
Oregon Investment Council

March 14, 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

March 14, 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 February 1, 2018	Rukaiyah Adams <i>OIC Chair</i>	1
9:02-9:05	2. 2018 and 2019 OIC Meeting Schedules	Rukaiyah Adams	2
9:05-9:15	3. Committee Reports and CIO Update	John Skjervem <i>Chief Investment Officer</i>	3
9:15-9:30	4. OIC Policy Updates	John Skjervem	4
9:30-9:35	5. OIC Real Estate Consultant Recommendation	Anthony Breault <i>Senior Investment Officer, Real Estate</i>	5
<u>B. Information Items</u>			
09:35-10:25	6. Real Estate Annual Review and 2018 Plan <i>OPERF Real Estate Portfolio</i>	Anthony Breault Christy Fields <i>Managing Director, Pension Consulting Alliance</i> David Glickman <i>Managing Director, Pension Consulting Alliance</i> Ken Riggs <i>President, Situs RERC</i>	6
10:25-10:40	----- BREAK -----		

TAB 1 – REVIEW & APPROVAL OF MINUTES

February 1, 2018 Regular Meeting



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

OREGON INVESTMENT COUNCIL
FEBRUARY 1, 2018
MEETING MINUTES

Members Present: Rukaiyah Adams, Tobias Read (by phone), John Russell, Rex Kim, 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, Jen Peet, Tom Lofton, Michael Viteri, Austin Carmichael, Dana Millican, Ben Mahon, Angela Schaffers, Roy Jackson, Mike Mueller, Jo Recht, Ricardo Lopez, Steven Chang, Garrett Cudahey, Debra Day, Andy Coutu, Kim Olson, William Hiles, Eric Messer, Aliese Jacobsen, Lisa Massena, Amanda Kingsbury, Paul Koch, Caitlyn Wang and Tim Baumert

Consultants Present: Tom Martin and David Fann, (TorreyCove); Allan Emkin and Christy Fields (PCA); Janet Becker-Wold and Uvan Tseng (Callan)

Legal Counsel Present: Dee Carlson, Department of Justice

The February 1st, 2018 OIC meeting was called to order at 9:01 am by Rukaiyah Adams, OIC Chair.

I. 09:02 am Review and Approval of Minutes

MOTION: Mr. Russell moved approval of the December 13th, 2017 OIC meeting minutes, and Mr. Kim seconded the motion which then passed by a 4/0 vote.

II. 09:03 am Officer Election

OIC Chair, Ms. Adams nominated Mr. Russell to continue as OIC Vice Chair. Mr. Kim seconded the motion which then passed by a 3/0 vote (Mr. Russell abstained from voting).

III. 09:04 am Calendar – Future Agenda Items

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

IV. 9:14 am Committee Reports and CIO Update

Committee Reports: Mr. Skjervem gave an update on the following committee actions taken since the December 13, 2017 OIC meeting:

Private Equity Committee

January 10, 2018	A&M Capital Partners II	\$200 million
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Alternatives Portfolio Committee

January 31, 2018	AQR Managed Futures	\$250 million
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Opportunity Portfolio Committee

January 31, 2018

TSSP TAO Contingent

\$200 million

Real Estate Committee

None

Mr. Skjervem then gave opening remarks which included a report on preliminary 2017 OPERF investment performance, a brief description of staff's Private Equity Manager Recommendation and some background for staff's Private Equity Program review. He also spoke about the Investment Division's overall 2018 goals.

V. 10:16 am Bridgepoint Europe VI – OPERF Private Equity Portfolio

Michael Langdon, Senior Investment Officer, Private Equity, recommended a €300 million capital commitment to Bridgepoint Europe VI, L.P. as part of the OPERF private equity portfolio. Approval of the proposed commitment would establish a new private equity relationship with Bridgepoint Advisors Limited.

Bridgepoint was founded in 1984 as a subsidiary of National Westminster Bank, a large bank in the United Kingdom and a subsidiary of Royal Bank of Scotland Group. In 2000, the Firm's Partners acquired the management company from NatWest, and Bridgepoint has since been 100% owned by its Partners and employees. Bridgepoint currently employs more than 100 investment professionals operating out of 11 offices around the world, and is led by a cohesive group of 27 Partners with an average tenure of 17 years at the Firm.

In 2001, the GP raised its first private equity partnership as an independent entity (Bridgepoint Europe II), and Bridgepoint has since raised roughly €13 billion across four funds focused on the Firm's core middle market, pan-European investment practice. Bridgepoint is now targeting at least €5 billion for Bridgepoint Europe VI as a continuation of that investment practice.

Mr. Langdon then introduced Mr. William Jackson, Managing Partner, Bridgepoint, and John Barber, Partner, Bridgepoint who provided the Council with a presentation on the firm, its investment strategy and performance record.

MOTION: Mr. Russell moved approval of staff's recommendation, and Mr. Kim seconded the motion which then passed by a 4/0 vote.

VI. 10:18 am Annual Placement Agent Report

John Hershey, Director of Alternative Investments provided the Council with the Annual Placement Agent Disclosure report. This report was made in accordance with Policy ADM 201: Conflict of Interest and Code of Conduct, which states, among other things, that the Oregon State Treasury (OST) shall disclose, in all investment recommendations to the Oregon Investment Council, any Placement Agent used by the investment firm that has had any contact with Treasury investment staff. Staff shall present to the OIC an annual summary of the foregoing, which will also be made available to the public on the Treasury website.

VII. 11:32 am Private Equity Annual Review and 2018 Plan – OPERF Private Equity Portfolio

Michael Langdon, along with Tom Martin of TorreyCove presented the Private Equity Annual Review and 2018 Plan. This presentation included a review of OPERF private equity activity in 2017, updated portfolio performance and a summary of staff's 2018 private equity pacing plan.

VIII. 11:33 am Asset Allocation & NAV Updates

Mr. Skjervem reviewed asset allocations and NAVs across OST-managed accounts for the period ended November 30, 2017.

IX. 11:34 am Calendar — Future Agenda Items

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

X. 11:35 am Open Discussion

Treasurer Read, participating via phone from New York City, shared his enthusiasm regarding conversations he'd had in the past two days with other institutional investors at a United Nations event, and indicated his intent to share a summary of the event with other Council members. Vice Chair Russell remarked on how pleased he was with the format and substance of the just completed Private Equity Annual Review discussion.

11:41 am Public Comments

Diane Freaney of Rooted Investing shared some thoughts and suggestions on investment matters relating to student loans and home mortgages.

Ms. Adams adjourned the meeting at 11:41 am.

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 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

Wednesday, March 13

Wednesday, April 24

Wednesday, June 5

Wednesday, August 7

Wednesday, September 18

Wednesday, October 30

Wednesday, December 11

TAB 3 – Committee Reports and CIO Update

Opening Remarks

John D. Skjervem, Chief Investment Officer

March 14, 2018



Oregon State Treasury

March 14, 2018 OIC Meeting

Investment Performance

- 2017 preliminary estimate = 15.3%
- 2017 actual = 15.9%

Policy Updates

- Proxy voting
- Proposing an increase in the Committees' approval ceilings

Real Estate Annual Review

- Early results from strategy pivot = very good
- Keep the momentum going, fortify the new approach
- Recruiting for another RE investment officer

Securities Lending and Overlay Reviews

- Low profile, but integral parts of OPERF

First Wave of the Cavalry Has Arrived

- Tim Baumert, Public Equity Paul Koch, Alternatives
- Tiffany ZhuGe, Private Equity Ahman Dirks, Private Equity

Investment Returns and Performance Summary as of 12/31/17

Annualized Returns¹	1-Year	3-Year	5-Year	7-Year	10-Year
Russell 3000	21.13%	11.12%	15.58%	13.50%	8.60%
S&P 500	21.83%	11.41%	15.79%	13.76%	8.50%
Russell 2000	14.65%	9.96%	14.12%	11.62%	8.71%
MSCI ACWI ex-US IMI	27.81%	8.38%	7.22%	5.15%	2.24%
MSCI Emerging Markets	37.28%	9.10%	4.35%	2.56%	1.70%
Barclays Aggregate	3.54%	2.32%	2.21%	3.41%	4.18%
Performance Rank²	1-Year	3-Year	5-Year	7-Year	10-Year
OPERF	15.86% (56)	8.97% (5)	10.30% (14)	10.07% (1)	6.91% (5)
Domestic Equity	20.46% (59)	11.18% (36)	15.47% (46)	13.20% (43)	8.61% (33)
International Equity	30.88% (8)	10.36% (11)	9.29% (11)	7.10% (12)	4.09% (1)
Fixed Income	3.85% (71)	2.62% (75)	2.56% (42)	4.20% (37)	5.34% (5)
Private Equity	18.27% (9)	13.32% (12)	15.70% (12)	16.28% (1)	11.72% (1)
Real Estate	10.50% (31)	9.76% (50)	11.41% (37)	12.35% (33)	5.94% (25)

Price/Yield Levels¹	2017	2016	2015	2014	2013
U.S. 10-Year Treasury Bond	2.41%	2.44%	2.27%	2.17%	3.03%
Federal Funds Rate	1.25 - 1.50%	0.50 - 0.75%	0.25 - 0.50%	0.00 - 0.25%	0.00 - 0.25%
Gold (\$/oz)	\$1,303	\$1,148	\$1,061	\$1,184	\$1,202
Euro (\$/€)	1.20	1.05	1.09	1.21	1.37
Yen (¥/\$)	112.69	116.96	120.22	119.78	105.31
Oil (WTI \$/Barrel)	60.42	53.72	37.04	53.27	98.42

- ¹ Bloomberg for index returns & price/yield levels.
- ² Ranking in Wilshire Trust Universe Comparison Service (TUCS) > \$10 billion AUM public funds peer group.



TAB 4 – OIC Policy Update

OIC Policy Updates
March 14, 2018

Purpose

To update several OIC Policies.

Discussion

The following is a brief summary of the attached Policies and staff's proposed updates thereto.

1. INV 605: Exercise of Voting Rights Accompanying Equity Securities

Changes: Staff recommends updating this policy to reflect OST's revised proxy vote process.

2. Alternative Investments Committee Series (INV 501 and 701)

Changes: Staff recommends the following two changes for the real estate and private equity policies: 1) increase OST committee approval ceiling for *new* general partner, fund sponsor or manager relationships from \$150M to \$250M; and 2) increase OST committee approval ceiling for *existing* general partner, fund sponsor or manager relationships from \$250M to \$350M.

Other changes include the following:

- Move the **Contract Execution** and **Partnership Funding** elements from the policy section to procedure appendices; and
- Harmonize standard policy language common to the asset classes.

Recommendation: Approve policy updates as presented in attached documents.

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The Oregon Investment Council (OIC) recognizes that the quality of corporate governance can affect long-term investment value. In general, the equity markets are highly efficient; therefore, the OIC's corporate governance philosophy anticipates that the OIC and Oregon State Treasury (OST) staff possess no knowledge not shared by the market. ~~The OIC therefore avoids attempts to micromanage companies, since corporate directors are expressly elected to represent shareholders.~~ The OIC strives ~~instead~~ to ensure that corporations and their directors follow practices that advance economic value and allow the market to appropriately value these corporations' securities. According to the CFA Institute, voting on corporate matters and advocating on behalf of corporate governance issues helps the OIC protect the interests of the State, by working to improve the long-term health of the companies in which the OIC invests.

The OIC recognizes that voting rights have economic value and must be treated as such. The voting rights obtained through the holdings of the domestic and international equity portfolios under the OIC's purview shall be exercised by an independent third party (the "vendor") that specializes in proxy research and voting in accordance with the vendor's independent voting standards which it may revise, at its sole discretion, from time to time. The vendor shall always vote shares as a fiduciary, based solely on the ultimate economic value of the investments overseen by the OIC.

Purposes and Goals

The goal of this policy is to codify the process through which the OIC exercises its voting rights.

Authority

ORS 293.736

POLICY PROVISIONS

Definitions

According to the CFA Institute:

Proxy Voting Policies. The duty of loyalty, prudence, and care may apply in a number of situations facing the investment professional other than issues related directly to investing assets. Part of [that] duty of loyalty includes voting proxies in an informed and responsible manner. Proxies have an economic value to a [fund] and [investors] must ensure that they properly safeguard and maximize this value. Voting of proxies is an integral part of the management of investments. A cost-benefit analysis may show that voting all proxies may not benefit the [fund], so voting proxies may not be necessary in all instances. *Standards of Practices Handbook, 2010*⁴.

Policy Statements

1. Vendor shall keep a record of how proxies are voted and why. Such records may be subject to review by Oregon State Treasury (OST) staff or other designated representatives of the OIC.
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2. OST staff and vendor shall provide ~~a calendar year end~~ an annual (or more frequently if requested) proxy voting summary to the OIC.
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3. Vendor shall provide any new or revised proxy voting policies or guidelines to OST staff upon their implementation.
-
4. Commingled and passive account managers employed by the OIC shall vote their proxies independent of the OIC's vendor, but as a fiduciary in the best interest of plan participants.
-
5. In accordance with the vendor agreement, and the timelines therein, the OIC reserves the right to vote proxies directly.
-
6. The public equity team will prepare recommendations to override the vendor's guidelines as circumstances arise that require a secondary review, generally at the request of a retained investment manager. The State Treasurer, Deputy State Treasurer and the Chief Investment Officer will review and vote to approve, or deny, these recommendations, or recommend the issue be brought before the OIC. All such decisions will be made by majority vote and reported to the OIC on a quarterly basis.
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Exceptions

None.

Failure to Comply

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

-

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 & 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 Private Equity Portfolio (hereinafter referred to as the "Program") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF) and b) diversify the overall OPERF investment portfolio. To date, Program investments have included participation in diversified strategies including leveraged-buyouts, venture capital, growth equity, fund-of-funds, co-investments and other special situation strategies. As opportunities become available, OST will invest Program assets prudently, productively and in a manner consistent with the Program's objectives, OIC policies and applicable law. Private equity investments are 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 private equity investments for OPERF and any other funds for which the OIC has oversight responsibility.

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;

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 monitoring.

Policy Statements

I. GENERAL POLICY

Program investments provide an appropriate complement to OPERF's investment portfolio, and are compatible 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.

Program investments are expected to exhibit both a higher degree of risk and a higher return potential than conventional public equity or fixed income investments. Program investments should also exhibit differentiated (i.e., less correlated) returns relative to other asset classes and should therefore provide diversification benefits to OPERF.

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

II. OBJECTIVES

A. Program Investment Performance Objectives

The Program's investment performance objective is long-term, net returns to OPERF (e.g., after management fees and general partners' carried interest) above a public market analog plus an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, Program performance should exceed a net internal rate of return equal to the Russell 3000 Index plus 300 basis points, and may vary by investment type (e.g., leveraged buyout, venture capital or special situation). OST staff (hereinafter referred to as

"Staff") will periodically evaluate the Program's performance objective, benchmark and assigned premium.

B. Diversification

Diversification reduces risk among Program investments. The following types of diversification should be considered by Staff, including, but not limited to:

1. Stage: Staff will diversify investments throughout the various financing stages from startup through mezzanine financing to leveraged buyouts and recapitalizations. The targeted exposure ranges for various types of investments are as follows:

Investment Type	Target Allocation
Corporate Finance	65-85%
Large Corporate Finance	45-65%
Mid Corporate Finance	5-25%
Small Corporate Finance	0-10%
Venture Capital	0-5%
Growth Equity	5-10%
Special Situations	5-15%
Distressed	0-10%
Mezzanine	0-5%
Secondaries	0-5%
Fund-of-Funds	0-5%
Co-Investments	0-7.5%

2. Industry Sectors: Staff will diversify investments among industry groupings.
3. Investment Size: Staff will diversify investments among a range of partnerships by commitment size, generally with a minimum commitment of \$75 million (\$25 million for venture capital). OST's commitment may represent as much as 25% of a particular partnership when appropriate. Staff will document and report any deviations from these

guidelines to the OST and 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 Program's investment and quality criteria.
5. Time: Staff will endeavor to invest OPERF assets in a consistent manner over time, unless market conditions appear uniquely unfavorable.

III. PRIVATE EQUITY COMMITTEE

- A. The Private Equity Committee or "Committee" acts on behalf of, and is subject to review by OST. The Committee is comprised of the following individuals: the Deputy State Treasurer; the Chief Investment Officer (CIO); and an OIC member invited by 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 capital up to and including \$250 million for new general partner, fund sponsor or manager relationships, and up to and including \$350 million for existing relationships, consistent with OIC policies (see Appendix B). The Committee may also make investments or partnership commitments on behalf of the Common School Fund. 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 and partnership commitments if agreement exists between the Advisor and Staff that the proposed investment or partnership commitment is consistent with Program 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, who may choose to cancel or refer such proposed investments or partnership commitments to the OIC for broader review and consideration.
- D. Staff shall furnish any favorable due diligence determination, including the underlying rationale, market conditions and portfolio impact, to the OIC as soon as practicable and at least two weeks prior to any Committee meeting during which a proposed investment or partnership commitment is considered. 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 investments 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 Program 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. Such additional 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 Program using a hybrid Staff/Advisor model. Specifically, and subject to budget limitations, OST will assign an appropriate number of Staff to manage Program design and portfolio construction, the Program'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 investments, performing Program analytics and valuation analyses and preparing current and historical performance reports.

Staff retains the primary responsibility to ensure that Program 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 and/or Oregon Department of Justice (DOJ) personnel. However, due to the complex nature of Program 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 Program 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 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: Private Equity Investments Valuation Policy

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

Appendix C: OST Procedures for INV 701

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

Private Equity 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 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, GP or investment manager;
 - b. Audited financial statements of Program 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.

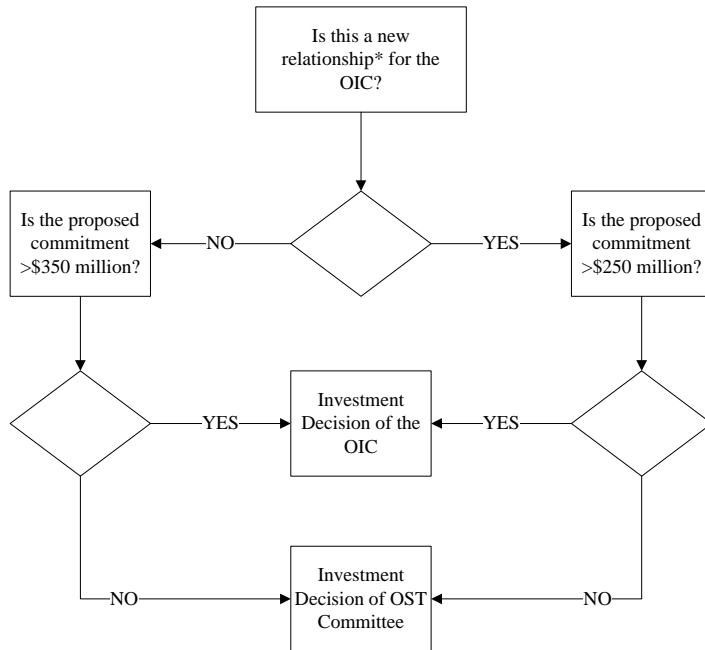
If the valuation provided by a GP or the Advisor is not U.S. GAAP fair value, Staff may request

additional information from the GP or Advisor, if needed, in order to estimate fair value.

4. Staff is responsible for ensuring Program 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 701

A. GENERAL PROCEDURES

1. Staff, and the Advisor, will screen available investments and designate those that meet the Program'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 Program 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 specific GPs or partnership sponsors to discuss an investment opportunity.
3. The Advisor will identify those investment opportunities that it determines best meet the Program's criteria and merit further detailed 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 or partnership commitment 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 Program 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 "Private Equity Committee" as outlined in the policy.
7. Appropriate legal counsel (generally, internal legal staff and/or the Oregon Attorney General's office or "DOJ") will receive documents for any and all proposed investments or partnership commitments approved by the OIC or Private Equity Committee. Legal counsel will identify and discuss any existing or potential legal issues with Staff.

B. SELECTION CRITERIA

1. The Staff, on behalf of 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 may include, but are not necessarily limited to the following:
 - a. A well-developed investment focus that meets the Program's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. Individual and collective investment experience of partners and key staff, as well as individual and 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:
 - i. deal flow and initial analysis of portfolio investments;
 - ii. pricing, selection and negotiation of portfolio investments;
 - iii. financial structuring of portfolio investments;
 - iv. management or oversight of portfolio companies; and
 - v. 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.

C. 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 Program standards and applicable law.

2. Prudent and Productive Investor Standards

Program 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 Program'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

To accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council (OIC), Oregon State Treasury (OST) created the Private Equity Portfolio (hereinafter referred to as the "Program") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF) and b) diversify the overall OPERF investment portfolio. To date, Program investments have included participation in diversified strategies including leveraged-buyouts, venture capital, growth equity, fund-of-funds, co-investments and other special situation strategies. As opportunities become available, OST will invest Program assets prudently, productively and in a manner consistent with the Program's objectives, OIC policies and applicable law. Private equity investments are 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 private equity investments for OPERF and any other funds for which the OIC has oversight responsibility.

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;

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- 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;

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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 monitoring.

Policy Statements

I. GENERAL POLICY

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

- ~~A.~~
- 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.~~ D. Complying with all applicable laws and regulations concerning the investment of pension assets.

Program investments are expected to exhibit both a higher degree of risk and a higher return potential than conventional public equity or fixed income investments. Program investments should also exhibit differentiated (i.e., less correlated) returns ~~Program investments are also expected to exhibit a lower correlation~~ relative to other asset classes and should therefore provide diversification benefits to OPERF.

~~Staff and the consultant or advisor specifically selected for the Program (the "Advisor") will provide furnish~~ the OST and OIC with an annual Program investment ~~review statement~~ and strategy plan.

II. OBJECTIVES

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B.
A. Program Investment Performance Objectives

The Program's investment performance objective is long-term net returns to OPERF (e.g., after management fees and general partners' carried interest) above a public market analog plus an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, Program performance should exceed a net internal rate of return equal to the Russell 3000 Index plus 300 basis points, and may vary by investment type (e.g., leveraged buyout, venture capital or special situation). OST staff (hereinafter referred to as "Staff") will periodically evaluate the Program's performance objective, benchmark and assigned premium.

A.
B. Diversification

Diversification reduces risk among Program investments. The following types of diversification should be considered by Staff, including, but not limited to:

B.
1. Stage: Staff will diversify investments throughout the various financing stages from startup through mezzanine financing to leveraged buyouts and recapitalizations. The targeted exposure ranges for various types of investments are as follows:

Investment Type	Target Allocation
Corporate Finance	65-85%
Large Corporate Finance	45-65%
Mid Corporate Finance	5-25%
Small Corporate Finance	0-10%
Venture Capital	0-5%
Growth Equity	5-10%
Special Situations	5-15%
Distressed	0-10%
Mezzanine	0-5%

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Secondaries 0-5%

Fund-of-Funds 0-5%

Co-Investments 0-7.5%

2. Industry Sectors: Staff will diversify investments among industry groupings.

b.

3. Size of Investment Sizes: Staff will diversify investments among a range of partnerships by commitment size, generally with a minimum commitment of \$75 million (\$25 million for venture capital). OST's commitment may represent as much as 25% of a particular partnership when appropriate. Staff will document and report any deviations from these guidelines to the OST and OIC.

e.

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 Program's investment and quality criteria.

d.

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

e.

III. PRIVATE EQUITY COMMITTEE

C.

A. The Private Equity Committee or "Committee" acts on behalf of, and is subject to review by OST. The Committee is comprised of the following individuals: the Deputy State Treasurer, the Chief Investment Officer (CIO), and an OIC member invited by 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.

A.

B. OST, through the Committee, may invest OPERF capital up to and including \$150-250 million for new general partner, fund sponsor or manager relationships, and up to and including \$250-350 million for existing relationships, consistent with OIC policies (see Appendix B). Consistent with OIC policy, the Committee may also make investments or in fund partnership commitments on behalf of the Common School Fund. 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.

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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 and partnership commitments if agreement exists between the Advisor and Staff that the proposed investment or partnership commitment is consistent with Program 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, who may choose to cancel or refer such proposed investments or partnership commitments to the OIC for broader review and consideration.

D. Staff shall furnish any favorable due diligence determination, including the underlying rationale, market conditions and portfolio impact, to the OIC as soon as practicable and at least two weeks prior to any Committee meeting during which a proposed investment or partnership commitment is considered. 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 proposed Committee meeting 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. Approve OST administrative activities and guideline exceptions if a plan is established to conform the [project/investment/fundpartnership] exception(s) to applicable guidelines within a reasonable period of time;

B. Acquire, retain, manage and dispose of investments or fundpartnership 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 consistent with its standards; and

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

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~~co-invest alongside a partnership in an individual investment or (3) co-invest with the fund in an individual fund investment.~~

~~Such additional 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~~ PERFORMANCE REQUIREMENTS

OST manages the ~~P~~program using a hybrid Staff/Advisor model. Specifically, and subject to budget limitations, OST will assign an appropriate number of Staff to manage Program design and portfolio construction, the Program'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 investments, performing Program analytics and valuation analyses and preparing current and historical performance reports.

Staff retains the primary responsibility to ensure that Program 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 ~~ed~~ consistently and appropriately by the Advisor.

VI. LEGAL COUNSEL

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

G. CONTRACT EXECUTION

~~A. 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.~~

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

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~~C. 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.~~

~~D. 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.~~

~~H. PARTNERSHIP FUNDING~~

~~A. 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.~~

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

~~C. 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~~

~~D. 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

~~I.~~

~~A. Reports.~~

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

~~A.~~

~~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 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.~~

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Failure to Comply

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

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PROCEDURES and FORMS

Appendix A: OIC Document: Private Equity Investments Valuation Policy

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

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Appendix C: OST Procedures for INV 701

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[Appendix D: OST Procedures: Contract Execution and Partnership Funding](#)

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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.

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APPENDIX A

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Private Equity 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.

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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.

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- ~~1)~~ 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.

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3. Staff are not typically experts in the valuation of non-public securities, but do have broad experience in 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:

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- ~~3)~~
 - a. Valuation analyses and adjustments performed by ~~the the Advisor, GP or investment manager~~ Advisor;
 - b. Audited financial statements of Program investments and limited partnerships;
 - c. GP-prepared quarterly and annual limited partnership reports;

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- 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. 4) Staff is responsible for ensuring Program 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.

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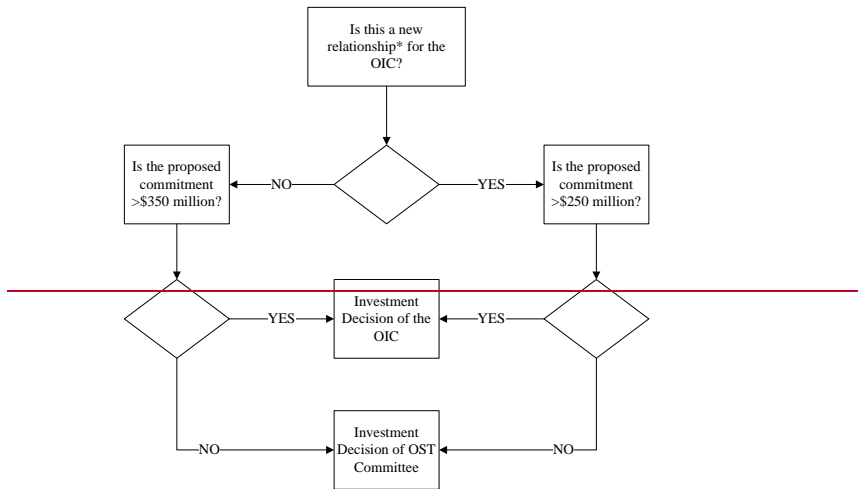
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Appendix B OIC/OST Alternative Investments Authority

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.

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| will identify and discuss any existing or potential legal issues with Staff.

B. SELECTION CRITERIA

1. The Staff, on behalf of 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 may include, but are not necessarily limited to the following:
 - a. ~~a.~~—A well-developed investment focus that meets the Program's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - ~~b. b.~~ **Individual and collective investment experience of partners and key staff, as well as individual and team stability.**~~Relevant investment experience of partners and key staff, individually and as a team, as well as their stability;~~
 - ~~c. c.~~—Organizational depth and ~~significant~~ time commitment to the partnership's or project's interests;
 - ~~d. d.~~—Well-structured decision-making and transaction execution processes, including:
 - ~~i. i.~~ deal flow and initial analysis of portfolio investments;
 - ~~ii. ii.~~ pricing, selection and negotiation of portfolio investments;
 - ~~iii. iii.~~ financial structuring of portfolio investments;
 - ~~iv. iv.~~ management or oversight of portfolio companies; and
 - ~~v. v.~~ development of exit strategies;
 - ~~e. e.~~—Consideration of relevant issues, such as conflicts of interest and alignment of interests, among others;
 - ~~f. f.~~—Experience in, and a demonstrated record of, successful prior investments; and,
 - g. Appropriate proposed terms and structure for the investment.

C. STANDARDS

- ~~3. 1.~~—Types of Allowable Investments
 - Any appropriate investment opportunity that has the potential for returns superior to traditional investment opportunities and is consistent with Program standards and applicable law.
- ~~3. 2.~~—Prudent and Productive Investor Standards
 - Program standards include the requirement to make and manage investments consistent with

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OIC and OST policies and other applicable fiduciary standards, including but not limited to ORS 293.721 and 293.726.

3. Negotiated Terms

~~3.~~ Improved investment terms, such as preferred returns, lower fee structures and profit splits should be pursued by Staff as is practical and prudent.

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APPENDIX D
Contract Execution and Partnership Funding

A. CONTRACT EXECUTION

1. Staff will inform the Program'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.

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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 Real Estate Program (hereinafter referred to as the "Program") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF or the Fund) and other state funds for which OIC has oversight responsibilities, and b) provide diversification opportunities for OPERF and other state funds. To date, Program investments have included participation in diversified strategies including separately managed accounts, joint ventures, co-investments, commingled funds, publicly-traded REITs, real estate debt and equity investments, and other diversifying real estate assets and special situations. As opportunities become available, OST will invest Program assets prudently, productively and in a manner consistent with the Program's objectives, OIC policies and applicable law. The Program 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 real estate investments for OPERF and other state funds for which the OIC has oversight responsibility.

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

Program 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.

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

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

II. REAL ESTATE INVESTMENT CLASSIFICATIONS

OPERF's real estate asset class consists of the following four sub-classifications:

- A. Core: equity investments in real properties. Typical Core properties will exhibit "institutional" qualities such as good locations within local and regional markets with high quality design and construction. In general, Core properties will be well occupied, though a limited allocation may be invested in properties undergoing redevelopment, new construction or significant re-leasing. Within the Core portfolio, the OIC/OST will generally have the right to (i) replace or terminate a manager with or without cause, (ii) add or subtract committed capital and (iii) create and modify investment, operating and financing guidelines pursuant to the terms of an operating agreement.
- B. REITs: equity investments in publicly-traded Real Estate Investment Trusts or publicly-traded real estate operating companies.
- C. Value Add: investments in real properties, commingled funds, joint ventures and private placements. The Value Add portfolio will be well diversified by property type and geography. Investments will include office, retail, industrial and apartment properties, but may target structured investments in alternative property types such as hotels, student housing, senior housing, debt and specialized retail uses. Value Add real estate may exhibit "institutional" qualities such as good locations within local and regional markets with high quality design and construction, but may need redevelopment or significant leasing to achieve stabilized investment value. Value Add investments may include development opportunities with balanced risk/return profiles. Development investment in the Value Add sub-class shall be limited to 35% of capital committed to Value Add at any given time. When a property reaches 80% occupancy, it will no longer be considered a development investment.
- D. Opportunistic: investments in commingled funds, joint ventures and private placements. The investments within the Opportunistic portfolio are likely to represent a wide variety of strategies and investment vehicles and may utilize greater leverage. The Opportunistic portfolio will include investments with expected returns in excess of either the Core or Value Add strategies, and may employ risk-adjusted strategies with greater leverage or other, above-market risk factors. These investments may include niche opportunities (e.g., hotels, operating companies, non-performing loan portfolios, speculative development, land acquisitions, etc.) or exist due to real estate or capital markets dislocations and/or inefficiencies. Investment strategies for the Opportunistic portfolio will be considered and classified "opportunistic" based on prevailing market conditions at the time of investment.

III. LEVERAGE

- A. Core. To enhance investment returns, leverage is permissible in the Core portfolio in an amount up to 45% of the fair market value of the aggregate Core portfolio, and up to 75% of the market value on any given property. Sufficient consideration should be given to the impact of debt financing on the risk and return characteristics of the leveraged investments as well as the Core portfolio in total. Use of leverage shall be subject to financing guidelines incorporated into the operating agreement(s) for each Core investment manager or partnership.

From time to time, managers may have the opportunity to acquire properties only if underlying property debt is assumed as part of the transaction. Such acquisitions may be

pursued so long as such acquisitions do not cause the manager's portfolio to exceed portfolio leverage limitations for an extended period of time. From time to time, a manager's portfolio may exceed leverage limitations as individual leveraged properties are acquired or capital market returns result in negative capital market valuations. The mechanisms and time frames to bring property leverage in line with portfolio guidelines and investment objectives must be part of each venture's operating agreement. Material deviations from leverage and policy guidelines may be resolved either through action by the OIC or the Real Estate Committee.

- B. Value Add. In order to enhance investment returns, leverage is permissible in the Value Add portfolio in an amount up to 65% of the fair market value of the aggregate Value Add portfolio and up to 80% of cost on any given property prior to stabilization. Sufficient consideration should be given to the impact of debt financing on the risk and return characteristics of the leveraged investments. Use of leverage shall be subject to financing guidelines incorporated into the operating agreement(s) for each Value Add investment manager or partnership.
- C. Opportunistic. Subject to financing guidelines incorporated into the operating agreement(s) for each Opportunistic investment manager or partnership, leverage may be unconstrained within Opportunistic real estate investments and partnerships.

Investment Classification	Portfolio Leverage Limit
Core	45%
REITS	N/A
Value Add	65%
Opportunistic	N/A
Total Portfolio	50%

IV. OBJECTIVES

A. Program Investment Performance Objectives

The Program'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 National Council of Real Estate Fiduciaries (NCREIF) Fund Index ("NFI") Open-end Diversified Core Equity Index ("ODCE"), and referred to as NFI-ODCE, *plus* an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, the Program's performance objective is a return exceeding NFI-ODCE plus 50 basis points, and may vary by investment type (e.g., core, public and private REITs, value add and

opportunistic real estate). OST staff (hereinafter referred to as "Staff") will periodically evaluate the Program's performance objective, benchmark and assigned return premium.

Investment Classification	After Fee Benchmark
Core	ODCE
Value Add	ODCE + 100 bps
Opportunistic	ODCE + 300 bps
Public REITs (Domestic)	NAREIT
Public REITs (International)	FTSE/EPRA/NAREIT
Total Portfolio	ODCE + 50 bps

B. Diversification

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

1. Strategy. Staff will diversify investments through exposure to a variety of real estate debt and equity investment strategies, property types (i.e., office, industrial, retail, multifamily, hospitality, etc.), and throughout the various stages of a property life-cycle from development to stabilized. The allocation ranges and targets for each sub-classifications are as follows:

Investment Category	Target Allocation
Core	45 - 65%
REITs	0 – 10%
Value Add	10 – 30%
Opportunistic	10 – 30%

2. Property Types. Staff will diversify Program investments among various real property types.

3. Investment Size. Investments will be diversified among a range of commitment sizes which may vary upon type of investment structure (i.e., separate account, joint venture, tailor made multi-investor "club" fund, open-ended or commingled fund), generally with a minimum commitment size of \$75 million.
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 Program's investment and quality criteria.
5. Time. Staff will endeavor to invest OPERF assets in a consistent manner over time, unless prevailing market conditions appear uniquely favorable or unfavorable.

V. REAL ESTATE COMMITTEE

- A. The Real Estate 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 a 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 Program 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 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.

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

VI. 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, and review and approve other activities as necessary to further the interests of the Program consistent with this statute;
- 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.

Such additional investments or partnership commitments shall be on terms equal to or better than the existing terms;

- D. Approve an increase or decrease in exposure to REITs through adjustments to the capital commitments of existing REIT managers, within OIC-established ranges;
- E. Approve capital allocation decreases to individual Core managers, so long as such decreases are not more than 50% of a specific manager's total capital under management and no more than \$200 million in aggregate in any calendar year;
- F. Approve the termination of separate account mandates and recommend action regarding the enforcement of termination and other commingled fund investment provisions;
- G. Terminate REIT managers. Immediately following a termination, the Real Estate SIO shall notify the terminated manager and instruct that manager to discontinue trading immediately. The SIO shall also instruct the OST Director of Operations (DIO) to suspend trading in that manager's account. Unless directed otherwise by the OIC, Staff shall proceed with a liquidation plan that may include the redistribution, transition or liquidation of securities in the terminated manager's account.

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

VII. ADVISOR AND OST REQUIREMENTS

OST manages the Program using a hybrid Staff/Advisor model. Specifically, and subject to budget limitations, OST will assign an appropriate number of Staff to manage Program design and portfolio construction, the Program'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 investments, performing Program analytics and valuation analyses and preparing current historical performance reports.

Staff retains the primary responsibility to ensure that Program 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.

VIII. LEGAL COUNSEL

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

IX. MONITORING

A. Reports

Staff will contract for third-party reporting services and shall furnish Program activity and performance reporting to the OIC on a quarterly 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 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.

X. PROHIBITED INVESTMENTS

Staff and the Advisor shall not knowingly propose the purchase of equity real estate or mortgages on real property owned and marketed for sale by any of the following: (a) an employee of the Oregon State Treasury (OST); (b) a member of the Oregon Investment Council (OIC); (c) a relative of (a) or (b); or (d) a private company in which (a), (b), or (c) has an ownership interest.

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: Real Estate Investments Valuation Policy

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

Appendix C: OST Document: Real Estate Investment Procedures for INV 501

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

APPENDIX A

Real Estate 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 & Private Equity Real Estate

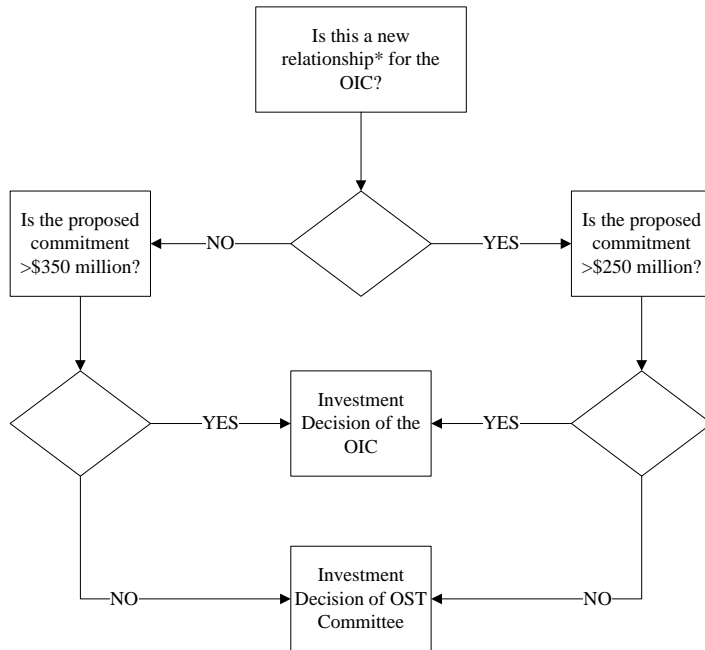
1. Non-publicly traded securities and private equity real estate should be listed at fair value. These types of investments are not traded on an active exchange and thus do not have readily determinable market prices established by arm's-length transactions; moreover, there exists no broadly accepted methodology for determining fair value, and valuations of such investments may contain subjective elements. Determination of the fair value should be based on the best available and most applicable valuation metrics. Valuation metrics may differ substantially, depending on an asset's development stage, industry category, competitive position, cash flow profile, location and geography.
2. The General Partner (GP) of each partnership will determine valuations for the investments within its 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 partnership.
3. Staff are not typically experts in the valuation of non-public investments, but do have broad experience in real estate investment management; accordingly, Staff will a) apply such experience to determine whether or not valuations reported by GPs and the investment manager 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 is not be limited to the following:
 - a. Valuation analyses and adjustments performed by the Advisor, GP or investment manager;
 - b. Audited financial statements of Program investments and limited partnerships;
 - c. GP-prepared quarterly and annual partnership reports;
 - d. Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
 - e. General Staff knowledge of investment performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

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

4. Staff is responsible for ensuring Program investments are recorded in OST's accounting 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 consolidated real estate portfolio quarterly report, including limited partnership quarterly summaries;
 - c. To the fullest extent practical, participate in limited partner committee reviews and/or limited partnership valuation approvals if Staff serves on such committees;
 - d. Review partnership annual reports and audited financial statements; and
 - e. 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 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

Real Estate Investment Procedures for INV 501

GENERAL PROCEDURES

1. Staff, and the Advisor, will screen available investments and designate those that meet the Program'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 Program 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. Staff and Advisor will identify those investment opportunities it determines best meet the Program'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 or partnership agreement including the following information: a) a description of the investment manager's or general partner's background, historical performance and organizational profile; b) the proposed investment strategy; c) the proposed investment terms; d) the expected rate of return; e) the merits of the investment; f) issues and concerns surrounding the investment as well as potential remedies and resolution strategies; and g) 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 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 Program 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 "Real Estate Committee" as outlined in 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 or partnership commitments approved by the OIC or Real Estate Committee. Legal counsel will identify and discuss any existing or potential legal issues with Staff.

SELECTION CRITERIA

1. 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 considered may include, but are not necessarily limited to the following:
 - a. A well-developed investment focus that meets the Program's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. Individual and collective investment experience of partners and key staff, as well as individual and 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:
 - i. deal flow and initial analysis of portfolio investments;
 - ii. pricing, selection and negotiation of portfolio investments;
 - iii. financial structuring of portfolio investments;
 - iv. management or oversight of portfolio companies; and
 - v. 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.

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 Program standards and applicable law.

2. Prudent and Productive Investor Standards

Program 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

Staff will inform the Program's current or prospective investment managers or general partners of investment or partnership commitments approved by the Council or the Committee immediately following such approvals. Approved commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with both internal and DOJ legal 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 internal legal staff or DOJ, prior to the execution of investment documents.

B. Partnership Funding

For all existing and future investments or partnership commitments, each investment manager or general partner shall submit a complete list 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 investment or partnership agreement, and OST shall not deviate from these pre-established instructions unless the investment manager or 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 and partnership 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 investment management or partnership agreement to ascertain whether or not funding levels are consistent with OIC's commitment approvals.

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 investment manager or general partner.

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 Real Estate Program (hereinafter referred to as the "Program") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF or the Fund) and other state funds for which OIC has oversight responsibilities, and b) provide diversification opportunities for OPERF and other state funds. To date, Program investments have included participation in diversified strategies including separately managed accounts, joint ventures, co-investments, commingled funds, publicly-traded REITs, real estate debt and equity investments, and other diversifying real estate assets and special situation strategies. As opportunities become available, OST will invest Program assets prudently, productively and in a manner consistent with the Program's objectives, OIC policies and applicable law. The Program 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 real estate investments for OPERF and other state funds for which the OIC has oversight responsibility.

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

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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]

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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]

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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

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

- ~~1-~~
- ~~1-~~**A.** Providing a means to pay benefits to OPERF participants and their beneficiaries;
- ~~2-~~**B.** Investing to produce a return based on prudent and reasonable levels of liquidity and investment risk;
- ~~3-~~**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.

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

- ~~4-~~ Staff and the ~~consultant or advisor (the "A~~ ~~Advisor")~~ specifically selected for the ~~Program~~ will furnish the OST and OIC with an annual Program investment ~~review~~ ~~statement~~ and strategy plan.

II. REAL ESTATE INVESTMENT CLASSIFICATIONS

~~2-~~ CLASSIFICATIONS

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OPERF's real estate asset class consists of the following four sub-classifications:

I.

A. ~~Core~~^{ORE}: equity investments in real properties. Typical Core properties will exhibit "institutional" qualities such as good locations within local and regional markets with high quality design and construction. In general, Core properties will be well occupied, though a limited allocation may be invested in properties undergoing redevelopment, new construction or significant re-leasing. Within the Core portfolio, the OIC/OST will generally have the right to (i) replace or terminate a manager with or without cause, (ii) add or subtract committed capital and (iii) create and modify investment, operating and financing guidelines pursuant to the terms of an operating agreement.

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II.

B. REITs: equity investments in publicly-traded Real Estate Investment Trusts or publicly-traded real estate operating companies.

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III.

C. ~~Value Add~~^{VALUE Add}: investments in real properties, commingled funds, joint ventures and private placements. The Value Add portfolio will be well diversified by property type and geography. Investments will include office, retail, industrial and apartment properties, but may target structured investments in alternative property types such as hotels, student housing, senior housing, debt and specialized retail uses. Value Add real estate may exhibit "institutional" qualities such as good locations within local and regional markets with high quality design and construction, but may need redevelopment or significant leasing to achieve stabilized investment value. Value Add investments may include development opportunities with balanced risk/return profiles. Development investment in the Value Add sub-class shall be limited to 35% of capital committed to Value Add at any given time. When a property reaches 80% occupancy, it will no longer be considered a development investment.

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IV.

D. ~~Opportunistic~~^{OPPORTUNISTIC}: investments in commingled funds, joint ventures and private placements. The investments within the Opportunistic portfolio are likely to represent a wide variety of strategies and investment vehicles and may utilize greater leverage. The Opportunistic portfolio will include investments with expected returns in excess of either the Core or Value Add strategies, and may employ risk-adjusted strategies with greater leverage or other, generally above-market risk factors, in excess of either the Core or Value Add strategies. These investments may include niche opportunities (e.g., hotels, operating companies, non-performing loan portfolios, speculative development, land acquisitions, etc.) or exist due to real estate or capital markets dislocations and/or inefficiencies. Investment strategies for the Opportunistic portfolio will be considered and classified "opportunistic" based on prevailing market conditions at the time of investment.

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III. LEVERAGE

3.

A. ~~Core~~^{ORE}: To enhance investment returns, leverage is permissible in the Core portfolio in an amount up to 45% of the fair market value of the aggregate Core portfolio, and up to 75% of the market value on any given property. Sufficient consideration should be given to the impact of debt financing on the risk and return characteristics of the leveraged investments as well as the Core portfolio in total. Use of leverage shall be subject to financing guidelines incorporated into the operating agreement(s) for each Core investment manager or partnership.

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From time to time, managers may have the opportunity to acquire properties only if underlying property debt is assumed as part of the transaction. Such acquisitions may be pursued so long as such acquisitions do not cause the manager's portfolio to exceed portfolio leverage limitations for an extended period of time. From time to time, a manager's portfolio may exceed leverage limitations as individual leveraged properties are acquired or capital market returns result in negative capital market valuations. The mechanisms and time frames to bring property leverage in line with portfolio guidelines and investment objectives must be part of each venture's operating agreement. Material deviations from leverage and policy guidelines may be resolved either through action by the OIC or the Real Estate Committee.

B. Value Add. In order to enhance investment returns, leverage is permissible in the Value Add portfolio in an amount up to 65% of the fair market value of the aggregate Value Add portfolio and up to 80% of cost on any given property prior to stabilization. Sufficient consideration should be given to the impact of debt financing on the risk and return characteristics of the leveraged investments. Use of leverage shall be subject to financing guidelines incorporated into the operating agreement(s) for each Value Add investment manager or partnership.

C. Opportunistic. Subject to financing guidelines incorporated into the operating agreement(s) for each Opportunistic investment manager or partnership, leverage may be unconstrained within Opportunistic real estate investments and partnerships.

Investment Classification	Portfolio Leverage Limit
Core	45%
REITS	N/A
Value Add	65%
Opportunistic	N/A
Total Portfolio	50%

IV. OBJECTIVES

A. Program Investment Performance Objectives

The Program'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 National Council of Real Estate Fiduciaries (NCREIF) Fund Index ("NFI") Open-end

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Diversified Core Equity Index ("ODCE"), and referred to as NFI-ODCE, *plus* an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, the Program's performance objective is a return exceeding NFI-ODCE plus 50 basis points, and may vary by investment type (e.g., core, public and private REITs, value add and opportunistic real estate). OST staff (hereinafter referred to as "Staff") will periodically evaluate the Program's performance objective, benchmark and assigned return premium.

±

Investment Classification	After Fee Benchmark
Core	ODCE
Value Add	ODCE + 100 bps
Opportunistic	ODCE + 300 bps
Public REITs (Domestic)	NAREIT
Public REITs (International)	FTSE/EPRA /NAREIT
Total Portfolio	ODCE + 50 bps

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B. Diversification

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

±

1. Strategy: – Staff will diversify investments through exposure to a variety of real estate debt and equity investment strategies, property types (i.e., office, industrial, retail, multifamily, hospitality, etc.), and throughout the various stages of a property life-cycle from development to stabilized. The allocation ranges and targets for each sub-classifications are as follows:

±

Investment Category	Target Allocation
Core	45 - 65%

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~~REITs~~ 0 – 10%

~~Value Add~~ 10 – 30%

~~Opportunistic~~ ~~10 – 30%~~ ~~10 – 30%~~

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~~2. b.~~ Property Types: Staff will diversify Program investments among various real property types.

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~~3. e.~~ Size of Investment Sizes: Investments will be diversified among a range of commitment sizes which may vary upon type of investment structure (i.e., separate account, joint venture, tailor made multi-investor "club" fund, open-ended or commingled fund), generally with a minimum commitment size of \$75 million.

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~~4. d.~~ 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 Program's investment and quality criteria.

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

V. REAL ESTATE COMMITTEE

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~~5. A.~~ The Real Estate 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.

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~~1. B.~~ OST, through the Committee, may invest OPERF amounts up to and including \$150-250 million per investment for a 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.

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~~2. 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 Program standards including, but not limited to, the applicable sector plan and strategy. Proposed investments or partnership commitments presented to the Committee. Investment opportunities and proposed Committee commitments 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.

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~~3.~~
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~~ the proposed investment as a separate agenda item at a subsequent OIC meeting.

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~~4.~~
~~5.~~ Staff shall report any investment or partnership commitment made by the Committee at the next, most feasible OIC meeting.

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VI. 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:

- ~~6.~~
A. Approve OST administrative activities and guideline exceptions if a plan is established to conform the [project/investment/partnership fund] exception(s) to applicable guidelines within a reasonable period of time;
- ~~1.~~
B. Acquire, retain, manage and dispose of investment or partnership fund interests consistent with the authority granted to the Office of the State Treasurer pursuant to ORS 293.736, and review and approve other activities as necessary to further the interests of the Program consistent with this statute;

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

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~~3.~~ Such additional investments or partnership commitments shall be on terms equal to or better than the existing investment fund terms;

D. Approve an increase or decrease in exposure to REITs through adjustments to the capital commitments of existing REIT managers, within OIC-established ranges;

4.

E. Approve capital allocation decreases to individual Core managers, so long as such decreases are not more than 50% of a specific manager's total capital under management and no more than \$200 million in aggregate in any calendar year;

5.

F. Approve the termination of separate account mandates and recommend action regarding the enforcement of termination and other commingled fund investment provisions;

6.

G. Terminate REIT managers. Immediately following a termination, the Real Estate SIO shall notify the terminated manager and instruct that manager to discontinue trading immediately. The SIO shall also instruct the OST Director of Operations (DIO) to suspend trading in that manager's account. Unless directed otherwise by the OIC, Staff shall proceed with a liquidation plan that may include the redistribution, transition or liquidation of securities in the terminated manager's account.

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

7.

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VII. ADVISOR AND OSTPERF REQUIREMENTS

OST manages the Program using a hybrid Staff/Advisor model. Specifically, and subject to budget limitations, OST will assign an appropriate number of Staff to manage Program design and portfolio construction, the Program'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 investments, performing Program analytics and valuation analyses and preparing current historical performance reports.

Staff retains the primary responsibility to ensure that Program 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.

7.

VIII. LEGAL COUNSEL

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

8.

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9. CONTRACT EXECUTION

1. 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. 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.

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 investment commitments in conjunction with proposed 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 DOJ, prior to the execution of investment documents.

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10. PARTNERSHIP FUNDING

1. For all existing and future partnership commitments, each general partner shall submit a complete list 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.

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, 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.

4. 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.

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IX. MONITORING

II.

A. Reports

Staff will contract for third-party reporting services and shall furnish Program activity and performance reporting to the OIC on a quarterly basis.

1.

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 industry standards. The Advisor will

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

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X. PROHIBITED INVESTMENTS

~~Staff and the Advisor. The Real Estate Program~~ shall not knowingly propose the purchase of equity real estate ~~being sold by,~~ or mortgages on real property owned and marketed for sale by any of the following: (a) an employee of the Oregon State Treasury (OST); (b) a member of the Oregon Investment Council (OIC); (c) a relative of (a) or (b); or (d) a private company in which (a), (b), or (c) has an ownership interest.

