,705	174.3 ¹	Excluded	--	--
Total impact of paying more/less for external management						-49,308
Total in bps						(6.5) bp

¹'Excluded' indicates that the asset class was excluded from this analysis due to comparability concerns with peers.

The net impact of differences in oversight, custodial & other costs saved 0.5 bps.

Cost impact of differences in oversight, custodial & other costs

	Your avg holdings in \$mils (A)	Cost in bps			Cost/ (savings) \$000s (A X B)
		Your Fund	Peer median	More/ (less) (B)	
Oversight	76,190	0.4	0.6	(0.2)	-1,516
Consulting	76,190	0.0	0.1	(0.1)	-422
Custodial	76,190	0.0	0.2	(0.2)	-1,417
Audit	76,190	0.0	0.0	(0.0)	-235
Other	76,190	0.1	0.1	(0.0)	-67
Total for oversight, custodial, other					-3,657
Total in bps					(0.5) bp

Key takeaways

Returns

- Your 5-year net total return was 9.3%. This was above the U.S. Public median of 9.0% and above the peer median of 9.0%.
- Your 5-year policy return was 9.5%. This was above the U.S. Public median of 8.7% and above the peer median of 8.6%.

Value added

- Your 5-year net value added was -0.2%. This was below the U.S. Public median of 0.2% and below the peer median of 0.2%.

Cost

- Your investment cost of 72.4 bps was below your benchmark cost of 76.3 bps. This suggests that your fund was slightly low cost compared to your peers. Your fund was slightly low cost because you paid less than peers for similar services.

TAB 8 – Oregon Savings Growth Plan
Annual Review and Update

TOBIAS READ
STATE TREASURER



PHONE 503-378-4329
FAX 503-373-7051

STATE OF OREGON
OREGON STATE TREASURY
159 STATE CAPITOL, 900 COURT ST NE
SALEM, OREGON 97301-4043

Date: September 5, 2018

To: Oregon Investment Council

From: Wil Hiles, Investment Analyst
Michael Viteri, Senior Investment Officer

Re: *Deferred Compensation Program, 2nd Quarter 2018 Report*

Background

The Oregon Savings Growth Plan (the “Plan” or “OSGP”) is the State of Oregon’s 457 Deferred Compensation plan. OSGP is a voluntary supplemental retirement plan that provides eligible state and local government employees the opportunity to defer a portion of their current salary on a pre-tax or after-tax (Roth) basis. These deferrals are invested in various investment options until participants draw funds at retirement. The Plan offers an array of equity and fixed income investment options, a suite of target-date retirement funds, which in aggregate constitute a single investment option, and a self-directed brokerage option. The plan has over 30,000 participants and assets totaling \$2.18 billion, as of June 30, 2018.

With support and assistance from the Oregon State Treasury (OST) Investment Division, the Oregon Investment Council (OIC) is responsible for oversight of the Plan’s **investment program**. Oversight of Plan **administration** is the responsibility of the Oregon Public Employees Retirement System Board (“PERS Board”), with support from OSGP staff. Additional oversight is provided by a seven-member Deferred Compensation Advisory Committee (the “Advisory Committee”) established under ORS 243.505.

OSGP Performance

**Oregon Savings Growth Plan
Performance Results
As of June 30, 2018**

Fund Option Benchmarks	Performance (%)					
	3 Months	YTD	1 Year	3 Years	5 Years	10 Years
Short-Term Fixed Option	0.40	0.71	1.14	0.48	0.23	0.14
<i>91 Day T-Bill</i>	0.45	0.81	1.36	0.68	0.42	0.35
Stable Value Option	0.48	0.92	1.77	1.54	1.40	1.65
<i>91 Day T-Bill</i>	0.45	0.81	1.36	0.68	0.42	0.35
<i>Rolling Average 5 Year CMT*</i>	0.40	0.79	1.53	1.36	1.39	2.18
Active Fixed Income Option	0.06	-0.99	0.56	2.31	2.79	4.50
<i>Barclays US Aggregate Bond Index</i>	-0.16	-1.62	-0.40	1.72	2.27	3.72
Large Company Value Stock Option	1.17	-1.70	6.70	8.15	10.38	8.54
<i>Russell 1000 Value Index</i>	1.18	-1.69	6.77	8.26	10.34	8.49
Stock Index Option	3.86	3.16	14.61	11.47	13.16	10.10
<i>Russell 3000 Index</i>	3.89	3.22	14.78	11.58	13.29	10.23
Large Company Growth Stock Option	5.72	7.16	22.26	14.80	16.10	11.44
<i>Russell 1000 Growth Index</i>	5.76	7.25	22.51	14.98	16.36	11.83
International Stock Option	-3.94	-4.22	6.61	4.94	6.23	3.29
<i>MSCI ACWI ex-US (net) Index</i>	-2.61	-3.77	7.28	5.07	6.37	2.81
Small Company Stock Option	7.37	6.70	17.75	10.57	12.27	10.78
<i>Russell 2000 Index</i>	7.75	7.66	17.57	10.96	12.95	11.06
Socially Responsible Stock Option	2.69	2.44	13.46	11.13	N/A	N/A
<i>Russell 3000 Index</i>	3.89	3.22	14.78	11.58	N/A	N/A
Real Return Option	0.06	-0.80	4.08	0.87	N/A	N/A
<i>CPI + 3%</i>	1.98	4.00	6.22	4.97	N/A	N/A
BlackRock LifePath Retirement	0.71	-0.33	4.66	4.29	4.91	4.98
BlackRock LifePath 2020	0.76	-0.28	5.44	4.84	5.72	5.13
BlackRock LifePath 2025	0.97	-0.13	6.68	5.62	6.50	5.50
BlackRock LifePath 2030	1.14	0.11	7.88	6.43	7.31	5.90
BlackRock LifePath 2035	1.32	0.15	8.83	6.99	7.82	6.11
BlackRock LifePath 2040	1.46	0.25	9.76	7.55	8.38	6.33
BlackRock LifePath 2045	1.59	0.33	10.39	7.92	8.78	6.50
BlackRock LifePath 2050	1.62	0.33	10.59	8.04	9.00	6.69
BlackRock LifePath 2055	1.62	0.33	10.57	8.03	9.12	N/A
BlackRock LifePath 2060	1.61	0.33	10.54	8.04	N/A	N/A

*CMT is the Constant Maturity Treasury Yield.

Performance shown for periods longer than one year is annualized.

All reported returns are net of fees. OSGP has two types of fees: investment management and administrative fees.

Administrative fees are comprised of State of Oregon administration, recordingkeeping, custody, trust, and communications fees.

Additional OSGP Data

Fund Name	Market Value (\$)	% of Total	Plan Participants	IM Fees (bps)	Admin Fees (bps)	Total Fees (bps)
Short-Term Fixed Option	50,217,898	2.3%	3,192	11	11.9	23
Stable Value Option	213,648,261	9.8%	7,335	38	11.9	50
Active Fixed Income Option	110,966,980	5.1%	6,345	18	11.9	30
Large Company Value Stock Option	189,865,012	8.7%	10,056	3	11.9	15
Stock Index Option	253,577,604	11.6%	9,505	4	11.9	16
Large Company Growth Stock Option	249,253,270	11.4%	11,310	3	11.9	15
International Stock Option	117,134,733	5.4%	9,437	38	11.9	50
Small Company Stock Option	278,463,186	12.8%	11,393	39	11.9	51
Real Return Option	4,127,246	0.2%	584	53	11.9	65
Socially Responsible Investment Option	12,097,953	0.6%	1,306	18	11.9	30
BlackRock LifePath Retirement Fund	195,632,323	9.0%	3,771	9	11.9	21
BlackRock LifePath 2020 Fund	142,337,413	6.5%	3,264	9	11.9	21
BlackRock LifePath 2025 Fund	108,383,758	5.0%	3,533	9	11.9	21
BlackRock LifePath 2030 Fund	79,902,853	3.7%	3,480	9	11.9	21
BlackRock LifePath 2035 Fund	58,855,010	2.7%	3,414	9	11.9	21
BlackRock LifePath 2040 Fund	39,287,852	1.8%	3,075	9	11.9	21
BlackRock LifePath 2045 Fund	25,674,674	1.2%	2,593	9	11.9	21
BlackRock LifePath 2050 Fund	23,288,556	1.1%	2,023	9	11.9	21
BlackRock LifePath 2055 Fund	8,704,556	0.4%	1,073	9	11.9	21
BlackRock LifePath 2060 Fund	5,086,817	0.2%	632	9	11.9	21
Self-Directed Brokerage Option	14,183,542	0.7%	204	0	11.9	12
Total	2,180,689,496	100%				

Source: Market Value & Plan Participants data, OSGP recordkeeper, Voya Financial. Fee estimation, OST.

The plan’s Self-Directed Brokerage Option, executed through Charles Schwab, finished the quarter with \$14.2 million in assets, or 0.7% of total OSGP assets.

Investment Structure Evaluation

At staff’s request, Callan, the Plan’s retained investment consultant, performed an evaluation on the Plan’s investment options. Staff identified that select investment options, specifically, the International Equity Option, the Short-Term Fixed Income Option, and the Real Return Option, warranted further attention. After completing further analysis and discussing potential solutions, staff and Callan recommend the following changes:

- 1) Add Arrowstreet ACWI ex-US to and remove BlackRock ACWI ex-US from International Equity Option**
OSGP’s International Equity Option is currently comprised of five underlying funds: AQR ACWI ex-US; BlackRock MSCI ACWI ex-US Index; DFA International Core Equity; Lazard International Equity; and DFA Emerging Markets Core Equity. In an attempt to more closely the investment managers with those in the Oregon Public Employees Retirement Fund (OPERF), staff and Callan are proposing to include Arrowstreet ACWI ex-US, as a replacement to the BlackRock MSCI ACWI ex-US Index Fund. Previously, Arrowstreet did not offer a suitable investment vehicle for inclusion within a defined contribution plan. Although this proposed change would increase the expense ratio for the International Equity Option from 38 bps to approximately 57 bps, staff and Callan remain comfortable with the addition given the high conviction held in Arrowstreet.

2) Consolidate Capital Preservation Options – remove Short-Term Fixed Income Option

OSGP currently offers two options serving the purpose of capital preservation, the Short-Term Fixed Income Option and the Stable Value Option. Given the redundancy of these options, staff and Callan are proposing to streamline the capital preservation options by eliminating the Short-Term Fixed Income Option and transferring associated assets to the Stable Value Option. Staff and Callan believe this change will reduce participant confusion of having multiple investment options serving the same purpose, while capturing some attractive features offered by the Stable Value Option. Further, the Stable Value Option has approximately 10% of total plan assets, while the Short-Term Fixed Income Option has just over 2% of total assets.

3) Simplify Real Return Option – remove GMO Benchmark Free Allocation and Wellington Real Total Return

OSGP's Real Return Option is currently comprised of three underlying funds: GMO Benchmark Free Allocation Fund; Wellington Real Return Fund; and SSgA Real Assets Fund. Although the current structure is a reasonable one, it also has exposure to sizable equity beta, as both the GMO and Wellington funds have exposure to traditional equities, as well as absolute return and style premia strategies. Utilization of the Real Return Option has been low, with approximately 0.2% of total plan assets. Accordingly, staff and Callan recommend simplifying the Real Return Option by eliminating GMO and Wellington from the fund structure, while retaining SSgA, making it more of a pure-play inflation sensitive option. The SSgA Real Assets Fund is well diversified across several inflation-sensitive asset classes such as commodities, REITs, and global infrastructure. Furthermore, the SSgA Real Assets fund is passively implemented so this proposed change would significantly reduce fees for the Real Return Option from 56 bps to 22 bps.

Oregon Savings Growth Plan Annual Review

Michael Viteri, Senior Investment Officer

Wil Hiles, Investment Analyst

September 19, 2018



Oregon State Treasury

Agenda

1. Plan Overview

2. Investment Option Performance

3. Investment Structure Review

Plan Overview

Background

The Oregon Savings Growth Plan (OSGP) is a 457(b) deferred compensation plan that provides Oregon public employees with a convenient way to save for retirement by allowing them to contribute a portion of their salary on a pre- or after-tax (Roth) basis.

Plan Overview

Participation

ORS 243.474 authorizes the state to offer its 457 deferred compensation program to all Oregon public **employers** including local governments and school districts.

All Oregon state **employees** are eligible to participate, so long as their employer has adopted the plan.

Plan Overview

Oversight, Authority & Administration

Oregon Savings Growth Plan (OSGP)	
Investment Oversight	OIC and Treasury
Trustee	PERS Board
Recordkeeper	Voya Financial
Custodian	State Street
Administrator	OSGP/PERS
Consultant	Callan
Additional Oversight	OSGP Advisory Committee

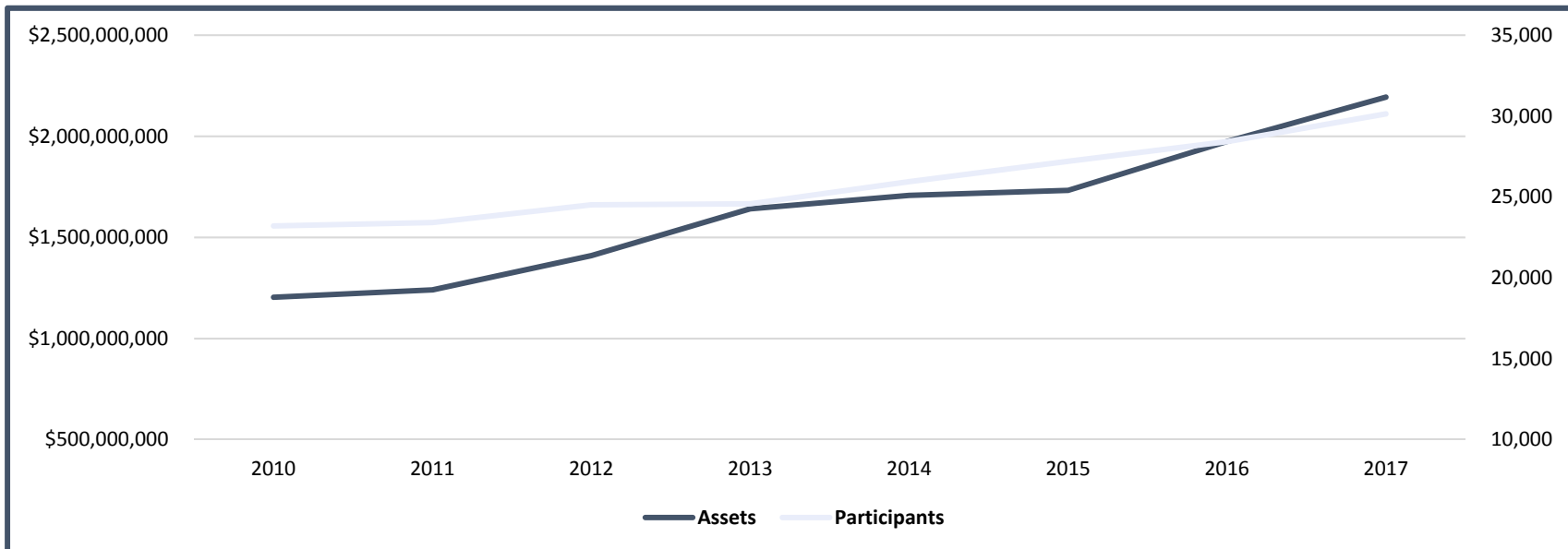
Plan Overview

Plan Statistics

Oregon Savings Growth Plan (OSGP)

Assets	\$2.18 billion
Participants	30,146

Change in Total Plan Assets & Participants



Source: Voya Financial, as of June 30, 2018.

