

### OREGON SAVINGS GROWTH PLAN ADVISORY COMMITTEE 4<sup>th</sup> QUARTER 2018

November 27, 2018 9:30 A.M.

Keizer Community Center 930 Chemawa Rd NE Keizer, OR 97303



#### November 27, 2018 – 9:30 a.m. Keizer Community Center – Keizer, Oregon

	Meet and Greet		8:30 a.m.			
١.	Introduction	Mark Carlton	9:30 a.m.			
II.	Approval of Minutes a. Carry-over to 2/20/2019 meeting	Mark Carlton				
III.	Old Business	Mark Carlton				
IV.	Information Items		9:45 a.m.			
	A. Q3 2018 Service Review	Brian Merrick, Voya				
	B. Q3 2018 Performance Report	Anne Heaphy, Ben Taylor, Uvan Tseng				
	C. Treasury Update	Wil Hiles, Treasury				
	<ul> <li>D. OSGP Update</li> <li>a. 2019 meetings going electronic <ul> <li>materials in PowerPoint format</li> </ul> </li> <li>b. Committee member outreach</li> </ul>	Roger Smith, OSGP				
	E. Outreach Team Update	Gladys Salquero, Voya				
	F. Communications Update a. Annual participant statements	Jennifer Moran, Voya				
V.	New Business	Mark Carlton	11:00 a.m.			
VI.	Public Comment	Mark Carlton	11:15 a.m.			
VII.	Adjournment	Mark Carlton	11:30 a.m.			
Next m	Next meeting: February 20, 2019					

Hard copies of the materials are made available to the Committee and to the public at <u>OSGP About Us</u>. If you have a disability that requires any special material, services or assistance please call

1-888-320-7377 at least 48 hours before the meeting.

	OSGP Advisory Committee Members			
	Mark Carlton, Chair	Kevin Nordhill		
Celeste Van	Cleave • Thomas Poon	Richard Bailey	<ul> <li>Brady Boothe</li> </ul>	

Email the OSGP Advisory Committee – <u>OSGP-Advisory@pers.state.or.us</u> Want to receive OSGP updates via email or text message? Sign up for GovDelivery: <u>https://public.govdelivery.com/accounts/ORPERS/subscriber/new</u>

### **Oregon Savings Growth Plan**

Third Quarter Service Review

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- 3. Outreach Team Update
- 4. Communications Update
- 5. Q3 2018 Report

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## Voya Update



### New & Noteworthy Recognition of Voya

Voya is focused on *making a difference that matters.* A passion for doing the right thing, the right way, and making a difference in the lives of our customers.



Institutional Investor DC Industry Leader<sup>2</sup>

### Ranked #2 recordkeeper

<sup>2</sup> 2018 DC Industry Leaders, https://www.institutionalinvestor.com/research/8293/ Methodology

For plan sponsor use only. Not for use with participants. Products and services offered through the Voya<sup>®</sup> family of companies

PLAN | INVEST | PROTECT

#### WealthManagement.com Industry Awards<sup>3</sup>

#### Best Place to Work for Disability Inclusion<sup>4</sup>



<sup>3</sup> 2018 Wealth Management Industry Award Winner for CSR/ Diversity, https://events.wealthmanagement.com/categories/



<sup>4</sup> 2018 DEI Best Places to Work, https://disabilityequalityindex.org/Results



### Voya<sup>®</sup> participant resources: Highly ranked among financial services communications



#### Industry-leading tools for a secure financial future

Voya Financial<sup>®</sup>'s participant website earned the DALBAR<sup>1</sup> Seal of Communications Excellence for the eighth consecutive year. The Voya website can help participants effectively and efficiently monitor and manage their retirement accounts.

\$4,375

Voya's mobile website was recognized with the DALBAR Seal for Communication Excellence for the first time.

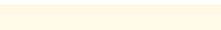
The Voya Retirement mobile app, recently enhanced with myOrangeMoney<sup>®</sup>, was awarded the DALBAR Seal of Communications Excellence for the third consecutive year. The seal recognizes best practices in plan participant communications. This recognition underscores the positive impact the myOrangeMoney experience — available to millions of America's retirement savers — can have to help individuals prepare for retirement.

Voya's Web Enrollment Experience was awarded the 2018 First Impressions seal for online enrollment. This new recognition reviewed the "State of the Industry" with respect to the online participant enrollment process, measuring the success of the efforts providers put forth in ensuring that they are offering a clear, engaging and seamless experience.

#### Applying technology to provide solutions

Voya invests in research and technology to create meaningful solutions and tests them in the real world. Voya's top rank affirms its dedication to helping Americans become financially and emotionally ready for retirement.

#### You can contact your Voya representative for more information.



#### Why Voya was recognized

"Voya continues to demonstrate its commitment to providing a superior standard of care when it comes to their customer communication channels," said Shelley Eramo, director at DALBAR.

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1 DALBAR, Inc. is a leading financial services market research firm that performs a variety of ratings and evaluations of practices and communications, committed to raising the standards of excellence in the financial services and healthcare industries.

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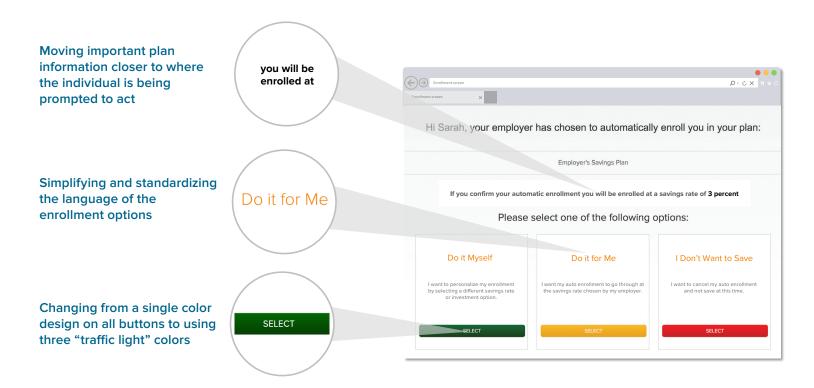


### Small Digital Design Enhancements to the Online Enrollment Experience Can Improve Retirement Outcomes — Similar to Dramatically Raising the Company's Match Limit

#### Summary

When it comes to an employee's financial well-being in retirement, many of the most critical decisions are made during the initial enrollment process. To help nudge workers in a positive direction, the retirement industry has historically focused its attention on instituting automatic enrollment and providing generous match incentives. However, recent research from The Voya Behavioral Finance Institute for Innovation suggests another promising opportunity — one that could be even more attractive to an employer that is not in a position to increase the generosity of its match or change its plan design.

In a new working paper titled Save(d) by Design, researchers from Carnegie Mellon University, City, University of London and UCLA conducted a field study<sup>1</sup> involving more than 8,500 employees across 500 workplace retirement plans. The workers, who were scheduled to be auto-enrolled into their employer-sponsored 401(k) plan, were visiting their online enrollment website to either confirm, decline or make personal adjustments to their savings selection. The study examined the impact of the following three design changes on the enrollment choices of employees:





#### Key insights

Making relatively small design changes to a retirement plan's enrollment website can lead to greater personalized enrollment, match take up, average savings, and improved long-term financial security.<sup>2</sup>

- 15% 1. Greater Enrollment Personalization: As a result of simple website design enhancements, the share of employees who personalized their enrollment increased by 15 percent. Among personalizers, the average contribution rate is 7.8 percent, compared to the rate of 3.4 percent among those who accept auto-enrollment.
- 19% 2. Greater Take-Up of Full Company Match: The design enhancements resulted in a 19 percent increase in the share of employees taking advantage of the company's full match benefit. We also found that an optimized enrollment design can actually increase the effectiveness of existing matching incentives.
- 3. Greater Plan Savings and Improved Retirement Security: The design changes also led to an increase in savings levels, boosting the average contribution rate by 62 basis points, or roughly 10 percent across all digital enrollees. That boost in savings is equivalent to what one would predict from increasing the typical employer match by 62 percent. Because of the "stickiness" of an employee's initial contribution decisions, these increases in contributions due to design can lead to meaningful improvements to long-term retirement security.

#### Conclusion

If a company is looking to improve participant savings, and an individual's long-term retirement security, as well as overall plan engagement, making small digital adjustments to an enrollment website can be a powerful strategy. By enhancing the online enrollment architecture in this manner, companies can generate improvements to retirement outcomes that are similar to the results of a dramatic match increase.

Voya Financial has applied these findings to its own enrollment process — in June of 2018 it began introducing newly-designed screens to clients that are influenced by this research.

We encourage plan sponsors and advisors to explore the potential benefits that come with a deeper understanding of digital design.

To learn more or read the full working paper, visit voya.com/behavioralfinance.

#### The Voya Behavioral Finance Institute for Innovation

The Voya Behavioral Finance Institute for Innovation, now celebrating its two year anniversary, is focused on gaining deeper insights into the decisions of Americans regarding their financial and retirement planning activities. As we look to the future of the retirement industry, the goal of the Institute is to conduct pioneering studies and test novel concepts that could translate into largescale solutions capable of helping Americans retire better in the digital age.

<sup>1</sup> Saurabh Bhargava, Lynn Conell-Price, Richard T. Mason, and Shlomo Benartzi. "Save(d) by Design," Working Paper, October 2018. SSRN: 3237820

<sup>2</sup> The tested enhanced design led to a 9 percentage point increase in the share of employees who personalized enrollment (on a baseline of 60 percent), an 11 percentage point increase in the share of employees taking full advantage of their employer match (on a baseline of 58 percent), and 62 basis point increase in the average contribution rate by employees (on a baseline of 5.41 percent of income). Available at SSRN: <a href="https://ssrn.com/abstract=3237820">https://ssrn.com/abstract=3237820</a>
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Information contained herein is proprietary, confidential and non-public and is not for public release.



### Improved Collaboration with Participants

# The Problem

 Online participants quickly abandon websites when they cannot find information or complete a web form or transaction. Without an agent ready to help, businesses lose potential participant engagement.

# Co-Browse Solution

 Co-browse secures online participants engagement by offering real-time guidance and joint navigation of the webpage, in conjunction with phone <and chat> support, in order to locate needed information or finish a complicated web form or transaction.



### **Co-Browse Overview**

- Co-browse lets plan participants browse and navigate Voya's Participant Website (Pweb) with Customer Service Associates (CSA) in conjunction with phone support
- Co-browse helps agents to provide more effective, personalized online assistance
- It can be requested by the participant or proactively offered by a CSA
- Allows Voya CSAs to point at the screen using pointing device or highlight relevant content



### Security

### **Technology Controls**

- Our Co-browse technology limits CSAs ability to operate HTML objects; grayed out radio buttons, lists or submit buttons
- Co-browse is limited to the Voya Pweb, anything else on the participants desktop is blocked
- Data masking; sensitive data like social security numbers, passwords or banking account number, cannot be viewed by the CSA
- Data encryption; Support for HTTPS and TLS
- Recording; just like phone calls, all cobrowse activity is recorded and stored by Voya

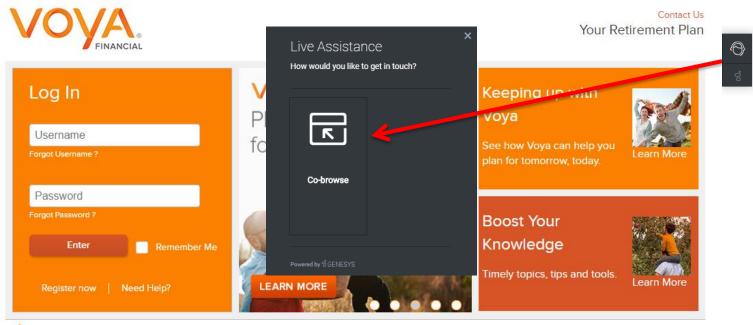
### **Participant Controls**

- The participant must initiate a Cobrowse session
- The participant can cancel a Cobrowse session at any time
- Co-browse ends automatically at the end of a voice interaction





### **Co-Browse Screens**

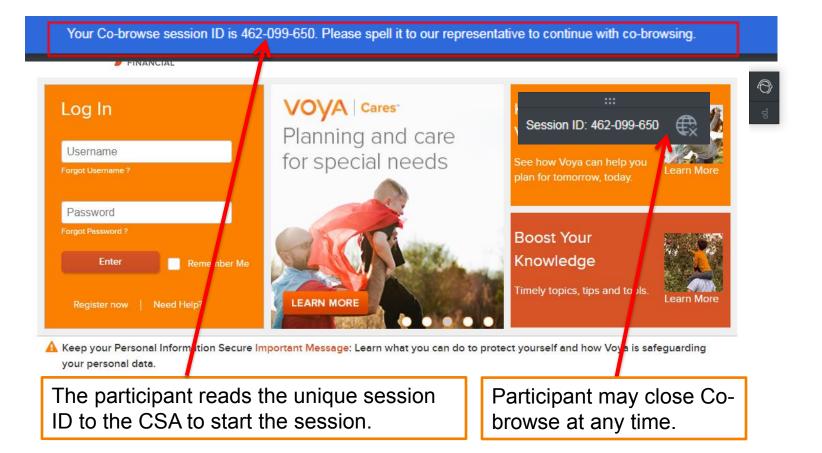


A Keep your Personal Information Secure Important Message: Learn what you can do to protect yourself and how Voya is safeguarding your personal data.

Co-Browse can be accessed on any page on Pweb by selecting the Live Assistance icon. A pop-up window allows the participant to start a Co-browse session.



### **Co-Browse Screens**





# **Executive Summary**



### **Executive Summary**

- Assets and Cash Flow
  - Total plan assets = \$2.3 billion as of September 30, 2018
  - Net cash flow was a positive \$14.6 million
    - Rollover in contributions were \$17 million
    - Participants with Roth elections 4,346
    - Roth contributions were \$2.4 million for the quarter
- Investment Composition
  - The LifePath Options hold 32% of plan assets
  - The Small Company Stock Option is second with 13% of plan assets, average balance of \$25,100
  - The Socially Responsible Option had 1,486 participants with a balance, average balance of \$9,986
  - The SCHWAB Brokerage account had 215 participants with a balance, average balance of \$71,752

**Participant Activity** 

- Web visitors averaged 2,106 web-based transactions each month
- PSR transactions averaged 456 per month
- Mobile transactions averaged 98 per month



#### **Oregon Digital Engagement Report** 7/1/2018-9/30/2018

#### **Retirement Calculator Engagement**

29% of participants took action after using myOrangeMoney

- 1,306 participants changed deferral amount on average from \$403 to \$517
- 629 participants changed fund allocation
- 2 participants rolled money into plan

Activity	# of Participants	
Logged in with access to myOrangeMoney	10,707	My Monthly Retirement Income 53,956 54,375 5417 These North Yours Enclosed Antify Gon The provest to real
Viewed the myOrangeMoney	8,143 (76%)	S veriller Deterlan Was If with a 1 0
Engaged and interacted with myOrangeMoney	5,681 (70%)	
Took Action after using myOrangeMoney	1,638 (29%)	Nan ny Paniny Run Nas Mysans Sa Kuturthania Produ Otle Kons Sich Konty Schoo Kuthou Solone Solone Solone School Comment

#### **Personal Financial Dashboard Engagement**

- 19% of participants took action after using the PFD
  - 43 participants changed deferral amount on average from \$397 to \$465
  - 21 participants changed fund allocation

Activity	# of Participants	Welcome PATIENCE, do you went to start completer	
Used the Personal Financial Dashboard (PFD)	272	Got 10 minutes? See new much you might have its retrement and have long your money could list. • Its way, American loss internation along quarter of you wanted.	Got 30 m See your entire t confident about Chall your pro- Seeward your h
Created an action plan	105 (39%)	ent even vary yeek to even but. - Desarption yeek to even the field to take the but was used and the - Desarption yeek to even the matter - Desarption to even the	Material your too found a goals. It     Cost here to nee
Took action after using PFD	52 (19%)	24 or 28 million	



# Rollover Summary Q3 2018

#### **OSGP Rollovers Out**

# of Rollovers	% of Total	\$ Rolled
99	46%	\$5,377,623
12	6%	\$544,405
7	3%	\$650,201
6	3%	\$323,649
6	3%	\$617,704
83	39%	\$7,546,729
2 1 7 6	99 12 7 5	99       46%         12       6%         7       3%         5       3%         5       3%

#### **OSGP** Rollovers In

Institution	# of Rollovers	% of Total	\$ Rolled
IAP	166	56%	\$12,645,213
All Others	128	44%	\$4,169,373

#### **IAP Rollovers Out**

Institution	# of Rollovers	% of Total	\$ Rolled
OSGP	166	9%	\$12,645,213
All Others	1,770	91%	\$113,534,933

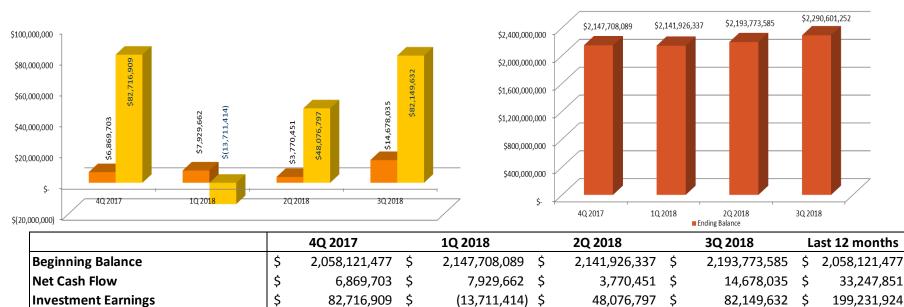
### Net Cash Flow and Earnings by Quarter

**Net Cash Flow and Earnings** 

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2,147,708,089

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**Ending Balance** 

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Ending Balance



2,290,601,252

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2,290,601,252

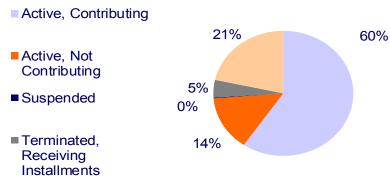
2,141,926,337 \$

2,193,773,585

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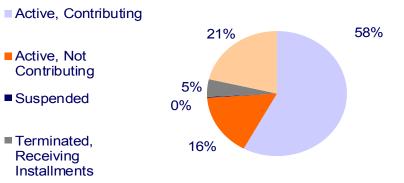
### Participant Status Summary

As June 30, 2018



Participant Status	Number of Participants
Active, Contributing	17,950
Active, Not Contributing	4,267
Suspended	56
Terminated, Receiving Installments	1,373
Terminated with a Balance	6,489
Total:	30,135

#### As of September 30, 2018



Participant Status	Number of Participants
Active, Contributing	17,745
Active, Not Contributing	4,926
Suspended	58
Terminated, Receiving Installments	1,399
Terminated with a Balance	6,532
Total:	30,660



# **Outreach Team Update**



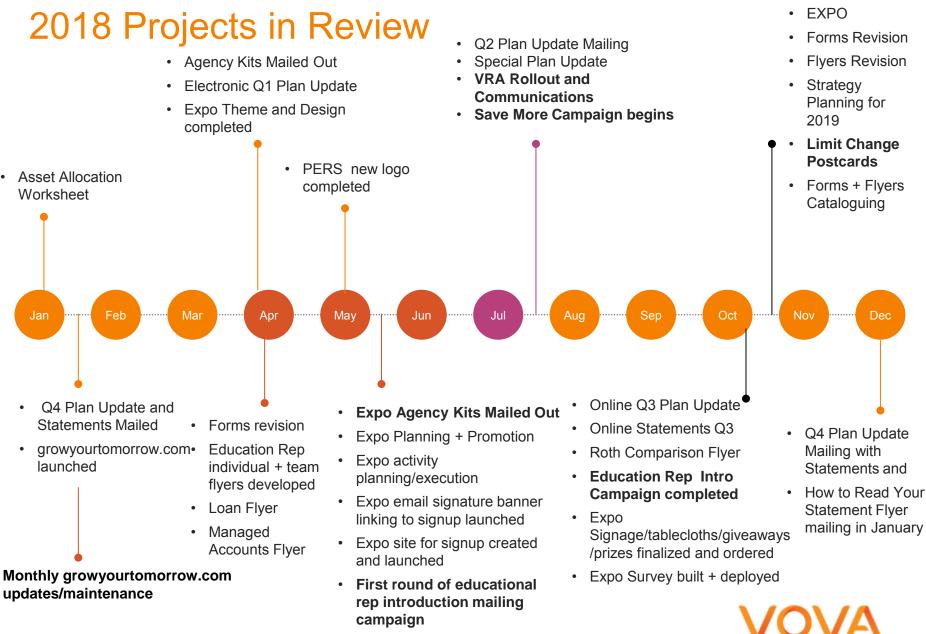
### **Outreach Activities**

Employer Contact Visits	Presentations	Presentation Attendance	Group Meetings	Group Meeting Attendance	Benefits Fairs	1-on-1s	Phone Meetings
150	100	809	81	299	18	507	123



# **Communications** Update





# Third Quarter 2018



Period Ending September 30, 2018

#### **OREGON SAVINGS GROWTH PLAN**

Cash In	
Employee Before-tax Contributions	22,901,572.27
Employee After-tax Contributions	0.00
Roth 457 Contributions	2,415,268.40
Roth 457 Conversion	50,097.24
Roth Qual Plan Conversion	0.00
Rollover Contributions	16,845,274.09
Employer Contributions	0.00
Loan Repayments	1,346,696.77
Conversions In	38,227.79
Transfers In	84,924,399.04
Other	2,208,935.33

**Total Cash In** 

\$130,730,470.93

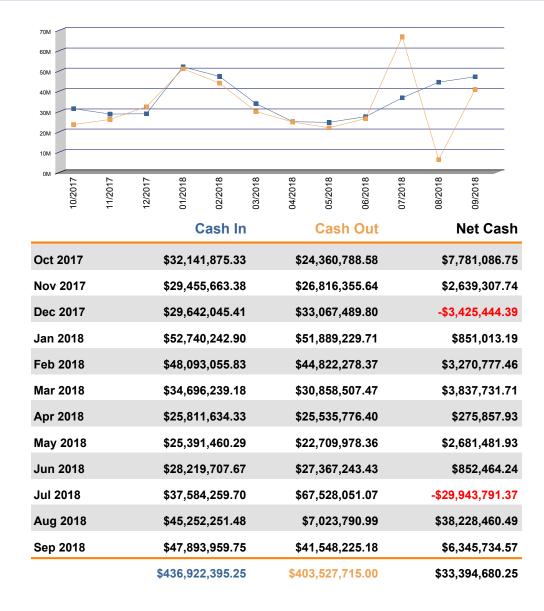
#### **Cash Out**

Fotal Cash Out	(\$116,100,067.24)
Other	2,208,935.33
Transfers Out	84,533,346.40
Fees	20,053.98
Conversions Out	1,868.98
Loans Issued	1,605,880.95
Terminations	20,976,521.81
Installment Payments	5,748,226.71
Withdrawals	1,005,233.08

#### **Total Cash Out**

#### **Net Cash Flow**

\$14,630,403.69





### Investment Balances by Quarter

#### Period Ending September 30, 2018

Investment Name	Q4 2017	Q1 2018	Q2 2018	Q3 2018
SHORT TERM FIXED OPTION	\$45,501,334.78	\$48,765,962.82	\$50,217,898.41	\$50,339,969.32
STABLE VALUE OPTION	\$209,016,762.63	\$212,980,973.95	\$213,648,261.04	\$217,867,543.63
LIFEPATH RETIREMENT FUND	\$197,348,614.30	\$196,830,971.35	\$195,632,322.51	\$195,818,560.71
LIFEPATH 2020 FUND	\$142,576,805.15	\$142,109,753.01	\$142,337,412.77	\$143,419,033.52
LIFEPATH 2025 FUND	\$104,146,041.93	\$105,512,031.68	\$108,383,758.18	\$111,118,493.53
LIFEPATH 2030 FUND	\$74,832,482.05	\$76,964,543.46	\$79,902,852.81	\$82,128,647.51
LIFEPATH 2035 FUND	\$55,227,937.91	\$56,381,955.24	\$58,855,009.58	\$60,990,605.96
LIFEPATH 2040 FUND	\$36,574,887.96	\$37,007,250.86	\$39,287,851.71	\$41,627,629.71
LIFEPATH 2045 FUND	\$24,492,817.46	\$24,266,431.42	\$25,674,673.92	\$27,200,096.00
LIFEPATH 2050 FUND	\$21,778,472.31	\$22,437,575.06	\$23,288,555.74	\$24,040,145.07
LIFEPATH 2055 FUND	\$8,050,315.65	\$8,469,137.02	\$8,704,556.31	\$9,137,490.03
LIFE PATH 2060	\$4,265,482.77	\$4,504,606.01	\$5,086,817.00	\$5,195,890.42
ACTIVE FIXED INCOME OPTION	\$115,491,315.58	\$112,346,978.87	\$110,966,980.34	\$116,491,309.41
REAL RETURN OPTION	\$3,486,781.41	\$3,994,376.41	\$4,127,246.14	\$4,399,927.76
SOCIALLY RESPONSIBLE INV OPT	\$10,465,548.66	\$11,548,480.40	\$12,097,952.97	\$14,840,421.41
LARGE COMP VALUE STOCK OPTION	\$199,538,949.61	\$189,528,318.93	\$189,865,011.56	\$202,357,426.96
STOCK INDEX OPTION	\$249,498,130.43	\$244,864,638.93	\$253,577,604.38	\$271,068,736.72
LARGE COMP GROWTH STOCK OPTION	\$233,014,949.22	\$235,522,873.59	\$249,253,270.24	\$277,329,127.66
INTERNATIONAL STK OPTION	\$121,714,238.90	\$122,856,289.34	\$117,134,733.35	\$117,725,597.06



	Q4 2017	Q1 2018	Q2 2018	Q3 2018
SMALL COMPANY STOCK OPTION	\$267,212,691.50	\$259,155,787.48	\$278,463,185.60	\$288,827,598.87
SCHWAB PCRA	\$10,658,491.84	\$12,804,602.60	\$14,183,541.70	\$15,426,840.50



Period Ending September 30, 2018

#### OREGON SAVINGS GROWTH PLAN

Asset Class	Q4 2017	Q1 2018	Q2 2018	Q3 2018
International Equity	\$121,714,238.90	\$122,856,289.34	\$117,134,733.35	\$117,725,597.06
Lifestyle/Balanced	\$669,293,857.49	\$674,484,255.11	\$687,153,810.53	\$700,676,592.46
Stable Value/Money Market	\$254,518,097.41	\$261,746,936.77	\$263,866,159.45	\$268,207,512.95
Stock Index	\$485,999,861.06	\$484,381,888.93	\$506,958,120.76	\$552,797,792.14
US Fixed Income	\$115,491,315.58	\$112,346,978.87	\$110,966,980.34	\$116,491,309.41
US Large Cap Equity	\$210,004,498.27	\$201,076,799.33	\$201,962,964.53	\$217,197,848.37
US Small Cap Equity	\$267,212,691.50	\$259,155,787.48	\$278,463,185.60	\$288,827,598.87



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### Contributions by Fund

Period Ending September 30, 2018

Investment Name	Q4 2017	Q1 2018	Q2 2018	Q3 2018
ACTIVE FIXED INCOME OPTION	\$1,792,670.35	\$1,540,340.56	\$1,275,082.15	\$1,770,468.64
INTERNATIONAL STK OPTION	\$2,199,478.44	\$2,116,062.31	\$1,953,632.84	\$1,953,699.82
LARGE COMP GROWTH STOCK OPTION	\$3,434,815.90	\$3,266,226.34	\$3,292,928.06	\$3,792,987.01
LARGE COMP VALUE STOCK OPTION	\$3,223,551.96	\$3,129,130.37	\$2,700,456.09	\$3,598,202.48
LIFE PATH 2060	\$245,248.85	\$345,432.98	\$363,163.87	\$358,111.38
LIFEPATH 2020 FUND	\$3,666,549.59	\$5,284,012.28	\$3,011,604.20	\$3,623,020.67
LIFEPATH 2025 FUND	\$3,557,380.86	\$3,656,100.84	\$2,999,083.30	\$3,297,690.44
LIFEPATH 2030 FUND	\$3,052,632.69	\$2,591,474.01	\$2,249,037.67	\$2,517,812.26
LIFEPATH 2035 FUND	\$2,282,318.24	\$1,924,465.24	\$1,993,363.25	\$1,949,458.51
LIFEPATH 2040 FUND	\$1,596,200.38	\$1,409,633.08	\$1,630,494.68	\$2,003,783.82
LIFEPATH 2045 FUND	\$1,204,011.79	\$1,085,610.35	\$1,271,381.97	\$1,243,608.14
LIFEPATH 2050 FUND	\$928,477.01	\$833,966.59	\$902,692.03	\$958,626.42
LIFEPATH 2055 FUND	\$417,560.21	\$480,336.40	\$405,397.68	\$602,741.89
LIFEPATH RETIREMENT FUND	\$2,833,753.15	\$3,374,818.00	\$1,587,903.13	\$2,004,216.33
REAL RETURN OPTION	\$182,850.68	\$154,344.81	\$107,223.59	\$166,256.66
SHORT TERM FIXED OPTION	\$890,219.48	\$1,405,376.71	\$870,641.48	\$1,042,662.67
SMALL COMPANY STOCK OPTION	\$3,292,128.31	\$3,784,141.58	\$3,404,429.61	\$3,437,358.78
SOCIALLY RESPONSIBLE INV OPT	\$460,551.62	\$587,954.49	\$392,408.29	\$524,507.39
STABLE VALUE OPTION	\$2,490,751.55	\$3,380,244.01	\$2,340,816.62	\$2,991,827.12



	Q4 2017	Q1 2018	Q2 2018	Q3 2018
STOCK INDEX OPTION	\$3,584,333.98	\$3,552,030.94	\$3,326,677.56	\$4,375,059.08
Total	41,335,485.04	43,901,701.89	36,078,418.07	42,212,099.51