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~~12.~~

Exceptions

~~None.~~

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Failure to Comply

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

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PROCEDURES and FORMS

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Appendix A: OIC Document: Real Estate Investments Valuation Policy, ~~OIC/OST Alternatives Investments Authority~~

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Appendix B: OIC Document: OIC/OST Alternatives Investments Authority, ~~Real Estate Investments Valuation Policy~~

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Appendix C: OST Document: Real Estate Investment Procedures for INV 501

Appendix D: OST Procedures: Contract Execution and Partnership Funding

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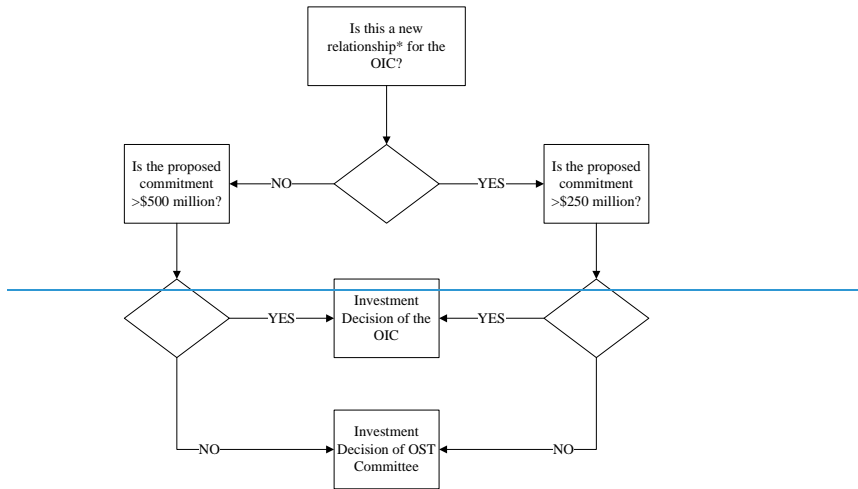
ADMINISTRATION

Feedback

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

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.



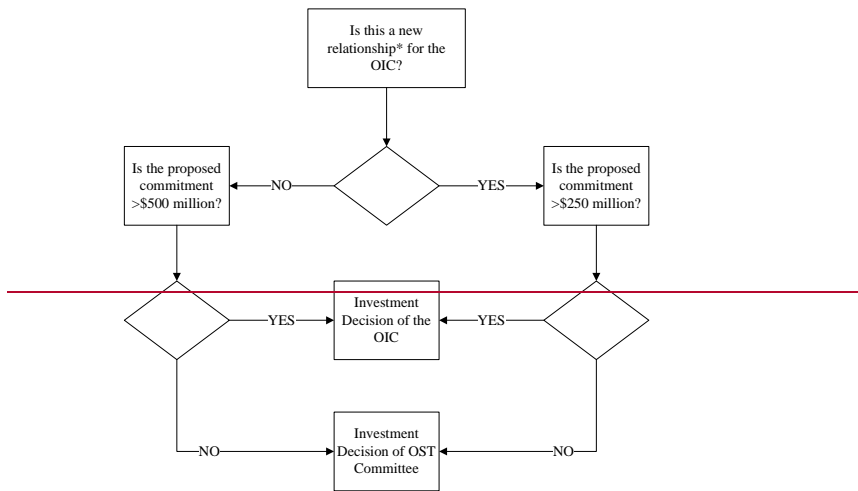
NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

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

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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 \$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.

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OIC Document

APPENDIX BA
Real Estate 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 & Private Equity Real Estate

1. Non-publicly traded securities and private equity real estate should be listed at fair value. These types of investments 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 investments may contain subjective elements. Determination of the fair value should be based on the best available and most applicable valuation metrics. Valuation metrics may differ substantially, depending on an asset's development stage, industry category, competitive position, cash flow profile, location and geography.

2. The General Partner (GP) of each partnership will determine valuations for the investments within its 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 partnership.

3. Staff are not typically experts in the valuation of non-public investments, but do have broad experience in real estate investment management; accordingly, Staff will a) apply such experience to determine whether or not valuations reported by GPs and the investment manager 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 is not be limited to the following:

- a. Valuation analyses and adjustments performed by the Advisor, GP or investment manager;
- b. Audited financial statements of Program investments and limited partnerships;
- c. GP-prepared quarterly and annual partnership reports;
- d. Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
- e. General Staff knowledge of investment performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

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

44. Staff is responsible for ensuring Program investments are recorded in OST's accounting 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 consolidated real estate portfolio quarterly report, including limited partnership quarterly summaries;
- c. To the fullest extent practical, participate in limited partner committee reviews and/or limited partnership valuation approvals if Staff serves on such committees;
- d. Review partnership annual reports and audited financial statements; and
- e. 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 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.

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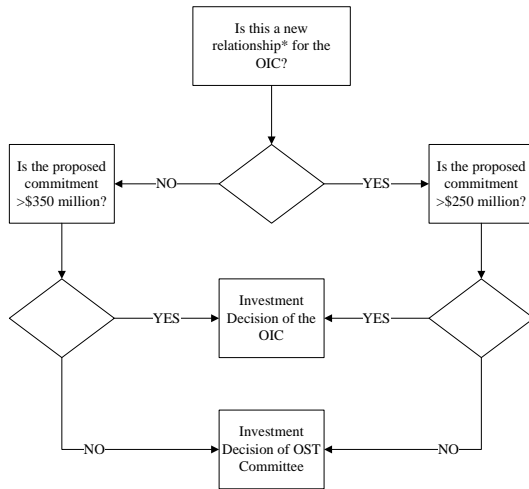
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Appendix B OIC/OST Alternative Investments Authority

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.

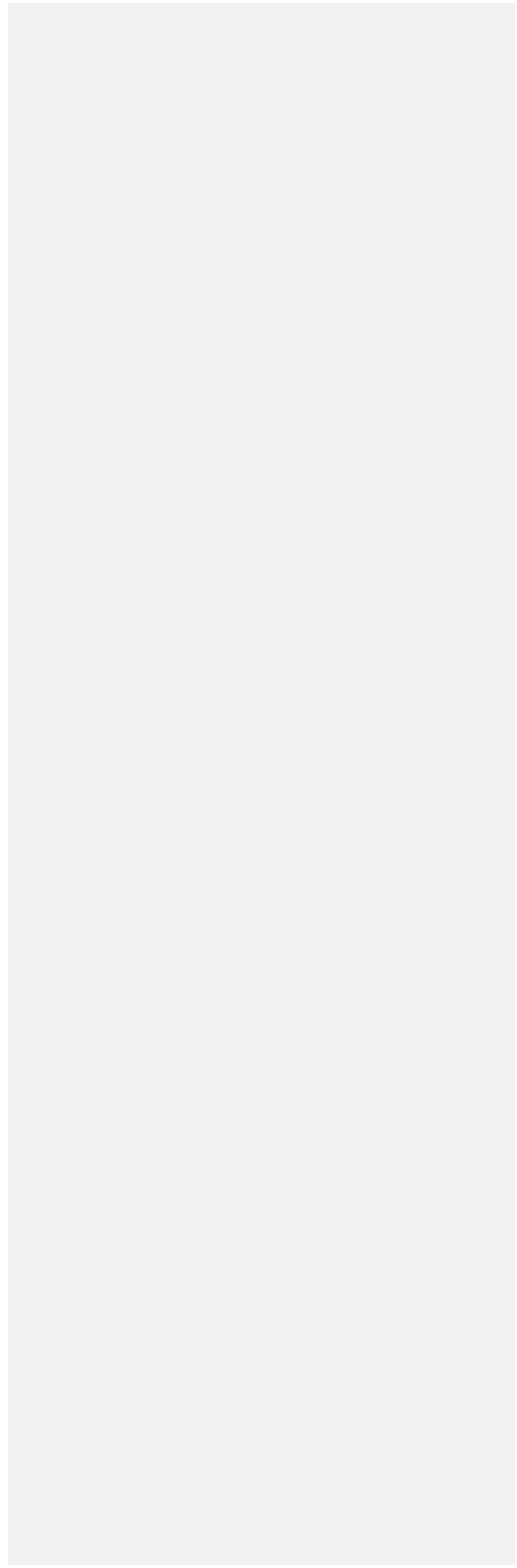


NOTE: If consideration of a particular investment opportunity is urgent, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

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

Field Code Changed

| 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 Program's objectives and a favorable assessment of the proposed investment's strategy and market conditions;
 - b. ~~Individual and collective Relevant~~ investment experience of partners and key staff, ~~individually and as a team,~~ as well as ~~individual and their team~~ stability;
 - 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:
 - i. deal flow and initial analysis of portfolio investments;
 - ii. pricing, selection and negotiation of portfolio investments;
 - iii. financial structuring of portfolio investments;
 - iv. management or oversight of portfolio companies; and
 - v. 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. 1. Types of Allowable Investments

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

2. 2. Prudent and Productive Investor Standards

Program 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.

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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.

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APPENDIX D
Contract Execution and Partnership Funding

A. Contract Execution

Staff will inform the Program's current or prospective investment managers or general partners of investment or partnership commitments approved by the Council or the Committee immediately following such approvals. Approved commitments are conditional and subject to the successful, subsequent negotiation of all terms and conditions consistent with both internal and DOJ legal 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 internal legal staff or DOJ, prior to the execution of investment documents.

B. Partnership Funding

For all existing and future investments or partnership commitments, each investment manager or general partner shall submit a complete list 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 investment or partnership agreement, and OST shall not deviate from these pre-established instructions unless the investment manager or 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 and partnership 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 investment management or partnership agreement to ascertain whether or not funding levels are consistent with OIC's commitment approvals.

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 investment manager or general partner.

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TAB 5 – OIC Real Estate Consultant Recommendation

OIC Real Estate Consultant Contract

Purpose

Address the OIC's real estate consultant contract which expires on June 30, 2018.

Background

Under OIC Policy INV 210, consultant contracts are awarded for three-year periods, can be renewed no more than twice, and are limited to a final expiration date not greater than four years beyond the original expiration. At the end of seven years, contracts shall be re-bid and a new seven-year cycle initiated. The current real estate consulting contract with Pension Consulting Alliance (PCA) will reach the end of its first two-year extension period at June 30, 2018.

In accordance with the negotiated contract terms with PCA, the second, and final, extension period annual rate shall be negotiated prior to the commencement of the second renewal period.

Discussion

In lieu of a RFP solicitation, Staff recommends extending the PCA contract for the final two-year extension, at a negotiated rate described below, to continue to provide services to the OIC and OST Staff, for the following reasons:

1. Staff has formed an efficient working relationship with PCA, and PCA personnel have worked closely with Staff to implement the revised goals and objectives for the OPERF Real Estate portfolio. Given the portfolio's recent repositioning and associated ongoing implementation efforts, Staff believes it prudent to defer any solicitation process until further repositioning progress has been achieved; and
2. Many of the of the real estate consultant firms have undergone significant ownership change in 2H 2017. Staff believes a solicitation process would be better conducted after the impact of those ownership changes and related integration issues can be properly assessed.

Recommendation

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

TAB 6 – Real Estate Annual Review and 2018 Plan
OPERF Real Estate Portfolio

COMMERCIAL REAL ESTATE Valuation Management Services & Outlook

2018 Real Estate

Presented to



Oregon State Treasury



Seaholm
Austin, Texas

OUR MISSION IS TO HELP CLIENTS DRIVE HIGHER RETURNS THROUGH ENHANCED RISK MANAGEMENT, IMPROVED EFFICIENCY, AND STRATEGIC ADVICE ON INDUSTRY AND REGULATORY ISSUES

MARKET RELEVANCE

- Founded in **1985**
- **800+** employees globally, **18** offices
- **\$165 billion** of Assets Under Management
- Evaluated **\$1 trillion** of real estate assets
- Fair Value Assessments on **\$150+ billion of real estate assets** quarterly
- Quarterly Valuation marks on **\$30 billion** of residential and consumer loans
- Servicing more than **260 MSR holdings** including **8/10 largest MSR** holders

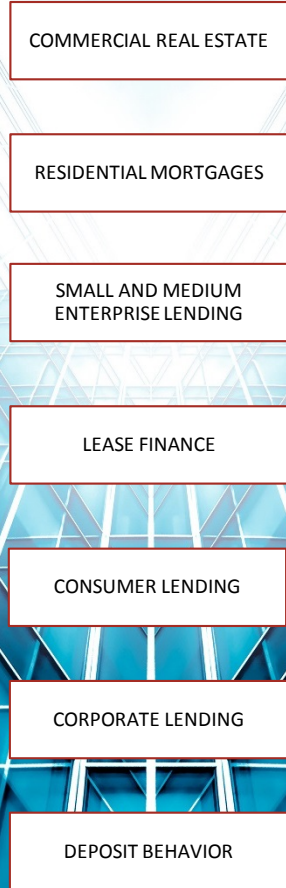
OUR CLIENTS

- +500 Active**
Financial Institution Clients
- 8 out of 10**
Largest Banks
- 8 out of 10**
Top Bank and Non-Bank Residential Mortgage Originators & Servicers
- 4 out of 5**
Top Insurance Companies
- 20 out of 20**
Largest CMBS Issuers
- 9 out of 15**
Largest Real Estate PE Firms

PROFESSIONAL ACCOMPLISHMENTS

- Rated CRE **Primary Servicer** and **Special Servicer** by Fitch, Standard & Poor's and Morningstar
- Extensive team of industry housing executives, focused on **policy, regulatory compliance, technology and risk management**
- Acquired **MountainView Financial Services** in 2018, **The Collingwood Group** in 2017 and **Hatfield Philips** in 2016

SECTOR EXPERTISE



GLOBAL OPERATIONS – Local Expertise

United States

- | | |
|------------|---------------|
| Atlanta | Robbins |
| Boca Raton | Sacramento |
| Denver | San Francisco |
| Des Moines | Scottsdale |
| Houston | Washington |
| New York | Waverly |
| Parsippany | |

Europe

- Amsterdam
- Dublin
- Frankfurt
- London
- Madrid



SITUS RERC HIGHLIGHTS

- **U.S. & European footprint**, founded in 1931 (RERC, now Situs RERC)
- **Multidiscipline Real Estate Advisory Firm**, offering Insight and Expertise in Valuation, Valuation Management and Debt & Equity Valuation
- **Deep bench of Senior CRE Professionals**, highly Credentialed (CFA, CRE, MAI, AI-GRS, CCIM, FRICS). **Stability**, 95% Retention Rate of Professionals
- **Daily Valuation** — Industry leader in daily valuation, over 12-years of experience with a variety of clients
- Conflict Free, **SEC-Registered Investment Advisor (RIA)** and **Independent Fiduciary**
- **Licensed Appraisal Management Company**
- **Technology** - Proven track record of security and value-add functionality
- Thought Leadership in **Independent Market Research, Data Management** and **Collaboration with Industry Associations**, such as DCREC, NCREIF, AI
- **Private Company**, with Long-Term View of Relationships vs. Short-Term Profits



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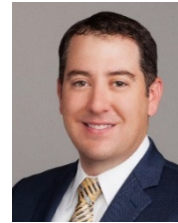
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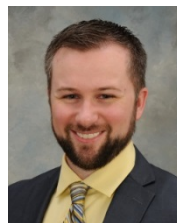
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Our experts devise tailored solutions that manage risks, reduce costs and increase the value of your investment. With more than 800 professionals, Situs offers full-service solutions from analysis to design and implementation.

INDUSTRY-LEADING PUBLICATIONS

Situs RERC publishes several key research reports that provide the valuation metrics that commercial real estate investors need to benchmark their return performance.

- Quarterly *Situs RERC Real Estate Report* for the U.S. market
- Annual forecast report, *Expectations & Market Realities in Real Estate*
- Semi-annual *Situs RERC Real Estate Report-European Edition* for the European market
- Semi-annual *Situs RERC – Urban Property Australia* *Australian Real Estate Trends* for the Australian market

CUSTOM RESEARCH

Measure and compare individual and unique investment criteria with benchmarks and market data

DATA INTEGRITY

- With a strong foundation in due diligence dating back to the mid-eighties, Situs prides itself on the capacity to maintain data quality through accurate information at all levels
- Data tapes stratification and analysis
- Data remediation, aggregation and validation
- Complex cash-flow modeling





VALUATION MANAGEMENT & REVIEWS

- Licensed AMC throughout U.S.
- Reviews completed by MAI designated appraisers
- Ensures independence in process for all clients (Banks, Pension Funds, Investment Managers, etc.)

PROPERTY APPRAISALS

- MAI Designated Appraisers
- Licensed Appraisers Throughout U.S.
- All property types (Core/Non-Core) and Life Cycles (Operating/Development/etc.)

TRANSACTION OPINIONS

- Fairness Opinions (related party acquisition)
- Partnership buyouts, recapitalizations, public-to-private transactions
- Advisory opinions to support board decisions, mergers and acquisitions
- Purchase Price Allocation: understanding the intricacies of the various property types and accounting standards is key to assisting clients with asset acquisition transaction accounting

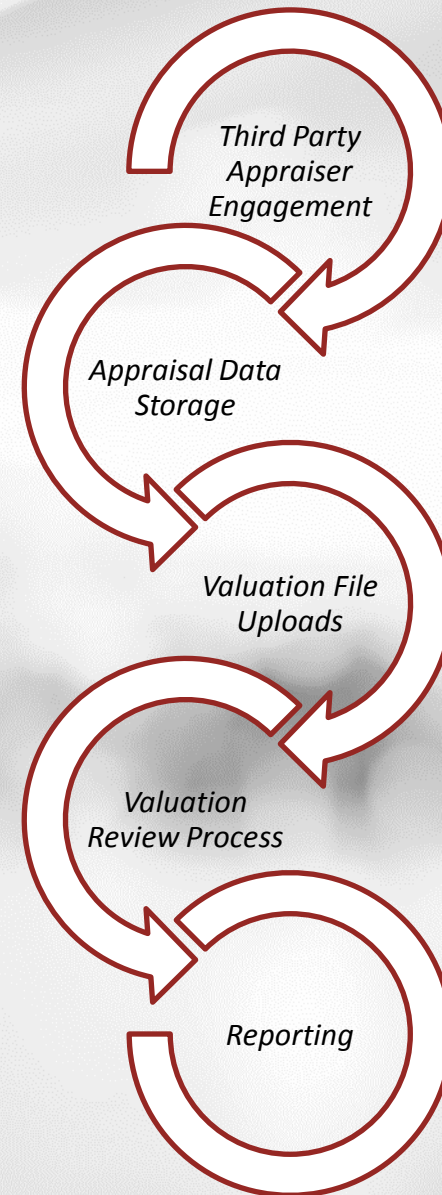
LOAN VALUATIONS

- Loan/debt valuation (payables and receivables) for all debt positions in capital stack
- Performing and non-performing loans
- Fair value reporting of more than \$15 billion of loans quarterly

“SITUS’ VALUATION ADVISORY SERVICES ARE COMPLETED BY RERC, A WHOLLY OWNED SUBSIDIARY OF SITUS. RERC IS AN SEC-REGISTERED ADVISOR AND PROVIDES VALUATION ADVISORY SERVICES FOR MORE THAN \$100 BILLION IN ASSETS ON A QUARTERLY BASIS”



- **Third Party Appraiser Engagement**
 - Bid requests
 - Appraiser recommendations
 - Engagement letters
- **Appraisal Data Storage**
 - Source documents between managers and appraisers
- **Valuation File Uploads**
 - Valuation files uploads with notifications
 - Online executive summary
- **Valuation Review Process**
 - RERC, OPERF, OPERF's managers review valuations
 - Review is sent to appraiser; appraiser responds
- **Reporting**
 - Initial valuation reporting
 - Value results reporting
 - Ad hoc reporting



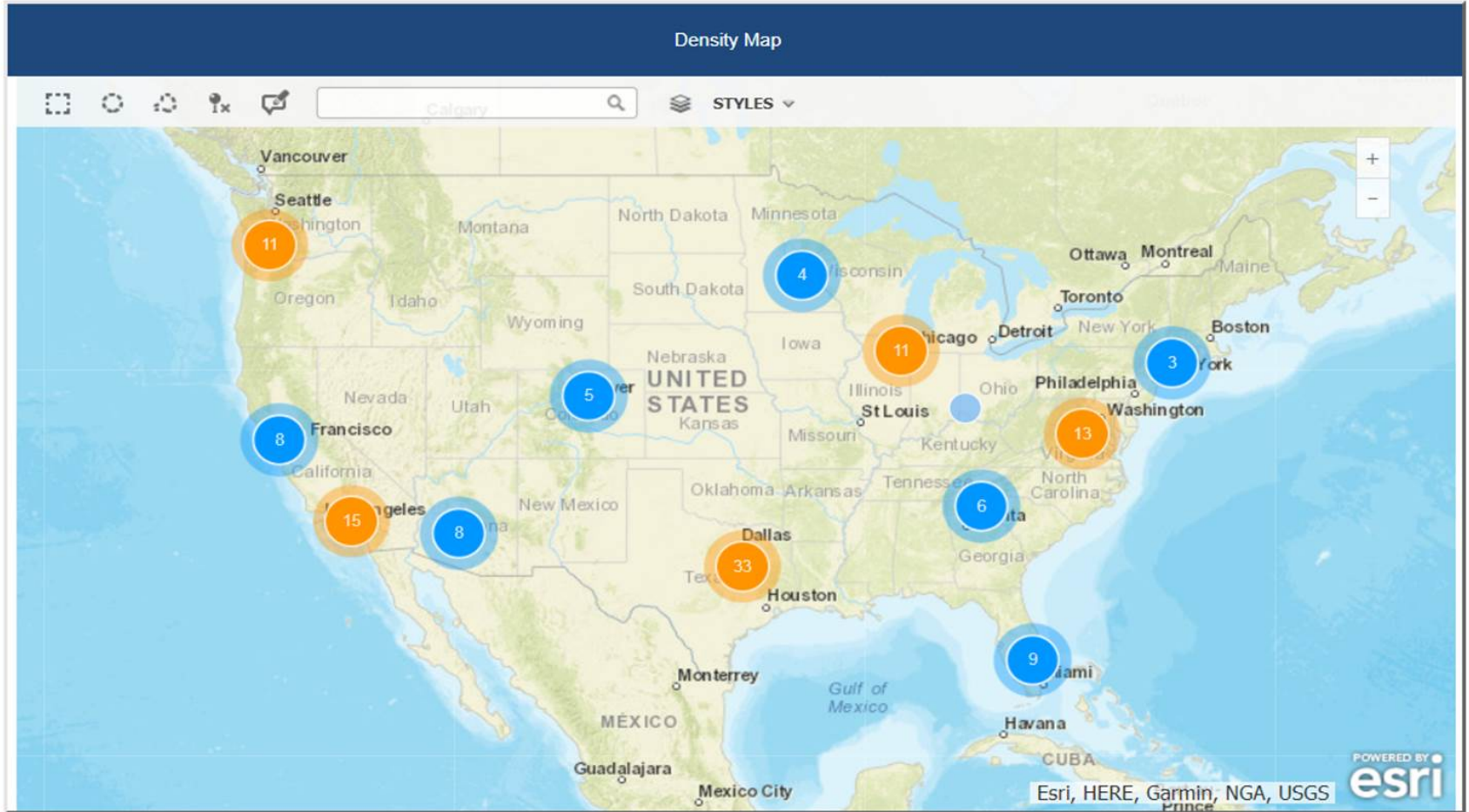
- **Step 1: Inquire on impact to every asset in the affected area.**
- **Step 2: Update valuation if material impact is identified**
- **Step 3: Utilize Extraordinary Assumption in reviews / valuations regarding the natural disasters**

Extraordinary Assumption when material impact is not identified: *The subject's market has been severely impacted by Hurricane Harvey/Irma. The subject has/has not been physically impacted. The extent of damages, as well as the impact to market conditions, are not currently known. This review/valuation was developed under the extraordinary assumption the hurricane has not materially impacted the subject market value as of the effective date of value. If this is found to be incorrect, it could impact the subject's value.*

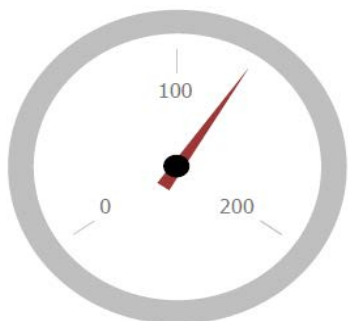
Extraordinary Assumption when material impact is identified: *The subject's market has been severely impacted by Hurricane Harvey/Irma. The subject has/has not been physically impacted. The extent of damages, as well as the impact to market conditions, are not currently known. This review/valuation was developed under the extraordinary assumption the hurricane has materially impacted the subject market value as of the effective date of value; the valuation has been prepared based on the best available information regarding the impact. If this is found to be incorrect, or if the extent of the impact was not completely and properly identified, it could impact the subject's value.*

TOTAL PORTFOLIO

Portfolio Map



Asset Count



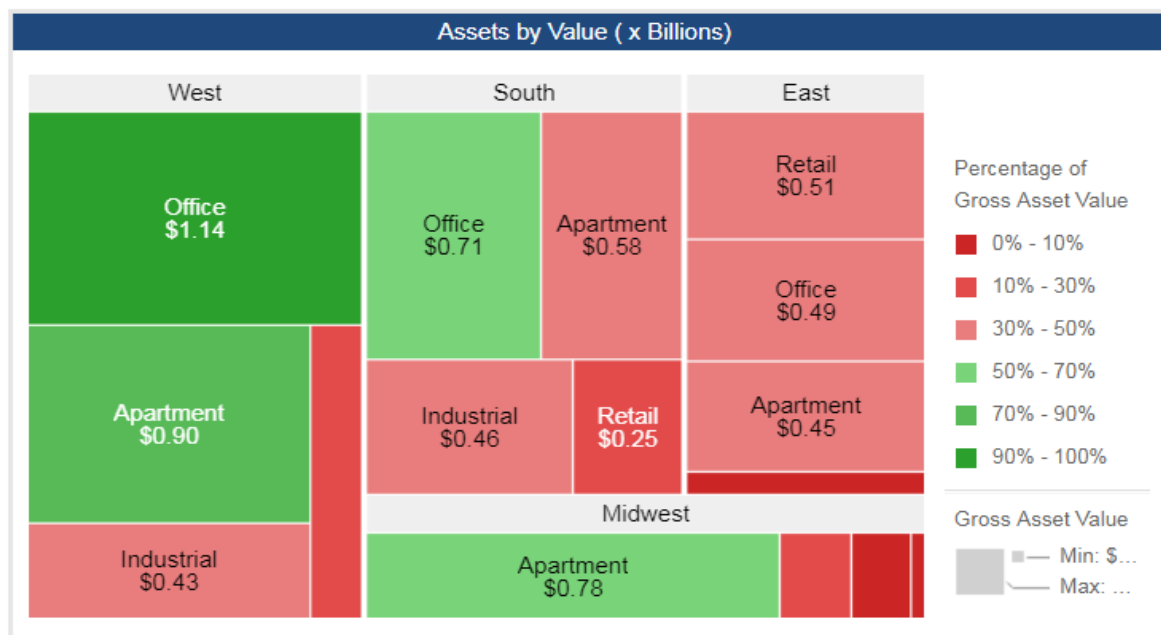
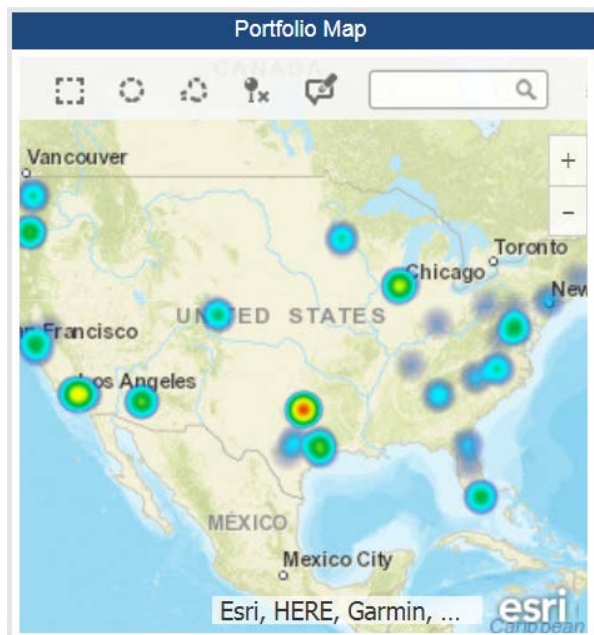
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Gross Asset Value



\$7,296,422,245.00

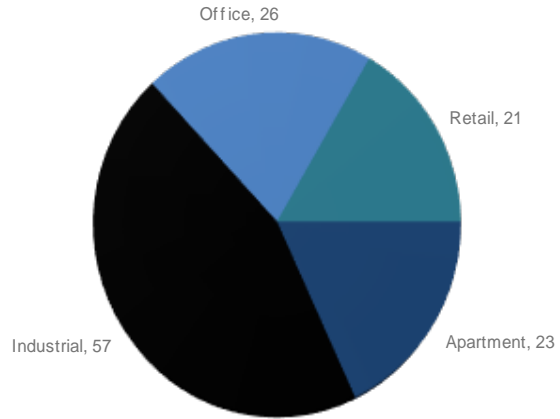
	Current Period	Prior Period
Value / Sq Ft	\$252.49	
Implied Cap Rate	4.55%	
Occupancy	83.96%	



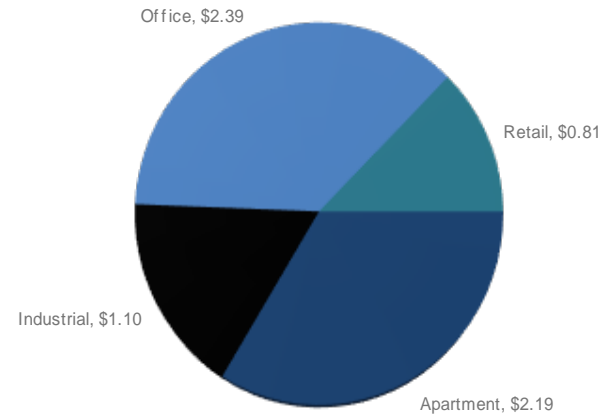
Disclaimer: Oregon's portfolio-level data is presented for illustrative purposes only and is still being reviewed/approved by RERC and the Oregon staff.

DIVERSIFICATION BY PROPERTY TYPE – EFFECTIVE OWNERSHIP %

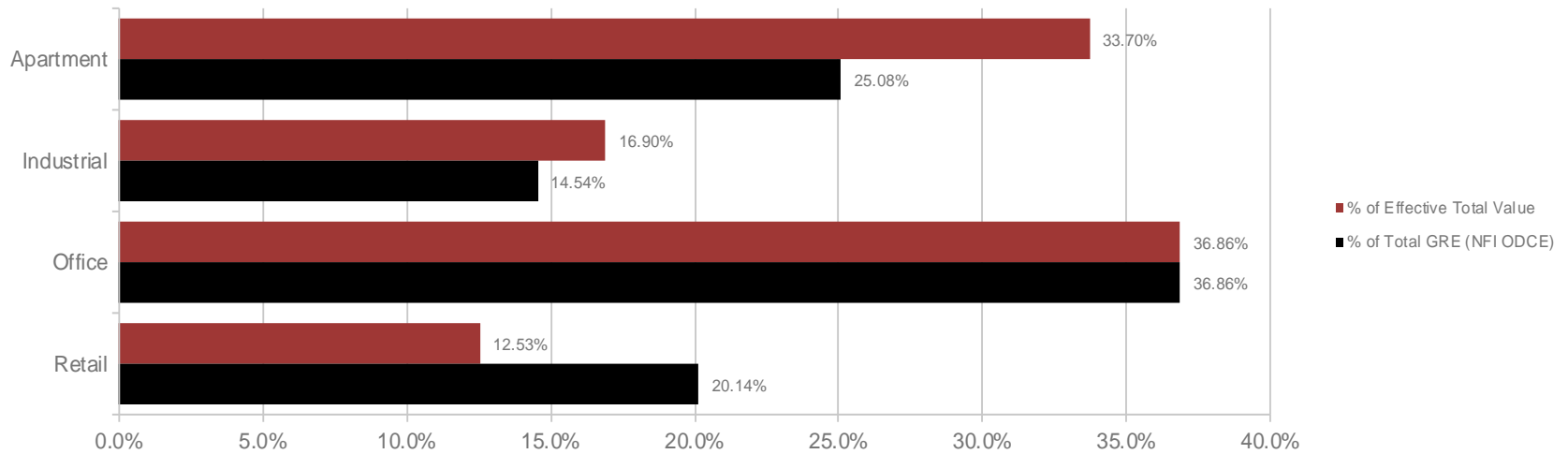
Asset Count by Property Type



Asset Value by Property Type (x Billion)

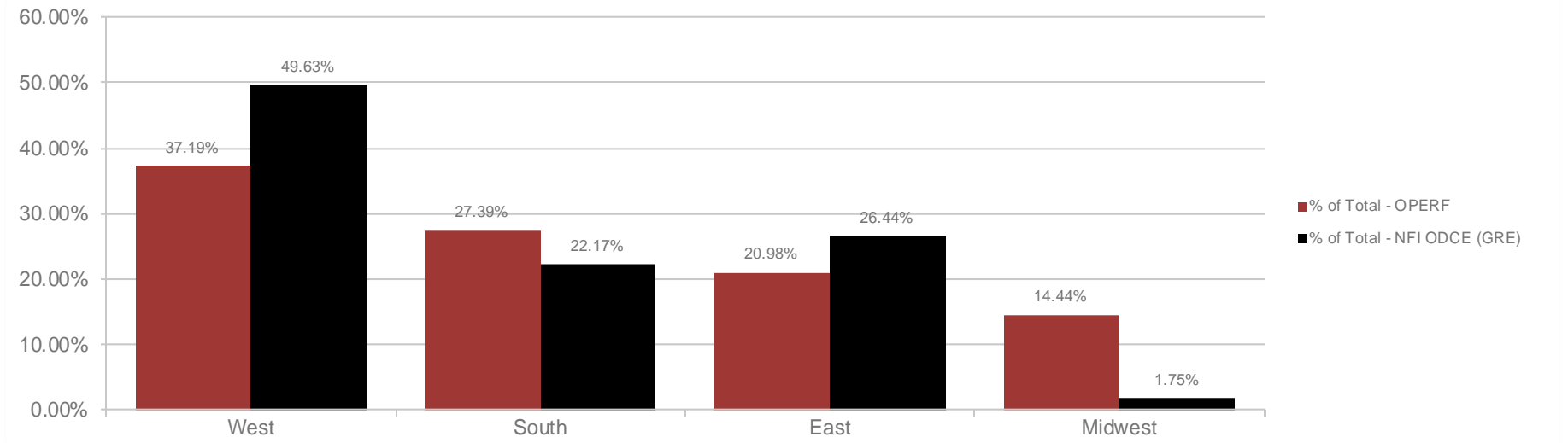


Portfolio Diversification by Property Type

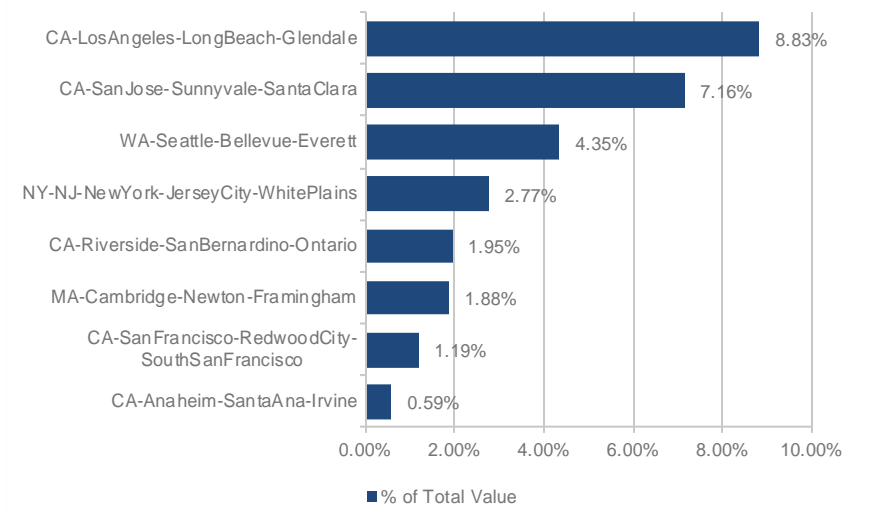


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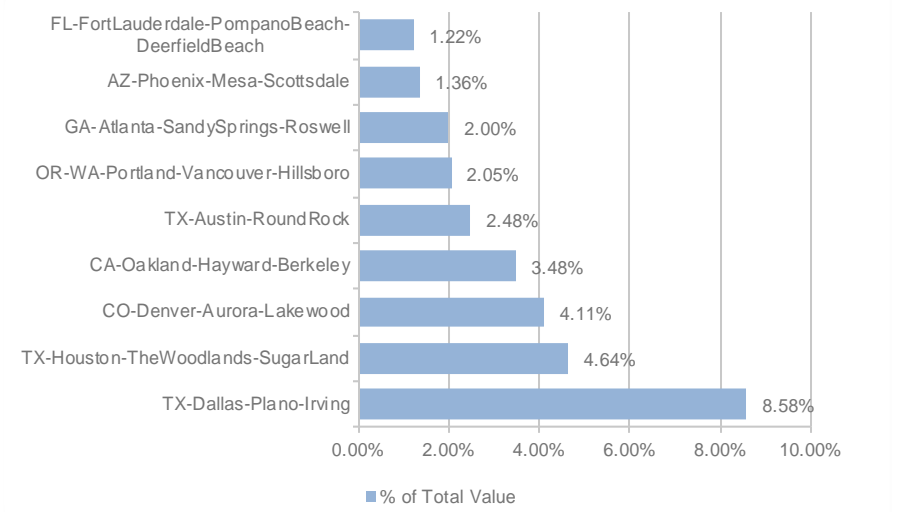
Regional Diversification



Top MSA Allocations



Bottom MSA Allocations



Disclaimer: Oregon's portfolio-level data is presented for illustrative purposes only and is still being reviewed/approved by RERC and the Oregon staff.



VALUATION & INVESTMENT ANALYSIS

- After valuations are finalized, results are aggregated in a slice & dice format

4Q2017 Valuation and Investment Analysis - Office

	Property Count	Value Per Sq. Ft.	Quarterly Gross % Change	Quarterly Net % Change	Quarterly Net Equity % Change	Discount Rate	Implied Cap Rate	Terminal Cap Rate	Cash on Cash (Hold Period)	Rent Growth (Hold Period)	NOI Growth (Hold Period)	Value Growth (Hold Period)	Vacancy(%)
Weighted	25	\$517				7.10%	5.35%	6.27%	6.03%	2.89%	3.90%	2.18%	11.07%
Overall Analysis													
Minimum		\$107				6.50%	1.84%	4.75%	3.69%	1.33%	-5.82%	0.15%	0.00%
Maximum		\$1,080				8.25%	8.42%	10.20%	17.13%	3.22%	20.02%	4.97%	65.82%
Average		\$498				7.20%	5.28%	6.46%	6.11%	2.84%	4.26%	2.12%	11.33%
Analysis By Region													
East	5	\$303				7.17%	5.35%	6.55%	5.39%	2.92%	5.43%	2.17%	12.37%
Midwest	1	\$287				6.53%	6.00%	7.50%	17.13%	2.00%	4.15%	2.51%	10.00%
South	9	\$372				7.51%	5.35%	6.63%	6.04%	2.87%	4.95%	2.08%	15.84%
West	10	\$740				6.88%	5.29%	5.80%	5.10%	2.99%	2.60%	2.21%	3.57%
Analysis By Property Class													
A	22	\$532				7.09%	5.43%	6.26%	6.10%	2.90%	3.50%	2.10%	8.34%
B	3	\$293				7.24%	4.30%	6.41%	5.09%	2.75%	9.28%	3.26%	33.68%
Analysis By Property Sub-Type													
CBD	15	\$545				7.03%	5.34%	6.21%	6.36%	2.90%	3.96%	2.19%	10.59%
Flex	1	\$107				8.00%	8.42%	10.20%	8.39%	2.56%	2.29%	0.15%	29.59%
Suburban	9	\$480				7.21%	5.35%	6.32%	5.48%	2.89%	3.82%	2.19%	11.05%
Analysis By Investment Manager													
Ascentris	2	\$263				6.87%	5.86%	7.50%	14.34%	1.84%	4.05%	1.99%	10.00%
Clarion Partners	7	\$590				7.04%	5.31%	5.97%	5.28%	2.93%	3.43%	2.25%	10.84%
Lincoln Property Company	1	\$107				8.00%	8.42%	10.20%	8.39%	2.56%	2.29%	0.15%	29.59%
Lionstone Investments	15	\$474				7.21%	5.30%	6.42%	5.63%	3.02%	4.48%	2.14%	10.89%
Analysis By Ownership Structure													
SA	25	\$517				7.10%	5.35%	6.27%	6.03%	2.89%	3.90%	2.18%	11.07%
Analysis By Investment Classification													
Core	25	\$517				7.10%	5.35%	6.27%	6.03%	2.89%	3.90%	2.18%	11.07%

Disclaimer: Oregon's portfolio-level data is presented for illustrative purposes only and is still being reviewed/approved by RERC and the Oregon staff.

An aerial view of the New York City skyline at sunset. The sky is a mix of blue, orange, and yellow. The sun is low on the horizon, casting a warm glow over the city. The Empire State Building is prominent on the left, and the Freedom Tower is visible in the distance. The water of the harbor is visible in the middle ground.

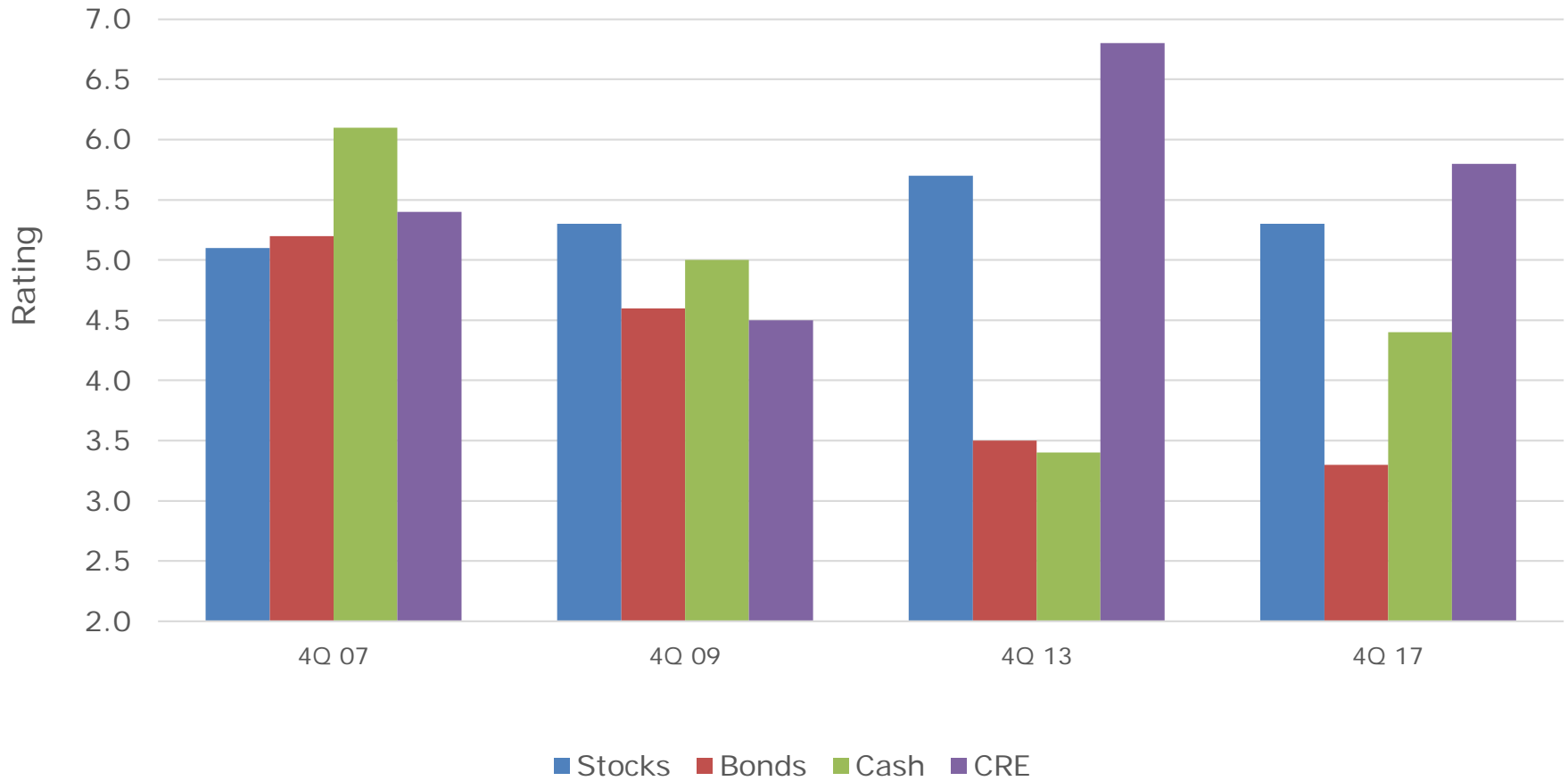
Situs RERC®

COMMERCIAL REAL ESTATE
Outlook

2018 Real Estate

Stability in a Risk Environment

Situs RERC historical ratings of investment alternatives



Note: Ratings are based on a scale of 1 to 10, with 10 being excellent.
Source: Situs RERC, 4Q 2017.

CRE & Investment Alternatives

Market Indexes	1-Year Trailing	3-Year Trailing	5-Year Trailing	10-Year Trailing	15-Year Trailing
Consumer Price Index ¹	2.12%	1.59%	1.40%	1.61%	2.09%
10-Year Treasury Bond ²	2.33%	2.10%	2.24%	2.58%	3.19%
Dow Jones Industrial Avg. ³	28.11%	14.36%	16.37%	9.28%	10.26%
Nasdaq Composite ⁴	30.16%	13.95%	18.34%	10.20%	11.68%
NYSE Composite ⁴	15.84%	5.72%	8.69%	2.78%	6.47%
S&P 500 ³	21.83%	11.41%	15.79%	8.50%	9.92%
NCREIF NPI ⁵	7.04%	9.48%	10.28%	6.12%	9.09%
NCREIF NFI ODCE ⁵	6.90%	9.11%	10.04%	6.00%	8.83%
NAREIT Index (Equity REITs) ³	8.67%	6.67%	9.83%	7.77%	11.13%

Note: Compounded annual rates of return as of December 29, 2017.

¹ Based on published data from the Bureau of Labor Statistics (Seasonally Adjusted).

² Based on average end-of-day T-bond rates.

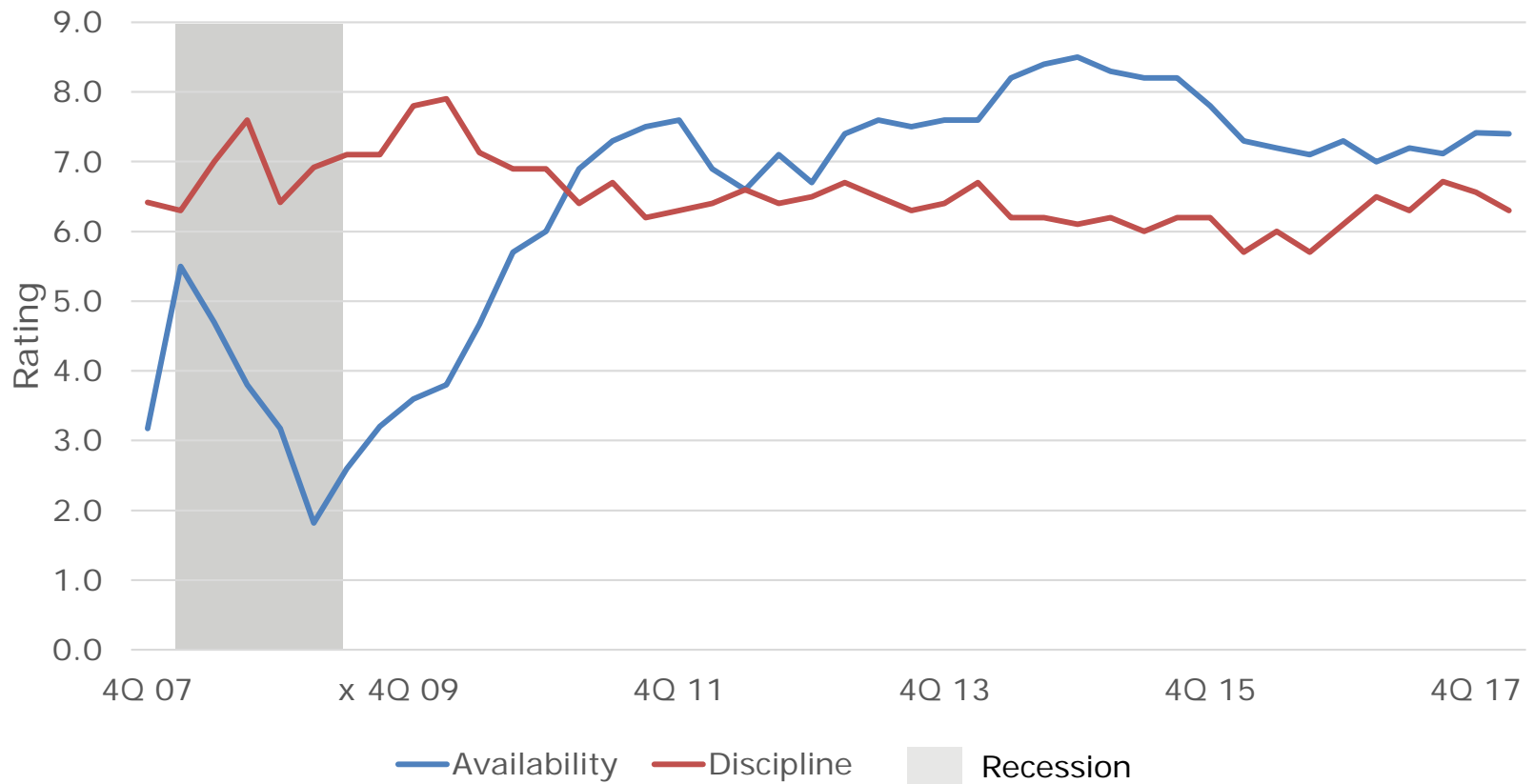
³ Based on Total Return Index, and includes the dividend yield.

⁴ Based on Price Index, and does not include the dividend yield.

⁵ NCREIF Total Return, composed of capital and income returns.

Situs RERC capital availability & discipline ratings

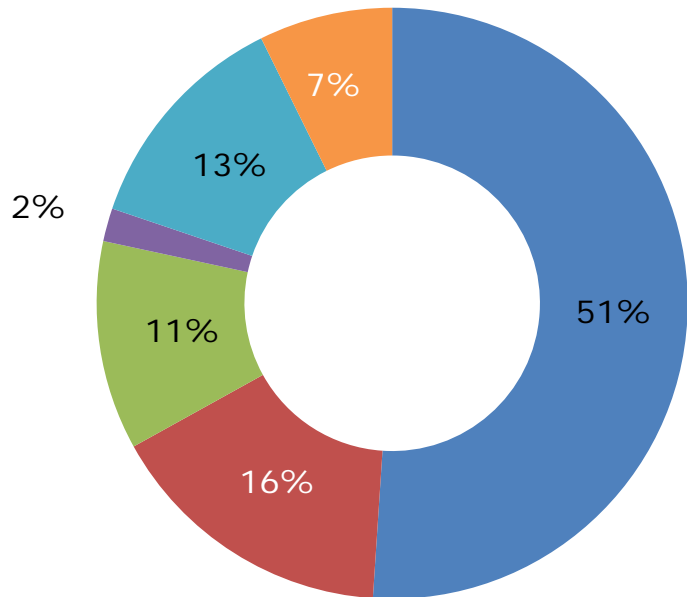
Equity & debt capital combined



Note: Ratings are based on a scale of 1 to 10, with 10 being excellent.
Source: Situs RERC, 4Q 2017.

Overview of CRE capital sources

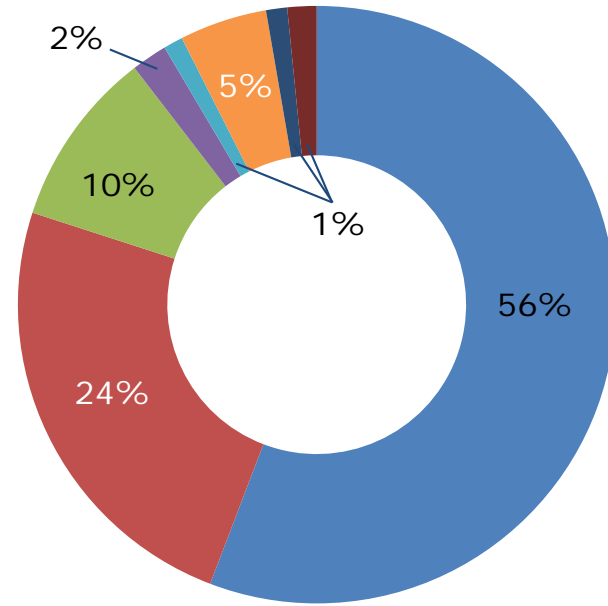
Fixed-Income Lender Composition
- \$3.92 Trillion



- U.S. - Chartered Depository Institutions
- CMBS, CDO and other ABS
- Life Insurance Companies
- Foreign Banking Offices in U.S.
- Govt. Sponsored Entities
- Other

Source: Federal Reserve Board, 3Q 2017.