Plan Overview

Investment Options

Core Funds	
Short-Term Fixed Income Option	Large Company Growth Stock Option
Stable Value Option	International Stock Option
Active Fixed Income Option	Small Company Stock Option
Large Company Value Stock Option	Real Return Option
Stock Index Option	Socially Responsible Investment Option

Asset Allocation Funds
BlackRock LifePath Funds

Self-Directed Brokerage Option
Schwab Personal Choice Retirement Account (PCRA)

Plan Overview

Investment Options

	Market Values		Participants
Short-Term Fixed Income Option	\$50,217,898	2.3%	3,192
Stable Value Option	\$213,648,261	9.8%	7,335
Active Fixed Income Option	\$110,966,980	5.1%	6,345
Large Company Value Stock Option	\$189,865,012	8.7%	10,056
Stock Index Option	\$253,577,604	11.6%	9,505
Large Company Growth Stock Option	\$249,253,270	11.4%	11,310
International Stock Option	\$117,134,733	5.4%	9,437
Small Company Stock Option	\$278,463,186	12.8%	11,393
Real Return Option	\$4,127,246	0.2%	584
Socially Responsible Investment Option	\$12,097,953	0.6%	1,306
BlackRock LifePath Funds	\$687,153,812	31.6%	26,858
Self-Directed Brokerage Option	\$14,183,542	0.7%	204
Total	\$2,180,689,496	100.0%	

Source: Voya Financial, as of June 30, 2018.

Agenda

1. Plan Overview

2. Investment Option Performance

3. Investment Structure Review

September 19, 2018



Second Quarter 2018 Performance Review

Anne Heaphy

Fund Sponsor Consulting

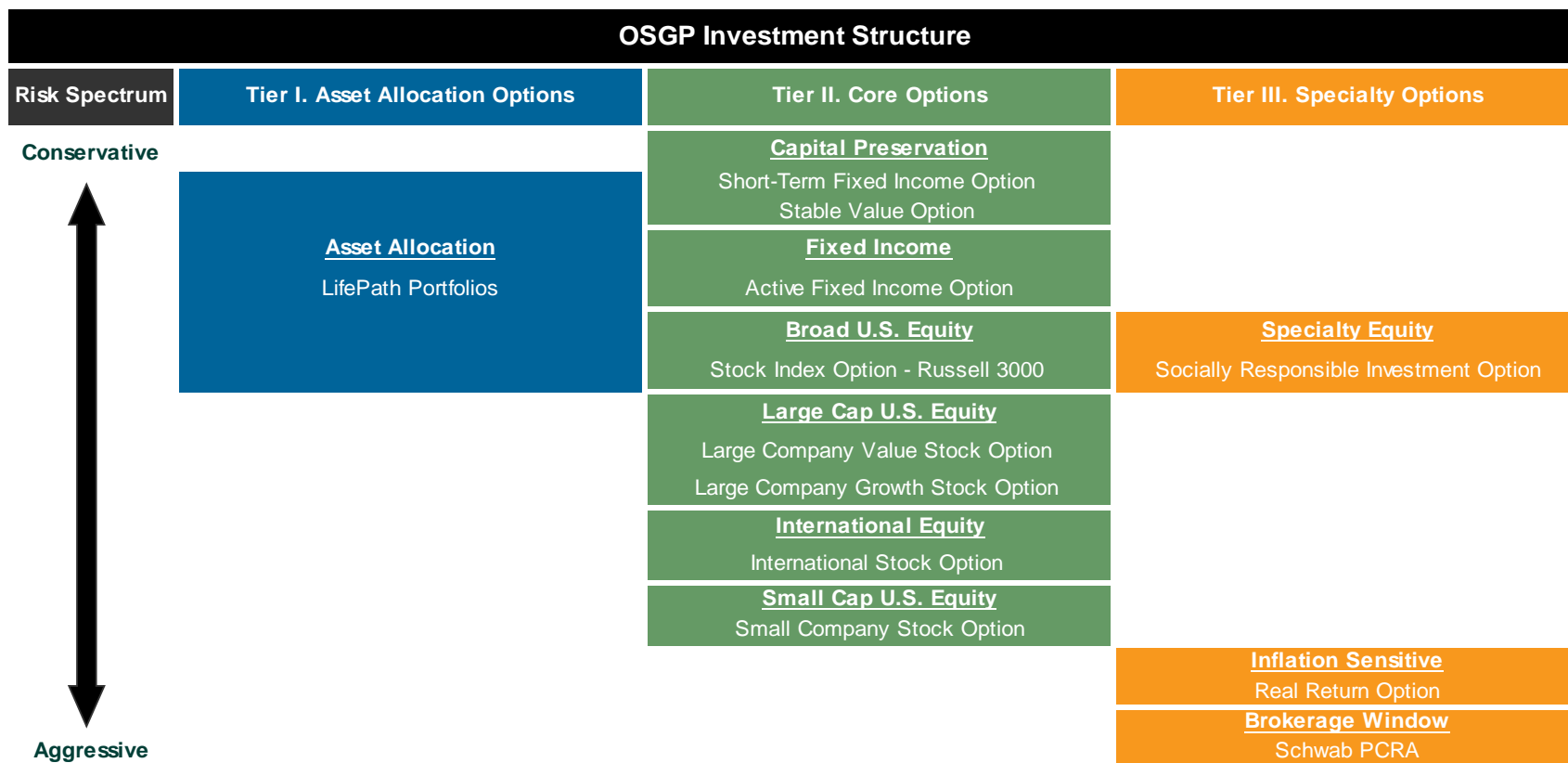
Uvan Tseng, CFA

Fund Sponsor Consulting



OSGP Review

OSGP Investment Structure



Asset Distribution

	June 30, 2018				March 31, 2018	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Tier I - Asset Allocation Options						
Target Date Funds	\$686,960,890	31.51%	\$6,021,346	\$6,384,958	\$674,554,587	31.68%
LifePath Index Retirement Fund L	195,649,576	8.97%	(2,588,406)	1,484,480	196,753,501	9.24%
LifePath Index 2020 Fund L	142,248,054	6.52%	(829,240)	795,074	142,282,221	6.68%
LifePath Index 2025 Fund L	108,376,931	4.97%	1,836,522	1,149,904	105,390,505	4.95%
LifePath Index 2030 Fund L	79,910,330	3.66%	2,051,432	745,583	77,113,314	3.62%
LifePath Index 2035 Fund L	58,759,852	2.69%	1,718,465	688,550	56,352,837	2.65%
LifePath Index 2040 Fund L	39,258,645	1.80%	1,729,410	545,009	36,984,227	1.74%
LifePath Index 2045 Fund L	25,670,322	1.18%	1,017,461	391,429	24,261,432	1.14%
LifePath Index 2050 Fund L	23,307,876	1.07%	481,562	425,480	22,400,834	1.05%
LifePath Index 2055 Fund L	8,703,565	0.40%	96,032	114,271	8,493,262	0.40%
LifePath Index 2060 Fund L	5,075,738	0.23%	508,107	45,178	4,522,453	0.21%
Tier II - Core Investment Options						
Short-Term Fixed Income Option						
State Street	50,310,486	2.31%	1,256,406	172,682	48,881,398	2.30%
Stable Value Option						
Galliard	213,587,945	9.80%	(339,705)	1,023,191	212,904,459	10.00%
Active Fixed Income Option						
BlackRock / DoubleLine / Wellington	110,878,866	5.09%	(1,443,561)	(68,031)	112,390,459	5.28%
Stock Index Option						
BlackRock	253,638,495	11.63%	128,407	8,610,500	244,899,588	11.50%
Large Company Value Stock Option						
BlackRock	189,728,400	8.70%	(1,893,635)	2,039,403	189,582,632	8.90%
Large Company Growth Stock Option						
BlackRock	249,416,321	11.44%	(744,635)	14,371,173	235,789,783	11.07%
International Stock Option						
AQR / BlackRock / DFA* / Lazard	116,832,763	5.36%	230,431	(6,101,834)	122,704,166	5.76%
Small Company Stock Option						
BlackRock / Callan / DFA	278,596,406	12.78%	261,267	19,151,617	259,183,523	12.17%
Tier III - Specialty Options						
Socially Responsible Investment Option						
TIAA-CREF	12,094,452	0.55%	(900,999)	1,606,538	11,388,913	0.53%
Real Return Option						
GMO / State Street / Wellington	4,121,348	0.19%	224,378	(125,902)	4,022,872	0.19%
Brokerage Window	14,221,745	0.65%	1,111,630	177,595	12,932,519	0.61%
Total Fund	\$2,180,388,117	100.0%	\$3,911,329	\$47,241,889	\$2,129,234,898	100.0%

Net of Fee Returns

Periods Ended June 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Tier I - Asset Allocation Options					
LifePath Index Retirement Fund L	0.74	4.82	4.46	5.08	5.17
LifePath Index Retirement Benchmark	0.76	4.79	4.46	5.09	5.18
LifePath Index 2020 Fund L	0.79	5.59	5.00	5.89	5.32
LifePath Index 2020 Benchmark	0.81	5.55	4.98	5.87	5.31
LifePath Index 2025 Fund L	1.00	6.83	5.78	6.68	5.70
LifePath Index 2025 Benchmark	1.03	6.77	5.75	6.63	5.67
LifePath Index 2030 Fund L	1.17	7.93	6.49	7.37	6.02
LifePath Index 2030 Benchmark	1.21	7.86	6.41	7.29	5.97
LifePath Index 2035 Fund L	1.35	8.99	7.17	8.00	6.31
LifePath Index 2035 Benchmark	1.39	8.90	7.05	7.91	6.24
LifePath Index 2040 Fund L	1.50	9.92	7.73	8.56	6.53
LifePath Index 2040 Benchmark	1.55	9.81	7.59	8.44	6.45
LifePath Index 2045 Fund L	1.62	10.55	8.10	8.97	6.69
LifePath Index 2045 Benchmark	1.66	10.42	7.94	8.84	6.60
LifePath Index 2050 Fund L	1.65	10.75	8.22	9.19	6.89
LifePath Index 2050 Benchmark	1.71	10.66	8.07	9.07	6.81
LifePath Index 2055 Fund L	1.65	10.74	8.21	9.31	--
LifePath Index 2055 Benchmark	1.71	10.66	8.07	9.19	--
LifePath Index 2060 Fund L	1.64	10.70	8.21	--	--
LifePath Index 2060 Benchmark	1.71	10.66	8.13	--	--

Net of Fee Returns

Periods Ended June 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Tier II - Core Investment Options					
Short-Term Fixed Income Option	0.43	1.29	0.64	0.39	0.33
3-month Treasury Bill	0.45	1.36	0.68	0.42	0.35
Stable Value Option	0.54	2.06	1.85	1.71	1.97
3-month Treasury Bill	0.45	1.36	0.68	0.42	0.35
Active Fixed Income Option	0.10	0.73	2.51	2.95	4.68
Bloomberg Aggregate Index	(0.16)	(0.40)	1.72	2.27	3.72
Stock Index Option	3.92	14.82	11.68	13.38	10.30
Russell 3000 Index	3.89	14.78	11.58	13.29	10.23
Large Company Value Stock Option	1.22	6.86	8.32	10.59	8.69
Russell 1000 Value Index	1.18	6.77	8.26	10.34	8.49
Large Company Growth Stock Option	5.76	22.39	14.97	16.22	11.50
Russell 1000 Growth Index	5.76	22.51	14.98	16.36	11.83
International Stock Option	(3.86)	6.91	5.25	6.44	3.31
MSCI ACWI ex US Index	(2.61)	7.28	5.07	5.99	2.54
Small Company Stock Option	7.41	17.86	10.67	12.34	10.80
Russell 2000 Index	7.75	17.57	10.96	12.46	10.60
Tier III - Specialty Options					
Socially Responsible Investment Option	2.75	13.54	11.20	--	--
Russell 3000 Index	3.89	14.78	11.58	13.29	10.23
Real Return Option	0.11	4.24	0.99	--	--
Consumer Price Index + 3%	1.84	6.09	4.74	4.37	4.36

Investment Options Fee Summary

Asset Class and Strategy	Total Annual Operating Expense Ratio*	Institutional Peer Group Median
Asset Allocation Options		
LifePath Index Retirement, 2020 – 2060 Funds; L	0.090%	0.08%
Capital Preservation		
Short-Term Fixed Income Option	0.110%	0.50%
Stable Value Option	0.383%	0.72%
Fixed Income		
Active Fixed Income Option	0.178%	0.76%
U.S. Large Cap Equity		
Stock Index Option	0.040%	0.04%
Large Company Value Stock Option	0.031%	0.04%
Large Company Growth Stock Option	0.030%	0.04%
U.S. Small Cap Equity		
Small Company Stock Option	0.393%	1.13%
International Equity		
International Stock Option	0.379%	1.10%
Specialty Options		
Socially Responsible Investment Option	0.180%	0.90%
Real Return Option	0.531%	1.32%

