
Oregon Investment Council

April 25, 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

April 25, 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>
9:00-9:02	1. Review & Approval of Minutes March 14, 2018	Rukaiyah Adams <i>OIC Chair</i>	1
9:02-9:05	2. 2018 and 2019 OIC Meeting Schedules	Rukaiyah Adams	2
9:05-9:10	3. Committee Reports and CIO Remarks	John Skjervem <i>Chief Investment Officer</i>	3
9:10-9:25	4. Policy Updates <i>OPERF and other OST-managed Accounts</i>	John Skjervem Jennifer Peet <i>Corporate Governance Director</i>	4
<u>B. Information Items</u>			
9:25-10:25	5. Strategic Asset Allocation & Capital Markets Assumptions Update <i>OPERF</i>	Karl Cheng <i>Senior Investment Officer, Portfolio Risk & Research</i> Janet Becker-Wold <i>Callan Associates</i> Jim Callahan <i>Callan Associates</i> Allan Emkin <i>Pension Consulting Alliance</i>	5
10:25-10:40	----- BREAK -----		

TAB 1 – REVIEW & APPROVAL OF MINUTES

March 14, 2018 Regular Meeting



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

OREGON INVESTMENT COUNCIL
MARCH 14, 2018
MEETING MINUTES

- Members Present: Rukaiyah Adams, Tobias Read, John Russell, Rex Kim, Rick Miller and Steve Rodeman
- Staff Present: John Skjervem, Darren Bond, Perrin Lim, David Randall, John Hershey, Deena Bothello, Susan Wilson, Karl Cheng, Tony Breault, May Fanning, Michael Langdon, Jen Plett, Michael Viteri, Austin Carmichael, Dana Millican, Ben Mahon, Jo Recht, Ricardo Lopez, Garrett Cudahey, Debra Day, Andy Coutu, Eric Messer, Aliese Jacobsen, Amanda Kingsbury, Paul Coch, Tim Baumert, Ahman Dirks, Tiffany Zhuge, Ryan Mann, Dmitri Palmateer, James Sinks, Jackie Steffans and Amy Wojcicki
- Consultants Present: Tom Martin and David Fann, (TorreyCove); Allan Emkin, Christy Fields and Brandon Ross (PCA); Janet Becker-Wold and Jim Callahan (Callan)
- Legal Counsel Present: Steven Marlowe, Department of Justice

The March 14th, 2018 OIC meeting was called to order at 9:02 am by Rukaiyah Adams, OIC Chair.

- I. **9: 03am Review and Approval of Minutes**
MOTION: Treasurer Read moved approval of the February 1st, 2018 OIC meeting minutes, and Mr. Kim seconded the motion which then passed by a 5/0 vote.
- II. **09:05 am 2018 and 2019 OIC Meeting Schedules**
OIC Chair, Ms. Adams presented the proposed 2018 and 2019 OIC meeting dates. A finalized version will be set in the coming weeks.
- III. **9:20 am Committee Reports and CIO Update**
Committee Reports: Mr. Skjervem gave an update on the following committee actions taken since the February 1, 2018 OIC meeting:

Private Equity Committee

None

Alternatives Portfolio Committee

None

Opportunity Portfolio Committee

None

Real Estate Committee

None

Mr. Skjervem then gave opening remarks which included a revised report on 2017 OPERF investment performance, a summary of proposed policy updates, and a brief description of the Real Estate, Securities Lending and Overlay annual reviews. Mr. Skjervem also introduced several newly hired OST investment officers.

IV. 9:34 am OIC Policy Updates

Mr. Skjervem recommended Council approval of staff's proposed updates to the following OIC policies:

1. INV 605: Exercise of Voting Rights Accompanying Equity Securities; and
2. Alternative Investments Committee Series (INV 501 and 701)

MOTION: Mr. Russell moved approval of staff's recommendation to update INV 605, and Mr. Kim seconded the motion which then passed by a 5/0 vote.

Subject to an additional revision that eliminated an existing substitution provision for OST investment committee meetings, Treasurer Read moved approval of staff's recommendation to update INV 501 and 701, and Mr. Kim seconded the motion which then passed by a 5/0 vote.

V. 9:39 am OIC Real Estate Consultant Recommendation

Tony Breault, Senior Investment Officer, Real Estate provided an update on the status of the Council's current real estate consulting contract with Pension Consulting Alliance (PCA) which reaches the end of its first two-year extension on June 30, 2018.

Staff proposed extending PCA's current contract, on behalf of the OIC, under terms and conditions similar to the existing contract, for a second, and final, two-year extension period ending June 30, 2020.

MOTION: Mr. Russell moved approval of staff's recommendation, and Treasurer Read seconded the motion which then passed by a 5/0 vote.

VI. 10:40 am Real Estate Annual Review and 2018 Plan – OPERF Real Estate Portfolio

Tony Breault, along with Christy Fields, Managing Director, Pension Consulting Alliance, presented the Real Estate Annual Review and 2018 Plan. This presentation included a review of OPERF real estate strategy, an annual and cumulative performance update for the period ended December 31, 2018, and a preview of likely portfolio activity during the coming year.

Mr. Breault introduced Mr. Ken Riggs, President, Situs RERC who described his firm and its valuation services and remarked on current conditions and trends in commercial real estate markets.

VII. 11:20 am Q4 2017 Performance & Risk Report – OPERF

Karl Cheng, Senior Investment Officer, Portfolio Risk & Research and Janet Becker-Wold, Senior Vice President, Callan Associates, presented the quarterly OPERF investment performance and risk report for the calendar year and cumulative period ended December 31, 2018.

VIII. 11:44 am Securities Lending Update – OPERF/SAIF/CSF/OSTF/Agency Accounts

Perrin Lim, Director of Capital Markets introduced Mr. Tom Connelley, Vice President, Senior Portfolio Manager, State Street Global Advisors and Mr. Johnson Shum, Vice President, Securities Finance, State Street Global Markets who provided State Street's annual update on its securities lending activities on behalf of OPERF and other OST-managed accounts.

IX. 12:04 pm Overlay Review – OPERF

Karl Cheng presented Mr. Greg Nordquist, Director, Overlay Strategies, Russell Investments and Ben Linford, Portfolio Manager, Overlay Strategies, Russell Investments who presented Russell's annual report on the OPERF overlay program and that firm's management thereof.

X. 12:05 pm Asset Allocation & NAV Updates

Mr. Skjervem reviewed asset allocations and NAVs across OST-managed accounts for the period ended January 31, 2018.

XI. 12:06 pm Calendar — Future Agenda Items

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

XII. 12:07 pm Open Discussion

Ms. Adams provided comments on talks she and Mr. Skjervem held in connection with the strategic issues discussion scheduled for Friday afternoon, April 27. Specifically, Chair Adams emphasized that the best use of Council members' time that afternoon would be to discuss strategic, not operating issues. She shared that some of today's Council conversations would help clarify and inform her thoughts about the strategic issues discussion, namely outlining a framework for the discussion or deferring it until later in the year.

12:16 pm Public Comments

1. Diane Freaney of Rooted Investing shared some thoughts and suggestions on investment matters relating to education and student financial aid.
2. Michael Pineschi of UniteHere! gave remarks in connection with his organization's support of hotel and hospitality workers. Specifically, Mr. Pineschi announced organizing efforts at a KKR-owned property in Waikiki, HI, and requested that Council members encourage KKR to remain neutral during the organizing process.

Ms. Adams adjourned the meeting at 12:16 pm.

Respectfully submitted,

May Fanning

May Fanning
Executive Support Specialist

TAB 2 – 2018 and 2019 OIC Meeting Schedules

OREGON INVESTMENT COUNCIL

2018 Meeting Schedule

Meetings Begin at 9:00 am

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

Thursday, February 1

Wednesday, March 14

Wednesday, April 25

Friday, April 27¹

Wednesday, June 6

Wednesday, August 1 or Wednesday, August 8

Wednesday, September 19

Wednesday, October 31

Wednesday, December 12

¹ Start time for the April 27 meeting is 1pm PT, all other meetings start at 9am PT.

OREGON INVESTMENT COUNCIL

Proposed 2019 Meeting Schedule

Meetings Begin at 9:00 am

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

Thursday, January 31, 2019

Wednesday, March 13, 2019

Wednesday, April 24, 2019

Wednesday, June 5, 2019

Wednesday, August 7, 2019

Wednesday, September 18, 2019

Wednesday, October 30, 2019

Wednesday, December 11, 2019

TAB 3 – Committee Reports and CIO Update

Opening Remarks

John D. Skjervem, Chief Investment Officer

April 25, 2018



Oregon State Treasury

April 25, 2018 OIC Meeting

Policy Updates

- Continuing Education for OIC Members
- Increase in Alts and Opp Committees' approval ceiling

Alternatives Portfolio Review

- In terms of AUM, half-way there; in terms of results, still too early to tell
- No shortage of opportunities to evaluate and consider!
- Team now at three, currently recruiting for another investment officer

Strategic Asset Allocation & CMA Update

- No changes recommended
- *Ex ante*, average annual beta return still 7.1%

SAIF Annual Review

- Status quo for now, but potential changes ahead

TAB 4 – Policy Update
OPERF and other OST-managed Accounts

OIC Policy Updates April 25, 2018

Purpose

Update policies governing the Alternative and Opportunity Portfolio committees, and present the Council with a new policy on continuing education for OIC members.

Discussion

The following is a brief summary of the attached policies and updates thereto.

1. INV 702 and 703: Alternative Investments and Opportunity Portfolio, Standards and Procedures

Changes: Staff recommends two changes to these policies, changes that are identical to those approved last month for the Private Equity and Real Estate committees: 1) committee approval ceiling for new relationships increases from \$150M to \$250M; and 2) committee approval ceiling for re-ups increases from \$250M to \$350M. As discussed at the March 14, 2018 OIC meeting, language on temporary committee member substitutions has been eliminated.

2. NEW policy on OIC education. ORS 293.712 requires the OIC Chair to consult with the Treasurer and prescribe continuing education requirements for OIC members. The goal of this policy is to provide OIC members with guidance and a framework for meeting that statutory requirement.

Recommendation: Approve policy language as presented in the attached documents.

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

To accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council (OIC), Oregon State Treasury (OST) created the Alternatives Portfolio (hereinafter referred to as the "[ProgramPortfolio](#)") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF or the Fund), and b) diversify the overall OPERF investment portfolio. To date, [ProgramPortfolio](#) investments have included participation in ~~diversifying assets and~~ ~~ied~~ strategies in areas such as ~~cluding~~ infrastructure, oil and gas, agriculture, timberland, hedge funds and other ~~diversifying assets and~~ special situation ~~strategies~~. After its initial build-out period, the [ProgramPortfolio](#)'s current allocation target is 12.5 percent of total OPERF asset value, with an expected duration of three to ten years. As opportunities become available, OST will invest [ProgramPortfolio](#) assets prudently, productively and in a manner consistent with the [ProgramPortfolio](#)'s objectives, OIC policies and applicable law. The [ProgramPortfolio](#) is subject to the specific, strategic target allocations established in Policy INV 215.

Purpose and Goals

The goal of this policy is to provide guidance to OST staff and advisors regarding the [ProgramPortfolio](#) and its investment objectives.

Applicability

Classified represented, management service, unclassified executive service

Authority

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

1. The investment funds shall be invested and the investments of those funds managed as a prudent investor would do, under the circumstances then prevailing and in light of the purposes, terms, distribution requirements and laws governing each investment fund.
2. The standard stated in subsection (1) of this section requires the exercise of reasonable care, skill and caution, and is to be applied to investments not in isolation but in the context of each investment fund's investment portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the particular investment fund.
3. In making and implementing investment decisions, the Oregon Investment Council and the investment officer have a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so.

4. In addition to the duties stated in subsection (3) of this section, the council and the investment officer must:
 - a. Conform to the fundamental fiduciary duties of loyalty and impartiality;
 - b. Act with prudence in deciding whether and how to delegate authority and in the selection and supervision of agents; and
 - c. Incur only costs that are reasonable in amount and appropriate to the investment responsibilities imposed by law.
5. The duties of the council and the investment officer under this section are subject to contrary provisions of privately created public trusts the assets of which by law are made investment funds. Within the limitations of the standard stated in subsection (1) of this section and subject to subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.
6. Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.
7. Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]

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

293.736 Duties of investment officer.

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

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

POLICY PROVISIONS

Definitions

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

Policy Statements

I. GENERAL POLICY

ProgramPortfolio investments provide an appropriate complement to OPERF's investment portfolio, and are consistent with OPERF's general objectives, including:

- A. Providing a means to pay benefits to OPERF participants and their beneficiaries;
- B. Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
- C. Attaining an adequate real return over the expected rate of inflation; and
- D. Complying with all applicable laws and regulations concerning the investment of pension assets.

ProgramPortfolio investments should exhibit differentiated (i.e., less correlated) returns ~~investment returns should exhibit a lower correlation~~ relative to other Fund assets and therefore the ProgramPortfolio is expected to provide diversification benefits to the Fund.

Staff and the ~~Advisoreconsultant or advisor specifically selected for the Program (the "Advisor")~~ will furnish the OST and OIC with an annual ProgramPortfolio investment reviewstatement and strategy plan.

II. OBJECTIVES

A. ProgramPortfolio Investment Performance Objectives

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

B. Diversification

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

1. a. Strategy. — The Portfolio Investments will include ~~be diversified through exposure to~~ a variety of alternative investment strategies, including infrastructure, natural resources (including commodities) and other diversifying ~~asset~~ strategies. The allocation ranges and targets for various types of investments are as follows:

Investment Type	Target Allocation
Infrastructure	20-30%
Natural Resources	30-40%
<u>Diversifying Assets</u> <u>Diversifying Strategies</u>	35-45%
Other	0-10%

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

3.

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

~~4d.~~ -Geography. – Staff should consider geographical diversification in investment selection; moreover, and to the extent appropriate, commitments may be considered that benefit the overall economic health of Oregon so long as and only if such commitments otherwise meet the investment criteria and quality of the ProgramPortfolio.

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

6. Total Portfolio Diversification.

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

III. ALTERNATIVES PORTFOLIO COMMITTEE

A. The Alternatives Portfolio Committee or "Committee" acts on behalf of, and subject to the review of, OST. The Committee is comprised of the following individuals: the Deputy State Treasurer; the Chief Investment Officer (CIO); and an OIC member invited by the OST to participate as a voting member on the Committee. OST will consider input from the OIC in extending such invitations. ~~In the unlikely event one member of the Committee cannot attend or participate in a Committee meeting that otherwise cannot be deferred or rescheduled, the CIO may, for purposes of establishing a quorum, include a Senior Investment Officer (SIO) and endow that SIO with temporary voting rights so long as that SIO does not work in or on behalf of the Program.~~

B. OST, through the Committee, may invest OPERF amounts up to and including ~~\$150-250~~ million per investment for new general partner, fund sponsor or manager relationships, and an amount up to and including ~~\$250-350~~ million for existing relationships, consistent with OIC policies (see Appendix B). If consideration of a particular investment opportunity is deemed urgent or otherwise less suited for presentation to the OIC, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

C. The Committee will only exercise its investment authority by unanimous vote and acting upon a favorable due diligence determination by the Advisor. The Committee may only consider proposed investments or partnership commitments if agreement exists between the Advisor and Staff that the proposed investment or partnership commitment is consistent with ProgramPortfolio standards including, but not limited to, the applicable sector plan and strategy. Proposed investments or partnership commitments presented to the Investment opportunities and proposed-Committee commitments are subject to review by OST, which may choose to cancel or refer such proposed commitments to the OIC for broader review and consideration.

D. In connection with a proposed investment or partnership commitment, Staff shall furnish any favorable due diligence determination, including the underlying rationale, market conditions and portfolio impact, to the OIC as soon as practical and at least two weeks prior to a Committee meeting called for purposes of considering the proposed investment or partnership commitment. If OST objects to the proposed investment or partnership commitment or is advised by any OIC member that he or she objects to the proposed investment or partnership commitment, OST will cancel the proposed investment or partnership commitment ~~commitment~~ and determine whether or not Staff will bring same ~~the proposed investment~~ as a separate agenda item at a subsequent OIC meeting.

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

IV. OST STAFF AUTHORITY

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

~~A.~~

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

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

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

~~D.~~ ~~Any s~~Such additional ~~investments or partnership~~ commitments shall be on terms equal to or better than the existing ~~investment fund~~ terms.

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

V. ~~ADVISOR AND OST~~PERF REQUIREMENTS

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

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

duties are performed consistently and appropriately by the Advisor.

VI. LEGAL COUNSEL

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

~~CONTRACT EXECUTION~~

~~Staff will inform the Program's current or prospective general partners of investment commitments approved by the Council or the Committee immediately following such approvals. All approved commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with DOJ advice, applicable law and other considerations.~~

~~With the possible exception of legally privileged materials, Staff will provide the Advisor with OIC and Committee meeting materials.~~

~~Staff will provide DOJ, in advance, with OIC and Committee meeting materials and will provide DOJ with timely verification of investment commitments in conjunction with proposed partnership documentation.~~

~~The Council's authorized signatory, the CIO (or designee in accordance with OST policy), will ensure legal sufficiency approval is provided by DOJ, prior to the execution of investment documents.~~

~~PARTNERSHIP FUNDING~~

~~For all existing and future partnership commitments, each general partner shall submit a complete listing of bank account(s) to which OST may wire funds in connection with its partnership commitments. This list may be included as an exhibit to the partnership agreement, and OST shall not deviate from these pre-established instructions unless the general partner authorizes such a change in advance and in writing.~~

~~All requests for funding (e.g., capital calls) must be made pursuant to established OST practices and guidelines.~~

~~Staff shall regularly monitor investments, through the Advisor or other contracted service providers, to ensure that the funding of investment commitments does not exceed the maximum amount authorized by the OIC or the Committee. In monitoring commitment funding levels, the Advisor or other contracted service provider will consider the effect of partnership recycling, temporary bridge financing and similar provisions included in the partnership's investment documents to ascertain whether or not funding levels are consistent with OIC's commitment approvals~~

~~Prior to advancing funds in connection with any one partnership commitment, Staff shall verify that written funding requests are properly executed by an authorized member of the corresponding general partner.~~

VII. MONITORING

A. Reports

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

~~B.~~

-

B. Adherence to Strategy

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

Exceptions

~~None.~~

Failure to Comply

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

-

PROCEDURES and FORMS

Appendix A: OIC Document: Alternative Investments Valuation Policy

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

Appendix C: OST Proceduress for INV 702

Appendix D: OST Procedures: Contract Execution and Partnership Funding

-

ADMINISTRATION

Feedback

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

APPENDIX A
Alternative Investments Valuation Policy

Public Company Securities

1. Public securities should be valued at the closing price or bid on the last day of the quarter of the performance measurement period.
- 1.2. In the event that two or more [investment managers or](#) general partners hold the same security with identical provisions and structure, but different valuations, Staff and the Advisor will establish the most appropriate valuation.

Non-Public Company Securities

1. Non-publicly traded securities should be valued at fair value. These types of securities are not traded on an active exchange and thus do not have readily determinable market prices established by arm's-length transactions; moreover, there exists no broadly accepted methodology for determining fair value, and valuations of such securities may contain subjective elements. Determination of the fair value of such securities should be based on the best available and most applicable valuation metrics that can be obtained. Valuation metrics may differ substantially, depending on the stage, industry, competitive position and geography of the company.
2. The General Partner (GP) of each limited partnership will determine valuations for the investments within its limited partnerships. If negotiated as part of the applicable Limited Partnership Agreement (LPA), these valuations may be reviewed and/or approved by a committee of limited partners (i.e., an Advisory Board, Investors' Committee, etc.) established for the limited partnership.
3. Staff are not typically experts in the valuation of non-public securities, but do have broad experience in [alternative private equity](#) investment management; accordingly, Staff will a) apply such experience to determine whether or not valuations reported by GPs and the Advisor are reasonably stated and b) assess the risk of material misstatement. Staff will utilize the best available and most applicable information in forming these assessments. Such information may include, but will not be limited to the following:
 - a. Valuation analyses and adjustments performed by the ~~Advisor~~ [Advisor, GP or investment manager](#);
 - b. Audited financial statements of [Program Portfolio investments and](#) limited partnerships;
 - c. GP-prepared quarterly and annual limited partnership reports;
 - d. Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
 - e. General Staff knowledge of company performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

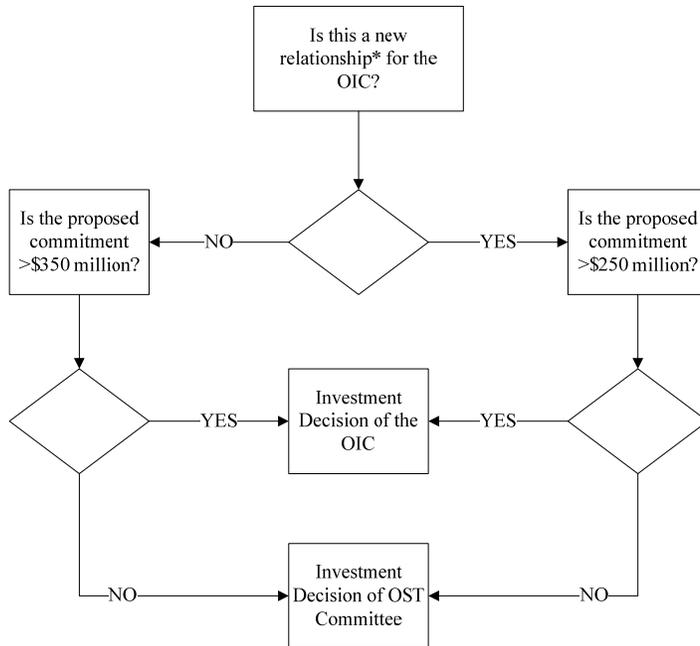
If the valuation provided by a GP or the Advisor is not U.S. GAAP fair value, Staff may request additional information from the GP or Advisor, if needed, in order to estimate fair value.

44.) Staff is responsible for ensuring ProgramPortfolio investments and partnership commitments are recorded in OST's book of record at fair value, and this responsibility may not be delegated to third parties. To fulfill this particular responsibility, Staff will:

- a. Maintain an alert and appropriate level of professional skepticism regarding private equity valuations;
- b. Review the Advisor's quarterly report, including limited partnership quarterly summaries which detail valuations and changes thereto;
- c. On an annual basis, meet with the Advisor to update or confirm Staff's understanding of the Advisor's procedures and analyses regarding limited partnership valuation;
- d. To the fullest extent practical, participate in limited partner committee reviews and/or limited partnership valuation approvals if Staff serves on such committees;
- e. Review limited partnership annual reports and audited financial statements; and
- f. On an exception basis, investigate any valuations that are materially different from fair value estimates or expectations, and document the results of such investigation and any proposed changes in limited partnership valuation. Such exceptions may include, but are not limited to, qualified or adverse audit opinions, financial statements prepared on a basis other than U.S. GAAP, material adverse events (e.g., a company bankruptcy), limited partnership valuation policy that is other than fair value, and a qualitative Staff assessment that a particular valuation may not reflect fair value.

Appendix B OIC/OST Alternative Investments Authority

The OST, through Committees, may invest OPERF amounts up to and including \$250 million per investment for new relationships, and an amount up to and including \$350 million for existing relationships.



NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

* A new relationship is defined as a general partner or management team with which the OIC has no existing or committed investment exposure.

APPENDIX C
Appendix C
OST Procedures for INV 702

A. GENERAL PROCEDURES

1. Staff, and the Advisor, will screen available investments and designate those that meet the ProgramPortfolio's general strategy, selection criteria and performance goals. Staff will coordinate the available investments, whether first identified by Staff, the OIC, the Advisor or otherwise. Staff may reject such proposed investments if they do not meet ProgramPortfolio criteria.
2. The Advisor, working in conjunction with Staff, will review the documents pertinent to an investment opportunity, including the offering memorandum, and identify possible issues. The Advisor and Staff may meet with the general partners, sponsors or investment managers to discuss the investment opportunity.
3. The Advisor will identify those investment opportunities it determines best meet the ProgramPortfolio's criteria and merit further review and analysis by Staff.
4. Staff will select those investment opportunities upon which the Advisor will conduct full due diligence. Upon completion of its due diligence, the Advisor will provide a written report containing a summary of the proposed investment including the following information: a description of the investment manager's or general partner's background, historical performance and organizational profile; the proposed investment strategy; the proposed investment terms; the expected rate of return; the merits of the investment; issues and concerns surrounding the investment as well as potential remedies and resolution strategies; and issues and provisions that should be subject to further negotiation.
5. The Advisor and Staff will discuss an investment opportunity and whether, under the circumstances, an investment recommendation by Staff is likely. Staff will arrange presentations and meetings –with the specific investment manager, general partner or partnershipfund sponsor as necessary to address issues or questions. As determined by Staff, but subject to OST review, investment opportunities deemed unattractive or otherwise inconsistent with ProgramPortfolio objectives will not normally be given further consideration.
6. Staff will prepare and submit a written recommendation of attractive or favorably reviewed investment opportunities to the OIC, and include any recommended commitment contingencies unless the proposed investment is processed through the "Alternative Portfolio Committee" as outlined in the policy.
7. Appropriate legal counsel (generally internal legal staff or the Oregon Attorney General's office or "DOJ") will receive partnership-documents for any and all proposed investments approved by the OIC or Alternative Portfolio Committee. Legal counsel will identify and discuss any existing or potential legal issues with Staff.

C. SELECTION CRITERIA

1. The Staff, on behalf of the OST and consistent with OIC policies, will generally invest with experienced organizations that have managed prior investments or partnerships. Primary emphasis will be on the quality and experience of the investment sponsor or manager.
2. Additional criteria to be considered may include, but are not necessarily limited to the following:
 - a. ~~a.~~—A well-developed investment focus that meets the [ProgramPortfolio](#)'s objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. ~~b.~~—[Collective and individual](#)~~Relevant~~ investment experience of partners and key staff, ~~individually and as a team,~~ as well as ~~team~~ [their](#) stability;
 - c. ~~c.~~—Organizational depth and ~~significant~~ time commitment to the partnership's or project's interests;
 - d. Well-structured decision-making and transaction execution processes, including:
 - deal flow and initial analysis of portfolio investments;
 - pricing, selection and negotiation of portfolio investments;
 - financial structuring of portfolio investments;
 - management or oversight of portfolio companies; and
 - ~~development~~ of exit strategies;
 - d. ~~d.~~—Consideration of relevant issues, such as conflicts of interest and alignment of interests, among others;
 - e. ~~e.~~—Experience in, and a demonstrated record of, successful prior investments; and,
 - g. Appropriate proposed terms and structure for the investment.

D. STANDARDS

1. ~~1.~~—Types of Allowable Investments

Any appropriate investment opportunity that has the potential for returns superior to traditional investment opportunities and is consistent with [ProgramPortfolio](#) standards and applicable law.

2. ~~2.~~—Prudent and Productive Investor Standards

[ProgramPortfolio](#) standards include the requirement to make and manage investments consistent with OIC and OST policies and other applicable fiduciary standards, including but not limited to ORS 293.721 and 293.726.

3. ~~3.~~ Negotiated Terms

Improved investment terms, such as preferred returns, lower fee structures and profit splits should be pursued by Staff as is practical and prudent.

APPENDIX D

Contract Execution and Partnership Funding

A. CONTRACT EXECUTION

1. Staff will inform the Portfolio's current or prospective managers or general partners of investments or partnership commitments approved by the Council or the Committee immediately following such approvals. All approved investments and partnership commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with internal legal staff, DOJ advice, applicable law and other considerations.
2. With the possible exception of legally privileged materials, Staff will provide the Advisor with OIC and Committee meeting materials.
3. Staff will provide DOJ, in advance, with OIC and Committee meeting materials and will provide DOJ with timely verification of investments and partnership commitments in conjunction with proposed investment management or partnership documentation.
4. The Council's authorized signatory, the CIO (or designee in accordance with OST policy), will ensure legal sufficiency approval is provided by internal legal staff or DOJ prior to the execution of investment management or partnership documentation.

B. PARTNERSHIP FUNDING

1. For all existing and future investments and partnership commitments, each manager or general partner shall submit a complete listing of bank account(s) to which OST may wire funds in connection with the investment or partnership commitment. This list may be included as an exhibit to the investment management or partnership agreement, and OST shall not deviate from these pre-established instructions unless the manager or general partner authorizes such a change in advance and in writing.
2. All requests for funding (e.g., capital calls) must be made pursuant to established OST practices and guidelines.
3. Staff shall regularly monitor investments and partnership commitments, through the Advisor or other contracted service providers, to ensure that any particular investment or partnership commitment does not exceed the maximum amount authorized by the OIC or the Committee. In monitoring investment or partnership commitment levels, the Advisor or other contracted service provider will consider the effect of partnership recycling, temporary bridge financing and similar provisions included in the investment management or partnership agreement to ascertain whether or not funding levels are consistent with OIC approval.

1. Prior to advancing funds in connection with any one investment or partnership commitment, Staff shall verify that written funding requests are properly executed by an authorized member of the corresponding manager or general partner.

~~2.4.~~

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

To accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council (OIC), Oregon State Treasury (OST) created the Alternatives Portfolio (hereinafter referred to as the "Portfolio") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF or the Fund), and b) diversify the overall OPERF investment portfolio. To date, Portfolio investments have included participation in diversifying assets and strategies in areas such as infrastructure, oil and gas, agriculture, timberland, hedge funds and other special situations. After its initial build-out period, the Portfolio's current allocation target is 12.5 percent of total OPERF asset value, with an expected duration of three to ten years. As opportunities become available, OST will invest Portfolio assets prudently, productively and in a manner consistent with the Portfolio's objectives, OIC policies and applicable law. The Portfolio is subject to the specific, strategic target allocations established in Policy INV 215.

Purpose and Goals

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

Applicability

Classified represented, management service, unclassified executive service

Authority

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

1. The investment funds shall be invested and the investments of those funds managed as a prudent investor would do, under the circumstances then prevailing and in light of the purposes, terms, distribution requirements and laws governing each investment fund.
2. The standard stated in subsection (1) of this section requires the exercise of reasonable care, skill and caution, and is to be applied to investments not in isolation but in the context of each investment fund's investment portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the particular investment fund.
3. In making and implementing investment decisions, the Oregon Investment Council and the investment officer have a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so.
4. In addition to the duties stated in subsection (3) of this section, the council and the

investment officer must:

- a. Conform to the fundamental fiduciary duties of loyalty and impartiality;
 - b. Act with prudence in deciding whether and how to delegate authority and in the selection and supervision of agents; and
 - c. Incur only costs that are reasonable in amount and appropriate to the investment responsibilities imposed by law.
5. The duties of the council and the investment officer under this section are subject to contrary provisions of privately created public trusts the assets of which by law are made investment funds. Within the limitations of the standard stated in subsection (1) of this section and subject to subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.
 6. Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.
 7. Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]

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

293.736 Duties of investment officer.

1. Except as provided in ORS 293.741, in amounts available for investment purposes and subject to the policies formulated by the Oregon Investment Council, the investment officer shall invest and reinvest moneys in the investment funds and acquire, retain, manage, including exercise of any voting rights, and dispose of investments of the investment funds.
2. Subject to the direction of the council, the investment officer shall perform the functions described in subsection (1) of this section with respect to the investment in mutual funds

of moneys in the Deferred Compensation Fund. The council must approve all mutual funds in which Deferred Compensation Fund moneys are invested. [1967 c.335 §9; 1997 c.179 §23; 2005 c.295 §1]

POLICY PROVISIONS

Definitions

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

Policy Statements

I. GENERAL POLICY

Portfolio investments provide an appropriate complement to OPERF's investment portfolio, and are consistent with OPERF's general objectives, including:

- A. Providing a means to pay benefits to OPERF participants and their beneficiaries;
- B. Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
- C. Attaining an adequate real return over the expected rate of inflation; and
- D. Complying with all applicable laws and regulations concerning the investment of pension assets.

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

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

II. OBJECTIVES

A. Portfolio Investment Performance Objectives

The Portfolio's investment performance objective is long-term net returns to OPERF (i.e., after management fees and general partners' carried interest) above a benchmark comprised of the Consumer Price Index ("CPI") plus an appropriate premium to compensate for illiquidity,

principal risk and related investment costs and expenses. Specifically, the Portfolio's performance objective is a return equivalent to CPI plus 400 basis points, and may vary by investment type (e.g., infrastructure or timberland). OST staff (hereinafter referred to as "Staff") will periodically evaluate the Portfolio's performance objective and assigned benchmark.

B. Diversification

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

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

Investment Type	Target Allocation
Infrastructure	20-30%
Natural Resources	30-40%
Diversifying Strategies	35-45%
Other	0-10%

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

III. ALTERNATIVES PORTFOLIO COMMITTEE

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

IV. OST STAFF AUTHORITY

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

- A. Approve OST administrative activities and guideline exceptions if a plan is established to conform the [project/investment/partnership] exception(s) to applicable guidelines within a reasonable period of time;
- B. Acquire, retain, manage and dispose of investment or partnership interests consistent with the authority granted to the Office of the State Treasurer pursuant to ORS 293.736. Review and

approve other activities as necessary to further the interests of the Portfolio consistent with its standards; and

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

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

V. ADVISOR AND OST REQUIREMENTS

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

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

VI. LEGAL COUNSEL

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

VII. MONITORING

A. Reports

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

B. Adherence to Strategy

Staff and the Advisor will evaluate the actual strategy employed by investment managers and general partners relative to stated objectives, strategies and other industry standards. The

Advisor will interact with the investment managers and general partners periodically and as necessary to verify adherence to such objectives, strategies and standards.

Exceptions

None

Failure to Comply

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

PROCEDURES and FORMS

Appendix A: OIC Document: Alternative Investments Valuation Policy

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

Appendix C: OST Procedures for INV 702

Appendix D: OST Procedures: Contract Execution and Partnership Funding

ADMINISTRATION

Feedback

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

APPENDIX A

Alternative Investments Valuation Policy

Public Company Securities

1. Public securities should be valued at the closing price or bid on the last day of the quarter of the performance measurement period.
2. In the event that two or more investment managers or general partners hold the same security with identical provisions and structure, but different valuations, Staff and the Advisor will establish the most appropriate valuation.

Non-Public Company Securities

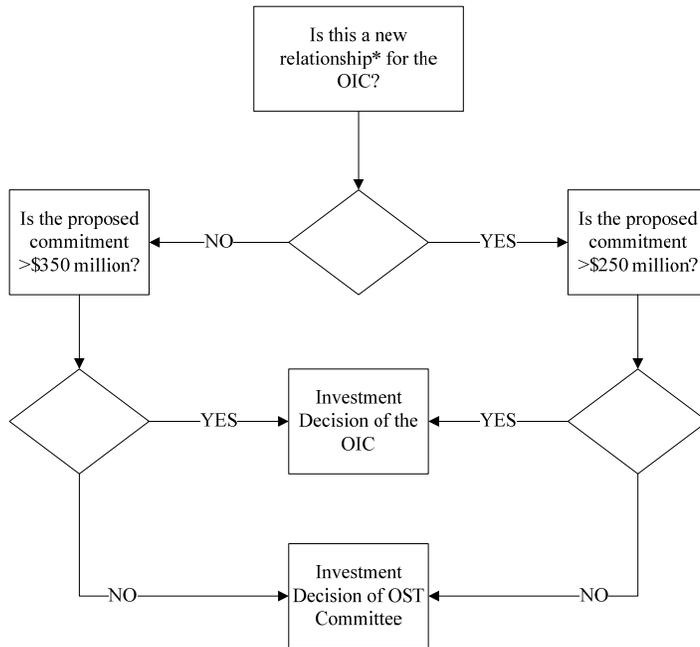
1. Non-publicly traded securities should be valued at fair value. These types of securities are not traded on an active exchange and thus do not have readily determinable market prices established by arm's-length transactions; moreover, there exists no broadly accepted methodology for determining fair value, and valuations of such securities may contain subjective elements. Determination of the fair value of such securities should be based on the best available and most applicable valuation metrics that can be obtained. Valuation metrics may differ substantially, depending on the stage, industry, competitive position and geography of the company.
2. The General Partner (GP) of each limited partnership will determine valuations for the investments within its limited partnerships. If negotiated as part of the applicable Limited Partnership Agreement (LPA), these valuations may be reviewed and/or approved by a committee of limited partners (i.e., an Advisory Board, Investors' Committee, etc.) established for the limited partnership.
3. Staff are not typically experts in the valuation of non-public securities, but do have broad experience in alternative investment management; accordingly, Staff will a) apply such experience to determine whether or not valuations reported by GPs and the Advisor are reasonably stated and b) assess the risk of material misstatement. Staff will utilize the best available and most applicable information in forming these assessments. Such information may include, but will not be limited to the following:
 - a. Valuation analyses and adjustments performed by the Advisor, GP or investment manager;
 - b. Audited financial statements of Portfolio investments and limited partnerships;
 - c. GP-prepared quarterly and annual limited partnership reports;
 - d. Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
 - e. General Staff knowledge of company performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

If the valuation provided by a GP or the Advisor is not U.S. GAAP fair value, Staff may request additional information from the GP or Advisor, if needed, in order to estimate fair value.