### Contributions by Source

Period Ending September 30, 2018

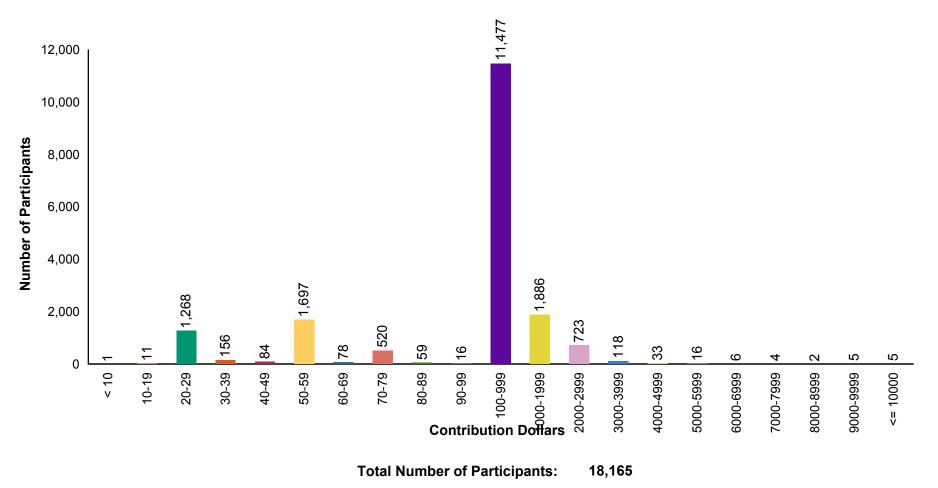
Source Name	July 2018	August 2018	September 2018	Total
Employee Before-tax Contributions	\$8,220,432.28	\$7,416,661.84	\$7,264,016.60	\$22,901,110.72
Rollover Contributions	\$5,004,722.37	\$4,767,730.91	\$7,072,820.81	\$16,845,274.09
Roth 457 Contributions	\$822,492.02	\$794,542.03	\$798,234.35	\$2,415,268.40
Roth 457 Conversion	\$6,995.10	\$38,552.14	\$4,437.51	\$49,984.75
Total	\$14,055,103.32	\$13,017,486.92	\$15,139,509.27	\$42,212,099.51

Source Name	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Total
Employee Before-tax Contributions	\$22,430,666.87	\$21,958,353.23	\$22,846,871.75	\$22,901,110.72	\$90,137,002.57
Rollover Contributions	\$16,861,317.80	\$19,780,523.84	\$10,831,594.43	\$16,845,274.09	\$64,318,710.16
Roth 457 Contributions	\$1,997,510.29	\$2,081,594.02	\$2,290,029.26	\$2,415,268.40	\$8,784,401.97
Roth 457 Conversion	\$26,883.88	\$44,839.60	\$96,014.89	\$49,984.75	\$217,723.12
Roth Qual Plan Conversion	\$2,790.72	\$30,000.00	\$0.00	\$0.00	\$32,790.72
Total	\$41,335,485.04	\$43,901,701.89	\$36,078,418.07	\$42,212,099.51	\$163,527,704.51



### **Before-Tax Contribution Amount Summary**

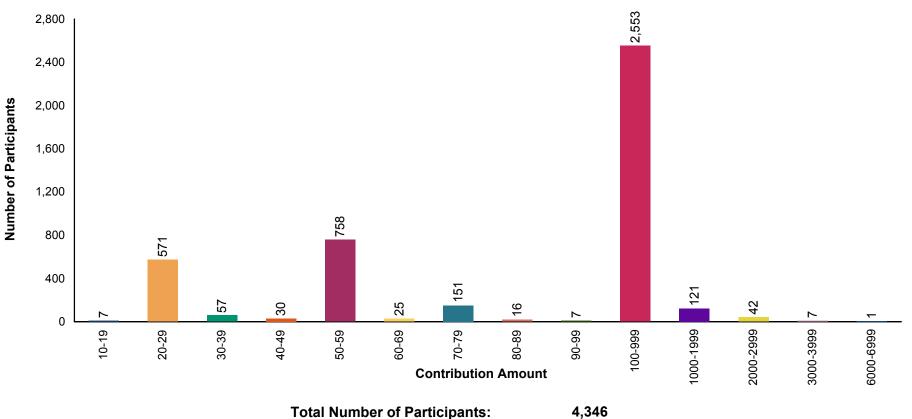
Period Ending September 30, 2018





As of September 30, 2018

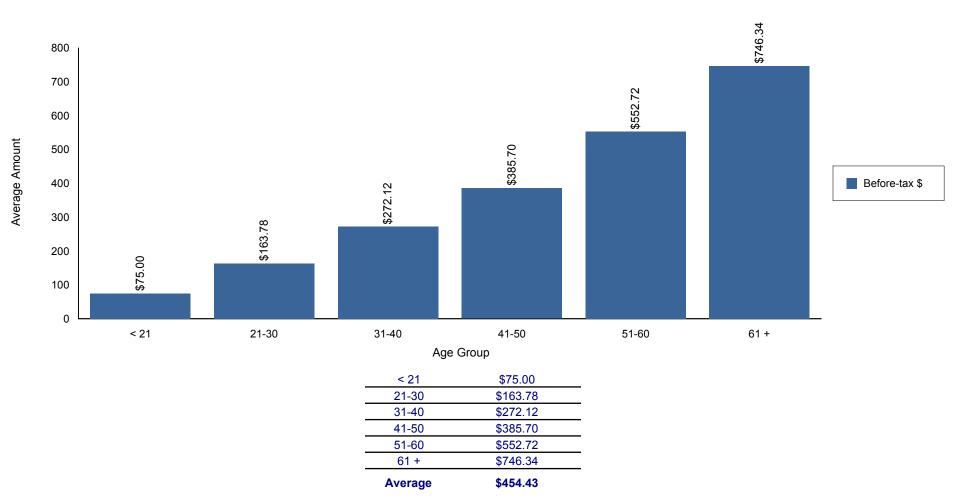
#### **OREGON SAVINGS GROWTH PLAN**



**Total Number of Participants:** 



Period Ending September 30, 2018

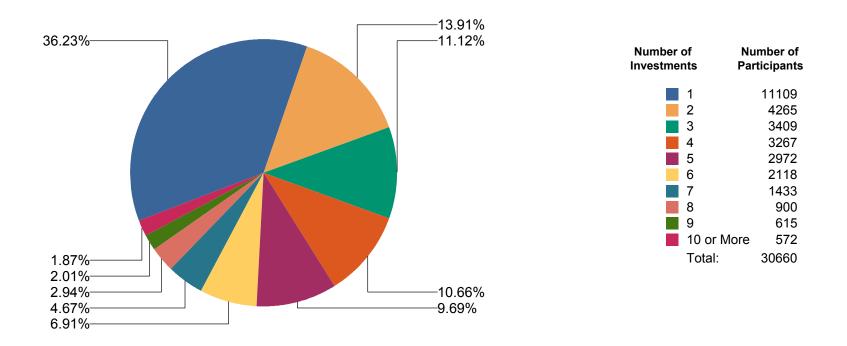




# Participants with Balances by Number of Investments

Period Ending September 30, 2018

### OREGON SAVINGS GROWTH PLAN

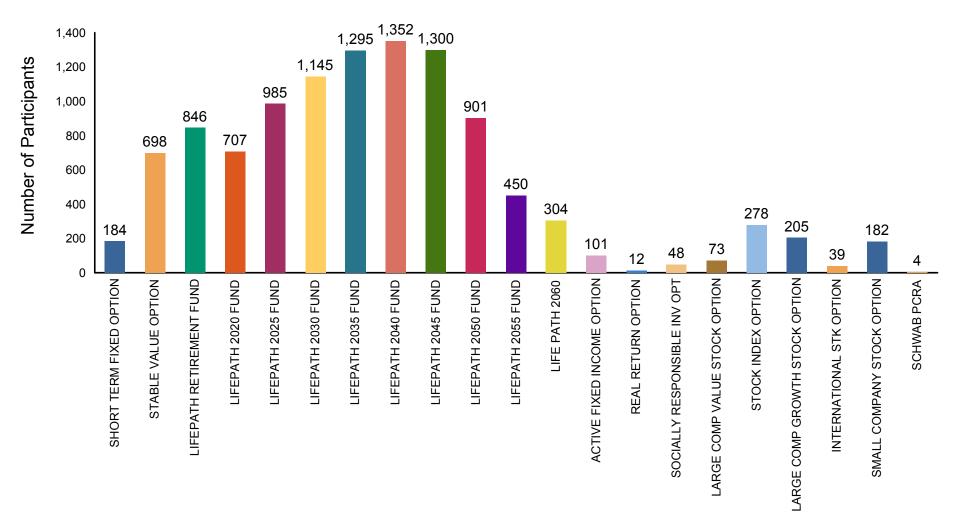


**Average Number of Funds: 3** 



# Participants with a Balance in a Single Investment

Period Ending September 30, 2018





Total Participants with Loans:	1,724
Total Number of Outstanding Loans:	1,724
Number of General Loans:	1,645
Number of Residential Loans:	79
Total Outstanding Loan Balance:	\$12,775,740.85
General Loan Balance:	\$11,549,177.96
Residential Loan Balance:	\$1,226,562.89
Number of Re-amortized Loans during the period:	1
Number of Loan Defaults during the period:	0

# **Balances by Investment**

As of September 30, 2018

### OREGON SAVINGS GROWTH PLAN

In contract t	Investment Pelence	Number of	Average Participant	Percentage of Plan Assets
Investment	Investment Balance	Participants	Participant	
SHORT TERM FIXED OPTION	\$50,339,969.32	3,246	\$15,508.31	2.21%
STABLE VALUE OPTION	\$217,867,543.63	7,386	\$29,497.37	9.57%
LIFEPATH RETIREMENT FUND	\$195,818,560.71	3,748	\$52,246.15	8.60%
LIFEPATH 2020 FUND	\$143,419,033.52	3,230	\$44,402.18	6.30%
LIFEPATH 2025 FUND	\$111,118,493.53	3,536	\$31,424.91	4.88%
LIFEPATH 2030 FUND	\$82,128,647.51	3,486	\$23,559.57	3.61%
LIFEPATH 2035 FUND	\$60,990,605.96	3,423	\$17,817.88	2.68%
LIFEPATH 2040 FUND	\$41,627,629.71	3,128	\$13,308.07	1.83%
LIFEPATH 2045 FUND	\$27,200,096.00	2,679	\$10,153.08	1.19%
LIFEPATH 2050 FUND	\$24,040,145.07	2,096	\$11,469.53	1.06%
LIFEPATH 2055 FUND	\$9,137,490.03	1,113	\$8,209.78	0.40%
LIFE PATH 2060	\$5,195,890.42	692	\$7,508.51	0.23%
ACTIVE FIXED INCOME OPTION	\$116,491,309.41	6,628	\$17,575.64	5.12%
REAL RETURN OPTION	\$4,399,927.76	635	\$6,929.02	0.19%
SOCIALLY RESPONSIBLE INV OPT	\$14,840,421.41	1,486	\$9,986.82	0.65%
LARGE COMP VALUE STOCK OPTION	\$202,357,426.96	10,378	\$19,498.69	8.89%
STOCK INDEX OPTION	\$271,068,736.72	9,829	\$27,578.47	11.90%
LARGE COMP GROWTH STOCK OPTION	\$277,329,127.66	11,728	\$23,646.75	12.18%
INTERNATIONAL STK OPTION	\$117,725,597.06	9,690	\$12,149.18	5.17%
SMALL COMPANY STOCK OPTION	\$288,827,598.87	11,507	\$25,100.17	12.68%
SCHWAB PCRA	\$15,426,840.50	215	\$71,752.75	0.68%

**Total Investment Balance:** 

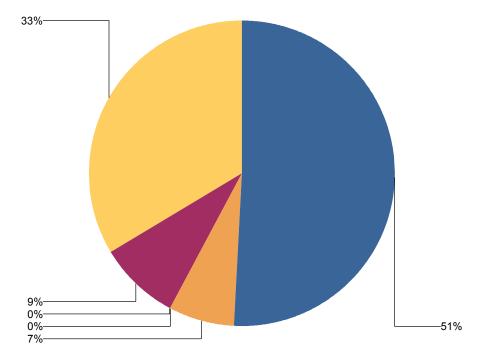
**Total Loan Fund:** 

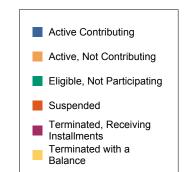
\$2,277,351,091.76

\$12,882,264.00



Period Ending September 30, 2018



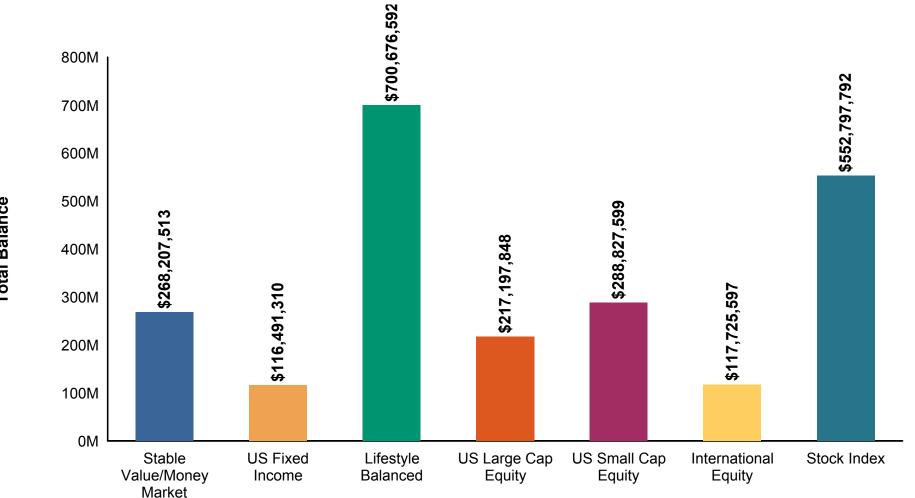


Participant Status	Participant Balance
Active Contributing	\$1,163,938,369.48
Active, Not Contributing	158,923,660.20
Suspended	\$3,350,864.70
Terminated, Receiving Installments	\$196,998,464.04
Terminated with a Balance	\$767,328,630.08
Total:	\$2,290,539,988.50



# **Asset Class Summary**

Period Ending September 30, 2018







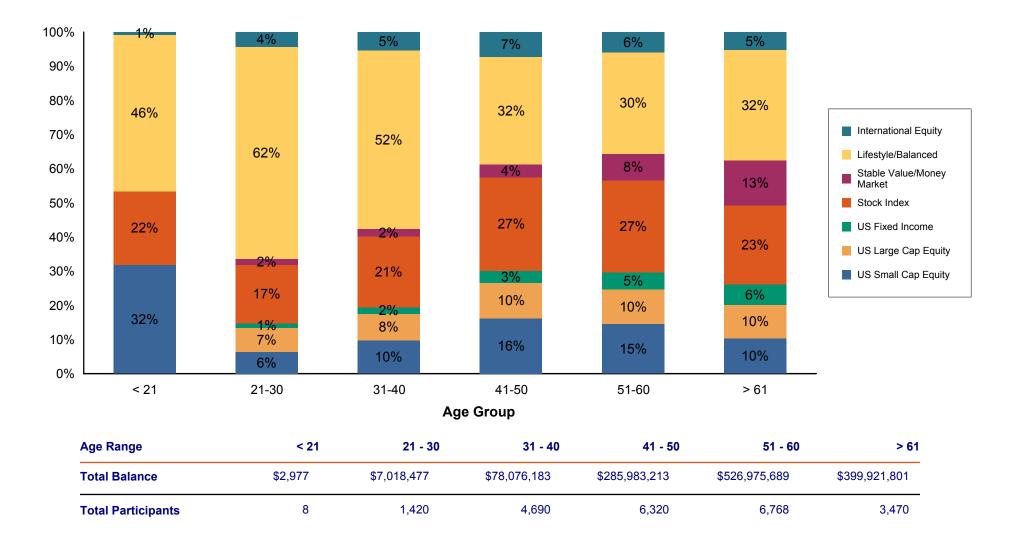
Period Ending September 30, 2018

Asset Class	Balance	Percentage of Total Assets
Stable Value/Money Market	\$268,207,513	11.71%
US Fixed Income	\$116,491,310	5.09%
Lifestyle/Balanced	\$700,676,592	30.59%
US Large Cap Equity	\$217,197,848	9.48%
US Small Cap Equity	\$288,827,599	12.61%
International Equity	\$117,725,597	5.14%
Stock Index	\$552,797,792	24.13%



# Asset Class Balances by Age Group

Period Ending September 30, 2018





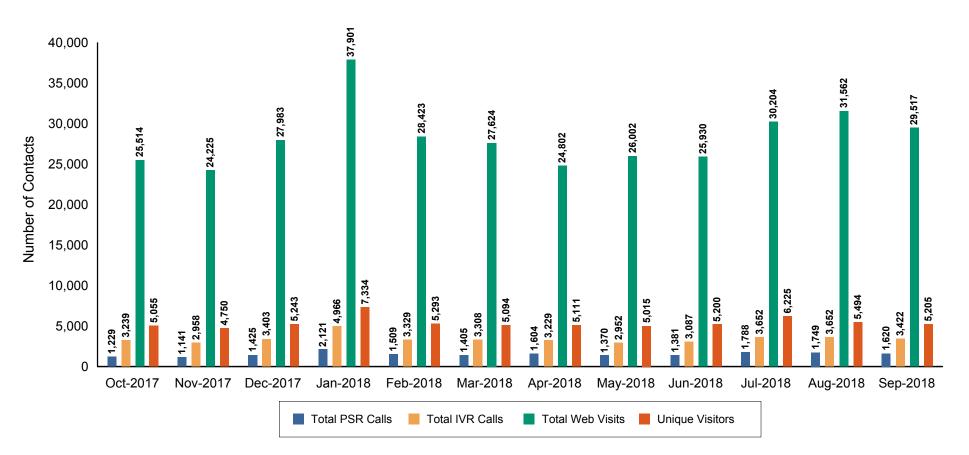
Period Ending September 30, 2018

Investment Name	Transfers In	Transfers Out	Net
SHORT TERM FIXED OPTION	\$3,581,256.77	-\$3,746,548.39	-\$165,291.62
STABLE VALUE OPTION	\$11,344,886.64	-\$6,479,585.53	\$4,865,301.11
LIFEPATH RETIREMENT FUND	\$3,463,638.19	-\$4,701,252.41	-\$1,237,614.22
LIFEPATH 2020 FUND	\$2,500,695.18	-\$5,465,982.88	-\$2,965,287.70
LIFEPATH 2025 FUND	\$2,478,182.90	-\$4,465,352.29	-\$1,987,169.39
LIFEPATH 2030 FUND	\$1,579,790.77	-\$3,432,305.31	-\$1,852,514.54
LIFEPATH 2035 FUND	\$622,894.01	-\$1,931,821.51	-\$1,308,927.50
LIFEPATH 2040 FUND	\$532,874.17	-\$1,346,561.95	-\$813,687.78
LIFEPATH 2045 FUND	\$580,056.68	-\$851,681.61	-\$271,624.93
LIFEPATH 2050 FUND	\$152,508.33	-\$964,927.63	-\$812,419.30
LIFEPATH 2055 FUND	\$83,366.84	-\$562,610.49	-\$479,243.65
LIFE PATH 2060	\$195,783.75	-\$610,215.23	-\$414,431.48
ACTIVE FIXED INCOME OPTION	\$9,674,307.13	-\$3,912,817.88	\$5,761,489.25
REAL RETURN OPTION	\$843,286.58	-\$692,564.51	\$150,722.07
SOCIALLY RESPONSIBLE INV OPT	\$2,596,521.27	-\$1,085,668.19	\$1,510,853.08
LARGE COMP VALUE STOCK OPTION	\$9,255,261.39	-\$8,995,777.90	\$259,483.49
STOCK INDEX OPTION	\$6,645,185.63	-\$8,601,511.81	-\$1,956,326.18
LARGE COMP GROWTH STOCK OPTION	\$13,800,513.87	-\$9,766,159.92	\$4,034,353.95
INTERNATIONAL STK OPTION	\$6,058,650.09	-\$6,765,842.98	-\$707,192.89
SMALL COMPANY STOCK OPTION	\$7,759,937.84	-\$9,782,630.58	-\$2,022,692.74
SCHWAB PCRA	\$1,174,801.01	-\$371,527.40	\$803,273.61



# **Participant Contact Summary**

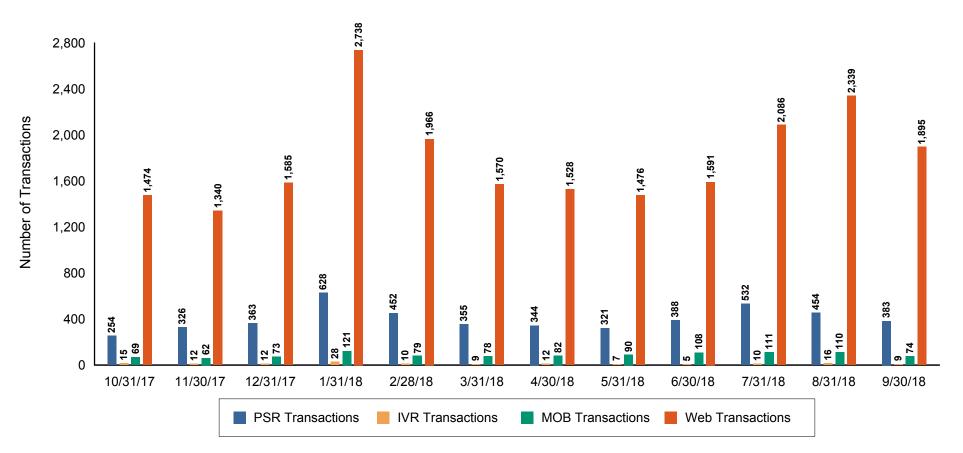
Period Ending September 30, 2018





# **Paperless Transaction Summary**

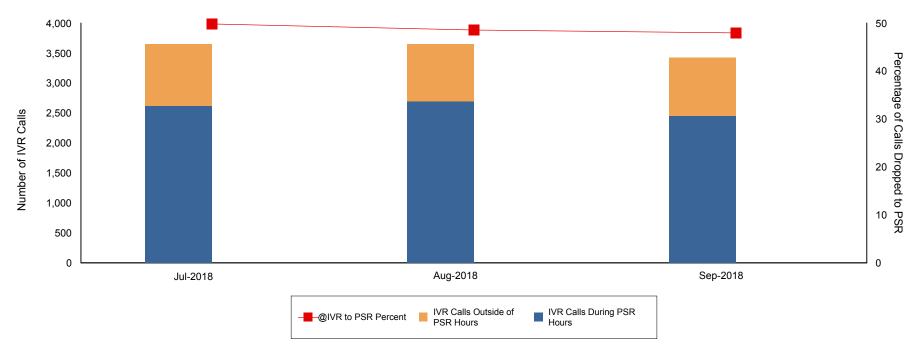
Period Ending September 30, 2018





# **IVR** Activity

July 01, 2018 to September 30, 2018



Date	Total IVR Calls	IVR Calls During PSR Hours	IVR Calls Outside of PSR Hours	IVR Calls Transferred to PSR	Percent of IVR Calls Transferred to PSR
Jul-2018	3,652	2,620	1,032	1,818	49.78%
Aug-2018	3,652	2,699	953	1,773	48.55%
Sep-2018	3,422	2,452	970	1,640	47.93%

Reporting Period	PSR Call Volume	Average Speed of Answer (Seconds)	Average Call Length (Minutes)
Oct-2017	1,229	102	5.67
Nov-2017	1,141	34	5.67
Dec-2017	1,425	7	5.87
Jan-2018	2,121	57	6.35
Feb-2018	1,509	17	5.85
Mar-2018	1,405	32	5.95
Apr-2018	1,604	27	5.98
May-2018	1,370	15	5.90
Jun-2018	1,381	8	6.35
Jul-2018	1,788	20	6.03
Aug-2018	1,749	18	5.80
Sep-2018	1,620	14	5.78

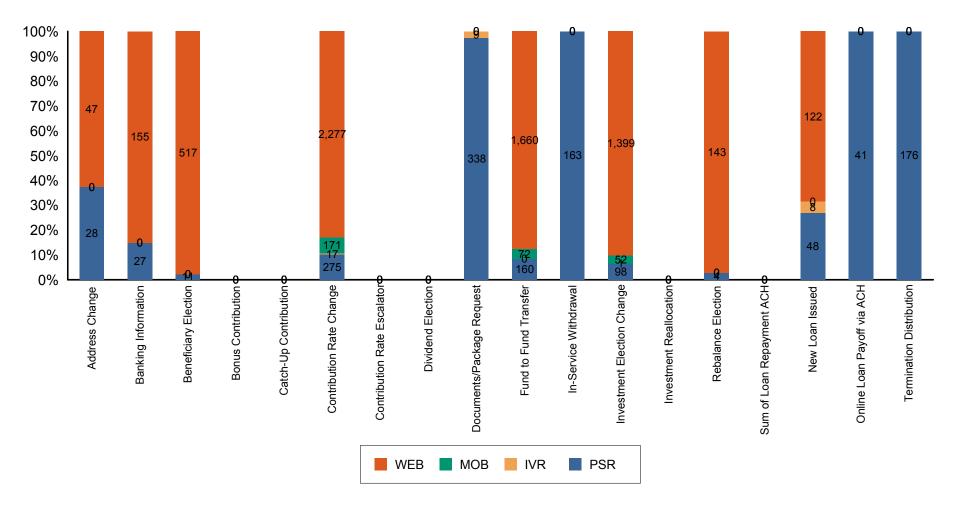


Reporting Period	PSR Call Volumes	Number of Abandoned Calls	Percent of Abandoned Calls
Oct-2017	1,229	89	0.06%
Nov-2017	1,141	24	0.02%
Dec-2017	1,425	6	0.00%
Jan-2018	2,121	90	0.04%
Feb-2018	1,509	20	0.01%
Mar-2018	1,405	34	0.02%
Apr-2018	1,604	26	0.01%
May-2018	1,370	15	0.01%
Jun-2018	1,381	2	0.00%
Jul-2018	1,788	30	0.01%
Aug-2018	1,749	24	0.01%
Sep-2018	1,620	20	0.01%



# **Paperless Transactions by Channel**

Period Ending September 30, 2018





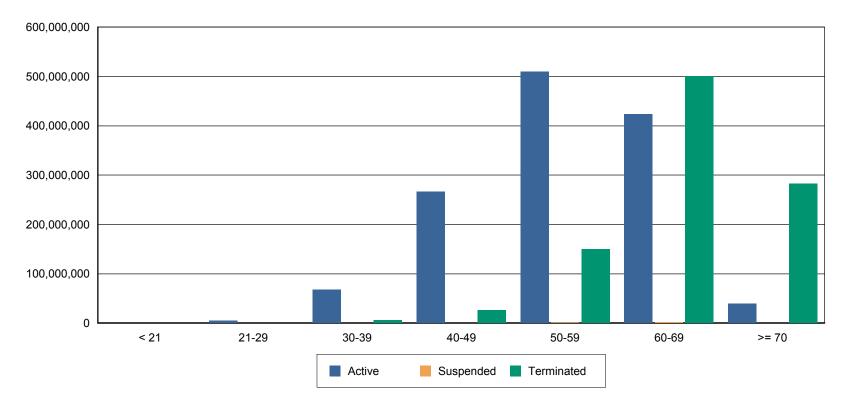
Period Ending September 30, 2018

Paperless Transaction Description	Transaction Volume
Address Change	75
Banking Information	182
Beneficiary Election	528
Bonus Contribution	0
Catch-up Contribution	0
Contribution Rate Change	2,740
Contribution Rate Escalator	0
Dividend Election	0
Document/Package Request	347
Fund to Fund Transfer	1,892
In-service Withdrawal	163
Investment Election Change	1,550
Investment Reallocation	0
Rebalance Election	147
Loan Repayment ACH Election	0
New Loans Issued	178
Online Loan Payoff via ACH	41
Termination Distribution	176



# Balances by Age and Status

Period Ending September 30, 2018

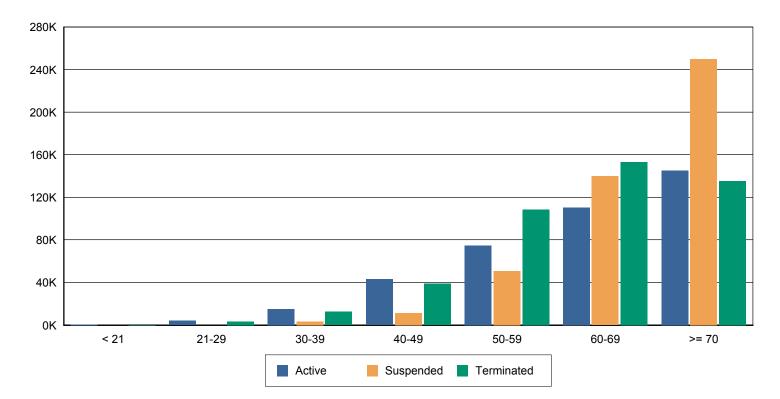


Status	< 21	21-29	30-39	40-49	50-59	60-69	>= 70
Active	\$2,977	\$4,597,437	\$67,527,817	\$265,860,495	\$509,665,963	\$423,322,538	\$39,070,521
Suspended	\$0	\$0	\$20,834	\$178,837	\$1,016,622	\$1,816,652	\$249,939
Terminated	\$397	\$266,691	\$5,428,173	\$26,057,498	\$149,838,193	\$500,207,752	\$282,221,757



# Average Balances by Age and Status

Period Ending September 30, 2018

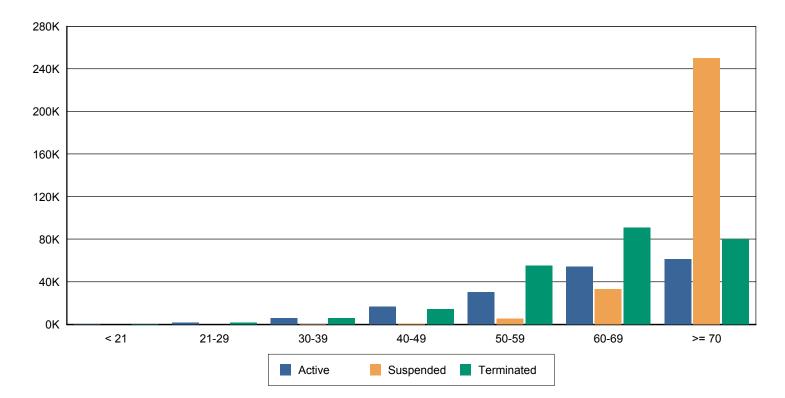


Status	< 21	21-29	30-39	40-49	50-59	60-69	>= 70
Active	\$372	\$4,079	\$15,226	\$42,936	\$74,775	\$110,528	\$145,244
Suspended	\$0	\$0	\$3,472	\$11,177	\$50,831	\$139,742	\$249,939
Terminated	\$198	\$3,175	\$12,421	\$38,776	\$108,500	\$153,109	\$135,423



# Median Balance by Age and Status

Period Ending September 30, 2018



Status	< 21	21-29	30-39	40-49	50-59	60-69	>= 70
Active	\$242	\$1,770	\$5,957	\$16,649	\$30,192	\$54,042	\$60,872
Suspended	\$0	\$0	\$197	\$900	\$5,297	\$33,032	\$249,939
Terminated	\$198	\$1,671	\$5,827	\$14,272	\$54,894	\$90,745	\$80,057



# Callan

November 27, 2018

OPEGON SAVINGS GROWTH PLAN Third Quarter 2018 Performance Review

Anne Heaphy Fund Sponsor Consulting

Uvan Tseng, CFA Fund Sponsor Consulting



### **Global Economic Update**

### The Big Picture

- · Globally, rate policies have yet to converge
  - The Fed hiked rates a quarter point at the March, June and September meetings.
  - One more hike in 2018, and three in 2019 expected
  - The target range for the Fed Funds rate is now 2.0% to 2.25%.
- Labor market continues to tighten.
- -Signs U.S. is reaching the limits of full employment.
  - Unemployment fell to 3.7% in September 2018, a generational low.
  - Initial claims for unemployment insurance have fallen to the lowest level since 1969.
  - Employment cost index rose 2.8% year-over-year in the second quarter, the highest rate of growth since 2007.
- -Euro zone unemployment dropped to 8.1% in August, the lowest rate in 10 years
- The U.S. and euro zone economies appear to be diverging again.
- -Eurozone economic growth stalled at 1.5% in the first half of 2018 after notching the strongest year in a decade in 2017.
  - Geopolitical turmoil across the zone, from Italy to Brexit, and the uncertainty from trade wars are dampening sentiment along with reported slower gains in GDP.
- China also showed signs of slowing, with industrial output and retail sales reporting growth at rates lower than expected in through the second and third quarters.
- Trade tensions with China on the rise.
- -U.S. dollar rose more than 7% since mid-April against a broad basket of developed market currencies, rebounding after 1<sup>st</sup> quarter concerns over a potential trade war with China and the fear of higher rates globally.
- The dollar appreciated 9% against the Yuan during this period as growth appeared to diverge between the U.S. and developed non-U.S. markets, and the U.S. alone raised rates.
- Crude oil prices continued to trend higher during the third quarter of 2018, cresting \$78 by the end of September.