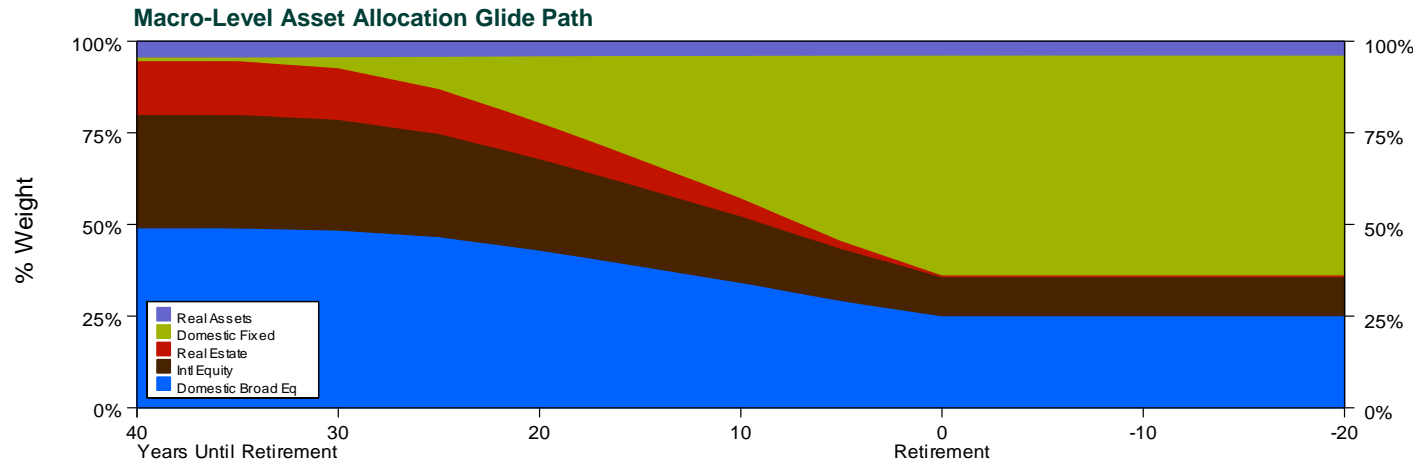
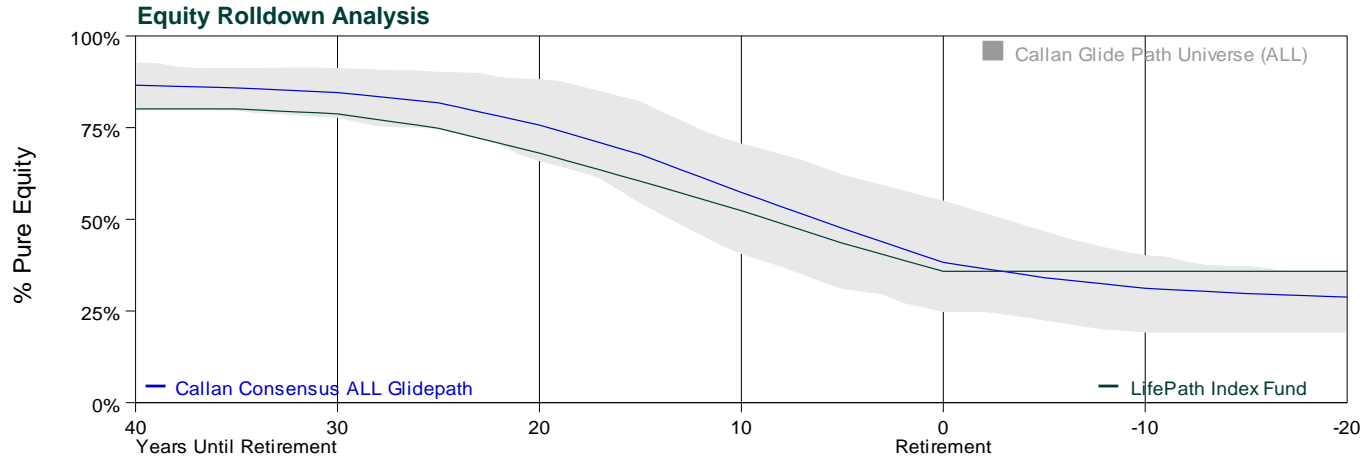
*Fee data provided by OST.



OSGP Investment Option Performance

BlackRock LifePath Index Target Date Funds

GlidePath Analysis as of June 30, 2018



LifePath Index Retirement Fund

Periods Ended June 30, 2018

Performance vs Callan Target Date Retirement Income (Institutional Net)

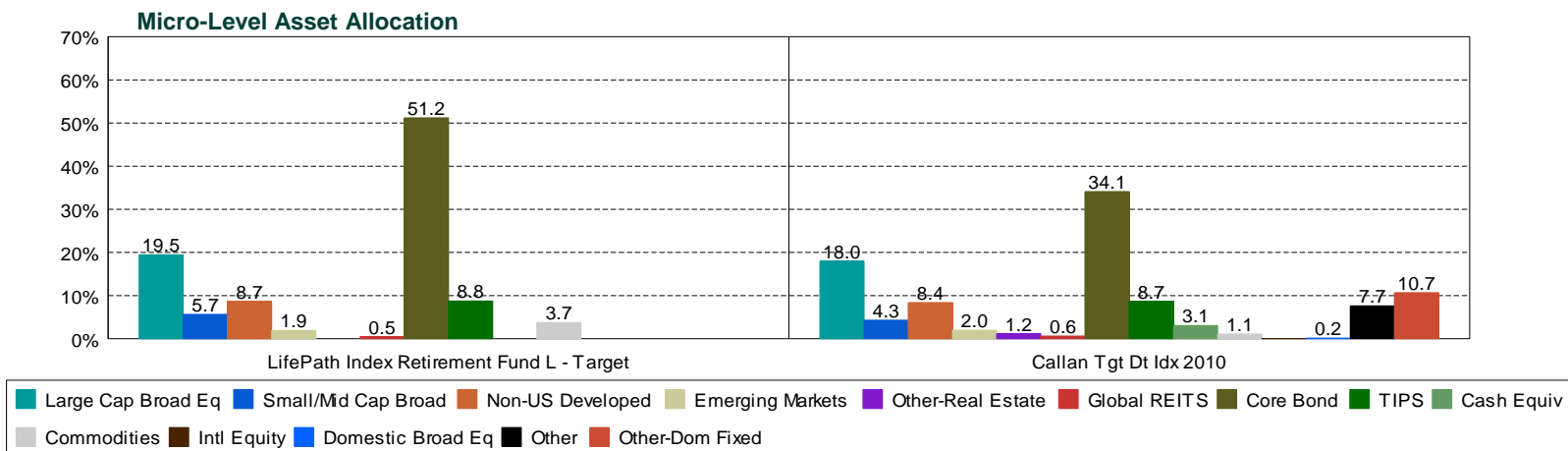
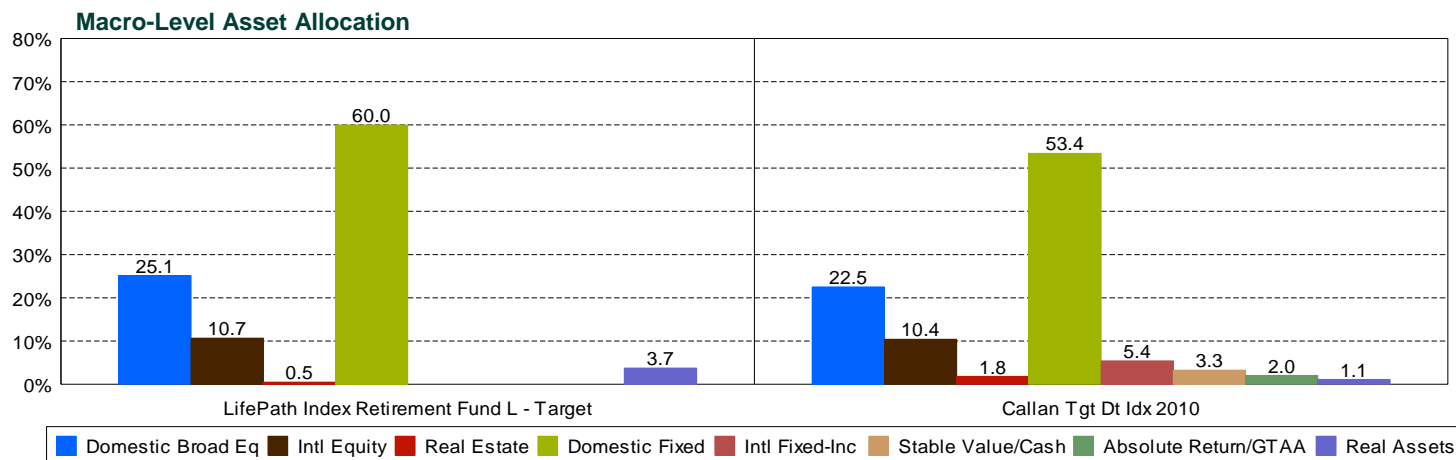


10th Percentile	0.85	5.09	4.85	5.56	5.61	5.53
25th Percentile	0.70	4.30	4.26	5.10	5.00	5.20
Median	0.43	3.78	3.95	4.28	4.24	4.84
75th Percentile	0.18	3.24	3.48	3.87	3.85	4.11
90th Percentile	(0.11)	2.57	2.98	3.51	3.24	3.46

LifePath Index Retirement Fund L	●	0.74	4.82	4.46	5.08	4.98	5.17
LifePath Index Retirement Benchmark	■	0.76	4.79	4.46	5.09	4.98	5.18

LifePath Index Retirement Fund

Asset Allocation as of June 30, 2018



LifePath Index 2030 Fund

Periods Ended June 30, 2018

Performance vs Callan Target Date 2030 (Institutional Net)



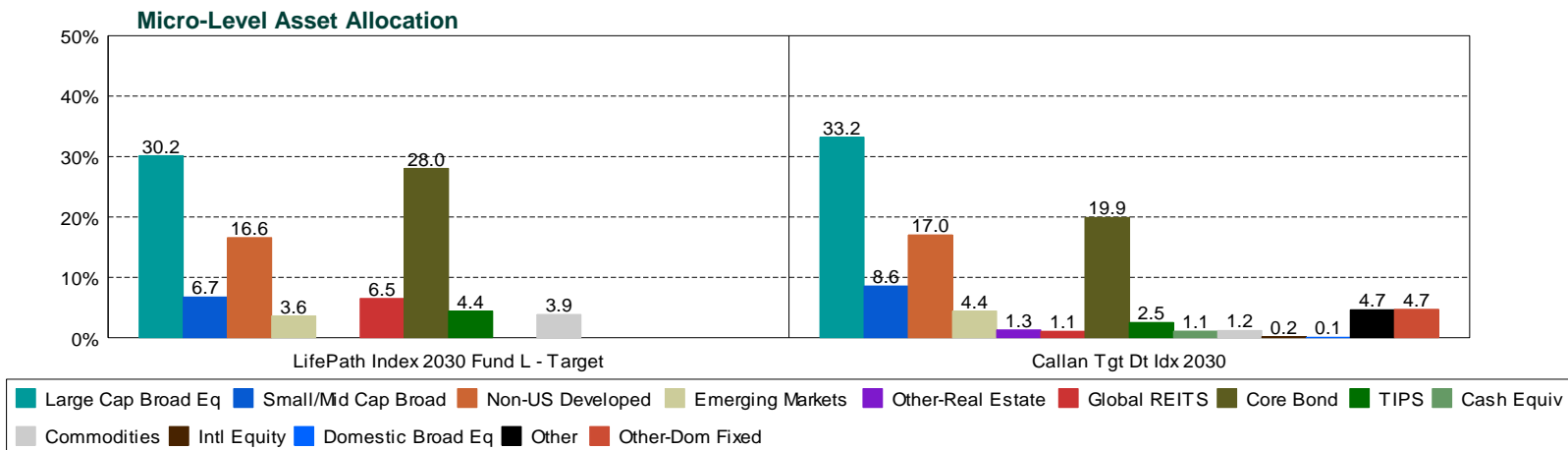
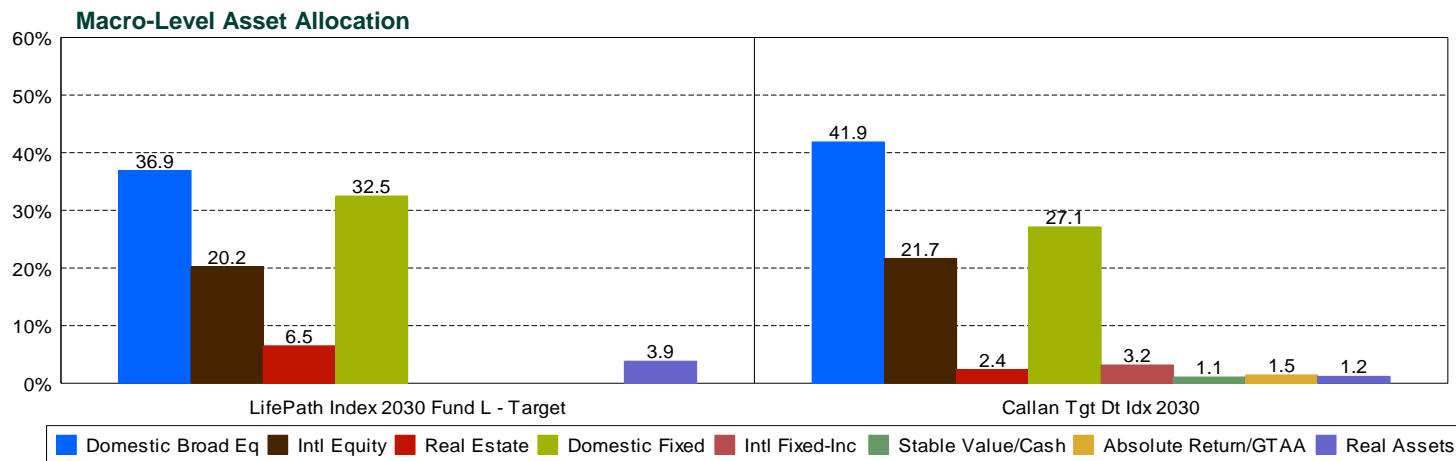
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	1.60	9.68	7.75	9.35	8.65	7.55
25th Percentile	1.19	8.79	7.28	8.66	8.25	6.98
Median	0.90	8.15	6.87	8.06	7.71	6.58
75th Percentile	0.61	7.17	6.16	7.28	6.85	6.03
90th Percentile	0.19	6.53	5.68	6.65	6.27	5.30

