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# **Oregon Investment Council**

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March 9, 2016 - 9:00 AM

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**PERS Headquarters  
11410 S.W. 68<sup>th</sup> Parkway  
Tigard, OR 97223**

**Katy Durant**  
Chair

**John Skjervem**  
Chief Investment Officer

**Ted Wheeler**  
State Treasurer





# OREGON INVESTMENT COUNCIL

## Agenda

**March 9, 2016**  
**9:00 AM**

PERS Headquarters  
11410 S.W. 68<sup>th</sup> Parkway  
Tigard, OR 97223

<u>Time</u>	<u>A. Action Items</u>	<u>Presenter</u>	<u>Tab</u>
9:00-9:05	<b>1. Review &amp; Approval of Minutes</b> February 3, 2016  <b>Committee Reports</b>	<b>Katy Durant</b> <i>OIC Chair</i>  <b>John Skjervem</b> <i>Chief Investment Officer</i>	<b>1</b>
9:05-9:50	<b>2. Lone Star Real Estate Fund V</b> <i>OPERF Real Estate Portfolio</i>	<b>Tony Breault</b> <i>Senior Investment Officer</i> <b>Austin Carmichael</b> <i>Investment Officer</i> <b>John Grayken</b> <i>CEO and Founder</i> <b>Nick Beevers</b> <i>Managing Director</i> <b>Christy Fields</b> <i>Pension Consulting Alliance</i>	<b>2</b>
9:50-10:35	<b>3. Brookfield Infrastructure Fund III, LP</b> <i>OPERF Alternatives Portfolio</i>	<b>Ben Mahon</b> <i>Senior Investment Officer</i> <b>Sam Pollock</b> <i>Senior Managing Partner &amp; CEO, Infrastructure Group</i> <b>Chris Harris</b> <i>Senior Vice President, Client Relations</i> <b>Tom Martin</b> <i>TorreyCove</i>	<b>3</b>
10:35-10:45	----- <b>BREAK</b> -----		

Katy Durant  
Chair

Rukaiyah Adams  
Vice Chair

Rex Kim  
Member

John Russell  
Member

Ted Wheeler  
State Treasurer

Steve Rodeman  
PERS Director



**TAB 1 – REVIEW & APPROVAL OF MINUTES**

February 3, 2016 Regular Meeting

OST Committee Reports – Verbal

JOHN D. SKJERVEM  
CHIEF INVESTMENT OFFICER  
INVESTMENT DIVISION



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**OFFICE OF THE STATE TREASURER**  
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SALEM, OREGON 97301-3896

OREGON INVESTMENT COUNCIL  
FEBRUARY 3, 2016  
MEETING MINUTES

Members Present: Rukaiyah Adams, Katy Durant, Keith Larson, Steve Rodeman, John Russell, Ted Wheeler

Staff Present: Darren Bond, Deena Bothello, Tony Breault, Karl Cheng, Debra Day, Sam Green, Karl Hausafus, Andy Hayes, John Hershey, Julie Jackson, Michael Langdon, Carmen Leiva, Perrin Lim, Tom Lofton, Mike Mueller, Paola Nealon, Jen Peet, Jen Plett, Dave Randall, Tom Rinehart, Angela Schaffers, James Sinks, John Skjervem, Michael Viteri

Consultants Present: David Fann, Jeff Goldberger and Tom Martin (TorreyCove); Christy Fields and John Linder (PCA); Janet Becker-Wold, Jim Callahan, Uvan Tseng (Callan)

Legal Counsel Present: Dee Carlson, Oregon Department of Justice

The February 3, 2016 OIC meeting was called to order at 9:00 am by Katy Durant, Chair.

**I. 9:00 am Review and Approval of Minutes**

**MOTION:** Mr. Russell moved approval of the December 9, 2015 meeting minutes. Ms. Adams seconded the motion, which then passed by a 4/0 vote (Treasurer Wheeler had not yet arrived).

**COMMITTEE REPORTS**

John Skjervem, OST Chief Investment Officer gave an update on the following committee actions taken since the December 9, 2015 OIC meeting:

**Private Equity Committee:**

February 1, 2016	Union Square Ventures 2016, L.P.	Up to \$20 million
February 1, 2016	GGV Capital VI, L.P.	\$45 million
February 1, 2016	GGV Capital VI Plus, L.P.	\$15 million
February 1, 2016	GGV Discovery I, L.P.	\$20 million
February 1, 2016	Green Equity Investors VII, L.P.	Up to \$250 million

**Alternatives Committee:**

None

**Opportunity Portfolio Committee:**

None

**Real Estate Committee:**

None

**II. 9:02 am Vista Equity Partners Fund VI, L.P. - OPERF Private Equity Portfolio**

Andy Hayes, Investment Officer and David Fann and Tom Martin with TorreyCove recommended a \$500 million commitment to Vista Equity Partners VI, L.P. (the "Fund VI") for the OPERF Private Equity Portfolio, subject to satisfactory negotiation of terms and conditions with Staff working in concert with Department of Justice personnel.

Vista Equity Partners ("Vista" or the "Firm") was founded in 2000 and is led founders Robert Smith, CEO and Brian Sheth, President. The Firm maintains offices in San Francisco, Chicago, and Austin and currently employs 69 investment professionals and 83 professionals in its consulting group, Vista Consulting Group.

Vista's focus for Fund VI will be similar to that pursued in its previous flagship equity funds. The Firm will seek to acquire "mission critical" enterprise software or technology-enabled companies with high recurring revenue and high customer retention. Vista will position Fund VI to continue the platform and add-on focus of past funds, targeting company acquisitions with enterprise values generally between \$400 million and \$5 billion. Fund VI will typically invest at least \$200 million in a platform company, while also adding smaller-sized 'add-on' transactions to each platform.

Relative to its past funds, Vista is increasing the prospective size of Fund VI in order to a) opportunistically pursue larger companies without running into allocation limits and b) enhance vintage year diversification.

**MOTION:** Mr. Larson moved approval of the staff recommendation. Treasurer Wheeler seconded the motion which passed by a vote of 5/0.

**III. 9:55 am Private Equity Review and 2016 Plan**

Michael Langdon, Senior Private Equity Investment Officer and TorreyCove's David Fann and Tom Martin presented the OPERF Private Equity Review and 2016 Plan.

Staff recommends a forward commitment pace of \$2.5-3.5 billion over the next several vintage years, a recommendation inclusion of the following primary considerations:

- ▶ As illustrated in the TorreyCove presentation, pacing at this level allows for a gradual move of the allocation down to 17.5% over several years;
- ▶ The Program's GP roster has been rationalized significantly over the past several years, and Staff recommends maintaining the current roster of roughly 50 managers which would dictate making 10-15 commitments per annum;
- ▶ Staff recommends a continued push to tighten the band of commitment sizes around an average commitment of \$250-300 million to allow for more effective diversification and less reliance on mega funds;
- ▶ The proposed range would continue to use a \$500 million soft cap while migrating the minimum check size up toward \$100-150 million over time; and
- ▶ Staff recently undertook an exhaustive market mapping exercise tracking 1,000 scale managers, of which roughly 10% are either in the Program today or part of a candidate list for possible inclusion going forward.

From an implementation standpoint, staff recommends maintaining a focus on primaries with continued emphasis on due diligence and monitoring process enhancements. Staff will also continue its exploration of co-investment models as well as separate accounts/strategic relationships, but those initiatives are not prioritized above continuous improvement initiatives in the primary underwriting process.

From a monitoring standpoint, staff will investigate solutions for the mature portion of the portfolio. More than half of the portfolio's current value is held in funds that commenced investing before 2009, and *end-of-fund-life* issues are becoming an increasing burden on staff time and resources.

Specifically, staff will study secondary and advisory solutions that may create additional leverage and allow for more effective monitoring and value optimization.

Other 2016 priorities include the Program's consultant RFP process as well as continued collaboration on the internal risk and audit work already underway.

**IV. 10:55 am Annual Placement Agent Report**

John Hershey, Director of Alternative Investments, presented the annual placement agent report.

**V. 10:56 am Proposed 2017 OIC Meeting Dates**

John Skjervem proposed the following 2017 OIC meeting dates:

Wednesday, February 1, 2017  
Wednesday, March 15, 2017  
Wednesday, April 26, 2017  
Wednesday, June 7, 2017  
Wednesday, August 9, 2017  
Wednesday, September 20, 2017  
Wednesday, November 1, 2017  
Wednesday, December 13, 2017

**MOTION:** Treasurer Wheeler moved approval of the staff recommendation. Mr. Russell seconded the motion which passed by a vote of 5/0.

**VI. 10:57 am Asset Allocation & NAV Updates**

Mr. Skjervem reviewed asset allocations and NAVs across OST-managed accounts for the period ended December 31, 2015.

**VII. 10:58 am Calendar – Future Agenda Items**

Mr. Skjervem updated OIC members on the forward OIC meeting calendar.

**VIII. 11:00 am Other Items**

Mr. Skjervem gave a summary of the information he presented at the previous Friday's PERS Board meeting.

**11:15 am Public Comments**

Alyssa Giachino with Unite Here gave public comment about Leonard Green Partners and the firm's use of private air transportation.

Ms. Durant adjourned the meeting at 11:20 am.

Respectfully submitted,



Julie Jackson  
Executive Support Specialist

TAB 2 – LONE STAR REAL ESTATE FUND V

## **Lone Star Real Estate Fund V, L.P.**

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### **Purpose**

Subject to the successful negotiation of all terms and conditions with Staff working in concert with DOJ personnel, Staff and Pension Consulting Alliance (PCA) recommend approval of a \$300 million commitment to Lone Star Real Estate Fund V, L.P. for the OPERF Real Estate Portfolio.

### **Background**

Lone Star was formed after John Grayken left the Bass Family organization in the mid-1990s to start his own real estate investment platform in the wake of the U.S. savings-and-loan crisis in the early 1990s. Beginning in 1995, Lone Star has raised a total of 15 funds with aggregate commitments totaling approximately \$60 billion. The firm currently has 88 investment personnel globally, with offices in North America, Europe and Asia. The team operates on a regional basis with independent asset management and servicing platforms located throughout the Americas (primarily the U.S.), Europe (primarily Western Europe and the UK), and Asia (mostly Japan). The entire organization is overseen by John Grayken as Chairman and André Collin as President, with the regions led by Mark Newman in Asia, Sam Loughlin in the Americas and Olivier Brahini in Europe. All regions report directly to Mr. Collin.

Hudson Advisors is a key part of Lone Star's strategy of successful distressed/workout investing and has been its captive servicing team since inception. With operations around the globe and nearly 900 personnel, Hudson Advisors is headquartered in Dallas with additional offices in New York, Montreal, San Juan (Puerto Rico), London, Frankfurt, Luxembourg, Dublin, Madrid, Amsterdam, Paris and Tokyo. As the dedicated asset management company to the Lone Star Funds, Hudson Advisors is responsible for performing the due diligence, analysis and much of the special servicing for assets acquired by the Lone Star Funds. Hudson Advisors and Lone Star work closely together and effectively operate as a single firm. Hudson Advisors only services the Lone Star Funds and does not provide services to other third party capital. As an affiliated party, all fee structures with Hudson Advisors are approved by the Fund limited partners and reviewed by the respective advisory boards.

### **Strategy**

Lone Star Real Estate Fund V ("LSREF V") is essentially a continuation of Lone Star Real Estate Fund IV (LSREF IV) which had its first and final close in April 2015 under a similar macro-economic investment environment. LSREF IV raised \$5.8 billion in capital commitments and must be at least 85% committed prior to the first closing of LSREF V. Given the size of loan pools and capital reserve requirements for European banks, Lone Star has committed LSREF IV capital at a more rapid pace than originally anticipated and has thus returned to the market with this subsequent fund raise with largely the same strategy and market outlook.

LSREF V has a targeted fund size of \$5.0 billion with a hard cap of \$5.5 billion. Similar to the prior Lone Star Real Estate Funds, the investment objective of LSREF V is to capitalize on market dislocations and acquire commercial real estate related investments at a significant discount to intrinsic value. Lone Star will target a broad range of financial instruments and other investment assets in global commercial real estate markets including, but not limited to, the following: equity real estate investments; investments in or originations of loans; securitized products; other equity investments; and derivative instruments related to any of the foregoing.

LSREF V may invest globally in the three regions (Western Europe, the Americas and Asia) in which Lone Star and Hudson Advisors has an established footprint. Given the current investable opportunity for Lone

Star's opportunistic strategy, LSREF V is anticipated to have an approximate 75% allocation to Europe, 15% to the Americas and 10% in Asia. Two notable changes from LSREF IV include: (i) expanding Lone Star's geographic opportunities to pan-Asia instead of the prior fund restriction to Japan-only; and (ii) broadening the Americas investment opportunities to include South America, subject to a 10% maximum exposure within LSREF V.

Lone Star continues to see the strongest acquisition opportunity in Europe where many countries are experiencing slow economic growth and high structural unemployment. Additionally, both regulatory guidelines and low profit margins are pressuring banks to dispose of non-performing and non-core assets from their balance sheets, thereby creating buying opportunities for Lone Star's strategy of acquiring debt at a significant discount.

## Issues to Consider

### Attributes

- *Track record.* Lone Star's prior funds have closed on approximately \$82 billion of aggregate asset purchases across 283 investments in 992 transactions in commercial real estate related transactions similar to those targeted by LSREF V. OPERF's 20 years of realized returns across all of the Lone Star fund series have resulted in a net 19.4% IRR and a 1.5x net multiple.
- *Capital Stewardship.* The Lone Star platform has demonstrated strong investment discipline on both the buy and sell side. Across all prior Lone Star Funds within the real estate portfolio (excluding the residential mortgage fund), OPREF has received an aggregate net distribution to paid-in capital ratio (DPI) of 1.21x, and a total value to paid in capital ratio (TVPI) of 1.52x. OPERF's since-inception history with Lone Star has contributed a net positive time weighted return of 51 basis points to OPERF's real estate portfolio and 272 basis points to the real estate portfolio's opportunistic sleeve.
- *Attractive entry point, particularly in Europe.* With Europe still struggling economically, a banking system in the early stages of recovery and many institutions still in need of recapitalizing, Lone Star remains well-positioned in this region. Since 2007, Lone Star has invested/committed \$10.6 billion of equity in 53 transaction throughout Europe, employing the same strategy targeted for LSREF V.
- *Dedicated underwriting / asset management team.* Lone Star uses Hudson Advisors, a dedicated 900-person team located across 12 global offices to provide underwriting, asset management and back office support. The Lone Star funds are Hudson Advisor's only client.

### Concerns

- *Complexity of transactions.* The complexity and size of the transactions, often involving pools of hundreds of non-performing loans per transaction, combined with multiple tranches of financing, makes it challenging to underwrite Lone Star's track record on a granular basis. Furthermore, Lone Star trades in highly illiquid assets and generally employs high levels of leverage to generate its targeted returns. [Mitigant: Lone Star has a 20-year history of operating with this strategy and has consistently returned capital from prior funds.]
- *Leadership changes.* There have been recent changes in the past year (since the LSREF IV fund raise) within the senior management team of Hudson Advisors, most notably the promotion of Jodi Cason to President and COO and William Young appointed to General Counsel. [Mitigant: Ms. Cason has worked within Hudson Advisors for 17 years and Mr. Young, at his prior firm, worked on

the Lone Star account dating back to 2001 and acted as lead legal counsel on numerous transactions over those years.]

- *Key man risk.* John Grayken, as the sole owner of both Lone Star and Hudson Advisors, has been critical to Lone Star's success since inception. [Mitigant: André Collin has taken a more active role in managing the day-to-day activities within Lone Star, which partially mitigates the ongoing concern should John Grayken cease to head the firm. Furthermore, a key-person event would trigger an automatic cessation of the investment period.]
- *General Partner concentration.* As of September 30, 2015, OPERF had an aggregate NAV exposure to Lone Star of \$662 million, representing approximately 8.2% of the Real Estate portfolio (figures exclude OPERF's \$86.4 million commitment to the Lone Star Residential Mortgage Fund.) Additionally, OPERF has approximately \$841 million remaining in unfunded commitments to prior Lone Star funds. [Mitigant: This concentration is partially ameliorated by the relatively short investment duration and Lone Star's demonstrated ability to return invested capital over multiple market cycles.]
- *American waterfall.* Lone Star receives the carry, after return of capital and a preferred return to the limited partners, on the fund's realized investments on a deal-by-deal basis. A European waterfall would be preferred. [Mitigant: LSREF V, as in prior funds, has a reserve and full-recourse clawback provisions to ensure limited partners receive all paid-in capital plus the preferred return prior to Lone Star participating in the carried interest.]

### **Terms**

LSREF V includes a management fee on committed capital with a preferred return and deal-by-deal (American waterfall) carry. The fund has a three-year investment period, and an eight-year fund life with two one-year extensions. The terms are essentially the same as those in LSREF IV, with the exception of a 25 basis point fee increase on committed capital. As in prior funds, the General Partner will make a 1% co-investment to LSREF V. In addition, Hudson Advisor employees, through a co-investment vehicle, can commit up to 1.5% of total capital commitments, while an entity affiliated with Mr. Grayken will commit another \$250 million. The combined co-invest from Lone Star, Hudson Advisors and Mr. Garyken is anticipated to total \$375 million or 7.5% of the targeted fund raise. No placement agent has had contact with Staff in connection with this offering.

### **Conclusion**

Given the demonstrated, and realized, performance of Lone Star, as well as the two-decade relationship between Lone Star and OPERF, Staff believes an investment in LSREF V would be accretive to overall returns in a macroeconomic environment in which Lone Star has a consistent track record and considerable competitive advantage.

TAB 3 – BROOKFIELD INFRASTRUCTURE FUND III, LP

## Brookfield Infrastructure Fund III, L.P.

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### **Purpose**

Staff and TorreyCove recommend a \$400 million commitment to Brookfield Infrastructure Fund III, L.P. ("BIF III" or the "Fund") for the OPERF Alternatives Portfolio, subject to satisfactory negotiation of terms and conditions with Staff working in concert with Department of Justice personnel.

### **Background**

Brookfield Asset Management, Inc. ("Brookfield" or the "Firm") is a publicly-listed global alternative asset manager (NYSE: BAM) with over \$225 billion of assets under management across a range of strategies including real estate, infrastructure, renewable power, timberlands, agriculture and private equity. The Firm has a long history of investing in and operating infrastructure assets, dating back to its founding in 1899. Today, Brookfield is one of the largest specialized investors in infrastructure, with \$48 billion of infrastructure assets under management. Oregon's relationship with Brookfield dates back to August 2013 when the OIC committed \$50 million of OPERF capital to Brookfield Global Timber Fund V. In 2015, a subsequent \$100 million commitment was made to the Brookfield Agriculture Fund II, L.P. Thus, this proposed commitment represents the OIC's third Brookfield fund commitment.

The Fund is a continuation of the investment strategy previously utilized in Brookfield Infrastructure Fund II ("BIF II"), a \$7 billion infrastructure fund that held its final closing in 2013, and Brookfield Americas Infrastructure Fund ("BIF I"), a \$2.7 billion infrastructure fund that held its final closing in 2010. BIF III is seeking \$10 billion of capital commitments, including \$4 billion of commitments from Brookfield, with an expected \$12 billion hard cap. The Firm plans to hold a first close on or about March 31, 2016. Well in excess of the Alternatives Portfolio's target return, the Fund is targeting a net internal rate of return of 10%, inclusive of a 5% cash yield.

### **Discussion/Investment Considerations**

Consistent with its history, Brookfield will focus Fund capital on high-quality, core infrastructure investments, primarily in the transportation, renewable power, utilities, and energy sectors. The Fund will focus on geographies where Brookfield has an operating presence, namely North America, Europe, South America, and Australasia. Brookfield is differentiated by its owner-operator legacy and a key feature of BIF III strategy is the Firm's operations-oriented investment approach. This approach benefits the Fund through the incorporation of technical insight into the valuation and execution of investments as well as through the "hands-on" management of the assets to enhance operational performance. Additionally, Brookfield will seek to leverage the scale and expertise from its existing operating platforms in order to add value post-acquisition. To deploy its investment strategy, Brookfield seeks sufficient influence over its investments through control or co-control. The Firm expects to target investments ranging from \$400 million to \$1 billion in size.

### Attributes:

- *Deep and Experienced team.* As a firm, Brookfield has over 100 years of infrastructure investing experience. More recently, over the past 15 years, Brookfield has deployed over \$20 billion of equity capital in more than 80 infrastructure investments. BIF III will be led by infrastructure CEO Sam Pollock, and supported by a senior leadership team that averages 24 years of infrastructure investing experience and 15 years with Brookfield. As experienced investors in, and operators of, a wide variety of infrastructure assets, the team possesses a breadth of experience that provides Brookfield with the capabilities to evaluate and optimize the widest possible opportunity set on behalf of the Fund.

- *Operational expertise.* The Fund will be managed by Brookfield’s infrastructure group, which is one of the world’s largest owners and operators of infrastructure assets. Of note, Brookfield manages \$48 billion of infrastructure assets, overseen by over 150 professionals and 12,000 operating employees across five continents. Staff believes this vertical integration sets Brookfield apart from other infrastructure investors in that it allows the Firm insight and management capability in all phases of the investment cycle.
- *Global and mature asset focus.* The Firm’s focus with BIF III will be on mature, “core-type” infrastructure investments, a strategy that complements OPERF’s existing infrastructure portfolio (e.g., Stonepeak, which provides exposure to middle-market infrastructure assets, and GIP which provides exposure to large, JV transactions).
- *Supply/demand gap.* Globally, infrastructure represents a compelling investment opportunity given the current and substantial gap between investment demand and capital supply. The infrastructure investment sector is projected to experience substantial growth due to the scale of investments required to modernize existing and develop new infrastructure. According to recent estimates, the global infrastructure expenditure requirement through 2030 is \$3 trillion per year. At the same time, traditional suppliers of infrastructure capital (such as governments and utilities) continue to be capital constrained. Furthermore, recent weakness in energy and other commodity markets has negatively impacted the availability and cost of capital to these capital-intensive industries, and Brookfield believes there are opportunities to provide capital to owners of infrastructure assets within these industries.
- *Alignment of interests.* BAM is typically a large limited partner in every investment vehicle it sponsors, and for this particular fund will contribute at least \$4 billion of the Fund's aggregate commitments. Additionally, senior executives and other employees of Brookfield are substantial owners of BAM (employees own approximately 20% of BAM).

Concerns:

- *Political/regulatory risks.* The political and regulatory environment for infrastructure is evolving and changes may have an adverse effect on the Fund’s ability to pursue its investment strategy. [Mitigant: All investments in the infrastructure sector are subject to the aforementioned risks. Staff finds the risk/reward tradeoff to be reasonable and supported by a) the team’s experience and technical expertise, b) the Fund’s asset diversification and c) the Fund’s geographic focus on investment grade countries.]
- *Competitive market for investment opportunities.* Interest from institutional investors in real assets, including infrastructure strategies, remains high. As more capital enters the market for private infrastructure, expected returns may be driven down. [Mitigant: Staff has confidence in Brookfield’s financial discipline and expertise in originating, structuring, and executing infrastructure transactions. Moreover, Brookfield focuses on transactions generated by established relationships, thereby reducing competition.]
- *Currency risk.* As a global fund, the majority of BIF III portfolio investments are expected to be outside the U.S. While drawdowns and distributions are in U.S. dollars, investments are made in local currencies. [Mitigant: Due to the long investment horizon, currency risk is not expected to be a material component of total return. In addition, a hedging strategy is adopted for each investment, further managing currency risk.]
- *Significant unrealized value.* As of September 30, 2015, Funds I and II have an unrealized carrying value of \$7.8 billion across 17 investments. Managing the unrealized portfolio will require significant time and attention from the investment and operating teams. [Mitigant: Brookfield feels that it is adequately staffed to manage Funds I and II and deploy Fund III, with the only staffing additions being

opportunistic hires. Brookfield has demonstrated, through the deployment and management of Fund II, its ability to navigate these challenges successfully.]

### **Terms**

Fund terms include a management fee on committed capital with a standard carry and preferred return. The Fund will have a four-year investment period and a 12-year term, subject to two one-year extensions options with the consent of the Fund's limited partners' advisory committee. During fundraising efforts, no placement agent had contact with Treasury staff.

### **Conclusion**

The Alternatives Portfolio target allocation to infrastructure is 20% to 30% (or approximately \$1.7 billion to \$2.5 billion at current OPERF NAV). To date, OIC has approved \$1.95 billion in aggregate commitments to the sector, and Staff considers BIF III an anchor commitment within the OPERF infrastructure portfolio. Brookfield is differentiated by their vertical integration and focus on mature, core infrastructure assets, and a commitment to BIF III would provide an attractive complement to other existing portfolio positions.

Staff also believes the BIF III strategy represents a natural extension and leveraging of Brookfield's industry-leading real assets investment platform as well as an opportunity to increase OPERF's exposure to a high conviction manager in an attractive sector. The depth and experience of the Brookfield team is notable, with the operations-oriented approach resulting in excellent market intelligence which should benefit BIF III returns. At a macro level, requirements for infrastructure investment are massive, underpinning positive demand dynamics for capital, and Staff believes Brookfield is well positioned to capitalize on the Fund's target opportunity set.

TAB 4 – OPERF REAL ESTATE PORTFOLIO

**Oregon Investment Council**  
**March 9, 2016**  
**OPERF Real Estate Portfolio Policy and Benchmark Update**

**Background**

At the December 9, 2015 OIC meeting, staff and consultant presented a revised vision for OPERF’s real estate portfolio. This vision included evaluating future real estate investments relative to a more narrowly-defined role within the broader OPERF portfolio. Specifically, the objectives of this new role include the following:

1. Improve overall OPERF diversification by gradually reducing the real estate portfolio’s embedded “equity beta” (i.e., improve overall diversification by lowering the real estate portfolio’s sensitivity to OPERF’s public and private equity allocations); and
2. Through this same re-positioning, increase the current income component of total return (with a commensurate reduction in capital appreciation expectations) in order to a) moderate the real estate portfolio’s return stream volatility and b) improve that return stream’s inflation-hedging potential.

Structural changes necessary to support these objectives include:

1. Dampen the real estate portfolio’s pro-cyclical strategy bias by reducing fund- and transaction-level leverage; and
2. Focus future real estate investments on income stream durability/resiliency.

**Recommendation**

1. Revise OPERF’s real estate allocation targets as outlined below:

	<b>Current</b>		<b>Recommended</b>	
<b>Real Estate Classification</b>	<b>Target Allocation</b>	<b>LTV Limit</b>	<b>Target Allocation</b>	<b>LTV Limit</b>
<b>Core</b>	<b>25-35%</b>	<b>50%</b>	<b>45-65%</b>	<b>45%</b>
<b>Public REITs</b>	<b>15-25%</b>	<b>N/A</b>	<b>0-10%</b>	<b>N/A</b>
<b>Value Add</b>	<b>15-25%</b>	<b>70%</b>	<b>10-30%</b>	<b>65%</b>
<b>Opportunistic</b>	<b>20-40%</b>	<b>N/A</b>	<b>10-30%</b>	<b>N/A</b>
<b>TOTAL PORTFOLIO</b>	<b>100%</b>	<b>60%</b>	<b>100%</b>	<b>50%</b>
	<b>Current</b>		<b>Recommended</b>	

2. Revise OPERF's real estate performance benchmark to match the revised investment and portfolio construction strategy:

	Current	Recommended
<b>Real Estate Classification</b>	<b>Benchmark</b>	<b>Benchmark</b>
<b>Core</b>	5% real return / NPI	ODCE
<b>Public REITs</b>	5% real/ NAREIT; FTSE/EPRA/NAREIT	NAREIT; FTSE/EPRA/NAREIT
<b>Value Add</b>	6% real / NPI + 100 bps	ODCE + 100 bps
<b>Opportunistic</b>	7% real / NPI + 200 bps	ODCE + 300 bps
<b>OPERF Real Estate</b>	N/A	ODCE + 50 bps

3. Revise OIC Policy INV 501, attached, incorporating the above allocation targets and benchmark recommendations. Further revise OIC Policy INV 501 to adopt previously updated policy and formatting standards now used for other OPERF Alternatives Program portfolios. Finally, approve recommended edits to the following appendices (attached herewith):
  - I. Appendix A, Investments Valuation Policy – Conforms real estate portfolio policy to that governing other Alternatives Program investments.
  - II. Appendix C, Appraisals Policy – clarifies existing real estate portfolio policy.
  - III. Appendix G, Non-Mandate Property Exceptions – clarifies existing Non-Mandate Property Exceptions policy.
  - IV. The remaining appendices listed in INV 501 conform to, without changes, existing real estate or Alternatives Program policy documents.

# **OREGON INVESTMENT COUNCIL POLICY**

## **INTRODUCTION & OVERVIEW**

### **Summary Policy Statement**

To accomplish the prudent and efficient implementation of investment policies established by the Oregon Investment Council (OIC), Oregon State Treasury (OST) created the Real Estate Program (hereinafter referred to as the "Program") to a) participate in attractive long-term investment opportunities for the Oregon Public Employees Retirement Fund (OPERF or the Fund) and other state funds for which OIC has oversight responsibilities and b) provide diversification opportunities for OPERF and other state funds. To date, Program investments have included participation in diversified strategies including separately managed accounts, joint ventures, co-investments, commingled funds, publicly-traded REITs, real estate debt and equity investments, and other diversifying real estate assets and special situation strategies. As opportunities become available, OST will invest Program assets prudently, productively and in a manner consistent with the Program's objectives, OIC policies and applicable law. The Program is subject to the specific, strategic target allocations established in Policy INV 215.

### **Purpose and Goals**

The goal of this policy is to provide guidance to OST staff and advisors regarding real estate investments for OPERF and other state funds for which the OIC has oversight responsibility.

### **Applicability**

Classified represented, management service, unclassified executive service

### **Authority**

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

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

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

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

**293.736 Duties of investment officer.**

1. Except as provided in ORS 293.741, in amounts available for investment purposes and subject to the policies formulated by the Oregon Investment Council, the investment officer shall invest and reinvest moneys in the investment funds and acquire, retain, manage, including exercise of any voting rights, and dispose of investments of the investment funds.
2. Subject to the direction of the council, the investment officer shall perform the functions described in subsection (1) of this section with respect to the investment in mutual funds of moneys in the Deferred Compensation Fund. The council must approve all mutual funds in which Deferred Compensation Fund moneys are invested. [1967 c.335 §9; 1997 c.179 §23; 2005 c.295 §1]

# POLICY PROVISIONS

## Definitions

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

## Policy Statements

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

Program investment returns should exhibit a lower correlation relative to other Fund assets and therefore the Program is expected to provide diversification benefits to the Fund.

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

## 2. REAL ESTATE INVESTMENT CLASSIFICATIONS

1. OPERF's real estate asset class consists of the following four sub-classifications:
  - I. CORE: equity investments in real properties. Typical Core properties will exhibit "institutional" qualities such as good locations within local and regional markets with high quality design and construction. In general, Core properties will be well occupied, though a limited allocation may be invested in properties undergoing redevelopment, new construction or significant re-leasing. Within the Core portfolio, the OIC/OST will generally have the right to (i) replace or terminate a manager with or without cause, (ii) add or subtract committed capital and (iii) create and modify investment, operating and financing guidelines pursuant to the terms of an operating agreement.
  - II. REITs: equity investments in publicly-traded Real Estate Investment Trusts or publicly traded real estate operating companies.

- III. VALUE ADD: investments in real properties, commingled funds, joint ventures and private placements. The Value Add portfolio will be well diversified by property type and geography. Investments will include office, retail, industrial and apartment properties, but may target structured investments in alternative property types such as hotels, student housing, senior housing, debt and specialized retail uses. Value Add real estate may exhibit "institutional" qualities such as good locations within local and regional markets with high quality design and construction, but may need redevelopment or significant leasing to achieve stabilized investment value. Value Add investments may include development opportunities with balanced risk/return profiles. Development investment in the Value Add sub-class shall be limited to 35% of capital committed to Value Add at any given time. When a property reaches ~~85~~80% occupancy, it will no longer be considered a development investment.
- IV. OPPORTUNISTIC: investments in commingled funds, joint ventures and private placements. The investments within the Opportunistic portfolio are likely to represent a wide variety of strategies and investment vehicles and may utilize greater leverage. The Opportunistic portfolio will include investments with expected returns, or employing risk-adjusted strategies, greater leverage or generally above-market risks, in excess of either the Core or Value Add strategies. These investments may include niche opportunities (e.g., hotels, operating companies, non-performing loan portfolios, speculative development, land acquisitions, etc.) or exist due to real estate or capital markets inefficiencies. ~~In addition, the Opportunistic portfolio may contain investments in international real estate joint ventures, limited partnerships, public and private REITs and operating companies.~~ Investment strategies for the Opportunistic portfolio will be considered and classified "opportunistic" based on prevailing market conditions at the time of investment.

### 3. LEVERAGE

1. CORE: To enhance investment returns, leverage is permissible in the Core portfolio in an amount up to ~~50~~45% of the fair market value of the aggregate Core portfolio, and up to 75% of the market value on any given property. Sufficient consideration should be given to the impact of debt financing on the risk and return characteristics of the leveraged investments as well as the Core portfolio in total. Use of leverage shall be subject to financing guidelines incorporated into the operating agreement(s) for each Core investment manager or partnership.

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

may be resolved either through action by the OIC or the Real Estate Committee.

2. **VALUE ADD:** In order to enhance investment returns, leverage is permissible in the Value Add portfolio in an amount up to ~~70~~65% of the fair market value of the aggregate Value Add portfolio and up to 80% of cost on any given property prior to stabilization. Sufficient consideration should be given to the impact of debt financing on the risk and return characteristics of the leveraged investments. Use of leverage shall be subject to financing guidelines incorporated into the operating agreement(s) for each Value Add investment manager or partnership.
3. **OPPORTUNISTIC:** Subject to financing guidelines incorporated into the operating agreement(s) for each Opportunistic investment manager or partnership, leverage may be unconstrained within Opportunistic real estate investments and partnerships.

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

#### 4. OBJECTIVES

##### 1. Program Investment Performance Objectives

The Program's investment performance objective is long-term net returns to OPERF (i.e., after management fees and general partners' carried interest) above a benchmark comprised of the National Council of Real Estate Fiduciaries (NCREIF) Fund Index ("NFI") Open-end Diversified Core Equity Index ("ODCE"), and referred to as NFI-ODCE, *plus* an appropriate premium to compensate for illiquidity, principal risk and related investment costs and expenses. Specifically, the Program's performance objective is a return exceeding NFI-ODCE plus 50 basis points, and may vary by investment type (e.g., core, public and private REITs, value add and opportunistic real estate). OST staff (hereinafter referred to as "Staff") will periodically evaluate the Program's performance objective, benchmark and assigned return premium.

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

## 2. Diversification

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

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

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

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

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

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

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

## 5. REAL ESTATE COMMITTEE

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

~~2.~~

~~3.2.~~ OST, through the Committee, may invest OPERF amounts up to and including \$150 million per investment for a new general partner, fund sponsor or manager relationships, and an amount up to and including \$250 million for existing relationships, consistent with OIC policies (see Appendix B). If consideration of a particular investment opportunity is deemed urgent or otherwise less suited for presentation to the OIC, the CIO may seek OIC approval for Committee consideration of that particular investment opportunity.

~~4.~~

~~5.3.~~ The Committee will only exercise its investment authority by unanimous vote and acting upon a favorable due diligence determination by the Advisor. The Committee may only consider proposed investments if agreement exists between the Advisor and Staff that the proposed investment is consistent with Program standards including, but not limited to, the applicable sector plan and strategy. Investment opportunities and proposed Committee commitments are subject to review by OST, which may choose to cancel or refer such proposed commitments to the OIC for broader review and consideration.

~~6.4.~~ In connection with a proposed investment, Staff shall furnish any favorable due diligence determination, including the underlying rationale, market conditions and portfolio impact, to the OIC as soon as practical and at least two weeks prior to a Committee meeting called for purposes of considering the proposed investment. If OST objects to the proposed investment or is advised by any OIC member that he or she objects to the proposed investment, OST will cancel the proposed commitment and determine whether or not Staff will bring the proposed investment as a separate agenda item at a subsequent OIC meeting.

~~7.5.~~ Staff shall report any investment commitment made by the Committee at the next, most feasible OIC meeting.

## **6. OST STAFF AUTHORITY**

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

1. Approve OST administrative activities and guideline exceptions if a plan is established to conform the [project/investment/fund] exceptions to applicable guidelines within a reasonable period of time;
2. Acquire, retain, manage and dispose of fund interests consistent with the authority granted to the Office of the State Treasurer pursuant to ORS 293.736, and review and approve other activities as necessary to further the interests of the Program consistent with this statute;
3. Approve up to an additional \$50 million to an existing investment fund for the following purposes: (1) recapitalize the fund with additional equity; (2) acquire all or part of another

limited partner's position in the fund; (3) re-balance between or among managers; or (4) co-invest with the fund in an individual fund investment. Such additional commitments shall be on terms equal to or better than the existing investment fund terms;

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

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

## **7. ADVISOR AND OPERF REQUIREMENTS**

OST manages the Program using a hybrid Staff/Advisor model. Specifically, and subject to budget limitations, OST will assign an appropriate number of Staff to manage Program design and portfolio construction, the Program's investment decision-making schedule and process, and the Advisor's contract. The OIC will retain a qualified, independent Advisor and will delegate to that Advisor substantial duties such as performing due diligence on investment opportunities, monitoring Program investments, performing Program analytics and valuation analyses and preparing current historical performance reports. Staff retains the primary responsibility to ensure that Program investments and prospective investments receive appropriate due diligence, monitoring, and valuation analyses. While some of these duties may be delegated to the Advisor, Staff will conduct and document sufficient reviews and tests of the Advisor's work as necessary to conclude that such delegated duties are performed consistently and appropriately by the Advisor.

## **8. LEGAL COUNSEL**

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

## **9. CONTRACT EXECUTION**

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

## **10. PARTNERSHIP FUNDING**

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

## **11. MONITORING**

### **1. Reports**

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

### **2. Adherence to Strategy**

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

## **Exceptions**

None.

## **Failure to Comply**

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

## **PROCEDURES and FORMS**

Appendix A: OIC Document: Real Estate Investments Valuation Policy

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

Appendix C: OIC Document: Real Estate Investments Property Appraisals

Appendix D: OIC Document: Real Estate Investments Responsible Contractor Policy

Appendix E: OIC Document: Real Estate Investments Property Insurance Policy

Appendix F: OIC Document: Real Estate Investments Terminating Investment Management Firms

Appendix G: OIC Document: Real Estate Investments: Non-Mandate Property Exceptions

Appendix H: OST Document: Real Estate Investment Procedures for INV501

# 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.

## OIC Document

### APPENDIX A

#### Alternative Real Estate Investments Valuation Policy

##### Public Company Securities

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

##### Non-Public Company Securities & Private Equity Real Estate

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

- Where applicable, limited partner committee reviews/approvals of valuations when Staff serve on such committees; and
- General Staff knowledge of [company investment](#) performance, comparable transactions and valuations, industry trends, market environment and other relevant factors.

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

4) Staff is responsible for ensuring Program investments are recorded in OST's [accounting](#) book of record at fair value, and this responsibility may not be delegated to third parties. To fulfill this particular responsibility, Staff will:

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

## OIC Document

### APPENDIX C

## Real Estate Investments Property Appraisals Policy

# POLICY

As delegated by the Treasurer, Office of the State Treasurer (OST) staff has the authority to hire firms to conduct appraisals of ~~the Core portfolio~~ properties within the Real Estate Program's portfolio's separate accounts and joint ventures.

# DEFINITIONS

Based on the Financial Institutions Reforms, Recovery, and Enforcement Act (FIRREA) requirements of February 9, 1990, the following shall be the operative definition of fair market value: *"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus."* Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby: (1) buyer and seller are typically motivated; (2) both parties are well informed or well advised, and each acting in what they consider their own best interest; (3) a reasonable time is allowed for exposure in the open market; (4) payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto; and (5) the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

# PROCEDURES

1. The Senior Real Estate Investment Officer, or a qualified designee, will engage an unbiased third party appraiser to estimate properties' ~~the~~ fair market value ~~of the properties in the Core portfolio.~~ For each property, The fair market value of a fee simple interest or partial interest ~~in real property~~ shall be determined no later than December 31, of the second year after date of acquisition (e.g., if a property was acquired 3/11/98~~2013~~, the first appraisal of that~~is~~ property would be as of 12/31/99~~2014~~) and ~~or~~ every other year thereafter.
2. OST staff shall have the right to select and to enter into contracts with appraiser(s) and to designate the properties to be appraised. The appraiser must be licensed in the state where the property is located, adequately experienced in appraising the property type, and knowledgeable of the local and regional market.
3. The appraisal report must be in compliance with the Uniform Standard of Professional Appraisal Practice (USPAP) as adopted by the Appraisal Standards Board (the "Board") of the Appraisal Foundation and all subsequent changes and modifications approved by the Board. Every property will be appraised no less than every two (2) years from the date of last appraisal until disposition, unless otherwise directed and documented by the Senior Real Estate Investment Officer because of extenuating circumstances. If marketing plans are in place, or if the sale of a property is expected to close within a reasonable period of time near the scheduled appraisal date, the Senior Real Estate

Investment Officer may accelerate or delay such appraisal, as necessary. If subsequently such a property sale fails to close, appraisal of this property will take place in the next year-end appraisal cycle.

4. In order to maintain fresh opinions of real estate values, a particular appraiser may only appraise a property twice (consecutively) before a new appraiser or appraisal firm must be selected.
5. For certain strategies deployed by ~~Core M~~anagers within the real estate portfolio, it may be more economical and consistent with OPERF investment objectives to have properties appraised pursuant to a schedule that differs from policy. Staff is granted the authority to craft an appraisal cycle, of up to three years, if such a cycle time is consistent with the real estate portfolio objectives and the strategy and structure of the venture.
6. The Senior Real Estate Officer, or a qualified designee, will ensure that real estate fair market values reported by ~~Core M~~anagers are accurately updated for the results of the property appraisals.

## **DISPUTE RESOLUTION PROCEDURES**

1. The Senior Real Estate Investment Officer, or a qualified designee, will engage an unbiased third-party appraiser (the "dispute resolution appraiser") to resolve any dispute or disagreement between an investment manager and appraiser as to a property's ~~the~~ fair market value ~~of a property~~.
2. The appraiser shall provide a copy of its appraisal and/or other information and the investment manager shall provide in writing a statement as to why it disagrees with the value determined by the appraiser. The dispute resolution appraiser shall review both sets of information and make a binding decision as to the fair market value of the property, which may be more or less than the manager or appraiser's estimate of fair market value.

## **SAMPLE FORMS, DOCUMENTS, OR REPORTS (Attached)**

None

## OIC Document

### APPENDIX G Real Estate Investments Non-Mandate Property Exceptions

## POLICY

Existing ~~Direct Property and Opportunity fund~~ real estate managers may acquire individual properties not conforming to existing OPERF or fund-specific acquisition guidelines, if these firms have demonstrable expertise acquiring, managing and disposing of such investments. Proposed acquisition objectives and any ~~the~~ leverage utilized must be consistent with the risk and return parameters for OPERF's Direct Property Core real estate portfolio.

## OBJECTIVES

Only (i) existing OPERF real estate managers to whom a Non-Mandate Property Exception has been made, and (ii) existing Opportunity fund managers may propose to acquire properties as Non-Mandate Property Exceptions. The rationale for allowing Non-Mandate Property Exception acquisitions is as follows:

**Access to transactions from Direct Property existing managers GP or investment manager:** OPERF Direct Property real estate portfolio managers are limited to acquiring either a one-specific property type or types, generally referred to as a mandate, as specified within each respective partnership agreement for ~~the~~ joint venture in which OPERF is the most significant investor. These managers occasionally have the opportunity to acquire properties that meet OPERF real estate portfolio objectives, but ~~are~~ may not be the same property type or strategy specified ~~by~~ within the ~~firm~~ partnership agreement and ~~OPERF's joint venture~~ acquisition guidelines.

**Access to transactions from Opportunity fund managers.** ~~Opportunity funds have greater tolerance for risk and have higher target return thresholds than for the OPERF Direct Property portfolio. Opportunity fund managers occasionally can acquire properties, or interests in properties meeting OPERF Direct Property acquisition and risk criteria, however these less volatile properties typically trade at prices higher than Opportunity funds are willing to pay.~~

## NON-NEGOTIABLE CONDITIONS

1. If a Non-Mandate Property Exception is acquired by ~~an~~ Opportunistic investment -manager, ~~it~~ the manager may use its counsel to represent the ownership entity, provided all correspondence is copied to the Department of Justice, and the Department of Justice is granted attorney-client privileged status.
2. In all proposed Non-Mandate Property Exception transactions, managers will serve as a fiduciary to OPERF. For each proposed Non-Mandate Property Exception, the manager will have full discretion to buy, sell, manage, lease and finance pursuant to partnership agreement amended terms and conditions, no worse than those currently in place.
3. The equity required for a Non-Mandate Property Exception may not exceed \$50 million for any one transaction or related series of transactions.
4. Co-investment from the manager for any proposed transaction can be no less than the co-investment

commitment to ~~thean~~ existing ~~Opportunity fund or Direct Property partnership agreement with the manager or same co-investment percentage as the most recent commingled fund to which OPERF has invested with thate manager~~. Any accrued incentive compensation earned, or accrued deficit versus minimum return thresholds shall be cross-collateralized with ~~the~~ manager's other ~~OPERF~~ investment ~~partnership~~ properties ~~with OPERF~~.

5. No ~~Opportunity fund manager or Direct Property joint venture manager~~ may have interests in more than two Non-Mandate Property Exceptions at any one time.

## PROCEDURES

1. Manager's or general partner's present the potential investment to Staff to determine if a proposed Non-Mandate Property Exception meets ~~the Core portfolio's~~ ~~Direct Property~~ return and risk parameters. The proposed Property Exception does not necessarily need to be one of the four major property types.
2. Staff determines if: ~~(i) the Non-Mandate Property Exception is~~ request will result in competitive bidding between existing OPERF managers; ~~or (ii) the acquisition of the proposed property increases exposure to a specific property type beyond the allocation policy ranges specified for the entire real estate portfolio. If either determination is~~ ~~is~~ the manager with the existing mandate is bidding on the investment on behalf of OPERF ~~affirmative~~, the request is denied.
3. Manager conducts independent due diligence on proposed transaction and draws capital for deposits, costs and closing consistent with existing partnership or limited liability company agreement.
4. Staff, the Department of Justice and manager may amend existing ~~Direct Property joint venture~~ partnership or operating agreement to reflect specific return thresholds for proposed Non-Mandate Property Exceptions; or, if necessary, negotiate terms of a new partnership ~~with an Opportunity fund manager agreement~~ for the proposed Non-Mandate Property Exception ownership entity.
5. Annually, Staff shall provide a summary report to the OIC ~~listing of~~ all accepted and rejected proposed Property Exception transactions.

TAB 5 – OREGON LOCAL GOVERNMENT  
INTERMEDIATE FUND

# Oregon Local Government Intermediate Fund

## Purpose

Provide background on the Oregon Local Government Intermediate Fund (“OLGIF”) and present OLGIF guidelines for approval.

## Background

Legislation (HB2140) passed and signed into law in 2013 allows Oregon State Treasury (“OST”) to offer comingled investment pools for local governments. OLGIF provides qualified local government participants with an OST vehicle to invest funds over a longer term horizon than the Oregon Short Term Fund (“OSTF”). After significant research into the various investment and administrative issues associated with a service base of potentially several hundred local government participants, OST has elected to delegate OLGIF management and administration to an external provider.

Key OLGIF structural tenets include the following:

- Intermediate-term (i.e., 2- to 3-year average duration) investment pool for qualified local governments; and
- Total return mandate with fluctuating net asset value subjecting OLGIF participants to principal volatility and investment losses.

Participant eligibility subject to the following OST-stipulated requirements:

- Participants must have an investment policy statement (“IPS”) reviewed by the OSTF Board and approved by the participant’s governing body;
- The OLGIF must be listed as an eligible investment in the participant’s IPS;
- The participant’s governing body must acknowledge the following in a resolution recorded in that body’s meeting minutes:
  - Investments in the OLGIF are subject to principal volatility and investment loss;
  - A participant’s contributions to and withdrawals from OLGIF are subject to restriction by OST; and
  - Affirmation that the OLGIF prospectus has been read and is understood by the participant’s board and relevant staff; and

Key OLGIF investment guidelines include the following:

- Assigned benchmark is the Barclays 1-5 Year Government/Corporate Index;
- No derivatives, 100% cash bond composition;
- Benchmark duration band of  $\pm 20\%$  (currently assigned benchmark duration has ranged between 2.6 to 2.7 years over the 5-year period ending December 31, 2015);
- Investment grade rating on all asset purchases; and
- U.S. dollar-denominated assets only.

## Recommendation

Staff recommends OIC approve Oregon Local Government guidelines in Appendix A.

## **APPENDIX A INVESTMENT GUIDELINES**

The mission of the Investment Division is “To Generate the Highest Returns Prudently Possible for Fund Beneficiaries” where Fund refers to the Oregon Local Government Intermediate Fund (hereafter referred to as the “Fund”).

The overall return objective established by the Oregon Investment Council (“OIC” or “Council”) is to achieve returns in excess of the Fund’s designated benchmark.

### **1. ASSET CLASSES AND ALLOCATIONS**

On an annual basis, the Council assesses asset allocation guidelines for the Fund’s approved investment categories.

In accordance with its established asset allocation guidelines, the Council may select one or more external fixed income investment managers (the “Manager” or “Managers”) with demonstrated experience and expertise and whose investment methodologies will collectively result in the implementation of the Council’s intended asset allocation.

Managers within the above-described structure shall acquire and manage a fixed income securities portfolio and reinvest the sales and income proceeds of that portfolio on behalf of the Fund. Additionally, these managers shall act as an internal advisor/research resource to the Oregon State Treasury Investment Division (the “Investment Division”). Managers shall further act in the capacity defined in Items 2.A. and B. below. This capacity is intended to complement fixed income asset management functions as performed by the Investment Division.