4. Staff is responsible for ensuring Portfolio investments and partnership commitments are recorded in OST's book of record at fair value, and this responsibility may not be delegated to third parties. To fulfill this particular responsibility, Staff will:
 - a. Maintain an alert and appropriate level of professional skepticism regarding private equity valuations;
 - b. Review the Advisor's quarterly report, including limited partnership quarterly summaries which detail valuations and changes thereto;
 - c. On an annual basis, meet with the Advisor to update or confirm Staff's understanding of the Advisor's procedures and analyses regarding limited partnership valuation;
 - d. To the fullest extent practical, participate in limited partner committee reviews and/or limited partnership valuation approvals if Staff serves on such committees;
 - e. Review limited partnership annual reports and audited financial statements; and
 - f. On an exception basis, investigate any valuations that are materially different from fair value estimates or expectations, and document the results of such investigation and any proposed changes in limited partnership valuation. Such exceptions may include, but are not limited to, qualified or adverse audit opinions, financial statements prepared on a basis other than U.S. GAAP, material adverse events (e.g., a company bankruptcy), limited partnership valuation policy that is other than fair value, and a qualitative Staff assessment that a particular valuation may not reflect fair value.

Appendix B OIC/OST Alternative Investments Authority

The OST, through Committees, may invest OPERF amounts up to and including \$250 million per investment for new relationships, and an amount up to and including \$350 million for existing relationships.



NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

* A new relationship is defined as a general partner or management team with which the OIC has no existing or committed investment exposure.

APPENDIX C

OST Procedures for INV 702

A. GENERAL PROCEDURES

1. Staff, and the Advisor, will screen available investments and designate those that meet the Portfolio's general strategy, selection criteria and performance goals. Staff will coordinate the available investments, whether first identified by Staff, the OIC, the Advisor or otherwise. Staff may reject such proposed investments if they do not meet Portfolio criteria.
2. The Advisor, working in conjunction with Staff, will review the documents pertinent to an investment opportunity, including the offering memorandum, and identify possible issues. The Advisor and Staff may meet with the general partners, sponsors or investment managers to discuss the investment opportunity.
3. The Advisor will identify those investment opportunities it determines best meet the Portfolio's criteria and merit further review and analysis by Staff.
4. Staff will select those investment opportunities upon which the Advisor will conduct full due diligence. Upon completion of its due diligence, the Advisor will provide a written report containing a summary of the proposed investment including the following information: a description of the investment manager's or general partner's background, historical performance and organizational profile; the proposed investment strategy; the proposed investment terms; the expected rate of return; the merits of the investment; issues and concerns surrounding the investment as well as potential remedies and resolution strategies; and issues and provisions that should be subject to further negotiation.
5. The Advisor and Staff will discuss an investment opportunity and whether, under the circumstances, an investment recommendation by Staff is likely. Staff will arrange presentations and meetings with the specific investment manager, general partner or partnership sponsor as necessary to address issues or questions. As determined by Staff, but subject to OST review, investment opportunities deemed unattractive or otherwise inconsistent with Portfolio objectives will not normally be given further consideration.
6. Staff will prepare and submit a written recommendation of attractive or favorably reviewed investment opportunities to the OIC, and include any recommended commitment contingencies unless the proposed investment is processed through the "Alternative Portfolio Committee" as outlined in the policy.
7. Appropriate legal counsel (generally internal legal staff or the Oregon Attorney General's office or "DOJ") will receive documents for any and all proposed investments approved by the OIC or Alternative Portfolio Committee. Legal counsel will identify and discuss any existing or potential legal issues with Staff.

C. SELECTION CRITERIA

1. The Staff, on behalf of the OST and consistent with OIC policies, will generally invest with experienced organizations that have managed prior investments or partnerships. Primary emphasis will be on the quality and experience of the investment sponsor or manager.
2. Additional criteria to be considered may include, but are not necessarily limited to the following:
 - a. A well-developed investment focus that meets the Portfolio's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. Collective and individual investment experience of partners and key staff as well as team stability;
 - c. Organizational depth and time commitment to the partnership's or project's interests;
 - d. Well-structured decision-making and transaction execution processes, including:
 - deal flow and initial analysis of portfolio investments;
 - pricing, selection and negotiation of portfolio investments;
 - financial structuring of portfolio investments;
 - management or oversight of portfolio companies; and
 - development of exit strategies;
 - e. Consideration of relevant issues, such as conflicts of interest and alignment of interests, among others;
 - f. Experience in, and a demonstrated record of, successful prior investments; and,
 - g. Appropriate proposed terms and structure for the investment.

D. STANDARDS

1. Types of Allowable Investments

Any appropriate investment opportunity that has the potential for returns superior to traditional investment opportunities and is consistent with Portfolio standards and applicable law.

2. Prudent and Productive Investor Standards

Portfolio standards include the requirement to make and manage investments consistent with OIC and OST policies and other applicable fiduciary standards, including but not limited to ORS 293.721 and 293.726.

3. Negotiated Terms

Improved investment terms, such as preferred returns, lower fee structures and profit splits should be pursued by Staff as is practical and prudent.

APPENDIX D

Contract Execution and Partnership Funding

A. CONTRACT EXECUTION

1. Staff will inform the Portfolio's current or prospective managers or general partners of investments or partnership commitments approved by the Council or the Committee immediately following such approvals. All approved investments and partnership commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with internal legal staff, DOJ advice, applicable law and other considerations.
2. With the possible exception of legally privileged materials, Staff will provide the Advisor with OIC and Committee meeting materials.
3. Staff will provide DOJ, in advance, with OIC and Committee meeting materials and will provide DOJ with timely verification of investments and partnership commitments in conjunction with proposed investment management or partnership documentation.
4. The Council's authorized signatory, the CIO (or designee in accordance with OST policy), will ensure legal sufficiency approval is provided by internal legal staff or DOJ prior to the execution of investment management or partnership documentation.

B. PARTNERSHIP FUNDING

1. For all existing and future investments and partnership commitments, each manager or general partner shall submit a complete listing of bank account(s) to which OST may wire funds in connection with the investment or partnership commitment. This list may be included as an exhibit to the investment management or partnership agreement, and OST shall not deviate from these pre-established instructions unless the manager or general partner authorizes such a change in advance and in writing.
2. All requests for funding (e.g., capital calls) must be made pursuant to established OST practices and guidelines.
3. Staff shall regularly monitor investments and partnership commitments, through the Advisor or other contracted service providers, to ensure that any particular investment or partnership commitment does not exceed the maximum amount authorized by the OIC or the Committee. In monitoring investment or partnership commitment levels, the Advisor or other contracted service provider will consider the effect of partnership recycling, temporary bridge financing and similar provisions included in the investment management or partnership agreement to ascertain whether or not funding levels are consistent with OIC approval.
4. Prior to advancing funds in connection with any one investment or partnership commitment, Staff shall verify that written funding requests are properly executed by an authorized member of the corresponding manager or general partner.

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The Oregon State Treasury ("OST"), to accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council ("OIC" or "Council"), has created the Opportunity Portfolio (the "Portfolio") as an investment strategy within the Oregon Public Employees Retirement Fund ("OPERF" or the "Fund"). The Portfolio may be populated with investment approaches across a wide range of investment opportunities with no limitation on asset classes or strategies employed. The Opportunity Portfolio investment program seeks to achieve its investment objective by making investments and partnership commitments that, for any one or more various reasons, do not conform to the guidelines and objectives of the OIC's previously identified asset classes (i.e., public equities, fixed income, real estate, private equity, alternative investments and cash).

Purpose and Goals

The purpose of this policy is to define the strategic role of the Portfolio within the OIC's general investment policies for OPERF, to set forth specific policy objectives, and to outline strategies and guidelines for Portfolio implementation.

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

Applicability

Classified represented, management service, unclassified executive service

Authority

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

1. The investment funds shall be invested and the investments of those funds managed as a prudent investor would do, under the circumstances then prevailing and in light of the purposes, terms, distribution requirements and laws governing each investment fund.
2. The standard stated in subsection (1) of this section requires the exercise of reasonable care, skill and caution, and is to be applied to investments not in isolation but in the context of each investment fund's investment portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the particular investment fund.

3. In making and implementing investment decisions, the Oregon Investment Council and the investment officer have a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so.
4. In addition to the duties stated in subsection (3) of this section, the council and the investment officer must:
 - a. Conform to the fundamental fiduciary duties of loyalty and impartiality;
 - b. Act with prudence in deciding whether and how to delegate authority and in the selection and supervision of agents; and
 - c. Incur only costs that are reasonable in amount and appropriate to the investment responsibilities imposed by law.
5. The duties of the council and the investment officer under this section are subject to contrary provisions of privately created public trusts the assets of which by law are made investment funds. Within the limitations of the standard stated in subsection (1) of this section and subject to subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.
6. Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.
7. Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]

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

293.736 Duties of investment officer.

1. Except as provided in ORS 293.741, in amounts available for investment purposes and subject to the policies formulated by the Oregon Investment Council, the investment officer shall invest and reinvest moneys in the investment funds and acquire, retain, manage,

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

POLICY PROVISIONS

Definitions

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

Policy Statements

I. GENERAL POLICY

Portfolio investments provide an appropriate complement to OPERF's other investments, and are consistent with OPERF's general objectives, including:

- A. Providing a means to pay benefits to OPERF participants and their beneficiaries;
- B. Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
- C. Attaining an adequate real return over the expected rate of inflation; and
- D. Complying with all applicable laws and regulations concerning the investment of pension assets.

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

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

II. OBJECTIVES

A. Strategic Role

The Portfolio should provide enhanced, risk-adjusted returns and diversification to OPERF, and

Portfolio investments are expected to comprise both shorter-term (1-3 years) and longer-term holdings, which may include inflation-oriented and real return-oriented strategies.

The Portfolio has no strategic target, and it may comprise **no more than 3.0%** of total Fund assets; moreover, any allocation to the Portfolio will not result in a range violation for or among the Fund's other, previously established strategic asset allocations.

B. Investment Performance Objective

The Portfolio's investment performance objective is long-term net returns to OPERF (i.e., after management fees and general partners' carried interest) above a benchmark comprised of the Consumer Price Index ("CPI") plus an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, the Portfolio's performance objective is a return equivalent to CPI plus 500 basis points. OST staff (hereinafter referred to as "Staff") will periodically evaluate the Portfolio's performance objective and assigned benchmark.

C. Diversification

1. The Portfolio may be non-diversified, meaning that Staff may concentrate its investments. However, with the exception of cash, the Portfolio's allocation to a particular investment or partnership commitment cannot exceed, at the time of investment, 25% of the Portfolio's maximum allowable 3% total Fund allocation ceiling (i.e., 0.75% of OPERF).
2. Certain investments may be allocated to the Portfolio for incubation purposes and, if successful, may be recommended for transfer into one of the other, primary OPERF asset classes.
3. Investments will be diversified among a range of commitment sizes, generally with a minimum commitment of \$75 million and a maximum commitment equal to 25% of any particular co-mingled partnership. Staff will document and report to the OIC any deviations from these guidelines.
4. Given the truly opportunistic nature and objective of the Portfolio, Staff expects its investments and partnership commitments will be highly episodic and inconsistent over time.
5. A low correlation between OPERF and Portfolio returns is expected over time.

III. OPPORTUNITY PORTFOLIO COMMITTEE

A. The Opportunity Portfolio Committee or "Committee" acts on behalf of, and subject to the review of, OST. The Committee is comprised of the following individuals: the Deputy State Treasurer; the Chief Investment Officer (CIO); and an OIC member invited by the OST to participate as a voting member on the Committee. OST will consider input from the OIC in extending such invitations. ~~In the unlikely event one member of the Committee cannot attend or participate in a Committee meeting that otherwise cannot be deferred or rescheduled, the CIO may, for purposes of establishing a quorum, include a Senior Investment Officer (SIO) and endow that SIO with temporary voting rights so long as that~~

SIO does not work in or on behalf of the Program.

- B. OST, through the Committee, may invest OPERF amounts up to and including \$250 million per investment for new general partner, fund sponsor or manager relationships, and an amount up to and including \$500350 million for existing relationships, consistent with OIC policies (see Appendix B). If consideration of a particular investment opportunity is deemed urgent or otherwise less suited for presentation to the OIC, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.
- C. The Committee will only exercise its investment authority by unanimous vote and acting upon a favorable due diligence determination by the Advisor. The Committee may only consider proposed investments if agreement exists between the Advisor and Staff that the proposed investment is consistent with Portfolio standards. Proposed investments or partnership commitments presented to the Committee are subject to review by OST, which may choose to cancel or refer such proposed investments or partnership commitments to the OIC for broader review and consideration.
- D. In connection with a proposed investment or partnership commitment, Staff shall furnish any favorable due diligence determination, including the underlying rationale, market conditions and portfolio impact, to the OIC as soon as practical and at least two weeks prior to a Committee meeting called for purposes of considering the proposed investment or partnership commitment. If OST objects to the proposed investment or partnership commitment or is advised by any OIC member that he or she objects to the proposed investment or partnership commitment, OST will cancel the proposed investment or partnership commitment and determine whether or not Staff will bring same as a separate agenda item at a subsequent OIC meeting.
- E. Staff shall report any investment or partnership commitment made by the Committee at the next, most feasible OIC meeting.

IV. OST STAFF AUTHORITY

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

- A. Approve OST administrative activities and guideline exceptions if a plan is established to conform the [project/investment/partnership] exception(s) to applicable guidelines within a reasonable period of time;
- B. Acquire, retain, manage and dispose of investment or partnership interests consistent with the authority granted to the Office of the State Treasurer pursuant to ORS 293.736. Review and approve other activities as necessary to further the interests of the Portfolio consistent with its standards; and
- C. Approve up to an additional \$50 million to an existing investment or partnership commitment for the following purposes: (1) recapitalize the investment or partnership with additional equity; (2) acquire all or part of another manager's or limited partner's interest in an investment or partnership; (3) re-balance between or among investments or partnership

commitments; or (4) co-invest alongside a partnership in an individual investment.

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

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

V. ADVISOR AND OST REQUIREMENTS

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

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

VI. LEGAL COUNSEL

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

VII. MONITORING

A. Reports

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

B. Adherence to Strategy

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

Exceptions

None

Failure to Comply

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

PROCEDURES and FORMS

Appendix A: OIC Document: Alternative Investments Valuation Policy

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

Appendix C: OST Procedures for INV 703

Appendix D: OST Procedures: Contract Execution and Partnership Funding

ADMINISTRATION

Feedback

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

APPENDIX A

Alternative Investments Valuation Policy

Public Company Securities

1. Public securities should be valued at the closing price or bid on the last day of the quarter of the performance measurement period.
2. In the event that two or more investment managers or general partners hold the same security with identical provisions and structure, but different valuations, Staff and the Advisor will establish the most appropriate valuation.

Non-Public Company Securities

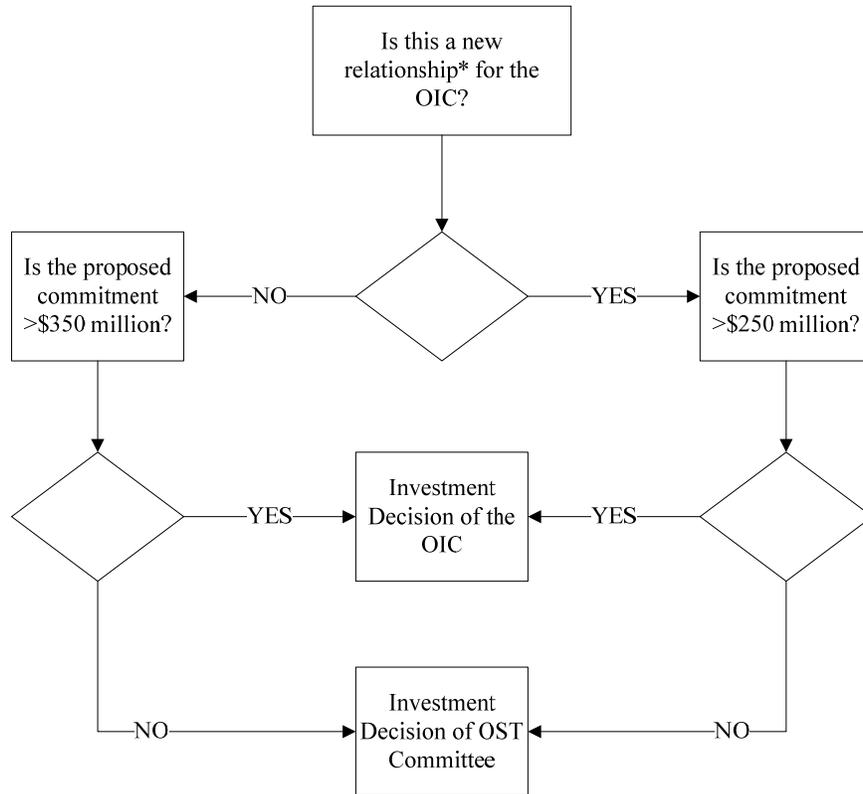
1. Non-publicly traded securities should be valued at fair value. These types of securities are not traded on an active exchange and thus do not have readily determinable market prices established by arm's-length transactions; moreover, there exists no broadly accepted methodology for determining fair value, and valuations of such securities may contain subjective elements. Determination of the fair value of such securities should be based on the best available and most applicable valuation metrics that can be obtained. Valuation metrics may differ substantially, depending on the stage, industry, competitive position and geography of the company.
2. The General Partner (GP) of each limited partnership will determine valuations for the investments within its limited partnerships. If negotiated as part of the applicable Limited Partnership Agreement (LPA), these valuations may be reviewed and/or approved by a committee of limited partners (i.e., an Advisory Board, Investors' Committee, etc.) established for the limited partnership.
3. Staff are not typically experts in the valuation of non-public securities, but do have broad experience in opportunistic investment management; accordingly, Staff will a) apply such experience to determine whether or not valuations reported by GPs and the Advisor are reasonably stated and b) assess the risk of material misstatement. Staff will utilize the best available and most applicable information in forming these assessments. Such information may include, but will not be limited to the following:
 - a. Valuation analyses and adjustments performed by the Advisor, GP or investment manager;
 - b. Audited financial statements of ProgramPortfolio investments and limited partnerships;
 - c. GP-prepared quarterly and annual limited partnership reports;
 - d. Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
 - e. General Staff knowledge of company performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

If the valuation provided by a GP or the Advisor is not U.S. GAAP fair value, Staff may request additional information from the GP or Advisor, if needed, in order to estimate fair value.

4. Staff is responsible for ensuring ProgramPortfolio investments are recorded in OST's book of record at fair value, and this responsibility may not be delegated to third parties. To fulfill this particular responsibility, Staff will:
 - a. Maintain an alert and appropriate level of professional skepticism regarding private equity valuations;
 - b. Review the Advisor's quarterly report, including limited partnership quarterly summaries which detail valuations and changes thereto;
 - c. On an annual basis, meet with the Advisor to update or confirm Staff's understanding of the Advisor's procedures and analyses regarding limited partnership valuation;
 - d. To the fullest extent practical, participate in limited partner committee reviews and/or limited partnership valuation approvals if Staff serves on such committees;
 - e. Review limited partnership annual reports and audited financial statements; and
 - f. On an exception basis, investigate any valuations that are materially different from fair value estimates or expectations, and document the results of such investigation and any proposed changes in limited partnership valuation. Such exceptions may include, but are not limited to, qualified or adverse audit opinions, financial statements prepared on a basis other than U.S. GAAP, material adverse events (e.g., a company bankruptcy), limited partnership valuation policy that is other than fair value, and a qualitative Staff assessment that a particular valuation may not reflect fair value.

Appendix B OIC/OST Alternative Investments Authority

The OST, through Committees, may invest OPERF amounts up to and including \$250 million per investment for new relationships, and an amount up to and including \$350 million for existing relationships.



NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

* A new relationship is defined as a general partner or management team with which the OIC has no existing or committed investment exposure.

APPENDIX C

OST Procedures for INV 7023

A. GENERAL PROCEDURES

1. Staff, and the Advisor, will screen available investments and designate those that meet the ProgramPortfolio's general strategy, selection criteria and performance goals. Staff will coordinate the available investments, whether first identified by Staff, the OIC, the Advisor or otherwise. Staff may reject such proposed investments if they do not meet ProgramPortfolio criteria.
2. The Advisor, working in conjunction with Staff, will review the documents pertinent to an investment opportunity, including the offering memorandum, and identify possible issues. The Advisor and Staff may meet with the general partners, sponsors or investment managers to discuss the investment opportunity.
3. The Advisor will identify those investment opportunities it determines best meet the ProgramPortfolio's criteria and merit further review and analysis by Staff.
4. Staff will select those investment opportunities upon which the Advisor will conduct full due diligence. Upon completion of its due diligence, the Advisor will provide a written report containing a summary of the proposed investment including the following information: a description of the general partner's background, historical performance and organizational profile; the proposed investment strategy; the proposed investment terms; the expected rate of return; the merits of the investment; issues and concerns surrounding the investment as well as potential remedies and resolution strategies; and issues and provisions that should be subject to further negotiation.
5. The Advisor and Staff will discuss an investment opportunity and whether, under the circumstances, an investment recommendation by Staff is likely. Staff will arrange presentations and meetings with the specific general partner or fund sponsor as necessary to address issues or questions. As determined by Staff, but subject to OST review, investment opportunities deemed unattractive or otherwise inconsistent with ProgramPortfolio objectives will not normally be given further consideration.
6. Staff will prepare and submit a written recommendation of attractive or favorably reviewed investment opportunities to the OIC, and include any recommended commitment contingencies unless the proposed investment is processed through the "AlternativeOpportunity Portfolio Committee" as outlined in the policy.
7. Appropriate legal counsel (generally internal legal staff or the Oregon Attorney General's office or "DOJ") will receive partnership documents for any and all proposed investments approved by the OIC or Alternative Opportunity Portfolio Committee. Legal counsel will identify and discuss any existing or potential legal issues with Staff.

C. SELECTION CRITERIA

1. The Staff, on behalf of the OST and consistent with OIC policies, will generally invest with experienced organizations that have managed prior investments or partnerships. Primary emphasis will be on the quality and experience of the investment sponsor or manager.
2. Additional criteria to be considered may include, but are not necessarily limited to the following:
 - a. A well-developed investment focus that meets the ProgramPortfolio's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. Collective and individual investment experience of partners and key staff as well as team stability;
 - c. Organizational depth and time commitment to the partnership's or project's interests;
 - d. Well-structured decision-making and transaction execution processes, including:
 - deal flow and initial analysis of portfolio investments;
 - pricing, selection and negotiation of portfolio investments;
 - financial structuring of portfolio investments;
 - management or oversight of portfolio companies; and
 - development of exit strategies;
 - e. Consideration of relevant issues, such as conflicts of interest and alignment of interests, among others;
 - f. Experience in, and a demonstrated record of, successful prior investments; and,
 - g. Appropriate proposed terms and structure for the investment.

D. STANDARDS

1. Types of Allowable Investments

Any appropriate investment opportunity that has the potential for returns superior to traditional investment opportunities and is consistent with ProgramPortfolio standards and applicable law.

2. Prudent and Productive Investor Standards

ProgramPortfolio standards include the requirement to make and manage investments consistent with OIC and OST policies and other applicable fiduciary standards, including but not limited to ORS 293.721 and 293.726.

3. Negotiated Terms

Improved investment terms, such as preferred returns, lower fee structures and profit splits should be pursued by Staff as is practical and prudent.

APPENDIX D

Contract Execution and Partnership Funding

A. CONTRACT EXECUTION

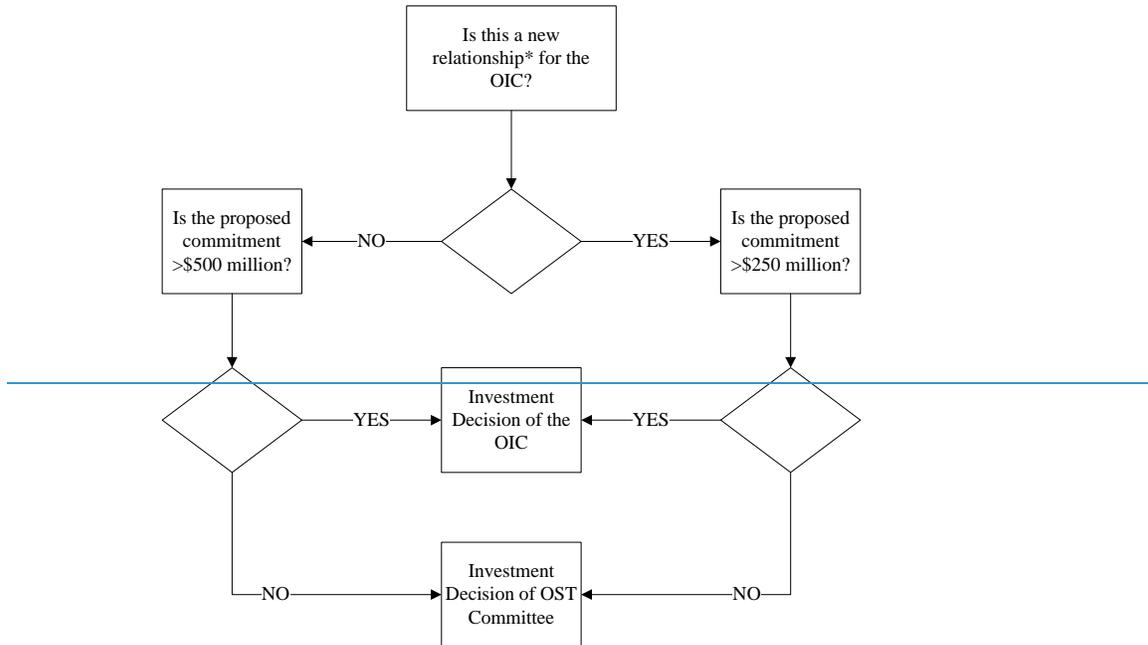
1. Staff will inform the Portfolio's current or prospective managers or general partners of investments or partnership commitments approved by the Council or the Committee immediately following such approvals. All approved investments and partnership commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with internal legal staff, DOJ advice, applicable law and other considerations.
2. With the possible exception of legally privileged materials, Staff will provide the Advisor with OIC and Committee meeting materials.
3. Staff will provide DOJ, in advance, with OIC and Committee meeting materials and will provide DOJ with timely verification of investments and partnership commitments in conjunction with proposed investment management or partnership documentation.
4. The Council's authorized signatory, the CIO (or designee in accordance with OST policy), will ensure legal sufficiency approval is provided by internal legal staff or DOJ prior to the execution of investment management or partnership documentation.

B. PARTNERSHIP FUNDING

1. For all existing and future investments and partnership commitments, each manager or general partner shall submit a complete listing of bank account(s) to which OST may wire funds in connection with the investment or partnership commitment. This list may be included as an exhibit to the investment management or partnership agreement, and OST shall not deviate from these pre-established instructions unless the manager or general partner authorizes such a change in advance and in writing.
 2. All requests for funding (e.g., capital calls) must be made pursuant to established OST practices and guidelines.
 3. Staff shall regularly monitor investments and partnership commitments, through the Advisor or other contracted service providers, to ensure that any particular investment or partnership commitment does not exceed the maximum amount authorized by the OIC or the Committee. In monitoring investment or partnership commitment levels, the Advisor or other contracted service provider will consider the effect of partnership recycling, temporary bridge financing and similar provisions included in the investment management or partnership agreement to ascertain whether or not funding levels are consistent with OIC approval.
- Prior to advancing funds in connection with any one investment or partnership commitment, Staff shall verify that written funding requests are properly executed by an authorized member of the corresponding manager or general partner.

Appendix A OIC/OST Alternative Investments Authority

The OST, through Committees, may invest OPERF amounts up to and including \$250 million per investment for new relationships, and an amount up to and including \$500 million for existing relationships.



NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

* A new relationship is defined as a general partner or management team with which the OIC has no existing or committed investment exposure.

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The Oregon State Treasury ("OST"), to accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council ("OIC" or "Council"), has created the Opportunity Portfolio (the "Portfolio") as an investment strategy within the Oregon Public Employees Retirement Fund ("OPERF" or the "Fund"). The Portfolio may be populated with investment approaches across a wide range of investment opportunities with no limitation on asset classes or strategies employed. The Opportunity Portfolio investment program seeks to achieve its investment objective by making investments and partnership commitments that, for any one or more various reasons, do not conform to the guidelines and objectives of the OIC's previously identified asset classes (i.e., public equities, fixed income, real estate, private equity, alternative investments and cash).

Purpose and Goals

The purpose of this policy is to define the strategic role of the Portfolio within the OIC's general investment policies for OPERF, to set forth specific policy objectives, and to outline strategies and guidelines for Portfolio implementation.

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

Applicability

Classified represented, management service, unclassified executive service

Authority

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

1. The investment funds shall be invested and the investments of those funds managed as a prudent investor would do, under the circumstances then prevailing and in light of the purposes, terms, distribution requirements and laws governing each investment fund.
2. The standard stated in subsection (1) of this section requires the exercise of reasonable care, skill and caution, and is to be applied to investments not in isolation but in the context of each investment fund's investment portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the particular investment fund.
3. In making and implementing investment decisions, the Oregon Investment Council and the investment officer have a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so.

4. In addition to the duties stated in subsection (3) of this section, the council and the investment officer must:
 - a. Conform to the fundamental fiduciary duties of loyalty and impartiality;
 - b. Act with prudence in deciding whether and how to delegate authority and in the selection and supervision of agents; and
 - c. Incur only costs that are reasonable in amount and appropriate to the investment responsibilities imposed by law.
5. The duties of the council and the investment officer under this section are subject to contrary provisions of privately created public trusts the assets of which by law are made investment funds. Within the limitations of the standard stated in subsection (1) of this section and subject to subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.
6. Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.
7. Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]

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

293.736 Duties of investment officer.

1. Except as provided in ORS 293.741, in amounts available for investment purposes and subject to the policies formulated by the Oregon Investment Council, the investment officer shall invest and reinvest moneys in the investment funds and acquire, retain, manage, including exercise of any voting rights, and dispose of investments of the investment funds.
2. Subject to the direction of the council, the investment officer shall perform the functions described in subsection (1) of this section with respect to the investment in mutual funds of

moneys in the Deferred Compensation Fund. The council must approve all mutual funds in which Deferred Compensation Fund moneys are invested. [1967 c.335 §9; 1997 c.179 §23; 2005 c.295 §1]

POLICY PROVISIONS

Definitions

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

Policy Statements

I. GENERAL POLICY

Portfolio investments provide an appropriate complement to OPERF's other investments, and are consistent with OPERF's general objectives, including:

- A. Providing a means to pay benefits to OPERF participants and their beneficiaries;
- B. Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
- C. Attaining an adequate real return over the expected rate of inflation; and
- D. Complying with all applicable laws and regulations concerning the investment of pension assets.

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

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

II. OBJECTIVES

A. Strategic Role

The Portfolio should provide enhanced, risk-adjusted returns and diversification to OPERF, and Portfolio investments are expected to comprise both shorter-term (1-3 years) and longer-term holdings, which may include inflation-oriented and real return-oriented strategies.

The Portfolio has no strategic target, and it may comprise **no more than 3.0%** of total Fund assets; moreover, any allocation to the Portfolio will not result in a range violation for or among the Fund's other, previously established strategic asset allocations.

B. Investment Performance Objective

The Portfolio's investment performance objective is long-term net returns to OPERF (i.e., after management fees and general partners' carried interest) above a benchmark comprised of the Consumer Price Index ("CPI") plus an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, the Portfolio's performance objective is a return equivalent to CPI plus 500 basis points. OST staff (hereinafter referred to as "Staff") will periodically evaluate the Portfolio's performance objective and assigned benchmark.

C. Diversification

1. The Portfolio may be non-diversified, meaning that Staff may concentrate its investments. However, with the exception of cash, the Portfolio's allocation to a particular investment or partnership commitment cannot exceed, at the time of investment, 25% of the Portfolio's maximum allowable 3% total Fund allocation ceiling (i.e., 0.75% of OPERF).
2. Certain investments may be allocated to the Portfolio for incubation purposes and, if successful, may be recommended for transfer into one of the other, primary OPERF asset classes.
3. Investments will be diversified among a range of commitment sizes, generally with a minimum commitment of \$75 million and a maximum commitment equal to 25% of any particular co-mingled partnership. Staff will document and report to the OIC any deviations from these guidelines.
4. Given the truly opportunistic nature and objective of the Portfolio, Staff expects its investments and partnership commitments will be highly episodic and inconsistent over time.
5. A low correlation between OPERF and Portfolio returns is expected over time.

III. OPPORTUNITY PORTFOLIO COMMITTEE

- A. The Opportunity Portfolio Committee or "Committee" acts on behalf of, and subject to the review of, OST. The Committee is comprised of the following individuals: the Deputy State Treasurer; the Chief Investment Officer (CIO); and an OIC member invited by the OST to participate as a voting member on the Committee. OST will consider input from the OIC in extending such invitations.
- B. OST, through the Committee, may invest OPERF amounts up to and including \$250 million per investment for new general partner, fund sponsor or manager relationships, and an amount up to and including \$350 million for existing relationships, consistent with OIC policies (see Appendix B). If consideration of a particular investment opportunity is deemed urgent or otherwise less suited for presentation to the OIC, the CIO may seek OIC approval

for Committee consideration of that particular investment opportunity.

- C. The Committee will only exercise its investment authority by unanimous vote and acting upon a favorable due diligence determination by the Advisor. The Committee may only consider proposed investments if agreement exists between the Advisor and Staff that the proposed investment is consistent with Portfolio standards. Proposed investments or partnership commitments presented to the Committee are subject to review by OST, which may choose to cancel or refer such proposed investments or partnership commitments to the OIC for broader review and consideration.
- D. In connection with a proposed investment or partnership commitment, Staff shall furnish any favorable due diligence determination, including the underlying rationale, market conditions and portfolio impact, to the OIC as soon as practical and at least two weeks prior to a Committee meeting called for purposes of considering the proposed investment or partnership commitment. If OST objects to the proposed investment or partnership commitment or is advised by any OIC member that he or she objects to the proposed investment or partnership commitment, OST will cancel the proposed investment or partnership commitment and determine whether or not Staff will bring same as a separate agenda item at a subsequent OIC meeting.
- E. Staff shall report any investment or partnership commitment made by the Committee at the next, most feasible OIC meeting.

