
Oregon Investment Council

April 26, 2017
9:00 AM

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

Rukaiyah Adams
Chair

John Skjervem
Chief Investment Officer

Tobias Read
State Treasurer





OREGON INVESTMENT COUNCIL

Agenda

April 26, 2017
9:00 AM

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

<u>Time</u>	<u>A. Action Items</u>	<u>Presenter</u>	<u>Tab</u>
9:00-9:02	1. Review & Approval of Minutes March 15, 2017	Rukaiyah Adams <i>OIC Chair</i>	1
9:02-9:10	2. Committee Reports and CIO Update	John Skjervem <i>Chief Investment Officer</i>	2
9:10-9:50	3. Morgan Stanley Prime Property Fund <i>OPERF Real Estate Portfolio</i>	Tony Breault <i>Senior Investment Officer</i> Christy Fields <i>Pension Consulting Alliance, LLC</i> Scott Brown <i>Morgan Stanley Investment Management</i> Claiborne Johnson <i>Morgan Stanley Investment Management</i>	3
9:50-10:45	4. Strategic Asset Allocation & Capital Market Assumptions Update <i>OPERF</i>	Karl Cheng <i>Investment Officer</i> Janet Becker-Wold <i>Callan Associates</i> Jim Callahan <i>Callan Associates</i> Allan Emkin <i>Pension Consulting Alliance</i>	4
10:45-11:00	----- BREAK -----		

Rukaiyah Adams
Chair

John Russell
Vice Chair

Rex Kim
Member

Rick Miller, Jr.
Member

Tobias Read
State Treasurer

Steve Rodeman
PERS Director

11:00-11:20	5. Policy Updates <i>OPERF and other OST-managed Accounts</i>	Kim Olson <i>Senior Policy Advisor</i> Deena Bothello <i>Acting General Counsel</i> Jennifer Peet <i>Director of Legal Affairs</i> Michael Viteri <i>Senior Investment Officer, Public Equity</i>	5
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B. Information Items

11:20-11:50	6. Alternatives Portfolio Review <i>OPERF</i>	Ben Mahon <i>Senior Investment Officer, Alternatives</i> Tom Martin <i>TorreyCove Partners</i> Jim Callahan	6
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11:50-12:20	7. Opportunity Portfolio Review <i>OPERF</i>	John Hershey <i>Director of Alternative Investments</i>	7
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12:20-12:40	8. State Accident Insurance Fund <i>Annual Review</i>	Perrin Lim <i>Director of Capital Markets</i> Kerry Barnett <i>President & CEO</i> Gina Manley, CPA <i>Vice President, Finance & CFO</i>	8
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12:40-12:41	9. Asset Allocations & NAV Updates a. Oregon Public Employees Retirement Fund b. SAIF Corporation c. Common School Fund d. Southern Oregon University Endowment Fund	John Skjervem	9
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12:41-12:42	10. Calendar — Future Agenda Items	John Skjervem	10
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12:42-12:55	11. Open Council Discussion	Council Members	
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C. Public Comment Invited

5 Minutes

TAB 1 – REVIEW & APPROVAL OF MINUTES

March 15, 2017 Regular Meeting



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

OREGON INVESTMENT COUNCIL
MARCH 15, 2017
MEETING MINUTES

- Members Present: Rukaiyah Adams, Tobias Read, John Russell, Rex Kim, Rick Miller and Steve Rodeman
- Staff Present: Darren Bond, John Skjervem, Deena Bothello, Karl Cheng, May Fanning, Michael Langdon, Perrin Lim, Jen Plett, Jen Peet, James Sinks, Michael Viteri, Tony Breault, Amanda Kingsbury, Austin Carmichael, Dana Millican, Ricardo Lopez, William Hiles, Andrew Coutu, Jo Recht, Mark Selfridge, Ben Mahon, Kim Olson, John Hersehy, Debra Day, Tom Lofton, Chelsea Brossard, Garrett Cudahey, Angela Schaffers, Lisa Massena, Eric Messer, David Randall, Paola Nealon, AmyWojcicki
- Consultants Present: Tom Martin, (TorreyCove); Christy Fields, Allan Emkin (PCA); Janet Becker-Wold, and James Callahan (Callan)
- Legal Counsel Present: Steven Marlowe, Oregon Department of Justice

The March 15th, 2017 OIC meeting was called to order at 9:00 am by Rukaiyah Adams, OIC Chair.

I. 9: 01am Review and Approval of Minutes

MOTION: Mr. Russell moved approval of the February 1, 2017 OIC meeting minutes, and Mr. Kim seconded the motion which then passed by a 5/0 vote.

II. 9:27 am Committee Reports and CIO Update

Committee Reports: John Skjervem, OST Chief Investment Officer gave an update on the following committee actions taken since the February 1, 2017 OIC meeting:

Private Equity Committee

February 2, 2017	KKR Asia Fund III, L.P.	\$250 million
February 2, 2017	EnCap Energy Capital Fund XI, L.P.	\$250 million
March 10, 2017	GI Partners Fund V, L.P.	\$250 million
March 10, 2017	Genstar Capital Partners VIII, L.P.	\$150 million

Alternatives Portfolio Committee

None

Opportunity Portfolio Committee

None

Real Estate Committee

None

Mr. Skjervem then reviewed progress for the Oregon investment program in 2016, and provided an outline of the program's 2017 goals and objectives.

According to Mr. Skjervem, 2016 program hi-lights including the following:

- Completed division consolidation in and relocation to new Tigard office;
- Hired and assimilated several new employees in various investment, operations and administrative support positions;
- Realized good investment performance in non-interest rate sensitive allocations;
- Completed important asset class restructurings in fixed income, real estate and public equity;
- Expanded and further refined Aladdin use in both capital markets transaction activities as well as total fund risk management efforts;
- Enhanced rigor and consistency of private markets due diligence and underwriting processes; and
- Improved data integrity (e.g., Operations team identified and resolved over \$800M in reporting errors last year).

Mr. Skjervem then noted the following as primary program goals in 2017:

- Execute, execute, execute;
- Recruit, hire and assimilate;
- Insource additional fixed income and public equity mandates;
- Maintain momentum and direction of real estate restructuring initiative;
- Continue research in private market focus areas (e.g., portfolio monitoring, benchmarking, performance calculation & risk measurement);
- Complete currency project and improve integration of ESG and Corporate Governance activities;
- Expand Aladdin use and expertise; and
- Advance strategic partnership discussions with one or more key GP/manager relationships.

III. 09:28 am 2018 OIC Meeting Schedule

Mr. Skjervem presented the amended 2018 OIC Meeting Schedule.

MOTION: Treasurer Read moved approval, and Mr. Kim seconded the motion which then passed by a 5/0 vote.

IV. 10:20 am Apollo Investment Fund IX, L.P. – OPERF Private Equity Portfolio

Founded in 1990, Apollo Global Management is a publicly-traded, global alternative investment manager with approximately \$189 billion of assets under management across three primary business segments (private equity, credit, and real estate) as of September 30, 2016. The Firm continues to be led by founding Managing Partners Leon Black (CEO), Joshua Harris, and Marc Rowan who have worked together for more than 30 years and currently oversee nearly 1,000 employees based in offices in New York, Los Angeles, Houston, London, Hong Kong, Singapore, and Mumbai. The Firm includes 24 Senior Partners and 106 total investment professionals who are focused on its global private equity practice. Private equity was Apollo's original investment platform, and the Firm has raised more than \$50 billion across eight funds since inception. Apollo is now targeting at least \$20 billion for Fund IX as a continuation of its flagship, global private equity investment practice.

Mike Langdon, Senior Investment Officer, Private Equity, recommended a capital commitment of up to \$500 million to Apollo Investment Fund IX, L.P. which represents, in staff's opinion, an attractive, core opportunity for the large buyout segment of the OPERF Private Equity portfolio.

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

V. 10:26 am Fixed Income Policy Update – OPERF Fixed Income Portfolio

Tom Lofton, Investment Officer, Fixed Income provided the OIC with an update on the OPERF Fixed Income Government strategy and requested Council approval of several guideline revisions recommended by staff.

MOTION: Treasurer Read moved approval of the proposed guideline revisions, and Mr. Russell seconded the motion which then passed by a 5/0 vote.

- VI. **11:06 am Securities Lending Update – OPERF/SAIF/CSF/OSTF/Agency Accounts**
Perrin Lim, Director of Capital Markets introduced Mr. Robert “Bo” Jackson, Vice President, Senior Portfolio Manager, State Street Global Advisors and Mr. Johnson Shum, Vice President, Securities Finance, State Street Global Markets who provided an update and review of the securities lending program in place for OPERF, OSTF and other state agency funds.
- VII. **11:23 am Overlay Review – OPERF**
Karl Cheng, Investment Officer, Portfolio Risk & Research provided the OIC with an update on the OPERF overlay program, currently managed by Russell Investments.
- VIII. **11:57 am Currency Project Update – OPERF**
Jiangning (Jen) Plett, Senior Internal Investment Auditor and Karl Cheng delivered an update on the OPERF currency project and discussed various approaches to currency management.
- IX. **12:14 pm Q4 2016 Performance & Risk Report – OPERF**
Karl Cheng and Janet Becker-Wold, Callan Associates presented the OPERF risk and performance report, respectively for the period ending December 31, 2016.
- X. **12:15 pm Asset Allocation & NAV Updates**
Mr. Skjervem reviewed asset allocations and NAVs across OST-managed accounts for the period ended January 31, 2017.
- XI. **12:16 pm Calendar – Future Agenda Items**
A calendar listing of future OIC meetings and scheduled agenda topics was included in the Council’s meeting material.
- XII. **12:16 pm Other Items**
None
- 12:16 pm Public Comments**
None

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

Respectfully submitted,

May Fanning
May Fanning

Executive Support Specialist

TAB 2 – Committee Reports and CIO Update

Opening Remarks

John D. Skjervem, Chief Investment Officer

April 26, 2017



Oregon State Treasury

April 26, 2017 OIC Meeting

OPERF Currency Project

- Context on Timing
- Facts v. Narratives
- Agnostic on Outcome

OPERF Strategic Asset Allocation

- No SAA changes
- CMA Updates: more of the same (i.e., lower)
- Alpha assumption key

Alternatives Portfolio Review

- Alts as the SAA “frontier”
- No longer at the kids table, but.....
- Oregon tradition: we expect success

TAB 3 – Morgan Stanley Prime Property Fund
OPERF Real Estate Portfolio

Morgan Stanley Prime Property Fund

Purpose

Subject to the satisfactory negotiation of all terms and conditions with Staff working in concert with legal counsel, Staff recommends approval of an up to \$250 million commitment to Morgan Stanley Prime Property Fund (“PPF” or the “Fund”) for the OPERF real estate portfolio. This proposed commitment represents a new relationship with Morgan Stanley Real Estate Investing (“MSREI”) for the OPERF real estate portfolio.

Background

Morgan Stanley was founded in 1935 and is a global financial services firm with securities underwriting, asset management, and wealth management services. Morgan Stanley maintains significant market positions in each of its business segments – Wealth Management, Investment Management, and Institutional Securities. Morgan Stanley Investment Management (“MSIM”) has more than \$406 billion under management across multiple geographies, strategies, and asset classes, including equity, fixed income, alternatives, and private markets. MSREI resides within Real Assets, itself a part of MSIM and is Morgan Stanley’s global real estate investment management platform. MSREI was established in the early 1990s and is primarily focused on opportunistic and core strategies. MSREI has 17 offices across 13 countries throughout the U.S., Europe, and Asia. The Fund sponsor is Morgan Stanley Real Estate Advisor, Inc. (“MSREA”).

PPF’s predecessor fund was originally formed in 1973 as a separate account for a life insurance company, The Equitable Life Assurance Society of the United States. The Fund was added to the NCREIF Fund Index – Open-Ended Diversified Core Equity Index (“NFI-ODCE Index”) upon the index’s formation in 1978 and was eventually acquired by Morgan Stanley in 2003. MSREA, as the Fund’s Advisor, is registered with the SEC as an investment advisor under the Investment Advisers Act of 1940. The Fund is established as a REIT and governed by an independently controlled Board of Directors that has delegated day-to-day management of the Fund to MSREA.

The selection of PPF for OPERF’s real estate portfolio was the result of an analysis during which Staff and consultant evaluated all 24 funds currently included in the NFI-ODCE Index. Specifically, Staff and PCA reviewed each fund’s underlying assets, performance characteristics, sector and geographic exposures, and historical returns. An in-depth performance assessment was then conducted over different investment horizons using simulated bear or bull market conditions, while also comparing volatility and Sharpe ratios relative to the index.

Strategy

PPF is an Open-Ended Diversified Core Equity (ODCE) fund, and, at \$20.9 billion GAV (\$17.5 billion NAV), is the fourth largest fund within the NFI-ODCE Index comprising approximately 11% of current index capitalization. The objective of MSREA is to maintain a diversified portfolio of U.S. commercial real estate that offers stable, highly predictable cash flow returns. The product focus is primarily on high-quality office buildings, Class A multifamily communities, warehouse distribution and storage facilities, and top-tier regional malls and shopping centers in targeted primary markets across the U.S.

MSREA may deploy up to 15% of the Fund’s capital into non-core assets, including development. As of Q3 2016, PPF had 8.8% of gross assets in non-core holdings compared to 7.4% for the index. PPF uses moderate leverage with a target range of 20-30%. As of Q3 2016, the Fund was below its target with 18.1% LTV vs. the index of 22.1%.

Unique to PPF is the ownership of two captive management platforms: AMLI Residential; and Safeguard Storage. These two platforms are wholly-owned by the Fund and provide property type expertise, asset management, and deal flow solely to the benefit of the Fund. The AMLI platform has been a consistently strong driver of returns and relative outperformance with multifamily apartments accounting for approximately 25% of Fund assets. Self-storage has been both a diversifier and accretive to fund-level returns, with this property type accounting for approximately 5% of PPF's assets. Another key attribute, and complementary to OPERF's broader real estate portfolio holdings, is PPF's exposure to super regional malls, primarily via partnerships with public REITs, which the Fund has maintained an overweight position relative to the benchmark. Given the complexity and capital intense nature of the regional mall asset class, OPERF's exposure has been limited to publicly-held securities within the REIT portfolio.

Issues to Consider

Attributes:

- *Asset size and quality:* PPF's ten largest assets comprise nearly 28% of the Fund and the 25 largest assets comprise 46% of the Fund. PPF's concentration of large assets, particularly in regional malls and CBD office assets with average market values over \$500M, is complementary to OPERF's existing separate account portfolio which generally does not have the scale to invest in such large properties.
- *Existing asset pool with ODCE governance:* A commitment to PPF would provide OPERF immediate and transparent exposure to an existing portfolio of well-diversified, income-producing, core real estate assets, which Staff was able to underwrite with detailed levels of return attribution. Further, as a NFI-ODCE Index participant, the Fund's strategy operates within pre-defined parameters and governance rules that all member funds must adhere to, thereby reducing the inherent risks of blind-pool commitments as well as the potential style-drift associated with less-defined and higher risk strategies and/or structures.
- *Alignment with OPERF Real Estate Strategic Plan:* As an open-ended investment vehicle focused on long-term growth and deriving the majority of its returns from recurring income, a commitment to SPF is strategically aligned with the broader objectives established for the OPERF real estate portfolio, namely reduced return volatility and the pursuit of high quality, inflation-protected income streams.
- *Top-quartile performance:* PPF has consistently outperformed, on a net of fee basis, the NFI-ODCE Index over the trailing one-, three-, five-, seven-, and ten-year periods as well as since its inception dating back to 1978. This outperformance has, in large part, been driven by MSREA's investment focus on high quality assets located in prime markets and an asset management focus on delivering consistent net operating income growth. To a lesser extent, PPF has maintained a moderate exposure to value added investment acquisitions, via development and/or taking lease up risk, which has also been accretive to the long term performance of the Fund.
- *Team continuity and long-term track record:* MSREA has 73 investment professionals dedicated to the Fund and located in four offices in the U.S. Officers within the management team have an average of 19 years with the Fund. Additionally, PPF was one of the founding funds within the NCREIF-ODCE Index created in 1978 and has an established track record of core real estate investing.

Concerns:

- *Lack of direct individual co-invest:* Neither the employees of Morgan Stanley nor the firm directly co-invest into the Fund. [Mitigant: A significant portion of the management team's compensation is tied to the performance of the Fund and bonus structures are directly correlated to both the Fund's incentive fee and same store net operating income growth.]

- *Passive investment vehicle:* The Fund has an Advisory Committee that meets annually and consists of larger investors within the Fund; however, the Advisory Committee only serves in an advisory role insofar as recommendations provided to either the Fund's Advisor or the Independent Board of Directors is concerned. This approach is similar to other ODCE funds, all of which have narrowly defined investment parameters and a lower risk strategy and, hence, generally require a lower level of active oversight and engagement for investors than the typical closed-end fund. [Mitigant: Unlike closed-end fund structures with contract terms defined by the general partner, NFI-ODCE funds adhere to a uniform set of rules defined by participation within the NFI-ODCE Index. Investors can be assured of a homogenous set of governance and investment parameters across all ODCE funds, thereby minimizing conflicts of interest and the need for an advisory board and additional governance rights for investors.]
- *Imperfect liquidity:* Consistent with other ODCE funds, investors can make redemption requests from PPF on a quarterly basis. However, liquidity is available only upon management's discretion and MSREA is not *required* to liquidate assets to fulfill redemption requests. [Mitigant: Historically, larger ODCE funds have been able to provide redemption-related liquidity more readily than smaller funds.]

Terms

The Fund's management fees are unique relative to the majority of the NFI-ODCE Index peer group. PPF charges a flat asset management fee on net asset value that is the same for all investors, regardless of commitment size (the majority of funds in the index provide tiered discounts for larger investors). Furthermore, PPF's fees include an incentive fee based upon improving net operating income for the trailing 12-month period (the majority of the index funds do not charge an incentive fee). The incentive fee does have a cap. In years when MSREA earns the maximum incentive fee, the Fund's fee drag can be larger than its peer group. However, the incentive fee can provide a level of alignment between MSREA and investors as demonstrated by the Fund's consistent outperformance to the benchmark over nearly all time periods on a net of fee basis. No placement agent had contact with Staff in connection with this commitment recommendation.

Conclusion

PPF represents an opportunity to invest in an existing pool of core real estate assets that are stabilized, income-producing, modestly-leveraged, and well-diversified by property type, market, tenant type, lease duration, and debt maturity. With an open-ended structure, the Fund allows for a level of liquidity not generally available within private real estate partnerships. Managed by a deep team with a strong track record relative to its index, PPF simultaneously provides immediate access to a significant component of the OPERF real estate benchmark (NFI-ODCE Index), and is in-line with the OPERF real estate portfolio's long-term goal of achieving strong, risk-adjusted returns primarily through durable income streams.

TAB 4 – Strategic Asset Allocation &
Capital Market Assumptions Update
OPERF

April 26, 2017



Oregon State Treasury

**2017 Capital Market Assumptions
and
OPERF Expected Returns and Risk**

Janet Becker-Wold, CFA
Denver Fund Sponsor Consulting

Jason Ellement, FSA, CFA
Capital Markets Research

James Callahan, CFA
San Francisco Fund Sponsor Consulting

Uvan Tseng, CFA
San Francisco Fund Sponsor Consulting

Callan 2017 – 2026 Capital Market Expectations

Asset Class	Index	2017 - 2026		Difference		2016 - 2025	
		Expected Return	Risk	Expected Return	Risk	Expected Return	Risk
Equities							
Broad Domestic Equity	Russell 3000	6.85%	18.25%	-0.50%	-0.45%	7.35%	18.70%
Large Cap	S&P 500	6.75%	17.40%	-0.50%	-0.55%	7.25%	17.95%
Small/Mid Cap	Russell 2500	7.00%	22.60%	-0.55%	-0.15%	7.55%	22.75%
Global ex-US Equity	MSCI ACWI ex USA	7.00%	21.00%	-0.55%	-0.30%	7.55%	21.30%
International Equity	MSCI World ex USA	6.75%	19.70%	-0.50%	-0.35%	7.25%	20.05%
Emerging Markets Equity	MSCI Emerging Markets	7.00%	27.45%	-0.60%	-0.40%	7.60%	27.85%
Fixed Income							
Short Duration	Barclays 1-3 Yr G/C	2.60%	2.10%	0.00%	-0.15%	2.60%	2.25%
Domestic Fixed	Barclays Aggregate	3.00%	3.75%	0.00%	0.00%	3.00%	3.75%
Long Duration	Barclays Long G/C	3.20%	10.90%	-0.50%	-0.50%	3.70%	11.40%
TIPS	Barclays TIPS	3.00%	5.25%	0.00%	-0.05%	3.00%	5.30%
High Yield	Barclays High Yield	4.75%	10.35%	-0.25%	-0.15%	5.00%	10.50%
Non-US Fixed	Barclays Global Aggregate ex-USD	1.40%	9.20%	0.00%	0.00%	1.40%	9.20%
Emerging Market Debt	EMBI Global Diversified	4.50%	9.60%	-0.10%	-0.30%	4.60%	9.90%
Other							
Real Estate	Callan Real Estate Database	5.75%	16.35%	-0.25%	-0.10%	6.00%	16.45%
Private Equity	TR Post Venture Capital	7.35%	32.90%	-0.80%	0.10%	8.15%	32.80%
Hedge Funds	Callan Hedge FoF Database	5.05%	9.15%	-0.20%	-0.15%	5.25%	9.30%
Commodities	Bloomberg Commodity	2.65%	18.30%	-0.10%	-0.20%	2.75%	18.50%
Cash Equivalents	90-Day T-Bill	2.25%	0.90%	0.00%	0.00%	2.25%	0.90%
Inflation	CPI-U	2.25%	1.50%	0.00%	0.00%	2.25%	1.50%

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

- Callan's 10-year capital market expectations represent passive exposure (beta only), net of fees, except for private market investments – real estate, private equity and hedge funds.

Oregon Custom 2017 – 2026 Capital Market Expectations

		2017 - 2026 Capital Market Expectations					
Asset Class	Index	Callan		Difference		Customized Oregon State Treasury	
		Expected Return	Risk	Expected Return	Risk	Expected Return	Risk
Equities							
Global Equity	OIC Blend ¹	7.1%	19.5%	0.0%	0.0%	7.1%	19.5%
Private Equity	OIC Private Equity	7.4%	32.9%	2.1%	-6.6%	9.5%	26.3%
Fixed Income							
Fixed Income	BB Aggregate	3.0%	3.8%	0.0%	0.0%	3.0%	3.8%
Inflation Sensitive							
Real Assets	OIC Real Assets	5.8%	16.4%	0.8%	-1.4%	6.6%	15.0%
Other							
Diversifying Strategies	Global 60/40	5.8%	11.0%	0.4%	0.0%	6.2%	11.0%

1 - 41% Large Cap US equity / 8% Small/mid Cap US equity / 34% Global ex-US equity / 12% Emerging Markets equity / 5% International Small Cap equity

- Capital market expectations for Private Equity and Real Assets are customized to Oregon’s unique experience and implementation.
- The Diversifying Strategies asset class is assumed to outperform a global 60/40 portfolio by .4%.

Rationale for Difference In Private Equity Assumptions

2017 Expectations

Asset Class	Arithmetic Return	Risk	Expected Return
Private Equity			
Oregon Portfolio Expectations	12.5%	26.3%	9.5%
Callan Standard Expectations	12.5%	32.9%	7.4%
Difference	0.0%	-6.6%	2.1%

1 - The Expected Return is a 10-year annualized (geometric) return derived from the arithmetic return and associated risk

- Private equity expected return is a function of the **same** arithmetic return and **lower** risk
 - “Volatility drag” has a much larger impact on Callan’s return expectation.
 - Oregon private equity risk was determined to fall between observed volatility (17%) and Callan’s risk estimate (32.9%).
 - Observed volatility reflects subjective asset valuation and pricing lags; it may not capture all risks associated with the asset class (e.g. illiquidity risk, implementation risk, leverage risk).
 - Callan’s estimate of risk reflects illiquidity risk, typical amounts of leverage, and manager implementation risk.

Rationale for Difference In Real Assets Assumptions

2017 Expectations

Asset Class	Arithmetic Return	Risk	Expected Return ¹
Real Assets			
Oregon Portfolio Expectations	7.6%	15.0%	6.6%
Callan Standard Expectations	6.9%	16.4%	5.8%
Difference	0.7%	-1.4%	0.8%

1 - The Expected Return is a 10-year annualized (geometric) return derived from the arithmetic return and associated risk

- Real Assets expected return is a function of **higher** arithmetic return and **lower** risk.
 - Callan’s standard risk-return expectations are based on the NCREIF benchmark and represent open-ended core real estate only.
 - Observed volatility of NCREIF is 3-4% (rolling 12-quarter standard deviation over 10-20 years).
 - Callan’s estimate of risk reflects illiquidity risk, typical amounts of leverage, and manager implementation risk.
 - Historically, the OPERF real estate program has more than double the risk of NCREIF due to investments in value-added real estate, opportunistic real estate and REITs.
 - As a result, higher return and risk relative to a core real estate program are expected.

Oregon 2017 – 2026 Portfolio Risk/Return Results

Asset Class	Current Target	Chg from Target	New Target
Global Equity	37.5%	0.0%	37.5%
Private Equity	20.0%	-2.5%	17.5%
Fixed Income	20.0%	0.0%	20.0%
Real Assets	20.0%	0.0%	20.0%
Diversifying Strategies	<u>2.5%</u>	<u>2.5%</u>	<u>5.0%</u>
Total	100.0%	0.0%	100.0%
Expected Return	7.1%	-0.1%	7.1%
Risk	14.6%	-0.5%	14.1%
Sharpe Ratio	0.33	0.01	0.34

- The New Target was recommended to the OIC in the 2015 asset liability study to further diversify the portfolio, enhance risk-adjusted returns and improve liquidity.
- Above calculations utilize Oregon's 2017-2026 customized assumptions.

Change From 2015

Asset Class	Customized OPERF					
	2015-2024		Difference		2017-2026	
	Expected Return	Risk	Expected Return	Risk	Expected Return	Risk
Equities						
Global Equity	7.8%	19.6%	-0.7%	-0.1%	7.1%	19.5%
Private Equity	10.3%	24.0%	-0.7%	2.3%	9.5%	26.3%
Fixed Income						
Fixed Income	3.0%	3.8%	0.0%	0.0%	3.0%	3.8%
Inflation Sensitive						
Real Assets	7.0%	15.0%	-0.4%	0.0%	6.6%	15.0%
Other						
Diversifying Strategies	6.4%	11.0%	-0.2%	0.0%	6.2%	11.0%
Current Target*	7.6%	14.4%	-0.5%	0.2%	7.1%	14.6%
New Target*	7.5%	14.0%	-0.4%	0.1%	7.1%	14.1%

- Expected return of Current and New Target declined 50 and 40 bps respectively from 2015 (shaded in green).
- The reduction is mostly due to lower return expectations for public and private equity.

* Current Target = 37.5% public equity; 20% private equity; 20% fixed income; 20% real assets; 2.5% diversifying strategies
 New Target = 37.5% public equity; 17.5% private equity; 20% fixed income; 20% real assets; 5.0% diversifying strategies

CAPITAL MARKET ASSUMPTIONS AND PORTFOLIO REVIEW

OPERF

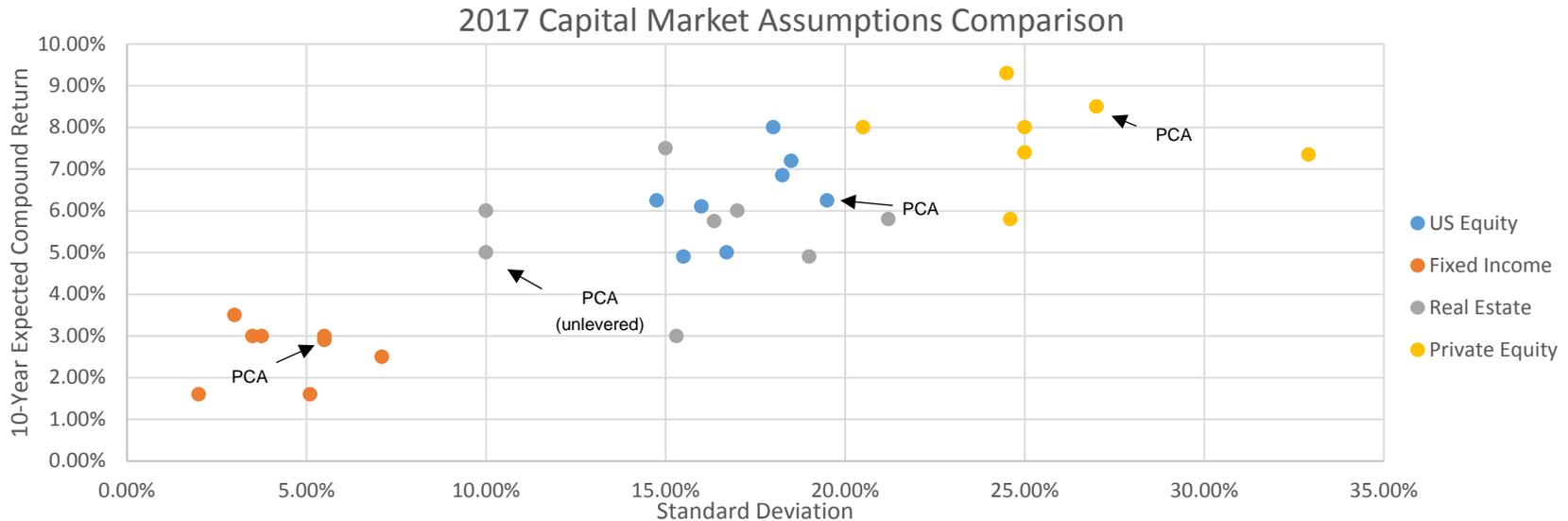
April 2017

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PENSION
CONSULTING
ALLIANCE



2017 10-Year Capital Market Assumptions: Overview



US Equity			
Firm	Geo. Return	Arith. Return	Risk
Robeco	8.00%	9.50%	18.00%
AON Hewitt	7.20%	8.80%	18.50%
Callan	6.85%	8.40%	18.25%
JPM	6.25%	7.30%	14.75%
PCA	6.25%	8.00%	19.50%
SSGA	6.10%	7.30%	16.00%
Voya	5.00%	6.30%	16.70%
BlackRock	4.90%	6.00%	15.50%

Fixed Income			
Firm	Geo. Return	Arith. Return	Risk
Robeco	3.50%	3.50%	3.00%
Callan	3.00%	3.10%	3.75%
JPM	3.00%	3.10%	3.50%
SSGA	3.00%	3.20%	5.50%
PCA	2.90%	3.05%	5.50%
AON Hewitt	2.60%	2.60%	3.00%
Voya	2.50%	2.80%	7.10%
BlackRock	1.60%	1.70%	5.10%

Real Estate			
Firm	Geo. Return	Arith. Return	Risk
AON Hewitt	7.50%	8.50%	15.00%
Robeco	6.00%	6.50%	10.00%
JPM	6.00%	7.40%	17.00%
Voya	5.80%	7.90%	21.20%
Callan	5.75%	7.00%	16.35%
PCA - unlevered	5.00%	5.50%	10.00%
SSGA	4.90%	6.60%	19.00%
BlackRock	3.00%	4.10%	15.30%

Private Equity			
Firm	Geo. Return	Arith. Return	Risk
AON Hewitt	9.30%	12.00%	24.50%
PCA	8.50%	11.75%	27.00%
Robeco	8.00%	10.90%	25.00%
JPM	8.00%	9.90%	20.50%
SSGA	7.40%	10.30%	25.00%
Callan	7.35%	12.30%	32.90%
BlackRock	5.80%	8.60%	24.60%

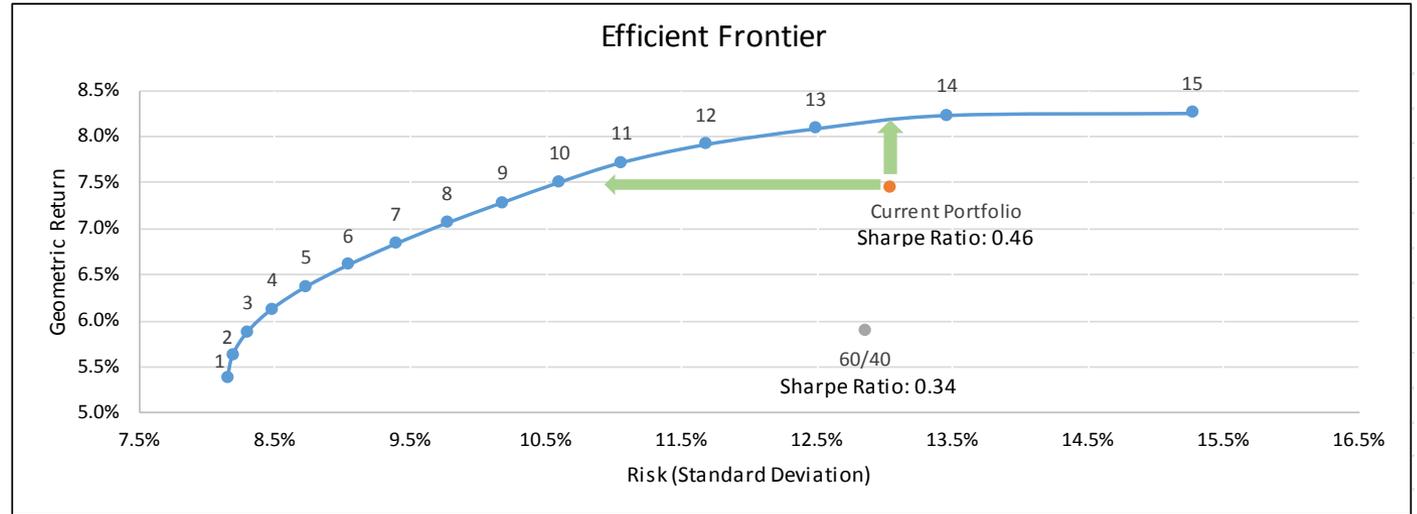
Data is sorted by expected compound return from highest to lowest