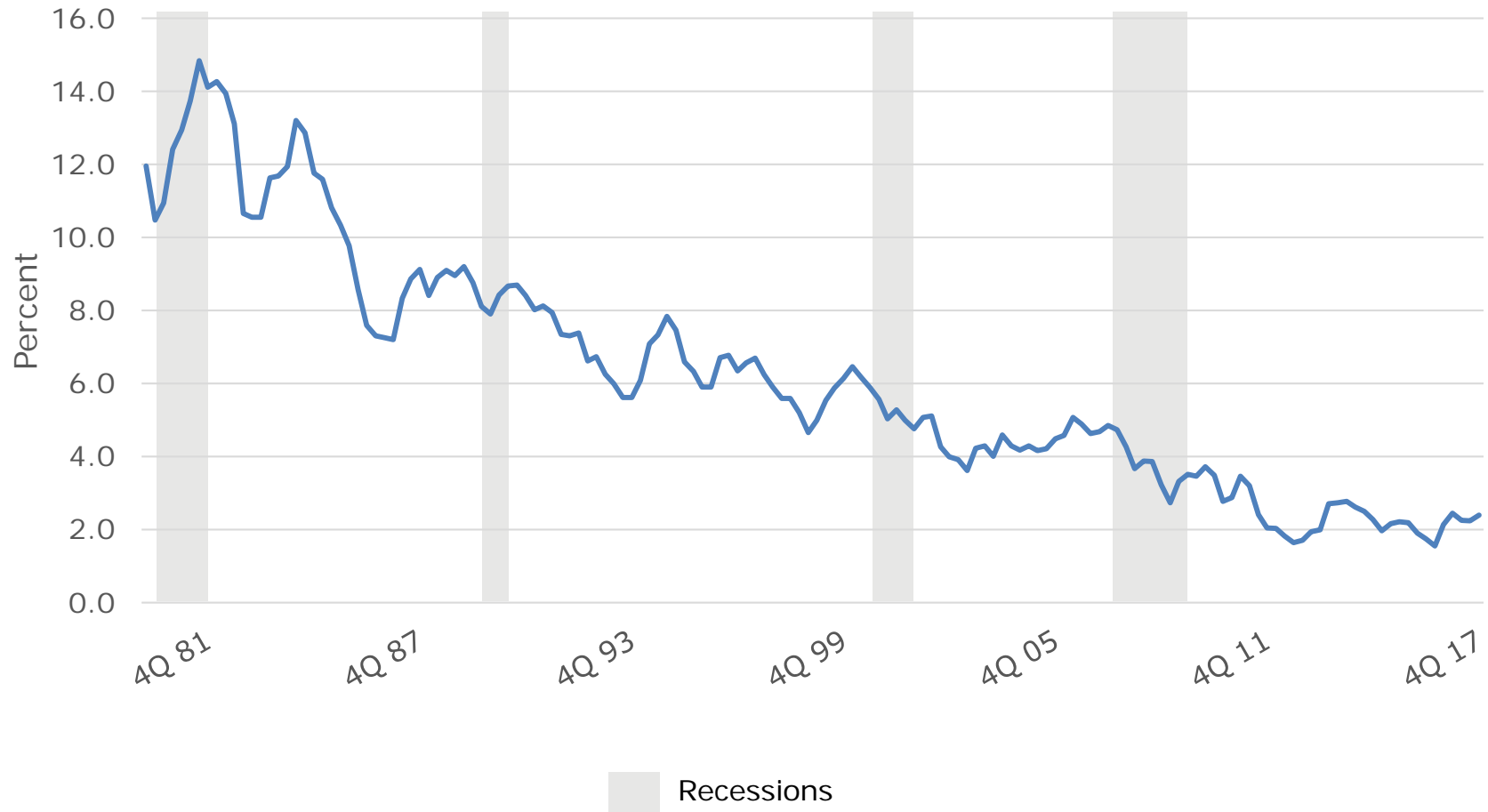
Institutional Equity Investor Composition - \$3.97 Trillion



- Private Equity
- REITs
- Pension Funds
- Life Insurance Companies
- Commercial Banks
- Corporations
- Foreign Investors
- Government, GSE & Others

Sources: NAREIT, NCREIF, RCA, compiled by Situs RERC, 3Q 2017.

Historical 10-year Treasurys



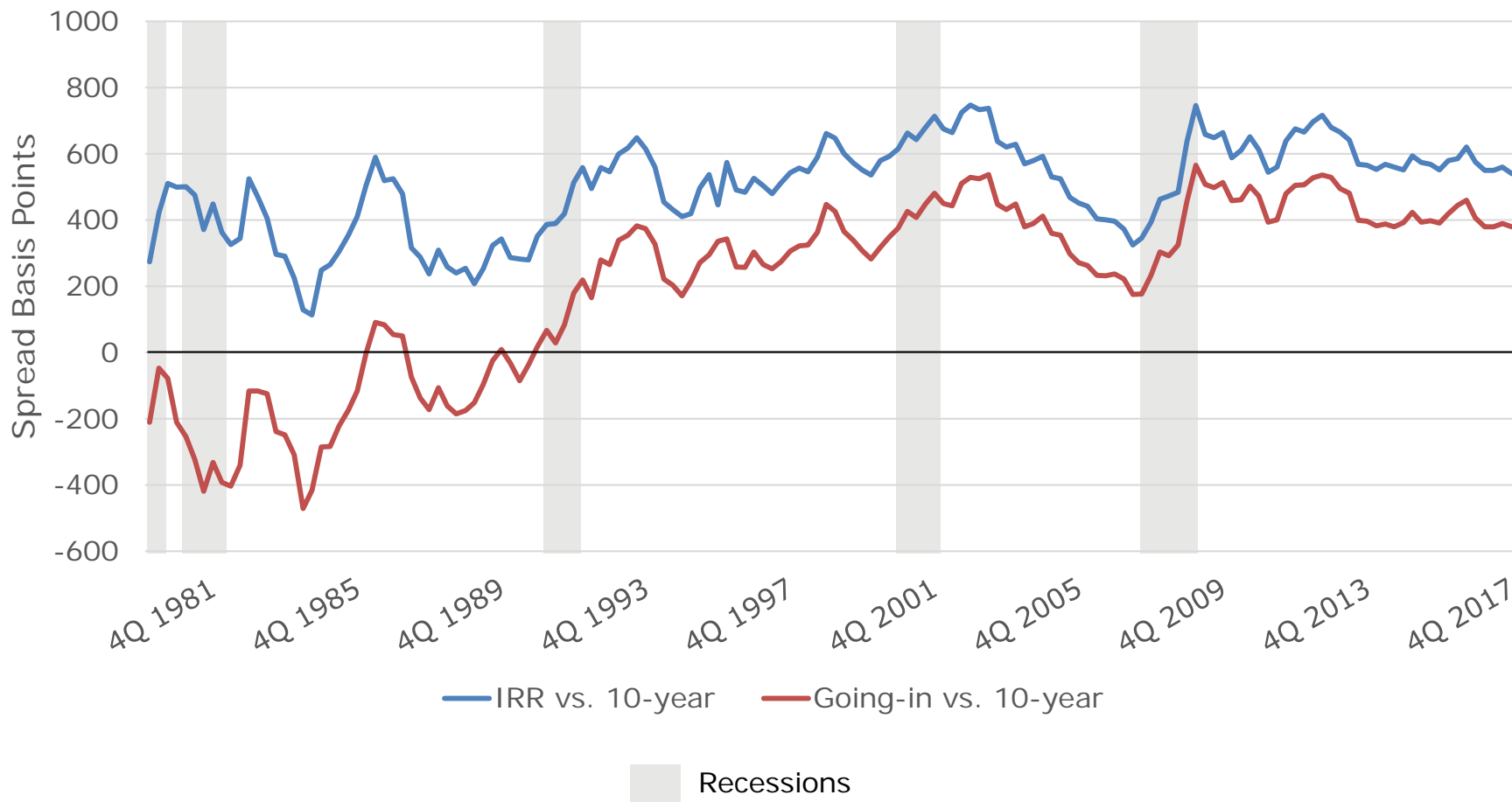
Note: 10-year Treasury data are based on quarterly averages.
Source: Federal Reserve, current as of December 29, 2017.

Situs RERC Treasury forecast



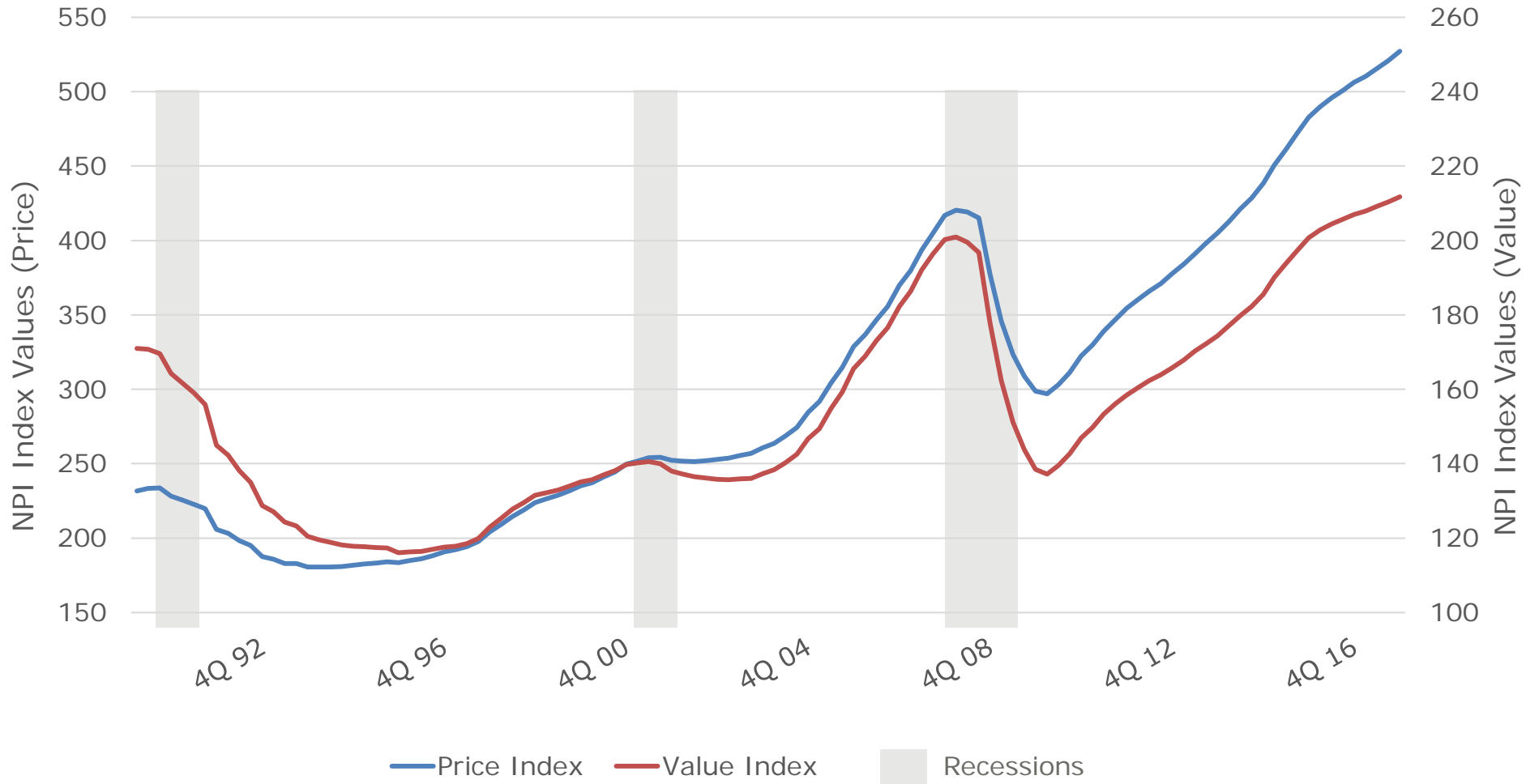
Note: Data based on quarterly average. Shaded area indicates forecast.
Source: Federal Reserve, Situs RERC, 4Q 2017.

Situs RERC rate spreads over 10-year Treasuries



Note: 10-year Treasury data are based on quarterly averages.
Sources: Federal Reserve, Situs RERC, current as of December 29, 2017.

Situs RERC price index¹ & value index²

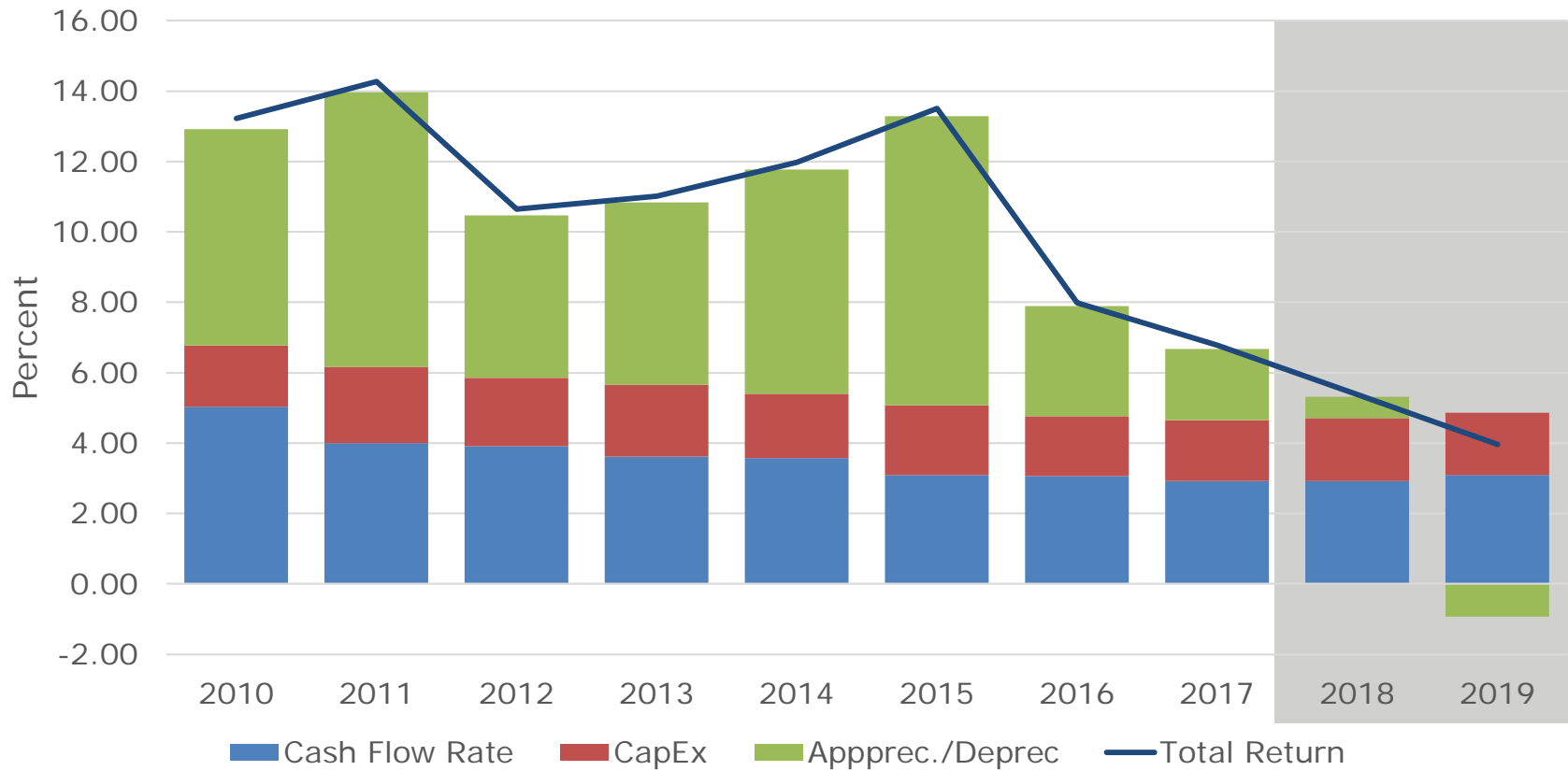


¹ Price index combines capital expenditures and capital returns. Price Index from 1Q 1990 to 4Q 2017 was 127.4%.

²Value index represents capital returns only. Value Index from 1Q 1990 to 4Q 2017 was 23.8%

Sources: NCREIF, Situs RERC, 4Q 2017.

Situs RERC cash flow, capital appreciation, capital expenditures and total return forecasts (base case scenario)



Sources: NCREIF, Situs RERC, 4Q 2017.

Note: These forecasts are Situs RERC's proprietary models based on Situs RERC data and data from the NCREIF Property Index (NPI) and are for unleveraged, institutional-grade properties. The price change is calculated by adding capital expenditures to capital appreciation/depreciation. Shaded area reflects Situs RERC's outlook for the base case scenario for 2018 and 2019.

2018 investment outlook for CRE

Potential strengths

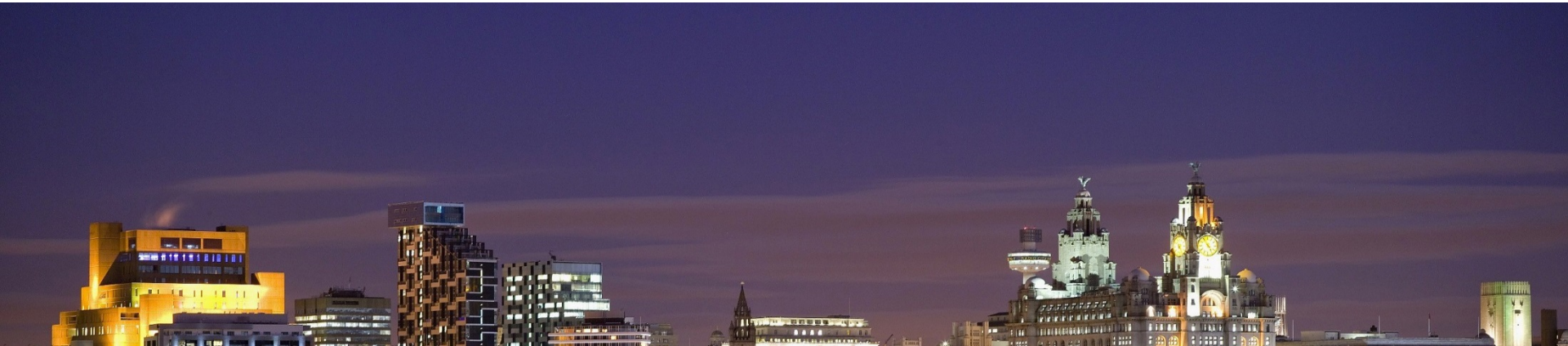
- Stable economy
- High capital availability
- Historically low interest rates
- Attractive spreads
- Steady income returns

Potential challenges

- Dwindling total returns
- Capital appreciation cycle ending
- Cap rates flattening/increasing
- Increase in long-term interest rates
- Disruptors

Property type forecast summary

Property type	Outlook for 2018
Office	<ul style="list-style-type: none">• Stable employment growth will likely boost demand• Demand for Class A properties in prime markets will likely drive up prices• Suburban office will likely outperform CBD on a risk-adjusted return basis
Industrial	<ul style="list-style-type: none">• Growth in e-commerce and domestic manufacturing will likely provide tailwinds• Demand for warehouse space will likely outstrip supply• Prices will likely remain above pre-recession highs
Retail	<ul style="list-style-type: none">• Store closures will likely continue to reduce the oversupply issue in the sector• Mixed-use and entertainment-driven redevelopments will likely buoy the mall sector• Cap rates are expected to remain stable or slightly increase
Apartment	<ul style="list-style-type: none">• New supply and increasing homeownership rates will likely provide headwinds• Fundamentals will likely cool• Relative to other property types, favorable volume and pricing will likely help maintain investor appetite
Hotel	<ul style="list-style-type: none">• Demand expected to outpace supply• ADR growth will likely stagnate• Cap rates will likely increase



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OPERF Real Estate Annual Review & 2018 Plan

March 14, 2018



Oregon State Treasury

PCA

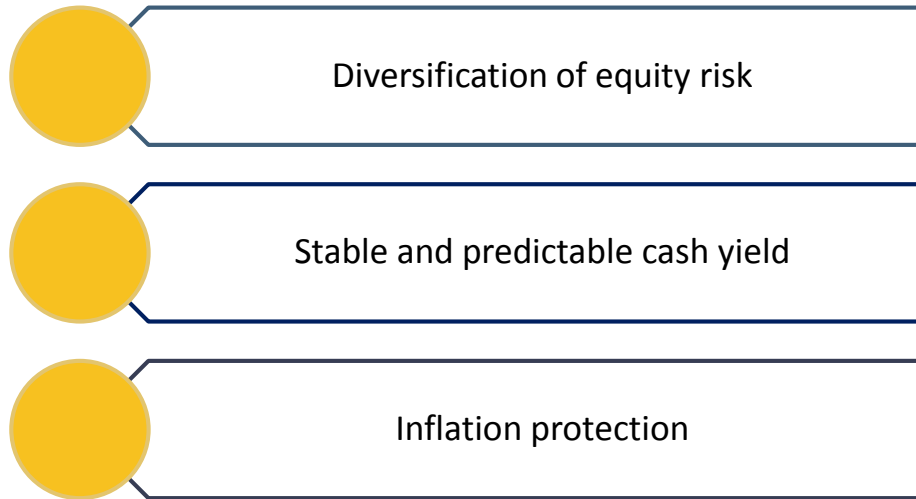
PENSION
CONSULTING
ALLIANCE

OPERF Real Estate Annual Review & 2018 Plan - Agenda

- ▶ **Preface – Page 3**
- ▶ **Executive Summary & Consultant Observations – Page 4**
- ▶ **Investment Environment – Pages 5-6**
- ▶ **OPERF 2017 Real Estate Year In Review – Pages 7-11**
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- ▶ **OPERF Real Estate Portfolio Update – Pages 15-20**
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 - ▶ Portfolio Construction – Pages 16-20
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Preface

▶ **OPERF's role for real estate is to provide:**



▶ **Benchmark:**

- ▶ National Council of Real Estate Fiduciaries – Open End Diversified Core Equity Index (NCREIF-ODCE) + 50 bps

Executive Summary & Consultant Observations

▶ **Investment Environment**

- ▶ Property supply and demand in balance. Global search for yield continues.

▶ **2017 Year In Review**

- ▶ On-track with reshaping portfolio to focus on durable cash flows. Revising select investment mandates and terminating non-strategic accounts.

▶ **Performance Review**

- ▶ Prior overweight to value-add and opportunistic funds, coupled with ex-US REITs, impaired long-term performance. Core portfolio has consistently outperformed through all time periods.

▶ **Portfolio Update**

- ▶ Shifted to greater reliance on core, strategic, and scalable partnerships designed to deliver across market cycles. Less dependence on closed-ended partnerships, market timing and cyclical strategies.

▶ **2018 Plan**

- ▶ Continued focus on enhanced reporting, analytics and due diligence. Implement portfolio construction to optimize manager relationships, minimize fees, and maximize GP-LP alignment.

▶ **Consultant Observations**

- ▶ The past year has seen further implementation of core strategies consistent with real estate's revised role within OPERF.
- ▶ The portfolio is producing returns in-line with its benchmark, with the core portfolio consistently outperforming and generating strong income returns.
- ▶ Risk within the portfolio is being reduced and new risk metrics are being implemented for enhanced portfolio monitoring.
- ▶ Income, which can be used to pay benefits, is becoming more predictable.

Investment Environment

▶ Pricing

- ▶ With a continued global search for yield, high quality real estate with strong cash flow visibility has seen competitive bidding and strong pricing, which is expected to continue in 2018.

▶ Equity Returns

- ▶ With a 7.62% annualized return for the NFI-ODCE, down from 8.77% in 2016 and 15.02% in 2015, core real estate showed signs of plateauing in 2017 while 2018 return expectations are in-line with historic norms of 6.0-8.0%.
- ▶ Appreciation has moderated, with all property types and geographic regions demonstrating relatively flat returns during Q4 2017.
- ▶ Predominant focus for go-forward returns is income (NOI) growth (i.e., a shift from yield compression to income growth).
- ▶ Opportunities for core outperformance require a higher component of active management and operational skillsets (e.g., retail repositioning in urban areas, cap-ex improvements to office, multifamily development, medical office & niche strategies).

▶ Capital Markets Update

- ▶ Throughout 2017, core cap rates spreads over 10-year Treasuries remained in-line relative to long-term averages. With the fundamental drivers of return (supply & demand) and the general economic outlook balanced, coupled with moderated return expectations, the real estate asset class appears fairly priced.
- ▶ Capital market activity saw a slight plateau in deal volume in 2H 2017, although plenty of capital allocated to the asset class remains “on the sidelines.”
- ▶ Lending standards have remained conservative and financing costs for equity borrowers remain accretive relative to property debt yields.

▶ General Industry Update

- ▶ Technology – real estate operators must maintain a vigilant eye on functional obsolescence and tenants’ rapidly changing space utilization demands (e.g., last mile logistics, changing consumer behavior, online disruptors for retail, creative space for office, etc.).
- ▶ Fundamentals – remain primarily strong, with supply in-check in most major markets, and continued demand drivers intact from economic growth sector (i.e., TAMI - Technology, Advertising, Media and Information) tenants.

Fundamentals remain solid, absolute yields are historically low, and returns have moderated to historic averages

Investment Environment

▶ Headwinds

- ▶ Property yields (cap rates) historically low on an absolute basis
- ▶ Opportunistic returns challenging to find in scale and without significant leverage

▶ Tailwinds

- ▶ Favorable supply/demand fundamentals
- ▶ Economic growth
- ▶ Conservative lending standards

▶ Institutional Real Estate Allocations Monitor⁽¹⁾

Survey of 244 global, national and regional institutional investors in 28 countries, with combined assets under management of more than \$11.5 trillion and total real estate assets of about \$1.1 trillion:







- ▶ Target allocations to real estate now stand at an average of 10.1%, up 20 bps from 2016 and up about 120 bps since first survey conducted in 2013;
- ▶ Respondents indicated target allocations would increase over next 12 months, by an average of 20 bps to 10.3%;
- ▶ 44% of investors now have target allocations to real estate of more than 10%, up from 18% and 27% in 2015 and 2016, respectively; and
- ▶ Investors remain under allocated against target allocations -- on average, investors have 9.1% of assets invested (against 10.1% average allocation).

(1) *Fifth Annual Institutional Real Estate Allocations Monitor* by Hodes Weill & Associates and Cornell University Baker Program in Real Estate.

Institutional investors continue to increase commercial real estate allocations leading to a capital plethora and competitive pricing

OPERF Real Estate 2017 Year in Review

2017 OST Real Estate Initiatives

-  **1. Create ODCE (Benchmark) Portfolio**
 - ▶ Compared and “landscaped” 24-fund index – resulted in aggregate commitments of \$800M to four new ODCE Funds.
-  **2. Reduce allocation to Public REITs**
 - ▶ Reduced REIT exposures by ~ \$1.5bn (20% to 5%).
 - ▶ Terminated ex-U.S. mandates, and downsized domestic exposure to a 5% allocation.
-  **3. OIC approved revised role for REIT allocation**
 - ▶ REIT role now a portfolio diversifier.
 - ▶ Renegotiated and customized LaSalle mandate to “niche” RE exposures not easily replicated in private portfolio.
-  **4. On-boarded separate account valuation service provider for improved reporting/attribution**
 - ▶ After competitive review process, selected Situs-RERC.
 - ▶ Completed valuation services onboarding for year-end, third party separate account appraisals.
 - ▶ Separate account attribution and performance reporting on track to begin Q2 2018.
-  **5. Continue to pursue enhancements to due diligence and monitoring processes**
 - ▶ Extend due diligence process enhancements achieved in 2016.
 - ▶ Achieve zero “dead deal” costs with PCA-OST concurrent underwriting.
-  **6. Improve real estate reporting capabilities via augmented PrivateEdge reporting**
 - ▶ Review capabilities and reporting interface options for peer group comparison and performance attribution on commingled, closed-end investments (e.g., NCREIF Closed End Index, Burgiss, etc.).

OPERF Real Estate 2017 Year in Review

▶ Investment Activity

- ▶ 2017 investment activity comprised the following:
 - ▶ **BENCHMARK PORTFOLIO** – Four investments from the portfolio benchmark were approved, totaling \$800 million in commitments.
 - ▶ **REIT RESTRUCTURING** – Public REIT separate account allocations were reduced to 5% and renegotiated and customized to provide enhanced diversification consistent with revised policy mandate.
 - ▶ **NON-STRATEGIC TERMINATIONS** – Three separate accounts, two ex-U.S. REITs and one commercial real estate debt mandate were terminated.

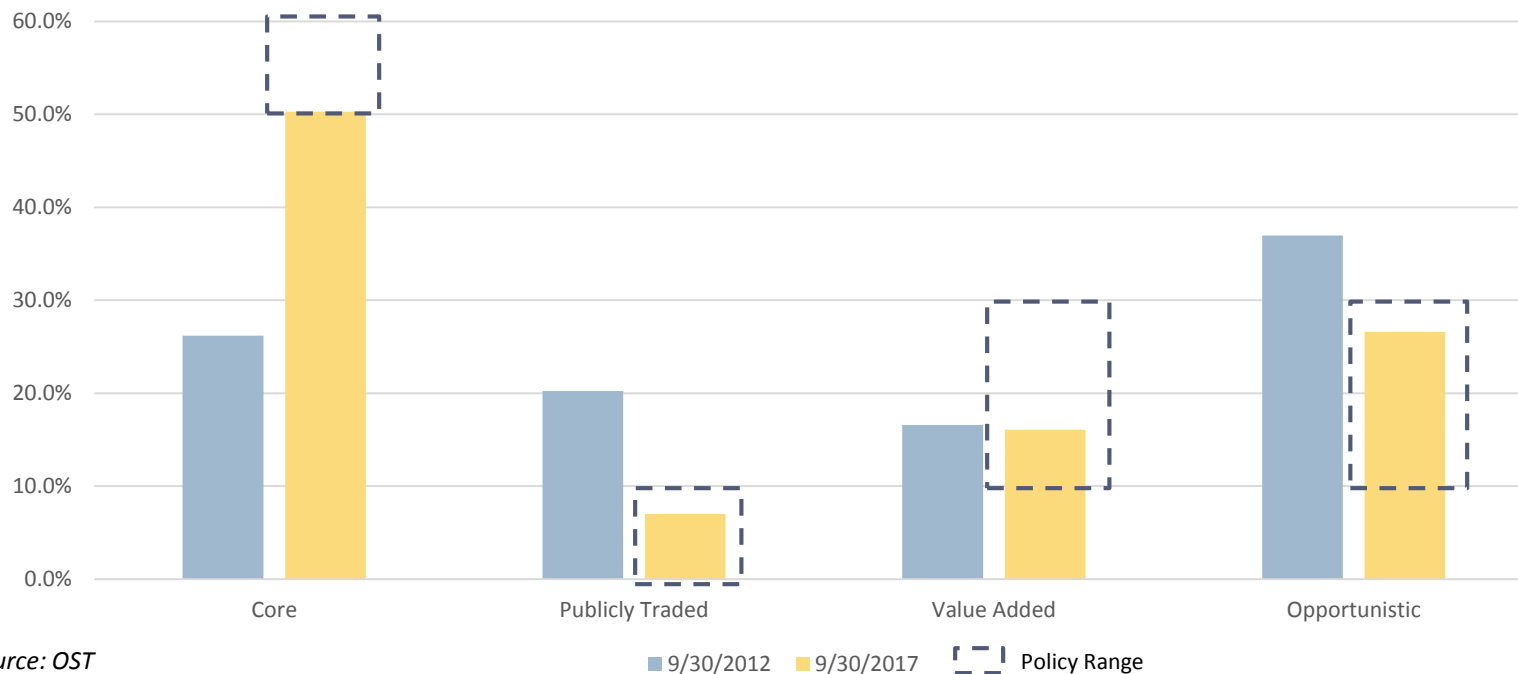
FUND NAME	STRATEGY	SUB-PORTFOLIO	GEOGRAPHY	COMMITMENT	Funding Status
				(\$ MM)	
JP Morgan Strategic Property Fund	Diversified	Core (ODCE)	Domestic	250	Funded
Morgan Stanley Prime Property Fund	Diversified	Core (ODCE)	Domestic	250	Unfunded
Heitman American Realty Trust	Diversified	Core (ODCE)	Domestic	150	Unfunded
ASB Allegiance Fund	Diversified	Core (ODCE)	Domestic	150	Funded Dec 2017
NEW COMMITMENTS SUB-TOTAL				800	
LaSalle Separate Account (Amended)	Separate Account	Public REITs	Domestic	(850)	Partially Liquidated
EII Separate Account	Separate Account	Public REITs	Ex-US	(80)	Liquidated
Morgan Stanley Separate Account	Separate Account	Public REITs	Ex-US	(421)	Liquidated
Talmage Separate Account	Separate Account	Credit (CMBS/CDOs)	Domestic	(430)	Liquidated Jan 2018
TERMINATIONS / AMENDMENTS SUB-TOTAL				(1,781)	

Source: OST

OPERF Real Estate 2017 Year in Review

▶ Portfolio Construction: Five-year (2012-2017) history of strategy evolution

- ▶ **CORE** – Over the past five years, the Core allocation increased from 26% to 50% of NAV as of 9/30/17. Core allocation projected to increase to 54% once \$550 MM of unfunded ODCE Core commitments are funded.
- ▶ **REIT RESTRUCTURING** – REITS reduced from 20% to 7% of NAV. Terminated three separate accounts, two ex-U.S. REITS and one commercial real estate debt mandate. Remaining REIT mandates renegotiated and further customized to provide enhanced diversification in accordance with revised policy mandate.
- ▶ **OPPORTUNISTIC** – Allocation to Opportunistic reduced from 37% to 27% with additional reductions planned as re-ups with non-strategic partnerships are not pursued.



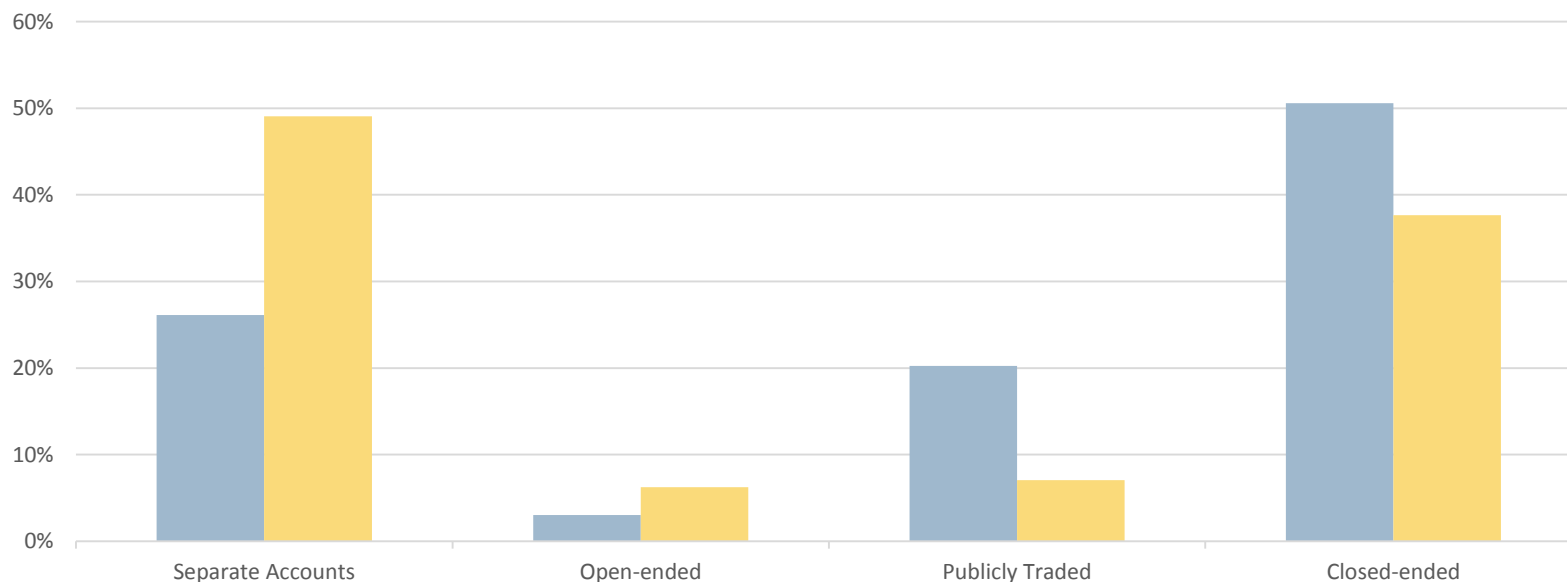
Source: OST

■ 9/30/2012 ■ 9/30/2017 - - - Policy Range

OPERF Real Estate 2017 Year in Review

▶ **Portfolio Construction: Five-year (2012-2017) history of policy evolution**

- ↑ ▶ **SEPARATE ACCOUNTS** – Renewed focus on long-term, strategic partnerships with greater ability to tailor investment mandates, control exposures and create GP-LP alignment with OPERF program goals.
- ↑ ▶ **OPEN-ENDED FUNDS** – Provide greater liquidity and access to high-quality, low-levered assets with reduced structural inefficiencies (i.e., no “timing window” for debt/equity management). This specific allocation increases from 6% to 12% upon funding of already-approved ODCE Core commitments.
- ↓ ▶ **PUBLIC EQUITY** – While public REITs may provide long-term Core exposure, they exhibit elevated volatility over short-term (i.e., 5 years or less) time horizons.
- ↓ ▶ **CLOSED-ENDED FUNDS** – Reducing allocation due to pro-cyclical market timing correlation, lower capital pacing control and higher-vol asset exposures.



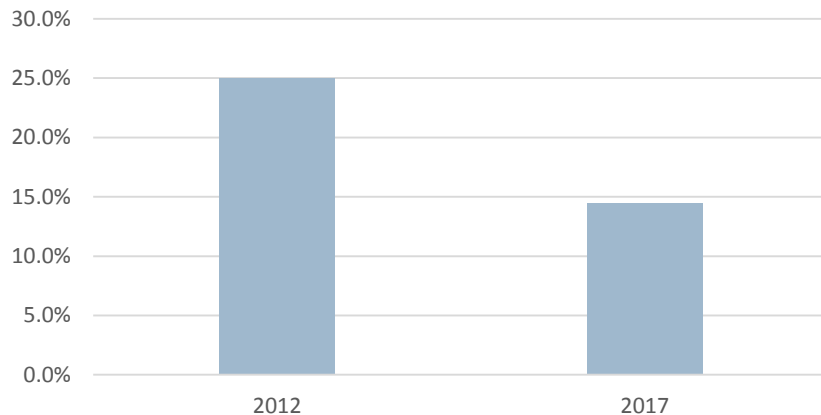
Source: OST

■ 9/30/2012 ■ 9/30/2017

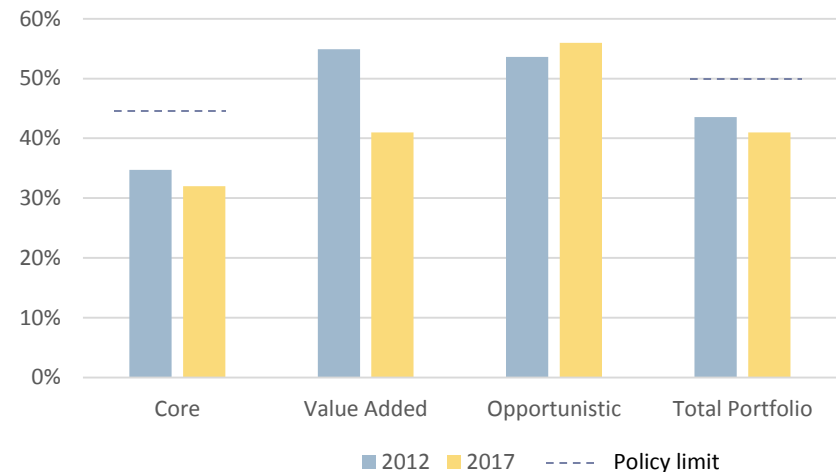
OPERF 2017 Real Estate Year in Review

- ▶ **Portfolio Construction: Five-year (2012-2017) history of risk profile evolution**
 - ▶ **International Exposure** – Over the past five years, reduced international exposure from 25% to less than 15%.
 - ▶ **Debt** – Loan-to-Value ratios have decreased across the portfolio and are lower than policy mandates, which were revised downward 500 bps in 2016.

International Exposure



Loan-to-Value Ratios



OPERF Real Estate Performance Review

Private Real Estate		Quarter (Q3 2017)	1-Year	3-Year	5-Year	10-Year	Since Inception
Core	Income	1.2%	5.0%	5.0%	5.3%	6.0%	7.2%
	Appreciation	0.7%	9.9%	8.9%	7.7%	1.0%	2.8%
	Total	1.9%	15.2%	14.2%	13.3%	7.1%	10.2%
Value-Add	Income	0.4%	2.0%	3.2%	3.7%	0.4%	0.9%
	Appreciation	2.2%	8.3%	14.4%	11.4%	2.3%	3.5%
	Total	2.6%	10.5%	15.9%	15.4%	2.3%	4.0%
Opportunistic	Income	1.2%	4.0%	3.3%	3.3%	1.8%	-0.1%
	Appreciation	0.1%	2.2%	1.7%	5.6%	1.3%	11.6%
	Total	1.3%	6.3%	5.0%	9.0%	3.0%	11.7%
Total Private Real Estate	Total	1.9%	11.2%	11.3%	12.3%	5.1%	10.8%
Public Real Estate	Total	0.5%	-5.7%	6.3%	7.7%	4.6%	10.8%
NAREIT Index		1.1%	2.6%	10.2%	10.0%	6.1%	
Excess Returns		-0.6%	-8.3%	-3.9%	-2.3%	-1.5%	
Total Portfolio	Income	0.0%	3.8%	3.9%	4.0%	3.3%	4.9%
	Appreciation	1.6%	3.9%	5.9%	7.0%	1.7%	5.6%
	Total	1.6%	7.9%	9.9%	11.1%	5.0%	10.7%
NCREIF Property Index (NPI)		1.7%	6.9%	9.8%	10.3%	6.2%	
NFI-ODCE, Net + 50 bps¹		1.8%	7.2%	10.3%	11.1%	6.1%	
Under/Over Performance¹		-0.1%	0.7%	-0.4%	0.0%	-1.1%	

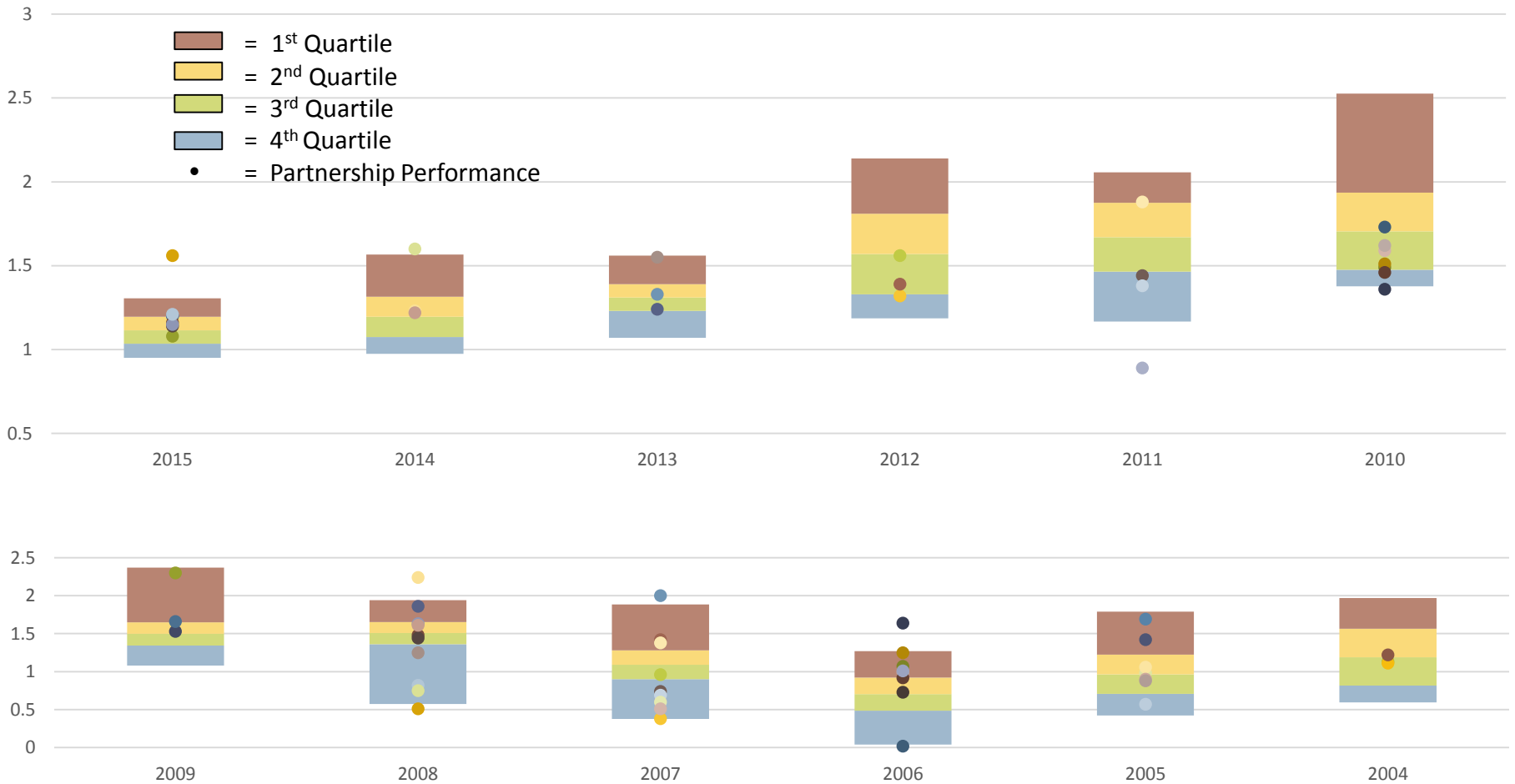
¹ Excess returns are compared to the NFI-ODCE + 50 bps benchmark, which became effective April 1, 2016. Prior to that change, the portfolio benchmark was the NCREIF Property Index.

- ▶ Core – produced consistent income returns and strong total returns across all periods.
- ▶ Value Added & Opportunistic – underperformed over the 10-year period, which includes the 2008 GFC and subsequent market recovery.
- ▶ Public Real Estate – underperformed, primarily due to the ex-U.S. REIT allocation.

Source: PCA, OST and SSB.

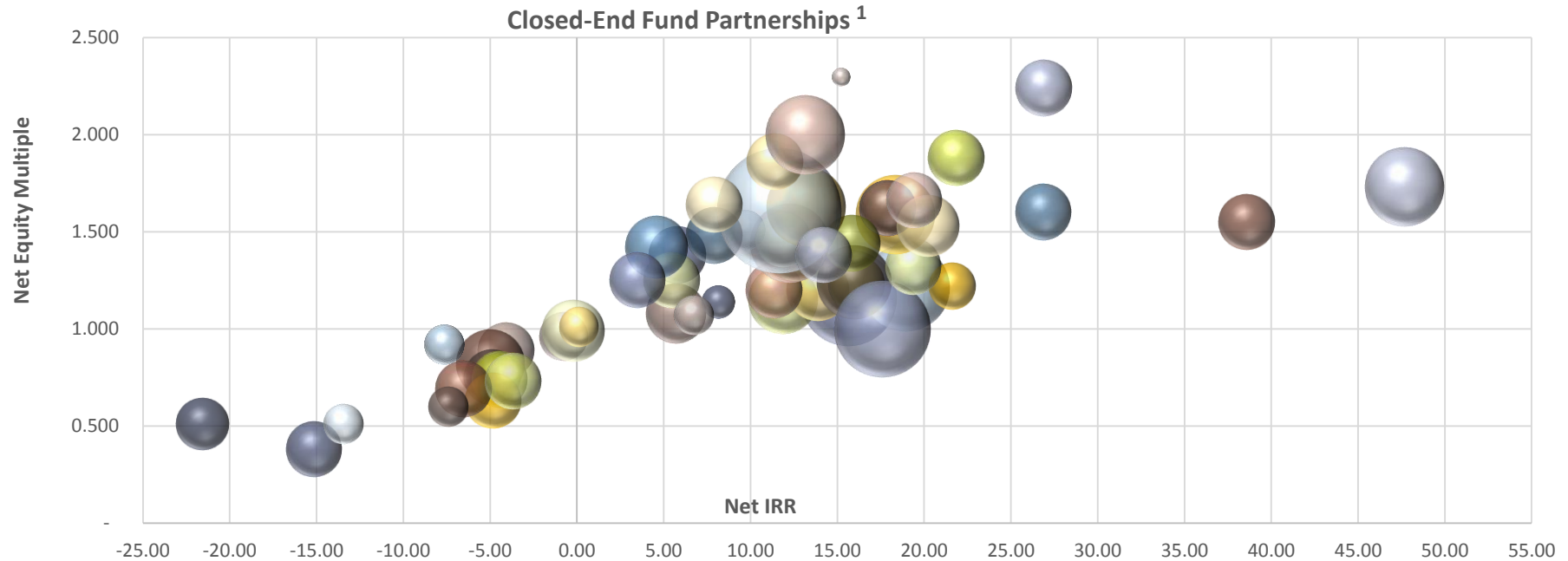
OPERF Real Estate Performance Review

2015 - 2004 Equity Multiple vs. Burgiss Universe as of September 30, 2017

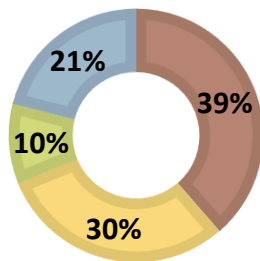


Source: Burgiss, PCA and SSB.

OPERF Real Estate 10-Year Peer Ranking Analysis



2006-2015 PERCENTAGE OF COMMITMENTS VS. BURGISS



■ Total First Quartile ■ Total Second Quartile
■ Total Third Quartile ■ Total Fourth Quartile

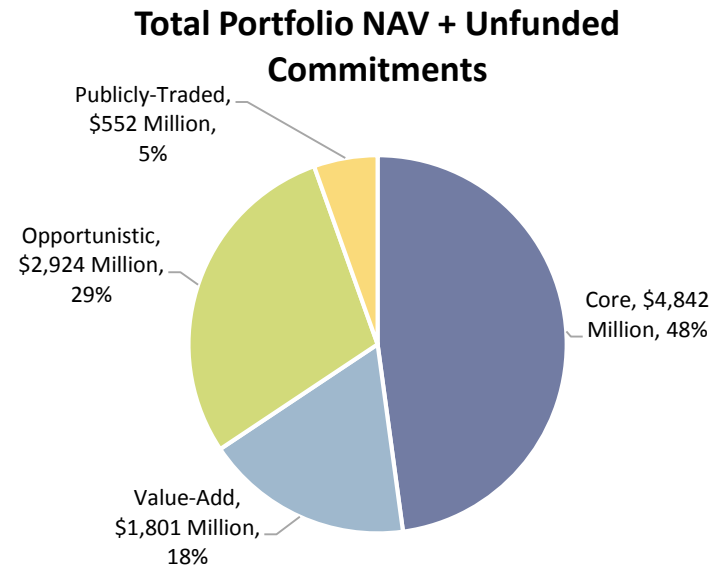
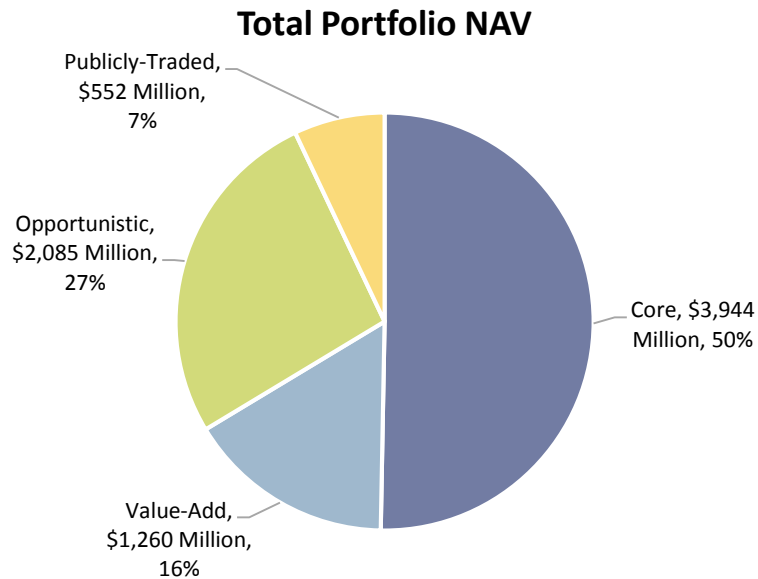
- ▶ Peer ranking analysis shows a majority of OPERF real estate capital (69%) invested in 1st and 2nd quartile funds during the 10-year period analyzed by PCA.
- ▶ Large commitments to Lone Star represent about half of the first quartile commitment percentage and about a third of the second quartile commitment percentage.
- ▶ 3rd and 4th quartile funds are predominantly older vintages (2010 and older).

¹ Some partnerships were excluded from the bubble chart as net IRR outliers. Bubbles sized relative to original commitment. Quartile rankings relative to the Burgiss peer universe. Net IRRs as of September 30, 2017. Percentage committed by quartile based on total dollars committed during the 10-year period.

OPERF Real Estate Portfolio Update

Total Real Estate Portfolio ¹	
Current Portfolio Net Asset Value	\$7.8 Billion
Current Unfunded Investment Commitments	\$2.3 Billion
Total Portfolio NAV plus Unfunded Commitments	\$10.1 Billion
Target Allocation to Real Estate	\$9.4 Billion
Total Number of Investments	83

Strategy Diversification



¹ As reported in State Street OPERF Real Estate Report at Q3 2017.

Source: OST, SSB.