LifePath Index 2030 Fund L ● 1.17 7.93 6.49 7.37 6.89 6.02

LifePath Index 2030 Benchmark ■ 1.21 7.86 6.41 7.29 6.83 5.97

LifePath Index 2030 Fund

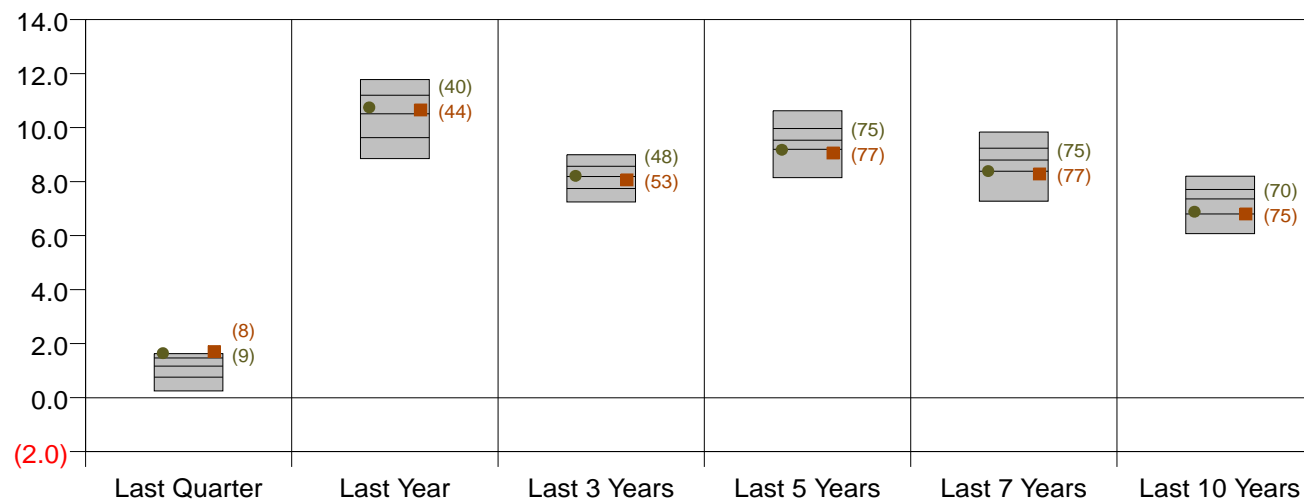
Asset Allocation as of June 30, 2018



LifePath Index 2050 Fund

Periods Ended June 30, 2018

Performance vs Callan Target Date 2050 (Institutional Net)



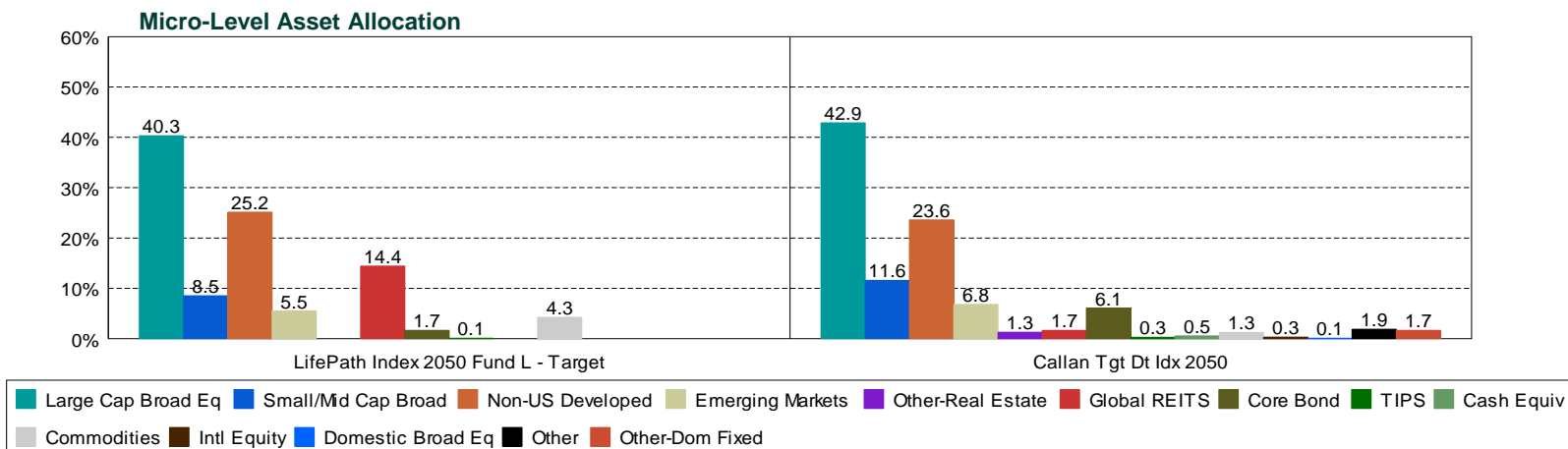
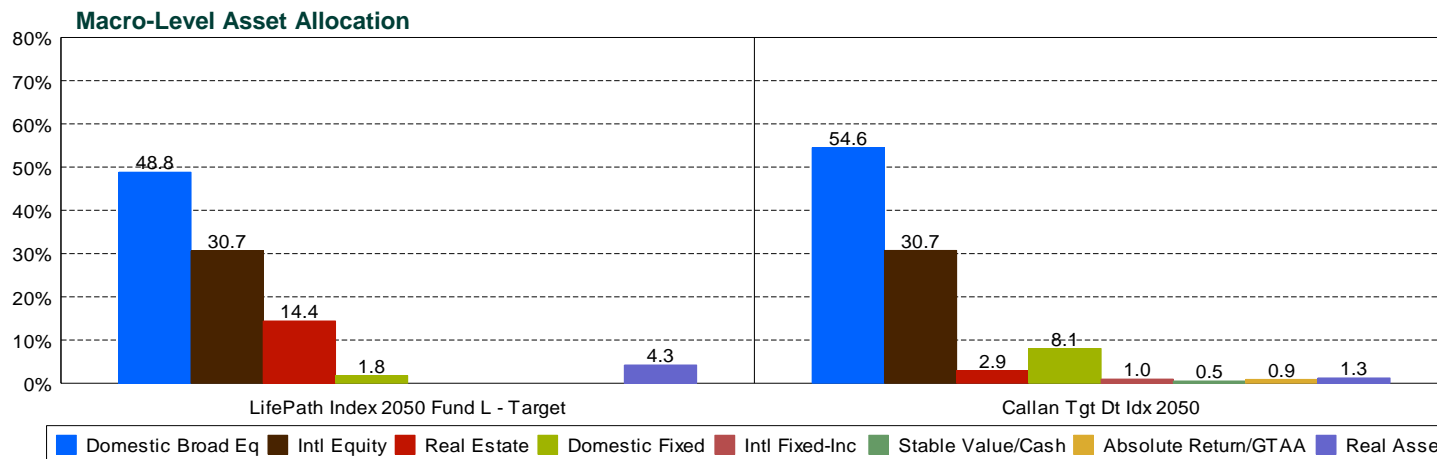
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	1.63	11.78	9.00	10.63	9.83	8.21
25th Percentile	1.47	11.20	8.57	9.97	9.24	7.71
Median	1.17	10.51	8.19	9.54	8.80	7.36
75th Percentile	0.76	9.63	7.75	9.19	8.39	6.81
90th Percentile	0.25	8.86	7.25	8.15	7.28	6.08

LifePath Index 2050 Fund L ● 1.65 10.75 8.22 9.19 8.40 6.89

LifePath Index 2050 Benchmark ■ 1.71 10.66 8.07 9.07 8.29 6.81

LifePath Index 2050 Fund

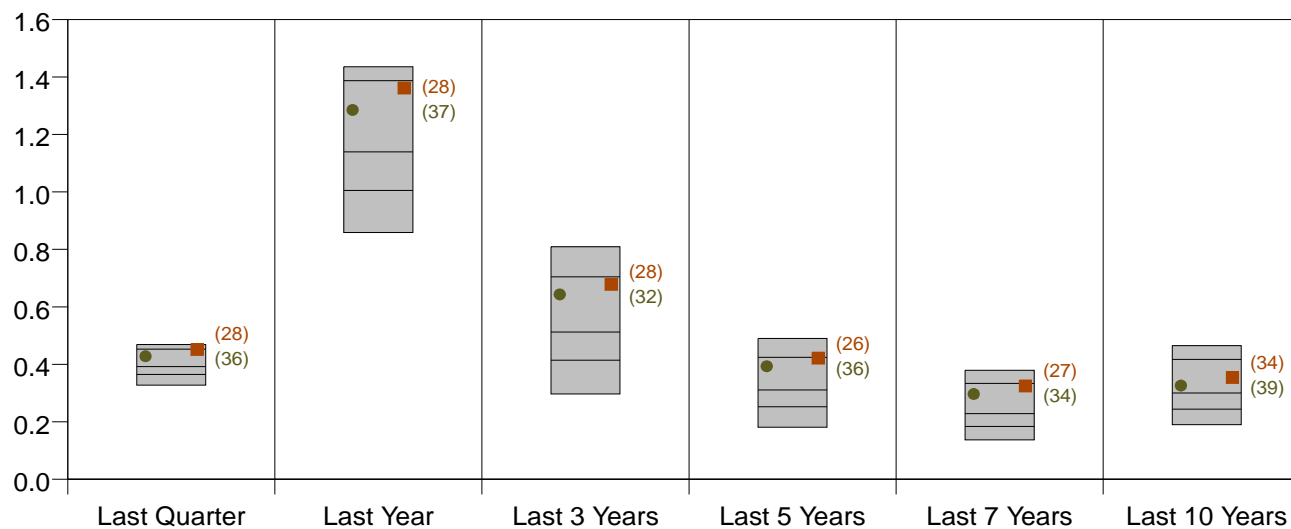
Asset Allocation as of June 30, 2018



Short Term Fixed Income Option

Periods Ended June 30, 2018

Performance vs Callan Money Market Instrument Funds (Institutional Net)



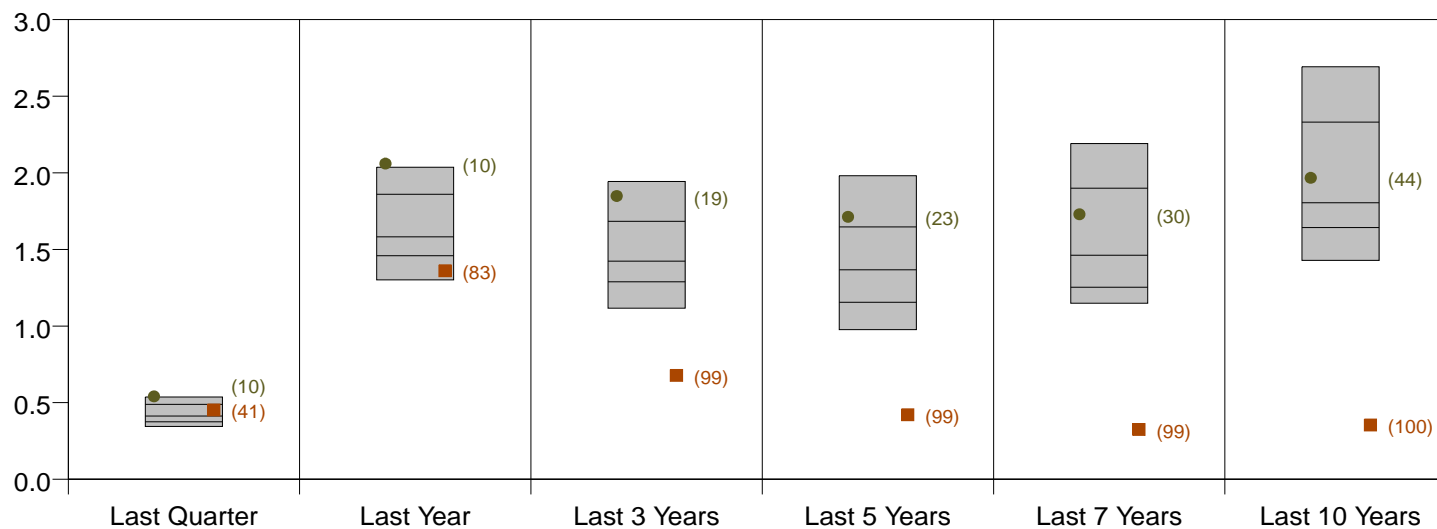
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	0.47	1.44	0.81	0.49	0.38	0.47
25th Percentile	0.45	1.39	0.70	0.42	0.33	0.42
Median	0.39	1.14	0.51	0.31	0.23	0.30
75th Percentile	0.37	1.01	0.41	0.25	0.18	0.24
90th Percentile	0.33	0.86	0.30	0.18	0.14	0.19

Short-Term Fixed Income Option ●	0.43	1.29	0.64	0.39	0.30	0.33
3-month Treasury Bill ■	0.45	1.36	0.68	0.42	0.33	0.35

Stable Value Option

Periods Ended June 30, 2018

Performance vs Callan Stable Value CT (Institutional Net)

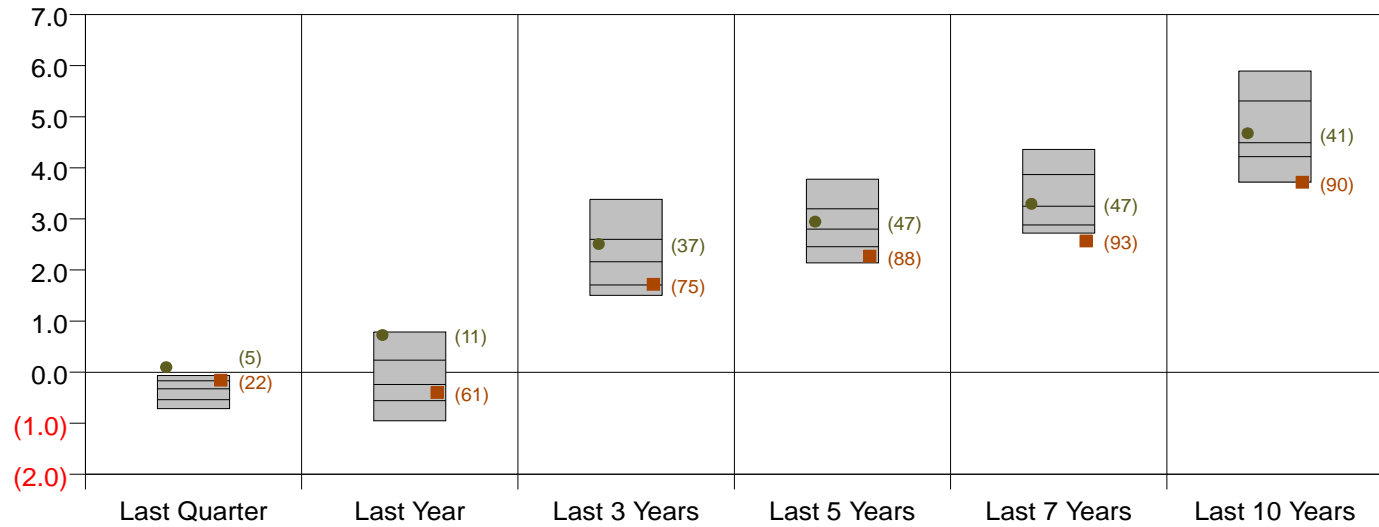


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	0.54	2.04	1.94	1.98	2.19	2.69
25th Percentile	0.49	1.86	1.68	1.65	1.90	2.33
Median	0.41	1.58	1.42	1.37	1.46	1.81
75th Percentile	0.38	1.46	1.29	1.16	1.25	1.64
90th Percentile	0.35	1.30	1.12	0.98	1.15	1.43
Stable Value Option ●	0.54	2.06	1.85	1.71	1.73	1.97
3-month Treasury Bill ■	0.45	1.36	0.68	0.42	0.33	0.35