- PCA's capital market assumptions are in-line with peers and generally near the median

Efficient Frontier Analysis

Allocation Constraints

	Min	Max
Global Equity	30	100
Private Equity	0	25
OIC Real Estate	0	25
OIC Fixed Income	10	100
OIC Liquid Alts	0	100
OIC Illiquid Alts	0	100



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	CP	60/40
Risk (StDev)	8.2%	8.2%	8.3%	8.5%	8.7%	9.1%	9.4%	9.8%	10.3%	10.8%	11.5%	12.4%	13.5%	14.7%	16.4%	13.0%	12.9%
Geometric Return	5.4%	5.6%	5.9%	6.1%	6.4%	6.6%	6.8%	7.1%	7.3%	7.5%	7.7%	7.8%	8.0%	8.1%	8.1%	7.5%	5.9%
Sharpe Ratio	0.42	0.45	0.48	0.50	0.51	0.52	0.53	0.54	0.54	0.54	0.52	0.51	0.49	0.47	0.43	0.46	0.34

Global Equity	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	40%	38%	60%
Private Equity	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	7%	13%	18%	24%	25%	18%	0%
OIC Real Estate	8%	10%	12%	14%	16%	18%	20%	22%	22%	25%	25%	25%	25%	25%	25%	13%	0%
OIC Fixed Income	56%	51%	45%	40%	35%	30%	24%	19%	13%	10%	10%	10%	10%	10%	10%	20%	40%
OIC Liquid Alts	6%	10%	13%	16%	19%	23%	26%	29%	32%	29%	26%	22%	17%	11%	0%	6%	0%
OIC Illiquid Alts	0%	0%	0%	0%	0%	0%	0%	0%	3%	5%	2%	0%	0%	0%	0%	7%	0%

Summary of Investment Class Assumptions

2017 PCA Generic Capital Market Assumptions	Expected Arithmetic Average Nominal Annual Return	Expected Geometric Compound Nominal Annual Return	Expected Risk of Nominal Returns (Ann. SD)	Cash	TIPS	TSY	CoreFxd	Credit	RealEst	USEq	IntlEq	GlblEq	HIntlEq	PrivEq
Cash	2.25	2.25	1.50											
Treasury Infl. Protected Securities	3.00	2.75	7.00	0.20										
US Treasuries Only Fixed Income	2.35	2.10	7.00	0.30	0.50									
US Core Fixed Income	3.05	2.90	5.50	0.25	0.60	0.40								
US Credit Fixed Income	3.75	3.50	7.00	0.00	0.65	0.00	0.75							
Core Real Estate	5.50	5.00	10.00	0.30	0.00	0.00	0.00	0.00						
Domestic Equity	8.00	6.25	19.50	0.00	0.00	-0.25	0.20	0.40	0.40					
International Equity	9.50	7.25	22.00	0.00	0.00	-0.35	0.10	0.20	0.30	0.80				
Global Equity	9.00	7.15	20.00	0.00	0.00	-0.30	0.15	0.30	0.35	0.90	0.90			
Hedged International Equity	9.35	7.40	20.50	0.00	0.00	-0.30	0.10	0.30	0.35	0.85	0.90	0.90		
Private Equity/Venture Capital	11.75	8.50	27.00	0.00	0.00	-0.30	0.00	0.30	0.30	0.85	0.80	0.80	0.80	
Inflation	2.25	2.25	1.50	0.50	0.45	-0.10	0.00	0.10	0.35	0.20	0.20	0.20	0.20	0.10

OIC Specific Class Assumptions	Expected Arithmetic Average Annual Return	Expected Geometric Compound Nominal Annual Return	Expected Risk of Nominal Returns	Global Equity	Private Equity	OIC Real Estate	OIC Fixed Income	OIC Liquid Alts
Global Equity	9.00	7.15	20.00					
Private Equity	11.75	8.50	27.00	0.80				
OIC Real Estate ¹	9.90	7.90	21.00	0.10	0.50			
OIC Fixed Income ²	3.20	2.90	7.70	0.20	0.00	-0.20		
OIC Liquid Alts ³	7.00	6.10	14.00	0.00	0.00	0.30	0.30	
OIC Illiquid Alts ⁴	7.80	6.80	14.90	0.60	0.30	0.30	0.50	0.20

1. Assumption was based on a 32% Core (20% leveraged) and 68% Non-Core allocation modeled with a private equity profile
2. Assumption was based on 46% BC Aggregate, 37% BC US Treasury, and 17% BC High Yield allocation
3. Assumption was based on 60% Risk Premia and 40% Systematic Trend Following allocation
4. Assumption was based on 60% Infrastructure (40% leverage) and 40% Natural Resources/Agriculture/Mining (25% leverage) allocation

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CMA Summary

- ▶ Based on its consultants' recommendations, the OIC formally adopts a set of capital market assumptions through approval of policy (INV 1203).
- ▶ Current set of projected returns includes considerable dispersion (ex-active component) among our consulting partners:

Expected Return	Callan	PCA	BlackRock
Global Equity	7.1%	7.2%	6.2%
Private Equity	9.5%	8.5%	6.8%
Fixed Income	3.0%	2.9%	3.1%
Real Estate	6.6%	8.0%	4.2%
Alternatives	6.8%	6.9%	3.6%
OPERF*	7.1%	7.4%	5.7%

** Table output generated by OST staff using data from Callan, PCA and BlackRock.*

- ▶ 20-year projections also have very wide error ranges which render incremental adjustments to return forecasts not particularly meaningful (i.e., slight adjustments to the projected signal are inconsequential relative to the magnitude of the accompanying noise).
- ▶ Primary emphasis should be on process methodology which in this case is robust.

“Prediction is very difficult, especially about the future.” - Niels Bohr (and Yogi Berra?)

PURPOSE

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

INVESTMENT OBJECTIVE

- ~~1. Subject to ORS 293.721 and 293.726, the investment objective for the *Regular Account* is earning, over rolling, consecutive twenty-year periods, an annualized return that equals or exceeds the actuarial discount rate (ADR) approved by the Public Employees Retirement Board (PERB) and used to value OPERF liabilities.~~
- ~~2.1. The Council believes, based on the assumptions outlined herein, that the investment policies summarized in this document will provide the highest probability of achieving this objective, possible return at a level of risk that is acceptable to appropriate for active and retired OPERF members. The Council evaluates risk in terms of both short-term asset price volatility and long-term plan viability (specifically, the probability of not achieving the actuarial discount rate (ADR) over a consecutive, twenty-year time horizon-.~~
- ~~2. Subject to ORS 293.721 and 293.726 and the risk parameters described directly above, the investment objective for the *Regular Account* is earning an annualized return that equals or exceeds the ADR that is approved by the Public Employees Retirement Board ("PERB") and used by PERB actuaries to value OPERF liabilities. The return projection period comprises a consecutive, twenty-year time horizon that matches the period PERB and its actuaries consider in their analyses.~~
3. Historically, members were allowed to direct up to 75% of their contributions to the *Variable Account*. While no longer receiving new contributions, the Variable Account's objective remains investment performance consistent with the *MSCI All Country World Investable Market Index-*
4. The Council has established investment objectives for individual asset classes that are also summarized in this Statement.

POLICY ASSET MIX, RISK DIVERSIFICATION AND RETURN EXPECTATIONS

1. After careful consideration of OPERF's investment objective, *liability* structure, *funded status* and liquidity needs, as well as the return, risk and *diversification* characteristics of different asset classes, the Council approved the asset mix policy presented in Exhibit 1 for the OPERF Regular Account. The Council's total fund asset mix policy and active management return expectations are also summarized in Exhibit 1.

2. Of its total assets, 55 percent of OPERF is targeted for investment in *equities*, inclusive of *private equity*. Equity investments have generated the highest returns over long time periods, but can also produce low and even negative returns over shorter time periods.
3. The risk of low returns over shorter time periods makes 100% equity policies unsuitable for most pension funds, including OPERF. By investing across multiple equity asset classes, and in lower return but less risky *fixed-income* and *real estate* assets, the Council is managing and diversifying the Fund's overall risk.
4. Specific asset class exposures are maintained within the ranges outlined in Exhibit 1.
- 5.4. ~~At a 7.6% expected annual return, the Fund has a 50% probability of earning an annualized return equal to or exceeding its actuarial discount rate over a consecutive 20-year horizon or, approximately, the next two to three market cycles.~~

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

Asset Class	Target Allocation (%)	Re-balancing Range (%)	Expected Annual Policy Return ^{1, 2} (%)	Expected Annual Active Management Return (net of fees) (%)	Expected Annual Total Return (%)
Public Equities	37.5	32.5-42.5	7.81	0.75	8.67.9
Private Equity	17.5	14-21	10.29.5	0.7	10.9.5
Total Equity	55	50-60			
Fixed Income	20	15-25	3.0	0.25	3.343
Real Estate	12.5	9.5-15.5	6.7.0	0.50	7.52
Alternatives	12.5	0-12.5	6.43	0.5	6.93
Total Fund ²	100		7.01	0.639	7.65

¹ Based on capital market forecasts developed by the Council's investment consultant, Callan Associates, ~~for the next two to three market cycles.~~

² Total Fund expected returns are simply-calculated geometrically using the investment consultant's forecasts for the arithmetic returns and covariances of the asset classes. Accordingly, the Total Fund's expected returns are not equivalent to the weighted averagesaverage of the individual asset class returns. The policy mix's geometric mean return expectation is approximately 7.9% - listed in the Exhibit.

- 6.5. The policy mix's 7.65% average annual return expectation was developed with reference to observed long-term relationships among major asset classes, adjusted to account for current market

conditions. The Council believes this return expectation is reasonable, but recognizes that ~~over shorter time periods, actual~~ realized returns can deviate significantly from expectations – both positively and negatively.

- ~~7.6.~~ U.S. equity, non-U.S. equity, and fixed-income asset classes are managed using both passive and active management strategies. Active management of the Fund's public market equity and real estate allocations is expected to earn respectively a 0.75% and a 0.5025% per annum return premium over rolling, consecutive five-year periods (and relative to those allocation's respective benchmarks). The Council recognizes that unsuccessful active management can reduce total fund returns.
- ~~8.7.~~ The OIC has allocated up to 3.0% of total Fund assets for investment in an *Opportunity Portfolio*, the objective of which is to provide enhanced returns and better diversification for OPERF. Investments in the *Opportunity Portfolio* are expected to comprise a combination of both shorter-term (1-3 year) and longer-term holdings. The *Opportunity Portfolio* has no strategic target since, by definition, eligible investments will only be pursued on an opportunistic or episodic basis; moreover, the *Opportunity Portfolio* allocation shall not result in an allocation range breach for any of the other five, primary asset class allocations.
- ~~9.8.~~ OPERF cash balances are invested in the *Oregon Short Term Fund* and managed to levels that are deliberately minimized but still sufficient to cover OPERF's short-term cash flow needs.
- ~~10.9.~~ In an effort to minimize cash balances at both the fund and manager level, the OIC has retained an overlay manager to more closely align the actual Fund portfolio with the approved policy mix, generally through the purchase and sale of futures contracts to increase or decrease specific asset class exposures, as necessary.
- ~~11.10.~~ The Council shall review, at least biennially, its expectations for asset class and active management performance, and assess how the updated expectations affect the probability that the Regular Account will achieve its investment objective.
-

PASSIVE AND ACTIVE MANAGEMENT

1. Passive management uses lower cost *index funds* to access the return streams available from the world's capital markets. Active management tries to earn higher returns than those available from index funds through the application of manager skill in the form of sector and security selection as well as market and/or asset mix timing decisions.
 2. The Council uses passive management to control costs, evaluate active management strategies, capture exposure to *efficient market* segments, manage *tracking error* and facilitate policy mix re-balancing activities. Exchange-traded *real estate investment trusts (REITSREITs)* may also be used to maintain the Fund's real estate exposure within specified policy ranges.
 3. The Council approves active management of Fund assets when proposed active strategies offer sufficiently high expected incremental returns, net of fees, and when the magnitude of potential under-performance can be estimated, monitored and managed.
 - ~~4.~~ The Council must accept active management in those asset classes for which there are no passive management alternatives; in particular, real estate, private equity and other alternative and opportunistic investment strategies.
4.5
 - ~~5.~~ The Council prefers active management strategies that emphasize sector and/or security selection decisions rather than market and/or asset mix timing decisions as the former are much better supported by professional experience and academic research.
4.6
 - ~~4.6.~~ At the aggregate level of the Regular Account, active management strategies authorized by the Council are expected to **add 0.64% of annualized excess return**, net of fees, over rolling, consecutive five-year periods. **Relative to the policy benchmark, Regular Account active risk shall be managed to a 2 to 3 percent annualized tracking error target.**
-

PUBLIC EQUITY STRATEGY

1. OPERF's public equity allocation is managed with the objective of earning at least **75 basis points** in annualized net excess return relative to the *MSCI All Country World Investable Market Index (ACWI IMI – net)* (unhedged) over rolling, consecutive five-year periods. **Relative to that same benchmark, active risk shall be managed to a 0.75 to 2.0 percent annualized tracking error target.**
2. Key elements of the strategy:- include the following:
 - a. In an effort to enhance return, maintain an over-weight to small capitalization stocks and other well supported sources of return premia. These strategic overweights or "tilts" are based on and supported by robust empirical research that historically links persistent and pervasive evidence of excess returns to systematic "factor exposures" such as size (i.e., small cap), value and momentum. Implementation of other factor tilts may be considered at the manager, strategy or mandate level upon approval of both the Chief Investment Officer (CIO) and OIC.
 - b. Multiple, specialist active managers with complementary investment styles are employed. For example, some OPERF managers focus on growth stocks, some on value stocks, some on large capitalization stocks and others on small capitalization stocks. This diversified approach produces more ~~consistent~~ excess return opportunities and minimizes the Fund's exposure to any single investment organization.
 - c. Active management is more common within OPERF's non-U.S. equity allocation because non-U.S. markets appear to provide more opportunities for the successful application of manager skill.
 - d. Managers with skills in security selection and country allocation are utilized as these attributes have been shown to be the principal sources of excess returns in non-U.S. equity portfolios. In addition, managers who have demonstrated an ability to add value through currency management are permitted to do so.
 - e. Aggregate exposures to countries, economic sectors, investment styles and market capitalization tiers are monitored and managed relative to corresponding benchmark exposures.

FIXED INCOME STRATEGY

1. OPERF's fixed income allocation is managed with the objective of earning **25 basis points** in annualized, net excess returns relative to a blended benchmark comprised of 46% *Bloomberg Barclays U.S. Aggregate Index*, 37% *Bloomberg Barclays U.S. Treasury Index*, 13% *S&P/LSTA Leveraged Loan Index* and 4% *Bank of America Merrill Lynch High Yield Master II Index* over rolling, consecutive five-year periods. **Relative to the above-described benchmark, active risk with the OPERF fixed income allocation is managed to a 0.5 to 1.0 percent annualized tracking error target.**
2. Key elements of the strategy:- include the following:
 - a. ~~At least 70%~~ A significant proportion of the OPERF fixed income allocation is actively managed due to performance and cost considerations. Specifically, excess returns from active fixed income management are more likely as many investors hold fixed income securities to meet regulatory and liability matching objectives, and hence are not total return oriented. This market dynamic produces systematic mis-pricings of fixed income securities that skilled investment managers can exploit. Active fixed income management fees are also much lower than active equity management fees.
 - b. Multiple active generalist managers will be used for a majority of the fixed income asset class, rather than the specialist manager approach used within OPERF's public equity allocation. However, the OIC may utilize specialist fixed income managers as warranted or necessary, although fixed income manager mandates generally have little impact on the Fund's total risk due to fixed income's lower overall Fund allocation and fixed income managers' generally low

- tracking error.
- c. Fixed income managers are selected for their skills in issue selection, credit analysis, sector allocations and duration management.
- d. Aggregate exposures to duration, credit and sectors are monitored and managed relative to corresponding exposures in the fixed income allocation benchmark.

REAL ESTATE STRATEGY

1. OPERF's real estate allocation is managed with the objective of earning at least **50 basis points** in annualized, net excess returns relative to the *NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE)*, net of management fees, over rolling, consecutive five-year periods. Because 80% of the Fund's real estate investments are illiquid and/or traded infrequently, conventional risk budget concepts are not applicable.
2. Key elements of the strategy include the following:
 - a. Real Estate is 100% actively managed because a passive replication of the full breadth and depth of the real estate asset class is not viable.
 - b. *Core* property investments represent 55% of the Fund's real estate allocation, with a range of 45% to 65%. Specialist managers are utilized. Risk is diversified by investing across the following major property types: office; apartments; retail; and industrial. The OPERF real estate allocation may also include structured investments in alternative property types with Core-like risk and return attributes.
 - c. Exchange traded real estate investment trusts (REITs) represent 5% of the Fund's real estate allocation, with a range of 0% to 10%. Active management will include style and capitalization specialists, as well as broad market managers. Up to 50% of the REIT exposure may be invested in markets outside the United States.
 - d. *Value Added* property investments represent 20% of the OPERF real estate allocation, with a range of 10% to 30%, and may include direct investments in each of the property types listed above, as well as structured investments in alternative property types. Risk is diversified by property type and geography.
 - e. *Opportunistic* property investments represent 20% of the OPERF real estate allocation, with a range of 10% to 30%. Relative to Core and Value Added strategies, real estate investments will be characterized as "opportunistic" based on higher risk/return expectations and other prevailing market conditions.
 - f. Within its real estate allocation, the Fund may participate in *co-investment* opportunities.

PRIVATE EQUITY STRATEGY

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

performance track records, unique or differentiated investment methodologies and transparent/verifiable reporting processes.

- e. Within its private equity allocation, the Fund may participate in co-investment opportunities.

ALTERNATIVES STRATEGY

1. OPERF's allocation to Alternatives is managed with the objective of earning at least **400 basis points** in annualized, net excess returns relative to *CPI* over rolling, consecutive ten-year periods. Because 80% of the OPERF alternatives allocation is illiquid and/or traded infrequently, risk budget concepts are not applicable.
2. Key elements of the strategy include the following:
 - a. Alternatives are 100% actively managed because index funds replicating the broad alternatives market are not available.
 - b. *Infrastructure* investments represent 25% of the Fund's alternatives allocation, with a range of 20% to 30%. Specialist managers are utilized, and risk is diversified by investment type, size and geography. Specific infrastructure sector exposures will likely include energy, transportation, ports and water in both domestic and international markets and comprising both mid-size and large capitalization enterprises.
 - c. *Natural Resource* investments represent 35% of the Fund's alternatives allocation, with a range of 30% to 40%. Risk is diversified by investing across multiple industry sectors including oil and gas, agriculture, timberland, mining and commodities. Specialist managers are utilized in both domestic and international markets and across both active and some passive strategies.
 - d. *Diversifying Assets* represent 40% of the Fund's alternatives allocation, with a range of 35% to 45%. Diversifying Assets investments may include relative value, macro, arbitrage and long/short equity strategies. The objective of this sleeve is to invest in strategies with returns uncorrelated with those of the broader Fund. Risk is diversified by investing in multiple managers and across several strategies.
 - e. *Other* investments may represent 5% of the Fund's alternatives allocation, with a range of 0% to 10%. Investment strategies will be characterized as "other" based on prevailing market conditions as well as a specific strategy's unique "value proposition" or investment thesis.
 - f. Within its alternatives allocation, the Fund may also participate in *co-investment* opportunities.

PERFORMANCE MONITORING AND EVALUATION

1. The Council and its agents use a variety of compliance verification and performance measurement tools to monitor, measure and evaluate the management of OPERF assets. Monitoring, reporting and evaluation frequencies range from daily to annually, although quarterly is the most commonly used reporting frequency.
2. The Council has developed a performance monitoring and evaluation system that answers two fundamental fiduciary questions:
 - Are Fund assets being prudently managed? More specifically, are Fund assets being managed in accordance with established laws, policies and procedures, and are individual investment managers in compliance with their respective mandates?
 - Are Fund assets being profitably managed? More specifically, has Fund investment performance affected benefit security, and has capital market risk in general and active management in particular been sufficiently rewarded?
3. When a breach of policies, procedures or portfolio mandates is reported or detected, the Council requires a supporting report explaining how the breach was discovered, the reasons for the breach, actions taken to rectify the breach, and steps taken to mitigate future occurrences.
4. One of many reports used by the Council to satisfy the above requirements ~~of 10.2 above~~ is a simple

comparison of Regular Account investment performance relative to the ADR over rolling, consecutive five-year periods. Other reports help the Council assess whether or not the Fund was rewarded for its allocations to higher return, higher risk equity investments and whether or not the active management strategies utilized added or subtracted from policy returns on a net of fees basis.

5. The reporting described in this section gives the Council a consolidated or "big picture" view of Regular Account investment performance. This view is the first level of a comprehensive four-level performance report used by the Council to monitor and evaluate Regular Account investment performance over different time horizons. Level two examines Regular Account investment performance excluding hard-to-price illiquid assets such as real estate and private equity investments. Level three examines Regular Account investment performance across the six, primary asset class allocations: U.S. equity; non-U.S. equity; fixed income; real estate; private equity; and alternatives. Level four examines the performance of individual managers within each of the asset class allocations. This four-level reporting structure allows the Council to "drill down" to the level of detail it may need to identify potential performance problems and take whatever corrective actions that may be required.

GLOSSARY

Actuarial Discount Rate (ADR): The interest rate used to calculate the present value of a defined benefit plan's future obligations and determine the size of the plan sponsor's annual contribution. The ADR approved by the PERB is currently 7.755%.

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

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

Bank of America Merrill Lynch U.S. High Yield Master II Index: ~~At September 30, 2013, this index had a market value of approximately \$1.2 trillion comprised of approximately 2,200 issues. This index tracks the performance of publicly-issued, U.S. dollar-denominated, below investment-grade corporate debt.~~ Its constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest. ~~This index tracks and must conform to the performance of publicly issued, U.S. dollar-denominated, following parameters:~~

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

Bloomberg Barclays U.S. Aggregate Index: ~~At September 30, 2013, this index had a market value of approximately \$16.7 trillion comprised of approximately 8,500 issues. Its constituents are SEC-registered, taxable, dollar-denominated securities.~~ This index covers the U.S. investment-grade fixed rate bond market, and includes government, corporate, mortgage pass-through and asset-backed securities. These major sectors

are subdivided into more specific indices that are calculated and reported on a regular basis. ~~The Aggregate Index was officially launched by the former Lehman Brothers on January 1, 1976, and its constituents~~ Its constituents are SEC-registered, taxable, dollar-denominated securities and must conform to the following parameters:

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

~~Bloomberg Barclays U.S. Treasury Index: At September 30, 2013, this index had a market value of approximately \$6.0 trillion comprised of 236 issues. It~~ This index is a sub-component of the Bloomberg Barclays Aggregate Index and includes ~~Treasuries, or more specifically,~~ public obligations of the U.S. Treasury that have remaining maturities of more than one year. ~~This index is a sub-component of the Barclays Aggregate Index, was officially launched by the former Lehman Brothers on January 1, 1976, and its~~ Its constituents must conform to the following parameters:

- Be a U.S. Government or investment-grade credit security;
- Have at least one year to final maturity regardless of call features;
- Have at least \$250 million par amount outstanding;
- Be rated Baa3/BBB- or higher (i.e., "investment grade") by at least two of the major ratings agencies (Moody's, S&P or Fitch);
- Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;~~Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;~~
- Be dollar-denominated and non-convertible; and
- Be publicly issued.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Leverage Buyout (LBO): A strategy in which debt financing is used to acquire a firm or business unit,

typically in a mature industry. LBO debt is usually repaid according to a strict schedule that absorbs most of the acquired firm's cash flow.

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

MSCI All Country World Investable Market Index (ACWI-IMI): A capitalization-weighted index that includes ~~over~~approximately 9,000 publically-traded equity securities and is designed to measure equity market performance across developed and emerging markets. ~~As of September 2013, this index consisted of 45 separate country indices comprising 24 developed and 21 emerging market countries. The developed market countries included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. The emerging market countries included are Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand and Turkey. This index consists of over 40 separate developed and emerging market country indices.~~

MSCI World Ex-U.S. Index: ~~Same as~~A subset of the MSCI ACWI-IMI index ~~described directly above, except~~All Country World Index that contains only securities from developed market countries, excluding those from the U.S. ~~stocks are excluded.~~

Market Capitalization: The value of a corporation as determined by multiplying the price of its shares by the number of shares outstanding. ~~Investors often use market capitalization as an indicator of portfolio risk or volatility.~~ In general, smaller capitalized companies are more volatile or risky than larger capitalized companies.

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

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

- At least 80% of fund market value must be in private equity operating real estate;
- At least 95% of fund market value must be in U.S. markets;
- At least 80% of fund market value must be invested in apartments, industrial properties, office buildings, and retail;
- No more than 65% of fund market value can be in one property type or one region as define by the NPI;
- No more than 40% leverage; and
- Compliance with the NCREIF/PREA Reporting Standards.

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

Opportunistic: Higher risk but higher expected return real estate investments that are usually illiquid,

produce little or no current income and are often focused on distressed and/or highly leveraged properties.

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

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

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

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

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

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

Real Estate: Investments in land and/or buildings.

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

Regular Account: That portion of the Oregon Public Employees Retirement Fund that excludes the Variable Account. A diversified investment portfolio for which the asset allocation and general investment policies are established and approved by the OIC. Tier One participants are guaranteed a minimum rate of return based on the long-term interest rate used by the actuary, currently 7.7550 percent. Tier Two participants have no guaranteed rate of return and receive benefits that reflect the Regular Account's actual or realized investment return.

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

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

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

S&P/LSTA Leveraged Loan Index: ~~At September 30, 2013, this index had a market value of approximately \$622 billion comprised of approximately 800 issuers and over 1,000 loan facilities.~~ The index is designed to mirror the market-weighted performance of the largest institutional leveraged loan portfolios based on market weightings, spreads and interest payments. Facilities are eligible for inclusion in the index if they are senior secured institutional term loans with a minimum initial spread of 125 basis points and minimum one-year term. Facilities are retired from the index when there is no bid posted on the facility for at least 12 successive weeks or when the loan is repaid.

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

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

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

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

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

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

Value Stock: Stocks that appear to be undervalued for reasons other than low potential earnings growth. Value stocks usually have low price-to-earnings ratios, low price-to-book ratios and a high dividend yield.

Variable Account: The Variable Annuity Program allowed active PERS members to allocate a portion of their yearly employee contributions to a domestic equity portfolio. No such contributions were allowed after December 31, 2003. Active members who participated in the Variable Program had part of their balance invested in the Regular Account and part invested in the Variable Account. Unless a member explicitly elected to participate in the Variable Program, all of that member's employee contributions were invested in

the Regular Account. This "primary" election allowed members to place 25 percent, 50 percent or 75 percent of their employee contributions in the Variable Account. Variable Account balances increase or decrease depending on the investment performance of the variable fund, and individual participant accounts are credited for any amount (gain or loss) available for distribution. The OIC's asset allocation policy purview only applies to the Regular Account since the OIC cannot control the investment option elections of Variable Program participants.

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

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

PURPOSE

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

INVESTMENT OBJECTIVE

1. The Council believes, based on the assumptions outlined herein, that the investment policies summarized in this document will provide the highest possible *return* at a level of *risk* that is appropriate for active and retired OPERF members. The Council evaluates risk in terms of both short-term asset price volatility and long-term plan viability (specifically, the probability of not achieving the *actuarial discount rate* (ADR) over a consecutive, twenty-year time horizon).
2. Subject to ORS 293.721 and 293.726 and the risk parameters described directly above, the investment objective for the *Regular Account* is earning an annualized return that equals or exceeds the ADR that is approved by the Public Employees Retirement Board ("PERB") and used by PERB actuaries to value OPERF liabilities. The return projection period comprises a consecutive, twenty-year time horizon that matches the period PERB and its actuaries consider in their analyses.
3. Historically, members were allowed to direct up to 75% of their contributions to the *Variable Account*. While no longer receiving new contributions, the Variable Account's objective remains investment performance consistent with the *MSCI All Country World Investable Market Index*.
4. The Council has established investment objectives for individual asset classes that are also summarized in this Statement.

POLICY ASSET MIX, RISK DIVERSIFICATION AND RETURN EXPECTATIONS

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

4. Specific asset class exposures are maintained within the ranges outlined in Exhibit 1.

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

Asset Class	Target Allocation (%)	Re-balancing Range (%)	Expected Annual Policy Return ¹ (%)	Expected Annual Active Management Return (net of fees) (%)	Expected Annual Total Return (%)
Public Equities	37.5	32.5-42.5	7.1	0.75	7.9
Private Equity	17.5	14-21	9.5		9.5
Total Equity	55	50-60			
Fixed Income	20	15-25	3.0	0.25	3.3
Real Estate	12.5	9.5-15.5	6.7	0.50	7.2
Alternatives	12.5	0-12.5	6.3		6.3
Total Fund ²	100		7.1	0.39	7.5

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

² Total Fund expected returns are calculated *geometrically* using the investment consultant's forecasts for the *arithmetic* returns and covariances of the asset classes. Accordingly, the Total Fund's expected returns are not equivalent to the weighted average of individual asset class returns listed in the Exhibit.

5. The policy mix's 7.5% average annual return expectation was developed with reference to observed long-term relationships among major asset classes, adjusted to account for current market conditions. The Council believes this return expectation is reasonable, but recognizes that *realized* returns can deviate significantly from expectations – both positively and negatively.
6. U.S. equity, non-U.S. equity, and fixed income asset classes are managed using both passive and active management strategies. Active management of the Fund's public market equity and real estate allocations is expected to earn respectively a 0.75% and a 0.25% per annum return premium over rolling, consecutive five-year periods (and relative to those allocation's respective benchmarks). The Council recognizes that unsuccessful active management can reduce total fund returns.
7. The OIC has allocated up to 3.0% of total Fund assets for investment in an *Opportunity Portfolio*, the objective of which is to provide enhanced returns and better diversification for OPERF. Investments in the *Opportunity Portfolio* are expected to comprise a combination of both shorter-term (1-3 year) and longer-term holdings. The *Opportunity Portfolio* has no strategic target since, by definition, eligible investments will only be pursued on an opportunistic or episodic basis; moreover, the *Opportunity Portfolio* allocation shall not result in an allocation range breach for any of the other five,

primary asset class allocations.

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

PASSIVE AND ACTIVE MANAGEMENT

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

PUBLIC EQUITY STRATEGY

1. OPERF's public equity allocation is managed with the objective of earning at least **75 basis points** in annualized net excess return relative to the *MSCI All Country World Investable Market Index (ACWI IMI – net)* (unhedged) over rolling, consecutive five-year periods. **Relative to that same benchmark, active risk shall be managed to a 0.75 to 2.0 percent annualized tracking error target.**
2. Key elements of the strategy include the following:
 - a. In an effort to enhance return, maintain an over-weight to small capitalization stocks and other well supported sources of return premia. These strategic overweights or "tilts" are based on and supported by robust empirical research that historically links persistent and pervasive evidence of excess returns to systematic "factor exposures" such as size (i.e., small cap), value and momentum. Implementation of other factor tilts may be considered at the manager, strategy or mandate level upon approval of both the Chief Investment Officer (CIO) and OIC.
 - b. Multiple, specialist active managers with complementary investment styles are employed. For example, some OPERF managers focus on growth stocks, some on value stocks, some on large capitalization stocks and others on small capitalization stocks. This diversified approach produces more excess return opportunities and minimizes the Fund's exposure to any single

- investment organization.
- c. Active management is more common within OPERF's non-U.S. equity allocation because non-U.S. markets appear to provide more opportunities for the successful application of manager skill.
 - d. Managers with skills in security selection and country allocation are utilized as these attributes have been shown to be the principal sources of excess returns in non-U.S. equity portfolios. In addition, managers who have demonstrated an ability to add value through currency management are permitted to do so.
 - e. Aggregate exposures to countries, economic sectors, investment styles and market capitalization tiers are monitored and managed relative to corresponding benchmark exposures.

FIXED INCOME STRATEGY

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

REAL ESTATE STRATEGY

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

estate allocation may also include structured investments in alternative property types with Core-like risk and return attributes.

- c. Exchange traded real estate investment trusts (REITs) represent 5% of the Fund's real estate allocation, with a range of 0% to 10%. Active management will include style and capitalization specialists, as well as broad market managers. Up to 50% of the REIT exposure may be invested in markets outside the United States.
- d. *Value Added* property investments represent 20% of the OPERF real estate allocation, with a range of 10% to 30%, and may include direct investments in each of the property types listed above, as well as structured investments in alternative property types. Risk is diversified by property type and geography.
- e. *Opportunistic* property investments represent 20% of the OPERF real estate allocation, with a range of 10% to 30%. Relative to Core and Value Added strategies, real estate investments will be characterized as "opportunistic" based on higher risk/return expectations and other prevailing market conditions.
- f. Within its real estate allocation, the Fund may participate in *co-investment* opportunities.