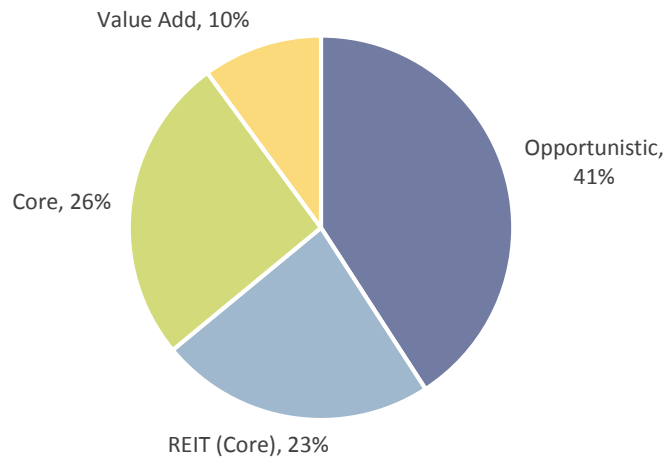


OPERF Real Estate Portfolio Update

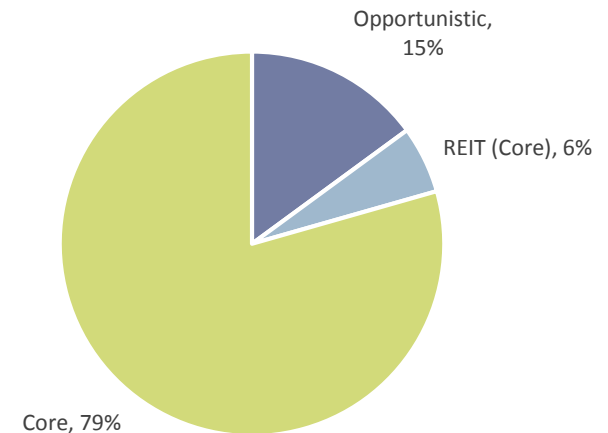
▶ Manager Diversification

- ▶ Five-year comparison (2012-2017)
 - ▶ Top ten manager relationships approximately same proportion of portfolio
 - ▶ 2012: 62% of portfolio NAV
 - ▶ 2017: 61% of portfolio NAV
- ▶ However.....
 - ▶ Strategy and exposures significantly shifted toward lower risk, less volatile strategies (i.e., Core).

Top 10 Managers Q4 2012



Top 10 Managers Q4 2017



Source: OST, SSB.

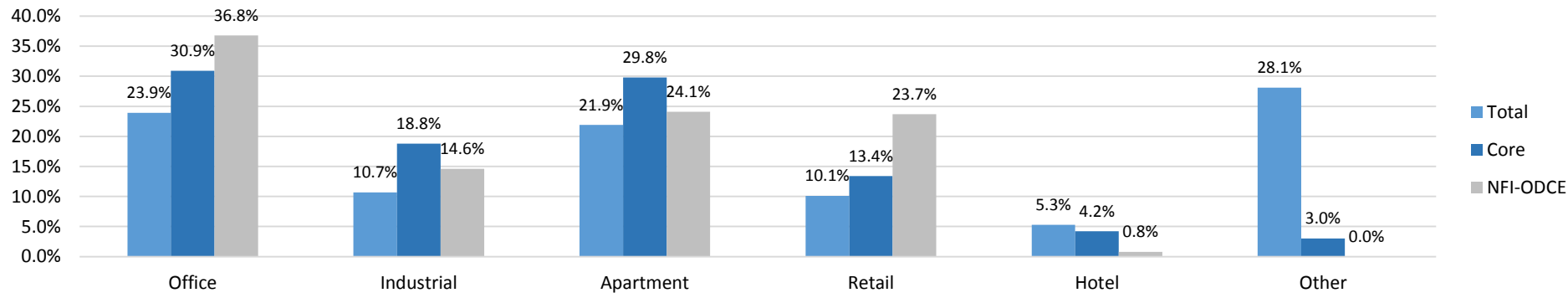


OPERF Real Estate Portfolio Update

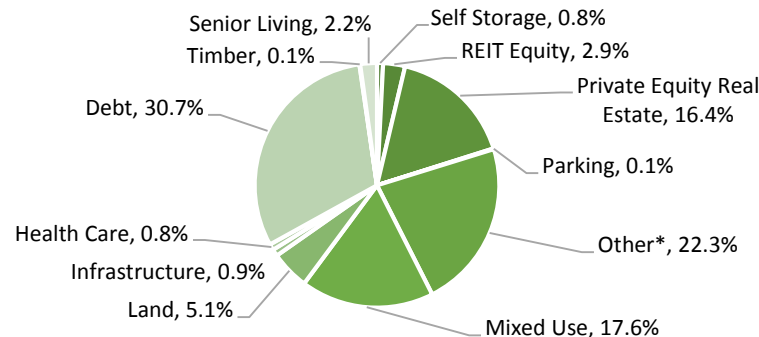
▶ Property Type Diversification – OPERF vs. ODCE

- ▶ Data below as of September 30, 2017 and does not include 2H non-strategic terminations (e.g., CMBS separate account), which accounted for much of the portfolio’s “Other” and “Hotel” exposures.
- ▶ Non-inclusive of \$550M in unfunded ODCE commitments made since June 30, 2017.
- ▶ Core diversification in-line with ODCE with intentional underweight to office and overweight to industrial and apartments.

Total Portfolio Property Type Diversification - as of September 30, 2017



Allocation to Other



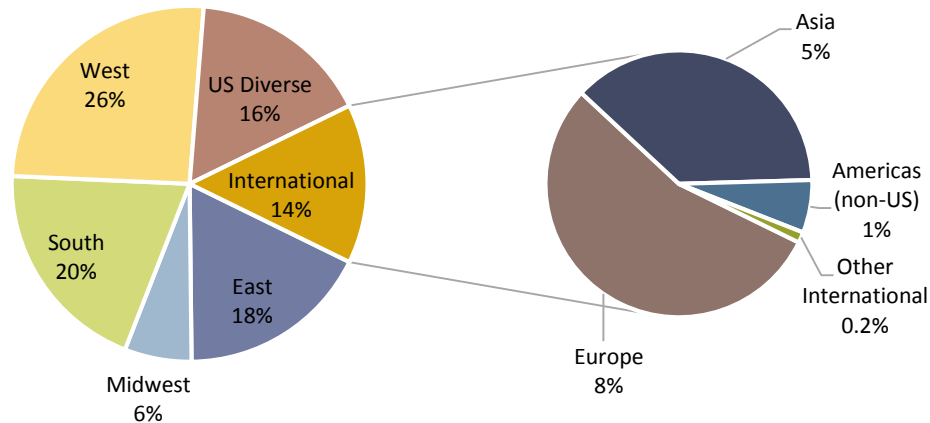
* In most cases, “Other” property type classifications are due to insufficient reporting disclosure.

Source: OST, SSB.

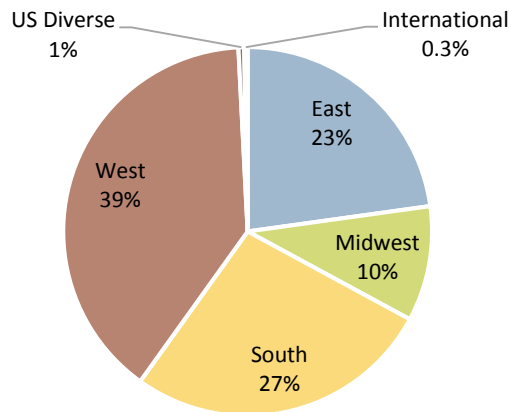
OPERF Real Estate Portfolio Update

▶ Geographic Diversification – Total Portfolio

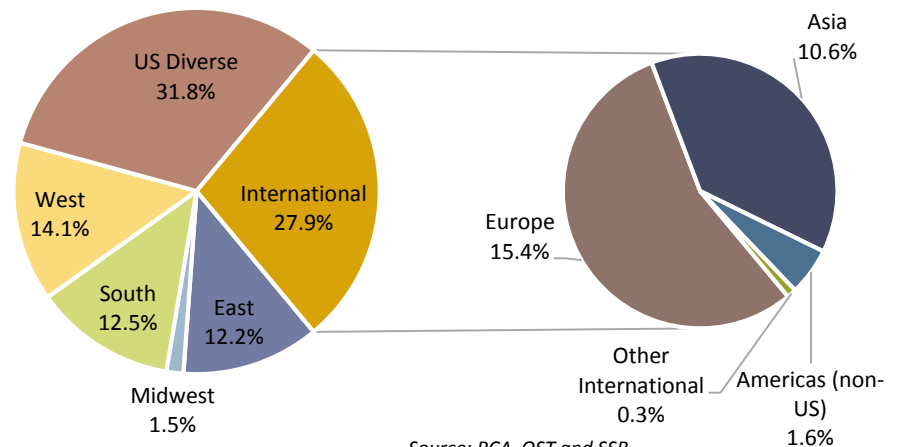
Total Portfolio



Core



Value-Add & Opportunistic



* As reported in State Street OPERF Real Estate Report at Q3 2017.

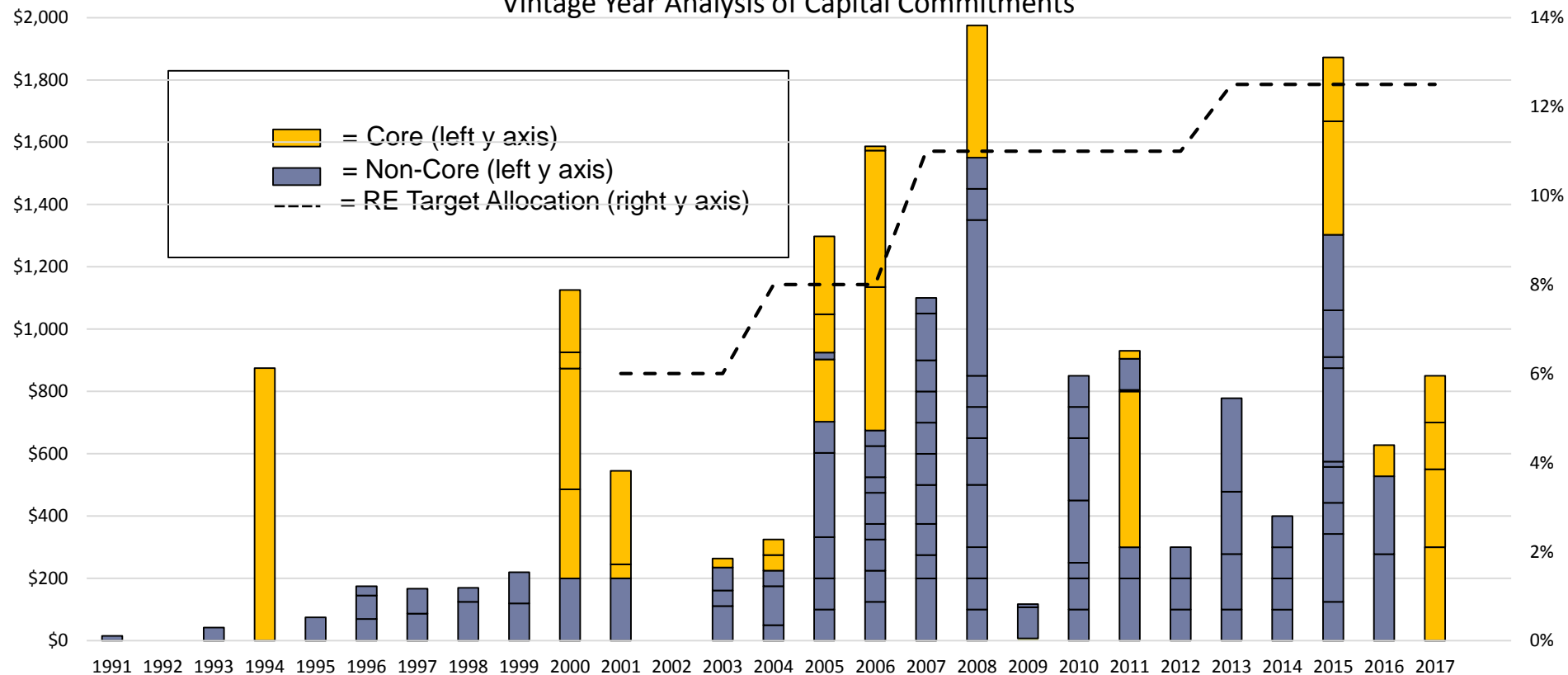
Source: PCA, OST and SSB.

OPERF Real Estate Portfolio Update

▶ Vintage Year Analysis of Capital Commitments

- ▶ Early years had greater focus on Core commitments.
- ▶ With advent of opportunistic real estate strategies in late 1990s, OPERF expanded its opportunistic and value-add allocations in 2005 (reducing core by 20%).

Vintage Year Analysis of Capital Commitments

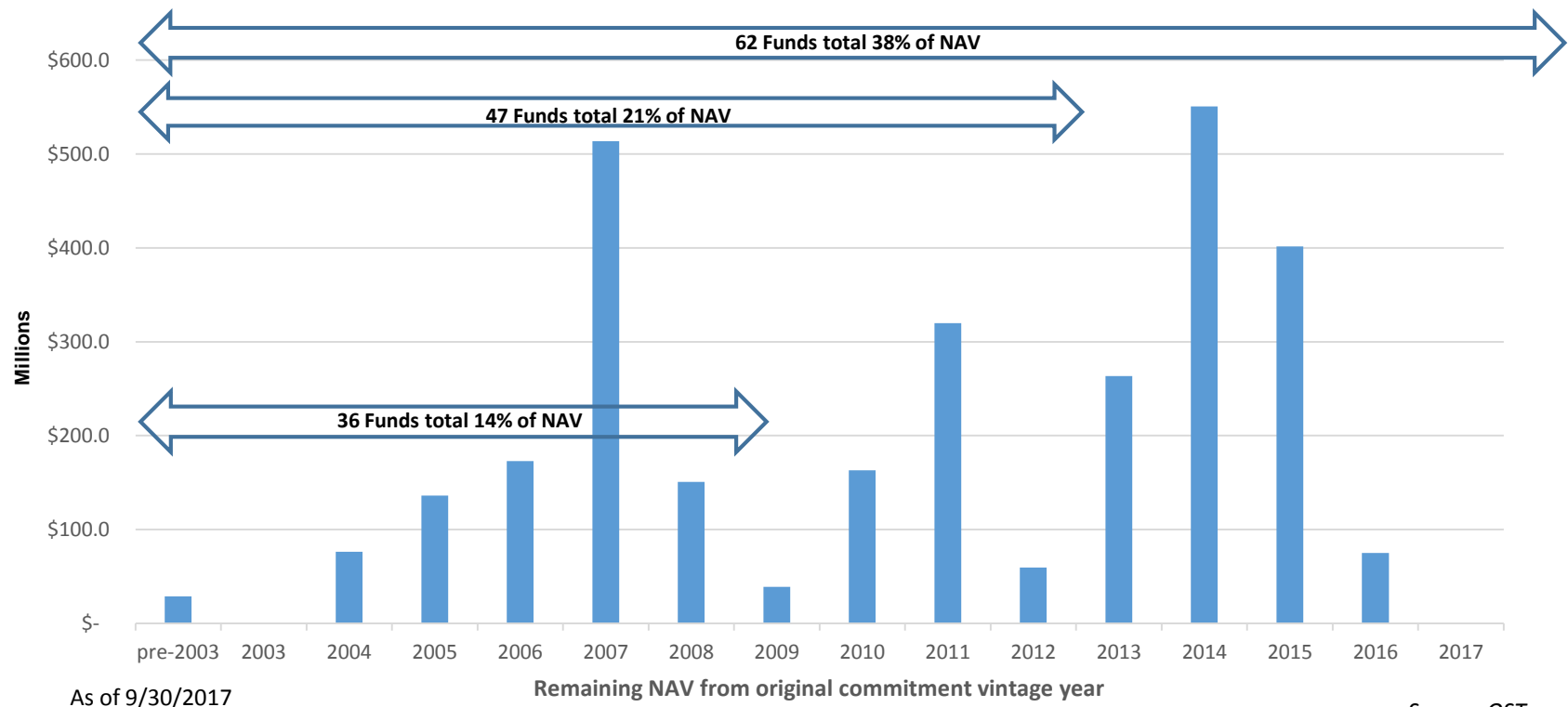


Source: PCA, SSB.

OPERF Real Estate Portfolio Update

▶ **The chart below shows current, *closed-end* portfolio NAV by vintage year commitment**

- ▶ Pre-GFC funds, 36 in total, represent 14% of portfolio NAV – a relatively small “legacy” allocation but with greater tail risk and liquidity challenges.
- ▶ Funds greater than five years old represent 21% of portfolio NAV, though most 2010 and 2011 vintage year investments are now liquidating.

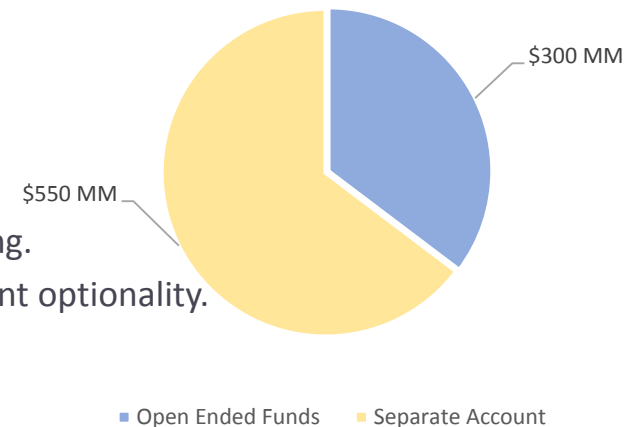


2018 Real Estate Plan

INVESTMENT THEME FOR 2018: Core+ & Value-Add

- ▶ Sourcing and selecting partnerships capable of delivering risk-adjusted outperformance relative to ODCE benchmark.
- ▶ Strategies selected should be capable of performing “through and across cycles” based upon long-term investment thesis (i.e., market timing).
- ▶ Underwriting pacing primarily dictated by OST, not GPs (i.e., not chasing first/final close deadlines, etc.).
- ▶ **Open-Ended Funds**
 - ▶ Emphasis on Core+ funds with sector tilts/concentrations. These strategies may allow for slightly higher leverage, acquisitions requiring partial lease-up or some other execution risks prior to stabilization. Return profile: 60-70% of total return from income vs. 80% for Core.
 - ▶ Niche, sector-specific strategies with proven expertise in higher yielding, diversifying property types such as medical office, student housing, senior living and self-storage.
- ▶ **Tailored Separate Accounts**
 - ▶ Investment mandates specifically tailored to meet OPERF’s strategy needs.
 - ▶ Generally lower fee structures than closed-end fund analogs.
 - ▶ Distribution waterfalls crafted to maximize GP-LP alignment.
 - ▶ Scalable strategies allow staff to retain greater control of capital pacing.
 - ▶ Evergreen term eliminates forced exit and improves asset management optionality.
 - ▶ Enhanced monitoring and asset transparency.
 - ▶ No current focus on opportunistic real estate (lack of scalable market opportunities, unnecessary volatility exposure).

2018 Pacing Projection



2018 Real Estate Plan

▶ **Staff Initiatives**

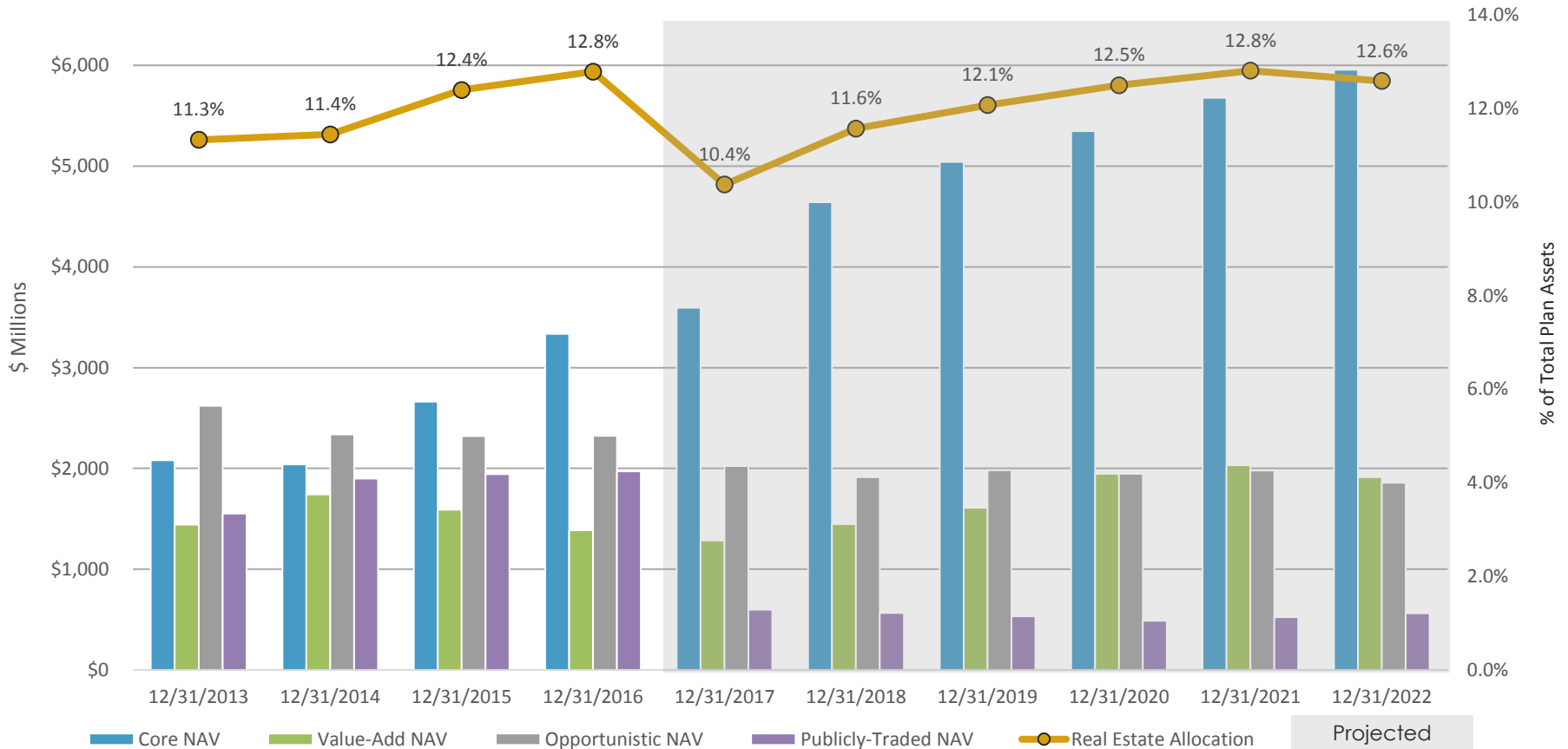
- ▶ MSCI
 - ▶ Incorporate “dashboard” analytics into separate account reviews (manager & asset attribution).
 - ▶ Continue crafting customized ODCE benchmarks for separate account hurdles/gates.
- ▶ Situs-RERC
 - ▶ Finalize onboarding of third party valuation service for separate account performance and attribution reporting.
- ▶ Complete review of industrial/logistics competitive landscape and existing separate account mandate in that space.
- ▶ Conduct non-ODCE Core+ open-ended fund review.
- ▶ Conduct competitive search process, source and underwrite a Core+ separate account.
- ▶ Continue to pursue enhancements to due diligence and monitoring processes:
 - ▶ Build on the ATL due diligence process enhancements achieved to-date; and
 - ▶ Continued integration of Investment Analyst pool in due diligence activities.
- ▶ Staffing – Investment Officer search currently in process with second search scheduled for 2H 2018.

2018 Plan

▶ PACING PROJECTIONS

- ▶ Over the next four years, the pacing plan will continue to shift the OPERF real estate portfolio toward a long-term target of 55% core, 20% value-add, 20% opportunistic, and 5% publicly-traded REITs.

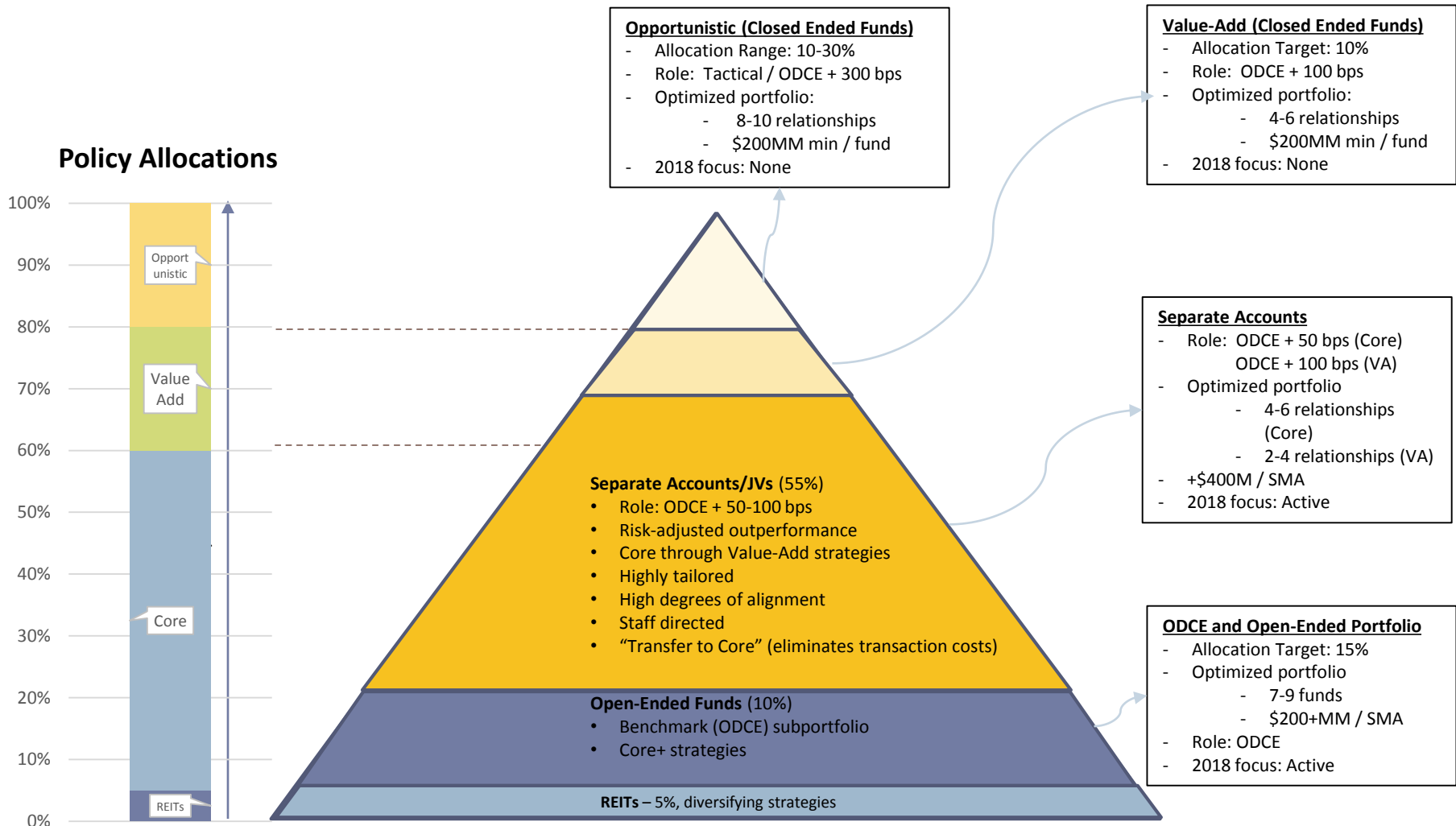
Historical and Projected NAV



Source: PCA, SSB.

OPERF Real Estate Portfolio Vision

► FIVE-YEAR PORTFOLIO CONSTRUCTION PLAN



PCA SWOT Analysis – Real Estate Program

Strengths

- Clear role
- OPERF Brand/access
- Portfolio construction (separate accounts and funds)
 - Increased use of separate accounts and open-end funds creates better alignment of portfolio with role of asset class
 - Substantially more capital in evergreen vehicles
 - Fee efficient
- Strong historical performance of strategic core investments
- OST management team experienced with portfolio

Weaknesses

- Constrained Staff resources
- Outdated separate account agreements
- Historical overweight of capital to poor vintage years.
- Non-strategic commingled fund investments with little control

Opportunities

- Lean into long-term themes
- Further reduce number of partnerships and restructure strategic relationships
- Further improve portfolio management (due diligence, monitoring, portfolio analytics)
- Further de-risk portfolio
- Consider Secondary sale of Legacy investments

Threats

- Market cycle
- Abundant capital in the market
- Technology changes in the manner in which space is consumed by tenants
- Uncertain regulatory environment could lead to bursts of new speculative construction



Conclusion

▶ **PCA Concluding Thoughts**

- ▶ At 10.4% of current OPERF net asset value, the real estate portfolio is within the +/- 300 basis points of its 12.5% strategic allocation target.
- ▶ During the next several years, as codified in OIC policy, real estate portfolio objectives include continued investments in structures and strategies capable of providing diversification from equities, current income and inflation protection.
- ▶ Real estate portfolio returns are in-line with the benchmark, with the Core allocation generating consistent outperformance and strong income returns.
- ▶ Staff is making progress on reducing the number of relationships and focusing on strategic allocations to managers with structures more appropriately aligned with OPERF's interests.
- ▶ Staff is implementing new portfolio analytic techniques, which are expected to yield a better understanding of risk factors and return drivers at both the mandate and portfolio level.

TAB 7 – Q4 2017 Performance & Risk Report

OPERF

OPERF Risk Dashboard

2017 Q4

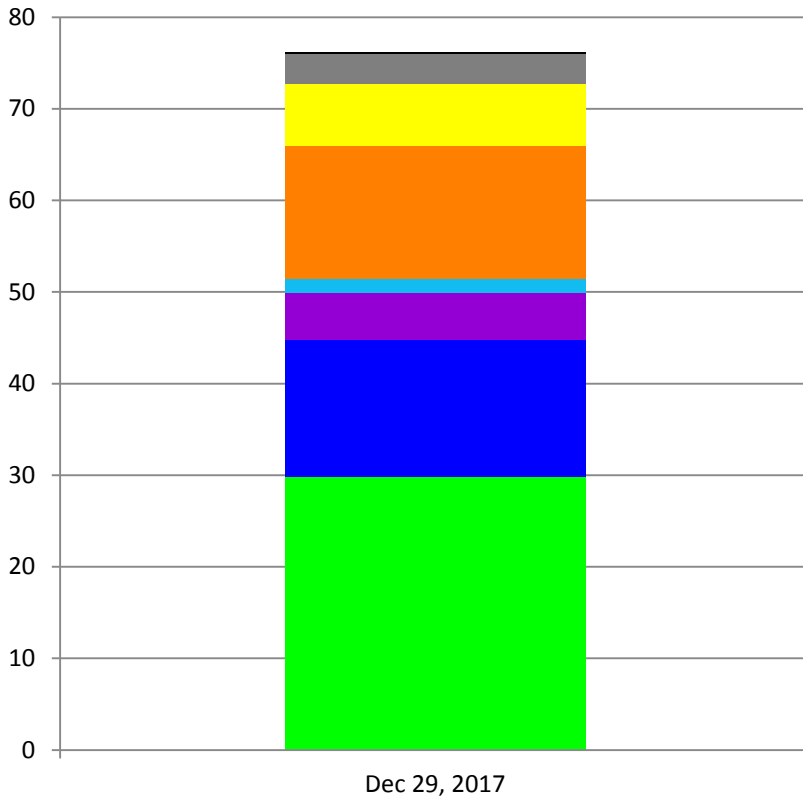
March 14, 2018



Oregon State Treasury

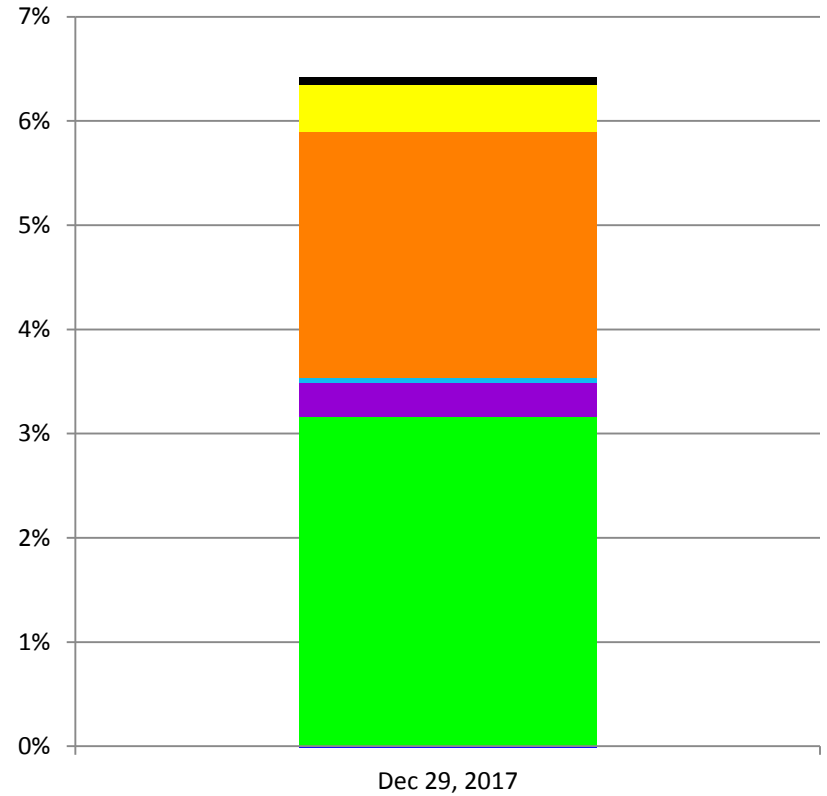
Allocation & Risk Contribution by Asset Class

Allocation in \$B



- Equity
- Fixed Income
- Alternatives Portfolio
- Opportunity Portfolio
- Private Equity
- Real Estate
- Cash
- Overlay

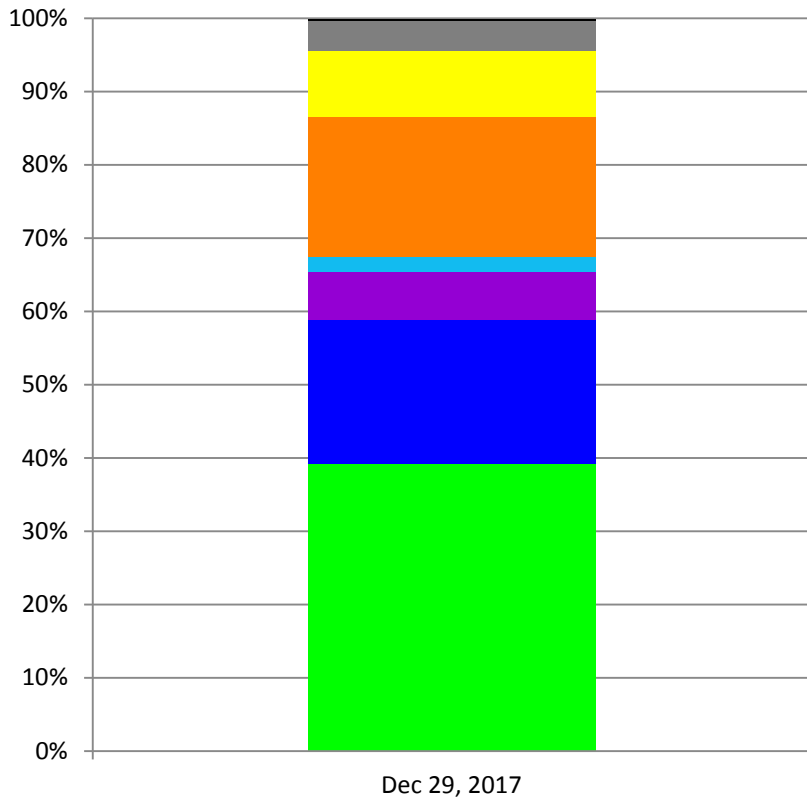
Risk Contribution



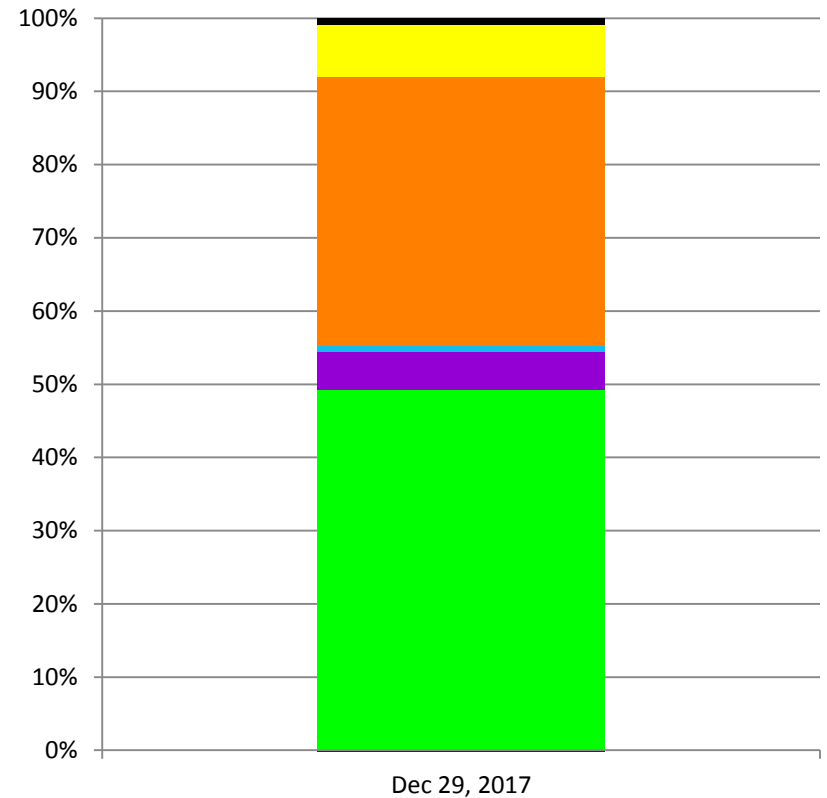
- Equity
- Fixed Income
- Alternatives Portfolio
- Opportunity Portfolio
- Private Equity
- Real Estate
- Cash
- Overlay

Allocation & Risk Contribution by Asset Class

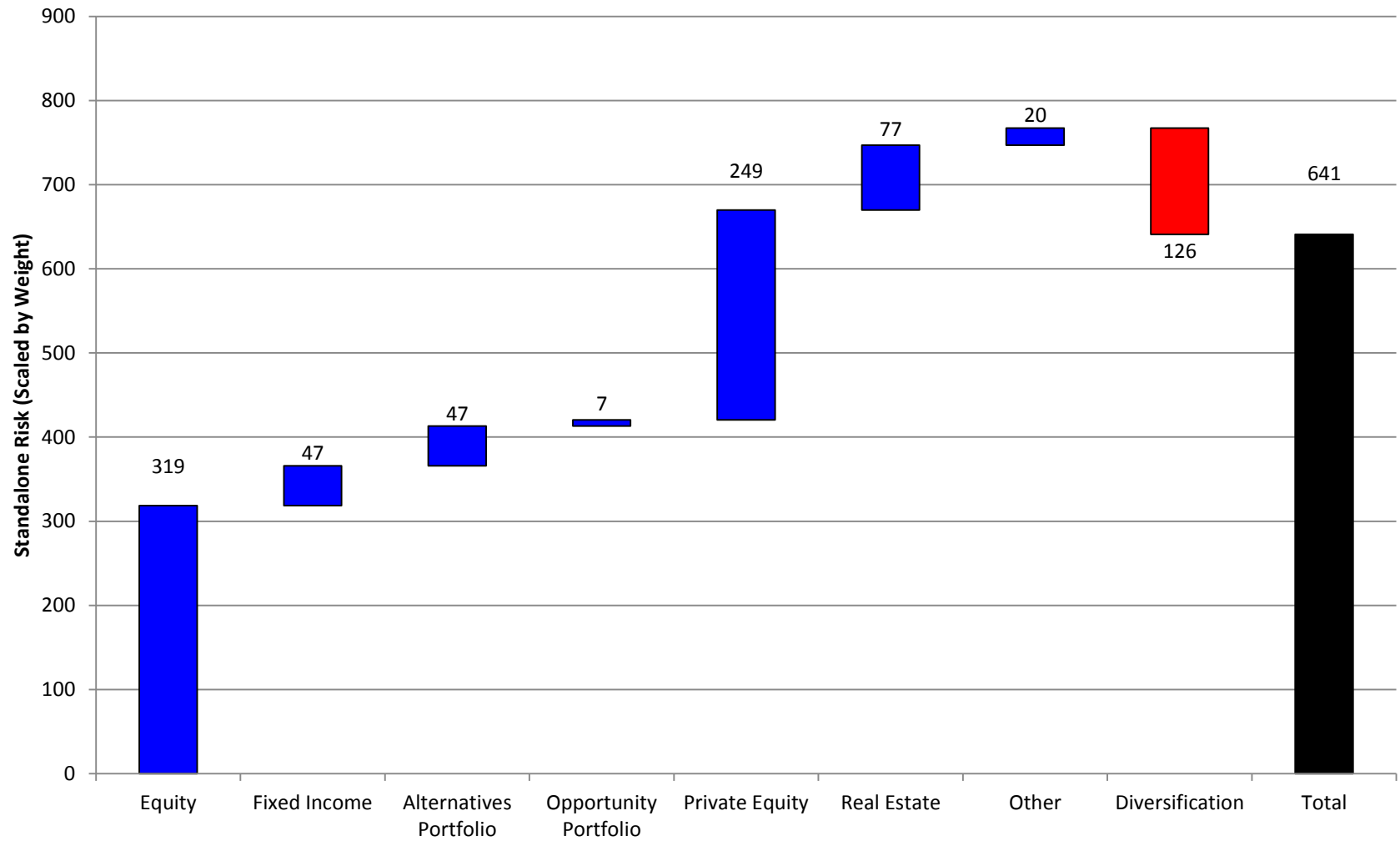
Allocation % of Total



Risk Contribution % of Total

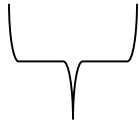


Stand-alone Risk by Asset Class



Correlation Matrix by Asset Class

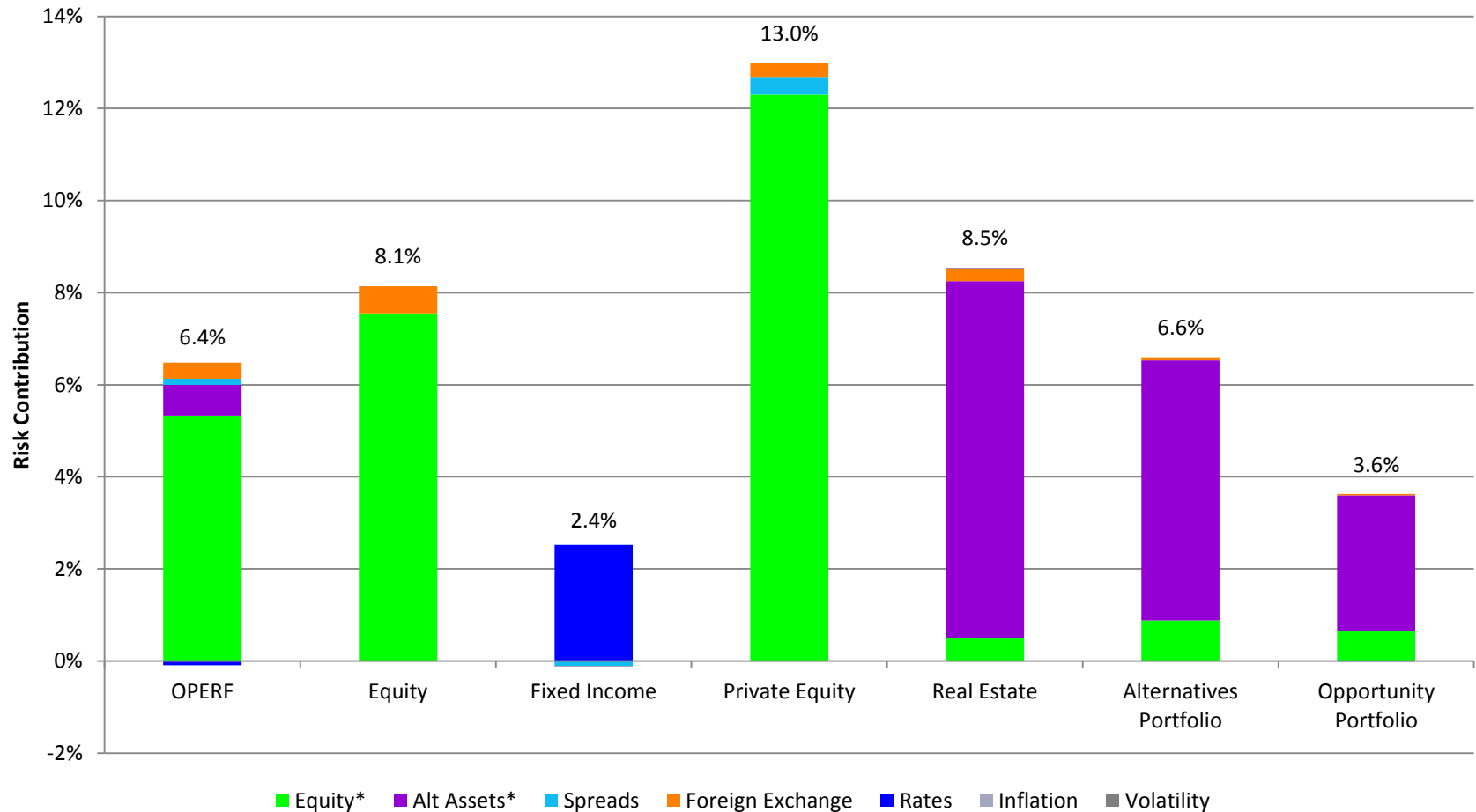
Expected Return	Expected Risk	Predicted Risk ¹	Dec 29, 2017	Equity	Fixed Income	Alternatives Portfolio	Opportunity Portfolio	Private Equity	Real Estate	OPERF
7.1%	19.5%	8.1%	Equity	1.00	-0.13	0.63	0.60	0.90	0.45	0.97
3.0%	3.8%	2.4%	Fixed Income		1.00	0.06	-0.11	-0.23	0.32	-0.03
6.3%	10.6%	6.6%	Alternatives Portfolio			1.00	0.52	0.63	0.41	0.71
		3.6%	Opportunity Portfolio				1.00	0.64	0.28	0.64
9.5%	26.3%	13.0%	Private Equity					1.00	0.39	0.94
6.7%	15.0%	8.5%	Real Estate						1.00	0.57
7.1%	14.1%	6.4%	OPERF							1.00



Capital Market Assumptions from Callan

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

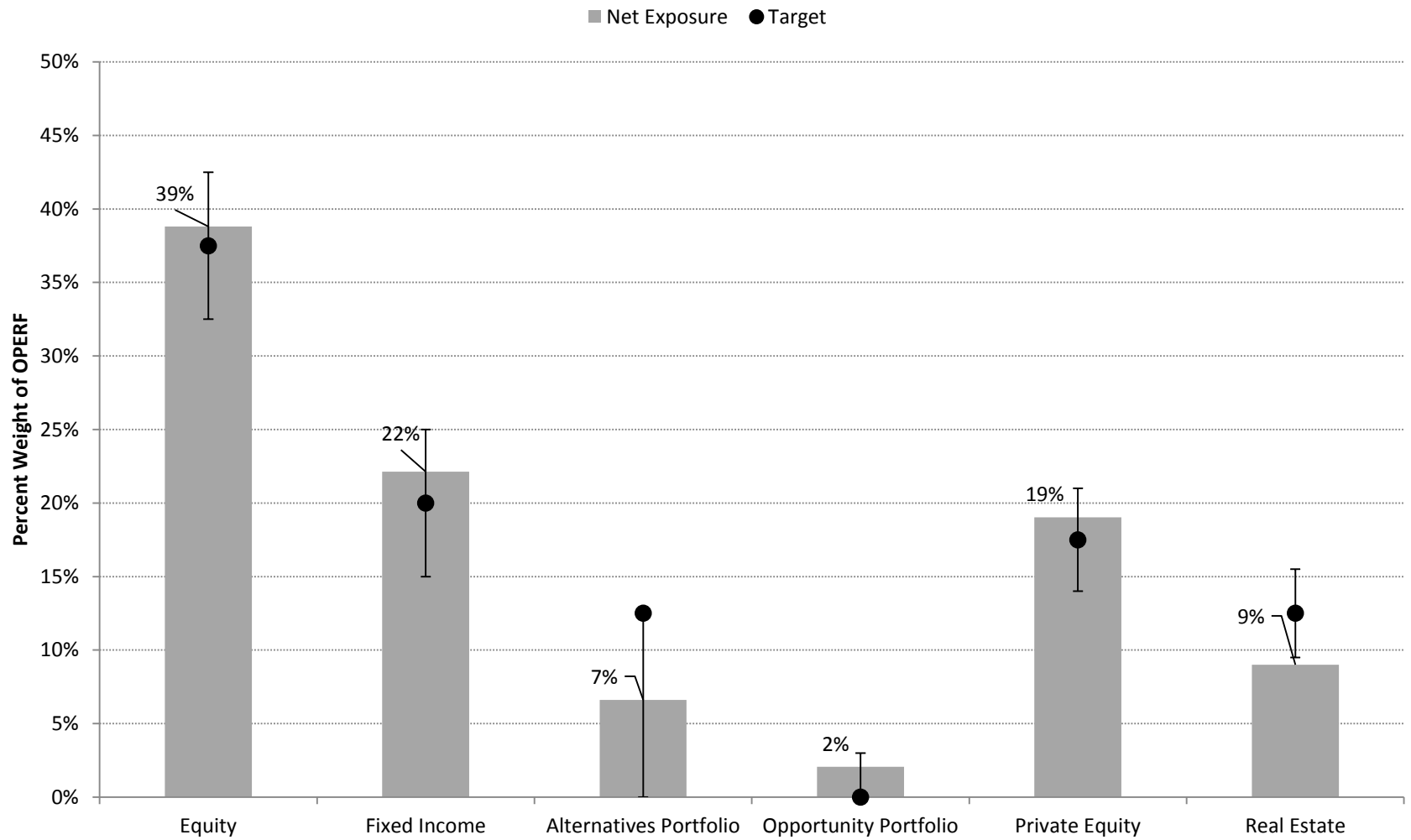
Risk Contribution by Factor Group



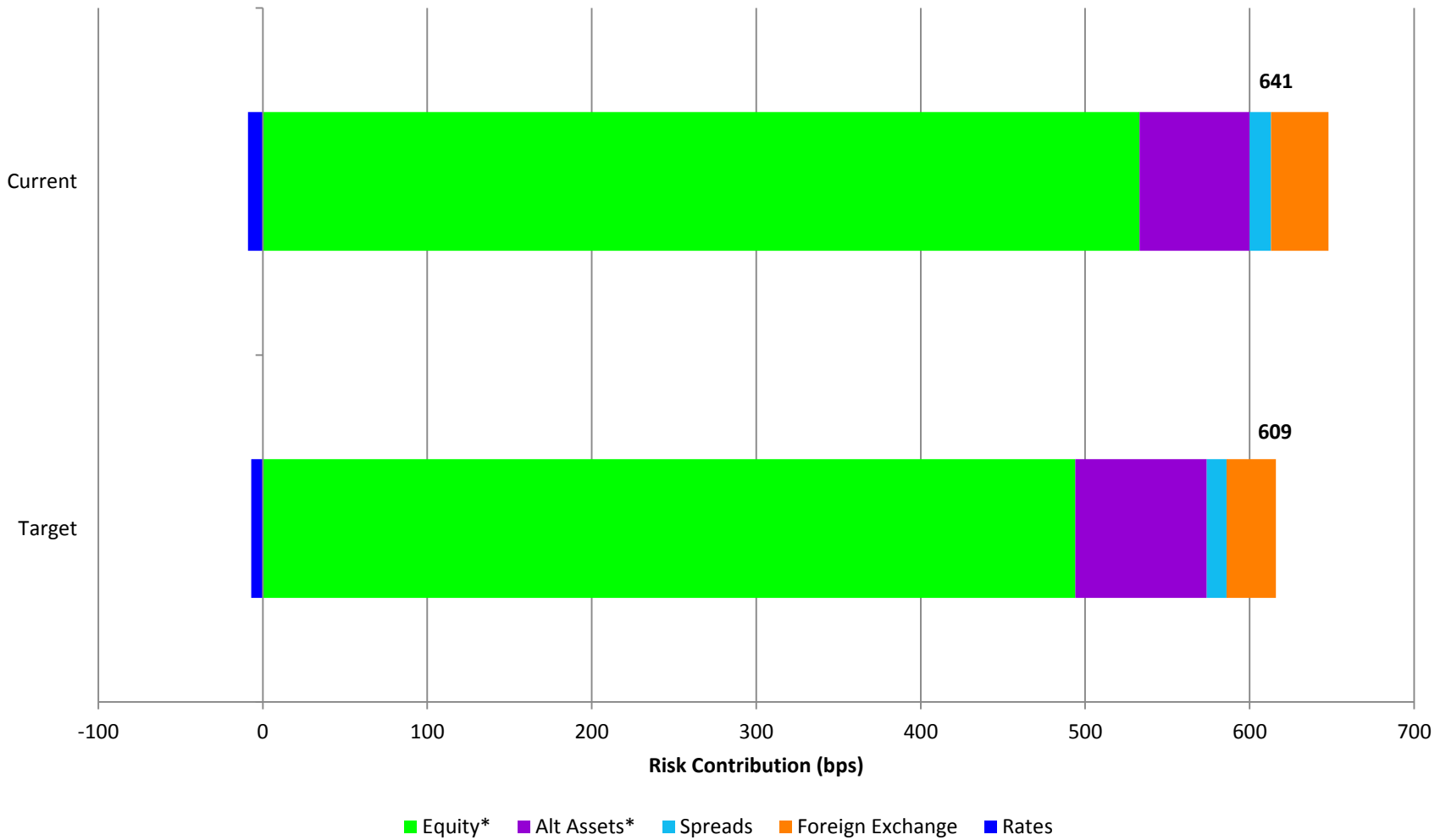
*Aladdin's Alternative risk factor group includes Private Equity, Real Estate, and Hedge Fund risk factors; however, Private Equity risk factors are highly correlated to Public Equity risk factors. In the above chart, Equity includes both Public & Private Equity while Alt Assets includes all other Alternative risk factors.