Active Fixed Income Option

Periods Ended June 30, 2018

Performance vs Callan Core Plus Mutual Funds (Institutional Net)



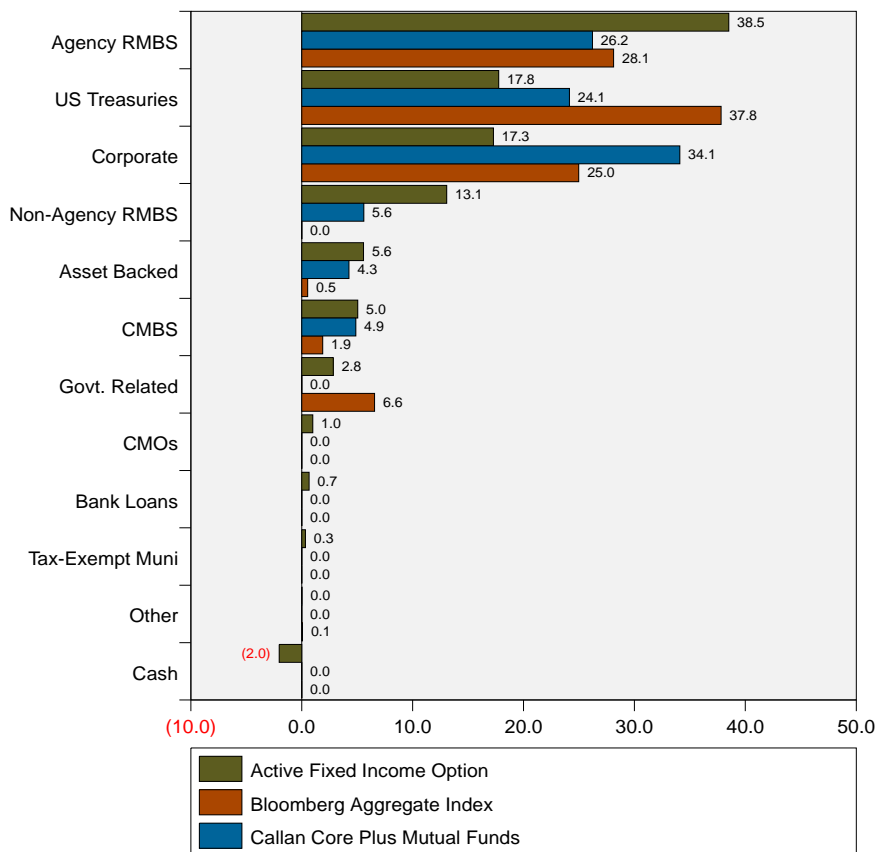
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(0.07)	0.79	3.38	3.78	4.36	5.90
25th Percentile	(0.17)	0.24	2.60	3.20	3.87	5.31
Median	(0.33)	(0.24)	2.16	2.80	3.25	4.49
75th Percentile	(0.54)	(0.56)	1.71	2.46	2.88	4.22
90th Percentile	(0.71)	(0.95)	1.51	2.14	2.72	3.72

Active Fixed Income Option	●	0.10	0.73	2.51	2.95	3.30	4.68
Bloomberg Aggregate Index	■	(0.16)	(0.40)	1.72	2.27	2.57	3.72

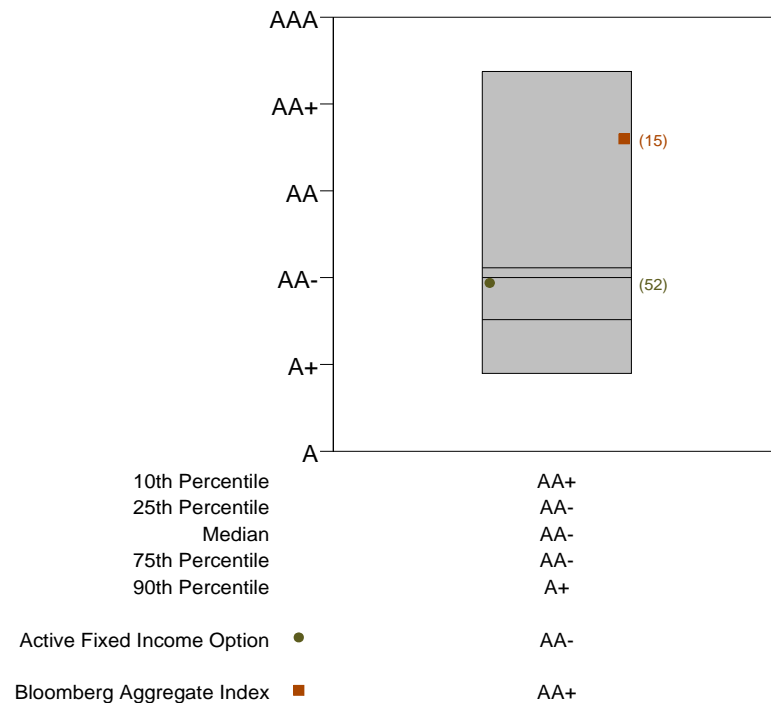
Active Fixed Income Option

Portfolio Characteristics as of June 30, 2018

**Sector Allocation
June 30, 2018**



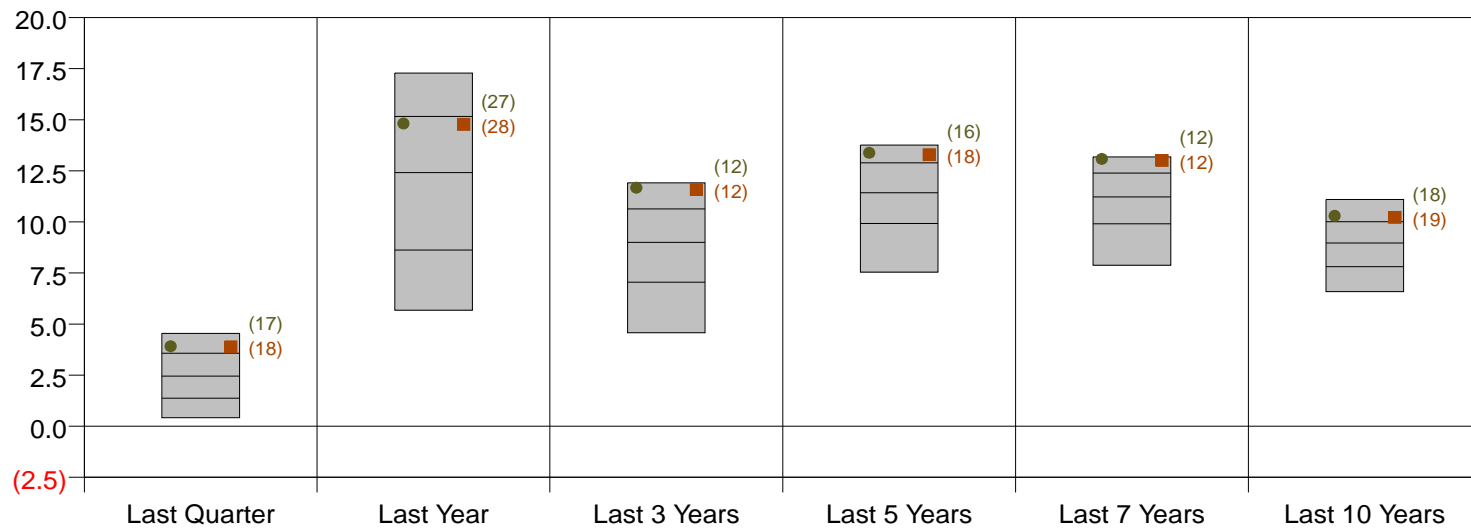
**Quality Ratings
vs Callan Core Plus Mutual Funds**



Stock Index Option

Periods Ended June 30, 2018

Performance vs Callan All Cap Core Mutual Funds (Institutional Net)



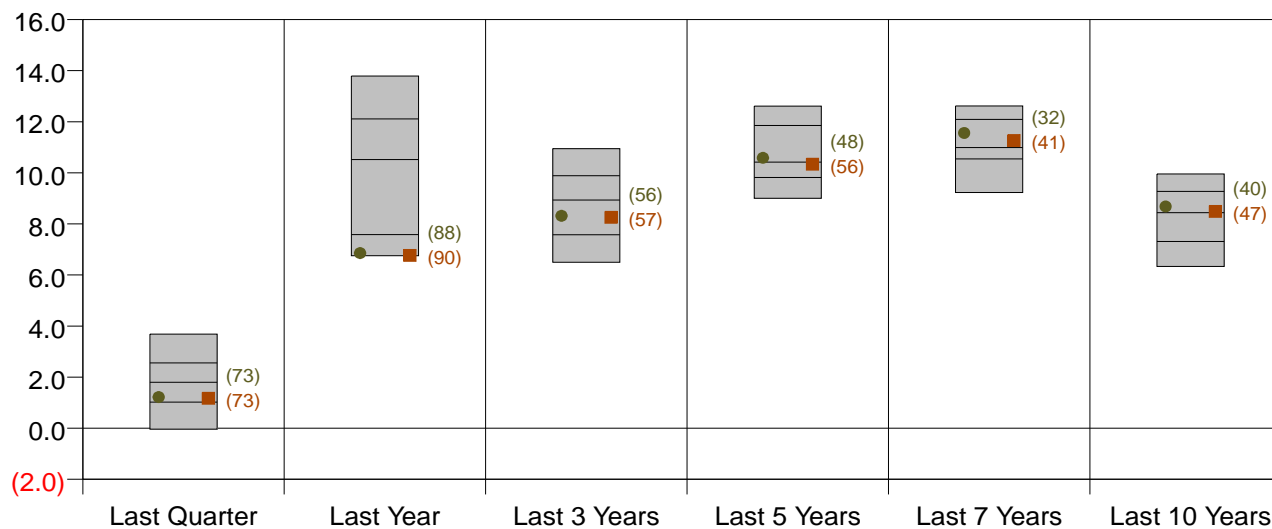
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	4.55	17.29	11.92	13.77	13.19	11.10
25th Percentile	3.57	15.17	10.64	12.90	12.39	10.01
Median	2.45	12.41	9.00	11.43	11.23	8.98
75th Percentile	1.37	8.63	7.05	9.93	9.91	7.81
90th Percentile	0.42	5.69	4.58	7.55	7.88	6.60

Stock Index Option ●	3.92	14.82	11.68	13.38	13.09	10.30
Russell 3000 Index ■	3.89	14.78	11.58	13.29	13.01	10.23

Large Company Value Stock Option

Periods Ended June 30, 2018

Performance vs Callan Large Cap Value Mutual Funds (Institutional Net)



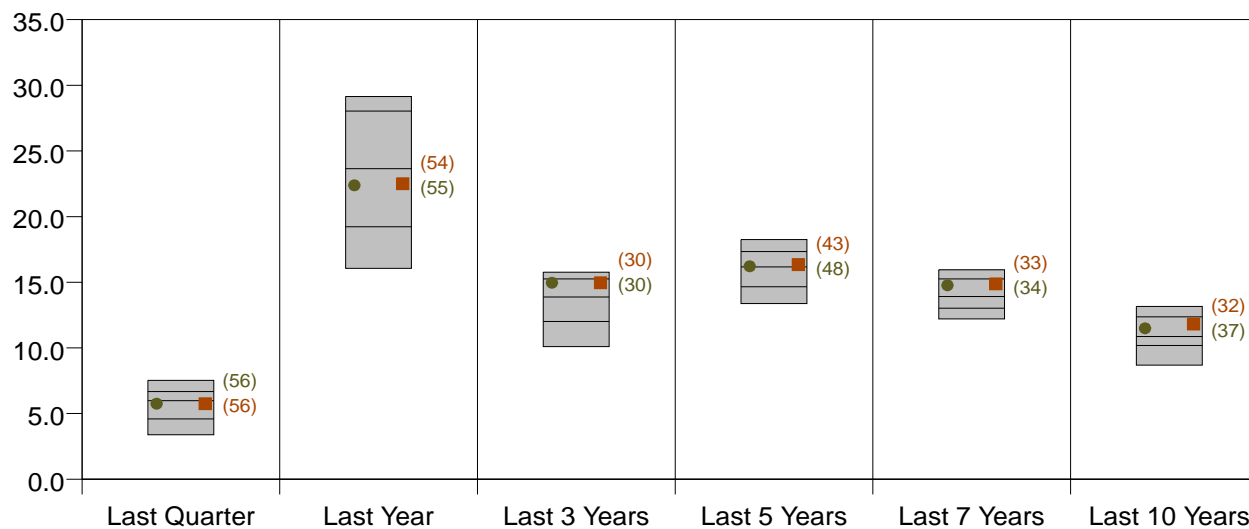
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	3.69	13.79	10.95	12.61	12.62	9.96
25th Percentile	2.56	12.11	9.89	11.85	12.10	9.27
Median	1.80	10.52	8.94	10.42	10.99	8.44
75th Percentile	1.02	7.58	7.58	9.82	10.55	7.31
90th Percentile	(0.04)	6.76	6.50	9.01	9.23	6.34

Large Company Value Stock Option	●	1.22	6.86	8.32	10.59	11.56	8.69
Russell 1000 Value Index	■	1.18	6.77	8.26	10.34	11.27	8.49

Large Company Growth Stock Option

Periods Ended June 30, 2018

Performance vs Callan Large Cap Growth Mutual Funds (Institutional Net)

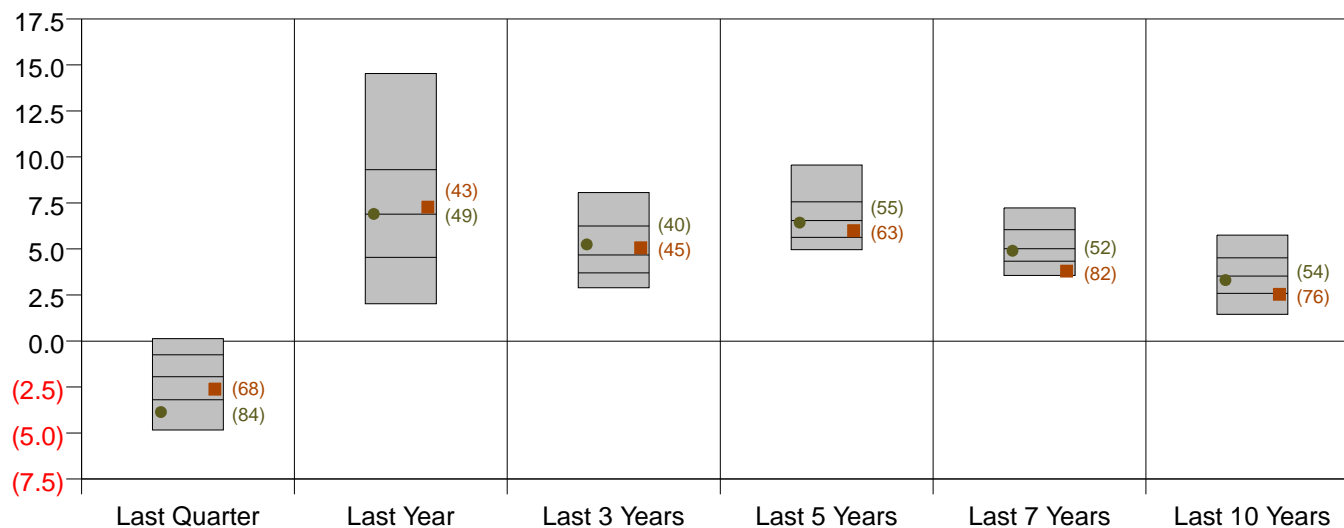


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	7.54	29.14	15.78	18.26	15.95	13.17
25th Percentile	6.69	28.04	15.25	17.34	15.25	12.38
Median	6.00	23.65	13.89	16.17	13.93	10.87
75th Percentile	4.60	19.23	12.02	14.67	13.03	10.19
90th Percentile	3.40	16.07	10.11	13.39	12.21	8.69
Large Company Growth Stock Option ●	5.76	22.39	14.97	16.22	14.77	11.50
Russell 1000 Growth Index ■	5.76	22.51	14.98	16.36	14.88	11.83