IV. OST STAFF AUTHORITY

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

- A. Approve OST administrative activities and guideline exceptions if a plan is established to conform the [project/investment/partnership] exception(s) to applicable guidelines within a reasonable period of time;
- B. Acquire, retain, manage and dispose of investment or partnership interests consistent with the authority granted to the Office of the State Treasurer pursuant to ORS 293.736. Review and approve other activities as necessary to further the interests of the Portfolio consistent with its standards; and
- C. Approve up to an additional \$50 million to an existing investment or partnership commitment for the following purposes: (1) recapitalize the investment or partnership with additional equity; (2) acquire all or part of another manager's or limited partner's interest in an investment or partnership; (3) re-balance between or among investments or partnership commitments; or (4) co-invest alongside a partnership in an individual investment.
- D. Any such additional investments or partnership commitments shall be on terms equal to or better than the existing terms.

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

V. ADVISOR AND OST REQUIREMENTS

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

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

VI. LEGAL COUNSEL

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

VII. MONITORING

A. Reports

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

B. Adherence to Strategy

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

Exceptions

None

Failure to Comply

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

PROCEDURES and FORMS

Appendix A: OIC Document: Alternative Investments Valuation Policy

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

Appendix C: OST Procedures for INV 703

Appendix D: OST Procedures: Contract Execution and Partnership Funding

ADMINISTRATION

Feedback

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

APPENDIX A

Alternative Investments Valuation Policy

Public Company Securities

1. Public securities should be valued at the closing price or bid on the last day of the quarter of the performance measurement period.
2. In the event that two or more investment managers or general partners hold the same security with identical provisions and structure, but different valuations, Staff and the Advisor will establish the most appropriate valuation.

Non-Public Company Securities

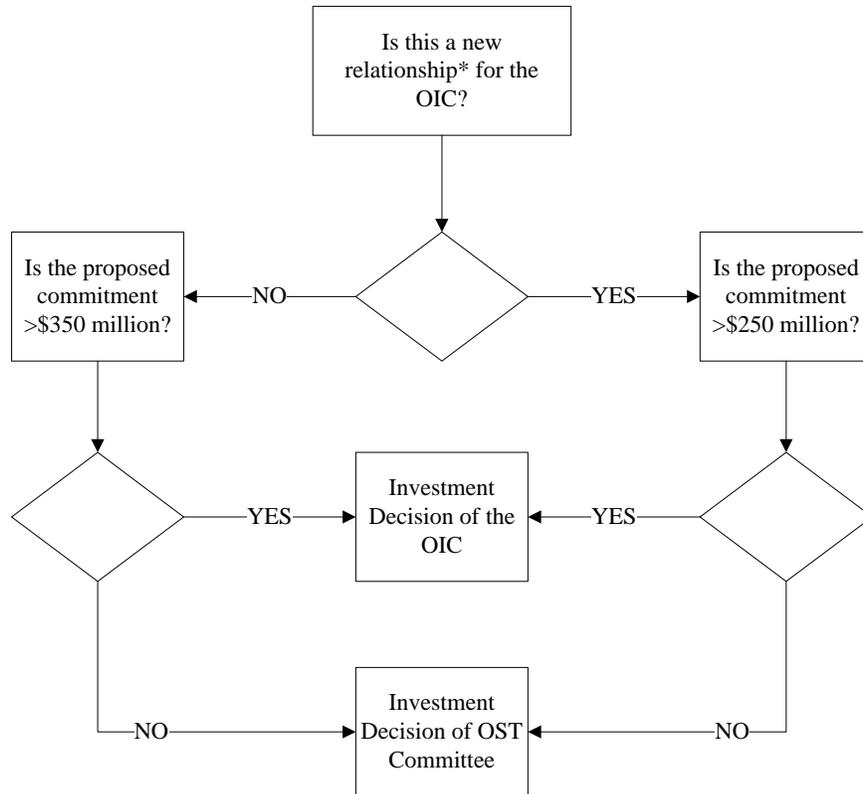
1. Non-publicly traded securities should be valued at fair value. These types of securities are not traded on an active exchange and thus do not have readily determinable market prices established by arm's-length transactions; moreover, there exists no broadly accepted methodology for determining fair value, and valuations of such securities may contain subjective elements. Determination of the fair value of such securities should be based on the best available and most applicable valuation metrics that can be obtained. Valuation metrics may differ substantially, depending on the stage, industry, competitive position and geography of the company.
2. The General Partner (GP) of each limited partnership will determine valuations for the investments within its limited partnerships. If negotiated as part of the applicable Limited Partnership Agreement (LPA), these valuations may be reviewed and/or approved by a committee of limited partners (i.e., an Advisory Board, Investors' Committee, etc.) established for the limited partnership.
3. Staff are not typically experts in the valuation of non-public securities, but do have broad experience in opportunistic investment management; accordingly, Staff will a) apply such experience to determine whether or not valuations reported by GPs and the Advisor are reasonably stated and b) assess the risk of material misstatement. Staff will utilize the best available and most applicable information in forming these assessments. Such information may include, but will not be limited to the following:
 - a. Valuation analyses and adjustments performed by the Advisor, GP or investment manager;
 - b. Audited financial statements of Portfolio investments and limited partnerships;
 - c. GP-prepared quarterly and annual limited partnership reports;
 - d. Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
 - e. General Staff knowledge of company performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

If the valuation provided by a GP or the Advisor is not U.S. GAAP fair value, Staff may request additional information from the GP or Advisor, if needed, in order to estimate fair value.

4. Staff is responsible for ensuring Portfolio investments are recorded in OST's book of record at fair value, and this responsibility may not be delegated to third parties. To fulfill this particular responsibility, Staff will:
 - a. Maintain an alert and appropriate level of professional skepticism regarding private equity valuations;
 - b. Review the Advisor's quarterly report, including limited partnership quarterly summaries which detail valuations and changes thereto;
 - c. On an annual basis, meet with the Advisor to update or confirm Staff's understanding of the Advisor's procedures and analyses regarding limited partnership valuation;
 - d. To the fullest extent practical, participate in limited partner committee reviews and/or limited partnership valuation approvals if Staff serves on such committees;
 - e. Review limited partnership annual reports and audited financial statements; and
 - f. On an exception basis, investigate any valuations that are materially different from fair value estimates or expectations, and document the results of such investigation and any proposed changes in limited partnership valuation. Such exceptions may include, but are not limited to, qualified or adverse audit opinions, financial statements prepared on a basis other than U.S. GAAP, material adverse events (e.g., a company bankruptcy), limited partnership valuation policy that is other than fair value, and a qualitative Staff assessment that a particular valuation may not reflect fair value.

Appendix B OIC/OST Alternative Investments Authority

The OST, through Committees, may invest OPERF amounts up to and including \$250 million per investment for new relationships, and an amount up to and including \$350 million for existing relationships.



NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

* A new relationship is defined as a general partner or management team with which the OIC has no existing or committed investment exposure.

APPENDIX C

OST Procedures for INV 703

A. GENERAL PROCEDURES

1. Staff, and the Advisor, will screen available investments and designate those that meet the Portfolio's general strategy, selection criteria and performance goals. Staff will coordinate the available investments, whether first identified by Staff, the OIC, the Advisor or otherwise. Staff may reject such proposed investments if they do not meet Portfolio criteria.
2. The Advisor, working in conjunction with Staff, will review the documents pertinent to an investment opportunity, including the offering memorandum, and identify possible issues. The Advisor and Staff may meet with the general partners, sponsors or investment managers to discuss the investment opportunity.
3. The Advisor will identify those investment opportunities it determines best meet the Portfolio's criteria and merit further review and analysis by Staff.
4. Staff will select those investment opportunities upon which the Advisor will conduct full due diligence. Upon completion of its due diligence, the Advisor will provide a written report containing a summary of the proposed investment including the following information: a description of the general partner's background, historical performance and organizational profile; the proposed investment strategy; the proposed investment terms; the expected rate of return; the merits of the investment; issues and concerns surrounding the investment as well as potential remedies and resolution strategies; and issues and provisions that should be subject to further negotiation.
5. The Advisor and Staff will discuss an investment opportunity and whether, under the circumstances, an investment recommendation by Staff is likely. Staff will arrange presentations and meetings with the specific general partner or fund sponsor as necessary to address issues or questions. As determined by Staff, but subject to OST review, investment opportunities deemed unattractive or otherwise inconsistent with Portfolio objectives will not normally be given further consideration.
6. Staff will prepare and submit a written recommendation of attractive or favorably reviewed investment opportunities to the OIC, and include any recommended commitment contingencies unless the proposed investment is processed through the "Opportunity Portfolio Committee" as outlined in the policy.
7. Appropriate legal counsel (generally internal legal staff or the Oregon Attorney General's office or "DOJ") will receive partnership documents for any and all proposed investments approved by the OIC or Opportunity Portfolio Committee. Legal counsel will identify and discuss any existing or potential legal issues with Staff.

C. SELECTION CRITERIA

1. The Staff, on behalf of the OST and consistent with OIC policies, will generally invest with experienced organizations that have managed prior investments or partnerships. Primary emphasis will be on the quality and experience of the investment sponsor or manager.
2. Additional criteria to be considered may include, but are not necessarily limited to the following:
 - a. A well-developed investment focus that meets the Portfolio's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. Collective and individual investment experience of partners and key staff as well as team stability;
 - c. Organizational depth and time commitment to the partnership's or project's interests;
 - d. Well-structured decision-making and transaction execution processes, including:
 - deal flow and initial analysis of portfolio investments;
 - pricing, selection and negotiation of portfolio investments;
 - financial structuring of portfolio investments;
 - management or oversight of portfolio companies; and
 - development of exit strategies;
 - e. Consideration of relevant issues, such as conflicts of interest and alignment of interests, among others;
 - f. Experience in, and a demonstrated record of, successful prior investments; and,
 - g. Appropriate proposed terms and structure for the investment.

D. STANDARDS

1. Types of Allowable Investments

Any appropriate investment opportunity that has the potential for returns superior to traditional investment opportunities and is consistent with Portfolio standards and applicable law.

2. Prudent and Productive Investor Standards

Portfolio standards include the requirement to make and manage investments consistent with OIC and OST policies and other applicable fiduciary standards, including but not limited to ORS 293.721 and 293.726.

3. Negotiated Terms

Improved investment terms, such as preferred returns, lower fee structures and profit splits should be pursued by Staff as is practical and prudent.

APPENDIX D

Contract Execution and Partnership Funding

A. CONTRACT EXECUTION

1. Staff will inform the Portfolio's current or prospective managers or general partners of investments or partnership commitments approved by the Council or the Committee immediately following such approvals. All approved investments and partnership commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with internal legal staff, DOJ advice, applicable law and other considerations.
2. With the possible exception of legally privileged materials, Staff will provide the Advisor with OIC and Committee meeting materials.
3. Staff will provide DOJ, in advance, with OIC and Committee meeting materials and will provide DOJ with timely verification of investments and partnership commitments in conjunction with proposed investment management or partnership documentation.
4. The Council's authorized signatory, the CIO (or designee in accordance with OST policy), will ensure legal sufficiency approval is provided by internal legal staff or DOJ prior to the execution of investment management or partnership documentation.

B. PARTNERSHIP FUNDING

1. For all existing and future investments and partnership commitments, each manager or general partner shall submit a complete listing of bank account(s) to which OST may wire funds in connection with the investment or partnership commitment. This list may be included as an exhibit to the investment management or partnership agreement, and OST shall not deviate from these pre-established instructions unless the manager or general partner authorizes such a change in advance and in writing.
2. All requests for funding (e.g., capital calls) must be made pursuant to established OST practices and guidelines.
3. Staff shall regularly monitor investments and partnership commitments, through the Advisor or other contracted service providers, to ensure that any particular investment or partnership commitment does not exceed the maximum amount authorized by the OIC or the Committee. In monitoring investment or partnership commitment levels, the Advisor or other contracted service provider will consider the effect of partnership recycling, temporary bridge financing and similar provisions included in the investment management or partnership agreement to ascertain whether or not funding levels are consistent with OIC approval.

Prior to advancing funds in connection with any one investment or partnership commitment, Staff shall verify that written funding requests are properly executed by an authorized member of the corresponding manager or general partner.

INTRODUCTION & OVERVIEW

Summary Policy Statement

ORS 293.712 requires the ~~OIC~~ chair of the Oregon Investment Council (OIC or the Council) to consult with the State Treasurer and prescribe continuing education requirements for OIC members related to fiduciary duties, best practices or both. This policy sets forth the process for OIC members to develop and maintain the skills required to meet the high standards to which they are held, and to comply with Oregon statutory requirements.

Purpose and Goals

ORS 293.726 requires the OIC to invest state funds with the reasonable care, skill, and caution that a prudent investor would observe under similar circumstances and in light of the purposes, terms, distribution requirements, and laws governing each investment fund. In order to meet this standard, OIC members collectively must develop an understanding of both peer best practices and ~~the~~ issues involved in managing large asset pools ~~of assets~~ as a prudent fiduciary.

Authority

ORS 293.701 through 293.847.

POLICY PROVISIONS

Definitions

Core Competencies: Skills deemed essential to the OIC, as listed in Attachment A.

Educational Activity: Any substantive educational activity relating to the Core Competencies or other topics that directly enhance a Council~~Board~~ member's ability to discharge~~carry out~~ their duties effectively. Substantive educational activities include but are not limited to conferences, seminars, accredited courses, workshops, on-line training and educational workshops provided by or incorporating the work of the OIC, ~~c~~consultants or Treasury staff.

Education Plan: A proposal for OIC education. The Chief Investment Officer (CIO) and Council~~Board~~ chair (the Chair) will develop an education plan pursuant to Section 2 below.

Policy Statements

1. OIC Member Core Competencies

OIC members must be qualified by training and experience in the field of investment or finance. OIC members should also seek to develop a collective understanding of specific areas related to their Council duties ~~as board members~~ (the "Core Competencies"), including fiduciary responsibilities and laws, investment roles and functions at the Oregon State Treasury (OST), OIC policies, and public meeting and public records laws. The full list of competencies is listed herewith in Attachment A ~~to this policy~~. The CIO and ~~Cboard~~ chair will review and update the Core Competencies as needed.

This policy does not contemplate that every OIC member become fully competent in all of the Core Competencies, or that all Core Competencies must be represented on the OIC at all times.

2. Skills Inventory and Education Plan

The OIC may engage in a biennial evaluation focused on (a) identifying existing member skill sets and interests, (b) further developing member Core Competencies, and (c) prioritizing development of any Core Competencies expected to be most needed over the next two to four years. The CIO and ~~the~~ Chair will use the results of the biennial evaluation to develop a proposed education plan ("Education Plan"), and the Chair may request individual members secure training as part of that Education Plan. The OIC's ~~e~~Education ~~p~~Plan should ensure that OIC expenditures for training are reasonable in amount and appropriate to the OIC's investment responsibilities, as required by ORS 293.726 (4) (c). The plan may include an education budget for costs associated with attendance at conferences, classes, or training sessions.

OST staff may work with the Oregon Governor's office to identify particular characteristics or expertise that would enhance functioning of the OIC.

3. New Member Orientation

- A. Every OIC member will attend the "Board Effectiveness Program for Pension and Other Long-Horizon Investment Institutions" at the University of Toronto's Rotman School of Management within one year of their appointment.
- B. The ~~Chief Investment Officer (CIO)~~ will arrange introductory training for all new OIC members, to include some or all of the Core Competencies. Orientation may consist of a single session or multiple session meetings with the CIOs, and should commence as soon as is practical. Orientation may include sessions with other ~~be conducted by Oregon State Treasury~~ staff or outside experts, and may include attendance at other conferences, classes, or seminars.
- C. Orientation sessions shall be open to all OIC members. In addition, the CIO shall ensure that refresher training sessions are offered on a regular basis, in OIC meetings or otherwise, with attention to specific Core Competencies in the Education Plan. OIC

members may also request training or ~~other~~ special educational presentations on ~~otherspecific~~ relevant topics.

D. All OIC members will receive written training materials from Treasury that includes ~~the DAS manual (what is this called) that covers~~ the range of expectations and responsibilities ~~of~~ members of public boards and commissions, under current law.

4. Regular Training through Educational Activities

A. The OIC recognizes that it must act with the care, skill, and caution of other prudent investors in similar circumstances, and that this standard of care requires them to avail themselves of training opportunities that are developed for (and attended by) similar institutional investors. OIC members are encouraged to learn from diverse sources to provide exposure to new ideas and counteract natural tendencies toward 'group think.'

B. In addition to developing an understanding of the baseline Core Competencies through the orientation process, ~~C~~ouncil members shall attend and participate in continuing education activities. ~~These~~ including but not limited to the following:

~~i.~~

i. Initial~~Annual~~ training on ~~the~~ fiduciary duties applicable to ~~trustees of a~~ public pension plan system~~trustees~~;

~~ii.~~

ii. Regular and on-going ~~e~~ducational Activities designed to develop Council members' ~~their~~ individual knowledge and expertise in ~~the~~ matters and areas set forth in the Core Competencies; and

~~iii.~~

iii. Educational opportunities~~Activities~~ that align with the goals of the Education Plan as developed by the ~~C~~ouncil chair and CIO. These opportunities can include but are not limited to: Fund governance, risk management and asset allocation strategy. Other areas of educational focus include issues related to the Fiduciary pactice of institutional asset management; investment industry issues and trends and; ~~or~~ pension plan issues and trends.

~~B.C.~~ Attendance at conferences and courses outside of the state, and occasionally outside of the country, is necessary to adequately equip OIC members to effectively fulfill ~~responsibilities for their~~ oversight responsibilities in connection with ~~Treasury's~~ global investment activities.

~~C.D.~~ Educational practices of peer funds also contemplate attendance at national and international educational programs and industry events.

~~D.E.~~ The CIO will work with OIC members upon request to identify quality educational opportunities that provide relevant training, and will provide suggestions for conferences, seminars, meetings, and courses. OIC members may also suggest educational events for the CIO's ~~to~~ consideration.

E.F. OIC members will comply with all OST travel and business expense policies, ethics codes, and standards of conduct. Members attend events as fiduciary representatives of the OIC and ~~the~~ State of Oregon, and should conduct themselves in a manner that comports with the highest standards of care and decorum.

5. Approval and Reports on Outside Training

Pre-approval to attend an educational conference, seminar, meeting, or course must be obtained from the Chair. The Chair will consult with the CIO to ensure that proposed training activities are consistent with this policy's objectives and do not exceed OST~~the CIO's~~ budget allocation for such purposes.

After attending an educational event, ~~an~~ OIC members shall report to the CIO on the quality of the event and its relevance to the Council's mission and responsibilities~~a public sector investment institution~~. The CIO shall consider member reports and recommendations in evaluating events for future training and orientation purposes.

6. Mentorship

A new member may request assignment of a mentor. If requested, the Chair shall assign an experienced OIC member to provide mentorship to the new OIC member for up to a year.

7. Industry Periodicals and Materials

OIC members may subscribe to industry periodicals, books, and other materials that are relevant to development and maintenance of Core Competences. Each OIC member shall also be given a copy of, or electronic access to, the current Member Orientation and Reference Manual.

Exceptions

None.

Failure to Comply

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

PROCEDURES and FORMS

A. Oregon Investment Council Matrix of Core Competencies

ADMINISTRATION

Review

Annually.

Feedback

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

Attachment A

Template Oregon Investment Council Matrix of Core Competencies Matrix Template

Orientation and Initial Core Competencies						
1) Fiduciary Responsibilities and Laws Relevant to the OIC						
2) OIC Governance Structure, Practices, and Policies						
3) Governance, Structure, and Purposes of the Funds under OIC Supervision						
4) Core functions of the OIC a) -Investment Management Fundamentals, including: Asset Allocation; Benchmarks; Performance Measurement; Investment Risk; Reporting Standards; Economic Principles; and Related Concepts b) Selection, Contracting, Monitoring, and Evaluation of Advisors, Managers, Consultants, and other Service Providers c) Understanding financial controls, audits, compliance, actuarial and funding analyses of pension systems, and enterprise risk management d) Materiality of Sustainability, Environmental, Social, and Corporate Governance Factors						
5) Investment Functions and Roles of the Oregon State Treasury, including communications and stakeholder relations						
6) Best Practices for Governing Boards and the Conduct of Meetings (from DAS manual) , including: a) Standards of Conduct including sexual harassment training, Confidentiality, Conflicts of Interest, Ethics Code Provisions, Personal Investments, and Related Disclosure Requirements; <u>and</u> b) Public Records and Meetings Law Requirements						
<u>Initial and Continuing Education:</u>						
7) F <u>Annual</u> Fiduciary training (required)						
8) <u>Regular or on-going e</u> E ducation activities <u>consistent in alignment</u> with the Core Competencies articulated in (4) above						

9) Other educational opportunities-activities that align with the Education Plan as developed by the Board-Chair and CIO						
--	--	--	--	--	--	--

INTRODUCTION & OVERVIEW

Summary Policy Statement

ORS 293.712 requires the chair of the Oregon Investment Council (OIC or the Council) to consult with the State Treasurer and prescribe continuing education requirements for OIC members related to fiduciary duties, best practices or both. This policy sets forth the process for OIC members to develop and maintain the skills required to meet the high standards to which they are held, and to comply with Oregon statutory requirements.

Purpose and Goals

ORS 293.726 requires the OIC to invest state funds with the reasonable care, skill, and caution that a prudent investor would observe under similar circumstances and in light of the purposes, terms, distribution requirements, and laws governing each investment fund. In order to meet this standard, OIC members collectively must develop an understanding of both peer best practices and issues involved in managing large asset pools as a prudent fiduciary.

Authority

ORS 293.701 through 293.847.

POLICY PROVISIONS

Definitions

Core Competencies: Skills deemed essential to the OIC, as listed in Attachment A.

Educational Activity: Any substantive educational activity relating to the Core Competencies or other topics that directly enhance a Council member's ability to discharge their duties effectively. Substantive educational activities include but are not limited to conferences, seminars, accredited courses, workshops, on-line training and educational workshops provided by or incorporating the work of the OIC, consultants or Treasury staff.

Education Plan: A proposal for OIC education. The Chief Investment Officer (CIO) and Council chair (the Chair) will develop an education plan pursuant to Section 2 below.

Policy Statements

1. OIC Member Core Competencies

OIC members must be qualified by training and experience in the field of investment or finance. OIC members should also seek to develop a collective understanding of specific areas related to their Council duties (the Core Competencies), including fiduciary responsibilities and laws, investment roles and functions at the Oregon State Treasury (OST), OIC policies, and public meeting and public records laws. The full list of competencies is listed herewith in Attachment A. The CIO and Chair will review and update the Core Competencies as needed.

This policy does not contemplate that every OIC member become fully competent in all of the Core Competencies, or that all Core Competencies must be represented on the OIC at all times.

2. Skills Inventory and Education Plan

The OIC may engage in a biennial evaluation focused on (a) identifying existing member skill sets and interests, (b) further developing member Core Competencies, and (c) prioritizing development of any Core Competencies expected to be most needed over the next two to four years. The CIO and Chair will use the results of the biennial evaluation to develop a proposed education plan (Education Plan), and the Chair may request individual members secure training as part of that Education Plan. The OIC's Education Plan should ensure that OIC expenditures for training are reasonable in amount and appropriate to the OIC's investment responsibilities, as required by ORS 293.726 (4) (c). The plan may include an education budget for costs associated with attendance at conferences, classes, or training sessions.

OST staff may work with the Oregon Governor's office to identify particular characteristics or expertise that would enhance functioning of the OIC.

3. New Member Orientation

- A. Every OIC member will attend the "Board Effectiveness Program for Pension and Other Long-Horizon Investment Institutions" at the University of Toronto's Rotman School of Management within one year of their appointment.
- B. The CIO will arrange introductory training for all new OIC members, to include some or all of the Core Competencies. Orientation may consist of a single session or multiple session meetings with the CIO, and should commence as soon as is practical. Orientation may include sessions with other OST staff or outside experts, and may include attendance at other conferences, classes, or seminars.
- C. Orientation sessions shall be open to all OIC members. In addition, the CIO shall ensure that refresher training sessions are offered on a regular basis, in OIC meetings or otherwise, with attention to specific Core Competencies in the Education Plan. OIC members may also request training or special educational presentations on other relevant topics.
- D. All OIC members will receive written training materials from Treasury that include the range of expectations and responsibilities for members of public boards and commissions under current law.

4. Regular Training through Educational Activities

- A. The OIC recognizes that it must act with the care, skill, and caution of other prudent investors in similar circumstances, and that this standard of care requires them to avail themselves of training opportunities that are developed for (and attended by) similar institutional investors. OIC members are encouraged to learn from diverse sources to provide exposure to new ideas and counteract natural tendencies toward 'group think.'
- B. In addition to developing an understanding of the baseline Core Competencies through the orientation process, Council members shall attend and participate in continuing education activities including but not limited to the following:
 - i. Initial training on fiduciary duties applicable to public pension plan trustees;
 - ii. Regular and on-going education designed to develop Council members' individual knowledge and expertise in matters and areas set forth in the Core Competencies; and
 - iii. Educational opportunities that align with the goals of the Education Plan as developed by the Chair and CIO. These opportunities can include but are not limited to fund governance, risk management and asset allocation strategy. Other areas of educational focus include issues related to the fiduciary practice of institutional asset management, investment industry issues and trends and pension plan issues and trends.
- C. Attendance at conferences and courses outside of the state, and occasionally outside of the country, is necessary to adequately equip OIC members to effectively fulfill their oversight responsibilities in connection with Treasury's global investment activities.
- D. Educational practices of peer funds also contemplate attendance at national and international educational programs and industry events.
- E. The CIO will work with OIC members upon request to identify quality educational opportunities that provide relevant training, and will provide suggestions for conferences, seminars, meetings, and courses. OIC members may also suggest educational events for the CIO's consideration.
- F. OIC members will comply with all OST travel and business expense policies, ethics codes, and standards of conduct. Members attend events as fiduciary representatives of the OIC and State of Oregon, and should conduct themselves in a manner that comports with the highest standards of care and decorum.

5. Approval and Reports on Outside Training

Pre-approval to attend an educational conference, seminar, meeting, or course must be obtained from the Chair. The Chair will consult with the CIO to ensure that proposed training activities

are consistent with this policy's objectives and do not exceed OST's budget allocation for such purposes.

After attending an educational event, OIC members shall report to the CIO on the quality of the event and its relevance to the Council's mission and responsibilities. The CIO shall consider member reports and recommendations in evaluating events for future training and orientation purposes.

6. Mentorship

A new member may request assignment of a mentor. If requested, the Chair shall assign an experienced OIC member to provide mentorship to the new OIC member for up to a year.

7. Industry Periodicals and Materials

OIC members may subscribe to industry periodicals, books, and other materials that are relevant to development and maintenance of Core Competences. Each OIC member shall also be given a copy of, or electronic access to, the current Member Orientation and Reference Manual.

Exceptions

None.

Failure to Comply

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

PROCEDURES and FORMS

A. Oregon Investment Council Matrix of Core Competencies

ADMINISTRATION

Review

Annually

Feedback

Your comments are extremely important to improving the effectiveness of this policy. If you would like to comment on the provisions of this policy, you may do so by e-mailing the Policy

Analyst. To ensure your comments are received without delay, *please list the policy number and name in your e-mail's subject*. Your comments will be reviewed during the policy revisions process and may result in changes to the policy.

Attachment A

Oregon Investment Council Core Competencies Matrix Template

Orientation and Initial Core Competencies						
1) Fiduciary Responsibilities and Laws Relevant to the OIC						
2) OIC Governance Structure, Practices, and Policies						
3) Governance, Structure, and Purposes of the Funds under OIC Supervision						
4) Core functions of the OIC a) Investment Management Fundamentals, including: Asset Allocation; Benchmarks; Performance Measurement; Investment Risk; Reporting Standards; Economic Principles; and Related Concepts b) Selection, Contracting, Monitoring, and Evaluation of Advisors, Managers, Consultants, and other Service Providers c) Understanding financial controls, audits, compliance, actuarial and funding analyses of pension systems, and enterprise risk management d) Materiality of Sustainability, Environmental, Social, and Corporate Governance Factors						
5) Investment Functions and Roles of the Oregon State Treasury, including communications and stakeholder relations						
6) Best Practices for Governing Boards and the Conduct of Meetings including: a) Standards of Conduct including sexual harassment training, Confidentiality, Conflicts of Interest, Ethics Code Provisions, Personal Investments, and Related Disclosure Requirements; and b) Public Records and Meetings Law Requirements						
Initial and Continuing Education:						
7) Fiduciary training (required)						
8) Regular or on-going education consistent with Core Competencies articulated in (4) above						
9) Other educational opportunities that align with the Education Plan as developed by the Chair and CIO						

TAB 5 – Strategic Asset Allocation & Capital Market

Assumptions Update

OPERF

OPERF Capital Market Assumptions Update

Purpose

Provide the OIC with updated Capital Market Assumptions, and, if necessary, revise estimates of OPERF's long-term, forward-looking risk and return.

Background

OIC Policy INV 215 (*OPERF Asset Allocation and Rebalancing Policy*) directs OST staff to work with the Council's general consultant to annually update risk and return expectations for OPERF based on a) the consultant's Capital Market Assumptions and b) OPERF's strategic asset allocation targets. The Capital Market Assumptions provided by the general consultant, Callan Associates, are unchanged from last year; moreover, staff is not proposing any strategic asset allocation changes. Accordingly, the *ex ante*, average annual estimate of OPERF's "beta" return remains 7.1%.

Asset Class	Target Allocation (%)	Rebalancing Range (%)	Expected Annual Policy Return (%)
Public Equity	37.5	32.5 – 42.5	7.1
Private Equity	17.5	14.0 – 21.0	9.5
<i>Total Equity</i>	<i>55.0</i>	<i>50.0 – 60.0</i>	
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

Since last year's Capital Market Assumptions update, the Council's excess return or "alpha" objective across the Fixed Income, Public Equity, and Real Estate portfolios declined from 0.4% to 0.3%. That decline is the result of a lower active return target in Public Equity. Specifically, and approved at the November 2017 OIC meeting, the active return target in Public Equity was reduced from 0.75% to 0.50% to reflect that portfolio's material repositioning into multiple "low vol" mandates.

Asset Class	Target Allocation (%)	Target Active Return (%)	Target Active Contribution (%)
Public Equity	37.5	0.50	0.19
Fixed Income	20.0	0.25	0.05
Real Estate	12.5	0.50	0.06
Total Fund			0.30

Staff Recommendation

Approve minor changes to OIC Policies INV 215 (*OPERF Asset Allocation and Rebalancing Policy*) and INV 1203 (*Statement of Investment Objectives and Policy Framework for OPERF*).



April 25, 2018

Oregon Investment Council 2018 Asset Allocation Update

Janet Becker-Wold, CFA
Fund Sponsor Consulting

Jason Ellement, FSA, CFA
Capital Markets Research

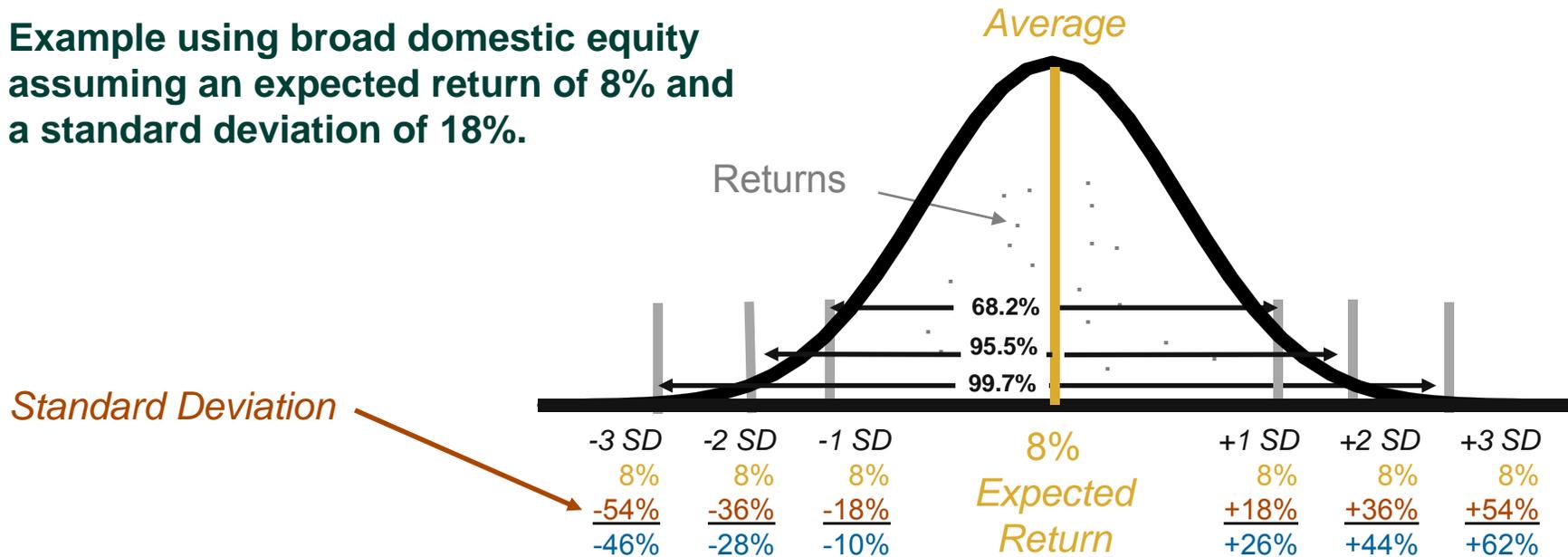
James Callahan, CFA
President

Uvan Tseng, CFA
Fund Sponsor Consulting

Risk According to Modern Portfolio Theory

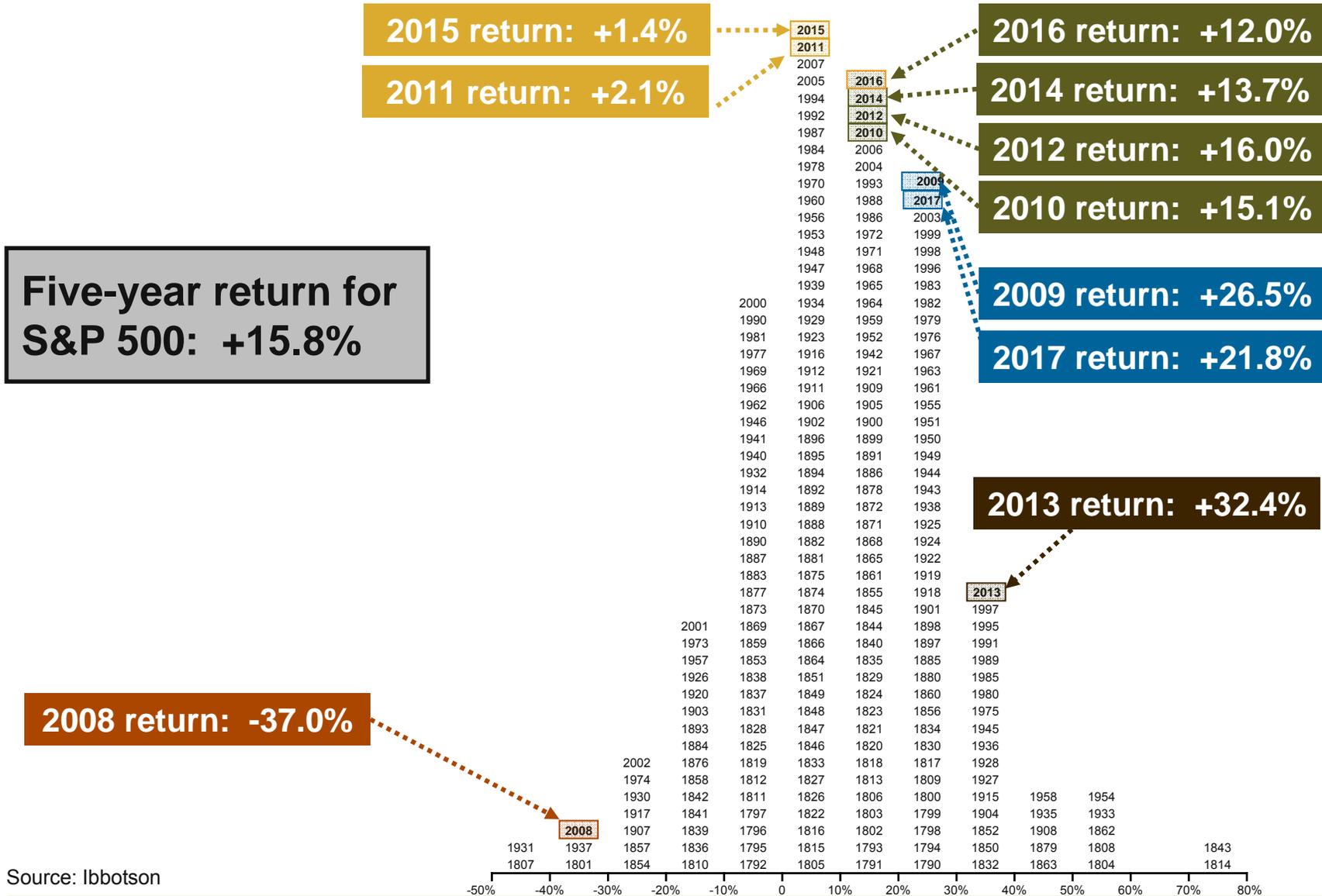
- Risk is measured by the **standard deviation**, the dispersion of returns around the mean (average).
 - If the standard deviation is high, wide range of outcomes= risk is high.
- Calculation of standard deviation includes returns both above and below the average.
- Standard deviation implies a *probability of occurrence* – useful for conveying the risk of poor outcomes.