OPERF Allocations



OPERF Risk Contribution – Current versus Target



Liquidity Report

Asset Class	Liquidity (\$M)				∞	Uncalled Commitment	Next 12 Months
	1 Week	1 Month	1 Quarter				
Cash & Overlay	1,425						
Public Equity	27,092	2,156	1,435				
Fixed Income	11,780	2,413					
Private Equity				14,680		-10,100	
Real Estate	581			7,000		-2,135	
Alternatives	212	564		4,266		-2,227	
Opportunity				1,568		-766	
Proj PERS Cash Flow							-3,350
Total	41,090	5,132	1,435	27,513		-15,228	-3,350

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

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

Fixed Income - 1 Month = Below Investment Grade

Real Estate - 1 Week = REIT composite

Alternatives - 1 Week = SailingStone

Alternatives - 1 Month = AQR, JP Morgan

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

Top 10 Exposures by Investment Firm

Rank	Asset Manager	Mkt Val (\$mm)	Mkt Val Weight	Asset Class
1	Internally-Managed	13,487	17.6%	Cash, Fixed Income, Public Equity
2	Dimensional Fund Advisors	5,507	7.2%	Public Equity
3	AQR	3,671	4.8%	Alternatives, Public Equity
4	Arrowstreet Capital	3,150	4.1%	Public Equity
5	KKR	3,053	4.0%	Fixed Income, Private Equity
6	AllianceBernstein	2,695	3.5%	Fixed Income, Public Equity
7	Lazard	2,470	3.2%	Public Equity
8	Russell Investments	2,196	2.9%	Cash, Transition
9	Wellington	2,141	2.8%	Fixed Income, Public Equity
10	Acadian	1,835	2.4%	Public Equity



March 14, 2018



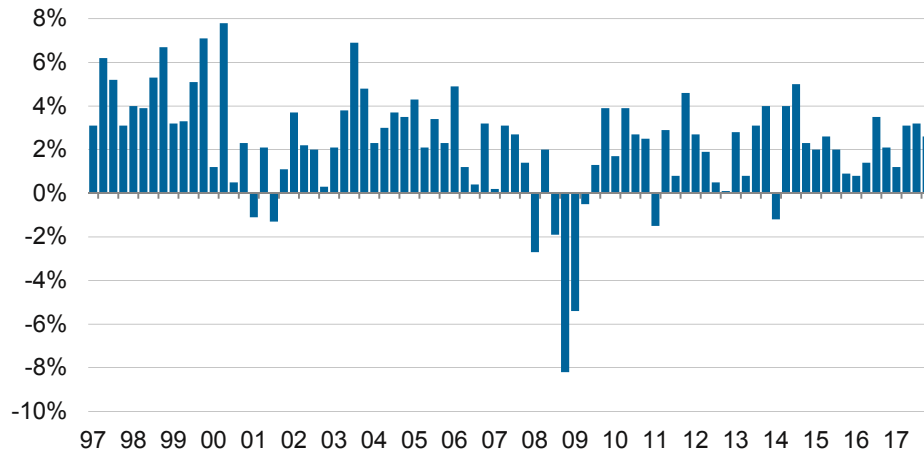
Oregon Investment Council

Fourth Quarter 2017
Performance Review

Economic Commentary

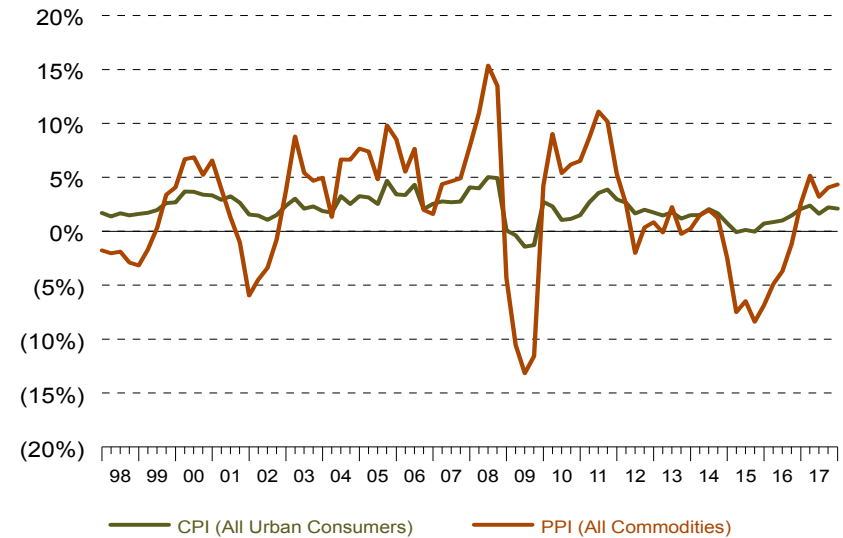
Fourth Quarter 2017

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

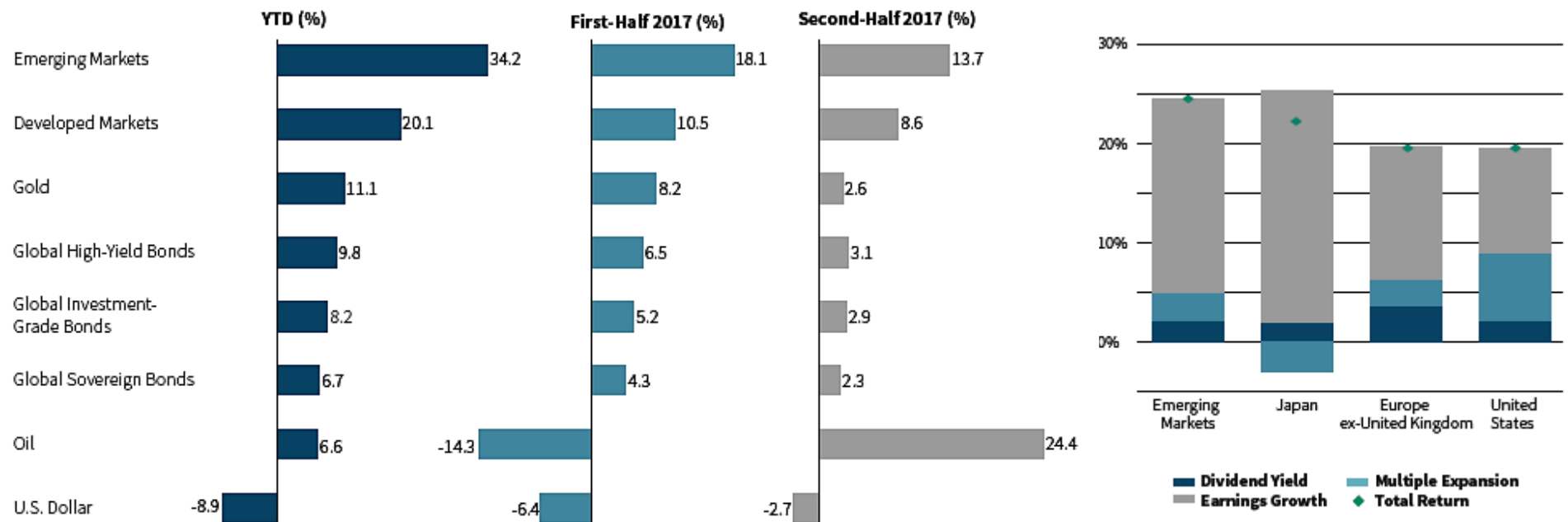
- The first estimate of the 4th quarter GDP came in at 2.6% and 2.3% year-over-year, compared with an increase of 1.5% in 2016. Growth was supported by consumer spending, nonresidential fixed investment and exports, offsetting the setback in inventory investment. 3rd quarter GDP was revised slightly upwards to 3.2%, the fastest pace since the first quarter of 2015 and following similarly robust second quarter growth (3.1%).
- Nonfarm payroll growth fell short of expectations in December, adding 148,000 jobs. An upward revision of November's jobs to 252,000 combined with a downward revision in October's to 211,000, resulted in a net decline of 9,000. The unemployment rate held steady at 4.1% even though the number of unemployed actively looking for work rose slightly. The labor-force participation rate was unchanged at 62.7%. Average hourly earnings increased 0.3% in December however November's increase of 0.2% was revised down to 0.1%.
- Inflation remained benign. For the trailing 12 months ended September, Headline CPI was +2.1%, and Core CPI (excluding food and energy) was +1.8%. Headline CPI was fueled by higher gasoline prices.

Performance By Asset Class

Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
MSCI Emerging Markets 7.5%	MSCI Emerging Markets 37.8%	S&P 500 11.4%	S&P 500 15.8%	Russell 2000 8.7%
S&P 500 6.6%	MSCI ACWI ex-US 27.2%	Russell 3000 11.1%	Russell 3000 15.6%	Russell 3000 8.6%
Russell 3000 6.3%	S&P 500 21.8%	NCREIF ODCE 10.4%	Russell 2000 14.1%	S&P 500 8.5%
MSCI ACWI ex-US 5.0%	Russell 3000 21.1%	Russell 2000 10.0%	NCREIF ODCE 11.5%	Merrill Lynch High Yield 7.8%
Russell 2000 3.3%	Russell 2000 14.6%	MSCI Emerging Markets 9.5%	MSCI ACWI ex-US 6.8%	NCREIF ODCE 5.0%
NCREIF ODCE 2.1%	NCREIF ODCE 7.6%	MSCI ACWI ex-US 7.8%	Merrill Lynch High Yield 5.8%	Bloomberg Aggregate 4.0%
Bloomberg Aggregate 0.4%	Merrill Lynch High Yield 7.5%	Merrill Lynch High Yield 6.4%	MSCI Emerging Markets 4.7%	MSCI Emerging Markets 2.0%
Merrill Lynch High Yield 0.4%	Bloomberg Aggregate 3.5%	Bloomberg Aggregate 2.2%	Bloomberg Aggregate 2.1%	MSCI ACWI ex-US 1.8%
90 Day T-Bill 0.3%	90 Day T-Bill 0.9%	90 Day T-Bill 0.4%	90 Day T-Bill 0.3%	90 Day T-Bill 0.4%

What Worked in 2017?

- Risk assets led the markets in 2017 with strong results coming from Emerging Markets, the Tech sector and High Yield bonds.
- Industrial production strengthened across the globe, broadening global growth. Earnings benefited from this synchronized global growth and were the main driver of strong returns.
- Emerging Markets were fueled by a weakening US Dollar, synchronized global growth, and strong oil and commodity prices. China was the country leader.
- The Technology sector dominated globally throughout 2017. Within the U.S., “FAANG” stocks drove the outperformance due to exceptional cash flow generation in global markets. The sector represented 24% of the S&P 500 and 38% of the Russell 1000 Growth at year-end.



Source: Bloomberg, MSCI, William Blair; returns as of 11/29/17.

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

OPERF Total Regular Account

Performance Summary for the Fourth Quarter 2017

Total Fund:

In the fourth quarter of 2017, the Total Regular Account added 3.93% (+3.83% net of fees), beating the 3.67% return of the Policy Benchmark, and ranked at the 43rd percentile of Callan's \$10B+ public fund peer group. For the 12 months ended December 31, 2017, the Total Regular Account surged 15.86% (+15.39% net of fees) versus 15.64% for the Policy Target, and ranked in the 61st percentile of Callan's \$10B+ public fund peer group. Longer term results trail the Policy Target but mostly rank in the top third of the peer group.

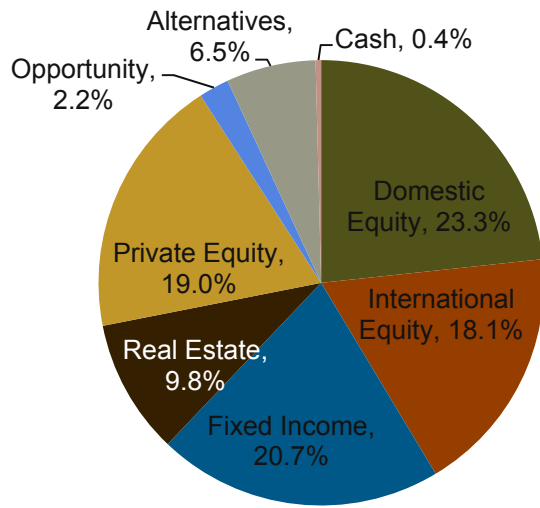
Asset Classes:

- **Total Fixed Income:** The Fixed Income Portfolio added 0.44% (+0.41% net of fees) for the quarter versus an increase of 0.36% for the Custom Fixed Income Benchmark, and ranked in the 79th percentile of Callan's Public Funds \$10+B US Fixed income (Gross) peer group. For the trailing year, the Portfolio returned 3.85% (+3.70% net of fees), beating the benchmark return of 3.32%, and ranked in the 84th percentile of the peer group. 10 year results remain comfortably ahead of the benchmark and rank in the top third of the peer group.
- **Total Public Equity:** Total Public Equity advanced 6.13% (+6.07% net of fees) for the quarter versus a return of 5.72% for the MSCI ACWI IMI Net benchmark, and ranked in the 31st percentile of its peer group. For the trailing year, the portfolio soared 24.70% (+24.41% net of fees), easily beating the 23.95% return of the benchmark and ranked near the median of the peer group.
 - **U.S. Equity:** The U.S. Equity Portfolio gained 6.71% (+6.69% net of fees) for the quarter, beating the 6.34% gain in the Russell 3000 Index, and ranked in the 8th percentile of Callan's Public Fund: \$10B+ Domestic Equity (gross) peer group. On a trailing 12 month basis, the Portfolio surged 20.52% (+20.40% net of fees) versus a gain of 21.13% for the benchmark and ranked in the 65th percentile of the peer group. 10 year results are slightly behind those of the benchmark (+8.39% net of fees versus +8.60%) but rank in the top half of the peer group.
 - **International Equity:** The International Equity Portfolio rose 5.66% (+5.57% net of fees) for the quarter, beating the 5.23% gain in the MSCI ACWI ex-U.S. IMI Index, and ranked in the top decile of Callan's Public Fund: \$10B+ International Equity (gross) peer group. For the trailing year, the Portfolio soared 30.73% (+30.23% net of fees) versus 27.81% for the benchmark, and ranked in the top third of the peer group. 10 year results remain well ahead of the benchmark (+3.71% net of fees versus 2.25%) and continue to rank in the top quartile of the peer group.
- **Total Real Estate:** The Real Estate Portfolio continues to show competitive absolute results over the last decade with an annualized return of 5.19% net of fees.
- **Opportunity Portfolio:** The Opportunity Portfolio's results over the last ten years continue to be favorable with an annualized return of 7.66% net of fees.
- **Alternative Portfolio:** The Alternative Portfolio has gained an annualized return of 4.11% net of fees over the last five years.
- **Total Private Equity:** The Private Equity Portfolio's returns remain strong with an annualized return of 8.86% net of fees over the last ten years.

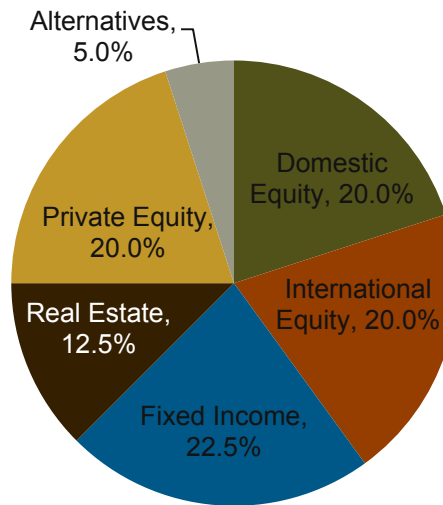
OPERF Total Regular Account

Asset Allocation as of December 31, 2017

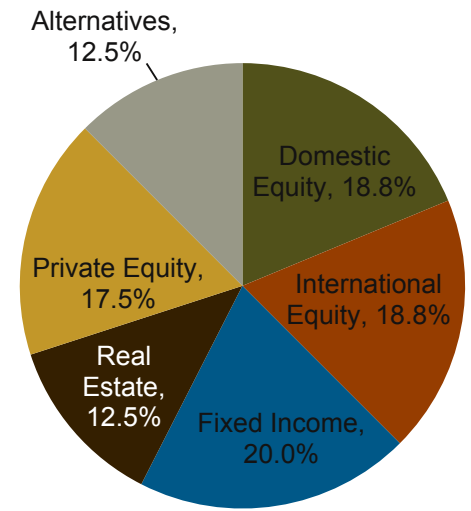
Actual Allocation



Interim Policy Target



Strategic Policy Target*



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Total Fixed Income	16,034,235	20.7%	22.5%	(1.8%)	(1,358,779)
U.S. Equity Portfolio	18,001,423	23.3%	20.0%	3.3%	2,540,966
Non-U.S. Equity Portfolio	13,996,199	18.1%	20.0%	(1.9%)	(1,464,259)
Total Real Estate	7,576,062	9.8%	12.5%	(2.7%)	(2,086,724)
Opportunity Portfolio	1,673,835	2.2%	0.0%	2.2%	1,673,835
Alternative Portfolio	5,041,662	6.5%	5.0%	1.5%	1,176,548
Total Private Equity	14,679,574	19.0%	20.0%	(1.0%)	(780,883)
Cash	299,296	0.4%	0.0%	0.4%	299,296
Total	77,302,287	100.0%	100.0%		

*Target established in June 2015

OPERF Total Regular Account

Net Cumulative Performance by Asset Class as of December 31, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
Total Regular Account	3.83	15.39	8.03	9.35	8.99	6.02
Total Regular Account ex-Overlay	3.88	15.38	7.90	9.27	8.87	5.99
OPERF Policy Benchmark*	3.67	15.64	8.56	9.87	9.45	6.41
Total Fixed Income	0.41	3.70	2.43	2.36	4.00	5.15
OPERF Total Custom FI Benchmark	0.36	3.32	1.99	1.86	3.29	4.05
Callan Public Fund \$10bn+ U.S. Fixed	0.79	4.94	3.20	2.79	4.03	4.70
Total Public Equity	6.07	24.41	10.34	11.94	9.56	5.60
MSCI ACWI IMI Net	5.72	23.95	9.52	11.00	8.82	4.97
U.S. Equity	6.69	20.40	11.10	15.32	13.01	8.39
Russell 3000 Index	6.34	21.13	11.12	15.58	13.50	8.60
Callan Large Public > \$10bn U.S. Equity	6.09	20.70	11.14	15.42	13.21	8.60
Non-U.S. Equity	5.57	30.23	9.91	8.87	6.70	3.71
MSCI ACWI ex USA IMI**	5.23	27.81	8.38	7.22	5.15	2.25
Callan Large Public >\$10bn Non-U.S. Equity	5.11	28.71	9.17	8.13	5.98	3.13
Total Real Estate	2.21	10.02	8.82	10.67	11.62	5.19
Total Real Estate ex REITs	1.96	11.19	11.28	12.32	12.84	5.12
NCREIF Property Index Qtr Lag	1.70	7.05	9.77	10.31	11.22	6.21
Callan Public Plan - Real Estate	2.02	7.71	8.99	10.34	10.88	4.56
Opportunity Portfolio	1.52	10.47	6.19	8.42	8.77	7.66
Russell 3000 Index	6.34	21.13	11.12	15.58	13.50	8.60
CPI + 5%	1.06	7.18	6.52	6.27	6.60	6.58
Total Alternative	2.08	8.30	3.38	4.11	--	--
CPI + 4%	0.87	6.19	5.70	5.49	--	--
Total Private Equity	4.93	17.32	10.35	12.59	12.63	8.86
OIC - Russell 3000 + 300 BPS Qtr Lag	5.34	22.22	14.03	17.61	17.67	11.23

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

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

OPERF Total Regular Account

Net Calendar Year Performance by Asset Class

	2017	2016	2015	2014	2013
Total Regular Account	15.39	7.11	2.01	7.29	15.59
Total Regular Account ex-Overlay	15.38	6.73	2.02	7.28	15.57
OPERF Policy Benchmark*	15.64	8.95	1.57	8.24	15.61
Total Fixed Income	3.70	3.06	0.54	3.52	1.04
OPERF Total Custom FI Benchmark	3.32	2.52	0.16	3.04	0.29
Callan Public Fund \$10bn+ U.S. Fixed	4.94	5.25	-0.50	6.31	-1.79
Total Public Equity	24.41	9.89	-1.75	3.31	26.68
MSCI ACWI IMI Net	23.95	8.36	-2.19	3.84	23.55
U.S. Equity	20.40	14.90	-0.87	9.85	35.41
Russell 3000 Index	21.13	12.74	0.48	12.56	33.55
Callan Large Public > \$10bn U.S. Equity	20.70	13.66	0.06	11.78	33.51
Non-U.S. Equity	30.23	4.67	-2.59	-2.88	18.62
MSCI ACWI ex USA IMI**	27.81	4.41	-4.60	-3.89	15.82
Callan Large Public >\$10bn Non-U.S. Equity	28.71	4.84	-3.58	-2.81	16.91
Total Real Estate	10.02	6.58	9.89	14.16	12.83
Total Real Estate ex REITs	11.19	10.01	12.67	12.01	15.79
NCREIF Property Index Qtr Lag	7.05	8.88	13.48	11.26	11.00
Callan Public Plan - Real Estate	7.71	8.24	11.05	13.46	11.35
Opportunity Portfolio	10.47	6.12	2.14	8.81	15.00
Russell 3000 Index	21.13	12.74	0.48	12.56	33.55
CPI + 5%	7.18	6.99	5.39	5.33	6.46
Total Alternative	8.30	6.61	-4.32	4.44	6.02
CPI + 4%	6.19	6.16	4.76	4.78	5.56
Total Private Equity	17.32	6.26	7.79	15.90	16.19
OIC - Russell 3000 + 300 BPS Qtr Lag	22.22	18.37	2.49	21.24	25.19

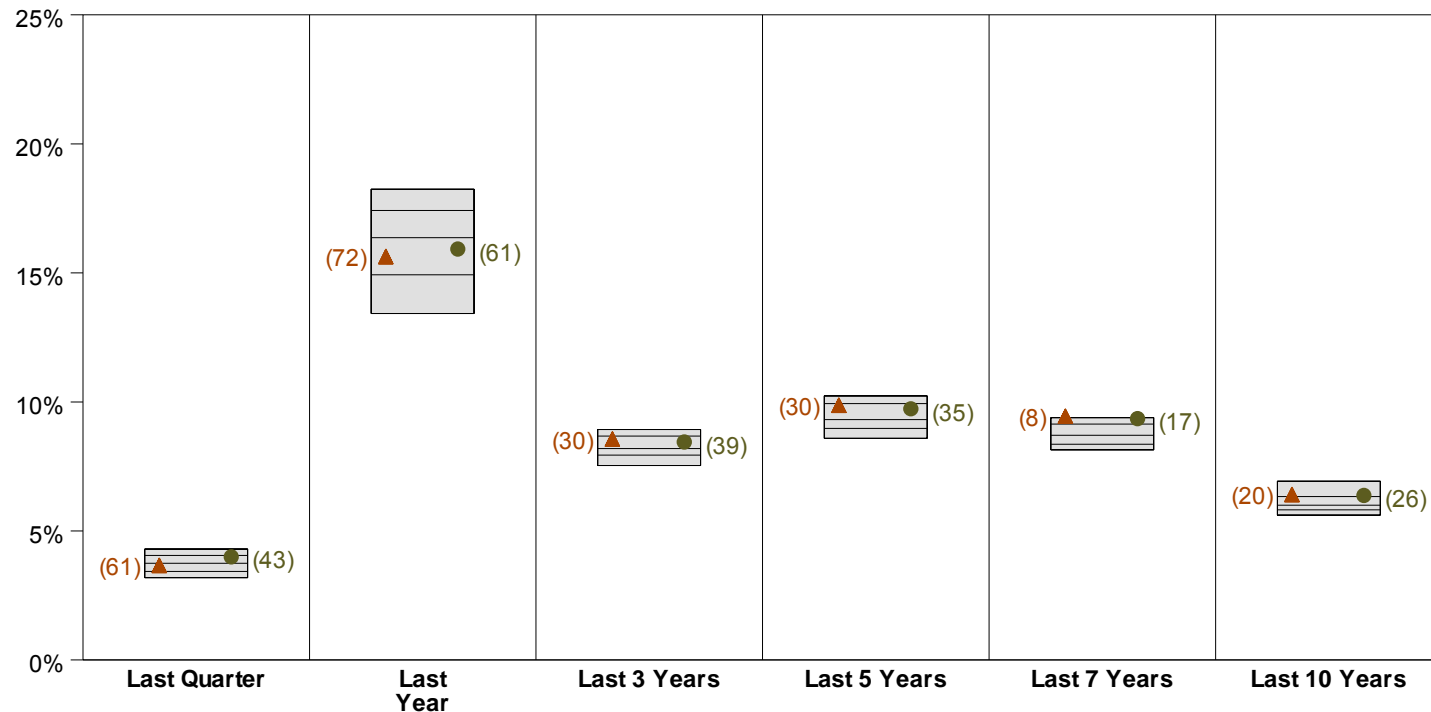
*Policy Benchmark = 22.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 Index, 20.0% MSCI ACWI ex US IMI, 20.0% Russell 3000 + 300 bps Qtr Lag, 12.5% Oregon Custom Real Estate Benchmark and 5.0% CPI + 400 bps.

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

OPERF Total Regular Account

Gross Performance and Peer Group Rankings* as of December 31, 2017

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



10th Percentile	4.30	18.24	8.93	10.23	9.39	6.93	
25th Percentile	4.05	17.42	8.68	9.94	9.14	6.33	
Median	3.74	16.37	8.19	9.31	8.71	6.00	
75th Percentile	3.43	14.93	7.94	8.97	8.36	5.82	
90th Percentile	3.19	13.42	7.54	8.59	8.14	5.62	
Total Regular Account	●	3.93	15.86	8.38	9.66	9.29	6.31
Total Policy Target	▲	3.67	15.64	8.56	9.87	9.45	6.41

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



Appendix

U.S. Equity Market

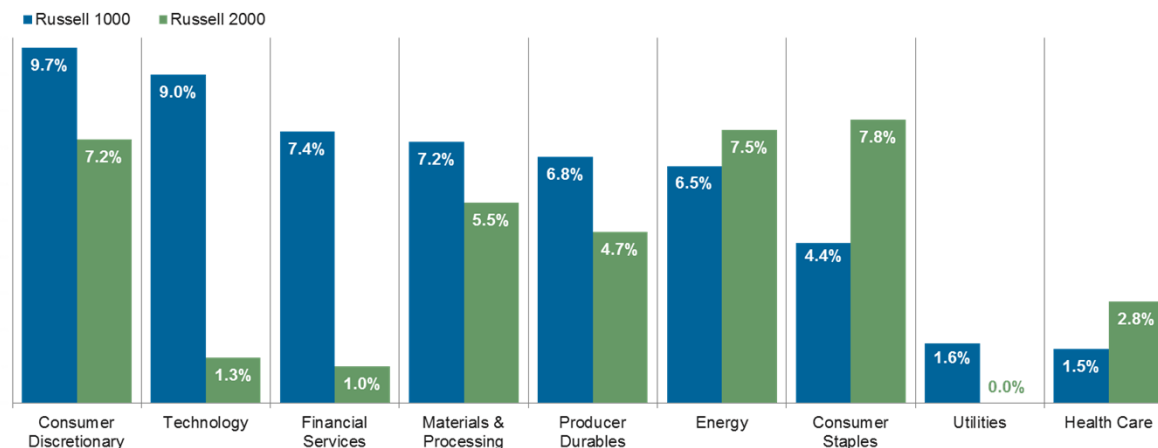
- US equity market continued upward trajectory with exceptionally low volatility.
- Investors embraced accelerating global economic growth and largely ignored turbulent political landscape and record number of global catastrophes.
- Corporate earnings registered double-digit growth, receiving boost from US tax reform.
- Growth outperformed Value across market cap range. Momentum stocks (+38%) posted biggest gain since 1999.
- Risk assets continued to lead: Tech (+9%) driven by Apple, Amazon and Microsoft, all up 10-20% for quarter and 36%-56% for year due to exceptional cash flow generation in global markets. Tech represents 24% of S&P 500 and 38% of Russell 1000 Growth.
- Discretionary (+10%) benefited from strong year-end sales and positive tax reform impact (carries highest industry tax rate). “Amazon Effect” remains a threat.
- Managers selling winners and reallocating to existing holdings; bench of ideas is slim due to stretched valuations.

For Periods ended December 31, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Large Cap Equity						
Russell 1000 Growth	7.86	30.21	13.79	17.33	10.00	10.70
Russell 1000 Value	5.33	13.66	8.65	14.04	7.10	9.55
Mid Cap Equity						
Russell Midcap Growth	6.81	25.27	10.30	15.30	9.10	11.96
Russell Midcap Value	5.50	13.34	9.00	14.68	9.10	11.96
Small Cap Equity						
Russell 2000 Growth	4.59	22.17	10.28	15.21	9.19	11.57
Russell 2000 Value	2.05	7.84	9.55	13.01	8.17	10.66

Economic Sector Quarter Performance

Quarter ended December 31, 2017



Source: Callan, Russell Investment Group

Non-U.S. Equity Market

- Strong quarter for Non-US, particularly EM, led by Cyclical. Inflection point in quarter as investors more willing to capitalize on synchronized global growth; began to rotate out of momentum winners into Financials, Energy and Materials. Non-US (+4.2%) trailed US (+6.4%).
- Tax reform, improving commodity prices and growth projections overcame Brexit fears and election uncertainty in Germany in a risk-on quarter.
- EM (+7.4%) outpaced developed markets (+4.2) for fourth consecutive quarter, fueled by soft US Dollar, synchronized global growth, strong oil and commodity prices, and renewed investor interest.
- Markets favored economically sensitive sectors: IT (+8.3%), Materials (+7.8%) and Discretionary (7.6%). Energy (+6.8%) up as commodity prices supported by distribution disruptions.
- U.S. Dollar fell against the EUR and GBP, boosting USD returns, but was flat to JPY.
- International Small Cap (+5.8%) modestly outperformed large/mid led by Asia. EM Small Cap (+9.2%) was best performer; EM SC Healthcare + 28% as changing demographics in China & S. Korea drove demand.

For Periods ended December 31, 2017

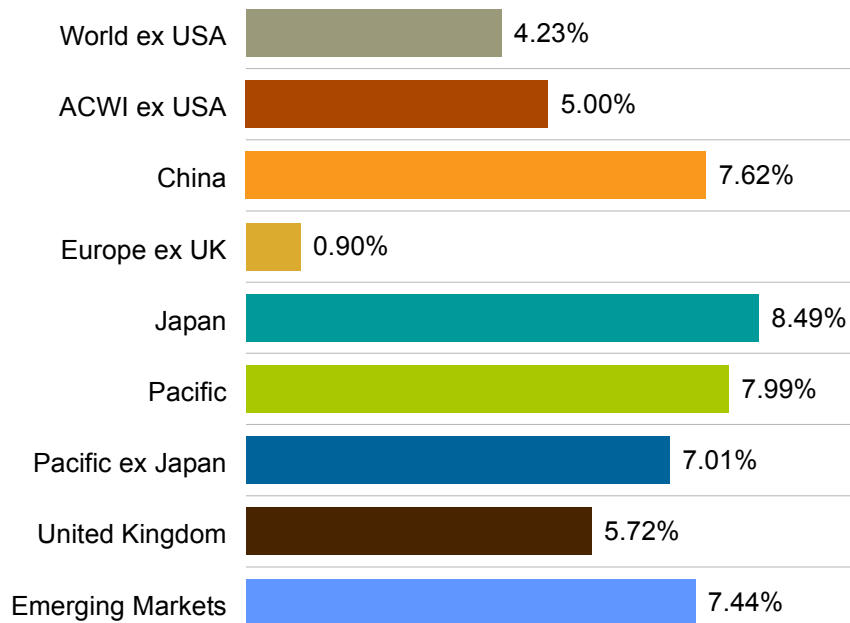
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Non-U.S. Equity						
MSCI ACWI ex USA	5.00	27.19	7.83	6.80	1.84	8.75
MSCI ACWI ex USA Growth	5.77	32.01	9.29	7.97	2.40	8.66
MSCI ACWI ex USA Value	4.23	22.66	6.31	5.58	1.23	8.78
MSCI EAFE	4.23	25.03	7.80	7.90	1.94	8.11
MSCI EAFE (local)	3.66	15.23	8.54	11.44	3.30	7.39
Regional Equity						
MSCI Europe	2.21	25.51	6.69	7.37	1.34	8.04
MSCI Europe (local)	1.27	13.06	8.34	10.10	3.52	7.59
MSCI Japan	8.49	23.99	11.62	11.16	3.17	6.97
MSCI Japan (local)	8.57	19.75	9.33	17.20	3.25	6.60
MSCI Pacific ex Japan	7.01	25.88	7.51	5.46	3.55	11.64
MSCI Pacific ex Japan (loc)	7.09	19.43	8.61	9.53	4.14	9.68
Emerging/Frontier Markets						
MSCI Emerging Markets	7.44	37.28	9.10	4.35	1.68	12.31
MSCI Emerging Markets (loc)	5.68	30.55	10.51	7.98	4.14	12.56
MSCI Frontier Markets	5.61	31.86	5.01	9.27	-1.35	8.56
Non-U.S. Small Cap Equity						
MSCI EAFE Small Cap	6.05	33.01	14.20	12.85	5.77	12.24
MSCI Em Mkts Small Cap	9.23	33.84	8.44	5.41	2.78	13.32

Sources: Callan, MSCI

Non-U.S. Equity Market

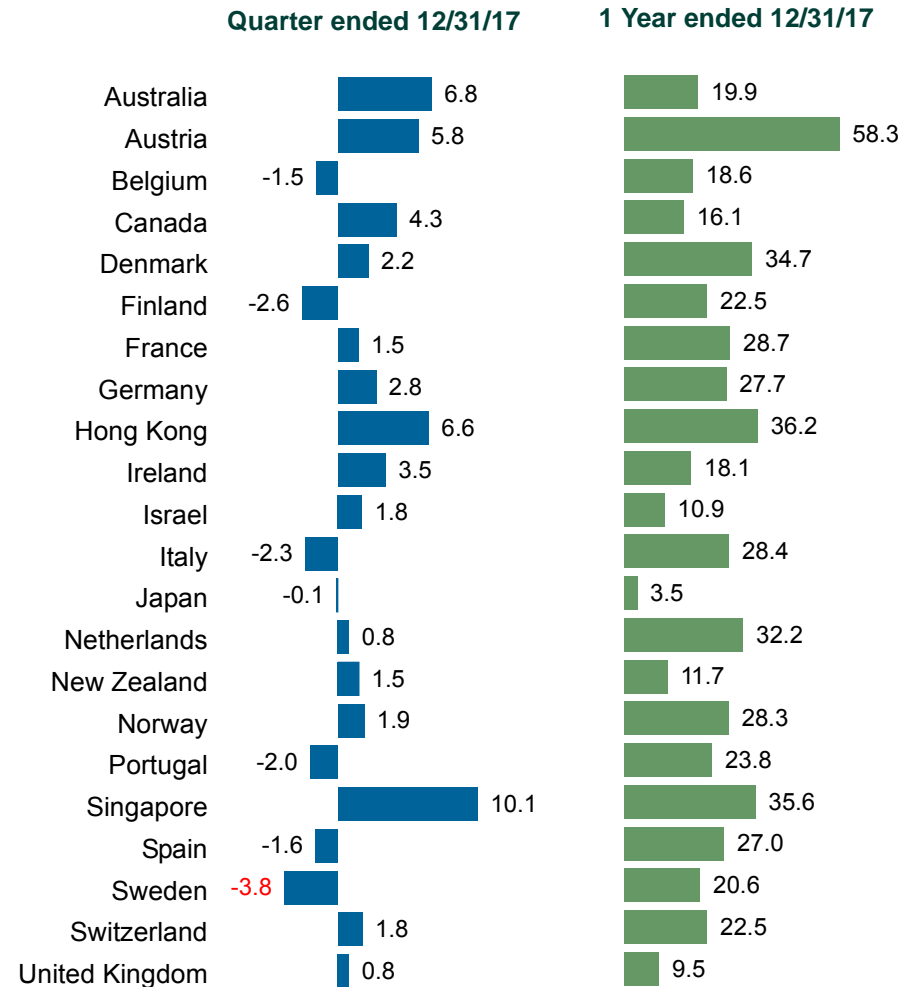
- Europe (+0.9%) reverted on Brexit negotiation concerns and political uncertainty following German elections. ECB also announced plans to curb quantitative easing in January 2018.
- Japan (+8.5%) was the best performer on elections and improved inflation expectations.

Non-U.S. Quarterly Performance (U.S. Dollar) as of December 31, 2017



Sources: Callan, MSCI

Developed Country Returns



Fixed Income Market

- US yield curve continued its flattening trend reflecting benign inflation in face of strong labor market and Fed's bias toward less accommodative monetary policy. Market pricing in three rate hikes for 2018.
- The 2-year Treasury yield climbed 42 bps to close at 1.89%; 30-year Treasury yield fell 12 bps to end year at 2.74%.
- Fed still struggling to estimate size of output gap, which is expected to indicate when growth translates into inflationary pressure.
- Fixed income volatility sits near historical lows. Strong global growth and loose monetary policy, as well as business and consumer confidence driving risk appetite.
- Spread sectors again outperformed Treasuries. Increasing comfort with credit fundamentals across corporates, consumers, and commercial real estate drove spreads tighter.
- Corporates outperformed for quarter & year; spreads reached post-crisis tight of 93 bps over Treasuries.
 - IG Credit strongest sector; tax reform may improve profitability and negatively impact issuance.
 - High yield aided by rising equity markets, but lagged IG. Tax reform to have potential negative impact on sector (limit on interest deductions) and issuance.
- EM Debt (+0.8%) supported by higher commodity prices and global growth.

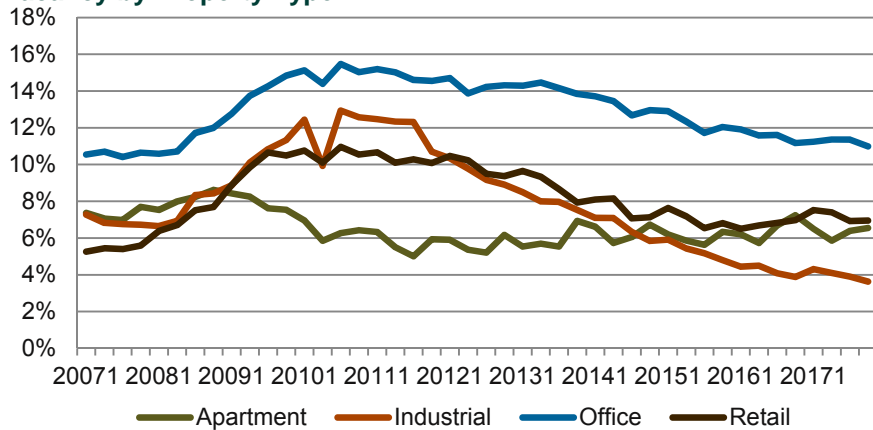
For Periods ended December 31, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Broad Fixed Income						
Core Bond Style	0.49	3.96	2.65	2.48	4.63	4.67
Core Bond Plus Style	0.59	4.90	3.26	3.03	5.30	5.51
BB Barclays Aggregate	0.39	3.54	2.24	2.10	4.01	4.15
BB Barclays Gov/Credit	0.49	4.00	2.38	2.13	4.08	4.20
BB Barclays Government	0.05	2.30	1.40	1.28	3.23	3.52
BB Barclays Credit	1.05	6.18	3.63	3.24	5.42	5.22
BB Barclays Corporate High Yld	0.47	7.50	6.35	5.78	8.03	8.98
Long-Term						
BB Barclays Long Gov/Credit	2.84	10.71	4.52	4.43	7.26	6.77
BB Barclays Long Government	2.34	8.53	2.85	3.49	6.49	6.24
BB Barclays Long Credit	3.18	12.21	5.68	5.11	7.72	7.17
Citi Pension Discount Curve	5.46	15.38	6.46	6.25	10.48	8.48
Intermediate-Term						
BB Barclays Interm Aggregate	-0.07	2.27	1.82	1.70	3.53	3.76
BB Barclays Interm Gov/Credit	-0.20	2.14	1.76	1.50	3.32	3.57
Short-Term						
Money Market Funds (net)	0.20	0.59	0.24	0.14	0.31	1.10
ML Treasury 1-3 Year	-0.25	0.42	0.62	0.56	1.44	2.00
90-Day Treasury Bills	0.28	0.86	0.41	0.27	0.39	1.28

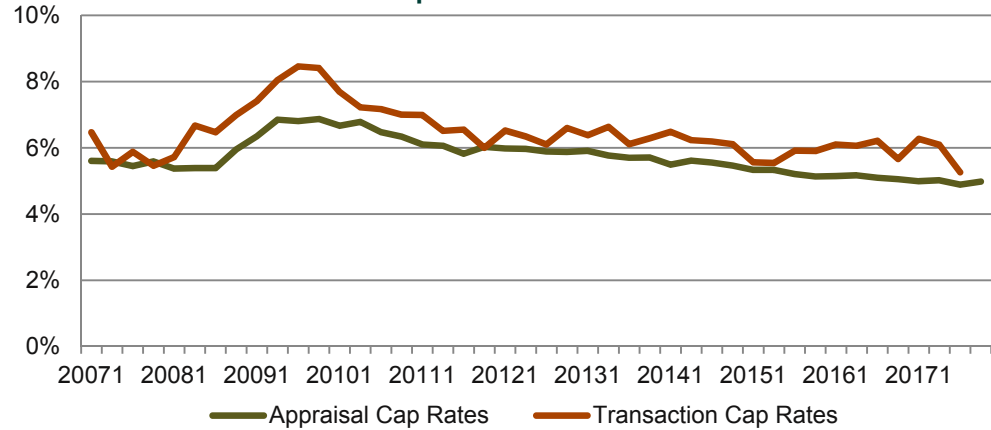
Source: Callan, Bloomberg

Real Estate Market

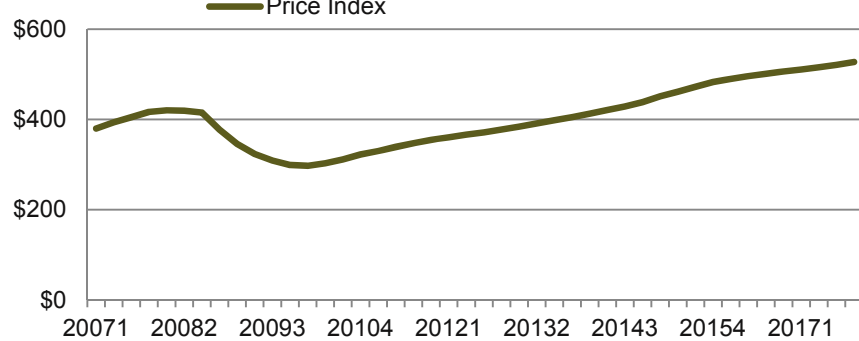
Vacancy by Property Type



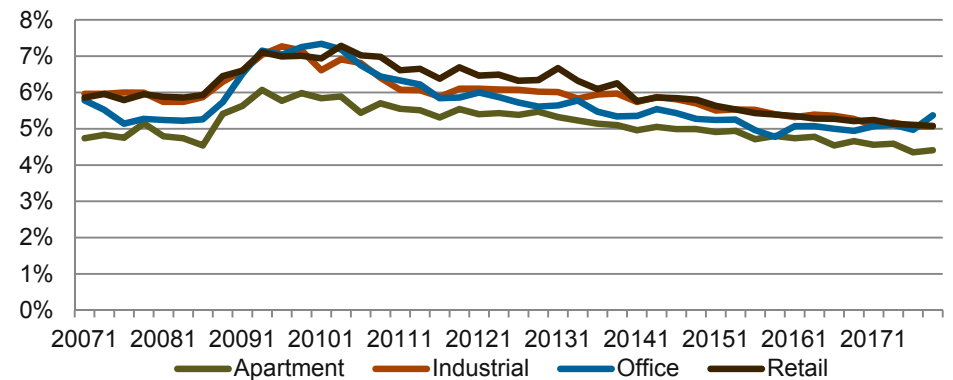
Current Value vs Transaction Cap Rates



Price Index



Current Value Cap Rates by Property Type



- Supply and demand fundamentals are balanced but peaking. Supply is in check and aided by strict commercial real estate lending standards. Demand continues on the back of synchronized domestic growth.
- Transaction volumes took a step back from current cycle peak levels but remain robust supporting pricing which remains expensive.
- The industrial sector is the strongest performing sector, benefitting as structural shifts in the economy, property markets and consumer habits continue to dampen demand for traditional retail space. Office is performing as expected late in the cycle and tenant improvements and other capital expenditures are increasing eroding cash flow. Multi-family remains strong except for very high end properties in some markets.

Source: NCREIF; periods ended December 31, 2017
 Note: Transaction capitalization rate is equal-weighted.

Hedge Fund & Multi-Asset Class (MAC)

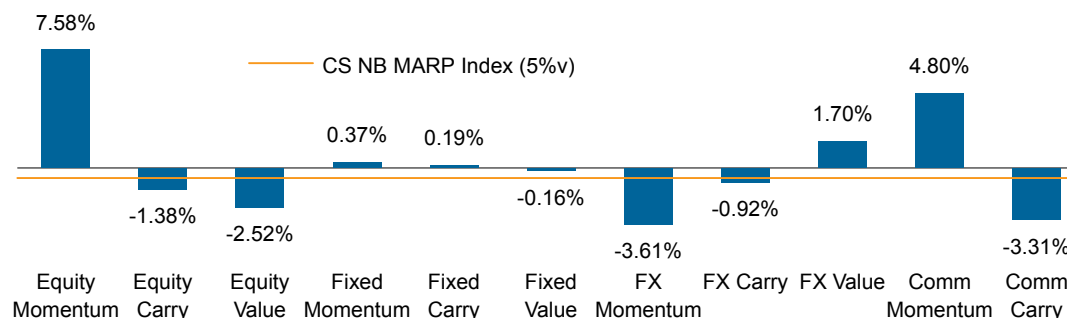
- While underlying market fundamentals becoming more important for hedge funds with rising rates, lower market volatility dampening the opportunity set.
- As represented by median Callan Fund-of-Fund managers, hedge fund portfolios performed as expected, net of fees, on a risk-adjusted basis. However, raw equity beta continues to run ahead.
- Event-driven hedge funds, particularly those in merger arbitrage, encountered unexpected regulatory risk when Justice Dept challenged the AT&T/Time Warner deal on anti-trust concerns.
- Smaller hedge funds beat larger ones, on average, as illustrated by HFRI Fund Wtd Composite (+2.65%) vs Asset Wtd Composite (+1.99%).
- Median managers of Callan Multi-Asset Class (MAC) style groups generated positive returns consistent with their return expectations. Risk Parity MACs gained with growth and inflation exposures, while Risk Premia MAC benefitted from higher exposure to momentum risk factors.
- As highlighted by the Credit Suisse Neuberger Multi-Asset Risk Premia Index (see bar chart), most alternative risk premia were flat or down. Strong momentum in equities and commodities particularly helped Risk Premia strategies.

Returns for Periods ended December 31, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Hedge Fund Universe						
Callan Absolute Return FoF	1.47	5.11	3.20	4.59	3.00	4.90
Callan Core Diversified FoF	1.51	6.42	2.36	4.79	2.77	5.18
Callan Long/Short Equity FoF	1.81	11.25	3.76	6.00	3.20	5.84
HFRI Asset Weighted Compo	1.99	6.52	3.06	4.60	3.34	--
HFRI Fund Weighted Index	2.65	8.68	4.25	4.95	3.23	6.10
.HFRI Equity Hedge	3.51	13.46	5.82	6.63	3.19	6.09
.HFRI Event-Driven	2.04	7.73	4.73	5.49	4.17	7.26
.HFRI Macro	2.42	2.21	0.65	1.40	1.95	4.65
.HFRI Relative Value	1.05	5.11	4.11	4.68	4.81	6.02
90 Day T-Bill + 5%	1.50	5.86	5.41	5.27	5.39	6.28
Liquid Alternatives Universe						
Callan Absolute Return MAC*	0.90	5.07	3.27	4.46	5.16	--
Callan Risk Premia MAC*	3.95	5.51	2.04	3.57	7.16	--
Callan Long Biased MAC*	3.35	13.87	5.46	6.39	5.76	8.70
Callan Risk Parity MAC*	4.66	11.88	6.47	5.81	6.75	--
S&P 500	6.64	21.83	11.41	15.79	8.50	9.92
Blmbg:Aggregate	0.39	3.54	2.24	2.10	4.01	4.15
60% S&P / 40% BB BC Agg	4.14	14.26	7.76	10.25	7.09	7.90
CS NB MARP Index (5%v)	-0.63	-1.61	2.05	3.55	7.15	--
SG Trend Index	7.70	2.19	-1.36	3.35	3.15	4.21

* Gross of fees

Returns for Quarter ended December 31, 2017 Alternative Risk Factor Breakdown



Source: Credit Suisse Neuberger Berman Multi-Asset Risk Premia Index (Bloomberg: CSEANB1E Index)

Impact of Tax Reform on Asset Classes

- **US Equity**

- U.S. small cap companies will be beneficiaries of tax reform given their higher exposure to US revenue bases; the small company tax rate approaches 40% for some sectors. Important to monitor what these companies do with the windfall – share buybacks? special dividend? capex spending?
- Companies carrying significant debt will suffer the most, as the cuts limit the amount of tax deductions companies can take on interest, meaning a higher cost burden for using debt financing.

- **Fixed Income**

- *Corporate*: The reduced issuance expected in investment grade market may be positive. Fundamentals helped by lower tax rates.
- *High Yield*: Select high yield issuers are expected to be negatively impacted by the limit on interest deductions from tax reform. Some may benefit from ability to immediately deduct cap ex.
- *Municipal Bonds*: Near term effect is positive given reduction in supply but longer term effect is uncertain given potential decrease in demand from taxable corporations. Fundamentals and changes in interest rates will be more important factors than tax reform, over the long-term.

- **Real Estate**

- The tax bill generally maintains the status quo for real estate with the continuation of the 1031 Exchange (like-kind) provision to allow for deferral of capital gains, and most commercial property investors can continue to deduct interest expenses.
- Lower corporate and household taxes may spur a bit more economic growth, thereby translating into possible stronger tenant demand and support slightly higher occupancies and rent growth across all property types. Sale-leasebacks may become more common, as most owner-occupiers will no longer be able to deduct interest expense, but can deduct rental payments.
- Non-US investors in US real estate will benefit from lower tax rates on property sales.
- REIT ordinary dividends are now business income and 20% deductible. If this boosts share prices then REITs could become more active buyers.

- **Hedge Funds**

- Little material impact. Since most hedge fund strategies don't have holdings beyond 18 months, changes on the now taxable nature of that carried interest on earnings will have little effect on a manager's behavior. Biggest impact could be that more hedge fund managers with big property and state tax bills in NY, NJ and CT will move to low-or-no tax states (Florida); an existing trend likely to accelerate.

TAB 8 – Securities Lending Update
OPERF/SAIF/CSF/OSTF/Agency Accounts

Annual Securities Lending Report

Purpose

To provide the Oregon Investment Council (OIC) an update and review of the securities lending program in place for OPERF, OSTF and other state agency funds.

Background

In accordance with INV 216: Securities Lending (attached), the investment division may lend securities through an agent lender. The Oregon State Treasury (OST) has participated in securities lending arrangements dating back decades. The current relationship with State Street Bank as agent lender began in 1997. Over the past 21 years, OIC-managed accounts have realized over \$435 million in net earnings from the OST securities lending program.

In 2017, and for all funds participating in the OST securities lending program, the “average on loan” was \$3.3 billion, with OPERF comprising 79% of that average. Moreover, the OPERF “legacy assets” securities lending fund (established in 2010 with over \$2 billion of program collateral) has declined to \$25 million as of January 2018 from \$28 million in the prior year.

As a reminder, effective January 2014, OST revised the reinvestment guidelines for the securities lending collateral pools managed by State Street. Key changes, all more conservative in nature, included: 1) uniformity of reinvestment guidelines between and among OPERF and other state funds; 2) maturity distribution guidelines that match those required for the Oregon Short Term Fund (OSTF); 3) corporate debt investment criteria that match OSTF; and 4) repurchase agreements that limit approved collateral to U.S. Treasury or U.S. Government Agency securities.

Discussion

Tom Connelley and Johnson Shum will provide the OIC an update on cash management and securities lending markets, respectively, with a focus on the two main accounts managed by State Street on behalf of OPERF and other state agency funds, including the OSTF.

Recommendation

None, information only.



Origination: 04/2007
Last Approved: 10/2016
Last Revised: 10/2016
Next Review: 10/2017
Owner: John Skjervem: Chief Investment Officer
Policy Area: Investments
References: OST Policy 4.01.20

INV 216: Securities Lending

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

Investment funds under the purview of the Oregon Investment Council ("OIC" or "Council") may lend securities through a Lending Agent (the "Agent") selected by Oregon State Treasury (OST) investment staff and approved by the OIC.

Applicability

Classified represented, management service, unclassified executive service

POLICY PROVISIONS

Policy Statements

1. Recognizing that securities lending activities may provide incremental return to investment fund portfolios:
 - a. The Agent shall reinvest all cash collateral received consistent with risk and return attributes and reinvestment guidelines approved by the OST Chief Investment Officer (CIO);
 - b. Acceptable collateral investments shall be documented with the Agent in advance of any lending activity;

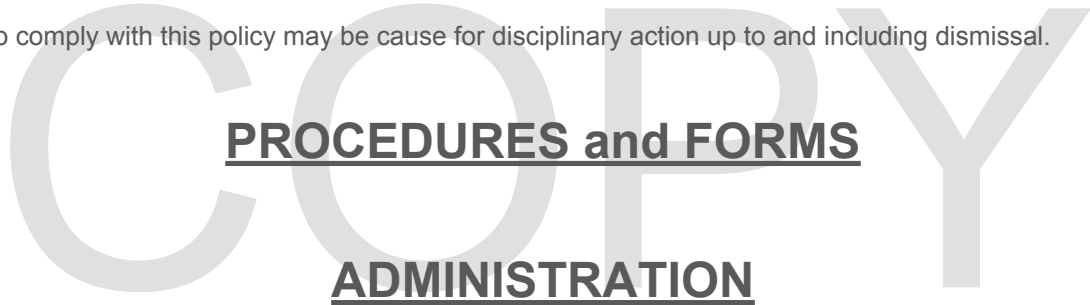
- c. Collateral reinvestment guidelines for the Oregon Short Term Fund shall be presented to and reviewed by the Oregon Short Term Fund Board prior to CIO approval;
 - d. Any changes to securities lending reinvestment guidelines shall be reported to the OIC at the next regularly-scheduled OIC meeting following the change(s);
2. OST staff shall ensure that securities loaned do not compromise investment fund managers' ability to liquidate fund portfolio positions when necessary; and
 3. OST Investment Accounting staff shall ensure that securities lending income is properly credited to the individual investment fund accounts.