International Stock Option

Periods Ended June 30, 2018

Performance vs Callan Non US Equity Mutual Funds (Institutional Net)

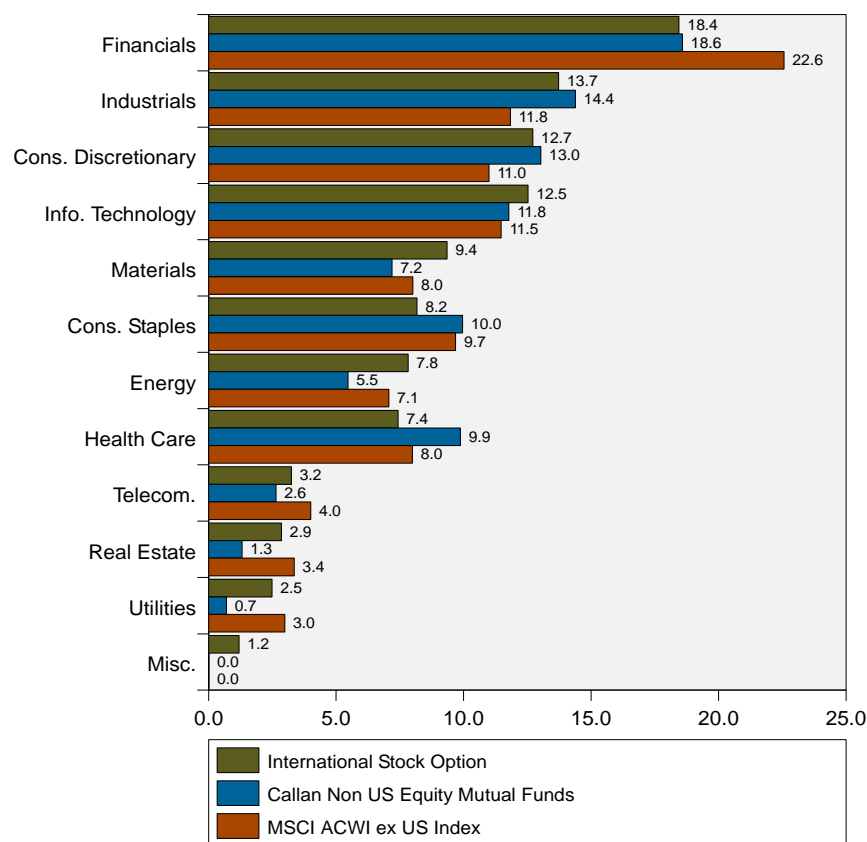


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	0.14	14.53	8.07	9.56	7.23	5.76
25th Percentile	(0.75)	9.31	6.26	7.57	6.05	4.52
Median	(1.93)	6.90	4.68	6.55	5.02	3.54
75th Percentile	(3.19)	4.55	3.70	5.63	4.34	2.60
90th Percentile	(4.83)	2.02	2.90	4.96	3.56	1.45
International Stock Option ●	(3.86)	6.91	5.25	6.44	4.91	3.31
MSCI ACWI ex US Index ■	(2.61)	7.28	5.07	5.99	3.81	2.54

International Stock Option

Portfolio Characteristics as of June 30, 2018

Sector Allocation as of June 30, 2018



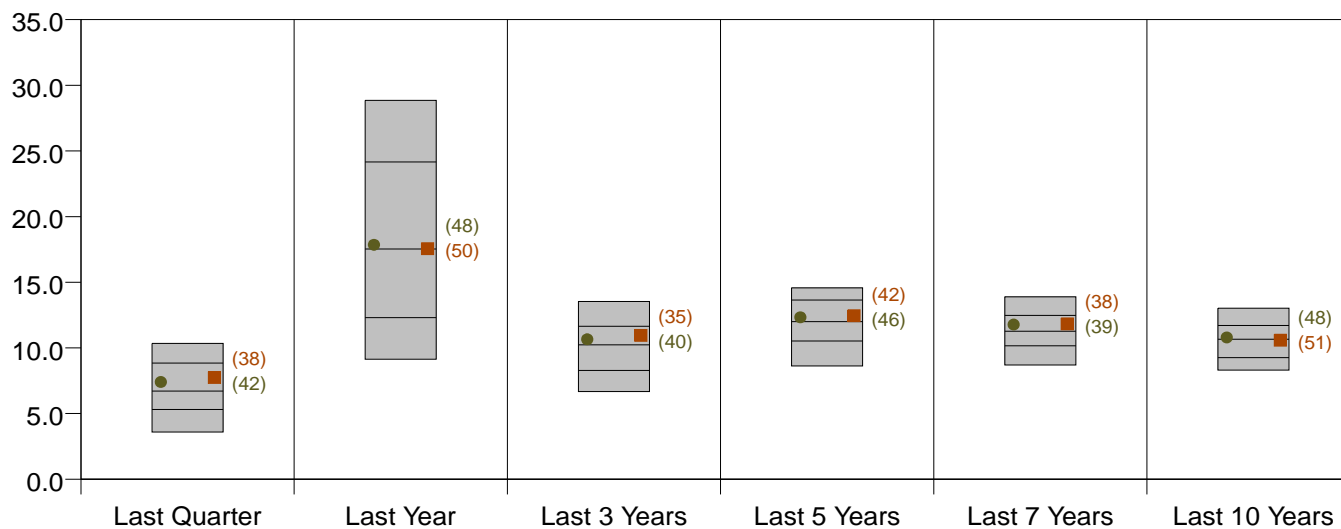
Style Exposure Matrix Holdings as of June 30, 2018

Europe/ Mid East	11.1% (593)	18.8% (685)	15.8% (598)	45.7% (1876)
	11.7% (129)	14.4% (133)	14.1% (193)	40.1% (455)
N. America	2.0% (152)	3.1% (159)	1.8% (110)	6.9% (421)
	2.0% (32)	2.9% (25)	1.6% (33)	6.5% (90)
Pacific	7.1% (1224)	6.5% (944)	10.0% (899)	23.6% (3067)
	8.9% (146)	6.6% (136)	8.8% (187)	24.3% (469)
Emerging/ FM	6.6% (1875)	8.9% (1610)	8.3% (1218)	23.7% (4703)
	8.8% (405)	9.2% (375)	11.1% (355)	29.1% (1135)
Total	26.9% (3844)	37.2% (3398)	35.9% (2825)	100.0% (10067)
	31.3% (712)	33.0% (669)	35.7% (768)	100.0% (2149)
	Value	Core	Growth	Total

Small Company Stock Option

Periods Ended June 30, 2018

Performance vs Callan Small Cap Mutual Funds (Institutional Net)



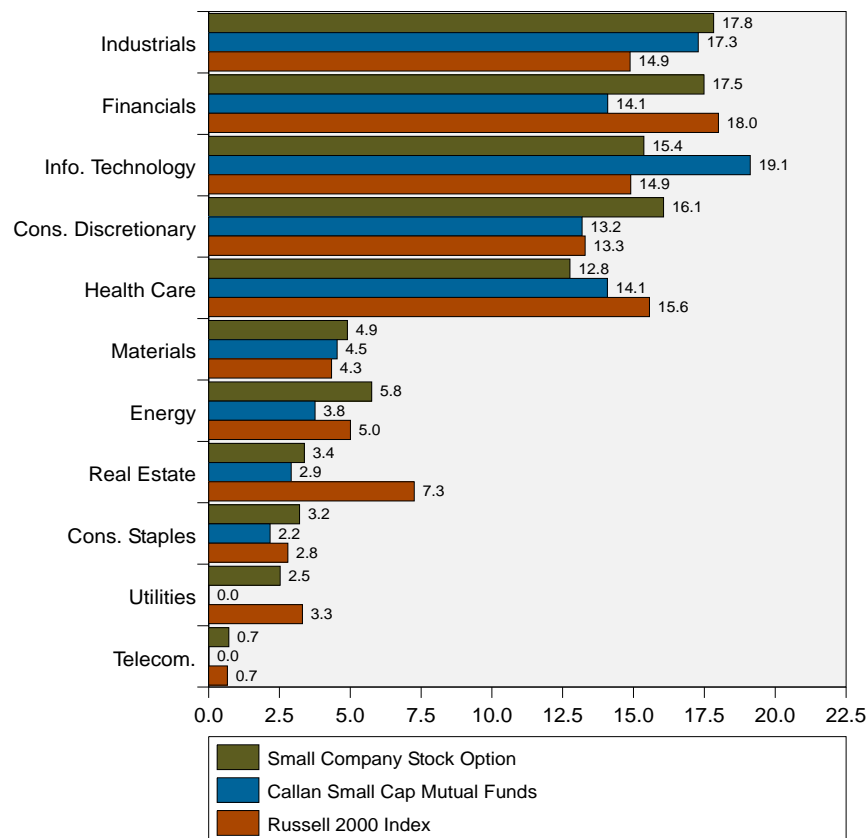
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	10.35	28.86	13.54	14.59	13.90	13.04
25th Percentile	8.86	24.17	11.66	13.66	12.48	11.72
Median	6.71	17.54	10.24	12.01	11.28	10.67
75th Percentile	5.32	12.32	8.29	10.54	10.18	9.26
90th Percentile	3.60	9.14	6.69	8.64	8.70	8.31

Small Company Stock Option ●	7.41	17.86	10.67	12.34	11.79	10.80
Russell 2000 Index ■	7.75	17.57	10.96	12.46	11.83	10.60

Small Company Stock Option

Portfolio Characteristics as of June 30, 2018

**Sector Allocation
June 30, 2018**



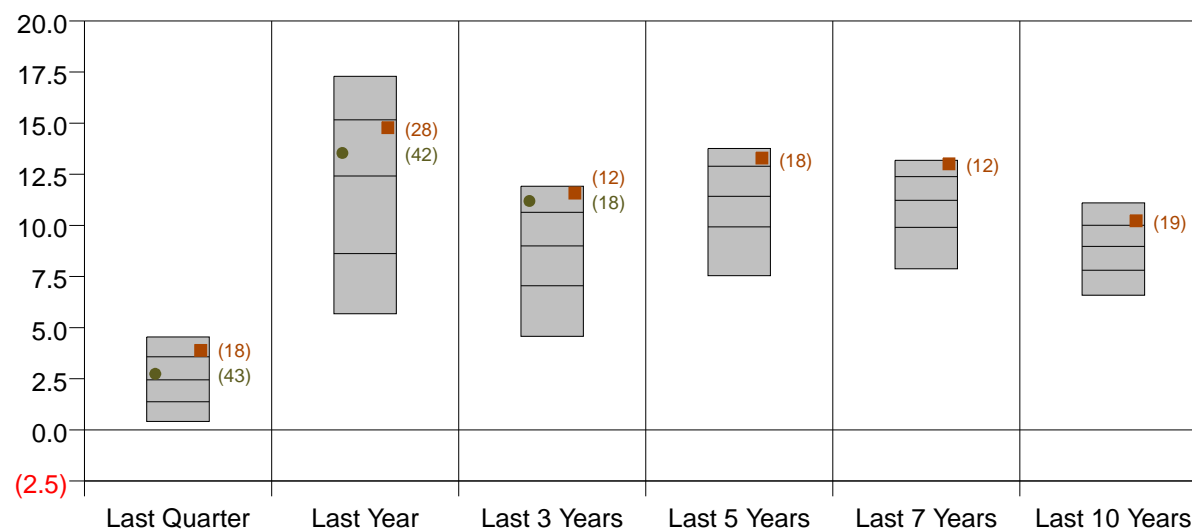
**Style Exposure Matrix
Holdings as of June 30, 2018**

Large	0.0% (0)	0.3% (4)	0.2% (3)	0.5% (7)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	2.2% (43)	3.6% (70)	9.2% (129)	15.1% (242)
	0.8% (5)	1.0% (6)	4.3% (23)	6.2% (34)
Small	18.4% (331)	28.3% (481)	22.3% (370)	69.0% (1182)
	22.2% (286)	32.9% (447)	25.9% (342)	81.0% (1075)
Micro	5.2% (456)	6.4% (540)	3.8% (272)	15.4% (1268)
	4.0% (273)	5.5% (392)	3.4% (229)	12.8% (894)
Total	25.7% (830)	38.7% (1095)	35.6% (774)	100.0% (2699)
	27.0% (564)	39.4% (845)	33.6% (594)	100.0% (2003)
	Value	Core	Growth	Total

Socially Responsible Investment Option

Periods Ended June 30, 2018

Performance vs Callan All Cap Core Mutual Funds (Institutional Net)