### **2. INVESTMENT GUIDELINES**

A. Manager Role and Performance Expectations. Managers retained by the Council shall invest with a primary objective of capital preservation and consistent with normal fixed income management risks. The secondary objective for these managers is to generate a rate of return from fixed income securities in excess of the Barclays Capital 1-5 Year Government/Credit Index (the “Benchmark”) net of all costs and fees over the course of a complete market cycle. In the event a Manager invests according to more than one mandate, the Manager and Investment Division staff will agree from time to time, in writing, on the allocation of investment funds to each mandate.

B. Manager Style. Managers retained by the Council may utilize an active management style including, but not limited, to a combination of quantitative and subjective valuation techniques designed to add value over the specified benchmark.

C. Eligible Securities. Securities eligible for investment include the following:

- (i) The Oregon Short Term Fund (the “OSTF”);
- (ii) Obligations issued or guaranteed by the United States (U.S.) Treasury or by U.S. federal agencies and instrumentalities, including inflation-indexed obligations;
- (iii) Non-U.S. Government Securities and their Instrumentalities;
  - Non-U.S. government securities and Instrumentalities must have minimum long-term ratings of AA-, Aa3 or better at the time of purchase.
- (iv) Certificates of deposit;
- (v) Bankers acceptances that are eligible for discount at a U.S. Federal Reserve Bank;
- (vi) Corporate debt obligations (e.g., commercial paper, term debt, etc.);
- (vii) Taxable and non-taxable municipal debt securities issued by U.S. states or local governments and their agencies, authorities and sponsored enterprises;
- (viii) U.S. Agency mortgage-backed securities (MBS) which include both pass-through securities and Collateralized Mortgage Obligations (CMOs). The weighted average life at purchase shall be 5 years or less;
- (ix) Commercial mortgage-backed securities (CMBS) which must be rated triple-A at the time of purchase and have a weighted average life of 5 years or less;
- (x) Asset-backed securities (ABS) which must be rated triple-A at the time of purchase and have a weighted average life of 5 years or less;
- (xi) Repurchase agreements, collateralized at 102% with U.S. Government securities or U.S. Agency mortgage securities as defined above. The maximum term of these agreements will be 90 days, and the collateral must be marked-to-market daily.
- (xii) Cash equivalent investments defined as any security that has an effective duration under one year, a weighted average life of less than one year and spread duration less than one year; and
- (xiii) State Street Short Term Investment Fund (STIF).

D. Exposure Constraints. Investments shall be constrained as follows:

- (i) Managers may invest up to a 3% maximum exposure in any one security, excluding U.S. Treasury and U.S. Government Agency obligations (including Agency MBS);
- (ii) Investments rated below investment grade at time of purchase are not allowed;
- (iii) No more than 5% of the par value of portfolio shall be invested in the securities of any one issuer. This restriction does not apply to obligations issued or guaranteed by the U.S. Treasury or by U.S. federal agencies and instrumentalities;
- (iv) No more than 25% of the portfolio shall be invested in the securities of one sector. This restriction does not apply to obligations issued or guaranteed by the U.S. Treasury or by U.S. federal agencies and instrumentalities;
- (v) No more than 25% of the portfolio may be invested in MBS;
- (vi) No more than 25% of the portfolio may be invested in ABS; and
- (vii) No more than 25% of the portfolio may be invested in CMBS.

E. Maturity. The maximum maturity on any allowed investment is constrained as follows:

- (i) The maximum stated maturity should not be greater than 10.25 years from the date of settlement unless otherwise noted; and
- (ii) For ABS, MBS and CMBS, weighted average life will be used to measure maturity limitations.

F. Duration. Managers shall invest their respective Fund allocations consistent with a target duration band of  $\pm 20\%$  (percent) relative to Benchmark duration.

G. Credit Criteria. In addition to the eligibility requirements described above, securities considered for purchase must be rated investment grade at the time of purchase. Benchmark rating methodology shall be used to determine the rating on any Fund holding.

For certain securities or instruments, such as newly-issued bonds, expected ratings may be used until actual ratings are issued and assigned. In such cases, the securities or instruments may be purchased in anticipation of rating assignments that comply with these investment guidelines. Should the actual rating assigned to a security or instrument diverge from the expected rating, a breach of these investment guidelines will not be deemed, but Investment Division staff and Manager will consult and reach a mutually agreed upon resolution.

The minimum-weighted, average credit quality of a Manager's respective Fund allocation will be 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 of a Manager's respective Fund allocation should be no lower than A2.

H. Diversification. The Council expects Managers to pursue broad diversification by market sector, industry and issuer. Net exposure to any single issuer, or issuing trust of structured securities such as ABS or MBS, excluding U.S. Treasury obligations and obligations of U.S. Government Agencies (including Agency MBS), shall at the time of purchase not represent more than 5% of a Manager's respective Fund allocation.

I. Absolute Restrictions. The following types of investments are prohibited:

- (i) Non-U.S. Dollar investments.
- (ii) Short sales of cash securities;
- (iii) Derivatives such as swaps, options, forwards and futures;
- (iv) Margin purchases, lending or borrowing or other uses of leverage or derivatives to create positions greater than 100% of the market value of assets under management;
- (v) Commodities or common stocks; and
- (vi) Securities issued by the Manager, its parent or other Manager-related subsidiaries.

J. Time Horizon and Monitoring. Expected performance results shall be achieved

over a full market cycle as defined by a consecutive three- to five-year period.

K. Tax Status. Fund earnings are exempt from taxation; therefore, tax considerations are not a constraint on investment management decisions.

L. Liquidity Needs. All investment income and sales proceeds shall be reinvested by the Managers.

M. Council Policies and State and Federal Regulations. In performing their duties hereunder, Managers shall at all times comply with existing Council policies as furnished to said managers from time to time as well as all applicable State and Federal laws, rules and regulations.

- (i) Dodd-Frank Compliance. Managers shall:
  - a. Be familiar with and understand Regulation §23.450 promulgated by the Commodity Futures Trading Commission (“CFTC”);
  - b. Have policies and procedures reasonably designed to ensure that Managers satisfy the applicable requirements of CFTC Regulation §23.450(b);
  - c. Meet the independence test of CFTC Regulation §23.450(c); and
  - d. Comply with the applicable requirements of CFTC Regulation §23.450(b) by agreement, condition of employment, law, rule, regulation or other enforceable duty.

N. Cross Trades. Cross trades are permitted at prevailing market levels, in accordance with “PTE 95-66”.

### **3. PERFORMANCE EXPECTATIONS**

There are various methods of calculating and reporting investment performance results. For mandates contemplated by these guidelines, investment performance results shall be calculated on a time-weighted, total return basis which includes all realized and accrued interest as well as all realized and unrealized gains and losses as reported by the Fund custodian. Performance results shall further be computed and reported after the deduction of all transaction charges and fees, including investment management fees.

Prior to the expiration of the time horizon for performance measurement set forth in paragraph 2.I. above, performance deviating from expectations shall be noted in writing to Managers at which time these managers shall be placed on “watch list” status by Investment Division personnel. Such managers shall develop a “plan of action” (the “Plan”) for how to rectify deficient performance so that subsequent performance results can reasonably be expected to meet Council objectives. This plan shall be reviewed for reasonableness and viability by the Investment Division staff member then functioning as the “Director” or “Senior Investment Officer” who shall also monitor and assess the Plan’s implementation and execution. However, notwithstanding the foregoing and whether or not the Managers fulfill their performance expectations, the Council may at any time exercise its right to terminate Managers “at will” according to the terms of Section 7 of the Investment Management

Agreement.

**TAB 6 – OPERF Q4 2015 PERFORMANCE & RISK REPORT**

December 31, 2015



**Oregon Public Employees  
Retirement Fund (OPERF)**

**Investment Measurement Service  
Quarterly Review**

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The following report was prepared by Callan Associates Inc. ("CAI") using information from sources that include the following: fund trustee(s); fund custodian(s); investment manager(s); CAI computer software; CAI investment manager and fund sponsor database; third party data vendors; and other outside sources as directed by the client. CAI assumes no responsibility for the accuracy or completeness of the information provided, or methodologies employed, by any information providers external to CAI. Reasonable care has been taken to assure the accuracy of the CAI database and computer software. Callan does not provide advice regarding, nor shall Callan be responsible for, the purchase, sale, hedge or holding of individual securities, including, without limitation securities of the client (i.e., company stock) or derivatives in the client's accounts. In preparing the following report, CAI has not reviewed the risks of individual security holdings or the conformity of individual security holdings with the client's investment policies and guidelines, nor has it assumed any responsibility to do so. Advice pertaining to the merits of individual securities and derivatives should be discussed with a third party securities expert. Copyright 2016 by Callan Associates Inc.

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Preliminary Returns for Various Periods - December 31, 2015

	Mo. Ending 10/31/15	Mo. Ending 11/30/15	Mo. Ending 12/31/15	Last Quarter	Last 2 Quarters	Last 3 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
MSCI:ACWI	7.9	(0.8)	(1.8)	5.1	(4.7)	(4.2)	(1.8)	8.3	6.7	5.3	4.7
Russell:3000 Index	7.9	0.6	(2.1)	6.3	(1.4)	(1.3)	0.5	14.7	12.2	7.4	5.4
Russell:3000 Growth	8.4	0.5	(1.7)	7.1	0.7	1.0	5.1	16.6	13.3	8.5	4.5
Russell:3000 Value	7.4	0.6	(2.4)	5.4	(3.6)	(3.6)	(4.1)	12.8	11.0	6.1	6.0
<b>MegaCap</b>											
Russell:Top 50	9.8	0.4	(0.8)	9.3	3.3	4.8	4.3	14.6	12.7	7.3	--
Russell:Top 200	8.9	0.4	(1.4)	7.7	0.9	1.8	2.4	15.4	12.9	7.2	4.2
Russell:Top 200 Growth	9.6	0.3	(1.2)	8.6	4.2	4.9	8.2	17.7	14.4	8.8	4.0
Russell:Top 200 Value	8.2	0.4	(1.7)	6.8	(2.4)	(1.4)	(3.4)	13.0	11.3	5.6	4.5
<b>Large Cap</b>											
S&P:500	8.4	0.3	(1.6)	7.0	0.1	0.4	1.4	15.1	12.6	7.3	5.0
S&P:500 HQ	6.2	0.9	(1.2)	5.9	2.0	0.7	1.9	16.3	14.0	7.7	7.2
S&P:500 LQ	8.7	1.0	(3.6)	5.8	(4.7)	(5.9)	(4.2)	15.8	11.9	8.7	8.5
Russell:1000 Index	8.1	0.3	(1.8)	6.5	(0.8)	(0.7)	0.9	15.0	12.4	7.4	5.3
Russell:1000 Growth	8.6	0.3	(1.5)	7.3	1.6	1.8	5.7	16.8	13.5	8.5	4.3
Russell:1000 Value	7.5	0.4	(2.2)	5.6	(3.2)	(3.1)	(3.8)	13.1	11.3	6.2	5.9
<b>MidCap</b>											
S&P:400 Mid Cap	5.6	1.4	(4.2)	2.6	(6.1)	(7.1)	(2.2)	12.8	10.7	8.2	8.3
Russell:Midcap	6.2	0.3	(2.7)	3.6	(4.7)	(6.1)	(2.4)	14.2	11.4	8.0	8.1
Russell:Midcap Growth	6.3	0.2	(2.3)	4.1	(4.2)	(5.3)	(0.2)	14.9	11.5	8.2	5.9
Russell:Midcap Value	6.1	0.3	(3.1)	3.1	(5.2)	(7.0)	(4.8)	13.4	11.3	7.6	9.1
<b>Small Cap</b>											
S&P:600 Small Cap	6.1	2.7	(4.8)	3.7	(5.9)	(5.7)	(2.0)	13.6	11.5	8.0	8.9
Russell:2000 Index	5.6	3.3	(5.0)	3.6	(8.8)	(8.4)	(4.4)	11.7	9.2	6.8	7.3
Russell:2000 Growth	5.7	3.7	(4.8)	4.3	(9.3)	(7.5)	(1.4)	14.3	10.7	8.0	6.0
Russell:2000 Value	5.6	2.8	(5.3)	2.9	(8.2)	(9.3)	(7.5)	9.1	7.7	5.6	8.2
Russell:Microcap	5.4	3.8	(5.2)	3.7	(10.5)	(8.0)	(5.2)	12.7	9.2	5.1	8.0
<b>Non-US Equity</b>											
MSCI:ACWI ex US	7.5	(2.1)	(1.9)	3.3	(9.2)	(8.5)	(5.2)	1.9	1.5	3.4	4.5
MSCI:EAFE US\$	7.8	(1.6)	(1.4)	4.7	(6.0)	(5.4)	(0.8)	5.0	3.6	3.0	3.5
MSCI:EAFE Gr w/ net div	8.2	(0.7)	(0.8)	6.7	(2.6)	(1.7)	4.1	6.8	4.6	4.0	3.3
MSCI:EAFE Val w/net div	7.4	(2.5)	(1.9)	2.7	(9.4)	(9.2)	(5.7)	3.1	2.5	2.0	3.6
MSCI:EAFE Small Cap	6.0	0.0	0.7	6.8	(0.5)	3.8	9.6	10.4	6.3	4.6	8.4
MSCI:Emer Markets	7.1	(3.9)	(2.2)	0.7	(17.2)	(16.5)	(14.6)	(6.4)	(4.5)	3.9	8.9
<b>Fixed Income</b>											
Barclays:Aggregate Index	0.0	(0.3)	(0.3)	(0.6)	0.7	(1.0)	0.6	1.4	3.2	4.5	5.0
Barclays:US TIPS Index	0.3	(0.1)	(0.8)	(0.6)	(1.8)	(2.8)	(1.4)	(2.3)	2.6	3.9	5.5
Barclays:Gov/Credit Long	0.4	(0.6)	(0.8)	(0.9)	1.2	(6.4)	(3.3)	1.7	7.0	6.4	7.1
Barclays:Credit A Long	0.5	(0.2)	(0.6)	(0.2)	2.4	(5.3)	(2.3)	2.2	7.0	5.9	6.9
Barclays:High Yield CP	2.8	(2.2)	(2.5)	(2.1)	(6.8)	(6.8)	(4.5)	1.7	5.1	7.0	7.7
Barclays:Muni 1-10 Blend	0.4	0.1	0.3	0.8	2.1	1.6	2.4	2.2	3.6	4.1	4.3
Barclays:Gl Agg xUS UH	0.3	(2.8)	1.2	(1.3)	(0.6)	(1.5)	(6.0)	(4.1)	(0.8)	3.1	4.6
Barclays:Gl Agg xUS DH	0.5	0.3	(0.2)	0.6	2.1	(0.6)	1.4	3.7	4.3	4.2	4.6
JPM:EMBI+	3.5	(0.4)	(1.3)	1.8	0.8	0.0	1.8	(0.3)	5.0	6.7	8.7
<b>Other Assets</b>											
Bloomberg Commodity	(0.4)	(7.3)	(3.1)	(10.5)	(23.5)	(19.9)	(24.7)	(17.3)	(13.5)	(6.4)	(1.0)
S&P GSCI	0.2	(9.0)	(8.6)	(16.6)	(32.7)	(26.8)	(32.9)	(23.7)	(15.2)	(10.6)	(4.2)
Gold (S&P Spot Price Index)	2.3	(6.7)	(0.5)	(4.9)	(9.5)	(10.4)	(10.5)	(14.2)	(5.7)	7.4	9.5
NAREIT Equity Index	5.9	(0.5)	1.8	7.3	9.4	(1.5)	3.2	11.2	12.0	7.4	11.2
Alerian MLP Index	9.7	(8.1)	(3.6)	(2.8)	(24.3)	(28.9)	(32.6)	(3.4)	1.5	8.7	12.4

## Market Environment

### As of December 31, 2015

Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Russell:3000 Index	6.27	0.48	14.74	12.18	7.35	5.39
Russell:1000 Index	6.50	0.92	15.01	12.44	7.40	5.25
Russell:2000 Index	3.59	(4.41)	11.65	9.19	6.80	7.28
MSCI:ACWI x US (Net)	3.24	(5.66)	1.50	1.06	2.92	4.03
MSCI:EAFE US\$	4.71	(0.81)	5.01	3.60	3.03	3.54
MSCI:Emer Markets	0.73	(14.60)	(6.42)	(4.47)	3.95	8.87
Barclays:Aggregate Index	(0.57)	0.55	1.44	3.25	4.51	4.97
NFI-ODCE Index	3.34	15.02	13.81	13.66	6.53	7.94
NAREIT Equity Index	7.26	3.20	11.23	11.96	7.41	11.16

Markets bounced back in October from a wildly disappointing third quarter but were not able to stabilize before fear and uncertainty returned. After hitting an all-time high in July, U.S. equity markets had a strong fourth quarter (+6.27%) ending the year basically flat (Russell 3000 Index: +0.5%). International equity markets ticked up in the fourth quarter, rising 3.2%, but still ended the year down 5.7% (MSCI ACWI ex-U.S.) after a tumultuous year including fears of a 'Grexit,' unrest in the Middle East, and a slowing Chinese economy. Oil prices fell 30% in 2015 amid concerns of oversupply, declining demand, and a strong U.S. dollar. This impacted corporate profits in the Energy and Materials sectors but boosted the amount of money in consumers' pockets. Oil was still searching for a bottom as we entered 2016 and continued to weigh on the global markets. The U.S. dollar strengthened in the fourth quarter as global monetary policies diverged, acting as a headwind to domestic GDP and hurting exports.

The Federal Reserve decided to finally raise interest rates in December after seven years of a near zero rate policy. The 0.25% increase was supported by two years of strong job creation and other positive economic data.

GDP growth in the fourth quarter sputtered as the economy grew at a modest 0.7%. The newest reading contrasts with the robust second quarter expansion of 3.9% and the average third quarter increase of 2.0%. This brought full year growth for 2015 to 2.4%, on par with the uninspiring pace that we have seen throughout the recovery. Inventory stockpiles, declining net exports, and business investment all weighed on the economy during the fourth quarter. Headline inflation continues to remain low with the decline in oil prices but ticked up slightly in December to 0.7% year-over-year. Core CPI (which excludes food and energy) finally broke through the Fed's target of 2.0%, reaching an increase of 2.1% for the year.

The job market continued to gain steam in the U.S. as employers added 292,000 positions to payrolls in December. Coming off the heels of strong October and November payroll reports, average monthly job creation in the fourth quarter posted its highest pace in a year, adding 284,000 positions per month. The past two years have been the best for job creation since 1999. The unemployment rate remained steady at 5.0%, down from 5.6% at the start of 2015. Despite the encouraging job growth numbers, average hourly earnings only rose 2.5% throughout the year. This is above trend in the current expansion but still below historical averages.

**Periodic Table of Returns  
As of December 31, 2015**

Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
S&P:500 7.0%	NFI-ODCE Index 15.0%	S&P:500 15.1%	NFI-ODCE Index 13.7%	Russell:3000 Index 7.4%
Russell:3000 Index 6.3%	S&P:500 1.4%	Russell:3000 Index 14.7%	S&P:500 12.6%	S&P:500 7.3%
Russell:2000 Index 3.6%	Barclays:Aggregate Index 0.5%	NFI-ODCE Index 13.8%	Russell:3000 Index 12.2%	Russell:2000 Index 6.8%
NFI-ODCE Index 3.3%	Russell:3000 Index 0.5%	Russell:2000 Index 11.7%	Russell:2000 Index 9.2%	ML:High Yield CP Idx 6.7%
MSCI:ACWI x US (Net) 3.2%	3 Month T-Bill 0.1%	ML:High Yield CP Idx 1.6%	ML:High Yield CP Idx 4.8%	NFI-ODCE Index 6.5%
MSCI:Emer Markets 0.7%	Russell:2000 Index (4.4%)	MSCI:ACWI x US (Net) 1.5%	Barclays:Aggregate Index 3.2%	Barclays:Aggregate Index 4.5%
3 Month T-Bill 0.0%	ML:High Yield CP Idx (4.6%)	Barclays:Aggregate Index 1.4%	MSCI:ACWI x US (Net) 1.1%	MSCI:Emer Markets 3.9%
Barclays:Aggregate Index (0.6%)	MSCI:ACWI x US (Net) (5.7%)	3 Month T-Bill 0.1%	3 Month T-Bill 0.1%	MSCI:ACWI x US (Net) 2.9%
ML:High Yield CP Idx (2.1%)	MSCI:Emer Markets (14.6%)	MSCI:Emer Markets (6.4%)	MSCI:Emer Markets (4.5%)	3 Month T-Bill 1.2%

**U.S. Equity Overview**  
**As of December 31, 2015**

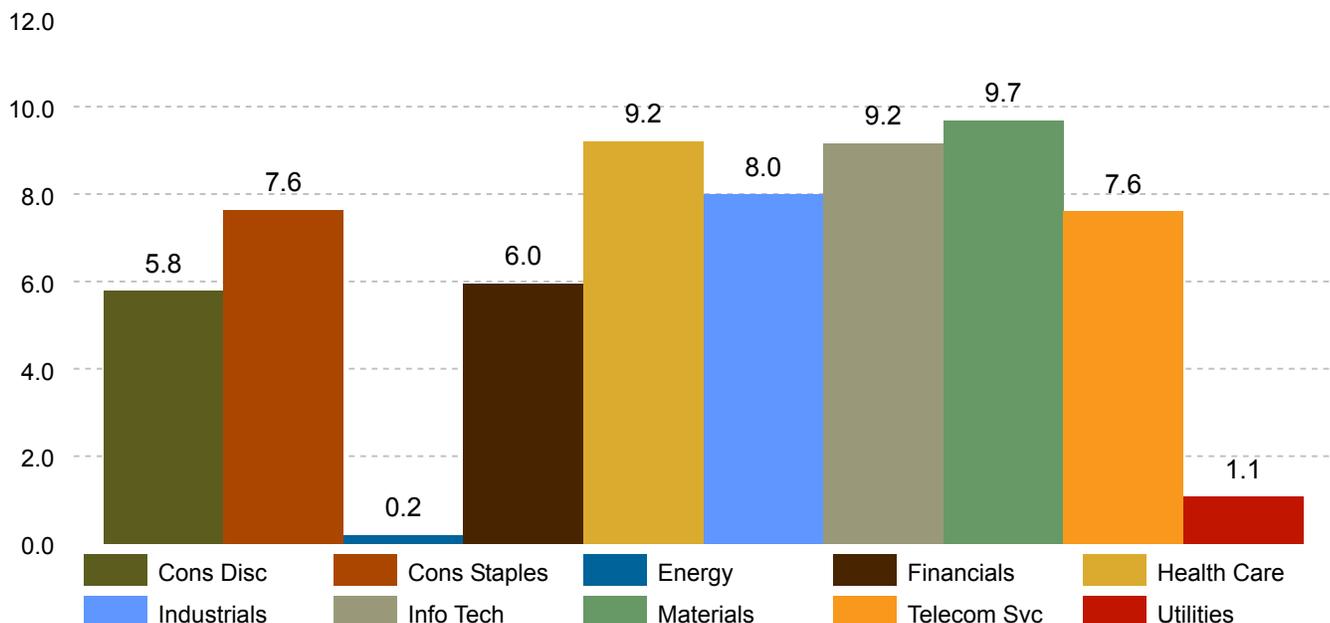
Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Russell:3000 Index	6.27	0.48	14.74	12.18	7.35	5.39
Russell:1000 Index	6.50	0.92	15.01	12.44	7.40	5.25
Russell:1000 Growth	7.32	5.67	16.83	13.53	8.53	4.33
Russell:1000 Value	5.64	(3.83)	13.08	11.27	6.16	5.86
Russell:2000 Index	3.59	(4.41)	11.65	9.19	6.80	7.28
Russell:2000 Growth	4.32	(1.38)	14.28	10.67	7.95	6.03
Russell:2000 Value	2.88	(7.47)	9.06	7.67	5.57	8.17
Russell:Microcap	3.74	(5.16)	12.70	9.23	5.13	7.99

U.S. equities rebounded nicely in October as concerns over decelerating economic growth in China and weakening commodity prices abated. Unfortunately, these issues reappeared in December and markets sold off slightly at the end of the year but managed to end the quarter up 6.3% (Russell 3000 Index). 2015 was disappointing for U.S. equities as the broad market ended only 48 basis points into positive territory.

The S&P 500 fared slightly better than the broad market and ended the quarter and year up 7.0% and 1.4%, respectively. All economic sectors in the S&P 500 increased with Materials (+9.7%), IT (+9.2%) and Health Care (+9.2%) leading the way. The Energy (+0.2%) and Utilities (+1.1%) sectors trailed.

Large cap stocks fared better than small caps for the quarter (Russell 1000 Index: 6.5%; Russell 2000 Index: 3.6%) and the year (Russell 1000 Index: 0.9%; Russell 2000 Index: -4.4%; Russell Microcap Index: -5.2%). In large cap stocks, growth outperformed value slightly over the quarter (Russell 1000 Growth Index: 7.3%; Russell 1000 Value Index: 5.6%) and more dramatically over the trailing year (Russell 1000 Growth Index: 5.7%; Russell 1000 Value Index: -3.8%). Small cap stocks experienced similar results for the quarter (Russell 2000 Growth Index: 4.3%; Russell 2000 Value Index: 2.9%) and year (Russell 2000 Growth Index: -1.4%; Russell 2000 Value Index: -7.5%).

**S&P 500 Index Sector Returns**



## Non-U.S. Equity Overview

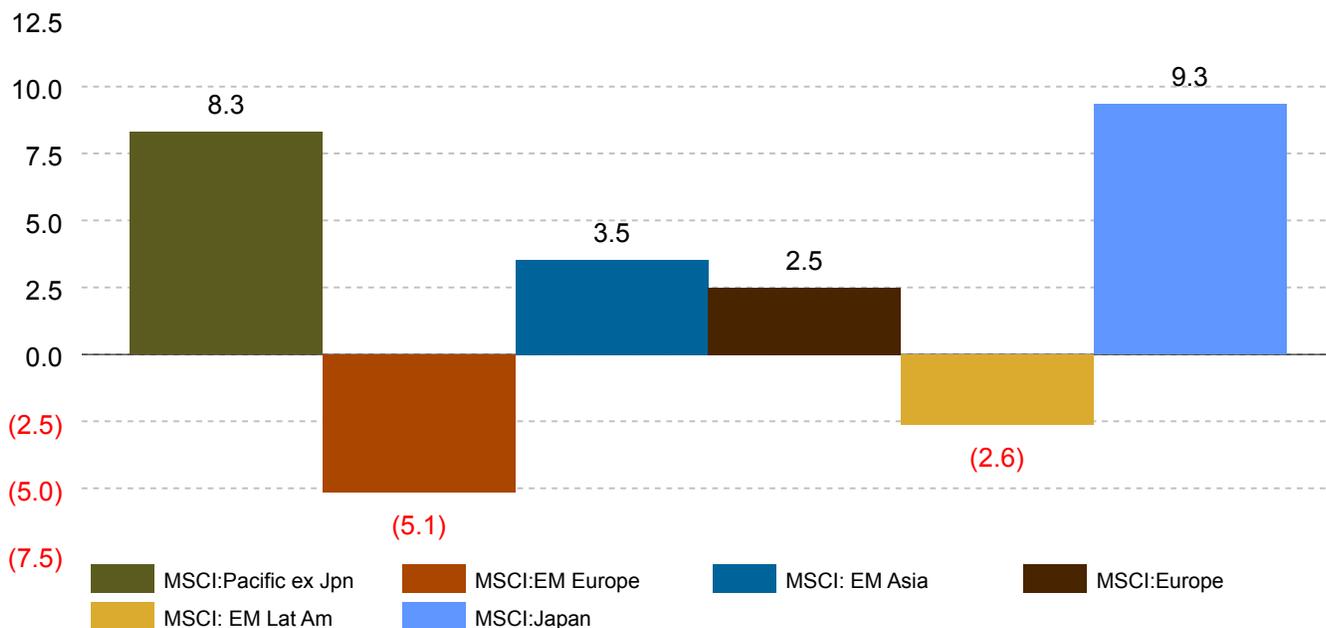
### As of December 31, 2015

Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
MSCI:ACWI x US (Net)	3.24	(5.66)	1.50	1.06	2.92	4.03
MSCI:ACWI x US Gr	5.04	(0.91)	3.90	2.48	4.02	3.96
MSCI:ACWI x US Val	1.50	(9.59)	(0.08)	0.49	2.68	4.87
MSCI:EAFE US\$	4.71	(0.81)	5.01	3.60	3.03	3.54
MSCI:EAFE LC(Net)	6.34	5.33	12.30	7.85	3.22	2.67
MSCI:Emer Markets	0.73	(14.60)	(6.42)	(4.47)	3.95	8.87
MSCI:ACWI SC x US	5.28	2.60	5.64	2.63	4.95	8.24

Equity markets outside of the U.S. managed to end the quarter in positive territory, but were not able to match the performance of their U.S. counterparts. The broad non-U.S. market (MSCI ACWI ex-U.S.) gained 3.2% during the fourth quarter but fell in value over the calendar year (-5.7%). The strengthening dollar took a bite out of results for investors as local returns were stronger over the quarter (MSCI EAFE Local Currency Index: +6.3%; MSCI EAFE US\$ Index: +4.71%) and year (MSCI EAFE Local Currency Index: +5.3%; MSCI EAFE US\$ Index: -0.8%). Emerging markets managed to eke out positive returns over the fourth quarter (MSCI Emerging Markets: +0.7%) but were down significantly over 2015 (-14.6%).

Regional returns were mixed during the quarter with Japan (+9.3%) and the Pacific ex-Japan (+8.3%) experiencing the best returns. Meanwhile, emerging markets in Europe (-5.1%) and Latin America (-2.6%) trailed all other regions. International style index dispersion was even more pronounced than in the U.S. as growth and value were 354 basis points apart (MSCI ACWI ex-U.S. Growth Index: +5.0%; MSCI ACWI ex-U.S. Value Index: +1.5%) during the fourth quarter. International small cap stocks gained ground over the quarter (MSCI ACWI ex-U.S. Small Cap Index: +5.3%) and year (+2.6%).

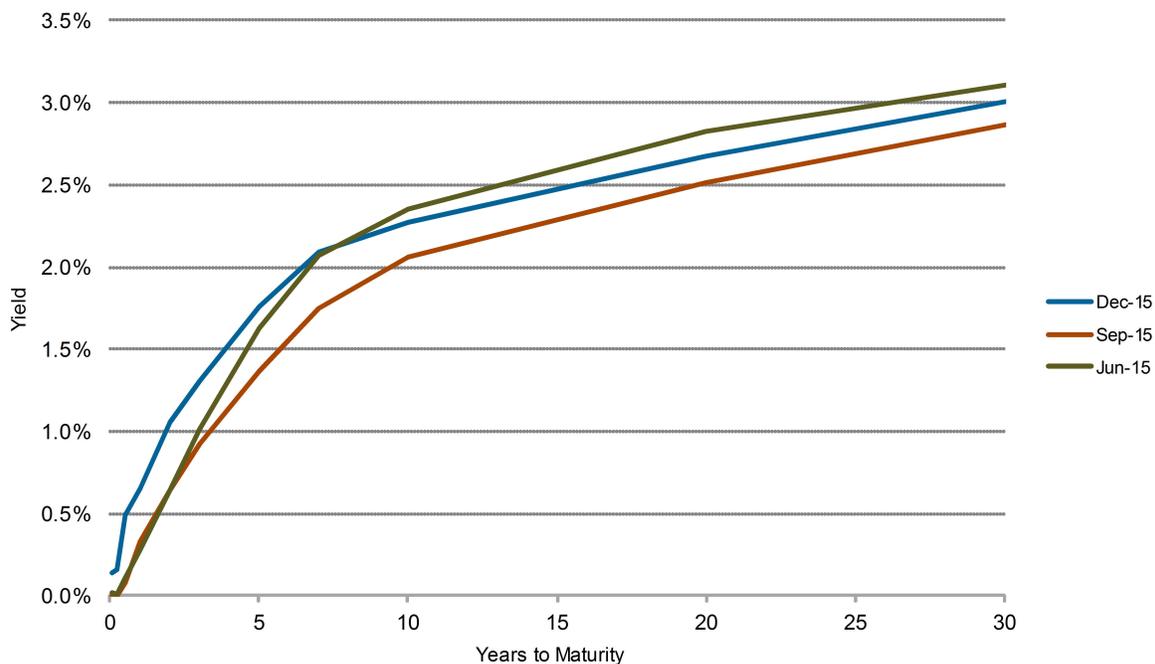
### MSCI Regional Returns



**Fixed Income Overview**  
**As of December 31, 2015**

Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Barclays:Aggregate Index	(0.57)	0.55	1.44	3.25	4.51	4.97
Barclays:Govt Index	(0.91)	0.86	1.01	2.77	4.10	4.53
Barclays:Credit	(0.52)	(0.77)	1.49	4.38	5.18	5.82
Barclays:US TIPS Index	(0.64)	(1.44)	(2.27)	2.55	3.93	5.51
Barclays:Mortgage Idx	(0.10)	1.51	2.01	2.96	4.64	4.90
ML:High Yield CP Idx	(2.09)	(4.55)	1.64	4.84	6.74	7.41
3 Month T-Bill	0.03	0.05	0.05	0.07	1.24	1.61
CS:Lev Loan	(1.96)	(0.39)	2.56	3.62	4.02	4.40
JPM:EMBI Global	1.55	1.23	(0.07)	5.11	6.72	8.54
JPM:GBI-EM GI Div	(0.01)	(14.92)	(9.95)	(3.48)	4.31	--

**Treasury Yield Curve**



The Federal Reserve moved to normalize monetary policy by raising the Fed Funds Rate for the first time in nine years. The Federal Open Market Committee unanimously voted for the rate hike as employment markets have steadily healed and inflation is expected to move toward their target. In this environment, the yield curve flattened as the short end rose more than the long end. The Barclays Aggregate Index fell 0.6% for the quarter while remaining in positive territory over the year (+0.6%). Credit securities performed roughly in-line with the broader market in the last quarter of 2015 (Barclays Corporate Index: -0.5%) but were in the red for the calendar year (-0.8%). Inflation protected securities (Barclays US TIPS Index) also fell 0.6% in the quarter and were down 1.4% for the year. High yield bonds, with their large exposure to the energy industry, sold off during the quarter (ML High Yield CP Index: -2.1%) and posted a 4.6% decline for 2015. Levered loans also suffered in the fourth quarter, declining 2.0% (CS:Lev Loan). The JPM:GBI-EM GI Div Index stabilized (-0.01%) and was flat for the quarter while the JPM:EMBI Global Index rallied 1.6%.

**Real Estate Overview**  
**As of December 31, 2015**

Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
<b>Private Real Estate:</b>						
NCREIF:Total Index	2.91	13.33	12.04	12.18	7.76	8.96
NCREIF:Apartment Index	2.73	11.99	10.90	11.86	7.29	8.89
NCREIF:Hotel Index	3.03	13.20	10.63	10.38	6.51	6.88
NCREIF:Industrial Idx	3.19	14.87	13.53	13.40	7.88	8.98
NCREIF:Office Index	2.58	12.50	11.28	11.41	7.69	8.18
NCREIF:Retail Index	3.46	15.28	13.75	13.32	8.74	11.10
NFI-ODCE Index	3.34	15.02	13.81	13.66	6.53	7.94
NFI-ODCE Income Index	1.14	4.76	5.01	5.19	5.45	6.14
NFI-ODCE Appreciation Index	2.20	9.88	8.46	8.13	1.05	1.73
<b>Public Real Estate:</b>						
NAREIT Equity Index	7.26	3.20	11.23	11.96	7.41	11.16
<b>Other:</b>						
Russell:3000 Index	6.27	0.48	14.74	12.18	7.35	5.39
Barclays:Aggregate Index	(0.57)	0.55	1.44	3.25	4.51	4.97
CPI-U Index	(0.60)	0.73	1.00	1.53	1.86	2.07

The NCREIF Property Index advanced 2.91%, recording a 1.20% income return and a 1.72% appreciation return during the quarter. The NCREIF Property Index cash-flow return appreciated 0.64% for the quarter and 3.10% for the trailing four quarters. There were 210 asset trades, representing \$11.3 billion of overall transactional volume, comfortably ahead of the \$5.1 billion 10-year quarterly transaction average and the prior peak of \$8.7 billion in the second quarter of 2007.

Pricing remained stable as equal-weighted transactional capitalization rates decreased to 5.90%, a slight retreat from the 2015 high (+5.91%) during the third quarter. Over the course of the prior cycle, quarterly equal-weighted transactional capitalization rates dipped to a low of 5.46% in the fourth quarter of 2007 and expanded to a peak of 8.46% in the third quarter of 2009. During the fourth quarter of 2015, appraisal capitalization rates decreased from 4.67% to 4.58%. As markets peaked over the prior cycle, appraisal capitalization rates declined to a low of 4.89% in the third quarter of 2008.

During 2015, MSCI and S&P Dow Jones announced that in August 2016, they will begin to break out real estate into a distinct sector rather than continuing to include it in the broader group of Financials. There are currently twenty-five companies included in the S&P 500 Index that will now be included in the new real estate sector. While most commercial real estate in the U.S. is traded in the private markets, this change indicates the increasing importance of publicly listed real estate.

## Hedge Fund Overview

### As of December 31, 2015

Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
<b>Diversified Hedge Fund-of-Funds:</b>						
Hedge Fund of Funds Database	0.40	(0.09)	4.72	3.54	3.96	5.28
Absolute Return FoF Database	(1.15)	(2.45)	2.98	2.23	3.58	5.08
Hedge FoF Long/Short Database	0.85	0.29	6.14	3.76	4.17	5.28
HFRI Fund of Funds Compos	0.77	(0.23)	3.96	2.11	2.27	3.46
CS:Hedge Fund Idx	(0.12)	(0.71)	4.30	3.55	4.97	5.95
CS:Convert Arbitrage	(0.58)	0.81	1.67	2.76	4.42	4.94
CS:Event-Driven	(2.32)	(6.29)	3.20	2.02	4.91	6.85
CS:Distressed	(1.76)	(5.30)	4.05	3.81	4.82	7.80
CS:Evt Driven Multi	(2.55)	(6.67)	2.86	1.08	5.12	6.45
CS:Risk Arb	0.81	0.41	1.30	1.50	3.55	3.65
CS:Emerging	2.79	(0.22)	3.30	2.55	5.17	8.06
CS:Fx-Inc Arb	0.03	0.59	2.90	4.84	3.84	4.50
CS:Global Macro	0.62	0.17	2.52	3.70	6.79	9.04
CS:Long/Short Eq	1.58	3.56	8.77	5.23	5.80	5.98
CS:Mgd Futures	(1.05)	(0.93)	4.54	1.22	4.21	5.40
CS:Mkt Neut Eq	(0.04)	1.69	3.16	2.96	(1.44)	1.39
CS:Multi-Strat	0.51	3.84	7.01	6.77	6.17	6.89
CS:Short Bias	(4.29)	2.38	(10.15)	(9.72)	(8.90)	(7.19)
<b>Other:</b>						
Russell:3000 Index	6.27	0.48	14.74	12.18	7.35	5.39
MSCI:ACWI x US (Net)	3.24	(5.66)	1.50	1.06	2.92	4.03
Barclays:Aggregate Index	(0.57)	0.55	1.44	3.25	4.51	4.97

As a proxy for hedge funds without implementation costs, the Credit Suisse Hedge Fund Index (CS HFI) slipped 0.12% in the fourth quarter. By contrast, the median manager in the Callan Hedge Fund-of-Funds Database edged ahead 0.40%, net of all fees.

Within the CS HFI, the major sector winner was Long/Short Equity (+1.58%). Event-Driven Multi-Strategy (-2.55%), which is typically more focused on soft catalysts, fell particularly hard as investors fled crowded trades in this space. Distressed (-1.76%) also lost ground with credit spreads widening, but outpaced the Barclays High Yield Credit Index (-2.07%).

Within Callan's Hedge Fund-of-Funds Database, market exposures marginally affected performance. Aided by the U.S. equity market rally, the median Callan Long/Short Equity FOF (+0.85%) outpaced the Callan Absolute Return FOF (-1.15%). With diversifying exposures to both non-directional and directional styles, the Core Diversified FOF modestly gained 0.37%.

**Capital Market Returns**  
**As of December 31, 2015**

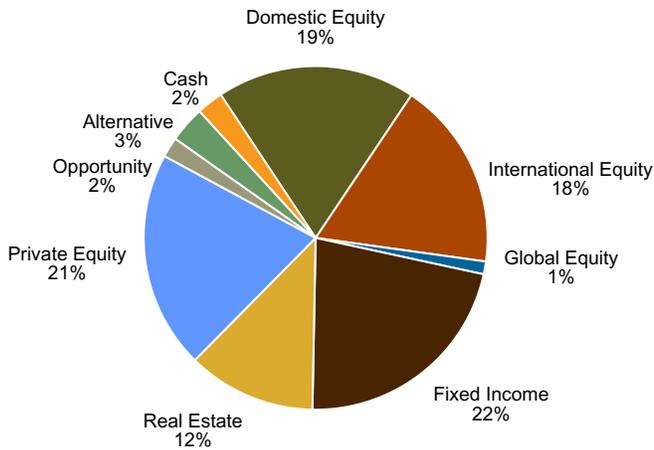
Index	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
<b>U.S. Equity:</b>						
Russell:3000 Index	6.27	0.48	14.74	12.18	7.35	5.39
S&P:500	7.04	1.38	15.13	12.57	7.31	5.00
Russell:1000 Index	6.50	0.92	15.01	12.44	7.40	5.25
Russell:1000 Growth	7.32	5.67	16.83	13.53	8.53	4.33
Russell:1000 Value	5.64	(3.83)	13.08	11.27	6.16	5.86
Russell:Midcap Index	3.62	(2.44)	14.18	11.44	8.00	8.15
Russell:Midcap Growth	4.12	(0.20)	14.88	11.54	8.16	5.85
Russell:Midcap Value	3.12	(4.78)	13.40	11.25	7.61	9.12
Russell:2000 Index	3.59	(4.41)	11.65	9.19	6.80	7.28
Russell:2000 Growth	4.32	(1.38)	14.28	10.67	7.95	6.03
Russell:2000 Value	2.88	(7.47)	9.06	7.67	5.57	8.17
<b>U.S. Fixed Income:</b>						
Barclays:Aggregate Index	(0.57)	0.55	1.44	3.25	4.51	4.97
Barclays:Gov/Credit Bond	(0.74)	0.15	1.21	3.39	4.47	5.01
Barclays:Gov/Credit Long	(0.94)	(3.30)	1.70	6.98	6.45	7.07
Barclays:Gov/Credit 1-3	(0.36)	0.65	0.69	0.98	2.74	3.21
Barclays:Credit	(0.52)	(0.77)	1.49	4.38	5.18	5.82
Barclays:Mortgage Idx	(0.10)	1.51	2.01	2.96	4.64	4.90
Barclays:High Yld Corp	(2.07)	(4.47)	1.69	5.04	6.96	7.59
Barclays:US Universal Idx	(0.55)	0.43	1.50	3.46	4.67	5.20
<b>Real Estate:</b>						
NCREIF:Total Index	2.91	13.33	12.04	12.18	7.76	8.96
NAREIT Composite Idx	7.13	2.05	9.94	11.29	6.65	10.59
<b>Global Equity:</b>						
MSCI:ACWI	5.15	(1.84)	8.26	6.66	5.31	4.67
MSCI:AC WORLD IMI	4.91	(2.19)	7.86	6.11	4.98	4.69
<b>Non-U.S. Equity:</b>						
MSCI:EAFE US\$	4.71	(0.81)	5.01	3.60	3.03	3.54
MSCI:EAFE LC(Net)	6.34	5.33	12.30	7.85	3.22	2.67
MSCI:ACWI ex US	3.30	(5.25)	1.94	1.51	3.38	4.46
MSCI:AC Wld Net x US LC	4.81	1.86	9.05	5.79	3.60	3.48
MSCI:ACWI SC ex US	5.28	2.60	5.64	2.63	4.95	8.24
MSCI:Emer Markets	0.73	(14.60)	(6.42)	(4.47)	3.95	8.87
<b>Other:</b>						
3 Month T-Bill	0.03	0.05	0.05	0.07	1.24	1.61
US DOL:CPI All Urban Cons	(0.60)	0.73	1.00	1.53	1.86	2.07



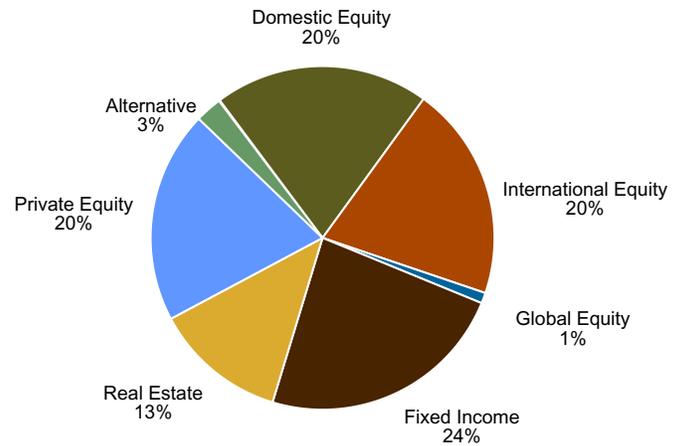
## Actual vs Target Asset Allocation As of December 31, 2015

The top left chart shows the Fund's asset allocation as of December 31, 2015. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Very Lrg Public Funds (>10B).

### Actual Asset Allocation

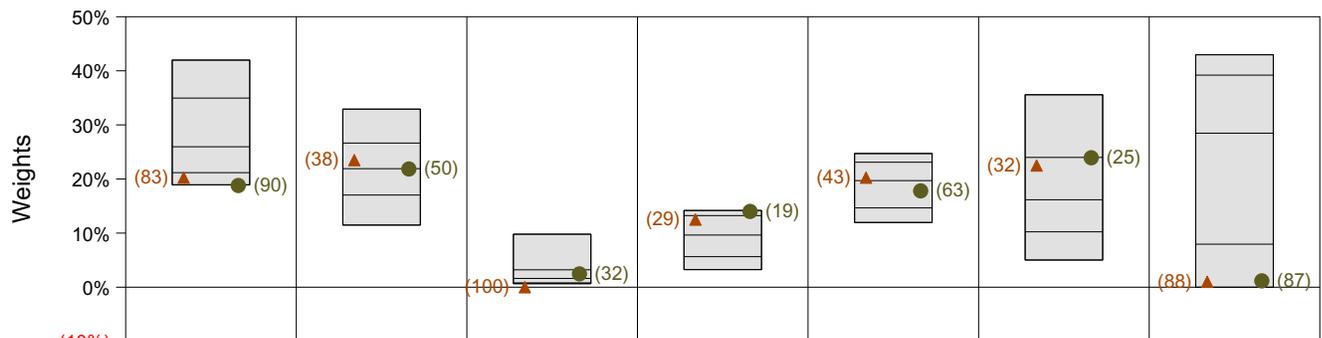


### Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equity	12,789,117	18.8%	20.2%	(1.5%)	(990,753)
International Equity	12,116,398	17.8%	20.2%	(2.4%)	(1,663,471)
Global Equity	795,050	1.2%	1.0%	0.2%	114,563
Fixed Income	14,869,818	21.9%	23.5%	(1.6%)	(1,121,635)
Real Estate	8,239,207	12.1%	12.5%	(0.4%)	(266,885)
Private Equity	13,982,582	20.5%	20.0%	0.5%	372,834
Opportunity	1,286,288	1.9%	0.0%	1.9%	1,286,288
Alternative	2,299,979	3.4%	2.5%	0.9%	598,761
Cash	1,670,299	2.5%	0.0%	2.5%	1,670,299
<b>Total</b>	<b>68,048,739</b>	<b>100.0%</b>	<b>100.0%</b>		

### Asset Class Weights vs Very Lrg Public Funds (>10B)



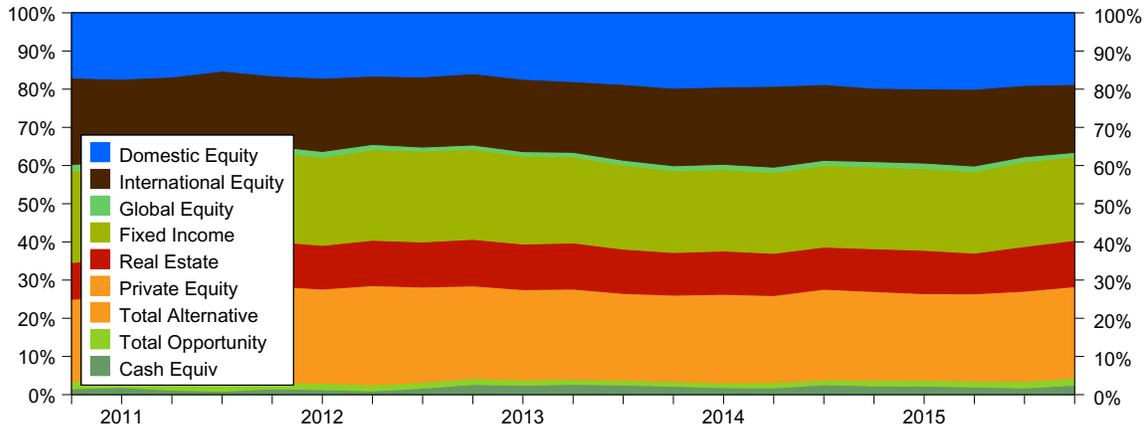
	Domestic Equity	Fixed Income	Cash	Real Estate	International Equity	Alternative	Global Equity
10th Percentile	41.98	32.92	9.79	14.18	24.71	35.57	42.97
25th Percentile	34.96	26.65	3.21	13.24	23.10	23.99	39.20
Median	25.96	21.91	1.61	9.64	19.70	16.16	28.47
75th Percentile	21.17	17.03	0.80	5.64	14.66	10.23	7.95
90th Percentile	18.93	11.48	0.65	3.25	11.96	5.02	0.00
<b>Fund</b> ●	18.79	21.85	2.45	14.00	17.81	23.93	1.17
<b>Target</b> ▲	20.25	23.50	0.00	12.50	20.25	22.50	1.00
% Group Invested	100.00%	95.65%	69.57%	86.96%	100.00%	95.65%	30.43%

\* Current Quarter Target = 23.5% OPERF Total Custom FI Benchmark, 20.2% Russell 3000 Index, 20.2% MSCI ACWI ex-US IMI Index, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag, 1.2% CPI + 400 bps, 1.2% CPI + 400 bps and 1.0% MSCI All Count Wid-Net.