### **US Economic Update**

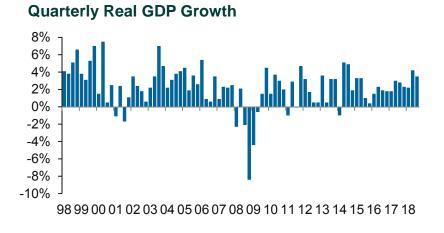
### The Big Picture

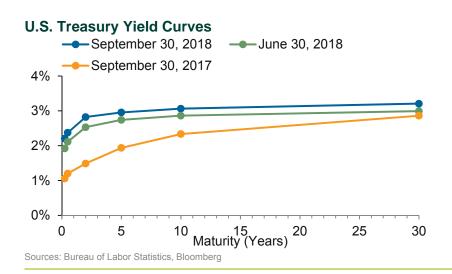
- A strong economic environment in the U.S. despite concerns about:
  - trade wars
  - inflation
- an inverted yield curve
- concerns about a market correction
- Length of the current expansion
- Richly priced capital markets
- The U.S. economy may be nearing peak growth for this cycle:
  - -GDP clocked a solid 3.5% gain in the third quarter, following a robust 4.2% jump in the second quarter.
  - The unemployment rate dropped to 3.7% in September, the lowest reading since 2000
- -Wages are inching up; consumer spending remains robust, as does consumer confidence
- -Housing starts surged to an 11-year high in May, only to stall during the summer as short supply and higher rates took their toll.
- -The Fed raised rates for the third time in 2018, bringing the Fed Funds rate to 2.0-2.25%.
- U.S. growth driven by international trade ahead of the imposition of tariffs.
- -Net exports declined in the third quarter, trimming GDP growth.
- -U.S. and China enacted tariffs on \$34 billion of imports in July.
- Consensus forecasts suggest a slowdown is coming
- Impact of trade wars on economic growth to be seen.
- -Growth over the next 18 months will be tempered by depletion of inventories, regardless of a trade war.
- Inflation on the rise?
- -Headline CPI rose 2.3% during the quarter, down from the 2.9% reported in the second quarter.
- Core CPI (ex-food and energy) rose 2.2%, slightly above the Fed's 2% target.

### **U.S. Economy**

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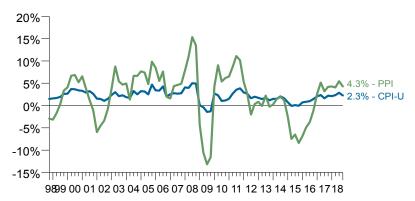
For periods ended September 30, 2018

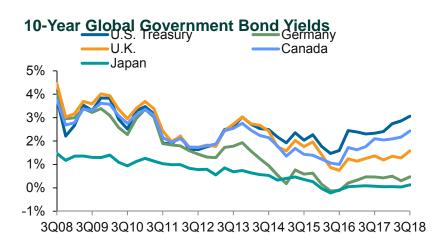




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Market Environment – Third Quarter 2018 5

## **Diversification Remains Key Risk Control**

Periodic Table of Investment Returns 2009–Q3 2018

2009	2010	2011	2012	2013	2014	2015	2016	2017	3 Qtrs. 2018
MSCI Emerging	Russell 2000	Bloomberg	MSCI Emerging	Russell 2000	S&P 500 Growth	S&P 500 Growth	Russell 2000	MSCI Emerging	S&P 500 Growth
Markets	Growth	Barclays Agg	Markets	Growth			Value	Markets	
78.51%	29.09%	7.84%	18.23%	43.30%	14.89%	5.52%	31.74%	37.28%	17.24%
Bloomberg Barclays High Yield	Russell 2000	Bloomberg Barclays High Yield	Russell 2000 Value	Russell 2000	S&P 500	S&P 500	Russell 2000	S&P 500 Growth	Russell 2000 Growth
58.21%	26.85%	4.98%	18.05%	38.82%	13.69%	1.38%	21.31%	27.44%	15.76%
Russell 2000 Growth	Russell 2000 Value	S&P 500 Growth	S&P 500 Value	Russell 2000 Value	S&P 500 Value	Bloomberg Barclays Agg	S&P 500 Value	MSCI World ex USA	Russell 2000
34.47%	24.50%	4.65%	17.68%	34.52%	12.36%	0.55%	17.40%	24.21%	11.51%
MSCI World ex USA	MSCI Emerging Markets	S&P 500	MSCI World ex USA	S&P 500 Growth	Bloomberg Barclays Agg	Russell 2000 Growth	Bloomberg Barclays High Yield	Russell 2000 Growth	S&P 500
33.67%	18.88%	2.11%	16.41%	32.75%	5.97%	-1.38%	17.13%	22.17%	10.56%
S&P 500 Growth	Bloomberg Barclays High Yield	S&P 500 Value	Russell 2000	S&P 500	Russell 2000 Growth	MSCI World ex USA	S&P 500	S&P 500	Russell 2000 Value
31.57%	15.12%	-0.48%	16.35%	32.39%	5.60%	-3.04%	11.96%	21.83%	7.14%
Russell 2000	S&P 500 Value	Russell 2000 Growth	S&P 500	S&P 500 Value	Russell 2000	S&P 500 Value	Russell 2000 Growth	S&P 500 Value	S&P 500 Value
27.17%	15.10%	-2.91%	16.00%	31.99%	4.89%	-3.13%	11.32%	15.36%	3.51%
S&P 500	S&P 500	Russell 2000	Bloomberg Barclays High Yield	MSCI World ex USA	Russell 2000 Value	Russell 2000	MSCI Emerging Markets	Russell 2000	Bloomberg Barclays High Yield
26.47%	15.06%	-4.18%	15.81%	21.02%	4.22%	-4.41%	11.19%	14.65%	2.57%
S&P 500 Value	S&P 500 Growth	Russell 2000 Value	S&P 500 Growth	Bloomberg Barclays High Yield	Bloomberg Barclays High Yield	Bloomberg Barclays High Yield	S&P 500 Growth	Russell 2000 Value	MSCI World ex USA
21.17%	15.05%	-5.50%	14.61%	7.44%	2.45%	-4.47%	6.89%	7.84%	-1.50%
Russell 2000 Value	MSCI World ex USA	MSCI World ex USA	Russell 2000 Growth	Bloomberg Barclays Agg	MSCI Emerging Markets	Russell 2000 Value	MSCI World ex USA	Bloomberg Barclays High Yield	Bloomberg Barclays Agg
20.58%	8.95%	-12.21%	14.59%	-2.02%	-2.19%	-7.47%	2.75%	7.50%	-1.60%
Bloomberg	Bloomberg	MSCI Emerging	Bloomberg	MSCI Emerging	MSCI World ex	MSCI Emerging	Bloomberg	Bloomberg	MSCI Emerging
Barclays Agg	Barclays Agg	Markets	Barclays Agg	Markets	USA	Markets	Barclays Agg	Barclays Agg	Markets
5.93%	6.54%	-18.42%	4.21%	-2.60%	-4.32%	-14.92%	2.65%	3.54%	-7.68%

### **U.S. Equity Performance**

U.S. equity markets posted broad-based gains in the quarter fueled by strong economic growth, robust corporate earnings, and heightened stock buybacks. Several major indices hit record levels during the quarter; the S&P 500 saw it's biggest gain in five years. Volatility was muted despite ongoing trade war threats.

#### Large Cap Outpaced Small Cap

- FAANG stocks plus Microsoft had a more muted impact, but still contributed nearly 25% of the S&P 500's quarterly return.
- All sectors landed in positive territory led by Health Care (+14.5%), Industrials (+10%), and Communication Services (+9.9%).

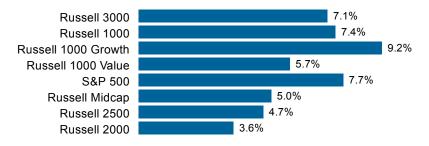
#### **Growth Continued to Outperform Value**

- Growth outpacing Value this year by the widest margin in 15 years (R1G YTD: +17.1% vs. R1V YTD: +3.9%) driven by ongoing FAANG stock euphoria.
- Momentum continued as the leading factor; Value is worstperforming style for last 18 months.

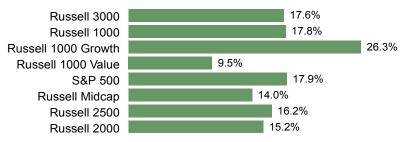
### Quarter ended September 30, 2018

Callan

#### **U.S. Equity: Quarterly Returns**



### U.S. Equity: Annual Returns

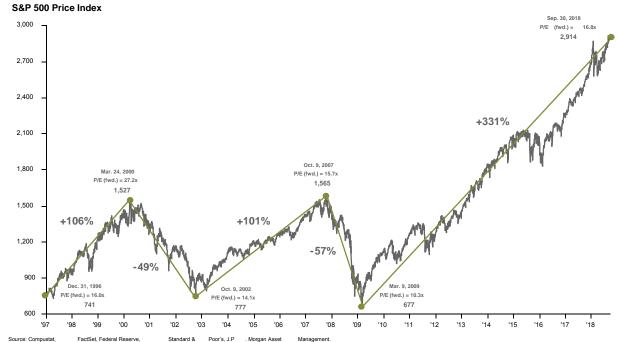




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### U.S. Stock Market Resumes Its Incredible Run in the Third Quarter

- Relentless climb in S&P 500 Price Index since the trough of the market in Q1 2009.
- Forward valuation dropped in the first and second quarter of 2018; rose again in the robust third quarter, now at 16.8, above the 25-year average, but nowhere near the peak set in 2000
- Dividend yield on stocks has been comparable to that of a 10-year Treasury for an extended period, and the gap is just widening now; vastly different relationship between stock and bond yields in 2000 and 2007



Source: compusita, Factset, Federal Reserve, Standard & Poors, J.P. Morgan Asset Management. Analogement. Analogement. Analogement and the source of the rest term of term o

Source: J.P. Morgan Asset Management.



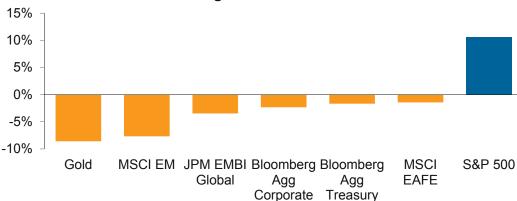
### U.S. Equities: Best House on a Bad Block

- U.S. equity has been the one major asset class with positive returns YTD
- What is driving divergence between U.S. and other asset classes?
  - 1) "Earnings Miracle"

60% of Russell 1000 companies beat consensus earnings expectations by at least one standard deviation in the third quarter - a 15 year record ; only 11% of companies reported earnings that missed expectations by at least a standard deviation; the gap between beats and misses is also at record levels.

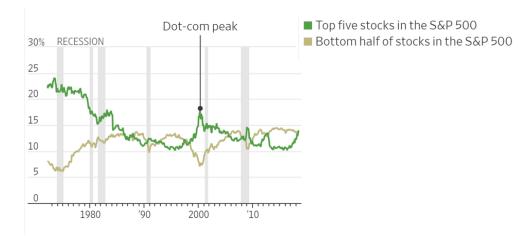
2) Tariff/Trade Uncertainty

Companies with international exposure underperformed those with primarily domestic exposure



#### Year-to-Date Returns Through Third Quarter for Various Asset Classes



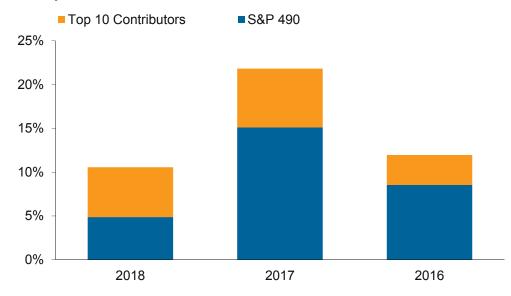


Source: Bloomberg, Ned Davis Research analysis of S&P Dow Jones Indices data, WSJ.com

### **Concentration Risk within U.S. Equities**

- The top five stocks by market cap in the S&P500 comprise approximately 14% of the market cap of the index.
- The market breadth within the S&P 500 Index remains very narrow. The top 10 performing stocks made up the lion's share of positive performance year-to-date.
- Technology and Communications stocks, particularly FAANG stocks (Facebook, Apple, Amazon, Netflix, Google/Alphabet and to some extent Microsoft) continue to drive outsized proportion of returns within equity indices.

#### Top 10 Contributors Versus Rest of S&P 500 Index



Source: Bloomberg as of 9/28/2018

### Non-U.S. Equity Performance

Market divergence emerged after synchronized growth in 2017. U.S. continues to gain; non-U.S. markets lagged.

### Non-U.S. Developed Positive Territory but Lags U.S.

- Dollar rallied against euro and yen given strong U.S. economy and Fed's contractionary monetary policy.
- Strong earnings boosted Health Care & Telecomm; Energy benefited from positive supply-demand dynamics. Real Estate, Financials, and Staples adversely impacted by rising rates.
- Growth moderately outperformed value. Volatility and small cap factors were out of favor given market uncertainties

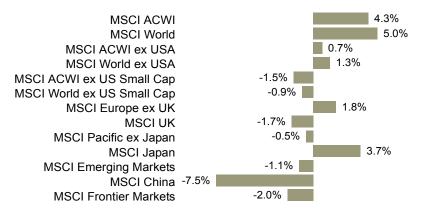
#### **Emerging Markets Faltered**

- EM pressured by rising dollar, U.S. interest rates, trade frictions
- China weakened by economic slowdown; regulatory concerns weighed on Chinese Tech companies
- Energy top performer on rising oil prices; Consumer Discretionary negatively impacted by China and India

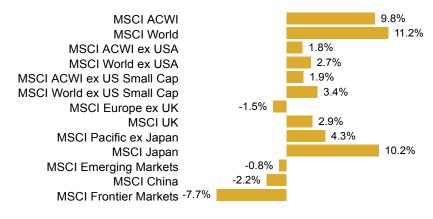
### Non-U.S. Small Cap Trailed Large Cap

- Both non-U.S. developed and emerging market small cap underperformed large cap as appetite for risk waned due to rising rates/dollar and trade tensions
- Value was favored as Energy thrived

#### **Global Equity: Quarterly Returns**



#### **Global Equity: Annual Returns**



### **U.S. Fixed Income Performance**

Fixed income performance was flat. Yield curve rose across maturity spectrum on better-than-expected corporate earnings and solid U.S. economic data.

- 10-year U.S. Treasury yield reached a high of 3.10% before settling at 3.06%
- The yield curve flattened with shorter-term rates rising faster than longer-term

#### Investment Grade Corporates Earned Strong Quarter

- +0.97% for the quarter; -2.3% YTD
- New issuance remained strong with an average of 2-3x oversubscribed demand throughout the quarter
- Spreads continued to narrow despite leverages increasing

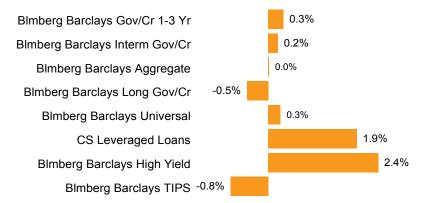
### High Yield Top Performer for Quarter

- +2.4% for the quarter; +2.6% YTD
- Low new issuance volume and stable fundamentals compressed spreads
- Bond issuance was \$41 billion, 33% lower than 3Q17

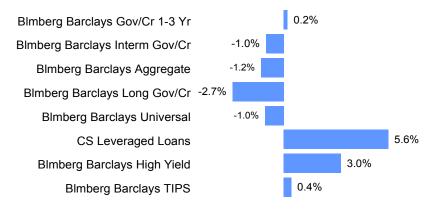
#### **Bank Loans Remain Strong**

- +1.9% for the quarter; +4.0% YTD
- Demand continues for floating rate securities despite covenantlite structures and higher spread duration
- Heavy issuance continued through the quarter;

#### **U.S. Fixed Income: Quarterly Returns**



### **U.S. Fixed Income: Annual Returns**





### **OSGP Investment Structure**

OSGP Investment Structure								
Risk Spectrum	Tier I. Asset Allocation Options	Tier II. Core Options	Tier III. Specialty Options					
Conservative		<u>Capital Preservation</u> Short-Term Fixed Income Option Stable Value Option						
	Asset Allocation	Fixed Income						
	LifePath Portfolios	Active Fixed Income Option						
		Broad U.S. Equity	Specialty Equity					
		Stock Index Option - Russell 3000	Socially Responsible Investment Option					
		Large Cap U.S. Equity						
		Large Company Value Stock Option						
		Large Company Growth Stock Option						
		International Equity						
		International Stock Option						
		Small Cap U.S. Equity						
		Small Company Stock Option						
			Inflation Sensitive					
V			Real Return Option					
▼ Aggressive			Brokerage Window Schwab PCRA					

### **Asset Distribution**

	September 30, 2018			June 30, 2018		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Tier I - Asset Allocation Options						-
Target Date Funds	\$700,059,180	30.76%	\$(1,799,911)	\$14,898,200	\$686,960,890	31.51%
LifePath Index Retirement Fund L	195,779,822	8.60%	(2,810,656)	2,940,902	195,649,576	8.97%
LifePath Index 2020 Fund L	143,196,021	6.29%	(1,422,704)	2,370,671	142,248,054	6.52%
LifePath Index 2025 Fund L	111,018,145	4.88%	323,363	2,317,851	108,376,931	4.97%
LifePath Index 2030 Fund L	81,959,890	3.60%	162,958	1,886,603	79,910,330	3.66%
LifePath Index 2035 Fund L	61,024,832	2.68%	373,198	1,891,782	58,759,852	2.69%
LifePath Index 2040 Fund L	41,580,403	1.83%	1,019,743	1,302,014	39,258,645	1.80%
LifePath Index 2045 Fund L	27,190,422	1.19%	614,686	905,414	25,670,322	1.18%
LifePath Index 2050 Fund L	23,982,486	1.05%	(105,317)	779,927	23,307,876	1.07%
LifePath Index 2055 Fund L	9,133,380	0.40%	118,173	311,641	8,703,565	0.40%
LifePath Index 2060 Fund L	5,193,780	0.23%	(73,355)	191,396	5,075,738	0.23%
Tier II - Core Investment Options						
Short-Term Fixed Income Option						
State Street	50,078,627	2.20%	(102,714)	(129,145)	50,310,486	2.31%
Stable Value Option						
Galliard	217,813,213	9.57%	3,129,346	1,095,922	213,587,945	9.80%
Active Fixed Income Option						
BlackRock / DoubleLine / Wellington	116,102,144	5.10%	5,349,871	(126,594)	110,878,866	5.09%
Stock Index Option BlackRock	270,713,471	11.90%	283,188	16,791,789	253,638,495	11.63%
	210,110,411	11.0070	200,100	10,701,700	200,000,400	11.00%
Large Company Value Stock Option BlackRock	202,302,128	8.89%	1,647,030	10,926,699	189,728,400	8.70%
Large Company Growth Stock Option						
BlackRock	277,489,958	12.19%	(496,709)	28,570,346	249,416,321	11.44%
International Stock Option	447 000 540	E 470/	1 010 100	(4.000.740)	140 000 700	5 000/
AQR / BlackRock / DFA* / Lazard	117,690,540	5.17%	1,918,488	(1,060,710)	116,832,763	5.36%
Small Company Stock Option BlackRock / Callan / DFA	288,780,587	12.69%	5,106,965	5,077,216	278,596,406	12.78%
Tier III - Specialty Options						
Socially Responsible Investment Option						
TIAA-CREF	14,736,810	0.65%	286,750	2,355,608	12,094,452	0.55%
Real Return Option	4 070 500	0.400/	(1.500.700)	4 770 005	4 404 040	0.400/
GMO / State Street / Wellington	4,376,563	0.19%	(1,522,789)	1,778,005	4,121,348	0.19%
Brokerage Window	15,442,672	0.68%	803,274	417,653	14,221,745	0.65%
Total Fund	\$2.275.585.894	100.0%	\$14.602.789	\$80.594.988	\$2.180.388.117	100.0%

\*DFA consists of 2 different strategies



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## Summary Returns

### Periods Ended September 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Inception Date	Since Inception
Tier I - Asset Allocation Options							
LifePath Index Retirement Fund L	1.56	3.88	6.16	4.80	5.93	7/1/05	5.29
LifePath Index Retirement Benchmark	1.55	3.84	6.14	4.78	5.96		6.17
LifePath Index 2020 Fund L	1.78	4.55	7.18	5.48	6.43	7/1/05	5.67
LifePath Index 2020 Benchmark	1.77	4.50	7.14	5.43	6.45		6.93
LifePath Index 2025 Fund L	2.23	5.81	8.49	6.24	6.95	7/1/06	6.03
LifePath Index 2025 Benchmark	2.21	5.77	8.44	6.19	6.97		7.15
LifePath Index 2030 Fund L	2.62	6.93	9.69	6.92	7.40	7/1/05	6.38
LifePath Index 2030 Benchmark	2.60	6.87	9.60	6.83	7.41		7.36
LifePath Index 2035 Fund L	2.99	8.00	10.85	7.54	7.83	7/1/06	6.59
LifePath Index 2035 Benchmark	2.96	7.91	10.71	7.44	7.80		7.56
LifePath Index 2040 Fund L	3.32	8.94	11.85	8.10	8.18	7/1/05	6.91
LifePath Index 2040 Benchmark	3.28	8.84	11.68	7.97	8.13		7.75
LifePath Index 2045 Fund L	3.51	9.54	12.45	8.48	8.43	4/1/08	6.51
LifePath Index 2045 Benchmark	3.46	9.42	12.26	8.34	8.38		7.95
LifePath Index 2050 Fund L	3.59	9.76	12.64	8.65	8.71	10/1/07	5.92
LifePath Index 2050 Benchmark	3.53	9.65	12.46	8.52	8.68		8.09
LifePath Index 2055 Fund L	3.60	9.76	12.63	8.71		4/1/10	10.23
LifePath Index 2055 Benchmark	3.54	9.65	12.46	8.58			11.19
LifePath Index 2060 Fund L	3.60	9.74	12.60			10/1/14	7.56

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## Summary Returns

### Periods Ended September 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Tier II - Core Investment Options						
Short-Term Fixed Income Option	0.48	1.52	0.80	0.49	0.32	1.33
3-month Treasury Bill	0.49	1.59	0.84	0.52	0.34	1.30
Stable Value Option	0.57	2.14	1.90	1.75	1.91	2.78
3-month Treasury Bill	0.49	1.59	0.84	0.52	0.34	1.30
Active Fixed Income Option	0.21	(0.20)	2.18	2.87	4.91	4.36
Bloomberg Aggregate Index	0.02	(1.22)	1.31	2.16	3.77	3.78
Stock Index Option	7.12	17.62	17.16	13.54	12.07	9.90
Russell 3000 Index	7.12	17.58	17.07	13.46	12.01	9.86
Large Company Value Stock Option	5.76	9.61	13.61	10.70	10.16	9.02
Russell 1000 Value Index	5.70	9.45	13.55	10.72	9.79	8.89
Large Company Growth Stock Option	9.12	26.12	20.53	16.21	14.09	10.33
Russell 1000 Growth Index	9.17	26.30	20.55	16.58	14.31	10.67
International Stock Option	0.32	0.87	9.41	4.33	5.43	6.97
MSCI ACWI ex US Index	0.71	1.76	9.97	4.12	5.18	7.20
Small Company Stock Option	4.27	15.83	16.92	11.10	12.04	10.86
Russell 2000 Index	3.58	15.24	17.12	11.07	11.11	10.12
Tier III - Specialty Options						
Socially Responsible Investment Option	6.86	16.20	16.56			
Russell 3000 Index	7.12	17.58	17.07	13.46	12.01	9.86
Real Return Option	(0.20)	1.39	3.57			
Consumer Price Index + 3%	0.89	5.34	4.96	4.36	4.39	5.09



## Investment Options Fee Summary

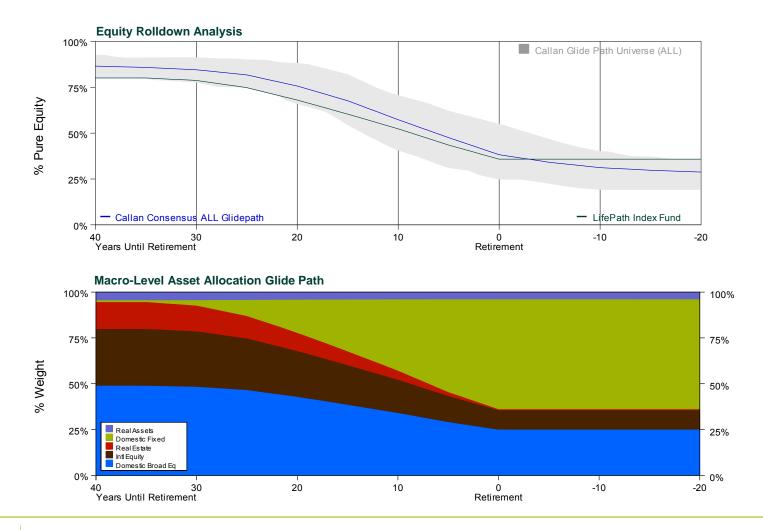
Asset Class and Strategy	Total Annual Operating Expense Ratio*	Institutional Peer Group Median
Asset Allocation Options LifePath Index Retirement, 2020 – 2060 Funds; L	0.090%	0.08%
Capital Preservation Short-Term Fixed Income Option Stable Value Option	0.110% 0.380%	0.44% 0.41%
Fixed Income Active Fixed Income Option	0.172%	0.76%
<b>U.S. Large Cap Equity</b> Stock Index Option Large Company Value Stock Option Large Company Growth Stock Option	0.039% 0.031% 0.030%	0.04% 0.04% 0.04%
U.S. Small Cap Equity Small Company Stock Option	0.391%	1.15%
International Equity International Stock Option	0.374%	1.10%
<b>Specialty Options</b> Socially Responsible Investment Option Real Return Option	0.180% 0.534%	0.90% 0.65%

\*Fee data provided by OST.