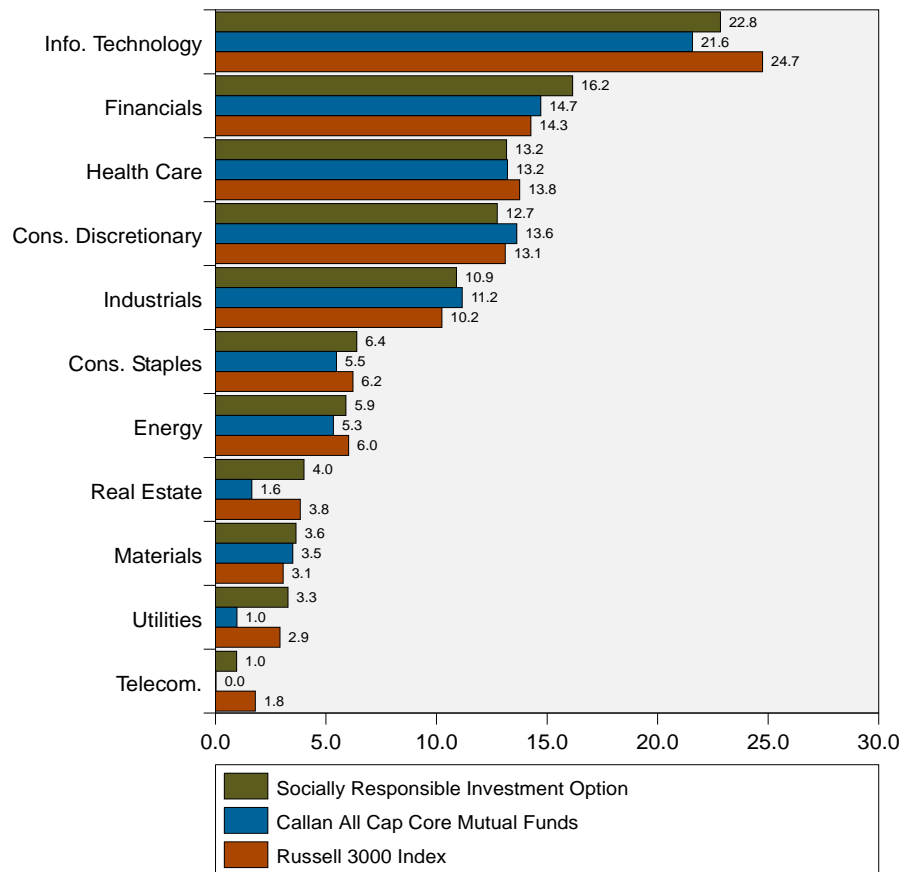
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	4.55	17.29	11.92	13.77	13.19	11.10
25th Percentile	3.57	15.17	10.64	12.90	12.39	10.01
Median	2.45	12.41	9.00	11.43	11.23	8.98
75th Percentile	1.37	8.63	7.05	9.93	9.91	7.81
90th Percentile	0.42	5.69	4.58	7.55	7.88	6.60

Socially Responsible Investment Option	●	2.75	13.54	11.20	--	--	--
Russell 3000 Index	■	3.89	14.78	11.58	13.29	13.01	10.23

Socially Responsible Investment Option

Portfolio Characteristics as of June 30, 2018

**Sector Allocation
June 30, 2018**

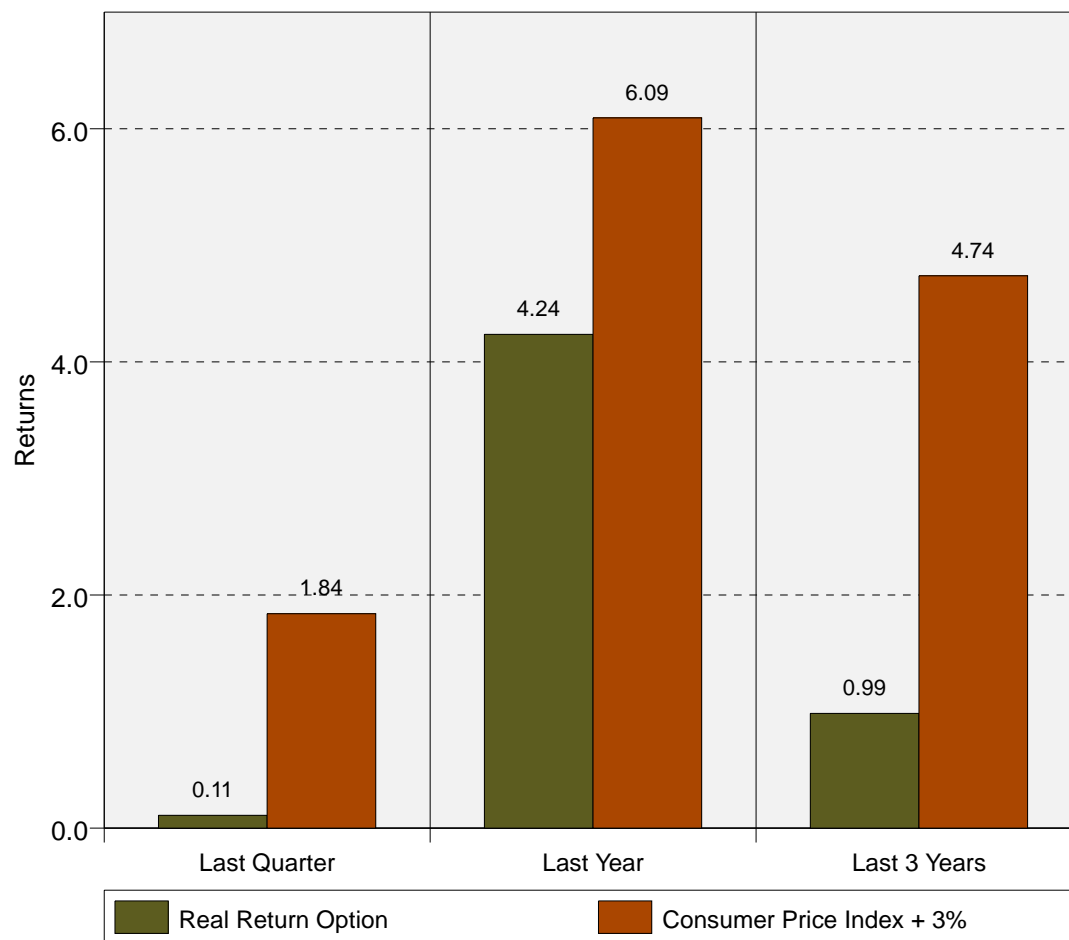


**Style Exposure Matrix
Holdings as of June 30, 2018**

	Value	Core	Growth	Total
Large	28.2% (60) 27.3% (110)	25.9% (54) 20.3% (99)	23.5% (41) 26.6% (89)	77.6% (155) 74.2% (298)
Mid	3.4% (49) 4.8% (177)	6.1% (84) 6.5% (215)	6.2% (72) 5.9% (205)	15.7% (205) 17.3% (597)
Small	1.2% (70) 2.3% (340)	2.1% (101) 2.9% (481)	2.6% (92) 2.4% (374)	6.0% (263) 7.5% (1195)
Micro	0.2% (17) 0.3% (273)	0.3% (34) 0.4% (392)	0.2% (21) 0.3% (230)	0.7% (72) 1.0% (895)
Total	33.0% (196) 34.7% (900)	34.4% (273) 30.2% (1187)	32.6% (226) 35.1% (898)	100.0% (695) 100.0% (2985)

Real Return Option

Periods Ended June 30, 2018



Agenda

1. Plan Overview

2. Investment Option Performance

3. Investment Structure Review

Investment Structure Review

Investment Options

Core Funds	
Short-Term Fixed Income Option	Large Company Growth Stock Option
Stable Value Option	International Stock Option
Active Fixed Income Option	Small Company Stock Option
Large Company Value Stock Option	Real Return Option
Stock Index Option	Socially Responsible Investment Option

Asset Allocation Funds
BlackRock LifePath Funds

Self-Directed Brokerage Option
Schwab Personal Choice Retirement Account (PCRA)

Investment Structure Review

Core Funds – Underlying Investment Options

Core Funds	
Short-Term Fixed Income Option	State Street STIF
Stable Value Option	Galliard Stable Value
Active Fixed Income Option	BlackRock US Debt (33%) / DoubleLine Total Return Bond (33%) / Wellington Core Bond Plus (33%)
Large Company Value Stock Option	BlackRock Russell 1000 Value Index
Stock Index Option	BlackRock Russell 3000 Index
Large Company Growth Stock Option	BlackRock Russell 1000 Growth Index
International Stock Option	AQR ACWI ex-US (25%) / BlackRock ACWI ex-US (25%) / Lazard ACWI ex-US (25%) / DFA Int'l Core (15%) / DFA EM Core (10%)
Small Company Stock Option	DFA Small Cap (35%) / Callan Dividend Trust (35%) / BlackRock Russell 2000 Index (30%)
Real Return Option	GMO Benchmark Free Allocation (33%) / Wellington Real Total Return (33%) / State Street Real Assets (33%)
Socially Responsible Investment Option	TIAA Social Choice

Investment Structure Review

Evaluation & Recommendations

Staff and Callan recommend approval of three investment option changes:

- 1) Add Arrowstreet ACWI ex-US to and remove BlackRock ACWI ex-US from International Equity Option
- 2) Consolidate Capital Preservation Options – remove Short-Term Fixed Income Option
- 3) Simplify Real Return Option – remove GMO Benchmark Free Allocation and Wellington Real Total Return

TAB 9 – Asset Allocations & NAV Updates

Asset Allocations at July 31, 2018

Regular Account								Target Date Funds	Variable Fund	Total Fund
OPERF	Policy	Target ¹	\$ Thousands	Pre-Overlay	Overlay	Net Position	Actual	\$ Thousands	\$ Thousands	\$ Thousands
Public Equity	32.5-42.5%	37.5%	28,498,145	37.7%	(833,150)	27,664,995	36.6%	1,022,337	558,057	29,245,389
Private Equity	13.5-21.5%	17.5%	15,699,580	20.8%		15,699,580	20.8%			15,699,580
Total Equity	50.0-60.0%	55.0%	44,197,725	58.5%	(833,150)	43,364,575	57.4%	1,230,623		44,944,969
Opportunity Portfolio	0-3%	0.0%	1,743,295	2.3%		1,743,295	2.3%			1,743,295
Fixed Income	15-25%	20.0%	14,099,006	18.7%	2,172,519	16,271,525	21.5%			17,502,148
Real Estate	9.5-15.5%	12.5%	7,851,499	10.4%	(4,600)	7,846,899	10.4%			7,846,899
Alternative Investments	0-12.5%	12.5%	6,338,056	8.4%		6,338,056	8.4%			6,338,056
Cash ²	0-3%	0.0%	1,348,704	1.8%	(1,334,769)	13,935	0.0%	2,452	16,387	
TOTAL OPERF		100%	\$ 75,578,285	100.0%	\$ -	\$ 75,578,285	100.0%	\$ 2,252,959	\$ 560,509	\$ 78,391,753

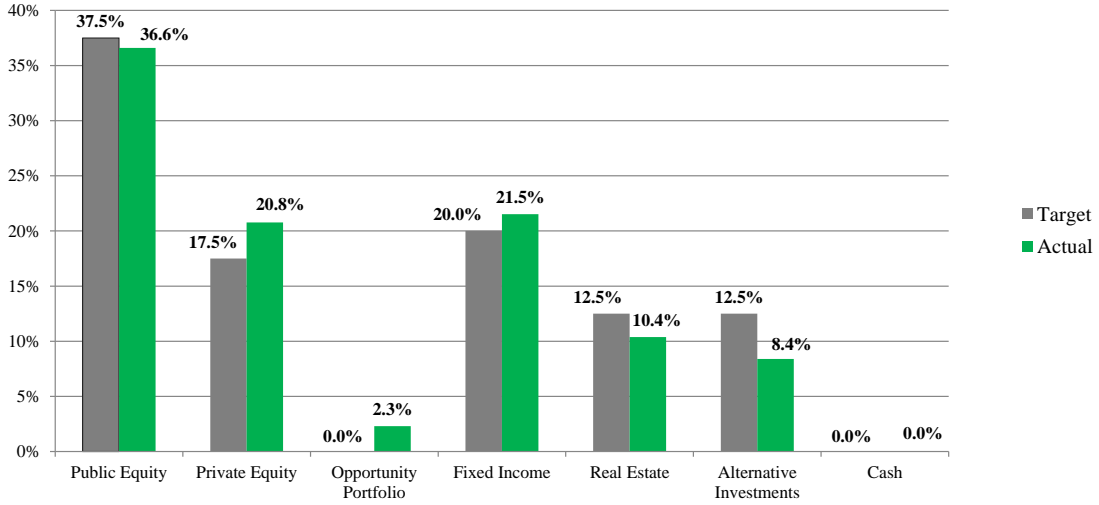
¹Targets established in June 2015. Interim policy benchmark consists of: 40% MSCI ACWI IMI Net, 22.5% Custom FI Benchmark, 20% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), & 5% CPI+400bps.

²Includes cash held in the policy implementation overlay program.

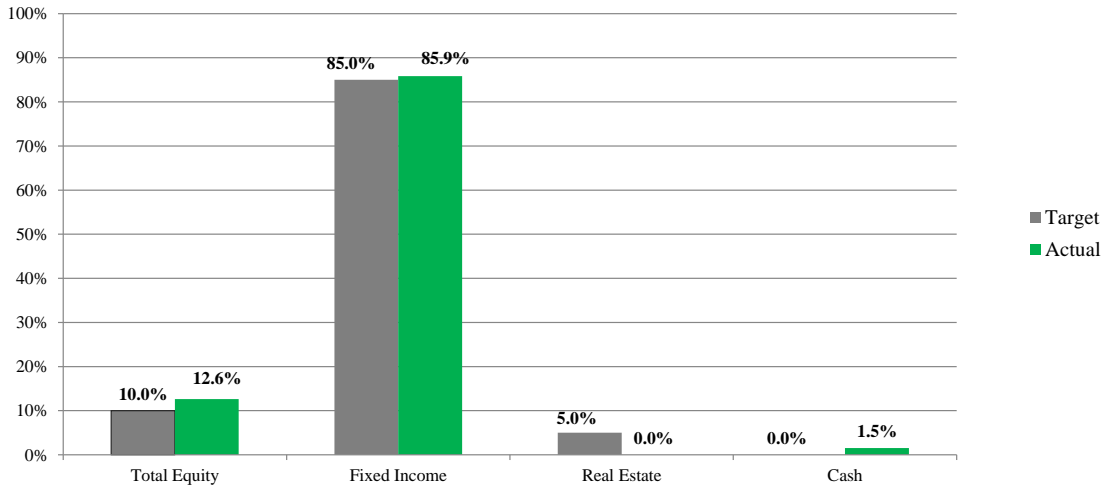
SAIF	Policy	Target	\$ Thousands	Actual
Total Equity	7-13%	10.0%	605,489	12.6%
Fixed Income	80-90%	85.0%	4,118,463	85.9%
Real Estate	0-7%	5.0%	0	0.0%
Cash	0-3%	0%	73,194	1.5%
TOTAL SAIF			\$ 4,797,146	100.0%

CSF	Policy	Target	\$ Thousands	Actual
Global Equities	40-50%	45%	816,649	49.6%
Private Equity	8-12%	10%	213,324	12.9%
Total Equity	58-62%	55%	1,029,973	62.5%
Fixed Income	25-35%	25%	437,244	26.5%
Real Estate	8-12%	10%	60,173	3.7%
Diversifying Strategies	8-12%	10%	90,728	5.5%
Cash	0-3%	0%	29,789	1.8%
TOTAL CSF			\$ 1,647,907	100.0%