PRIVATE EQUITY STRATEGY

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

ALTERNATIVES STRATEGY

1. OPERF's allocation to Alternatives is managed with the objective of earning at least **400 basis points** in annualized, net excess returns relative to *CPI* over rolling, consecutive ten-year periods. Because 80% of the OPERF alternatives allocation is illiquid and/or traded infrequently, risk budget concepts are not applicable.
2. Key elements of the strategy include the following:
 - a. Alternatives are 100% actively managed because index funds replicating the broad alternatives market are not available.
 - b. *Infrastructure* investments represent 25% of the Fund's alternatives allocation, with a range of 20% to 30%. Specialist managers are utilized, and risk is diversified by investment type, size and geography. Specific infrastructure sector exposures will likely include energy, transportation, ports and water in both domestic and international markets and comprising both mid-size and large capitalization enterprises.
 - c. *Natural Resource* investments represent 35% of the Fund's alternatives allocation, with a range of 30% to 40%. Risk is diversified by investing across multiple industry sectors including oil and gas, agriculture, timberland, mining and commodities. Specialist managers

are utilized in both domestic and international markets and across both active and some passive strategies.

- d. *Diversifying Assets* represent 40% of the Fund's alternatives allocation, with a range of 35% to 45%. Diversifying Assets investments may include relative value, macro, arbitrage and long/short equity strategies. The objective of this sleeve is to invest in strategies with returns uncorrelated with those of the broader Fund. Risk is diversified by investing in multiple managers and across several strategies.
- e. *Other* investments may represent 5% of the Fund's alternatives allocation, with a range of 0% to 10%. Investment strategies will be characterized as "other" based on prevailing market conditions as well as a specific strategy's unique "value proposition" or investment thesis.
- f. Within its alternatives allocation, the Fund may also participate in *co-investment* opportunities.

PERFORMANCE MONITORING AND EVALUATION

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

GLOSSARY

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

Alternatives: Investments that are considered non-traditional or emerging in nature. Presently, the following

investment types are included within the OPERF alternatives allocation: hedge funds; infrastructure; natural resources; and commodities.

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

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

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

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

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

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

- Be a U.S. Government or investment-grade credit security;
- Have at least one year to final maturity regardless of call features;
- Have at least \$250 million par amount outstanding;
- Be rated Baa3/BBB- or higher (i.e., "investment grade") by at least two of the major ratings agencies (Moody's, S&P or Fitch);
- Be fixed rate, although securities with a coupon that steps up or changes according to a predetermined schedule are permitted;
- Be dollar-denominated and non-convertible; and
- Be publicly issued.

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

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

this case, the Russell 3000 Index serves as or represents the U.S. equity benchmark.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- At least 80% of fund market value must be in private equity operating real estate;
- At least 95% of fund market value must be in U.S. markets;
- At least 80% of fund market value must be invested in apartments, industrial properties, office buildings, and retail;
- No more than 65% of fund market value can be in one property type or one region as defined by the NPI;
- No more than 40% leverage; and
- Compliance with the NCREIF/PREA Reporting Standards.

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

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

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

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

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

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

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

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

Real Estate: Investments in land and/or buildings.

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

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

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

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

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

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

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

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

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

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

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

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

Value Stock: Stocks that appear to be undervalued for reasons other than low potential earnings growth. Value stocks usually have low price-to-earnings ratios, low price-to-book ratios and a high dividend yield.

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

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

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

TAB 5 – Policy Updates
OPERF and other OST-managed Accounts

OIC Policy Updates April 26, 2017

Purpose

To update several OIC Policies to conform with Treasury's new PolicyStat application.

Background

This work is a continuation of the policy updates brought by staff beginning with the September 2015 meeting. As noted at that time:

In April 2015, Kim Olson informed the OIC of a new online application, PolicyStat, acquired by Oregon State Treasury (OST) to facilitate the management of policies and procedures for the Oregon Investment Council (OIC) and the rest of OST. As the current OIC Policies and Procedures have been migrated to this new application, staff is now engaged in a staged project to reformat existing documents to fit the new rubric approved by Treasury management. Of particular significance is the segregation of Policy and Procedure sections, a recommendation made by Cortex Applied Research during a review completed in August 2012. As staff moves to implement these recommendations going forward, revised policies will come before the OIC for approval, while operating procedures will be approved by the Chief Investment Officer.

Discussion

The following is a brief summary of the attached Policies and updates thereto. Due to the quantity of revisions to INV 203, INV 204 and INV 205, we are providing both the revised policy and the previous policy for purposes of a side-by-side comparison. The remaining policies are provided only in their revised form.

1. INV 203: Dodd-Frank Regulatory Compliance

Changes: We are recommending updating the OIC's existing Dodd-Frank policy to reflect current market practice. We continuously monitor best practices with respect to compliance matters pertaining to large institutional investors. As the guidance surrounding regulatory requirements evolves, the OIC is well served to update its policies from time to time to reflect such advice. Our outside legal counsel has recommended the enclosed and revised version of INV 203. This revised language does not represent a substantive change in policy or procedure, but more fully describes the requirements of the OIC's external managers and provides a clearer metric for OIC staff to use in monitoring the investment managers' performance.

The first policy is the revised version, followed by the previous version.

2. INV 204: Investment Performance Reports

Changes: The Director of Investment Operations (DIO) completely revised and reformatted this policy. The original is attached for comparison purposes. In the original, reporting requirements were listed for each asset class. The revised version avoids the repetition inherent in the previous policy by summarizing the report types and information provided. The updated policy also references the Investment Division's newly created operations unit and the corresponding centralization of the division's reporting activities. David Randall, the DIO, is now the primary contact for the division's reporting function.

This revised policy was originally presented at the September 2016 OIC meeting. At that time, Council members presented concerns that the changes potentially reduced the deliverables. The revised policy addresses those concerns, and includes a reporting section on PERS. Changes to this policy retain the spirit of the original, but are still too extensive to try and summarize in this memo. Accordingly, we have attached both the original and revised versions of this policy for comparison purposes.

The first policy is the revised version, followed by the previous version.

3. INV 205: Consideration of Investments

INV 206: Divestiture Initiatives

These two documents were combined into a single policy – **INV 205: Consideration of Investments and Divestiture Initiatives.**

Consideration of Investments was previously maintained in the form of an “advisory letter” articulating the guidelines within which the OIC would consider existing and potential investments. Following a discussion of this historical advisory letter format with legal counsel, we believe the OIC is better served to instead reconstitute this advisory letter as an integrated policy document. Therefore, we have removed references to “advisory letter” and reformatted the letter's language into our now standard policy template.

The original INV 206 language remains largely the same. We removed policy statements 1, 2 and 3 because they are redundant with statute quotations or INV 205 language. The result is a reduced total number of investment policies and elimination of an anomalous advisory letter.

This revised policy was originally presented at the September 2016 OIC meeting. At that time, Council members presented concerns about the clarity of the language. The revised

policy addresses those concerns. The first policy is the revised version, followed by the previous version of INV 205, then the previous version of INV 206.

Public Equity Series (INV 601, 602, 603)

4. INV 601: Public Equity Investments: Strategic Role of Public Equity Securities within OPERF

This policy was reformatted and approved by the OIC in April 2016. This policy was previously a main policy (INV 601) and three attachments. In this version, staff has combined two of the previous attachments (INV 601A and INV 601C) into the main body of INV 601. The remaining attachment has been renamed INV 601A (previously INV 601B).

Changes: Added Section (D) OST Staff Authority and Reporting and Section (previously in INV 601A, plus additional language) and (E) Investment Management Agreement Execution (previously in INV 601C, plus additional language).

Changes: INV 601A Investment Manager Benchmarks includes one new mandate (OST International Risk Premia) and deletes nine mandates (Internal RAFI, BlackRock Russell 1000 Growth and Value, Columbia Wanger, TT International, Wells Cap CEF, Pyramis, Victory, SSGA World X –US Index).

The first two policies are the revised versions of INV 601 and INV 601A, followed by the previous versions of INV 601A and INV 601C.

5. INV 602: Equity Investments: Selecting and Terminating Investment Management Firms

This policy was reformatted and approved by the OIC in April 2016.

Addition: Added “Investment Officer” to this statement: “6a. Immediately following a termination, the Senior Investment Officer or Investment Officer for Public Equity shall notify the terminated firm.”

Deletion: Deleted the phrase “transitioning securities through an index fund” from the following statement: “6c. Unless directed otherwise by the OIC, OST staff shall proceed with an liquidation plan that may include redistributing securities to the other, existing

managers, transitioning securities through an index fund or liquidating assets altogether.”

6. INV 603: Internal Equity - Portfolio Objectives and Strategies

This policy was reformatted and approved by the OIC in April 2016.

Change: This version **removes** the Russell/RAFI Fundamental Large Cap Index Strategy and **inserts** the International Developed Risk Premia Strategy.

Common School Fund Series (INV 901, 903-905)

7. INV 901: Common School Fund: Asset Classes, Asset Allocation, and Reporting Requirements

This policy was reformatted and approved by the OIC in April 2016. This version contains minor language changes for improved clarity.

8. INV 903: Common School Fund: Public Equity Investments

This policy was reformatted and approved by the OIC in April 2016.

Addition: This version contains a new section (B) OST Staff Authority and Reporting. This section allows OST staff, with approval from the Chief Investment Officer and quarterly notification to the OIC, to:

- terminate “at will” any public equity manager mandate according to the terms of its contract with, and on behalf of, the OIC;
- exercise discretion to rebalance between and among managers within the public equity portfolio; and
- exercise discretion to retain any public equity manager that has been approved by the Council on behalf of OPERF.

In addition, OST staff, with approval from the Chief Investment Officer and OIC Consultant, will have discretion to convert any public equity long-only implementation to a 130/30 strategy, provided such implementation does not change the mandate’s role within the public equity portfolio.

9. INV 904: Common School Fund: Fixed Income Investments

This policy was reformatted and approved by the OIC in April 2016.

Addition: This version contains a new section (B) OST Staff Authority and Reporting. This section allows OST staff, with approval from the Chief Investment Officer and quarterly notification to the OIC, to:

- terminate “at will” any fixed income manager mandate according to the terms of its contract with, and on behalf of, the OIC;
- exercise discretion to rebalance between, and among, managers within the fixed income portfolio; and
- exercise discretion to retain any fixed income manager that has been approved by the Council on behalf of OPERF.

10. INV 905: Common School Fund: Private Equity Investments

This policy was reformatted and approved by the OIC in April 2016.

Addition: This version contains a new section (B) OST Staff Authority and Reporting. This section allows OST staff, with approval from the Chief Investment Officer and quarterly notification to the OIC, to have discretion to retain any private equity manager/strategy that has been approved by the Council on behalf of OPERF.

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

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The State of Oregon by and through the Oregon Investment Council (“OIC”) acting on behalf of certain funds (“OIC”) intends to transact in swaps, directly or indirectly through investment managers, with dealers who will be acting as counterparties to and not as advisors to the OIC. Moreover, the OIC intends to institute policies and procedures that will enable it to so transact and to make the necessary representations to such dealers so that they can comply with their business conduct requirements under the Wall Street Transparency and Accountability Act of 2010 (“Dodd-Frank”) and rules and regulations thereunder.

Applicability

Classified represented, management service, unclassified executive service employees

BACKGROUND

Dodd-Frank imposes business conduct requirements generally on dealers in over-the-counter derivative products and those business conduct requirements are expanded when the dealer transacts with an entity such as the OIC. Pursuant to authority conferred by Dodd-Frank, the Commodity Futures Trading Commission (“CFTC”) promulgated business conduct rules and regulations for swap dealers (*i.e.*, dealers in “swaps” as defined in Section 1a(47) of the Commodity Exchange Act and CFTC Regulation 1.3(xxx), which term includes over-the-counter derivatives on interest rates, currencies, commodities and indices, including credit default swap indices).

A swap dealer will generally not transact with an entity such as the OIC if the dealer would be considered to be an advisor of such entity because such status would require the swap dealer to act in the best interests of the entity. In order for a swap dealer to not be considered to be an advisor to OIC with a duty to act in the best interests of the OIC, the swap dealer must have a reasonable basis to believe that the OIC has a representative that:

- (i) has sufficient knowledge to evaluate the swap and the risks of the swap;
- (ii) is not subject to statutory disqualification;
- (iii) is independent of the swap dealer;
- (iv) undertakes to act in the best interest of the OIC;
- (v) makes appropriate and timely disclosures to the OIC;
- (vi) evaluates fair pricing and the appropriateness of the swap, consistent with any guidelines of the OIC; and
- (vii) is subject to restrictions on political contributions imposed by a regulatory authority.

A representative is considered to be independent if:

- (a) the representative is not and within one year of representing the OIC was not

associated with the swap dealer;

(b) there is no principal relationship between the representative and the swap dealer;

(c) the representative provides timely and effective disclosure to the OIC of all material conflicts of interest that could reasonably affect the judgment or decision making of the representative, and the representative complies with policies and procedures reasonably designed to manage and mitigate such conflicts of interest;

(d) the representative is not directly or indirectly controlled by, in control of or under common control with the swap dealer; and

(e) the swap dealer did not recommend or introduce the representative to the OIC within one year of the representative's representation of the OIC in connection with the swap.

A swap dealer is deemed to have a reasonable basis to believe that the OIC has a representative that satisfies the foregoing requirements if:

(i) the OIC represents in writing that it has complied in good faith with written policies and procedures reasonably designed to ensure that it has selected a representative that meets the foregoing requirements, and that such policies and procedures provide for ongoing monitoring of the representative's performance of the requirements described above; and

(ii) the representative represents to the OIC and the swap dealer that the representative has policies and procedures reasonably designed to ensure that it satisfies the foregoing provisions, meets the independence test described above, and is legally obligated to comply with the foregoing requirements by contract, regulation or other enforceable duty.

To take advantage of the foregoing safe harbor, swap dealers will require the OIC either directly or through its investment managers to make the written representations described above.

Policy Statements

Oregon State Treasury ("OST") staff monitoring, combined with written representations obtained from external investment managers, will provide the means for policy implementation.

(1) Before permitting any investment manager to engage in swaps on behalf of the OIC, the OIC shall have a reasonable basis to believe that such representative satisfies the requirements of CFTC Regulation §23.450, which requires that the OIC has a reasonable basis to believe that the representative:

(i) has sufficient knowledge to evaluate the swap transactions and risks;

(ii) is not subject to "statutory disqualification," which term means grounds for refusal to register or revoke, condition, or restrict the registration of the investment manager as set forth in Sections 8a(2) and 8a(3) of the Commodity Exchange Act ("CEA");

(iii) is "independent" of the swap dealer within the meaning of CFTC Regulation §23.450(c), and a representative will be deemed to be independent of the swap dealer if:

(a) the representative is not and, within one year of representing OIC in connection with the swap, was not an associated person of the swap dealer within the meaning of Section 1a(4) of the CEA (*i.e.*, was not a partner, officer, employee, agent or similar person that solicits swaps or supervises such person);

(b) there is no principal relationship between the representative and the swap dealer. In this regard, a principal relationship arises where a swap dealer is a principal of the representative or the representative is a principal of the swap dealer. Principals include directors,

presidents, chief executive officers, chief operating officers, chief financial officers, chief compliance officers, persons in charge of principal business units, general partners, managing members, persons having the power to exercise a controlling influence over an entity's activities, 10% shareholders and persons entitled to receive 10% of the profits of an entity;

(c) the representative: (1) provides timely and effective disclosures to OIC of all material conflicts of interest that could reasonably affect the judgment or decision making of the representative with respect to its obligations to OIC; and (2) complies with policies and procedures reasonably designed to manage and mitigate such material conflicts of interest;

(d) the representative is not directly or indirectly, through one or more persons, controlled by, in control of, or under common control with the swap dealer; and

(e) the swap dealer did not refer, recommend, or introduce the representative to the OIC within one year of the representative's representation of the OIC in connection with the swap;

(iv) undertakes a duty to act in the best interests of the OIC;

(v) makes appropriate and timely disclosures to the OIC;

(vi) evaluates, consistent with any guidelines provided by the OIC, fair pricing and the appropriateness of the swap; and

(vii) is subject to restrictions on certain political contributions imposed by the CFTC, the Securities Exchange Commission, or a self-regulatory organization subject to the jurisdiction of any of such commissions.

(2) The determination required in clause (1) above shall be made by OST staff;

(3) In making the determination required in clause (1), OST staff may reasonably rely upon written representations provided by the representative, which may be in the form attached hereto; and

(4) OST staff shall monitor the investment manager's performance with the items set forth in clause (1) above.

EXCEPTIONS

None.

FORMS

The OIC shall require each investment manager that is authorized to transact in swaps to execute a letter in substantially the form attached hereto.

REVIEW

This policy shall be reviewed as necessary and no less frequently than annually.

FEEDBACK

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

Appendix A

[Form of Representative Representation Letter]

[Letterhead of Representative]

[Date]

State of Oregon by and through the Oregon Investment Council
[OIC Address]

Re: Representation Letter for CFTC Regulation §23.450

Dear Sir/Madam:

[Name of Representative] (“Manager”) acts as investment manager to the State of Oregon by and through the Oregon Investment Council (“OIC”) acting on behalf of certain funds (“OIC”) pursuant to that Investment Manager Agreement, dated [Insert Date], between Manager and the OIC. Pursuant to that agreement and in compliance with the guidelines therein, Manager may invest in derivative instruments.

Manager hereby represents and warrants to the OIC as follows, which representations and warranties shall be continuously made at all times during which Manager acts as investment manager to the OIC unless Manager otherwise notifies the OIC in writing:

(i) Manager is familiar with and understands Regulation §23.450 promulgated by the Commodity Futures Trading Commission (“CFTC”);

(ii) Manager has policies and procedures reasonably designed to ensure that Manager satisfies the applicable requirements of CFTC Regulation §23.450(b);

(iii) Manager meets the independence test of CFTC Regulation §23.450(c); and

(iv) Manager is legally obligated to comply with the applicable requirements of CFTC Regulation §23.450(b) by agreement, condition of employment, law, rule, regulation or other enforceable duty.

Sincerely,

[Name of Representative]

By: _____

Name:

Title:



Origination:	03/2014
Last Approved:	03/2014
Last Revised:	03/2014
Next Review:	07/2015
Owner:	<i>John Skjervem: Chief Investment Officer</i>
Policy Area:	<i>Investments</i>
References:	<i>OST Policy 4.01.03</i>

INV 203: Dodd-Frank Regulatory Compliance

POLICY

The Council intends to comply with the requirements of the Wall Street Transparency and Accountability Act of 2010 ("Dodd-Frank") and related regulations for advisors selected and approved to trade in over-the-counter derivative transactions.

BACKGROUND

The Commodity Futures Trading Commission's ("CFTC") rules and regulations require investment managers and counterparties in certain derivative transactions to perform due diligence and make certain disclosures, in an attempt to prevent abusive trading practices. As a result of Dodd-Frank, governmental entities are required to have written policies and procedures in place that are reasonably designed to ensure that the selection and monitoring of certain investment managers are performed in a manner that is consistent with the CFTC regulations.

Staff monitoring, combined with representations obtained from external investment managers, will provide for the means for policy implementation. When investment managers enter into derivative transactions on behalf of the Oregon Investment Council (OIC), investment managers will act as the swap advisors referenced in the procedure language. The contracting and due diligence processes will, therefore, be the primary procedures for ensuring compliance with this regulation. As an additional measure, Staff will continue its rigorous process for selecting and monitoring investment managers and will do so in a manner consistent with this policy.

PROCEDURES

- A. Each swap advisor engaged or to be engaged by the OIC shall function as a designated qualified independent representative of the OIC, sometimes referred to as a "Designated QIR."
- B. Each swap advisor shall represent in writing to the OIC that it agrees to meet, and shall meet, the requirements specified in CFTC Regulation §23.450 or any successor regulation.
- C. OST staff shall monitor the performance of each swap advisor consistent with the requirements specified in CFTC Regulation §23.450.
- D. OST staff shall exercise independent judgment in consultation with its swap advisor(s) in evaluating all recommendations, if any, presented by any swap dealer with respect to transactions authorized pursuant to Council policy.

E. OST staff shall rely on the advice of its swap advisor(s) with respect to transactions authorized pursuant to OIC policy and shall not rely on recommendations, if any, presented by any swap dealer with respect to transactions authorized pursuant to OIC policy.

SAMPLE FORMS, DOCUMENTS OR REPORTS (Attached)

None

Attachments:

No Attachments

INTRODUCTION & OVERVIEW

Summary Policy Statement

Oregon law requires the Treasurer, acting as chief investment officer for the State, among other duties, to retain and manage investments of the investment funds. This policy establishes a uniform process for reporting investment performance and activity, consistent with that mandate.

Purpose and Goals

The goal of this policy is to establish general parameters for reporting the performance and activity of investment funds managed by Oregon State Treasury (OST).

Applicability

Classified represented, management service, unclassified executive service

Authority

ORS 293.731; 293.736; 293.741; 293.761; 293.766; 293.771

POLICY PROVISIONS

Definitions

Terms not otherwise defined herein have the meanings ascribed to them in ORS 293.701, *et. seq.*

Policy Statements

The Treasurer is tasked with the management of the investment funds and has delegated portions of that task to the OST Chief Investment Officer and certain OST investment staff. As part of their duties, OST Investment Division staff (“Staff”) are tasked with providing periodic reports on the investment funds to various parties, as detailed below.

The Director of Investment Operations shall generally oversee preparation of each report and shall obtain any information necessary for a report from applicable custodians and other third party service providers. However, certain reports may be overseen by other Staff, including the Director of Alternatives, the Director of Capital Markets and/or their designees.

COUNCIL REPORTS

Staff shall provide the Council with periodic reports (each an “OIC Report”) on the investment funds, which include their performance history and a summary of transaction activity. Generally, each OIC Report will be delivered to the Council on a monthly basis unless otherwise specified requested by the

Council.

~~OIC Reports shall include relevant p~~Performance information over applicable time periods shall illuminate total plan performance as well as for both internally- and externally-managed investment fund performances relative against relevant appropriate benchmarks. These reports shall also include and a summary of portfolio holdings, purchases and sales, as well as all gains and losses, total plan performance; and may also include any other information Staff or the OIC deems relevant or useful, including information from custodians, consultants and other third parties. In most cases, tThe OIC Reports in most cases will be asset classstrategy specific (i.e., Private Equity, Alternatives, OpportunFixed Income, etc.istic Investments, Public Equities) or plan specific (i.e., OPERF, CSF, SAIF, OSGP, etc.-457 Plan) specific.

Staff shall also assist the Council in providing periodic reports to the Governor and Legislative Assembly on the investment funds' performance and transaction activity. Such reports shall be provided on a bi-annual basis orand at such other times as the Council considers in the public interest or as may be required by statute or rule.

OST ANNUAL REPORT

Staff shall assist in the production of OST's annual report, providing necessary information on the investment funds, including ~~their~~ performance and transaction activity, ~~including~~ portfolio holdings, purchases and sales as well as all gains and losses.

PERS REPORTS

Staff shall provide reports that will include returns for the OPERF Regular and Variable Account to the Public Employees Retirement System (PERS), typically on a monthly basis, so that PERS is able to determine the earnings rates ~~to be~~ credited to various accounts and reserves ~~in OPERF~~ in accordance with applicable statutes and rules. The structure and methodology of these reports will be developed in cooperation with PERS to reflect the reasonably determined the rate of return that should be periodically credited to these accounts and reserves.

Staff shall also provide periodic reports to PERS or its designees as necessary for the timely and accurate production of ~~that~~ agency's Comprehensive Annual Financial Report (CAFR).

THIRD PARTY REPORTS

Council and Staff may periodically employ consultants to provide advice or otherwise assist in the management of the investment funds. Staff shall provide information and assist such consultants as reasonably necessary in the preparation of reports for the Council, OST or other investment funds stakeholders relating to the investment funds.

OTHER REPORTS

Staff shall provide information to ~~OST~~ internal and external auditors as may be requested to complete annual audits of any investment fund and/or any comprehensive annual financial report ~~of~~ OST treasury or any of its divisions.

Staff shall provide OST's Finance Division with a monthly performance report for the holdings of the Oregon Short Term Fund, and such other present or future investment funds as may be applicable, as well as a summary of holdings and a portfolio compliance report.

Staff shall assist OST and other OST division staff in preparing reports related to the investment funds or their management thereof.

Staff shall assist OST in providing information periodically to the public concerning the investment funds via OST's website and other sources as requested by the Treasurer and/or the Council.

PUBLIC REPORTS

Investment fund holdings and performance data are highly sensitive information. As such, Staff may provide such information on a one-quarter lag basis when it will be used in any external or public setting.

REPORT CONTENT

OIC Reports should include relevant information for each applicable investment fund and/or asset class, including the Fixed Income (both internally- and externally-managed), Public Equity (both internally- and externally-managed), Real Estate, Private Equity, Alternatives and Opportunity portfolios. Reports should generally include some or all of the following: -a current holdings summary of the investment fund/asset class holdings; performance information including comparisons to measured against one or more an applicable benchmarks; security purchases and sales of securities, (or funds, portfolio company or real property held, as applicable); and gains and losses realized (or current appraisal or valuation, as applicable).

All other reports shall contain information deemed relevant and/or responsive in Staff's reasonable discretion.

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

Review

Annually.

Feedback

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



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Last Revised:	09/2014
Next Review:	09/2015
Owner:	<i>John Skjervem: Chief Investment Officer</i>
Policy Area:	<i>Investments</i>
References:	<i>OST Policy 4.01.05</i>

INV 204: Investment Performance Reports

POLICY

Performance and investment fund activity shall be reported in a manner consistent with each asset class. The Office of the State Treasurer (OST) shall produce an Annual Report, including an investment funds section.

PROCEDURES

- Short-Term Investments.** Each month, OST prepares a summary of Oregon Short-Term Fund (OSTF) holdings and a portfolio compliance report. This information, as well as the OSTF interest rate, is also posted to the OST's website. The OSTF custodian provides monthly performance calculations, while OST's Finance Division determines the interest credited to each OSTF investor. An annual financial report for the OSTF is prepared by OST and is audited by the Secretary of State's Audits Division.
- Fixed Income (Internally-managed).** The custodian provides monthly and quarterly performance information relative to predetermined benchmarks. Upon request, the custodian can provide a trade report to the Treasurer, the Deputy Treasurer and the Chief Investment Officer. The report includes summaries of security purchases and sales as well as all gains and losses realized in internally-managed fixed income accounts. The report can be accompanied, upon request, by a full listing of the fixed income securities held by OST in its internally-managed accounts.
- Fixed Income (Externally-managed).** The custodian prepares monthly and quarterly reports for each externally-managed account that include current market values and investment performance relative to OIC-assigned benchmarks. These reports are distributed to OIC members, the Treasurer, the Deputy Treasurer, the Chief Investment Officer and Investment Division staff. The OIC's consultant also provides, generally quarterly, a comprehensive review of all externally-managed fixed income accounts.
- Public Equity (Internally-managed).** The custodian provides monthly and quarterly performance information relative to predetermined benchmarks. Upon request, the custodian can deliver a trade report to the Treasurer, the Deputy Treasurer and the Chief Investment Officer. The report includes summaries of security purchases and sales as well as all gains and losses realized in internally-managed public equity accounts. The report can be accompanied, upon request, by a full listing of the public equity securities held by OST in its internally-managed accounts.
- Public Equity (Externally-managed).** The custodian prepares monthly and quarterly reports for each externally-managed account that include current market values and investment performance relative to OIC-assigned benchmarks. These reports are distributed to OIC members, the Treasurer, the Deputy

Treasurer, the Chief Investment Officer and Investment Division staff. The OIC's consultant also provides, generally quarterly, a comprehensive review of all externally-managed public equity accounts.

6. **Real Estate.** An independent firm hired by OST prepares comprehensive quarterly reports that include fund and specific property holdings, current appraisal values and benchmark-relative performance calculations. This report is distributed to OIC members and OST staff. In addition, OIC's real estate consultant and/or other real estate advisors provide similar reports to OIC members and OST staff.
7. **Private Equity.** On a continuing basis, private equity investments are reviewed and evaluated by the Director of Alternative Investments, the Private Equity Investment Officers and the Chief Investment Officer. In addition, the OIC's private equity consultant provides quarterly reports that include a list of fund and portfolio company holdings, current portfolio appraisal values and benchmark-relative performance calculations. At least annually, the OIC's private equity consultant provides a comprehensive private equity portfolio review that includes a pacing schedule, or projection of future private equity program cash flows.
8. **Alternative & Opportunity Portfolios.** On a quarterly basis, performance for the Alternatives and Opportunity portfolios is calculated by the OIC's consultant.

SAMPLE FORMS, DOCUMENTS OR REPORTS (Attached)

None

Attachments:

No Attachments

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

This policy articulates the guidelines within which the Oregon Investment Council (“OIC” or “Council”) considers existing and potential investments. The statutory standards of prudence and productivity are the *only* standards that apply to the investment of the Oregon Public Employees Retirement Fund (OPERF) and all other Oregon public trust funds. The OIC recognizes its obligation to adhere to applicable law and that political, social and legal circumstances in various nations and regions of the world may impact the productivity and prudence of investments made in or connected with those nations and regions.

Applicability

Classified represented, management service, unclassified executive service

Authority

ORS 293.721, 292.726

The OIC can only consider investments that meet the productivity objectives of Oregon Revised Statutes (ORS) 293.721 and the prudence standards of ORS 293.726. Each proposed investment is separately evaluated based on its unique structure and potential in accordance with standard OIC and Oregon State Treasury (“OST”) investment criteria. The standard stated in 293.721(1) "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."

ORS 293.721 states, in part: "Moneys in the investment funds shall be invested and reinvested to achieve the investment objective of the investment funds, which is to make the moneys as productive as possible." Under ORS 293.726 (1) and (2), the OIC and its investment officer (the "Treasurer" or OST) ~~also are~~ also required to invest with prudence, reasonable care, skill and caution. Under subsection (4), the OIC and OST must adhere to the fundamental fiduciary duties of loyalty and impartiality.

POLICY PROVISIONS

Policy Statements

I. Consideration of Investments

The Council's statutory duties, as defined in ORS 293.721, to formulate and review investment policies consistent with the productivity objectives set forth in ORS 293.721 and the prudence standards set forth in ORS 293.726, shall take precedence over any other consideration. The Council's implementation of these objectives and standards can be stated as follows:

- A. Consideration of investments is limited to those which, when judged solely on the basis of economic value, enhance portfolio returns on a risk-adjusted basis;
- B. Any benefit an investment may confer, other than meeting the statutory standards of prudence and productivity, is not and shall not be considered the responsibility or within the control of OST, the Council, or its agents;
- C. For allocation purposes, proposed investments are categorized by asset class and subject to the Council's asset allocation guidelines, ranges, and targets;
- D. Proposed investments shall be consistent with the Council's desired level of portfolio diversification as defined by the mix of asset types and allocations to different economic, industry, and geographic exposures;
- E. Investments shall at all times conform to the laws, requirements, policies, and procedures governing the Council, OST, and OPERF;
- F. Because investments are part of an actively managed portfolio, full due diligence is exercised. This due diligence, conducted by OST staff, designated private managers, consultants, and/or advisors, addresses, at a minimum, (1) legal sufficiency, (2) investment sufficiency, and (3) the identification of any potential conflicts of interest. Only those investment proposals that comply with the Council's prescribed proposal format shall be considered. The costs associated with all legal and financial review for each investment proposal shall be addressed pursuant to policy consistent with similar investment types. Where no such policies exist, these costs shall be borne entirely by the proposer. Furthermore, the proposer shall provide all information that the Council, OST staff and designated private managers, consultants and/or advisors deem necessary to perform appropriate levels of due diligence and evaluation. If the information is not provided within a specified, reasonable time frame, the Council, OST staff, or designated private managers, consultants, and/or advisors may discontinue their individual and collective due diligence and evaluation considerations. All investments that are approved by the Council shall be subject to a continuing obligation to disclose certain requested information;
- G. Investments shall be valued at current market prices and will be subject to performance measurement at least annually;
- H. The Council carefully considers investment structures such as partnerships and joint ventures when evaluating an initial investment and ongoing participation with a sponsoring entity. The Council will only consider those structures that appropriately align financial rewards and risk among all other partners/participants. OST staff or designated private managers, consultants and/or advisors shall consider and recommend to the Council structural features to mitigate investment risks, losses, and liabilities such as federal government credit insurance, personal guarantees, corporate guarantees, cross-corporate collateralization, and other such mechanisms. Furthermore, only those investment proposals that stipulate explicit exit strategies and define the means by which investment returns may be realized shall be considered;
- I. Due to resource constraints, investment proposals that may impose unreasonable administrative burdens directly upon the Council, OST investment staff, or the State Treasurer shall not be considered;

- J. All persons or firms managing, evaluating, or monitoring investments on behalf of the Council shall act in a fiduciary capacity when giving advice or information to the Council and OST staff;
- K. The OIC recognizes that excellent investment opportunities may exist within Oregon ~~and actively considers such in-state investments~~, but specific decisions regarding whether or not investments are made in Oregon-based companies or real property are delegated to third-party managers selected by the OIC;
- L. ~~The Council recognizes that Oregon is an underserved market for venture capital investments and that such circumstances may, from time to time, result in attractive investment opportunities. Further, the Council recognizes that prudent, local investments may satisfy the exclusive benefit rule for pension plan participants, as well as provide the collateral benefit of encouraging economic development within the state. Accordingly, whenever diversification and quality standards permit, the Council will endeavor to hire local partners or will encourage leading national firms to open an Oregon office; and~~
- M. The methodology that the Council applies to all its investments also applies and will be applied to investment opportunities within Oregon. Consequently, the risk, return, and liquidity characteristics of investments in Oregon must be ~~determined to assure that such characteristics are~~ consistent with (i.e., meet or exceed) the evaluation criteria, legal standards, and investment policies that govern all Council investment activity.