Example using broad domestic equity assuming an expected return of 8% and a standard deviation of 18%.



Stock Market Returns by Calendar Year

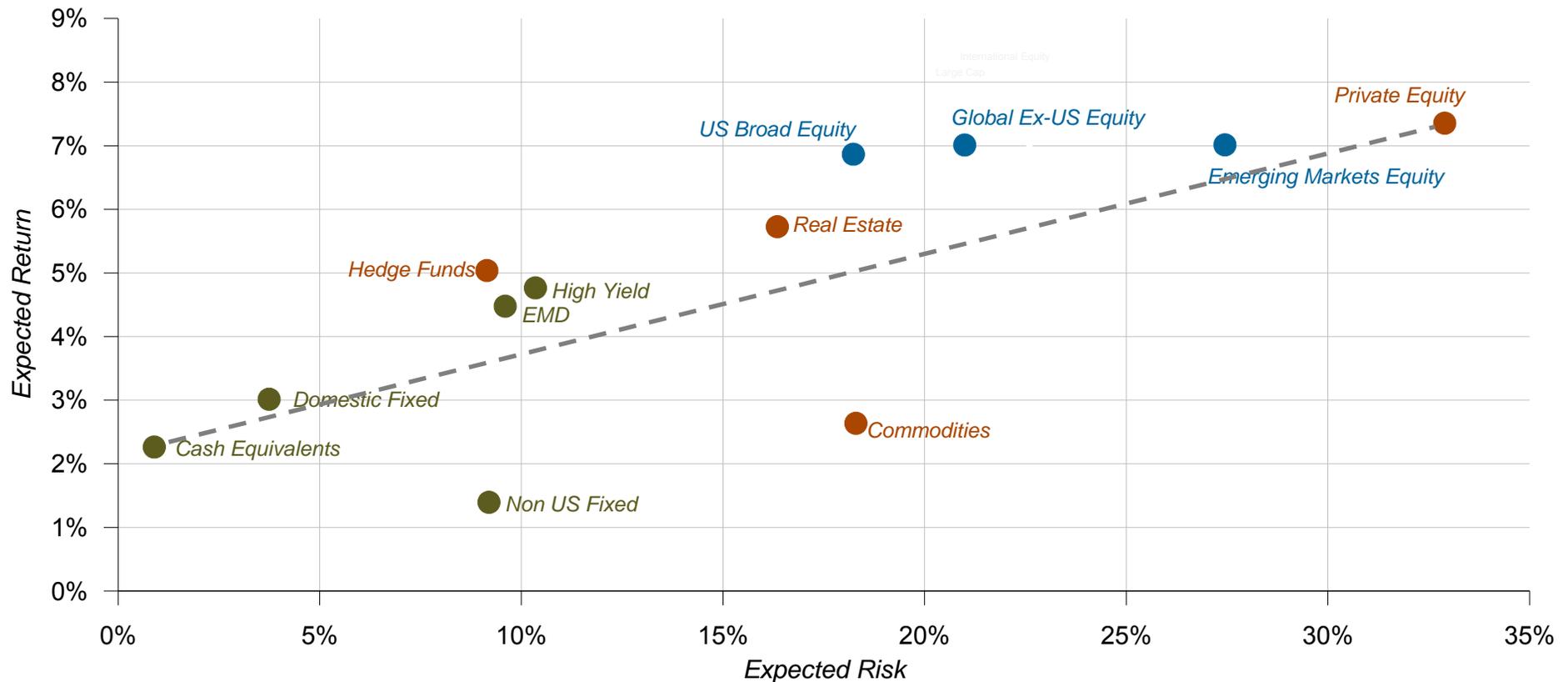
2017 Performance in Perspective: History of the U.S. Stock Market (228 Years of Returns)



Source: Ibbotson

Relationship Between Risk and Return – Capital Market Line

Depicts Callan's Standard Assumptions of Return and Risk for Asset Classes Shown



- Modern portfolio theory assumes investors are risk averse.
 - Given a choice between two assets with the same level of return, an investor will select the asset with a lower level of risk.
 - The risk premium demanded by investors provides evidence of risk aversion.
 - For example, investors demand a greater return from private equity over public equity for the increased risk they are assuming.

Callan 2018 – 2027 Capital Market Expectations

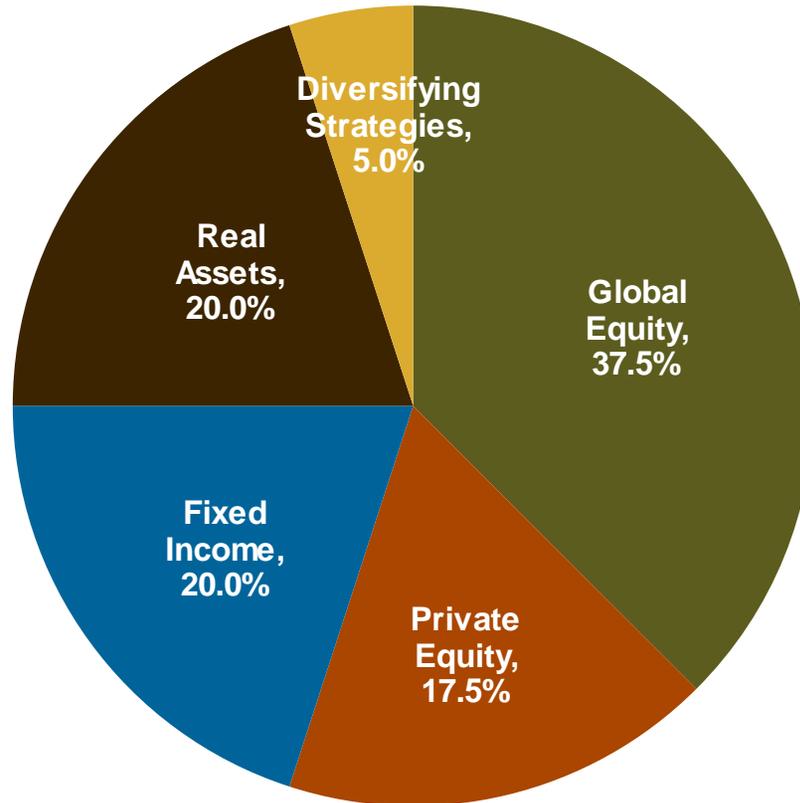
Asset Class	Index	2018 - 2027		Difference		2017 - 2026	
		Expected Return	Risk	Expected Return	Risk	Expected Return	Risk
Equities							
Broad US Equity	Russell 3000	6.85%	18.25%	0.00%	0.00%	6.85%	18.25%
Global ex-US Equity	MSCI ACWI ex USA	7.00%	21.00%	0.00%	0.00%	7.00%	21.00%
Emerging Markets Equity	MSCI Emerging Markets	7.00%	27.45%	0.00%	0.00%	7.00%	27.45%
Global Equity	49% US / 51% ex-US	7.10%	19.50%	0.00%	0.00%	7.10%	19.50%
Fixed Income							
Short Duration	Barclays 1-3 Yr G/C	2.60%	2.10%	0.00%	0.00%	2.60%	2.10%
US Fixed Income	Barclays Aggregate	3.00%	3.75%	0.00%	0.00%	3.00%	3.75%
High Yield	Barclays High Yield	4.75%	10.35%	0.00%	0.00%	4.75%	10.35%
Emerging Market Debt	EMBI Global Diversified	4.50%	9.60%	0.00%	0.00%	4.50%	9.60%
Other							
OIC Real Assets	OIC	6.60%	15.00%	0.00%	0.00%	6.60%	15.00%
OIC Private Equity	OIC	9.50%	26.30%	0.00%	0.00%	9.50%	26.30%
Diversifying Strategies	~ 60% Global Equity / 40% US Fixed	6.20%	11.00%	0.00%	0.00%	6.20%	11.00%
Cash Equivalents	90-Day T-Bill	2.25%	0.90%	0.00%	0.00%	2.25%	0.90%
Inflation	CPI-U	2.25%	1.50%	0.00%	0.00%	2.25%	1.50%

The Expected Return is the 10-year annualized (geometric) return.

- Callan 10-year capital market expectations represent passive exposure (beta only), net of fees, except for private market investments – real assets and private equity.
- Oregon asset classes are highlighted.

2018 – 2027 Return-Risk Expectations

Current Target

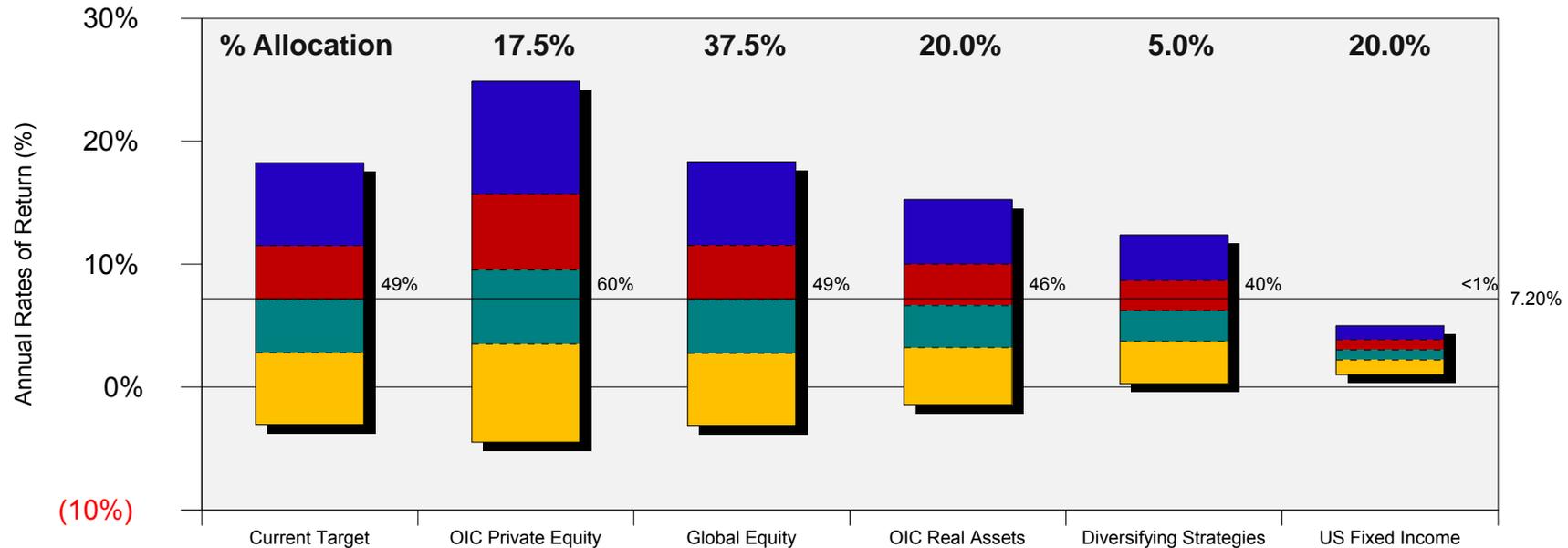


Expected Return	7.1%
Risk	14.1%
Sharpe Ratio	0.34

- Return and risk expectations have not changed from last year.

2018 – 2027 Return Projections

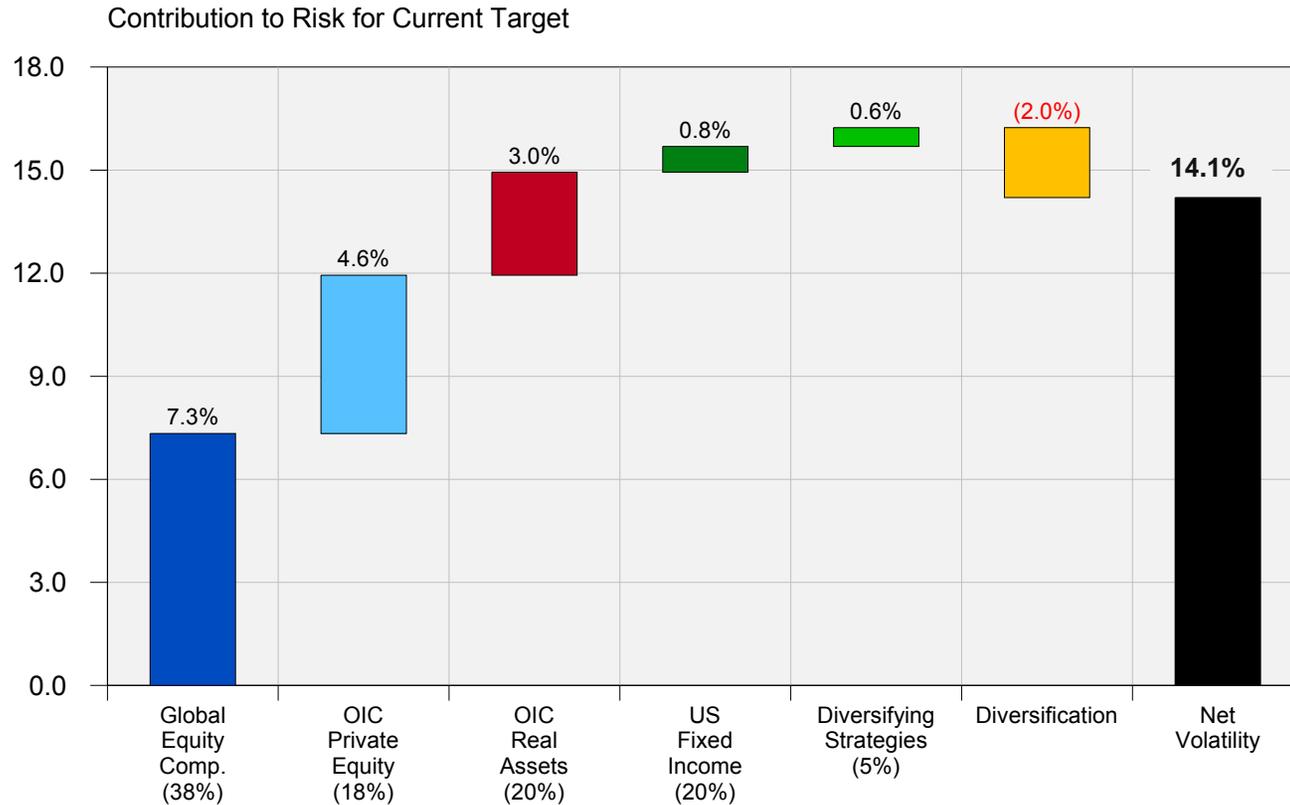
Range of Projected Rates of Return - Projection Period: 10 Years



5th Percentile	18.3%	24.9%	18.3%	15.3%	12.4%	5.0%
25th Percentile	11.5%	15.7%	11.5%	10.0%	8.7%	3.9%
Median	7.1%	9.5%	7.1%	6.6%	6.2%	3.0%
75th Percentile	2.8%	3.5%	2.8%	3.2%	3.7%	2.2%
95th Percentile	(3.1%)	(4.5%)	(3.1%)	(1.4%)	0.3%	1.0%
Prob > 7.20%	49.4%	60.1%	49.2%	45.6%	39.5%	<1.0%

- Range of returns is a function of the standard deviation, higher = wider range.
- Probability of the Current Target achieving PERS' actuarial assumed rate of return of 7.20% over the next 10 years is 49.4%.

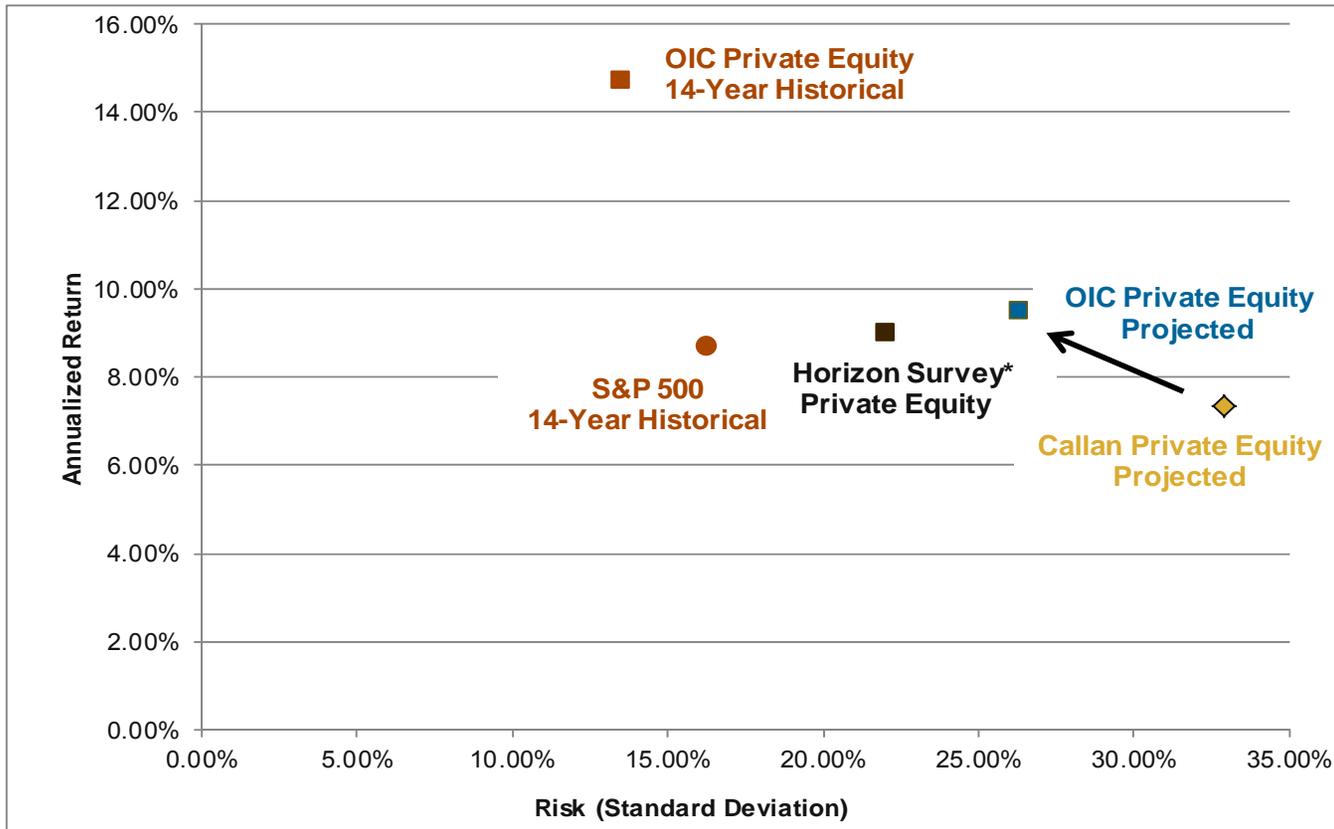
Diversification



- The top graph illustrates the contribution to risk from each asset class.
- The reduction in risk due to diversification captures the lack of co-movement between asset classes (i.e. correlations < 1.0).
- US Fixed Income and Diversifying Strategies have lower return expectations than equities/real assets but offer better diversification of the portfolio.

	Global Equity	OIC Private Equity	US Fixed Income	OIC Real Assets	Diversifying Strategies
Global Equity	1.00	0.94	-0.13	0.65	0.51
OIC Private Equity	0.94	1.00	-0.16	0.72	0.47
US Fixed Income	-0.13	-0.16	1.00	-0.03	-0.02
OIC Real Assets	0.65	0.72	-0.03	1.00	0.45
Diversifying Strategies	0.51	0.47	-0.02	0.45	1.00

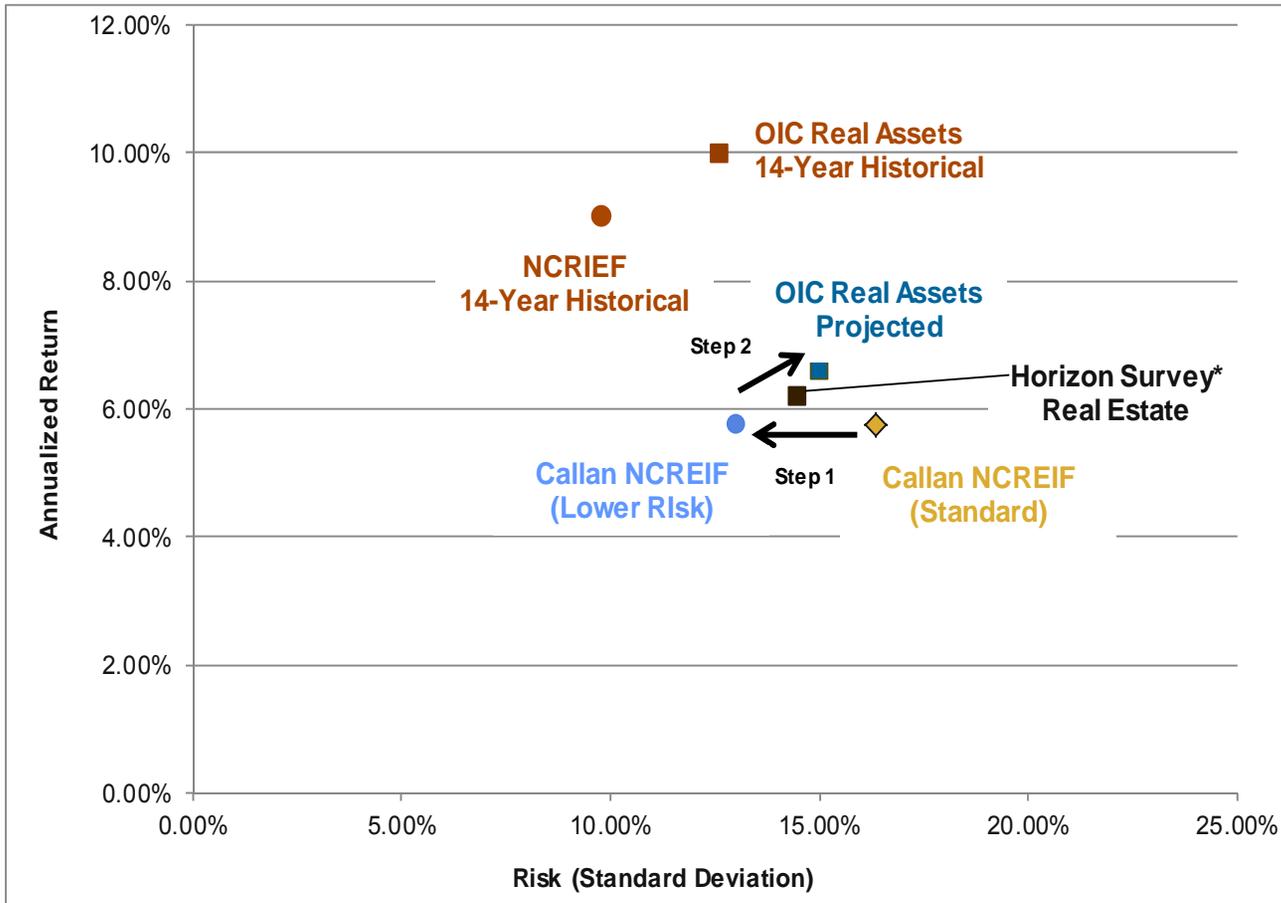
Private Equity Assumption Setting



* Source: Horizon Actuarial Services - 2017 Survey of Capital Market Assumptions. 35 Investment Advisors participated in the 2017 Survey.

- Expect higher return and lower risk for OIC Private Equity relative to Callan assumptions.
- Looking forward, OIC private equity excess return over S&P500 was lowered to 2.75%.
 - Historically, excess return was 4.8%.
- Callan’s measure of private equity risk has a conservative bias for illiquidity, leverage and implementation risks.
 - A long-term buy and hold asset owner is expected to experience less risk.
 - E.g. 14-year OIC private equity risk is 13.5%.

Real Assets Assumption Setting

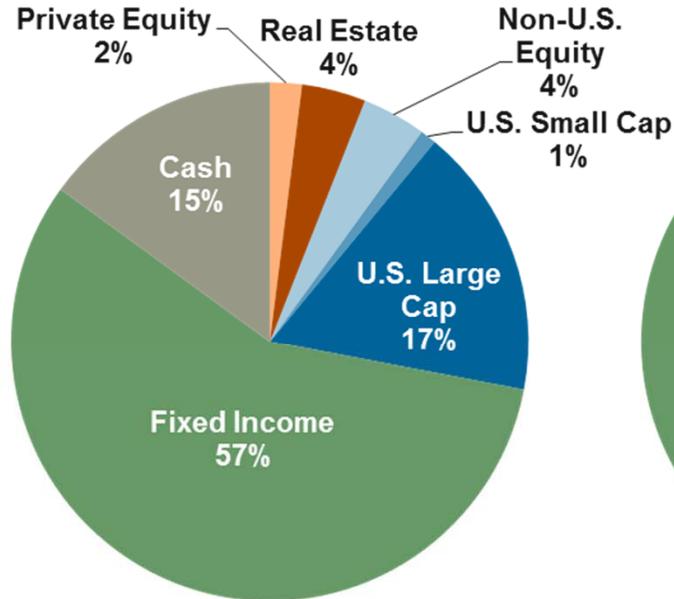


* Source: Horizon Actuarial Services - 2017 Survey of Capital Market Assumptions. 35 Investment Advisors participated in the 2017 Survey.

- Expect higher return and lower risk for OIC Real Assets relative to Callan's standard assumptions for core real estate (NCREIF).
- Step 1 - Core real estate risk was lowered from 16.35% to 13.0%.
 - Callan's measure of core real estate risk has a conservative bias for illiquidity, leverage and implementation risks.
 - A long-term buy and hold asset owner is expected to experience less risk.
- Step 2 – Adjust for OIC implementation of Real Assets.
 - OIC Real Assets target 50% Core Real Estate and 50% in value added/opportunistic/REITs strategies.
 - Value added/opportunistic/REITs strategies are expected to deliver higher return and risk than core real estate.

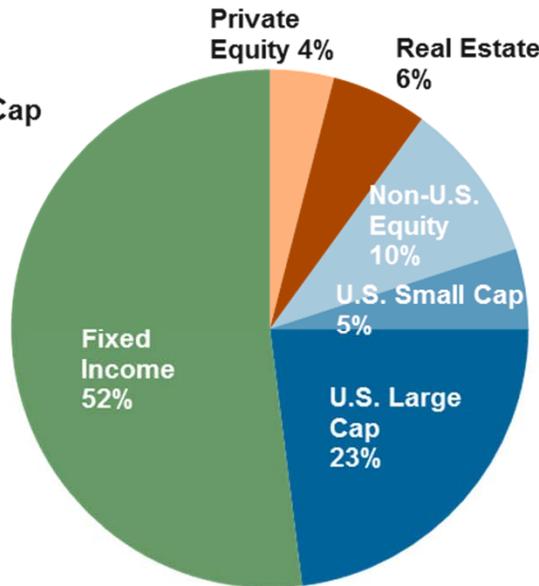
Expected Portfolio Returns Over Past 20 Years

Increasing Complexity



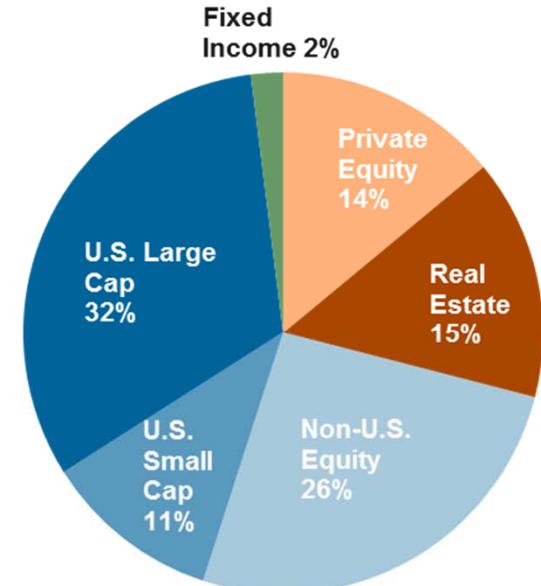
1998

Expected Return: 7.1%
Projected Std Deviation: 5.8%



2008

Expected Return: 7.1%
Projected Std Deviation: 8.7%



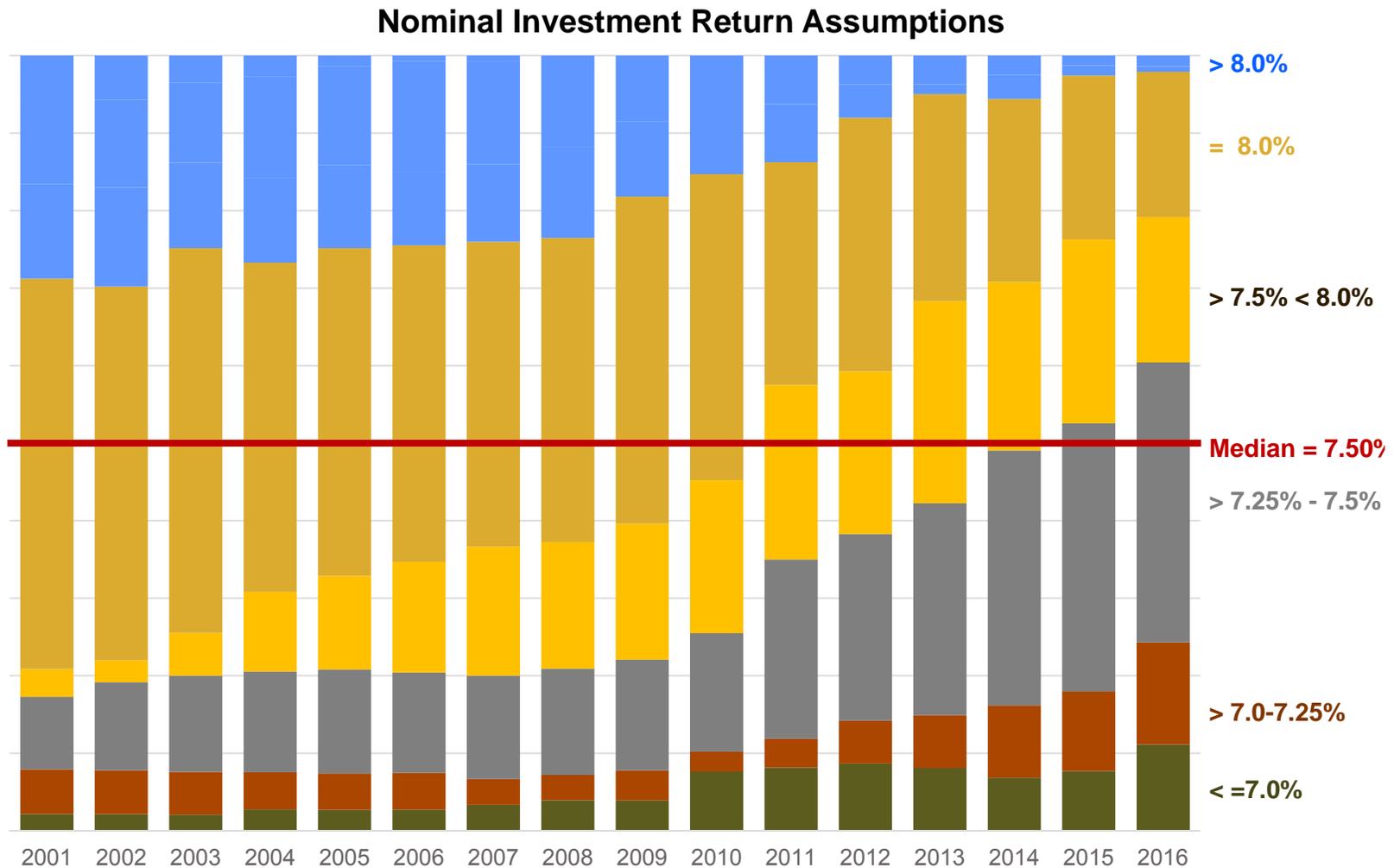
2018

Expected Return: 7.1%
Projected Std Deviation: 19.0%

Increasing Risk

- With cash and broad U.S. fixed income return expectations of 4.8% and 6.6% respectively in 1998, an investor could have almost three-quarters of the portfolio in these low risk asset classes and still expect to earn 7.1%.
- Ten years later, an investor needed 48% in relatively risky, return-seeking assets to achieve 7.1%.
- By 2018, had to risk up the portfolio even more and include 98% in return-seeking assets to earn 7.1%.
- The risk required to achieve a 7.1% return more than tripled from 5.8% in 1998 to 19% in 2018.