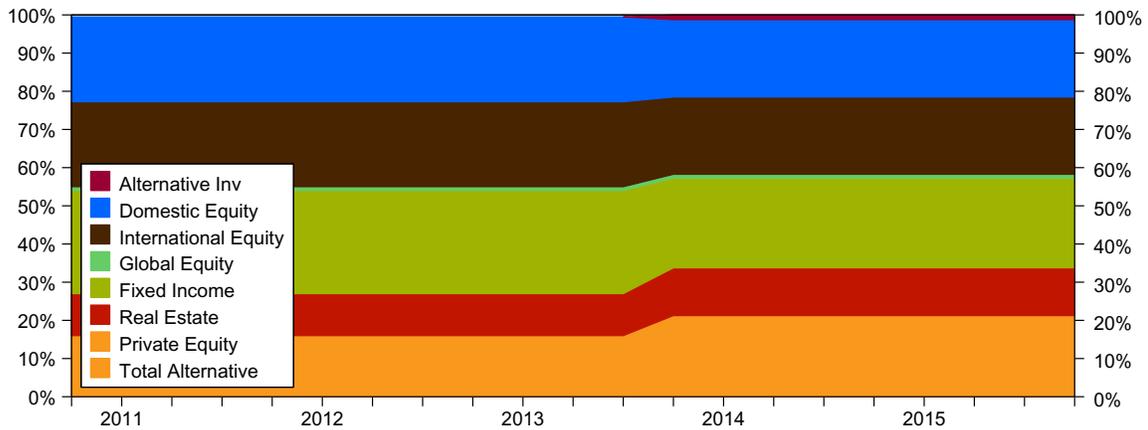
## Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Very Lrg Public Funds (>10B).

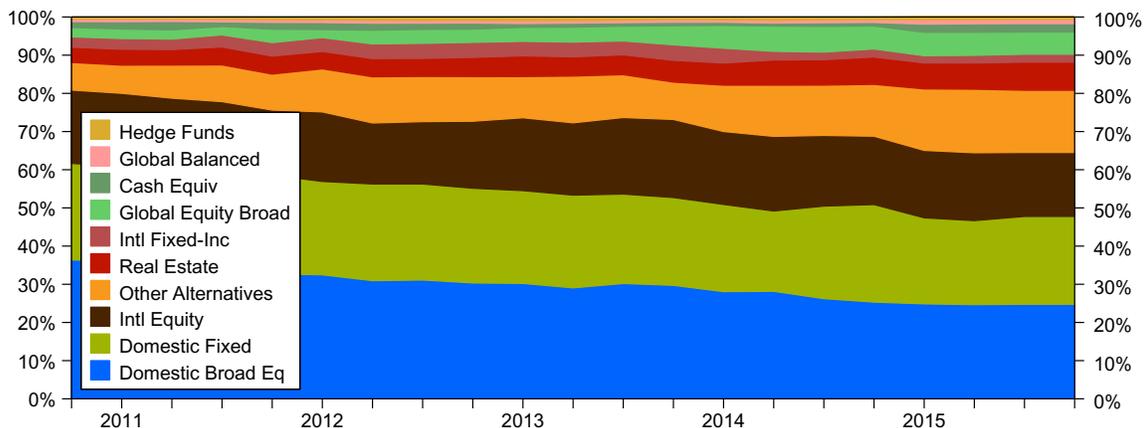
### Actual Historical Asset Allocation



### Target Historical Asset Allocation



### Average Very Lrg Public Funds (>10B) Historical Asset Allocation



\* Current Quarter Target = 23.5% OPERF Total Custom FI Benchmark, 20.2% Russell 3000 Index, 20.2% MSCI ACWI ex-US IMI Index, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag, 1.2% CPI + 400 bps, 1.2% CPI + 400 bps and 1.0% MSCI All Count Wid-Net.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2015, with the distribution as of September 30, 2015.

### Asset Distribution Across Investment Managers

	December 31, 2015		September 30, 2015	
	Market Value	% of Total Fund	Market Value	% of Total Fund
<b>Public Equity*</b>	<b>\$25,700,565,434</b>	<b>37.41%</b>	<b>\$26,376,320,570</b>	<b>38.72%</b>
<b>Domestic Equity*</b>	<b>\$12,789,117,203</b>	<b>18.61%</b>	<b>\$12,862,535,129</b>	<b>18.88%</b>
<b>Large Cap Growth</b>	<b>\$886,402,510</b>	<b>1.29%</b>	<b>\$1,333,618,538</b>	<b>1.96%</b>
BlackRock Russell 1000 Growth	886,402,510	1.29%	1,333,618,531	1.96%
<b>Large Cap Value</b>	<b>\$1,843,475,864</b>	<b>2.68%</b>	<b>\$1,936,309,047</b>	<b>2.84%</b>
Aronson, Johnson & Ortiz	1,187,098,077	1.73%	1,127,763,156	1.66%
BlackRock Russell 1000 Value	656,377,787	0.96%	808,545,883	1.19%
<b>Small Cap Growth</b>	<b>\$128,860,411</b>	<b>0.19%</b>	<b>\$223,943,317</b>	<b>0.33%</b>
Next Century Small Cap	8,039	0.00%	98,645,080	0.14%
EAM MicroCap Growth	128,852,372	0.19%	125,298,238	0.18%
<b>Small Cap Value</b>	<b>\$728,010,370</b>	<b>1.06%</b>	<b>\$700,579,466</b>	<b>1.03%</b>
AQR Capital Management	203,522,349	0.30%	193,153,490	0.28%
Boston Company Asset Management	226,404,730	0.33%	219,586,606	0.32%
DFA MicroCap Value	181,094,170	0.26%	175,054,371	0.26%
Callan US Microcap Value	116,989,121	0.17%	112,784,998	0.17%
<b>Market Oriented</b>	<b>\$9,073,974,732</b>	<b>13.21%</b>	<b>\$8,628,784,837</b>	<b>12.67%</b>
PIMCO (liquidating)	1,014,256	0.00%	737,222	0.00%
Russell Fundamental LC OST managed	1,243,858,897	1.81%	1,176,469,354	1.73%
DFA Large Cap Core	3,370,650,570	4.91%	3,230,651,702	4.74%
Wanger Asset Management	733,505,453	1.07%	716,675,408	1.05%
Wellington Mgmt - Domestic Equity	371,506,619	0.54%	343,446,135	0.50%
Russell 2000 Synthetic - OST managed	340,746,724	0.50%	328,174,165	0.48%
S&P 500 - OST managed	1,812,021,158	2.64%	1,692,181,140	2.48%
S&P 400 - OST managed	472,523,126	0.69%	460,280,287	0.68%
OST Risk Premia Strategy	729,162,185	1.06%	680,906,645	1.00%
<b>Other</b>				
Transitional & Closed Accounts	26,351,477	0.04%	2,500,658	0.00%
Shott Capital Management	6,219,524	0.01%	33,842,164	0.05%
Shott Annex	3	0.00%	2,936,049	0.00%
Transition Account II - Domestic Equity	95,822,313	0.14%	21,052	0.00%
<b>International Equity</b>	<b>\$12,116,398,307</b>	<b>17.64%</b>	<b>\$12,598,369,543</b>	<b>18.49%</b>
<b>International Market Oriented (Core)</b>	<b>\$6,171,196,672</b>	<b>8.98%</b>	<b>\$6,615,545,888</b>	<b>9.71%</b>
Northern Trust Non-US Eq (liquidating)	188,241	0.00%	229,391	0.00%
Arrowstreet Capital	1,190,506,401	1.73%	1,130,140,548	1.66%
Arrowstreet Capital (liquidating)	1,257,373	0.00%	1,467,249	0.00%
Lazard Asset Management	922,167,214	1.34%	892,111,344	1.31%
Pyramis Global Advisors	863,594,236	1.26%	984,032,635	1.44%
Wells Cap International CEF	407,579,101	0.59%	389,272,491	0.57%
Lazard International CEF	612,867,139	0.89%	569,937,871	0.84%
AQR Capital Management	938,757,494	1.37%	995,857,575	1.46%
SSgA MSCI World ex US Net Index	1,235,725,089	1.80%	1,654,193,423	2.43%
<b>International Value</b>	<b>\$1,629,667,749</b>	<b>2.37%</b>	<b>\$1,585,351,910</b>	<b>2.33%</b>
Acadian Asset Management	810,426,301	1.18%	789,743,376	1.16%
Brandes Investment Partners	819,241,448	1.19%	795,608,534	1.17%
<b>International Growth</b>	<b>\$1,396,059,981</b>	<b>2.03%</b>	<b>\$1,315,052,500</b>	<b>1.93%</b>
TT International	669,999,640	0.98%	638,932,466	0.94%
Walter Scott Management	726,060,342	1.06%	676,112,341	0.99%
UBS Global Asset Mgmt Americas	7,483	0.00%	7,692	0.00%

All Returns and market values provided by custodian.

\*Domestic Equity and Public Equity composites include Shott Cap. Mgmt and Transitional Accounts for this page only.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2015, with the distribution as of September 30, 2015.

### Asset Distribution Across Investment Managers

	December 31, 2015		September 30, 2015	
	Market Value	% of Total Fund	Market Value	% of Total Fund
<b>International Small Cap</b>	<b>\$1,323,280,075</b>	<b>1.93%</b>	<b>\$1,306,988,305</b>	<b>1.92%</b>
DFA International Small Cap	271,998,300	0.40%	260,924,919	0.38%
Harris Associates	264,155,728	0.38%	258,971,203	0.38%
Pyramis Select Small Cap	307,293,457	0.45%	337,489,756	0.50%
Victory Capital Management	233,495,119	0.34%	219,492,930	0.32%
EAM International Micro Cap	117,609,813	0.17%	106,347,351	0.16%
DFA International Micro Cap	128,727,658	0.19%	123,762,146	0.18%
<b>Emerging Markets</b>	<b>\$1,596,193,829</b>	<b>2.32%</b>	<b>\$1,775,430,940</b>	<b>2.61%</b>
Genesis Emerging Markets	545,901,067	0.79%	542,636,032	0.80%
Arrowstreet Emerging Markets	383,419,174	0.56%	382,408,989	0.56%
BlackRock Tiered Emerging Markets	-2	(0.00%)	180,449,700	0.26%
Westwood Global Investment	237,259,893	0.35%	244,775,877	0.36%
William Blair and Company	183,025,354	0.27%	180,630,603	0.27%
DFA Emerging Market Small Cap	112,594,925	0.16%	109,946,819	0.16%
William Blair Emerging Mkt Small Cap	133,993,415	0.20%	134,582,921	0.20%
<b>Global Equity</b>	<b>\$795,049,924</b>	<b>1.16%</b>	<b>\$915,415,898</b>	<b>1.34%</b>
Alliance Bernstein Global Value	795,049,924	1.16%	915,415,898	1.34%
<b>Fixed Income</b>	<b>\$14,869,818,368</b>	<b>21.64%</b>	<b>\$14,945,905,543</b>	<b>21.94%</b>
<b>Core Fixed Income</b>	<b>\$5,478,673,593</b>	<b>7.97%</b>	<b>\$5,496,693,655</b>	<b>8.07%</b>
Alliance Bernstein	1,365,480,263	1.99%	1,373,060,522	2.02%
Blackrock	1,373,170,524	2.00%	1,378,863,743	2.02%
Wellington	1,359,825,845	1.98%	1,366,440,889	2.01%
Western Asset	1,380,196,960	2.01%	1,378,328,502	2.02%
<b>Short Term Fixed Income</b>	<b>\$4,972,619,922</b>	<b>7.24%</b>	<b>\$4,979,240,395</b>	<b>7.31%</b>
Wellington Short Duration	1,261,216,607	1.84%	1,260,127,166	1.85%
Western Asset Short Duration	1,240,444,859	1.81%	1,241,319,994	1.82%
Alliance Bernstein Short Duration	1,238,491,480	1.80%	1,241,522,732	1.82%
Blackrock Short Duration	1,232,466,976	1.79%	1,236,270,504	1.81%
<b>BIG Fixed Income</b>	<b>\$4,418,516,613</b>	<b>6.43%</b>	<b>\$4,470,013,183</b>	<b>6.56%</b>
KKR Asset Management	2,715,727,542	3.95%	2,744,824,198	4.03%
Oak Hill	1,702,789,072	2.48%	1,725,188,985	2.53%
<b>Total Real Estate</b>	<b>\$8,239,207,267</b>	<b>11.99%</b>	<b>\$7,878,622,928</b>	<b>11.57%</b>
<b>Real Estate excluding REITs</b>	<b>\$6,298,741,155</b>	<b>9.17%</b>	<b>\$6,035,048,842</b>	<b>8.86%</b>
<b>Total REITs</b>	<b>\$1,940,466,111</b>	<b>2.82%</b>	<b>\$1,843,574,086</b>	<b>2.71%</b>
<b>Total Domestic REITs</b>	<b>\$1,437,547,569</b>	<b>2.09%</b>	<b>\$1,342,638,048</b>	<b>1.97%</b>
ABKB - LaSalle Advisors	950,407,088	1.38%	883,161,260	1.30%
Woodbourne Investment Management	84,166,655	0.12%	84,372,457	0.12%
Cohen & Steers	402,973,825	0.59%	375,104,331	0.55%
<b>Total Global REITs</b>	<b>\$502,918,543</b>	<b>0.73%</b>	<b>\$500,936,038</b>	<b>0.74%</b>
Morgan Stanley	420,159,052	0.61%	418,894,133	0.61%
European Investors	82,759,491	0.12%	82,041,905	0.12%

All Returns and market values provided by custodian.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2015, with the distribution as of September 30, 2015.

### Asset Distribution Across Investment Managers

	December 31, 2015		September 30, 2015	
	Market Value	% of Total Fund	Market Value	% of Total Fund
<b>Total Private Equity</b>	<b>\$13,982,581,934</b>	<b>20.55%</b>	<b>\$14,235,715,663</b>	<b>21.10%</b>
<b>Opportunity Portfolio</b>	<b>\$1,286,287,827</b>	<b>1.89%</b>	<b>\$1,169,579,948</b>	<b>1.73%</b>
<b>Alternative Portfolio</b>	<b>\$2,299,979,451</b>	<b>3.38%</b>	<b>\$1,690,121,013</b>	<b>2.50%</b>
<b>Cash Mobilization Fund</b>	<b>\$1,398,613,407</b>	<b>2.06%</b>	<b>\$931,751,596</b>	<b>1.38%</b>
<b>Total Variable Fund</b>	<b>\$655,618,552</b>	<b>0.96%</b>	<b>\$645,349,664</b>	<b>0.96%</b>
BlackRock ACWI Index Fund	644,223,584	0.95%	636,958,654	0.94%
Variable Cash Fund	11,394,967	0.02%	8,391,007	0.01%
Transition Account - Variable	1	0.00%	1	0.00%
<b>Overlay</b>	<b>\$271,685,789</b>	<b>0.40%</b>	<b>\$248,788,750</b>	<b>0.37%</b>
<b>Total Regular Account</b>	<b>\$68,048,750,845</b>	<b>100.0%</b>	<b>\$67,476,806,011</b>	<b>100.0%</b>

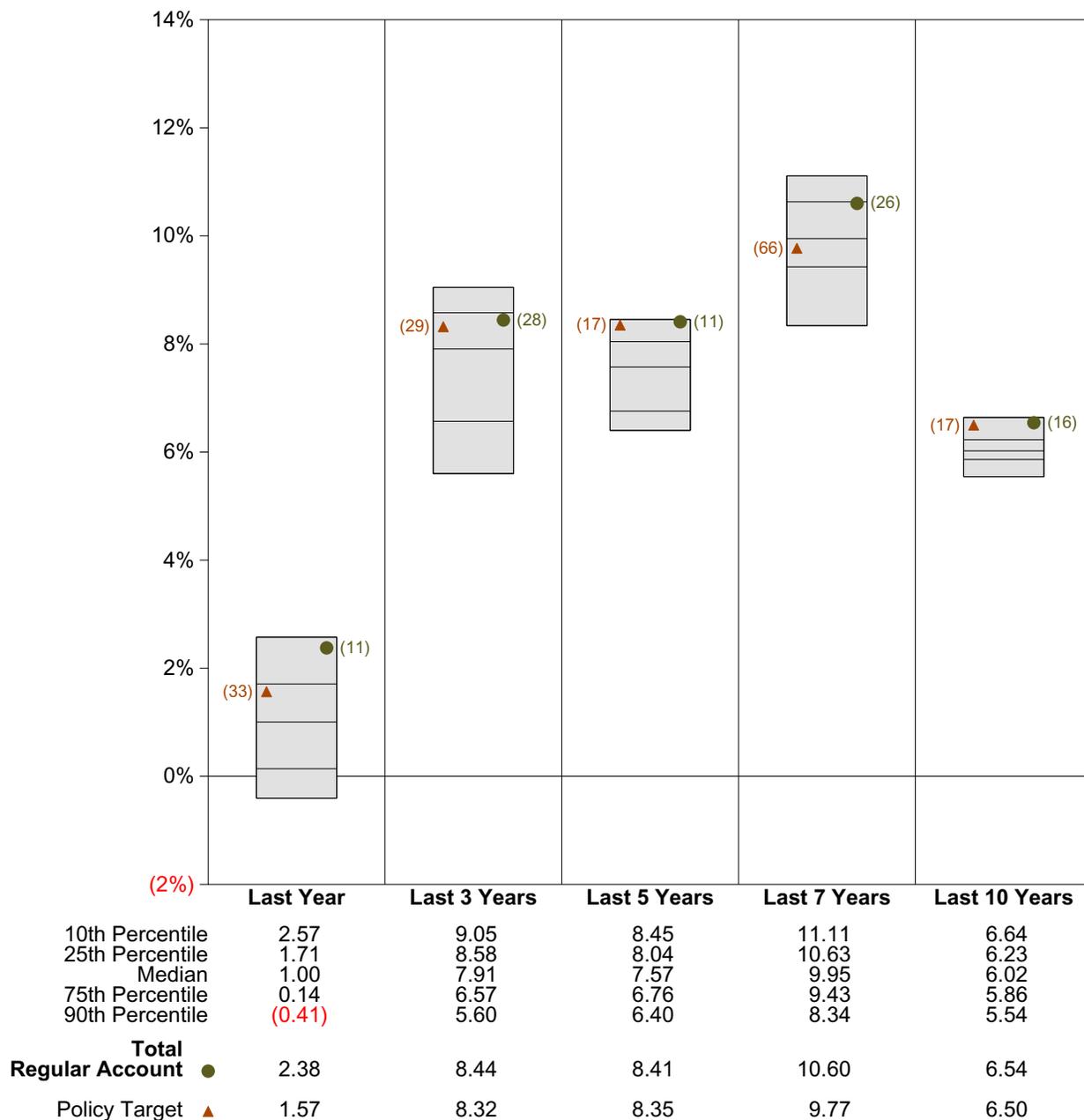
All Returns and market values provided by custodian.



## Oregon Public Employees Retirement Fund (OPERF) Performance vs Very Lrg Public Funds (>10B) Periods Ended December 31, 2015

### Return Ranking

The chart below illustrates fund rankings over various periods versus the Very Lrg Public Funds (>10B). The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Very Lrg Public Funds (>10B). The numbers to the right of the bar represent the percentile rankings of the fund being analyzed. The table below the chart details the rates of return plotted in the graph above.



\* Current Quarter Target = 41.5% MSCI All Count Wld-Net, 23.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag and 2.5% CPI + 400 bps.

Total Regular Account performance is gross for public market funds and net for private market funds.

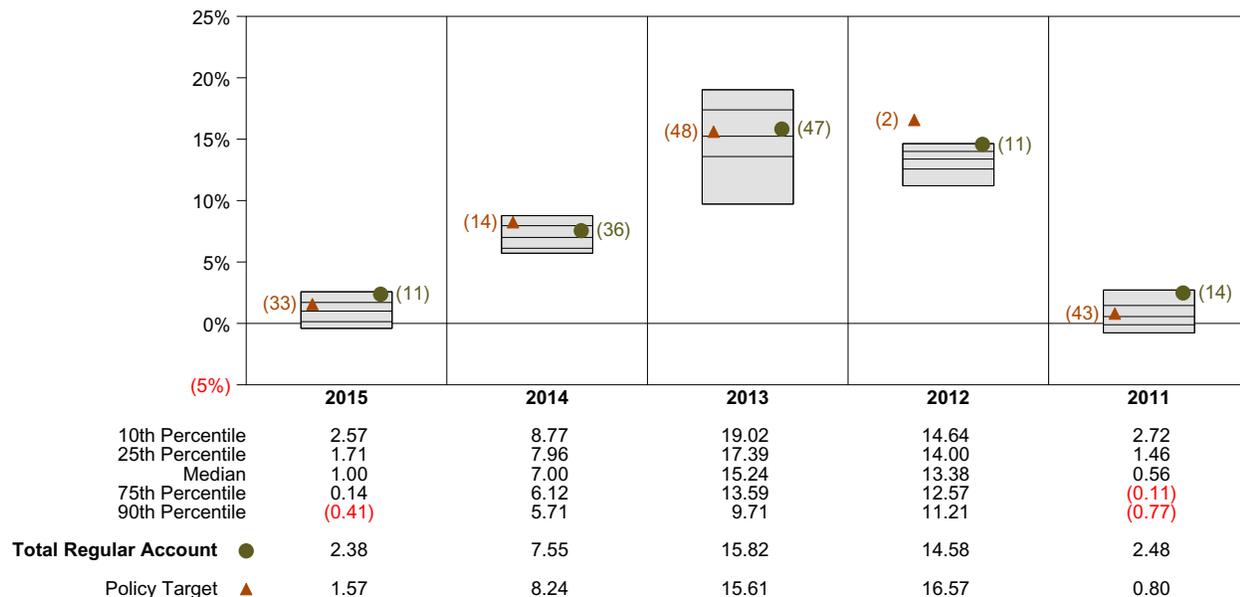
# Oregon Public Employees Retirement Fund (OPERF)

## Performance vs Very Lrg Public Funds (>10B)

### Recent Periods

#### Return Ranking

The chart below illustrates fund rankings over various periods versus the Very Lrg Public Funds (>10B). The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Very Lrg Public Funds (>10B). The numbers to the right of the bar represent the percentile rankings of the fund being analyzed. The table below the chart details the rates of return plotted in the graph above.

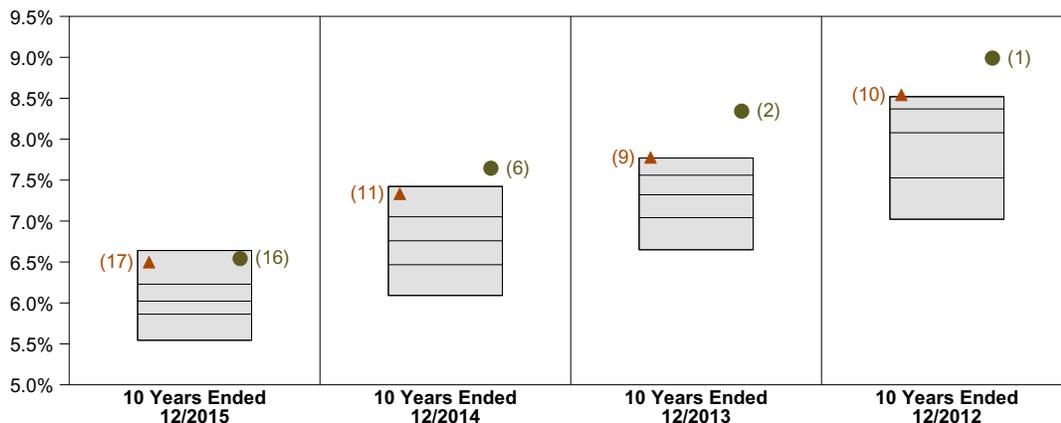


\* Current Quarter Target = 41.5% MSCI All Count Wld-Net, 23.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag and 2.5% CPI + 400 bps.  
Total Regular Account performance is gross for public market funds and net for private market funds.

# Oregon Public Employees Retirement Fund (OPERF) Performance vs Very Lrg Public Funds (>10B) Rolling Periods

## Return Ranking

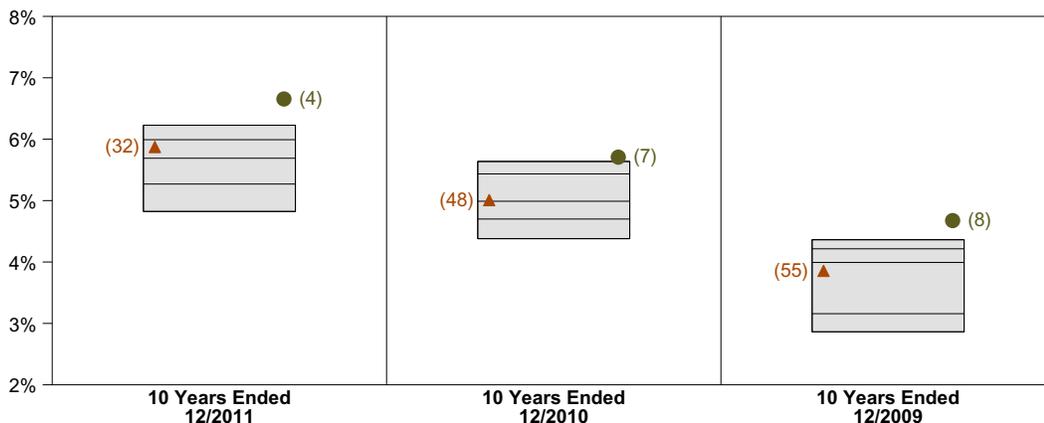
The chart below illustrates fund rankings over various periods versus the Very Lrg Public Funds (>10B). The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Very Lrg Public Funds (>10B). The numbers to the right of the bar represent the percentile rankings of the fund being analyzed. The table below the chart details the rates of return plotted in the graph above.



10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

**Total Regular Account** ●

**Policy Target** ▲



10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

**Total Regular Account** ●

**Policy Target** ▲

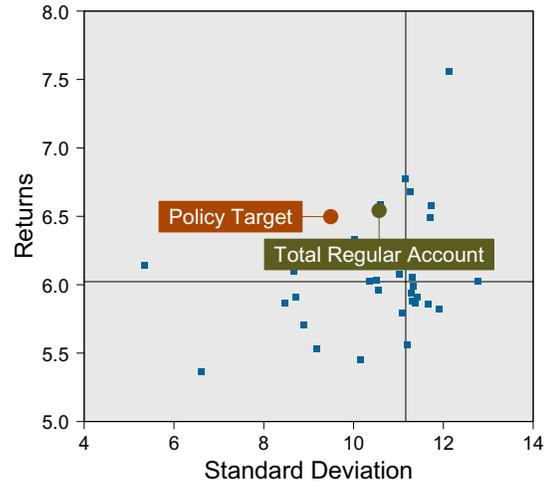
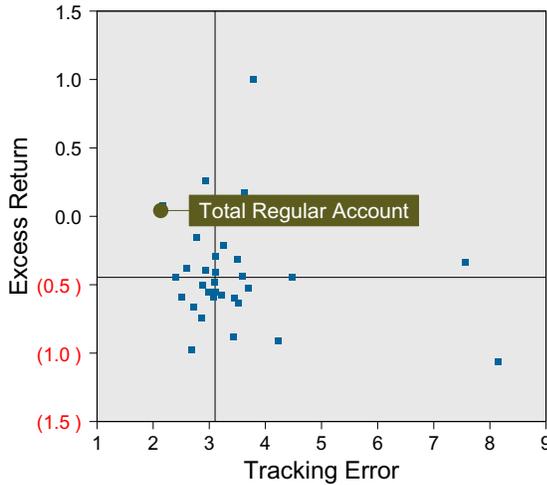
\* Current Quarter Target = 41.5% MSCI All Count Wld-Net, 23.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag and 2.5% CPI + 400 bps.  
Total Regular Account performance is gross for public market funds and net for private market funds.

# Total Regular Account Risk Analysis Summary

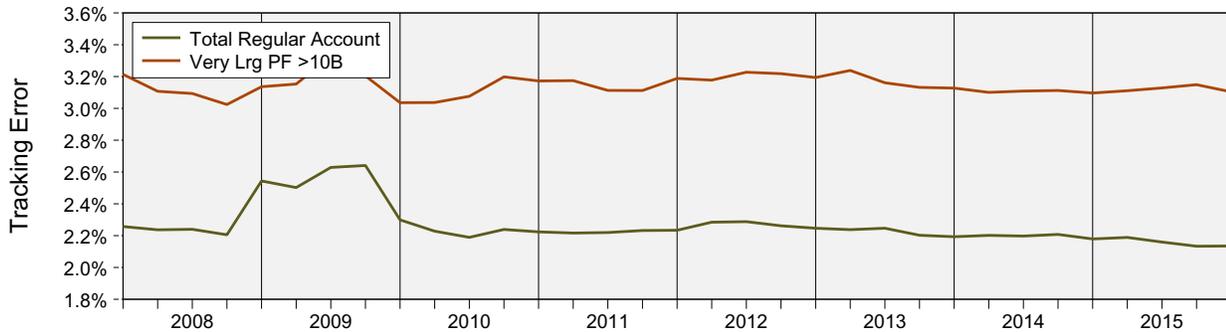
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second scatter chart displays the return versus risk relationship. The third chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

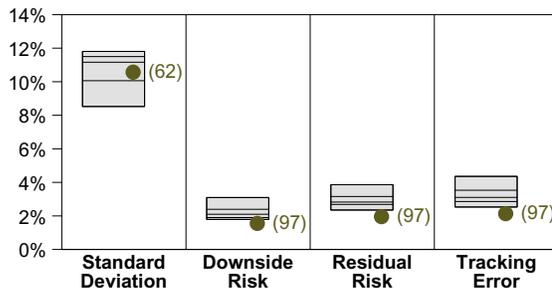
### Risk Analysis vs Very Lrg Public Funds (>10B) (Gross) Ten Years Ended December 31, 2015



### Rolling 40 Quarter Tracking Error vs Policy Target

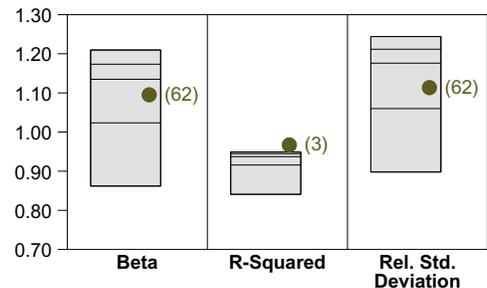


### Risk Statistics Rankings vs Policy Target Rankings Against Very Lrg Public Funds (>10B) (Gross) Ten Years Ended December 31, 2015



	Standard Deviation	Downside Risk	Residual Risk	Tracking Error
10th Percentile	11.81	3.10	3.86	4.36
25th Percentile	11.50	2.40	3.16	3.53
Median	11.16	2.10	2.83	3.10
75th Percentile	10.06	1.90	2.68	2.86
90th Percentile	8.52	1.79	2.35	2.53

**Total Regular Account** ● 10.57      1.55      1.96      2.13



	Beta	R-Squared	Rel. Std. Deviation
10th Percentile	1.21	0.95	1.24
25th Percentile	1.17	0.94	1.21
Median	1.13	0.94	1.18
75th Percentile	1.02	0.92	1.06
90th Percentile	0.86	0.84	0.90

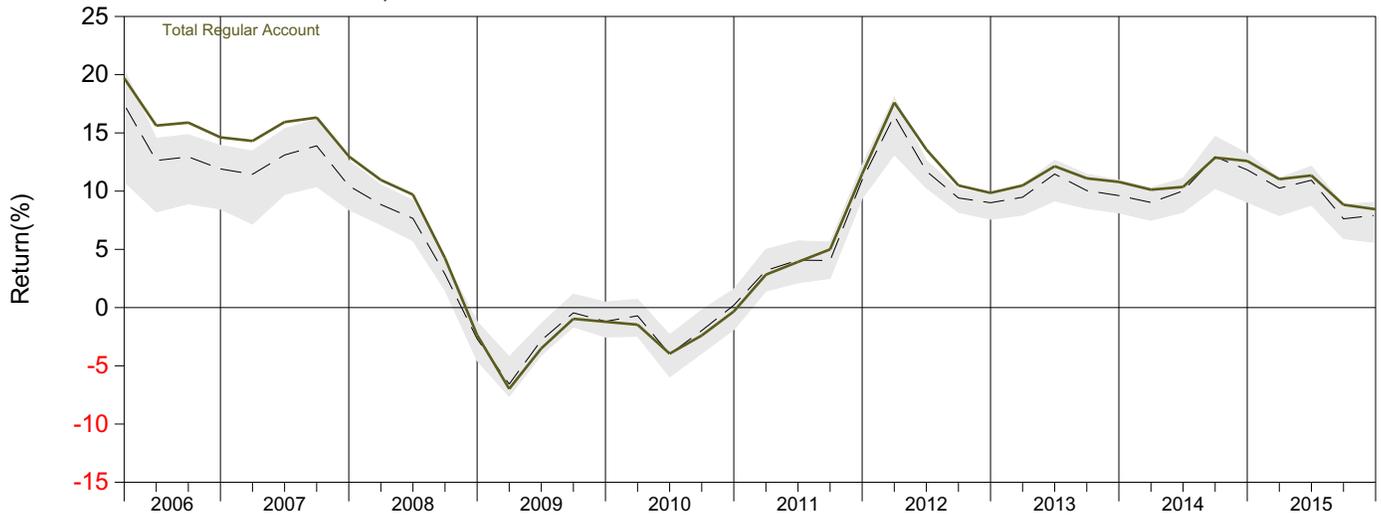
**Total Regular Account** ● 1.10      0.97      1.11

## Total Regular Account Historical Consistency Analysis

### Consistency of Return(%) and Sharpe Ratio

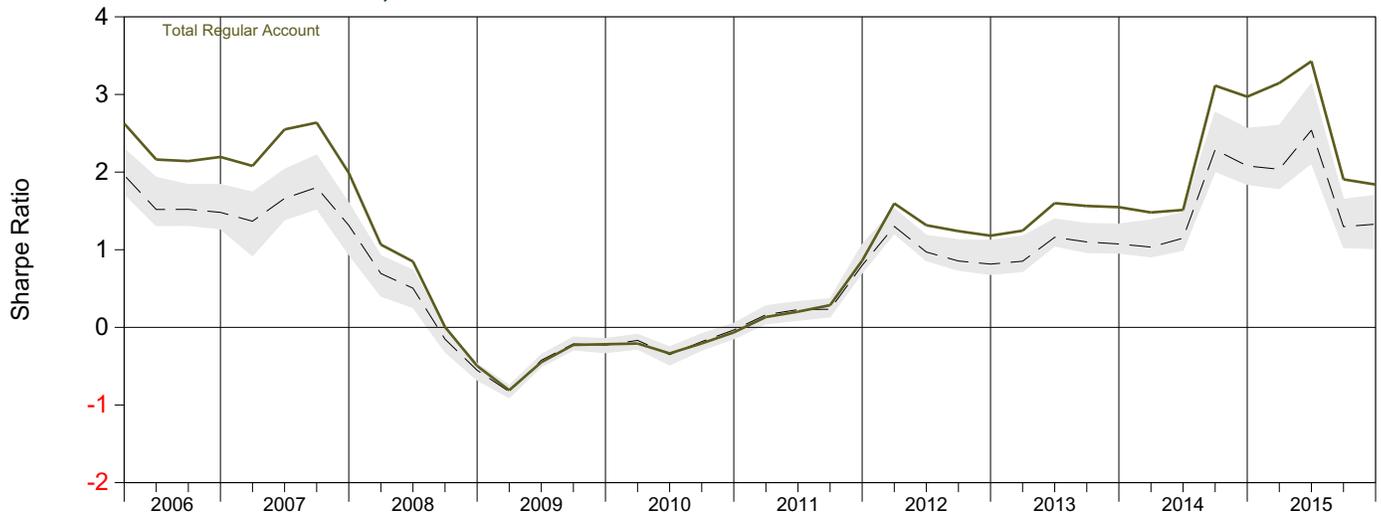
The first chart below illustrates the consistency of return(%) over rolling three year periods versus the Policy Target. The gray area represents the range of return(%) for the 10th through 90th percentile for the Very Lrg PF >10B. The second chart below illustrates the consistency of sharpe ratio over rolling three year periods. The tables provide summary statistics for the median manager of the group and the portfolio.

### Rolling Three Year Return(%) Relative to Policy Target Ten Years Ended December 31, 2015



Rolling Three Year Period Analysis	Median	Portfolio
Average Annual Return(%)	7.32%	8.30%
% Positive Periods	80%	78%
Average Ranking	50	28

### Rolling Three Year Sharpe Ratio Relative to Policy Target Ten Years Ended December 31, 2015

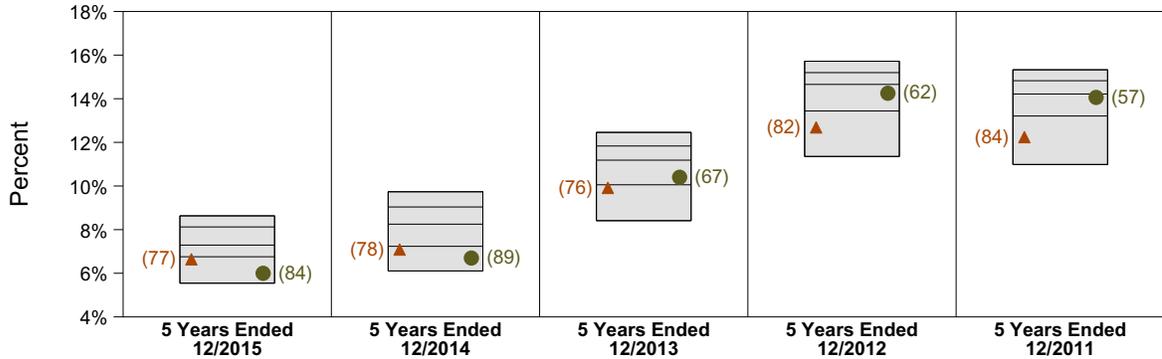


Rolling Three Year Period Analysis	Median	Portfolio
Average Annual Sharpe Ratio	0.85%	1.24%
% Positive Periods	75%	78%
Average Ranking	50	19

# Risk and Risk Adjusted Return Statistics

## Period Ended December 31, 2015

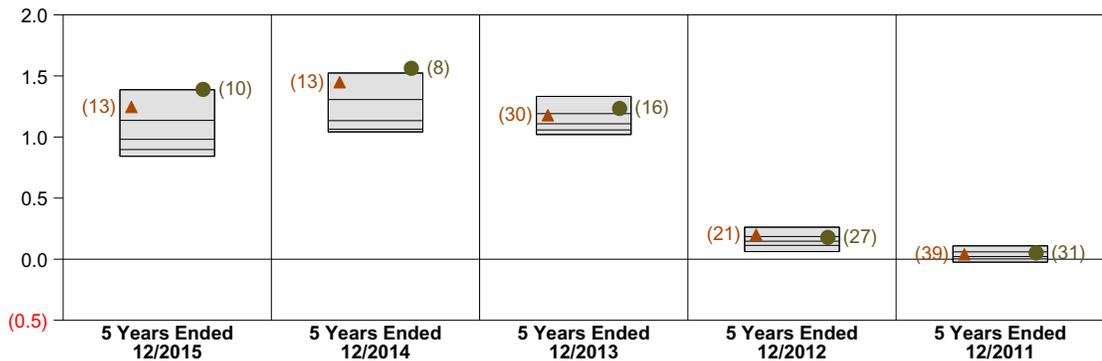
### Standard Deviation vs Very Lrg Public Funds (>10B)



10th Percentile	8.63	9.74	12.46	15.72	15.33
25th Percentile	8.12	9.04	11.83	15.20	14.83
Median	7.29	8.25	11.18	14.66	14.22
75th Percentile	6.76	7.24	10.06	13.44	13.21
90th Percentile	5.55	6.11	8.41	11.35	10.99

<b>Total Regular Account</b> ●	6.00	6.70	10.40	14.25	14.06
<b>Policy Target</b> ▲	6.64	7.09	9.91	12.69	12.24

### Sharpe Ratio vs Very Lrg Public Funds (>10B)



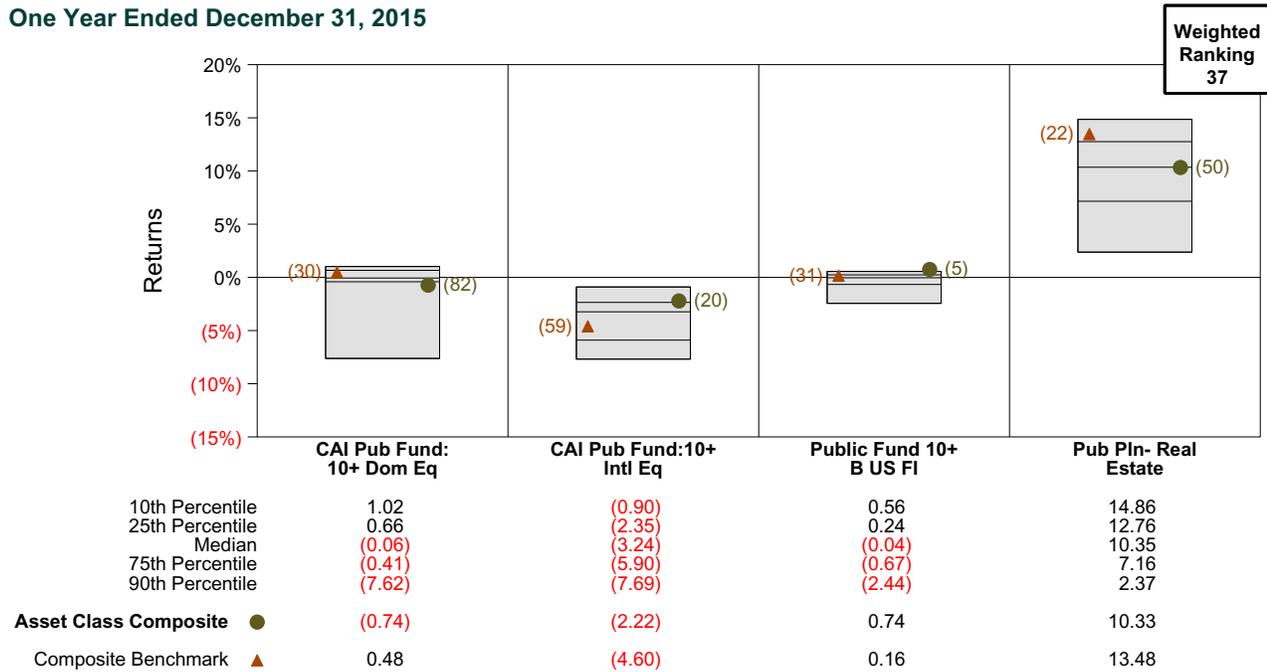
10th Percentile	1.39	1.52	1.33	0.26	0.11
25th Percentile	1.14	1.31	1.19	0.19	0.06
Median	0.98	1.13	1.11	0.15	0.02
75th Percentile	0.90	1.06	1.06	0.11	0.00
90th Percentile	0.84	1.04	1.02	0.06	(0.02)

<b>Total Regular Account</b> ●	1.39	1.56	1.23	0.18	0.05
<b>Policy Target</b> ▲	1.25	1.45	1.18	0.20	0.04

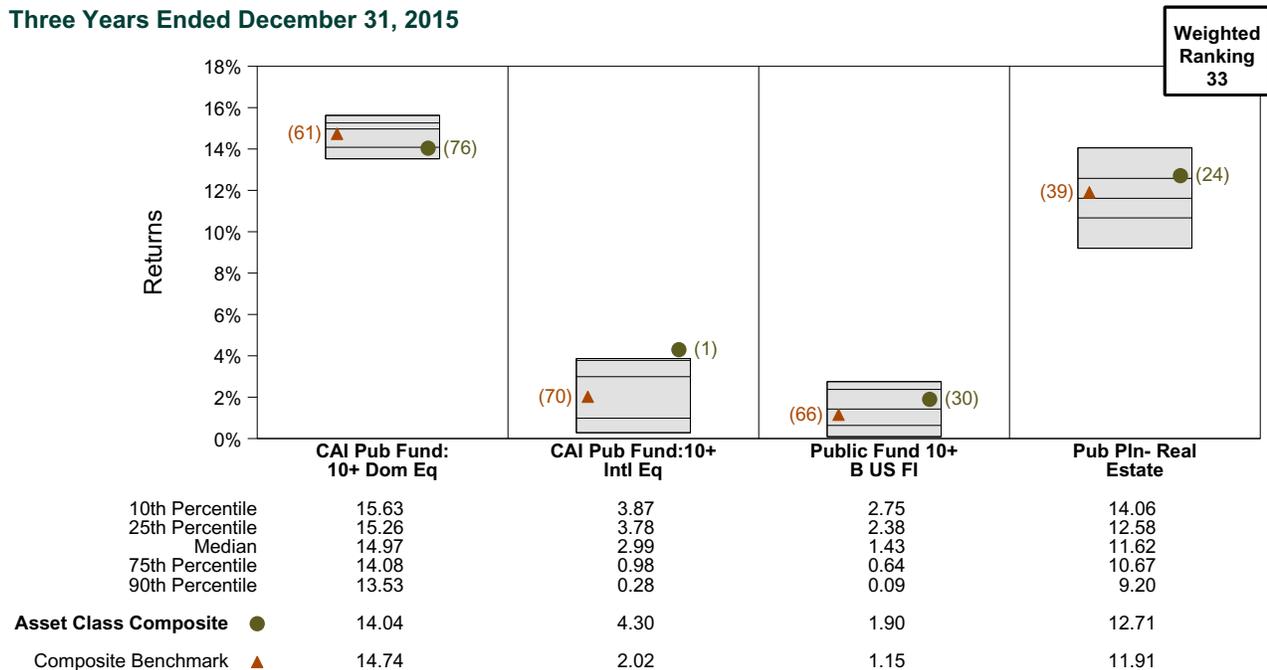
## Asset Class Rankings

Total Regular Account performance is gross for public market funds and net for private market funds.

### Total Asset Class Performance One Year Ended December 31, 2015



### Total Asset Class Performance Three Years Ended December 31, 2015

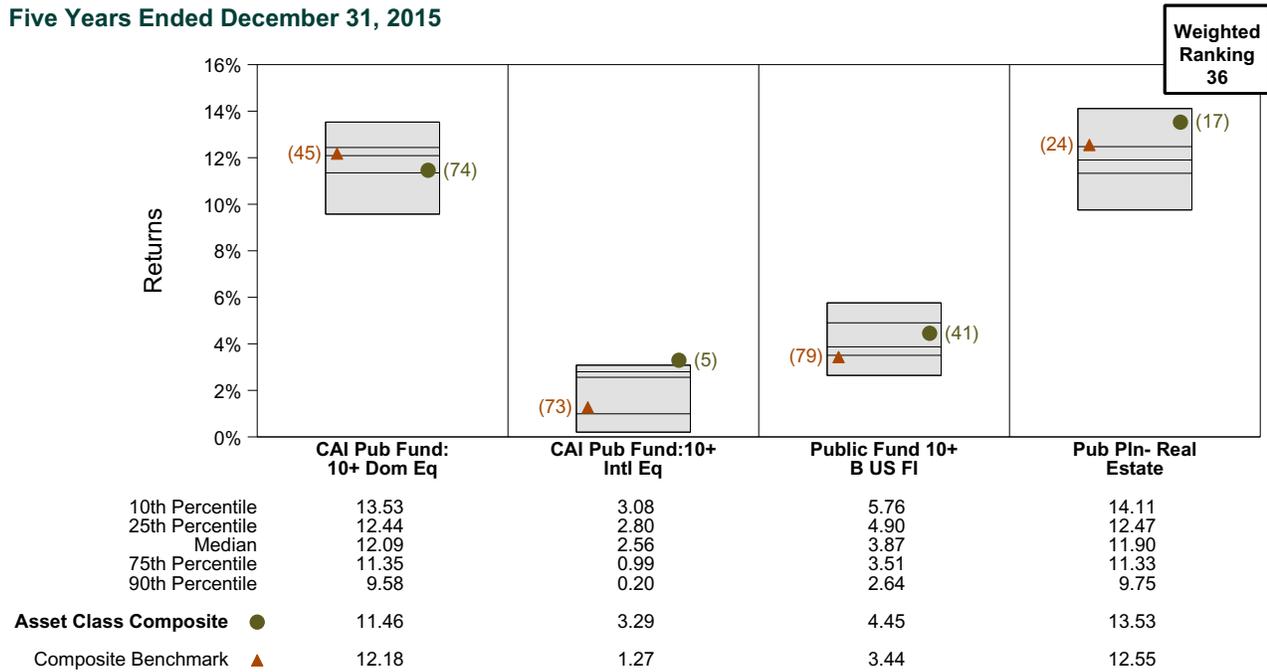


\* Current Quarter Target = 23.5% OPERF Total Custom FI Benchmark, 20.2% Russell 3000 Index, 20.2% MSCI ACWI ex-US IMI Index, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag, 1.2% CPI + 400 bps, 1.2% CPI + 400 bps and 1.0% MSCI All Count Wld-Net.