II. Divestiture Initiatives

While social, political, ~~social~~, and legal circumstances material to prudent and productive investment activities should receive appropriate consideration in making and maintaining investments, such factors may not be given undue weight (i.e., weight disproportionate to their impact upon economic prudence and productivity) when implementing the OIC's and OST's investment responsibility to a) act with prudence to make the moneys under their care as productive as possible and b) adhere to their fundamental fiduciary duties of loyalty and impartiality.

The OIC and OST are subject to, and will comply with, applicable federal and state law.

- A. The federal government of the United States of America (the "United States") has preeminent governmental power for those subject to its jurisdiction with respect to the conduct of foreign policy and interstate commerce. When the United States sanctions or restricts investment by subject entities in other nations, as when it regulates interstate commerce, the OIC requires all of its investment managers to comply with those regulations, as applicable. The OIC also expects companies in which it invests, that are subject to such regulations, to comply with those regulations.
- B. The OIC requires its investment managers to consider all material risks and benefits when making an investment. Material risks or benefits may include those factors that arise from the social, political, ~~social~~, or legal circumstances affecting regions or governments with or within which companies considered for investment conduct business.
- C. OST will maintain a dialogue with the OIC's proxy voting agent(s) and investment managers to ascertain how ballot issues and investment decisions related to international investments and compliance with government regulations are addressed.
- D. When not inconsistent with the policies described above, the OIC prefers that its managers avoid holdings in companies doing business with or in countries where such conduct is prohibited if

performed by companies subject to the jurisdiction of the United States.

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 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.



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Owner: John Skjervem: Chief Investment Officer
Policy Area: Investments
References: [OST Policy 4.01.07](#)

INV 205: Consideration of Investments

Policy Number:

INV 205

POLICY

This policy represents an advisory letter of the Oregon Investment Council setting forth certain guidelines and procedures that govern its investment activities.

PROCEDURES:

I. Background

A. Objective of this Advisory Letter

The purpose of this Advisory Letter is to set forth the guidelines within which the Oregon Investment Council (OIC or Council) considers existing and potential investments.

This Advisory Letter does not represent a new or separate policy, but merely describes the guidelines and procedures that govern *all* investment activities of both the OIC and the Office of the State Treasurer (OST).

The statutory standards of prudence and productivity are the *only* standards that apply to the investment of the Oregon Public Employees Retirement Fund (OPERF) and all other Oregon public trust funds.

B. Authority of the Oregon Investment Council

The OIC can only consider investments that meet the productivity objectives of ORS 293.721 and the prudence standards of ORS 293.726. Each proposed investment is separately evaluated based on its unique structure and potential in accordance with standard OIC and OST investment criteria. The standard stated in 293.721(1) "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."

II. Policies

The Council's statutory duties, as defined in Oregon Revised Statutes (ORS) 293.721, to formulate and review investment policies consistent with the productivity objectives set forth in ORS 293.721 and the prudence standards set forth in ORS 293.726, shall take precedence over any other consideration. The Council's implementation of these objectives and standards can be stated as follows:

1. Consideration of investments is limited to those which, when judged solely on the basis of economic value, enhance portfolio returns on a risk-adjusted basis;
2. Any benefit an investment may confer, other than meeting the statutory standards of prudence and productivity, is not and shall not be considered the responsibility or within the control of OST, the Council or its agents;
3. For allocation purposes, proposed investments are categorized by asset class and subject to the Council's asset allocation guidelines, ranges and targets;
4. Proposed investments shall be consistent with the Council's desired level of portfolio diversification as defined by the mix of asset types, the portfolio's exposure to different economic and industry sectors and a range of investment quality;
5. Investments shall at all times conform to the laws, requirements, policies and procedures governing the Council, OST and OPERF;
6. Because investments are part of an actively managed portfolio, full due diligence is exercised. This due diligence, conducted by OST staff, designated private managers, consultants and/or advisors, addresses, at a minimum (1) legal sufficiency, (2) investment sufficiency and (3) the identification of any potential conflicts of interest. Only those investment proposals that comply with the Council's prescribed proposal format shall be considered. The costs associated with all legal and financial review for each investment proposal shall be addressed pursuant to policy consistent with similar investment types. Where no such policies exist, these costs shall be borne entirely by the proposer. Furthermore, the proposer shall provide all information that the Council, OST staff and designated private managers, consultants and/or advisors deem necessary to perform appropriate levels of due diligence and evaluation. If the information is not provided within a specified, reasonable time frame, the Council, OST staff or designated private managers, consultants and/or advisors may discontinue their individual and collective due diligence and evaluation considerations. All investments that are approved by the Council shall be subject to a continuing obligation to disclose certain requested information;
7. Investments shall be valued at current market prices and will be subject to performance measurement at least annually;
8. The Council carefully considers investment structures such as partnerships and joint ventures when considering an initial investment and ongoing participation with a sponsoring entity. The Council will only consider those structures that align financial rewards and risk sharing among other partners/participants. OST staff or designated private managers, consultants and/or advisors shall consider and recommend to the Council structural features to mitigate investment risks, losses and liabilities such as federal government credit insurance, personal guarantees, corporate guarantees, cross-corporate collateralization and other such mechanisms. Furthermore, only those investment proposals that stipulate explicit exit strategies and define the means by which investment returns may be realized shall be considered;
9. Due to resource constraints, investment proposals that may impose unreasonable administrative burdens directly upon Council members and the State Treasurer shall not be considered;
10. All persons or firms managing, evaluating or monitoring investments on behalf of the Council shall act in a fiduciary capacity when giving advice or information to the Council and OST staff;
11. The OIC recognizes that excellent investment opportunities may exist within Oregon and actively considers such in-state investments, but specific decisions regarding whether or not investments are made in Oregon-based companies are delegated to the third-party managers selected by the OIC.

12. The Council recognizes that Oregon is an underserved market for venture capital investments and that such circumstances may, from time to time, result in attractive investment opportunities. Further, the Council recognizes that prudent investments may satisfy the exclusive benefit rule for pension plan participants as well as provide the collateral benefit of encouraging economic development within the state. Accordingly, whenever diversification and quality standards permit, the Council will endeavor to hire local partners or will encourage leading national firms to open an Oregon office; and
13. The methodology that the Council applies to all its investments also applies and will be applied to investment opportunities within Oregon. Consequently, the risk, return and liquidity characteristics of investments within Oregon must be determined to assure that such characteristics are consistent with (i.e., meet or exceed) the evaluation criteria, legal standards and investment policies that govern all Council investment activity.

SAMPLE FORMS, DOCUMENTS OR REPORTS (Attached)

None

Attachments:

No Attachments



Origination: 09/2014
Last Approved: 09/2014
Last Revised: 09/2014
Next Review: 09/2015
Owner: John Skjervem: Chief Investment Officer
Policy Area: Investments
References: [OST Policy 4.01.08](#)

INV 206: Divestiture Initiatives

The Oregon Investment Council (OIC or Council) recognizes its obligation to adhere to applicable law and that political, social and legal circumstances in various nations and regions of the world may impact the productivity and prudence of investments made in or connected with those nations and regions.

POLICY

1. ORS 293.721 states, in part: "Moneys in the investment funds shall be invested and reinvested to achieve the investment objective of the investment funds, which is to make the moneys as productive as possible." Under ORS 293.726 (1) and (2), the OIC and its investment officer (the "Treasurer" or "OST") also are required to invest with prudence, reasonable care, skill and caution. Under subsection (4), the OIC and OST must adhere to the fundamental fiduciary duties of loyalty and impartiality.
2. In recognition of the above statutory standards, and consistent with its "fundamental fiduciary duties of loyalty and impartiality," the OIC has adopted OIC Policy 4.01.07(I)(A), wherein it reaffirms that the applicable standards of prudence and productivity are the *only* standards that may govern its investment decisions concerning "investment funds," including the Oregon Public Employees Retirement Fund (OPERF).
3. Pursuant to OIC Policy 4.01.07(I)(B), each proposed investment must be separately evaluated on its unique structure and potential in accordance with the obligation of the OIC and OST to exercise diligent judgment of appropriate investment criteria in consideration of their fundamental fiduciary duties. The standard stated in 293.721(1) "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."
4. OIC Policy 4.01.07(II) states, in part:

"The Council's statutory duties, as defined in Oregon Revised Statutes (ORS) 293.721, to formulate and review investment policies consistent with the productivity objectives set forth in ORS 293.721 and the prudence standards set forth in ORS 293.726, shall take precedence over any other consideration. The Council's implementation of these objectives and standards can be stated as follows:

1. Consideration of investments is limited to those which, when judged solely on the basis of economic value, enhance portfolio returns on a risk-adjusted basis.

2. Any benefit an investment may confer, other than meeting the statutory standards of prudence and productivity, is not and shall not be considered the responsibility or within the control of OST, the Council or its agents."
5. While political, social and legal circumstances material to prudent and productive investment activities should receive appropriate consideration in making and maintaining investments, such factors may not be given undue weight (i.e., weight disproportionate to their impact upon economic prudence and productivity) when implementing the OIC's and the OST's investment responsibility to a) act with prudence to make the moneys under their care as productive as possible and b) adhere to their fundamental fiduciary duties of loyalty and impartiality.
6. The OIC and OST are subject to, and will comply with, applicable federal and state law.

PROCEDURES

1. The federal government of the United States of America (the "United States") has preeminent governmental power for those subject to its jurisdiction with respect to the conduct of foreign policy and interstate commerce. When the United States sanctions or restricts investment by subject entities in other nations, as when it regulates interstate commerce, the OIC requires all of its investment managers to comply with those regulations, as applicable. The OIC also expects companies in which it invests, that are subject to such regulations, to comply with those regulations.
2. The OIC requires its investment managers to consider all material risks and benefits when making an investment. Material risks or benefits may include those factors that arise from the political, social or legal circumstances affecting regions or governments with or within which companies considered for investment conduct business.
3. The Treasurer's staff will maintain a dialogue with the OIC's proxy voting agent(s) and investment managers to ascertain how ballot issues and investment decisions related to international investments and compliance with government regulations are addressed.
4. When not inconsistent with the policies described above, the OIC prefers that its managers avoid holdings in companies doing business with or in countries where such conduct is prohibited if performed by companies subject to the jurisdiction of the United States.

SAMPLE FORMS, DOCUMENTS OR REPORTS (Attached)

None

Attachments:

No Attachments

INV 601: Public Equity Investments: Strategic Role of Public Equity Securities within OPERF

OREGON INVESTMENT COUNCIL POLICY

Summary Policy Statement

The strategic role of publicly-traded equity securities is to provide enhanced return and diversification opportunities for the Oregon Public Employees Retirement Fund ("OPERF" or the "Fund"). The OPERF public equity portfolio also provides liquidity relative to the Fund's cash flow requirements. Staff, with approval from the Chief Investment Officer (CIO) and quarterly notification to the OIC, will have the discretion to rebalance between and among managers with the public equity portfolio. Public equity securities are subject to the specific, strategic allocation targets established by OIC Policy INV 215: OPERF Asset Allocation and Rebalancing Policy.

Purpose and Goals

The purpose of these Public Equity Investment Policies & Strategies is to define the objectives of public equities as an asset class within the general investment policies of the Oregon Investment Council ("OIC" or the "Council"), and to outline strategies used to implement the Council's public equity investment policies.

POLICY PROVISIONS

Policy Statements

A. GENERAL POLICY

To provide one of the highest expected returns among approved OPERF asset classes. Over the long-term, public equity returns are expected to exceed inflation by approximately 5 percent on an average, annual basis.

B. OBJECTIVES

1. To achieve a public equities portfolio return of 0.75 percent or more above the MSCI All Country World Index Investable Market Index (ACWI IMI) (net) over a market cycle of three to five years and on a net-of-fees basis.
2. To manage active risk to a targeted annualized tracking error of 0.75 to 2.0 percent, relative to the MSCI ACWI IMI (net).

~~A. Objectives~~

- ~~1. To provide one of the highest expected returns among approved OPERF asset classes. Over the long-term, public equity returns are expected to exceed inflation by approximately 5 percent on an average, annual basis.~~
- ~~2. To achieve a public equities portfolio return of 0.75 percent or more above the MSCI All Country World Index Investable Market Index (ACWI IMI) (net) over a market cycle of three to five years on a net-of-fees basis.~~
- ~~3. To manage active risk to a targeted annualized tracking error of 0.75 to 2.0 percent, relative to the MSCI ACWI IMI (net).~~

C. DIVERSIFICATION

Subject to periodic review and revision, the Council adopts the following strategic allocation targets:

1. The OPERF public equity portfolio shall be structured on a global basis, seeking to loosely replicate the country and market capitalization characteristics of the investable universe of public equity securities which can be further categorized as U.S., non-U.S. developed countries and emerging market countries.

<u>Allocation</u>	<u>Targets</u>	<u>Ranges</u>
<u>U.S.</u>	<u>ACWI IMI weight</u>	<u>+/- 10%</u>
<u>Non-U.S.</u>	<u>ACWI IMI weight</u>	<u>+/- 10%</u>
<u>Emerging Markets</u>	<u>ACWI IMI weight</u>	<u>+/- 4%</u>

2. A strategic allocation to *Size* (small cap) and *Value* (style exposure), domestically:

<u>Allocation</u>	<u>Targets</u>	<u>Ranges</u>
<u>U.S. Small Cap Overweight</u>	<u>70%</u>	<u>0% - 100%</u>
<u>U.S. Value</u>	<u>60%</u>	<u>+/- 10%</u>

Note: The U.S. small cap overweight is based on the Russell 2000 index weight relative to the Russell 3000 index weight, the latter of which approximates 8%. A 70% U.S. Small Cap overweight target equates to a 13.6% $[48\% \times (1+0.7)]$ allocation within the Domestic Equity portfolio. The U.S. value target is determined and calculated using a Russell 3000 baseline which weighs growth and value equally. A 60% U.S. Value weight implies that the US Growth weight is 40%.

3. A 25% strategic allocation of the OPERF Public Equity portfolio to *Low Volatility* strategies, globally:

<u>Allocation</u>	<u>Targets</u>	<u>Ranges</u>
<u>Global Low Volatility</u>	<u>25%</u>	<u>+/- 10%</u>

4. Unless tax, regulatory or liquidity constraints suggest otherwise, diversify public equity allocations across the stock markets of all investable countries to ensure exposure to a wide range of investment opportunities, and participate broadly in those markets in an attempt to capture the full market rate of equity return generated therein. The size of any commitment to an individual investment strategy will be based on that strategy's expected portfolio impact, the Staff's confidence in the strategy's manager, the manager's investment style, and the capacity available in/with a particular strategy/manager.

5. Maintain an overall equity portfolio capitalization that broadly reflects the MSCI ACWI IMI, but with deliberate, ~~and~~ systematic overweights to small capitalization and value stocks. These strategic overweights or "tilts" are based on and supported by robust empirical research that historically links persistent and pervasive evidence of excess returns to systematic small cap and value "factor" exposures. Implementation of other such "factor" tilts may be considered at the manager, strategy or mandate level upon approval of both the ~~Chief Investment Officer (CIO)~~ and OIC.

6. Invest opportunistically, using unique investment approaches, within a controlled and defined portfolio allocation.

7. Enhance returns through selective active management provided such actively-managed strategies demonstrate empirical efficacy relative to embedded factor exposures and net of all fees and

transactions costs.

-
- 8. Actively-managed strategies are expected to outperform stated benchmarks on an after-fee and risk-adjusted basis. Comparisons against a representative peer group universe will also be considered in evaluating the performance and risk characteristics of these strategies.
-
- 9. Benchmarks assigned to all non-U.S. strategies should be unhedged. Managers may be permitted to hedge currency exposures, and in cases where currency represents an explicit element of a manager's stated investment approach, may take active currency positions; however, all managers will be measured against an unhedged benchmark.

-

The Council's selection of active managers will be based on those managers' demonstrated ability to add value on a "triple net" basis (i.e., net of all fees, transactions costs and factor exposures) relative to a passive management alternative. Additional considerations include managers' stated style and volatility parameters relative to the strategic allocation targets outlined above

Strategies

1. ~~The OPERF public equity portfolio shall be structured on a global basis, seeking to loosely replicate the country and market capitalization characteristics of the investable universe of public equity securities which can be further categorized as U.S., non-U.S. developed countries and emerging market countries.~~
-
2. ~~Unless tax, regulatory or liquidity constraints suggest otherwise, diversify public equity allocations across the stock markets of all investable countries to ensure exposure to a wide range of investment opportunities, and participate broadly in those markets in an attempt to capture the full market rate of equity return generated therein. The size of any commitment to an individual investment strategy will be based on that strategy's expected portfolio impact, the Staff's confidence in the strategy's manager, the manager's investment style, and the capacity available in/with a particular strategy/manager.~~
-
3. ~~Maintain an overall equity portfolio capitalization that broadly reflects the MSCI ACWI IMI, but with deliberate and systematic overweights to small capitalization and value stocks. These strategic overweights or "tilts" are based on and supported by robust empirical research that historically links persistent and pervasive evidence of excess returns to systematic small cap and value "factor" exposures. Implementation of other such "factor" tilts may be considered at the manager, strategy or mandate level upon approval of both the Chief Investment Officer (CIO) and OIC.~~
-
4. ~~Invest opportunistically, using unique investment approaches, within a controlled and defined portfolio allocation. Specifically, "130/30" strategies may be implemented with any existing OPERF public equity mandate conditional upon consultant and CIO concurrence and provided such implementation does not change the mandate's role within the public equity portfolio. Staff will report any such 130/30 implementations to the Council in the quarter immediately following the implementation.~~
-
5. ~~Enhance returns through selective active management provided such actively managed strategies demonstrate empirical efficacy relative to embedded factor exposures and net of all fees and transactions costs.~~
-
6. ~~Actively managed strategies are expected to outperform stated benchmarks on an after fee and risk-adjusted basis. Comparisons against a representative peer group universe will also be considered in evaluating the performance and risk characteristics of these strategies.~~
-
7. ~~Benchmarks assigned to all non-U.S. strategies should be unhedged. Managers may be permitted to~~

~~hedge currency exposures, and in cases where currency represents an explicit element of a manager's stated investment approach, may take active currency positions; however, all managers will be measured against an unhedged benchmark.~~

-

- ~~8. The Council's selection of active managers will be based on those managers' demonstrated ability to add value on a "triple net" basis (i.e., net of all fees, transactions costs and factor exposures) relative to a passive management alternative. Additional considerations include managers' stated style and volatility parameters relative to the strategic allocation targets set forth in Appendix A. Finally, the management guidelines described in Appendix C will be attached to and incorporated into the Council's contract with each investment manager.~~

D. OST STAFF AUTHORITY & REPORTING

1. With CIO approval and subsequent quarterly reporting to the OIC, staff will also have discretion to rebalance between and among managers within the public equity portfolio. The aggregate structural characteristics of the public equity portfolio will be considered during such rebalancing, while re-allocations between asset classes shall remain governed by Policy **INV 215: OPERF Asset Allocation and Rebalancing Policy.**
2. 130/30 strategies may be implemented with any existing OPERF public equity mandate, conditional upon consultant and CIO concurrence, and provided such implementation does not change the mandate's role within the public equity portfolio. Staff will report any such 130/30 implementations to the Council in the quarter immediately following the implementation.
3. On a quarterly basis, staff will prepare and deliver to the Council a report that includes public equity portfolio performance relative to return and risk objectives as outlined in this policy including the portfolio's style (growth/value) and construction (active/passive) weightings, as well as its geographic allocation relative to the MSCI ACWI IMI benchmark.

E. INVESTMENT MANAGEMENT AGREEMENT (IMA) EXECUTION

Management guidelines shall be attached to and incorporated into every separate account contract entered into between the Council and an investment manager. These guidelines may be modified from time to time as considered necessary by the CIO; however, the assigned benchmark may not be changed without OIC approval, and each contract must specify the following:

1. The specific category to which a manager's strategy is assigned;
2. A description of the manager's investment style;
3. The manager's specific performance objective relative to an index or passively managed alternative;
4. The strategy's expected risk (tracking error) relative to its assigned benchmark;
5. Portfolio characteristics which the OIC expects the manager's strategy to exhibit on average throughout a market cycle; and
6. A list of permissible equity securities in which the manager may invest.

Exceptions

None.

Failure to Comply

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

PROCEDURES AND FORMS

[A. OST Procedure: Investment Manager Benchmarks \(Appendix A\)](#)

~~PROCEDURES AND FORMS~~

~~[A. OIC Policy: Public Equity Strategic Allocation Targets \(Appendix A\)](#)~~

~~[B. OST Procedure: Investment Manager Benchmarks \(Appendix B\)](#)~~

~~[C.A. OIC Policy: Management Guidelines \(Appendix C\)](#)~~

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 STATE TREASURY PROCEDURE
APPENDIX AB

INVESTMENT MANAGER BENCHMARKS

<u>Manager</u>	<u>Benchmark</u>	<u>Peer Group</u>	<u>Return Objective Over Benchmark Net-of-Fees</u>
U.S. Large Cap:			
DFA	Russell 1000	U.S. Large Core	1.5%
Aronson + Johnson + Ortiz	Russell 1000 Value	U.S. Large Value	1.0%
Russell/RAFI Fund Index	Russell 1000	U.S. Large Core	1.5%
OST Risk Premia Strategy	MSCI USA	U.S. Large Core	1.5%
BGI Russell 1000 Value Index	Russell 1000 Value	U.S. Large Value	N/A
BGI Russell 1000 Growth Index	Russell 1000 Growth	U.S. Large Growth	N/A
OST S&P 500 Index	S&P 500	U.S. Large Passive	<u>0.05%</u> N/A
OST S&P 400 Index	S&P 400	U.S. Mid Passive	<u>0.10%</u> N/A
U.S. Small and SMID Cap			
EAM	Russell Microcap Growth	U.S. Micro Growth	2.5%
DFA	Russell Microcap Value	U.S. Micro Value	1.5%
Callan	Russell Microcap Value	U.S. Micro Value	1.5%
AQR 130/30 Fund	Russell 2000 Value	U.S. Small Value	1.0%
Boston Company	Russell 2000 Value	U.S. Small Value	1.0%
Wellington	Russell 2000	U.S. Small Core	1.0%
Wanger	Russell 2500	U.S. SMID Core	1.0%
OST Russell 2000 Synthetic Index		Russell 2000	U.S. Small 0.3%
Non-U.S. Large Cap			
TT International	World x U.S. Std Growth	Non-U.S. Growth	2.0%
Wells Capital CEF	ACWI x U.S. IMI	Non-U.S. Core	2.0%
OST Int'l Risk Premia Strategy	World X U.S. Std	Non-U.S. Core	1.5%
Lazard CEF	ACWI x U.S. IMI	Non-U.S. Core	2.0%
Walter Scott	World x U.S. Std	Non-U.S. Growth	2.0%
Acadian	ACWI x U.S. IMI Value	Non-U.S. Value	1.7%
Brandes	ACWI x U.S. Std Value	Non-U.S. Value	2.0%
AQR	World x U.S. Std	Non-U.S. Core	2.0%
Arrowstreet 130/30 Fund	ACWI x U.S. IMI	Non-U.S. Core	2.0%
Lazard	ACWI x U.S. Std	Non-U.S. Core	1.5%
Pyramis Select	ACWI x U.S. Std	Non-U.S. Core	1.0%

<u>Manager</u>	<u>Benchmark</u>	<u>Peer Group</u>	<u>Return Objective Over Benchmark Net-of-Fees</u>
Non-U.S. Large Cap (cont.)			
SSgA World ex-US Index	World x U.S. Std	Non-U.S. Passive	N/A
Non-U.S. Small Cap			
DFA	World x U.S. SC Value	Non-U.S. Small Value	1.5%
Harris Associates	ACWI x U.S. SC Value	Non-U.S. Small Value	2.0%
Pyramis Select	World x U.S. SC	Non-U.S. Small Core	2.0%
Victory International	World x U.S. SC	Non-U.S. Small Growth	2.0%
DFA	Global x U.S. Micro	Non-U.S. Small Value	2.0%
EAM Investors	Global x U.S. Micro	Non-U.S. Small Growth	2.0%
Emerging Markets			
Arrowstreet	EM IMI	Emerging Markets	2.0%
DFA	EM Small Cap	Emerging Markets	1.5%
William Blair	EM Small Cap	Emerging Markets	2.0%
Genesis	EM IMI	Emerging Markets	2.0%
William Blair	EM Std	Emerging Markets	2.0%
Westwood Global	EM Std	Emerging Markets	2.5%
Global			
AllianceBernstein Value	ACWI Value Std	Global Value	2.0%
LA Capital Low Volatility	ACWI Std	Global Low Volatility	0.0%
Acadian Low Volatility	ACWI IMI	Global Low Volatility	0.0%
AQR Low Volatility	ACWI Std	Global Low Volatility	0.0%
Arrowstreet Low Volatility	70% ACWI IMI + 30% Cash	Global Low Volatility	0.0%

ACWI – MSCI All-Country World Index (U.S. + Non-U.S. Developed + Emerging Markets)

IMI – MSCI IMI Index (Large Cap + Mid Cap + Small Cap)

Std – MSCI Standard Index (Large Cap + Mid Cap)

SC – MSCI Index (Small Cap)

EM – MSCI Emerging Markets Index

**OREGON INVESTMENT COUNCIL POLICY
APPENDIX A**

**PUBLIC EQUITY
STRATEGIC ALLOCATION TARGETS**

Subject to periodic review and revision, the Council adopts the following strategic allocation targets¹:

- a. Capitalization exposure similar to stated benchmark with the exception of strategic overweights to small cap and value factors;
- b. The Council's strategic allocation targets represent percentages of the total OPERF public equity portfolio. Each such target has an accompanying percentage range. The strategic allocation targets and ranges are summarized as follows:

	<u>Targets</u>	<u>Ranges</u>
U.S.	ACWI IMI weight	+/- 10%
Non-U.S.	ACWI IMI weight	+/- 10%
Emerging Markets	ACWI IMI weight	+/- 4%
U.S. Small Cap Overweight	70%	0% - 140%
U.S. Value	60%	+/- 10%

Note: The U.S. small cap overweight is based on the Russell 2000 index weight relative to the Russell 3000 index weight, the latter of which approximates 8%. The U.S. value overweight is determined and calculated using a Russell 3000 baseline.

- c. On a quarterly basis, staff will prepare and deliver to the Council a report that includes public equity portfolio performance relative to return and risk objectives as outlined in this policy including the portfolio's style (growth/value) and construction (active/passive) weightings as well as its geographic allocation relative to the MSCI ACWI IMI benchmark. With CIO approval and subsequent quarterly reporting to the OIC, staff will also have discretion to rebalance between and among managers within the public equity portfolio. The aggregate structural characteristics of the public equity portfolio will be considered during such rebalancings, while re-allocations between asset classes shall remain governed by Policy **INV 215: OPERF Asset Allocation and Rebalancing Policy**.

¹ All targets measured relative to the MSCI ACWI IMI index.

**OREGON INVESTMENT COUNCIL POLICY
APPENDIX C**

MANAGEMENT GUIDELINES

Management guidelines shall be attached to and incorporated into every separate account contract entered into between the Council and an investment manager. These guidelines may be modified from time to time as considered necessary by the CIO; however, the assigned benchmark may not be changed without OIC approval, and each contract must specify the following:

1. The specific category to which a manager's strategy is assigned;
2. A description of the manager's investment style;
3. The manager's specific performance objective relative to an index or passively managed alternative;
4. The strategy's expected risk (tracking error) relative to its assigned benchmark;
5. Portfolio characteristics which the OIC expects the manager's strategy to exhibit on average throughout a market cycle; and
6. A list of permissible equity securities in which the manager may invest.

INV 602: Equity Investments: Selecting and Terminating Investment Management Firms

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The Oregon Investment Council (OIC) may enter into contracts with one or more persons whom the OIC determines to be qualified, whereby the persons undertake, in lieu of the investment officer, to perform the functions specified in ORS 293.736 to the extent provided in the contract (ORS 293.741). Staff, with approval from the Chief Investment Officer (CIO) and quarterly notification to the OIC, may terminate "at will" any manager according to the terms of its contract with and on behalf of the OIC.

Purposes and Goals

The goal of this policy is to establish criteria for selecting and terminating public equity investment managers.

Authority

ORS 293.736; ORS 293.741.

POLICY PROVISIONS

A. ~~POLICY~~ Policy Statements ~~TATEMENTS~~

1. Factors to be considered when hiring an investment management firm may include, but are not limited to the following:
 - a. The firm's major line of business;
 - b. The firm's ownership and organizational structure ~~of the firm~~;
 - c. The background and experience of the firm's key members ~~of the firm~~, including the portfolio manager expected to be responsible for the Oregon account;
 - d. The size of the firm's asset base, and the proportion of that base that would be comprised by Oregon's portfolio if the firm were hired;
 - e. Equity managers will be screened by staff and the OIC's consultant via various quantitative and qualitative means. At least one visit to the firm's offices should be made prior to hiring and funding;
 - f. If the firm has a readily determinable investment style, it should complement those of existing managers; and
 - g. Firms should not be hired on a short-term or trial basis.
2. Factors to be considered for the termination of an investment management firm may include, but are not limited to the following:

~~h~~.a. Major personnel changes within the firm's decision-making group;

~~i~~.b. Changes in the firm's ownership or organizational structure;

~~j~~.c. Administrative problems;

~~k~~.d. Radical or continual changes in investment style;

~~l~~.e. Inferior performance, although a firm should be given ample time to demonstrate the purported efficacy of its strategy. Performance deficiencies during short-term time periods (e.g., quarterly or annually) shall not be the basis for termination so long as the firm can demonstrate that it is adhering to its defined investment philosophy. A firm's philosophy must continue to enjoy confidence with Staff and the OIC for inclusion in the Oregon portfolio, and the firm should compare reasonably well with ~~its~~ peers using a similar investment style; and

~~m~~.f. Non-compliance with contractual responsibilities to the OIC.

3. Selection of Investment Management Firms.

~~n~~.a. OST investment staff shall meet with and obtain information from prospective investment management firms. Members of the OIC may also choose to familiarize themselves with prospective firms.

~~o~~.b. Consultants may be used to assist in evaluating prospective investment management firms; however, the OIC will not delegate its policy- or decision-making responsibilities to consultants or others.

~~p~~.c. The OIC shall select investment managers by majority vote.

~~q~~.d. The Chief Investment Officer is authorized to engage and fund any systematic or passive equity strategy considered necessary to allocate assets from terminated or defunded managers or to fill gaps identified in, or reduce risk in, the Public Equity portfolio. Any such actions shall be communicated to the OIC on a quarterly basis.

4. Investment Manager Selection Criteria

~~r~~.a. Identification of a strategic role within the Public Equity portfolio that a prospective investment manager shall fulfill.

~~s~~.b. Description of the manager's style, or how the manager will fulfill the proposed, strategic role.

~~t~~.c. Identification of the universe of securities from which the manager will construct its portfolio.

~~u~~.d. Identification of the expected risk level, as measured by commonly accepted investment risk measures, relative to the strategic role the prospective investment manager shall fulfill. The risk level can be expressed either relative to a) the universe of securities from which the manager selects; b) other, similar managers; or c) the market as a whole. Alternatively, the risk level can be expressed in absolute terms.

~~v~~.e. Identification of a specific performance objective. The performance objective should be expressed on a risk-adjusted basis. For example, a manager's performance may be compared to

an index, which represents the universe of securities from which the manager may select, plus some degree of excess return over that index which is commensurate with the risk the manager takes to achieve that excess return.

w.f. Identification of a time horizon considered acceptable by the manager and the OIC for the delivery of the expected performance results. This time horizon should be determined with consideration for an appropriate market cycle for that manager's specific management style. A manager's specific management style should also inform the selection of an appropriate index. A market cycle is defined as "peak to trough" performance for the corresponding index.

5. Compensation of Investment Management Firms.

x.a. Management and/or performance-based fees shall be negotiated by staff.

y.b. Typically, a manager's fees are set as a percentage of assets managed, and vary on a sliding scale inversely with the total value of assets managed by the firm.

6. Terminating Management Firms:

z.a. Immediately following a termination, the Senior Investment Officer or Investment Officer for Public Equity shall notify the terminated firm.

aa.b. _____ Separate account managers will be instructed to discontinue trading immediately, and the custodian will be instructed to suspend trading in that same account.

bb.c. _____ Unless directed otherwise by the OIC, OST staff shall proceed with a liquidation plan that may include redistributing securities to the other, existing managers, transitioning securities through an index fund or liquidating assets altogether.

ee.d. _____ For equity mandates structured through commingled trusts, OST staff shall ensure that a liquidation or in-kind transfer is effected in a timely and efficient manner given all relevant constraints and parameters.

B. OST Staff ~~TAFF~~ Authority ~~UTHORITY~~ & Reporting ~~EPORING~~

1. OST Staff, with approval from the Chief Investment Officer (CIO) and quarterly notification to the OIC, may terminate "at will" any manager according to the terms of its contract with and on behalf of the OIC.
2. OST Staff, with approval from the ~~Chief Investment Officer (CIO)~~ and quarterly notification to the OIC is authorized to engage and fund any systematic or passive equity strategy considered necessary to allocate assets from terminated or defunded managers or to fill gaps identified in, or reduce risk in, the Public Equity portfolio.

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.

INV 603: Internal Equity – Portfolio Objectives and Strategies

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

All internal equity investments shall be authorized by a public equity investment officer, and such authorization shall be documented in accordance with portfolio guidelines established by the Oregon Investment Council (OIC). Subject to prior notification of the OIC, the Chief Investment Officer (CIO) has the authority to approve changes to the "Permitted Holdings" section of this policy.

Purpose and Goals

The purpose of this policy is to specify portfolio strategies staff is authorized to manage internally and to define governing risk, performance, and permitted investments parameters.