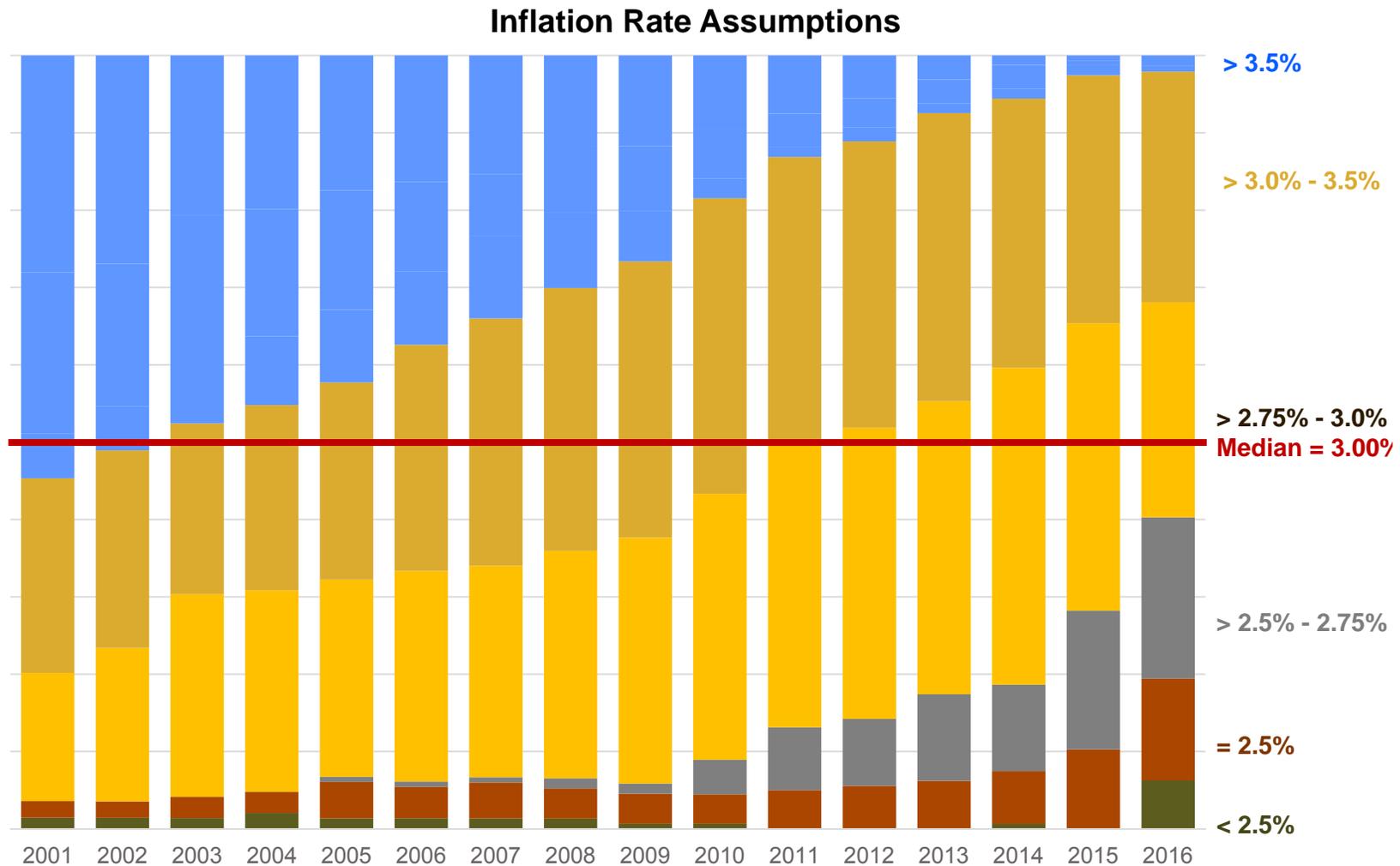
Peer Return Assumptions - Nominal



The Alaska Retirement Management Board analyzed plan level data for 170 state and local pension plans.

Source: *Public Plans Data*. 2001-2016. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

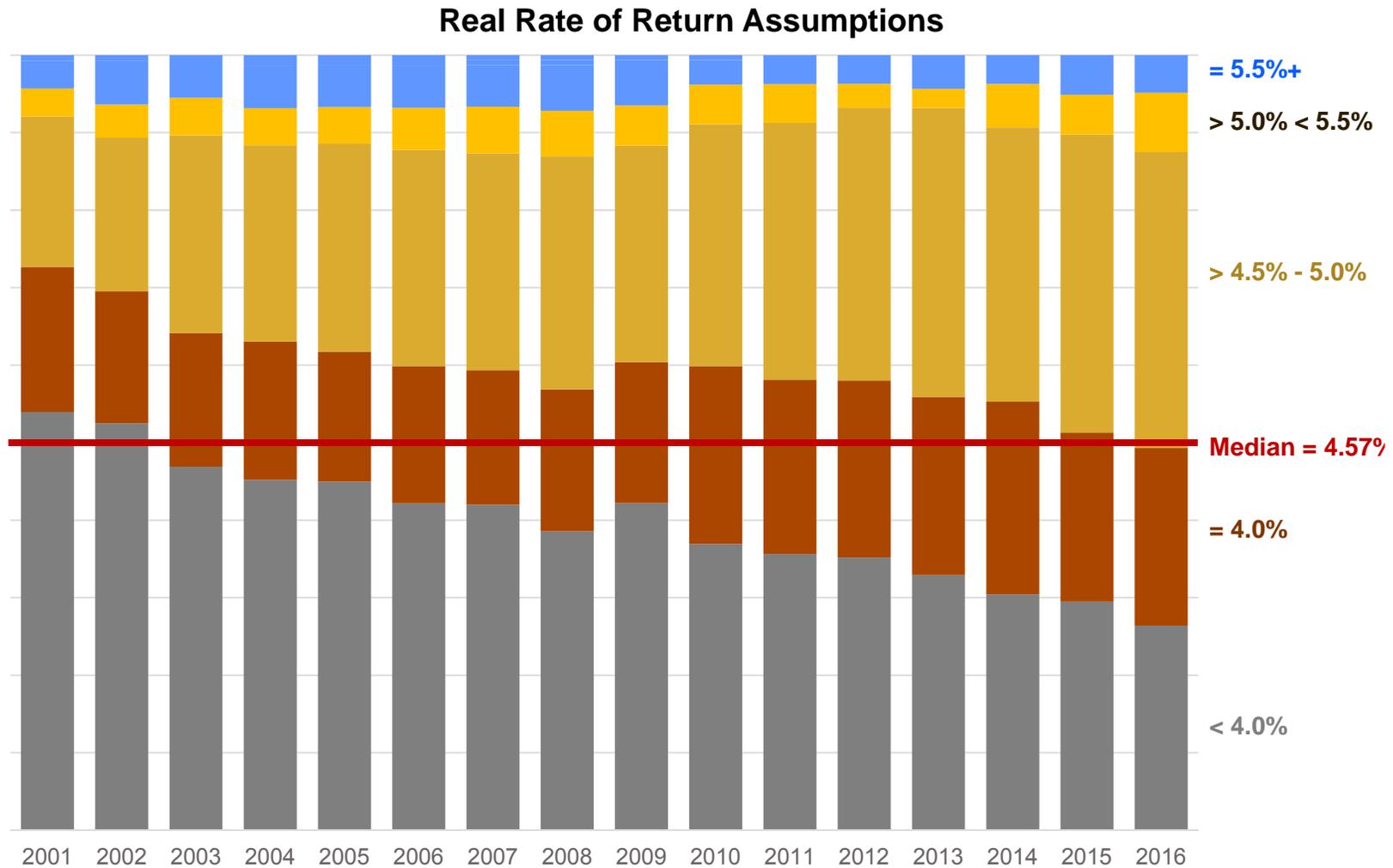
Peer Inflation Assumptions



The Alaska Retirement Management Board analyzed plan level data for 170 state and local pension plans.

Source: *Public Plans Data*. 2001-2016. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

Peer Return Assumptions - Real



The Alaska Retirement Management Board analyzed plan level data for 170 state and local pension plans.

Source: *Public Plans Data*. 2001-2016. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

2018 TEN-YEAR CAPITAL MARKET ASSUMPTIONS

TABLE OF CONTENTS

2018 vs. 2017 Assumptions	2
Summary & Highlights	2
Detailed Assumptions	3-4



2018 vs. 2017 ASSUMPTIONS

A comparison of PCA's 2018 10-year compound asset class total return assumptions versus those in 2017.

ASSET CLASSIFICATION	2017 COMPOUND EXPECTED RETURN	2018 COMPOUND EXPECTED RETURN	CHANGE from 2017 to 2018
Cash	2.25	2.25	0.00
Treasury Inflation Protected Securities	2.75	2.75	0.00
U.S. Treasuries Only Fixed Income	2.10	2.65	0.55
U.S. Core Fixed Income	2.90	3.40	0.50
U.S. Credit Fixed Income	3.50	3.75	0.25
Core Real Estate (unlevered)	5.00	5.00	0.00
Domestic Equity	6.25	5.75	-0.50
International Equity	7.25	6.80	-0.45
Global Equity	7.15	6.70	-0.45
Private Equity	8.50	7.90	-0.60
Inflation	2.25	2.25	0.00

2018 SUMMARY & HIGHLIGHTS

- Expected returns are fundamental-based and reflect a building block methodology:
(Inflation) + (Real Risk-Free Rate of Cash) + (Premium over Real Risk-Free Rate)
- The methodology/algorithm to convert arithmetic returns to geometric returns (or vice versa) will impact a portfolio's estimated expected return. PCA uses a horizon-dependent algorithm to convert between the two.
- Data points related to current yields, forward curves, economic growth, default rates, and other quantitative-based measures form the basis of most class return expectations. Surveys and practitioner insight are marginally incorporated into certain projections (e.g., inflation).
- We project cash returns to match inflation over the next 10-year period.
- The spread between fixed income and equity expected returns narrowed from 2017. This largely reflects valuation increases across the equity landscape and higher yields across the fixed income segment.
- Based on these assumptions, an allocation of 60% global public equities, 20% core bonds, 10% core real estate (20% LTV), and 10% private equity has an expected compound return of approximately 6.5%.
- Excluding private equity, no standalone class is projected to produce a return above 7% over the next 10 years.

Summary of Investment Class Assumptions

	Expected Arithmetic Average Nominal Annual Return	Expected Geometric ¹ Compound Nominal Annual Return	Expected Risk of Nominal Returns (Ann. SD)	Cash	TIPS	TSY	CoreFxd	Credit	RealEst	USEq	IntlEq	GblEq	PrivEq
Cash	2.25	2.25	1.25										
Treasury Infl. Protected Securities	3.00	2.75	7.00	0.20									
U.S. Treasuries Only Fixed Income	2.85	2.65	6.50	0.30	0.55								
U.S. Core Fixed Income	3.55	3.40	5.50	0.25	0.60	0.75							
U.S. Credit Fixed Income	4.00	3.75	7.00	0.00	0.65	0.40	0.70						
Core Real Estate (unlevered)	5.50	5.00	10.00	0.30	0.05	0.00	0.00	0.00					
Domestic Equity	7.25	5.75	19.00	0.00	0.00	-0.25	0.00	0.35	0.40				
International Equity	8.70	6.80	21.50	0.00	0.00	-0.35	0.00	0.25	0.30	0.80			
Global Equity	8.25	6.70	19.50	0.00	0.00	-0.30	0.00	0.30	0.35	0.90	0.90		
Private Equity	10.75	7.90	27.00	0.00	0.00	-0.30	0.00	0.30	0.30	0.85	0.80	0.80	
Inflation	2.25	2.25	1.50	0.50	0.45	-0.20	-0.15	0.10	0.35	0.20	0.20	0.20	0.10

Key Takeaways and Significant Changes from PCA's 2017 Ten-Year Assumptions

- PCA's inflation expectation remains the same as last year at 2.25%. U.S. breakeven inflation, realized inflation, the Federal Reserve Bank of Cleveland's expectation, and other consensus estimates generally forecast inflation to be between 1.90% and 2.25%.
- PCA continues to forecast a 0% real return to cash.
- PCA marginally decreased volatility expectations across the public equity classes. These decreases reflect the likelihood of the current low volatility environment persisting in the near-term followed by a reversion to more historical averages.
- Fixed income return expectations increased across the board. Current yields are generally higher than last year and forward curves forecast a tepid pace to interest rate increases, which will ultimately benefit long-term investors in these segments.
- Equity return expectations universally decreased. Strong recent returns coupled with high valuations lead to modestly unattractive return expectations on an absolute basis. International equity markets exhibit marginally more attractive return expectations compared to the U.S.
- With the exception of Private Equity, no standalone class is forecasted to achieve a compound return above 7% over the next 10 years.

Indices/Assets Used in Modeling Asset Class Assumptions

Asset Class	Index/Asset
Cash	3-month U.S. Treasury Bills
TIPS	Bloomberg Barclays U.S. TIPS Index, Simulated TIPS series per Bridgewater
U.S. Treasuries Only Fixed Income	Bloomberg Barclays U.S. Government Index
U.S. Core Fixed Income	Bloomberg Barclays U.S. Aggregate Index, Bloomberg Barclays U.S. Govt/Credit Index
U.S. Credit Fixed Income	Bloomberg Barclays U.S. Credit Index (includes IG & HY)
Core Real Estate	NCREIF NPI Index
Domestic Equity	Russell 3000 Index, S&P 500 Index
International Equity	MSCI ACWI ex-U.S. Index, MSCI EAFE Index
Global Equity	MSCI ACWI Index
Private Equity	Cambridge Indices, VCJ Venture Capital Index

¹ Geometric returns are comparable to actuarial assumption rates for pension funds (i.e., compound/annualized returns).

Expected Inflation, Arithmetic Average Annual Risk Free Rates & Annual Risk Premiums for Various Classes - %

Category	Expectation - Annual %	Comments
Inflation	2.25	Long-term inflation expectations are the same as last year. The TIPS breakeven inflation rate, one important data point indicative of equilibrium pricing of inflation expectations, was just south of 2% as of December 2017. The real rate on 10-year TIPS was somewhat volatile during 2017 but ultimately ended the year in-line with the beginning of the year. Realized inflation over the last two years has been around 2.0%, notably increasing from prior years. Market-based measures, Federal Reserve-generated models, and forecasts from a variety of market participants are generally forecasting inflation to be within the 1.90%-2.25% range over the next 10 years. A variety of economic factors such as GDP growth, unemployment, wages, interest rates, and commodity prices, among others, indicate that inflation is likely to be on the rise in the medium-term. The trajectory of all of these factors led PCA to forecast inflation at the higher-end of the consensus range.
Real Risk-Free Rates		
Short-Term (Cash)	0.00	The Federal Reserve continued to raise short-term lending rates throughout 2017. The target range is now 1.25%-1.50%. As of 12/31/17, short-term U.S. Treasury Bills were inside of that range. Forward curves for U.S. Treasuries indicate slowly rising rates over the next 10 years, with the average 3-month U.S. Treasury Bill yielding approximately 2.25% over this period. Expectations are for short-term rates to converge with inflation (on average), resulting in a zero real rate over the investment horizon.
Longer-Term (10-Year Real TIPS Yield)	0.45	The expected long-term real risk free rate is the current 10-year TIPS real yield. As of December 2017, the 10-Year TIPS real yield was approximately 0.45%, slightly decreasing from 0.50% in December 2016. Note, this is a rate, not an investment class. It is different from the TIPS asset class.
Risk Premiums Over Short-Term Risk-Free Rate		
U.S. Treasury Inflation Linked Securities (TIPS)	0.75	As of December 2017, the yield-to-worst (YTW) on the BB U.S. Treasury Index was 2.2%. The YTW on the BB U.S. Aggregate Index was 2.7%. The YTW on credit indices ranged from approximately 3.0% to 6.0% (depending on credit quality). Throughout 2017, the yield curve generally flattened as short and intermediate rates rose (on average), while longer term rates (10-30 years) declined modestly. The Fed raised rates three times in 2017, and credit spreads narrowed during the year. The broad markets (e.g., forward curves) are generally forecasting slowly rising rates over the next 10 years. Current expected returns assume near-term price declines with reinvestment at higher rates, modest spread widening, and historical default rates for credit-related securities.
U.S. Treasuries Only Fixed Income	0.60	
U.S. Core Fixed Income	1.30	
U.S. Credit Fixed Income	1.75	
Core Real Estate (unlevered)	3.25	Cap rates remained stable throughout 2017. Estimate assumes slowly rising interest rates and a stable-to-rising cap rate level, reverting towards historical averages.
Domestic Equity	5.00	On average over the past nine years, the <u>realized</u> U.S. equity risk premium has been well above historical averages. After another year of above average realized returns in public equities, valuations (especially in the U.S.) are stretched. Our assumptions take into account earnings/yield, earnings/GDP growth/reversion, and expected valuation changes. Current U.S. equity valuations are well above historical averages and higher from a year ago. Non-U.S. equity valuations are in-line with their historical averages. We assume a modestly higher return for Non-U.S. equities due to both valuation differences and inherent risk.
International Equity	6.45	
Global Equity	6.00	
Alternative Investments/Private Equity	8.50	Expected long-term illiquidity premium over U.S. public equity of 3.50% (arithmetic).

Notes:

PCA developed its average annual return premiums and standard deviation estimates using a combination of approaches. First, for major asset classes with an appropriate amount of history, PCA studied historical time series over both one-year and five-year holding periods to uncover any specific trends in the time series data. For example, domestic stock return premiums exhibit cyclical behavior, with each full cycle lasting approximately 40-50 years. Statistical procedures were used to identify such trends and extrapolate these trends 10-15 years forward. Second, PCA examined fundamental variables underlying several major asset classes and computed expectations based on consensus views of these variables. PCA also reviewed outlook opinions from a handful of leading investment banks and investment advisory firms. PCA compiled these opinions to develop consensus expectations for the major asset classes. PCA then used these consensus expectations as reference checks against its own expectations. Finally, PCA professionals discussed and debated asset expectations internally until a consensus view developed.

In recognizing that asset class risks are not always stable, PCA also examined risk trends utilizing similar statistical procedures. PCA also calculated risks weighting more recent periods heavier than earlier periods. In certain instances, weighted standard deviations differed materially from basic standard deviations. In these cases, PCA utilized weighted standard deviations as a base line for analysis.

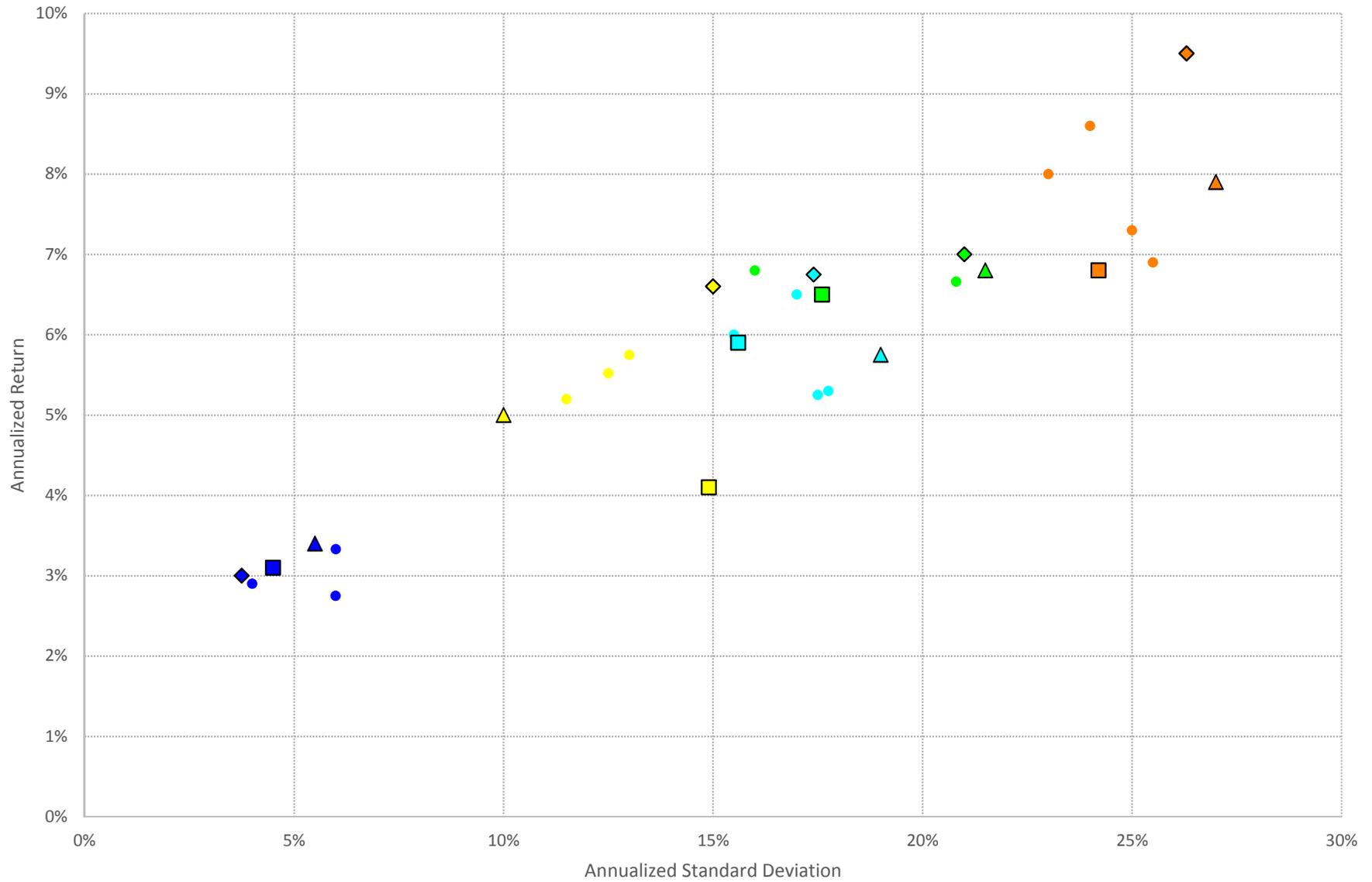
In recognizing that correlations are also not always stable, PCA analyzed the current behavior of the correlations among major pairs of asset classes. In analyzing the correlation trends among pairs of assets, we focused on correlation trends across non-overlapping five-year holding periods. Using statistical procedures highlighted above, we extrapolated the trends of these correlations into the future to gain a sense of their level and direction. Correlations across different time horizons (monthly, quarterly, annual, etc.) were analyzed to improve robustness. Similar to analyzing risks, we also applied a decay factor to return history and calculated weighted correlations where appropriate.

The investment class risk premia estimated for classes that consist of publicly traded securities are market "beta" returns and do not assume returns to active management, nor active management fees. The risk premia for investment classes that, by definition, are actively managed (e.g., private real estate, hedge fund of funds, private equity), have been developed "net" of customary investment management fees, which are intrinsic to the indices from which the premia were developed.

Given the complexities associated with developing capital market expectations, we advise users of the above information to rely on judgment as well as optimization approaches in setting strategic allocations to any set of investment classes. Please note that all information shown is based on qualitative and quantitative analyses. Exclusive reliance on the above is not advised. This information is not intended as a recommendation to invest in any particular asset class or as a promise of future performance. References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.

Assumptions, opinions, and estimates are provided for illustrative purposes only. They should not be relied upon as recommendations to invest in or avoid certain investments. Forecasts of financial markets that are based on current market conditions constitute our judgment and are subject to change. We believe the information provided here is reliable but do not warrant its accuracy or completeness. This material has been prepared for information purposes only.

10-Year Capital Market Assumptions by Asset Class & by Consultant



● U.S. Fixed Income ● Real Estate ● U.S. Large Cap Equity ● Non-U.S. Equity ● Private Equity ◆ Callan □ BlackRock △ PCA

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION AND SUMMARY

Summary Policy Statement

The Oregon Investment Council (OIC) approves the asset allocation of the Oregon Public Employees Retirement Fund (OPERF or the Fund).

Purpose and Goals

The goal of this policy is to provide guidance to Oregon State Treasury (OST) staff and advisors regarding the asset allocation of OPERF.

In the absence of any other considerations, the optimal rebalancing strategy would suggest continually rebalancing back to OPERF's strategic asset allocation targets. However, rebalancing involves transactions costs such as brokerage fees and market impact. As a result of these costs, ranges were established around the strategic asset allocation targets in order to balance the desirability of achieving precise target allocations with the various and often material transactions costs associated with these same rebalancing activities. In addition, the overlay manager is expected to minimize cash exposures at both the Fund and individual manager level.

A breach of any of the established asset allocation ranges triggers a review and possible rebalancing back to established targets with due consideration given to the liquidity of the affected investments, all anticipated transaction costs and the current portfolio structure within each asset class.

Applicability

Classified represented, management service, unclassified executive service

Authority

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

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

- subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.
6. Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.
 7. Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]

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

POLICY PROVISIONS

Definitions

Overlay Manager: An investment advisor retained by the OIC to monitor daily cash balances in OPERF and execute trades in the equity and fixed income futures markets to adjust OPERF's overall asset allocation closer to its OIC-approved targets.

Policy Statements

1. The OIC establishes asset allocation ranges and targets for OPERF. On an ongoing basis, OST staff manages OPERF's asset allocation relative to OIC-established targets, Fund-level cash flows and financial and real asset market volatility.
2. The OIC undertakes a rigorous study of OPERF's assets and liabilities every three to five years (or more frequently, if desired). These asset-liability studies shall include the following elements for OIC consideration: 1) capital market assumptions by asset class which include expected returns, volatilities and correlations; 2) asset mix optimizations using various portfolio modeling/construction techniques; 3) scenario, risk contribution and plan liability analyses; 4) pension surplus/cost projections; and 5) recommended strategic asset allocation targets and a rebalancing framework.
3. The purpose of OST staff's rebalancing efforts are to ensure that OPERF's actual asset allocation does not drift significantly from the strategic targets approved by the OIC and informed by the asset-liability study described above. Moreover, rebalancing ensures that the return objectives and risk tolerance parameters approved by the OIC are consistently and effectively reflected in OST staff's management of OPERF assets over time. With OIC oversight, implementing the approved rebalancing framework is an OST staff responsibility, although the illiquid nature of many private market assets may exempt those assets from staff's short-term rebalancing activities.

OPERF	Policy	Target
Public Equity	32.5-42.5%	37.5%
Private Equity	13.5-21.5%	17.5%
Total Equity	50.0-60.0%	55.0%
Opportunity Portfolio	0-3%	0.0%
Fixed Income	15-25%	20.0%
Real Estate	9.5-15.5%	12.5%
Alternative Investments	0-12.5%	12.5%
Cash	0-3%	0.0%
TOTAL OPERF		100%

Note: Targets and ranges as established by the OIC in June 2015. Full implementation will take multiple years.

IMPLEMENTATION

1. OST Staff will undertake the implementation of the rebalancing program.
2. OPERF's actual asset allocation shall be reviewed at the end of each month when asset valuations become available. More frequent reviews may be undertaken, if appropriate, provided the required asset value information is also available. Rebalancing will take place if the allocation to any particular asset class exceeds the corresponding, stipulated policy range. Staff shall manage liquidity by rebalancing assets between and among managers, as necessary, to a) meet OPERF's cash needs and b) maintain the preferred portfolio structure (i.e., maintain specific manager weightings) within each asset class. All physical rebalancings shall be executed in concert with the overlay manager as described above.
3. Rebalancing should be implemented by the most cost-effective means available. For example, cash flows into and out of OPERF will first be used to rebalance back toward asset class targets, whenever possible. Crossing opportunities in index fund investments and futures/options may also be used in rebalancing in order to reduce costs.
4. When rebalancing occurs, OST staff shall make a recommendation to the Chief Investment Officer regarding the most appropriate asset allocation, taking into account portfolio characteristics, preferred portfolio structure, existing manager weights, market conditions and OPERF's cash flow requirements.
5. All rebalancing shall take place within the asset class and sub-asset class ranges established in policy by the OIC.
6. For illiquid assets such as private equity and real estate, rebalancing considerations should include higher transaction costs and the availability of alternative rebalancing opportunities, if any.
7. Staff shall report to the OIC the actual market valuations versus the target allocations by asset class monthly as well as any and all rebalancing activity quarterly.

ASSET ALLOCATION AND EXPECTED RISK AND RETURNS

1. At least annually, Periodically (annually or twice a year) the OIC's general consultant updates its capital market assumptions as well as its ex ante risk and return estimates for each primary and asset class return assumptions.
2. At least annually, and fFor OIC approval, OST staff then will works concurrently with the general consultant to update the OPERF Regular Account policy mix and return expectations, and revise, if necessary, INV 1203 for the OPERF Regular Account as reflected in the (Statement of Investment Objectives and Policy Framework).

Exceptions

None.

Failure to Comply

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

PROCEDURES and FORMS

None.

ADMINISTRATION

Feedback

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

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION AND SUMMARY

Summary Policy Statement

The Oregon Investment Council (OIC) approves the asset allocation of the Oregon Public Employees Retirement Fund (OPERF or the Fund).

Purpose and Goals

The goal of this policy is to provide guidance to Oregon State Treasury (OST) staff and advisors regarding the asset allocation of OPERF.

In the absence of any other considerations, the optimal rebalancing strategy would suggest continually rebalancing back to OPERF's strategic asset allocation targets. However, rebalancing involves transactions costs such as brokerage fees and market impact. As a result of these costs, ranges were established around the strategic asset allocation targets in order to balance the desirability of achieving precise target allocations with the various and often material transactions costs associated with these same rebalancing activities. In addition, the overlay manager is expected to minimize cash exposures at both the Fund and individual manager level.

A breach of any of the established asset allocation ranges triggers a review and possible rebalancing back to established targets with due consideration given to the liquidity of the affected investments, all anticipated transaction costs and the current portfolio structure within each asset class.

Applicability

Classified represented, management service, unclassified executive service

Authority

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

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

- subsection (6) of this section, there may be acquired, retained, managed and disposed of as investments of the investment funds every kind of investment which persons of prudence, discretion and intelligence acquire, retain, manage and dispose of for their own account.
6. Notwithstanding subsection (1) of this section, not more than 50 percent of the moneys contributed to the Public Employees Retirement Fund or the Industrial Accident Fund may be invested in common stock, and not more than 65 percent of the moneys contributed to the other trust and endowment funds managed by the Oregon Investment Council or the State Treasurer may be invested in common stock.
 7. Subject to the standards set forth in this section, moneys held in the Deferred Compensation Fund may be invested in the stock of any company, association or corporation, including but not limited to shares of a mutual fund. Investment of moneys in the Deferred Compensation Fund is not subject to the limitation imposed by subsection (6) of this section. [1967 c.335 §7; 1971 c.53 §1; 1973 c.385 §1; 1981 c.880 §12; 1983 c.456 §1; 1983 c.466 §1; 1987 c.759 §1; 1993 c.18 §59; 1993 c.75 §1; 1997 c.129 §2; 1997 c.179 §22; 1997 c.804 §5; 2005 c.294 §1]

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

POLICY PROVISIONS

Definitions

Overlay Manager: An investment advisor retained by the OIC to monitor daily cash balances in OPERF and execute trades in the equity and fixed income futures markets to adjust OPERF's overall asset allocation closer to its OIC-approved targets.

Policy Statements

1. The OIC establishes asset allocation ranges and targets for OPERF. On an ongoing basis, OST staff manages OPERF's asset allocation relative to OIC-established targets, Fund-level cash flows and financial and real asset market volatility.
2. The OIC undertakes a rigorous study of OPERF's assets and liabilities every three to five years (or more frequently, if desired). These asset-liability studies shall include the following elements for OIC consideration: 1) capital market assumptions by asset class which include expected returns, volatilities and correlations; 2) asset mix optimizations using various portfolio modeling/construction techniques; 3) scenario, risk contribution and plan liability analyses; 4) pension surplus/cost projections; and 5) recommended strategic asset allocation targets and a rebalancing framework.
3. The purpose of OST staff's rebalancing efforts are to ensure that OPERF's actual asset allocation does not drift significantly from the strategic targets approved by the OIC and informed by the asset-liability study described above. Moreover, rebalancing ensures that the return objectives and risk tolerance parameters approved by the OIC are consistently and effectively reflected in OST staff's management of OPERF assets over time. With OIC oversight, implementing the approved rebalancing framework is an OST staff responsibility, although the illiquid nature of many private market assets may exempt those assets from staff's short-term rebalancing activities.

OPERF	Policy	Target
Public Equity	32.5-42.5%	37.5%
Private Equity	13.5-21.5%	17.5%
Total Equity	50.0-60.0%	55.0%
Opportunity Portfolio	0-3%	0.0%
Fixed Income	15-25%	20.0%
Real Estate	9.5-15.5%	12.5%
Alternative Investments	0-12.5%	12.5%
Cash	0-3%	0.0%
TOTAL OPERF		100%

Note: Targets and ranges as established by the OIC in June 2015. Full implementation will take multiple years.

IMPLEMENTATION

1. OST Staff will undertake the implementation of the rebalancing program.
2. OPERF's actual asset allocation shall be reviewed at the end of each month when asset valuations become available. More frequent reviews may be undertaken, if appropriate, provided the required asset value information is also available. Rebalancing will take place if the allocation to any particular asset class exceeds the corresponding, stipulated policy range. Staff shall manage liquidity by rebalancing assets between and among managers, as necessary, to a) meet OPERF's cash needs and b) maintain the preferred portfolio structure (i.e., maintain specific manager weightings) within each asset class. All physical rebalancings shall be executed in concert with the overlay manager as described above.
3. Rebalancing should be implemented by the most cost-effective means available. For example, cash flows into and out of OPERF will first be used to rebalance back toward asset class targets, whenever possible. Crossing opportunities in index fund investments and futures/options may also be used in rebalancing in order to reduce costs.
4. When rebalancing occurs, OST staff shall make a recommendation to the Chief Investment Officer regarding the most appropriate asset allocation, taking into account portfolio characteristics, preferred portfolio structure, existing manager weights, market conditions and OPERF's cash flow requirements.
5. All rebalancing shall take place within the asset class and sub-asset class ranges established in policy by the OIC.
6. For illiquid assets such as private equity and real estate, rebalancing considerations should include higher transaction costs and the availability of alternative rebalancing opportunities, if any.
7. Staff shall report to the OIC the actual market valuations versus the target allocations by asset class monthly as well as any and all rebalancing activity quarterly.

ASSET ALLOCATION AND EXPECTED RISK AND RETURN

1. At least annually, the OIC's general consultant updates its capital market assumptions as well as its *ex ante* risk and return estimates for each primary asset class.
2. For OIC approval, OST staff then works concurrently with the general consultant to update the OPERF Regular Account policy mix and return expectations, and revise, if necessary, INV 1203 (Statement of Investment Objectives and Policy Framework).

Exceptions

None.

Failure to Comply

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

PROCEDURES and FORMS

None.

ADMINISTRATION

Feedback

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

PURPOSE

1. This Statement of Investment Objectives and Policy Framework (the "Statement") summarizes the philosophy, objectives and policies approved by the *Oregon Investment Council* (the "OIC" or the "Council") for the investment of *Oregon Public Employees Retirement Fund* ("OPERF" or the "Fund") assets.
2. The Council approved these objectives and framework after careful consideration of OPERF benefit provisions, and the implications of alternative objectives and policies.
3. The Statement has been prepared with six audiences in mind: 1) incumbent, new and prospective Council members; 2) investment division staff of the *Oregon State Treasury* ("OST"); 3) the Public Employees Retirement Board ("PERB"); 4) active and retired Oregon Public Employees Retirement System (OPERS) members; 5) the Oregon State Legislature and Governor; and 6) agents engaged by the Council to manage and administer Fund assets.
4. The Statement summarizes more detailed policy and procedure documents prepared and maintained by investment division staff, and numerous other documents that govern the day-to-day management of OPERF assets including agent agreements, individual investment manager mandates and limited partnership documents.
5. The Council regularly assesses the continued suitability of its approved investment objectives and policies, initiates change as necessary and updates these documents accordingly.

INVESTMENT OBJECTIVE

1. The Council believes, based on the assumptions outlined herein, that the investment policies summarized in this document will provide the highest possible *return* at a level of *risk* that is appropriate for active and retired OPERF members. The Council evaluates risk in terms of both short-term asset price volatility and long-term plan viability.
2. Subject to ORS 293.721 and 293.726 and the risk parameters described directly above, the objective for the *Regular Account* is to maximize the net, annualized, risk-adjusted return on OPERF capital consistent with Council investment policies, particularly those concerning asset allocation and prudent diversification. This objective further contemplates a consecutive ten-year forecast horizon, and the Council also understands that estimates of forward-looking OPERF returns are a primary consideration during PERB's biennial determination of its *actuarial discount rate* (ADR).
3. Historically, OPERF members were allowed to direct up to 75% of their annual, employee retirement contributions to the *Variable Account*. While no longer receiving new contributions, the Variable Account's objective remains investment performance consistent with the *MSCI All Country World Investable Market Index*.
4. The Council has established investment objectives for individual asset classes that are also summarized in this Statement.

POLICY ASSET MIX DIVERSIFICATION AND RETURN EXPECTATIONS

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, and its active management return expectations are summarized in Exhibit 2.
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 or negative 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 in Exhibit 1.

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

Asset Class	Target Allocation (%)	Re-balancing Range (0%)	Expected Annual Policy Return ¹ (%)
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 Fund²	100.0		7.1

1 Based on capital market forecasts developed by the Council's investment consultant, Callan Associates.

2 Total Fund expected returns are calculated *geometrically* using the investment consultant's forecasts for the *arithmetic* returns and covariances of the asset classes. Accordingly, the Total Fund's expected returns are not equivalent to the weighted average of individual asset class returns listed in Exhibit 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 shall review, at least biennially, its expectations for asset class and active management performance, and assess how the updated expectations affect the probability that the

Regular Account will achieve its investment objective.