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

ADMINISTRATION

Feedback

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

Attachments:

No Attachments

Approval Signatures

Step Description	Approver	Date
Oregon Investment Council	John Skjervem: Chief Investment Officer	10/2016
	Kim Olson: Policy Analyst	10/2016
	John Skjervem: Chief Investment Officer	10/2016

Oregon Investment Council

Securities Finance Program Review
March 14, 2018

Johnson Shum



STATE STREET

Market Update



Market Update

- **Market/Trading**

- **Limited** Deal/M&A lending activity in 2017
 - “Specials” lending remains robust in **retail, energy, bio-tech sectors**
- Cross border **tax regulation** changes have negatively impacted international equity dividend lending
- US Treasury specials stretched across maturity curve; most notably, ‘Current Issues’ (ahead of their respective monthly auctions), various T-Bills and even the long end at the beginning of December.

- **Regulatory**

- **Agents, borrowers, and end-users** continue to look at ways to adjust their programs while continuing to maintain their level of product and service delivery
 - Enhanced **demand for non-cash collateral** trades from borrowers as the cost of using balance sheet has increased due to regulatory environment
 - Non-cash collateral is balance sheet “neutral” for borrowers because there is no funding component, with increasing demand from borrowers to pledge **equities and ETFs** non-cash collateral
 - Approximately **54%** of all loans in **2017** were non-cash collateral loans for **State Street Securities Finance**
 - OST average **non-cash loan** balances approximately **\$1.49B** or **38.5%** of total average on loan in 2017 (\$1.13B in 2016)

Source: Securities Finance Business Intelligence
Data represents past performance and is not a guarantee of future results

State Street Securities Lending Program

**Performance
Review**

Relationship Summary

- Earnings Overview
 - \$403.4M* in securities lending revenue for Oregon State Treasury since 2001
- Cash Collateral
 - Separate accounts for Oregon PERS Funds and Oregon Non – PERS Funds managed by SSGA with same custom investment guidelines as Oregon Short - Term Fund (changed January 1, 2014)
- Non-Cash Collateral
 - US Treasury and US Agency Bonds, Sovereign Debt
- Approved Borrowers
 - Oregon PERS Funds - State Street approved Borrowers list
 - Oregon Non - PERS Funds - Fed Primary Dealers list
- Program Parameters
 - Limits: 20% per Borrower
- Borrower Default Indemnification provided by State Street

* As of December 31, 2017

Source: my.statestreet.com

Data represents past performance and is not a guarantee of future results

Securities Lending Performance

State of Oregon - All Accounts Performance

	2014	2015	2016	2017	2016 vs. 2017
Average Lendable Assets (\$)	46,572,386,792	46,873,315,429	46,860,853,506	51,858,652,901	10.67%
Average On Loan (\$)	4,624,330,337	3,862,547,304	3,345,928,200	3,290,834,044	-1.65%
Utilization	9.93%	8.24%	7.14%	6.35%	-11.13%
Earnings by Program (\$)					
US Equity	5,475,584	6,432,435	6,011,253	4,378,891	-27.16%
US Corporate Bond	1,134,885	1,199,884	998,690	899,955	-9.89%
US Government	2,298,079	1,052,336	1,504,167	1,108,839	-26.28%
Non-US Equity	6,040,817	4,833,880	5,313,485	3,835,483	-27.82%
Non-US Fixed Income	79,592	53,843	27,893	20,182	-27.64%
Total Earnings (\$)	15,028,958	13,572,378	13,855,487	10,243,350	-26.07%
Components of Spread (bps)					
Demand Spread	35	45	47	41	-13.08%
Reinvestment Spread	10	10	16	7	-54.69%
Net Spread	44	55	63	48	-23.83%
Non-Cash Collateral Spread (bps)	26	29	31	29	-5.50%
Return to Lendable Assets (bps)	3.2	2.9	3.0	2.0	-33%

Notes:

- (1) Risk-Free rate used for spread calculations was Fed Funds Open, which changed to OBFR on 9/19/2016
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence
- (4) Components of Spread encompass only "cash collateral" backed loans during the period

Securities Lending Performance

State of Oregon - PERS Performance

	2014	2015	2016	2017	2016 vs. 2017
Average Lendable Assets (\$)	29,957,224,725	29,691,967,014	29,289,150,404	33,296,379,135	13.68%
Average On Loan (\$)	3,407,053,731	2,776,953,944	2,518,154,606	2,596,442,241	3.11%
Utilization	11.37%	9.35%	8.60%	7.80%	-9.30%
Earnings by Program (\$)					
US Equity	5,366,675	6,374,287	5,951,586	4,287,278	-27.96%
US Corporate Bond	693,662	625,657	445,389	421,351	-5.40%
US Government	1,306,159	449,063	721,885	609,248	-15.60%
Non-US Equity	5,834,749	4,634,822	5,047,557	3,704,779	-26.60%
Non-US Fixed Income	79,592	53,843	27,893	20,182	-27.64%
Total Earnings (\$)	13,280,836	12,137,671	12,194,309	9,042,839	-25.84%
Components of Spread (bps)					
Demand Spread	44	60	62	46	-25.92%
Reinvestment Spread	9	10	16	7	-55.88%
Net Spread	53	70	77	52	-31.96%
Non-Cash Collateral Spread (bps)	33	34	34	35	1.19%
Return to Lendable Assets (bps)	4.4	4.1	4.2	2.7	-35%

Notes:

- (1) Risk-Free rate used for spread calculations was Fed Funds Open, which changed to OBFR on 9/19/2016
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence
- (4) Components of Spread encompass only "cash collateral" backed loans during the period

Securities Lending Performance

State of Oregon - Non - PERS Performance

	2014	2015	2016	2017	2016 vs. 2017
Average Lendable Assets (\$)	16,615,162,067	17,181,348,415	17,571,703,102	18,562,273,766	5.64%
Average On Loan (\$)	1,217,276,606	1,085,593,360	827,773,594	694,391,803	-16.11%
Utilization	7.33%	6.32%	4.71%	3.74%	-20.59%
Earnings by Program (\$)					
US Equity	108,909	58,148	59,667	91,612	53.54%
US Corporate Bond	441,223	574,227	553,301	478,603	-13.50%
US Government	991,920	603,274	782,283	499,592	-36.14%
Non-US Equity	206,069	199,057	265,928	130,704	-50.85%
Non-US Fixed Income	-	-	-	-	-
Total Earnings (\$)	1,748,121	1,434,706	1,661,178	1,200,511	-27.73%
Components of Spread (bps)					
Demand Spread	9	9	11	20	78.82%
Reinvestment Spread	11	9	18	10	-44.25%
Net Spread	20	19	30	31	3.04%
Non-Cash Collateral Spread (bps)	9	14	17	13	-19.35%
Return to Lendable Assets (bps)	1.1	0.8	0.9	0.6	-32%

Notes:

- (1) Risk-Free rate used for spread calculations was Fed Funds Open, which changed to OBFR on 9/19/2016
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- (3) Data Source: Securities Finance Business Intelligence
- (4) Components of Spread encompass only "cash collateral" backed loans during the period

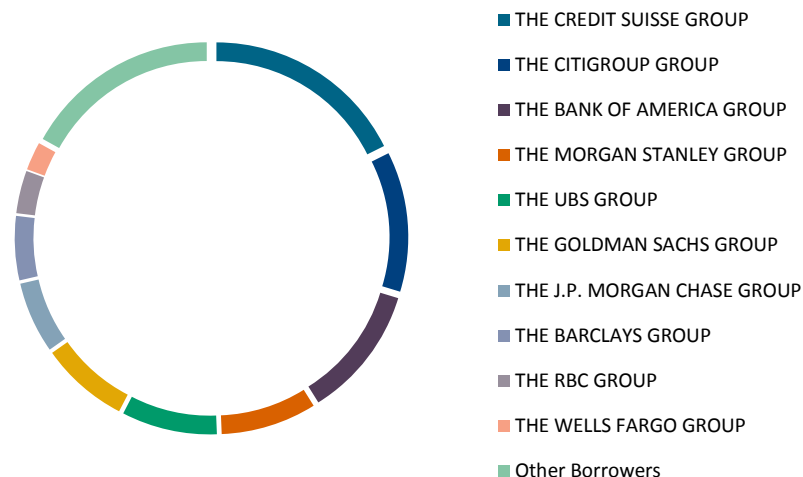
Borrower Diversification

State of Oregon Borrower Diversification

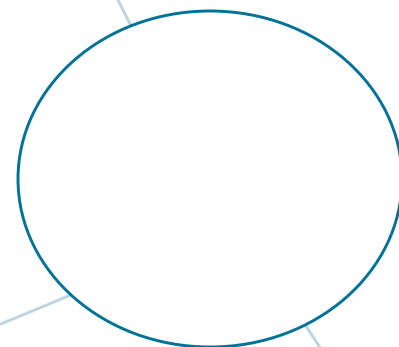
Borrower	On-Loan Market Value	% of Total
THE CREDIT SUISSE GROUP	547,764,496	18%
THE CITIGROUP GROUP	375,947,569	12%
THE BANK OF AMERICA GROUP	354,222,678	11%
THE MORGAN STANLEY GROUP	256,904,999	8%
THE UBS GROUP	256,226,119	8%
THE GOLDMAN SACHS GROUP	236,892,216	8%
THE J.P. MORGAN CHASE GROUP	191,706,173	6%
THE BARCLAYS GROUP	171,571,021	6%
THE RBC GROUP	114,759,996	4%
THE WELLS FARGO GROUP	75,906,893	2%
Other Borrowers	527,089,947	17%
Total	3,108,992,105	100%

Notes:

- (1) Based Currency (USD) Loan balance as of: December 31, 2017
- (2) Data represents past performance and is not a guarantee of future results
- (3) Data Source: Securities Finance Business Intelligence



Appendix

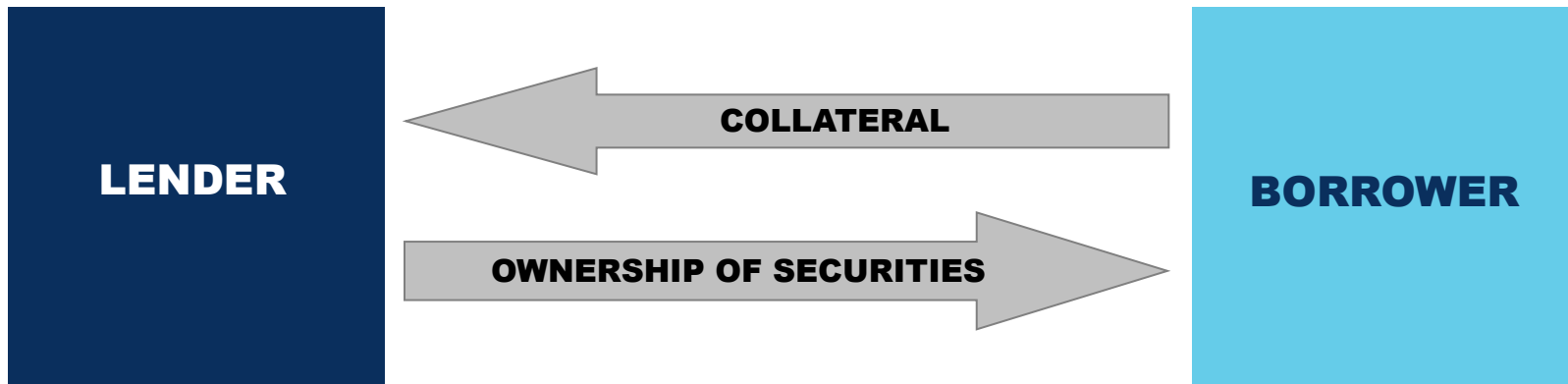


Securities Finance 101



Securities Finance Defined

An investment management product where participants generate revenue by temporarily transferring idle securities, in a collateralized transaction, to a borrower



- Borrower becomes legal owner of securities while lender retains rights of beneficial ownership entitling it to all distributions and corporate actions.
- Lender portfolios can be managed without limitation
- The borrower is contractually obligated to return the securities upon recall by the lender

Benefits of Securities Finance

- Many clients are supporters of securities lending, appreciating:
 - Revenue that can be used to offset custodial fees and service
 - Additional alpha it generates
 - The liquidity and price discovery benefits that securities lending provides the markets
- Increasingly, securities lending is being used as a way to:
 - Generate liquidity
 - Lower the cost of leverage
 - A means to raise cash to collateralize derivatives

Fundamentals of Securities Finance

Transaction Basics / Demand Drivers

- Securities are borrowed by a counterparty that has a commitment to deliver those which it has sold, but does not possess.
 - All asset classes
 - Failing purchase on the other side of the trade
- Securities are borrowed to cover a “short” position in a security.
 - All asset classes, but typically seen in corporate securities
 - Broker sells a position that it doesn’t own and borrows securities to make good on their delivery
 - Bets that the price of the security will fall before it has to return shares to the beneficial owner
 - Broker profits on the difference in price minus the cost to borrow the stock
- Tax treaties between governments allow for dividend arbitrage trades.
 - These are non-U.S. equities entitled to 75%-85% of a foreign dividend, borrower in the local market entitled to 100%
- Securities are borrowed as part of a financing strategy
 - Typically U.S. and non-U.S. government securities
 - “Repo” transaction

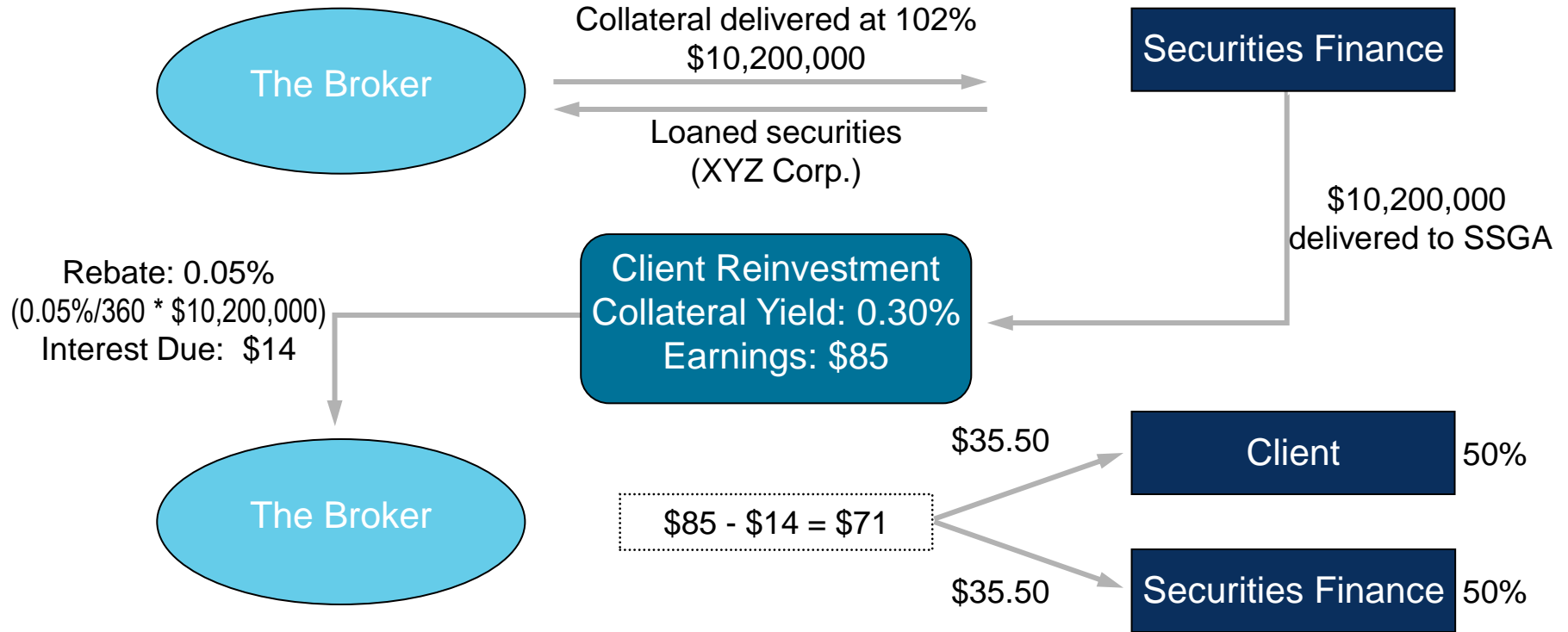
Fundamentals of Securities Finance

One Day Sample Transaction – Cash Collateral

- A Broker is looking to borrow 50,000 shares of XYZ Corp.
 - 50,000 shares of XYZ Corp. has a market value of \$10 million
- The Broker contacts the Securities Finance US Equity Trading Desk in Boston.
 - State Street has the supply/inventory
- Terms are agreed:
 - Rebate rate of 0.05%
 - Cash collateral
 - Open loan (no fixed period of time)
- Trade is executed on DML (Securities Finance's Trading and Accounting Platform).
 - The automated queuing system identifies fund ABCD as next in line for loan
 - ABCD has 50,000 shares of XYZ Corp available
- Collateral is delivered by the Broker
 - Cash collateral valued at 102% of the market value (\$10,200,000)
 - Cash is invested by SSGA in a specific, client designated re-investment portfolio, earning 0.30%
- Shares are delivered through DTC to the Broker

Fundamentals of Securities Finance

One Day Sample Transaction Diagram – Cash Collateral



Yield – Rebate = Total Spread
0.30% - 0.05% = 0.25% (25 bps)

Yield – OBFR = Reinvestment Spread
0.30% - 0.15% = 0.15% (15 bps)

OBFR – Rebate = Demand Spread
0.15% - 0.05% = 0.10% (10 bps)

Collateral Yield and Rebate Rate are annualized

OBFR – Overnight Banking Funding Rate

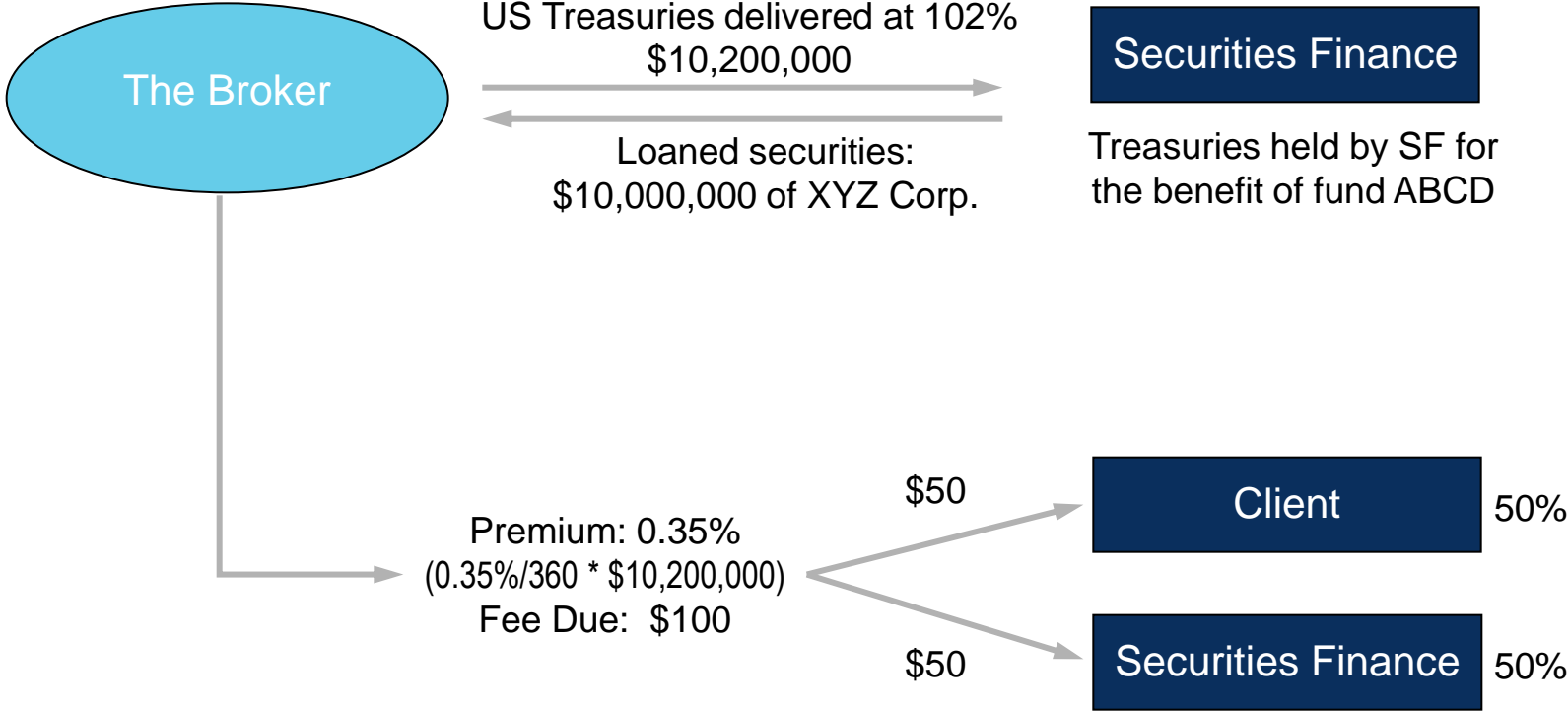
Fundamentals of Securities Finance

One Day Sample Transaction – Non-Cash Collateral

- A Broker is looking to borrow 50,000 shares of XYZ Corp.
 - 50,000 shares of XYZ Corp. has a market value of \$10 million
- The Broker contacts the Trading Desk.
 - State Street has the supply/inventory
- Terms are agreed:
 - Premium rate of 0.35%
 - Non-Cash collateral
 - Open loan (no fixed period of time)
- Trade is executed on DML (Securities Finance's Trading and Accounting Platform).
 - The automated queuing system identifies fund ABCD as next in line for loan
 - Fund ABCD has 50,000 shares of XYZ Corp available
- Collateral is delivered by Broker
 - \$10,200,000 US Treasuries, 102% of the market value of XYZ Corp.
 - US Treasuries are delivered to State Street and held for the benefit of fund ABCD
- XYZ Corp. shares are delivered through DTC to Broker

Fundamentals of Securities Finance

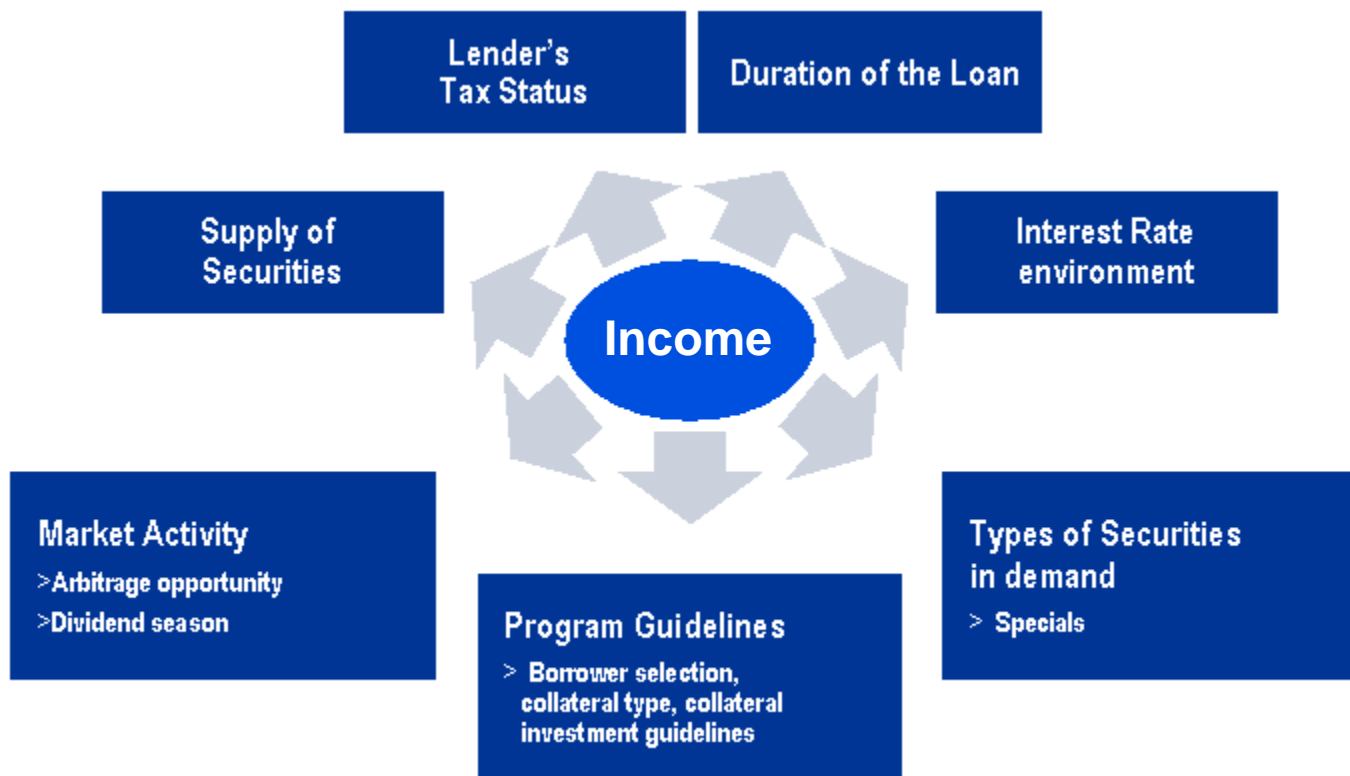
One Day Sample Transaction Diagram – Non-Cash Collateral (US Treasuries)



Premium rate annualized using a 360-day basis.

Fundamentals of Securities Finance

Factors Affecting Income



Securities Finance

Major Risks and Mitigating Factors

Credit Risk

State Street controls the quality of its **approved borrower list** and monitors all borrowers daily against credit limits approved by Enterprise Risk Management.

The optional borrower default **indemnity** transfers credit risk to State Street Bank & Trust Co which is rated AA- by S&P, the joint highest of any major agent lender.*

Market Risk

State Street **marks to market** all loans and collateral daily, takes a positive margin on collateral, and actively monitors value-at-risk in addition to stress scenario exposures.

The optional borrower default **indemnity** transfers market risk to State Street, who will cover the shortfall in collateral value in the event of a borrower default.

Ops Risk

State Street has **dedicated operations teams** to monitor daily processes and industry standard systems such as Pirum to reconcile positions with borrowers.

Security-level **buffers** are imposed to ensure that most sales can be facilitated through swaps with other clients, removing the need for a loan recall.

Legal Risk

Clients sign a single **Securities Lending Agency Agreement (SLAA)** defining all terms and parameters for their program.

The SLAA should be regularly reviewed and updated to ensure that it properly reflects the client's **risk/reward appetite**.

Reinvest Risk

Cash collateral is managed by **State Street Global Advisors**, one of the world's largest cash managers with over \$347 billion under management.**

State Street's optional borrower default indemnity typically **does not cover cash collateral** and clients should ensure that their reinvestment policy is appropriate.

State Street Securities Finance Program Overview

State Street's securities finance program launched in 1974 and was recently voted the **#1 provider** in the Americas by the Global Investor/ISF 2017 survey of beneficial owners.*

#1
Innovation
Globally*

44 years of experience in securities finance **#1** agent lender for the Americas region*

\$3.72 trillion of lendable assets **#1** in the 2017 Global Investor ISF Survey for Innovation*

\$391 billion of active loans **SSGA** experience in cash collateral management

34 security markets for equities and fixed income **9** regional offices with **5** trading desks

260 active clients, **44** approved jurisdictions **272** dedicated employees

137 borrowers, **16** approved jurisdictions **AA-** rating from Standard & Poor's

\$3.72tr
Lendable assets
\$391b
Active loans

34
Security
markets



“State Street was voted to be the most innovative provider globally.”
2017 Global Investor/ISF Beneficial Owners Survey

21 * Source: 2017 Global Investor/ISF Beneficial Owners Survey
All other State Street data as of December 31, 2017

Benefits of Partnering with State Street Securities Finance

272 employees* solely **dedicated to managing all aspects of the lending business** (Risk, Operations, Legal, Tax, Technology, Product Development, etc.)

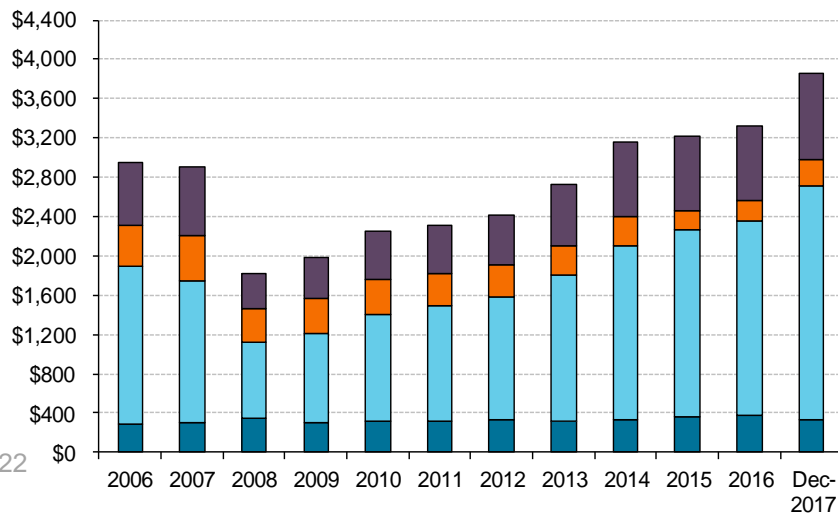
The **size of our program minimizes operational disruptions** and our stable supply of “specials” balances provides pricing power with borrower

Securities Finance is a **core product**, not an ancillary service, thus State Street commits a significant amount of capital to Securities Finance

A recognized **leader in the evolving regulatory environment** and its impact on the financing industry. Currently have employees serving on several industry Boards including the RMA, ISLA, ICI, SIFMA & Others

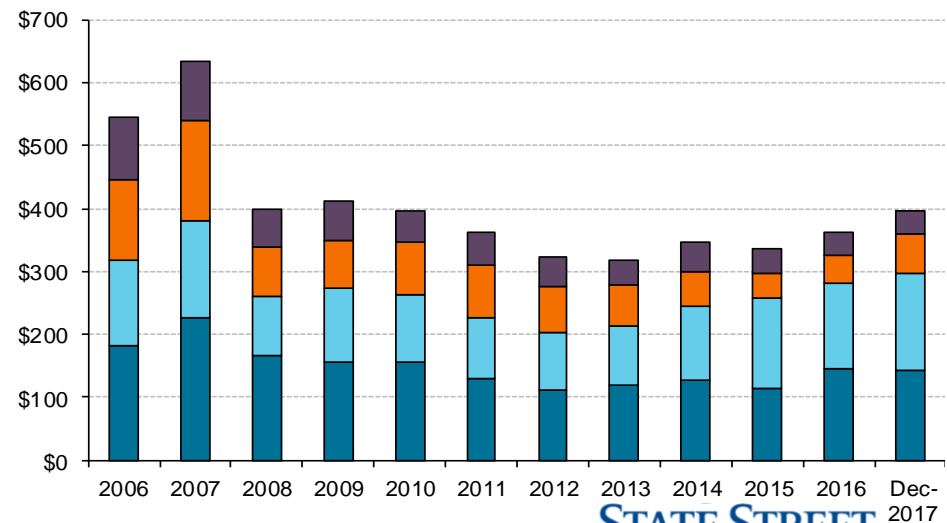
\$ Billions

Lendable Assets



\$ Billions

Total on Loan



STATE STREET

*As of December 31, 2017

Glossary

- **Asset-Backed Commercial Paper (ABCP)**¹ - A short-term investment vehicle with a maturity that is typically between 90 and 180 days. The security itself is typically issued by a bank or other financial institution. The notes are backed by physical assets such as trade receivables, and are generally used for short-term financing needs.
- **Asset-Backed Security (ABS)**¹ - A financial security backed by a loan, lease or receivables against assets other than real estate and mortgage-backed securities. For investors, asset-backed securities are an alternative to investing in corporate debt.
- **Asset/Liability Mismatch** - The process of maintaining assets and liabilities with different durations in an attempt to optimize return. In securities lending transactions, securities loans (liabilities of the lender) are typically overnight instruments while the reinvestment securities (assets of the lender) have various durations, depending on the condition of the yield curve at the time of purchase.
- **Counterparty Risk** - The risk that a counterparty will not settle an obligation in full, either on the due date or at any time afterwards. This risk is present on both the lending side (borrower as counterparty) and the collateral reinvestment side (reinvestment security issuer as counterparty) of a securities lending transaction. Synonymous with credit risk.
- **Demand Spread** - For loans vs. cash collateral, it is the weighted average risk-free rate less the rebate rate. It represents a measure of the demand value of the loaned security and is also referred to as the funding spread, the intrinsic spread, the intrinsic value, the natural spread or the below-the-line spread. For loans vs. non-cash collateral it is equal to the premium paid by the borrower.
- **General Collateral** - Securities that are not highly sought after in the market by borrowers; demand for general collateral is not issue specific. Repo rates, rebate rates and premiums for these specific securities tend to be lower than the prevailing rate for special collateral.
- **Gross Spread** - The difference between the yield generated by the cash collateral and the rebate paid on the securities loans (or, the in case of loans vs. non-cash collateral, the premium). It is comprised of the demand spread and the reinvestment spread. Also referred to as combined spread, integrated spread or total spread.
- **Mark to Market** - The practice of (re)valuing securities and financial instruments using current market prices. Both securities loans and collateral are revalued daily.

Glossary

- **Open Transactions** – Transactions with no fixed maturity date that are subject to the possibility of daily termination or renegotiation of rebate rates. Securities loans are generally considered overnight, or open, transactions.
- **Rebate Rate** - The interest rate that a securities lender pays the borrower on cash collateral. This will normally be below the risk-free rate and will reflect the demand value of the securities. Also referred to as the funding rebate.
- **Reinvestment Spread** - Weighted average collateral yield less the weighted average risk-free rate. This represents a measure of the excess return generated by the investment process. This is also referred to as asset spread, investment spread, above-the-line spread or collateral spread.
- **Repurchase Agreement (Repo)** - A financing arrangement in which the holder of securities sells them to a lender under an agreement to repurchase them on a specified date at an agreed-to price.
- **Risk Free Rate** - A theoretical interest rate that would be returned on an investment that was completely free of risk. The very short-term government securities are usually used as proxies for the risk free rate, since they are virtually risk-free. In securities lending transactions the Overnight Banking Funding Rate (OBFR) and the Eonia are used as close approximations of the risk-free rate for loans vs. USD collateral and loans vs. Euro collateral, respectively. The risk-free rate serves as the breakpoint that segments the total spread/income earned on a securities lending transaction into the portion of spread/income attributable to the demand for the loaned securities and the portion attributable to the reinvestment process.
- **Specials Collateral** - Securities that, for a specific reason, are highly sought after in the market by borrowers. Funding rates, rebate rates and premiums for these specific securities tend to be higher than the prevailing rate for general collateral.
- **Substitute Payment** - A payment made by the borrower of securities to the lender in lieu of actual dividends or other income earned on the securities (net of any applicable taxes). This payment is equal to that which the lender would have received if it had not lent the securities. Also referred to as a manufactured payment.
- **Weighted Average Maturity (WAM)²** - The length of time until the average security in a fund will mature or be redeemed by its issuer. It indicates a fixed income fund's sensitivity to interest rate changes: longer average weighted maturity implies greater volatility in response to interest rate changes.

Biography



Johnson Shum
Vice President

Johnson is a vice president and relationship manager in State Street's Securities Finance division. He is responsible for the overall service delivery and satisfaction for strategic lending customers. He also acts as the point of contact and advocate for Securities Finance-related matters.

Prior to assuming his current role, Mr. Shum worked at Brown Brothers Harriman & Co.'s securities lending group as a product development manager. He was responsible for the development of new products to expand their securities lending capabilities. Previously, he worked as a client services and relationship manager servicing mutual fund clients at The Bank of New York.

Mr. Shum has more than 19 years experience in the financial services industry, specifically in client services and product management. He holds a Bachelor of Arts degree in international business from the State University of New York at Buffalo.

State Street provides experienced securities lending capabilities and supplies liquidity across more than 30 markets, worldwide, via Securities Finance offices and trading desks located throughout the Americas, Europe/Middle-East/Africa and Asia/Pacific regions.

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Past performance is no guarantee of future results.

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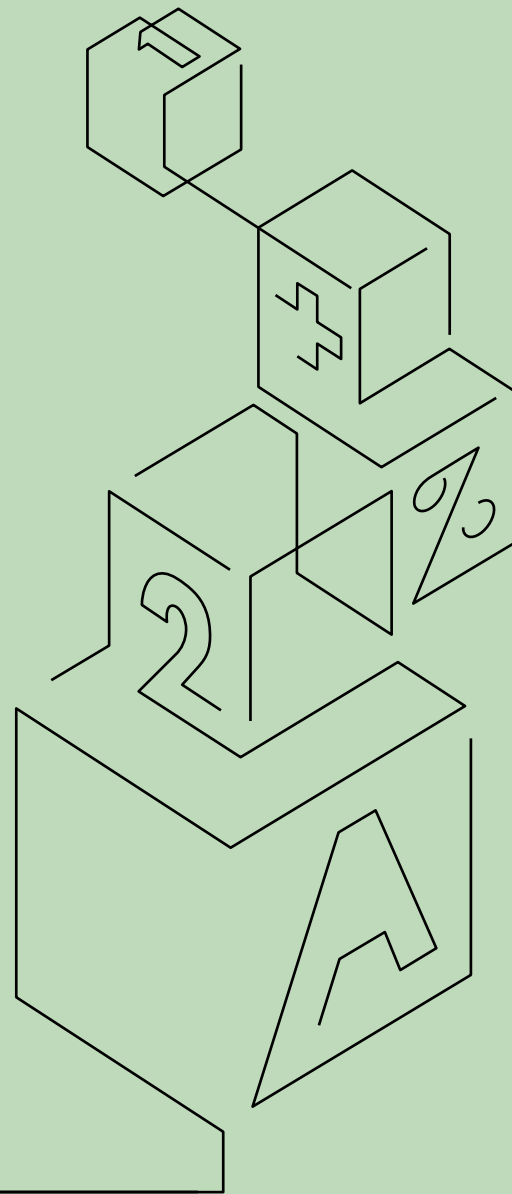
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Global Cash Management

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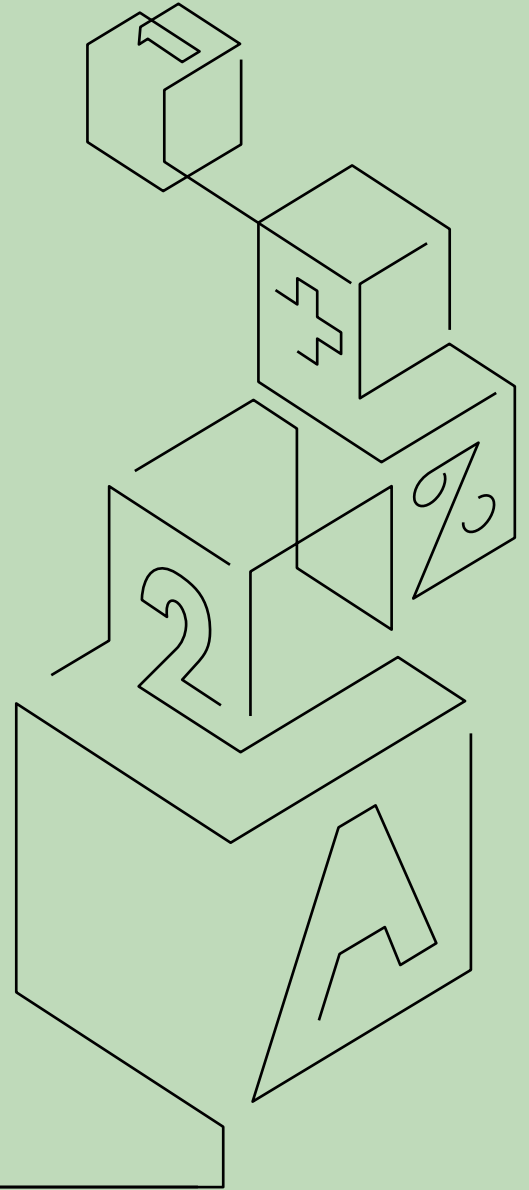
STATE STREET
GLOBAL ADVISORS[®]



Portfolio Characteristics

January 31, 2018

STATE STREET
GLOBAL ADVISORS®



STATE OF OREGON PERF

FC5L — STATE OF OREGON PERF

Summary Characteristics

As of January 31, 2018

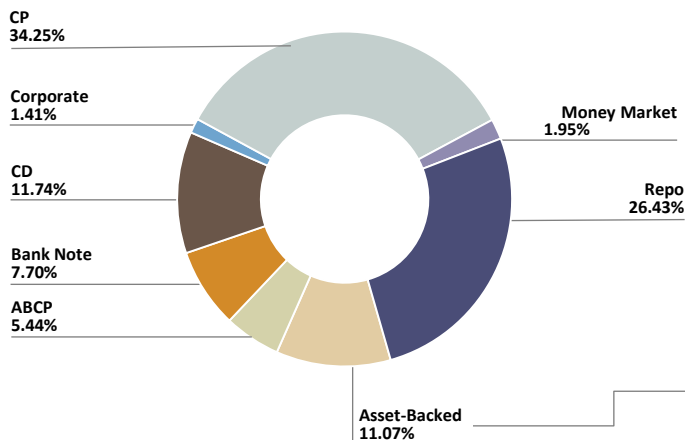
1-Day Yield (360 Basis)	1.61%
Shares Outstanding	1,288,096,637
Floating Rate %	55.17
% Foreign Issuers	24.96
WAM	13
WAM to Call	13
Call versus Mat Spread	—
% Callables	1.94%
Avg Life -Expected Maturity	117
Fund Price as of [1/31/2018]	99.9921

Credit Quality Breakdown

LONG-TERM RATINGS	% OF FUND
AAA	9.83
AA	8.94
A	3.74
BBB+	—
BBB	—
BBB-	—
BB+	—
BB	—
BB-	—
SHORT-TERM RATINGS	% OF FUND
A-1+/P-1	22.51
A-1/P-1	48.51
SPLIT	3.27
OTHER	3.20

Floating Index Breakdown

	% of Fund
FED FUNDS	—
1MO LIBOR	49.87
3 MOS LIBOR	5.30
PRIME	—
Reset Buckets	% of Fund
Next Business Day	2.18
2–7 Days	9.11
8–31 Days	41.78
1–2 Months	0.78
2–3 Months	1.32
Maturity Buckets	% of Fund
Next Business Day	28.49
1 WEEK LIQUIDITY	35.01
2–30 Days Liquidity	17.00
31–60 Days Liquidity	9.04
61–90 Days Liquidity	2.95
90 DAY LIQUIDITY	57.49
91–120 Days Liquidity	2.33
121–150 Days Liquidity	2.56
151–180 Days Liquidity	10.33
181–270 Days Liquidity	12.58
271–360 Days Liquidity	10.53
12–15 Month Liquidity	1.94
15–18 Month Liquidity	—
18–21 Month Liquidity	2.25
21–24 Month Liquidity	---
Greater than 2 Year Liquidity	---
Repo Collateral	% of Fund
Treasuries	21.69
Agencies	4.74
Agency MBS	—
Money Markets	—
Corporates	—
Asset-Backed	—
Equities	—



Source: Bloomberg Finance L.P., SSGA

The fund does not hold any SIV's, CDO's, or Extendible Liquidity Note securities. Ratings are Standard and Poor's. The designation "Other" under Credit Quality Breakdown refers to Long Term Ratings below BB — and Short Term Ratings below A-1/P-1. Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

STATE OF OREGON PERF

FC5N — STATE OF OREGON PERF Summary Characteristics

As of January 31, 2018

1-Day Yield (360 Basis)	2.26%
Shares Outstanding	25,214,626
Floating Rate %	100.00
% Foreign Issuers	21.94
WAM	75
WAM to Call	75
Call versus Mat Spread	—
% Callables	—
Avg Life -Expected Maturity	3,230
Fund Price as of [1/31/2018]	98.4704

Credit Quality Breakdown

LONG-TERM RATINGS	% OF FUND
AAA	---
AA	85.94
A	2.27
BBB+	—
BBB	—
BBB-	—
BB+	—
BB	—
BB-	—
SHORT-TERM RATINGS	% OF FUND
A-1+/P-1	—
A-1/P-1	—
SPLIT	—
OTHER	11.79

Floating Index Breakdown

	% of Fund
FED FUNDS	—
1MO LIBOR	11.79
3 MOS LIBOR	88.21
PRIME	—
Reset Buckets	% of Fund
Next Business Day	—
2–7 Days	—
8–31 Days	11.79
1–2 Months	—
2–3 Months	88.21
Maturity Buckets	% of Fund
Next Business Day	—
1 WEEK LIQUIDITY	—
2–30 Days Liquidity	—
31–60 Days Liquidity	—
61–90 Days Liquidity	—
90 DAY LIQUIDITY	—
91–120 Days Liquidity	—
121–150 Days Liquidity	—
151–180 Days Liquidity	2.27
181–270 Days Liquidity	---
271–360 Days Liquidity	—
12–15 Month Liquidity	—
15–18 Month Liquidity	—
18–21 Month Liquidity	—
21–24 Month Liquidity	—
Greater than 2 Year Liquidity	97.73
Repo Collateral	% of Fund
Treasuries	—
Agencies	—
Agency MBS	—
Money Markets	—
Corporates	—
Asset-Backed	—
Equities	—



Asset-Backed
100.00%

Auto Retail	—
Credit Card	—
Floor Plan	—
Home Equity	11.79
Other	—
Student Loan	66.27
UK RMBS	21.94

Source: Bloomberg Finance L.P., SSGA

The fund does not hold any SIV's, CDO's, or Extendible Liquidity Note securities. Ratings are Standard and Poor's.

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OREGON SHORT TERM FUND

FC91 OREGON SHORT TERM FUND

Summary Characteristics

As of January 31, 2018

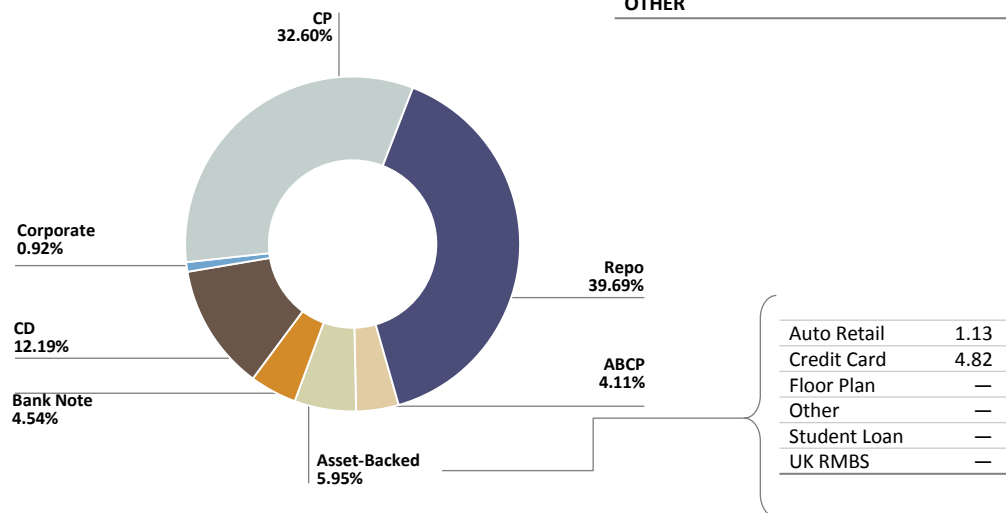
1-Day Yield (360 Basis)	1.52%
Shares Outstanding	362,700,326
Floating Rate %	42.31
% Foreign Issuers	23.53
WAM	12
WAM to Call	12
Call versus Mat Spread	—
% Callables	—
Avg Life -Expected Maturity	80
Fund Price as of [1/31/2018]	100.01

Credit Quality Breakdown

LONG-TERM RATINGS	% OF FUND
AAA	4.82
AA	5.39
A	3.19
BBB+	—
BBB	—
BBB-	—
BB+	—
BB	—
BB-	—
SHORT-TERM RATINGS	% OF FUND
A-1+/P-1	27.50
A-1/P-1	46.63
SPLIT	11.34
OTHER	1.13

Floating Index Breakdown

	% of Fund
FED FUNDS	—
1MO LIBOR	39.12
3 MOS LIBOR	3.19
PRIME	—
Reset Buckets	% of Fund
Next Business Day	2.27
2–7 Days	3.47
8–31 Days	34.30
1–2 Months	1.42
2–3 Months	0.85
Maturity Buckets	% of Fund
Next Business Day	41.34
1 WEEK LIQUIDITY	47.41
2–30 Days Liquidity	15.99
31–60 Days Liquidity	11.72
61–90 Days Liquidity	2.76
90 DAY LIQUIDITY	71.81
91–120 Days Liquidity	---
121–150 Days Liquidity	1.65
151–180 Days Liquidity	9.10
181–270 Days Liquidity	9.10
271–360 Days Liquidity	6.41
12–15 Month Liquidity	---
15–18 Month Liquidity	—
18–21 Month Liquidity	1.93
21–24 Month Liquidity	---
Greater than 2 Year Liquidity	—
Repo Collateral	% of Fund
Treasuries	39.69
Agencies	---
Agency MBS	—
Money Markets	—
Corporates	—
Asset-Backed	—
Equities	—



Source: Bloomberg Finance L.P., SSGA

The fund does not hold any SIV's, CDO's, or Extendible Liquidity Note securities. Ratings are Standard and Poor's.

The designation "Other" under Credit Quality Breakdown refers to Long Term Ratings below BB — and Short Term Ratings below A-1/P-1.

Characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

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Tracking Code: 2015407.1.1.GBL.INST

Expiration Date: July 31, 2018

TAB 9 – Overlay Review

OPERF

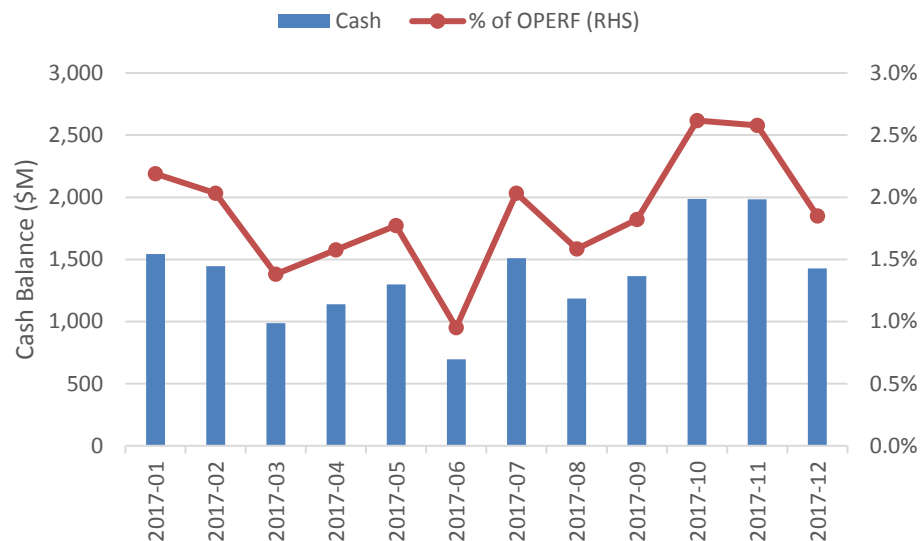
OPERF Policy Implementation Overlay Manager Annual Update

Purpose

To provide the OIC an update on the OPERF overlay program, currently managed by Russell Investments.

Background

Although OPERF does not have a strategic allocation to cash, it maintains a cash balance that is primarily invested with the Oregon Short Term Fund (OSTF). This cash balance is used to make regularly-scheduled PERS benefit payments as well handle episodic capital calls and distributions associated with OPERF's private market investments. The chart below shows OPERF's 2017 monthly cash balance invested in OSTF and subject to the overlay program.



Since it does not have a strategic allocation target, the OPERF cash balance may be the source of “cash drag” in that it is not invested in investments with greater potential return. To minimize cash drag, the OIC retained Russell Investments to implement an overlay program that equitizes OPERF's cash balances. Specifically, Russell monitors and, if necessary, equitizes both excess cash held by public equity and REIT managers and any other idle OPERF cash. In its equitizing process, Russell uses highly-liquid futures contracts with margin requirements much smaller than the contracts' “face” or “notional” values. As part of its process, Russell also a) monitors OPERF's asset allocation relative to its OIC-established strategic targets (see attached OIC Policy INV 215: OPERF Asset Allocation and Rebalancing Policy) and b) trades equity and fixed income futures contracts as necessary to align the Fund's overall asset allocation with these OIC-established targets. For perspective on the overlay program, OIC members receive a monthly update on the program's overlay exposures in the asset allocation section of the regular OIC meeting materials.