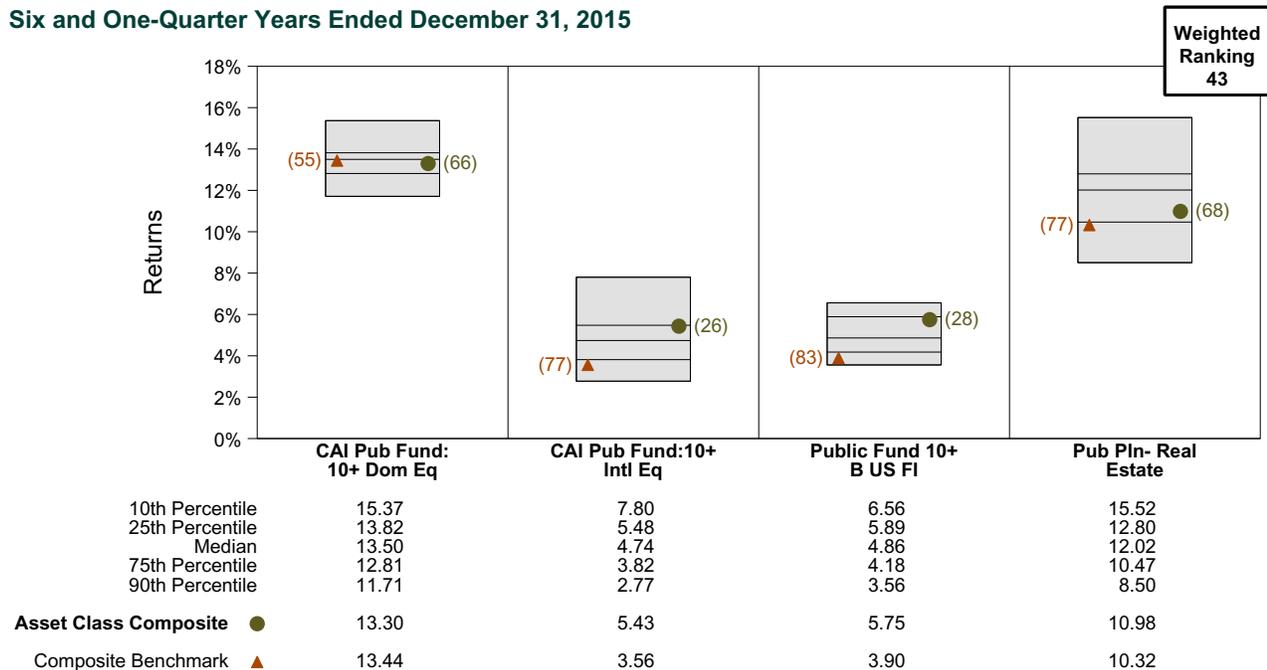
## Asset Class Rankings

Total Regular Account performance is gross for public market funds and net for private market funds.

### Total Asset Class Performance Five Years Ended December 31, 2015



### Total Asset Class Performance Six and One-Quarter Years Ended December 31, 2015



\* Current Quarter Target = 23.5% OPERF Total Custom FI Benchmark, 20.2% Russell 3000 Index, 20.2% MSCI ACWI ex-US IMI Index, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag, 1.2% CPI + 400 bps, 1.2% CPI + 400 bps and 1.0% MSCI All Count Wld-Net.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2015. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2015

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Total Public Equity</b>	<b>4.50%</b>	<b>(1.75%)</b>	<b>8.74%</b>	<b>6.75%</b>	<b>5.02%</b>
MSCI ACWI IMI Net	4.91%	(2.19%)	7.86%	6.11%	4.98%
CAI Global Equity Broad Style	5.30%	0.06%	10.13%	7.83%	5.89%
<b>Domestic Equity</b>	<b>5.25%</b>	<b>(0.87%)</b>	<b>13.82%</b>	<b>11.21%</b>	<b>6.86%</b>
Russell 3000 Index	6.27%	0.48%	14.74%	12.18%	7.35%
CAI Pub Fund:10+ Dom Eq	5.72%	(0.26%)	14.21%	11.80%	7.25%
<b>International Equity</b>	<b>3.86%</b>	<b>(2.59%)</b>	<b>3.92%</b>	<b>2.93%</b>	<b>4.51%</b>
MSCI ACWI ex-US IMI Index (5)	3.52%	(4.60%)	2.02%	1.27%	3.38%
CAI Pub Fund:10+ Intl Eq	3.32%	(4.38%)	2.70%	2.12%	3.68%
<b>Total Fixed Income</b>	<b>(0.51%)</b>	<b>0.54%</b>	<b>1.69%</b>	<b>4.25%</b>	<b>5.54%</b>
Custom FI Benchmark (15)	(0.80%)	0.16%	1.15%	3.41%	4.56%
CAI Pub Fund: 10+ US FI	(0.67%)	(0.46%)	1.29%	3.62%	4.88%
<b>Total Real Estate (19)</b>	<b>2.65%</b>	<b>9.81%</b>	<b>12.25%</b>	<b>12.96%</b>	<b>7.08%</b>
Total Real Estate ex REITs (20)	1.83%	12.55%	13.43%	13.73%	7.10%
NCREIF Property Index Qtr Lag	3.09%	13.48%	11.91%	12.55%	8.02%
Public Plan - Real Estate	4.07%	12.10%	12.30%	12.31%	6.10%
<b>Total Private Equity (21)</b>	<b>(0.25%)</b>	<b>7.79%</b>	<b>13.23%</b>	<b>13.02%</b>	<b>10.56%</b>
Russell 3000 + 300 BPS Qtr Lag	(6.54%)	2.49%	15.87%	16.64%	10.50%
<b>Total Alternative</b>	<b>(0.15%)</b>	<b>(4.32%)</b>	<b>1.94%</b>	-	-
CPI + 4%	0.38%	4.76%	5.03%	-	-
<b>Opportunity Portfolio</b>	<b>0.62%</b>	<b>2.14%</b>	<b>8.52%</b>	<b>8.97%</b>	-
Russell 3000 Index	6.27%	0.48%	14.74%	12.18%	7.35%
CPI + 5%	0.45%	5.39%	5.72%	6.41%	6.84%
<b>Total Regular Account</b>	<b>2.00%</b>	<b>2.11%</b>	<b>8.19%</b>	<b>8.15%</b>	<b>6.27%</b>
Total Regular Account ex-Overlay	1.98%	2.02%	8.15%	8.05%	6.30%
OPERF Policy Benchmark* (1)	1.00%	1.57%	8.32%	8.35%	6.50%

\* Current Quarter Target = 41.5% MSCI All Count Wld-Net, 23.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag and 2.5% CPI + 400 bps.  
All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2015	2014	2013	2012	2011
<b>Total Public Equity</b>	<b>(1.75%)</b>	<b>3.31%</b>	<b>26.68%</b>	<b>17.47%</b>	<b>(8.23%)</b>
MSCI ACWI IMI Net	(2.19%)	3.84%	23.55%	16.38%	(7.89%)
CAI Global Equity Broad Style	0.06%	4.14%	28.19%	18.06%	(7.58%)
<b>Domestic Equity</b>	<b>(0.87%)</b>	<b>9.85%</b>	<b>35.41%</b>	<b>16.30%</b>	<b>(0.79%)</b>
Russell 3000 Index	0.48%	12.56%	33.55%	16.42%	1.03%
CAI Pub Fund:10+ Dom Eq	(0.26%)	11.82%	33.56%	15.68%	1.38%
<b>International Equity</b>	<b>(2.59%)</b>	<b>(2.88%)</b>	<b>18.62%</b>	<b>18.92%</b>	<b>(13.45%)</b>
MSCI ACWI ex-US IMI Index (5)	(4.60%)	(3.89%)	15.82%	17.04%	(14.31%)
CAI Pub Fund:10+ Intl Eq	(4.38%)	(2.94%)	16.72%	18.11%	(13.18%)
<b>Total Fixed Income</b>	<b>0.54%</b>	<b>3.52%</b>	<b>1.04%</b>	<b>10.33%</b>	<b>6.12%</b>
Custom FI Benchmark (15)	0.16%	3.04%	0.28%	8.61%	5.19%
CAI Pub Fund: 10+ US FI	(0.46%)	6.31%	(1.79%)	6.86%	7.56%
<b>Total Real Estate (19)</b>	<b>9.81%</b>	<b>14.16%</b>	<b>12.83%</b>	<b>13.64%</b>	<b>14.44%</b>
Total Real Estate ex REITs (20)	12.55%	12.01%	15.79%	10.76%	17.69%
NCREIF Property Index Qtr Lag	13.48%	11.26%	11.00%	11.00%	16.10%
Public Plan - Real Estate	12.10%	13.46%	11.35%	11.94%	12.71%
<b>Total Private Equity (21)</b>	<b>7.79%</b>	<b>15.90%</b>	<b>16.19%</b>	<b>14.41%</b>	<b>11.06%</b>
Russell 3000 + 300 BPS Qtr Lag	2.49%	21.24%	25.19%	34.02%	3.57%
<b>Total Alternative</b>	<b>(4.32%)</b>	<b>4.44%</b>	<b>6.02%</b>	<b>(0.84%)</b>	-
CPI + 4%	4.76%	4.78%	5.56%	5.80%	-
<b>Opportunity Portfolio</b>	<b>2.14%</b>	<b>8.81%</b>	<b>15.00%</b>	<b>18.44%</b>	<b>1.50%</b>
Russell 3000 Index	0.48%	12.56%	33.55%	16.42%	1.03%
CPI + 5%	5.39%	5.33%	6.46%	6.68%	8.21%
<b>Total Regular Account</b>	<b>2.11%</b>	<b>7.29%</b>	<b>15.59%</b>	<b>14.29%</b>	<b>2.22%</b>
Total Regular Account ex-Overlay	2.02%	7.28%	15.57%	14.15%	1.98%
OPERF Policy Benchmark* (1)	1.57%	8.24%	15.61%	16.57%	0.80%

\* Current Quarter Target = 41.5% MSCI All Count Wld-Net, 23.5% OPERF Total Custom FI Benchmark, 20.0% Russell 3000 + 300 BPS Qtr Lag, 12.5% NCREIF Property Index Qtr Lag and 2.5% CPI + 400 bps.  
All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2010	2009	2008	2007	2006
<b>Total Public Equity</b>	<b>15.69%</b>	<b>36.91%</b>	<b>(42.57%)</b>	<b>8.85%</b>	<b>18.92%</b>
MSCI ACWI IMI Net	14.34%	36.42%	(42.34%)	11.16%	20.91%
CAI Global Equity Broad Style	13.01%	34.34%	(42.10%)	12.83%	22.59%
<b>Domestic Equity</b>	<b>19.03%</b>	<b>32.86%</b>	<b>(39.89%)</b>	<b>5.34%</b>	<b>13.94%</b>
Russell 3000 Index	16.93%	28.34%	(37.31%)	5.14%	15.72%
CAI Pub Fund:10+ Dom Eq	18.83%	32.00%	(39.71%)	5.08%	15.97%
<b>International Equity</b>	<b>14.12%</b>	<b>41.10%</b>	<b>(43.25%)</b>	<b>16.03%</b>	<b>26.89%</b>
MSCI ACWI ex-US IMI Index (5)	12.73%	43.60%	(45.70%)	17.12%	27.16%
CAI Pub Fund:10+ Intl Eq	13.04%	41.49%	(44.30%)	14.45%	26.68%
<b>Total Fixed Income</b>	<b>10.78%</b>	<b>25.73%</b>	<b>(9.86%)</b>	<b>4.84%</b>	<b>5.84%</b>
Custom FI Benchmark (15)	6.69%	7.97%	2.94%	6.34%	4.79%
CAI Pub Fund: 10+ US FI	9.02%	12.92%	(2.05%)	6.87%	4.58%
<b>Total Real Estate (19)</b>	<b>(1.88%)</b>	<b>(9.40%)</b>	<b>(13.59%)</b>	<b>10.20%</b>	<b>27.30%</b>
Total Real Estate ex REITs (20)	(9.41%)	(17.30%)	(5.61%)	17.41%	25.75%
NCREIF Property Index Qtr Lag	5.84%	(22.11%)	5.27%	17.30%	17.62%
Public Plan - Real Estate	12.08%	(20.04%)	(15.23%)	9.55%	21.54%
<b>Total Private Equity (21)</b>	<b>16.44%</b>	<b>(4.36%)</b>	<b>(8.75%)</b>	<b>25.76%</b>	<b>15.73%</b>
Russell 3000 + 300 BPS Qtr Lag	14.27%	(0.91%)	(18.09%)	19.64%	13.31%
<b>Opportunity Portfolio</b>	<b>12.37%</b>	<b>37.47%</b>	<b>(24.85%)</b>	<b>3.01%</b>	<b>-</b>
Russell 3000 Index	16.93%	28.34%	(37.31%)	5.14%	15.72%
CPI + 5%	6.68%	8.37%	4.56%	9.35%	7.45%
<b>Total Regular Account</b>	<b>12.62%</b>	<b>19.41%</b>	<b>(26.96%)</b>	<b>9.66%</b>	<b>15.30%</b>
Total Regular Account ex-Overlay	12.56%	18.19%	(25.83%)	9.71%	15.52%
OPERF Policy Benchmark* (1)	11.32%	15.52%	(23.04%)	10.52%	14.89%

\* Current Quarter Target = 46.0% MSCI All Count Wld-Net, 27.0% OPERF Total Custom FI Benchmark, 16.0% Russell 3000 + 300 BPS Qtr Lag and 11.0% NCREIF Property Index Qtr Lag.  
All returns reported net-of-fee.



## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2015. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2015

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Total Public Equity</b>	<b>4.50%</b>	<b>(1.75%)</b>	<b>8.74%</b>	<b>6.75%</b>	<b>5.02%</b>
MSCI ACWI IMI Net	4.91%	(2.19%)	7.86%	6.11%	4.98%
CAI Global Equity Broad Style	5.30%	0.06%	10.13%	7.83%	5.89%
<b>Domestic Equity</b>	<b>5.25%</b>	<b>(0.87%)</b>	<b>13.82%</b>	<b>11.21%</b>	<b>6.86%</b>
Russell 3000 Index	6.27%	0.48%	14.74%	12.18%	7.35%
CAI Pub Fund:10+ Dom Eq	5.72%	(0.26%)	14.21%	11.80%	7.25%
<b>International Equity</b>	<b>3.86%</b>	<b>(2.59%)</b>	<b>3.92%</b>	<b>2.93%</b>	<b>4.51%</b>
MSCI ACWI ex-US IMI Index (5)	3.52%	(4.60%)	2.02%	1.27%	3.38%
CAI Pub Fund:10+ Intl Eq	3.32%	(4.38%)	2.70%	2.12%	3.68%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2015	2014	2013	2012	2011
<b>Total Public Equity</b>	<b>(1.75%)</b>	<b>3.31%</b>	<b>26.68%</b>	<b>17.47%</b>	<b>(8.23%)</b>
MSCI ACWI IMI Net	(2.19%)	3.84%	23.55%	16.38%	(7.89%)
CAI Global Equity Broad Style	0.06%	4.14%	28.19%	18.06%	(7.58%)
<b>Domestic Equity</b>	<b>(0.87%)</b>	<b>9.85%</b>	<b>35.41%</b>	<b>16.30%</b>	<b>(0.79%)</b>
Russell 3000 Index	0.48%	12.56%	33.55%	16.42%	1.03%
CAI Pub Fund:10+ Dom Eq	(0.26%)	11.82%	33.56%	15.68%	1.38%
<b>International Equity</b>	<b>(2.59%)</b>	<b>(2.88%)</b>	<b>18.62%</b>	<b>18.92%</b>	<b>(13.45%)</b>
MSCI ACWI ex-US IMI Index (5)	(4.60%)	(3.89%)	15.82%	17.04%	(14.31%)
CAI Pub Fund:10+ Intl Eq	(4.38%)	(2.94%)	16.72%	18.11%	(13.18%)

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2010	2009	2008	2007	2006
<b>Total Public Equity</b>	<b>15.69%</b>	<b>36.91%</b>	<b>(42.57%)</b>	<b>8.85%</b>	<b>18.92%</b>
MSCI ACWI IMI Net	14.34%	36.42%	(42.34%)	11.16%	20.91%
CAI Global Equity Broad Style	13.01%	34.34%	(42.10%)	12.83%	22.59%
<b>Domestic Equity</b>	<b>19.03%</b>	<b>32.86%</b>	<b>(39.89%)</b>	<b>5.34%</b>	<b>13.94%</b>
Russell 3000 Index	16.93%	28.34%	(37.31%)	5.14%	15.72%
CAI Pub Fund:10+ Dom Eq	18.83%	32.00%	(39.71%)	5.08%	15.97%
<b>International Equity</b>	<b>14.12%</b>	<b>41.10%</b>	<b>(43.25%)</b>	<b>16.03%</b>	<b>26.89%</b>
MSCI ACWI ex-US IMI Index (5)	12.73%	43.60%	(45.70%)	17.12%	27.16%
CAI Pub Fund:10+ Intl Eq	13.04%	41.49%	(44.30%)	14.45%	26.68%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2015. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2015

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Domestic Equity</b>	<b>5.25%</b>	<b>(0.87%)</b>	<b>13.82%</b>	<b>11.21%</b>	<b>6.86%</b>
Russell 3000 Index	6.27%	0.48%	14.74%	12.18%	7.35%
CAI Pub Fund:10+ Dom Eq	5.72%	(0.26%)	14.21%	11.80%	7.25%
<b>Market Oriented</b>	<b>5.16%</b>	<b>(1.70%)</b>	<b>13.25%</b>	<b>10.84%</b>	-
Russell 3000 Index	6.27%	0.48%	14.74%	12.18%	7.35%
CAI All Cap: Broad DB	5.16%	(0.76%)	14.13%	10.59%	7.02%
<b>Large Cap Growth</b>	<b>7.33%</b>	<b>6.52%</b>	<b>16.03%</b>	<b>12.43%</b>	-
Russell 1000 Growth Index	7.32%	5.67%	16.83%	13.53%	8.53%
CAI Lrg Cap Growth Style	7.61%	6.61%	17.41%	13.43%	8.32%
<b>Large Cap Value</b>	<b>5.38%</b>	<b>(1.71%)</b>	<b>13.16%</b>	<b>11.43%</b>	-
Russell 1000 Value Index	5.64%	(3.83%)	13.08%	11.27%	6.16%
CAI Large Cap Value Style	5.38%	(3.03%)	13.63%	11.32%	6.11%
<b>Small Cap Growth</b>	<b>(0.49%)</b>	<b>(4.95%)</b>	<b>13.12%</b>	<b>8.38%</b>	-
Russell 2000 Growth Index	4.32%	(1.38%)	14.28%	10.67%	7.95%
CAI Sm Cap Growth Style	2.90%	(1.37%)	14.04%	10.76%	8.03%
<b>Small Cap Value</b>	<b>3.92%</b>	<b>(5.20%)</b>	<b>10.15%</b>	<b>8.03%</b>	-
Russell 2000 Value Index	2.88%	(7.47%)	9.06%	7.67%	5.57%
CAI Small Cap Value Style	2.64%	(4.31%)	12.31%	10.11%	7.20%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2015	2014	2013	2012	2011
<b>Domestic Equity</b>	<b>(0.87%)</b>	<b>9.85%</b>	<b>35.41%</b>	<b>16.30%</b>	<b>(0.79%)</b>
Russell 3000 Index	0.48%	12.56%	33.55%	16.42%	1.03%
CAI Pub Fund:10+ Dom Eq	<b>(0.26%)</b>	11.82%	33.56%	15.68%	1.38%
<b>Market Oriented</b>	<b>(1.70%)</b>	<b>11.07%</b>	<b>33.05%</b>	<b>16.57%</b>	<b>(1.20%)</b>
Russell 3000 Index	0.48%	12.56%	33.55%	16.42%	1.03%
CAI All Cap: Broad	<b>(0.76%)</b>	9.65%	36.62%	13.56%	<b>(2.00%)</b>
<b>Large Cap Growth</b>	<b>6.52%</b>	<b>9.04%</b>	<b>34.48%</b>	<b>15.37%</b>	<b>(0.29%)</b>
Russell 1000 Growth Index	5.67%	13.05%	33.48%	15.26%	2.64%
CAI Lrg Cap Growth Style	6.61%	11.95%	35.62%	16.10%	<b>(0.05%)</b>
<b>Large Cap Value</b>	<b>(1.71%)</b>	<b>8.37%</b>	<b>36.03%</b>	<b>17.37%</b>	<b>1.03%</b>
Russell 1000 Value Index	<b>(3.83%)</b>	13.45%	32.53%	17.51%	0.39%
CAI Large Cap Value Style	<b>(3.03%)</b>	12.41%	34.60%	16.53%	<b>(0.00%)</b>
<b>Small Cap Growth</b>	<b>(4.95%)</b>	<b>(3.58%)</b>	<b>57.92%</b>	<b>11.33%</b>	<b>(7.19%)</b>
Russell 2000 Growth Index	<b>(1.38%)</b>	5.60%	43.30%	14.59%	<b>(2.91%)</b>
CAI Sm Cap Growth Style	<b>(1.37%)</b>	2.37%	46.90%	14.22%	<b>(1.59%)</b>
<b>Small Cap Value</b>	<b>(5.20%)</b>	<b>3.04%</b>	<b>36.83%</b>	<b>15.52%</b>	<b>(4.69%)</b>
Russell 2000 Value Index	<b>(7.47%)</b>	4.22%	34.52%	18.05%	<b>(5.50%)</b>
CAI Small Cap Value Style	<b>(4.31%)</b>	6.41%	39.12%	18.16%	<b>(3.32%)</b>

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2010	2009	2008	2007	2006
<b>Domestic Equity</b>	<b>19.03%</b>	<b>32.86%</b>	<b>(39.89%)</b>	<b>5.34%</b>	<b>13.94%</b>
Russell 3000 Index	16.93%	28.34%	(37.31%)	5.14%	15.72%
CAI Pub Fund:10+ Dom Eq	18.83%	32.00%	(39.71%)	5.08%	15.97%
<b>Market Oriented</b>	<b>21.09%</b>	-	-	-	-
Russell 3000 Index	16.93%	28.34%	(37.31%)	5.14%	15.72%
CAI All Cap: Broad	17.72%	32.33%	(38.15%)	8.72%	13.70%
<b>Large Cap Growth</b>	<b>17.87%</b>	-	-	-	-
Russell 1000 Growth Index	16.71%	37.21%	(38.44%)	11.81%	9.07%
CAI Lrg Cap Growth Style	16.94%	35.86%	(40.01%)	15.68%	7.40%
<b>Large Cap Value</b>	<b>14.67%</b>	-	-	-	-
Russell 1000 Value Index	15.51%	19.69%	(36.85%)	(0.17%)	22.25%
CAI Large Cap Value Style	14.48%	24.19%	(37.42%)	0.67%	18.20%
<b>Small Cap Growth</b>	<b>35.71%</b>	-	-	-	-
Russell 2000 Growth Index	29.09%	34.47%	(38.54%)	7.05%	13.35%
CAI Sm Cap Growth Style	29.31%	37.53%	(43.18%)	14.04%	12.74%
<b>Small Cap Value</b>	<b>22.83%</b>	-	-	-	-
Russell 2000 Value Index	24.50%	20.58%	(28.92%)	(9.78%)	23.48%
CAI Small Cap Value Style	27.98%	34.34%	(33.69%)	(7.72%)	17.71%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2015. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2015

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>International Equity</b>	<b>3.86%</b>	<b>(2.59%)</b>	<b>3.92%</b>	<b>2.93%</b>	<b>4.51%</b>
MSCI ACWI ex-US IMI Index (5)	3.52%	(4.60%)	2.02%	1.27%	3.38%
CAI Pub Fund:10+ Intl Eq	3.32%	(4.38%)	2.70%	2.12%	3.68%
<b>International Market Oriented (Core)</b>	<b>4.51%</b>	<b>(1.16%)</b>	<b>5.29%</b>	<b>4.11%</b>	-
MSCI World Ex-US IMI (Net)	4.17%	(1.95%)	4.43%	3.00%	3.15%
CAI Core Int'l Equity	4.76%	1.08%	6.45%	4.91%	4.14%
<b>International Value</b>	<b>2.80%</b>	<b>(4.48%)</b>	<b>4.56%</b>	<b>3.29%</b>	-
MSCI ACWI x US (Net)	3.24%	(5.66%)	1.50%	1.06%	2.92%
CAI Core Value Int'l Equity Style	3.99%	(0.85%)	4.93%	3.07%	3.01%
<b>International Growth</b>	<b>6.16%</b>	<b>1.91%</b>	<b>5.01%</b>	<b>3.02%</b>	-
MSCI World ex US	3.91%	(3.04%)	3.93%	2.79%	2.92%
CAI Core Growth Int'l Equity Style	5.29%	3.09%	6.88%	5.13%	4.96%
<b>International Small Cap</b>	<b>5.13%</b>	<b>6.06%</b>	<b>8.59%</b>	<b>4.67%</b>	-
ACWI Small Cap ex US	5.28%	2.60%	5.64%	2.63%	4.95%
CAI Int'l Small Cap Style	6.40%	9.26%	10.68%	7.54%	6.64%
<b>Emerging Markets</b>	<b>(0.04%)</b>	<b>(14.55%)</b>	<b>(4.77%)</b>	<b>(2.39%)</b>	-
EM IMI Index	1.03%	(13.86%)	(6.12%)	(4.59%)	3.94%
CAI Emerging Markets Equity DB	1.54%	(11.93%)	(3.05%)	(2.12%)	5.58%
<b>Global Equity</b>	<b>3.05%</b>	<b>(3.25%)</b>	<b>11.93%</b>	<b>6.19%</b>	-
MSCI ACWI Value Net Index (14)	4.06%	(6.26%)	5.69%	4.79%	3.88%
CAI Global Eq Broad Style	5.30%	0.06%	10.13%	7.83%	5.89%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2015	2014	2013	2012	2011
<b>International Equity</b>	<b>(2.59%)</b>	<b>(2.88%)</b>	<b>18.62%</b>	<b>18.92%</b>	<b>(13.45%)</b>
MSCI ACWI ex-US IMI Index (5)	(4.60%)	(3.89%)	15.82%	17.04%	(14.31%)
CAI Pub Fund:10+ Intl Eq	(4.38%)	(2.94%)	16.72%	18.11%	(13.18%)
<b>International Market Oriented (Core)</b>	<b>(1.16%)</b>	<b>(2.61%)</b>	<b>21.27%</b>	<b>19.29%</b>	<b>(12.14%)</b>
MSCI World Ex-US IMI (Net)	(1.95%)	(4.45%)	21.57%	16.55%	(12.66%)
CAI Core Int'l Equity	1.08%	(4.19%)	24.56%	18.99%	(11.48%)
<b>International Value</b>	<b>(4.48%)</b>	<b>(4.26%)</b>	<b>24.98%</b>	<b>15.11%</b>	<b>(10.66%)</b>
MSCI ACWI x US (Net)	(5.66%)	(3.87%)	15.29%	16.83%	(13.71%)
CAI Core Value Int'l Equity Style	(0.85%)	(6.05%)	24.03%	15.92%	(13.14%)
<b>International Growth</b>	<b>1.91%</b>	<b>(4.32%)</b>	<b>18.74%</b>	<b>18.27%</b>	<b>(15.27%)</b>
MSCI World ex US	(3.04%)	(4.32%)	21.02%	16.41%	(12.21%)
CAI Core Growth Int'l Equity Style	3.09%	(4.49%)	24.00%	20.70%	(12.86%)
<b>International Small Cap</b>	<b>6.06%</b>	<b>(6.46%)</b>	<b>29.08%</b>	<b>18.66%</b>	<b>(17.31%)</b>
ACWI Small Cap ex US	2.60%	(4.03%)	19.73%	18.52%	(18.50%)
CAI Int'l Small Cap Style	9.26%	(4.76%)	30.28%	22.99%	(13.74%)
<b>Emerging Markets</b>	<b>(14.55%)</b>	<b>1.19%</b>	<b>(0.12%)</b>	<b>21.71%</b>	<b>(15.72%)</b>
EM IMI Index	(13.86%)	(1.79%)	(2.20%)	18.69%	(19.49%)
CAI Emerging Markets Equity DB	(11.93%)	0.78%	2.67%	20.35%	(18.08%)
<b>Global Equity</b>	<b>(3.25%)</b>	<b>6.90%</b>	<b>35.56%</b>	<b>12.57%</b>	<b>(14.45%)</b>
MSCI ACWI Value Net Index (14)	(6.26%)	2.86%	22.43%	15.55%	(7.35%)
CAI Global Eq Broad Style	0.06%	4.14%	28.19%	18.06%	(7.58%)

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2010	2009	2008	2007	2006
<b>International Equity</b>	<b>14.12%</b>	<b>41.10%</b>	<b>(43.25%)</b>	<b>16.03%</b>	<b>26.89%</b>
MSCI ACWI ex-US IMI Index (5)	12.73%	43.60%	(45.70%)	17.12%	27.16%
CAI Pub Fund:10+ Intl Eq	13.04%	41.49%	(44.30%)	14.45%	26.68%
<b>Global Equity</b>	<b>10.46%</b>	<b>36.25%</b>	<b>(48.65%)</b>	-	-
MSCI ACWI Value Net Index (14)	10.13%	34.63%	(42.20%)	11.66%	20.95%
CAI Global Eq Broad Style	13.01%	34.34%	(42.10%)	12.83%	22.59%

All returns reported net-of-fee.

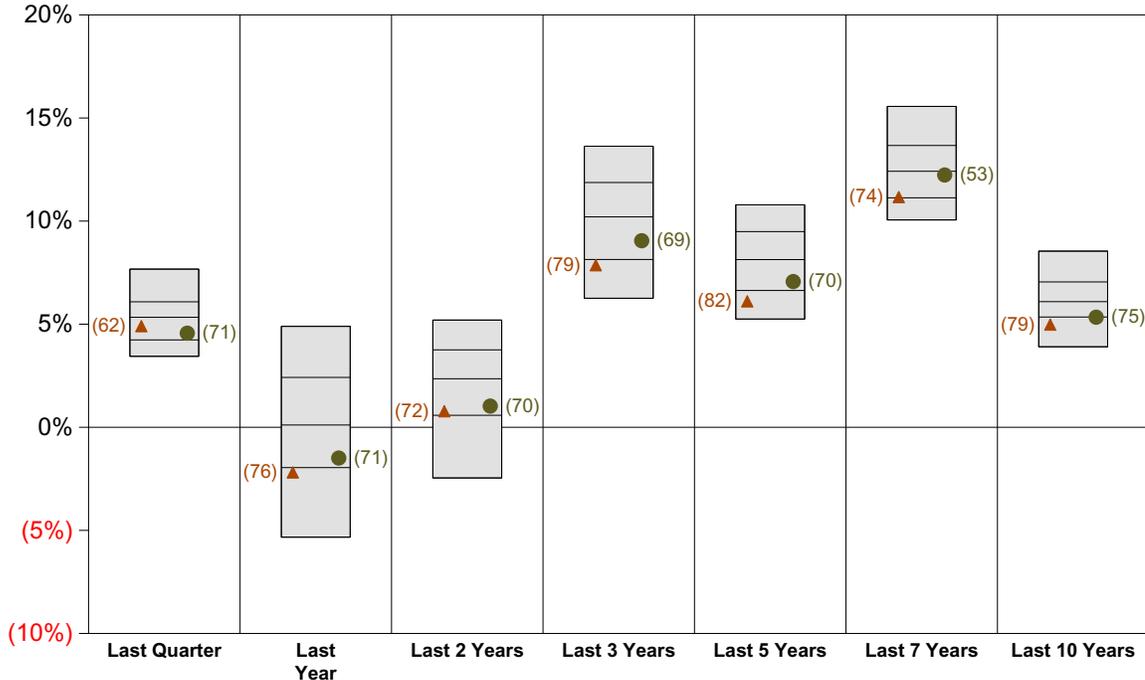
# Total Public Equity

## Period Ended December 31, 2015

### Quarterly Summary and Highlights

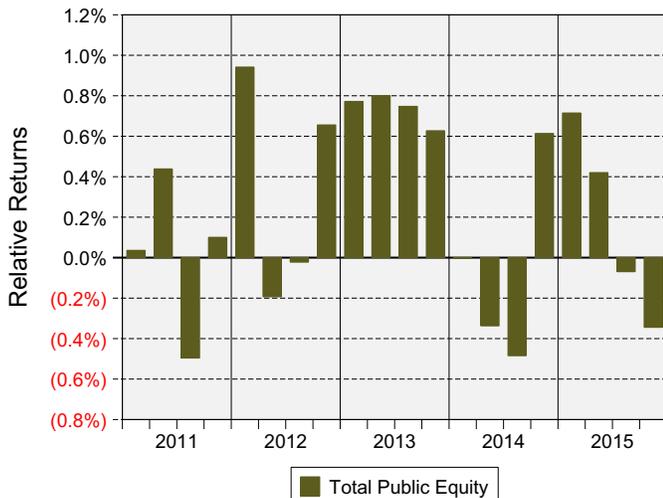
- Total Public Equity's portfolio posted a 4.56% return for the quarter placing it in the 71 percentile of the CAI Global Equity Broad Style group for the quarter and in the 71 percentile for the last year.
- Total Public Equity's portfolio underperformed the MSCI ACWI IMI Net by 0.34% for the quarter and outperformed the MSCI ACWI IMI Net for the year by 0.69%.

### Performance vs CAI Global Equity Broad Style (Gross)

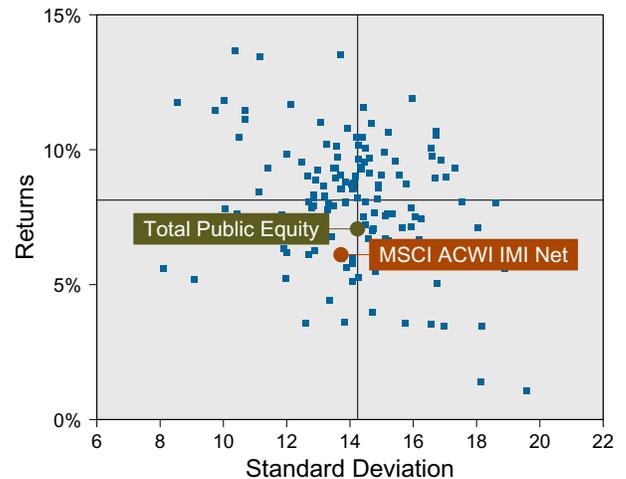


10th Percentile	7.67	4.90	5.20	13.63	10.79	15.56	8.54
25th Percentile	6.09	2.42	3.75	11.87	9.49	13.67	7.05
Median	5.34	0.11	2.35	10.20	8.13	12.42	6.09
75th Percentile	4.24	(1.96)	0.58	8.14	6.63	11.13	5.35
90th Percentile	3.44	(5.33)	(2.46)	6.26	5.25	10.06	3.90
<b>Total Public Equity</b> ●	<b>4.56</b>	<b>(1.49)</b>	<b>1.03</b>	<b>9.05</b>	<b>7.07</b>	<b>12.23</b>	<b>5.34</b>
<b>MSCI ACWI IMI Net</b> ▲	<b>4.91</b>	<b>(2.19)</b>	<b>0.78</b>	<b>7.86</b>	<b>6.11</b>	<b>11.17</b>	<b>4.98</b>

### Relative Return vs MSCI ACWI IMI Net



### CAI Global Equity Broad Style (Gross) Annualized Five Year Risk vs Return

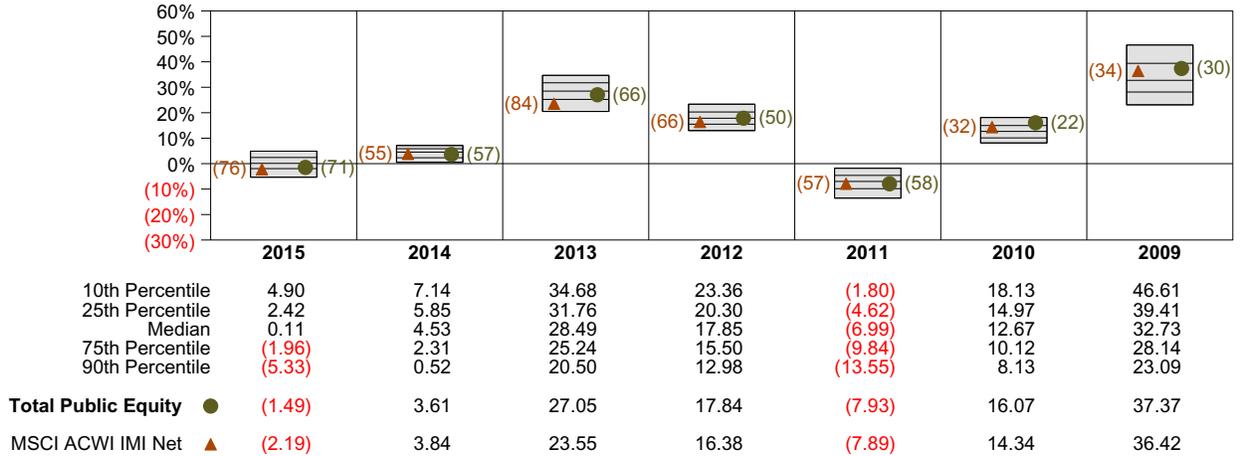


# Total Public Equity Return Analysis Summary

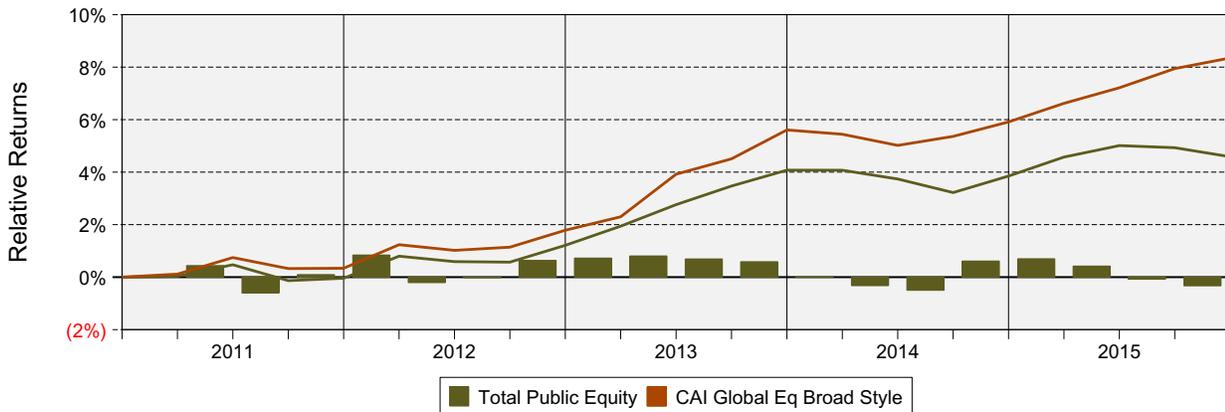
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last two charts illustrate the manager's ranking relative to their style using various risk-adjusted return measures.

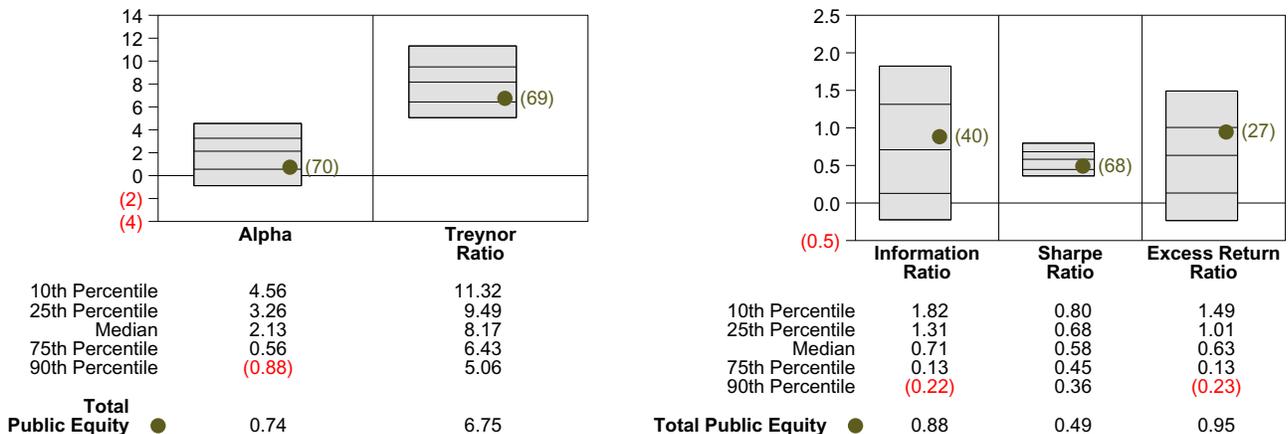
### Performance vs CAI Global Equity Broad Style (Gross)



### Cumulative and Quarterly Relative Return vs MSCI ACWI IMI Net



### Risk Adjusted Return Measures vs MSCI ACWI IMI Net Rankings Against CAI Global Equity Broad Style (Gross) Five Years Ended December 31, 2015

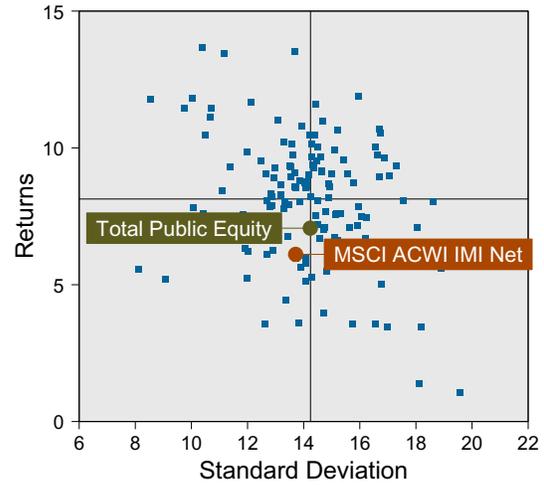
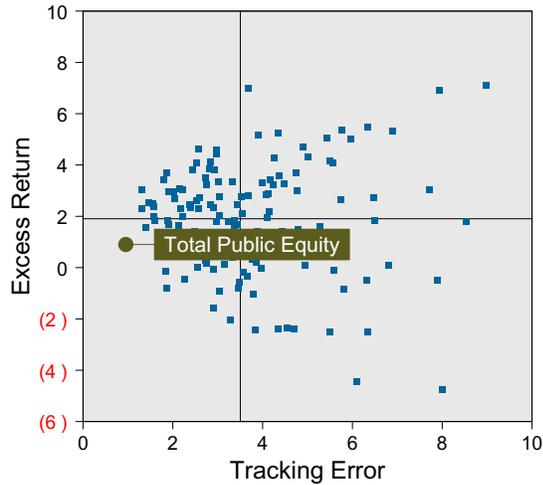


# Total Public Equity Risk Analysis Summary

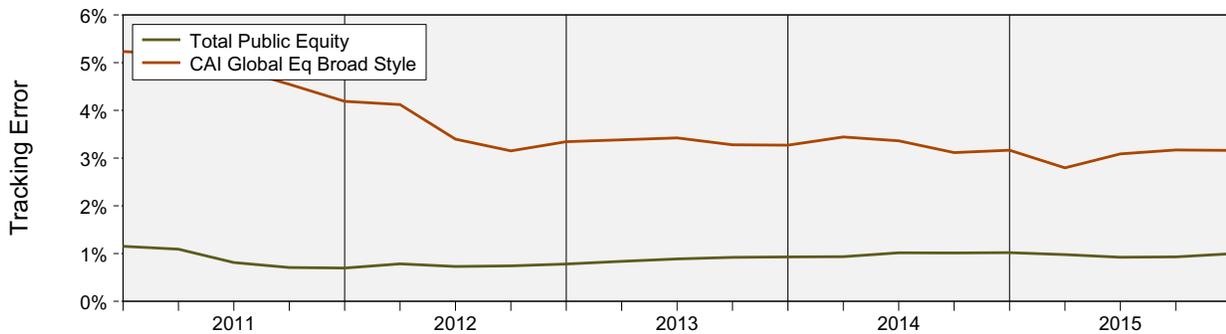
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second scatter chart displays the return versus risk relationship. The third chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

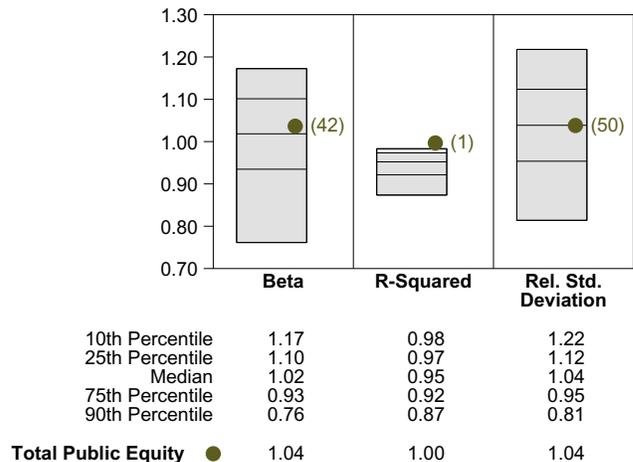
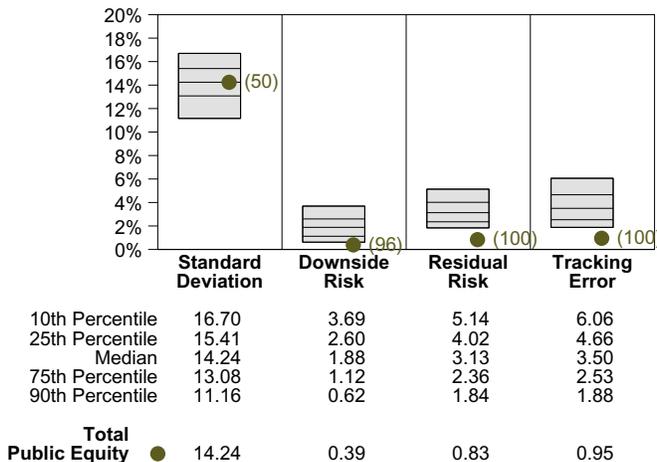
### Risk Analysis vs CAI Global Equity Broad Style (Gross) Five Years Ended December 31, 2015



### Rolling 12 Quarter Tracking Error vs MSCI ACWI IMI Net



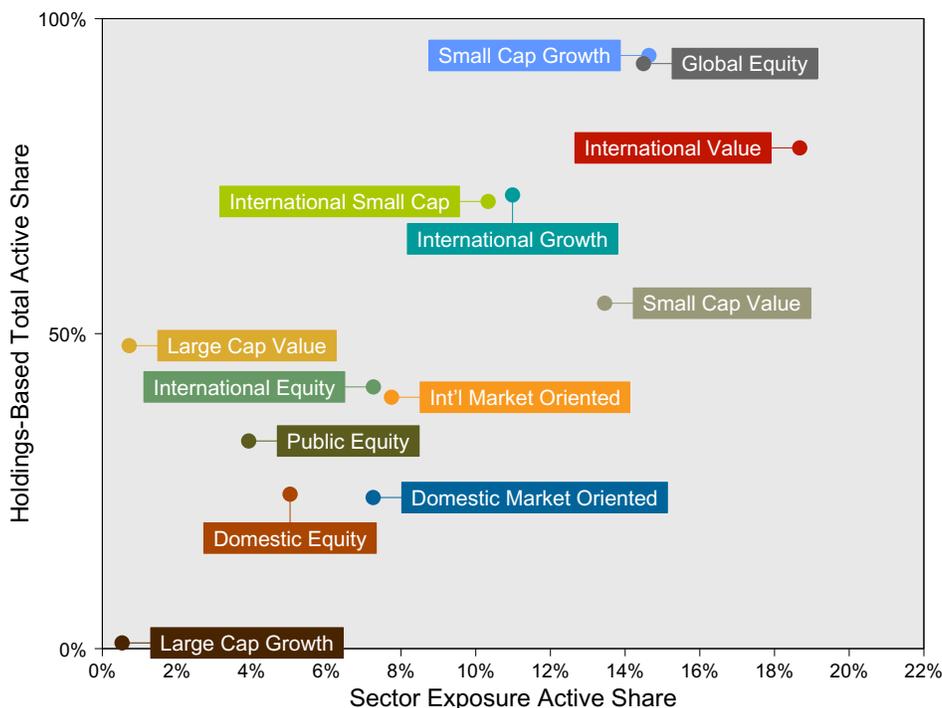
### Risk Statistics Rankings vs MSCI ACWI IMI Net Rankings Against CAI Global Equity Broad Style (Gross) Five Years Ended December 31, 2015



## Active Share Structure Analysis For One Quarter Ended December 31, 2015

This analysis compares multiple portfolios and composites in an active share context, illustrating the varying degrees of active risk taken by individual portfolios, and how they combine into active risk profiles for composites and the equity structure. Two sources of active share (active risk) are shown: 1) Total Holdings-Based Active Share based on individual position comparisons to the index (and the subcomponent from holding non-index securities), and 2) Sector Exposure Active Share that quantifies the more macro-level sector differences from the index.