OSGP Investment Option Performance

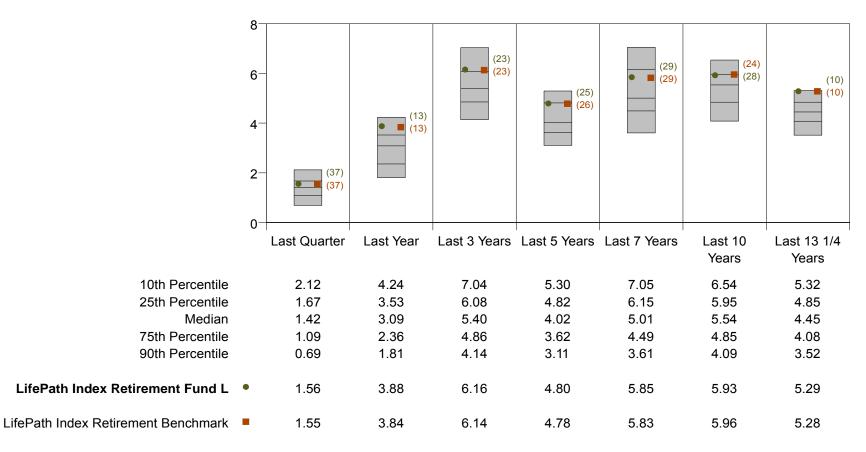
### BlackRock LifePath Index Target Date Funds

**GlidePath Analysis** 



### LifePath Index Retirement Fund

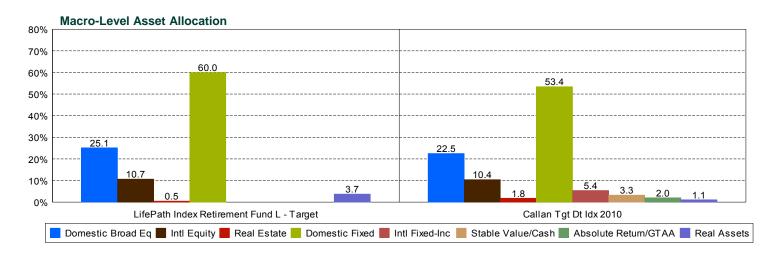
Periods Ended September 30, 2018

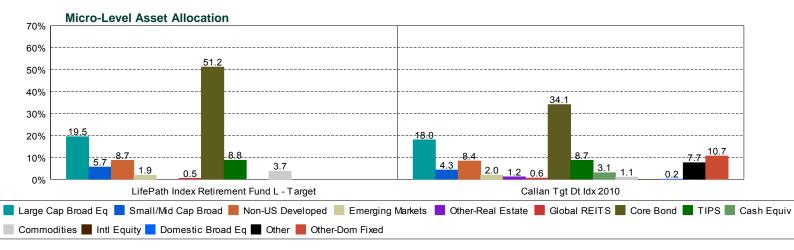


#### Performance vs Callan Target Date Retirement Income (Institutional Net)

### LifePath Index Retirement Fund

Asset Allocation as of September 30, 2018

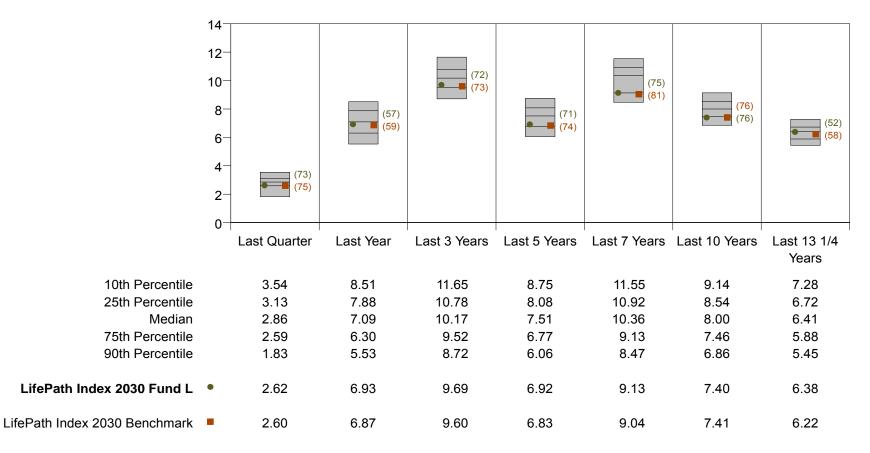




### LifePath Index 2030 Fund

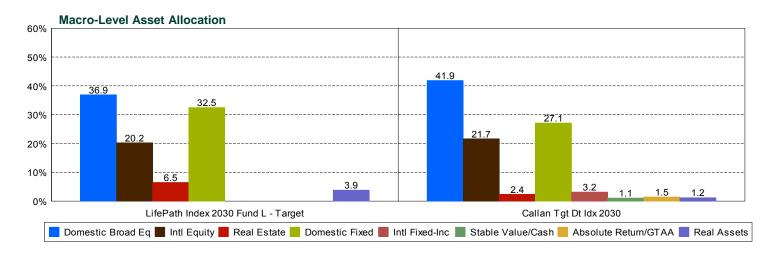
Periods Ended September 30, 2018

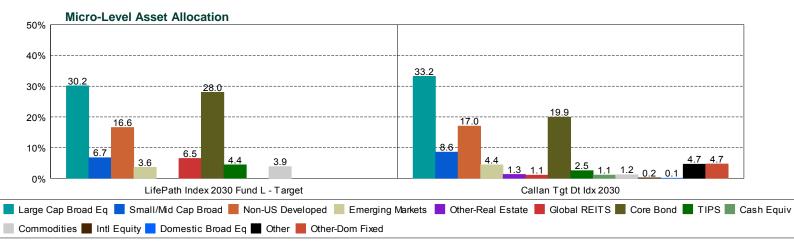
#### Performance vs Callan Target Date 2030 (Institutional Net)



### LifePath Index 2030 Fund

### Asset Allocation as of September 30, 2018

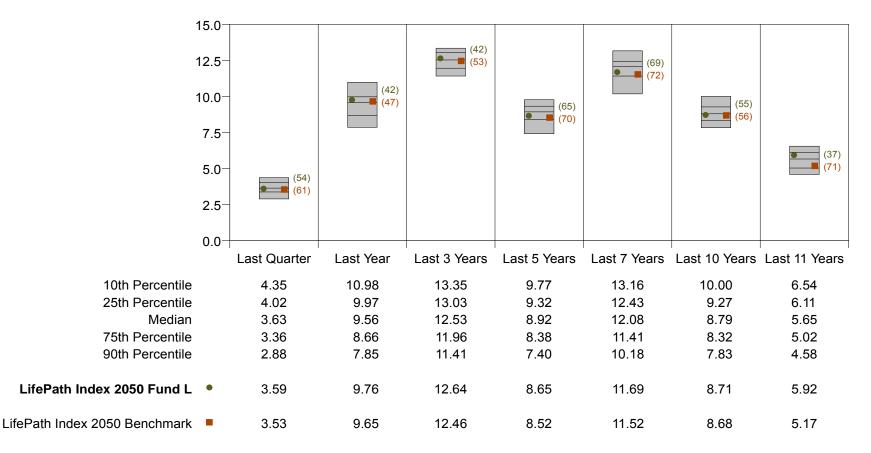




### LifePath Index 2050 Fund

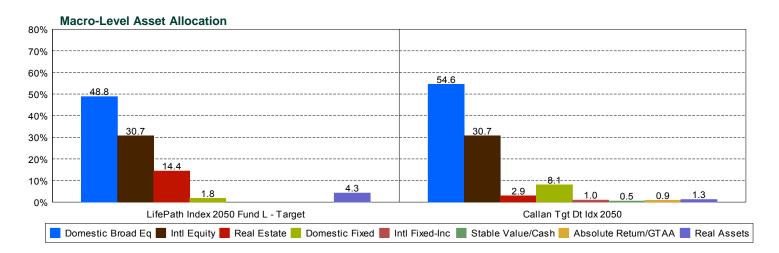
Periods Ended September 30, 2018

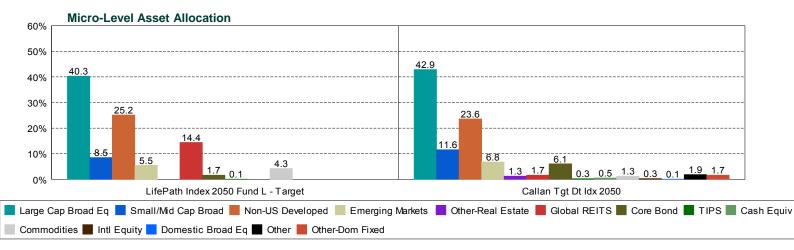
#### Performance vs Callan Target Date 2050 (Institutional Net)



### LifePath Index 2050 Fund

### Asset Allocation as of September 30, 2018





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### **Short Term Fixed Income Option**

Periods Ended September 30, 2018

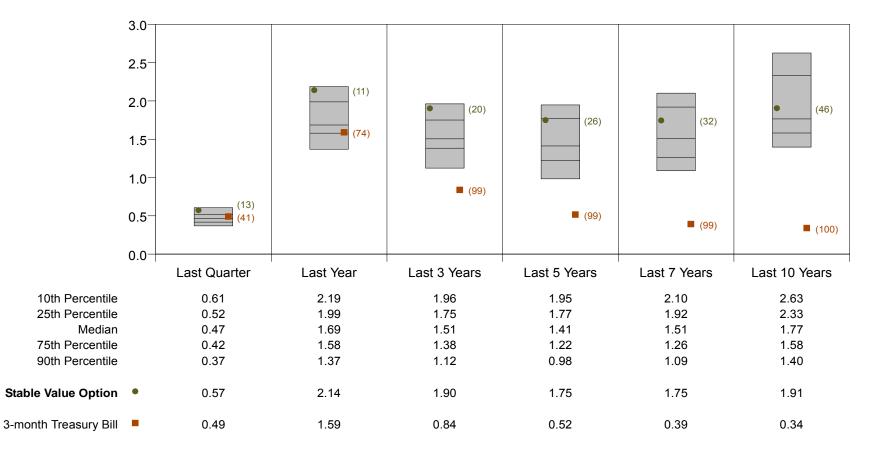
#### 1.75 (4) (5) 1.50 1.25 1.00-(2) (2) 0.75-(2) (5) 0.50-(6) (2) (2) (4) (3) (6) 0.25 0.00 (0.25) Last 7 Years Last Quarter Last Year Last 3 Years Last 5 Years Last 10 Years 10th Percentile 0.46 1.45 0.73 0.45 0.33 0.30 0.65 25th Percentile 0.45 1.38 0.39 0.28 0.25 Median 0.42 1.27 0.58 0.35 0.25 0.21 75th Percentile 0.38 0.28 0.17 1.11 0.46 0.20 0.86 90th Percentile 0.30 0.34 0.21 0.15 0.13 Short-Term Fixed Income Option 0.48 1.52 0.80 0.49 0.36 0.32 3-month Treasury Bill 0.49 1.59 0.84 0.52 0.39 0.34

#### Performance vs Callan Money Market Instrument Funds (Institutional Net)

### **Stable Value Option**

Periods Ended September 30, 2018

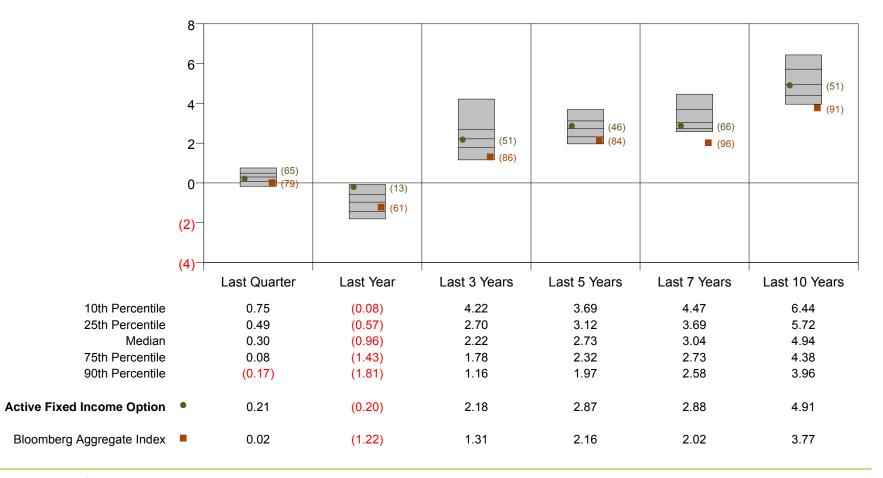
#### Performance vs Callan Stable Value CT (Institutional Net)



### **Active Fixed Income Option**

Periods Ended September 30, 2018

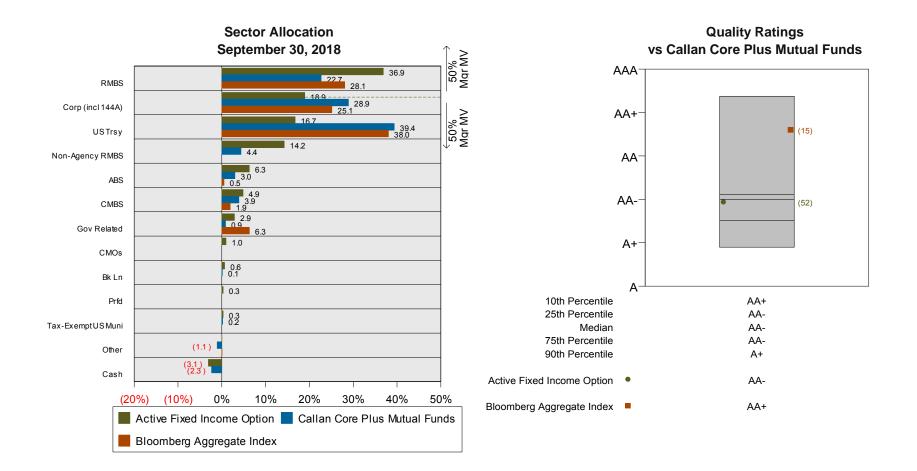
#### Performance vs Callan Core Plus Mutual Funds (Institutional Net)



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### **Active Fixed Income Option**

### Portfolio Characteristics as of September 30, 2018



### **Stock Index Option**

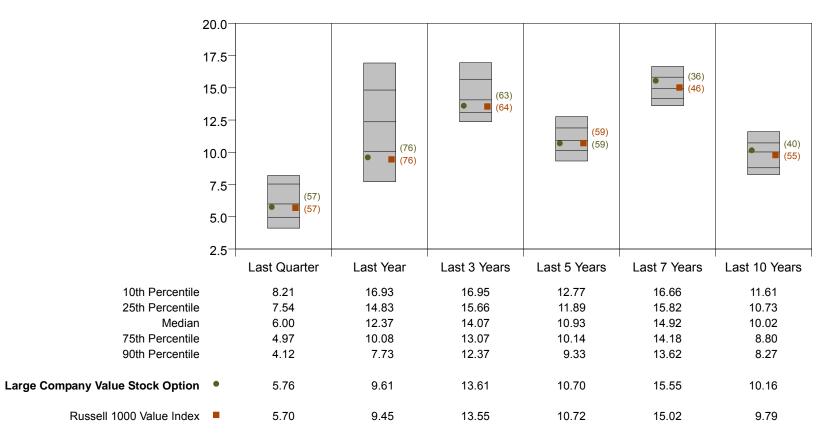
Periods Ended September 30, 2018

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



### Large Company Value Stock Option

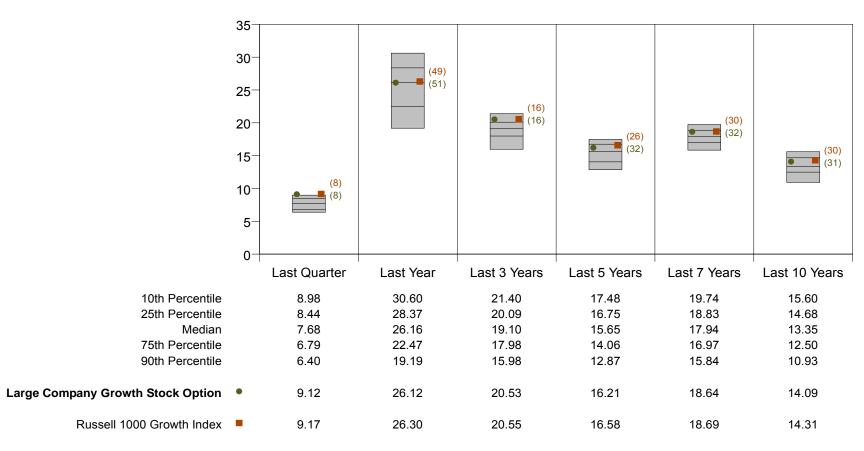
Periods Ended September 30, 2018



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

### Large Company Growth Stock Option

Periods Ended September 30, 2018



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

### **International Stock Option**

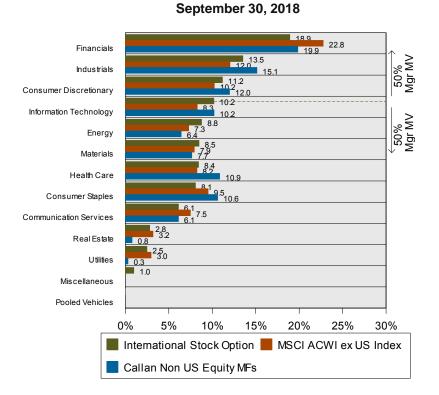
Periods Ended September 30, 2018

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



### **International Stock Option**

Portfolio Characteristics as of September 30, 2018



### Sector Allocation as of

#### **Style Exposure Matrix** Holdings as of September 30, 2018

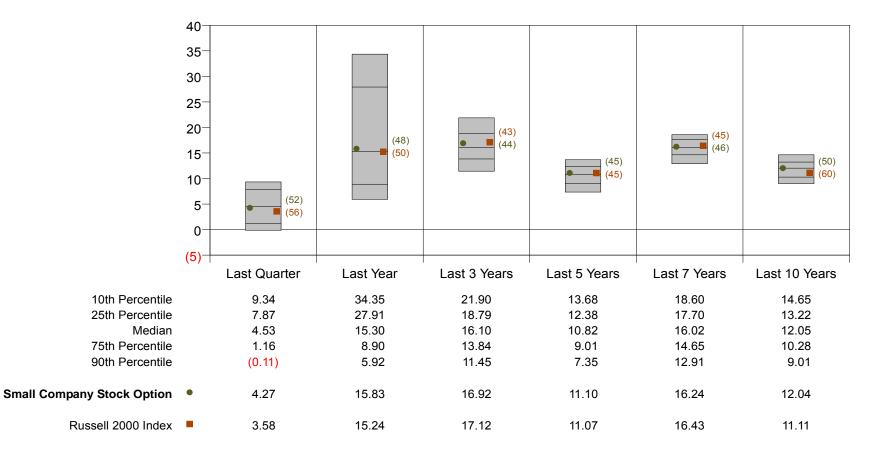
Europe (	11.1% (618)	15.4% (670)	18.7% (574)	45.2% (1862)
Europe/ Mid East	12.1% (132)	12.5% (130)	16.3% (190)	41. <b>0</b> % (452)
	2.1% (151)	3.3% (162)	2.2% (100)	7.6% (413)
N. America				
	2.0% (34)	2.7% (26)	1.8% (31)	6.5% (91)
	7.5% (1263)	6.2% (938)	9.7% (866)	23.5% (3067)
Pacific				
	8.2% (145)	6.6% (146)	9.1% (177)	23.8% (468)
	7.2% (1935)	8.2% (1604)	8.4% (1304)	23.8% (4843)
Emerging/				
FM	8.2% (409)	9.7% (371)	10.8% (368)	28.7% (1148)
	27.8% (3967)	33.2% (3374)	39.0% (2844)	100.0% (10185)
Total				
	30.5% (720)	31.5% (673)	38.0% (766)	100.0% (2159)
	Value	Core	Growth	Total

N.

### **Small Company Stock Option**

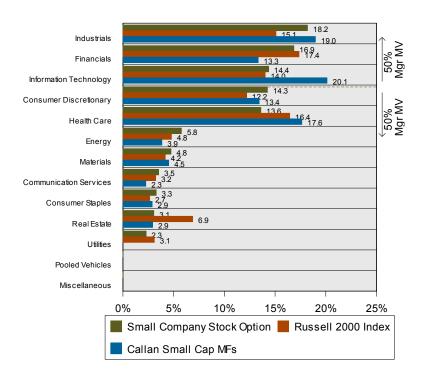
Periods Ended September 30, 2018

### Performance vs Callan Small Cap Mutual Funds (Institutional Net)



### **Small Company Stock Option**

Portfolio Characteristics as of September 30, 2018



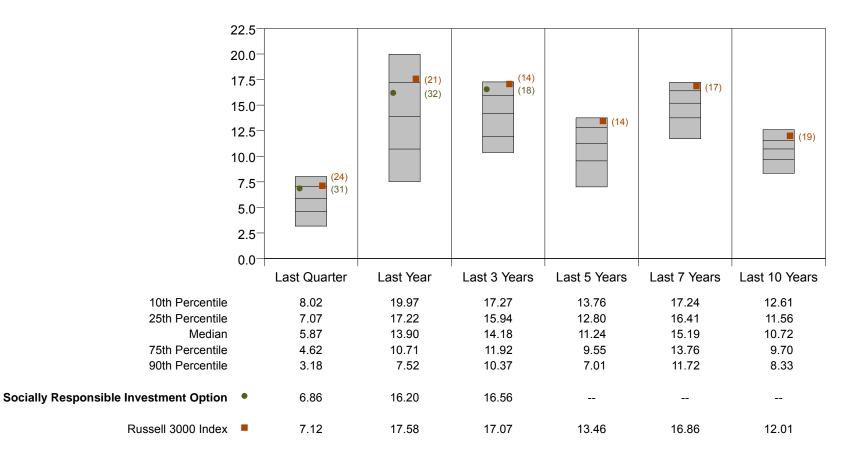
#### Sector Allocation September 30, 2018

### Style Exposure Matrix Holdings as of September 30, 2018

	0.0% (0)	0.4% (5)	0.4% (7)	0.8% (12)
Large		0.170 (0)	0.170 (7)	
0	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	2.1% (45)	4.0% (70)	9.9% (124)	15.9% (239)
Mid				
	0.8% (4)	2.1% (13)	6.3% (30)	9.2% (47)
	17.4% (324)	28.4% (487)	22.6% (379)	68.5% (1190)
Small				
	21.1% (276)	31.5% (445)	26.3% (351)	78.8% (1072)
	5.5% (486)	5.7% (546)	3.6% (265)	14.8% (1297)
Micro				
	4.1% (294)	4.9% (381)	3.0% (220)	<b>12.0%</b> (895)
	25.0% (855)	38.4% (1108)	36.5% (775)	100.0% (2738)
Total				
	<b>26.0%</b> (574)	38.5% (839)	35.5% (601)	100.0% (2014)
	Value	Core	Growth	Total

### **Socially Responsible Investment Option**

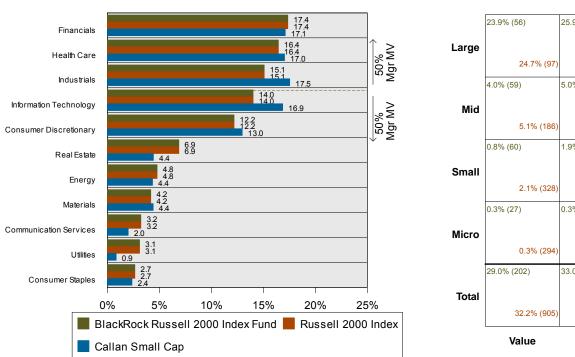
Periods Ended September 30, 2018



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

### **Socially Responsible Investment Option**

Portfolio Characteristics as of September 30, 2018



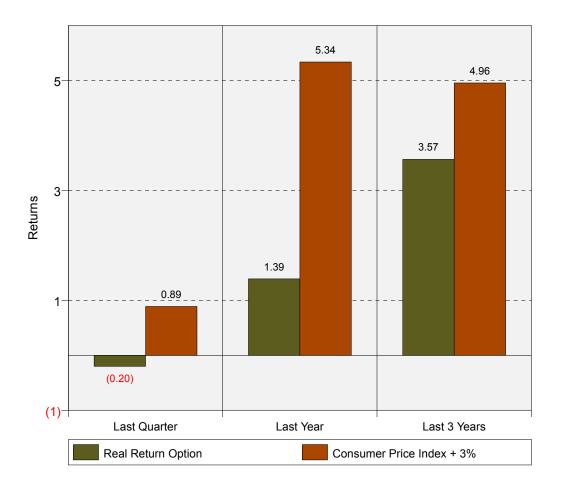
#### Sector Allocation September 30, 2018

### Style Exposure Matrix Holdings as of September 30, 2018



### **Real Return Option**

Periods Ended September 30, 2018





### **Regulatory Trends**

### Simplified Hardship Withdrawal Rules

The Bipartisan Budget Act of 2018 simplified hardship withdrawal restrictions to provide flexibility for participants facing financial challenges and to permit participants to continue saving for retirement.

The primary purpose of defined contribution (DC) plans is to allow participants to save for retirement. Allowing participants to take money out of the DC plan complicates the likelihood of reaching that goal and is therefore limited to certain circumstances, one of which is a participant undergoing a financial hardship. To be considered a hardship, the withdrawal is required to be an immediate and heavy financial need and has to be necessary to meet that need. Whether an employee has an immediate and heavy financial need is based on facts and circumstances, but there are safe harbor events (e.g., burial expenses, repair costs for primary residence) that apply. The requirement could be met if the participant had taken all other distributions and loans available to them and if they suspended their deferrals into the DC plan for a period of at least six months.

The Bipartisan Budget Act of 2018 simplified hardship withdrawal restrictions to provide flexibility for participants facing financial challenges and to permit participants to continue saving for retirement. The Budget Act made several optional changes to the hardship withdrawal rules that will become effective on the first day of the plan year beginning in 2019. The legislation:

- · Allows hardship withdrawals without requiring participants to take any available plan loans.
- Directs the Treasury Department to remove the required six-month suspension on deferrals following a hardship withdrawal from the 401(k) safe harbor regulations.
- Expands the types of contributions available for hardships to include qualified non-elective contributions (QNECs) and qualified matching contributions (QMACs), as well as earnings on QNECs, QMACs, and elective deferral contributions.

Plan sponsors should consider the impact of loosening the hardship restrictions in their DC plans and which, if any, of these provisions are desirable for the plan participants. If the plan sponsor elects to make these changes, the plan document will need to be amended and the plan administration manual, forms, communications, and the summary plan description will require updates.

### **Regulatory Trends**

### Potential Changes Underway for Workplace Retirement Plans

On August 31, 2018, President Trump signed an executive order directing the Departments of Treasury and Labor to examine guidance or regulation regarding expanding the availability of open, multiple-employer retirement plans, as well as require minimum distribution rules and certain notice requirements.

The executive order furthers the policy goals that are contained within two currently stalled bills in Congress, the Retirement Enhancement Savings Act, or RESA (S. 2526 and H.R. 5282) and the RETIRE Act (H.R. 4610). The administration has directed the Department of Labor (DOL) to consider guidance or regulations that make it easier for businesses to participate in association retirement plans, more commonly known as "open MEPs." Under current DOL guidance, unrelated plan sponsors are only permitted to participate in such plans if they share a common economic interest or relationship, such as a trade association.

Another feature of the executive order is the direction to reexamine guidance related to these plans, which would very likely address what is known as the "one bad apple rule." This rule has previously impacted open MEPs because the failure to meet qualification standards by one member could impact the entire plan, rather than the employer in question. Additionally, the DOL is directed to examine opportunities to expand participation in such plans for "part-time workers, sole proprietors, working owners, and other entrepreneurial workers with non-traditional employer-employee relationships." The administration has directed the DOL to consider within 180 days whether to issue regulations or guidance.

In addition, the executive order also directs the DOL and the Treasury Department to review requirement minimum distribution rules to determine whether it is possible to permit participants in these plans to retain their investments for a longer period of time without taking distributions. As a related change, the Treasury is directed to examine life expectancy and mortality assumptions related to the age 70½ cutoff for required minimum distributions. The departments are directed to respond on whether guidance will be issued within 180 days.

Finally, the executive order directs the two departments to review opportunities to reduce paperwork and required notices under ERISA and the Internal Revenue Code of 1986 more understandable and useful for participants and beneficiaries. In particular, the executive order highlights modernizing delivery of these notices electronically, rather than via mail.

The executive order does not, by itself, create any new regulations, and it remains to be seen what the agencies will be able to accomplish without the benefit of the bipartisan legislation currently addressing many of these same topics. Additionally, should open MEPs become more widely available, it is possible that a subsequent administration can reverse guidance or rules promulgated by the Trump administration, which may inhibit efforts to join open MEPs. However, the opportunity for smaller employers to join together to create large economies of scale has significant potential to alter the retirement landscape for many employers and industries across the country, and should be seen as a significant development that can impact recordkeepers, investment managers, and plan sponsors.

### **Legal Trends**

### Lawsuit Including RICO Allegations Dismissed

An amended lawsuit filed by participants of Ford Motor Company defined contribution (DC) plans against Xerox HR Solutions has been dismissed. The U.S. District Court for the Eastern District of Michigan Southern Division found that the second amended complaint failed to address the deficiencies identified by the court and included new allegations and new defendants.

Xerox administers and recordkeeps the Ford DC plans, as well as the master trust for the Ford DC plans. The initial complaint alleged that Xerox exercised de facto control over Ford's selection of Financial Engines (FE). Xerox's master agreement with FE provides that FE will be the sole investment adviser, and the suit alleges that, in exchange, FE shares ~30% of the fees it collects from plan participants using the managed account solution. According to the complaint, the payments from FE to Xerox equate to "pay to play," and participants end up paying more than is reasonable or necessary for advisory services. FE was not named as a defendant in the complaint.

The court rejected the plaintiffs' original three arguments to place fiduciary status on Xerox, but allowed the plantiffs to replead whether Xerox acted as a fiduciary by exercising de facto control over the election of FE as a fiduciary for the plans. The court indicated that a party could act as a functional fiduciary if they exercised control over the means by which another fiduciary would act in a fiduciary capacity. However, the court also cautioned that anything less than an allegation that Xerox was directly involved in the Ford-FE negotiations would fail to impose liability.

The amended complaint added new parties (Xerox Corporation and Conduent, Inc.) and claimed that Xerox and FE engaged in a "pattern of racketeering activity" subjecting them to civil liability under the Racketeer Influence Corrupt Organizations Act (RICO). The court's decision notes that a RICO claim requires (1) conduct (2) of an enterprise (3) through a pattern (4) of racketeering activity. The court was doubtful that Xerox could properly be held criminally liable for the RICO violation as the section in question appears to impose only individual—not corporate—criminal liability. The decision also noted the relationship between Xerox and FE was not "an enterprise" and was therefore outside the scope of RICO. The court has denied further leave to amend the complaint and has granted the Xerox defendant's second motion to dismiss.

Litigators continue to explore new tactics to allege fiduciary breaches, expanding the pool of defendants beyond the plan sponsor and exploring new avenues to prove fiduciary breaches. Plan sponsors should continue their ongoing due diligence over the DC plan, service providers, and revenue that the plan generates for the services providers. While the collection of indirect revenue to subsidize related plan services appears to be industry practice, legal or regulatory rulings have not yet validated or refuted the practice.

### Legal Trends

### Lawsuit Alleges Cross-Selling Violates Fiduciary Duties

A class-action lawsuit against Vanderbilt University was amended to include a fiduciary breach claim alleging that Vanderbilt allowed the plan recordkeeper (TIAA) to use participant data to market TIAA products and wealth management services to the plan's participants.

The initial lawsuit is one of a number originally filed against universities in 2016. The amended complaint is based on the Employee Retirement Income Security Act (ERISA) requirement that plan fiduciaries act solely in the interest of and for the exclusive purpose of providing benefits to the plan's participants, defraying the reasonable expenses of administering the plan, and acting with the care, skill, prudence, and diligence required by ERISA.