As of December 31, 2017, the OPERF overlay program was long \$1.84 billion in fixed income contracts and short \$270 million in global equity contracts for a total gross notional exposure of \$2.11 billion.

Staff Recommendation

None, information only.



Origination: 09/2014
Last Approved: 09/2015
Last Revised: 09/2015
Next Review: 09/2016
Owner: *John Skjervem: Chief Investment Officer*
Policy Area: *Investments*
References: *OST Policy 4.01.18*

INV 215: OPERF Asset Allocation and Rebalancing 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 RETURNS

1. Periodically (annually or twice a year) the OIC's general consultant updates its capital market and asset class return assumptions.
2. At least annually, and for OIC approval, OST staff will work with the general consultant to update the policy mix and return expectations 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.

Attachments:

No Attachments

Approval Signatures

Step Description	Approver	Date
Oregon Investment Council	John Skjervem: Chief Investment Officer	09/2015
	Kim Olson: Policy Analyst	09/2015
	Mike Mueller	09/2015

COPY

State of Oregon

Russell Investments Overlay Update

Greg Nordquist, CFA – Director, Overlay Strategies

Ben Linford, CFA – Portfolio Manager, Overlay Strategies

Doug Miller – Director Relationship Management, Americas Institutional

MARCH 14, 2018

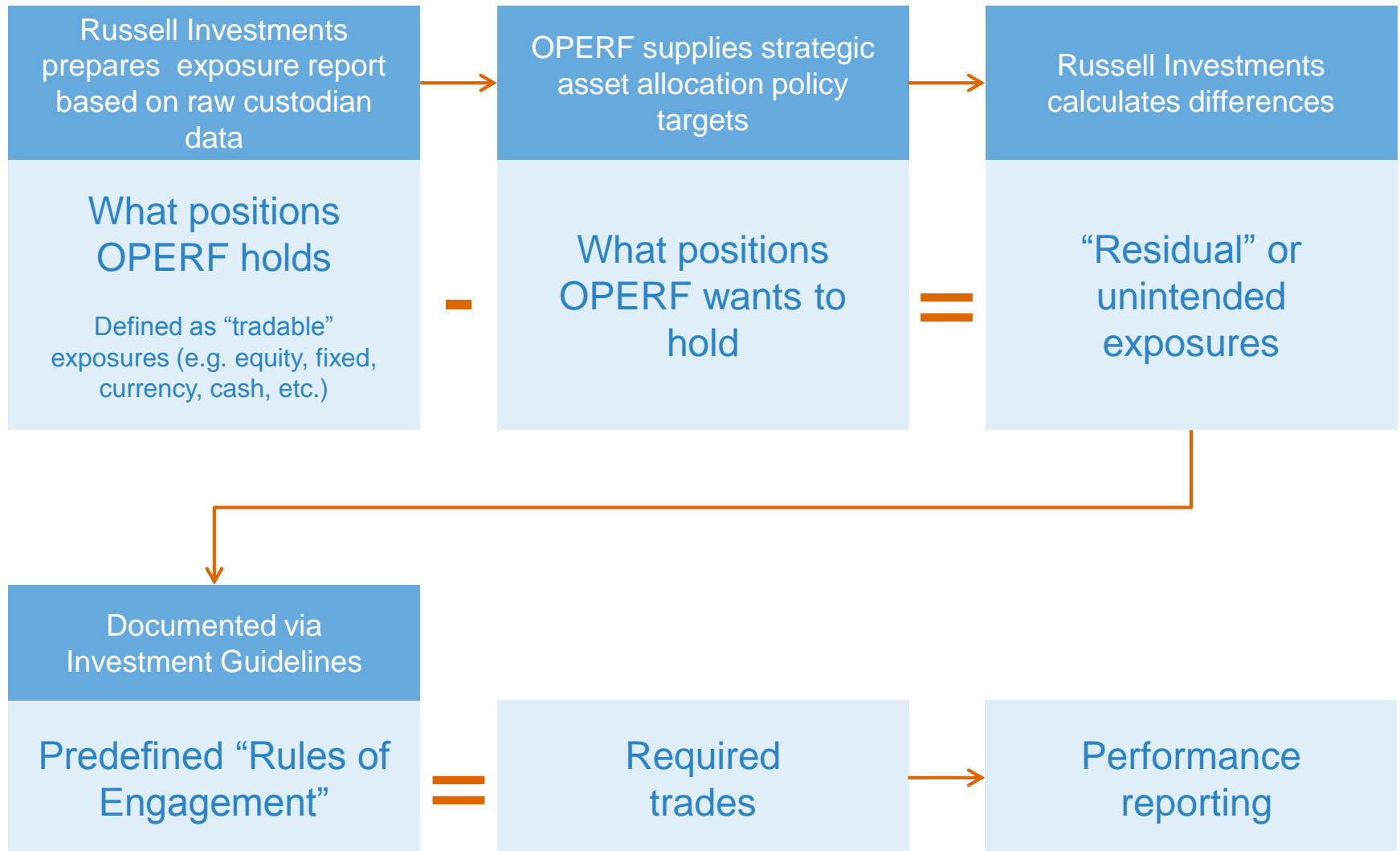
Executive Summary

- › Futures Overlay Explained
 - › Review of the basic mechanics of an overlay program
- › Why use an overlay?
 - › Review of the benefits that the overlay provides
 - › Reduction in cash drag (+ \$269 MM)
 - › Reduction in risk (73% lower tracking error)
 - › Reduction in transaction costs (\$17 MM)
- › Appendix
 - › 2017 performance report

Futures Overlay Explained



Investment process



For illustrative purposes only.

Overlay futures explained

Physicals vs Futures example - Day 1

Note: Futures = Liquid Exposure
(NOT Leverage)

Initial
Position

Physical
Exposure

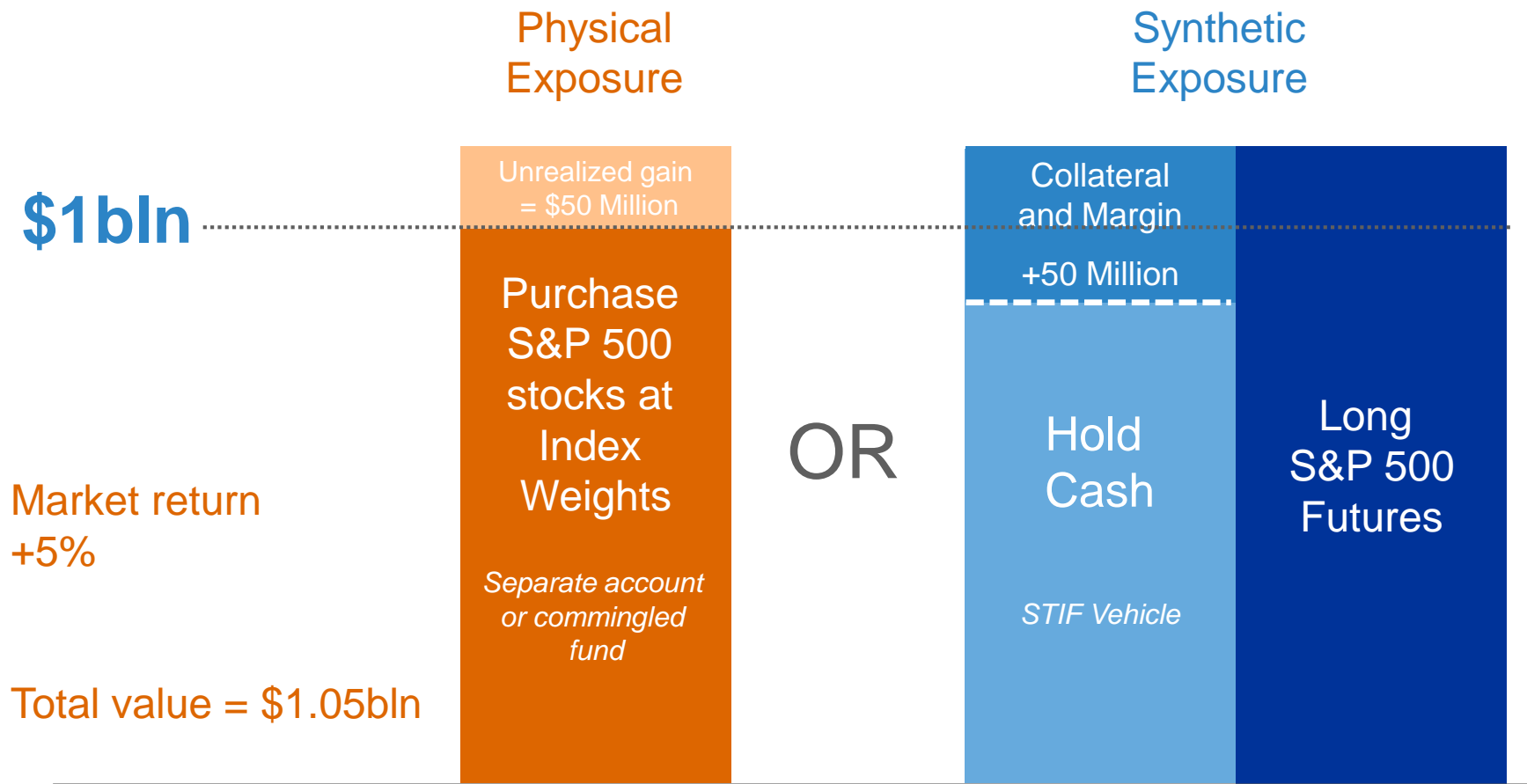
Synthetic
Exposure



For illustrative purposes only.
Indexes are unmanaged and cannot be invested in directly.

Overlay futures explained

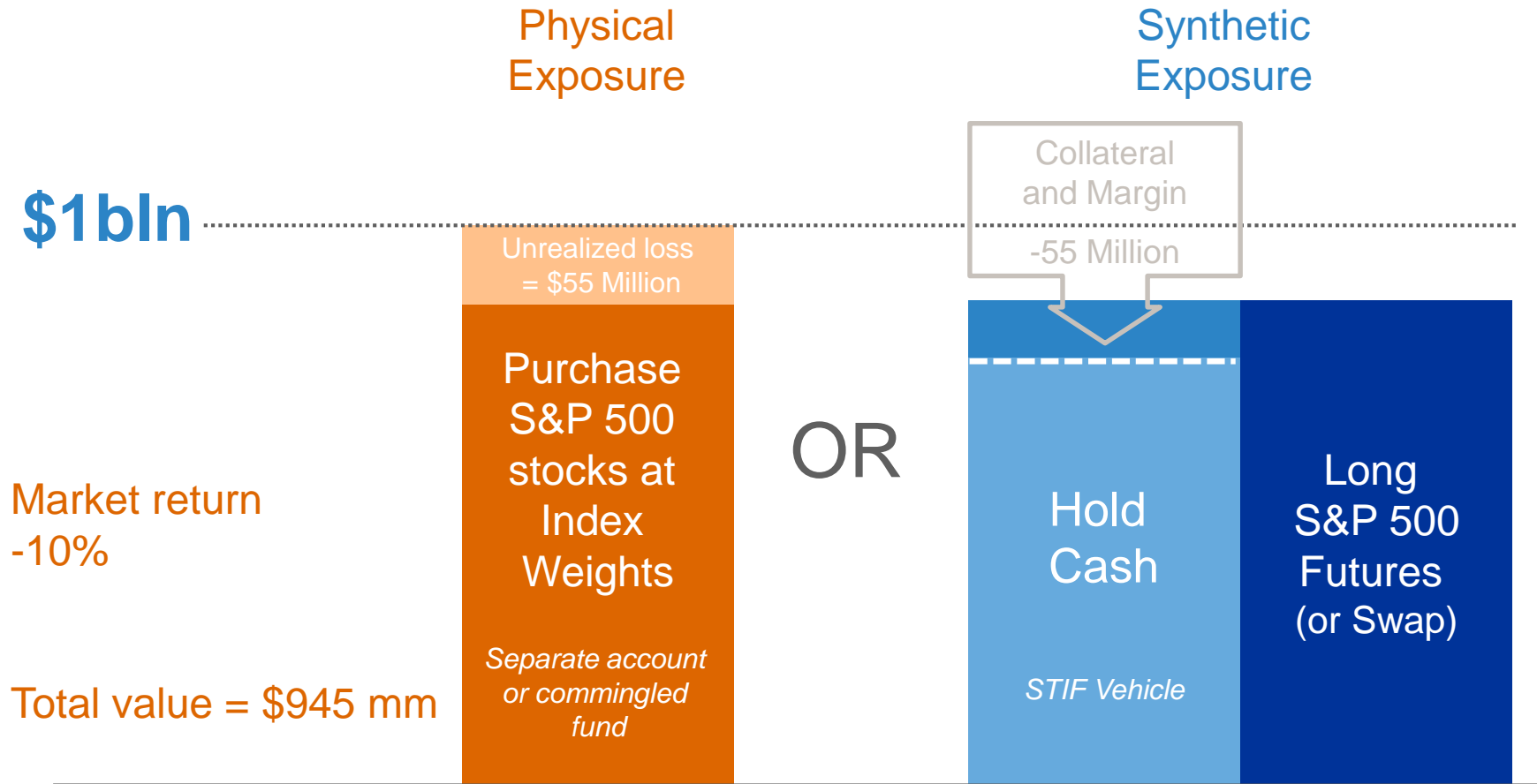
Physicals vs Futures example - Day 2



For illustrative purposes only.
Indexes are unmanaged and cannot be invested in directly.

Overlay futures explained

Physicals vs Futures example - Day 3



For illustrative purposes only.
Indexes are unmanaged and cannot be invested in directly.

Why use an overlay?

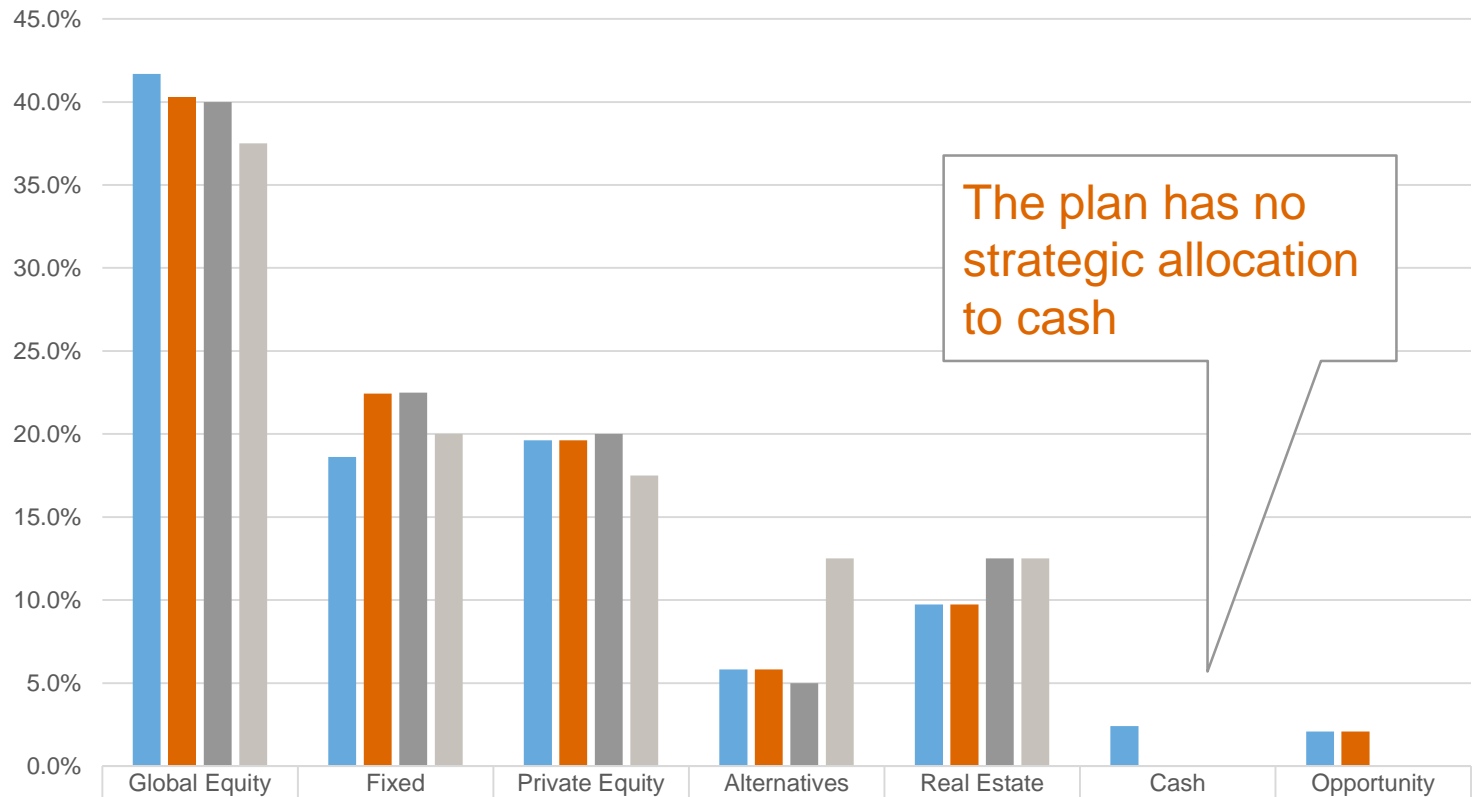
Reduce cash drag



Reduce cash drag

No strategic allocation to cash

OPERF Asset Allocation – 11/30/2017

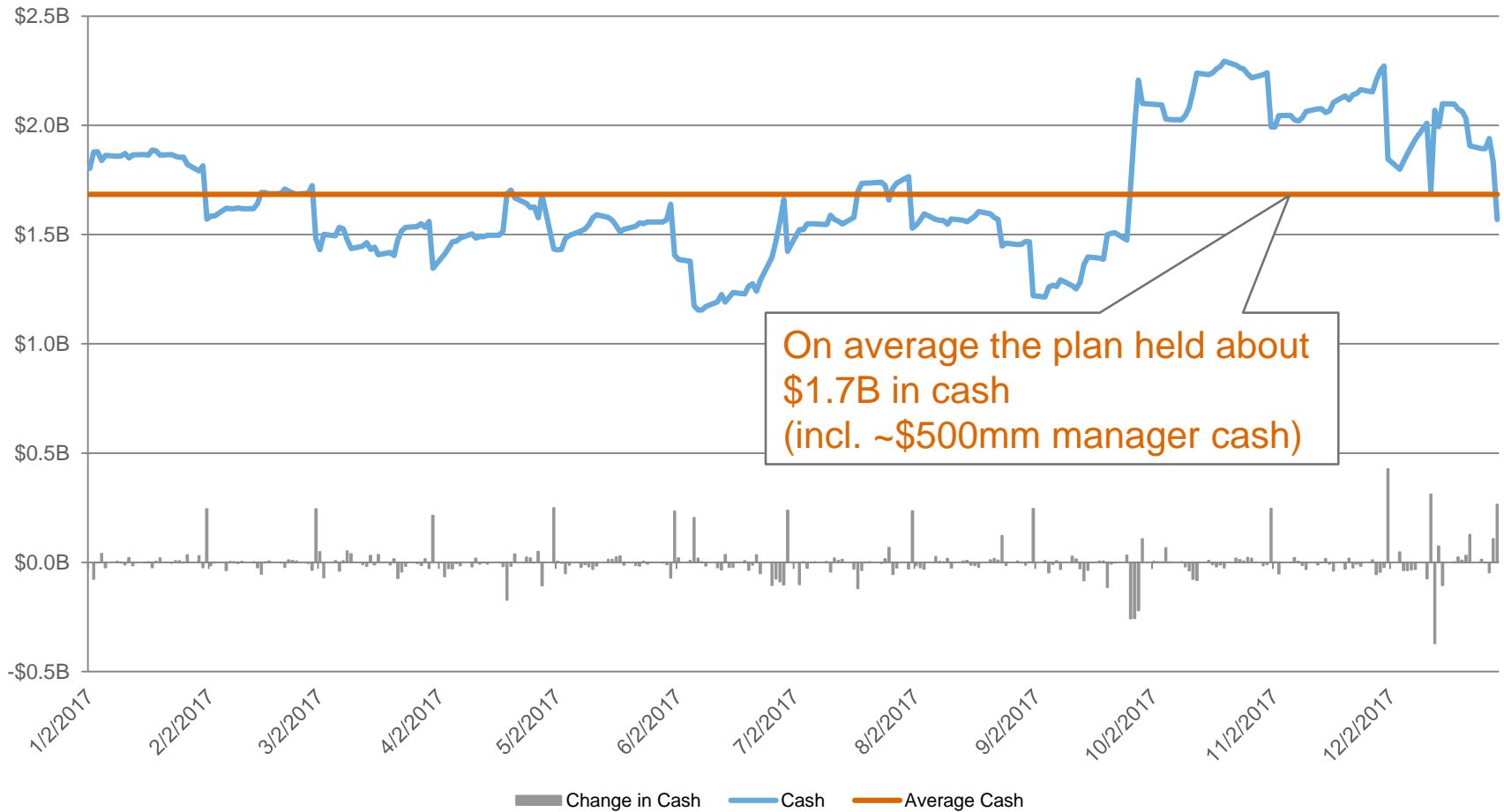


The plan has no strategic allocation to cash

Reduce cash drag

Plan cash levels

OPERF Plan Cash Levels

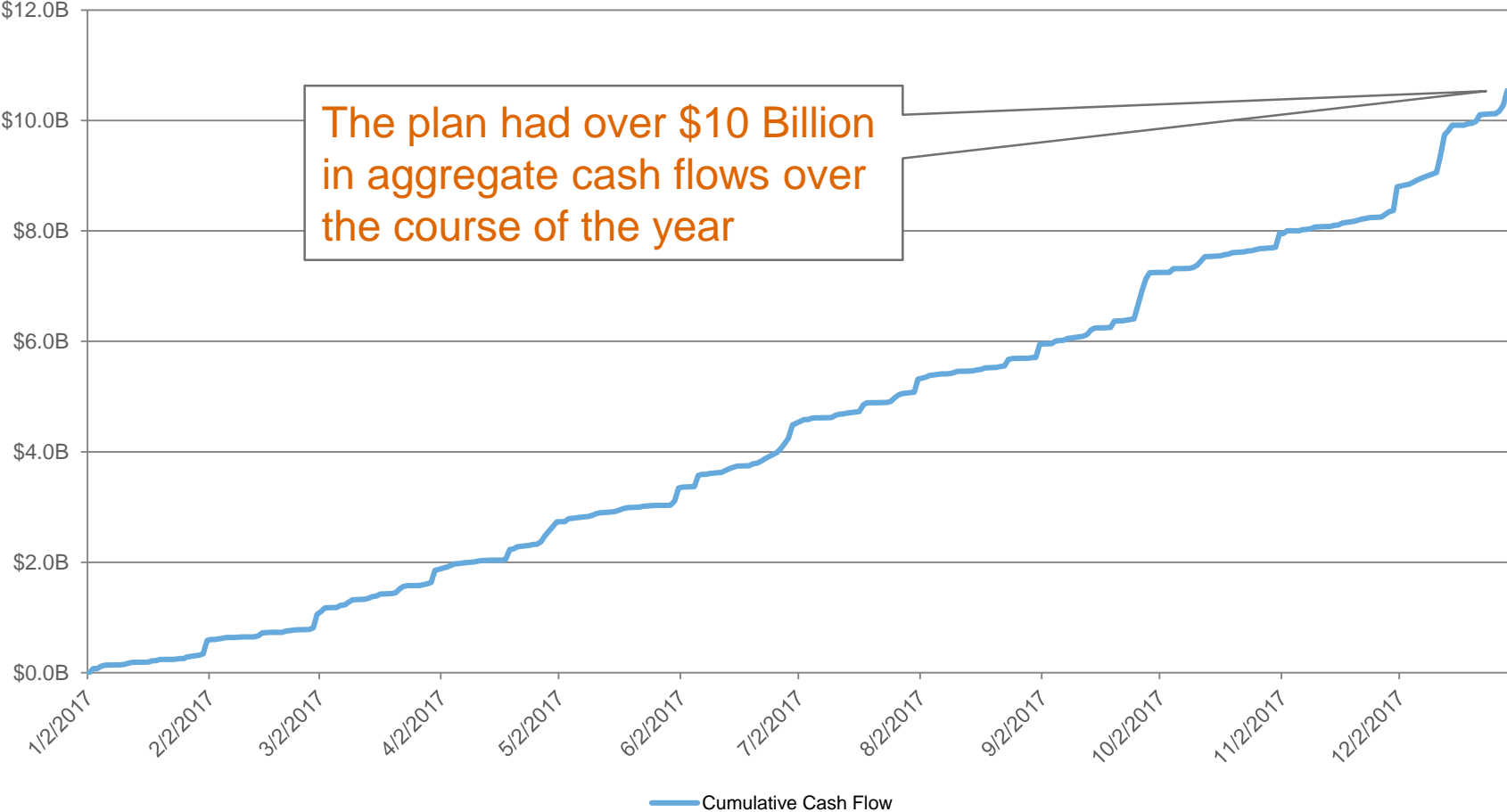


Past performance is not a guarantee of future results.

Reduce cash drag

Plan cash flows

OPERF Cumulative Cash Flows

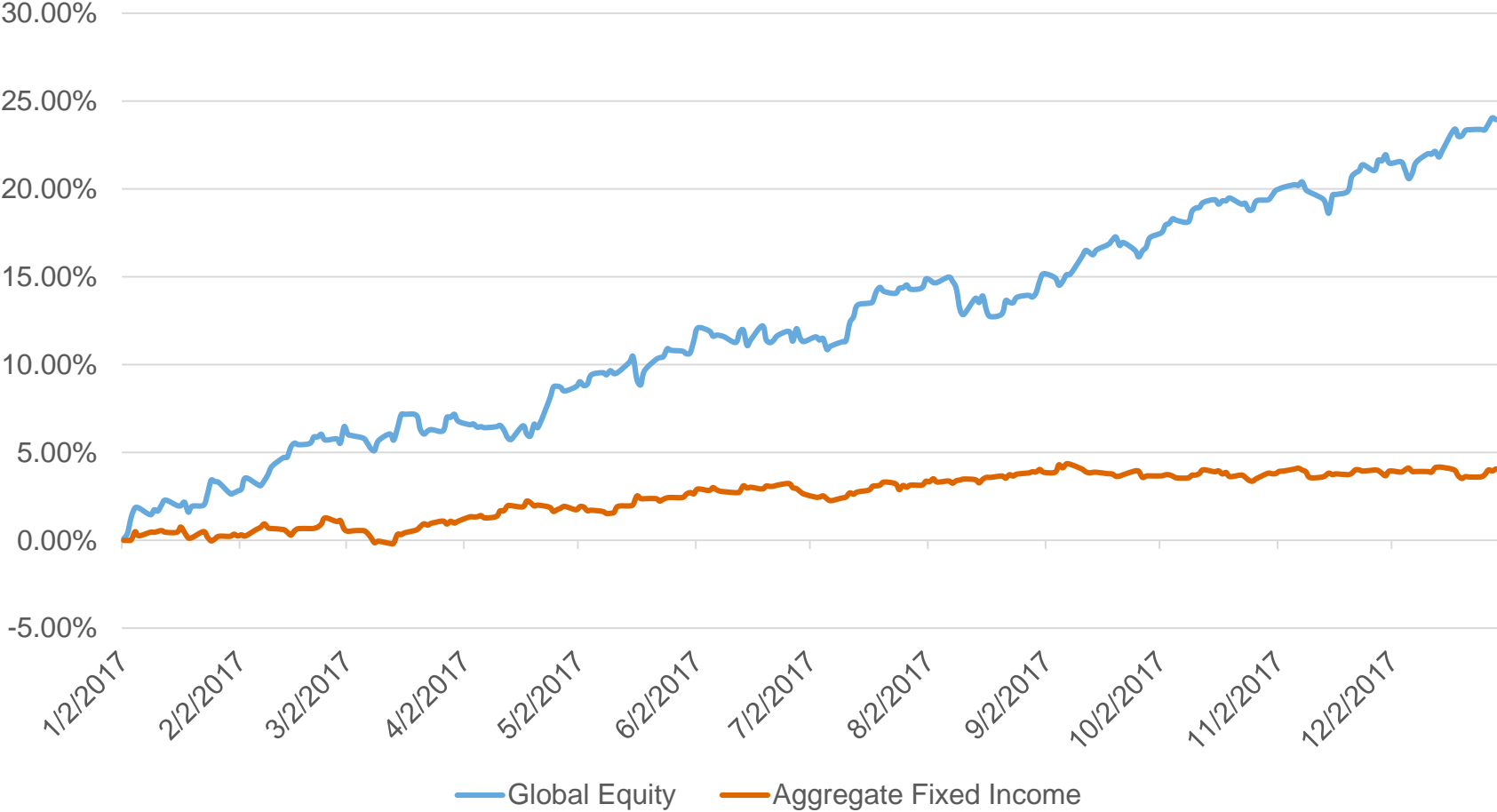


Past performance is not a guarantee of future results.

Reduce cash drag

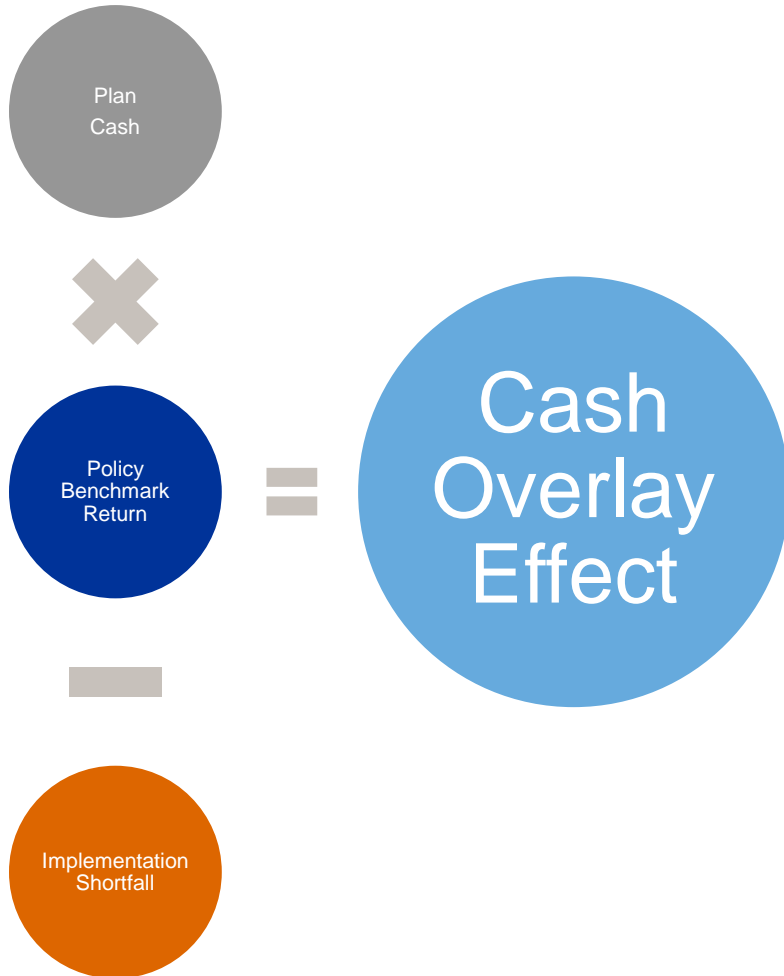
Benchmark Returns

Running Benchmark Return



Reduce cash drag

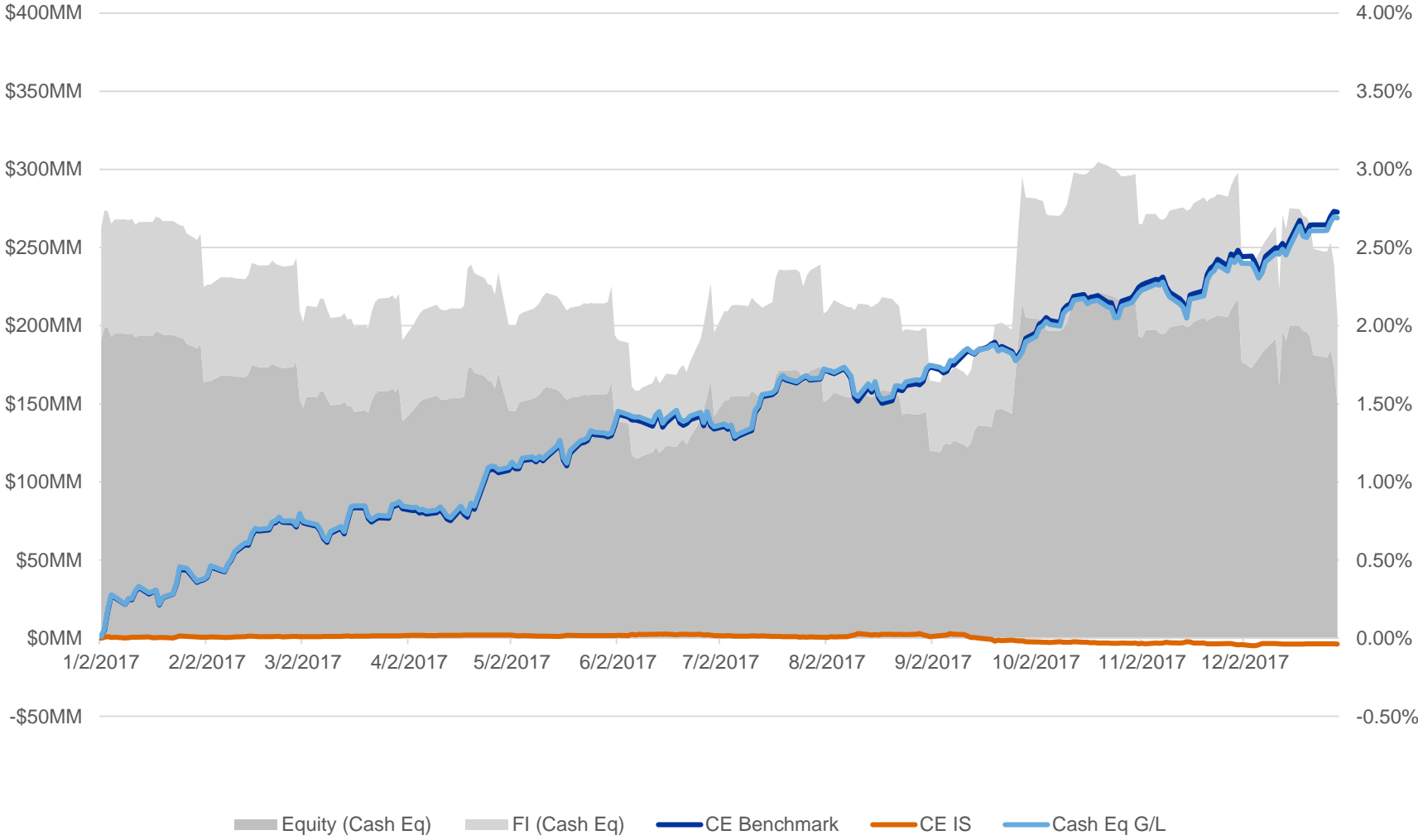
Cash Overlay Effect



- › In 2017 the cash overlay effect was about \$269 million
- › Without the overlay, there would have been a cash drag on performance of about \$269 million
- › In other words, by simply sitting in cash without an overlay the plan would have been about \$269 million less funded

Reduce cash drag

Cash Overlay Effect Detail



Past performance is not a guarantee of future results.

Why use an overlay?
Reduce risk

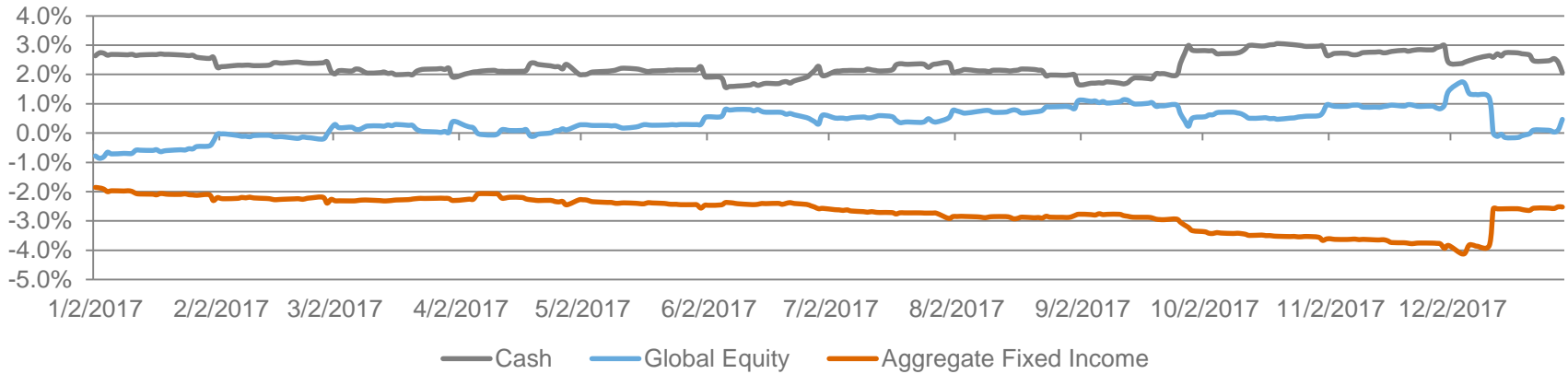


Reduce risk

Deviations from policy exposures

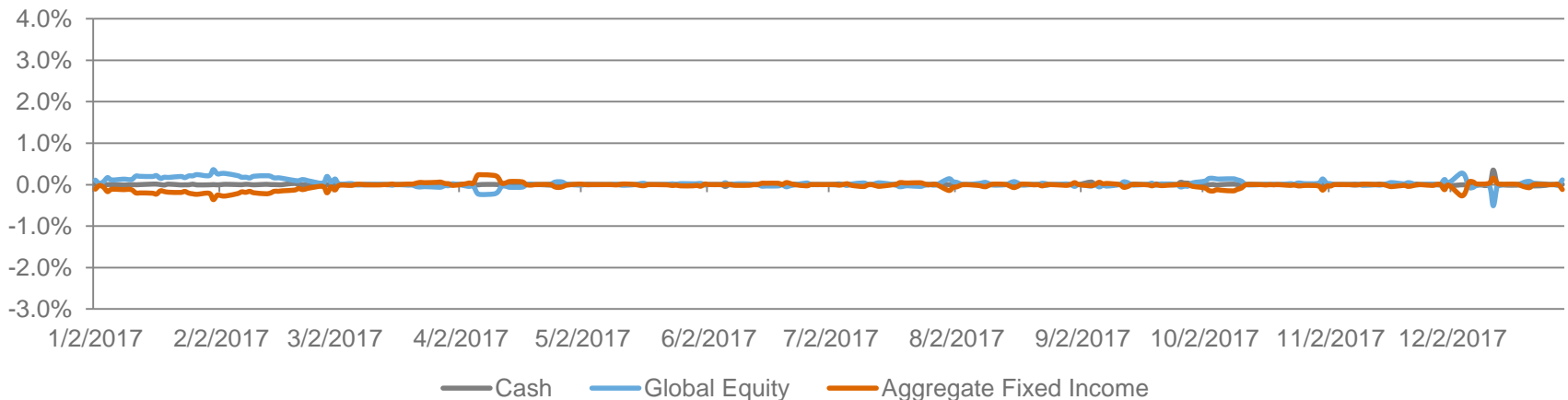
Without Overlay

Daily Physical % vs. Target



With Overlay

Daily Net Exposure % vs. Target

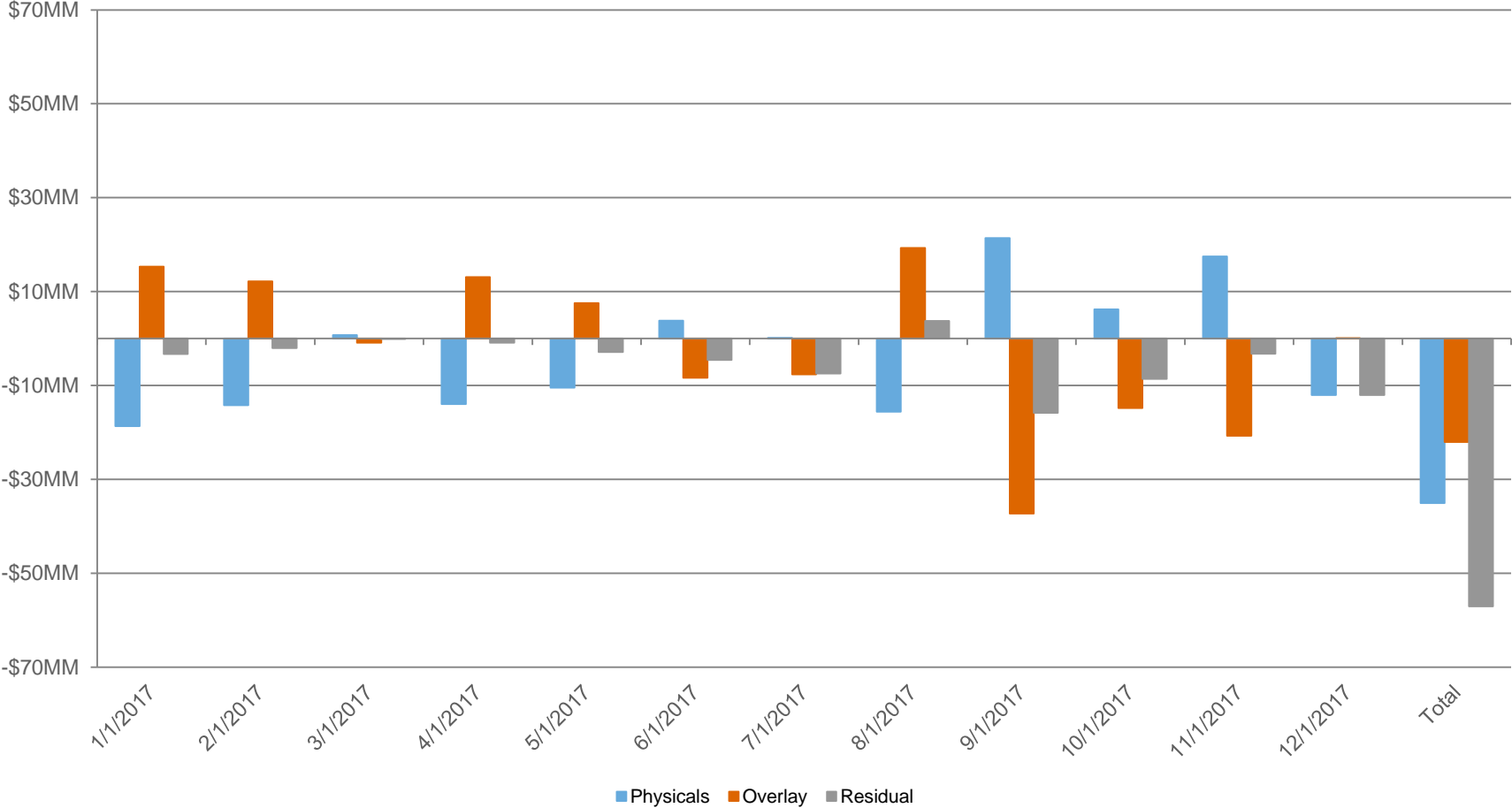


Past performance is not a guarantee of future results.

Reduce risk

Gain / Loss due to deviations

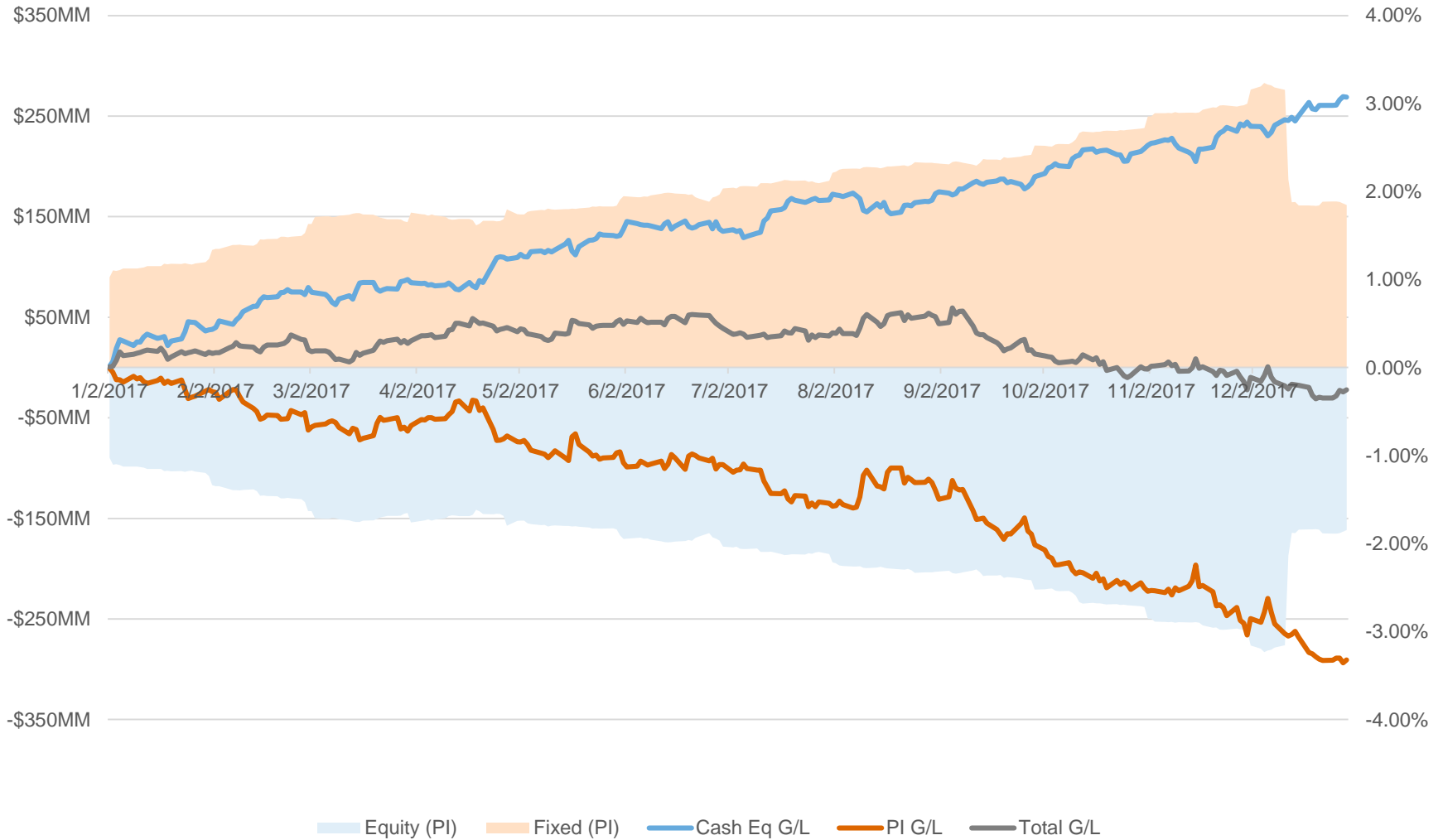
OPERF Monthly Gain/Loss



Past performance is not a guarantee of future results.

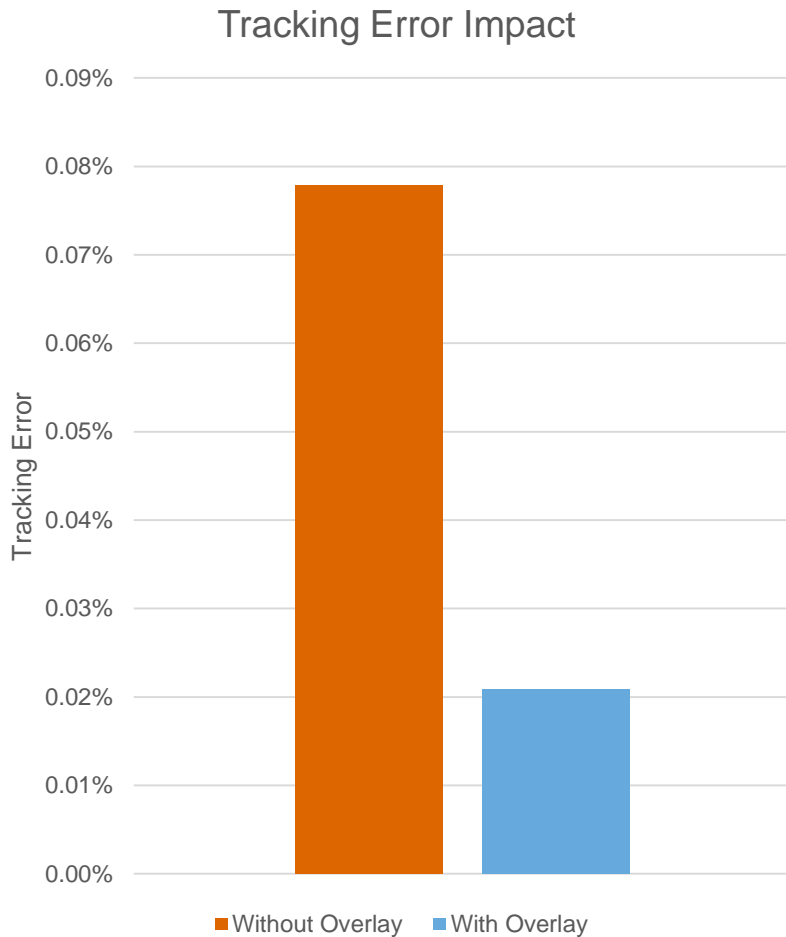
Reduce risk

Decomposing Cash Equitization and Policy Implementation Effects



Past performance is not a guarantee of future results.

Reduce risk



- › The Overlay reduced the tracking error of the plan vs. its policy benchmark by about 73%
- › Given OPERF's \$73 billion average market value, this reduction in risk equates to an \$83 million reduction in risk*

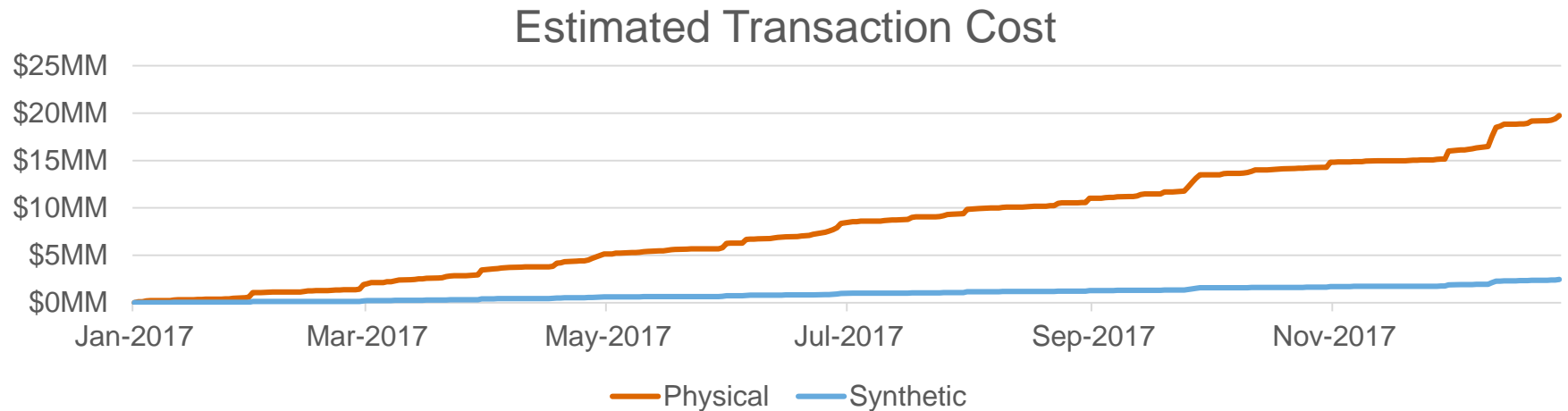
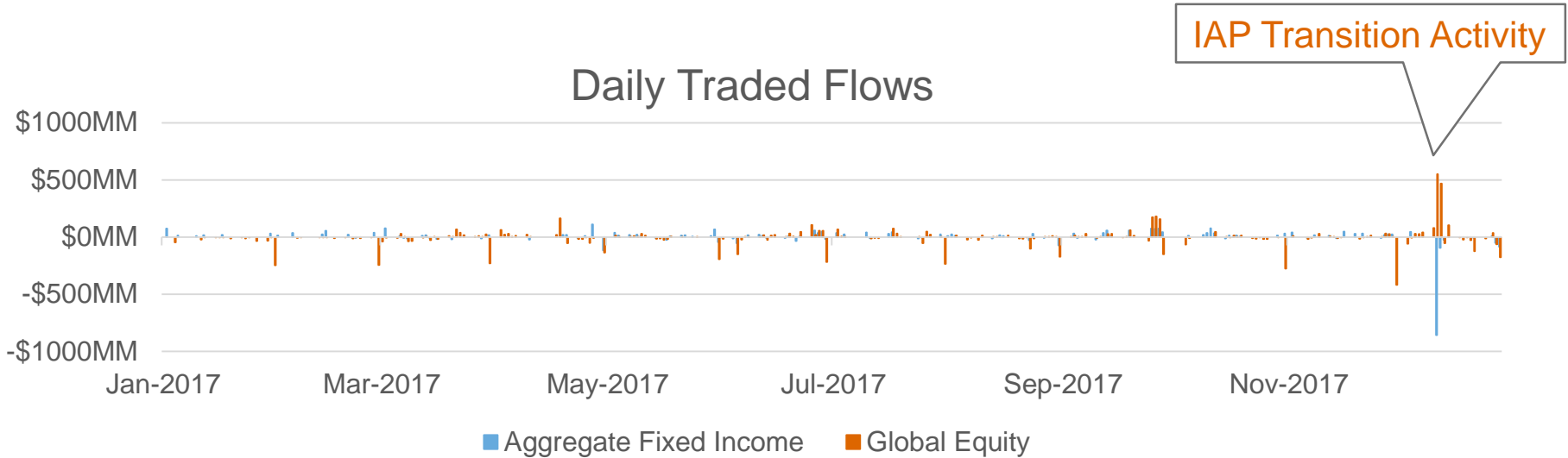
Why use an overlay?