PASSIVE AND ACTIVE MANAGEMENT

1. Passive management uses lower cost *index funds* to access the return streams available from the world's capital markets. Active management tries to earn higher returns than those available from index funds through the application of manager skill in the form of sector and security selection as well as market and/or asset mix timing decisions.
2. The Council uses passive management to control costs, evaluate active management strategies, capture exposure to *efficient market* segments, manage *tracking error* and facilitate policy mix re-balancing activities. Exchange-traded *real estate investment trusts (REITs)* may also be used to maintain the Fund's real estate exposure within specified policy ranges.
3. The Council approves active management of Fund assets when proposed active strategies offer sufficiently high expected incremental returns, net of fees, and when the magnitude of potential under-performance can be estimated, monitored and managed.
4. Public equity and fixed income asset classes are managed using both passive and active management strategies. Active management of the Fund's public market equity and fixed income allocations is expected to earn annual return premiums of 0.50% and 0.25%, respectively, over rolling, consecutive five-year periods (and relative to those allocation's respective benchmarks). The Council recognizes that unsuccessful active management can reduce total Fund returns.
5. The Council must accept active management in those asset classes for which there are no passive management alternatives; in particular, private real estate, private equity and other alternative and opportunistic investment strategies.
6. The Council prefers active management strategies that emphasize sector and/or security selection decisions rather than market and/or asset mix timing decisions as the former are much better supported by professional experience and academic research.
7. At the aggregate, Regular Account level, and as outlined in Exhibit 2, active management strategies authorized by the Council are expected to **add 0.4% of annualized excess return**, net of fees, over rolling, consecutive five-year periods. **Relative to the policy benchmark, Regular Account active risk shall be managed to a 2 to 3 percent annualized tracking error target.**

Exhibit 2: Active Return Expectations for the OPERF Regular Account by Asset Class

Asset Class	Target Allocation (%)	Target Active Return (%)	Target Active Contribution (%)
Public Equity	37.5	0.50	0.19
Fixed Income	20.0	0.25	0.05
Real Estate	12.5	0.50	0.06
Total Fund			0.30

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.

PERFORMANCE MONITORING AND EVALUATION

1. The Council and its agents use a variety of compliance verification and performance measurement tools to monitor, measure and evaluate the management of OPERF assets. Monitoring, reporting and evaluation frequencies range from daily to annually, although quarterly is the most commonly used reporting frequency.
2. The Council has developed a performance monitoring and evaluation system that answers two fundamental fiduciary questions:
 - Are Fund assets being prudently managed? More specifically, are Fund assets being managed in accordance with established laws, policies and procedures, and are individual investment managers in compliance with their respective mandates?
 - Are Fund assets being profitably managed? More specifically, has Fund investment performance improved benefit security, and has capital market risk in general and active management in particular been sufficiently rewarded?
3. When a breach of policies, procedures or portfolio mandates is reported or detected, the Council requires a supporting report explaining how the breach was discovered, the reasons for the breach, actions taken to rectify the breach, and steps taken to mitigate future occurrences.
4. One of many reports used by the Council to satisfy the above requirements is a simple comparison of Regular Account investment performance relative to the Council's assigned total Fund benchmark over rolling, consecutive multi-year periods. Other reports help the Council assess whether or not the Fund was rewarded for its allocations to higher return, higher risk equity investments and whether or not the active management strategies utilized added or subtracted from policy returns on a net of fees basis.
5. The reporting described in this section gives the Council a consolidated or "big picture" view of Regular Account investment performance. This view is the first level of a comprehensive four-level performance report used by the Council to monitor and evaluate Regular Account investment performance over different time horizons. Level two examines Regular Account investment performance excluding hard-to-price illiquid assets such as real estate and private equity investments. Level three examines Regular Account investment performance across seven, primary asset allocation categories: U.S. equity; Non-U.S. equity; Fixed Income; Real Estate; Private Equity; and the Alternatives and Opportunity portfolios. Level four examines the performance of individual managers within each of the asset allocation categories. This four-level

reporting structure allows the Council to "drill down" to the level of detail it may need to identify potential performance problems and take whatever corrective actions that may be required.

GLOSSARY

Actuarial Discount Rate (ADR): The interest rate used to calculate the present value of a defined benefit plan's future obligations and determine the size of the plan sponsor's annual contribution. The ADR currently approved by the PERB is 7.5%.

Alternatives: Investments that are considered non-traditional or emerging in nature. Presently, the following investment types are included within the OPERF alternatives allocation: hedge funds; infrastructure; natural resources; and commodities.

Asset Class: A collection of securities that have conceptually similar claims on income streams and have returns that are highly correlated with each other. The most frequently referenced asset classes include equities, fixed income, real estate and cash.

Bank of America Merrill Lynch U.S. High Yield Master II Index: This index tracks the performance of publicly-issued, U.S. dollar-denominated, below investment-grade corporate debt. Its constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest and must conform to the following parameters:

- Be rated below investment-grade rating based on an average of Moody's, S&P and Fitch;
- Have at least 18 months to final maturity at the time of issuance and at least one year remaining to final maturity as of an index rebalancing date;
- Have a fixed coupon schedule and a minimum outstanding of \$100 million; and
- Qualifying securities must have risk exposure to countries that are members of the FX-G10, Western Europe or territories of the U.S. and Western Europe (the FX-G10 includes all Euro members, the U.S., Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden).

Bloomberg Barclays U.S. Aggregate Index: This index covers the U.S. investment-grade fixed rate bond market, and includes government, corporate, mortgage pass-through and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis. Its constituents are SEC-registered, taxable, dollar-denominated securities and must conform to the following parameters:

- Have at least one year to final maturity regardless of call features;
- Be rated investment-grade (Baa3/BBB- or higher) by at least two of the major ratings agencies (Moody's, S&P or Fitch);
- Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;
- Be dollar-denominated and non-convertible; and
- Be publicly issued, although 144A securities with registration rights and Reg-S issues are included.

Bloomberg Barclays U.S. Treasury Index: This index is a sub-component of the Bloomberg Barclays Aggregate Index and includes public obligations of the U.S. Treasury that have remaining maturities of more than one year. Its constituents must conform to the following parameters:

- Be a U.S. Government or investment-grade credit security;
- Have at least one year to final maturity regardless of call features;
- Have at least \$250 million par amount outstanding;
- Be rated Baa3/BBB- or higher (i.e., "investment grade") by at least two of the major ratings agencies (Moody's, S&P or Fitch);

- Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;
- Be dollar-denominated and non-convertible; and
- Be publicly issued.

Basis Point: One basis point equals 0.01%. One hundred basis points equal one percentage point.

Benchmark: A standard by which investment performance can be measured and evaluated. For example, the performance of U.S. equity managers is often measured and evaluated relative to the Russell 3000 Index. In this case, the Russell 3000 Index serves as or represents the U.S. equity benchmark.

Benchmark Exposure: The proportion that a given stock represents within a benchmark, such as the Russell 3000 Index of U.S. equity securities. Allows investors to measure the extent to which a portfolio or specific investment strategy is over- or under-exposed to a particular stock or investment characteristic (e.g., market capitalization) relative to a benchmark.

Co-investment: Although used loosely to describe any two parties that invest alongside one another in the same company, this term has a special meaning in the context of an investment fund's limited partners. By having co-investment rights, a limited partner can invest directly in a company that is simultaneously backed by the fund's general partner. In this way, the limited partner has two separate stakes in the company: the first, an indirect investment through its participation in the general partner's fund; the second, a direct investment alongside the general partner. While the direct, co-investment opportunity is usually offered at terms and conditions more favorable than the fund investment, the direct, concentrated nature of the co-investment opportunity implies higher risk for the limited partner.

Core: Real estate investment strategies which exhibit "institutional" qualities, such as superior location, high occupancy and premium design and construction quality.

Credit: Used most often in a fixed income context, the measure of an organization's ability to re-pay borrowed money. Organizations with the highest credit rating (i.e., those most likely to re-pay borrowed money) are assigned a AAA credit rating.

Distressed Debt: A private equity investment strategy that involves purchasing discounted bonds of a financially-distressed firm. Distressed debt investors frequently convert their holdings into equity and become actively involved in the management of the distressed firm.

Diversifying Strategies: Investment strategies that attempt to systematically capture certain risk premia beyond traditional equity and fixed income market exposures using alternative investment techniques.

Diversification: Reducing risk without a commensurate reduction in expected return by combining assets and/or investment strategies with low or uncorrelated return and volatility profiles. For example, a decline in the price of one asset (e.g., oil stocks) is offset by an increase in the price of another asset (e.g., airline stocks). In lay terms, this principal is often described as "putting your eggs in more than one basket".

Duration: A financial measure used by investors to estimate the price sensitivity of a fixed income security relative to changes in interest rates. For example, if interest rates increase by 1 percentage point, a 5-year duration bond will decline in price by approximately 5 percent.

Efficient Market: A market in which security prices rapidly reflect all information germane to the price discovery process. A primary implication of an efficient market is that active management efforts often fail to produce results that consistently beat the performance of an index fund or other passive strategy net of fees, transactions costs and other expenses.

Equities: Investments that represent ownership in a company and therefore a proportional share of company profits.

Fixed Income: Debt obligations that specify the precise repayment of previously borrowed money. Typically, repayment takes the form of a series of fixed-amount, semi-annual interest payments and a single, final repayment of principal.

Funded Status: A comparison of a pension plan's assets and liabilities where the latter are often referred to as the plan's projected benefit obligation (PBO). When a plan's assets exceed its PBO, the plan is considered overfunded. Conversely, if a plan's assets are less than its PBO, the plan is considered underfunded and the plan sponsor has a net liability position with respect to its pension plan.

Fund-of-funds: Often organized by an investment advisor or investment bank, a fund that invests in other funds rather than directly in securities, operating firms or other assets.

Growth Stock: Stocks exhibiting faster-than-average earnings growth with expectations that such growth will continue. Growth stocks usually have high price-to-earnings ratios, high price-to-book ratios and low to no dividend yields.

Hedged: A term applied to one, more or an entire portfolio of assets indicating that the base country value of such assets is partially or wholly protected from foreign currency fluctuations. Forward currency contracts are typically used to hedge or offset the effects of these fluctuations.

Index Fund: A portfolio management strategy that seeks to match the composition and performance of a select index such as the Russell 3000 or S&P 500.

Leverage Buyout (LBO): A strategy in which debt financing is used to acquire a firm or business unit, typically in a mature industry. LBO debt is usually repaid according to a strict schedule that absorbs most of the acquired firm's cash flow.

Liability: A claim on assets by individuals or companies. In a pension context, liabilities represent the claim on fund assets by active and retired plan beneficiaries.

MSCI All Country World Investable Market Index (ACWI-IMI): A capitalization-weighted index that includes approximately 9,000 publically-traded equity securities and is designed to measure equity market performance across developed and emerging markets. This index consists of over 40 separate developed and emerging market country indices.

MSCI World Ex-U.S. Index: A subset of the MSCI All Country World Index that contains only securities from developed market countries, excluding those from the U.S.

Market Capitalization: The value of a corporation as determined by multiplying the price of its shares by the number of shares outstanding. In general, the share prices of smaller capitalized companies are more volatile than those of larger capitalized companies.

Mezzanine: Either a private equity financing undertaken shortly before an initial public offering, or an investment strategy that employs subordinated debt (which has fewer privileges than bank debt but more standing than equity) and often is issued with attached equity warrants.

NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE): The NFI-ODCE is an investment performance composite published quarterly by the National Council of Real Estate Investment Fiduciaries (NCREIF). This index is a capitalization-weighted index of approximately 30 open-ended, commingled funds pursuing a "core" investment strategy. The specific qualifications for NFI-ODCE inclusion are as follows:

- At least 80% of fund market value must be in private equity operating real estate;
- At least 95% of fund market value must be in U.S. markets;
- At least 80% of fund market value must be invested in apartments, industrial properties, office buildings, and retail;

- No more than 65% of fund market value can be in one property type or one region as defined by the NPI;
- No more than 40% leverage; and
- Compliance with the NCREIF/PREA Reporting Standards.

Oregon State Treasury: Headed by the State Treasurer, the Oregon State Treasury is responsible for managing the day to day investment operations of the state pension fund (and other funds), issuing all state debt, and serving as the central bank for state agencies. Within the Oregon State Treasury, the Investment Division also manages investment programs for the state's deferred compensation and college savings plans, and serves as staff to the Oregon Investment Council.

Opportunistic: Higher risk but higher expected return real estate investments that are usually illiquid, produce little or no current income and are often focused on distressed and/or highly leveraged properties.

Opportunity Portfolio: Includes non-traditional and/or concentrated investment strategies that may provide enhanced diversification and/or unique sources of return relative to the other asset classes included in the OIC's approved policy mix. The Opportunity Portfolio's objectives are pursued by investing in strategies that fall outside the boundaries of "strategic" or approved policy mix allocations including new or innovative strategies across a wide range of potential investment opportunities and with few limitations or constraints.

Oregon Investment Council (OIC): Oregon Revised Statute (ORS) 293.706 establishes the OIC, which consists of five voting members, four of whom are appointed by the Governor and subject to Senate confirmation (the Treasurer serves as an ex-officio member, and is therefore not subject to confirmation). The members appointed by the Governor must be qualified by training and experience in the field of investment or finance. In addition, the Director of the Oregon Public Employees Retirement System is a non-voting ex-officio member of the OIC. ORS 293.721 and 293.726 establish the OIC's investment objectives and standards of judgment and care: "Moneys in the investment funds shall be invested and reinvested to achieve the investment objective of the investment funds, which is to make the moneys as productive as possible, subject to the prudent investor standard".

Oregon Public Employees Retirement Fund (OPERF): Holds the assets of beneficiaries of the Oregon Public Employees Retirement System (PERS). PERS is a state-wide, defined benefit retirement plan for units of state government, political subdivisions, community colleges and school districts. PERS is administered under ORS chapters 237, 238, 238A, and applicable provisions of the Internal Revenue Code by the Public Employees Retirement Board (PERB). Participation by state government units, school districts, and community colleges is mandatory. Participation by most political subdivisions is optional but irrevocable if elected. All system assets accumulated for the payment of benefits may legally be used to pay benefits to any of the plan members or beneficiaries of the system. PERS is responsible for administering the management of the plan's liability and participant benefits.

Oregon Short Term Fund (OSTF): The state's commingled cash investment pool managed internally by Treasury staff. The OSTF includes all excess state agency cash, as required by law, as well as cash invested by local governments on a discretionary basis. The OSTF is invested in accordance with investment guidelines recommended by the state's Oregon Short Term Fund Board and approved by the OIC.

Overweight: A stock, sector or capitalization exposure that is higher than the corresponding exposure in a given asset class benchmark, such as the Russell 3000 Index.

Private Equity: Venture Economics (VE) uses the term to describe the universe of all venture investing, buyout investing and mezzanine investing. Fund-of-funds investing and secondaries are also included in this term's broadest interpretation. VE is not using the term to include angel investors or business angels, real estate investments or other investing scenarios outside of the public market. See also *Alternatives*.

Real Estate: Investments in land, buildings or other real property.

Real Estate Investment Trusts (REITs): A real estate portfolio managed by an investment company for the benefit of the trust unit holders. The units of most REITs are publically traded.

Regular Account: That portion of the Oregon Public Employees Retirement Fund that excludes the Variable Account. A diversified investment portfolio for which the asset allocation and general investment policies are established and approved by the OIC. Tier One participants are guaranteed a minimum rate of return based on the long-term interest rate used by the actuary, currently 7.50 percent. Tier Two participants have no guaranteed rate of return and receive benefits that reflect the Regular Account's actual or realized investment return.

Return: The gain or loss in value of an investment over a given period of time expressed as a percentage of the original amount invested. For example, an initial investment of \$100 that grows to \$105 over one year has produced a 5% return.

Risk: The probability of losing money or not achieving the expected investment outcome.

Russell 3000 Index: Measures the investment performance of a composite comprised of stocks issued by the approximately 3,000 largest U.S. companies. Based on total market capitalization, this index represents approximately 98% of the investable U.S. equity market.

S&P/LSTA Leveraged Loan Index: This index is designed to mirror the market-weighted performance of the largest institutional leveraged loan portfolios based on market weightings, spreads and interest payments. Facilities are eligible for inclusion in the index if they are senior secured institutional term loans with a minimum initial spread of 125 basis points and minimum one-year term. Facilities are retired from the index when there is no bid posted on the facility for at least 12 successive weeks or when the loan is repaid.

Secondaries: The purchase and sale of existing limited partnership commitments to other limited partners and/or fund sponsors.

Sector: A particular group of stocks or bonds that usually characterize a given industry or economic activity. For example, "pharmaceuticals" is the name given to stocks issued by companies researching, manufacturing and selling over-the-counter and prescription medicines. "Corporates" is the name given to fixed income instruments issued by private and public companies.

Sector Funds: A pooled investment product that focuses on a particular industry or economic activity. For example, pooled funds that invest principally in technology stocks would be termed a technology sector fund.

Tracking Error: The amount by which an investor's investment performance differed from a corresponding or assigned benchmark. Usually measured and expressed as the standard deviation of returns relative to a pre-specified benchmark.

Unhedged: A term indicating that the value of one, more or an entire portfolio of assets may be affected by foreign currency fluctuations and that no deliberate attempt has been made to protect against such fluctuations.

Value Added: As used in real estate, may include office, retail, industrial and apartment properties, but may target structured investments in alternative property types such as hotels, student housing, senior housing and specialized retail uses. Portfolios or strategies that are positioned as Value Added are expected to produce returns between Core and Opportunistic portfolios/strategies. For example, a Value Added property may exhibit some "institutional" qualities such as good location and high design and construction quality, but may need significant leasing improvements to stabilize and enhance its value. Value Added investments may also include development opportunities with balanced risk/return profiles.

Value Stock: Stocks that appear to be undervalued for reasons other than low potential earnings growth.

Value stocks usually have low price-to-earnings ratios, low price-to-book ratios and a high dividend yield.

Variable Account: The Variable Annuity Program (VAP) allowed active PERS members to allocate a portion of their yearly, employee retirement contributions to a domestic equity portfolio. No such contributions were allowed after December 31, 2003. Active members who participated in the VAP had part of their balance invested in the Regular Account and part invested in the Variable Account. Unless a member explicitly elected to participate in the VAP, all of that member's employee contributions were invested in the Regular Account. This "primary" election allowed members to place 25 percent, 50 percent or 75 percent of their employee contributions in the Variable Account. Variable Account balances increase or decrease depending on the investment performance of the variable fund, and individual participant accounts are credited for any amount (gain or loss) available for distribution. The OIC's asset allocation policy purview only applies to the Regular Account since the OIC cannot control the investment option elections of VAP participants.

Venture Capital: Independently managed, dedicated pools of capital that focus on equity or equity-linked investments in privately held, high growth companies. Outside of the United States, the term venture capital is used as a synonym for all types of alternative or private equity.

Vintage Year: The calendar year in which an investment fund's first closing occurs. For example, the 1995 vintage year for venture capital includes all venture capital funds that held a first closing in 1995.

PURPOSE

1. This Statement of Investment Objectives and Policy Framework (the "Statement") summarizes the philosophy, objectives and policies approved by the *Oregon Investment Council* (the "OIC" or the "Council") for the investment of *Oregon Public Employees Retirement Fund* ("OPERF" or the "Fund") assets.
2. The Council approved these objectives and framework after careful consideration of OPERF benefit provisions, and the implications of alternative objectives and policies.
3. The Statement has been prepared with six audiences in mind: 1) incumbent, new and prospective Council members; 2) investment division staff of the *Oregon State Treasury* ("OST"); 3) the Public Employees Retirement Board ("PERB"); 4) active and retired Oregon Public Employees Retirement System (OPERS) members; 5) the Oregon State Legislature and Governor; and 6) agents engaged by the Council to manage and administer Fund assets.
4. The Statement summarizes more detailed policy and procedure documents prepared and maintained by investment division staff, and numerous other documents that govern the day-to-day management of OPERF assets including agent agreements, individual investment manager mandates and limited partnership documents.
5. The Council regularly assesses the continued suitability of its approved investment objectives and policies, initiates change as necessary and updates these documents accordingly.

INVESTMENT OBJECTIVE

1. The Council believes, based on the assumptions outlined herein, that the investment policies summarized in this document will provide the highest possible *return* at a level of *risk* that is appropriate for active and retired OPERF members. The Council evaluates risk in terms of both short-term asset price volatility and long-term plan viability.
2. Subject to ORS 293.721 and 293.726 and the risk parameters described directly above, the objective for the *Regular Account* is to maximize the net, annualized, risk-adjusted return on OPERF capital consistent with Council investment policies, particularly those concerning asset allocation and prudent diversification. This objective further contemplates a consecutive ten-year forecast horizon, and the Council also understands that estimates of forward-looking OPERF returns are a primary consideration during PERB's biennial determination of its *actuarial discount rate* (ADR).
3. Historically, OPERF members were allowed to direct up to 75% of their annual, employee retirement contributions to the *Variable Account*. While no longer receiving new contributions, the Variable Account's objective remains investment performance consistent with the *MSCI All Country World Investable Market Index*.
4. The Council has established investment objectives for individual asset classes that are also summarized in this Statement.

POLICY ASSET MIX DIVERSIFICATION AND RETURN EXPECTATIONS

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, and its active management return expectations are summarized in Exhibit 2.
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 or negative 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 in Exhibit 1.

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

Asset Class	Target Allocation (%)	Re-balancing Range (0%)	Expected Annual Policy Return ¹ (%)
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 Fund²	100.0		7.1

1 Based on capital market forecasts developed by the Council's investment consultant, Callan Associates.

2 Total Fund expected returns are calculated *geometrically* using the investment consultant's forecasts for the *arithmetic* returns and covariances of the asset classes. Accordingly, the Total Fund's expected returns are not equivalent to the weighted average of individual asset class returns listed in Exhibit 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 shall review, at least biennially, its expectations for asset class and active management performance, and assess how the updated expectations affect the probability that the

Regular Account will achieve its investment objective.

PASSIVE AND ACTIVE MANAGEMENT

1. Passive management uses lower cost *index funds* to access the return streams available from the world's capital markets. Active management tries to earn higher returns than those available from index funds through the application of manager skill in the form of sector and security selection as well as market and/or asset mix timing decisions.
2. The Council uses passive management to control costs, evaluate active management strategies, capture exposure to *efficient market* segments, manage *tracking error* and facilitate policy mix re-balancing activities. Exchange-traded *real estate investment trusts (REITs)* may also be used to maintain the Fund's real estate exposure within specified policy ranges.
3. The Council approves active management of Fund assets when proposed active strategies offer sufficiently high expected incremental returns, net of fees, and when the magnitude of potential under-performance can be estimated, monitored and managed.
4. Public equity and fixed income asset classes are managed using both passive and active management strategies. Active management of the Fund's public market equity and fixed income allocations is expected to earn annual return premiums of 0.50% and 0.25%, respectively, over rolling, consecutive five-year periods (and relative to those allocation's respective benchmarks). The Council recognizes that unsuccessful active management can reduce total Fund returns.
5. The Council must accept active management in those asset classes for which there are no passive management alternatives; in particular, private real estate, private equity and other alternative and opportunistic investment strategies.
6. The Council prefers active management strategies that emphasize sector and/or security selection decisions rather than market and/or asset mix timing decisions as the former are much better supported by professional experience and academic research.
7. At the aggregate, Regular Account level, and as outlined in Exhibit 2, active management strategies authorized by the Council are expected to **add 0.4% of annualized excess return**, net of fees, over rolling, consecutive five-year periods. **Relative to the policy benchmark, Regular Account active risk shall be managed to a 2 to 3 percent annualized tracking error target.**

Exhibit 2: Active Return Expectations for the OPERF Regular Account by Asset Class

Asset Class	Target Allocation (%)	Target Active Return (%)	Target Active Contribution (%)
Public Equity	37.5	0.50	0.19
Fixed Income	20.0	0.25	0.05
Real Estate	12.5	0.50	0.06
Total Fund			0.30

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.

PERFORMANCE MONITORING AND EVALUATION

1. The Council and its agents use a variety of compliance verification and performance measurement tools to monitor, measure and evaluate the management of OPERF assets. Monitoring, reporting and evaluation frequencies range from daily to annually, although quarterly is the most commonly used reporting frequency.
2. The Council has developed a performance monitoring and evaluation system that answers two fundamental fiduciary questions:
 - Are Fund assets being prudently managed? More specifically, are Fund assets being managed in accordance with established laws, policies and procedures, and are individual investment managers in compliance with their respective mandates?
 - Are Fund assets being profitably managed? More specifically, has Fund investment performance improved benefit security, and has capital market risk in general and active management in particular been sufficiently rewarded?
3. When a breach of policies, procedures or portfolio mandates is reported or detected, the Council requires a supporting report explaining how the breach was discovered, the reasons for the breach, actions taken to rectify the breach, and steps taken to mitigate future occurrences.
4. One of many reports used by the Council to satisfy the above requirements is a simple comparison of Regular Account investment performance relative to the Council's assigned total Fund benchmark over rolling, consecutive multi-year periods. Other reports help the Council assess whether or not the Fund was rewarded for its allocations to higher return, higher risk equity investments and whether or not the active management strategies utilized added or subtracted from policy returns on a net of fees basis.
5. The reporting described in this section gives the Council a consolidated or "big picture" view of Regular Account investment performance. This view is the first level of a comprehensive four-level performance report used by the Council to monitor and evaluate Regular Account investment performance over different time horizons. Level two examines Regular Account investment performance excluding hard-to-price illiquid assets such as real estate and private equity investments. Level three examines Regular Account investment performance across seven, primary asset allocation categories: U.S. equity; Non-U.S. equity; Fixed Income; Real Estate; Private Equity; and the Alternatives and Opportunity portfolios. Level four examines the performance of individual managers within each of the asset allocation categories. This four-level

reporting structure allows the Council to "drill down" to the level of detail it may need to identify potential performance problems and take whatever corrective actions that may be required.

GLOSSARY

Actuarial Discount Rate (ADR): The interest rate used to calculate the present value of a defined benefit plan's future obligations and determine the size of the plan sponsor's annual contribution. The ADR currently approved by the PERB is 7.5%.

Alternatives: Investments that are considered non-traditional or emerging in nature. Presently, the following investment types are included within the OPERF alternatives allocation: hedge funds; infrastructure; natural resources; and commodities.

Asset Class: A collection of securities that have conceptually similar claims on income streams and have returns that are highly correlated with each other. The most frequently referenced asset classes include equities, fixed income, real estate and cash.

Bank of America Merrill Lynch U.S. High Yield Master II Index: This index tracks the performance of publicly-issued, U.S. dollar-denominated, below investment-grade corporate debt. Its constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest and must conform to the following parameters:

- Be rated below investment-grade rating based on an average of Moody's, S&P and Fitch;
- Have at least 18 months to final maturity at the time of issuance and at least one year remaining to final maturity as of an index rebalancing date;
- Have a fixed coupon schedule and a minimum outstanding of \$100 million; and
- Qualifying securities must have risk exposure to countries that are members of the FX-G10, Western Europe or territories of the U.S. and Western Europe (the FX-G10 includes all Euro members, the U.S., Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden).

Bloomberg Barclays U.S. Aggregate Index: This index covers the U.S. investment-grade fixed rate bond market, and includes government, corporate, mortgage pass-through and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis. Its constituents are SEC-registered, taxable, dollar-denominated securities and must conform to the following parameters:

- Have at least one year to final maturity regardless of call features;
- Be rated investment-grade (Baa3/BBB- or higher) by at least two of the major ratings agencies (Moody's, S&P or Fitch);
- Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;
- Be dollar-denominated and non-convertible; and
- Be publicly issued, although 144A securities with registration rights and Reg-S issues are included.

Bloomberg Barclays U.S. Treasury Index: This index is a sub-component of the Bloomberg Barclays Aggregate Index and includes public obligations of the U.S. Treasury that have remaining maturities of more than one year. Its constituents must conform to the following parameters:

- Be a U.S. Government or investment-grade credit security;
- Have at least one year to final maturity regardless of call features;
- Have at least \$250 million par amount outstanding;
- Be rated Baa3/BBB- or higher (i.e., "investment grade") by at least two of the major ratings agencies (Moody's, S&P or Fitch);

- Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;
- Be dollar-denominated and non-convertible; and
- Be publicly issued.

Basis Point: One basis point equals 0.01%. One hundred basis points equal one percentage point.

Benchmark: A standard by which investment performance can be measured and evaluated. For example, the performance of U.S. equity managers is often measured and evaluated relative to the Russell 3000 Index. In this case, the Russell 3000 Index serves as or represents the U.S. equity benchmark.

Benchmark Exposure: The proportion that a given stock represents within a benchmark, such as the Russell 3000 Index of U.S. equity securities. Allows investors to measure the extent to which a portfolio or specific investment strategy is over- or under-exposed to a particular stock or investment characteristic (e.g., market capitalization) relative to a benchmark.

Co-investment: Although used loosely to describe any two parties that invest alongside one another in the same company, this term has a special meaning in the context of an investment fund's limited partners. By having co-investment rights, a limited partner can invest directly in a company that is simultaneously backed by the fund's general partner. In this way, the limited partner has two separate stakes in the company: the first, an indirect investment through its participation in the general partner's fund; the second, a direct investment alongside the general partner. While the direct, co-investment opportunity is usually offered at terms and conditions more favorable than the fund investment, the direct, concentrated nature of the co-investment opportunity implies higher risk for the limited partner.

Core: Real estate investment strategies which exhibit "institutional" qualities, such as superior location, high occupancy and premium design and construction quality.

Credit: Used most often in a fixed income context, the measure of an organization's ability to re-pay borrowed money. Organizations with the highest credit rating (i.e., those most likely to re-pay borrowed money) are assigned a AAA credit rating.

Distressed Debt: A private equity investment strategy that involves purchasing discounted bonds of a financially-distressed firm. Distressed debt investors frequently convert their holdings into equity and become actively involved in the management of the distressed firm.

Diversifying Strategies: Investment strategies that attempt to systematically capture certain risk premia beyond traditional equity and fixed income market exposures using alternative investment techniques.

Diversification: Reducing risk without a commensurate reduction in expected return by combining assets and/or investment strategies with low or uncorrelated return and volatility profiles. For example, a decline in the price of one asset (e.g., oil stocks) is offset by an increase in the price of another asset (e.g., airline stocks). In lay terms, this principal is often described as "putting your eggs in more than one basket".

Duration: A financial measure used by investors to estimate the price sensitivity of a fixed income security relative to changes in interest rates. For example, if interest rates increase by 1 percentage point, a 5-year duration bond will decline in price by approximately 5 percent.

Efficient Market: A market in which security prices rapidly reflect all information germane to the price discovery process. A primary implication of an efficient market is that active management efforts often fail to produce results that consistently beat the performance of an index fund or other passive strategy net of fees, transactions costs and other expenses.

Equities: Investments that represent ownership in a company and therefore a proportional share of company profits.

Fixed Income: Debt obligations that specify the precise repayment of previously borrowed money. Typically, repayment takes the form of a series of fixed-amount, semi-annual interest payments and a single, final repayment of principal.

Funded Status: A comparison of a pension plan's assets and liabilities where the latter are often referred to as the plan's projected benefit obligation (PBO). When a plan's assets exceed its PBO, the plan is considered overfunded. Conversely, if a plan's assets are less than its PBO, the plan is considered underfunded and the plan sponsor has a net liability position with respect to its pension plan.

Fund-of-funds: Often organized by an investment advisor or investment bank, a fund that invests in other funds rather than directly in securities, operating firms or other assets.

Growth Stock: Stocks exhibiting faster-than-average earnings growth with expectations that such growth will continue. Growth stocks usually have high price-to-earnings ratios, high price-to-book ratios and low to no dividend yields.

Hedged: A term applied to one, more or an entire portfolio of assets indicating that the base country value of such assets is partially or wholly protected from foreign currency fluctuations. Forward currency contracts are typically used to hedge or offset the effects of these fluctuations.

Index Fund: A portfolio management strategy that seeks to match the composition and performance of a select index such as the Russell 3000 or S&P 500.

Leverage Buyout (LBO): A strategy in which debt financing is used to acquire a firm or business unit, typically in a mature industry. LBO debt is usually repaid according to a strict schedule that absorbs most of the acquired firm's cash flow.

Liability: A claim on assets by individuals or companies. In a pension context, liabilities represent the claim on fund assets by active and retired plan beneficiaries.

MSCI All Country World Investable Market Index (ACWI-IMI): A capitalization-weighted index that includes approximately 9,000 publically-traded equity securities and is designed to measure equity market performance across developed and emerging markets. This index consists of over 40 separate developed and emerging market country indices.

MSCI World Ex-U.S. Index: A subset of the MSCI All Country World Index that contains only securities from developed market countries, excluding those from the U.S.

Market Capitalization: The value of a corporation as determined by multiplying the price of its shares by the number of shares outstanding. In general, the share prices of smaller capitalized companies are more volatile than those of larger capitalized companies.

Mezzanine: Either a private equity financing undertaken shortly before an initial public offering, or an investment strategy that employs subordinated debt (which has fewer privileges than bank debt but more standing than equity) and often is issued with attached equity warrants.

NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE): The NFI-ODCE is an investment performance composite published quarterly by the National Council of Real Estate Investment Fiduciaries (NCREIF). This index is a capitalization-weighted index of approximately 30 open-ended, commingled funds pursuing a "core" investment strategy. The specific qualifications for NFI-ODCE inclusion are as follows:

- At least 80% of fund market value must be in private equity operating real estate;
- At least 95% of fund market value must be in U.S. markets;
- At least 80% of fund market value must be invested in apartments, industrial properties, office buildings, and retail;

- No more than 65% of fund market value can be in one property type or one region as defined by the NPI;
- No more than 40% leverage; and
- Compliance with the NCREIF/PREA Reporting Standards.

Oregon State Treasury: Headed by the State Treasurer, the Oregon State Treasury is responsible for managing the day to day investment operations of the state pension fund (and other funds), issuing all state debt, and serving as the central bank for state agencies. Within the Oregon State Treasury, the Investment Division also manages investment programs for the state's deferred compensation and college savings plans, and serves as staff to the Oregon Investment Council.

Opportunistic: Higher risk but higher expected return real estate investments that are usually illiquid, produce little or no current income and are often focused on distressed and/or highly leveraged properties.

Opportunity Portfolio: Includes non-traditional and/or concentrated investment strategies that may provide enhanced diversification and/or unique sources of return relative to the other asset classes included in the OIC's approved policy mix. The Opportunity Portfolio's objectives are pursued by investing in strategies that fall outside the boundaries of "strategic" or approved policy mix allocations including new or innovative strategies across a wide range of potential investment opportunities and with few limitations or constraints.

Oregon Investment Council (OIC): Oregon Revised Statute (ORS) 293.706 establishes the OIC, which consists of five voting members, four of whom are appointed by the Governor and subject to Senate confirmation (the Treasurer serves as an ex-officio member, and is therefore not subject to confirmation). The members appointed by the Governor must be qualified by training and experience in the field of investment or finance. In addition, the Director of the Oregon Public Employees Retirement System is a non-voting ex-officio member of the OIC. ORS 293.721 and 293.726 establish the OIC's investment objectives and standards of judgment and care: "Moneys in the investment funds shall be invested and reinvested to achieve the investment objective of the investment funds, which is to make the moneys as productive as possible, subject to the prudent investor standard".

Oregon Public Employees Retirement Fund (OPERF): Holds the assets of beneficiaries of the Oregon Public Employees Retirement System (PERS). PERS is a state-wide, defined benefit retirement plan for units of state government, political subdivisions, community colleges and school districts. PERS is administered under ORS chapters 237, 238, 238A, and applicable provisions of the Internal Revenue Code by the Public Employees Retirement Board (PERB). Participation by state government units, school districts, and community colleges is mandatory. Participation by most political subdivisions is optional but irrevocable if elected. All system assets accumulated for the payment of benefits may legally be used to pay benefits to any of the plan members or beneficiaries of the system. PERS is responsible for administering the management of the plan's liability and participant benefits.