The claim states that the plan fiduciaries allowed TIAA to exploit its position as recordkeeper, contrary to the best interests of participants. The complaint alleges that plan fiduciaries violated the duty to work for the exclusive benefit of plan participants "by allowing TIAA to use its position as the plan's recordkeeper to obtain access to participants, gaining valuable, private, and sensitive information including participants' contact information, their choices of investments, the asset size of their accounts, their employment status, age, and proximity to retirement, among other things."

The complaint further states that TIAA used the data "to sell TIAA products and wealth management services to the plan's participants." The complaint also alleges that Vanderbilt was aware of TIAA's misuse of participant information and did nothing to prevent that misuse by establishing safeguards, as other prudent fiduciaries have done.

Litigators continue to explore new tactics to allege fiduciary breaches. Plan sponsors should continue their ongoing due diligence by selecting and monitoring their service providers, including limiting the use of participant data to plan purposes. This new type of claim may be duplicated in other litigation, should it prove fruitful here.

## Callan

September 30, 2018 Oregon Savings Growth Plan Defined Contribution Plan

Investment Measurement Service Quarterly Review

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#### **U.S. EQUITY**

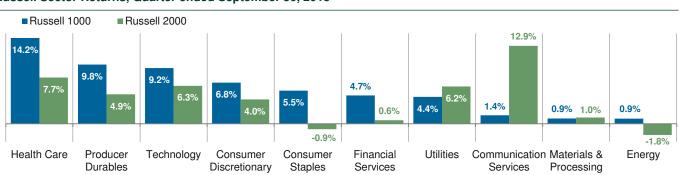
The U.S. equity market posted broad-based gains in the third quarter fueled by strong economic growth, robust corporate earnings, and heightened stock buybacks. Several major indices hit record levels during the quarter, and the 7.7% gain for the S&P 500 was its biggest since the fourth quarter of 2013. Volatility was muted in spite of persistent headlines around trade war threats and the ever-changing negotiations.

#### Large Cap Outpaced Small Cap (Russell 1000: +7.4%; Russell 2000: +3.6%)

- Tax reform and domestic prosperity contributed to an acceleration in corporate earnings growth, and valuations remained elevated as strong sentiment persisted given positive economic data.
- Amazon (+17.8%), Apple (+22.4%), and Microsoft (+16.4%) were strong contributors to large cap outperformance.
- FAANG stocks plus Microsoft had a more muted impact than in previous quarters, but still contributed nearly 25% of the S&P 500's quarterly return.
- All sectors landed in positive territory with Health Care (+14.5%), Industrials (+10%), and Communication Services (+9.9%) as the strongest performers.
- The new Communication Services sector represents 10% of the S&P 500 and includes several FAANG stocks such as Alphabet, Facebook, and Netflix; Tech and Consumer Discretionary now represent lower weightings in the index.

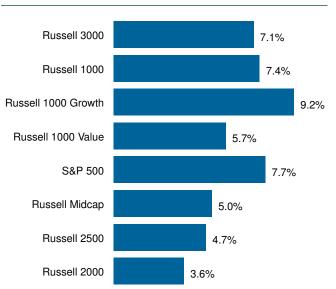
#### **Growth Continued to Outperform Value** (Russell 1000 Growth: +9.2%; Russell 1000 Value: +5.7%)

- Divergence between Growth and Value approaching historical high; Growth outpacing Value this year by the widest margin in 15 years within large cap (Russell 1000 Growth YTD: +17.1% vs. Russell 1000 Value YTD: +3.9%) due largely to ongoing euphoria of the FAANG stocks.
- Momentum continued as the leading factor for the quarter and year-to-date; value has been the worst-performing style for the last 18 months.

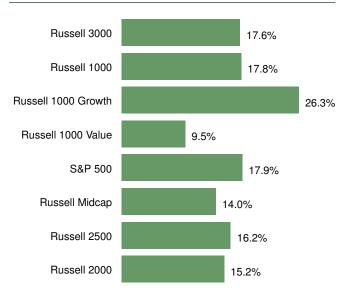


#### Russell Sector Returns, Quarter ended September 30, 2018

#### U.S. Equity: Quarterly Returns



#### U.S. Equity: One-Year Returns



Sources: FTSE Russell, Standard & Poor's



#### NON-U.S./GLOBAL EQUITY

Market divergence has emerged after synchronized growth in 2017. The U.S. continues to post positive returns while non-U.S. developed and emerging markets have rolled over year-to-date, dragged down by geopolitical and economic uncertainties.

Global/Non-US Developed (MSCI EAFE: +1.4%; MSCI Europe: +0.8%; MSCI Japan: +3.7%; MSCI World ex USA: +1.3%)

- The dollar rallied against the euro and yen given the fundamentals of the U.S. economy and Fed's contractionary monetary policy; other central banks maintained status quo
- Global trade tensions coupled with Brexit negotiation and Italy's populism concerns tempered the European market despite solid earnings growth; re-election of Prime Minister Shinzo Abe and GDP growth sparked the Japanese market
- Top sector performers were Health Care, Telecommunication Services, and Energy
- Real Estate, Financials, and Consumer Staples were hurt by rising interest rates and a flattening yield curve
- Style had a de minimis impact; however, Growth moderately outperformed Value. Volatility and small cap factors were out of favor given market uncertainties

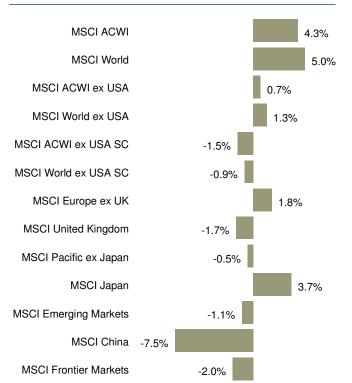
#### Emerging Markets (MSCI EM: -1.1%)

- Emerging markets were under pressure from a rising dollar, U.S. interest rates, and U.S.-China trade frictions
- Turkey was the worst-performing country within emerging markets as the lira and local currency bonds crashed due to the twin deficit, high level of dollar debt, and inflation
- The economic slowdown in China and trade tensions with the U.S. weakened the market
- Brazil and Russia were among the best performers due to climbing oil prices
- Energy was the best performer supported by rising oil prices; Consumer Discretionary was the worst sector performer weighed down by China and India
- Value and large cap factors were in favor as Energy gained traction with rising oil prices and momentum struggled as market leadership rotated away from Asian tech companies

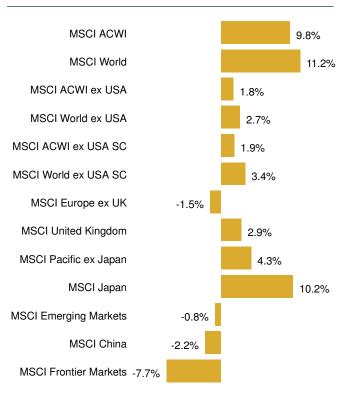
### International Small Cap (MSCI World ex USA Small Cap: +0.9%; MSCI EM Small Cap: -4.2%)

- Both non-U.S. developed and emerging market small cap underperformed large cap as appetite for risk waned due to rising interest rates/dollar, global trade tensions, and geopolitical conflicts
- Value was favored in both non-U.S. developed and emerging market small cap as the value-oriented Energy sector thrived with rising oil prices





#### **Global Equity: One-Year Returns**



Source: MSCI

#### **U.S. FIXED INCOME**

Fixed income performance was flat for the third quarter. The U.S. Treasury yield curve rose across the maturity spectrum on better-than-expected corporate earnings and solid U.S. economic data despite increased headline risks from U.S. trade tensions and European political uncertainties. Investors searching for shorter duration spreads helped both the commercial mortgage-backed securities (CMBS) and assetbacked securities (ABS) markets as well, but higher interest rates slowed prepayments and extended the duration of agency MBS, resulting in its underperformance.

In other markets, U.S. below-investment grade debt and bank loans also provided strong results this quarter as a lack of new high yield issuance and demand for bank loans from collateralized loan obligation (CLO) formation provided strong support.

### Bloomberg Barclays US Aggregate Bond Index: +0.02% in 3Q; -1.6% YTD

- 10-year U.S. Treasury yield rose steadily, reaching a high of 3.10%, before settling at 3.06% as strong economic data repriced investors' inflation expectations and increased the probability of a December rate hike by the Federal Reserve
- The yield curve flattened with short-term interest rates rising quicker than the longer-term rate. The spread between the 2year and 10-year key rates narrowed 9 bps to 24 bps from last quarter, the tightest in 10 years

#### Investment Grade Corporates: +1.0% in 3Q; -2.3% YTD

- New issuance remained strong with an average of 2-3x oversubscribed demand throughout the quarter
- Spreads continued to narrow this quarter despite leverages increasing within the sector
- Higher rates and weaker overall fundamentals caused this sector to post negative results year to date

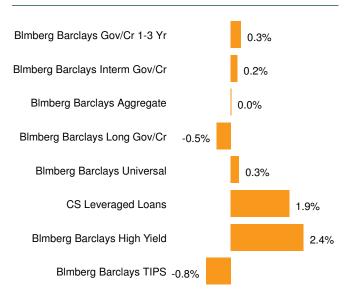
#### High Yield: +2.4% in 3Q; +2.6% YTD

- Low new issuance volume and stable fundamentals compressed spreads
- Bond issuance was \$41 billion, 33% lower than 3Q17

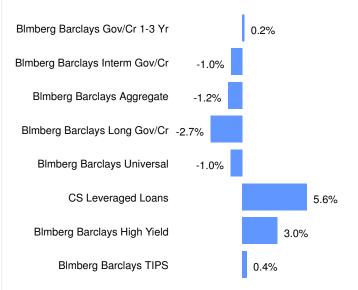
#### Bank Loans: +1.8% in 3Q; +4.0% YTD

- Demand continues for floating rate securities despite covenant-lite structures and higher spread duration
- Heavy issuance continued through the quarter; YTD leveraged loan issuance is above \$900 billion, driven by leveraged buyout and mergers-and-acquisitions activities
- CLO formation also increased demand in the third quarter

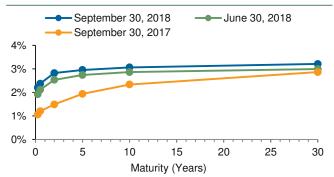
#### **U.S. Fixed Income: Quarterly Returns**



#### U.S. Fixed Income: One-Year Returns



#### **U.S. Treasury Yield Curves**



Sources: Bloomberg, Bloomberg Barclays, Credit Suisse

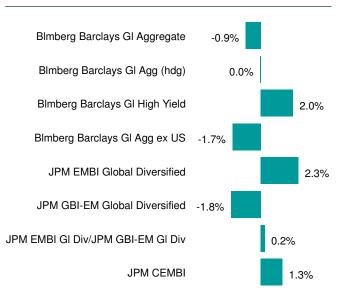
### Callan

#### NON-U.S. FIXED INCOME

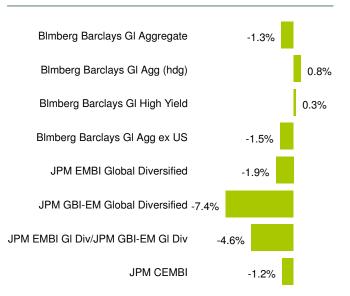
#### Volatility Hinders Local EM Debt

- The quarterly return for the JPM EMBI Global Diversified Index (USD denominated) was +2.3% with all sub-regions delivering positive results. Local currency emerging markets, however, fared more poorly. The JPM GBI-EM Global Diversified Index fell 1.8% for the quarter, but also endured significant intra-quarter volatility including a 6.1% drop in August.
- Further, return dispersion among countries was significant. Argentina (-35%) has seen its peso fall more than 50% this year to a record low as investors were spooked by previous currency debacles and worries over the economic picture. In addition to securing support from the International Monetary Fund, the country's central bank hiked short-term interest rates 15 percentage points to a global high of 60%. Turkey (-27%) endured a similar currency rout, though for different reasons. U.S.-imposed sanctions and concerns over central bank policy were the twin drivers of the lira's weakness. Turkey hiked short rates by 6.25 percentage points to 24% to stem its currency slide.
- Elsewhere, returns were far more modest (positive or negative) with only Russia (-6%) and Mexico (+6%) being noteworthy.
- Issuers in Europe faced a different challenge as political uncertainties surrounding Italy caused that market to weaken.

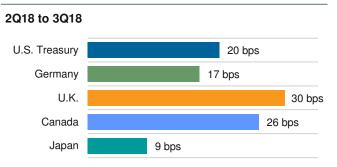
#### **Global Fixed Income: Quarterly Returns**



#### **Global Fixed Income: One-Year Returns**



#### Change in 10-Year Global Government Bond Yields



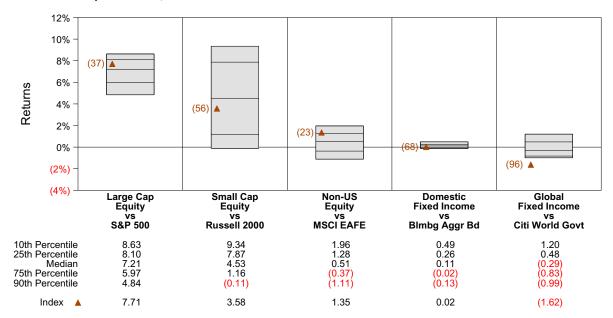
Sources: Bloomberg, Bloomberg Barclays, JP Morgan

#### Market Overview Active Management vs Index Returns

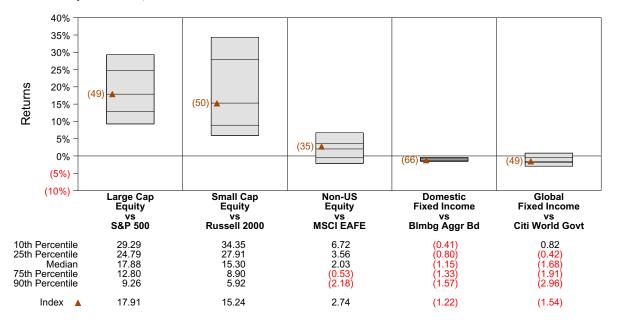
#### Market Overview

The charts below illustrate the range of returns across managers in Callan's Mutual Fund database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also shown for each asset class for comparison purposes. As an example, the first bar in the upper chart illustrates the range of returns for domestic equity managers over the last quarter. The triangle represents the S&P 500 return. The number next to the triangle represents the ranking of the S&P 500 in the Large Cap Equity manager database.

#### Range of Mutual Fund Returns by Asset Class One Quarter Ended September 30, 2018



#### Range of Mutual Fund Returns by Asset Class One Year Ended September 30, 2018



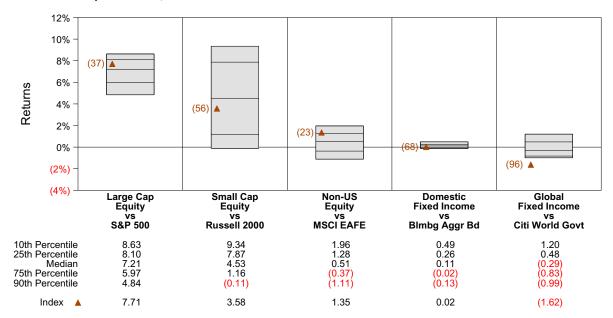


### Market Overview Active Management vs Index Returns

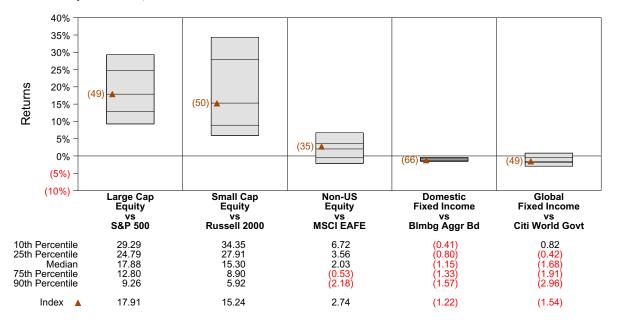
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#### Range of Mutual Fund Returns by Asset Class One Quarter Ended September 30, 2018



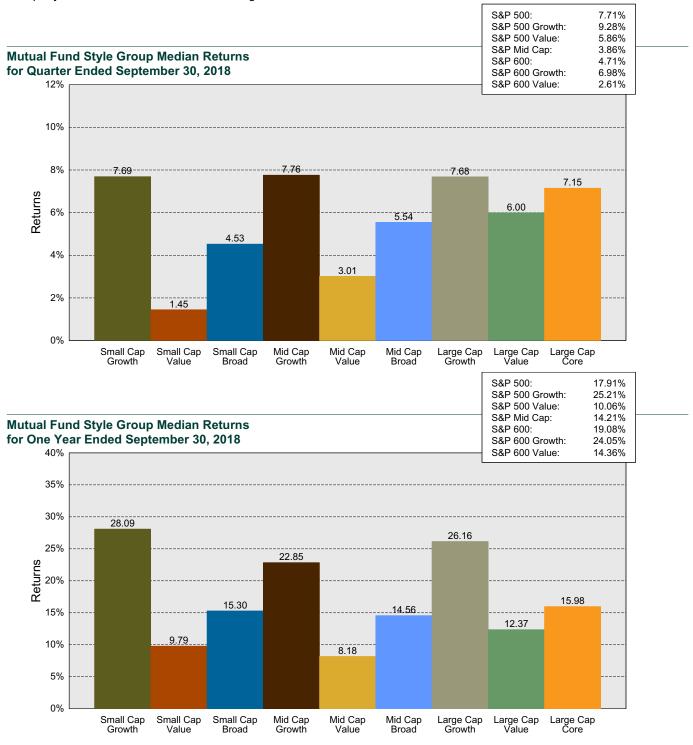
#### Range of Mutual Fund Returns by Asset Class One Year Ended September 30, 2018





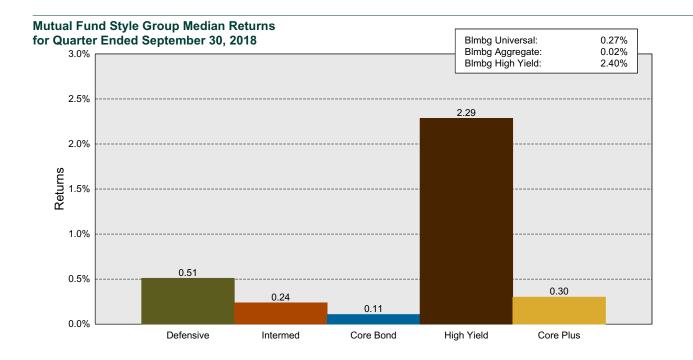
### Domestic Equity Active Management Overview

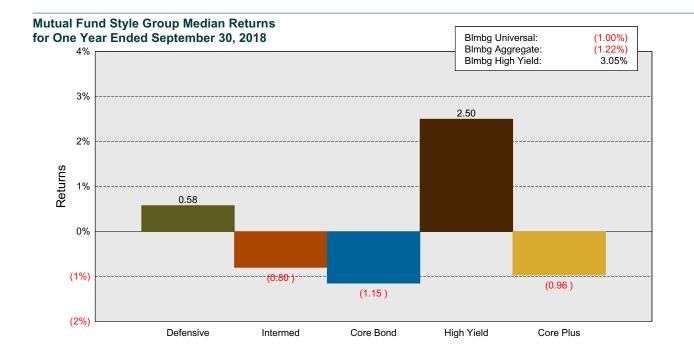
The U.S. equity market posted broad gains in the third quarter, fueled by strong economic growth, soaring corporate profits, and record levels of stock buybacks. Several major indices hit record levels during the quarter, and the S&P's 7.7% gain was its biggest since the fourth quarter of 2013. Volatility was muted in spite of persistent headlines around tariff threats. Large growth stocks were the top performers (R1000G: +9.2%) while small value (R2000V: +1.6%) occupied the bottom slot. All sectors posted positive returns within the S&P 500, but the differences were stark. Health Care (+14.5), Industrials (+10.0%), Technology (+8.8%) and the new Communication Services (+9.9%) sectors were the top performers, bookmarked by Materials, Energy, and Real Estate all of which returned less than 1% for the quarter. Of note, effective September 28, 2018, "Communications Services" replaced "Telecommunications," which only held three stocks. The new sector adopted names from Technology and Consumer Discretionary, including Facebook, Alphabet, Netflix, Twitter, and The Walt Disney Company and it now includes over 20 holdings.



### Domestic Fixed Income Active Management Overview

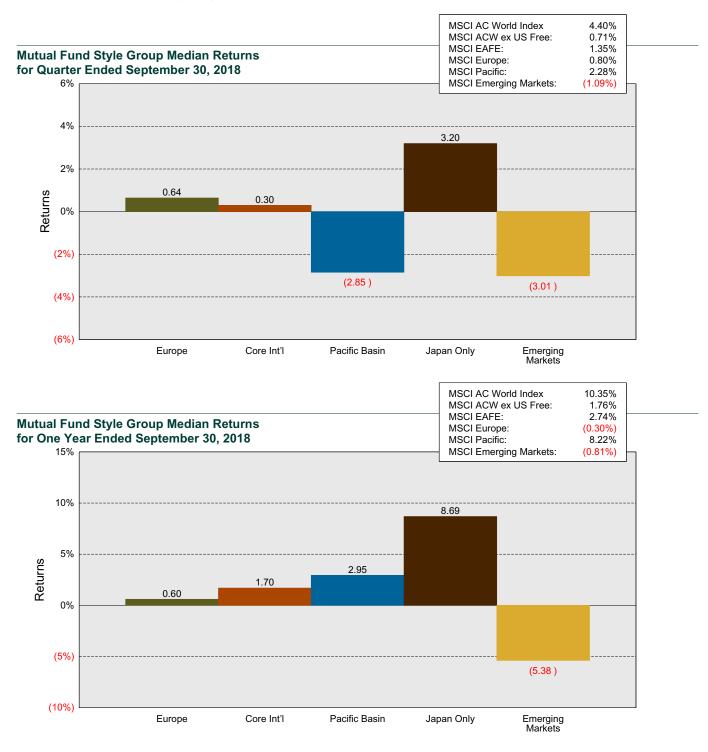
Yields rose during the quarter; the 2-year U.S. Treasury Note climbed nearly 30 bps to close at a multi-year high of 2.81% while the 10- and 30-year Treasury yields rose roughly 20 bps The yield curve continued to flatten with the spread between the 2-year Treasury yield and the 10-year Treasury yield falling to 24 bps as of quarter-end. As expected, the Fed hiked short rates by 25 bps in September and one more hike in December 2018 appears likely. Markets expect two more hikes in 2019 while the median Fed projection is for three. The 10-year breakeven inflation rate rose modestly to 2.14% (9/30) from 2.11% (6/30). The Bloomberg Barclays TIPS Index fell 0.8% as rates rose. The Bloomberg Barclays Aggregate Index was flat (+0.0%) for the quarter with the U.S. Treasury sector (-0.6%) underperforming the Corporate bond sector (+1.0%). High yield (Bloomberg Barclays High Yield Index: +2.4%) outperformed and leveraged loans rose 1.8% (S&P: LSTA Leveraged Loan).





### International Equity Active Management Overview

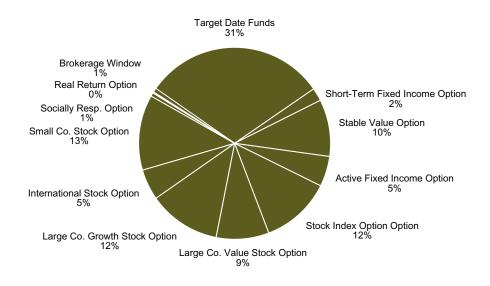
Non-U.S. developed markets underperformed the U.S. in the third quarter. The MSCI ACWI ex-U.S. posted a meager +0.7% result. Japan was a top performer (+3.7%) as Prime Minister Abe won his intra-party leadership battle and retained his role as President of the Liberal Democratic Party. The U.K. dropped 1.7% as uncertainty around Brexit continued to weigh on investors' minds. Italy (-4.5%) sank on political turmoil and financial woes while Europe ex-UK was up 1.8%. As in the U.S., Health Care (+4.3%) was a top performing sector while Real Estate (-2.8%) was among the worst. Emerging market equities declined (MSCI: EM -1.1%), but returns were highly divergent. Turkey (-21%) and Greece (-18%) fell the most due to macro-economic concerns. As a region, Latin America gained 5% with Mexico (+7%) and Brazil (+6%) up the most. Elsewhere, Russia (+6%) rebounded, largely due to the surge in its Energy sector (+16%). Conversely, China (-8%) dropped given a large sell-off in Chinese technology companies (-14%). India (-2%) posted a modest loss due to a significant decline in its Financial sector (-12%).



### Changes in Investment Fund Balances Period Ended September 30, 2018

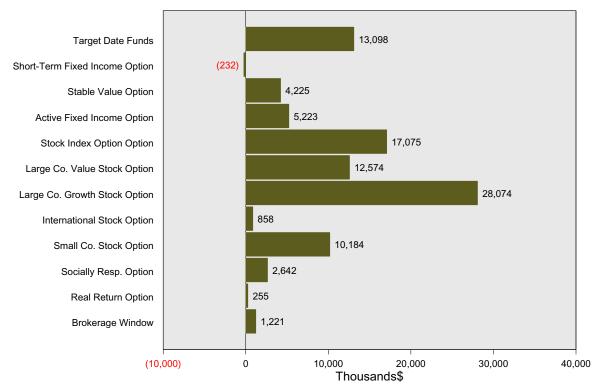
#### **Allocation Across Investment Options**

The chart below illustrates the allocation of the aggregate fund assets across the various investment options as of September 30, 2018.



#### **Changes in Fund Values**

The chart below shows the net change in fund values across the various investment options for the quarter ended September 30, 2018. The change in value for each fund is the result of a combination of 3 factors: 1) market movements; 2) contributions or disbursements into or out of the funds by the participants (and any matching done by the company); and 3) transfers between funds by the participants.