POLICY PROVISIONS

Policy Statements and Strategies

S&P 500 Index Strategy

1. The objective of the S&P 500 Index Strategy is to closely match the S&P 500 Total Return Index performance using full index replication.
2. The S&P 500 Index Strategy is expected to outperform the S&P 500 Total Return Index by 5 basis points annualized over a market cycle with an expected tracking error of 10 basis points or less.

S&P 400 Index Strategy

1. The objective of the S&P 400 Index Strategy is to closely match the S&P 400 Total Return Index performance using full index replication.
2. The S&P 400 Index Strategy is expected to outperform the S&P 400 Total Return Index by 10 basis points annualized over a market cycle with an expected tracking error of 30 basis points or less.

Russell 2000 Synthetic Index Strategy

1. The objective of the Russell 2000 Index Strategy is to closely match the Russell 2000 Total Return Index performance using synthetic replication.
2. The Russell 2000 Index Strategy is expected to outperform the Russell 2000 Index Total Return Index by 30 basis points annualized over a market cycle with an expected tracking of 50 basis points or less.

~~Russell/RAFI Fundamental Large Cap Index Strategy~~

~~The objective of the RAFI/Russell 1000 Strategy is to outperform the Russell 1000 Total Return Index by 200 basis points annualized over a market cycle with an expected tracking error of 450 basis points or less. This strategy is managed using fundamental factors, and its security weights are derived from non-price metrics such as sales, earnings, book value, and dividends. A key tenet behind the fundamental strategy is~~

~~that underlying accounting valuation metrics are objective and less volatile measures of a company's importance in the economy, as opposed to the market value of the company's listed shares.~~

U.S. Risk Premia Strategy

The objective of the U.S. Risk Premia Strategy is to outperform the MSCI USA Index by 150 basis points annualized over a market cycle with an expected tracking of 400 basis points or less. This strategy invests in a blend of risk premia or "factors" ~~including; specifically, -such as~~ momentum, value and quality. A key tenet supporting the risk premia strategy is that systematic tilts toward these ~~and other discreet~~ factors are rewarded in the form of excess returns over long-term investment horizons.

International Developed Risk Premia Strategy

The objective of the International²¹ Developed Risk Premia Strategy is to outperform the MSCI World X-US Index (net) -by 200 basis points annualized over a market cycle with an expected tracking of 700 basis points or less. This strategy invests in a blend of risk premia or "factors" including; specifically, -such as momentum, value, -and quality and low volatility. A key tenet supporting the risk premia strategy is that systematic tilts toward these and other discreet factors are rewarded in the form of excess returns over long-term investment horizons.

Permitted Holdings

S&P 500 Index Strategy

1. Securities contained in the S&P 500 Index.
2. Securities reasonably expected to be part of the S&P 500 Index at some future date.
3. Securities that have recently been included in the S&P 500 Index.
4. Exchange Traded Funds (ETFs) which replicate the S&P 500 Index such as iShares S&P 500 Index Fund (Ticker: IVV) or SPDR S&P 500 (Ticker: SPY).
5. S&P 500 Index Futures (Large Contracts and Minis).
6. U.S. Treasury Bills or other acceptable cash equivalents utilized for equity futures collateral.

S&P 400 Index Strategy

1. Securities contained in the S&P 400 Index.
2. Securities reasonably expected to be part of the S&P 400 Index at some future date.
3. Securities that have recently been included in the S&P 400 Index.
4. Exchange Traded Funds (ETFs) which replicate the S&P 400 Index such as iShares S&P 400 Index Fund (Ticker: IJH).
- 4.5. S&P 400 Index Futures (Large Contracts and Minis).
- 5.6. U.S. Treasury Bills or other acceptable cash equivalents utilized for equity futures collateral.

Russell 2000 Synthetic Index Strategy

1. Russell 2000 Index and S&P 600 futures contracts.
2. iShares Russell 2000 Index (Ticker: IWM).
3. U.S. Treasury Bills or other acceptable cash equivalents used for equity futures collateral.
- ~~3-4.~~ Oregon Short Term Fund.
- ~~4-5.~~ PIMCO Enhanced Short Maturity ETF (Ticker: MINT).
- ~~5-6.~~ DFA – One-Year Fixed Income Portfolio I (Ticker: DFIHX).
- ~~6-7.~~ DFA – Two-Year Global Fixed Income Portfolio I (Ticker: DFGFX).

Russell/RAFI Fundamental Large Cap Index Strategy

- ~~1. Securities contained in the Russell 1000 Index.~~
- ~~2. Securities reasonably expected to be part of the Russell 1000 Index at some future date.~~
- ~~3. Securities that have recently been included in the Russell 1000 Index.~~
- ~~4. Exchange Traded Funds (ETFs) which replicate the RAFI/Russell 1000.~~
- ~~5. Russell 1000, Russell 2000, S&P 500, S&P 400, S&P 400 and S&P 600 futures contracts.~~
- ~~6. U.S. Treasury Bills or other acceptable cash equivalents utilized for equity futures collateral.~~

U.S. Risk Premia Strategy

1. Securities contained in the MSCI USA Index.
2. Securities reasonably expected to be part of the MSCI USA Index at some future date.
3. Securities that have recently been a member of the MSCI USA Index.
4. Exchange Traded Funds (ETFs) which closely track either the MSCI USA or other U.S. Large Cap style/risk premia index.
5. Russell 1000, Russell 2000, S&P 500, S&P 400 and S&P 600 futures contracts.
6. U.S. Treasury Bills or other acceptable cash equivalents utilized for equity futures collateral.

International Developed Risk Premia Strategy

1. Securities contained in the MSCI World X-US Index.
2. Securities reasonably expected to be part of the MSCI World X-US Index at some future date.
3. Securities that have recently been a member of the MSCI World X-US Index.
4. Exchange Traded Funds (ETFs) which closely track either the MSCI World X-US or other International Developed X –US style/risk premia index.

[5. MSCI EAFE, MSCI Canada futures contracts.](#)

[6. U.S. Treasury Bills or other acceptable cash equivalents utilized for equity futures collateral.](#)

Absolute Restrictions

The Internal Public Equity Portfolios may not purchase the following investments or types of investments without the specific advanced approval of both the CIO and OIC:

1. Short sales of securities;
2. Notional equity exposure in excess of a portfolio's Net Asset Value;
3. Commodities; and
4. Non-U.S. dollar denominated fixed income securities issued by entities incorporated or chartered outside of the United States.

Correction of Non-Compliance

If an internally-managed equity fund is found to be out of compliance with one or more adopted investment guidelines or is being managed inconsistently with its policy and objectives, Staff shall bring the internally managed equity fund into compliance as soon as is prudently feasible. Actions to bring internally-managed equity funds back into compliance and justification for such actions, including documentation of proposed and actual resolution strategies shall be coordinated with the OST investment compliance program.

Investment Transaction Authorization

All trades shall be entered into the Order Management System (OMS) of record (e.g., Aladdin), and are authorized electronically by a Public Equity Investment Officer ~~who. The Public Equity Investment Officer~~ shall act in accordance with established procedures and internal controls for the operation of the investment program consistent with this policy.

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.

INV 901: Common School Fund: Asset Classes, Asset Allocation, and Reporting Requirements

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The Oregon Investment Council (OIC) approves asset classes and the asset allocation of the Common School Fund (“CSF” 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, asset classes and reporting requirements for the Fund.

Applicability

All investment division staff.

POLICY PROVISIONS

A. Policy Statements

1. OST shall adopt an asset allocation policy defining appropriate guidelines for the CSF portfolio, the objective of which is to optimize the Fund's long-term investment return and distributions, while enabling the CSF asset base to grow in real terms.
2. The OIC shall establish asset allocation ranges and targets for the CSF, while OST staff shall monitor the Fund's actual asset allocations relative to OIC-established targets on a monthly basis.
3. The purpose of OST staff's monitoring efforts is to ensure that CSF allocations do not drift significantly from the strategic targets approved by the OIC. A sustained and material deviation outside of the approved ranges shall trigger a review and rebalancing back towards established targets with due consideration given to any liquidity constraints and/or potential transactions costs. Whenever possible, cash flows into and out of the fund will be used to rebalance between asset classes.
4. The CSF's asset allocation shall be managed to and around a 70% equity/30% fixed income target with +/- 5% tolerances, as detailed below:

Asset Class	Benchmark	Target Allocation	Range
Domestic Equities	Russell 3000 Index	30%	25% - 35%
International Equities	MSCI ACWI ex-U.S.	30%	25% - 35%
Private Equity	Russell 3000 + 300 bps	10%	0% - 12%
Total Equities		70%	65% - 75%

U.S. Fixed Income	Barclays U.S. Aggregate Bond Index	30%	25% - 35%
Cash		0%	0% - 3%
Policy Mix	Weighted aggregate of indices listed above at target allocation	100%	

5. OST will work with the State Land Board and Department of State Lands (DSL) staff to ensure the implementation of the Fund's asset allocation policy comports with DSL business needs. Moreover, the OIC shall not make asset allocation changes without considering input from the State Land Board.
6. Formal asset allocation reviews will be performed at least every 3 years to ensure that CSF capital is positioned properly. These reviews will be performed by OST staff in conjunction with the OIC's general consultant, and any asset classes not specifically addressed in the policy below will be reviewed by OST and State Land Board staff for approval by the OIC.
7. Recognizing the general objectives and operating philosophy of the Fund, the OIC has approved the following asset classes:
 - a. **Public Equity.** Domestic and international investments that represent a direct ownership of, or interest in, a corporation, and the shares of which are traded in public securities markets.
 - b. **Fixed Income.** Investments in loans and other debt obligations that have pre-defined interest and principal repayment schedules. This asset class may include mortgage obligations.
 - c. **Private Equity.** Investments in privately-held companies or corporations including buyouts, venture capital and mezzanine finance techniques. Fund of funds investing and purchases of secondary interests may also be included in this category.
 - d. **Cash.** Cash and cash equivalents are defined as cash held in OST's Oregon Short Term Fund.
8. **Reporting Requirements.** Formal review with the State Land Board shall be undertaken at least annually.
9. **Reporting Package to [CSF Department of State Lands \(DSL\)](#).** The material covered during each meeting should be summarized and available in advance, and unless otherwise indicated, the material distributed should include the following information:
 - a. Economic and market outlook;
 - b. Portfolio structure and asset allocation summary;
 - c. Current investment strategy;
 - d. Recent portfolio performance including an attribution analysis; and
 - e. Other items of importance, such as changes in personnel, legislative impacts or any changes in investment philosophy and approach.
10. **OST/OIC Reviews.** Review of the asset allocation policy and investment performance will occur at least annually with the OIC and more frequently by OST staff. These reviews will focus on the continued appropriateness of existing policy, compliance with guidelines and performance relative to Fund objectives. A formal process shall be established allowing DSL staff to meet with OIC's consultants on an annual basis to discuss investment management and asset allocation issues. In addition, DSL staff will

have the opportunity to address the OIC annually to discuss the State Land Board's particular views regarding Fund performance and related management issues.

Exceptions

None.

Failure to Comply

In general, this statement will suffice: "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 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.

INV 903: Common School Fund: Public Equity Investments

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The strategic role of publicly-traded equity securities is to provide enhanced return and diversification opportunities for the Common School Fund ("CSF" or the "Fund"). The Fund's public equity securities portfolio also provides liquidity relative to its regular cash distribution obligations. Public equity securities are subject to the specific, strategic allocation targets established by OIC Policy INV 901: CSF Asset Class, Allocations and Reporting Requirements. Currently, 60 percent of the Fund is invested in publicly-traded equity securities.

Purpose and Goals

The purpose of this policy is to define the objectives of public equity as an asset class within the general investment policies of the Oregon Investment Council ("OIC" or the "Council"), and to outline the strategies used to implement the Council's public equity investment policies.

Applicability

All Investment Division staff.

POLICY PROVISIONS

A. Policy Statement

To provide one of the highest expected returns among approved CSF asset classes.

B. Strategy

1. The CSF public equity portfolio shall be structured on a global basis, seeking to loosely replicate the country and market capitalization characteristics of the investable universe of public equity securities which can be further categorized as U.S., non-U.S. developed ~~countries~~ and emerging market countries.
2. Unless tax, regulatory or liquidity constraints suggest otherwise, diversify public equity allocations across the stock markets of all investable countries to ensure exposure to a wide range of investment opportunities, and participate broadly in those markets in an attempt to capture the full market rate of equity return generated therein. The size of any commitment to an individual investment strategy will be based on that strategy's expected portfolio impact, staff's confidence in the strategy's manager, the manager's investment style, and the capacity available in/with a particular strategy/manager.
3. Enhance returns through selective active management, provided such actively-managed strategies demonstrate empirical efficacy relative to factor exposures and net of all fees and transactions costs.

-
- 4. Actively-managed strategies are expected to outperform stated benchmarks on an after-fee and risk-adjusted basis, over a full market cycle. Quarterly manager reviews will focus on adherence to guidelines and assessments of investment performance relative to objectives.
-
- 5. Benchmarks assigned to all non-U.S. strategies should be unhedged. Managers may be permitted to hedge currency exposures, and in cases where currency represents an explicit element of a manager's stated investment approach, may take active currency positions; however, all managers will be measured against an unhedged benchmark.
-
- 6. Proxies associated with separately managed accounts will be voted by the third-party proxy voting agent retained by the OIC.
-

CB. ~~OST Staff~~ Authority & Reporting

- 1. OST Staff, with approval from the Chief Investment Officer (CIO) and quarterly notification to the OIC, may terminate "at will" any public equity manager mandate according to the terms of its contract with, and on behalf of, the OIC.
- 2. OST Staff, with approval from the ~~Chief Investment Officer (CIO)~~ and quarterly notification to the OIC, will ~~also~~ have discretion to rebalance between and among managers within the public equity portfolio. The aggregate, structural characteristics of the public equity portfolio will be considered during such rebalancing, while re-allocations between asset classes shall remain governed by *INV 901 Common School Fund: Asset Classes, Asset Allocation, and Reporting Requirements*.
- 3. OST Staff, with approval from the ~~Chief Investment Officer (CIO)~~ and quarterly notification to the OIC, will have ~~the~~ discretion to retain any public equity manager that has been approved by the board on behalf of the Oregon Public Employees Retirement Fund (OPERF).
- 4. OST Staff, with approval from the ~~Chief Investment Officer (CIO)~~ and OIC Consultant, will ~~have~~ ~~the~~ discretion to convert any public equity long-only implementation to a 130/30 strategy, provided such implementation does not change the mandate's role within the public equity portfolio. Staff will report any such 130/30 implementations to the ~~Council~~OIC in the quarter immediately following the implementation.

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

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None.

ADMINISTRATION

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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.

INV 904: Common School Fund: Fixed Income Investments

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The strategic role of fixed income securities is to diversify the Common School Fund (CSF) asset base in general and its allocation to equity securities in particular. The fixed income securities portfolio within CSF is also designed to provide liquidity in connection with CSF's regular cash distribution obligations. Fixed income securities are subject to the specific, strategic allocation targets established by OIC Policy *INV 901: Asset Class, Allocations and Reporting Requirements*. Approximately 30 percent of the CSF shall be invested in fixed income securities.

Purpose and Goals

The purpose of these Fixed Income Investment Policies is to define the objectives of fixed income as an asset class within the general investment policies of the Oregon Investment Council ("OIC" or the "Council"), and to outline the strategies used to implement the Council's fixed income investment policies.

Applicability

All Investment Division staff.

POLICY PROVISIONS

A. Policy Statements

To provide diversification to equity securities.

B. Strategy:

1. Manage a well-diversified bond portfolio to maximize total return while closely tracking the portfolio's benchmark, the Barclays Capital U.S. Aggregate Bond Index (the "Benchmark");
2. Invest opportunistically, using innovative investment approaches within a controlled and defined portfolio allocation;
3. Maintain a minimum-weighted, average credit quality of one rating category below that of the Benchmark. For example, if the Benchmark's average credit quality is AA2, the minimum-weighted, average credit quality should be A2;
4. Maintain a target duration band of +/-20% relative to the effective duration of the Benchmark;
5. Actively-managed strategies are expected to outperform stated benchmarks on an after-fee and risk-adjusted basis, over a full market cycle;
6. Quarterly manager reviews will focus on adherence to guidelines and assessments of investment performance relative to objectives; ~~and~~
7. The OIC's selection of active managers will be based upon demonstrated expertise as reflected by an ability to add value over passive management alternatives and within reasonable risk parameters.

C. Permitted Holdings:

1. Obligations issued or guaranteed by the U.S. Federal Government, U.S. Federal agencies or U.S. government-sponsored corporations and agencies;
2. Obligations of U.S. and non-U.S. corporations such as debentures issued by industrial, utility, finance, commercial banking or bank holding company organizations, bank loans, common stock received in connection with the restructuring of corporate debt;
3. Mortgage-backed, asset-backed and structured securities;
4. Securities eligible for the Oregon Short-Term Fund (OSTF);
5. Yankee Bonds (dollar denominated sovereign and corporate debt);
6. Obligations, including the securities of emerging market issuers, denominated in U.S. dollars or foreign currencies of international agencies, supranational entities and foreign governments (or their subdivisions or agencies);
7. Rule 144A securities with the expectation that they will carry registration rights;
8. Credit Criteria: In addition to the eligibility requirements described above, securities considered for purchase must be rated investment grade at the time of purchase. If no ratings are available for a particular security, then an equivalent credit rating, as deemed by the Manager, may be used. The methodology utilized by the Benchmark Index shall be used to determine the rating on any holding.
9. For certain securities or instruments, such as newly-issued bonds, expected ratings may be used until actual ratings are issued and assigned by the rating agencies.

D. Diversification

1. The portfolio should be adequately diversified to minimize various risks. The following specific limitations reflect, in part, the OIC's current investment philosophy regarding diversification:
 - a. No fixed income investment in any one issue shall be in excess of 5% of the outstanding fixed income obligations of that issuer;
 - b. Not more than 3% of the total market value of the CSF fixed income portfolio shall be invested in fixed income securities of any one issuer, except U.S. Government and Agency obligations (no limit) and private mortgage-backed and asset-backed securities, which shall be limited to 10% per issuer;
 - c. Obligations of other national governments are limited to 10% per issuer;
 - d. Not more than 10% of the CSF fixed income portfolio may be invested in non-dollar denominated securities; and
 - e. Currency hedging is at the Manager's discretion.

D.E. Portfolio Restrictions:

1. No more than 10% of the total CSF fixed income portfolio, at market value, may be maintained in

securities rated less than Baa3₊

2. No more than 10% of the total CSF fixed income portfolio, at market value, may be maintained in Rule 144A securities₊
3. Not more than 25% of the CSF fixed income portfolio shall be invested in a single industry or government agency₊ and
4. Leverage in any fixed income securities holding (excluding use of securities in a securities lending program) is not permitted.

F. Liquidity

÷CSF may have occasional need to draw on a portion of its invested capital to pay expenses, make distributions or satisfy other operating or funding obligations. Prior to any withdrawal, CSF will communicate its requirement as soon as possible to provide advance notice for portfolio sales and rebalancing purposes.

G. Performance Expectations/Reviews

÷Over a market cycle of 3-5 years, the CSF fixed income portfolio is expected to outperform its benchmark~~the index~~ by at least 35 basis points, net-of-fees. Quarterly investment portfolio reviews will focus on performance relative to objectives and adherence to guidelines.

HB. ~~OST Staff Authority~~ AUTHORITY & Reporting REPORTING

1. OST Staff, with approval from the Chief Investment Officer (CIO) and quarterly notification to the OIC, may terminate "at will" any fixed income manager mandate according to the terms of its contract with and on behalf of the OIC.
2. OST Staff, with approval from the ~~Chief Investment Officer (CIO)~~ and quarterly notification to the OIC, will ~~also~~ have discretion to rebalance between, and among, managers within the fixed income portfolio. The aggregate, structural characteristics of the fixed income portfolio will be considered during such rebalancing, while re-allocations between asset classes shall remain governed by *INV 901 Common School Fund: Asset Classes, Asset Allocation, and Reporting Requirements*.
3. OST Staff, with approval from the ~~Chief Investment Officer (CIO)~~ and quarterly notification to the OIC, will have ~~the~~ discretion to retain any fixed income manager/strategy that has been approved by the board on behalf of the Oregon Public Employees Retirement Fund (OPERF).

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

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INV 905: Common School Fund: Private Equity Investments

OREGON INVESTMENT COUNCIL POLICY

INTRODUCTION & OVERVIEW

Summary Policy Statement

The strategic role of private equity investments is to enhance return and diversification opportunities for the Common School Fund (“CSF”). While traditionally more volatile than the public equity asset class, private equity provides a diversification benefit and the opportunity to achieve higher returns. Private equity securities are subject to the specific, strategic allocation targets established by OIC Policy *INV 901: CSF Asset Class, Allocations and Reporting Requirements*. Currently, 10 percent of the CSF is allocated to private equity investments.

Purpose and Goals

The purpose of these Private Equity Investment Policies is to define the objectives of private equity as an asset class within the general investment policies of the Oregon Investment Council ("OIC" or the "Council"), and to outline strategies used to implement the Council's private equity investment policies.

Applicability

All Investment Division staff.

POLICY PROVISIONS

A. Policy Statements

To provide one of the highest expected returns among approved CSF asset classes, and increase Fund diversification.

B. Strategies

1. The CSF Private Equity portfolio will include investments with a select group of large, established and historically successful private equity partners and will generally be accessed through limited partnership interests.
2. The OIC recognizes the need for high levels of diversification to minimize the risk of significant losses to the Fund. Diversification in private equity may manifest in one or more of the following dimensions: investment style; geographic location; sector allocation; and capitalization.
3. Partnership agreements shall be in conformance with current industry standards and shall be subject to legal sufficiency approval by and through the Oregon State Treasury Department of J(OST) legal counsel.

4. The CSF private equity portfolio is expected to achieve total returns 300 basis points greater than its public market benchmark, net of fees, over a three- to five-year investment cycle.
-
5. Quarterly manager reviews will be conducted by Staff and Consultant and will focus on adherence to guidelines and assessments of investment performance relative to objectives. However, given the illiquid nature of private equity investments, managers may not generally be terminated other than for breach of contract.

C. B. OST Staff Authority & Reporting

OST Staff, with approval from the Chief Investment Officer (CIO) and quarterly notification to the OIC, will have the discretion to retain any private equity manager/strategy that has been approved by the board on behalf of the Oregon Public Employees Retirement Fund (OPERF).

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 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.

TAB 6 – Alternatives Portfolio Review

OPERF

OPERF Alternatives Portfolio 2017 Plan and Review

Ben Mahon, Senior Investment Officer

April 26, 2017



Oregon State Treasury

Executive Summary

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

- Pacing on target
 - Market value as of December 31, 2016 = \$4 billion
 - Market value as a % of OPERF as of December 31, 2016 = 5.8% (vs. 12.5% target)

- Portfolio still early in its build-out
 - ≈ 75% of total commitments made in last three years
 - Weighted-average age of 2.3 years
 - “Fourth inning” of portfolio development

- Dynamic market and evolving opportunity set
 - Steady flow of new managers, strategies, and structures

Portfolio development on track

Topics

1. Background/Objectives

2. 2016 Review

3. Looking Forward

4. Appendix

Background/Objectives

➤ Alternatives Portfolio Background

- Alternatives Portfolio approved at January 26, 2011 OIC meeting
- Portfolio seeded July 1, 2011 with three investments from the Opportunity Portfolio
- Target allocation for the Portfolio has increased twice since its inception:
 - First, from 5% to 10% at June 26, 2013 OIC meeting
 - Second, from 10% to 12.5% at June 3, 2015 OIC meeting
 - Actual allocation at December 31, 2016 is 5.8%
- Portfolio comprised of three primary sectors:
 - Infrastructure = 20-30%
 - Natural Resources = 30-40%
 - Diversifying Strategies = 35-45%

➤ Alternatives Portfolio Objectives

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

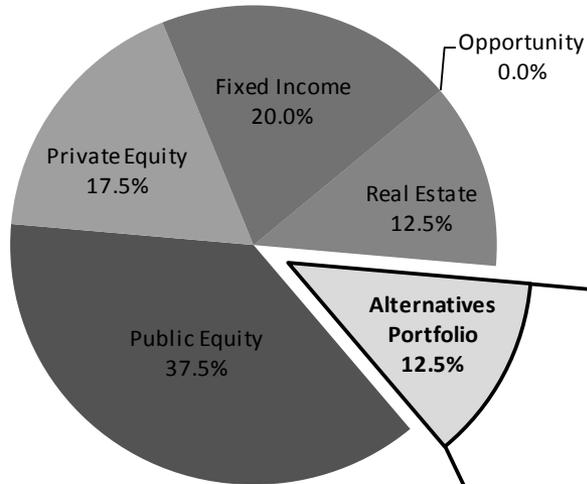
Enumerated in
OIC Investment
Beliefs

OIC Investment Beliefs

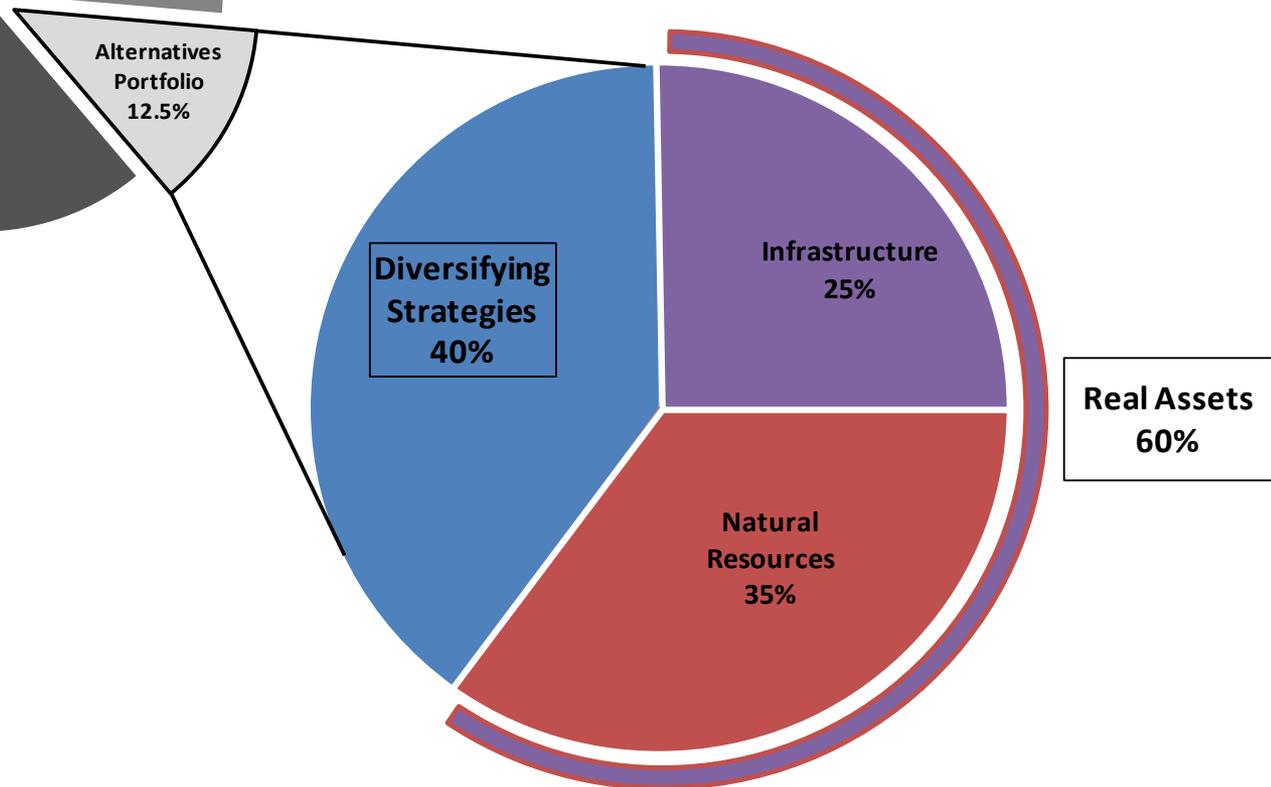
- Diversification, asset class correlations, and private market investment expectations and considerations are all enumerated in the OIC's investment beliefs, which serve to guide portfolio construction, strategy, and manager selection decisions in the Alternatives Portfolio.
 - Importance of asset allocation, which is the primary driver of risk and return:
 - Belief 1C: *“To exploit market inefficiencies, the OIC must be contrarian, innovative and opportunistic in its investment approach.”*
 - Belief 2A: *“Asset allocation is the OIC’s primary policy tool for managing the investment program’s long-term risk/return profile.”*
 - Belief 2B: *“Portfolio construction, including diversification and correlation considerations, is essential to maximizing risk-adjusted returns.”*
 - Private market investments can add significant value and represent a core OIC/OST competency:
 - Belief 4A: *“The OIC can capitalize on its status as a true, long-term investor by making meaningful allocations to illiquid, private market investments.”*
 - Belief 4B: *“Dispersion in private market investment returns is wide; accordingly, top-quartile manager selection and vintage year diversification are paramount.”*

Target Weights

OPERF Target Allocation



Alternatives Portfolio Target Allocation



Defining Real Assets

- “Real assets” are broadly defined as long-lived, capital intensive, physical or “hard” assets that provide essential products and services to the global economy or generally serve as the inputs to economic production. Real assets typically share three key characteristics:
 - Tangible, with intrinsic value
 - Relatively stable demand and/or revenue profile
 - Inflation-linkage

- Real assets offer investment characteristics and risk profiles that are differentiated from other asset classes, and which therefore provide valuable diversification benefits. These differentiations include the potential for capital preservation, long-term growth, current income, low volatility, and inflation protection.
 - The primary driver for the low correlation of real assets to other asset classes is the relatively low cyclicality and volatility of their demand profiles, and the consequent stability of their cash flows and earnings. This stability is a function of the essential nature of real assets and their contracted, regulated, or commodity-linked revenues.
 - Underpinning their role in economic and social activity, real assets also stand to benefit from long-term macro trends such as population growth, urbanization, and economic development.

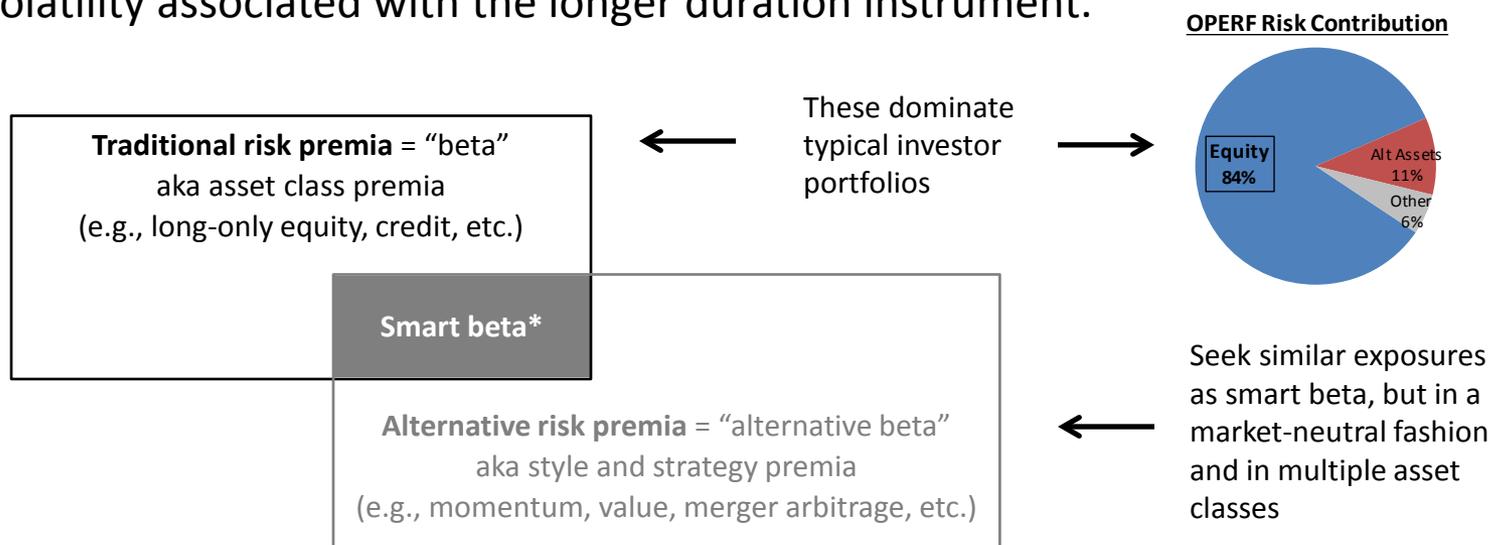
Defining Real Assets, cont.

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

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

Defining Diversifying Strategies

- “Diversifying strategies” is a category comprising strategies that attempt to systematically capture certain risk premia beyond traditional equity and bond market exposures using alternative investment techniques.
- Underlying the “risk premia” terminology is the notion that there should be a premium (i.e., a higher *expected* return) for bearing risk. For example, the March 1, 2017 yield on the U.S. 1-month T-bill was 0.46%, while the yield on the U.S. 30-year T-bond was 3.06%. The 2.60% differential represents the risk premium (in this case, the *term* premium) that compensates investors for the additional price volatility associated with the longer duration instrument.



* The term “smart beta” refers to long-only exposure to an asset class with a style premium bias; e.g., OPERF public equity portfolio utilizing size, value and low volatility tilts.

Defining Diversifying Strategies, cont.

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

ASSET CLASS	SUB-SECTORS OF INTEREST	DESCRIPTION	GP EXAMPLES
Diversifying Strategies	Risk Premia	Non-directional harvesting of style and strategy risk premia	AQR Style Premia, AQR DELTA
	Managed Futures	Directional harvesting of momentum (trend-following) risk premia	AQR Managed Futures
	Absolute Return/Global Macro	Forecasting security or market direction based on movements in economic variables; aims to capture perceived mispricings	

* See “Why diversify” slides in appendix for more detailed discussion.