### Active Share Analysis Ended December 31, 2015



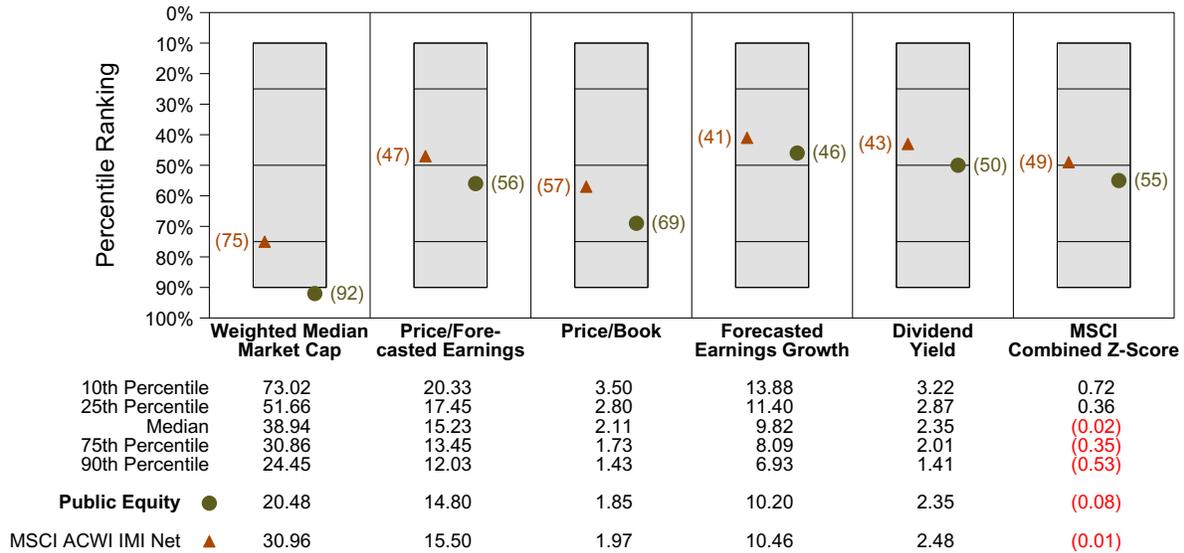
	Weight %	Index	Total Act Share	Non-Idx Act Share	Sector Act Share	Number Securities	Security Diverse
<b>Public Equity</b>	<b>100.00%</b>	<b>AC WORLD IMI</b>	<b>32.96%</b>	<b>2.41%</b>	<b>3.92%</b>	<b>9721</b>	<b>342.11</b>
<b>Domestic Equity</b>	<b>49.70%</b>	<b>Russell 3000</b>	<b>24.52%</b>	<b>0.72%</b>	<b>5.03%</b>	<b>2482</b>	<b>134.91</b>
Domestic Market Oriented	35.35%	Russell 3000	23.99%	0.62%	7.25%	1406	121.43
Large Cap Growth	3.45%	Russell 1000 Growth	0.91%	0.40%	0.53%	643	39.63
Large Cap Value	7.18%	Russell 1000 Value	48.09%	8.35%	0.72%	718	41.11
Small Cap Growth	0.50%	Russell 2000 Growth	94.15%	18.19%	14.64%	197	61.82
Small Cap Value	2.84%	Russell 2000 Value	54.83%	9.61%	13.45%	1096	171.33
<b>International Equity</b>	<b>47.20%</b>	<b>MSCI ACWI ex-US IMI</b>	<b>41.54%</b>	<b>3.80%</b>	<b>7.26%</b>	<b>7256</b>	<b>223.71</b>
Int'l Market Oriented	24.04%	WORLD ex USA IMI	39.90%	6.53%	7.74%	1324	139.18
International Value	6.35%	MSCI ACWI ex-US IMI Val	79.48%	14.87%	18.67%	600	50.07
International Growth	5.44%	MSCI World ex US Growth	72.01%	16.68%	10.98%	109	33.57
International Small Cap	5.16%	ACWI Sm Cap ex US	70.98%	15.42%	10.33%	3041	184.42
<b>Global Equity</b>	<b>3.10%</b>	<b>MSCI All Count Wld-Net</b>	<b>92.86%</b>	<b>5.89%</b>	<b>14.49%</b>	<b>66</b>	<b>24.47</b>

# Public Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

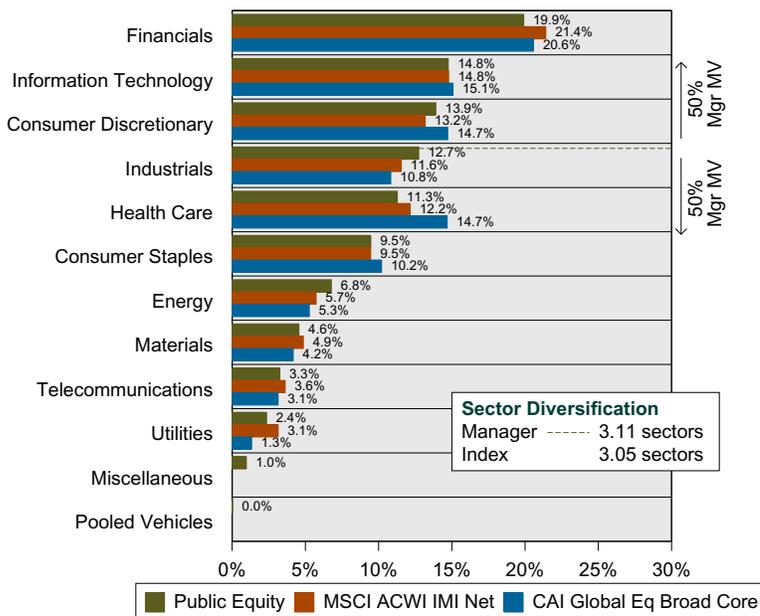
## Portfolio Characteristics Percentile Rankings Rankings Against CAI Global Equity Broad Core Style as of December 31, 2015



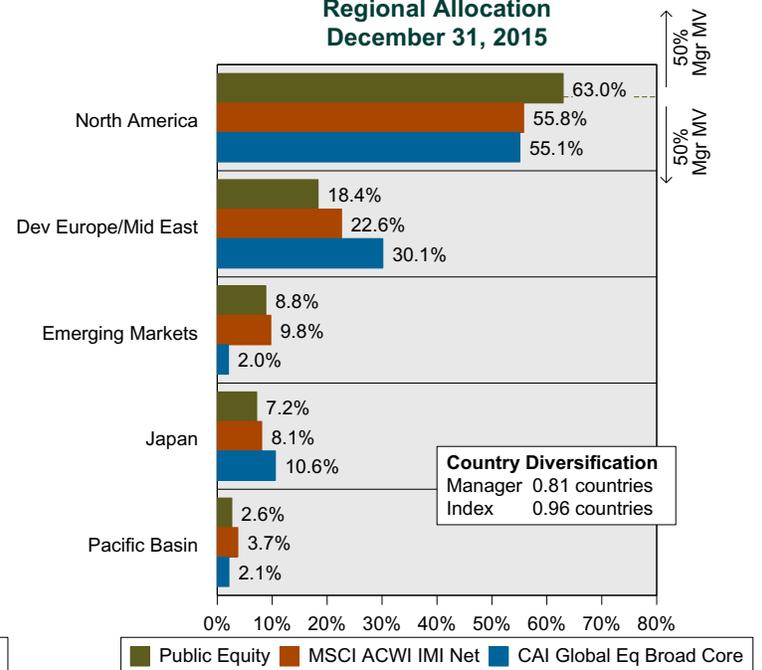
## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

### Sector Allocation December 31, 2015



### Regional Allocation December 31, 2015



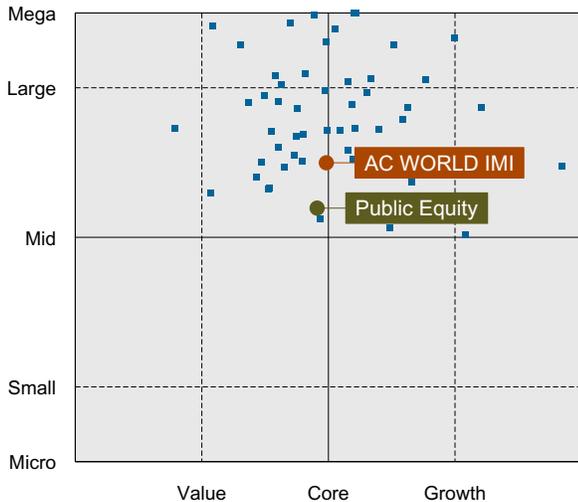
# Current Holdings Based Style Analysis

## Public Equity

### As of December 31, 2015

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

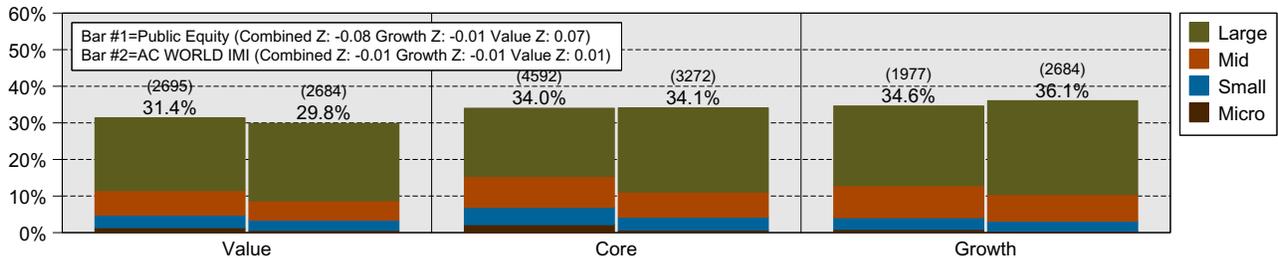
**Style Map vs CAI Global Eq Broad Core Holdings as of December 31, 2015**



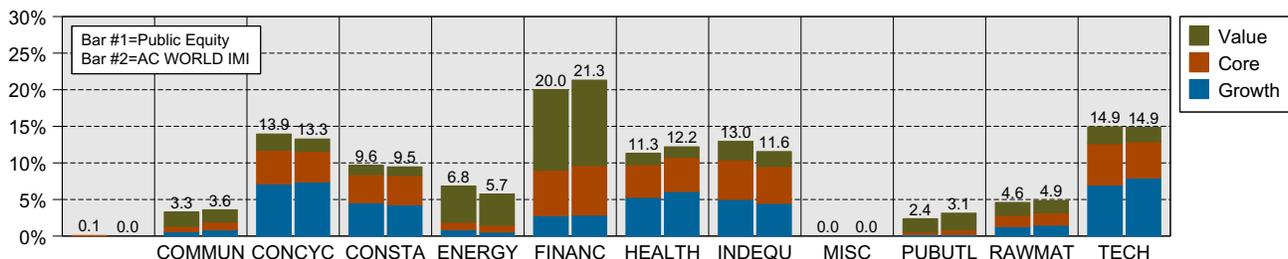
**Style Exposure Matrix Holdings as of December 31, 2015**

	Value	Core	Growth	Total
Large	19.9% (243)	18.7% (273)	21.7% (323)	60.3% (839)
	21.1% (248)	23.0% (266)	25.6% (318)	69.8% (832)
Mid	6.7% (386)	8.5% (544)	8.8% (549)	24.0% (1479)
	5.2% (445)	6.9% (582)	7.2% (645)	19.3% (1672)
Small	3.5% (776)	4.7% (1079)	3.2% (592)	11.4% (2447)
	2.9% (1044)	3.5% (1358)	2.8% (1071)	9.2% (3473)
Micro	1.3% (1290)	2.2% (2696)	0.9% (513)	4.4% (4499)
	0.6% (947)	0.7% (1066)	0.4% (650)	1.8% (2663)
Total	31.4% (2695)	34.0% (4592)	34.6% (1977)	100.0% (9264)
	29.8% (2684)	34.1% (3272)	36.1% (2684)	100.0% (8640)

**Combined Z-Score Style Distribution Holdings as of December 31, 2015**



**Sector Weights Distribution Holdings as of December 31, 2015**



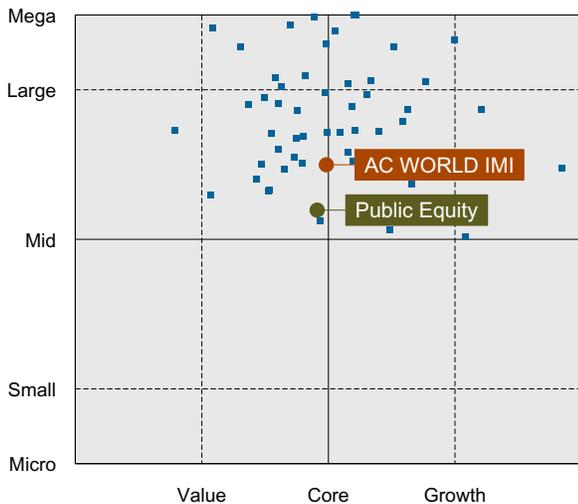
# Current Holdings Based Style Analysis

## Public Equity

### As of December 31, 2015

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left chart map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

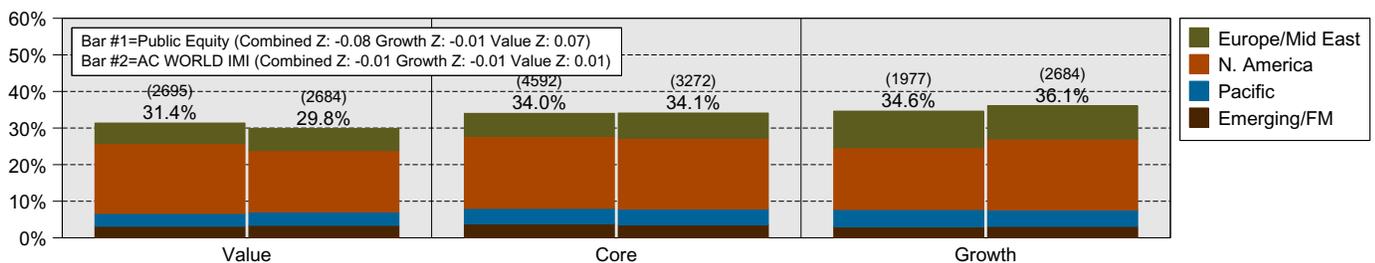
**Style Map vs CAI Global Eq Broad Core Holdings as of December 31, 2015**



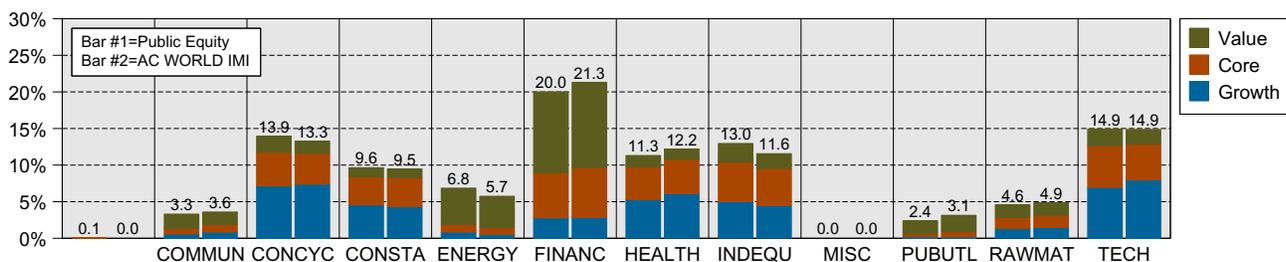
**Style Exposure Matrix Holdings as of December 31, 2015**

	Value	Core	Growth	Total
Europe/ Mid East	5.6% (440)	6.3% (493)	10.0% (370)	21.9% (1303)
N. America	6.0% (457)	6.8% (487)	9.1% (480)	21.9% (1424)
Pacific	19.1% (850)	19.7% (1157)	16.9% (663)	55.7% (2670)
Emerging/ FM	16.8% (792)	19.4% (1198)	19.4% (894)	55.6% (2884)
<b>Total</b>	<b>31.4% (2695)</b>	<b>34.0% (4592)</b>	<b>34.6% (1977)</b>	<b>100.0% (9264)</b>
	<b>29.8% (2684)</b>	<b>34.1% (3272)</b>	<b>36.1% (2684)</b>	<b>100.0% (8640)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2015**



**Sector Weights Distribution Holdings as of December 31, 2015**



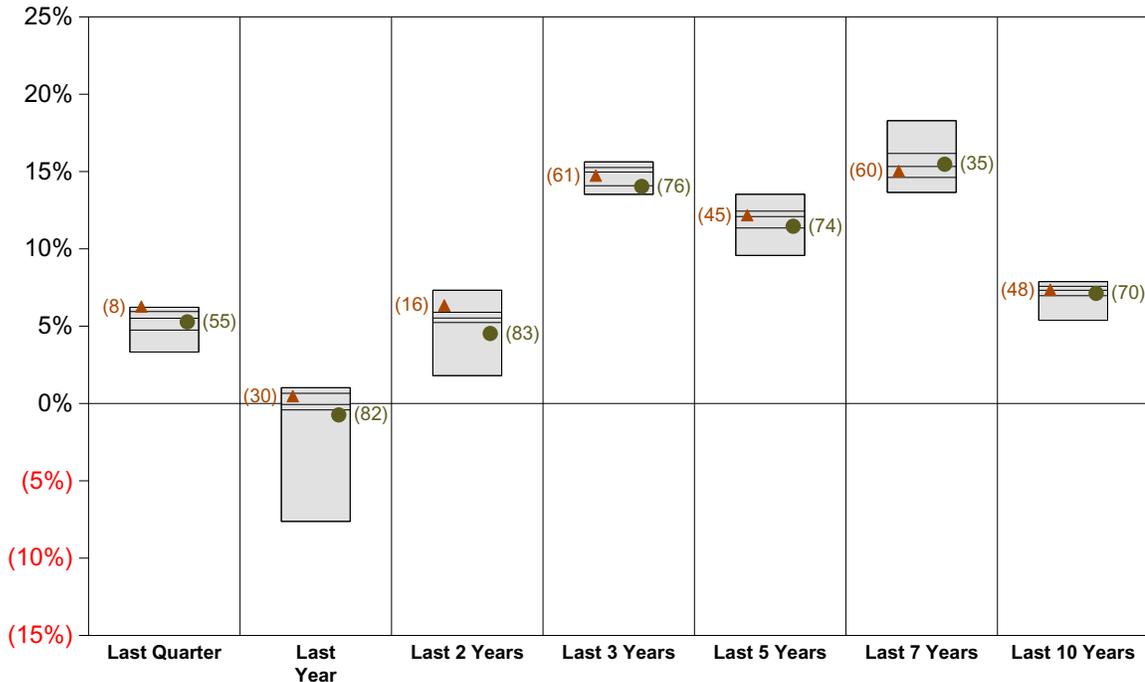
# Domestic Equity

## Period Ended December 31, 2015

### Quarterly Summary and Highlights

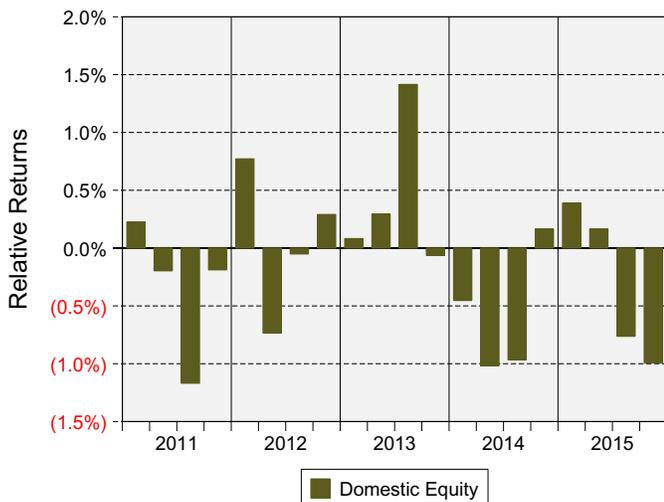
- Domestic Equity's portfolio posted a 5.28% return for the quarter placing it in the 55 percentile of the CAI Pub Fund:10+ Dom Eq group for the quarter and in the 82 percentile for the last year.
- Domestic Equity's portfolio underperformed the Russell 3000 Index by 0.99% for the quarter and underperformed the Russell 3000 Index for the year by 1.22%.

### Performance vs CAI Pub Fund:10+ Dom Eq (Gross)

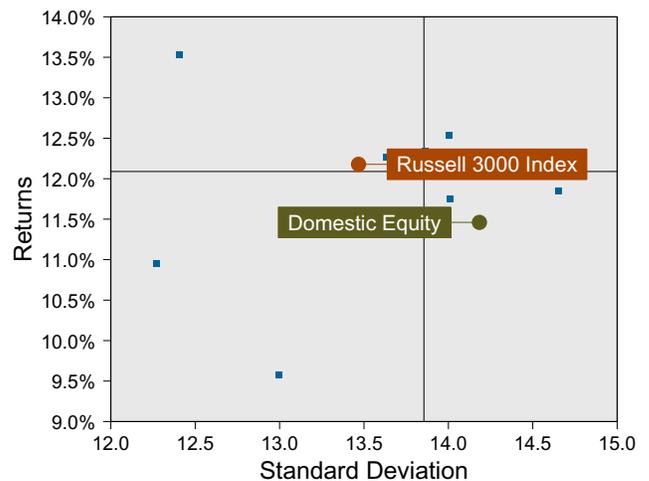


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	6.22	1.02	7.32	15.63	13.53	18.29	7.88
25th Percentile	5.95	0.66	5.90	15.26	12.44	16.17	7.58
Median	5.51	(0.06)	5.53	14.97	12.09	15.33	7.32
75th Percentile	4.75	(0.41)	5.24	14.08	11.35	14.62	6.97
90th Percentile	3.33	(7.62)	1.80	13.53	9.58	13.65	5.38
<b>Domestic Equity</b> ●	5.28	(0.74)	4.53	14.04	11.46	15.47	7.12
Russell 3000 Index ▲	6.27	0.48	6.35	14.74	12.18	15.04	7.35

### Relative Return vs Russell 3000 Index



### CAI Pub Fund:10+ Dom Eq (Gross) Annualized Five Year Risk vs Return

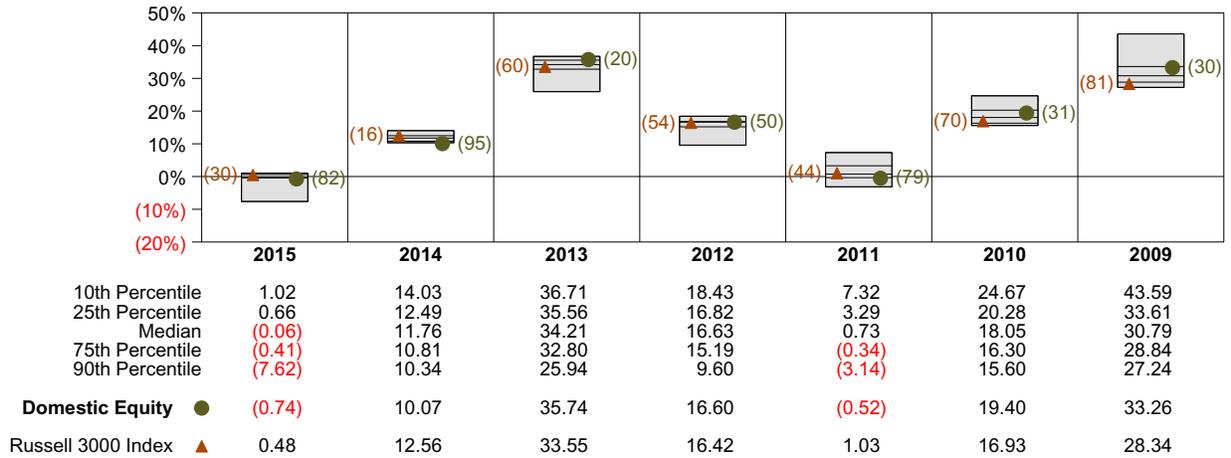


# Domestic Equity Return Analysis Summary

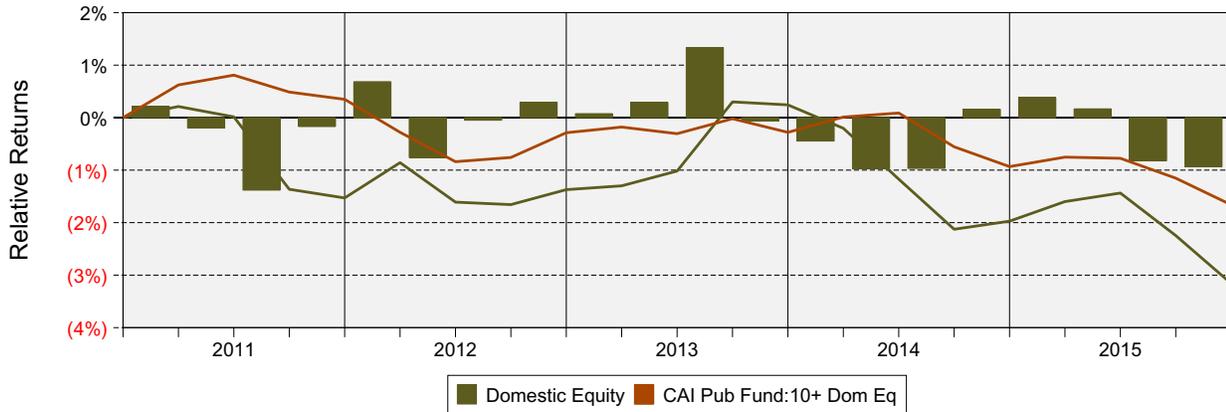
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last two charts illustrate the manager's ranking relative to their style using various risk-adjusted return measures.

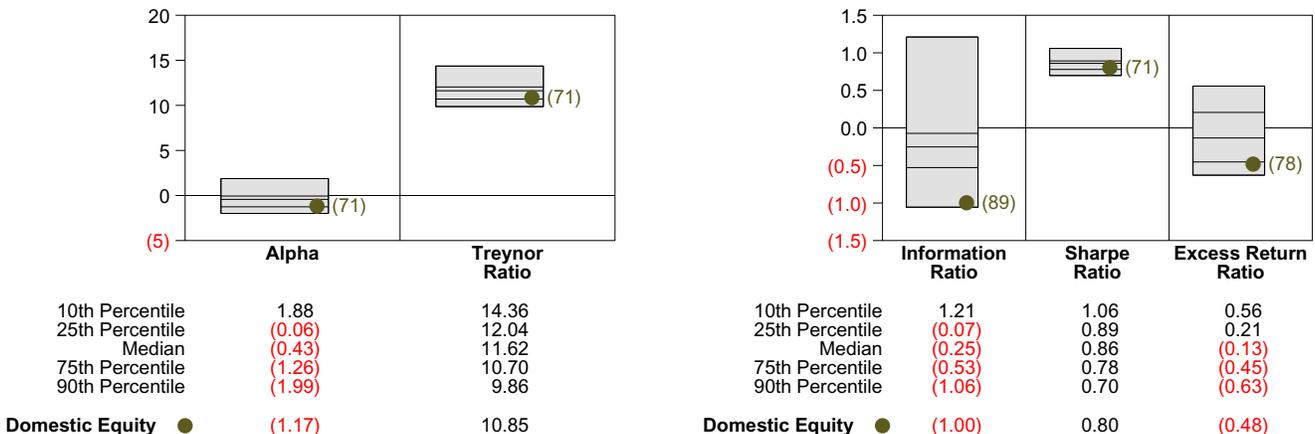
### Performance vs CAI Pub Fund:10+ Dom Eq (Gross)



### Cumulative and Quarterly Relative Return vs Russell 3000 Index



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against CAI Pub Fund:10+ Dom Eq (Gross) Five Years Ended December 31, 2015

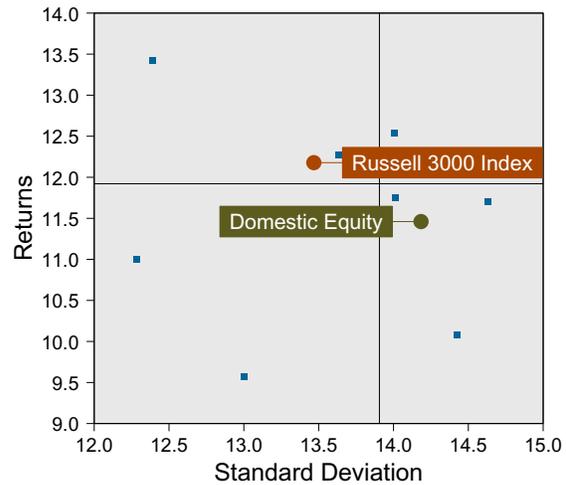
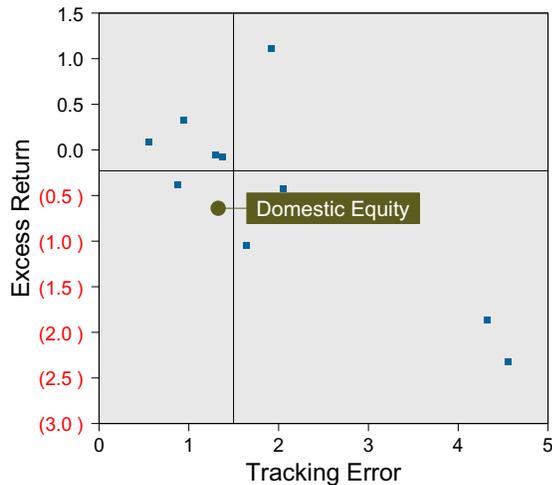


# Domestic Equity Risk Analysis Summary

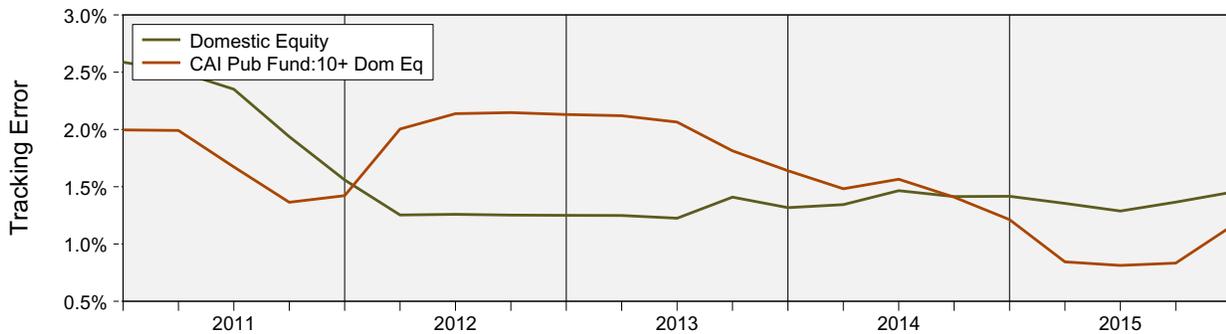
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second scatter chart displays the return versus risk relationship. The third chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

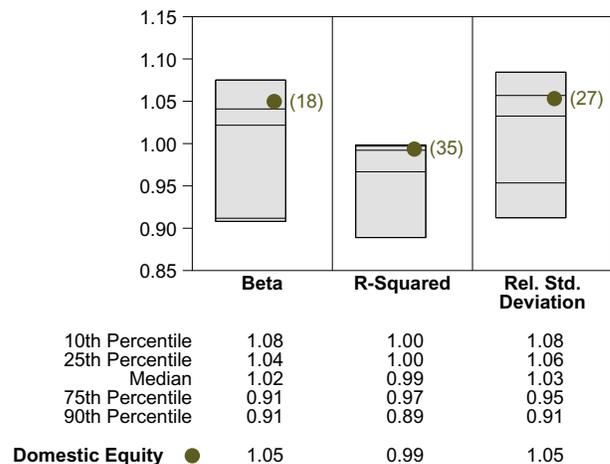
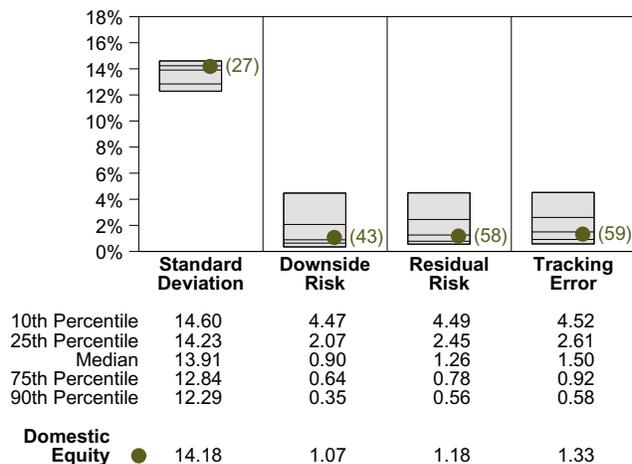
### Risk Analysis vs CAI Pub Fund:10+ Dom Eq (Gross) Five Years Ended December 31, 2015



### Rolling 12 Quarter Tracking Error vs Russell 3000 Index



### Risk Statistics Rankings vs Russell 3000 Index Rankings Against CAI Pub Fund:10+ Dom Eq (Gross) Five Years Ended December 31, 2015

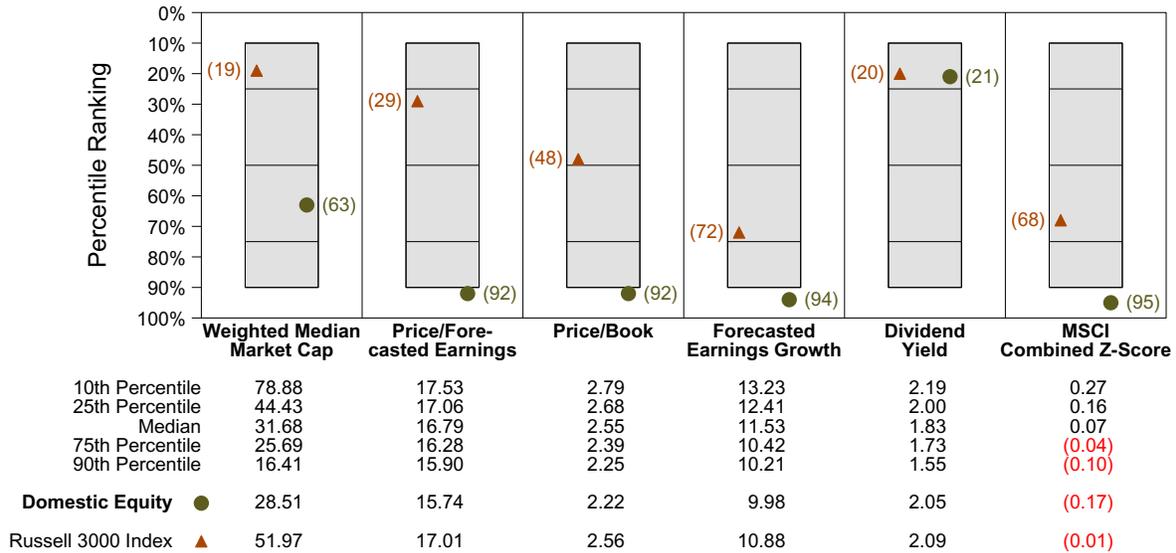


# Domestic Equity Equity Characteristics Analysis Summary

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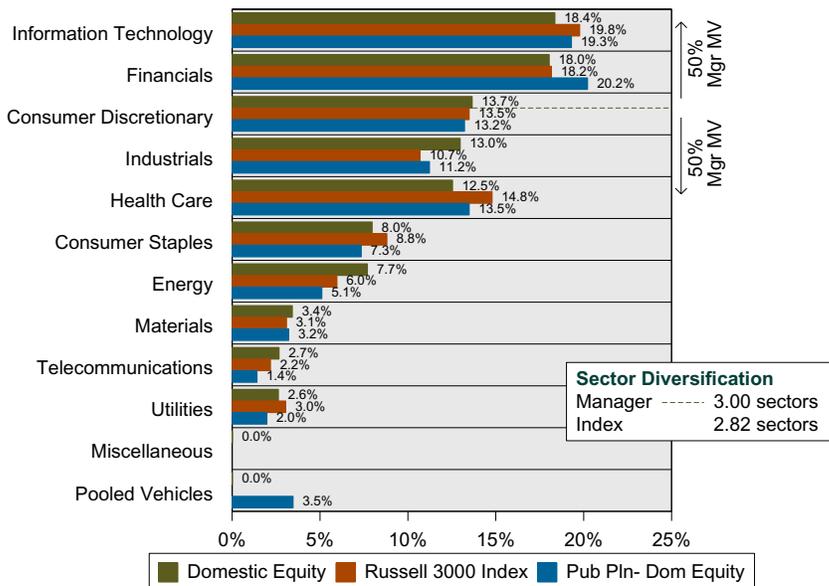
## Portfolio Characteristics Percentile Rankings Rankings Against Pub Pln- Domestic Equity as of December 31, 2015



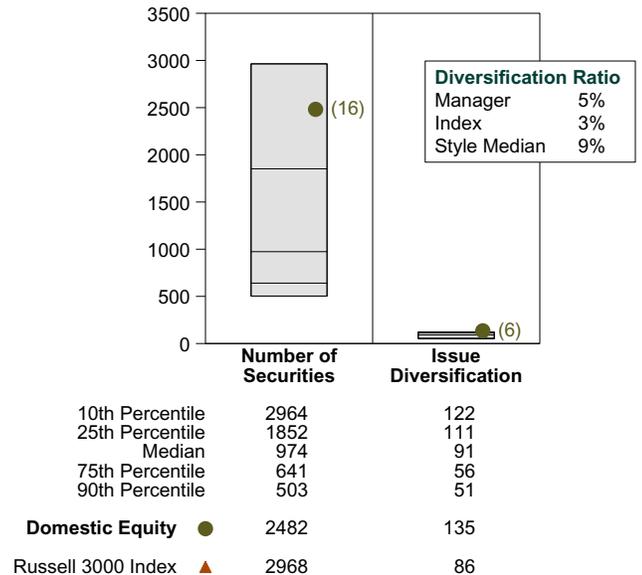
## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.

### Sector Allocation December 31, 2015



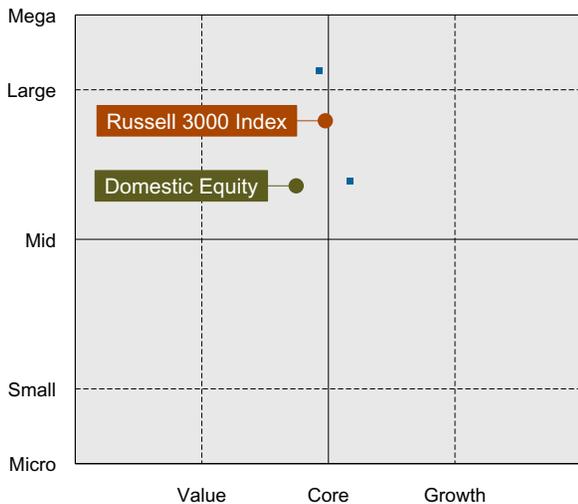
### Diversification December 31, 2015



# Current Holdings Based Style Analysis Domestic Equity As of December 31, 2015

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

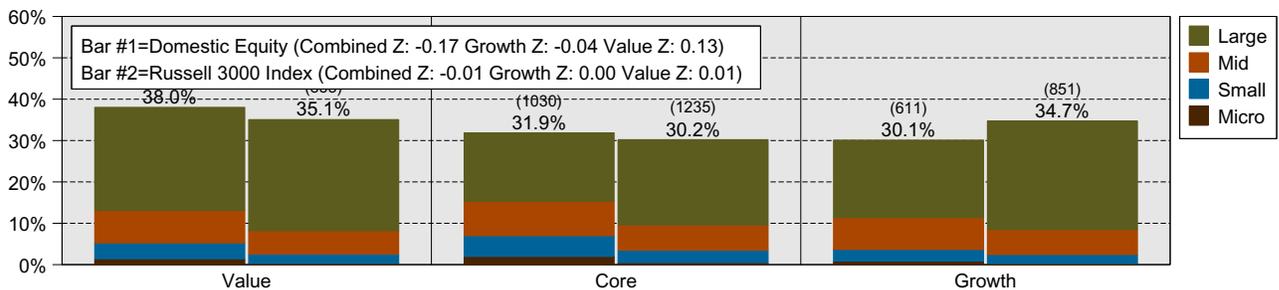
**Style Map vs CAI Pub Fund:10+ Dom Eq Holdings as of December 31, 2015**



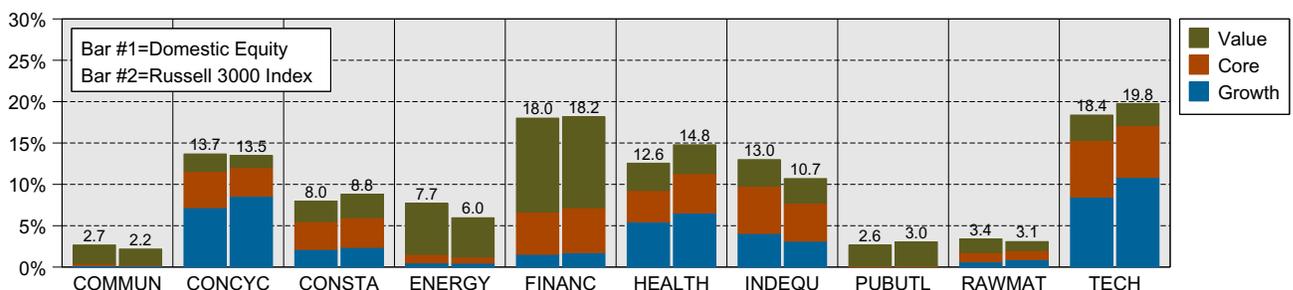
**Style Exposure Matrix Holdings as of December 31, 2015**

	Value	Core	Growth	Total
<b>Large</b>	24.9% (94)	16.6% (98)	18.7% (105)	60.2% (297)
	26.9% (94)	20.6% (95)	26.2% (104)	73.8% (293)
<b>Mid</b>	7.8% (180)	8.3% (218)	7.7% (204)	23.9% (602)
	5.6% (178)	6.1% (209)	6.0% (201)	17.8% (588)
<b>Small</b>	3.8% (278)	5.0% (381)	2.8% (191)	11.7% (850)
	2.2% (326)	3.0% (489)	2.2% (361)	7.5% (1176)
<b>Micro</b>	1.4% (272)	2.0% (333)	0.8% (111)	4.2% (716)
	0.3% (255)	0.5% (442)	0.2% (185)	1.0% (882)
<b>Total</b>	38.0% (824)	31.9% (1030)	30.1% (611)	100.0% (2465)
	35.1% (853)	30.2% (1235)	34.7% (851)	100.0% (2939)

**Combined Z-Score Style Distribution Holdings as of December 31, 2015**



**Sector Weights Distribution Holdings as of December 31, 2015**



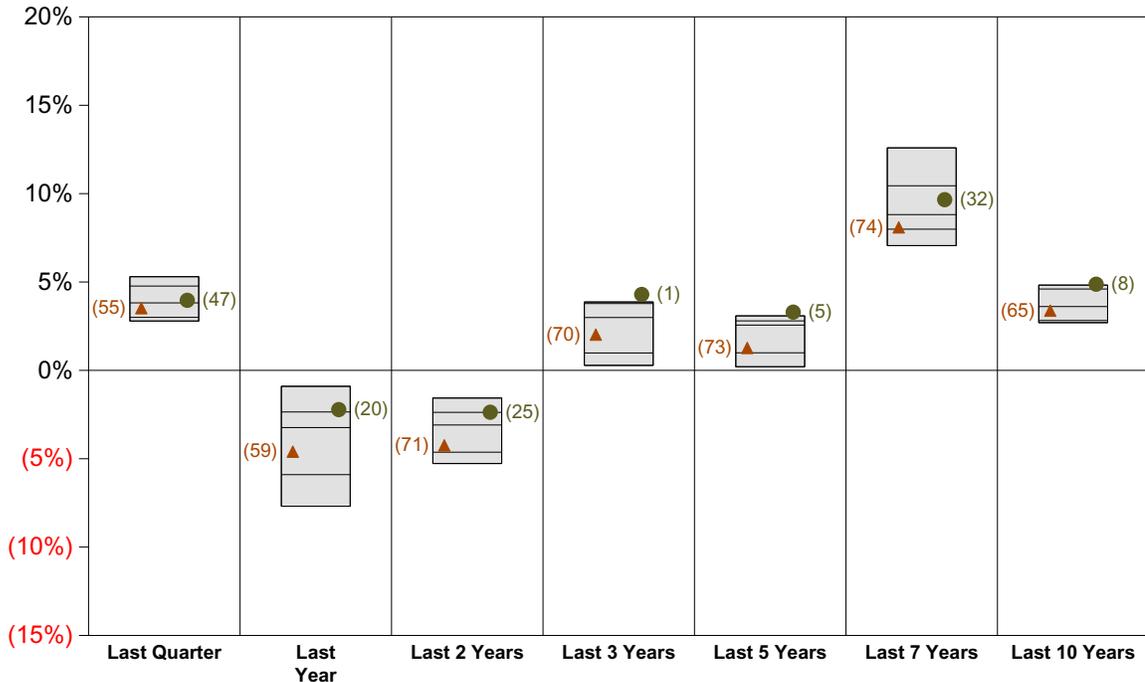
# International Equity

## Period Ended December 31, 2015

### Quarterly Summary and Highlights

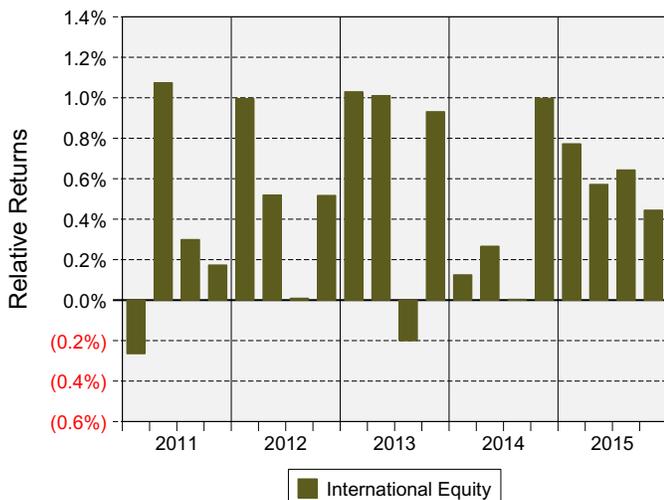
- International Equity's portfolio posted a 3.96% return for the quarter placing it in the 47 percentile of the CAI Pub Fund:10+ Intl Eq group for the quarter and in the 20 percentile for the last year.
- International Equity's portfolio outperformed the MSCI ACWI ex-US IMI Index (5) by 0.44% for the quarter and outperformed the MSCI ACWI ex-US IMI Index (5) for the year by 2.38%.

### Performance vs CAI Pub Fund:10+ Intl Eq (Gross)

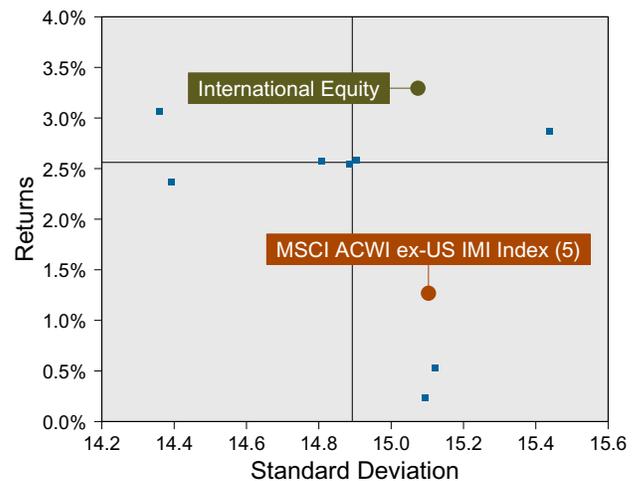


10th Percentile	5.30	(0.90)	(1.57)	3.87	3.08	12.59	4.82
25th Percentile	4.77	(2.35)	(2.38)	3.78	2.80	10.44	4.60
Median	3.82	(3.24)	(3.09)	2.99	2.56	8.81	3.61
75th Percentile	3.00	(5.90)	(4.63)	0.98	0.99	7.99	2.82
90th Percentile	2.79	(7.69)	(5.27)	0.28	0.20	7.06	2.70
<b>International Equity</b> ●	3.96	(2.22)	(2.37)	4.30	3.29	9.66	4.87
MSCI ACWI ex-US IMI Index (5) ▲	3.52	(4.60)	(4.24)	2.02	1.27	8.09	3.38

### Relative Returns vs MSCI ACWI ex-US IMI Index (5)



### CAI Pub Fund:10+ Intl Eq (Gross) Annualized Five Year Risk vs Return

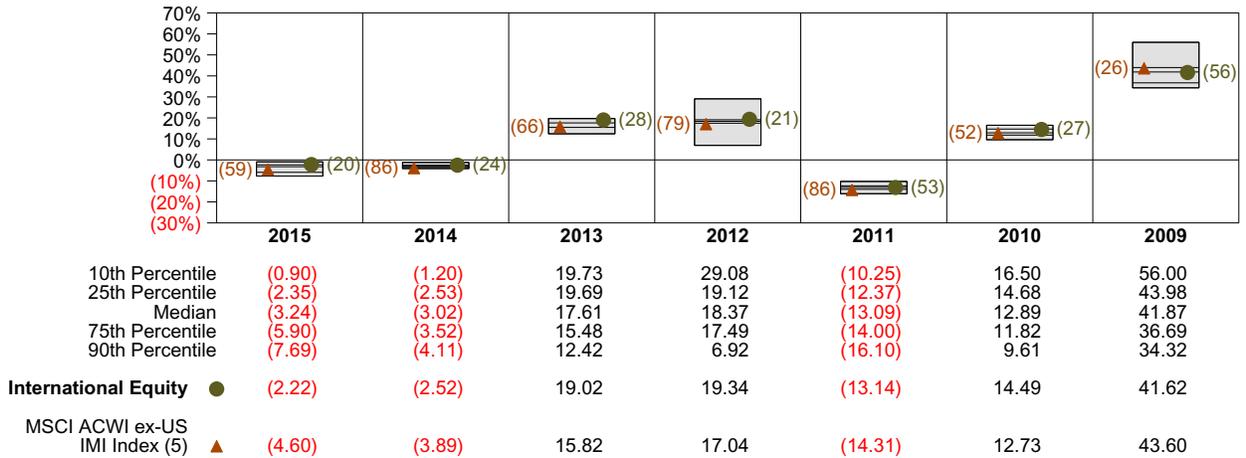


# International Equity Return Analysis Summary

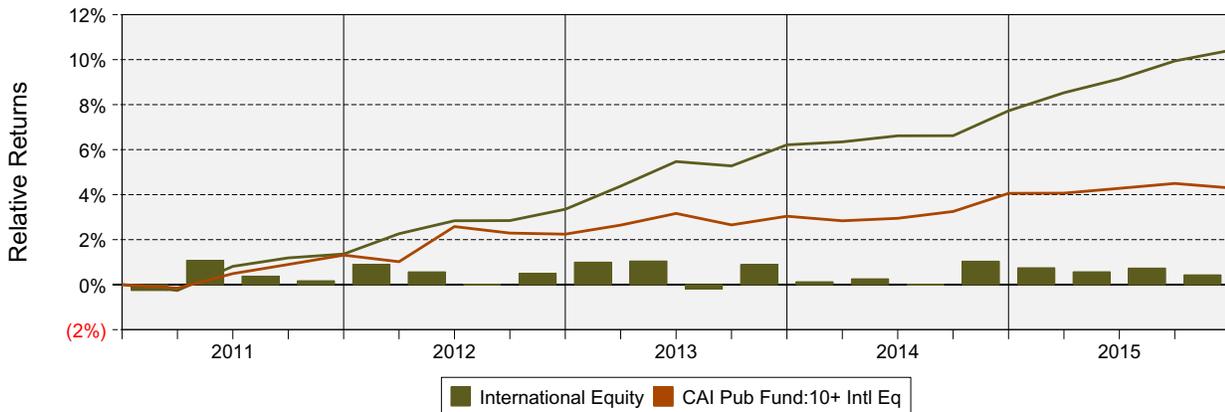
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last two charts illustrate the manager's ranking relative to their style using various risk-adjusted return measures.