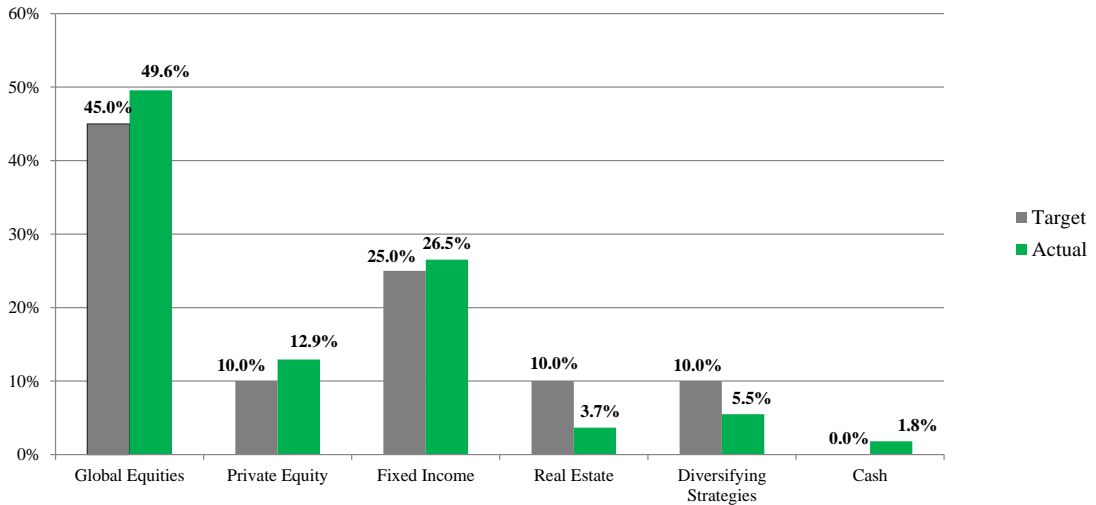
OPERF Asset Allocation



SAIF Asset Allocation



CSF Asset Allocation

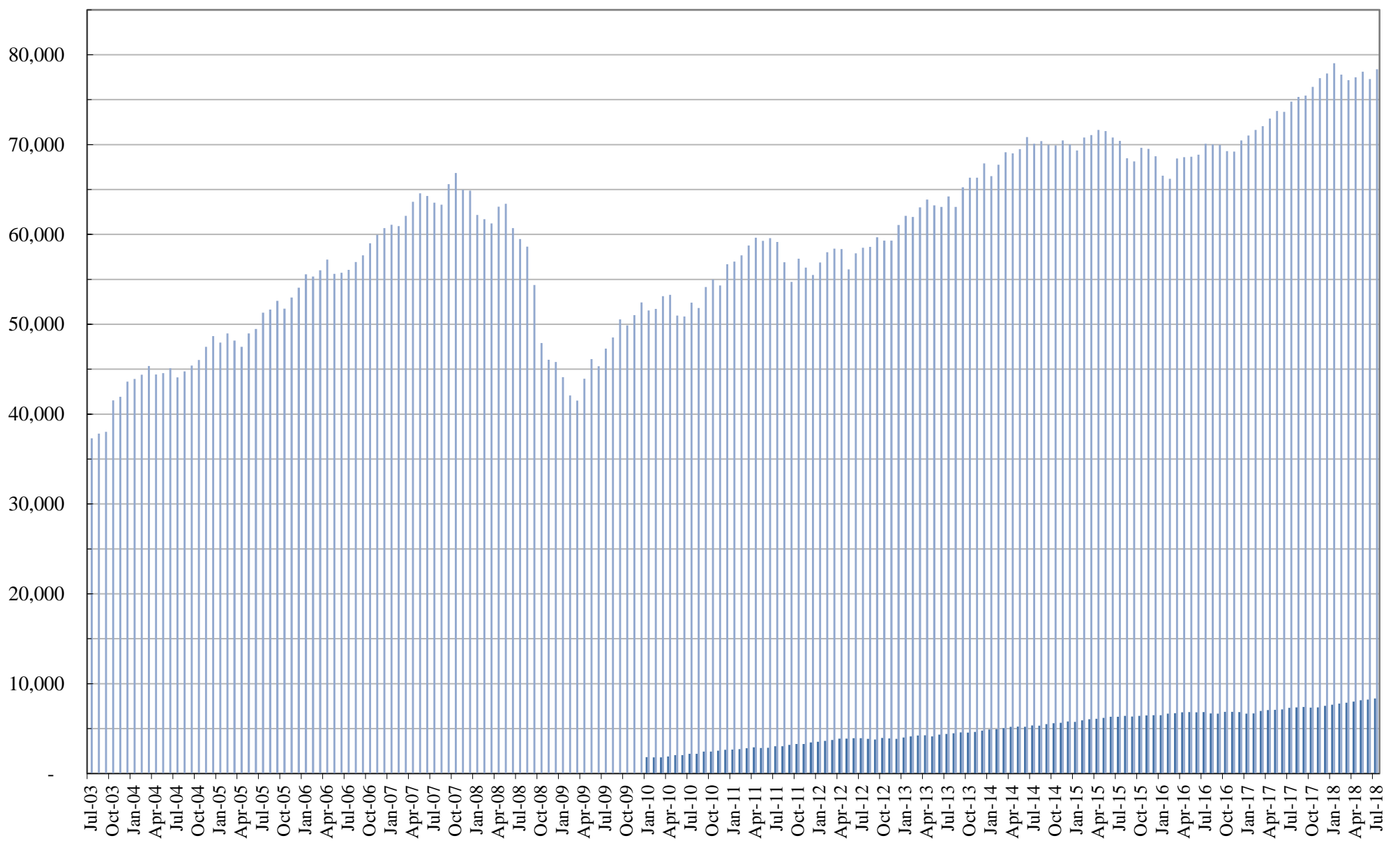


OPERF NAV

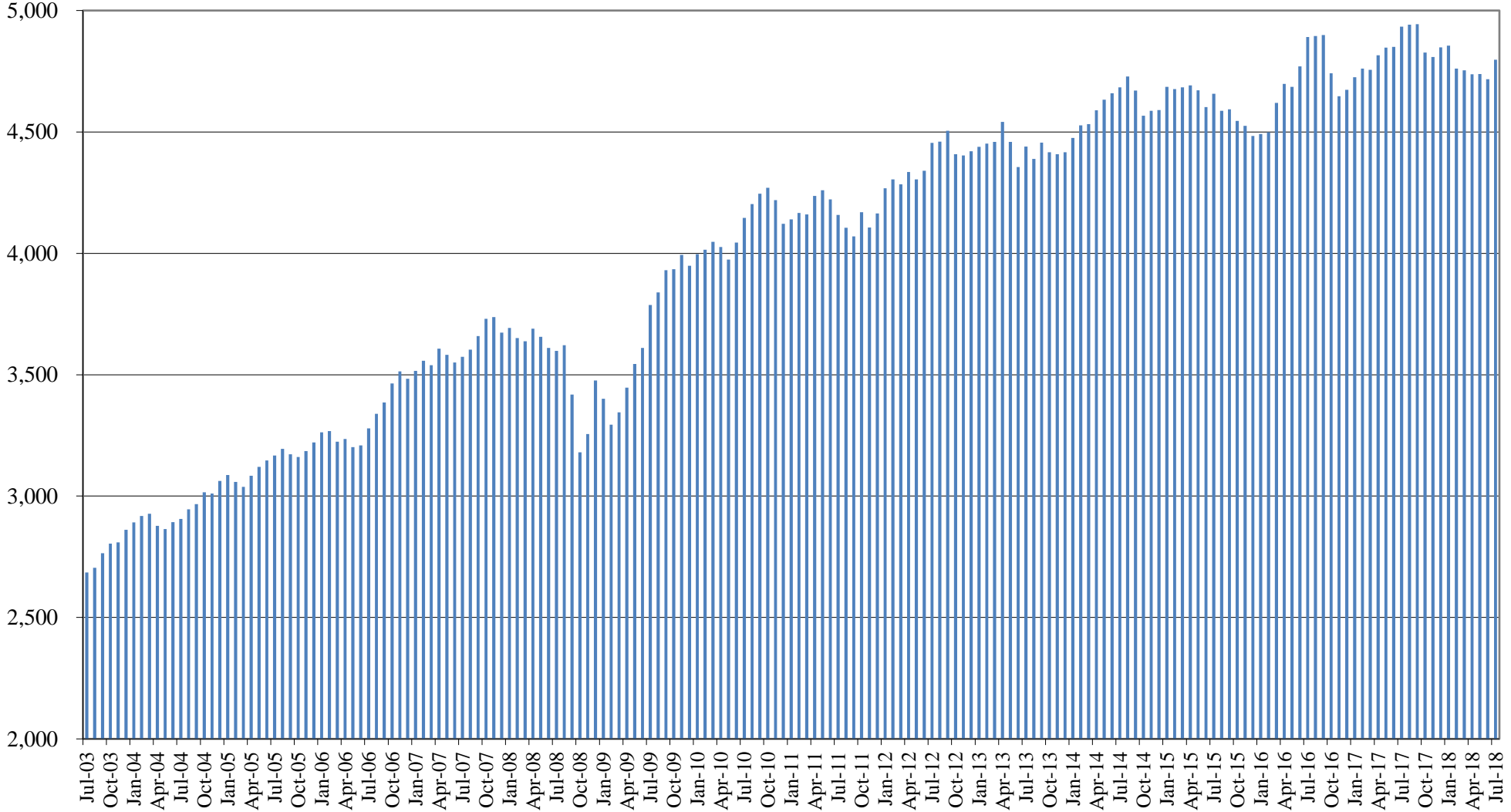
15 years ending July 2018

(\$ in Millions)

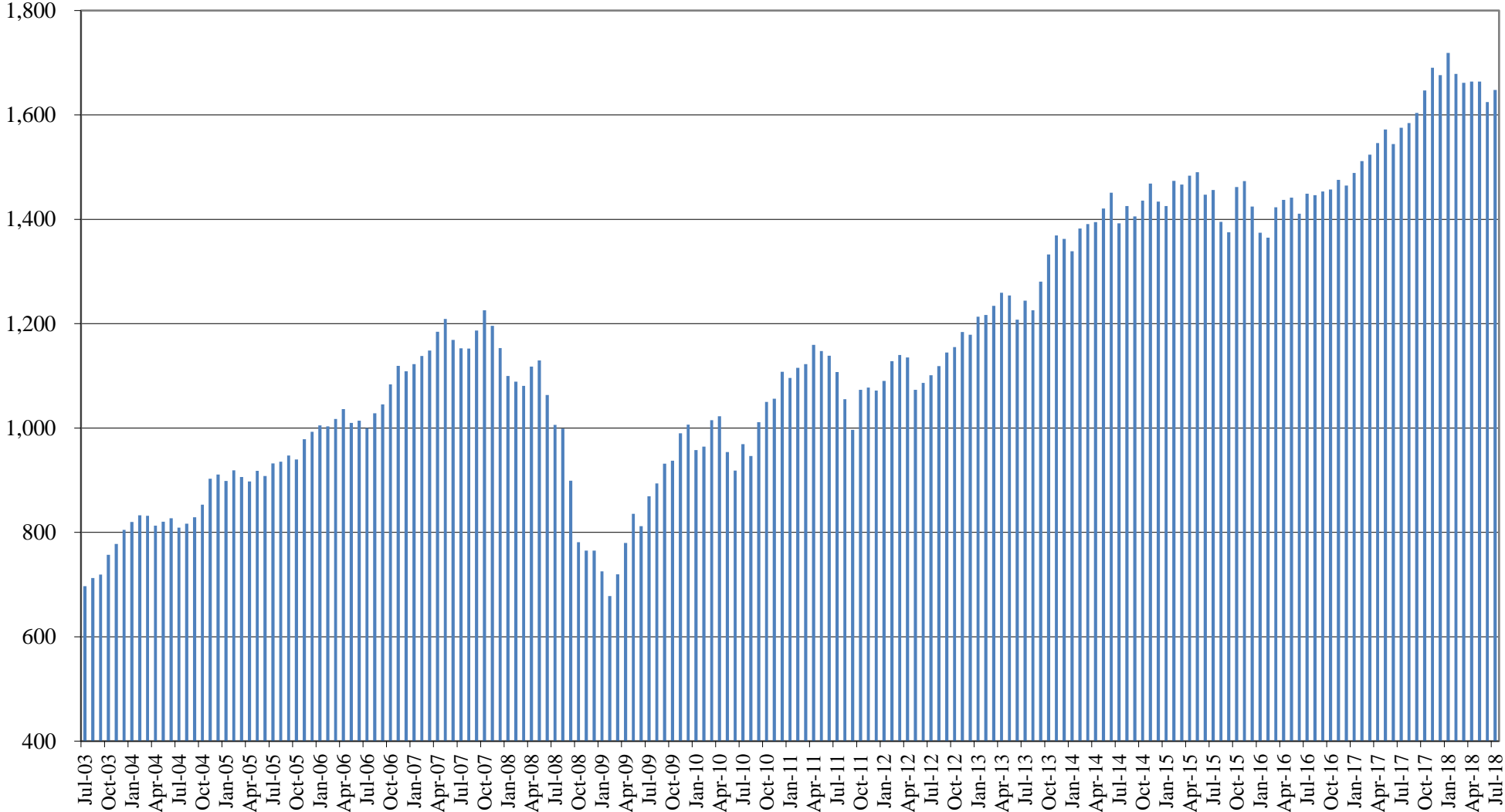
■ IAP ■ OPERF



SAIF NAV
15 years ending July 2018
(\$ in Millions)



CSF NAV
15 years ending July 2018
(\$ in Millions)



TAB 10 – Calendar — Future Agenda Items

2018/19 OIC Forward Calendar and Planned Agenda Topics

October 31, 2018:	Currency Program Review Public Equity Program Review Alternatives Consultant Recommendation General Consultant Recommendation
December 12, 2018:	Q3 OPERF Performance & Risk Report Fixed Income Program Review Alternatives Portfolio Investment Recommendation
January 31, 2019:	Private Equity Program Review Placement Agent Report 2020 OIC Calendar Approval IAP Update
March 13, 2019:	Real Estate Program Review Q4 2018 OPERF Performance & Risk Report SAIF Annual Review OPERF Liquidity Analysis
April 24, 2019:	OPERF Asset Allocation & Capital Market Assumptions Update Securities Lending Update OPERF Overlay Review
June 5, 2019	Q1 OPERF Performance & Risk Report Alternatives Portfolio Review Operations Update CSF Annual Review
August 7, 2019	Opportunity Portfolio Review OSGP Annual Review Corporate Governance Update