### **Investment Manager Asset Allocation**

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2018, with the distribution as of June 30, 2018. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

	September 3	0, 2018	June 30, 2018			
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Tier I - Asset Allocation Options		•				
Target Date Funds	\$700,059,180	30.76%	\$(1,799,911)	\$14,898,200	\$686,960,890	31.51%
LifePath Index Retirement Fund L	195,779,822	8.60%	(2,810,656)	2,940,902	195,649,576	8.97%
LifePath Index 2020 Fund L	143,196,021	6.29%	(1,422,704)	2,370,671	142,248,054	6.52%
LifePath Index 2025 Fund L	111,018,145	4.88%	323,363	2,317,851	108,376,931	4.97%
LifePath Index 2030 Fund L	81,959,890	3.60%	162,958	1,886,603	79,910,330	3.66%
LifePath Index 2035 Fund L	61,024,832	2.68%	373,198	1,891,782	58,759,852	2.69%
LifePath Index 2040 Fund L	41,580,403	1.83%	1,019,743	1,302,014	39,258,645	1.80%
LifePath Index 2045 Fund L	27,190,422	1.19%	614,686	905,414	25,670,322	1.18%
LifePath Index 2050 Fund L	23,982,486	1.05%	(105,317)	779,927	23,307,876	1.07%
LifePath Index 2055 Fund L	9,133,380	0.40%	118,173	311,641	8,703,565	0.40%
LifePath Index 2060 Fund L	5,193,780	0.23%	(73,355)	191,396	5,075,738	0.23%
Tier II - Core Investment Options						
Short-Term Fixed Income Option	50 070 007	2.20%	(400.744)	(100, 115)	50 040 400	2 240/
State Street	50,078,627	2.20%	(102,714)	(129,145)	50,310,486	2.31%
Stable Value Option Galliard	217,813,213	9.57%	3,129,346	1,095,922	213,587,945	9.80%
Active Fixed Income Option BlackRock / DoubleLine / Wellington	116,102,144	5.10%	5,349,871	(126,594)	110,878,866	5.09%
Stock Index Option BlackRock	270,713,471	11.90%	283,188	16,791,789	253,638,495	11.63%
Large Company Value Stock Option BlackRock	202,302,128	8.89%	1,647,030	10,926,699	189,728,400	8.70%
Large Company Growth Stock Option BlackRock	277,489,958	12.19%	(496,709)	28,570,346	249,416,321	11.44%
	,,		()		,,	
International Stock Option AQR / BlackRock / DFA* / Lazard	117,690,540	5.17%	1,918,488	(1,060,710)	116,832,763	5.36%
Small Company Stock Option BlackRock / Callan / DFA	288,780,587	12.69%	5,106,965	5,077,216	278,596,406	12.78%
Tier III - Specialty Options						
Socially Responsible Investment Option						
TIAA-CREF	14,736,810	0.65%	286,750	2,355,608	12,094,452	0.55%
Real Return Option GMO / State Street / Wellington	4,376,563	0.19%	(1,522,789)	1,778,005	4,121,348	0.19%
Brokerage Window	15,442,672	0.68%	803,274	417,653	14,221,745	0.65%
Total Fund	\$2,275,585,894	100.0%	\$14,602,789	\$80,594,988	\$2,180,388,117	100.0%

### **Asset Distribution Across Investment Managers**

\* DFA exposure consists of two differing strategies



### **Investment Fund Returns**

The table below details the rates of return for the plan's investment managers over various cumulative time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

			Last	Last	Last
	Last	Last	3	5	10
	Quarter	Year	Years	Years	Years
ier I - Asset Allocation Options					
.ifePath Index Retirement Fund L	<b>1.55%</b>	<b>3.85%</b>	<b>6.15%</b>	<b>4.79%</b>	<b>5.93%</b>
LifePath Index Retirement Benchmark	1.55%	3.84%	6.14%	4.78%	5.96%
.ifePath Index 2020 Fund L	<b>1.77%</b>	<b>4.53%</b>	<b>7.17%</b>	<b>5.48%</b>	<b>6.43%</b>
LifePath Index 2020 Benchmark	1.77%	4.50%	7.14%	5.43%	6.45%
.ifePath Index 2025 Fund L	<b>2.22%</b>	<b>5.79%</b>	<b>8.49%</b>	<b>6.25%</b>	<b>6.95%</b>
LifePath Index 2025 Benchmark	2.21%	5.77%	8.44%	6.19%	6.97%
.ifePath Index 2030 Fund L	<b>2.62%</b>	<b>6.92%</b>	<b>9.69%</b>	<b>6.92%</b>	<b>7.40%</b>
LifePath Index 2030 Benchmark	2.60%	6.87%	9.60%	6.83%	7.41%
.ifePath Index 2035 Fund L	<b>2.99%</b>	<b>7.98%</b>	<b>10.85%</b>	<b>7.54%</b>	<b>7.83%</b>
LifePath Index 2035 Benchmark	2.96%	7.91%	10.71%	7.44%	7.80%
.ifePath Index 2040 Fund L	<b>3.32%</b>	<b>8.93%</b>	<b>11.84%</b>	<b>8.10%</b>	<b>8.17%</b>
LifePath Index 2040 Benchmark	3.28%	8.84%	11.68%	7.97%	8.13%
.ifePath Index 2045 Fund L	<b>3.50%</b>	<b>9.52%</b>	<b>12.44%</b>	<b>8.48%</b>	<b>8.43%</b>
LifePath Index 2045 Benchmark	3.46%	9.42%	12.26%	8.34%	8.38%
.ifePath Index 2050 Fund L	<b>3.58%</b>	<b>9.73%</b>	<b>12.63%</b>	<b>8.64%</b>	<b>8.71%</b>
LifePath Index 2050 Benchmark	3.53%	9.65%	12.46%	8.52%	8.68%
.ifePath Index 2055 Fund L	<b>3.59%</b>	<b>9.73%</b>	<b>12.62%</b>	<b>8.70%</b>	-
LifePath Index 2055 Benchmark	3.54%	9.65%	12.46%	8.58%	
ifePath Index 2060 Fund L LifePath Index 2060 Benchmark	<b>3.59%</b> 3.54%	<b>9.72%</b> 9.65%	<b>12.59%</b> 12.46%	-	-
ier II - Core Investment Options					
Short-Term Fixed Income Option	<b>0.48%</b>	<b>1.52%</b>	<b>0.80%</b>	<b>0.49%</b>	<b>0.32%</b>
3-month Treasury Bill	0.49%	1.59%	0.84%	0.52%	0.34%
Stable Value Option	<b>0.57%</b>	<b>2.14%</b>	<b>1.90%</b>	<b>1.75%</b>	<b>1.91%</b>
3-month Treasury Bill	0.49%	1.59%	0.84%	0.52%	0.34%
Active Fixed Income Option	<b>0.21%</b>	<b>(0.20%)</b>	<b>2.18%</b>	<b>2.87%</b>	<b>4.91%</b>
Bloomberg Aggregate Index	0.02%	(1.22%)	1.31%	2.16%	3.77%
Stock Index Option	<b>7.12%</b>	<b>17.62%</b>	<b>17.16%</b>	<b>13.54%</b>	<b>12.07%</b>
Russell 3000 Index	7.12%	17.58%	17.07%	13.46%	12.01%
arge Company Value Stock Option	<b>5.76%</b>	<b>9.61%</b>	<b>13.61%</b>	<b>10.70%</b>	<b>10.16%</b>
Russell 1000 Value Index	5.70%	9.45%	13.55%	10.72%	9.79%
arge Company Growth Stock Option	<b>9.12%</b>	<b>26.12%</b>	<b>20.53%</b>	<b>16.21%</b>	<b>14.09%</b>
Russell 1000 Growth Index	9.17%	26.30%	20.55%	16.58%	14.31%
nternational Stock Option	<b>0.32%</b>	<b>0.87%</b>	<b>9.41%</b>	<b>4.33%</b>	<b>5.43%</b>
MSCI ACWI ex US Index	0.71%	1.76%	9.97%	4.12%	5.18%
Small Company Stock Option	<b>4.27%</b>	<b>15.83%</b>	<b>16.92%</b>	<b>11.10%</b>	<b>12.04%</b>
Russell 2000 Index	3.58%	15.24%	17.12%	11.07%	11.11%
ier III - Specialty Options					
Socially Responsible Option	<b>6.86%</b>	<b>16.20%</b>	<b>16.56%</b>	-	-
Russell 3000 Index	7.12%	17.58%	17.07%	13.46%	12.01%
Real Return Option	(0.20%)	<b>1.39%</b>	<b>3.57%</b>	-	-
Consumer Price Index + 3%	0.89%	5.34%	4.95%	4.35%	4.39%

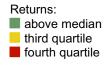
### **Investment Fund Returns**

The table below details the rates of return for the plan's investment managers over various cumulative time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	12/2017- 9/2018	2017	2016	2015	2014
Fier I - Asset Allocation Options					
LifePath Index Retirement Fund L	<b>1.27%</b>	<b>10.16%</b>	<b>6.07%</b>	<b>(1.16%)</b>	<b>5.35%</b>
LifePath Index Retirement Benchmark	1.25%	10.10%	6.01%	(1.07%)	5.36%
.ifePath Index 2020 Fund L	<b>1.53%</b>	<b>11.75%</b>	<b>6.61%</b>	<b>(1.29%)</b>	<b>5.59%</b>
LifePath Index 2020 Benchmark	1.50%	11.67%	6.51%	(1.28%)	5.62%
.ifePath Index 2025 Fund L	<b>2.14%</b>	<b>13.88%</b>	<b>7.26%</b>	<b>(1.44%)</b>	<b>5.74%</b>
LifePath Index 2025 Benchmark	2.11%	13.75%	7.10%	(1.45%)	5.82%
.ifePath Index 2030 Fund L	<b>2.69%</b>	<b>15.80%</b>	<b>7.84%</b>	<b>(1.63%)</b>	<b>5.88%</b>
LifePath Index 2030 Benchmark	2.63%	15.64%	7.61%	(1.66%)	5.95%
ifePath Index 2035 Fund L	<b>3.19%</b>	<b>17.67%</b>	<b>8.40%</b>	<b>(1.82%)</b>	<b>5.99%</b>
LifePath Index 2035 Benchmark	3.11%	17.48%	8.08%	(1.86%)	6.11%
ifePath Index 2040 Fund L	<b>3.64%</b>	<b>19.35%</b>	<b>8.84%</b>	<b>(2.02%)</b>	<b>6.08%</b>
LifePath Index 2040 Benchmark	3.54%	19.09%	8.51%	(2.08%)	6.21%
ifePath Index 2045 Fund L	<b>3.89%</b>	<b>20.43%</b>	<b>9.15%</b>	<b>(2.17%)</b>	<b>6.19%</b>
LifePath Index 2045 Benchmark	3.78%	20.15%	8.77%	(2.22%)	6.31%
ifePath Index 2050 Fund L	<b>3.98%</b>	<b>20.81%</b>	<b>9.22%</b>	<b>(2.21%)</b>	<b>6.24%</b>
LifePath Index 2050 Benchmark	3.88%	20.55%	8.82%	(2.26%)	6.41%
ifePath Index 2055 Fund L	<b>3.98%</b>	<b>20.79%</b>	<b>9.18%</b>	<b>(2.19%)</b>	<b>6.28%</b>
LifePath Index 2055 Benchmark	3.89%	20.55%	8.82%	(2.26%)	6.41%
ifePath Index 2060 Fund L	<b>3.98%</b>	<b>20.74%</b>	<b>9.19%</b>	<b>(2.17%)</b>	-
LifePath Index 2060 Benchmark	3.89%	20.55%	8.82%	(2.16%)	
ier II - Core Investment Options					
hort-Term Fixed Income Option	<b>1.25%</b>	<b>0.84%</b>	<b>0.30%</b>	<b>0.04%</b>	<b>0.02%</b>
3-month Treasury Bill	1.30%	0.86%	0.33%	0.05%	0.03%
table Value Option	<b>1.63%</b>	<b>1.89%</b>	<b>1.77%</b>	<b>1.65%</b>	<b>1.44%</b>
3-month Treasury Bill	1.30%	0.86%	0.33%	0.05%	0.03%
ctive Fixed Income Option	<b>(0.72%)</b>	<b>4.47%</b>	<b>3.48%</b>	<b>0.82%</b>	<b>6.13%</b>
Bloomberg Aggregate Index	(1.60%)	3.54%	2.65%	0.55%	5.97%
tock Index Option	<b>10.60%</b>	<b>21.23%</b>	<b>12.83%</b>	<b>0.61%</b>	<b>12.61%</b>
Russell 3000 Index	10.57%	21.13%	12.74%	0.48%	12.56%
arge Company Value Stock Option	<b>4.03%</b>	<b>13.81%</b>	<b>17.21%</b>	<b>(3.77%)</b>	<b>12.18%</b>
Russell 1000 Value Index	3.92%	13.66%	17.34%	(3.83%)	13.45%
arge Company Growth Stock Option	<b>16.94%</b>	<b>30.21%</b>	<b>7.11%</b>	<b>5.25%</b>	<b>11.63%</b>
Russell 1000 Growth Index	17.09%	30.21%	7.08%	5.67%	13.05%
nternational Stock Option	<b>(3.80%)</b>	<b>27.70%</b>	<b>3.46%</b>	<b>(2.59%)</b>	<b>(5.06%)</b>
MSCI ACWI ex US Index	(3.09%)	27.19%	4.50%	(5.66%)	(3.87%)
mall Company Stock Option	<b>11.32%</b>	<b>14.74%</b>	<b>21.43%</b>	<b>(4.17%)</b>	<b>4.71%</b>
Russell 2000 Index	11.51%	14.65%	21.31%	(4.41%)	4.89%
ier III - Specialty Options					
ocially Responsible Option	<b>9.49%</b>	<b>20.71%</b>	<b>13.39%</b>	-	-
Russell 3000 Index	10.57%	21.13%	12.74%	0.48%	12.56%
teal Return Option	<mark>(0.94%)</mark>	<b>7.49%</b>	<b>5.34%</b>	-	-
Consumer Price Index + 3%	4.73%	5.18%	4.99%	3.39%	3.32%

## Oregon Savings Growth Plan Investment Manager Performance Monitoring Summary Report September 30, 2018

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	
Tier I - Asset Allocation Options							
LifePath Index Retirement Fund L Callan Target Date Retirement Inc	<b>1.6</b> 37	<b>3.9</b> 13	<b>6.2</b> 22	<b>4.8</b> 25	<b>5.9</b> 29	<b>5.9</b> 28	
LifePath Index Retirement Benchmark	1.6 37	3.8 13	6.1 23	4.8 26	5.8 29	6.0 24	
LifePath Index 2020 Fund L Callan Target Date 2020	<b>1.8</b> 77	<b>4.5</b> 62	<b>7.2</b> 72	<b>5.5</b> 66	<b>7.2</b> 71	<b>6.4</b> 72	
LifePath Index 2020 Benchmark	1.8 77	4.5 63	7.1 73	5.4 66	7.2 72	6.4 71	
LifePath Index 2025 Fund L Callan Target Date 2025	<b>2.2</b> 69	<b>5.8</b> 57	<b>8.5</b> 68	<b>6.2</b> 70	<b>8.3</b> 79	<b>6.9</b> 80	
LifePath Index 2025 Benchmark	2.2 70	5.8 61	8.4 70	6.2 72	8.2 79	7.0 80	
LifePath Index 2030 Fund L Callan Target Date 2030	<b>2.6</b> 73	<b>6.9</b> 57	<b>9.7</b> 72	<b>6.9</b> 71	<b>9.1</b> 75	<b>7.4</b> 76	
LifePath Index 2030 Benchmark	2.6 75	6.9 59	9.6 73	6.8 74	9.0 81	7.4 76	
LifePath Index 2035 Fund L Callan Target Date 2035	<b>3.0</b> 68	<b>8.0</b> 54	<b>10.9</b> 68	<b>7.5</b> 72	<b>10.0</b> 87	<b>7.8</b> 83	
LifePath Index 2035 Benchmark	3.0 72	7.9 57	10.7 74	7.4 75	9.8 89	7.8 84	
LifePath Index 2040 Fund L Callan Target Date 2040	<b>3.3</b> 66	<b>8.9</b> 48	<b>11.8</b> 48	<b>8.1</b> 71	<b>10.7</b> 79	<b>8.2</b> 73	
LifePath Index 2040 Benchmark	3.3 67	8.8 52	11.7 56	8.0 74	10.5 83	8.1 75	
LifePath Index 2045 Fund L Callan Target Date 2045	<b>3.5</b> 60	<b>9.5</b> 45	<b>12.4</b> 47	<b>8.5</b> 69	<b>11.3</b> 85	<b>8.4</b> 78	
LifePath Index 2045 Benchmark	3.5 64	9.4 49	12.3 55	8.3 76	11.1 86	8.4 79	
LifePath Index 2050 Fund L Callan Target Date 2050	<b>3.6</b> 54	<b>9.8</b> 42	<b>12.6</b> 42	<b>8.6</b> 66	<b>11.7</b> 69	<b>8.7</b> 55	
LifePath Index 2050 Benchmark	3.5 61	9.6 47	12.5 53	8.5 70	11.5 72	8.7 56	
LifePath Index 2055 Fund L Callan Target Date 2055	<b>3.6</b> 53	<b>9.8</b> 48	<b>12.6</b> 56	<b>8.7</b> 68	<b>12.0</b> 72		
LifePath Index 2055 Benchmark	3.5 60	9.7 49	12.5 62	8.6 78	11.8 82		
LifePath Index 2060 Fund L Callan Target Date 2060	<b>3.6</b> 60	<b>9.7</b> 53	<b>12.6</b> 65				
LifePath Index 2060 Benchmark	3.5 66	9.7 56	12.5 70				



### Oregon Savings Growth Plan Investment Manager Performance Monitoring Summary Report September 30, 2018

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	
Tier II - Core Investment Options							
Short-Term Fixed Income Option Callan Money Market Funds	<b>0.5</b> 6	<b>1.5</b> 5	<b>0.8</b> 2	<b>0.5</b> 2	<b>0.4</b> 3	<b>0.3</b> 6	
3-month Treasury Bill Stable Value Option Callan Stable Value CT	0.5 5 0.6 13	1.6 4 <b>2.1</b> 11	0.8 2 1.9 20	0.5 2 1.7 26	0.4 2 1.7 32	<b>1.9</b> 46	
3-month Treasury Bill	0.5 41	1.6 74	0.8 99	0.5 99	0.4 99	0.3 100	
Active Fixed Income Option Callan Core Plus MFs	<b>0.2</b> 65	<b>-0.2</b> 13	<b>2.2</b> 51	<b>2.9</b> 46	<b>2.9</b> 66	<b>4.9</b> 51	
Bloomberg Aggregate Index	0.0 79	-1.2 61	1.3 86	2.2 84	2.0 96	<b>3.8</b> 91	
Stock Index Option (i) Callan All Cap Core MFs	<b>7.1</b> 24	<b>17.6</b> 20	<b>17.2</b> 13	<b>13.5</b> 12	<b>16.9</b> 15	<b>12.1</b> 18	
Russell 3000 Index	7.1 24	17.6 21	17.1 14	13.5 14	16.9 17	12.0 19	
Large Company Value Stock Option (i) Callan Large Cap Value MFs Russell 1000 Value Index	<b>5.8</b> 57 5.7 57	<b>9.6</b> 76 9.5 76	<b>13.6</b> 63	<b>10.7</b> 59	<b>15.6</b> 36	<b>10.2</b> 40 9.8 55	
Large Company Growth Stock Option (i) Callan Large Cap Growth MFs	<b>9.1</b> 8	<b>26.1</b> 51	<b>20.5</b> 16	<b>16.2</b> 32	<b>18.6</b> 32	<b>14.1</b> 31	
Russell 1000 Growth Index	9.2 8	26.3 49	20.6 16	16.6 26	18.7 30	14.3 30	
International Stock Option Callan Non US Equity MFs	<b>0.3</b> 58	<b>0.9</b> 65	<b>9.4</b> 38	<b>4.3</b> 54	<b>8.6</b> 48	<b>5.4</b> 54	
MSCI ACWI ex US Index	0.7 43	1.8 54	10.0 32	4.1 58	7.2 89	5.2 59	
Small Company Stock Option Callan Small Cap MFs	<b>4.3</b> 52	<b>15.8</b> 48	<b>16.9</b> 44	<b>11.1</b> 45	<b>16.2</b> 46	<b>12.0</b> 50	
Russell 2000 Index	3.6 56	15.2 50	17.1 43	11.1 45	16.4 45	11.1 60	



(i) - Indexed scoring method used. Green: manager & index ranking differ by <= +/- 10%tile. Yellow: manager & index ranking differ by <= +/- 20%tile. Red: manager & index ranking differ by > +/- 20%tile.



## Oregon Savings Growth Plan Investment Manager Performance Monitoring Summary Report September 30, 2018

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return
Tier III - Specialty Options						
Socially Responsible Option Callan All Cap Core MFs	<b>6.9</b> 31	<b>16.2</b> 32	<b>16.6</b> 18			
Russell 3000 Index	7.1 24	17.6 21	17.1 14	13.5 14	16.9 17	12.0 19
Real Return Option	-0.2	1.4	3.6			
Consumer Price Index + 3%	0.9	5.3	5.0	4.4	4.4	4.4

Returns: above median third quartile fourth quartile



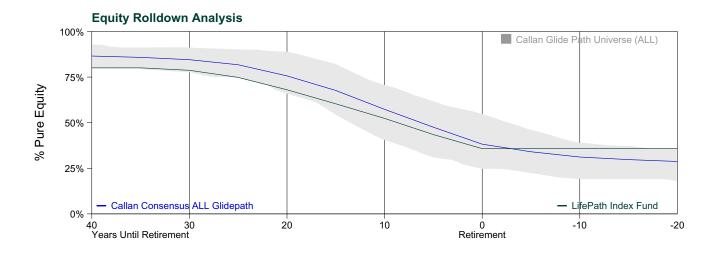
Asset Class and Strategy	Total Annual Operating Expense Ratio*	Institutional Peer Group Median
Asset Allocation Options LifePath Index Retirement, 2020 – 2060 Funds; L	0.090%	0.08%
<b>Capital Preservation</b> Short-Term Fixed Income Option Stable Value Option	0.110% 0.380%	0.44% 0.41%
Fixed Income Active Fixed Income Option	0.172%	0.76%
<b>U.S. Large Cap Equity</b> Stock Index Option Large Company Value Stock Option Large Company Growth Stock Option	0.039% 0.031% 0.030%	0.04% 0.04% 0.04%
U.S. Small Cap Equity Small Company Stock Option	0.391%	1.15%
International Equity International Stock Option	0.374%	1.10%
<b>Specialty Options</b> Socially Responsible Investment Option Real Return Option	0.180% 0.534%	0.90% 0.65%

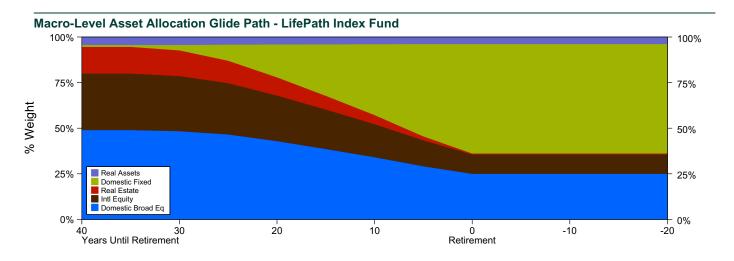
\*Investment option fee data provided by OST

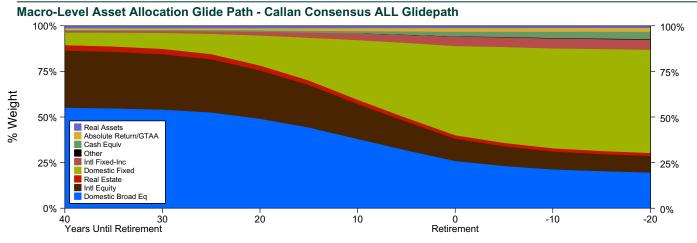


### LifePath Index Fund Target Date Glide Path Analysis as of September 30, 2018

The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure" equity exposure (public equities excluding REITs) versus the peer group and index. The subsequent charts show more asset allocation detail at the high "macro" level.

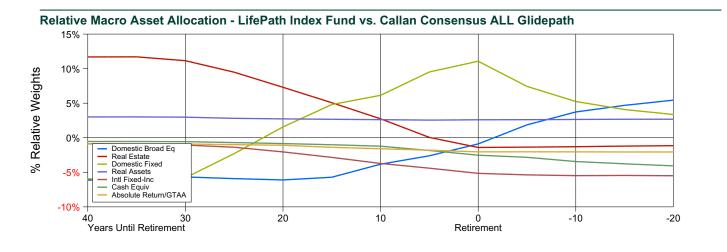




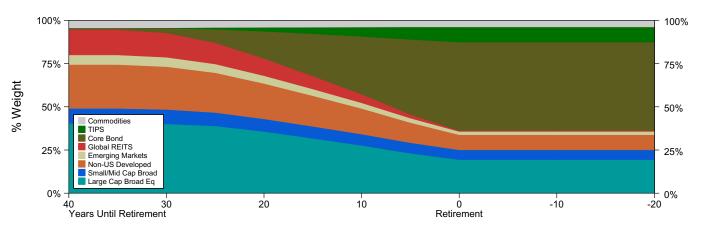


### LifePath Index Fund Target Date Glide Path Analysis as of September 30, 2018

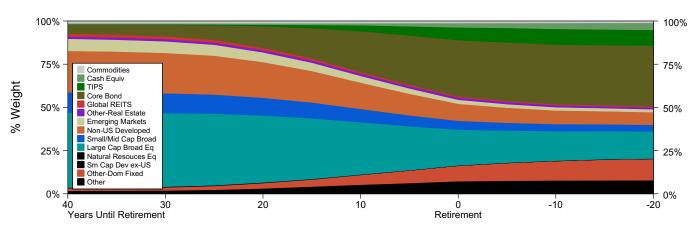
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart highlights any significant "macro-level" differences between the manager's asset allocation glide path and that of the glide path index. The bottom two charts illustrate the asset allocation glide paths of both the manager and index at the more detailed "micro" level.





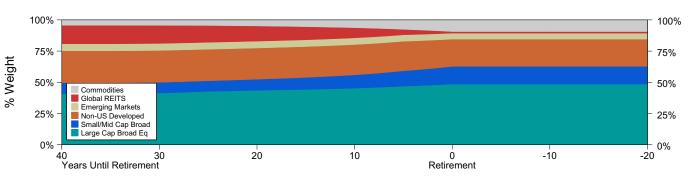






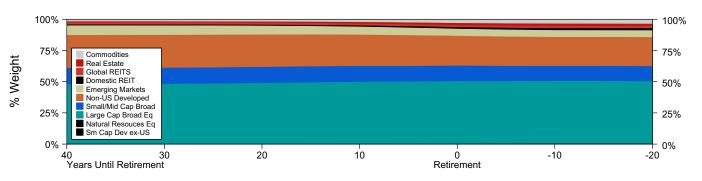
### LifePath Index Fund Target Date Glide Path Analysis as of September 30, 2018

The first two charts below illustrate the detailed composition over time of the "risky", or "growth" portion of the glide paths for both the manager and index, defined to be all public equity and real estate asset classes. These charts highlight both the levels of diversification and aggressiveness within the wealth creation portion of the glide paths. The last two charts serve a similar purpose but focus on the composition over time of the remaining wealth preservation portion (non-equity) of the manager and index glide paths.

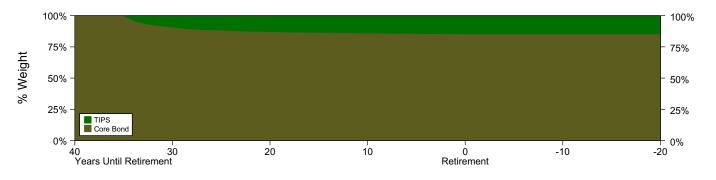


### Micro-Level Equity Allocation Glide Path - LifePath Index Fund

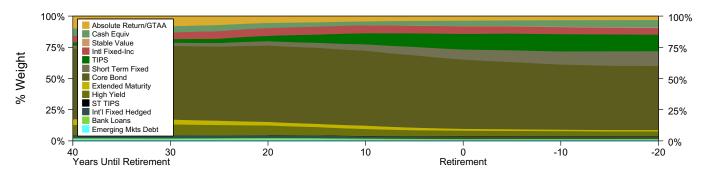




#### Micro-Level Non-Equity Allocation Glide Path - LifePath Index Fund



### Micro-Level Non-Equity Asset Allocation Glide Path - Callan Consensus ALL Glidep

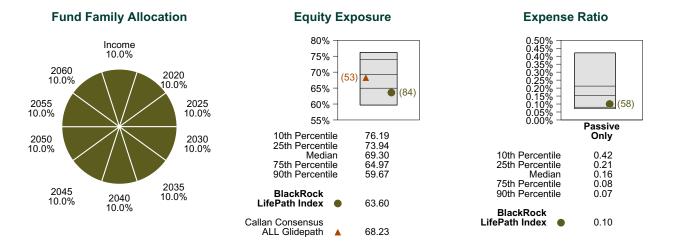


### Equal-Weighted - BlackRock LifePath Index Target Date Fund Family Analysis as of September 30, 2018

The following is an analysis of the suite of target date funds as an aggregated portfolio using equal-weighting by target date. The upper-left pie chart shows equal-weighting across target dates. The rest of the charts compare different attributes of the aggregated target date portfolio to a peer group of target date fund families, as well as target date indices, by mimicking the equal-weighted target date suites using these alternatives. The first two charts evaluate the aggregate equity exposure and expense ratio via target date funds. The last two charts analyze aggregate target date performance on both an actual return basis as well as a "glide path return" basis (simulated returns using each funds' asset allocation "glide path" weights and index returns).

#### **Glidepath Peer Group: ALL**

### Fee/Return Type: Institutional Net



#### **Target Date Family Performance vs Peer Families**

14% 12% - 10% - 8% - 6% - 4% - 2% - 0%	(21)	(24)	(40)	(51)	(60)	(50)
078	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Dereentile						
10th Percentile 25th Percentile	3.58 3.29	8.86 8.20	11.66 11.39	8.74 8.20	11.97 11.08	8.94 8.30
Median	2.98	7.79	10.63	7.85	10.55	7.85
75th Percentile	2.75	6.84	10.28	7.43	9.94	7.41
90th Percentile	2.37	6.46	9.46	6.70	9.09	6.87
BlackRock LifePath Index  ●	2.87	7.66	10.43	7.28	9.61	7.19
Callan Consensus ALL Glidepath 🔺	3.34	8.28	10.84	7.84	10.26	7.83

#### **Target Date Family Glide Path Returns vs Peer Families**

2% -	(60)	(58)	(60)	(73)	(68)	(69)
0% —	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile 25th Percentile Median 75th Percentile 90th Percentile	4.06 3.78 3.41 3.13 2.60	9.75 9.31 8.51 7.34 7.17	11.96 11.70 11.02 10.38 9.57	9.04 8.60 8.22 7.59 6.40	11.67 11.20 10.55 9.95 8.86	8.94 8.67 8.03 7.69 6.53
BlackRock LifePath Index  ●	2.99	7.79	10.21	7.37	9.71	7.32
Callan Consensus ALL Glidepath 🔺	3.34	8.28	10.84	7.84	10.26	7.83

### LifePath Index Retirement Fund L Period Ended September 30, 2018

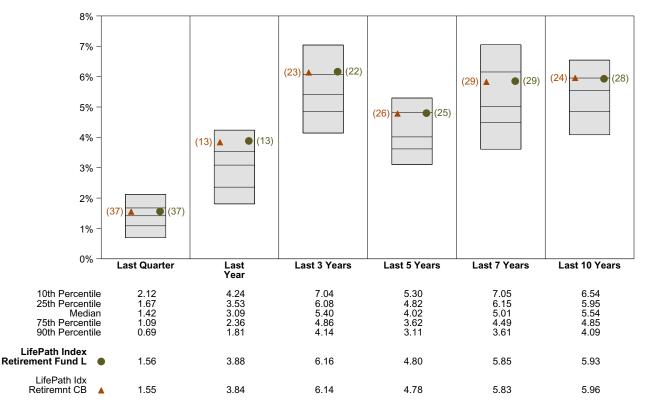
#### **Investment Philosophy**

LifePath Index Retirement Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) now or in the near future may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index Retirement Fund L's portfolio posted a 1.56% return for the quarter placing it in the 37 percentile of the Callan Target Date Retirement Income group for the quarter and in the 13 percentile for the last year.
- LifePath Index Retirement Fund L's portfolio outperformed the LifePath Idx Retiremnt CB by 0.01% for the quarter and outperformed the LifePath Idx Retiremnt CB for the year by 0.04%.

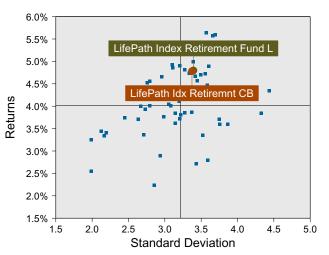
Performance vs Callan Target Date Retirement Income (Institutional Net)



0.10% 0.05% 0.00% 0.