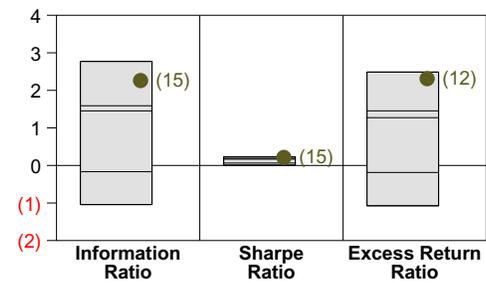
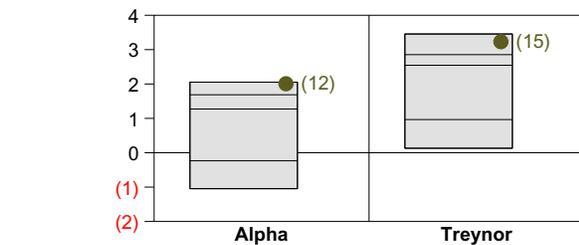
### Performance vs CAI Pub Fund:10+ Intl Eq (Gross)



### Cumulative and Quarterly Relative Return vs MSCI ACWI ex-US IMI Index (5)



### Risk Adjusted Return Measures vs MSCI ACWI ex-US IMI Index (5) Rankings Against CAI Pub Fund:10+ Intl Eq (Gross) Five Years Ended December 31, 2015

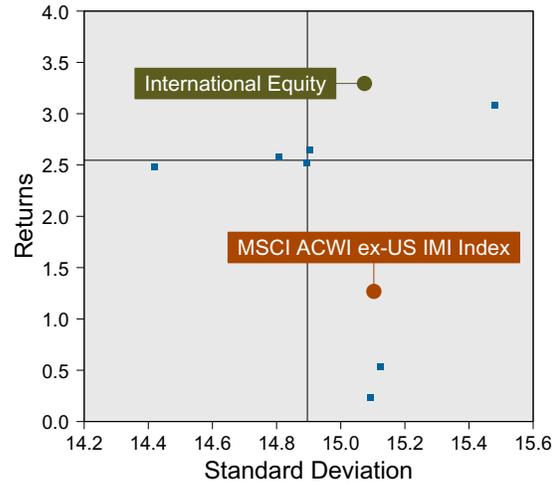
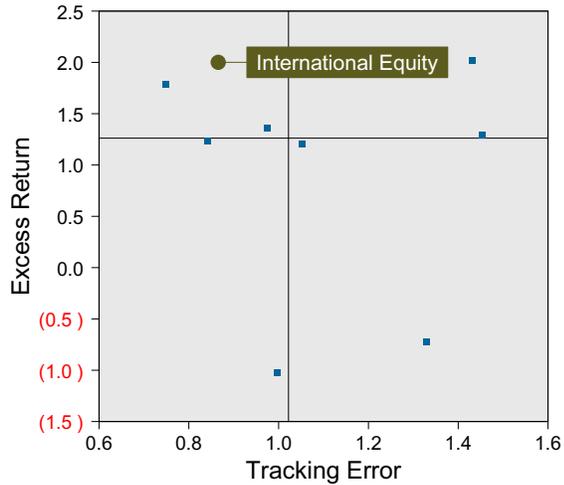


# International Equity Risk Analysis Summary

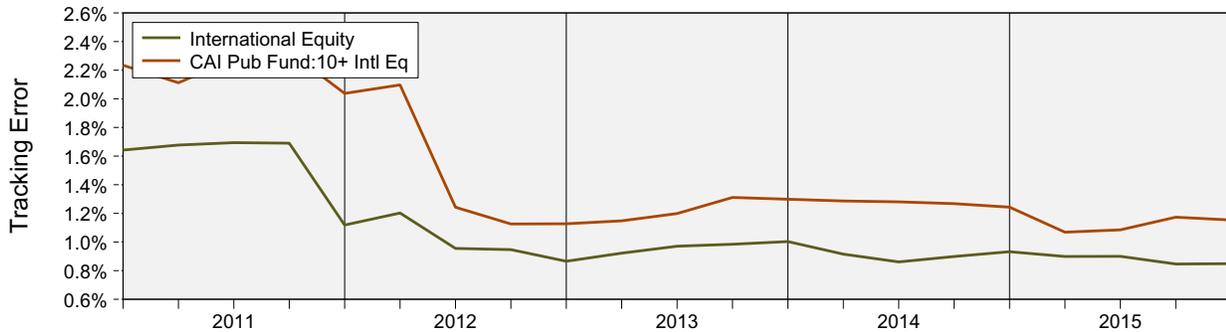
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second scatter chart displays the return versus risk relationship. The third chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

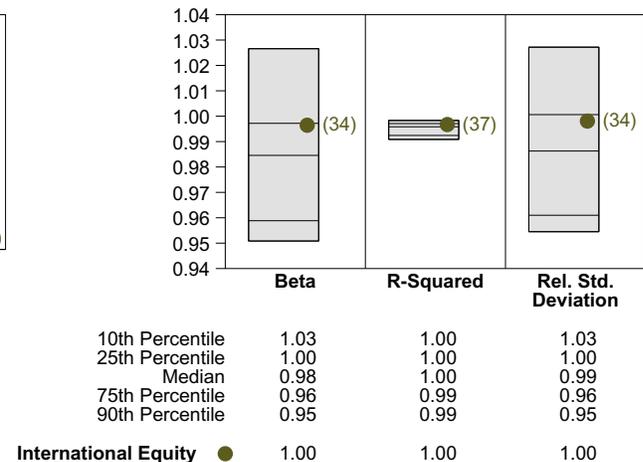
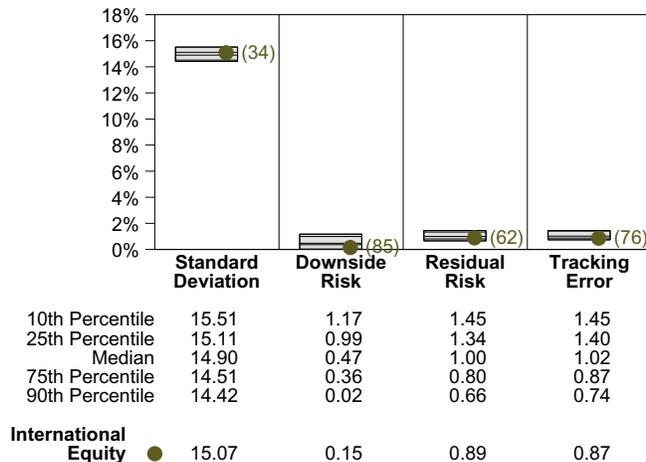
### Risk Analysis vs CAI Pub Fund:10+ Intl Eq (Gross) Five Years Ended December 31, 2015



### Rolling 12 Quarter Tracking Error vs MSCI ACWI ex-US IMI Index (5)



### Risk Statistics Rankings vs MSCI ACWI ex-US IMI Index (5) Rankings Against CAI Pub Fund:10+ Intl Eq (Gross) Five Years Ended December 31, 2015

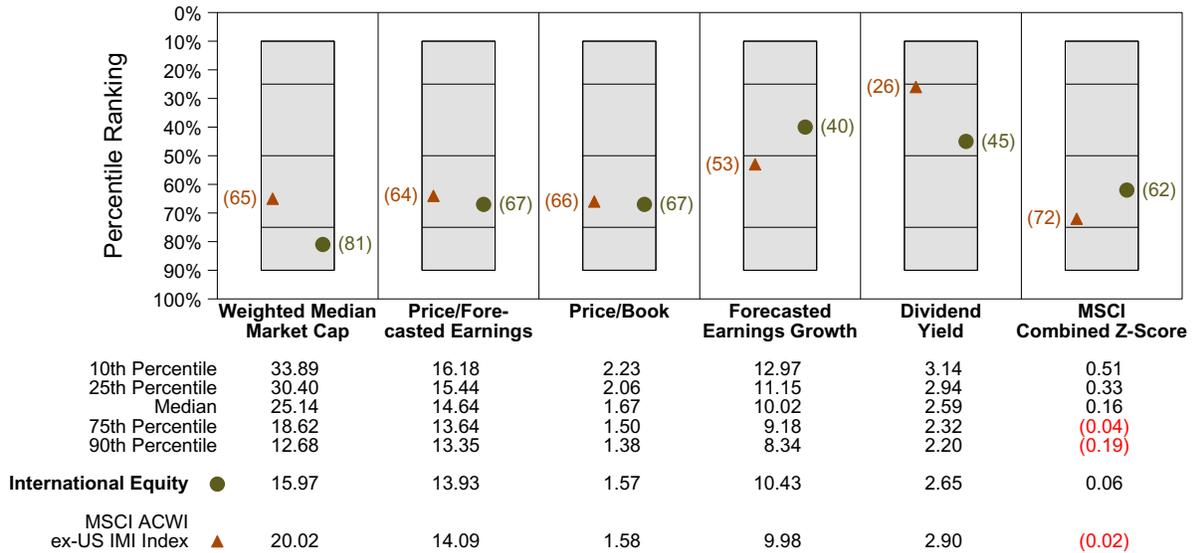


# International Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

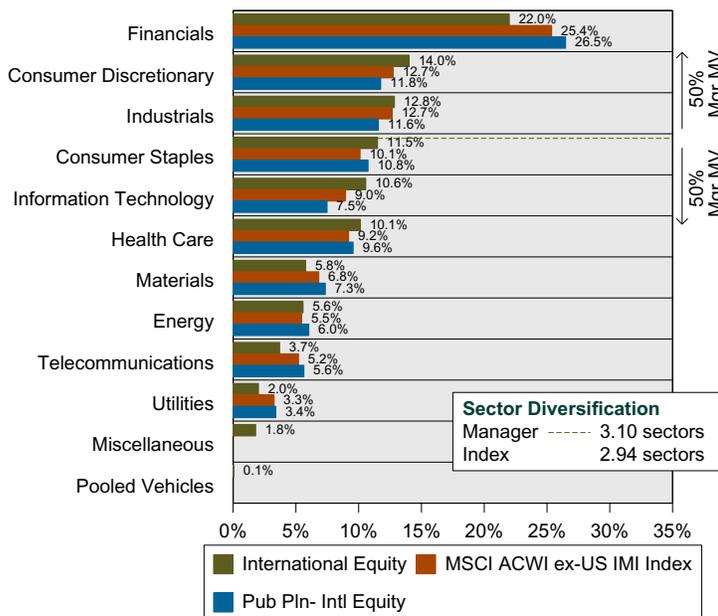
## Portfolio Characteristics Percentile Rankings Rankings Against Pub Pln- International Equity as of December 31, 2015



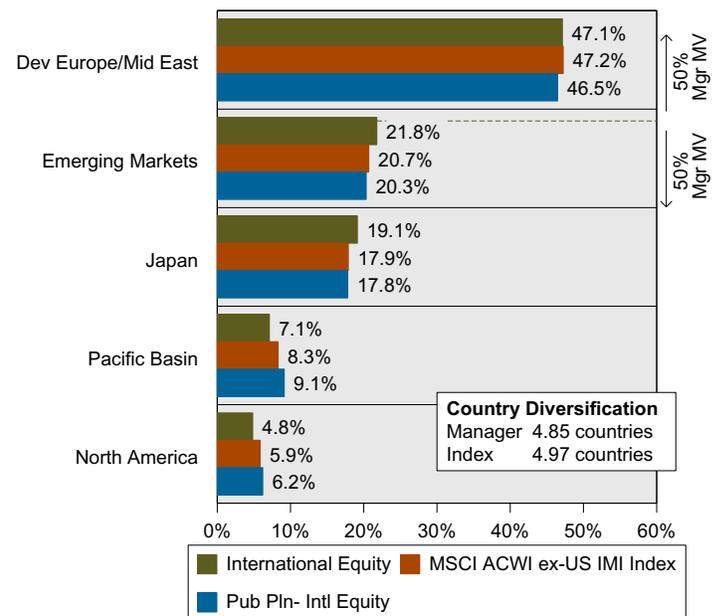
## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

### Sector Allocation December 31, 2015



### Regional Allocation December 31, 2015



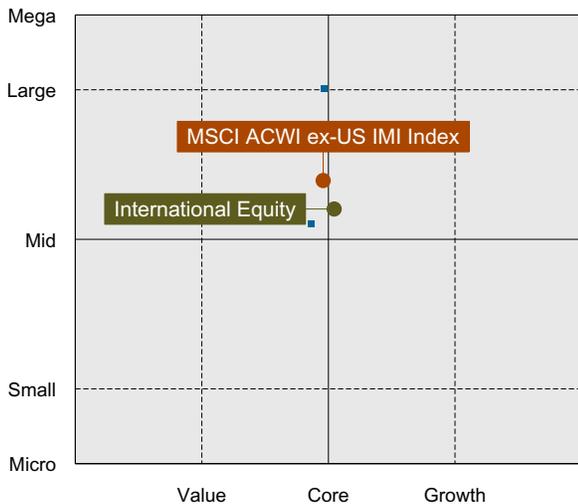
# Current Holdings Based Style Analysis

## International Equity

### As of December 31, 2015

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

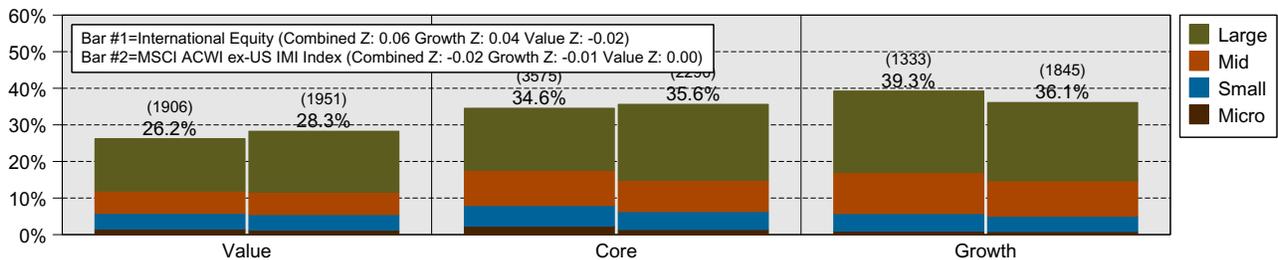
**Style Map vs CAI Pub Fund:10+ Intl Eq Holdings as of December 31, 2015**



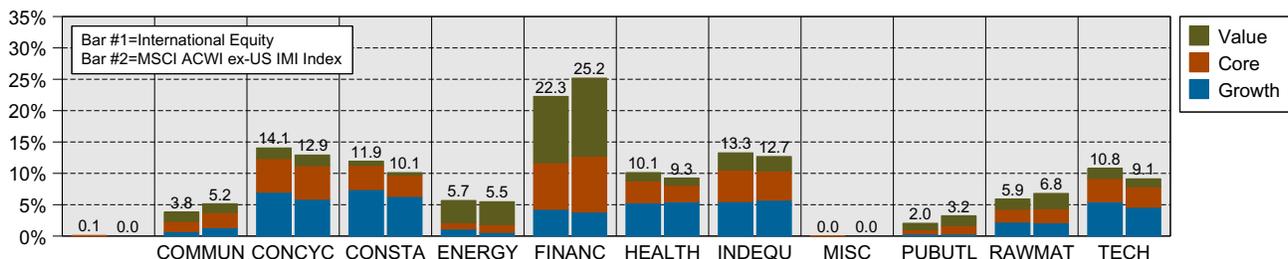
**Style Exposure Matrix Holdings as of December 31, 2015**

	Value	Core	Growth	Total
Large	14.3% (121)	16.9% (144)	22.3% (173)	53.5% (438)
	16.7% (123)	20.8% (136)	21.4% (160)	58.8% (419)
Mid	6.1% (200)	9.7% (296)	11.2% (315)	27.1% (811)
	6.2% (252)	8.5% (329)	9.7% (385)	24.4% (966)
Small	4.2% (495)	5.6% (682)	4.7% (408)	14.6% (1585)
	4.2% (692)	4.9% (854)	4.2% (707)	13.3% (2253)
Micro	1.5% (1090)	2.3% (2453)	1.0% (437)	4.9% (3980)
	1.2% (884)	1.4% (971)	0.8% (593)	3.5% (2448)
Total	26.2% (1906)	34.6% (3575)	39.3% (1333)	100.0% (6814)
	28.3% (1951)	35.6% (2290)	36.1% (1845)	100.0% (6086)

**Combined Z-Score Style Distribution Holdings as of December 31, 2015**



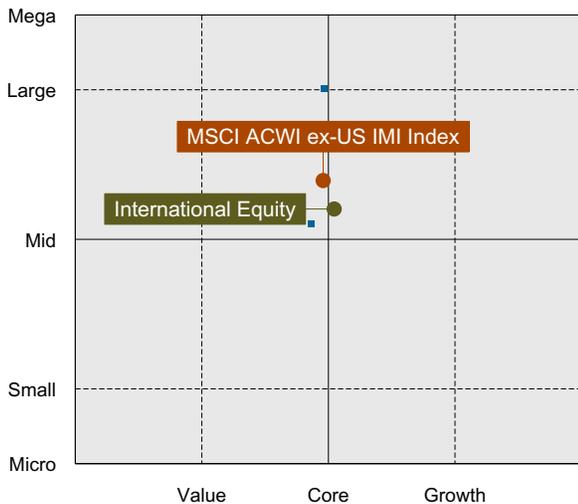
**Sector Weights Distribution Holdings as of December 31, 2015**



# Current Holdings Based Style Analysis International Equity As of December 31, 2015

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

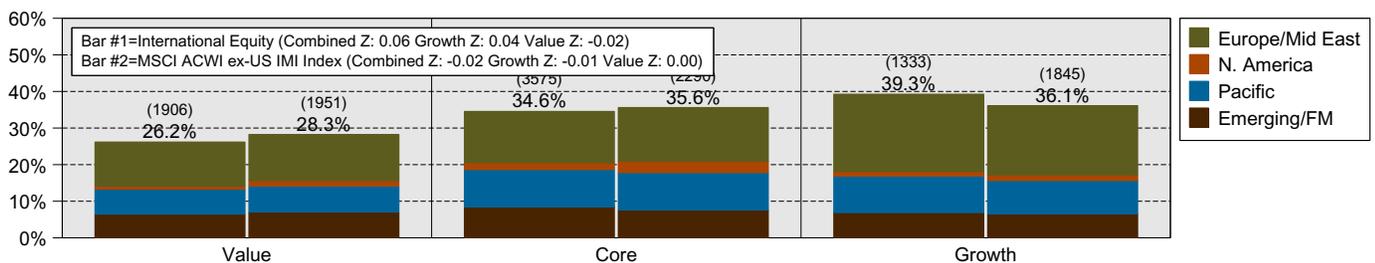
**Style Map vs CAI Pub Fund:10+ Intl Eq Holdings as of December 31, 2015**



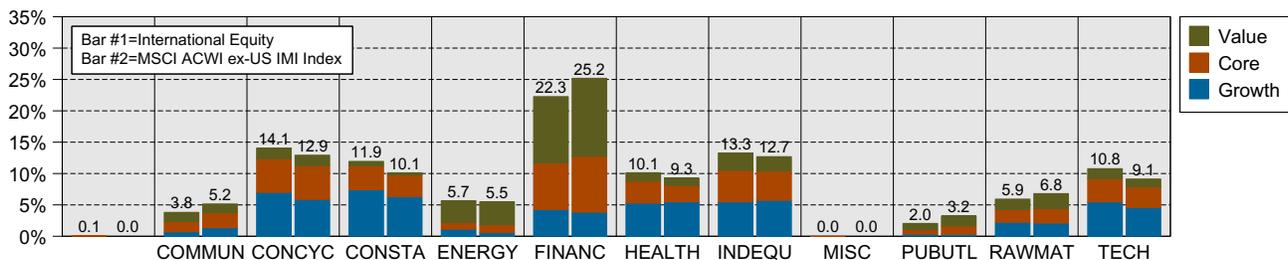
**Style Exposure Matrix Holdings as of December 31, 2015**

	Value	Core	Growth	Total
Europe/ Mid East	12.0% (435)	14.0% (501)	21.1% (358)	47.1% (1294)
N. America	12.6% (450)	14.7% (503)	18.9% (471)	46.2% (1424)
Pacific	0.9% (87)	1.9% (102)	1.3% (46)	4.1% (235)
Emerging/ FM	1.4% (94)	3.2% (152)	1.6% (84)	6.1% (330)
<b>Total</b>	<b>26.2% (1906)</b>	<b>34.6% (3575)</b>	<b>39.3% (1333)</b>	<b>100.0% (6814)</b>
	<b>28.3% (1951)</b>	<b>35.6% (2290)</b>	<b>36.1% (1845)</b>	<b>100.0% (6086)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2015**



**Sector Weights Distribution Holdings as of December 31, 2015**





## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2015. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2015

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
<b>Total Fixed Income</b>	<b>(0.51%)</b>	<b>0.54%</b>	<b>1.69%</b>	<b>4.25%</b>	<b>5.54%</b>
Custom FI Benchmark (15)	(0.80%)	0.16%	1.15%	3.41%	4.56%
CAI Pub Fund: 10+ US FI	(0.67%)	(0.46%)	1.29%	3.62%	4.88%
<b>Core Fixed Income</b>	<b>(0.33%)</b>	<b>0.61%</b>	<b>1.96%</b>	<b>4.31%</b>	<b>5.41%</b>
Custom FI Benchmark (16)	(0.57%)	0.55%	1.50%	3.68%	4.70%
CAI Core Bond Style	(0.51%)	0.72%	1.77%	3.85%	4.93%
<b>Short Term Fixed Income</b>	<b>(0.13%)</b>	<b>0.90%</b>	-	-	-
Barclays Gov/Credit 1-3 Y	(0.36%)	0.65%	0.69%	0.98%	2.74%
CAI Defensive F-I Style	(0.27%)	0.84%	0.88%	1.35%	2.87%
<b>BIG Fixed Income</b>	<b>(1.15%)</b>	<b>0.22%</b>	<b>3.51%</b>	<b>5.42%</b>	-
HY/Leveraged Loans & Bond Index (23)	(2.11%)	(1.68%)	1.94%	3.76%	4.94%
Leveraged Bank Loans	(2.70%)	(2.18%)	1.83%	3.72%	4.30%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2015	2014	2013	2012	2011
<b>Total Fixed Income</b>	<b>0.54%</b>	<b>3.52%</b>	<b>1.04%</b>	<b>10.33%</b>	<b>6.12%</b>
Custom FI Benchmark (15)	0.16%	3.04%	0.28%	8.61%	5.19%
CAI Pub Fund: 10+ US FI	(0.46%)	6.31%	(1.79%)	6.86%	7.56%
<b>Core Fixed Income</b>	<b>0.61%</b>	<b>6.87%</b>	<b>(1.42%)</b>	<b>9.08%</b>	<b>6.79%</b>
Custom FI Benchmark (16)	0.55%	5.97%	(1.87%)	6.79%	7.32%
CAI Core Bond Style	0.72%	6.21%	(1.48%)	6.37%	7.75%
<b>Short Term Fixed Income</b>	<b>0.90%</b>	<b>1.02%</b>	-	-	-
Barclays Gov/Credit 1-3 Y	0.65%	0.77%	0.64%	1.26%	1.59%
CAI Defensive F-I Style	0.84%	1.13%	0.66%	2.14%	1.98%
<b>BIG Fixed Income</b>	<b>0.22%</b>	<b>2.36%</b>	<b>8.09%</b>	<b>13.15%</b>	<b>3.78%</b>
HY/Leveraged Loans & Bond Index (23)	(1.68%)	1.83%	5.82%	11.13%	2.14%
Leveraged Bank Loans	(2.18%)	1.52%	6.34%	10.09%	3.24%

All returns reported net-of-fee.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	2009	2008	2007	2006	2005
<b>Total Fixed Income</b>	<b>25.73%</b>	<b>(9.86%)</b>	<b>4.84%</b>	<b>5.84%</b>	<b>3.67%</b>
Custom FI Benchmark (15)	7.97%	2.94%	6.34%	4.79%	3.01%
CAI Pub Fund: 10+ US FI	12.92%	(2.05%)	6.87%	4.58%	3.04%
<b>Core Fixed Income</b>	<b>22.00%</b>	<b>(7.96%)</b>	<b>4.74%</b>	<b>5.89%</b>	<b>3.71%</b>
Custom FI Benchmark (16)	7.97%	2.94%	6.34%	4.79%	3.01%
CAI Core Bond Style	11.50%	0.30%	6.20%	4.68%	2.78%
<b>BIG Fixed Income</b>	<b>42.92%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
HY/Leveraged Loans & Bond Idx (23)	53.14%	(28.39%)	2.06%	8.01%	4.50%
Leveraged Bank Loans	45.30%	(28.54%)	2.54%	7.35%	5.09%

All returns reported net-of-fee.

# Total Fixed Income

## Period Ended December 31, 2015

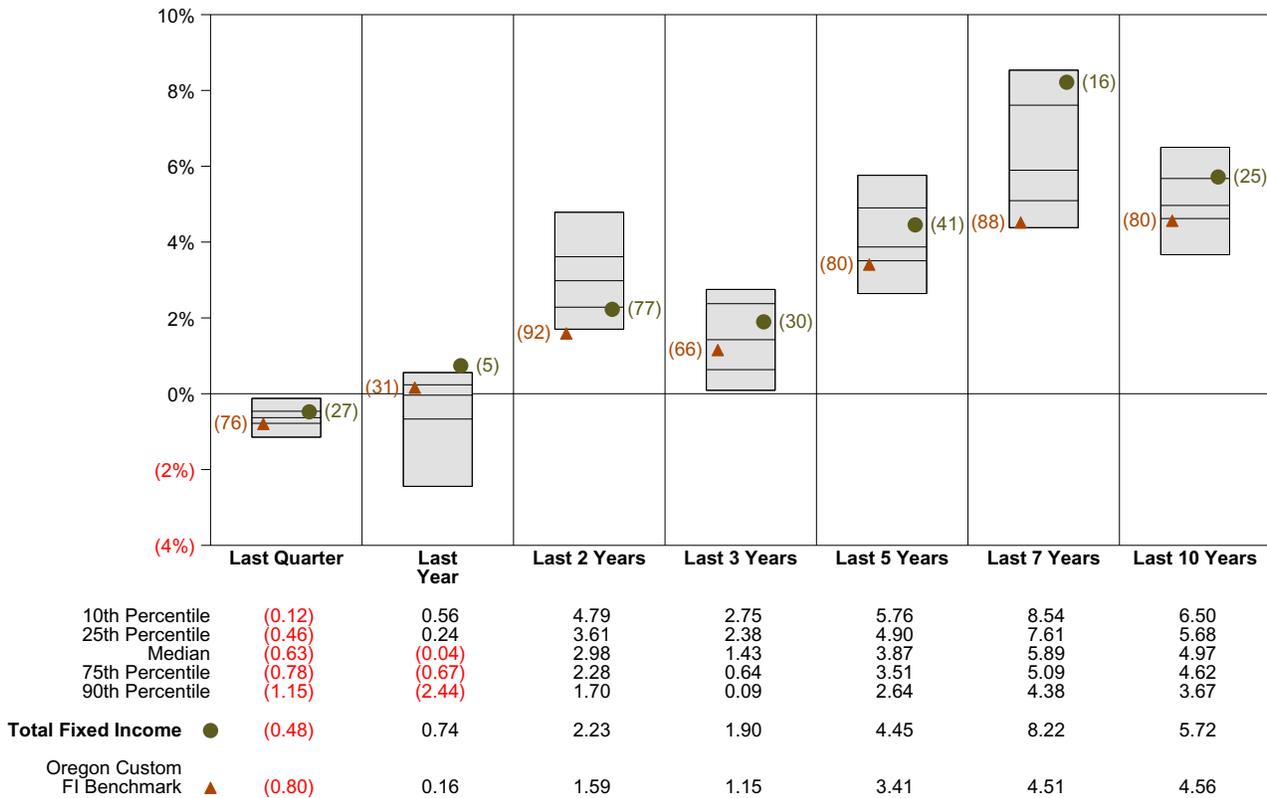
### Investment Philosophy

Current Benchmark = 40% Barclays Capital U.S. Aggregate Bond, 40% Barclays Capital U.S. 1-3 Govt/Credit Bond Index, 15% S&P/LSTA Leveraged Loan Index, and 5% BofA ML High Yield Master II Index.

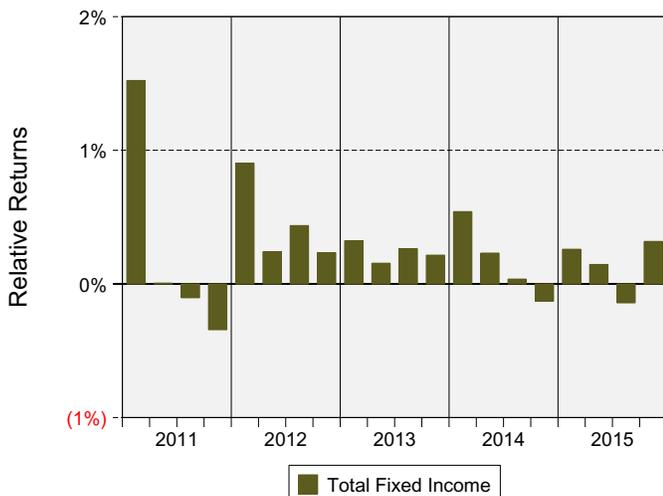
### Quarterly Summary and Highlights

- Total Fixed Income's portfolio posted a (0.48)% return for the quarter placing it in the 27 percentile of the Public Fund 10+ B US FI group for the quarter and in the 5 percentile for the last year.
- Total Fixed Income's portfolio outperformed the Oregon Custom FI Benchmark by 0.32% for the quarter and outperformed the Oregon Custom FI Benchmark for the year by 0.58%.

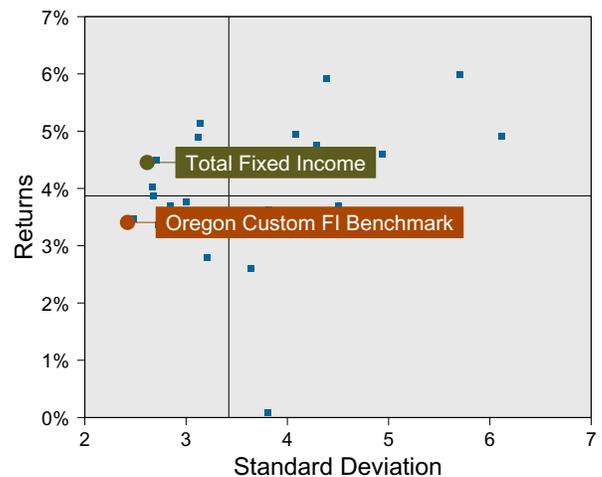
### Performance vs Public Fund 10+ B US FI (Gross)



### Relative Returns vs Oregon Custom FI Benchmark



### Public Fund 10+ B US FI (Gross) Annualized Five Year Risk vs Return

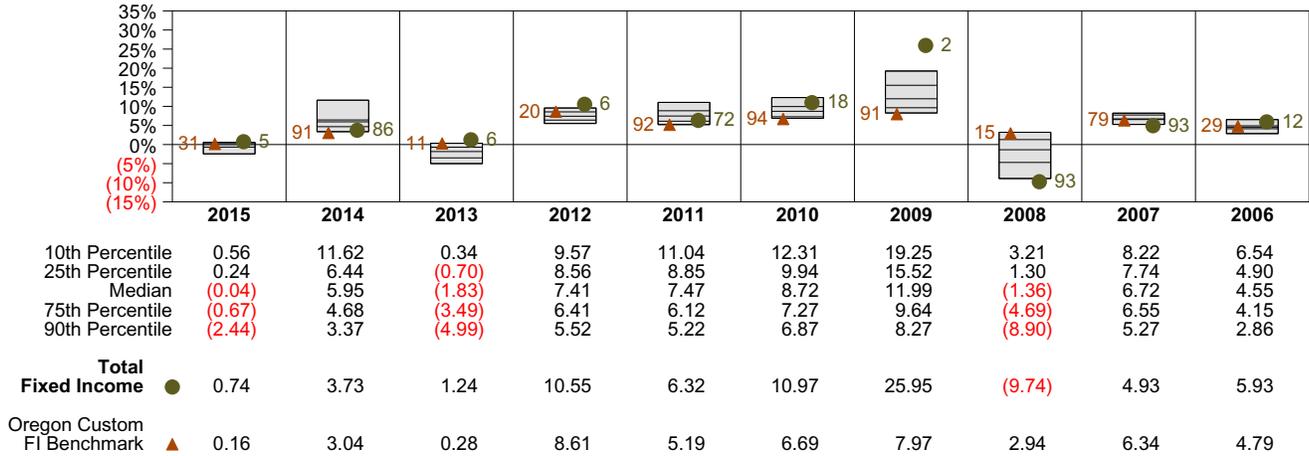


# Total Fixed Income Return Analysis Summary

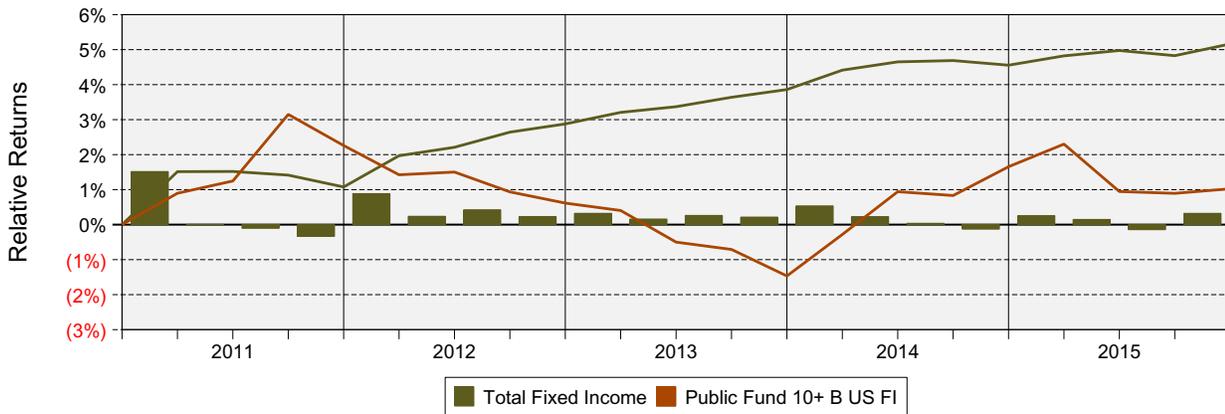
## Return Analysis

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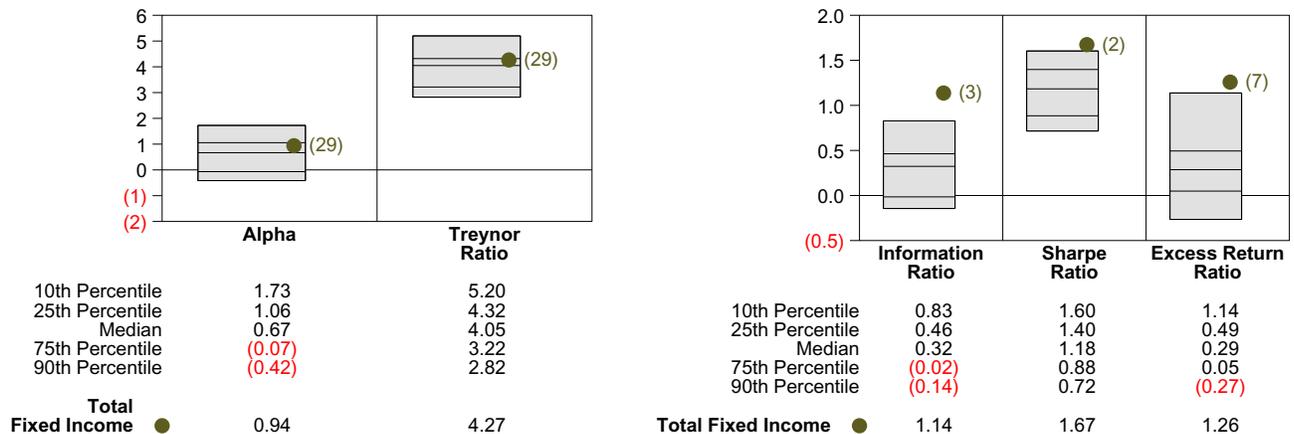
### Performance vs Public Fund 10+ B US FI (Gross)



### Cumulative and Quarterly Relative Return vs Oregon Custom FI Benchmark



### Risk Adjusted Return Measures vs Oregon Custom FI Benchmark Rankings Against Public Fund 10+ B US FI (Gross) Five Years Ended December 31, 2015

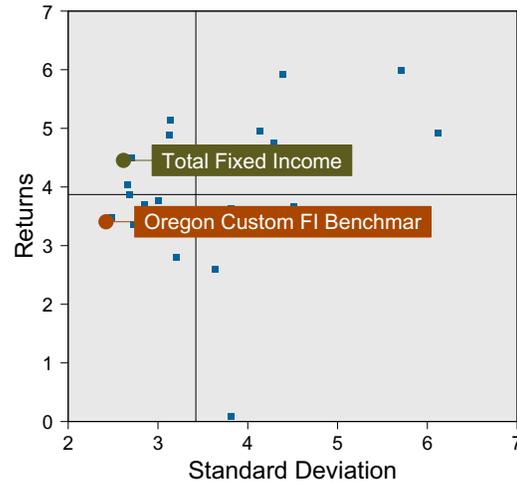
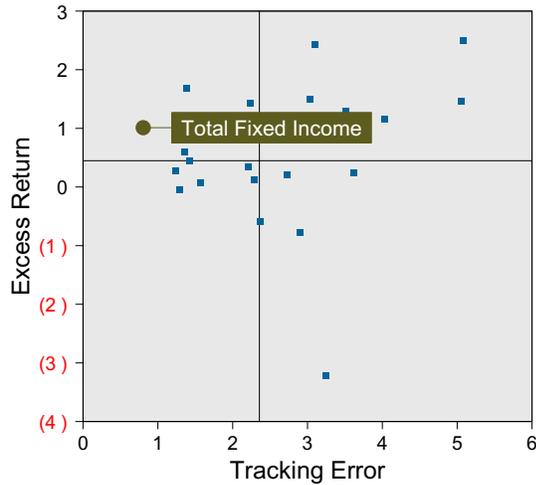


# Total Fixed Income Risk Analysis Summary

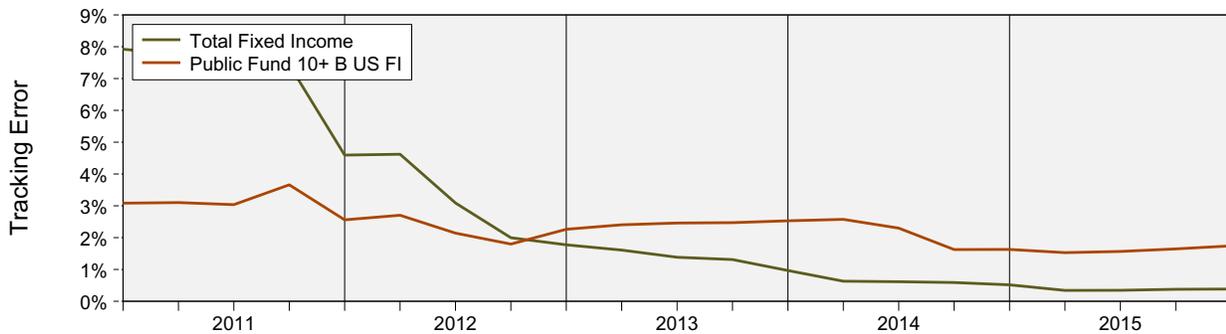
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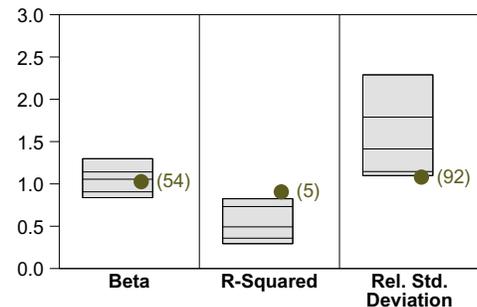
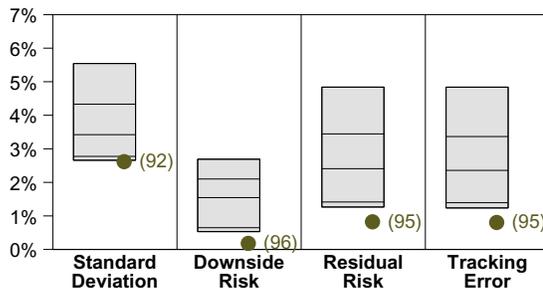
### Risk Analysis vs Public Fund 10+ B US FI (Gross) Five Years Ended December 31, 2015



### Rolling 12 Quarter Tracking Error vs Oregon Custom FI Benchmark



### Risk Statistics Rankings vs Oregon Custom FI Benchmark Rankings Against Public Fund 10+ B US FI (Gross) Five Years Ended December 31, 2015



	Standard Deviation	Downside Risk	Residual Risk	Tracking Error
10th Percentile	5.54	2.69	4.84	4.84
25th Percentile	4.33	2.10	3.44	3.37
Median	3.42	1.55	2.41	2.36
75th Percentile	2.77	0.65	1.42	1.39
90th Percentile	2.66	0.53	1.26	1.24

	Beta	R-Squared	Rel. Std. Deviation
10th Percentile	1.30	0.82	2.29
25th Percentile	1.14	0.73	1.79
Median	1.06	0.49	1.41
75th Percentile	0.91	0.36	1.15
90th Percentile	0.84	0.29	1.10

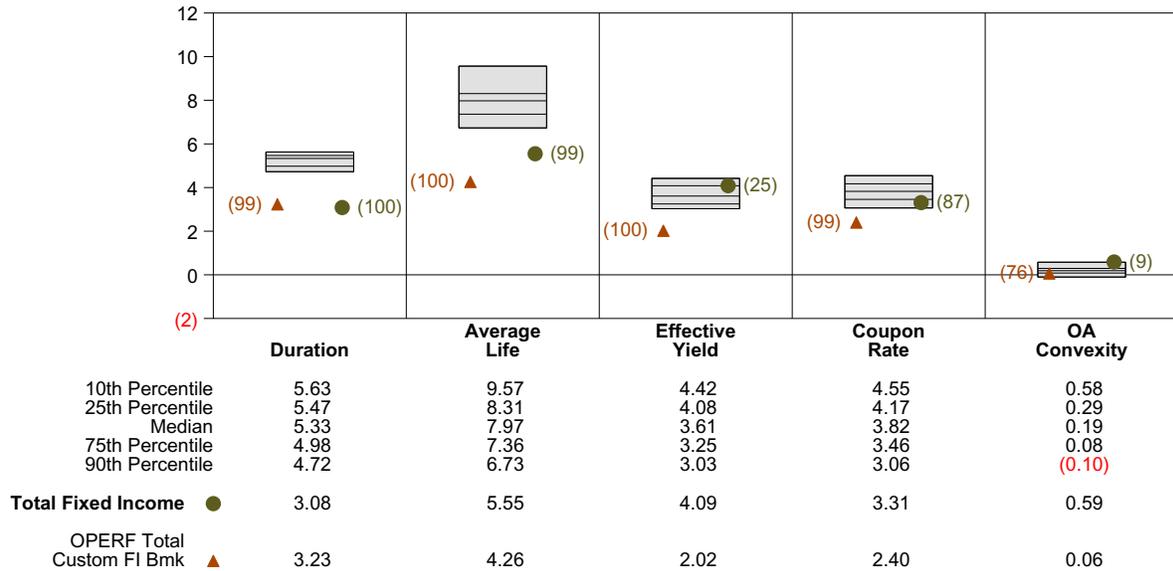
<b>Total Fixed Income</b>	● 2.62	0.18	0.82	0.80	<b>Total Fixed Income</b>	● 1.03	0.91	1.08
---------------------------	--------	------	------	------	---------------------------	--------	------	------

# Total Fixed Income Bond Characteristics Analysis Summary

## Portfolio Characteristics

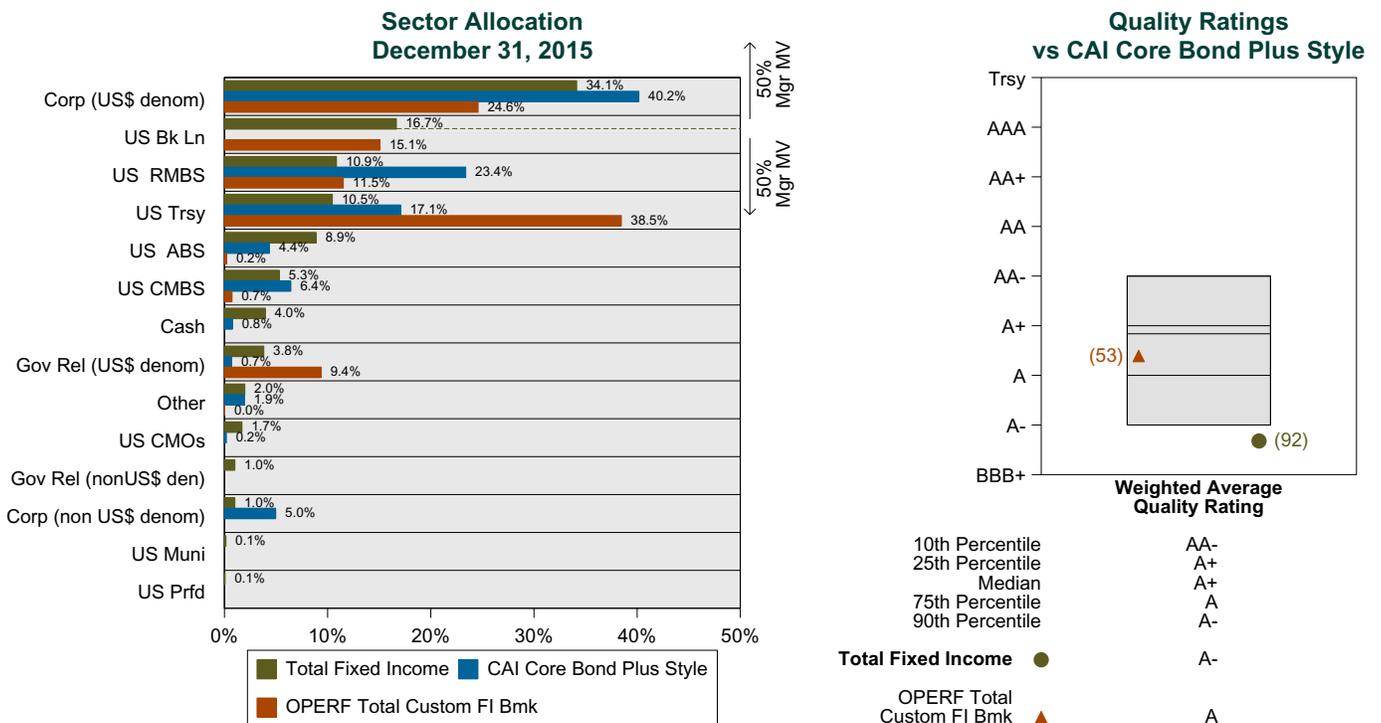
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against CAI Core Bond Plus Style as of December 31, 2015



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.





## State of Oregon - PERS

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- (1) Prior to September 30, 2013, policy benchmark is 46% MSCI ACWI Net, 27% Custom FI Benchmark, 16% Russell 3000+300 QTR lag, and 11% NCREIF Property 1 QTR lag. From October 31, 2013 to current, policy benchmark is 41.50% MSCI ACWI Net, 23.50% Custom FI Benchmark, 20% Russell 3000+300 QTR lag, 12.50% NCREIF Property QTR lag, and 2.50% CPI+400 bps
- (2) Overlay - inception date is November 1, 2005.
- (3) Prior to March 31, 2008, index is Russell 3000. From April 1, 2008 to current, index is MSCI ACWI IMI Net.
- (4) The start date for the Total Public Equity benchmark is January 1, 2008, when public equities were restructured to an ACWI asset allocation.
- (5) Effective June 1, 2008, MSCI completed the implementation of the Investable Market Index(IMI - Large Cap+Mid Cap+Small Cap). The MSCI ACWI ex US IMI Net Index was formally adopted as the benchmark for the International Equity Fund. Benchmark performance through May 31, 2008, is MSCI ACWI ex US Gross and is linked thereafter with the MSCI ACWI ex US IMI Net Index.
- (6) Benchmark performance through May 31, 2008, is the applicable MSCI Standard Gross Index and is linked thereafter with the MSCI Standard Net Index.
- (7) Prior to June 1 2008, index is MSCI ACWI ex US Value. From June 1 2008 onwards, index is MSCI ACWI ex US Value IMI.
- (8) Prior to June 1 2008, index is MSCI World ex US Growth. From June 1, 2008 onwards, index is MSCI World ex US Growth (Net)
- (9) Benchmark performance through May 31, 2008, is the applicable MSCI Standard Gross Index and is linked thereafter with the MSCI IMI Net Index.
- (10) Benchmark performance through May 31, 2008, is the applicable MSCI Standard Gross Index and is linked thereafter with the MSCI Standard Net Index.
- (11) Benchmark performance through May 31, 2008, is the applicable MSCI Standard Gross Index and is linked thereafter with the MSCI Standard Net Index.
- (12) Benchmark performance through May 31, 2008, is the applicable MSCI Standard Gross Index and is linked thereafter with the MSCI IMI Net Index.
- (13) Benchmark performance through May 31, 2008, is the applicable MSCI Standard Gross Index and is linked thereafter with the MSCI Standard Net Index.
- (14) Benchmark performance through March 31, 2010 is the applicable MSCI AC World (NET) and is linked thereafter with the MSCI ACWI Value Net Index.
- (15) Prior to February 28, 2011, index is Oregon Custom FI 90/10 Benchmark (90% BC US Universal Index and 10% SSBI Non-US World Gov't Bond Hedged Index). From March 1, 2011 to December 31, 2013, index is Oregon Custom FI Benchmark (60% BC US Universal Index, 20% S&P/LSTA Leveraged Loan Index, 10% JMP EMBI Global Index, and 10% BofA ML High Yield Master II Index). From January 1, 2014 to Current, index is Oregon Custom FI Benchmark (40% Barclays Capital U.S. Aggregate Bond, 40% Barclays Capital U.S. 1-3 Govt/Credit Bond Index, 15% S&P/LSTA Leveraged Loan Index, and 5% BofA ML High Yield Master II Index).
- (16) Prior to February 28, 2011, index is Oregon Custom External FI 90/10 Benchmark (90% BC US Universal and 10% SSBI Non-US World Gov't Bond Hedged Index). From March 1, 2011 to December 31, 2013, index is Oregon Custom External FI Benchmark (90% BC US Universal Index and 10% JMP EMBI Global Index). From January 1, 2014 to Current, index is Oregon Custom External FI Benchmark (100% Barclays Capital U.S. Aggregate Bond).
- (17) 65% S&P-LSTA/35% Merrill HY Master II.
- (18) 85% S&P-LSTA/15% Merrill HY Master II.
- (19) Returns reported quarterly and lagged one quarter.
- (20) Returns reported quarterly and lagged one quarter.
- (21) Beginning in September 2010, the Private Equity return now combines the estimated return from the most recent quarter with a revision component that trues up the past two quarters' reported returns with the past two quarters' actual returns.
- (22) Prior to May 1, 2005, index is R3000+500 bps Qtr Lag.
- (23) 75% S&P-LSTA/25% Merrill HY Master II.