Reduce
transaction costs



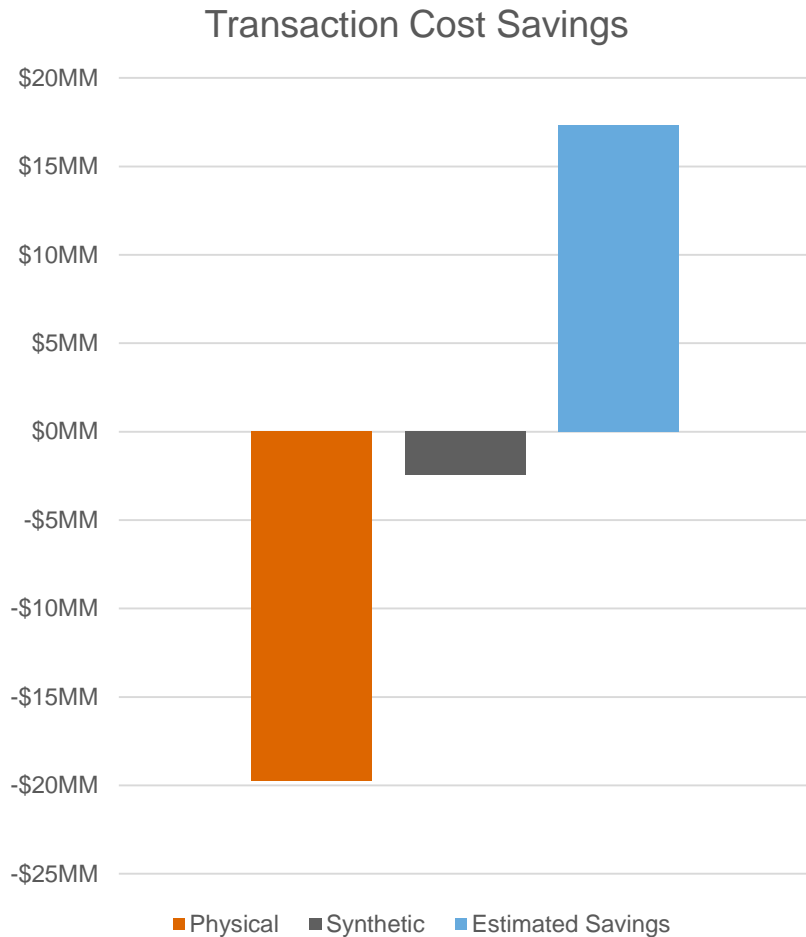
Reduce transaction costs

Daily traded flows & estimated transaction costs



Past performance is not a guarantee of future results.

Reduce transaction costs



- › Compared to rebalancing physicals, we estimate that rebalancing with derivatives in the overlay saved about \$17 million in transaction costs

Past performance is not a guarantee of future results.

Bringing it all together

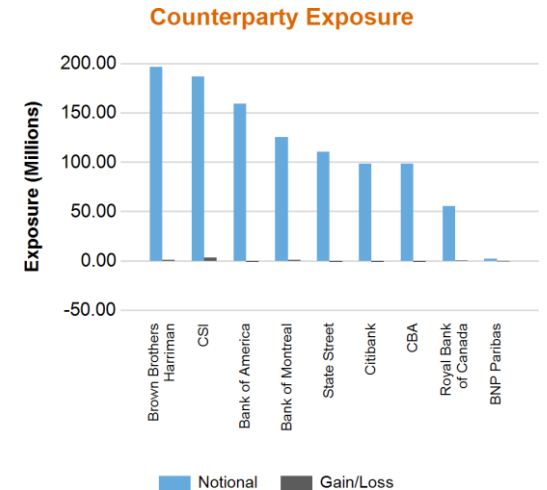
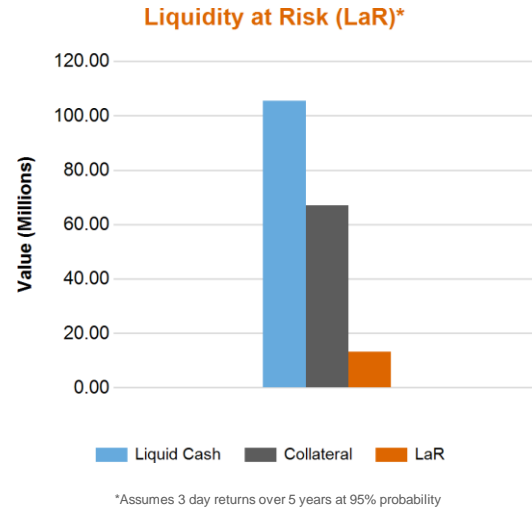
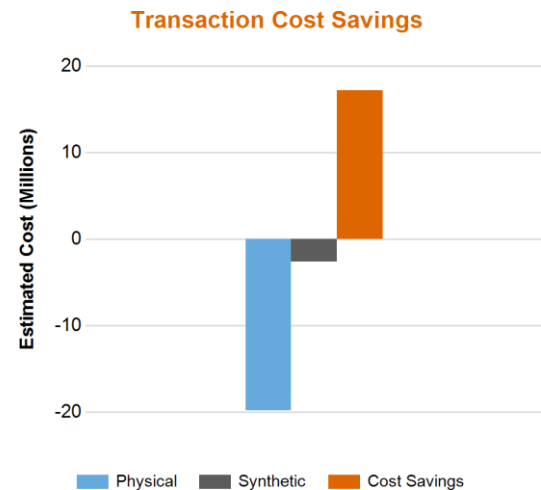
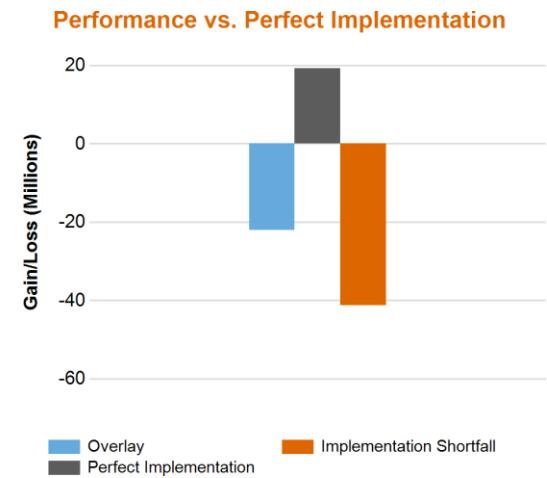
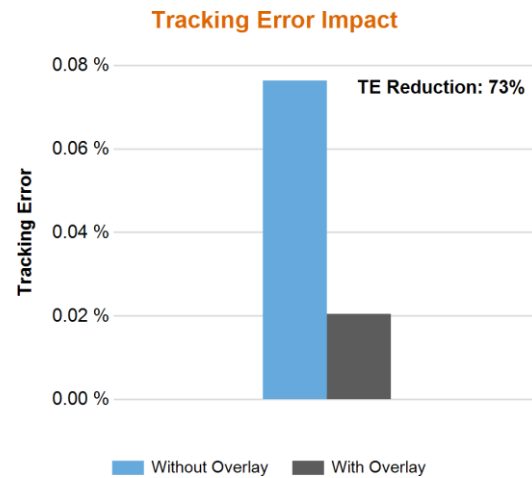
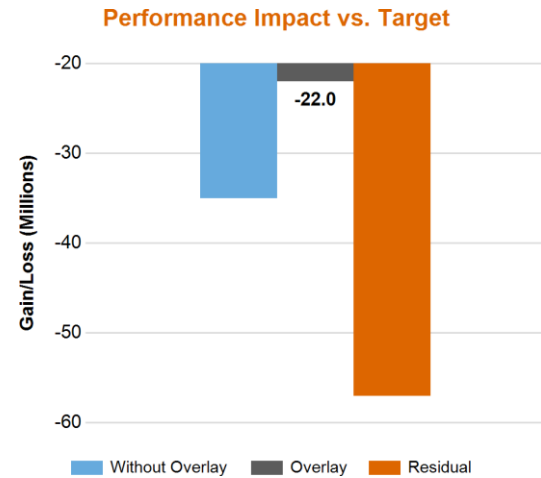
Overlay Highlights



Overlay Highlights

Oregon - Oregon

02-Jan-2017 to 29-Dec-2017



Perfect Implementation assumes all trades at the prior day close, no transaction costs, and returns equal to physical benchmark(s). In addition, 3-month LIBOR (daily calculated) is subtracted from the total return benchmark in the calculation of the perfect implementation benchmark.

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Appendix





Russell Investments Overlay Services Performance

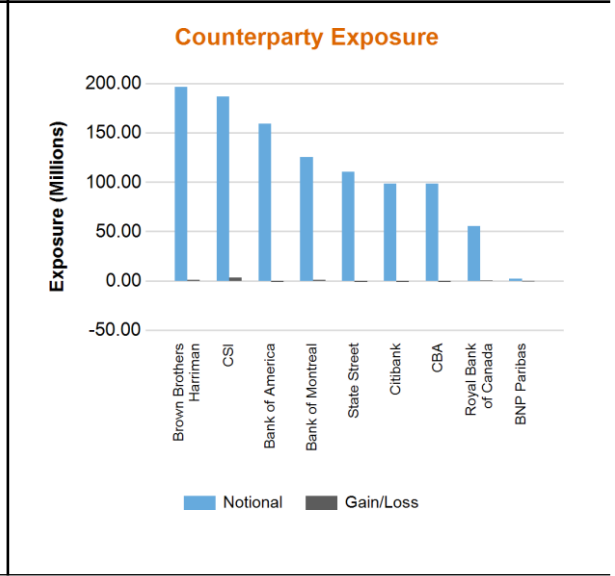
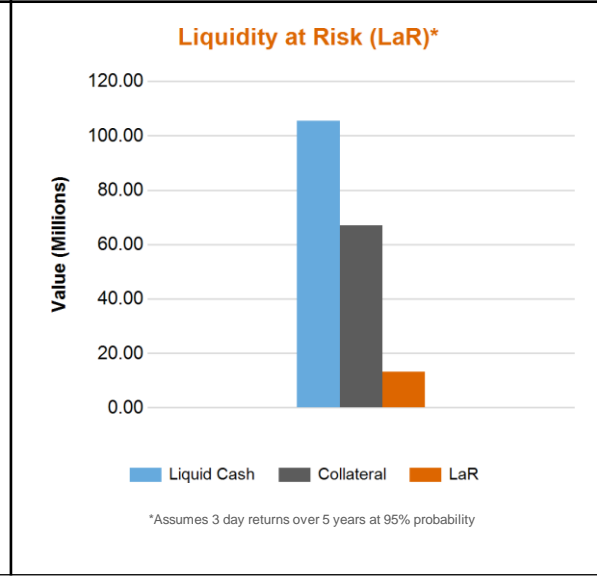
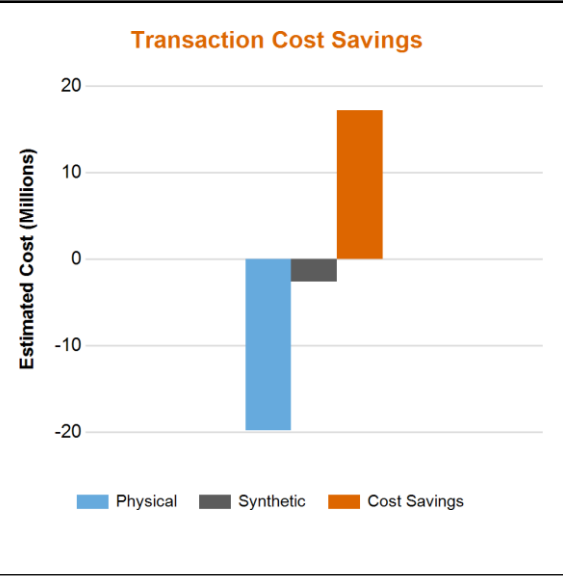
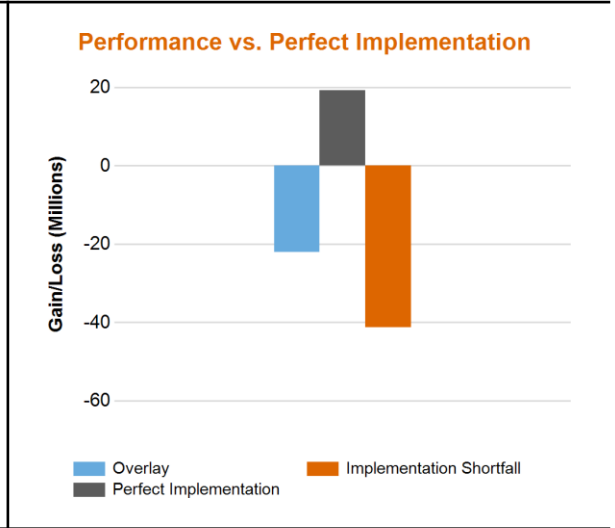
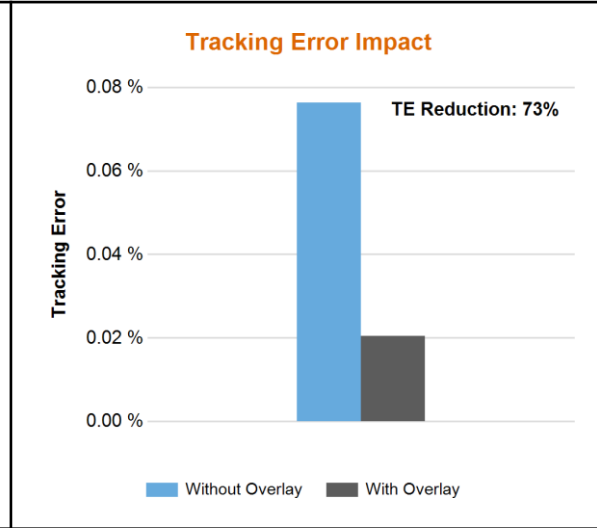
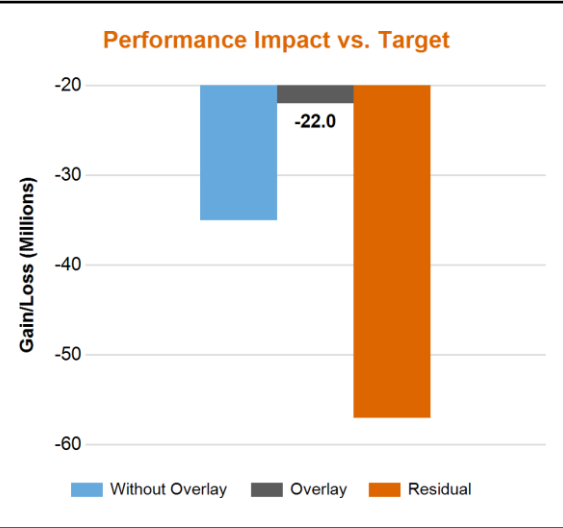
Oregon State Treasury

As of 29 December, 2017

Overlay Highlights

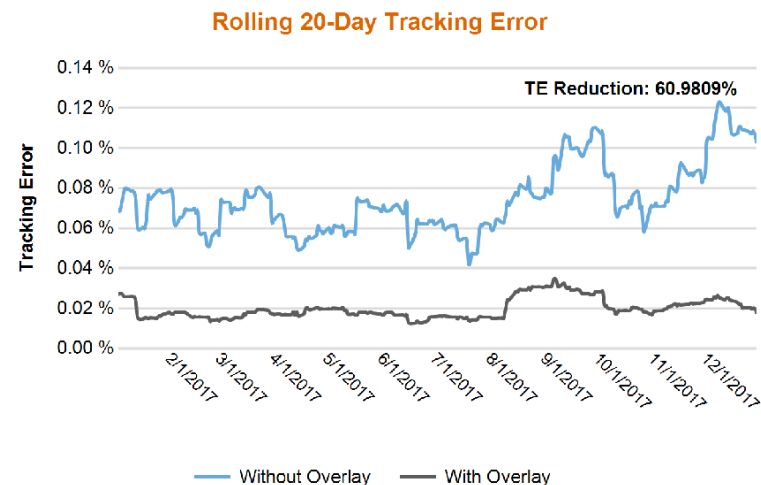
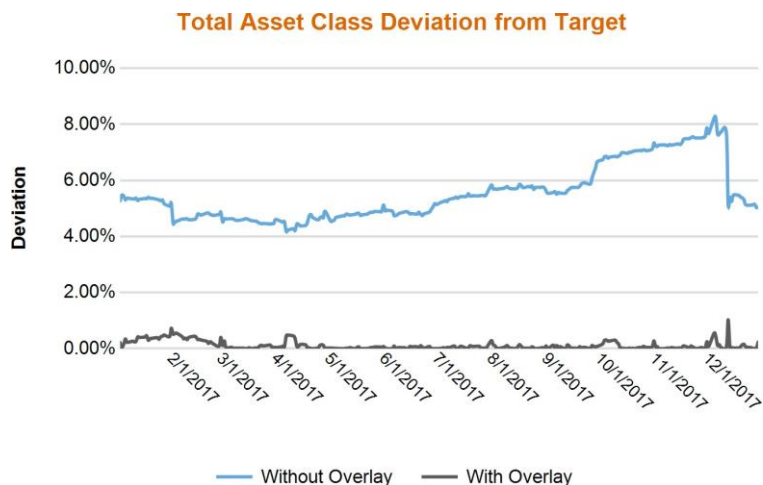
Oregon - Oregon

02-Jan-2017 to 29-Dec-2017

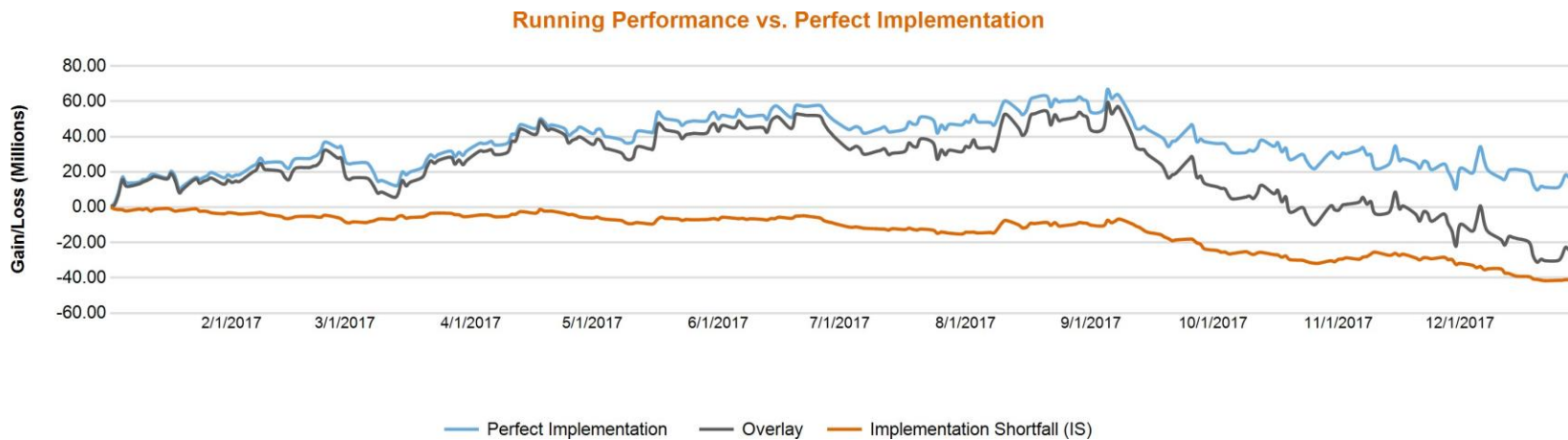


Perfect Implementation assumes all trades at the prior day close, no transaction costs, and returns equal to physical benchmark(s). In addition, 3-month LIBOR (daily calculated) is subtracted from the total return benchmark in the calculation of the perfect implementation benchmark.

Total Fund Risk Management



Implementation Efficiency



Perfect Implementation assumes all trades at the prior day close, no transaction costs, and returns equal to physical benchmark(s). In addition, 3-month LIBOR (daily calculated) is subtracted from the total return benchmark in the calculation of the perfect implementation benchmark.

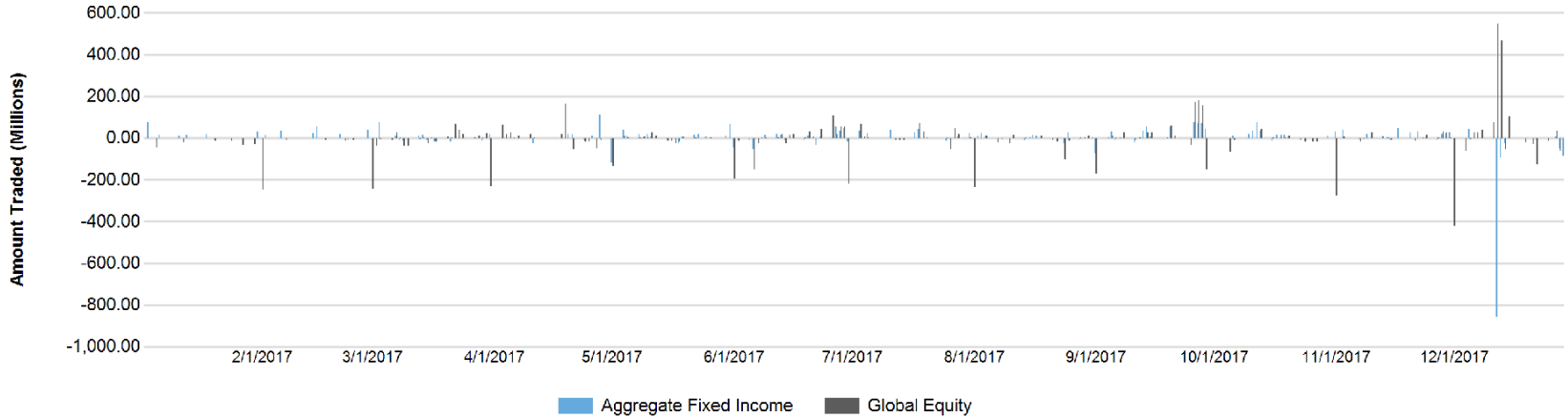
Transaction Cost Savings

Oregon - Oregon

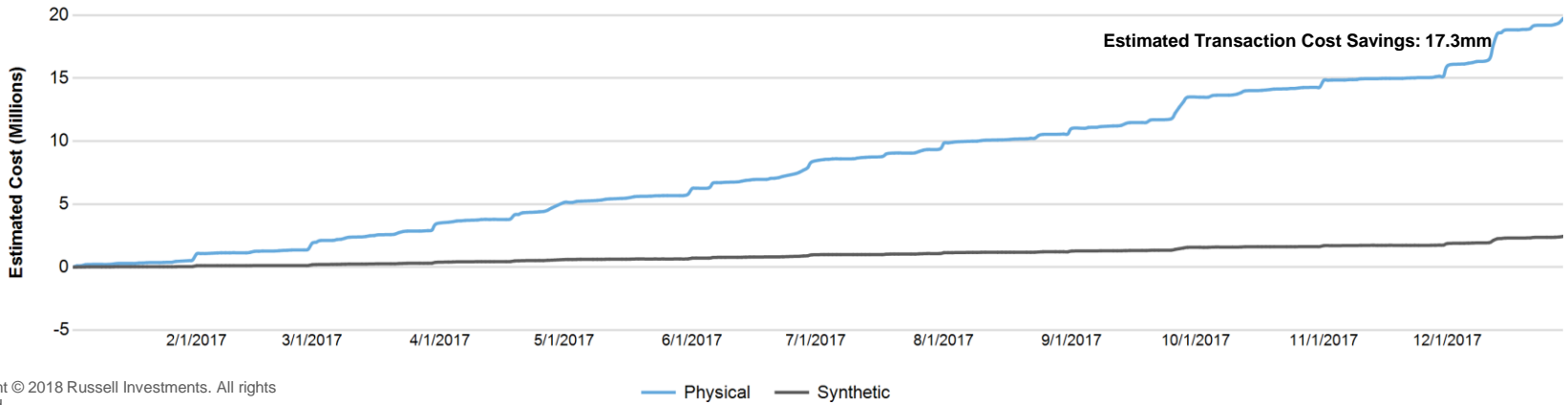


02-Jan-2017 to 29-Dec-2017

Notional Traded



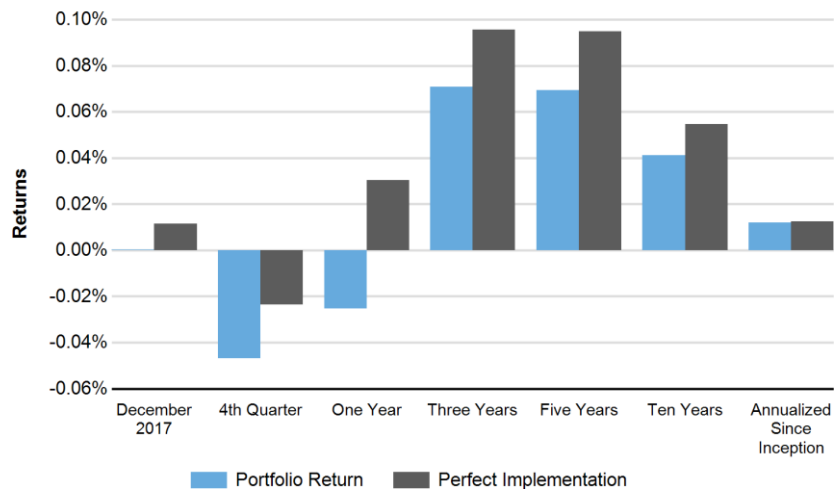
Estimated Transaction Costs



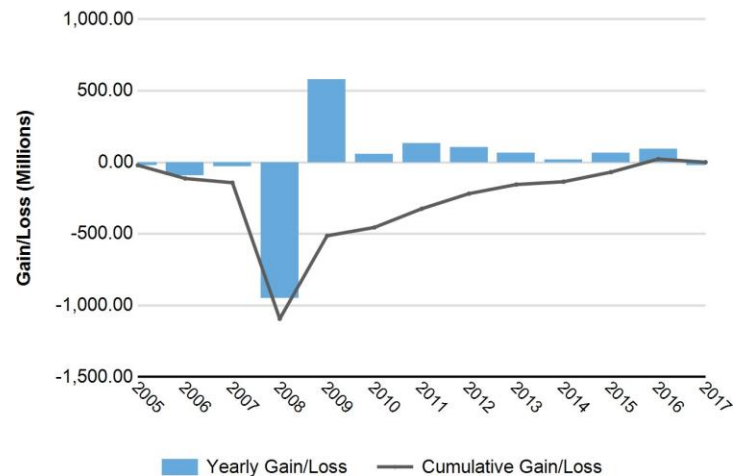
As of 29-Dec-2017

Time Period	Gain/Loss	Portfolio Return*	Perfect Implementation*
December 2017	30,407.62	0.00 %	0.01 %
4th Quarter	-35,476,059.86	-0.05 %	-0.02 %
One Year	-21,890,736.40	-0.03 %	0.03 %
Three Years	136,076,730.99	0.07 %	0.10 %
Five Years	219,510,668.62	0.07 %	0.09 %
Ten Years	143,211,801.78	0.04 %	0.05 %
Annualized Since Inception	73,316.93	0.01 %	0.01 %
Cumulative Since Inception	896,073.50	0.15 %	0.15 %

Portfolio Return vs Perfect Implementation



Yearly Gain/Loss vs Cumulative



Inception Date: 11-Oct-2005

*Annualized if greater than one year.

Perfect Implementation assumes all trades at the prior day close, no transaction costs, and returns equal to physical benchmark(s). In addition, 3-month LIBOR (daily calculated) is subtracted from the total return benchmark in the calculation of the perfect implementation benchmark.

As of 29-Dec-2017

Performance Detail

Time Period	Gain/Loss	Average Daily Market Value	Average Daily Cash	Portfolio Return	Perfect Implementation	Deviation
2017						
December	30,407.62	76,172,930,532.37	1,801,688,780.22	0.00%	0.01 %	-0.01 %
November	-20,689,562.45	75,664,794,730.46	2,112,408,200.74	-0.03%	-0.03 %	0.00 %
October	-14,816,905.03	75,093,538,870.37	2,189,204,921.34	-0.02%	-0.01 %	-0.01 %
September	-37,256,564.22	74,507,758,171.39	1,470,952,855.21	-0.05%	-0.03 %	-0.02 %
August	19,329,468.86	73,713,720,131.32	1,548,526,348.45	0.03%	0.02 %	0.01 %
July	-7,599,667.19	73,296,116,960.10	1,643,071,673.65	-0.01%	0.00 %	-0.01 %
June	-8,363,257.61	72,965,553,161.73	1,307,955,794.35	-0.01%	-0.01 %	0.00 %
May	7,580,975.13	72,214,279,240.95	1,546,602,579.99	0.01%	0.01 %	0.00 %
April	13,102,427.27	71,010,307,496.85	1,538,615,661.13	0.02%	0.02 %	0.00 %
March	-830,586.77	70,538,949,247.76	1,483,285,831.13	0.00%	0.00 %	0.00 %
February	12,172,061.42	70,505,656,111.86	1,664,546,030.20	0.02%	0.02 %	-0.01 %
January	15,450,466.57	69,740,757,323.57	1,858,158,201.22	0.02%	0.03 %	0.00 %
2016						
December	13,782,912.86	68,673,233,910.34	1,616,298,116.43	0.02%	0.02 %	0.00 %
November	-2,326,790.91	68,181,367,184.57	1,339,993,557.92	0.00%	0.00 %	0.00 %
October	-17,004,397.41	68,872,377,481.39	1,247,550,617.46	-0.02%	-0.03 %	0.00 %
September	3,990,504.24	69,101,819,391.97	1,589,546,924.41	0.01%	0.01 %	0.00 %
August	-2,832,765.70	69,242,613,622.20	1,859,241,346.82	0.00%	0.01 %	-0.01 %
July	41,095,752.93	68,439,431,063.89	1,973,400,014.22	0.06%	0.07 %	-0.01 %
June	36,301,994.83	66,761,725,030.03	1,442,032,947.56	0.05%	0.04 %	0.02 %
May	-2,989,982.62	66,502,891,212.34	1,542,008,750.67	0.00%	0.01 %	-0.01 %
April	10,250,110.89	67,367,228,869.99	1,399,059,893.75	0.02%	0.03 %	-0.01 %
March	74,939,504.24	66,435,120,569.47	1,350,775,509.81	0.11%	0.11 %	0.00 %
February	-11,105,702.38	65,163,677,986.59	1,429,909,854.35	-0.02%	-0.02 %	0.00 %
January	-52,839,001.58	65,762,863,542.19	1,746,685,527.91	-0.08%	-0.08 %	0.00 %

Client Performance Appendix

Oregon - Oregon



As of 29-Dec-2017

End of Period Positions

Asset Class	Contract	Ticker	Quantity	Close Price (Local)	Multiplier	FXRate	Notional Value (Base)
Aggregate Fixed Income							
	US2YR	TUH8	3,157	107.05	2,000	1.00000	675,943,300.03
	UST10	TYH8	2,994	124.05	1,000	1.00000	371,396,343.75
	UST30	USH8	2,033	153.00	1,000	1.00000	311,049,000.00
	UST5	FVH8	4,158	116.16	1,000	1.00000	483,010,173.95
						SubTotal:	
						817.73	
Global Equity							
	AMIDX	EOF8	-32	544.50	200	1.20080	-4,184,548.58
	CAC	CFF8	-188	5,310.50	10	1.20080	-11,988,477.12
	DAX	GXH8	-28	12,910.00	25	1.20080	-10,851,631.53
	EMMINNYSE	MESH8	-229	1,163.70	50	1.00000	-13,324,365.00
	ERSTX	VGH8	-265	3,493.00	10	1.20080	-11,115,147.13
	FTSE	Z H8	-179	7,638.00	10	1.35275	-18,494,822.35
	HSENG	HIF8	-23	29,948.00	50	0.12792	-4,405,638.78
	IBEX	IBF8	-30	10,020.80	10	1.20080	-3,609,893.63
	OMX	QCF8	-146	1,574.25	100	0.12214	-2,807,212.21
	R2MIN(CME)	RTYH8	-59	1,536.50	50	1.00000	-4,532,675.00
	SMB	STH8	-23	21,757.00	5	1.20080	-3,004,468.18
	SP4MN	FAH8	-21	1,902.40	100	1.00000	-3,995,040.00
	SPMIN	ESH8	-1,056	2,676.00	50	1.00000	-141,292,800.00
	TOPIX	TPH8	-160	1,817.00	10,000	0.00888	-25,807,367.95
	TSE60	PTH8	-24	957.40	200	0.79812	-3,667,760.09
	XPSP1	XPH8	-63	6,020.00	25	0.78215	-7,415,956.02
						SubTotal:	-270,497,803.57
						Total:	1,570,901,014.16

As of 29-Dec-2017

Currency Forward Positions

	Holding Date	Settle Date	Currency	Exchange Rate	Local Amount	Base Cost	Unrealized Gain/Loss
POREG01							
	12/29/2017	3/22/2018	AUD	0.78	-8,620,000	6,488,828	-252,020
	12/29/2017	3/22/2018	CAD	0.80	-3,040,000	2,467,251	38,425
	12/29/2017	3/22/2018	EUR	1.21	-37,030,000	45,011,318	319,626
	12/29/2017	3/22/2018	GBP	1.36	-13,230,000	18,104,533	157,852
	12/29/2017	3/22/2018	HKD	0.13	-32,240,000	4,125,021	-5,922
	12/29/2017	3/22/2018	JPY	0.01	-2,567,090,000	23,094,737	206,562
	12/29/2017	3/22/2018	SEK	0.12	-24,300,000	2,951,457	-31,659
					Total:	102,243,145	432,863



TAB 10 – Asset Allocations & NAV Updates

Asset Allocations at January 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%	33,270,567	42.4%	(1,512,066)	31,758,500	40.5%	628,728	32,387,228
Private Equity	13.5-21.5%	17.5%	14,688,088	18.7%		14,688,088	18.7%		14,688,088
Total Equity	50.0-60.0%	55.0%	47,958,654	61.2%	(1,512,066)	46,446,588	59.2%		47,075,315
Opportunity Portfolio	0-3%	0.0%	1,649,067	2.1%		1,649,067	2.1%		1,649,067
Fixed Income	15-25%	20.0%	15,309,053	19.5%	2,383,352	17,692,406	22.6%		17,692,406
Real Estate	9.5-15.5%	12.5%	7,448,078	9.5%	(4,100)	7,443,978	9.5%		7,443,978
Alternative Investments	0-12.5%	12.5%	5,183,655	6.6%		5,183,655	6.6%		5,183,655
Cash²	0-3%	0.0%	874,722	1.1%	(867,186)	7,536	0.0%		16,967
TOTAL OPERF		100%	\$ 78,423,229	100.0%	\$ -	\$ 78,423,229	100.0%		\$ 638,159

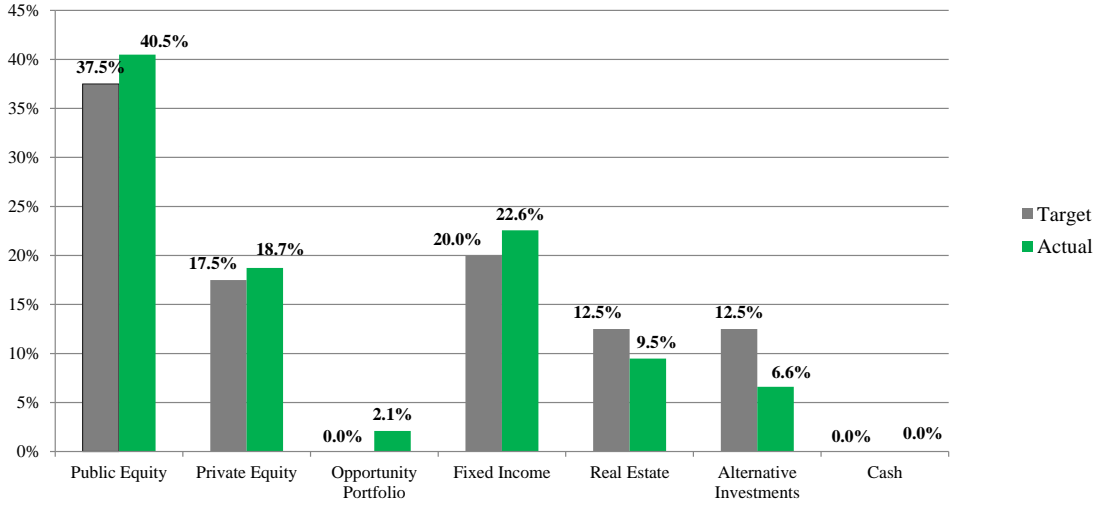
¹Targets established in June 2015. Interim policy benchmark consists of: 40% MSCI ACWI IMI Net, 22.5% Custom FI Benchmark, 20% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), & 5% CPI+400bps.

²Includes cash held in the policy implementation overlay program.

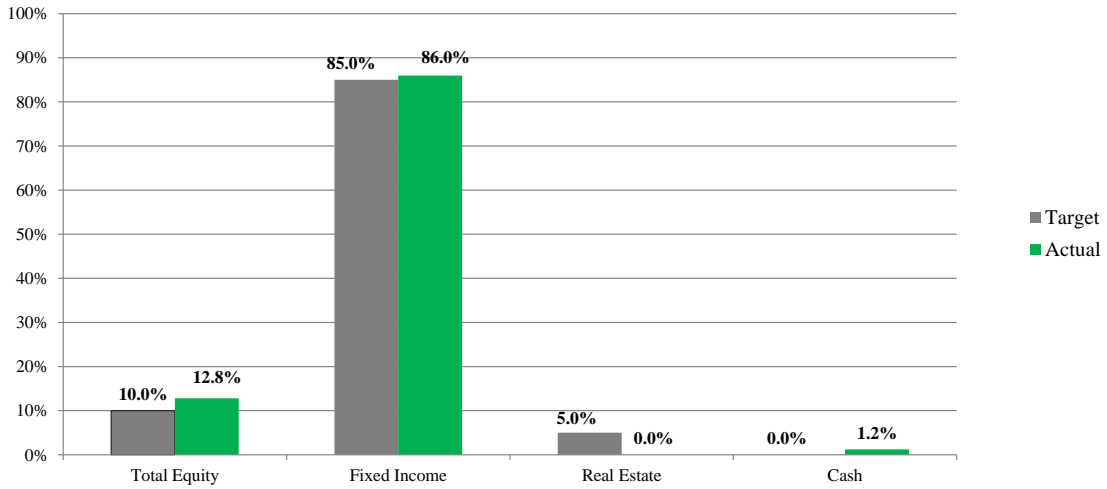
SAIF	Policy	Target	\$ Thousands	Actual
Total Equity	7-13%	10.0%	621,129	12.8%
Fixed Income	80-90%	85.0%	4,174,477	86.0%
Real Estate	0-7%	5.0%	0	0.0%
Cash	0-3%	0%	59,585	1.2%
TOTAL SAIF			\$ 4,855,191	100.0%

CSF	Policy	Target	\$ Thousands	Actual
Domestic Equities	25-35%	30%	479,225	27.9%
International Equities	25-35%	30%	471,585	27.4%
Alternatives			100,000	5.8%
Private Equity	0-12%	10%	203,346	11.8%
Total Equity	65-75%	70%	1,254,157	73.0%
Fixed Income	25-35%	30%	443,668	25.8%
Cash	0-3%	0%	20,800	1.2%
TOTAL CSF			\$ 1,718,624	100.0%

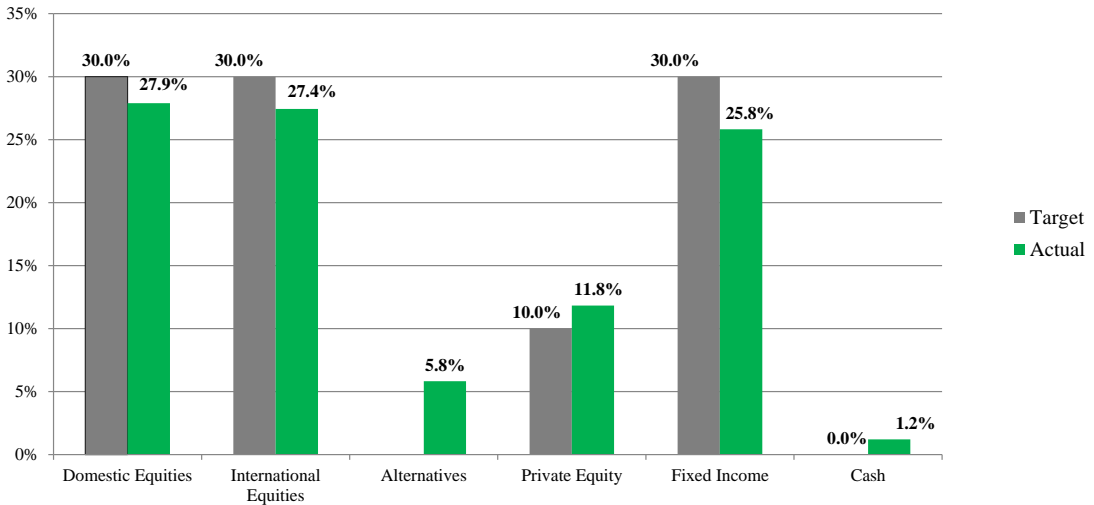
OPERF Asset Allocation



SAIF Asset Allocation



CSF Asset Allocation

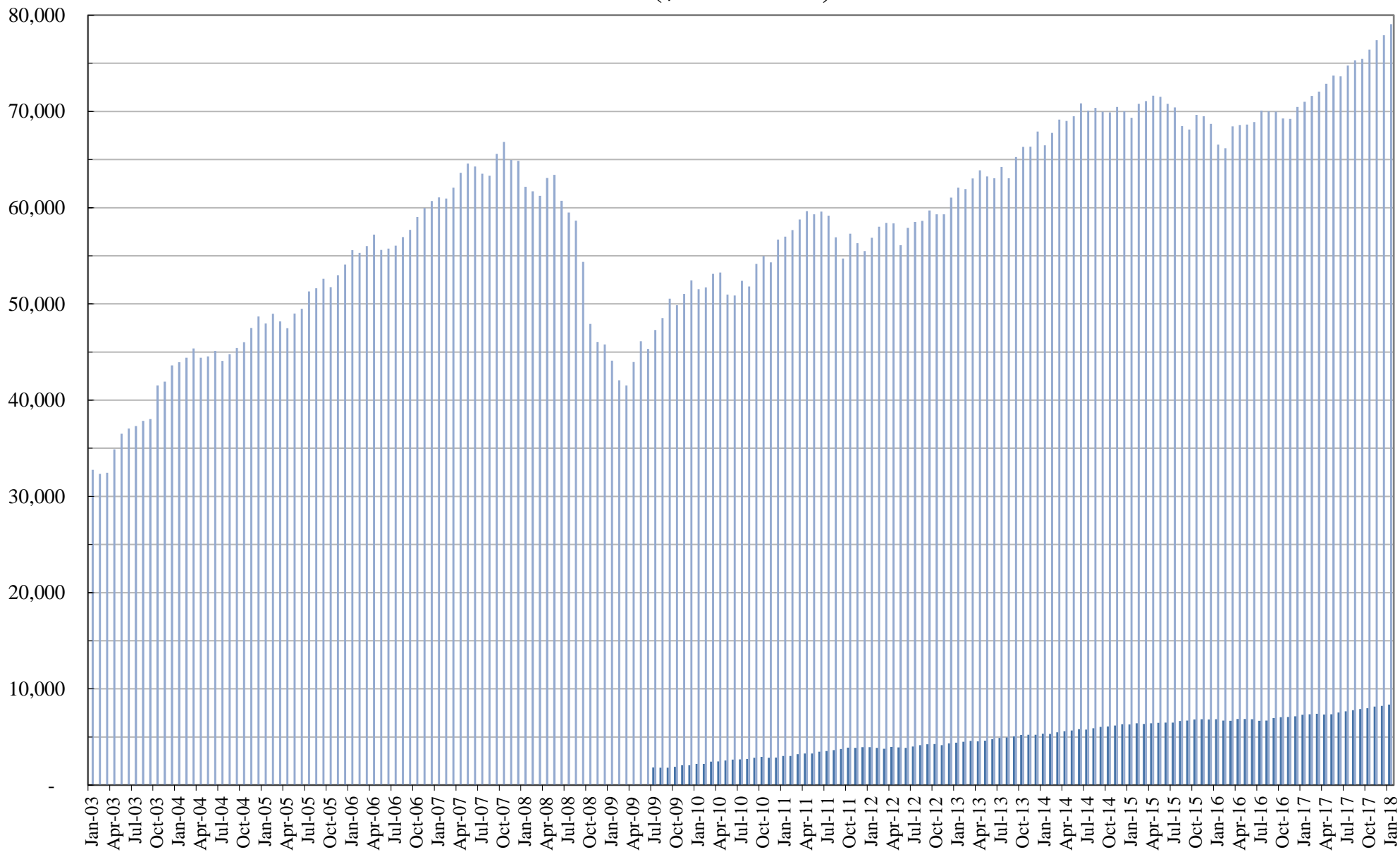


OPERF NAV

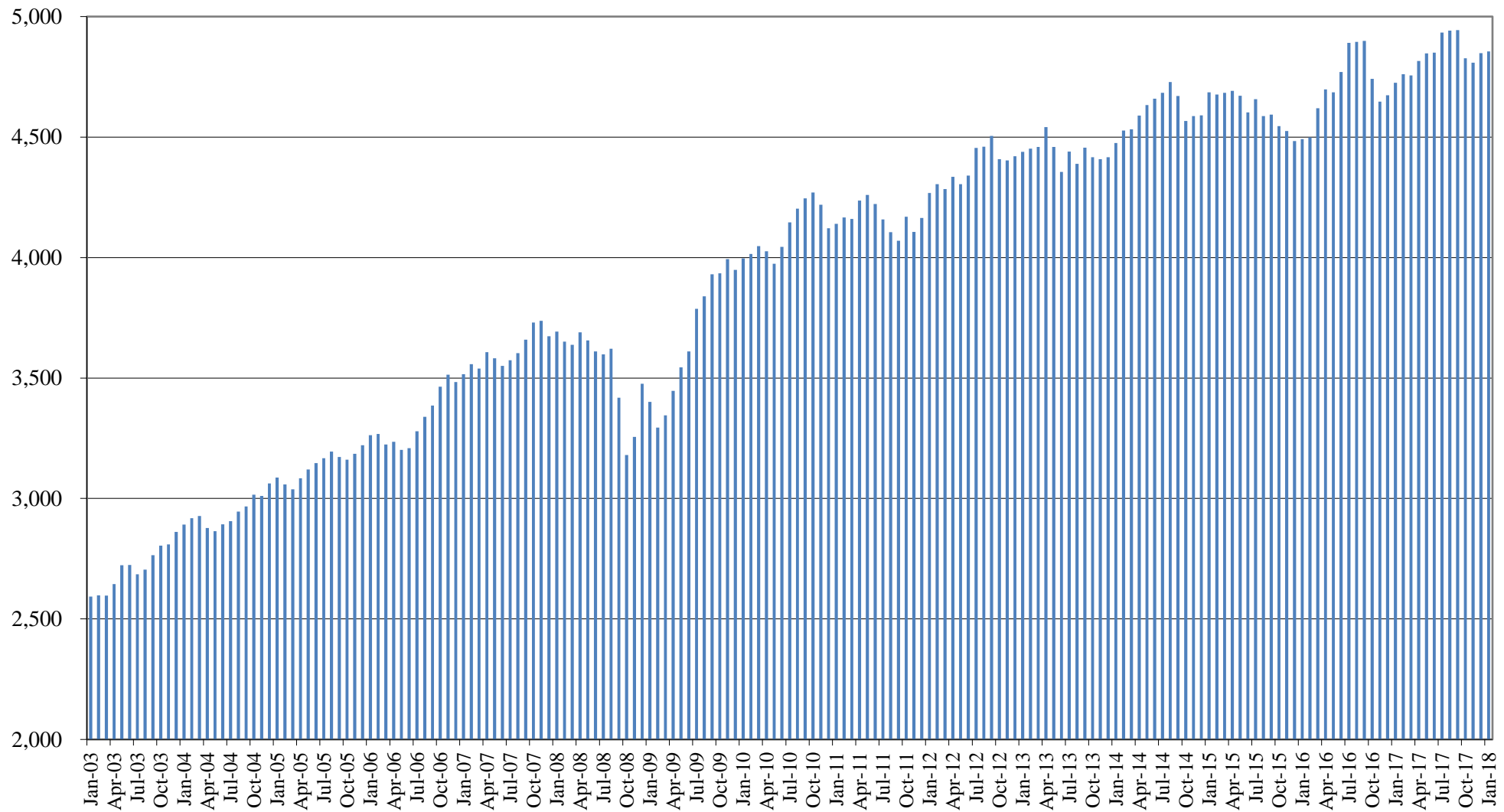
15 years ending January 2018

(\$ in Millions)

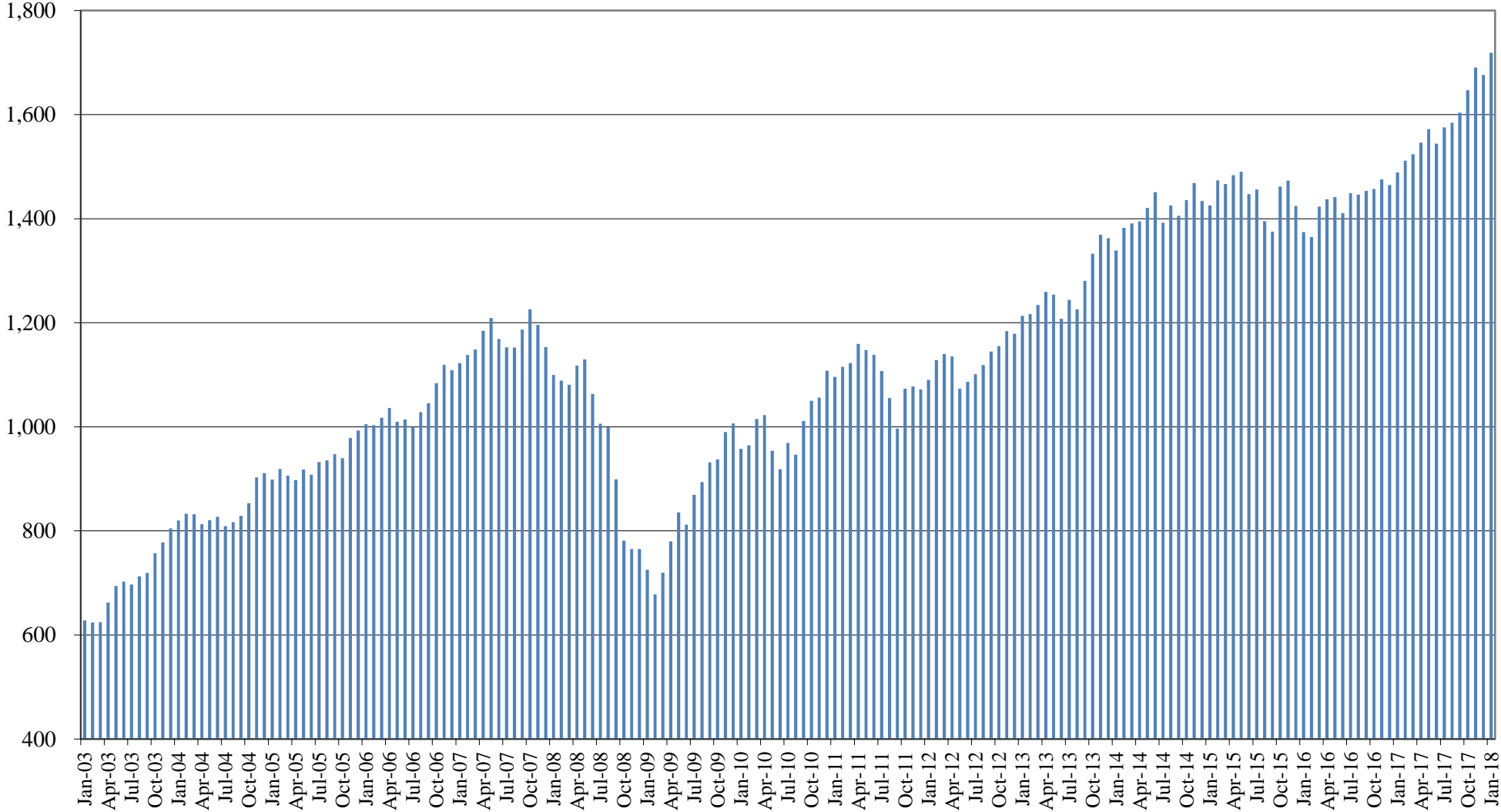
IAP OPERF



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



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



TAB 11 – Calendar — Future Agenda Items

2018/19 OIC Forward Calendar and Planned Agenda Topics

April 25, 2018:	OPERF Asset Allocation & Capital Market Assumptions Update Private Equity Manager Presentation Alternatives Portfolio Review OIC Policy Updates SAIF Annual Review
April 27, 2018	Strategic Issues Discussion ¹
June 6, 2018	Private Equity Manager Presentation Q1 OPERF Performance & Risk Report Operations Update CSF Annual Review
August 8, 2018:	Private Equity Manager Presentation Opportunity Portfolio Review OSGP Annual Review Corporate Governance Update OIC Policy Updates
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:	OPERF Overlay Review Securities Lending Update Real Estate Program Review Q4 2018 OPERF Performance & Risk Report

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