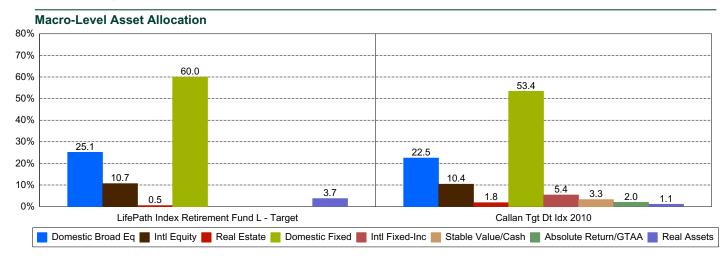
Relative Return vs LifePath Idx Retiremnt CB

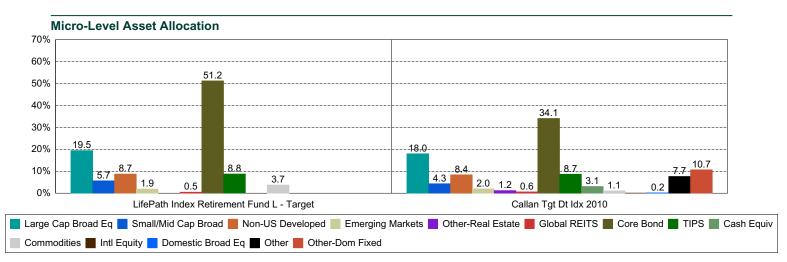
Callan Target Date Retirement Income (Institutional Net) Annualized Five Year Risk vs Return

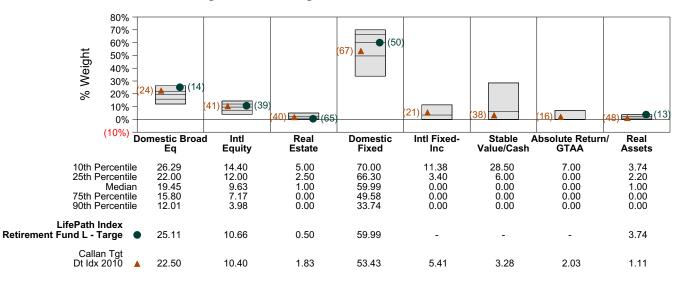


### LifePath Index Retirement Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.









### LifePath Index 2020 Fund L Period Ended September 30, 2018

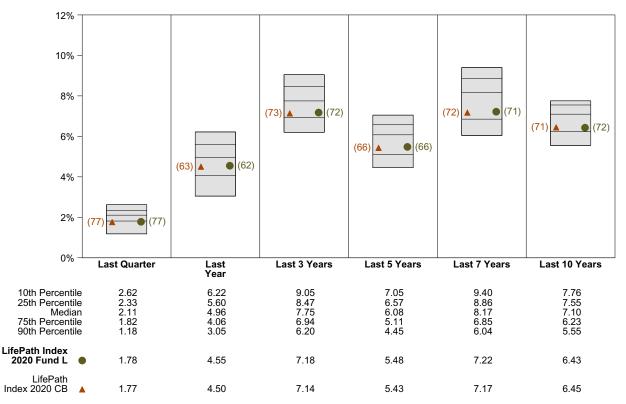
#### **Investment Philosophy**

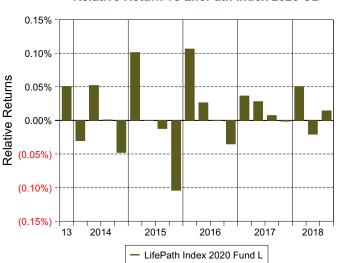
LifePath Index 2020 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2020 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2020 Fund L's portfolio posted a 1.78% return for the quarter placing it in the 77 percentile of the Callan Target Date 2020 group for the quarter and in the 62 percentile for the last year.
- LifePath Index 2020 Fund L's portfolio outperformed the LifePath Index 2020 CB by 0.01% for the quarter and outperformed the LifePath Index 2020 CB for the year by 0.05%.

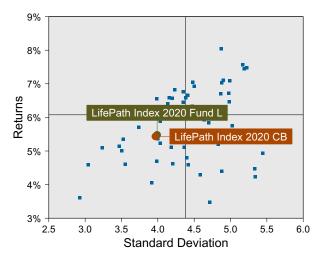
### Performance vs Callan Target Date 2020 (Institutional Net)





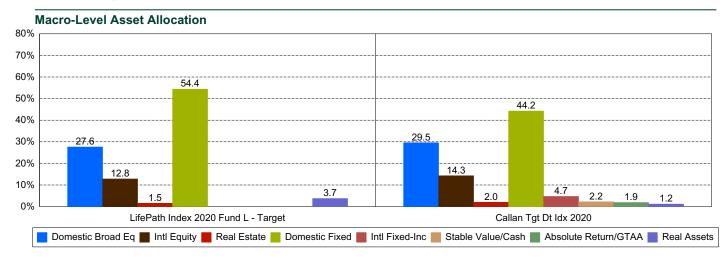
#### **Relative Return vs LifePath Index 2020 CB**

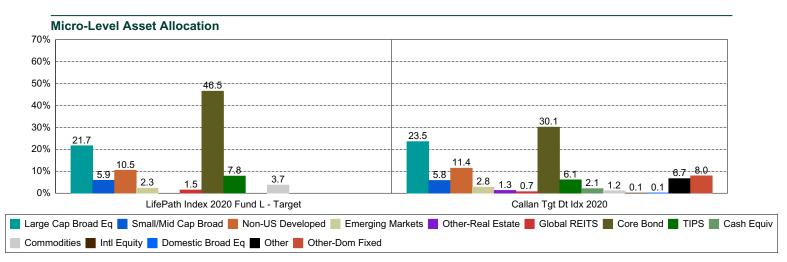
Callan Target Date 2020 (Institutional Net) Annualized Five Year Risk vs Return

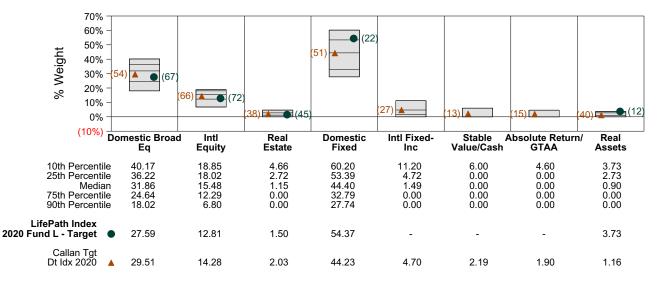


### LifePath Index 2020 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







Oregon Savings Growth Plan

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#### Macro Asset Allocation Rankings vs. Callan Target Date 2020

### LifePath Index 2025 Fund L Period Ended September 30, 2018

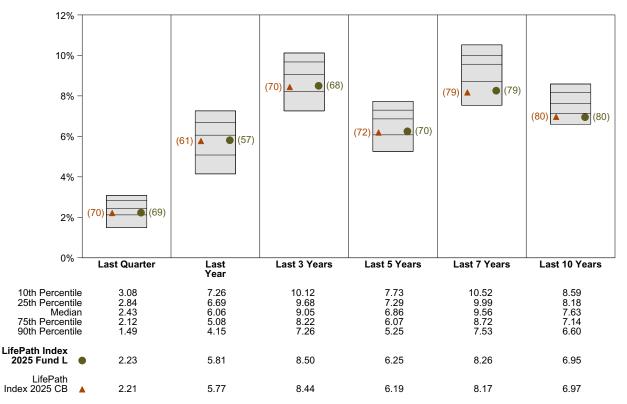
#### **Investment Philosophy**

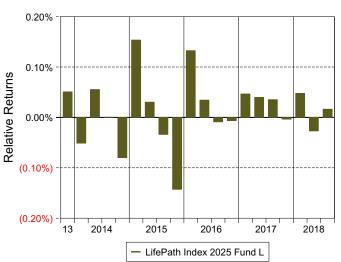
LifePath Index 2025 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2025 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2025 Fund L's portfolio posted a 2.23% return for the quarter placing it in the 69 percentile of the Callan Target Date 2025 group for the quarter and in the 57 percentile for the last year.
- LifePath Index 2025 Fund L's portfolio outperformed the LifePath Index 2025 CB by 0.02% for the quarter and outperformed the LifePath Index 2025 CB for the year by 0.04%.

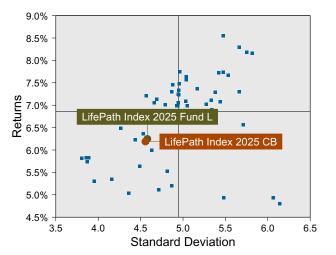
### Performance vs Callan Target Date 2025 (Institutional Net)





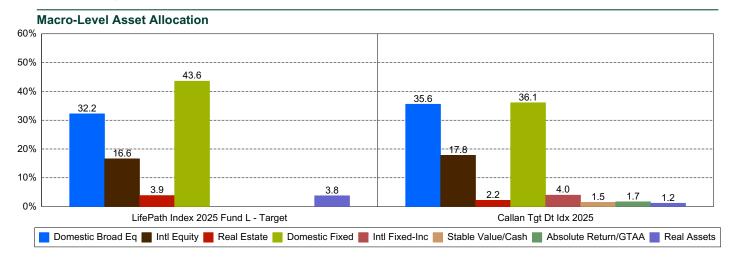
#### **Relative Return vs LifePath Index 2025 CB**

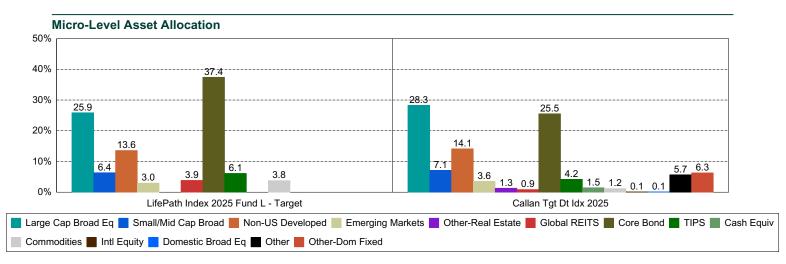
Callan Target Date 2025 (Institutional Net) Annualized Five Year Risk vs Return

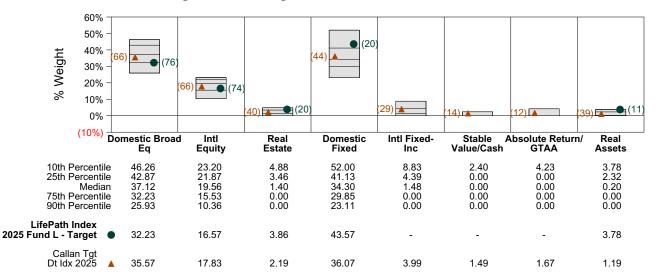


### LifePath Index 2025 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2025

### LifePath Index 2030 Fund L Period Ended September 30, 2018

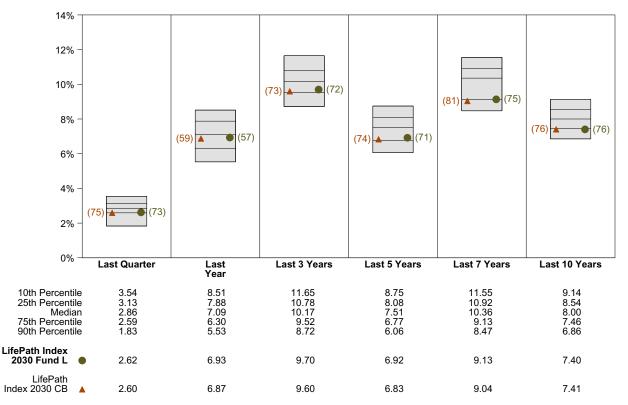
#### **Investment Philosophy**

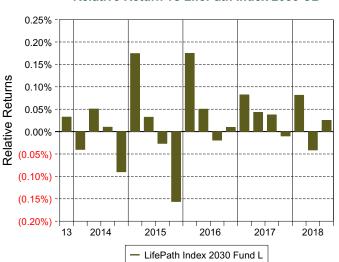
LifePath Index 2030 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2030 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2030 Fund L's portfolio posted a 2.62% return for the quarter placing it in the 73 percentile of the Callan Target Date 2030 group for the quarter and in the 57 percentile for the last year.
- LifePath Index 2030 Fund L's portfolio outperformed the LifePath Index 2030 CB by 0.02% for the quarter and outperformed the LifePath Index 2030 CB for the year by 0.06%.

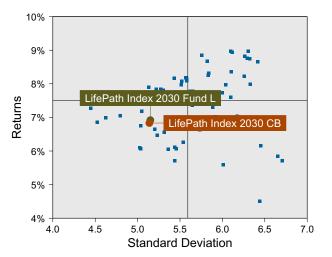
### Performance vs Callan Target Date 2030 (Institutional Net)





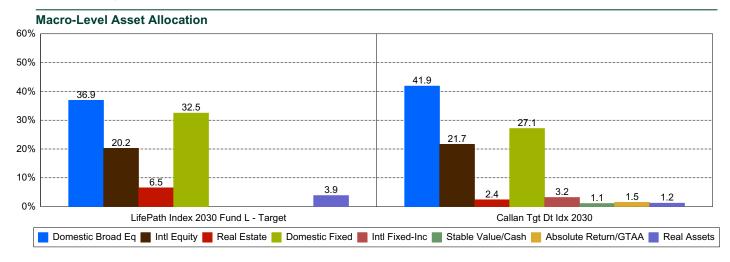
#### **Relative Return vs LifePath Index 2030 CB**

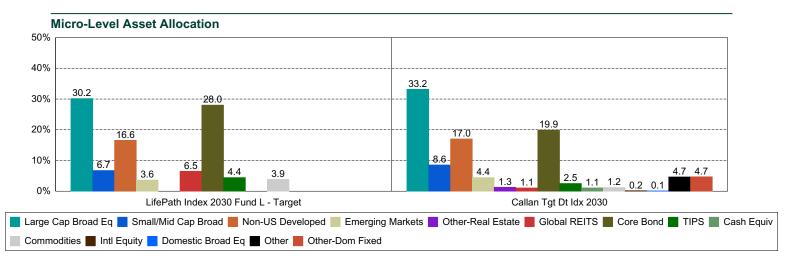
Callan Target Date 2030 (Institutional Net) Annualized Five Year Risk vs Return

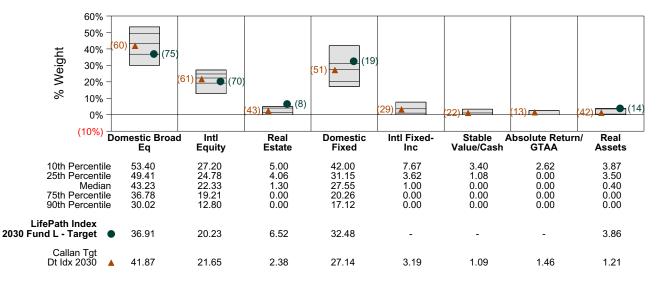


### LifePath Index 2030 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2030

### LifePath Index 2035 Fund L Period Ended September 30, 2018

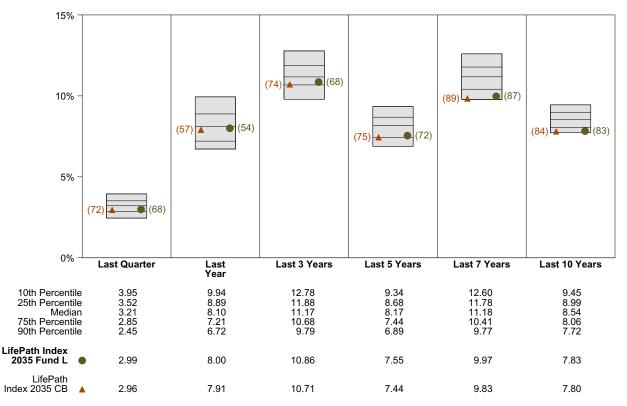
#### **Investment Philosophy**

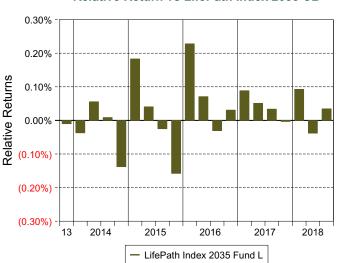
LifePath Index 2035 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2035 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2035 Fund L's portfolio posted a 2.99% return for the quarter placing it in the 68 percentile of the Callan Target Date 2035 group for the quarter and in the 54 percentile for the last year.
- LifePath Index 2035 Fund L's portfolio outperformed the LifePath Index 2035 CB by 0.03% for the quarter and outperformed the LifePath Index 2035 CB for the year by 0.09%.

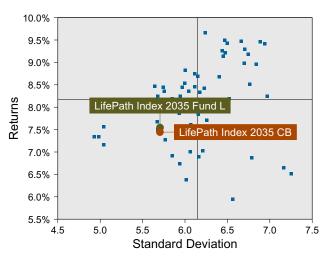
### Performance vs Callan Target Date 2035 (Institutional Net)





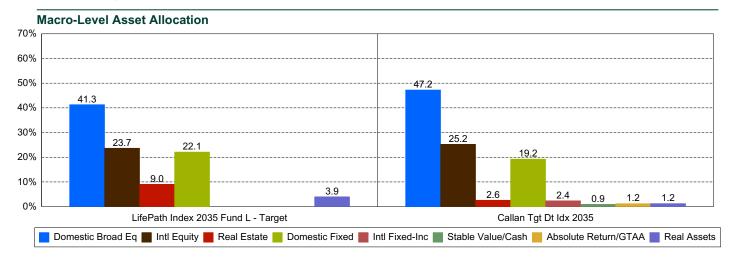
#### **Relative Return vs LifePath Index 2035 CB**

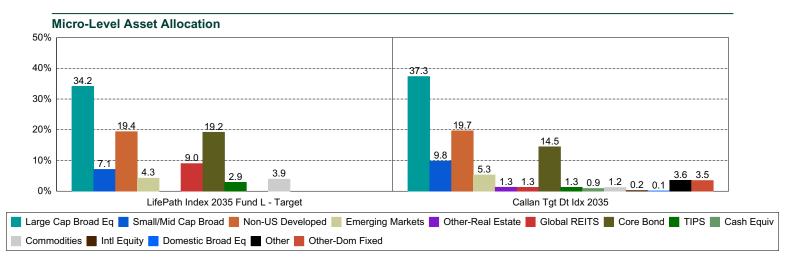


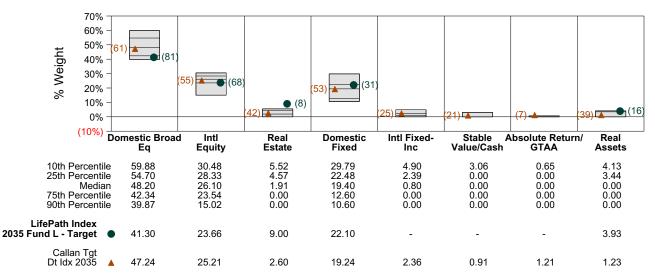


### LifePath Index 2035 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2035

### LifePath Index 2040 Fund L Period Ended September 30, 2018

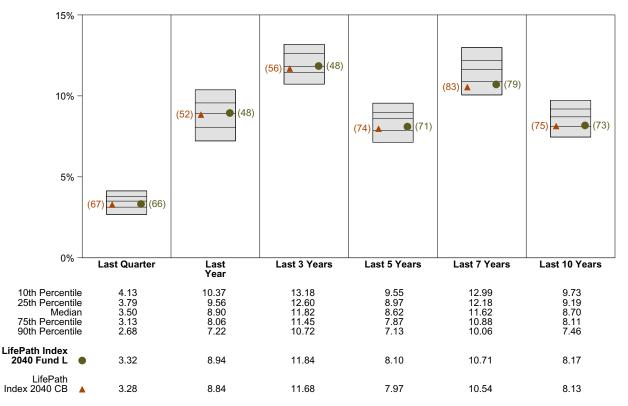
#### **Investment Philosophy**

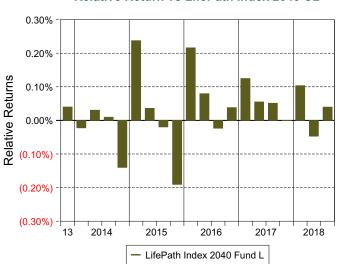
LifePath Index 2040 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2040 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2040 Fund L's portfolio posted a 3.32% return for the quarter placing it in the 66 percentile of the Callan Target Date 2040 group for the quarter and in the 48 percentile for the last year.
- LifePath Index 2040 Fund L's portfolio outperformed the LifePath Index 2040 CB by 0.04% for the quarter and outperformed the LifePath Index 2040 CB for the year by 0.11%.

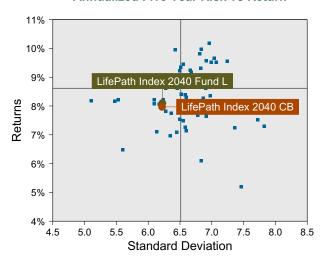
### Performance vs Callan Target Date 2040 (Institutional Net)





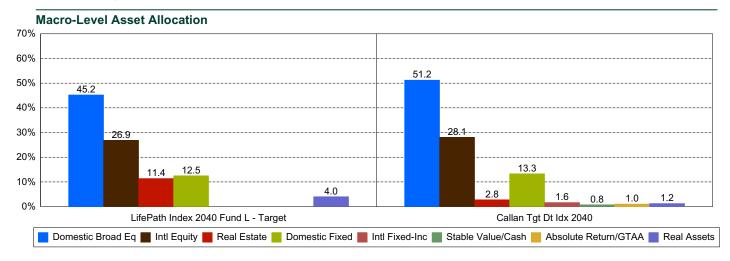
#### **Relative Return vs LifePath Index 2040 CB**

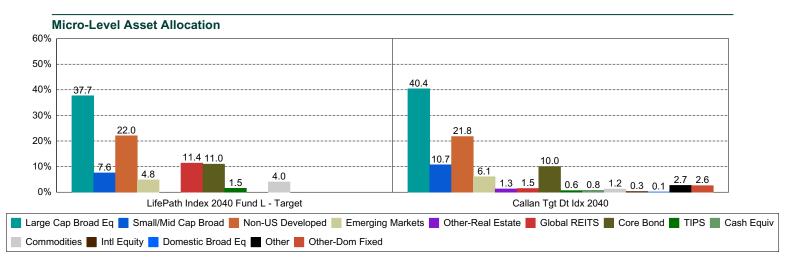
Callan Target Date 2040 (Institutional Net) Annualized Five Year Risk vs Return

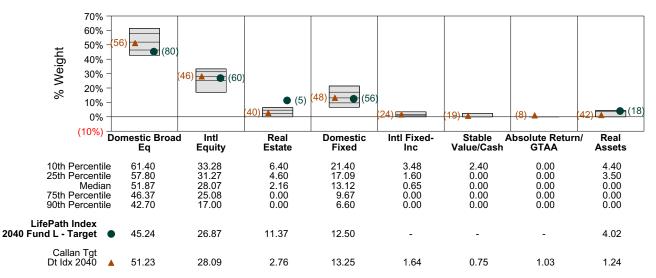


### LifePath Index 2040 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2040

### LifePath Index 2045 Fund L Period Ended September 30, 2018

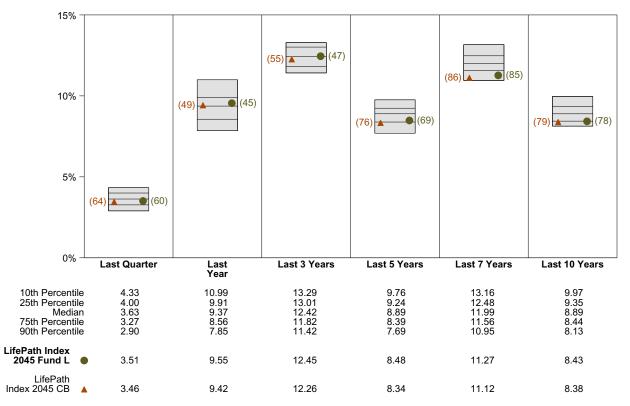
#### **Investment Philosophy**

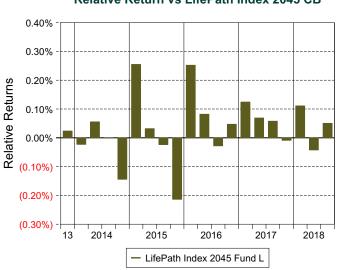
LifePath Index 2045 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2045 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2045 Fund L's portfolio posted a 3.51% return for the quarter placing it in the 60 percentile of the Callan Target Date 2045 group for the quarter and in the 45 percentile for the last year.
- LifePath Index 2045 Fund L's portfolio outperformed the LifePath Index 2045 CB by 0.05% for the quarter and outperformed the LifePath Index 2045 CB for the year by 0.12%.

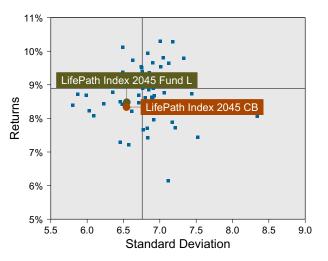
### Performance vs Callan Target Date 2045 (Institutional Net)





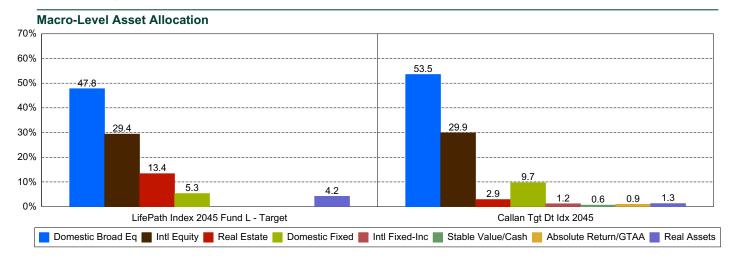
#### **Relative Return vs LifePath Index 2045 CB**

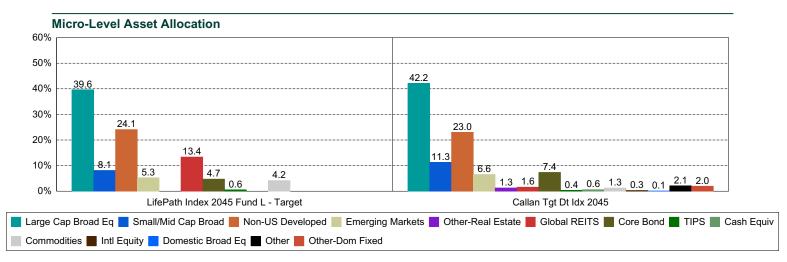
Callan Target Date 2045 (Institutional Net) Annualized Five Year Risk vs Return

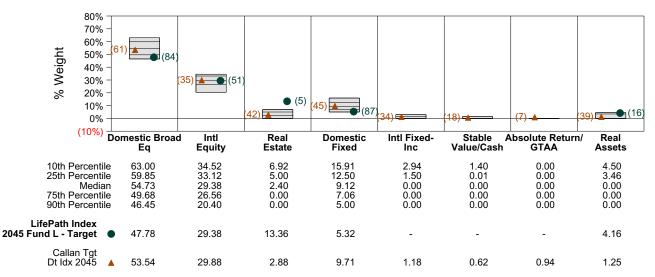


### LifePath Index 2045 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2045

### LifePath Index 2050 Fund L Period Ended September 30, 2018

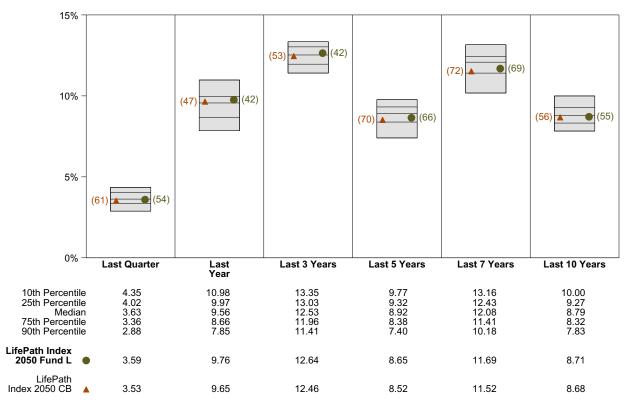
#### **Investment Philosophy**

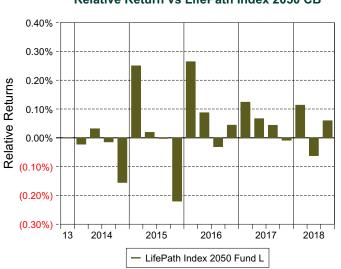
LifePath Index 2050 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2050 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2050 Fund L's portfolio posted a 3.59% return for the quarter placing it in the 54 percentile of the Callan Target Date 2050 group for the quarter and in the 42 percentile for the last year.
- LifePath Index 2050 Fund L's portfolio outperformed the LifePath Index 2050 CB by 0.06% for the quarter and outperformed the LifePath Index 2050 CB for the year by 0.11%.

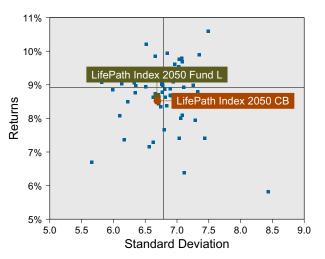
### Performance vs Callan Target Date 2050 (Institutional Net)





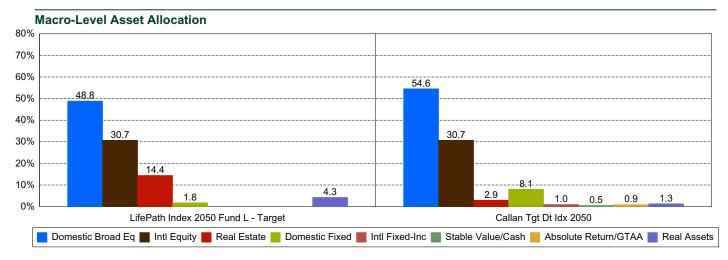
#### **Relative Return vs LifePath Index 2050 CB**

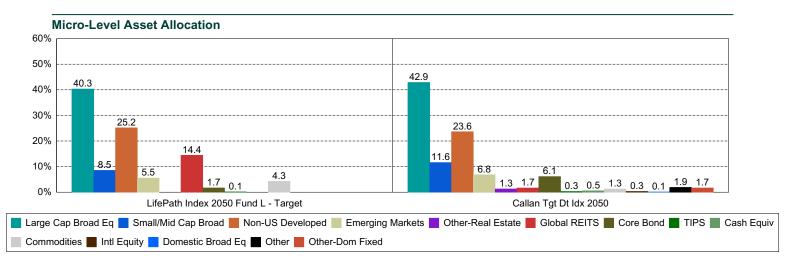
Callan Target Date 2050 (Institutional Net) Annualized Five Year Risk vs Return

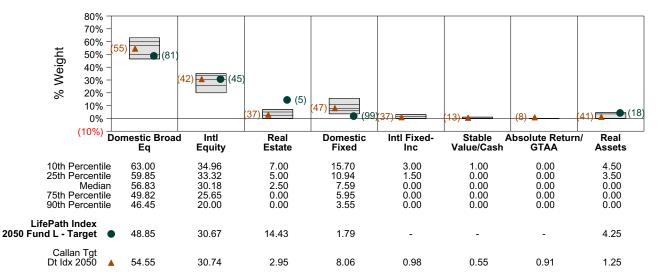


### LifePath Index 2050 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2050

### LifePath Index 2055 Fund L Period Ended September 30, 2018

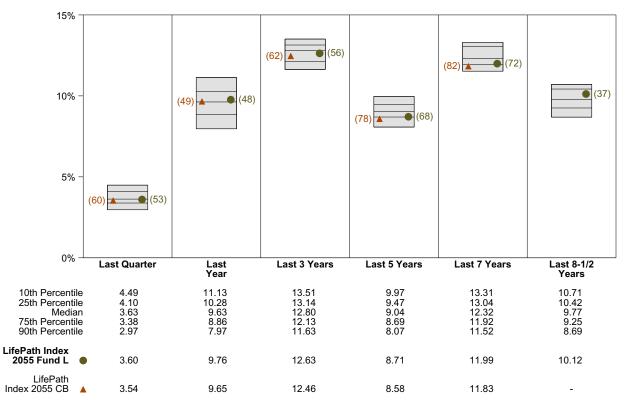
#### **Investment Philosophy**

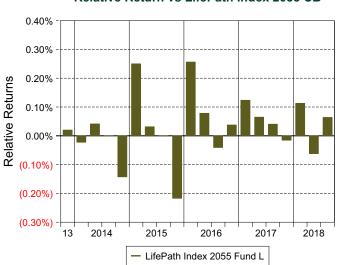
LifePath Index 2055 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2055 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

#### **Quarterly Summary and Highlights**

- LifePath Index 2055 Fund L's portfolio posted a 3.60% return for the quarter placing it in the 53 percentile of the Callan Target Date 2055 group for the quarter and in the 48 percentile for the last year.
- LifePath Index 2055 Fund L's portfolio outperformed the LifePath Index 2055 CB by 0.06% for the quarter and outperformed the LifePath Index 2055 CB for the year by 0.11%.