## Research and Educational Programs

The Callan Investments Institute provides research that keeps clients updated on the latest industry trends while helping them learn through carefully structured educational programs.

### Recent Research

Please visit [www.callan.com/research](http://www.callan.com/research) to see all of our publications.

**Video: The Education of Beta** In this brief video, Eugene Podkaminer describes the reasons he decided to explore the “smart beta” concept in detail.

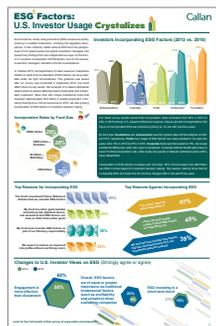


**2015 Alternative Investments Survey** Our 2015 Alternative Investments Survey provides institutional investors a current report on asset allocation trends and investor practices.

**Inside Callan’s Database, 3rd Quarter 2015** This report graphs performance and risk data from Callan’s proprietary database alongside relevant market indices.

**Capital Market Review, 3rd Quarter 2015** Insights on the economy and recent performance in equities, fixed income, alternatives, real estate, and more.

**Market Pulse Flipbook, 3rd Quarter 2015** A quarterly market reference guide covering investment and fund sponsor trends in the U.S. economy, U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution.



**ESG Factors: U.S. Investor Usage Crystalizes** This charticle looks at ESG from the perspectives of U.S. asset owners and global investment managers, revealing growing incorporation of ESG factors in investment decision making.

**The Department of Labor Weighs in on ESG: Key Takeaways from Interpretive Bulletin 2015-01** A summary of the DOL’s Interpretive Bulletin 2015-011, relating to the fiduciary standard under ERISA considering economically targeted investments (ETIs), and the implications for investors.

**Hedge Fund Monitor, 3rd Quarter 2015** Author Jim McKee provides quarterly performance and a snapshot of the asset class. This quarter’s cover story: “Beyond the Glitter and Regret: Reassessing Hedge Funds’ Role in Asset Allocation.”

**Video: In the Spotlight-Target Date Funds** Lori Lucas discusses some of the trends that are causing target date funds to have lower fees.

**ESG Interest and Implementation Survey** Results of Callan’s third annual survey to assess the status of ESG factor integration in the U.S. institutional market.

**DC Observer, 3rd Quarter 2015** Cover story: Meeting the Challenge of Managed Account Selection and Evaluation.

**Grading the Pension Protection Act, Ten Years Later: Success Stories and Near Misses** Callan grades the performance of nine key PPA provisions over the past decade, listing them from least to most effective.

**Private Markets Trends, Fall 2015** Gary Robertson summarizes the market environment, recent events, performance, and other issues involving private equity.

## Events

Miss out on a Callan conference or workshop? Event summaries and speakers' presentations are available on our website: <https://www.callan.com/education/CII/>

The **National Conference**, to be held January 25–27 in San Francisco, consists of general sessions with presentations by world, political, arts, science, and investment industry speakers. The general sessions are followed by smaller breakout sessions on timely industry topics led by Callan specialists. Attendees include plan/fund sponsors, investment managers, and Callan associates.

Save the date for our **Regional Workshops**: June 28 in Atlanta, June 29 in San Francisco, October 25 in New York, and October 26 in Chicago. Also mark your calendars for our fall **Investment Manager Conference**, September 11-13.

For more information about research or educational events, please contact Anna West: 415.974.5060 / [institute@callan.com](mailto:institute@callan.com)

## The Center for Investment Training Educational Sessions

The Center for Investment Training, better known as the “Callan College,” provides a foundation of knowledge for industry professionals who are involved in the investment decision-making process. It was founded in 1994 to provide clients and non-clients alike with basic- to intermediate-level instruction. Our next session is:

### Introduction to Investments

Atlanta, GA, April 19–20, 2016

San Francisco, CA, July 19–20, 2016

Chicago, IL, October 18–19, 2016

This session familiarizes fund sponsor trustees, staff, and asset management advisors with basic investment theory, terminology, and practices. It lasts one-and-a-half days and is designed for individuals who have less than two years of experience with asset-management oversight and/or support responsibilities. Tuition for the Introductory “Callan College” session is \$2,350 per person. Tuition includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

### Customized Sessions

The “Callan College” is equipped to customize a curriculum to meet the training and educational needs of a specific organization. These tailored sessions range from basic to advanced and can take place anywhere—even at your office.

Learn more at <https://www.callan.com/education/college/> or contact Kathleen Cunnie: 415.274.3029 / [cunnie@callan.com](mailto:cunnie@callan.com)

## Education: By the Numbers

500

Attendees (on average) of the Institute's annual National Conference

50+

Unique pieces of research the Institute generates each year

3,300

Total attendees of the “Callan College” since 1994

1980

Year the Callan Investments Institute was founded



“We think the best way to learn something is to teach it. Entrusting client education to our consultants and specialists ensures that they have a total command of their subject matter. This is one reason why education and research have been cornerstones of our firm for more than 40 years.”

Ron Peyton, Chairman and CEO



## List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor and disclose potential conflicts on an on-going basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan's Compliance Department.

Manager Name
1607 Capital Partners, LLC
Aberdeen Asset Management
Acadian Asset Management, Inc.
Advisory Research
Affiliated Managers Group
AllianceBernstein
Allianz Global Investors U.S. LLC
Allianz Life Insurance Company of North America
AlphaOne Investment Services
American Century Investment Management
Analytic Investors
Apollo Global Management
AQR Capital Management
Ares Management
Ariel Investments
Aristotle Capital Management
Artisan Partners Limited
Atlanta Capital Management Co., L.L.C.
AXA Rosenberg Investment Management
Babson Capital Management LLC
Bailard
Baillie Gifford Overseas Limited
Baird Advisors
Bank of America
Baring Asset Management
Baron Capital Management
BlackRock
Blue Vista Capital Management
BMO Asset Management
BNP Paribas Investment Partners
BNY Mellon Asset Management
Boston Company Asset Management, LLC (The)
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
Brown Brothers Harriman & Company
Cadence Capital Management

Manager Name
Calamos Advisors
Capital Group
CastleArk Management, LLC
Causeway Capital Management
Champlain Investment Partners
Channing Capital Management, LLC
Charles Schwab Investment Management
Chartwell Investment Partners
ClearBridge Investments, LLC (fka ClearBridge Advisors)
Cohen & Steers
Columbia Management Investment Advisors, LLC
Columbus Circle Investors
Corbin Capital Partners
Cornerstone Investment Partners, LLC
Cramer Rosenthal McGlynn, LLC
Crawford Investment Council
Credit Suisse Asset Management
Crestline Investors
Cutwater Asset Management
DDJ Capital Management
DE Shaw Investment Management LLC
Delaware Investments
DePrince, Race & Zollo, Inc.
Deutsche Asset & Wealth Management
Diamond Hill Investments
Duff & Phelps Investment Mgmt.
Eagle Asset Management, Inc.
EARNEST Partners, LLC
Eaton Vance Management
EnTrust Capital Inc.
Epoch Investment Partners
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
First Eagle Investment Management
First Hawaiian Bank Wealth Management Division
First State Investments

Manager Name
Fisher Investments
FLAG Capital Management
Fort Washington Investment Advisors, Inc.
Franklin Templeton
Fred Alger Management Co., Inc.
Fuller & Thaler Asset Management
GAM (USA) Inc.
GE Asset Management
Goldman Sachs Asset Management
Grand-Jean Capital Management
GMO (fka Grantham, Mayo, Van Otterloo & Co., LLC)
Gresham Investment Management, LLC
Guggenheim Investments Asset Management (fka Security Global)
Harbor Capital
Harding Loevner LP
Harrison Street Real Estate Capital
Hartford Funds
Hartford Investment Management Co.
Henderson Global Investors
Hotchkis & Wiley
HSBC Global Asset Management
Income Research & Management
Insight Investment Management
Institutional Capital LLC
INTECH Investment Management
Invesco
Investec Asset Management
Janus Capital Group (fka Janus Capital Management, LLC)
Jensen Investment Management
J.P. Morgan Asset Management
KeyCorp
Kopernik Global Investors
Lazard Asset Management
LMCG Investments (fka Lee Munder Capital Group)
Legal & General Investment Management America
Lincoln National Corporation
Logan Circle Partners, L.P.
The London Company
Longview Partners
Loomis, Sayles & Company, L.P.
Lord Abbett & Company
Los Angeles Capital Management
LSV Asset Management
Lyrical Partners
MackKay Shields LLC
Man Investments
Manulife Asset Management
Martin Currie
Marvin & Palmer Associates, Inc.
MFS Investment Management
MidFirst Bank
Millstreet Capital Management
Mondrian Investment Partners Limited
Montag & Caldwell, Inc.
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
MUFG Union Bank, N.A.
Neuberger Berman, LLC (fka, Lehman Brothers)
Newton Capital Management
Northern Lights Capital Group

Manager Name
Northern Trust Asset Management
Nuveen Investments Institutional Services Group LLC
Old Mutual Asset Management
OppenheimerFunds, Inc.
Pacific Investment Management Company
Palisade Capital Management LLC
PanAgora Asset Management
Paradigm Asset Management
Parametric Portfolio Associates
Peregrine Capital Management, Inc.
PineBridge Investments (formerly AIG)
Pinnacle Asset Management
Pioneer Investment Management, Inc.
PNC Capital Advisors, LLC (fka Allegiant Asset Mgmt)
Principal Global Investors
Private Advisors
Prudential Investment Management, Inc.
Putnam Investments, LLC
Pyramis Global Advisors
Pzena Investment Management, LLC
RBC Global Asset Management (U.S.) Inc.
Regions Financial Corporation
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Rothschild Asset Management, Inc.
Royce & Associates
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Santander Global Facilities
Schroder Investment Management North America Inc.
Scout Investments
SEI Investments
SEIX Investment Advisors, Inc.
Smith Graham and Company
Smith Group Asset Management
Standard Life Investments
Standish (fka, Standish Mellon Asset Management)
State Street Global Advisors
Stone Harbor Investment Partners, L.P.
Systematic Financial Management
T. Rowe Price Associates, Inc.
Taplin, Canida & Habacht
TIAA-CREF
TCW Asset Management Company
Tocqueville Asset Management
UBS Asset Management
Van Eck
Versus Capital Group
Victory Capital Management Inc.
Vontobel Asset Management
Voya Investment Management (fka ING)
Waddell & Reed Asset Management Group
WCM Investment Management
WEDGE Capital Management
Wellington Management Company, LLP
Wells Capital Management
Wells Fargo Private Bank
Western Asset Management Company
Westwood Management Corp.
William Blair & Co., Inc.

CLIENT: Oregon Public Employees Retirement Fund (OPERF)		REPORT TYPE: EMAIL
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CONSULTANT	OFFICE	MAILING DUE DATE
Jim Callahan	CA	Feb 17 2016

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CLIENT: Oregon Public Employees Retirement Fund (OPERF)

Mr. Jim Callahan  
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1

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Mr. Uvan Tseng  
Senior Vice President  
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600 Montgomery Street Suite 800  
San Francisco, CA 94111

Number of Reports  
1

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**BLACKROCK®**

# Oregon State Treasury

**Risk Dashboard**

**Q4 2015**

March 9, 2016

# 1. Portfolio Overview

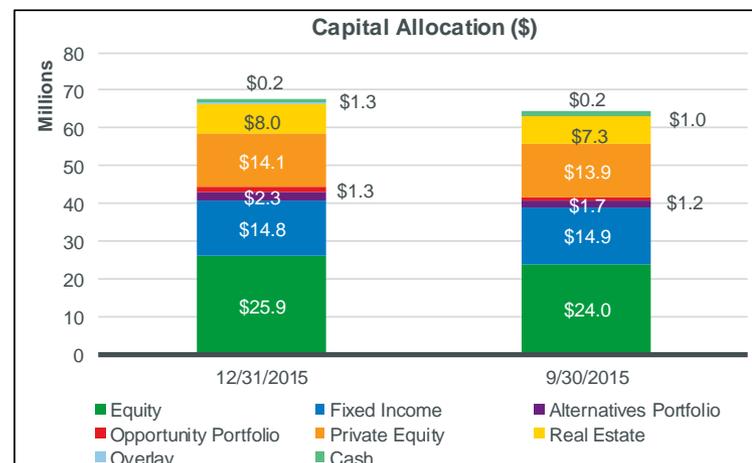
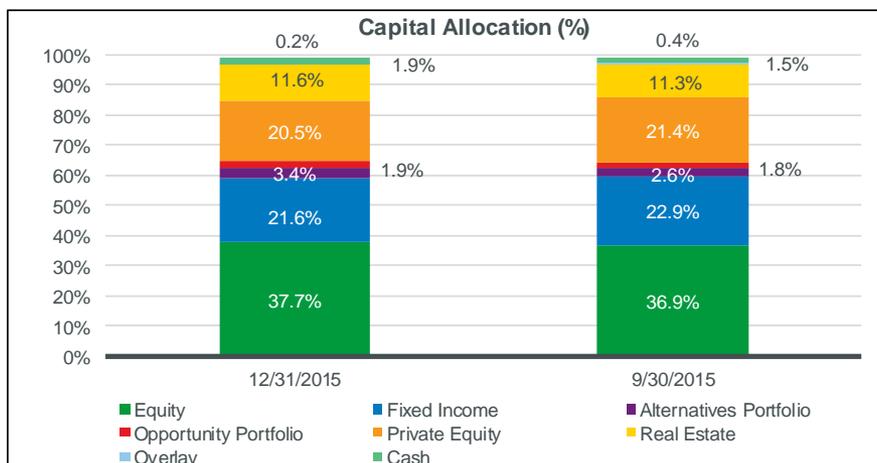
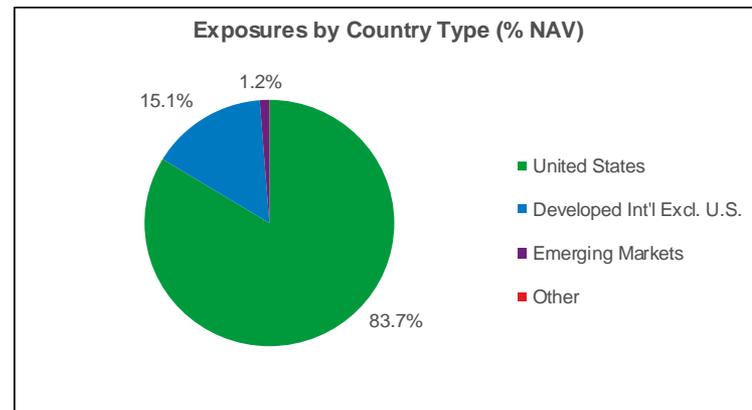
OPERF

## Oregon Public Employee Retirement Fund

December 31, 2015

Market Value (\$m): \$68,717,318

	December 31, 2015		September 30, 2015	
	Market Value (%)	Market Value (\$m)	Market Value (%)	Market Value (\$m)
Capital Markets	59.3%	\$40,727,568	59.8%	\$38,894,823
Equity	37.7%	\$25,901,865	36.9%	\$23,991,990
Fixed Income	21.6%	\$14,825,703	22.9%	\$14,902,833
Alternatives Program	37.4%	\$25,716,593	37.2%	\$24,197,059
Alternatives Portfolio	3.4%	\$2,314,907	2.6%	\$1,688,947
Opportunity Portfolio	1.9%	\$1,288,935	1.8%	\$1,180,910
Private Equity	20.5%	\$14,107,227	21.4%	\$13,940,833
Real Estate	11.6%	\$7,997,768	11.3%	\$7,348,729
Overlay	0.2%	\$169,826	0.4%	\$248,613
Cash	1.9%	\$1,320,692	1.5%	\$1,006,654
Portfolio NAV	100.0%	\$68,717,318	100.0%	\$65,010,541



# 2a. Portfolio Risk (%)

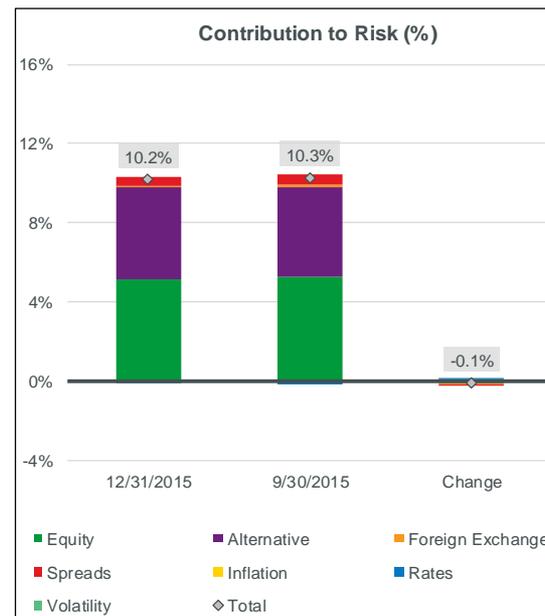
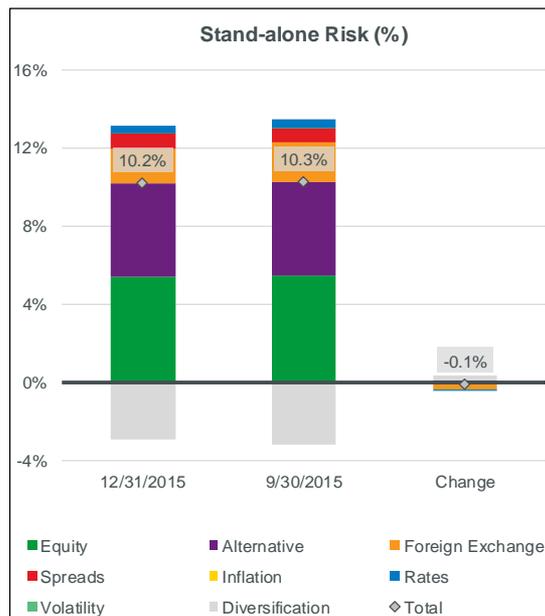
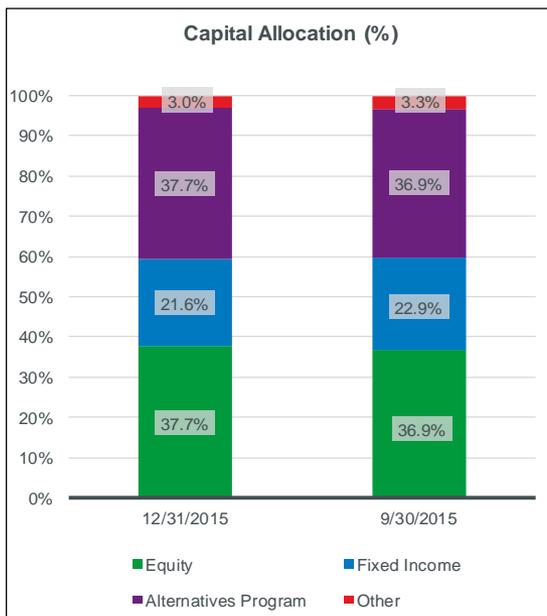
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## Portfolio Risk (%)

December 31, 2015

Market Value (\$m): \$68,717,318

Analytical Risk		
	1 SD (%)	95% VaR (%)
Month End	10.21%	16.80%
Quarter	10.28%	16.91%
Change	-0.07%	-0.12%



# 2b. Portfolio Risk (\$)

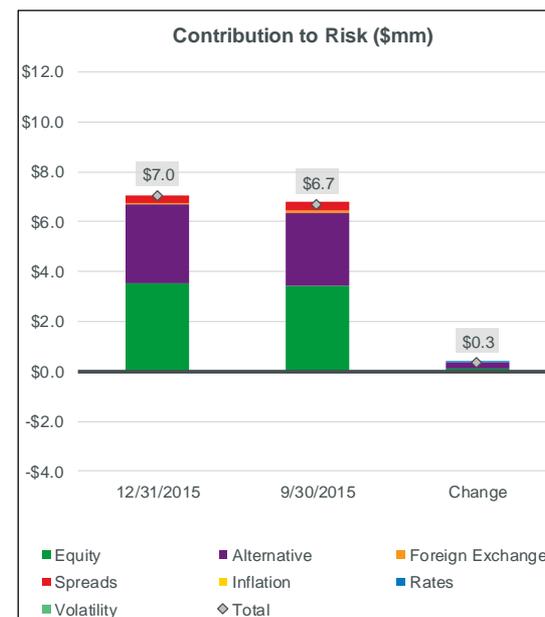
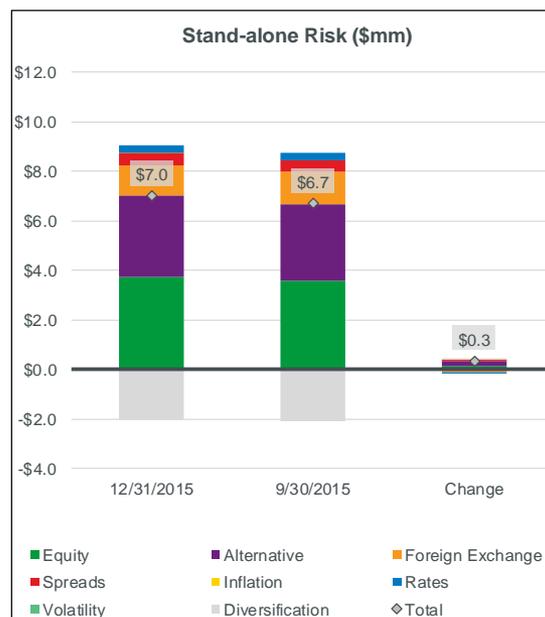
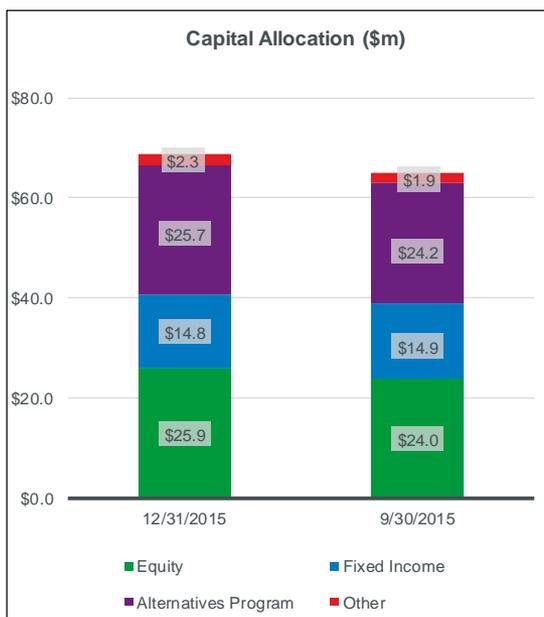
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## Portfolio Risk (\$mm)

December 31, 2015

Market Value (\$m): \$68,717,318

	Analytical Risk	
	1 SD (\$mm)	95% VaR (\$mm)
Month End	\$7.0	\$11.5
Quarter	\$6.7	\$11.0
Change	\$0.3	\$0.5



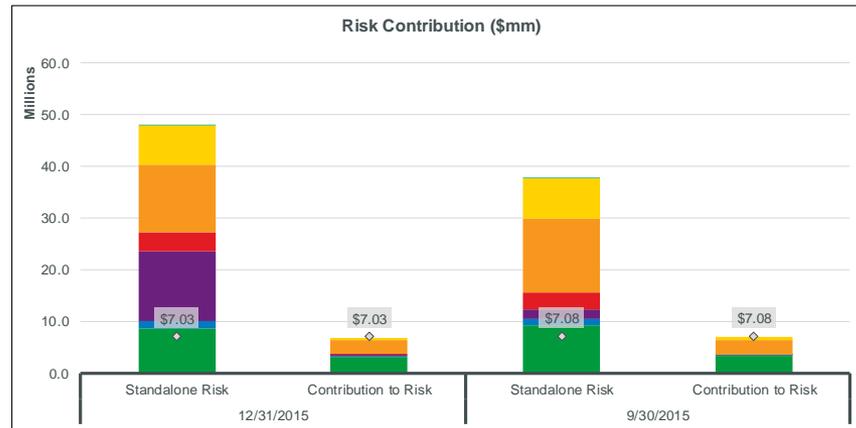
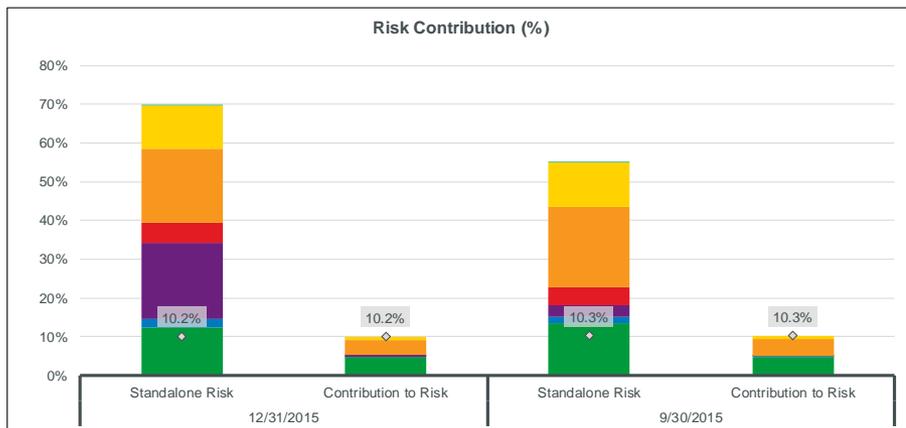
# 2c. Risk by Portfolio Sleeve

## OPERF

### Risk Breakdown by Portfolio Sleeve

December 31, 2015

Market Value (\$m): \$68,717,318



■ Equity 
 ■ Fixed Income 
 ■ Alternatives 
 ■ Opportunity 
 ■ Private Equity 
 ■ Real Estate 
 ■ Cash 
 ◇ Total

	Analytical Risk					
	% NAV	12/31/2015		9/30/2015		
		Standalone Risk	Contribution to Risk	Standalone Risk	Contribution to Risk	
Capital Markets	58.4%	8.5%	4.9%	8.6%	5.0%	
Equity	38.5%	12.5%	4.7%	13.5%	4.9%	
Fixed Income	20.0%	2.1%	0.2%	1.7%	0.2%	
Alternatives Program	38.2%	13.9%	5.2%	14.0%	5.1%	
Alternatives Portfolio	3.4%	19.5%	0.4%	2.9%	0.1%	
Opportunity Portfolio	1.9%	5.3%	0.1%	4.7%	0.1%	
Private Equity	21.0%	19.0%	3.8%	20.6%	4.2%	
Real Estate	11.9%	11.2%	0.9%	11.5%	0.8%	
Cash	2.0%	0.1%	0.0%	0.1%	0.0%	
<b>Total</b>	<b>100.0%</b>	<b>10.2%</b>	<b>10.2%</b>	<b>10.3%</b>	<b>10.3%</b>	

	Analytical Risk					
	Market Value (m)	12/31/2015		9/30/2015		
		Standalone Risk	Contribution to Risk	Standalone Risk	Contribution to Risk	
Capital Markets	\$ 40,816,542.00	\$ 5,857,210.21	\$ 3,345,010.77	\$ 5,905,389.38	\$ 3,462,017.31	
Equity	\$ 25,613,197.00	\$ 8,610,305.49	\$ 3,214,238.74	\$ 9,277,931.09	\$ 3,345,010.77	
Fixed Income	\$ 15,203,345.00	\$ 1,438,492.28	\$ 130,772.03	\$ 1,163,182.76	\$ 117,006.55	
Alternatives Program	\$ 25,730,264.00	\$ 9,560,123.36	\$ 3,572,141.13	\$ 9,649,598.96	\$ 3,517,079.22	
Alternatives Portfolio	\$ 2,314,896.00	\$ 13,441,987.70	\$ 295,957.74	\$ 1,975,345.86	\$ 41,296.43	
Opportunity Portfolio	\$ 1,288,927.00	\$ 3,675,382.20	\$ 48,179.17	\$ 3,255,535.17	\$ 48,179.17	
Private Equity	\$ 14,102,363.00	\$ 13,104,733.53	\$ 2,629,205.99	\$ 14,178,440.69	\$ 2,890,750.04	
Real Estate	\$ 7,989,599.00	\$ 7,729,315.00	\$ 591,915.49	\$ 7,928,914.41	\$ 529,970.84	
Cash	\$ 1,324,778.00	\$ 82,592.86	\$ -	\$ 96,358.33	\$ -	
<b>Total</b>	<b>\$68,827,382</b>	<b>\$7,027,276</b>	<b>\$7,027,276</b>	<b>\$7,075,455</b>	<b>\$7,075,455</b>	

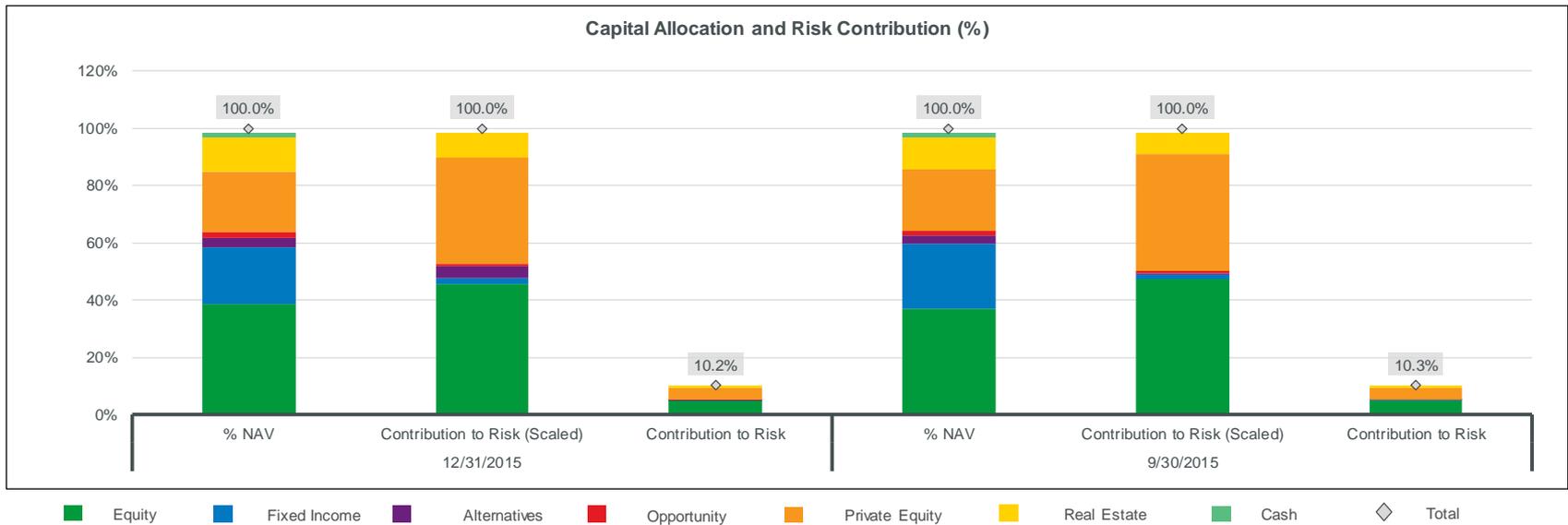
# 2d. Capital Allocation and Risk Contribution Comparison

OPERF

## Capital Allocation and Risk Contribution Comparison

December 31, 2015

Market Value (\$m): \$68,717,318



	Analytical Risk					
	12/31/2015			9/30/2015		
	% NAV	Contribution to Risk (Scaled)	Contribution to Risk	% NAV	Contribution to Risk (Scaled)	Contribution to Risk
Capital Markets	58.4%	47.6%	4.9%	59.8%	48.9%	5.0%
Equity	38.5%	45.7%	4.7%	36.9%	47.3%	4.9%
Fixed Income	20.0%	1.9%	0.2%	22.9%	1.7%	0.2%
Alternatives Program	38.2%	50.8%	5.2%	37.2%	49.7%	5.1%
Alternatives Portfolio	3.4%	4.2%	0.4%	2.6%	0.6%	0.1%
Opportunity Portfolio	1.9%	0.7%	0.1%	1.8%	0.7%	0.1%
Private Equity	21.0%	37.4%	3.8%	21.4%	40.9%	4.2%
Real Estate	11.9%	8.4%	0.9%	11.3%	7.5%	0.8%
Cash	2.0%	0.0%	0.0%	1.6%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>10.2%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>10.3%</b>

# 3a. Explanatory Risk Factors (%)

OPERF

## Explanatory Risk Factors

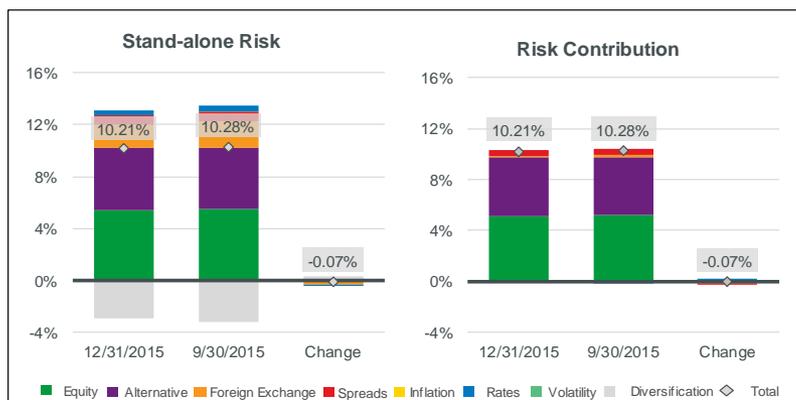
December 31, 2015

Market Value (\$m): \$68,717,318

	Stand-alone Risk			Risk Contribution		
	12/31/2015	9/30/2015	Change	12/31/2015	9/30/2015	Change
Equity	5.40%	5.49%	-0.09%	5.14%	5.24%	-0.10%
Alternative	4.80%	4.75%	0.05%	4.63%	4.55%	0.08%
Foreign Exchange	1.77%	2.02%	-0.25%	0.08%	0.13%	-0.05%
Spreads	0.76%	0.74%	0.02%	0.44%	0.50%	-0.06%
Inflation	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%
Rates	0.41%	0.47%	-0.06%	-0.08%	-0.15%	0.07%
Volatility	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Diversification	-2.94%	-3.20%	0.26%	0.00%	0.00%	0.00%
<b>Total</b>	<b>10.21%</b>	<b>10.28%</b>	<b>-0.07%</b>	<b>10.21%</b>	<b>10.28%</b>	<b>-0.07%</b>

	Stand-alone Risk		
	12/31/2015	9/30/2015	Change
<b>Alternative</b>	<b>480</b>	<b>475</b>	<b>5</b>
Private Equity	408	421	-13
Real Estate	109	106	3
Hedge Funds	4	1	3
Index Time Series	19	7	12
<b>Equity</b>	<b>540</b>	<b>549</b>	<b>-9</b>
WRLD Style	531	552	-21
WRLD Country	75	87	-12
WRLD Sector	19	19	0
Equity Specific	23	23	0
Equity Indices	10	5	5
<b>Spreads</b>	<b>76</b>	<b>74</b>	<b>2</b>
Corporate	59	55	4
Sw ap Spreads	1	1	0
Other Spreads	19	20	-1
USD EM	2	3	-1
<b>Rates</b>	<b>41</b>	<b>47</b>	<b>-6</b>
USD Int Rates	41	47	-6
<b>Foreign Exchange</b>	<b>177</b>	<b>202</b>	<b>-25</b>
FX Spot	177	202	-25
<b>Inflation</b>	<b>1</b>	<b>1</b>	<b>0</b>
USD Inflation	1	1	0
<b>Total</b>	<b>1021</b>	<b>1028</b>	<b>-7</b>

	Risk Contribution		
	12/31/2015	9/30/2015	Change
<b>Alternative</b>	<b>463</b>	<b>455</b>	<b>8</b>
Private Equity	384	395	-11
Real Estate	61	54	7
Hedge Funds	2	1	1
Index Time Series	15	5	10
<b>Equity</b>	<b>514</b>	<b>524</b>	<b>-10</b>
WRLD Style	499	518	-19
WRLD Country	7	3	4
WRLD Sector	-2	-2	0
Equity Specific	1	1	0
Equity Indices	8	4	4
<b>Spreads</b>	<b>44</b>	<b>50</b>	<b>-6</b>
Corporate	33	36	-3
Sw ap Spreads	0	0	0
Other Spreads	9	13	-4
USD EM	1	2	-1
<b>Rates</b>	<b>-8</b>	<b>-15</b>	<b>7</b>
USD Int Rates	-8	-15	7
<b>Foreign Exchange</b>	<b>8</b>	<b>13</b>	<b>-5</b>
FX Spot	8	13	-5
<b>Inflation</b>	<b>0</b>	<b>0</b>	<b>0</b>
USD Inflation	0	0	0
<b>Total</b>	<b>1021</b>	<b>1028</b>	<b>-7</b>



# 3b. Explanatory Risk Factors (\$)

OPERF

## Explanatory Risk Factors

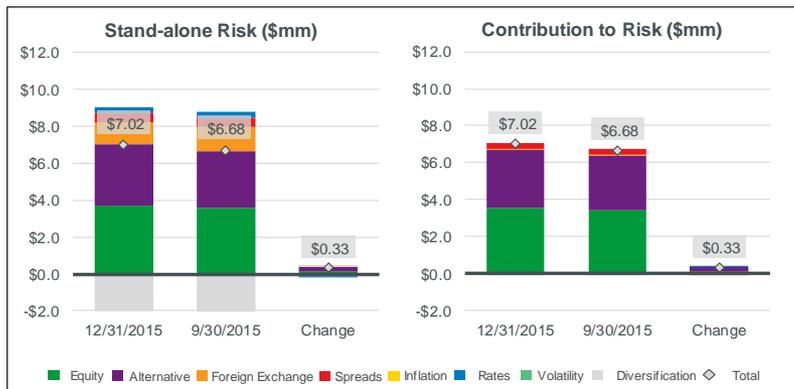
December 31, 2015

Market Value (\$m): \$68,717,318

	Stand-alone Risk			Contribution to Risk		
	12/31/2015	9/30/2015	Change	12/31/2015	9/30/2015	Change
Equity	\$3.71	\$3.57	\$0.14	\$3.53	\$3.41	\$0.13
Alternative	\$3.30	\$3.09	\$0.21	\$3.18	\$2.96	\$0.22
Foreign Exchange	\$1.22	\$1.31	-\$0.10	\$0.05	\$0.08	-\$0.03
Spreads	\$0.52	\$0.48	\$0.04	\$0.30	\$0.33	-\$0.02
Inflation	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00
Rates	\$0.28	\$0.31	-\$0.02	-\$0.05	-\$0.10	\$0.04
Volatility	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Diversification	-\$2.02	-\$2.08	\$0.06	\$0.00	\$0.00	\$0.00
<b>Total</b>	<b>\$7.02</b>	<b>\$6.68</b>	<b>\$0.33</b>	<b>\$7.02</b>	<b>\$6.68</b>	<b>\$0.33</b>

	Stand-alone Risk (mm)		
	12/31/2015	9/30/2015	Change
<b>Alternative</b>	<b>3,232</b>	<b>3,090</b>	<b>142</b>
Private Equity	2,746	2,735	11
Real Estate	732	690	42
Hedge Funds	25	7	18
Index Time Series	125	43	82
<b>Equity</b>	<b>3,637</b>	<b>3,571</b>	<b>66</b>
WRLD Style	3,574	3,586	-12
WRLD Country	506	569	-63
WRLD Sector	128	125	3
Equity Specific	157	149	8
Equity Indices	66	30	36
<b>Spreads</b>	<b>512</b>	<b>480</b>	<b>32</b>
Corporate	396	359	37
Swap Spreads	4	4	0
Other Spreads	131	132	-1
USD EM	14	17	-3
<b>Rates</b>	<b>277</b>	<b>306</b>	<b>-29</b>
USD Int Rates	275	305	-30
<b>Foreign Exchange</b>	<b>1,194</b>	<b>1,313</b>	<b>-119</b>
FX Spot	1,194	1,313	-119
<b>Inflation</b>	<b>4</b>	<b>4</b>	<b>0</b>
USD Inflation	4	4	0
<b>Total</b>	<b>6,878</b>	<b>6,686</b>	<b>192</b>

	Risk Contribution (mm)		
	12/31/2015	9/30/2015	Change
<b>Alternative</b>	<b>3,116</b>	<b>2,960</b>	<b>156</b>
Private Equity	2,590	2,570	20
Real Estate	411	354	57
Hedge Funds	11	4	7
Index Time Series	104	32	72
<b>Equity</b>	<b>3,460</b>	<b>3,407</b>	<b>53</b>
WRLD Style	3,363	3,370	-7
WRLD Country	50	22	28
WRLD Sector	-14	-11	-3
Equity Specific	4	3	1
Equity Indices	57	23	34
<b>Spreads</b>	<b>296</b>	<b>326</b>	<b>-30</b>
Corporate	223	232	-9
Swap Spreads	-1	0	-1
Other Spreads	63	83	-20
USD EM	10	12	-2
<b>Rates</b>	<b>-51</b>	<b>-96</b>	<b>45</b>
USD Int Rates	-51	-96	45
<b>Foreign Exchange</b>	<b>54</b>	<b>84</b>	<b>-30</b>
FX Spot	54	84	-30
<b>Inflation</b>	<b>2</b>	<b>2</b>	<b>0</b>
USD Inflation	2	2	0
<b>Total</b>	<b>6,878</b>	<b>6,686</b>	<b>192</b>



# 4a. Scenario Analysis by Risk Factor

OPERF

## Scenario Analysis by Risk Factor

December 31, 2015

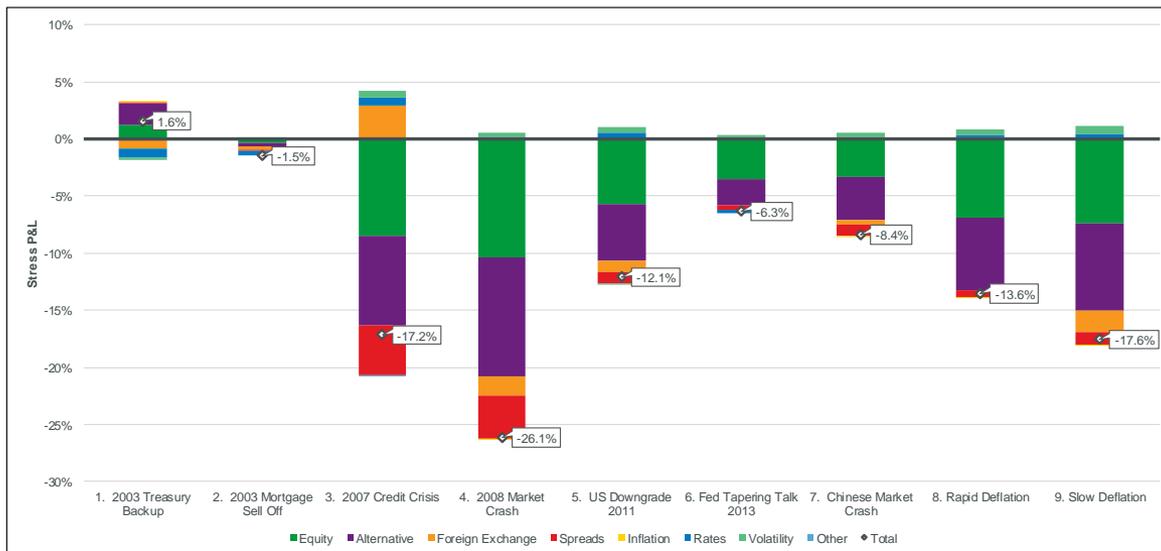
Market Value (\$m): \$68,717,318

### Stress Testing

	1. 2003 Treasury Backup	2. 2003 Mortgage Sell Off	3. 2007 Credit Crisis	4. 2008 Market Crash	5. US Downgrade 2011	6. Fed Tapering Talk 2013	7. Chinese Market Crash	8. Rapid Deflation	9. Slow Deflation
Equity	1.2%	-0.4%	-8.5%	-10.4%	-5.7%	-3.5%	-3.3%	-6.9%	-7.4%
Alternative	1.9%	-0.3%	-7.8%	-10.4%	-5.0%	-2.3%	-3.8%	-6.4%	-7.6%
Foreign Exchan	-0.9%	-0.3%	2.9%	-1.7%	-1.0%	0.2%	-0.4%	0.1%	-1.9%
Spreads	0.1%	-0.1%	-4.5%	-3.7%	-1.0%	-0.4%	-1.0%	-0.6%	-1.1%
Inflation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rates	-0.8%	-0.5%	0.7%	0.1%	0.6%	-0.3%	0.1%	0.3%	0.5%
Volatility	-0.2%	0.0%	0.6%	0.5%	0.5%	0.2%	0.5%	0.5%	0.6%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>1.6%</b>	<b>-1.5%</b>	<b>-17.2%</b>	<b>-26.1%</b>	<b>-12.1%</b>	<b>-6.3%</b>	<b>-8.4%</b>	<b>-13.6%</b>	<b>-17.6%</b>
<b>Total (\$mm)</b>	<b>\$1,079</b>	<b>-\$1,010</b>	<b>-\$11,792</b>	<b>-\$17,956</b>	<b>-\$8,308</b>	<b>-\$4,357</b>	<b>-\$5,759</b>	<b>-\$9,311</b>	<b>-\$12,060</b>

### Stress Testing - Scenario Definitions

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>1</b> 2003 Treasury Backup</p> <p>Treasuries sell-off resulting in a loss on interest rate returns. Equities and alternatives benefit as investors seek returns in other investments.</p> <p><b>2</b> 2003 Mortgage Sell Off</p> <p>An unexpected rise in Treasury yields engendered a massive sell-off of mortgage backed securities (MBS), resulting in increased MBS spreads and decreased credit spreads. Convexity selling as mortgage durations lengthen.</p> <p><b>3</b> 2007 Credit Crisis</p> <p>The Credit Crisis of 2007 resulted from the bursting of the housing bubble, a consequence of an unprecedented expansion of credit that helped feed a boom in the housing market. The bursting of the bubble forced banks to write down bad loans caused by mortgage delinquencies. The crisis saw a massive decrease in Treasury yields and a widening of both MBS and credit spreads.</p> <p><b>4</b> 2008 Market Crash</p> <p>Credit &amp; liquidity crisis and equity market crash set off by Lehman Brothers bankruptcy. Significant credit spreads widening caused by massive deleveraging.</p> <p><b>5</b> 2011 US Downgrade</p> <p>The period begins with an indication of a 50% chance of a US downgrade from S&amp;P and ends with the Fed's Operation Twist announcement. The stock market incurred losses while bond markets saw gains due to flight to quality.</p> | <p><b>6</b> 2013 Fed Tapering Scare</p> <p>The timing and magnitude of Bernanke's testimony in front of Congress surprised the market, causing market volatility and both equity and bonds to sell off. Emerging Markets suffered badly due to a flight of money to the US.</p> <p><b>7</b> Chinese Market Crash</p> <p>Chinese stock market crash beginning with the popping of the stock market bubble on June 12, 2015.</p> <p><b>8</b> Rapid Deflation</p> <p>Oil price drops which causes short-end of the inflation curve to drop. The short end of the nominal curve is held unchanged since nominal rates in the short end are already very low. Due to the new round of quantitative easing agency mortgage rate spreads widen.</p> <p><b>9</b> Slow Deflation</p> <p>Oil price is kept unchanged. The 10yr inflation rate drops 200 bps. The 10yr nominal rate drops to historical lows while short-term nominal rates are held constant. Agency mortgage rate spreads tighten.</p> |
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# 4b. Scenario Analysis by Portfolio Sleeve

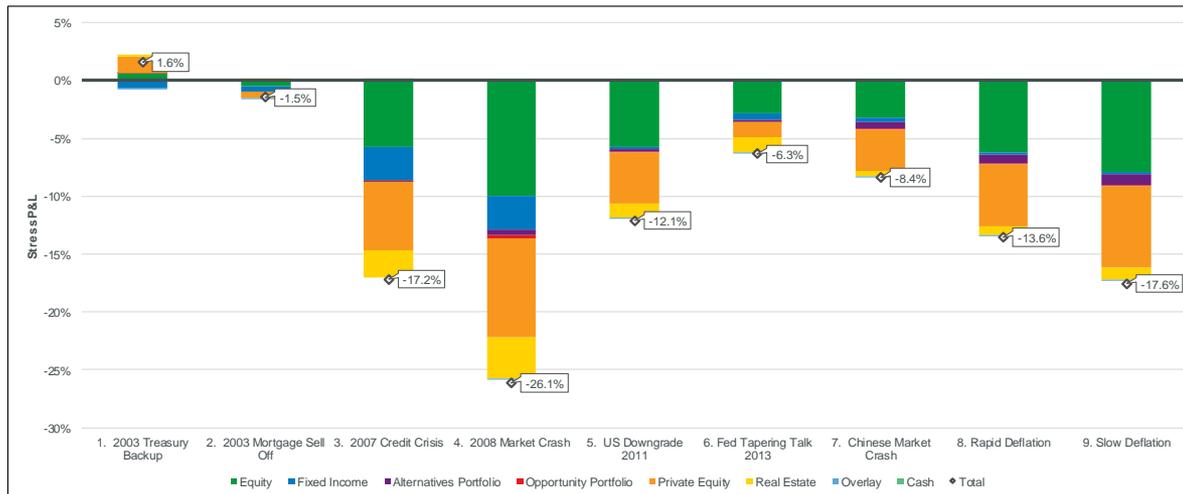
OPERF

## Scenario Analysis by Portfolio Sleeve

December 31, 2015

Market Value (\$m): \$68,717,318

	Stress Testing								
	1. 2003 Treasury Backup	2. 2003 Mortgage Sell Off	3. 2007 Credit Crisis	4. 2008 Market Crash	5. US Downgrade 2011	6. Fed Tapering Talk 2013	7. Chinese Market Crash	8. Rapid Deflation	9. Slow Deflation
Capital Markets	-0.1%	-1.0%	-8.6%	-12.8%	-5.9%	-3.4%	-3.6%	-6.4%	-8.1%
Equity	0.6%	-0.5%	-5.7%	-10.0%	-5.8%	-2.8%	-3.2%	-6.2%	-7.9%
Fixed Income	-0.7%	-0.4%	-2.9%	-2.9%	-0.1%	-0.6%	-0.4%	-0.2%	-0.2%
Alternatives Program	1.7%	-0.5%	-8.5%	-12.9%	-6.0%	-2.8%	-4.7%	-6.9%	-9.2%
Alternatives Portfolio	0.1%	0.1%	0.0%	-0.5%	-0.2%	-0.2%	-0.5%	-0.7%	-0.9%
Opportunity Portfolio	0.0%	0.0%	-0.1%	-0.3%	-0.1%	-0.1%	-0.1%	-0.1%	-0.2%
Private Equity	1.4%	-0.5%	-5.9%	-8.5%	-4.4%	-1.3%	-3.6%	-5.4%	-7.1%
Real Estate	0.3%	0.0%	-2.4%	-3.6%	-1.2%	-1.3%	-0.5%	-0.7%	-1.0%
Overlay	0.0%	0.0%	0.1%	0.1%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>1.6%</b>	<b>-1.5%</b>	<b>-17.2%</b>	<b>-26.1%</b>	<b>-12.1%</b>	<b>-6.3%</b>	<b>-8.4%</b>	<b>-13.6%</b>	<b>-17.6%</b>
<b>Total (\$mm)</b>	<b>\$1,079</b>	<b>-\$1,010</b>	<b>-\$11,792</b>	<b>-\$17,956</b>	<b>-\$8,308</b>	<b>-\$4,357</b>	<b>-\$5,759</b>	<b>-\$9,311</b>	<b>-\$12,060</b>



## Stress Testing - Scenario Definitions

- 2003 Treasury Backup**  
 Treasuries sell-off resulting in a loss on interest rate returns. Equities and alternatives benefit as investors seek returns in other investments.
- 2003 Mortgage Sell Off**  
 An unexpected rise in Treasury yields engendered a massive sell-off of mortgage backed securities (MBS), resulting in increased MBS spreads and decreased credit spreads. Convexity selling as mortgage durations lengthen.
- 2007 Credit Crisis**  
 The Credit Crisis of 2007 resulted from the bursting of the housing bubble, a consequence of an unprecedented expansion of credit that helped feed a boom in the housing market. The bursting of the bubble forced banks to write down bad loans caused by mortgage delinquencies. The crisis saw a massive decrease in Treasury yields and a widening of both MBS and credit spreads.
- 2008 Market Crash**  
 Credit & liquidity crisis and equity market crash set off by Lehman Brothers bankruptcy. Significant credit spreads widening caused by massive deleveraging.
- 2011 US Downgrade**  
 The period begins with an indication of a 50% chance of a US downgrade from S&P and ends with the Fed's Operation Twist announcement. The stock market incurred losses while bond markets saw gains due to flight to quality.
- 2013 Fed Tapering Scare**  
 The timing and magnitude of Bernanke's testimony in front of Congress surprised the market, causing market volatility and both equity and bonds to sell off. Emerging Markets suffered badly due to a flight of money to the US.
- Chinese Market Crash**  
 Chinese stock market crash beginning with the popping of the stock market bubble on June 12, 2015.
- Rapid Deflation**  
 Oil price drops which causes short-end of the inflation curve to drop. The short end of the nominal curve is held unchanged since nominal rates in the short end are already very low. Due to the new round of quantitative easing agency mortgage rate spreads widen.
- Slow Deflation**  
 Oil price is kept unchanged. The 10yr inflation rate drops 200 bps. The 10yr nominal rate drops to historical lows while short-term nominal rates are held constant. Agency mortgage rate spreads tighten.