Portfolio Construction: Putting It All Together

ASSET CLASS	TARGET ALLOCATION	SOURCES OF RETURN	MACROECONOMIC SENSITIVITIES	Capital Protection	Diversification	Current Income	Inflation-Linkage
Infrastructure	25%	Cash flows are generated by long-lived assets that deliver essential products or services. These cash flows tend to be a function of price (often tied to a regulatory or concession framework) and volume (throughput generally tied to underlying economic conditions). Additional sources of return through improvement and/or expansion to operations.	The cash flows from infrastructure assets tend to be contracted under terms with periodic price escalators tied to inflation. Since cash flows are generally contracted or feature monopolistic-like pricing power, and are therefore inelastic, infrastructure can be defensive in periods of economic contraction.				
Natural Resources	35%	Cash flows are generally derived from the production, processing, and distribution of commodities or globally traded goods coming from these resources. Additional sources of return through resource expansion and/or improvement to operations.	The essential nature of natural resources (i.e., food) generally results in inelastic demand. Factors such as weather and overproduction, however, can significantly impact short-term supply and demand. Implicit inflation linkage arises because natural resources include many of the underlying components of inflation (i.e., the production inputs that determine the cost of many goods and services).				
Diversifying Strategies	40%	Returns generated by using a systematic, rules-based process of harvesting recognized and exploitable risk premia for which an economic or behavioral rationale exists, driving a positive expected return over time.	Owing to the use of alternative investment techniques such as shorting and leverage, sources of returns largely independent of the market environment.				



= Primary objective



= Secondary objective



= Not an objective



Topics

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2016 Year in Review

➤ Progress-to-date

- Authorized \$1.7 billion in commitments in 2016 (11 investments)
 - Midpoint of expected \$1.5 - \$2.0 billion range
- Portfolio exposures are balanced and within target ranges
- Continue to refine strategy and develop anchor positions complemented by specialists/next generation relationships. No shortage of deal flow! Challenge has been discriminating among opportunities.

➤ Consultant

- TorreyCove contract extended for a two-year period ending December 31, 2018

➤ “Firsts” for the Portfolio

- First dedicated maritime investment (Northern Shipping III)
- First dedicated U.S. land-based agriculture investment (Homestead Capital II)
- First dedicated trend-following (aka managed futures) investment (AQR)

2016 Year in Review, cont.

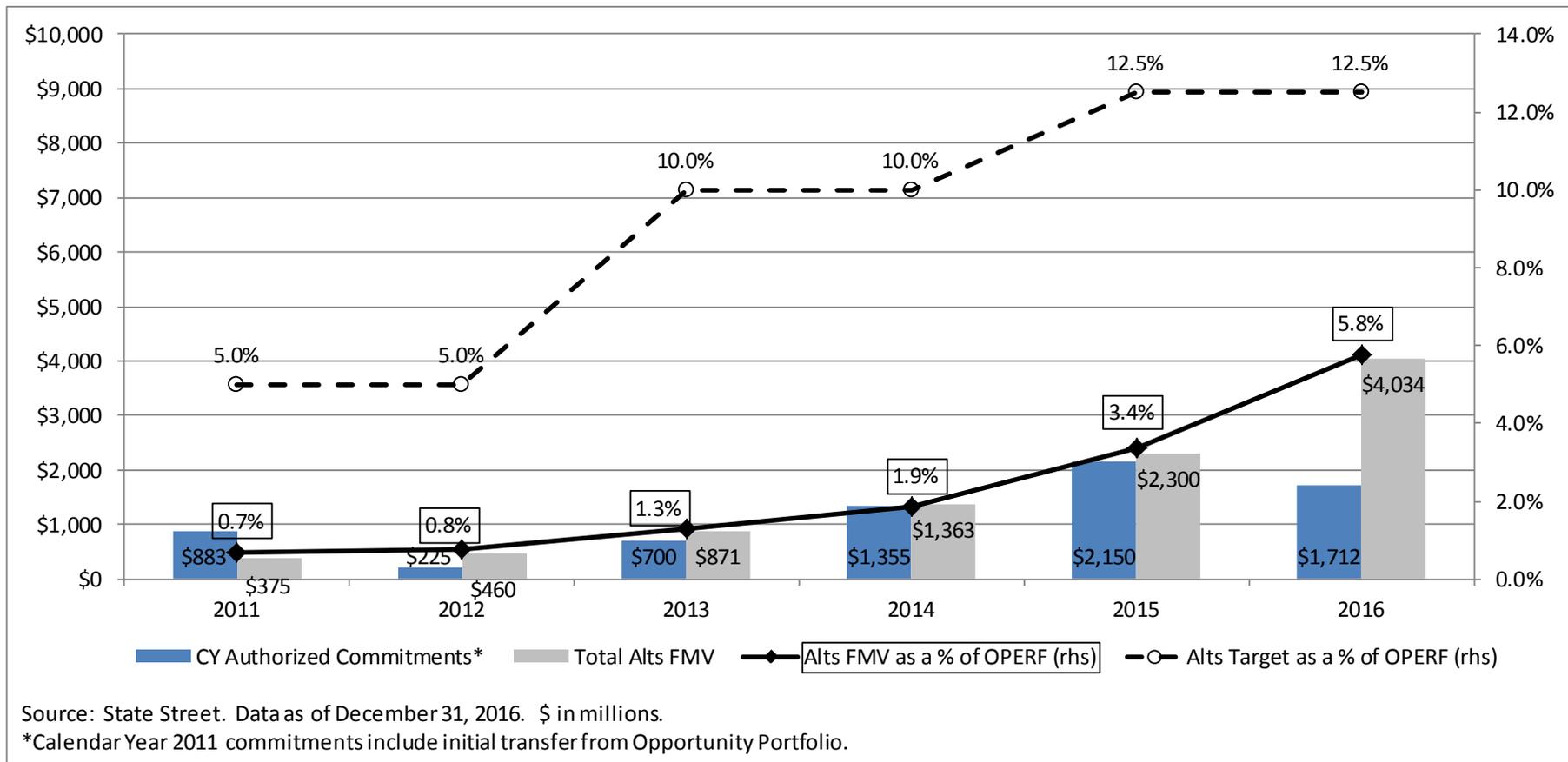
- During 2016, OIC/OST authorized \$1.7 billion in commitments across 11 investments
- 6 of the commitments were new relationships; 5 were “re-ups” or extensions of existing strategies
- 2016 commitments comprised a diverse set of investment strategies:

INVESTMENT NAME	AUTHORIZED DATE	FIRST OPERF DRAWDOWN	COMMITMENT AMOUNT
SailingStone Global Natural Resources Strategy	2/1/2016	3/11/2016	\$50,000,000
Brookfield Infrastructure Fund III, L.P.	3/9/2016	5/16/2016	\$400,000,000
Warwick Partners III, L.P.	4/22/2016	5/13/2016	\$150,000,000
EMR Capital Resources Fund II, L.P.	8/17/2016	9/13/2016	\$125,000,000
Northern Shipping Fund III, L.P.	8/17/2016	10/21/2016	\$125,000,000
Homestead Capital USA Farmland Fund II, L.P.	9/29/2016	10/21/2016	\$100,000,000
Starwood Energy Infrastructure Fund III, L.P.	9/29/2016	N/A	\$150,000,000
AQR Managed Futures	10/26/2016	1/1/2017	\$250,000,000
Tillridge II Global Agribusiness Partners, L.P.	11/17/2016	1/13/2017	\$100,000,000
Taurus Mining Finance Annex Fund, L.P.	11/22/2016	1/30/2017	\$50,000,000
EQT Infrastructure III (No.2) SCSp	12/7/2017	N/A	\$212,000,000 *
TOTAL			\$1,712,000,000

*Euro = \$1.06

Commitments and Market Values

- Alternatives Portfolio weight increasing as a percentage of OPERF; equal to 5.8% at year-end
- Since inception, \$6.9 billion of commitments have been authorized, with the majority (\$5.1 billion or ≈ 75%) over the past three years



Portfolio Snapshot

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

SECTOR	TARGET (\$)	TARGET (%)	TARGET RANGE (%)	MARKET VALUE (\$)	MARKET VALUE (%)
Infrastructure	\$2,182.9	25%	20-30%	\$1,161.0	29%
Natural Resources	\$3,056.1	35%	30-40%	\$1,441.6	36%
Diversifying Strategies	\$3,492.7	40%	35-45%	\$1,431.0	35%
TOTAL:	\$8,731.8	100%	0-10%	\$4,033.6	100%

Source: State State. Data as of December 31, 2016. \$ in millions.

Cash Flow Activity Since Inception

- As anticipated, Portfolio cash outflows have outweighed cash inflows by a meaningful amount with pace of contributions increasing as capital commitments are made
- As of December 31, 2016, OPERF has contributed \$4.2 billion in capital, funding approximately 61% of aggregate capital commitments. Approximately \$2.9 billion of capital commitments remain outstanding.
- A total of \$609.0 million has been distributed to OPERF
- As new commitments continue to be made, the weighted-average age of commitments has remained consistent, averaging approximately 2 years
- Since inception, 36 commitments to closed-end vehicles:
 - 9 have reached end of investment period
 - 0 have reached end of term
 - 0 have been fully realized

	2011	2012	2013	2014	2015	2016
Authorized Commitments*	\$882.5	\$225.0	\$700.0	\$1,355.0	\$2,150.0	\$1,712.0
Contributions	-\$383.7	-\$155.8	-\$435.1	-\$363.9	-\$1,102.0	-\$1,760.2
Distributions	\$58.6	\$67.1	\$57.3	\$126.2	\$63.9	\$236.0
Net Cash Flow	-\$325.0	-\$88.6	-\$377.8	-\$237.7	-\$1,038.1	-\$1,524.2
Unfunded Commitments	\$282.5	\$534.4	\$574.3	\$1,643.1	\$2,353.6	\$2,871.5
Weighted Avg. Age of Commitments (yrs)	2.0	2.1	2.1	1.9	2.1	2.3

Source: State Street. Data as of December 31, 2016. \$ in millions.

*Calendar Year 2011 commitments include initial transfer from Opportunity Portfolio.

Performance

- As noted, Alternatives Portfolio is early in its build-out, and nearly all returns are unrealized
 - $\approx 77\%$ of total contributions made in the last three years
 - Weighted-average age of 2.3 years
- Given the long-term nature of alternative investments, as well as the J-curve effect, performance less than three years is generally not meaningful

Time-Weighted	1 Year	3 Year	5 year	Inception
Alternatives Portfolio	11.6	3.7	2.8	2.8
CPI + 4%	6.5	5.1	5.3	5.4
<i>Difference</i>	5.2	-1.4	-2.4	-2.6

Source: State Street. Data as of March 31, 2017. Net of fees.

Dollar-Weighted	1 Year	3 Year	5 year	Inception
Alternatives Portfolio	9.5	3.7	3.4	3.1
CPI + 4%	6.0	5.2	5.2	5.2
<i>Difference</i>	3.5	-1.5	-1.8	-2.1

Source: TorreyCove. Data as of December 31, 2016. Net of fees.

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2017 Portfolio Initiatives

➤ Diversifying Strategies

- Kicked off second year of “three-year plan” with Callan onsite February 3, 2017
- Assistance from Karl Cheng on managed futures
- 2-3 recommendations expected in second half of 2017

➤ Co-investment

- Staff and consultant continue to evaluate co-investment opportunities and refine program model
 - Objective function is to reduce fee drag
 - No one-size-fits-all approach exists

➤ Separate accounts/strategic relationships

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

➤ Benchmarking

- Evaluation of primary and secondary benchmarks underway

2017 Portfolio Initiatives, cont.

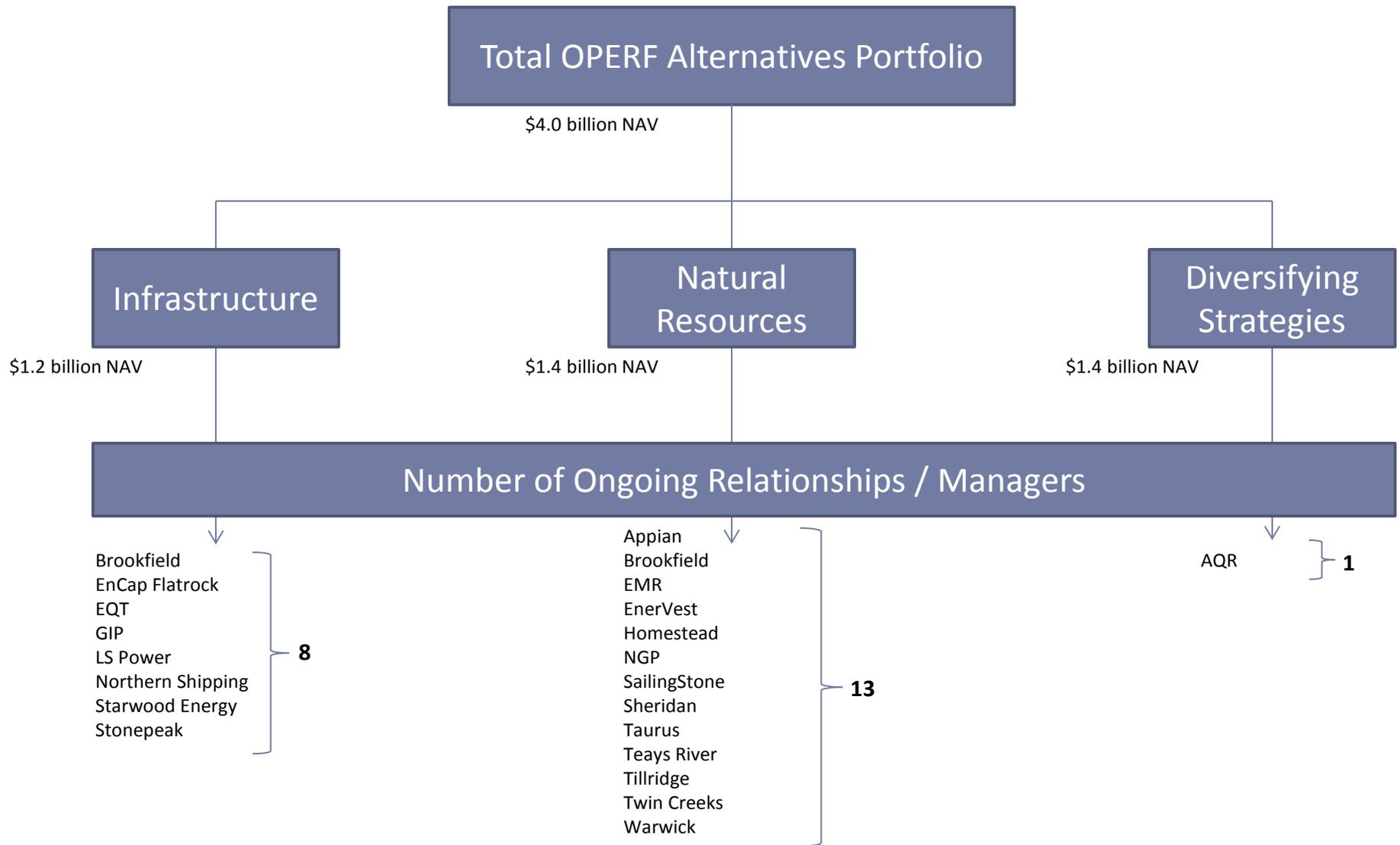
➤ Investment Pipeline

- Alternative risk premia (2) (Global, public markets)
- Upstream energy (North America, private markets)
- Diversified infrastructure (North America, private markets)
- Diversified energy (North America, private markets)
- Midstream infrastructure (North America, private markets)
- Managed futures (Global, public markets)
- Upstream energy (North America, private markets)
- Power infrastructure (North America, private markets)

➤ Current Market Themes

- Rise of non-traditional funds and fund sponsors
- North American energy plays
- Energy storage
- Reduction in traditional lending
- Renewable power
- Emerging markets

Portfolio Structure/Relationships

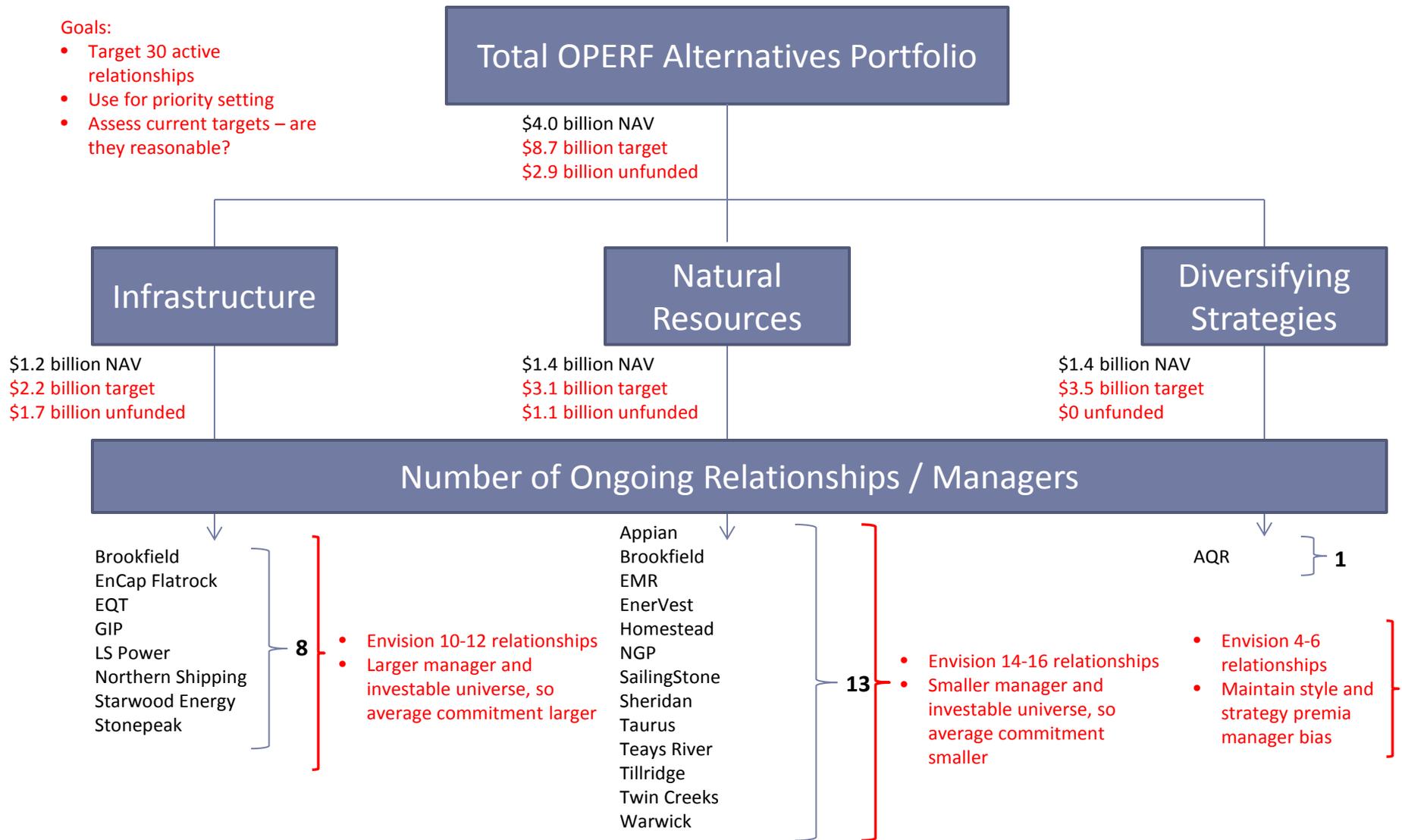


* Source: State Street. Market values as of December 31, 2016.

Portfolio Structure/Relationships **Vision**

Goals:

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



* Source: State Street. Market values as of December 31, 2016.

Portfolio Pacing

➤ 2017 Plan

- \$2.0 – \$2.5 billion in commitments
- Based on balanced portfolio allocation, not driven by need to fill an exposure

➤ Longer-term pacing

- Staff has been measured, given entry point risk, research requirements and resource constraints
- At current pace, will not reach target allocation for several years
- Can deploy liquid strategies (e.g., diversifying strategies and listed commodities funds) more quickly than illiquid strategies (e.g., infrastructure, timber, agriculture, metals & mining, etc.)
- Remain cognizant of exposures while aiming for vintage year diversification

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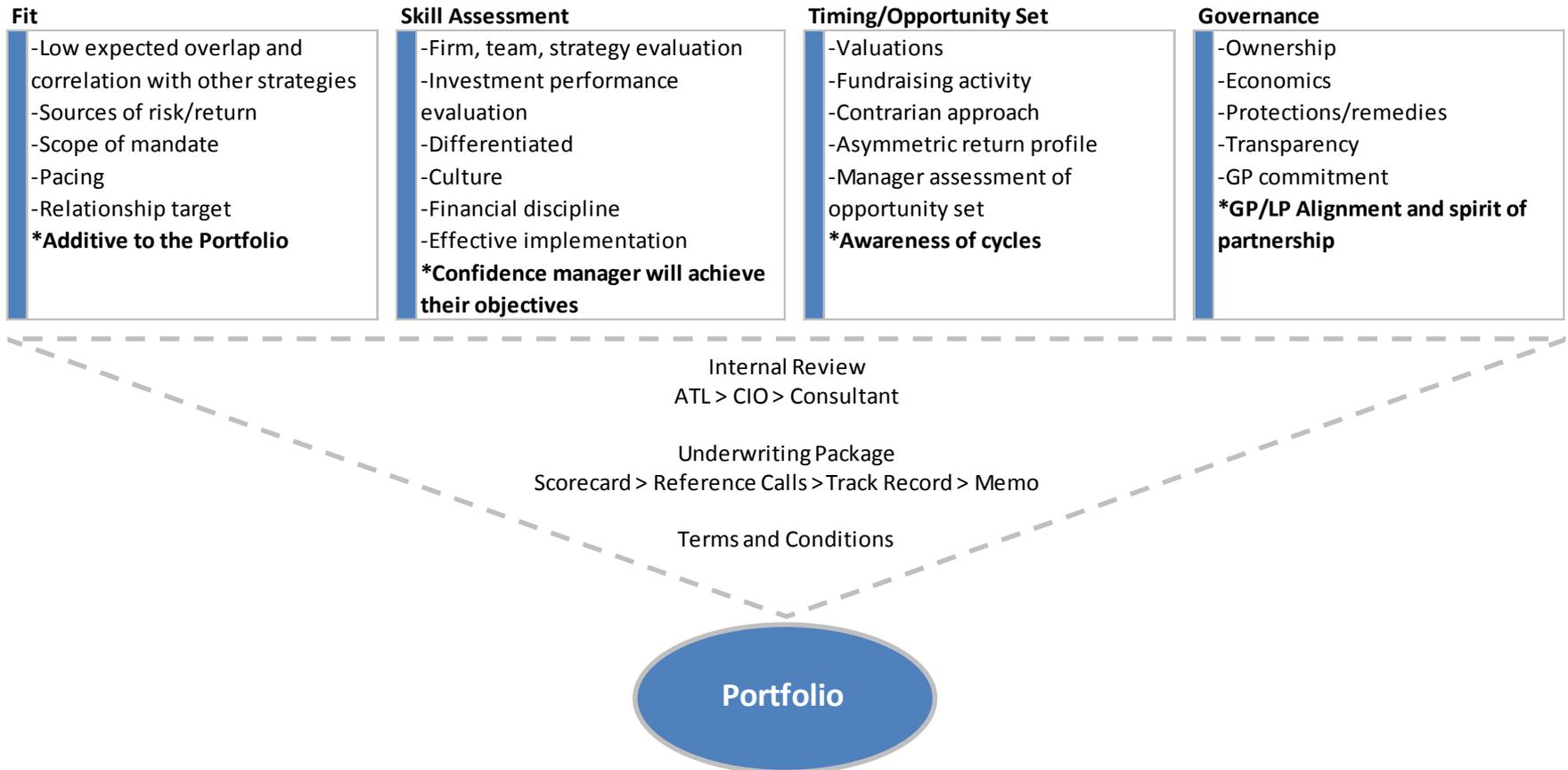
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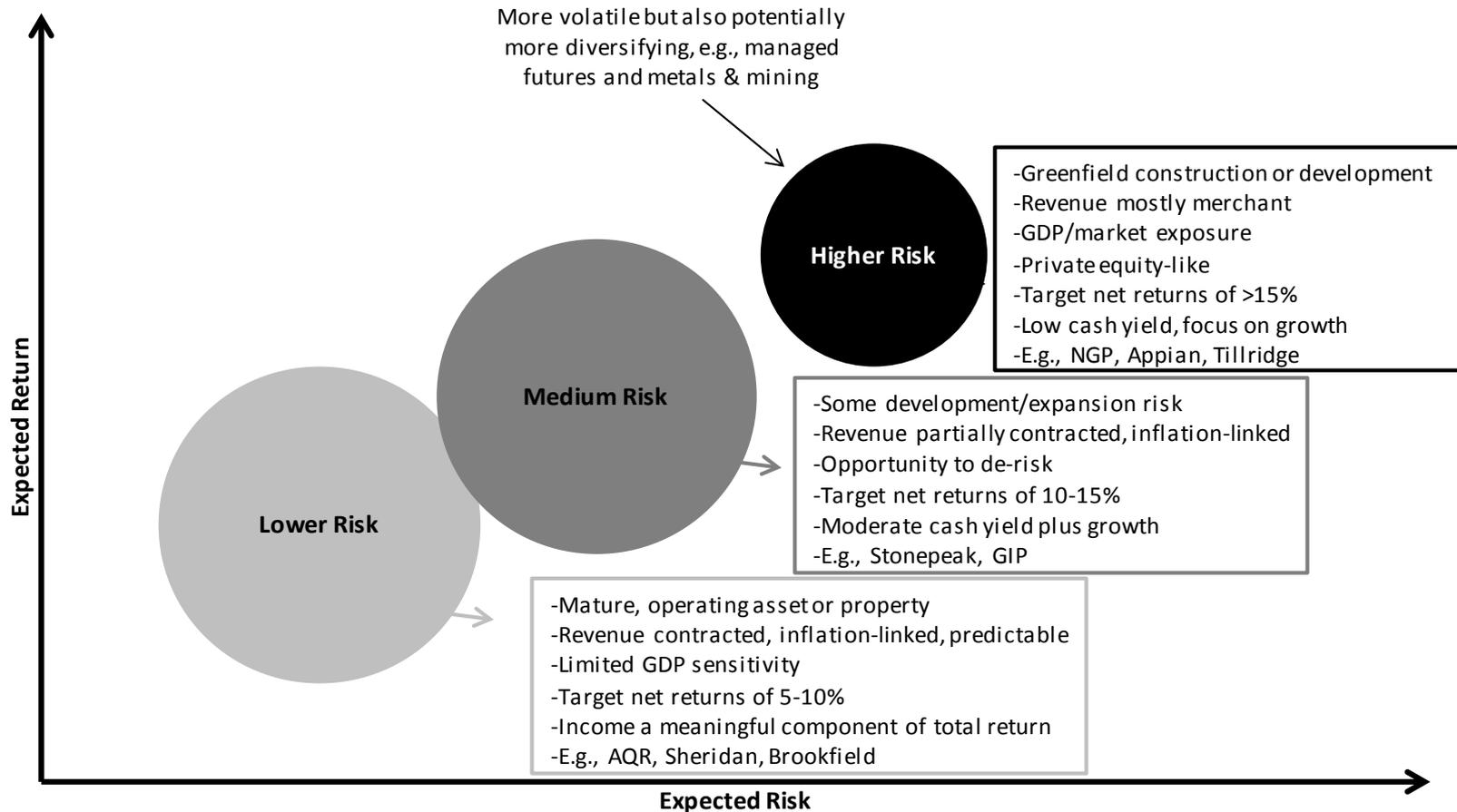


Appendix: Investment Process

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



Appendix: Relative Risk & Return Expectations



Appendix: Why diversify?

➤ The “problem”

- OPERF portfolio performance highly tied to equity market performance (Aladdin estimates equity risk contributes 84% of OPERF’s overall risk)
- All pension plans are susceptible to large drawdowns of returns, aka “left-tail risk”
 - For example, between October 2007 and March 2009, OPERF suffered a 35% loss and took six years (October 2013) to regain its previous highwater mark.

➤ The “partial” solution

- Add more diversifying investments and investment strategies to dampen (though not eliminate) those effects
- Diversification is the only “free lunch” in investing. Portfolios comprised of less than perfectly correlated assets are better, because, all else equal, lower correlations reduce portfolio volatility without sacrificing return.

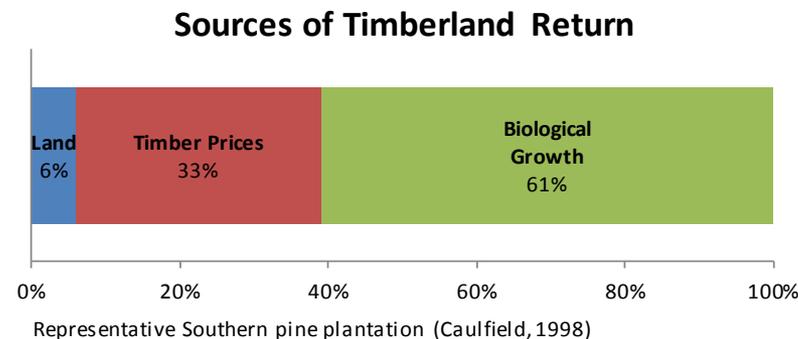
➤ The implementation

- Generate diversification by seeking less correlated return profiles:
 - Infrastructure
 - Natural resources
 - Diversifying strategies

In seeking the most consistent risk-adjusted returns, the conclusion is to diversify as much as prudently possible

Appendix: Why diversify? Timberland Example

- Timberland investment returns have moved in a manner quite different from those of many other asset classes. This is due to the unique drivers of return for timberland:
 - Biological growth – historically, biological tree growth has been the largest component of timberland return. Regardless of what is happening in financial markets and the economy, trees continue to grow. As trees grow in volume, they also turn into higher value products (called “ingrowth”).
 - Timber prices – influenced by a variety of macroeconomic factors, including population growth, GDP per capital, housing starts, etc. Importantly, the various utilities of timber in the consumer market tends to produce a return that is linked with inflation.
 - Land prices – related to local supply and demand conditions, namely highest and best use (“HBU”) considerations.
 - Other characteristics:
 - Ability to defer harvest – investors can “store-on-the-stump” at low, marginal costs, thus adjusting production to varying levels of demand.