Oregon Short Term Fund (OSTF): The state's commingled cash investment pool managed internally by Treasury staff. The OSTF includes all excess state agency cash, as required by law, as well as cash invested by local governments on a discretionary basis. The OSTF is invested in accordance with investment guidelines recommended by the state's Oregon Short Term Fund Board and approved by the OIC.

Overweight: A stock, sector or capitalization exposure that is higher than the corresponding exposure in a given asset class benchmark, such as the Russell 3000 Index.

Private Equity: Venture Economics (VE) uses the term to describe the universe of all venture investing, buyout investing and mezzanine investing. Fund-of-funds investing and secondaries are also included in this term's broadest interpretation. VE is not using the term to include angel investors or business angels, real estate investments or other investing scenarios outside of the public market. See also *Alternatives*.

Real Estate: Investments in land, buildings or other real property.

Real Estate Investment Trusts (REITs): A real estate portfolio managed by an investment company for the benefit of the trust unit holders. The units of most REITs are publically traded.

Regular Account: That portion of the Oregon Public Employees Retirement Fund that excludes the Variable Account. A diversified investment portfolio for which the asset allocation and general investment policies are established and approved by the OIC. Tier One participants are guaranteed a minimum rate of return based on the long-term interest rate used by the actuary, currently 7.50 percent. Tier Two participants have no guaranteed rate of return and receive benefits that reflect the Regular Account's actual or realized investment return.

Return: The gain or loss in value of an investment over a given period of time expressed as a percentage of the original amount invested. For example, an initial investment of \$100 that grows to \$105 over one year has produced a 5% return.

Risk: The probability of losing money or not achieving the expected investment outcome.

Russell 3000 Index: Measures the investment performance of a composite comprised of stocks issued by the approximately 3,000 largest U.S. companies. Based on total market capitalization, this index represents approximately 98% of the investable U.S. equity market.

S&P/LSTA Leveraged Loan Index: This index is designed to mirror the market-weighted performance of the largest institutional leveraged loan portfolios based on market weightings, spreads and interest payments. Facilities are eligible for inclusion in the index if they are senior secured institutional term loans with a minimum initial spread of 125 basis points and minimum one-year term. Facilities are retired from the index when there is no bid posted on the facility for at least 12 successive weeks or when the loan is repaid.

Secondaries: The purchase and sale of existing limited partnership commitments to other limited partners and/or fund sponsors.

Sector: A particular group of stocks or bonds that usually characterize a given industry or economic activity. For example, "pharmaceuticals" is the name given to stocks issued by companies researching, manufacturing and selling over-the-counter and prescription medicines. "Corporates" is the name given to fixed income instruments issued by private and public companies.

Sector Funds: A pooled investment product that focuses on a particular industry or economic activity. For example, pooled funds that invest principally in technology stocks would be termed a technology sector fund.

Tracking Error: The amount by which an investor's investment performance differed from a corresponding or assigned benchmark. Usually measured and expressed as the standard deviation of returns relative to a pre-specified benchmark.

Unhedged: A term indicating that the value of one, more or an entire portfolio of assets may be affected by foreign currency fluctuations and that no deliberate attempt has been made to protect against such fluctuations.

Value Added: As used in real estate, may include office, retail, industrial and apartment properties, but may target structured investments in alternative property types such as hotels, student housing, senior housing and specialized retail uses. Portfolios or strategies that are positioned as Value Added are expected to produce returns between Core and Opportunistic portfolios/strategies. For example, a Value Added property may exhibit some "institutional" qualities such as good location and high design and construction quality, but may need significant leasing improvements to stabilize and enhance its value. Value Added investments may also include development opportunities with balanced risk/return profiles.

Value Stock: Stocks that appear to be undervalued for reasons other than low potential earnings growth.

Value stocks usually have low price-to-earnings ratios, low price-to-book ratios and a high dividend yield.

Variable Account: The Variable Annuity Program (VAP) allowed active PERS members to allocate a portion of their yearly, employee retirement contributions to a domestic equity portfolio. No such contributions were allowed after December 31, 2003. Active members who participated in the VAP had part of their balance invested in the Regular Account and part invested in the Variable Account. Unless a member explicitly elected to participate in the VAP, all of that member's employee contributions were invested in the Regular Account. This "primary" election allowed members to place 25 percent, 50 percent or 75 percent of their employee contributions in the Variable Account. Variable Account balances increase or decrease depending on the investment performance of the variable fund, and individual participant accounts are credited for any amount (gain or loss) available for distribution. The OIC's asset allocation policy purview only applies to the Regular Account since the OIC cannot control the investment option elections of VAP participants.

Venture Capital: Independently managed, dedicated pools of capital that focus on equity or equity-linked investments in privately held, high growth companies. Outside of the United States, the term venture capital is used as a synonym for all types of alternative or private equity.

Vintage Year: The calendar year in which an investment fund's first closing occurs. For example, the 1995 vintage year for venture capital includes all venture capital funds that held a first closing in 1995.

TAB 6 – Alternatives Portfolio Review

OPERF

OPERF Alternatives Portfolio 2017 Annual Review and 2018 Plan

Ben Mahon

Senior Investment Officer

April 25, 2018



Oregon State Treasury

Executive Summary

- Primary role of Alternatives Portfolio = diversification
 - The “keyboard” in ‘70s rock band analogy
 - Seeking less correlated and diversifying sources of returns, as well as inflation hedges or inflation-sensitive returns

- Pacing on target; Portfolio still young and early in its build-out
 - Market value as of December 31, 2017 = \$5 billion (vs. \$4 billion at year-end 2016)
 - Market value as a % of OPERF as of December 31, 2017 = 6.5% (vs. 12.5% target)
 - ≈ 70% of both total commitments authorized and capital contributed in past 3 years; weighted-average age of 2.3 years
 - “Fifth inning” of portfolio development

- Additional resources
 - Addition of third Alts investment officer, currently recruiting for a fourth
 - Continued expansion (and utilization) of broader OST resources

- Dynamic market and evolving investment opportunity set
 - Steady flow of new managers, strategies, and structures
 - Strong set of existing managers, offering opportunities to expand relationships

Portfolio development on track

Topics

1. Background/Objectives

2. 2017 Review

3. Looking Forward

4. Appendix

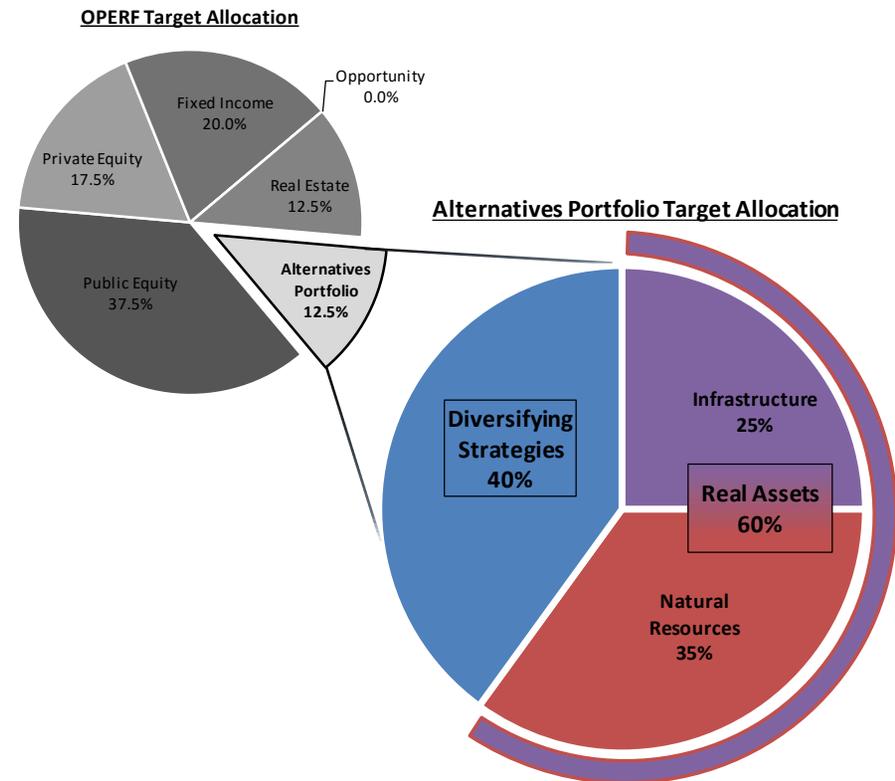
Background/Objectives

➤ Alternatives Portfolio background

- Alternatives Portfolio approved at January 2011 OIC meeting; seeded July 2011 with 3 investments from the Opportunity Portfolio
- Target allocation for the Portfolio has increased twice since its inception:
 - From 5% to 10% in June 2013, then from 10% to 12.5% in June 2015
 - Actual allocation at December 31, 2017 was 6.5%

➤ Alternatives Portfolio objectives

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



Topics

1. Background/Objectives

2. 2017 Review

3. Looking Forward

4. Appendix

2017 Year in Review

➤ Portfolio build-out continued on track

- During 2017, OIC/OST authorized \$2.7 billion in commitments across 8 investments
 - 3 of the commitments were new relationships; 5 were “re-ups”
 - Slightly above expected \$2.0 - \$2.5 billion range
- Portfolio exposures are balanced and within target ranges
- Continue to refine strategy and develop anchor positions complemented by specialists/next generation relationships. No shortage of deal flow!
- 2017 commitments comprised a diverse set of investment strategies:

INVESTMENT NAME	AUTHORIZED DATE	FIRST OPERF DRAWDOWN	COMMITMENT AMOUNT
NGP Natural Resources Fund XII, L.P.	August 2017	November 2017	\$250.0
JP Morgan Systematic Alpha	September 2017	November 2017	\$500.0
Stonepeak Infrastructure Fund III, L.P.	September 2017	February 2018	\$400.0
Blackrock Style Advantage	November 2017	December 2017	\$500.0
EnCap Flatrock Midstream Fund IV, L.P.	December 2017	February 2018	\$113.0
LS Power Equity Partners Fund IV, L.P.	December 2017	N/A	\$200.0
Warwick Partners IV, L.P.	December 2017	N/A	\$200.0
Aspect Core Diversified Programme	December 2017	April 2018	\$500.0
TOTAL			\$2,663.0

\$ in millions.

2017 Year in Review, cont.

➤ Diversifying Strategies

- Significant progress in 2017, added 3 new relationships
- Including AQR Managed Futures top-off recommendation (January 2018), 85% of Diversifying Strategies allocation now identified
 - Newly authorized mandates will fund over the course of 2018

➤ Additional resources

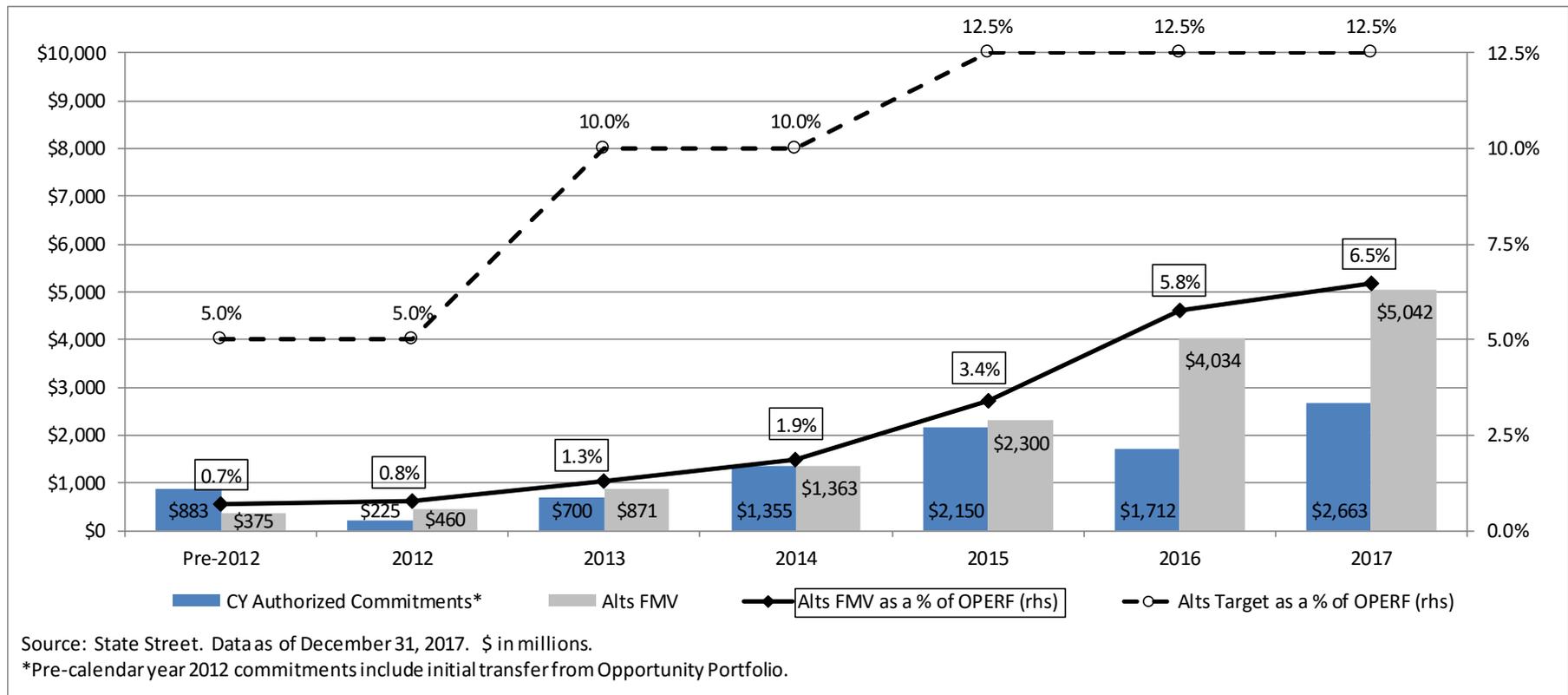
- Addition of Alts investment officer: Paul Koch (January 2018 start)
 - Second Alts investment officer recruitment launched March 2018
- Continued expansion of Alts Program analyst pool (now 3 members)
- Continued expansion of legal/compliance/operations/risk teams

➤ Evaluation of Portfolio benchmark

- Completed evaluation of benchmarking approaches; presented to the CIO and concluded CPI + 4% remains most appropriate performance objective
- See appendix for summary

Commitments and Market Values

- Alternatives Portfolio weight increasing as a percentage of OPERF; equal to 6.5% at year-end
- Since inception, \$9.6 billion of commitments have been authorized, with the majority (\$6.5 billion or ≈ 70%) over the past 3 years



Cash Flow Activity Since Inception

- As anticipated, Portfolio cash outflows have exceeded cash inflows by a meaningful amount with pace of contributions increasing as capital commitments are made.
- As of December 31, 2017, OPERF had contributed \$5.9 billion in capital, funding approximately 61% of aggregate capital commitments. Approximately \$4.4 billion of capital commitments remain outstanding.
- Since inception, a total of \$1.4 billion has been distributed to OPERF.
- As new commitments continue to be made, the weighted-average age of commitments has remained consistent through time, averaging approximately 2 years (representing the early stage of the Portfolio).
- Since inception, 42 commitments made to closed-end vehicles:
 - 14 have reached end of investment period
 - 0 have reached end of term
 - 0 have been fully realized

	Pre-2012	2012	2013	2014	2015	2016	2017
Authorized Commitments*	\$882.5	\$225.0	\$700.0	\$1,355.0	\$2,150.0	\$1,712.0	\$2,663.0
Contributions	-\$395.6	-\$136.3	-\$429.3	-\$561.7	-\$1,450.1	-\$1,727.2	-\$1,183.8
Distributions	\$8.3	\$47.7	\$51.5	\$112.1	\$443.5	\$204.1	\$506.4
Net Cash Flow	-\$387.4	-\$88.6	-\$377.8	-\$449.6	-\$1,006.6	-\$1,523.2	-\$677.4
Unfunded Commitments	\$282.5	\$534.4	\$574.3	\$1,643.1	\$2,353.6	\$2,871.5	\$4,399.4
Weighted Avg. Age of Commitments (yrs)	2.0	2.1	2.1	1.9	2.1	2.3	2.3

Source: State Street. Data as of December 31, 2017. \$ in millions.

*Pre-calendar year 2012 commitments include initial transfer from Opportunity Portfolio.

Portfolio Snapshot

- Sector exposures are within targeted allocation ranges
 - Diversifying Strategies and listed natural resources/commodities funds are liquid and can be deployed more quickly than illiquid investments in infrastructure and natural resources...
 - ... while cognizant of allocation ranges, anticipate deviations to occur as the program scales.

SECTOR	TARGET (\$)	TARGET (%)	TARGET RANGE (%)	MARKET VALUE (\$)	MARKET VALUE (%)
Infrastructure	\$2,431.5	25%	20-30%	\$1,343.2	27%
Natural Resources	\$3,404.1	35%	30-40%	\$1,763.7	35%
Diversifying Strategies	\$3,890.4	40%	35-45%	\$1,934.8	38%
TOTAL:	\$9,726.1	100%		\$5,041.7	100%

Source: State State. Data as of December 31, 2017. \$ in millions.

Performance

- As noted, Alternatives Portfolio is early in its build-out, and nearly all returns are unrealized
 - \approx 70% of total contributions made in the past 3 years
 - Weighted-average age of 2.3 years
- Given the long-term nature of alternative investments, as well as the J-curve effect, performance to-date is not meaningful

IRR	1 Year	2 Year	3 Year	5 Year	Inception
Alternatives Portfolio	8.0%	10.1%	7.3%	6.0%	5.7%
CPI + 4%	6.2%	6.1%	5.8%	5.6%	5.6%
<i>Difference</i>	<i>1.8%</i>	<i>4.0%</i>	<i>1.5%</i>	<i>0.4%</i>	<i>0.1%</i>
SECTOR					
Infrastructure	9.1%	10.5%	9.8%	10.7%	9.9%
Natural Resources	6.5%	15.3%	6.9%	2.9%	2.6%
Diversifying Strategies	8.9%	5.0%	5.5%	6.1%	6.0%

Source: TorreyCove. Data as of December 31, 2017. Net of fees.

Topics

1. Background/Objectives

2. 2017 Review

3. Looking Forward

4. Appendix

2018 Portfolio Initiatives

➤ Diversifying Strategies

- Kicked off third year of “3-year plan” with Callan onsite February 2018
- With alternative risk premia and managed futures managers identified, focus shifts to “forecasting” strategies (e.g., absolute return, systematic macro, etc.)
- 1-2 recommendations expected in second half of 2018

➤ Real Assets

- Very full pipeline (see page 15)
- 8-12 recommendations expected in second half of 2018

➤ Monitoring and risk management

- Continue to pursue enhancements to monitoring and risk management efforts

➤ Additional resources

- Investment officer search currently underway, targeting Q2/Q3 completion
- Continue to improve onboarding process and integration efforts for new staff
- Continue to leverage investment/operations analysts

➤ Consultant search

- Existing TorreyCove agreement ends December 31, 2018
- Will commence RFP process after Annual Review, targeting Q3/Q4 recommendation

2018 Portfolio Initiatives, cont.

- Separate accounts/strategic relationships
 - Staff and consultant continue to evaluate existing anchor relationships for potential separate account/strategic relationship programs

- Co-investment
 - Staff and consultant continue to evaluate co-investment opportunities and refine program model
 - Objective function is to reduce fee drag
 - No one-size-fits-all approach exists, but focusing on side-car vehicles

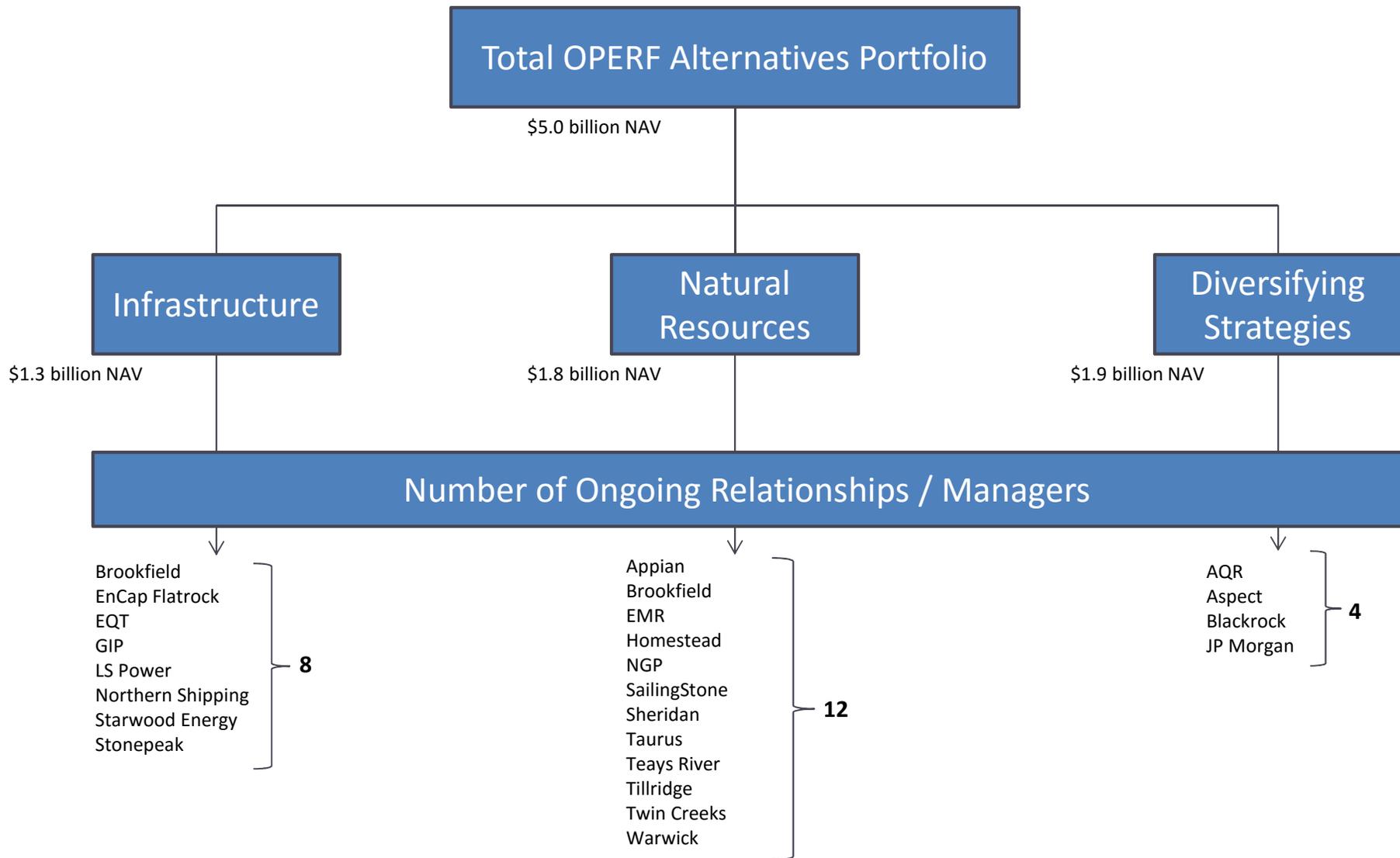
- Current market themes and areas of research focus
 - Expanding universe of credit-oriented strategies
 - Rise of non-traditional funds and fund sponsors
 - North American energy plays
 - Energy storage
 - Reduction in traditional lending
 - Renewable power
 - Emerging markets
 - Growth of telecommunications infrastructure universe
 - Core capital assets (i.e., aviation, shipping, containers, etc.)

2018 Portfolio Initiatives, cont.

➤ Investment pipeline

- Diversifying Strategies (\approx 1-2) (global, public markets)
- Upstream energy (2) (North America, private markets)
- Diversified infrastructure (\approx 5) (global, private markets)
- Diversified energy (global, private markets)
- Telecommunications infrastructure (global, private markets)
- Infrastructure debt (global, private markets)
- Maritime finance (global, private markets)
- Metals & mining (North America, private markets)
- Metals & mining finance (global, private markets)
- Timberland (United States, private markets)
- Farmland (United States, private markets)

Portfolio Structure/Relationships

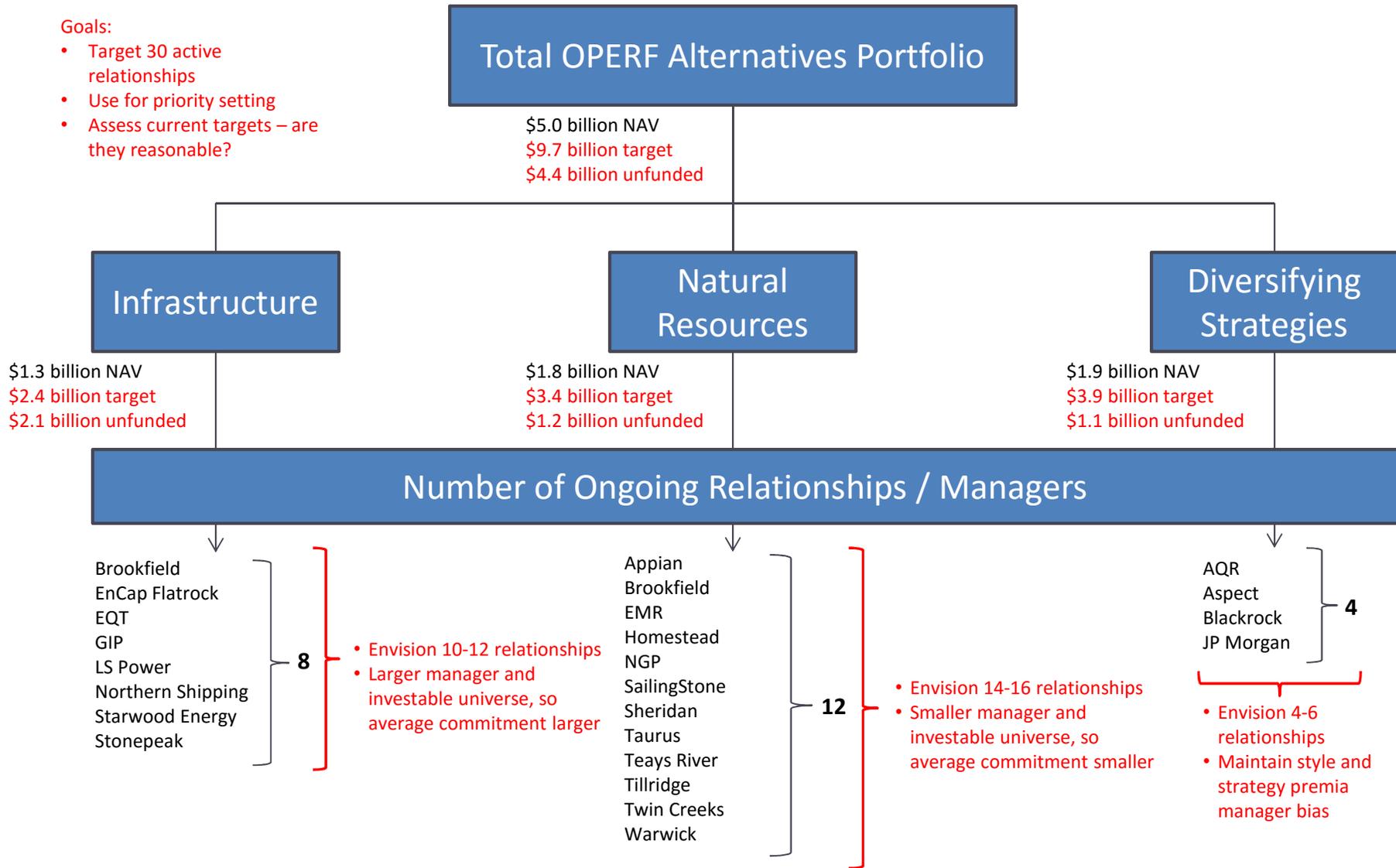


* Source: State Street. Market values as of December 31, 2017.

Portfolio Structure/Relationships **Vision**

Goals:

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



* Source: State Street. Market values as of December 31, 2017.

Portfolio Pacing

➤ 2018 plan

- \$2.5 – \$3.0 billion in commitments
- Based on balanced portfolio allocation, not driven by need to fill an exposure

➤ Longer-term pacing

- Staff has been measured, given entry point risk, research requirements, and resource constraints
- At current pace, anticipate reaching target allocation in \approx 5 years
- Can deploy liquid strategies (e.g., diversifying strategies and listed commodities funds) more quickly than illiquid strategies (e.g., infrastructure, timber, agriculture, metals & mining, etc.)
- Remain cognizant of exposures while aiming for vintage year diversification

Topics

1. Background/Objectives

2. 2017 Review

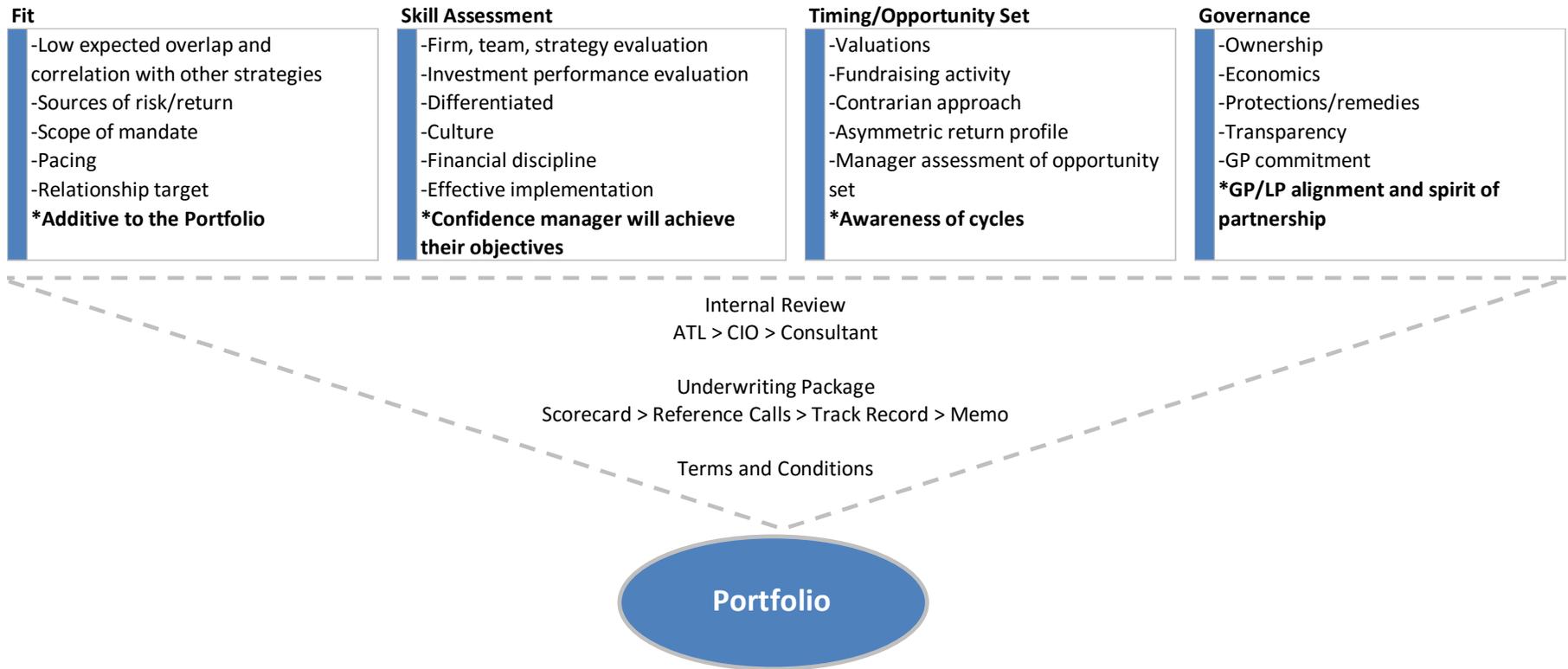
3. Looking Forward

4. Appendix

Appendix: Investment Process

➤ Evaluation framework

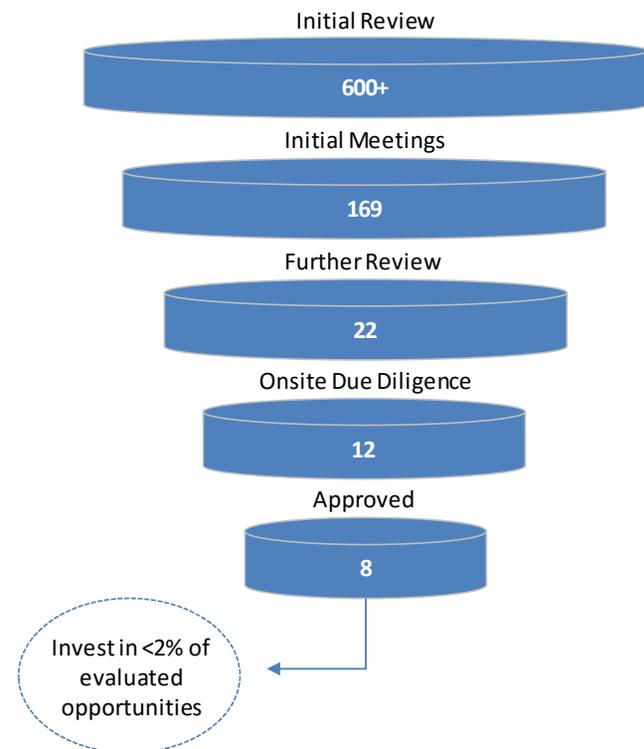
- Very high-level summary of Alternatives Portfolio investment evaluation framework below
- In practice, many more variables, non-linear, and with numerous feedback channels



Appendix: Investment Process, Cont.

➤ Example: 2017 Alts Portfolio meeting count

- Began formally tracking meeting count in 2016
- Scale, brand, and open door policy leveraged to foster deal flow; broad opportunity set has helped meeting count remain consistent over time
 - E.g., among U.S. defined benefit plans, OPERF ranks (by assets) in the top 5 in infrastructure, the top 10 in energy and commodities, and the top 20 in hedge funds*
- After screening over 600 opportunities, held initial meetings (in-person or telephonic) with 169 distinct prospective managers/investments
 - In total, held 464 manager meetings in 2017, 269 of which were with prospects
- “Deep dives” on 22 opportunities
- Ultimately sought approval for 8 investments



* Source: P&I. Market values as of September 30, 2017.

Appendix: Benchmark Evaluation

➤ Background

- The Alternatives Portfolio has used the CPI + 4% as its benchmark since inception. The choice was supported by two primary factors: 1) it represented the most common benchmark among peer pension plans; and 2) it was deemed appropriate and reflective of the inflation protection investment objective.
- Staff undertook a review of approaches, asking “is there anything better?”

➤ Conclusion

- Benchmarking alternative investment performance is notoriously challenging:
 - No readily available universe of transactions, assets, and/or funds makes it difficult to construct a replicable benchmark or statistically significant peer group
 - Benchmarks that do exist struggle to meet the criteria of a “good benchmark”
 - No established index that captures the relevant opportunity set of the Alternatives Portfolio; must balance trade-offs between complexity and completeness
- CPI-based benchmarks remain commonplace for alternative investments (e.g., Alaska Permanent Fund Corporation, CalPERS, CalSTRS, Florida State Board of Administration, Michigan Retirement System, New York City Employees’ Retirement System, Virginia Retirement System, Washington State Investment Board, etc.)
- Although the existing benchmark fails on a number of criteria (namely, the ability to invest), the CPI + 4% remains the most prevalent among peers, as well as the most straightforward and effective in capturing the desired risk profile and inflation hedging characteristics. In Staff’s assessment, no alternate benchmark emerged that was demonstrably better.
- Staff continues to explore next-generation benchmarks and peer groups.