## Appendix

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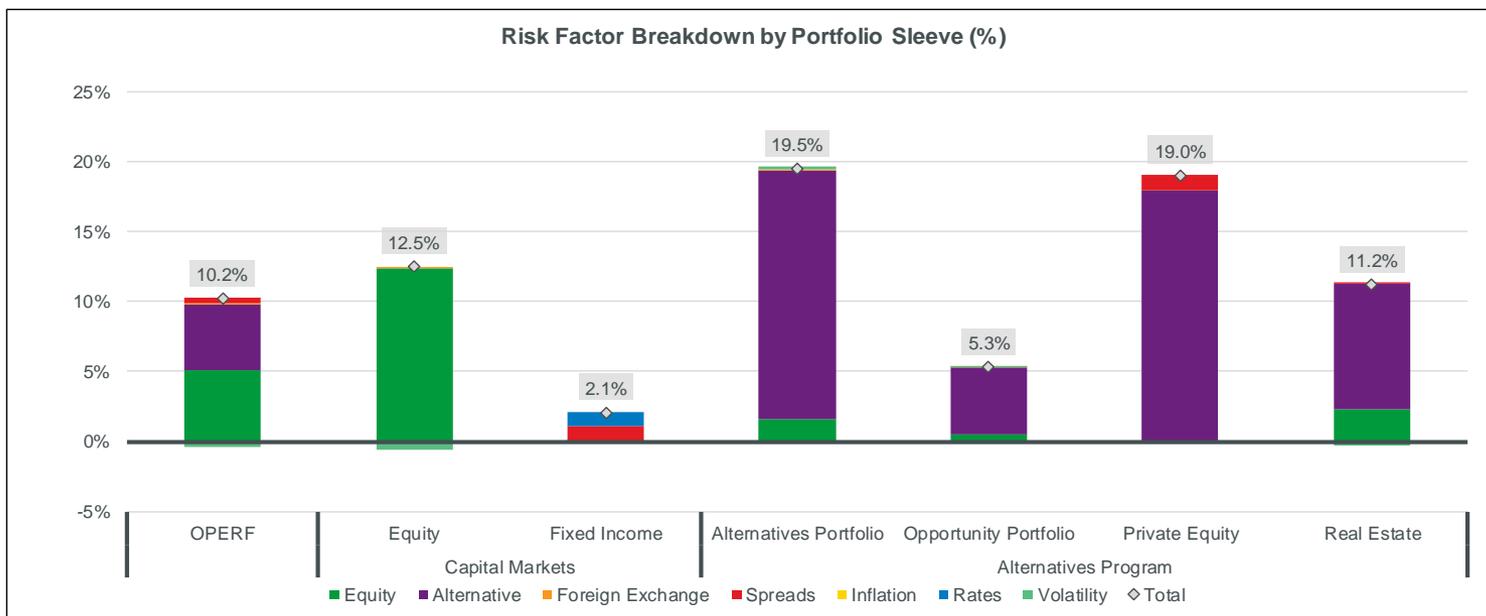
# 5a. Risk Factor Breakdown by Portfolio Sleeve (Risk Contribution)

OPERF

## Risk Factor Breakdown by Portfolio Sleeve (Risk Contribution)

December 31, 2015

Market Value (\$m): \$68,717,318



	Analytical Risk									
	OPERF	Capital Markets			Alternatives Program					
		Equity	Fixed Income		Alternatives Portfolio	Opportunity Portfolio	Private Equity	Real Estate		
Equity	5.1%	12.4%	0.0%	1.6%	0.5%	0.0%	2.3%			
Alternative	4.6%	0.0%	0.0%	17.8%	4.8%	18.0%	9.0%			
Foreign Exchange	0.1%	0.2%	0.0%	0.1%	0.0%	0.1%	0.0%			
Spreads	0.4%	0.0%	1.1%	0.0%	0.0%	1.0%	0.0%			
Inflation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Rates	-0.1%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%			
Volatility	-0.3%	-0.6%	0.0%	0.2%	0.1%	0.0%	-0.2%			
<b>Total</b>	<b>10.2%</b>	<b>12.5%</b>	<b>2.1%</b>	<b>19.5%</b>	<b>5.3%</b>	<b>19.0%</b>	<b>11.2%</b>			

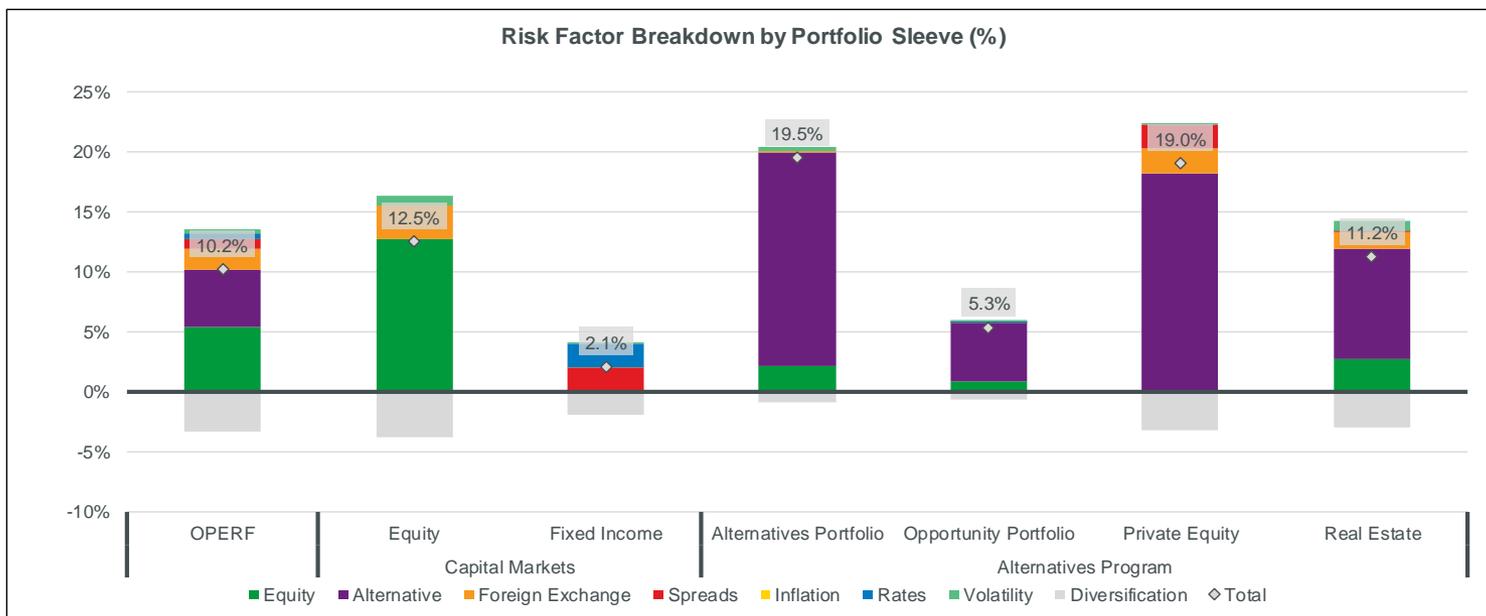
# 5b. Risk Factor Breakdown by Portfolio Sleeve (Stand-Alone)

OPERF

## Risk Factor Breakdown by Portfolio Sleeve (Stand-Alone)

December 31, 2015

Market Value (\$m): \$68,717,318



	Analytical Risk										
	Capital Markets							Alternatives Program			
	OPERF	Equity	Fixed Income	Alternatives Portfolio	Opportunity Portfolio	Private Equity	Real Estate				
Equity	5.4%	12.7%	0.1%	2.1%	0.9%	0.1%	2.8%				
Alternative	4.8%	0.0%	0.0%	17.9%	4.8%	18.2%	9.2%				
Foreign Exchange	1.8%	2.9%	0.0%	0.2%	0.1%	2.0%	1.5%				
Spreads	0.8%	0.0%	1.9%	0.0%	0.0%	2.0%	0.0%				
Inflation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
Rates	0.4%	0.0%	2.0%	0.0%	0.1%	0.0%	0.0%				
Volatility	0.4%	0.8%	0.0%	0.3%	0.1%	0.0%	0.8%				
Diversification	-3.3%	-3.8%	-1.9%	-0.9%	-0.6%	-3.2%	-3.0%				
<b>Total</b>	<b>10.2%</b>	<b>12.5%</b>	<b>2.1%</b>	<b>19.5%</b>	<b>5.3%</b>	<b>19.0%</b>	<b>11.2%</b>				

TAB 7 – STATE ACCIDENT INSURANCE FUND

# Oregon Investment Council SAIF Corporation

## Purpose

In accordance with OIC Policy 4.09.06 for SAIF: “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.

To date, staff has not acted on the permitted allocation to private market real estate, given current valuation levels.

## Performance through January 2016

FUND NAME	MKT VAL \$(M)	%	1 YEAR	3 YEARS	5 YEARS	7 YEARS	10 YEARS
STATE ACCIDENT INSURANCE FUND	4,498,964	100.0	-2.32	2.64	4.48	7.27	5.26
OREGON SAIF POLICY INDEX			-1.91	2.40	4.18	6.51	5.04
BLACKROCK MSCI ACWI IMI INDEX FUND	408,713	9.1	-6.55	4.32	4.82		
MSCI ACWI IMI NET			-6.87	3.95	4.45		
WELLINGTON MANAGEMENT COMPANY	2,024,062	45.0	-1.13	2.65	4.63	7.21	5.58
WESTERN ASSET MANAGEMENT	2,001,061	44.5	-2.69	2.17	4.26	6.12	5.38
OREGON SAIF FIXED INCOME INDEX			-1.45	2.17	4.05	5.66	5.21
CASH FUND	56,839	1.3	0.51	0.59	0.69	0.92	1.80
91 DAY T-BILL			0.05	0.05	0.07	0.10	1.23
PLEDGED SECURITIES	8,289	0.2	0.46	0.85	1.05	1.02	
91 DAY T-BILL			0.05	0.05	0.07	0.10	

The SAIF portfolio has outperformed its policy benchmark for periods from three years through ten years.

## 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

**March 9, 2016**



# Oregon's Workers Compensation System

- 100 Years old
- Mandatory Coverage; three-way system
  - SAIF
  - Private carriers
  - Self-insure
- 1980's: System in disarray
  - Costs rising at an uncontrolled pace
  - No limits on medical costs
  - No limits on litigation
  - 6<sup>th</sup> highest rates in the nation



# Oregon's Workers Compensation System

- 1990 Mahonia Hall reforms
  - Restructured the system to benefit employers and employees
  - 66.3% reduction in pure premium rates
  - 9<sup>th</sup> lowest rates in the nation
  - Increased most benefit levels for workers
- 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
- 50.1% market share
- 99.8% premium 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
  - 18 of last 26 years
  - An average of 31.5% of earned premium
- And one more...



# Changes to Loss Reserves

- Total asset base: \$4.8B
- Loss reserves: \$2.9B
  - 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
  - Job mix
- Can result in substantial shifts of capital
  - \$235M in 2015
  - 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



# Capital Base: “Surplus”

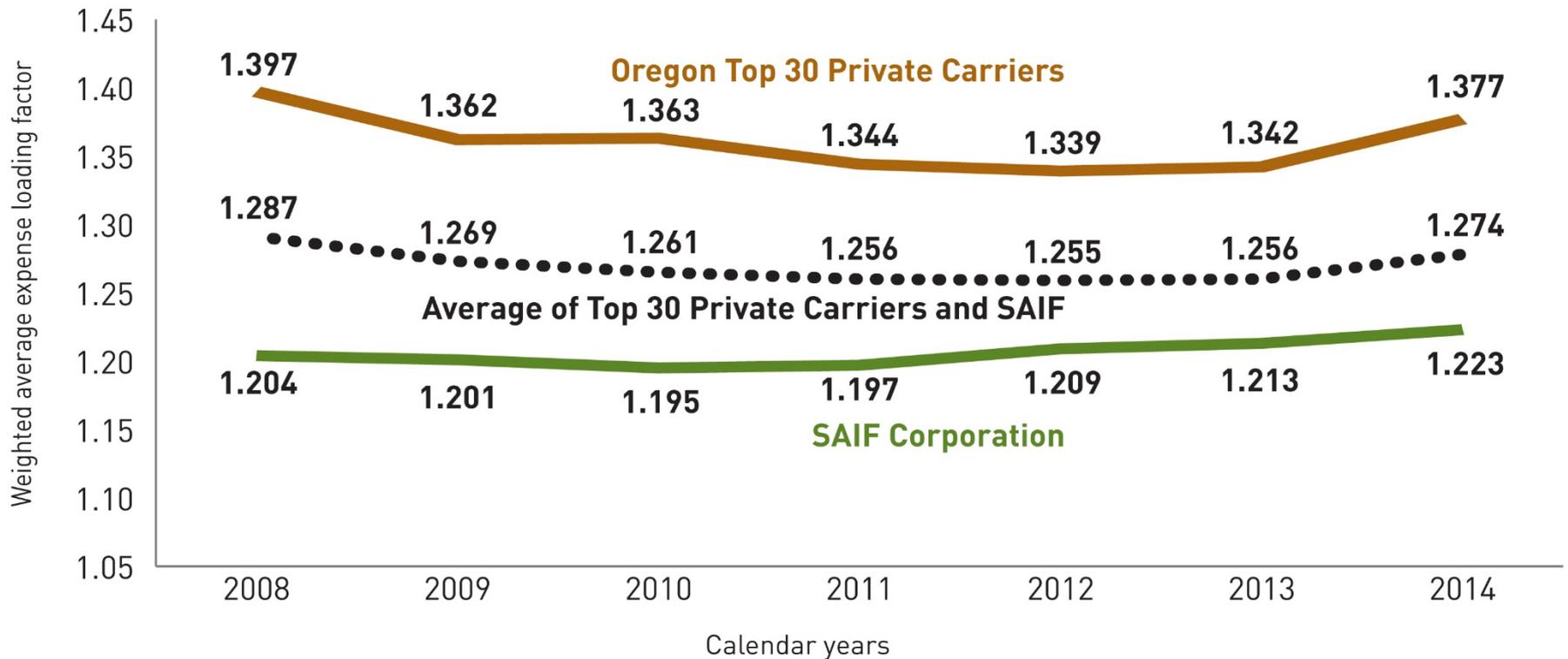
- Risk Factors:
  - Catastrophe
  - Major economic downturn
  - Changes in loss patterns or business mix
  - Decline in investments
  - Negative development in loss reserves
  - Regulatory and statutory changes
  - Inflation
  - Workers' Compensation has a “long tail”
- Special risk factors for SAIF:
  - We are unable to spread risk: mono-state, mono-line
  - No other sources of capital
  - Growth in market share requires more capital

# Facts

	2014	2015
Number of employers insured (including share of assigned risk pool)	50,713	51,419
Total invested assets	\$4.4 billion	\$4.4 billion
Total assets	\$4.8 billion	\$4.8 billion
Loss and loss adjustment expense reserves	\$3.0 billion	\$2.9 billion
Total liabilities	\$3.5 billion	\$3.4 billion
Surplus	\$1,315.7 million	\$1,424.0 million
Net earned premium	\$474.6 million	\$491.1 million
Market share (as of Dec. 31, 2014)	50.1%	—
Investment income	\$193.2 million	\$155.7 million
Policyholder dividend	\$165.0 million	\$120.0 million
Number of employees	903	944
Retention percentage (premium)	99.6%	99.8%
Average weighted expense load factor	1.223	—

# Average weighted expense load factor

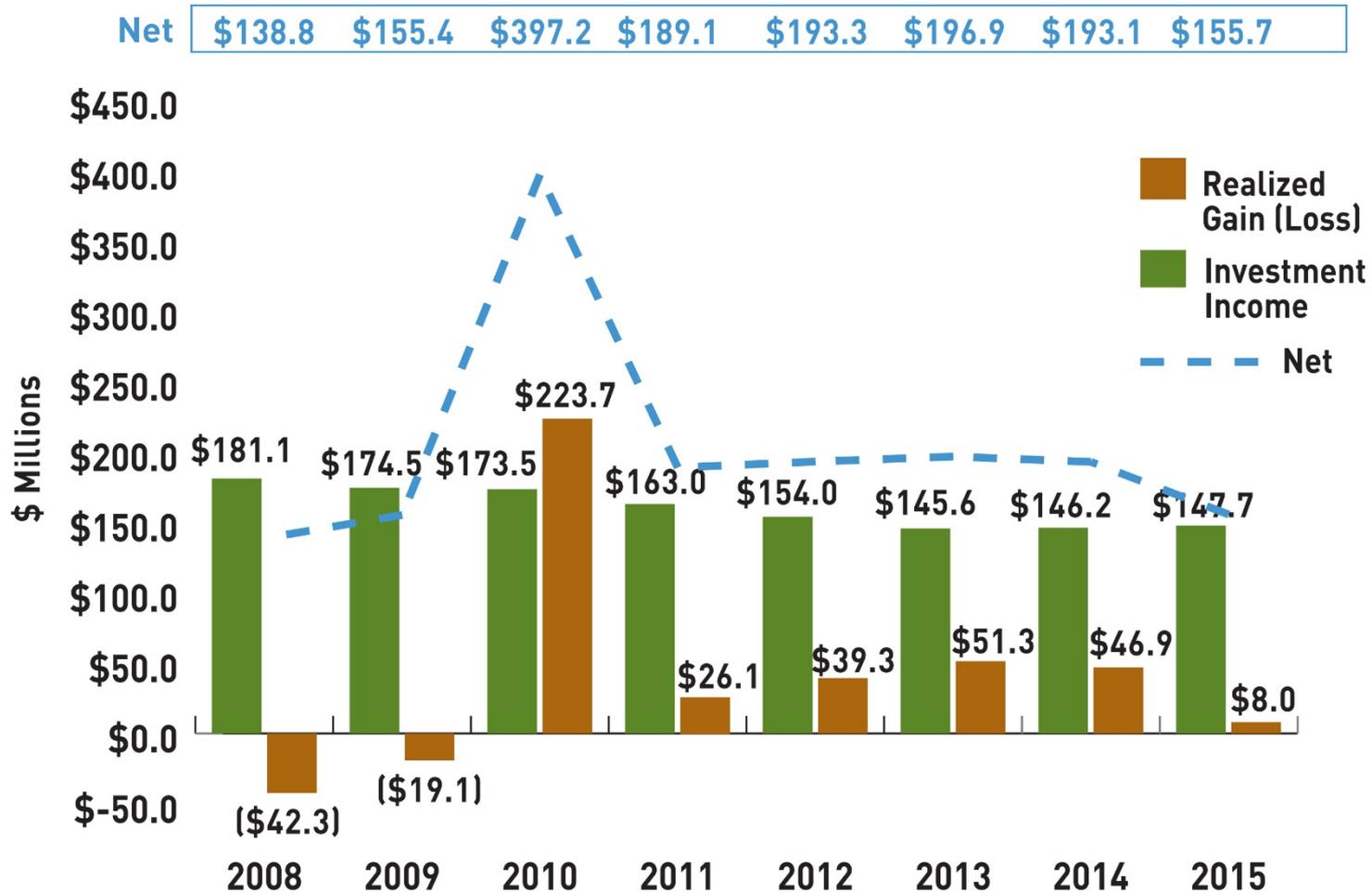
SAIF, top 30 private carriers, average of top 30 and SAIF



# Net earned premium



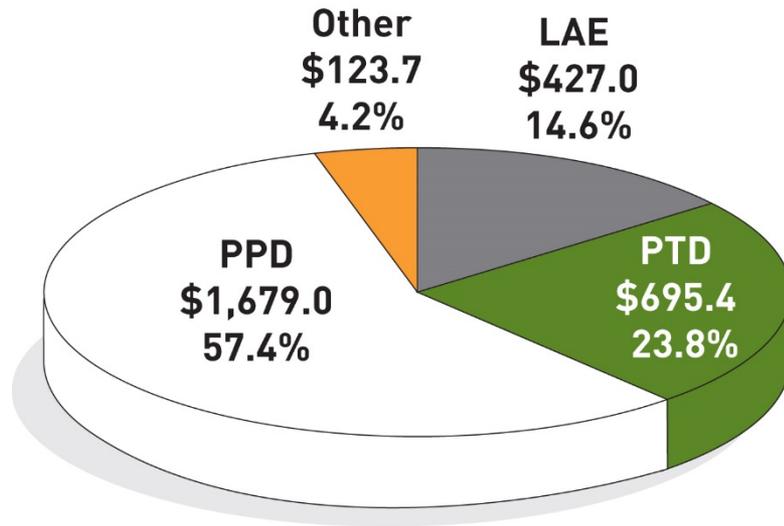
# Investment income



# Loss Reserves

As of December 31, 2015

**Total \$2,925.1 (dollars in millions)**

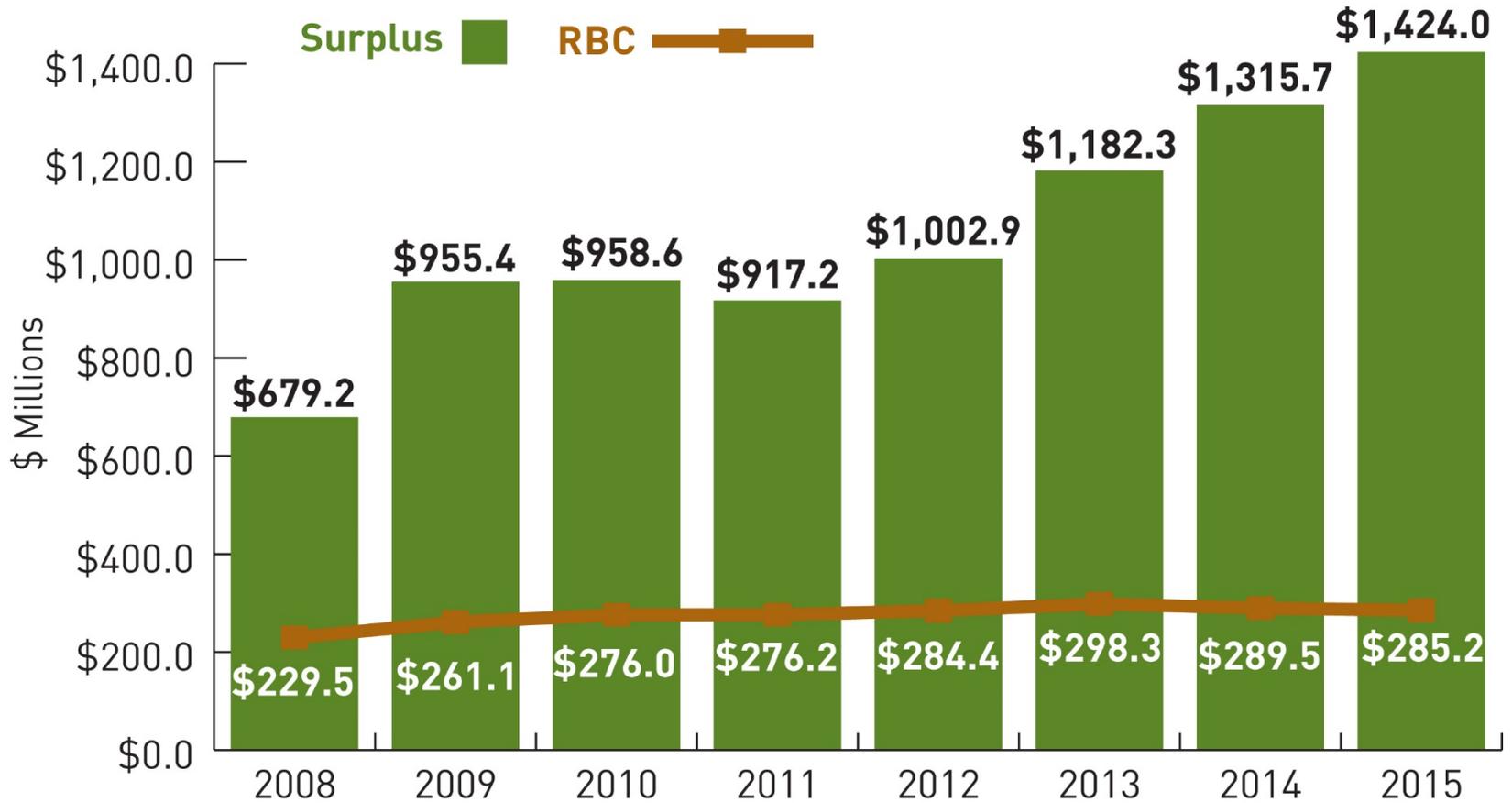


## Definitions:

- 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

# Surplus

as of December 31





# Adequacy of surplus and reserves

- Risk-based capital (RBC) is the minimum amount of capital required by an insurance company to support its overall business operations. The formula for determining RBC is developed and maintained by the National Association of Insurance Commissioners (NAIC) and takes into consideration the size and risk profile of the company.
- A 2015 audit by an independent actuary hired by the Secretary of State Audits Division determined that SAIF's loss reserves, as of December 31, 2014, 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%
Policy mix	Weighted aggregate of indexes listed above at target allocation	100%	



**TAB 8 – ASSET ALLOCATIONS & NAV UPDATES**

## Asset Allocations at January 31, 2016

OPERF	Regular Account					Variable Fund	Total Fund			
	Policy	Target <sup>1</sup>	\$ Thousands	Pre-Overlay	Overlay	Net Position	Actual	\$ Thousands	\$ Thousands	
Public Equity	32.5-42.5%	37.5%	23,871,947	36.2%	1,037,695	24,909,642	37.8%	595,839	25,505,481	
Private Equity	13.5-21.5%	17.5%	13,731,625	20.8%		13,731,625	20.8%		13,731,625	
<b>Total Equity</b>	<b>50.0-60.0%</b>	<b>55.0%</b>	<b>37,603,572</b>	<b>57.0%</b>	<b>1,037,695</b>	<b>38,641,267</b>	<b>58.6%</b>		<b>39,237,106</b>	
Opportunity Portfolio	0-3%	0.0%	1,292,012	2.0%		1,292,012	2.0%		1,292,012	
<b>Fixed Income</b>	<b>15-25%</b>	<b>20.0%</b>	<b>14,897,146</b>	<b>22.6%</b>	<b>416,579</b>	<b>15,313,725</b>	<b>23.2%</b>		<b>15,313,725</b>	
Real Estate	9.5-15.5%	12.5%	8,139,661	12.3%	(17,900)	8,121,761	12.3%		8,121,761	
Alternative Investments	0-12.5%	12.5%	2,558,434	3.9%		2,558,434	3.9%		2,558,434	
Cash <sup>2</sup>	0-3%	0.0%	1,444,465	2.2%	(1,436,374)	8,091	0.0%		18,488	
<b>TOTAL OPERF</b>		<b>100%</b>	<b>\$ 65,935,290</b>	<b>100.0%</b>	<b>\$ -</b>	<b>\$ 65,935,290</b>	<b>100.0%</b>		<b>\$ 606,236</b>	<b>\$ 66,541,526</b>

<sup>1</sup>Targets established in June 2015. Interim policy benchmark consists of: 41.5% MSCI ACWI Net, 23.5% Custom FI Benchmark, 20% Russell 3000+300bps (1 quarter lagged), 12.5% NCREIF (1 quarter lagged), & 2.5% CPI+400bps.

<sup>2</sup>Includes cash held in the policy implementation overlay program.

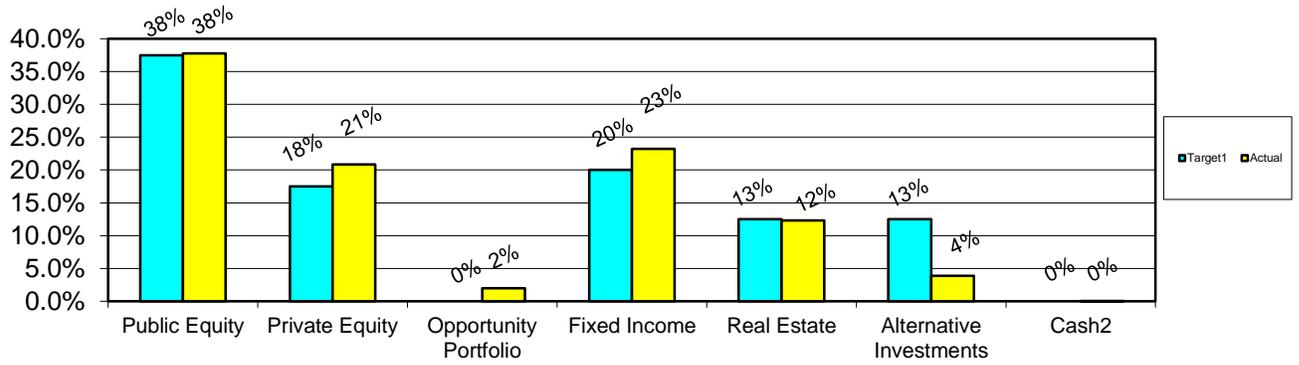
SAIF	Policy	Target	\$ Thousands	Actual
<b>Total Equity</b>	<b>7-13%</b>	<b>10.0%</b>	<b>408,713</b>	<b>9.1%</b>
<b>Fixed Income</b>	<b>80-90%</b>	<b>85.0%</b>	<b>4,033,412</b>	<b>89.8%</b>
<b>Real Estate</b>	<b>0-7%</b>	<b>5.0%</b>	<b>0</b>	<b>0.0%</b>
<b>Cash</b>	<b>0-3%</b>	<b>0%</b>	<b>49,051</b>	<b>1.1%</b>
<b>TOTAL SAIF</b>			<b>\$4,491,176</b>	<b>100.0%</b>

CSF	Policy	Target	\$ Thousands	Actual
Domestic Equities	25-35%	30%	405,638	29.5%
International Equities	25-35%	30%	361,271	26.3%
Private Equity	0-12%	10%	151,918	11.1%
<b>Total Equity</b>	<b>65-75%</b>	<b>70%</b>	<b>918,827</b>	<b>66.9%</b>
<b>Fixed Income</b>	<b>25-35%</b>	<b>30%</b>	<b>419,747</b>	<b>30.5%</b>
<b>Cash</b>	<b>0-3%</b>	<b>0%</b>	<b>35,506</b>	<b>2.6%</b>
<b>TOTAL CSF</b>			<b>\$1,374,080</b>	<b>100.0%</b>

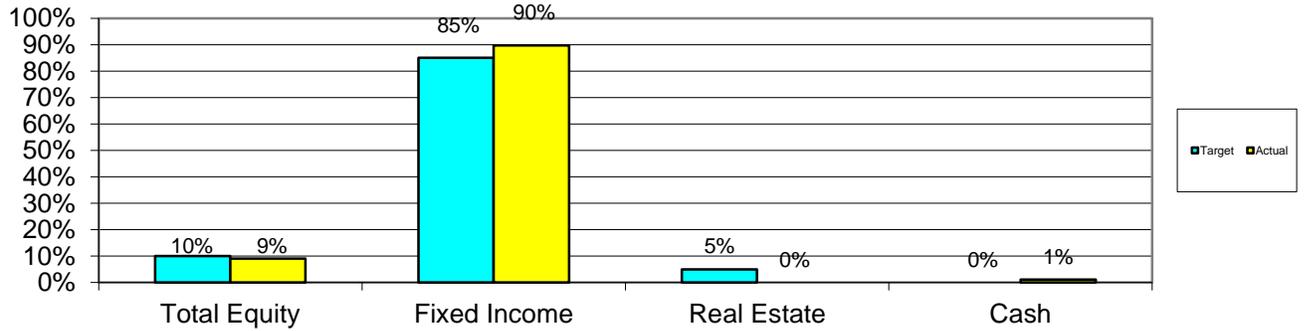
SOUE	Policy	Target <sup>3</sup>	\$ Thousands	Actual
Global Equities	65-75%	70%	1,393	69.9%
<b>Growth Assets</b>	<b>65-75%</b>	<b>70%</b>	<b>1,393</b>	<b>69.9%</b>
Fixed Income	25-35%	30%	597	30.0%
Cash	0-3%	0%	3	0.2%
<b>Diversifying Assets</b>	<b>25-35%</b>	<b>30%</b>	<b>600</b>	<b>30.1%</b>
<b>TOTAL SOUE</b>			<b>\$1,993</b>	<b>100.0%</b>

<sup>3</sup>Revised asset allocation adopted by OIC, March 2015.

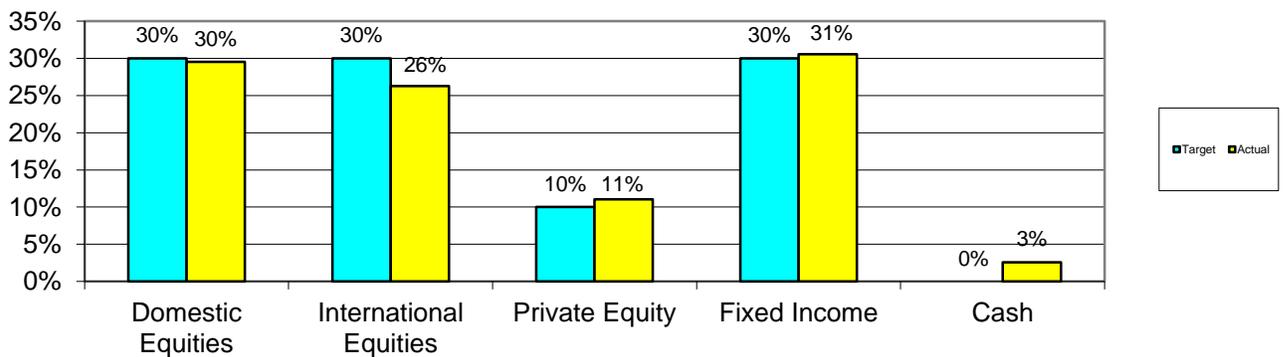
### OPERF Asset Allocation



### SAIF Asset Allocation



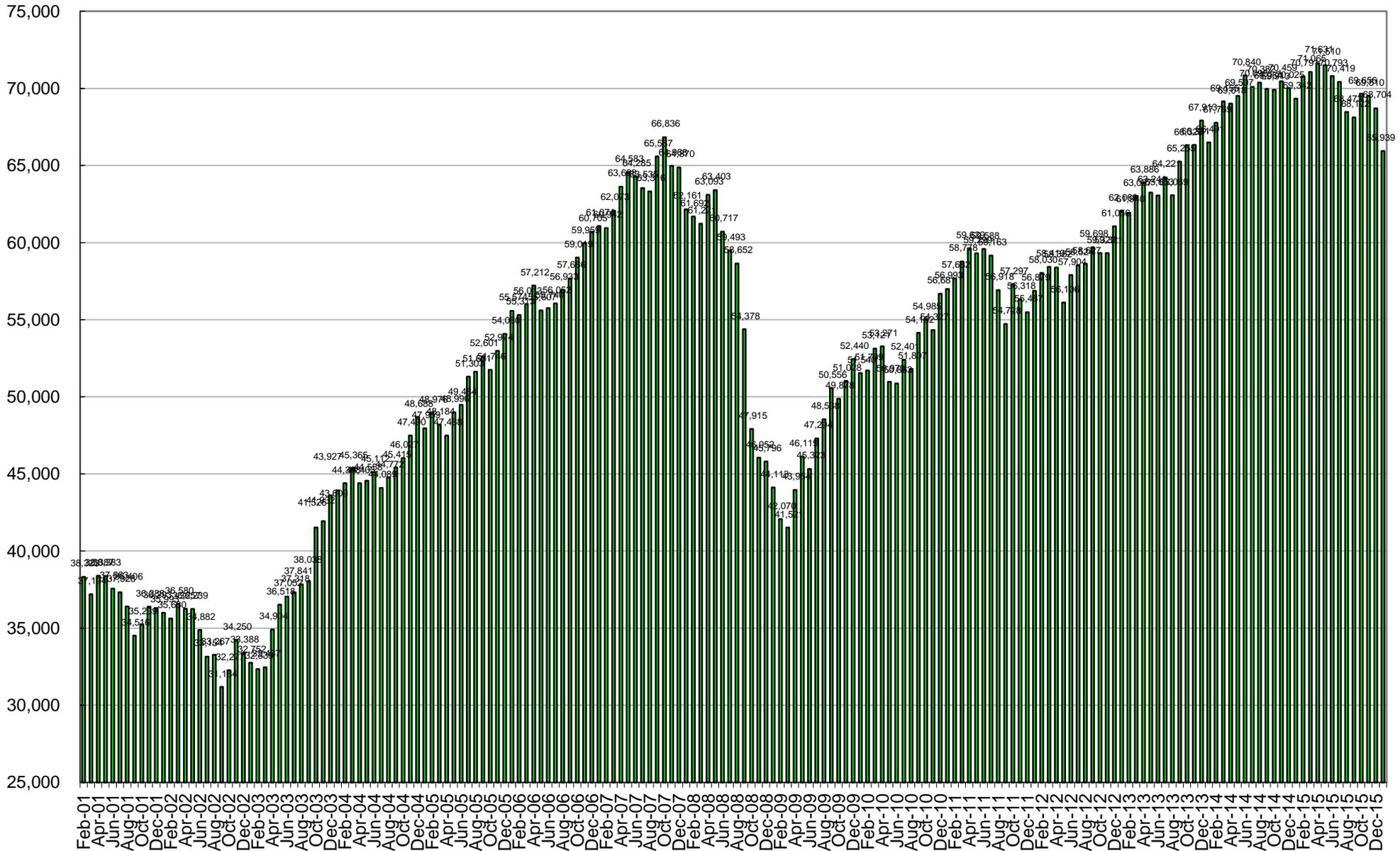
### CSF Asset Allocation



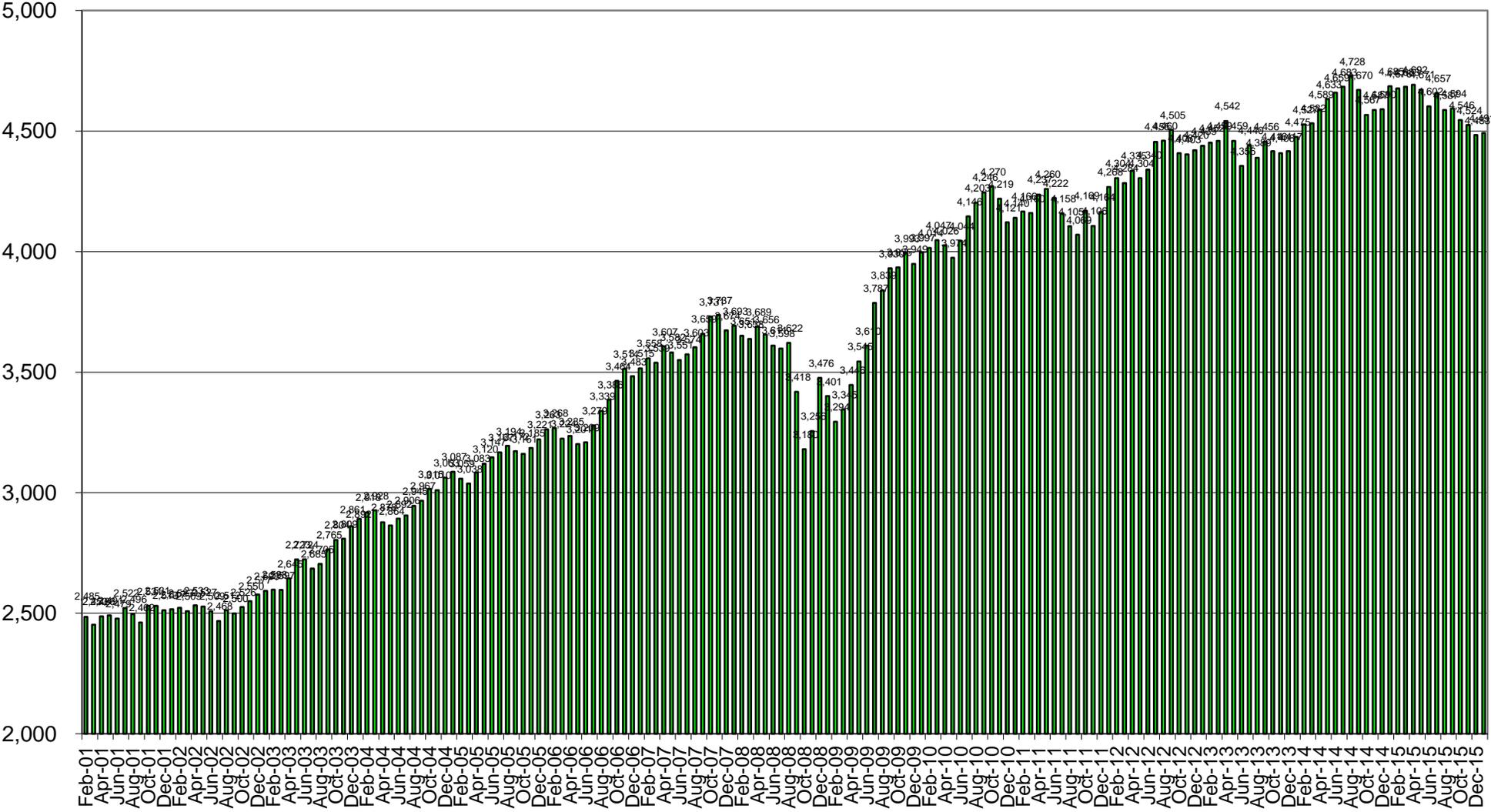
# OPERF NAV

## 15 years ending January 2016

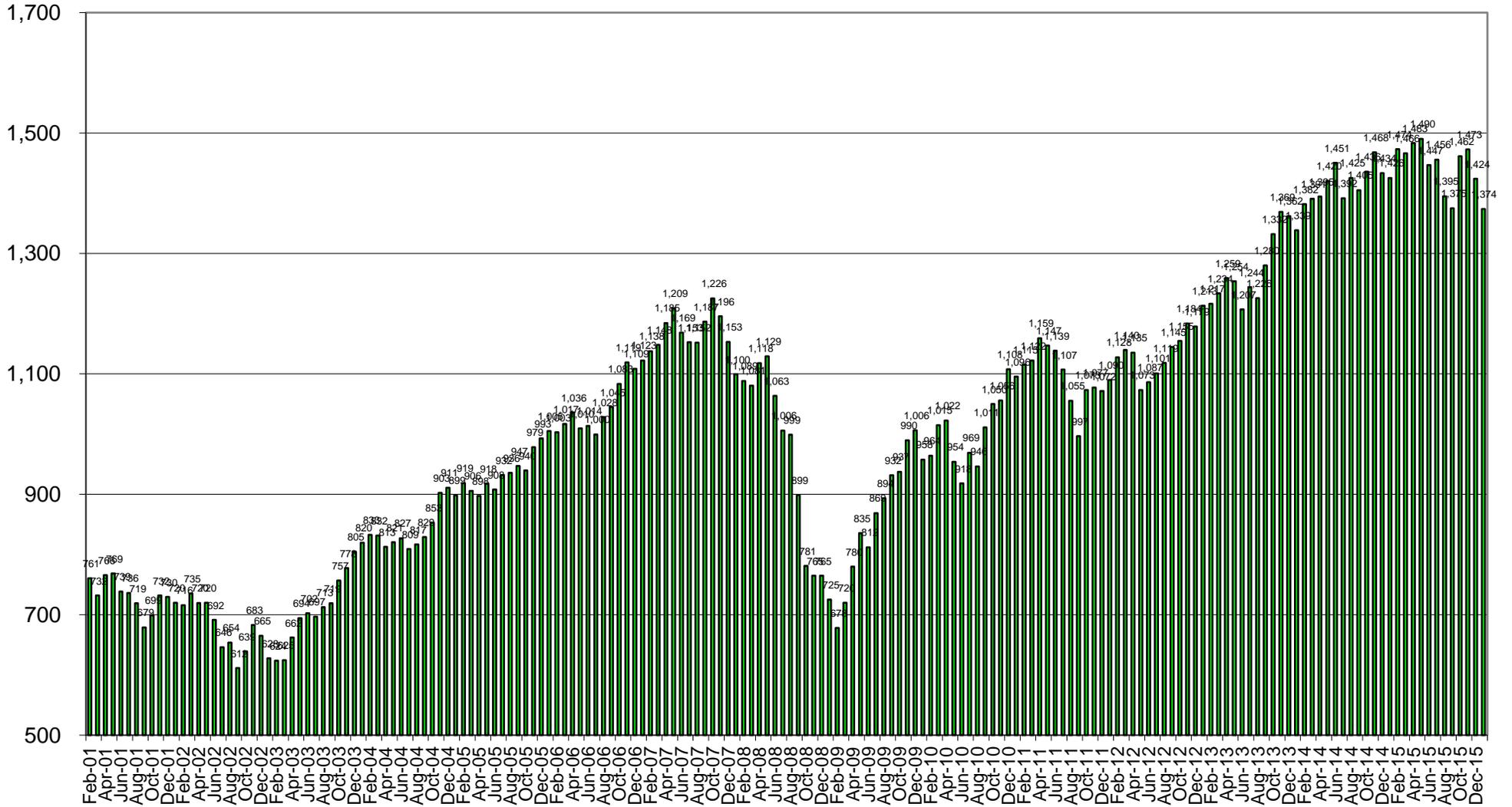
(\$ in Millions)



**SAIF NAV**  
**15 years ending January 2016**  
**(\$ in Millions)**



**CSF NAV**  
**15 years ending January 2016**  
**(\$ in Millions)**



**TAB 9 – CALENDAR/FUTURE AGENDA ITEMS**

## **2016 OIC Meeting Calendar and Planned Agenda Topics**

- March 9:** OPERF Real Estate Manager Recommendation  
OPERF Alternatives Manager Recommendation  
OPERF Real Estate Policy Recommendation  
OLGIF Policy Recommendation  
SAIF Annual Review  
Q4 2015 OPERF Performance & Risk Report
- April 20:** OPERF Overlay Review  
Alternatives Portfolio Review  
CSF Annual Review  
OIC Policy Update Placeholder
- June 1:** OITP Review  
Securities Lending Update  
OIC Real Estate Consultant Recommendation  
Q1 2016 OPERF Performance & Risk Report
- August 3:** Corporate Governance Update  
OPERF Litigation Update
- September 14:** Public Equity Program Review  
OIC Private Equity Consultant Recommendation  
OPERF Q2 2016 Performance & Risk Report  
OSGP Update
- October 26:** OSTF Review  
Fixed Income Program Review  
CEM Benchmarking Report  
OIC General Consultant(s) Recommendation
- December 7:** OPERF Q3 2016 Performance & Risk Report Report  
Real Estate Program Review  
Opportunity Portfolio Review