TAB 7 – Opportunity Portfolio Review

OPERF

OPERF Opportunity Portfolio 2015-2016 Review

John Hershey, Director of Alternative Investments

April 26, 2017



Oregon State Treasury

Topics

1. Opportunity Portfolio Overview

2. 2015-2016 Review

3. Active Funds Review



Opportunity Portfolio Overview

Role

- Provide enhanced risk adjusted returns and diversification to OPERF
- Investments typically a combination of shorter-term (1-3 years) and longer-term holdings
- May be up to 3.0% allocation of OPERF
- No strategic target allocation

Objectives

- Policy 9.0% target return, net of fees
- Secondary policy benchmark CPI + 5.0%, over trailing three-year period
- Low correlation with other OPERF holdings
- Less risk than OPERF public equity component
- Opportunistic/dislocation oriented
- Innovation oriented
- Non-diversified – may concentrate investments

Strategies of Interest

- Dislocation oriented (illiquid credit, mortgages, regulatory capital arbitrage)
- Less correlation oriented (drug royalties, insurance and reinsurance, intellectual property)
- Strategic partnerships (“club deals”, tactical/opportunistic partnerships)

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New Investments / Pipeline / Dispositions

2015 Commitments

- TPG European Specialty Lending (\$100mm – Feb)
- TPG TAO (\$250mm – Sep)

2016 Commitments

- Owl Rock (\$150mm – Sep)
- Lone Star Fund X (\$150mm – Oct)

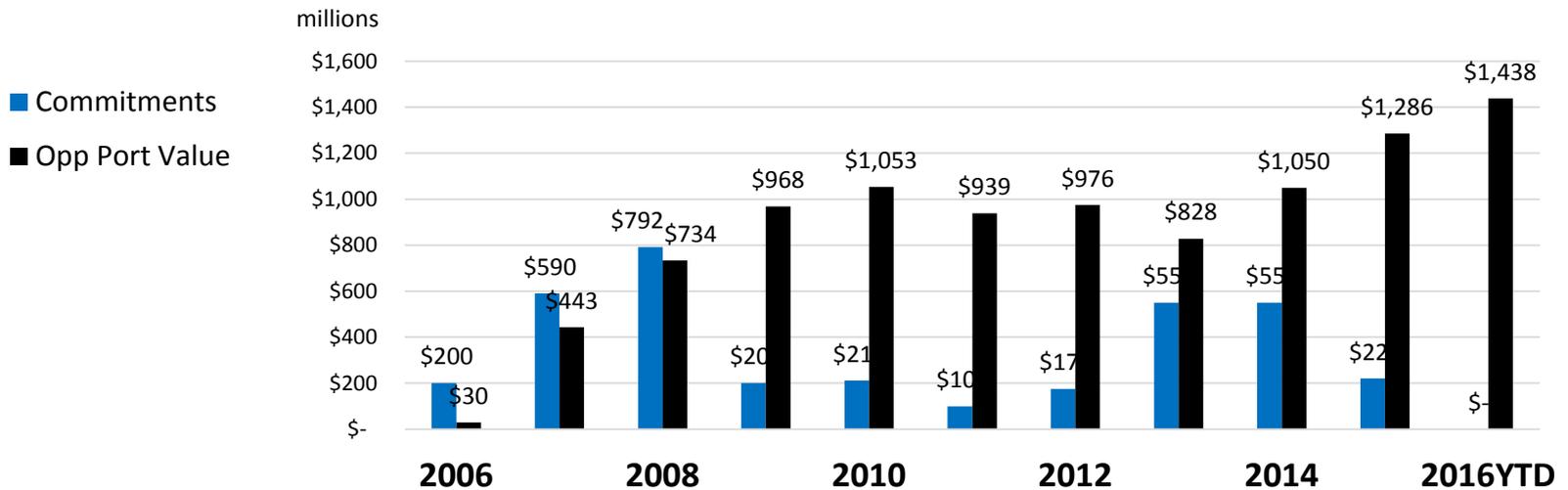
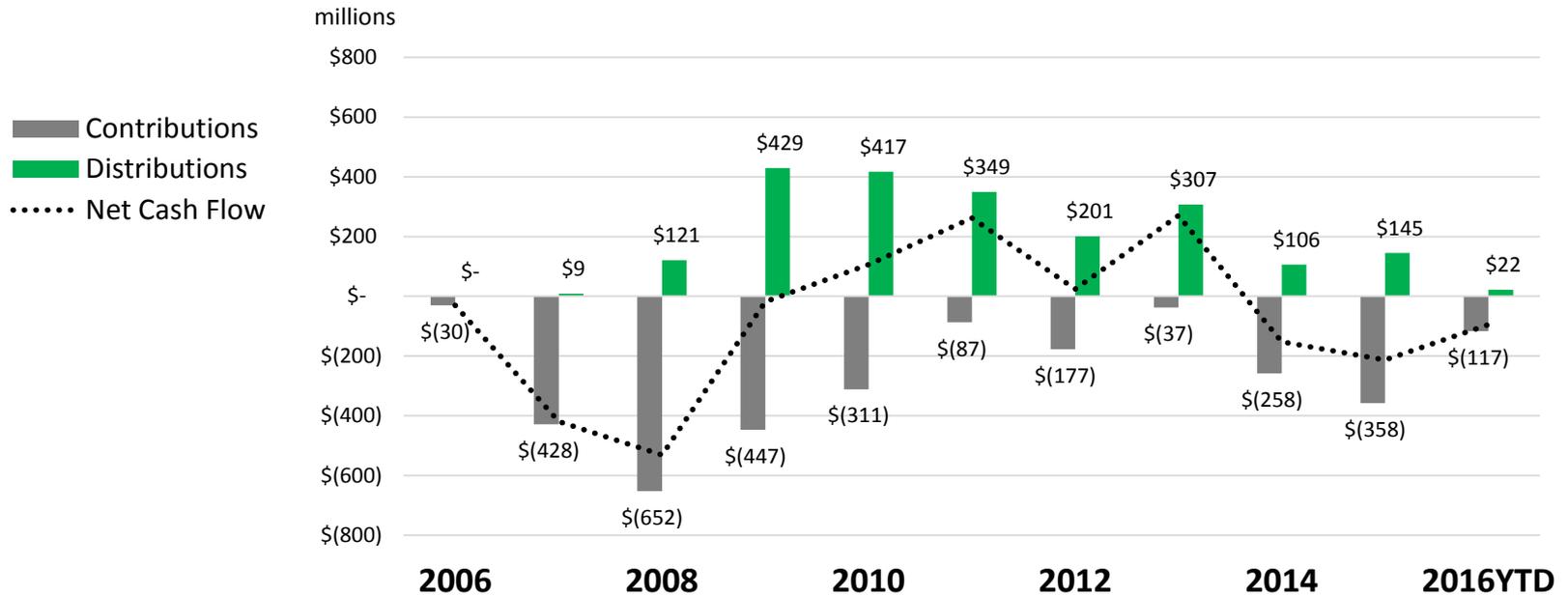
2015 Dispositions

- Endeavor SEAM (\$20mm – Q1'15)

2016 Commitment Reductions

- Lone Star Residential Mortgages (\$43mm – June)

Cash Flows and Commitments (as of 6/30/2016)



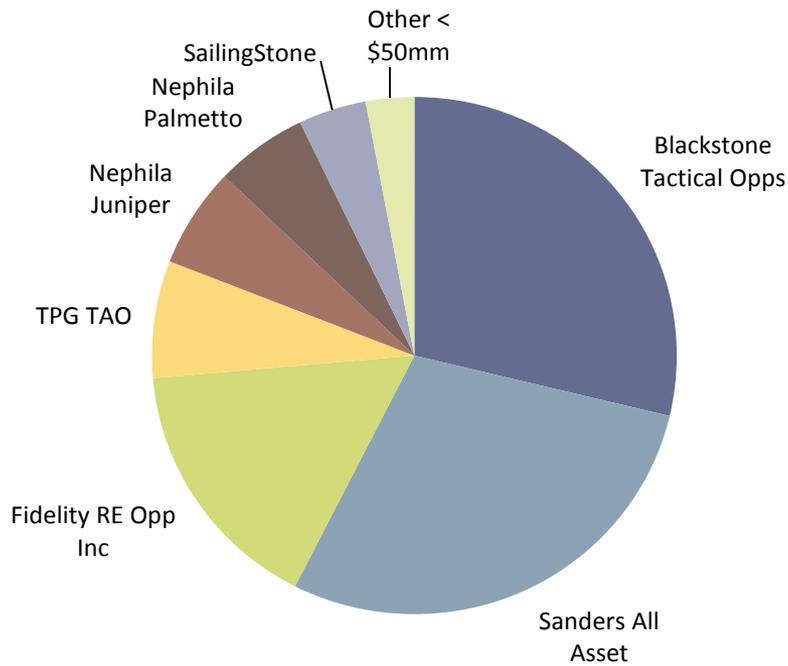
Investments (as of 6/30/2016)

Fund	Strategy	FMV (\$mm)	%	Commitment (\$mm)	Date of Commitment	Vintage Year	Contribution-Weighted Age (years)
Fidelity RE Opp Inc	Debt	186.8	13%	100.0	2/2007	2007	8.8
BlackRock Credit Inv	Debt	0.2	< 1%	200.0	11/2007	2007	8.7
Providence TMT	Bank Loan	4.0	< 1%	100.0	6/2008	2008	7.4
Apollo Credit Opp II	Bank Loan	1.4	< 1%	250.0	8/2008	2008	7.1
BlackRock Credit Inv II	Debt	0.2	< 1%	100.0	9/2008	2008	7.8
BlackRock Credit Inv Co-Inv	Debt	0.1	< 1%	72.0	10/2008	2008	7.7
Sanders All Asset	Equity	320.5	22%	200.0	1/2010	2010	6.3
Nephila Juniper	Reinsurance	74.6	5%	50.0	1/2012	2012	4.5
Nephila Palmetto	Reinsurance	67.4	5%	50.0	1/2012	2012	4.5
SailingStone Nat Gas	Equity	73.6	5%	75.0	10/2012	2012	2.5
Blackstone Tactical Opps	Diversified	390.5	27%	500.0	9/2013	2013	1.5
Content Partners 3	Royalties	15.9	1%	50.0	4/2014	2014	1.0
TPG TAO	Diversified	223.6	16%	500.0	5/2014	2014	1.0
Lone Star Res Mtg I	Debt	(0.6)	< 1%	43.2	12/2014	2015	0.8
Galton Mortgage	Debt	49.9	3%	50.0	1/2015	2015	0.6
OrbiMed	Royalties	5.2	< 1%	35.0	1/2015	2015	0.6
TPG Specialty Europe I	Debt	24.5	2%	100.0	3/2015	2015	0.6
Total Opportunity Portfolio		\$1,437.7					4.6
Allocation within OPERF		2.1%					(FMV-weighted)

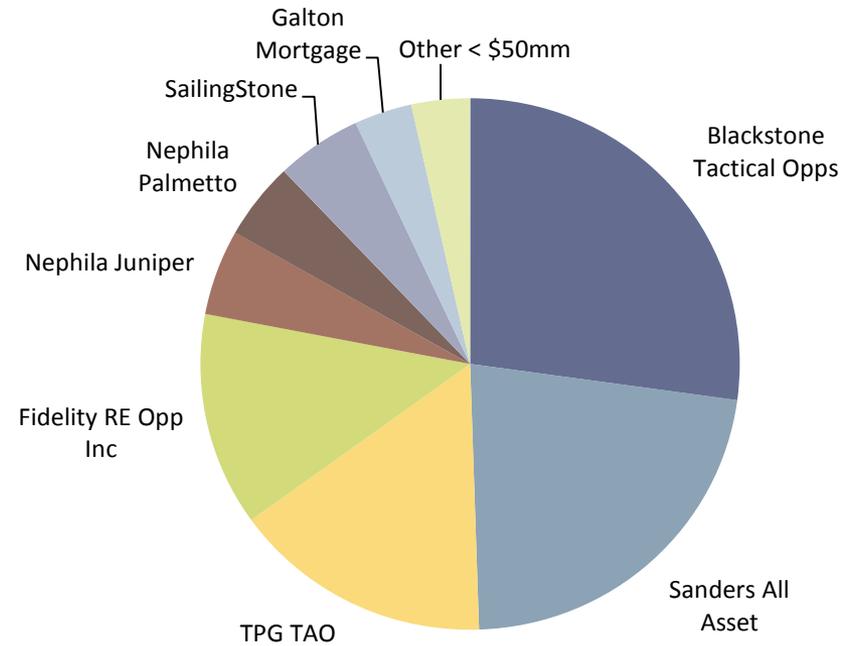
78% of Portfolio
in 4 Funds

Portfolio Snapshot

June 2015
FMV \$1.1 billion

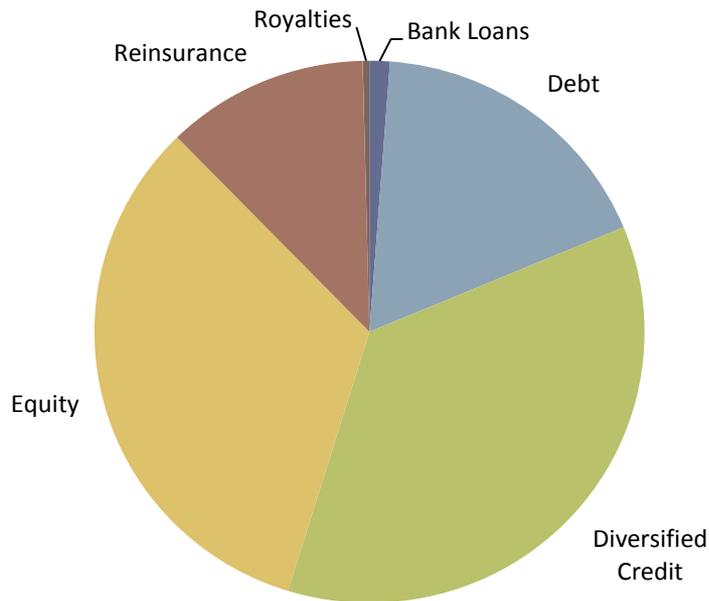


June 2016
FMV \$1.4 billion

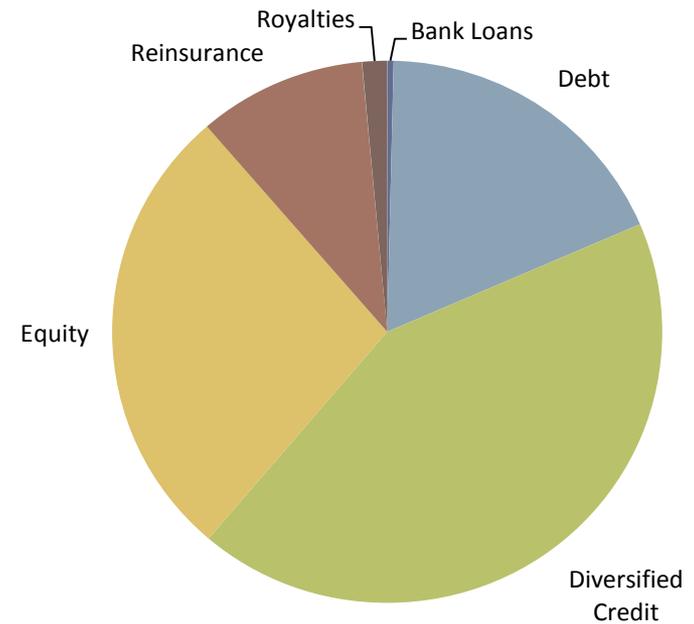


Portfolio Strategy Snapshot

**June 2015
Strategy FMV**

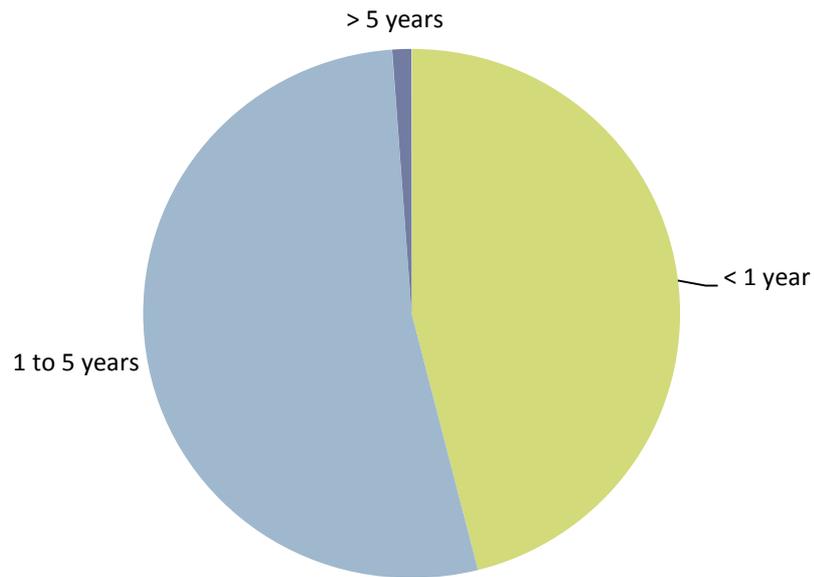


**June 2016
Strategy FMV**

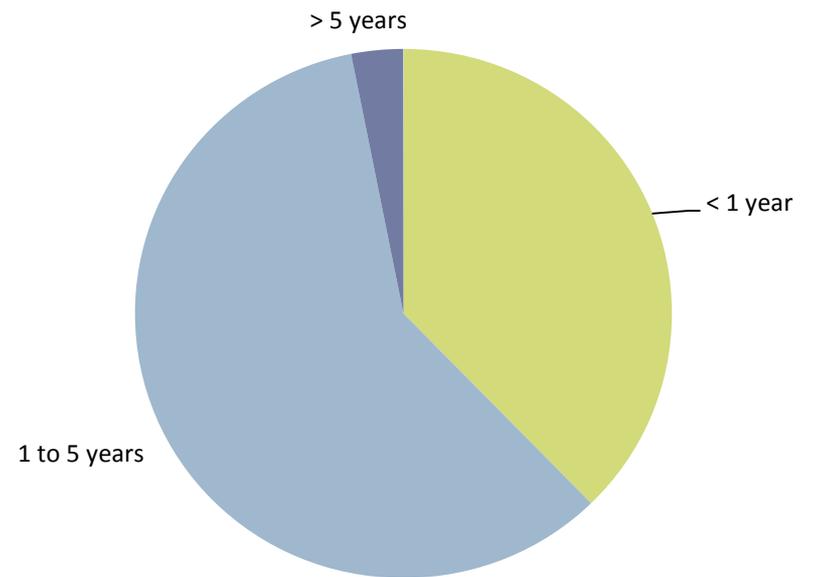


Portfolio Liquidity Snapshot

**June 2015
Liquidity FMV**



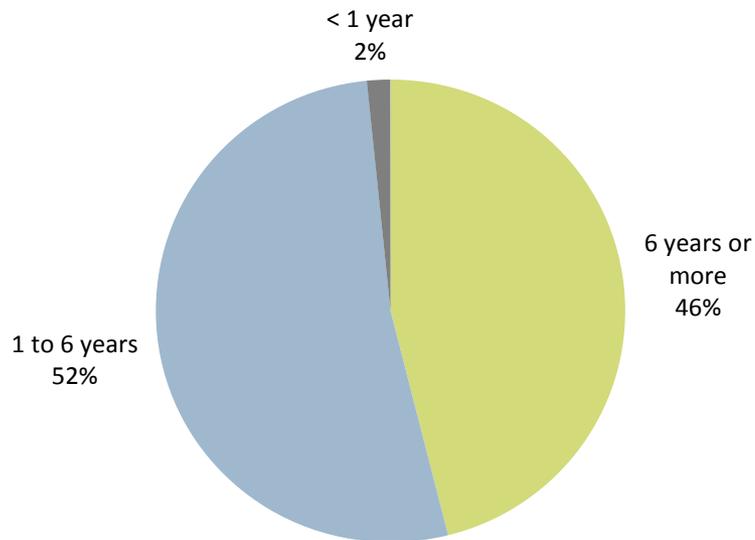
**June 2016
Liquidity FMV**



Portfolio Age Snapshot

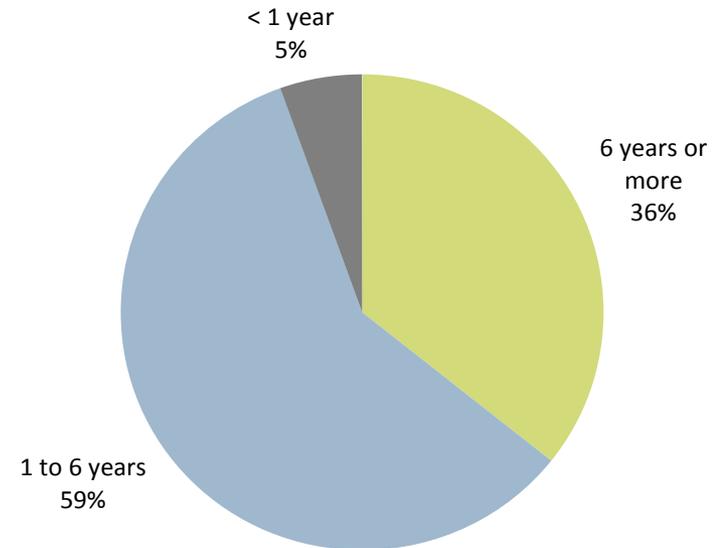
June 2015

Contribution-Weighted Age FMV

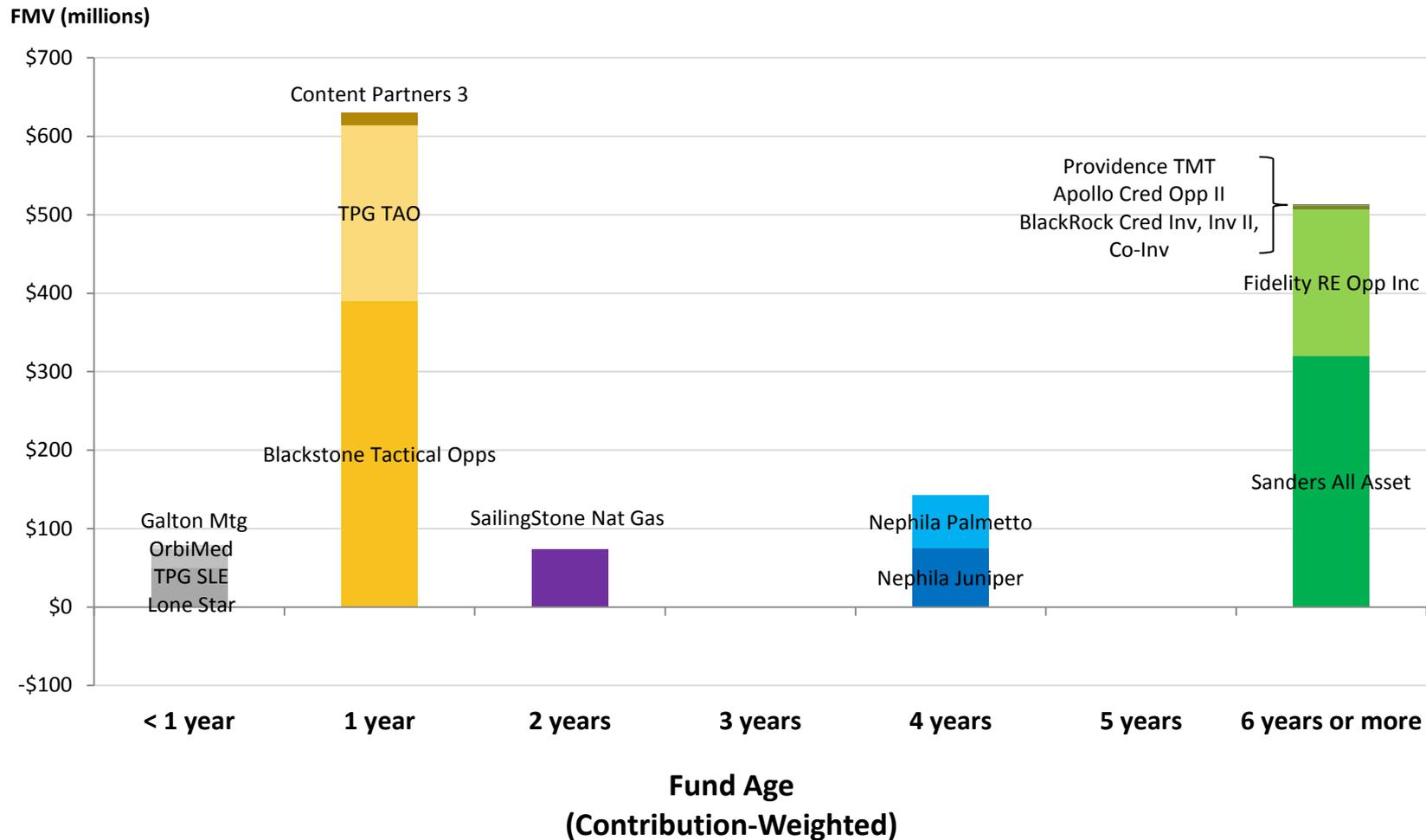


June 2016

Contribution-Weighted Age FMV



Portfolio Age Snapshot (as of 6/30/2016)



Performance

Measure	6/30/2015	6/30/2016
FMV + Distributions	\$3,055mm	\$3,365mm
FMV	\$1,121mm	\$1,437mm
FMV % of OPERF	~1.6%	~2.1%
FMV + unfunded commitments % of OPERF	~2.3%	~3.0%
Multiple ((FMV + Distributions)/Drawn)	1.26x	1.34x
IRR since inception (9/2006)	8.2%	7.7%
Time-weighted returns (source: State Street)		
YTD	2.9%	0.9%
1 Year	3.3%	0.8%
3 Years	9.0%	6.3%
5 Years	11.9%	7.2%
7 Years	11.6%	12.3%
Since inception (9/2006)	9.2%	7.0%



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Active Funds Review

Fidelity Real Estate Opportunities

Strategy	Real estate debt (CMBS, private debt, term loans)
Vintage	2007
Performance	7.3% net IRR since inception (2/07)
Outlook	<ul style="list-style-type: none">• 7.7% current yield• Focus on CMBS recently, given that CMBS have lagged broader rally and attractive spread levels

Sanders Capital All Asset Value

Strategy	All asset value fund
Vintage	2010
Performance	9.4% net time-weighted return since inception (3/10) as of 3/17
Outlook	<ul style="list-style-type: none">• 10% hurdle rate for each investment• 35% cash position, defensively positioned, few opportunities meeting hurdle requirement, focusing on high tech particularly in Information Technology and Health Care



Active Funds Review

Nephila Juniper Fund

Strategy	Natural hazard catastrophe risk reinsurance
Vintage	2012
Performance	9.3% net time-weighted return since inception (1/12)
Outlook	<ul style="list-style-type: none">• Catastrophe risk premiums have declined• Average expected return may not meet Portfolio threshold• Few major catastrophes since inception• Evaluating a shift in strategy/implementation

Nephila Palmetto Fund

Strategy	Natural hazard catastrophe risk reinsurance
Vintage	2012
Performance	6.9% net time-weighted return since inception (1/12)
Outlook	<ul style="list-style-type: none">• Catastrophe risk premiums have declined• Average expected return may not meet Portfolio threshold• Few major catastrophes since inception• Evaluating a shift in strategy/implementation

Active Funds Review

SailingStone Natural Gas Portfolio

Strategy	Natural Gas E&P
Vintage	2012
Performance	(5.8)% net time-weighted return since inception (11/12)
Outlook	<ul style="list-style-type: none">• Estimating point forward annualized return of 20% over 5-year horizon based on natural gas price assumptions• Targeting companies with advantaged assets generating low double digit returns at \$3.0/mmbtu• Expect increasing demand and prices for gas over medium term• Have dollar-cost averaged down

Blackstone Tactical Opportunities

Strategy	All assets
Vintage	2013
Performance	High single-digit IRR since inception (9/13) for separately managed account
Outlook	<ul style="list-style-type: none">• Expected 13% net IRR• Significant investments in telecom infrastructure and services, specialty finance, insurance, metals and mining, and energy• In harvest period

Active Funds Review

Content Partners 3

Strategy	Entertainment royalties
Vintage	2014
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Target 10-15% return• Current projected IRR on assets expected to be 15%• Closed \$330mm investment in Revolution Studios in Jan 2017 with 12% projected gross IRR and potential upside

TPG TSSP Adjacent Opportunities Partners

Strategy	Diversified credit
Vintage	2014
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Expect 10-15% total returns with upside potential• Some outstanding investments in 2015-2016 vintages• Significant realization on 'Project Greek' financing

Active Funds Review

OrbiMed Royalty Opportunities III

Strategy	Pharmaceutical royalties
Vintage	2015
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Target 10-15% total return• 45% invested with ~18% in pipeline

Lone Star Residential Mortgage Fund I

Strategy	Residential mortgage securities
Vintage	2015
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Target 15-20% total return• Smaller market opportunity drove Lone Star to reduce fund commitment by 50% and to reduce management fee• Recent volume has ticked up

Active Funds Review

Galton Mortgage Recovery Fund III

Strategy	Residential mortgages
Vintage	2015
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Market opportunity slow to develop because of change in FHA policy and lower than expected organic borrower demand• Recently implemented a well-received securitization to secure low funding cost• Original target return of 15% is now 10%

TPG Specialty Lending Europe I

Strategy	Direct lending
Vintage	2015
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Target 14% net IRR• Running in line with target on current portfolio• Approximately 30% invested

Active Funds Review

Owl Rock Capital Corporation

Strategy	Direct lending
Vintage	3Q2016
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Targeting 20% gross IRR• Market opportunity driven by bank regulatory concerns• Focused on PE sponsor transactions

Lone Star Fund X

Strategy	Debt
Vintage	4Q2016
Performance	NM (less than 3 years)
Outlook	<ul style="list-style-type: none">• Targeting 25% gross IRR• Moved from Real Estate Portfolio given poor fit for newer Real Estate Portfolio mandate

TAB 8 – State Accident Insurance Fund
Annual Review

Oregon Investment Council SAIF Corporation Annual Update

Purpose

In accordance with policy INV 1006 for SAIF (formerly OIC Policy 4.09.06): “Review of the asset allocation policy, investment management and performance will occur at least annually with the OIC and more frequently by OST staff. These reviews will focus on the continued appropriateness of policy, compliance with guidelines and performance relative to objectives. A formal process shall be established allowing SAIF staff to meet with OIC’s consultants on an annual basis to discuss issues of management and asset allocation. In addition, SAIF staff will have the opportunity to address the OIC annually to discuss SAIF’s particular views as to the management of the fund.”

Background

At the July 2013 OIC meeting, the OIC approved the following asset allocation changes for the SAIF portfolio:

1. Investments which represent a direct ownership of commercial real estate or the purchase of debt in commercial real estate. Investments in this asset class will be implemented in the form of private or publicly traded funds, seeking a five percent total fund allocation over time (and funded by a commensurate decrease in core fixed income); and
2. Expanded the flexibility of fixed income managers to purchase high yield debt. Also, allow same managers to invest more broadly in below investment grade markets, specifically allowing investments in bank loans and dollar denominated emerging markets debt.

SAIF management will conduct an asset/liability analysis in the coming year with a presentation and potential recommendations at the next annual review.

Performance through February 2017

	Market Value (\$M)	Actual Weight	1 Year	3 Year	5 Year	7 Year	10 Year
STATE ACCIDENT INSURANCE FUND	4,760,495	100.0	8.13	3.98	4.49	5.72	5.35
OREGON SAIF POLICY INDEX			6.08	3.43	3.75	5.16	4.97
SAIF-BLACKROCK ACWI IMI-GLBCOR	500,366	10.5	23.03	5.13	8.82		
MSCI ACWI IMI NET			22.65	4.78	8.43	8.84	4.32
TOTAL FIXED INCOME - SAIF	4,222,327	88.7	6.70	3.88	4.02	5.30	5.51
SAIF-WELLINGTON-FICORE	2,108,437	44.3	5.94	3.96	4.00	5.32	5.53
SAIF-WESTERN ASSET-FICORE	2,113,890	44.4	7.47	3.80	4.03	5.28	5.49
OREGON SAIF FI INDEX			4.34	3.22	3.18	4.61	5.06
SAIF-CASH INVESTED IN OSTF	29,731	0.6	1.27	0.77	0.82	0.78	1.38
91 DAY TREASURY BILL			0.39	0.16	0.14	0.13	0.73
SAIF-PLEDGED SECURITIES-PLEDGD	8,071	0.2	0.77	0.93	0.76	0.46	2.13
91 DAY TREASURY BILL			0.39	0.16	0.14	0.13	0.73

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

Recommendation

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

Financial Overview

OREGON INVESTMENT COUNCIL

April 2017



Oregon's workers' compensation system

- 100 years old
- Mandatory coverage; three-way system
 - SAIF
 - Private carriers
 - Self-insure
- 1980s: system in disarray
 - Costs rising at an uncontrolled pace
 - No limits on medical costs
 - No limits on litigation
 - 6th highest rates in the nation



Oregon's workers' compensation system

- 1990 Mahonia Hall reforms
 - Restructured the system to benefit employers and employees
 - 70.2 percent reduction in pure premium rates
 - 7th lowest rates in the nation
 - Increased most benefit levels for workers
 - Other states' (IL, FL, NY, IA, KY, etc.) systems in crisis, but not here
- Management Labor Advisory Committee created
- SAIF's goal: maintain balance in the system



Our story

- State-chartered, public corporation
- Public mission: promote health and safety
- We operate as an insurer in a competitive market.
- We're the market leader.
 - Price
 - Service
 - Safety
- 51.7 percent market share (direct written premium)
- 99.5 percent retention rate



Key financial drivers

- **Premium revenues**
 - Market share
 - The economy
 - Employment rates, income growth, job mix
- **Claims experience**
 - Safety and health
 - Getting injured workers back to work
- **Investment returns**
 - Used to reduce prices
- **Dividends for policyholders**
 - 19 of last 27 years
 - An average of 21.1 percent of earned premium
- **And one more...**



Changes to loss reserves

- Total asset base: \$5.0 billion
- Claim reserves: \$2.8 billion
 - A reserve is set for every significant claim.
 - Represents the full amount to be paid over the life of the claim
 - Claims can last for decades.
- Loss reserves are recalculated twice a year.
 - Adjusted for loss patterns: frequency and severity
 - Medical cost inflation
- Can result in substantial shifts of capital
 - \$270 million in 2016
 - Major impact on bottom line
 - Can go both ways!



Capital base: “surplus”

- Surplus: assets not offset by a liability
- Why is surplus necessary?
 - Minimize the risk of breaking the promise we make to policyholders and workers
 - Maintain credibility in the market
- How much surplus is “enough”?
 - There is no formula.
 - Regulators impose a minimum, but not a maximum.
 - It’s really about risk tolerance.
- Reinsurance can extend surplus, but at a price



Capital base: “surplus”

Risk factors

- Catastrophe
- Major economic downturn
- Changes in loss patterns or business mix
- Decline in investments
- Negative development in loss reserves
- Regulatory and statutory changes
- Inflation
- Workers’ compensation has a “long tail.”