TAB 7 – State Accident Insurance Fund
Annual Review

**Oregon Investment Council
SAIF Corporation Annual Update**

Purpose

Provide the Council with an update on SAIF investment activities in accordance with policy INV 1006: "Review of the asset allocation policy, investment management and performance will occur at least annually with the OIC and more frequently by OST staff. These reviews will focus on the continued appropriateness of policy, compliance with guidelines and performance relative to objectives. A formal process shall be established allowing SAIF staff to meet with OIC's consultants on an annual basis to discuss issues of management and asset allocation. In addition, SAIF staff will have the opportunity to address the OIC annually to discuss SAIF's particular views as to the management of the fund."

Background

SAIF management will conduct an asset/liability analysis in the near future which may produce asset allocation or other potential modification recommendations at the next annual review.

Performance through February 2018

	Market Value	Actual Weight	1 Year	2 Year	3 Year	4 Year	5 Year	7 Year	10 Year
STATE ACCIDENT INSURANCE FUND OREGON SAIF POLICY INDEX	4,760,366	100.0	4.07 2.99	6.08 4.53	3.32 2.55	4.00 3.32	3.96 3.24	4.85 4.24	5.49 4.86
SAIF-BLACKROCK ACWI IMI-GLBCOR MSCI ACWI IMI NET	595,356	12.5	18.98 18.61	20.99 20.61	8.82 8.47	8.44 8.08	10.55 10.18	8.67 8.30	5.94
TOTAL FIXED INCOME - SAIF	4,083,509	85.8	2.29	4.47	2.64	3.48	3.19	4.41	5.32
SAIF-WELLINGTON-FICORE	2,042,843	42.9	2.39	4.15	2.73	3.57	3.19	4.45	5.41
SAIF-WESTERN ASSET-FICORE OREGON SAIF FI INDEX	2,040,666	42.9	2.18 1.36	4.79 2.84	2.55 1.86	3.39 2.75	3.20 2.45	4.38 3.73	5.22 4.64
SAIF-CASH INVESTED IN OSTF 91 DAY TREASURY BILL	41,144	0.9	1.22 0.99	1.24 0.69	1.00 0.48	0.88 0.37	0.84 0.31	0.83 0.25	0.97 0.35
SAIF-PLEDGED SECURITIES-PLEDGD 91 DAY TREASURY BILL	40,357	0.8	-1.32 0.99	-0.28 0.69	0.11 0.48	0.37 0.37	0.40 0.31	0.72 0.25	1.13 0.35

The SAIF portfolio has outperformed its policy benchmark for all periods.

Recommendation

None at this time. Under separate cover, SAIF management will provide a business and operating update for their organization.

Financial Overview

April, 25, 2018



Today's presentation:

- Brief update on the state of SAIF
- Brief update on SAIF's financial position
- Discussion of some key strategic issues related to SAIF capital



The state of SAI F is good

- Market share is 54%
- Approx. 10% pricing differential, on average
- Very strong safety program
- Market-leading service levels
 - Agent, employer, worker surveys
 - Return-to-work services
 - Timely claims decisions
 - Timely delivery of first check to injured workers



The state of SAI F (continued)

- Dividends
 - \$120M traditional dividend
 - \$40M safety dividend
 - 20 of last 28 years, 8 in a row
- Year-over-year retention rate: 99.4%
- The workers' comp system is stable and balanced
 - 1/1/18 pure premium reduction of 14%
 - 1/1/17 pure premium reduction of 6.6%
 - 38.8% reduction over past five years!



SAIF's financial model

- Policies are priced below actual cost
- Investment returns subsidize pricing
- Changes to our \$2.7B claims reserve have a big impact
- Goals:
 - Maintain stable, predictable pricing
 - Small contribution to capital base each year
 - Pay a dividend when appropriate

SAIF's financial position

Balance sheet

	2017	2016
Invested assets	\$4.9 billion	\$4.6 billion
Other assets	\$0.4 billion	\$0.4 billion
Total assets	\$5.3 billion	\$5.0 billion
Claims reserves	\$2.7 billion	\$2.8 billion
Insurance payables and other	\$0.7 billion	\$0.6 billion
Total liabilities	\$3.4 billion	\$3.4 billion
Total surplus/capital	\$1.9 billion	\$1.6 billion
Total liabilities & surplus/capital	\$5.3 billion	\$5.0 billion

Income statement

	2017	2016
Premiums	\$527 million	\$517 million
Claims		
Paid claims	\$ 318 million	\$293 million
Claims reserve changes	<u>-\$114 million</u>	<u>-\$95 million</u>
Total claims	\$204 million	\$198 million
Expenses		
Loss adjustment expenses	\$83 million	\$81 million
Underwriting & other expenses	\$106 million	\$105 million
Net underwriting gain (loss)	\$134 million	\$133 million
Investment income		
Investment income	\$141 million	\$141 million
Investment realized gains/losses	<u>\$31 million</u>	<u>\$42 million</u>
Net investment income	\$172 million	\$183 million
Income before dividends	\$306 million	\$316 million
Policyholder dividends	<u>\$160 million</u>	<u>\$140 million</u>
Net income	<u>\$146 million</u>	<u>\$176 million</u>

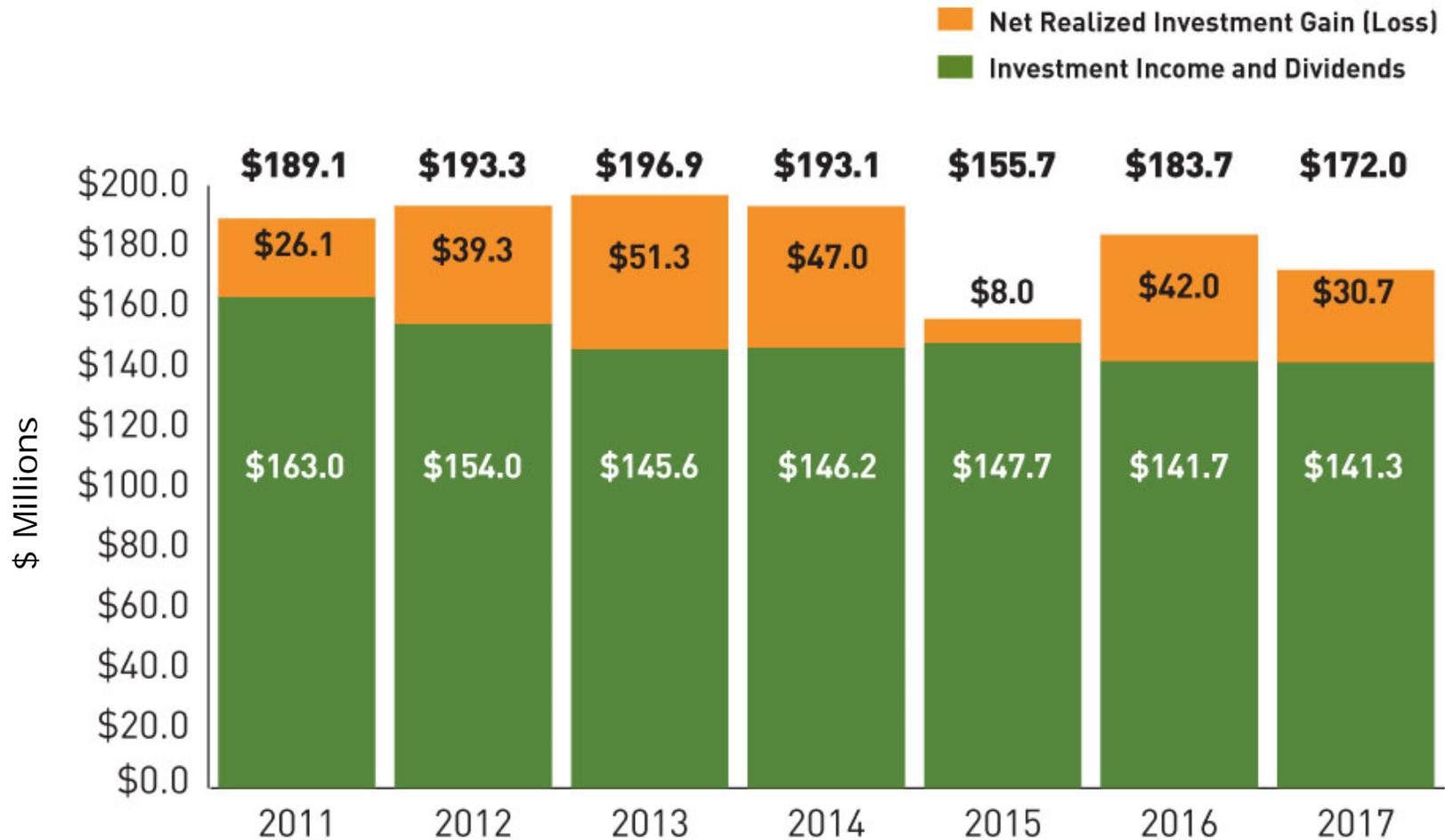
Statement of surplus/capital

	2017	2016
Beginning surplus/capital	\$1.6 billion	\$1.4 billion
Net income	\$146 million	\$176 million
Change in unrealized investment gain (loss)	\$117 million	\$46 million
Other changes	-\$18 million	-\$1.6 million
Ending surplus/capital	\$1.9 billion	\$1.6 billion

Premium

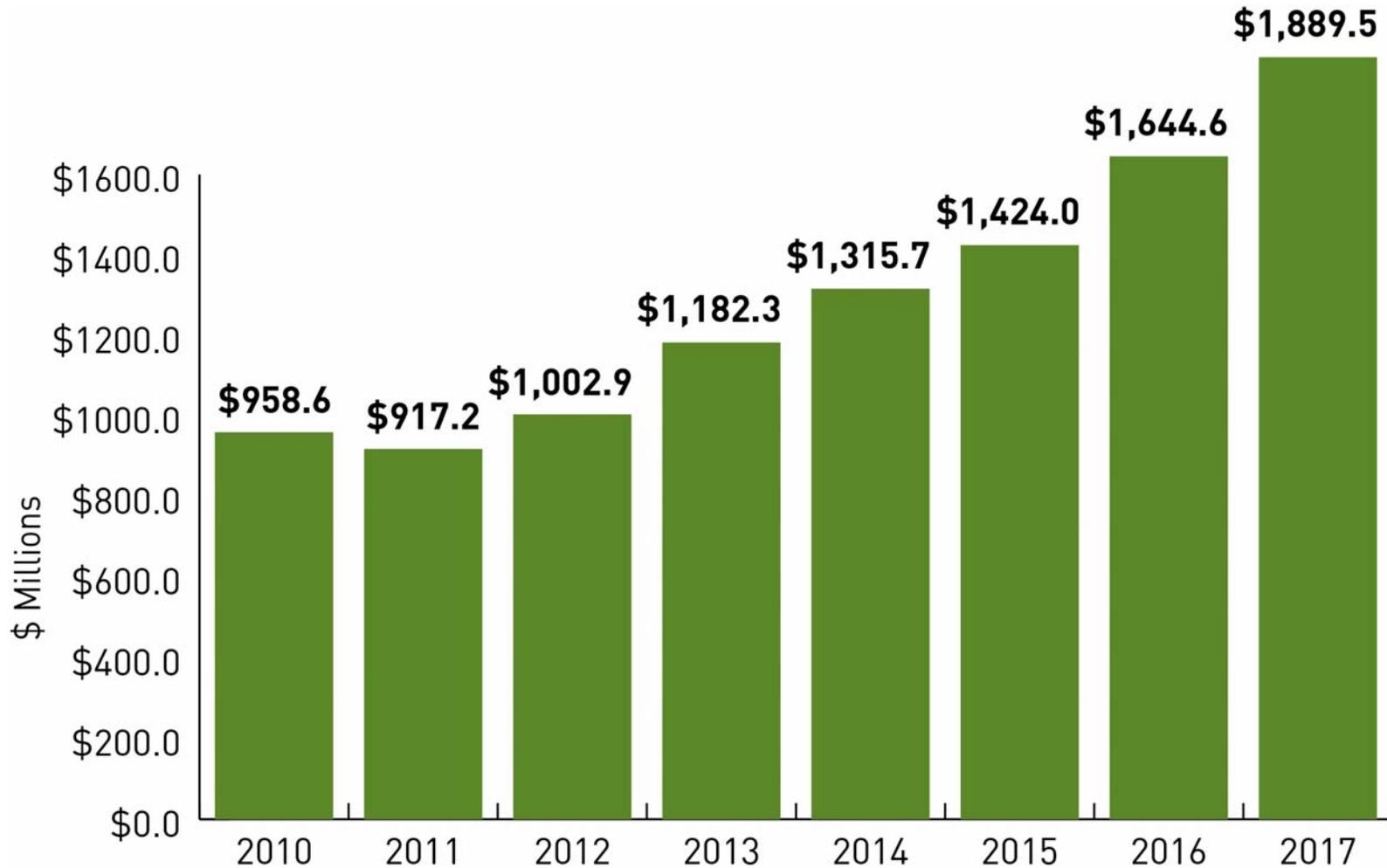


Total investment income



Surplus/capital

as of December 31, 2017





SAIF's investment priorities

- Preservation of capital
- Stable, predictable investment returns
- Matching liquidity to SAIF cash needs
 - Availability of capital in a crisis
 - Availability of capital for project work



Asset allocation study

- Study conducted about every 5 years
- Last study conducted in 2013 by Towers Watson
- Planning for 2018 study in progress
- Involvement from: Treasury, OIC, SAIF's board, SAIF's investment managers



Asset allocation study (continued)

- Portfolio allocation analysis
- Review and update SAIF's detailed investment policy and performance benchmarks
- Asset/liability matching
- Risk considerations
- Opportunities

Key Strategic Issues

Project Portfolio

- Substantial pent-up demand for technology upgrades
 - Policy and Billing System
 - Claims System
 - Finance System
 - Human Resources System
 - Learning Management System
 - Document Management System
- New headquarters building





The economy

- Our business is very sensitive to changes in the economy
 - Employment rates
 - Payroll growth
 - Credit/collection challenges
- Last recession: lost 27.5% of top-line revenue
- Changes in labor markets impacts claims



Diversification

- Insurers of our size routinely diversify their risks
- SAIF is mono-line, mono-state
- More exposure based on the economy, natural disaster, etc.
- Requires a greater reserve of capital



Medical cost escalation

- We maintain a claims reserve of \$2.7B
 - We are required to post a reserve for every disabling claim
 - Must be an estimate of the full value of the claim over its lifetime
 - Very sensitive estimates of future medical costs
- Twice annually we recalculate and adjust the reserve
 - Changes increase/decrease our surplus capital



Medical cost escalation (continued)

- Significant claims reserve reductions in recent years due to low medical cost escalation
- Major increases in medical cost escalation would substantially reduce available capital for SAIF



PERS

- We share concern about maintaining viability of the system
 - We share the pain of increasing assessments
- Governor's Task Force last year identified "options" related to SAIF
 - Take a portion of SAIF's capital
 - Take a portion of declared dividends
 - Change SAIF's business model to focus on generating profit
 - Sell or privatize SAIF



PERS (continued)

- All would have a significant impact on pricing, service, and dividends
- Very difficult to engage in risk and capital planning, and to make pricing, dividend, and other decisions with a threat of an arbitrary reduction in capital
 - “ATM machine”
- Reviewing option of creating a PERS side account



Market issues

- Increased competition ahead?
- Direct online sales to small business
- “Bundling” of workers’ comp with other services and lines of insurance
- Artificial intelligence and advanced analytics

Thank you

TAB 8 – Asset Allocations & NAV Updates

Asset Allocations at March 31, 2018

Regular Account							Variable Fund	Total Fund	
OPERF	Policy	Target ¹	\$ Thousands	Pre-Overlay	Overlay	Net Position	Actual	\$ Thousands	\$ Thousands
Public Equity	32.5-42.5%	37.5%	30,484,217	39.8%	(1,389,724)	29,094,493	38.0%	577,397	29,671,890
Private Equity	13.5-21.5%	17.5%	15,166,287	19.8%		15,166,287	19.8%		15,166,287
Total Equity	50.0-60.0%	55.0%	45,650,504	59.6%	(1,389,724)	44,260,780	57.8%		44,838,177
Opportunity Portfolio	0-3%	0.0%	1,713,152	2.2%		1,713,152	2.2%		1,713,152
Fixed Income	15-25%	20.0%	15,295,306	20.0%	2,279,134	17,574,440	22.9%		17,574,440
Real Estate	9.5-15.5%	12.5%	7,497,697	9.8%	(8,900)	7,488,797	9.8%		7,488,797
Alternative Investments	0-12.5%	12.5%	5,463,211	7.1%		5,463,211	7.1%		5,463,211
Cash ²	0-3%	0.0%	967,336	1.3%	(880,510)	86,825	0.1%	9,437	96,262
TOTAL OPERF		100%	\$ 76,587,205	100.0%	\$ -	\$ 76,587,205	100.0%	\$ 586,834	\$ 77,174,039

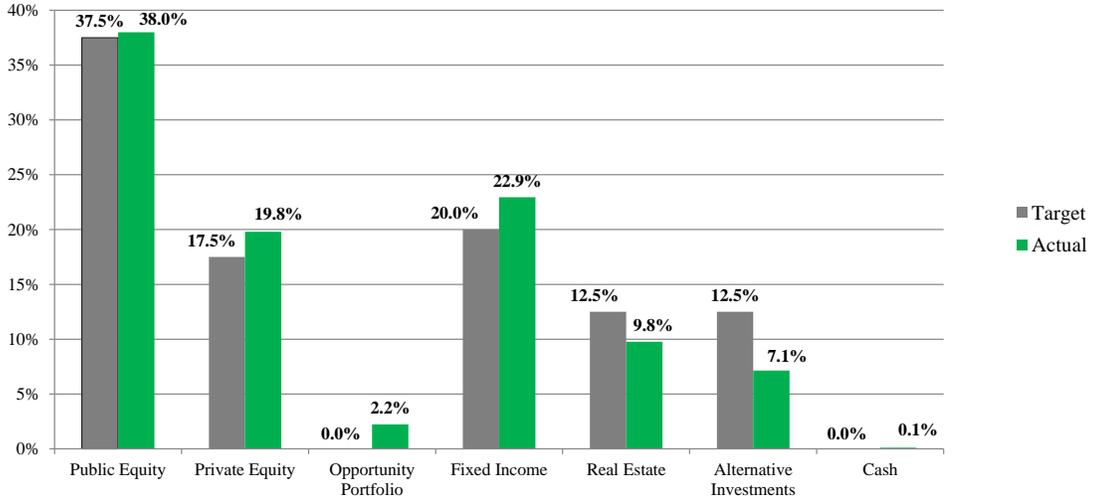
¹Targets established in June 2015. Interim policy benchmark consists of: 40% MSCI ACWI IMI Net, 22.5% Custom FI Benchmark, 20% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), & 5% CPI+400bps.

²Includes cash held in the policy implementation overlay program.

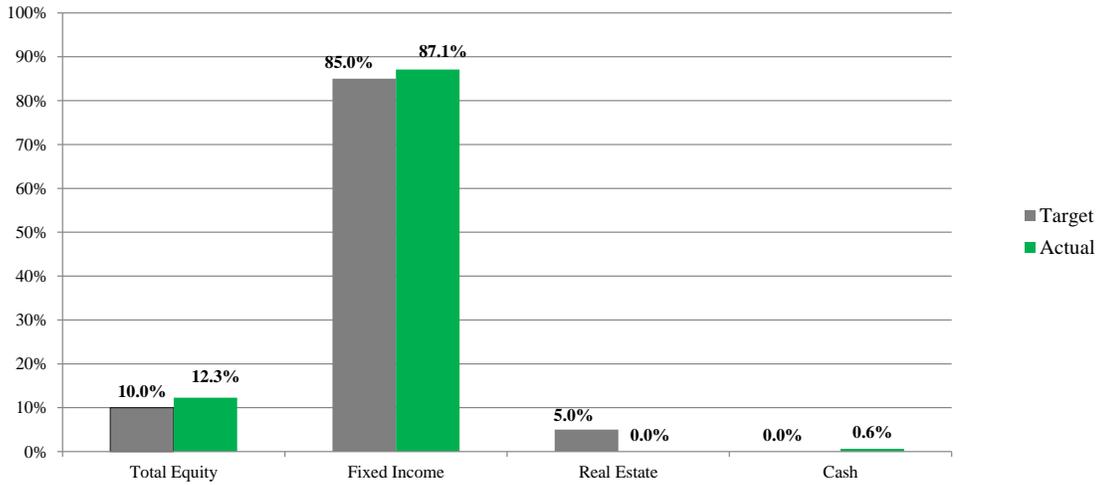
SAIF	Policy	Target	\$ Thousands	Actual
Total Equity	7-13%	10.0%	583,922	12.3%
Fixed Income	80-90%	85.0%	4,139,971	87.1%
Real Estate	0-7%	5.0%	0	0.0%
Cash	0-3%	0%	29,726	0.6%
TOTAL SAIF			\$ 4,753,619	100.0%

CSF	Policy	Target	\$ Thousands	Actual
Global Equities	40-50%	45%	891,720	53.7%
Private Equity	8-12%	10%	212,873	12.8%
Total Equity	58-62%	55%	1,104,593	66.5%
Fixed Income	25-35%	25%	451,976	27.2%
Real Estate	8-12%	10%	9,000	0.5%
Diversifying Strategies	8-12%	10%	95,869	5.8%
Cash	0-3%	0%	0	0.0%
TOTAL CSF			\$ 1,661,438	100.0%

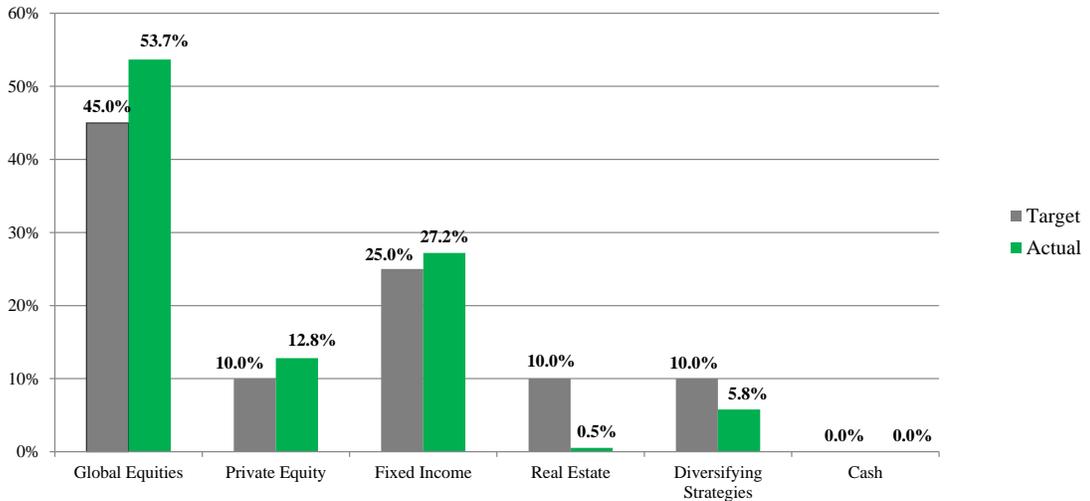
OPERF Asset Allocation



SAIF Asset Allocation



CSF Asset Allocation

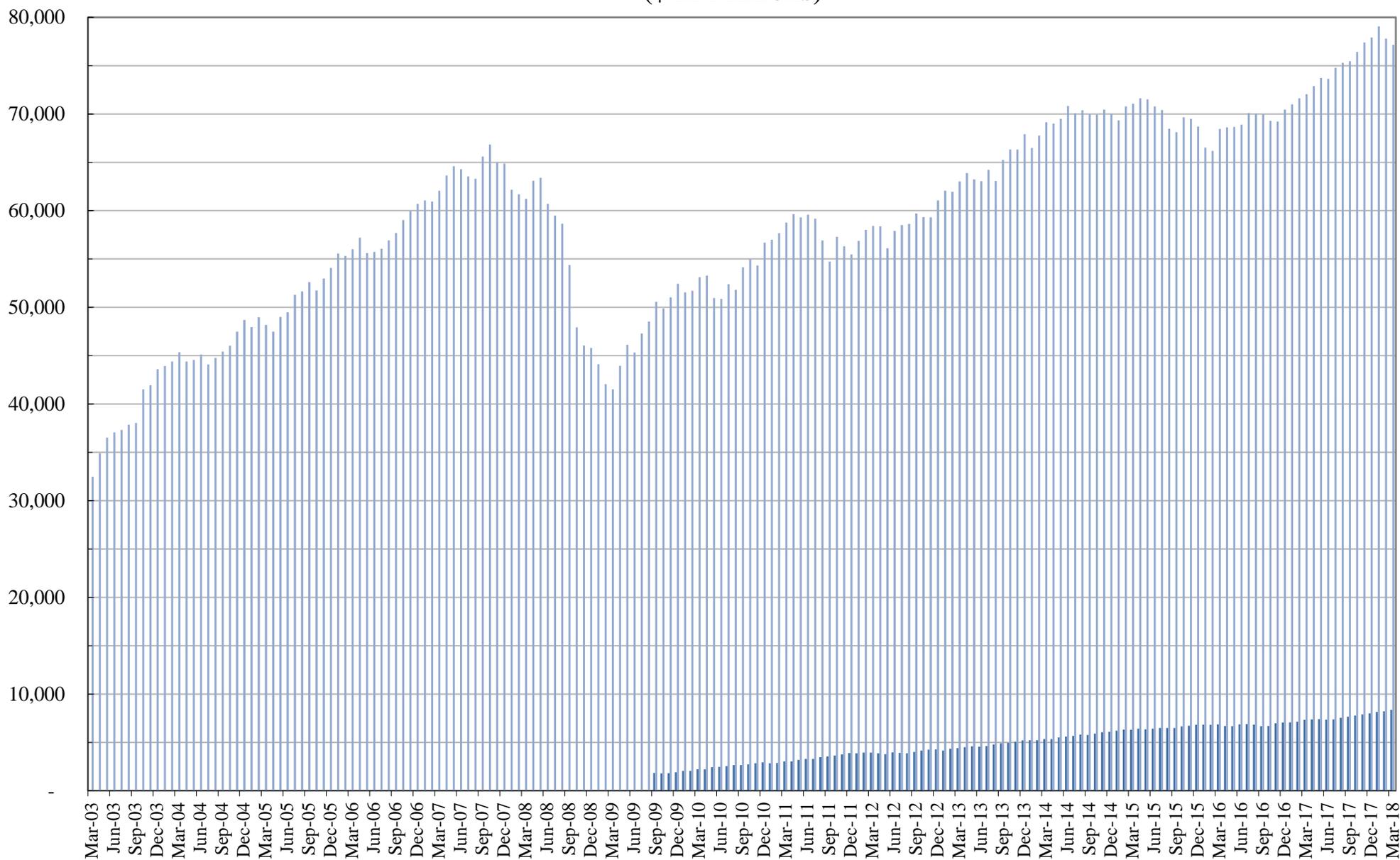


OPERF NAV

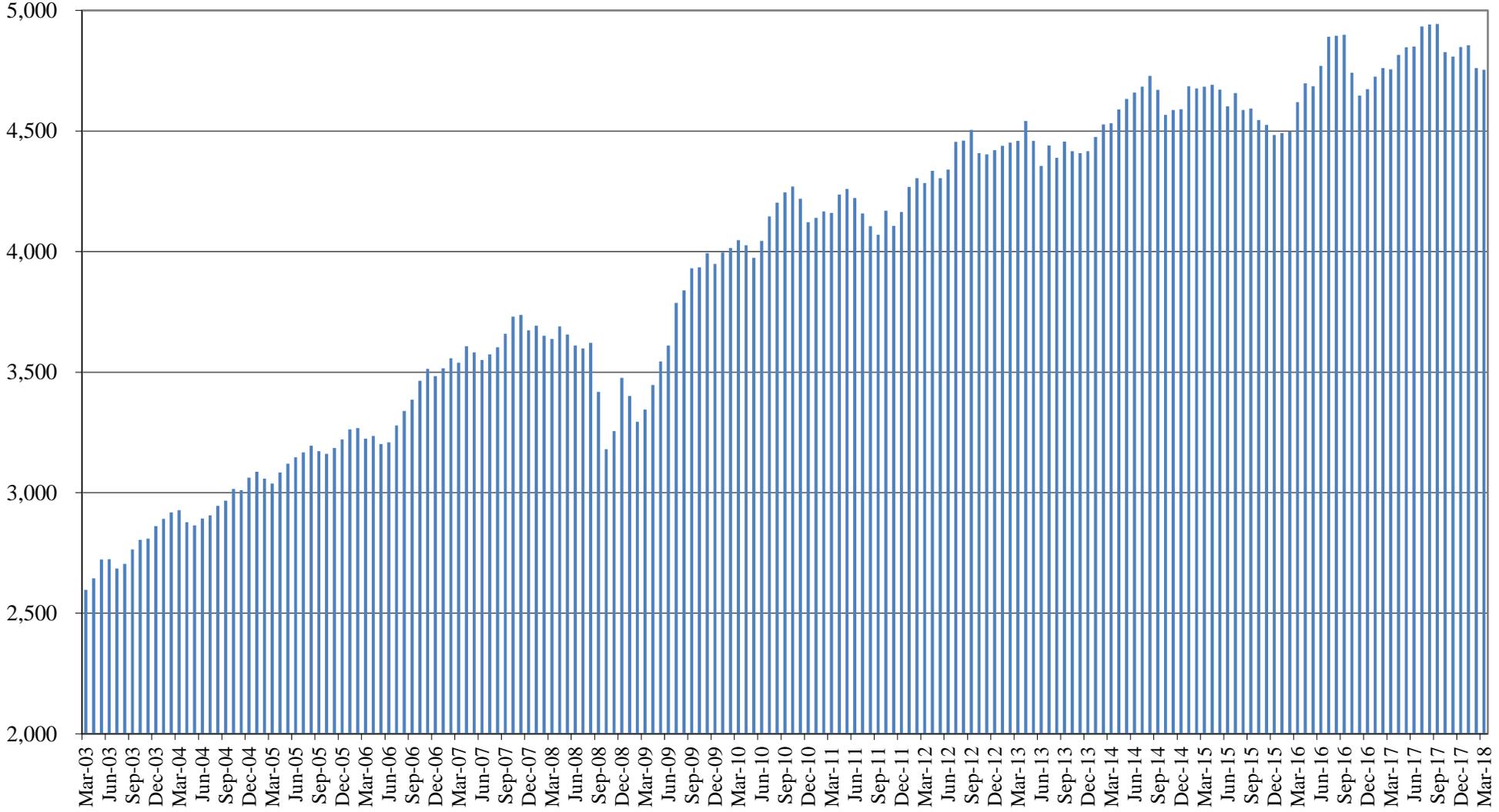
15 years ending March 2018

(\$ in Millions)

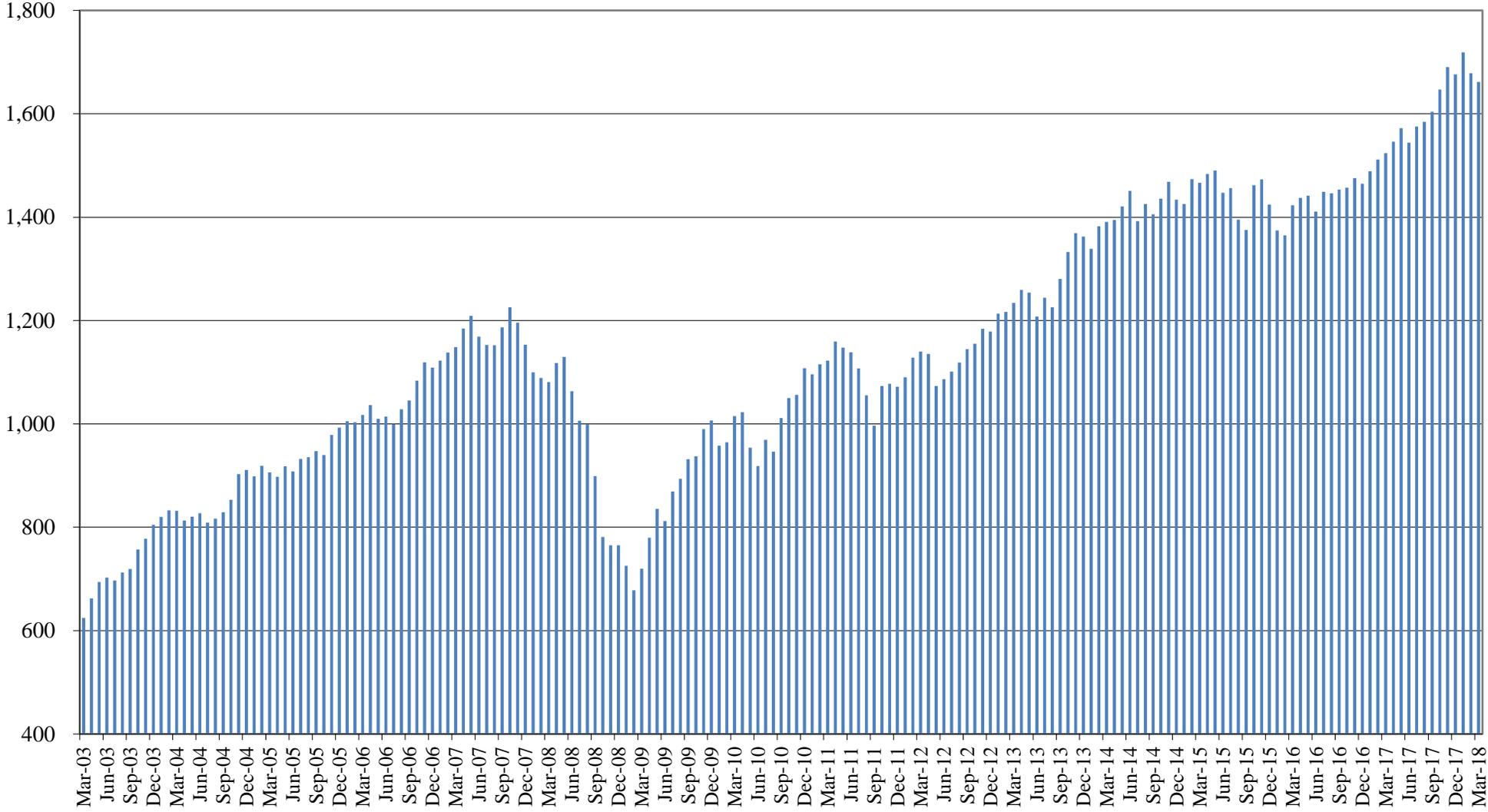
IAP OPERF



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



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



TAB 9 – Calendar — Future Agenda Items

2018/19 OIC Forward Calendar and Planned Agenda Topics

April 27, 2018	Strategic Issues Discussion ¹
June 6, 2018	Private Equity Manager Presentation(s) Q1 OPERF Performance & Risk Report Operations Update CSF Annual Review
August 8, 2018:	Opportunity Portfolio Review OSGP Annual Review Corporate Governance Update
September 19, 2018:	Q2 OPERF Performance & Risk Report CEM Benchmarking Report McKinsey Survey Results
October 31, 2018:	Currency Program Review Public Equity Program Review General Consultant Recommendation
December 12, 2018:	Q3 OPERF Performance & Risk Report Fixed Income Program Review
January 31, 2019:	Private Equity Program Review Placement Agent Report 2020 OIC Calendar Approval
March 13, 2019:	Real Estate Program Review Securities Lending Update OPERF Overlay Review Q4 2018 OPERF Performance & Risk Report
April 24, 2019:	OPERF Asset Allocation & Capital Market Assumptions Update Alternatives Portfolio Review SAIF Annual Review

¹ Start time for the April 27 meeting is 1pm PT, all other meetings start at 9am PT.