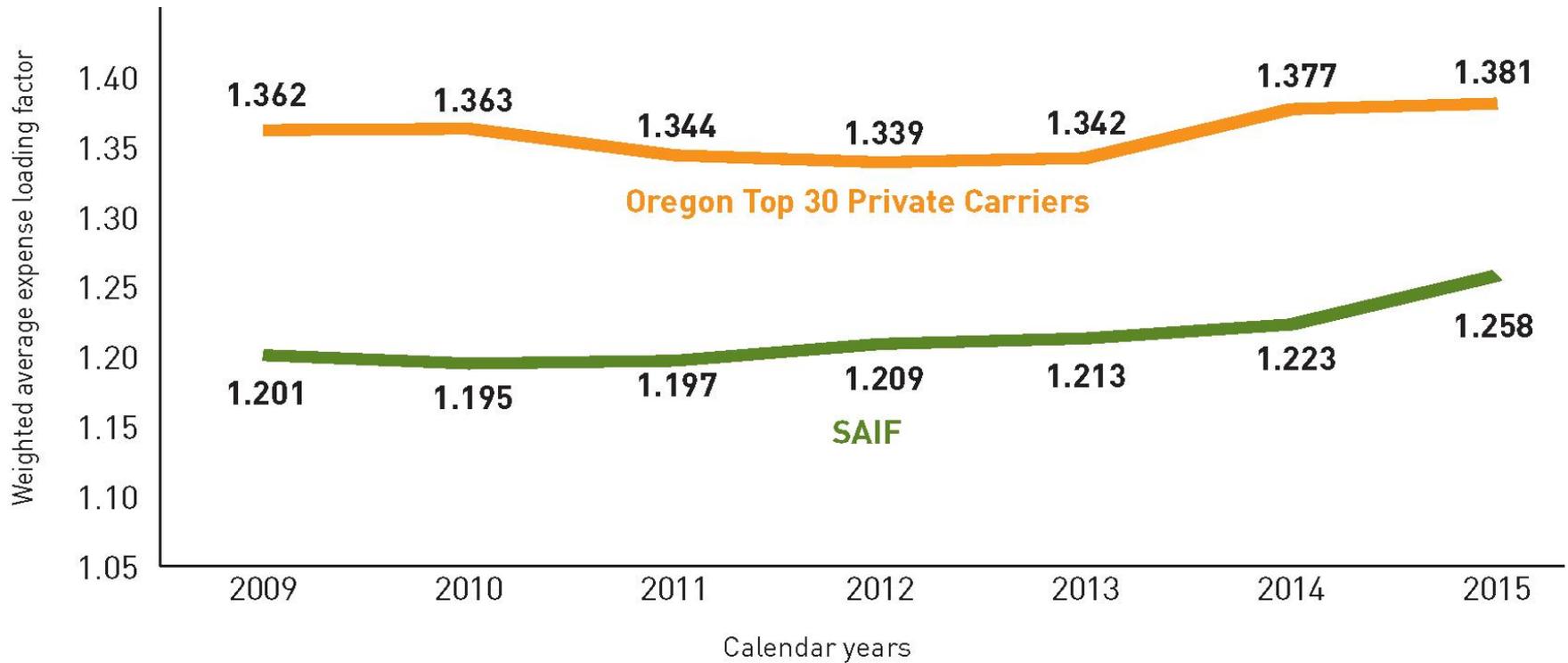
Special risk factors for SAIF

- We are unable to spread risk: mono-state, mono-line.
- No other sources of capital
- Growth in market share requires more capital.

Facts

	2015	2016
Number of employers insured (including share of Assigned Risk Pool)	51,419	51,764
Total invested assets	\$4.4 billion	\$4.6 billion
Total assets	\$4.8 billion	\$5.0 billion
Claims and loss adjustment expense reserves	\$2.9 billion	\$2.8 billion
Total liabilities	\$3.4 billion	\$3.3 billion
Surplus/capital	\$1.4 billion	\$1.6 billion
Net earned premium	\$491.1 million	\$516.5 million
Premium market share (as of Dec. 31, 2015)	51.7 percent	—
Total investment income	\$155.7 million	\$183.7 million
Policyholder dividend	\$120.0 million	\$139.9 million
Number of employees	944	992
Retention percentage	99.6 percent	99.5 percent
Average weighted expense load factor	1.258	—

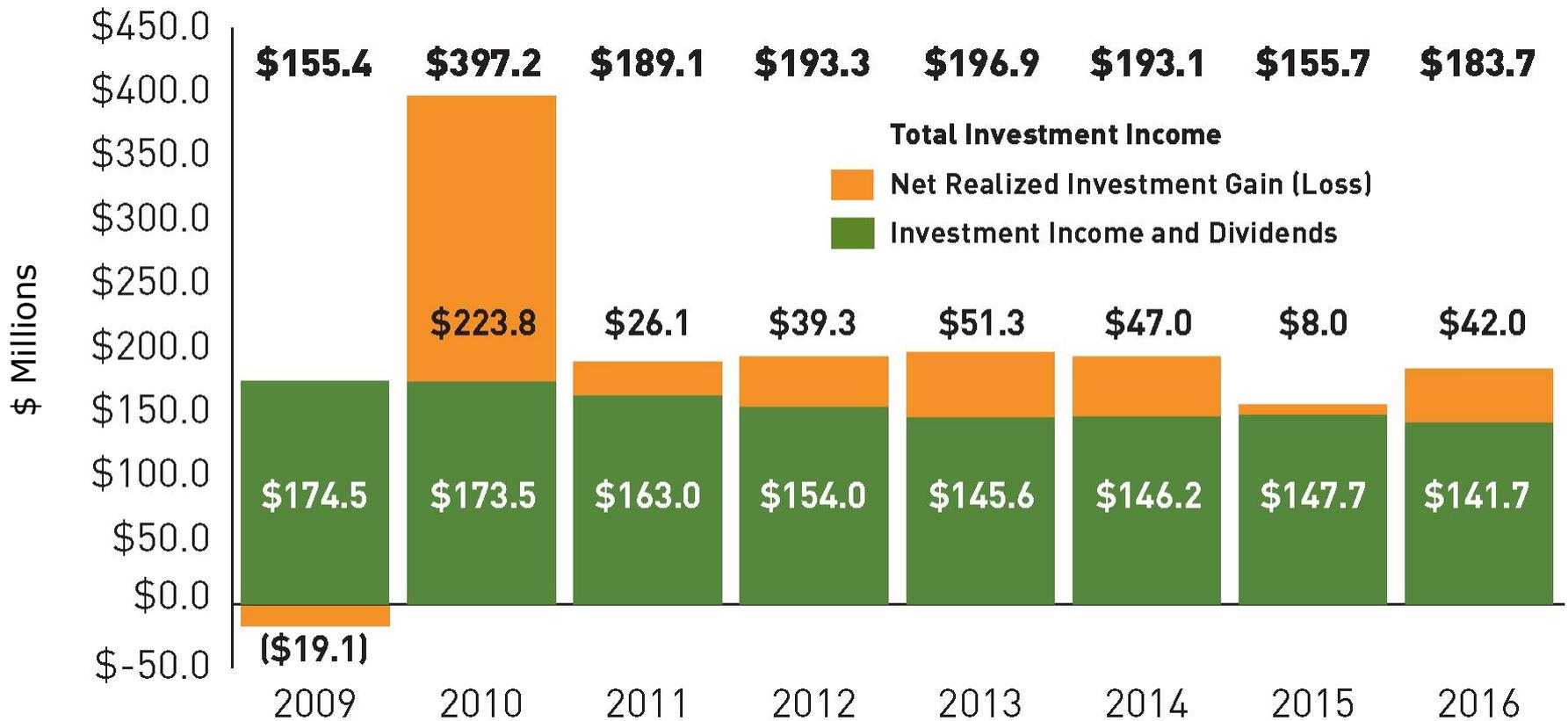
Average weighted expense load factor



Net earned premium



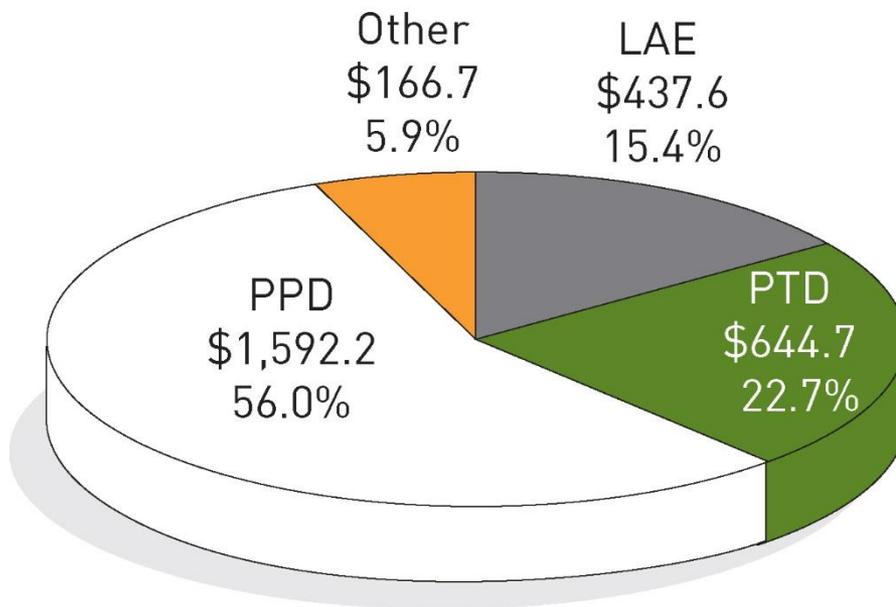
Total investment income



Claim reserves

As of December 31, 2016

Total \$2,841.2 (dollars in millions)



Definitions

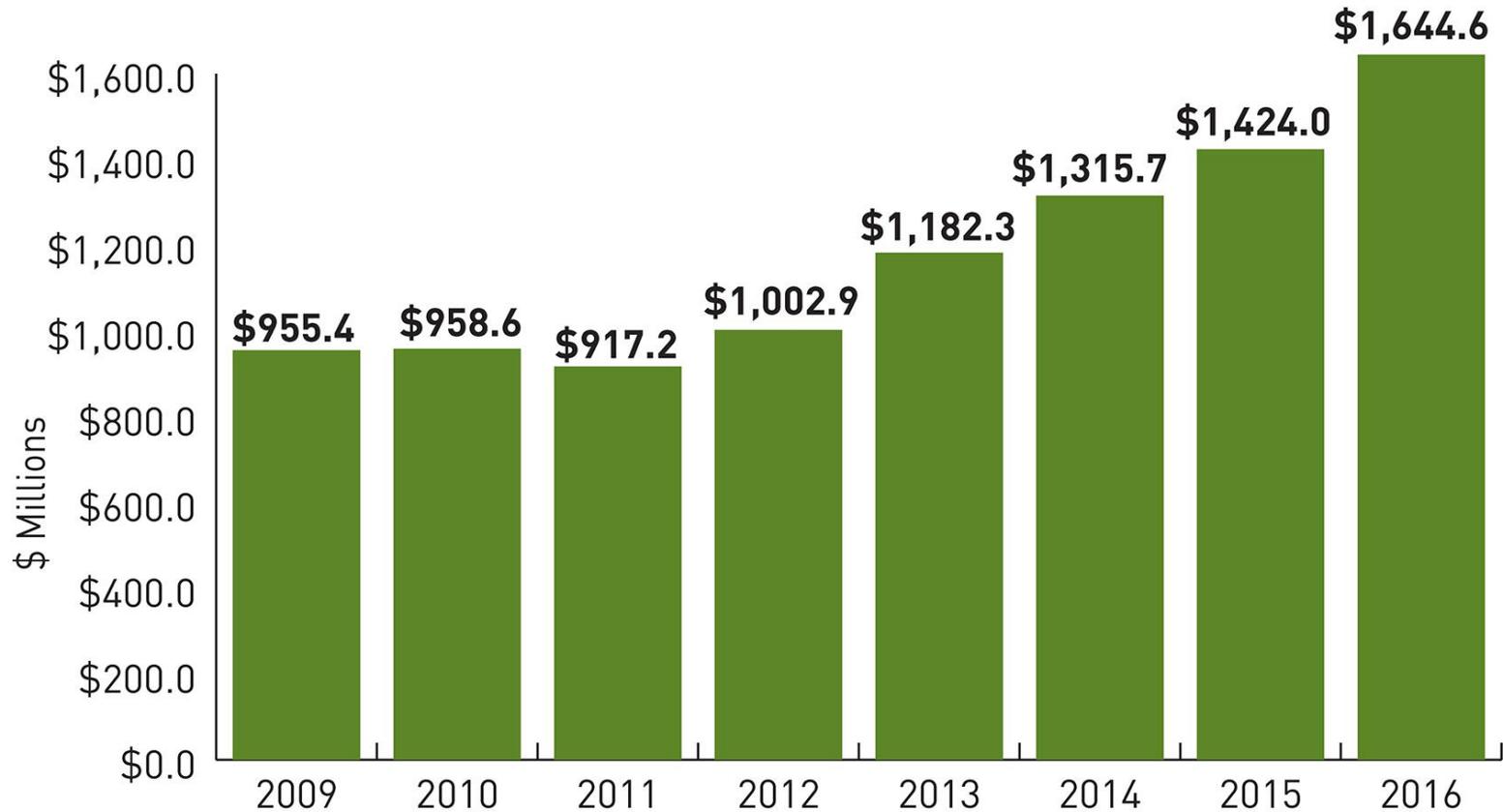
- LAE** (Loss adjustment expenses)
Reserves for the future cost of adjusting and processing claims
- PTD** (Permanent total disability)
Reserves for the loss of use or function of any portion of the body which permanently incapacitates the worker from regularly performing work at a gainful and suitable occupation
- PPD** (Permanent partial disability)
Reserves for permanent, complete, or partial loss of use of bodily extremities, including vision or hearing
- Other** Reserves for claims involving fatalities, claims which only include medical costs, injured worker attorney fees, vocational rehabilitation costs, and other claims related costs

Dividend history



Surplus/capital

as of December 31





Adequacy of surplus and reserves

- As of December 31, 2016 our surplus/capital balance was within the board approved risk appetite and tolerance statement.
- A 2016 audit by an independent actuary hired by the Secretary of State Audits Division determined that SAIF's loss reserves, as of December 31, 2015, are in the reasonable range.
- Given SAIF's adequate loss reserves, the independent actuary concluded that SAIF's surplus appears to be sufficient to support SAIF as an ongoing concern over a five-year forecast horizon.

SAIF's current investment policy

At its September 25, 2013, meeting the Oregon Investment Council adopted the following policy.

Asset allocation

Asset class	Benchmark	Strategic target allocation	Range
Global equities	MSCI ACWI IMI index	10%	7%–13%
US fixed income	Custom fixed-income benchmark	85%	80%–90%
Real estate	NCREIF property index	5%	0%–7%
Cash		0%	0%–3%



TAB 9 – Asset Allocations & NAV Updates

Asset Allocations at March 31, 2017

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%	28,054,075	39.3%	(606,159)	27,447,916	38.4%	617,042	28,064,958
Private Equity	13.5-21.5%	17.5%	13,895,366	19.5%		13,895,366	19.5%		13,895,366
Total Equity	50.0-60.0%	55.0%	41,949,441	58.7%	(606,159)	41,343,282	57.9%		41,960,324
Opportunity Portfolio	0-3%	0.0%	1,477,260	2.1%		1,477,260	2.1%		1,477,260
Fixed Income	15-25%	20.0%	13,853,478	19.4%	1,613,454	15,466,932	21.7%		15,466,932
Real Estate	9.5-15.5%	12.5%	8,900,194	12.5%	(33,200)	8,866,994	12.4%		8,866,994
Alternative Investments	0-12.5%	12.5%	4,255,385	6.0%		4,255,385	6.0%		4,255,385
Cash²	0-3%	0.0%	984,804	1.4%	(974,096)	10,708	0.0%	9,409	20,117
TOTAL OPERF		100%	\$ 71,420,561	100.0%	\$ -	\$ 71,420,561	100.0%	\$ 626,451	\$ 72,047,012

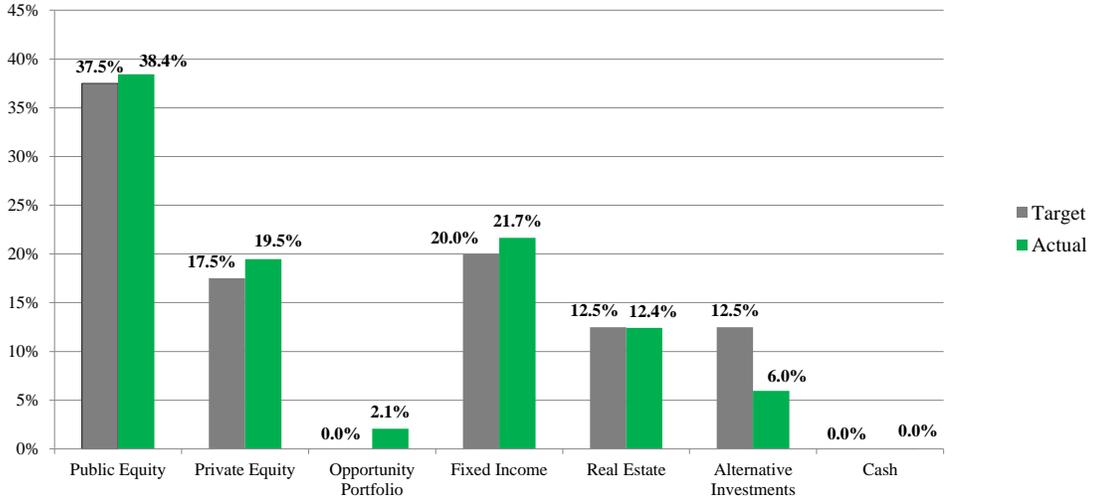
¹Targets established in June 2015. Interim policy benchmark consists of: 40% MSCI ACWI IMI Net, 22.5% Custom FI Benchmark, 20% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF ODCE net (1 quarter lagged), & 5% CPI+400bps.

²Includes cash held in the policy implementation overlay program.

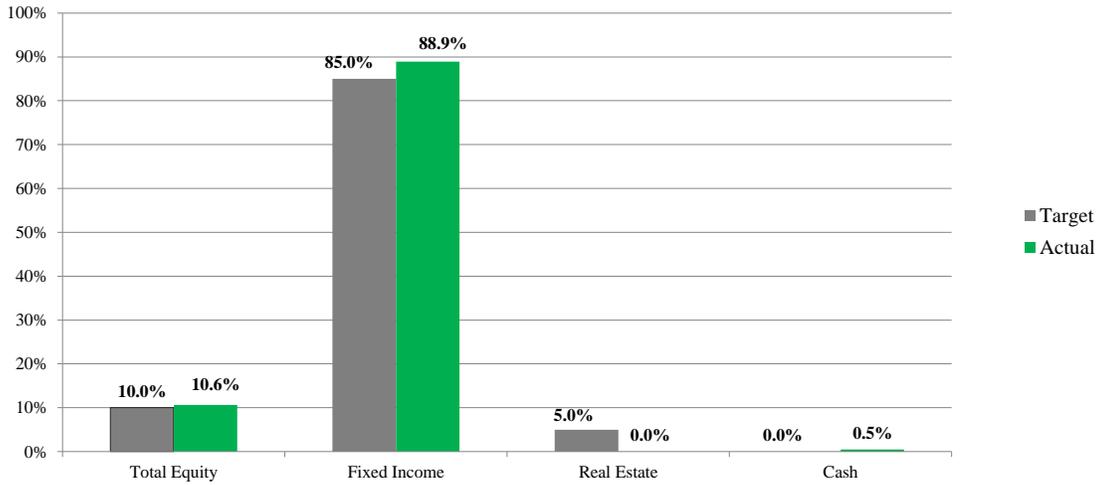
SAIF	Policy	Target	\$ Thousands	Actual
Total Equity	7-13%	10.0%	506,445	10.6%
Fixed Income	80-90%	85.0%	4,227,618	88.9%
Real Estate	0-7%	5.0%	0	0.0%
Cash	0-3%	0%	22,047	0.5%
TOTAL SAIF			\$ 4,756,111	100.0%

CSF	Policy	Target	\$ Thousands	Actual
Domestic Equities	25-35%	30%	462,150	30.3%
International Equities	25-35%	30%	434,818	28.5%
Private Equity	0-12%	10%	178,294	11.7%
Total Equity	65-75%	70%	1,075,262	70.6%
Fixed Income	25-35%	30%	433,035	28.4%
Cash	0-3%	0%	15,609	1.0%
TOTAL CSF			\$ 1,523,906	100.0%

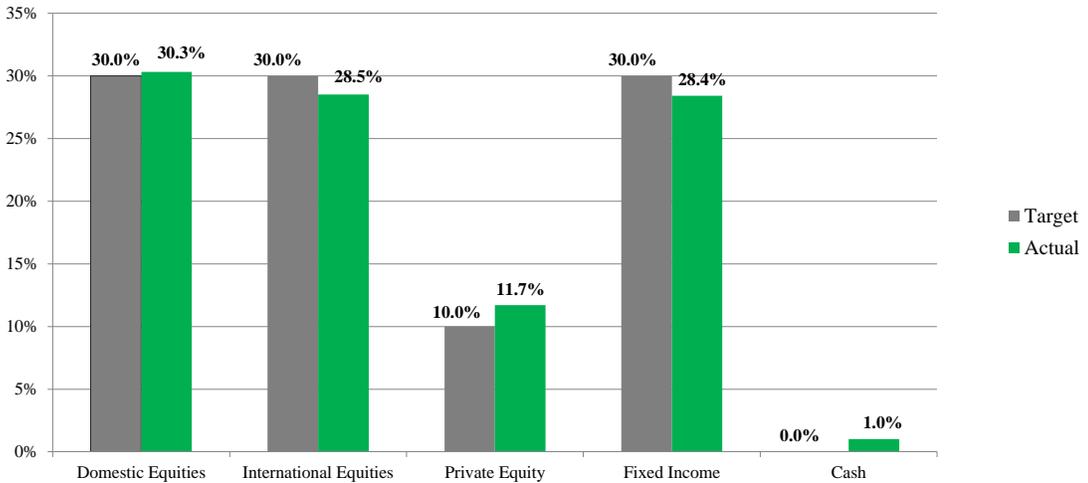
OPERF Asset Allocation



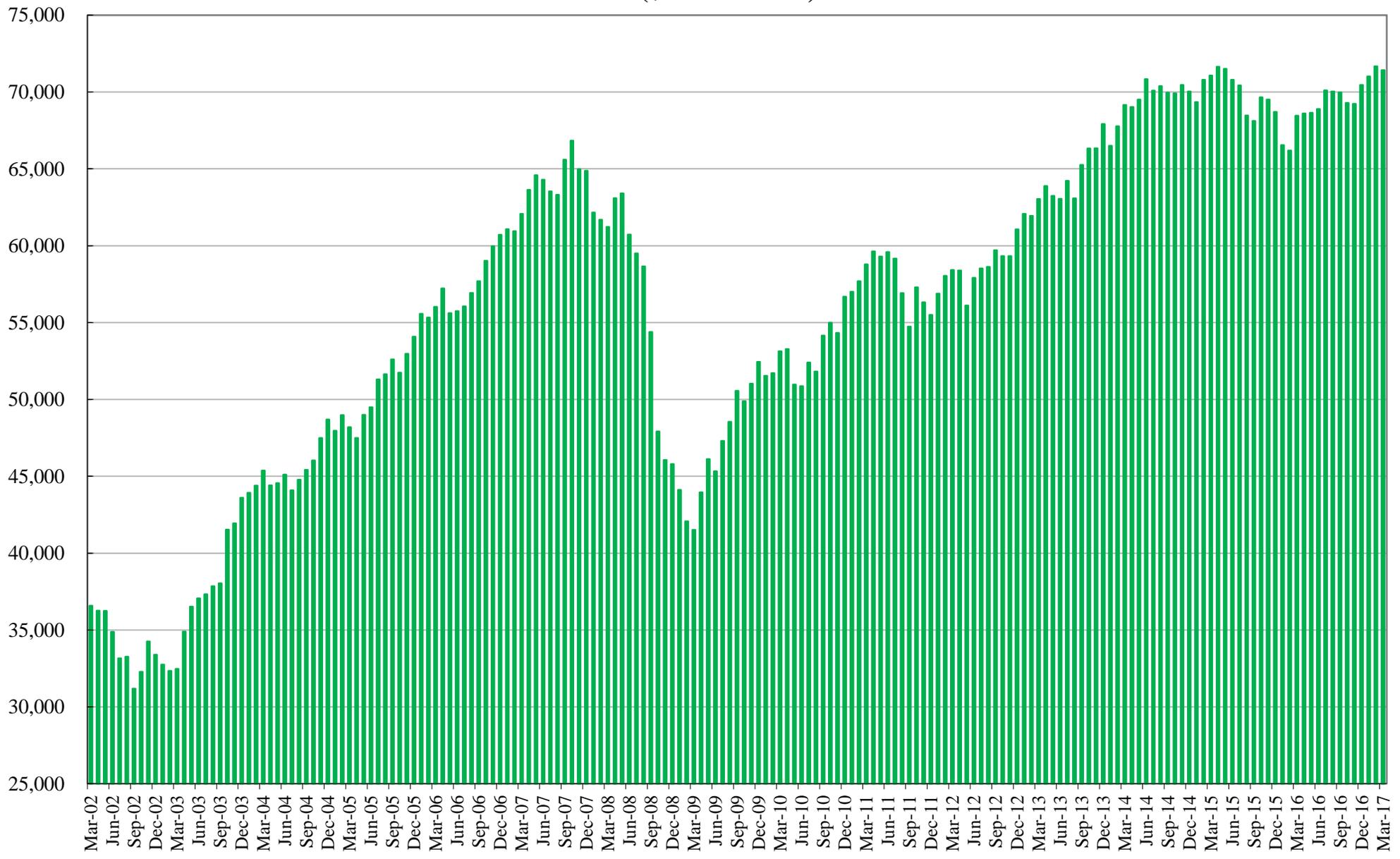
SAIF Asset Allocation



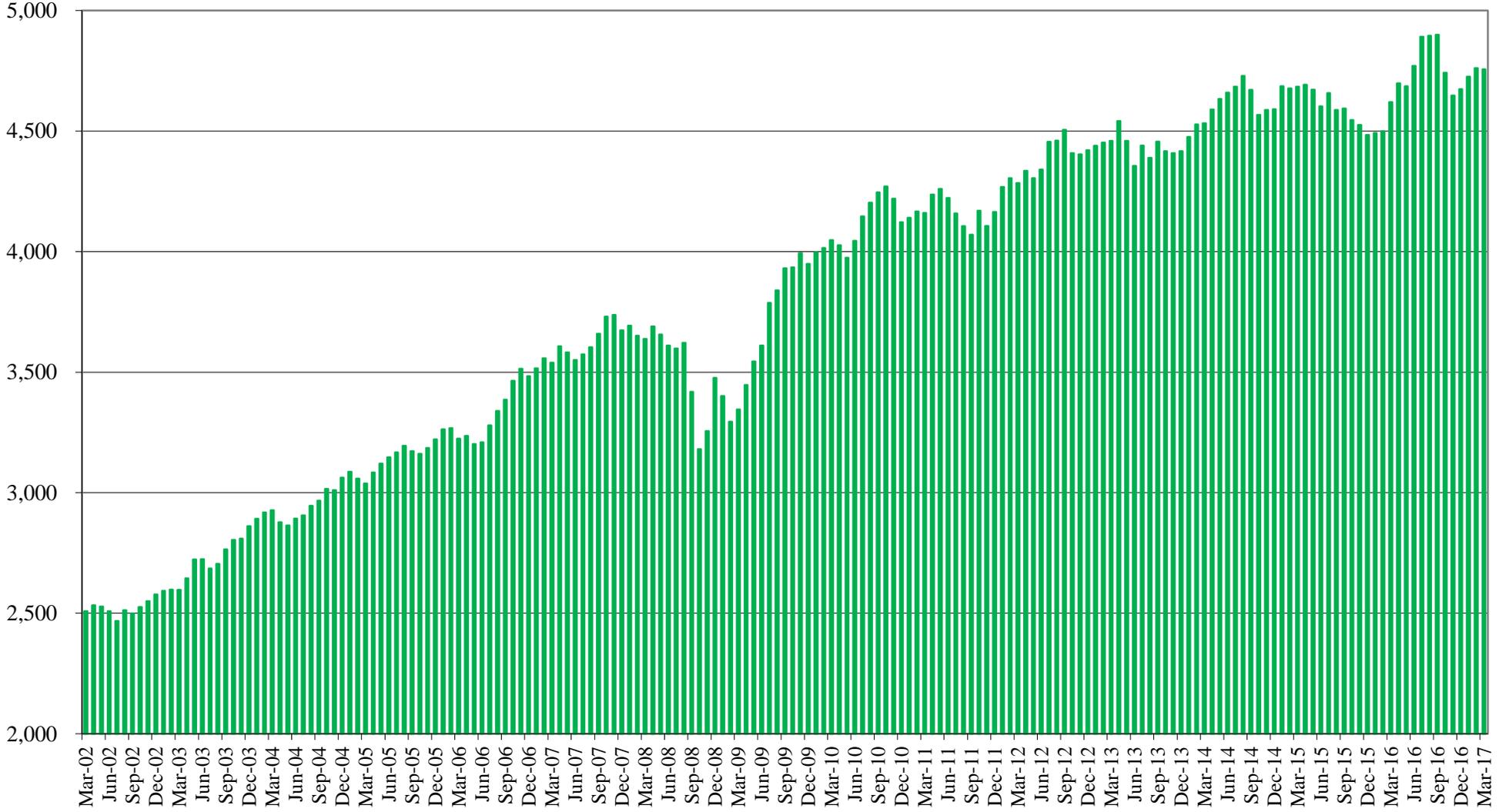
CSF Asset Allocation



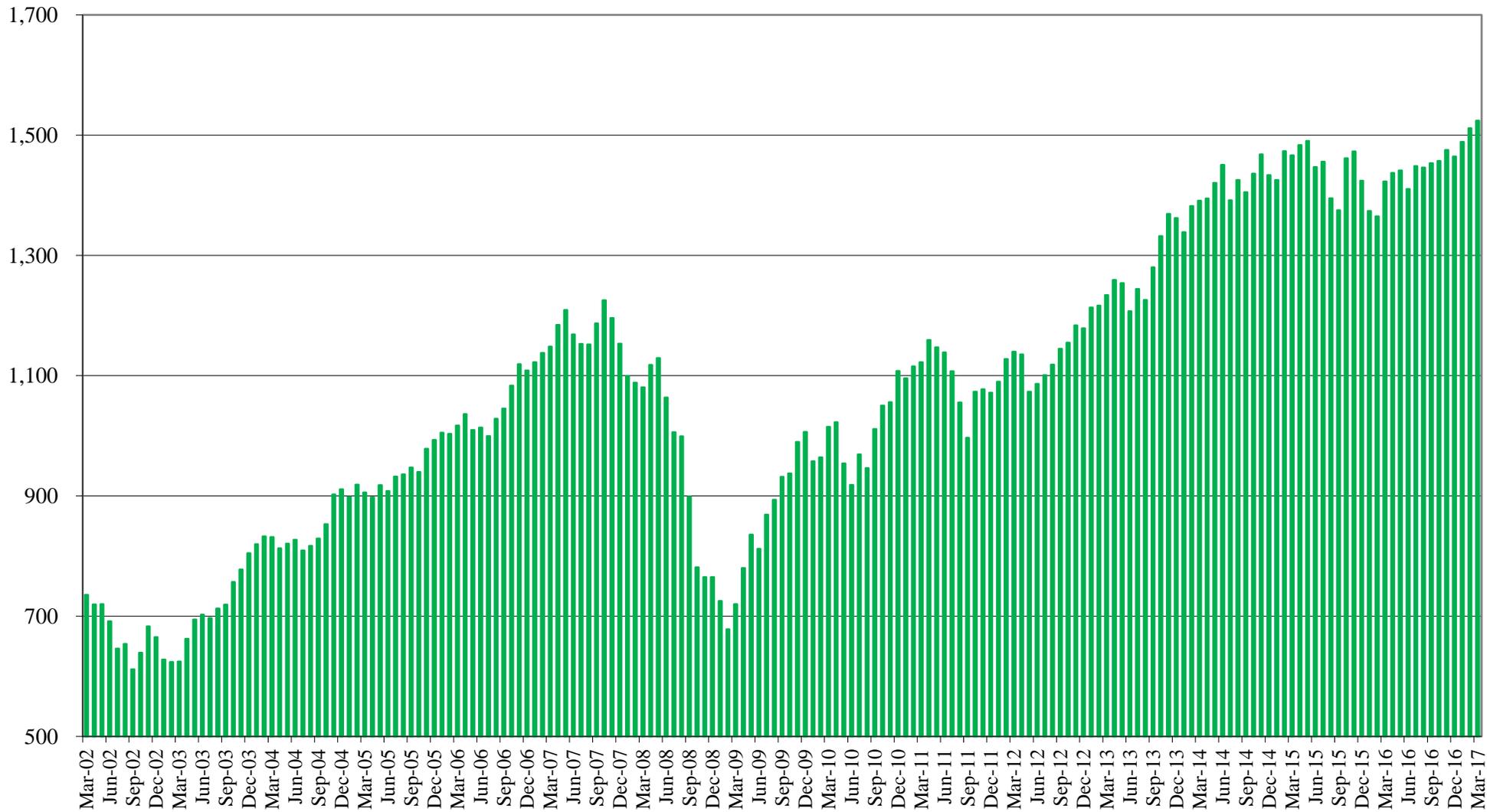
OPERF NAV
15 years ending March 2017
(\$ in Millions)



SAIF NAV
15 years ending March 2017
(\$ in Millions)



CSF NAV
15 years ending March 2017
(\$ in Millions)



TAB 10 – Calendar — Future Agenda Items

2017/18 OIC Forward Calendar and Planned Agenda Topics

- June 7, 2017:** Q1 2017 OPERF Performance & Risk Report
Operations Update
Corporate Governance Update
CSF Annual Review
- August 9, 2017:** OPERF Currency Policy Recommendation
Alternatives Portfolio Manager Recommendation
IAP Recommendation
- September 20, 2017:** OPERF Currency Manager Recommendation
Alternatives Portfolio Manager Recommendations (2)
Q2 2017 OPERF Performance & Risk Report
- November 1, 2017:** Alternatives Portfolio Manager Recommendation
Public Equity Program Review
CEM Benchmarking Report
OIC Policy Updates
- December 13, 2017:** OIC Officer Election
Q3 2017 OPERF Performance & Risk Report
Fixed Income Program Review
- February 1, 2018:** Private Equity Program Review
Placement Agent Report
2019 OIC Calendar Approval
OIC Strategic Issues Discussion
- March 14, 2018:** OPERF Overlay Review
Securities Lending Update
Real Estate Program Review
Q4 2017 OPERF Performance & Risk Report
- April 25, 2018:** OPERF Asset Allocation & Capital Market Assumptions Update
Alternatives Portfolio Review
OIC Policy Updates
SAIF Annual Review