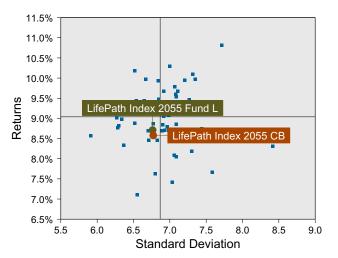
### Performance vs Callan Target Date 2055 (Institutional Net)





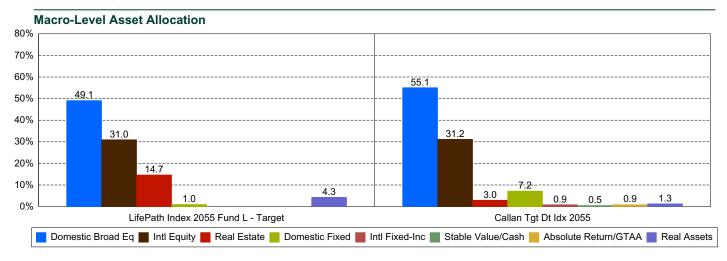
#### **Relative Return vs LifePath Index 2055 CB**

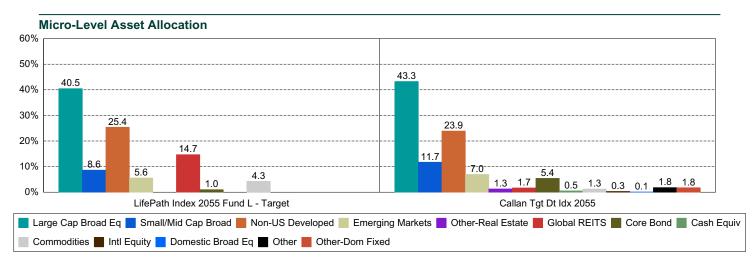
Callan Target Date 2055 (Institutional Net) Annualized Five Year Risk vs Return

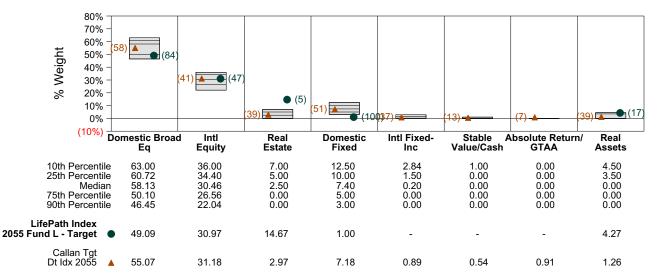


### LifePath Index 2055 Fund L Target Date Fund Asset Allocation as of September 30, 2018

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2055

### LifePath Index 2060 Fund L Period Ended September 30, 2018

#### **Investment Philosophy**

LifePath Index 2060 Portfolio seeks to maximize return consistent with the quantitatively measured risk that investors planning to retire (or begin to withdraw substantial portions of their investment) approximately in the year 2060 may be willing to accept. BlackRock LifePath Funds changed from Q class to L class on 10/26/17.

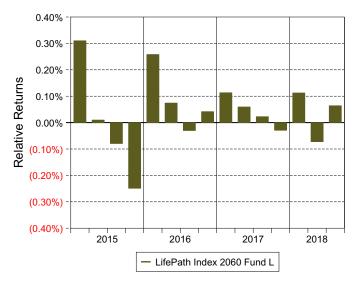
#### **Quarterly Summary and Highlights**

- LifePath Index 2060 Fund L's portfolio posted a 3.60% return for the quarter placing it in the 60 percentile of the Callan Target Date 2060 group for the quarter and in the 53 percentile for the last year.
- LifePath Index 2060 Fund L's portfolio outperformed the LifePath Index 2060 CB by 0.06% for the quarter and outperformed the LifePath Index 2060 CB for the year by 0.08%.

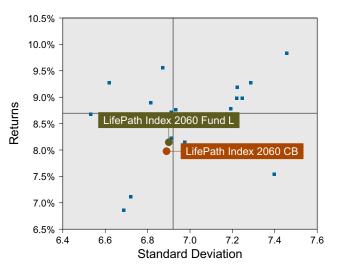
#### Performance vs Callan Target Date 2060 (Institutional Net)



Relative Return vs LifePath Index 2060 CB



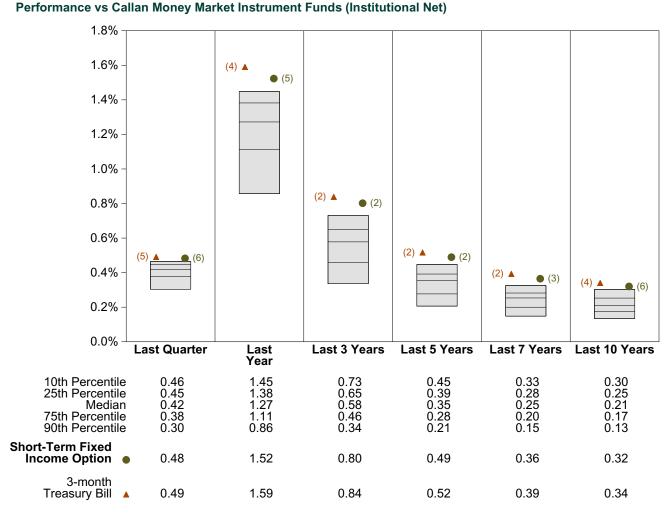
Callan Target Date 2060 (Institutional Net) Annualized Three and Three-Quarter Year Risk vs Return



### Short-Term Fixed Income Option Period Ended September 30, 2018

#### **Quarterly Summary and Highlights**

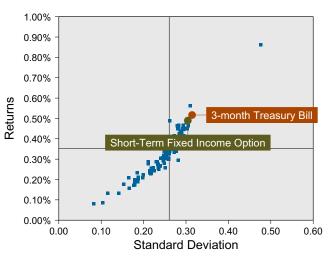
- Short-Term Fixed Income Option's portfolio posted a 0.48% return for the quarter placing it in the 6 percentile of the Callan Money Market Instrument Funds group for the quarter and in the 5 percentile for the last year.
- Short-Term Fixed Income Option's portfolio underperformed the 3-month Treasury Bill by 0.01% for the quarter and underperformed the 3-month Treasury Bill for the year by 0.07%.



**Relative Return vs 3-month Treasury Bill** 



Callan Money Market Instrument Funds (Institutional Net) Annualized Five Year Risk vs Return



## Short-Term Fixed Income Option Return Analysis Summary

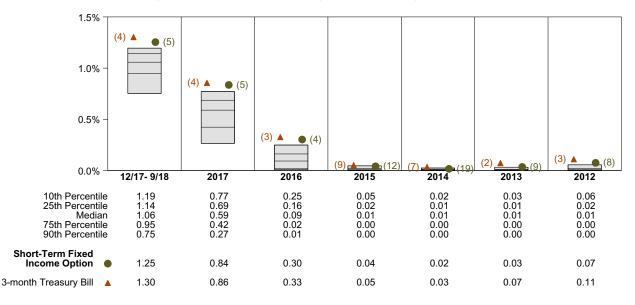
## **Return Analysis**

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.

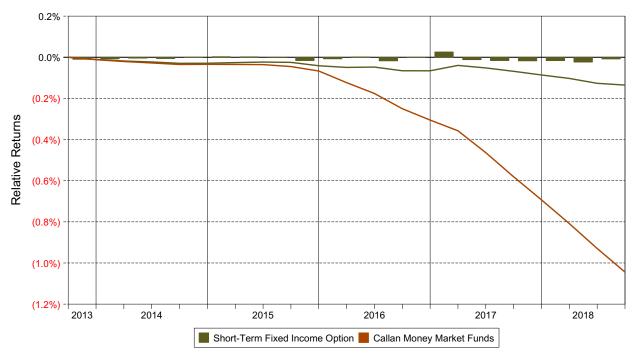
#### Risk Adjusted Return Measures vs 3-month Treasury Bill Five Years Ended September 30, 2018

			Tracking	Standard	Sharpe	Excess	Downside
	Alpha	Beta	Error	Deviation	Ratio	Return	Risk
Short-Term Fixed Income Option	(0.03%)	0.00	0.02	0.30%	(0.09)	(0.03)	0.02%

Performance vs Callan Money Market Instrument Funds (Institutional Net)



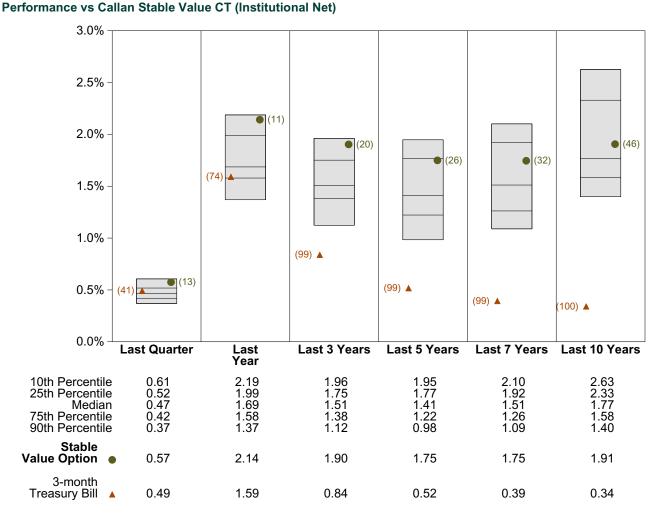
## Cumulative and Quarterly Relative Return vs 3-month Treasury Bill



## Stable Value Option Period Ended September 30, 2018

## **Quarterly Summary and Highlights**

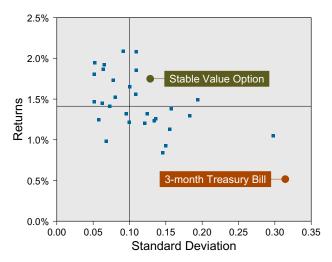
- Stable Value Option's portfolio posted a 0.57% return for the quarter placing it in the 13 percentile of the Callan Stable Value CT group for the quarter and in the 11 percentile for the last year.
- Stable Value Option's portfolio outperformed the 3-month Treasury Bill by 0.08% for the quarter and outperformed the 3-month Treasury Bill for the year by 0.55%.





#### **Relative Return vs 3-month Treasury Bill**

#### Callan Stable Value CT (Institutional Net) Annualized Five Year Risk vs Return



## Stable Value Option Return Analysis Summary

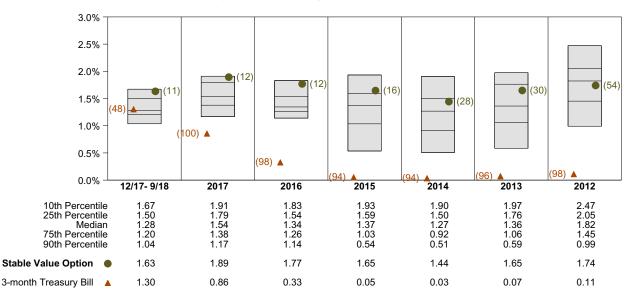
## **Return Analysis**

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.

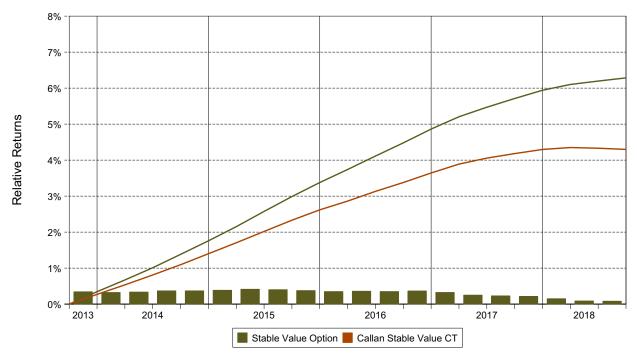
## Risk Adjusted Return Measures vs 3-month Treasury Bill Five Years Ended September 30, 2018

-			Tracking	Standard	Sharpe	Excess	Downside
	Alpha	Beta	Error	Deviation	Ratio	Return	Risk
Stable Value Option	1.23%	0.00	0.20	0.13%	9.59	1.23	0.00%

Performance vs Callan Stable Value CT (Institutional Net)



## Cumulative and Quarterly Relative Return vs 3-month Treasury Bill

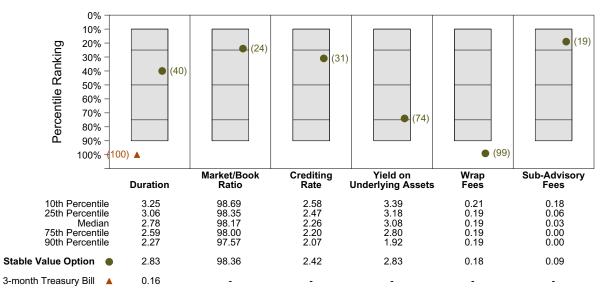


## Stable Value Option Stable Value Characteristics Analysis Summary

## **Portfolio Characteristics**

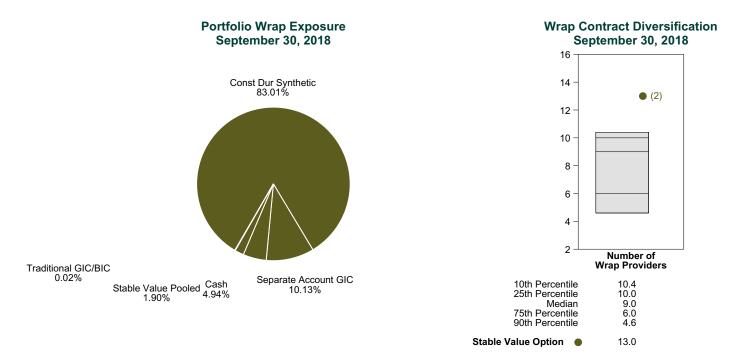
This graph compares the stable value fund's portfolio characteristics with the range of characteristics for the portfolios which make up the fund's style group. This analysis illustrates whether the fund's current structure is consistent with other funds employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Stable Value CT as of September 30, 2018



#### Wrap Structure and Diversification

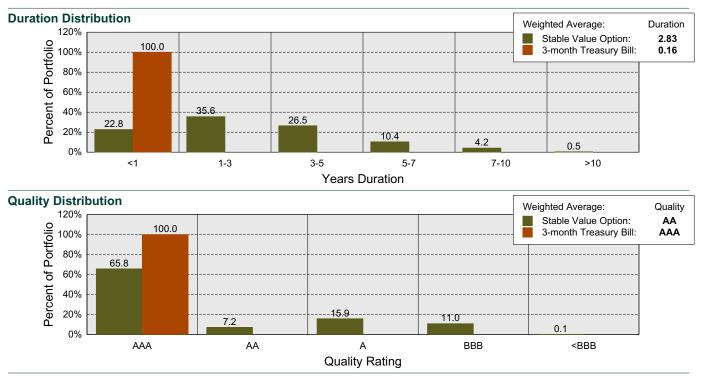
The graph below represents the stable value fund's wrap contract structure as of the most recent reporting period. The fund's overall wrap structure may include exposure to constant duration or maturing synthetic GIC contracts, traditional GIC contracts, cash, or other exposures. These contracts allow stable value portfolios to maintain book value accounting practices and a stable net asset value.



## Stable Value Option Stable Value Portfolio Characteristics Summary As of September 30, 2018

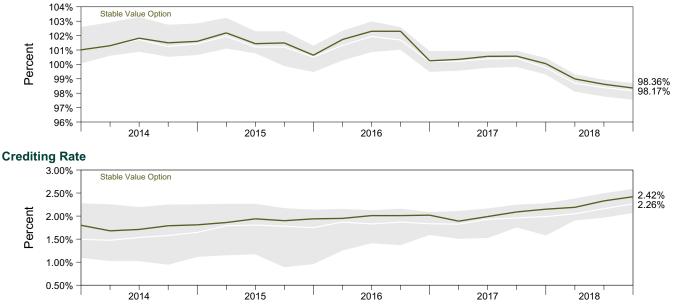
## **Portfolio Structure Comparison**

The charts below compare the structure of the portfolio to that of the index from two perspectives that have the greatest influence on return. The first chart compares the portfolio's duration distribution versus the benchmark, and the second chart compares the distributions across quality ratings.



#### Market-to-Book Ratio and Crediting Rates Over Time

The market-to-book ratio chart below depicts the historical movement of the stable value portfolio's market-to-book ratio over time. This statistic measures the overall health of the underlying portfolio. Portfolios with market-to-book ratios closer to 100% will be better positioned to absorb flows and should offer greater return stability over time. The crediting rate chart below depicts the historical movement of the stable value portfolio's crediting rate over time. As a backdrop the range (from 10th to 90th percentile) is shown along with a white median line for the Callan Stable Value CT Universe.

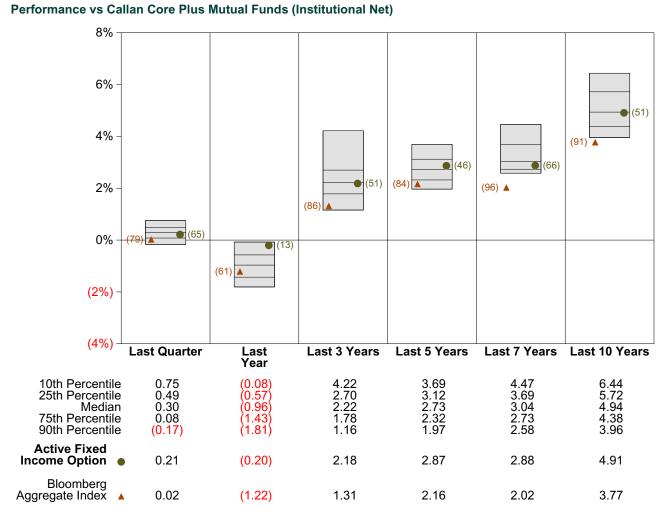


## Market-to-Book Ratio

## Active Fixed Income Option Period Ended September 30, 2018

## **Quarterly Summary and Highlights**

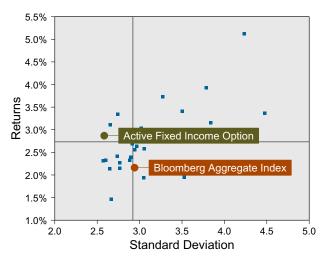
- Active Fixed Income Option's portfolio posted a 0.21% return for the quarter placing it in the 65 percentile of the Callan Core Plus Mutual Funds group for the quarter and in the 13 percentile for the last year.
- Active Fixed Income Option's portfolio outperformed the Bloomberg Aggregate Index by 0.19% for the quarter and outperformed the Bloomberg Aggregate Index for the year by 1.01%.





Relative Returns vs Bloomberg Aggregate Index

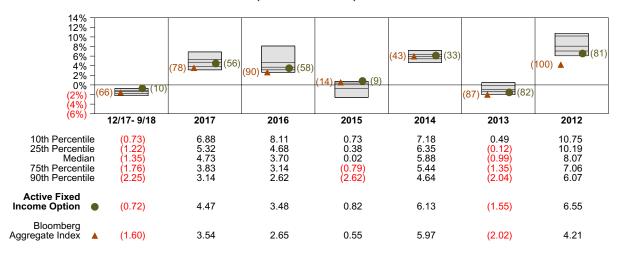
Callan Core Plus Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Active Fixed Income Option Return Analysis Summary

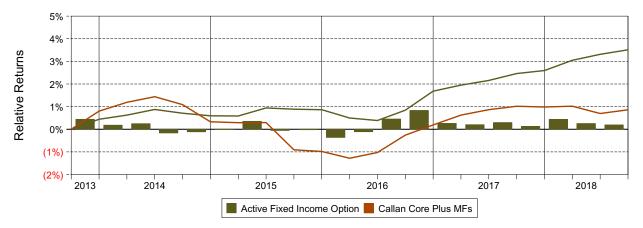
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

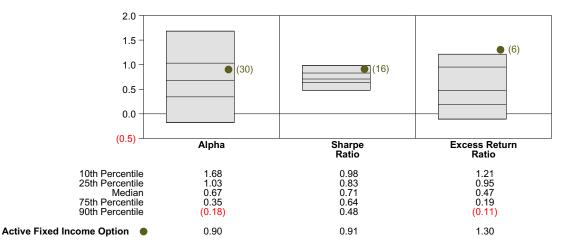


#### Performance vs Callan Core Plus Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs Bloomberg Aggregate Index



Risk Adjusted Return Measures vs Bloomberg Aggregate Index Rankings Against Callan Core Plus Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



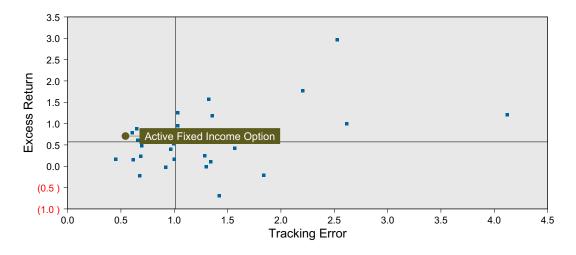


## **Active Fixed Income Option Risk Analysis Summary**

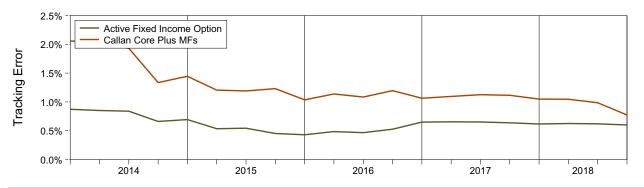
#### **Risk Analysis**

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 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.

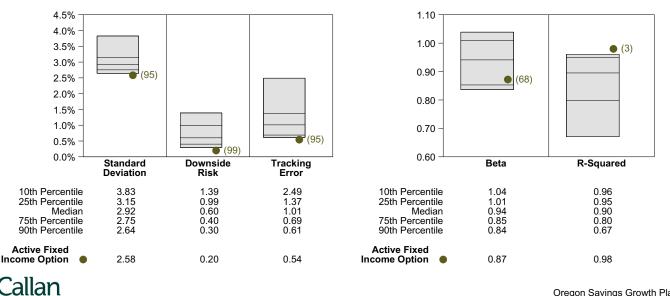
**Risk Analysis vs Callan Core Plus Mutual Funds (Institutional Net)** Five Years Ended September 30, 2018









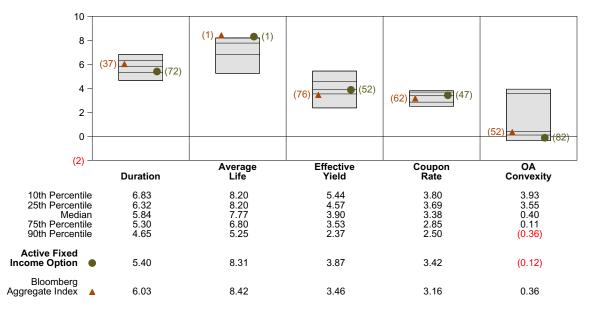


## Active Fixed Income Option Bond Characteristics Analysis Summary

## **Portfolio Characteristics**

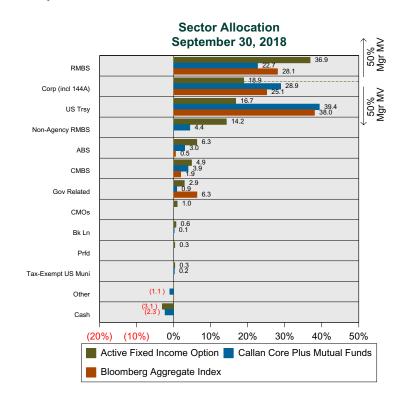
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Plus Mutual Funds as of September 30, 2018

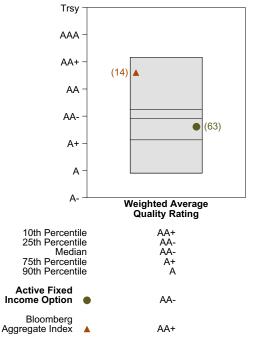


## Sector Allocation and Quality Ratings

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.



## Quality Ratings vs Callan Core Plus Mutual Funds



## BlackRock US Debt Index Fund Period Ended September 30, 2018

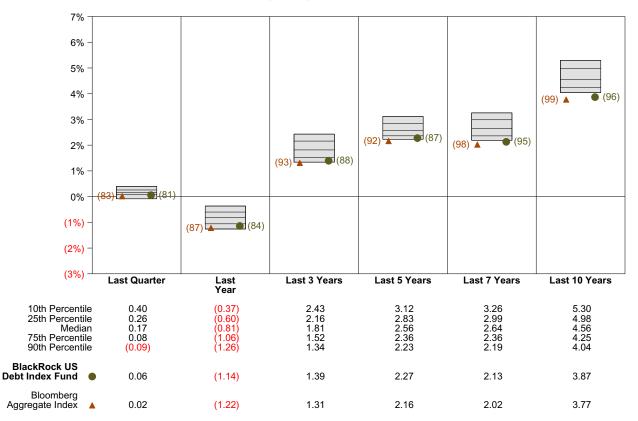
## **Investment Philosophy**

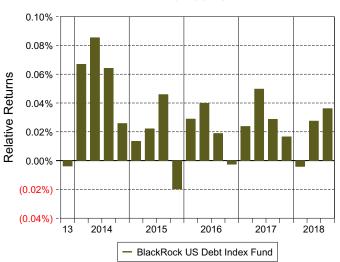
The U.S. Debt Index Fund is constructed to ensure that the risk and return profile of the Bloomberg Barclays Aggregate Bond index is replicated and tracking error is minimized.

#### **Quarterly Summary and Highlights**

- BlackRock US Debt Index Fund's portfolio posted a 0.06% return for the quarter placing it in the 81 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 84 percentile for the last year.
- BlackRock US Debt Index Fund's portfolio outperformed the Bloomberg Aggregate Index by 0.04% for the quarter and outperformed the Bloomberg Aggregate Index for the year by 0.07%.

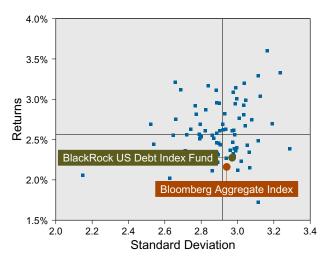
#### Performance vs Callan Core Bond Fixed Income (Gross)





#### Relative Returns vs Bloomberg Aggregate Index

## Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return

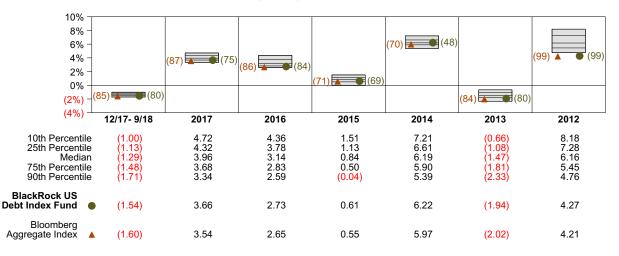


## BlackRock US Debt Index Fund Return Analysis Summary

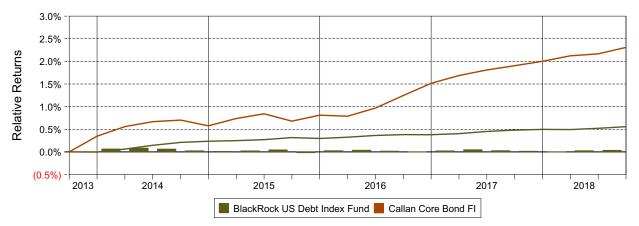
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

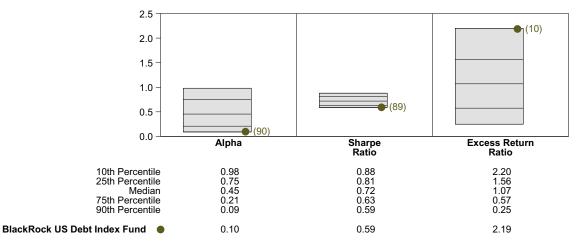
#### Performance vs Callan Core Bond Fixed Income (Gross)



Cumulative and Quarterly Relative Return vs Bloomberg Aggregate Index



Risk Adjusted Return Measures vs Bloomberg Aggregate Index Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended September 30, 2018



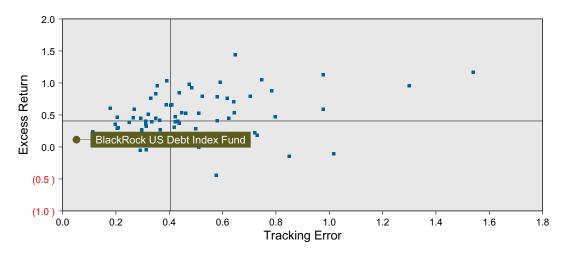


## BlackRock US Debt Index Fund **Risk Analysis Summary**

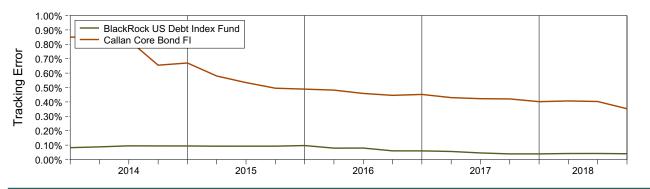
#### **Risk Analysis**

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 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.

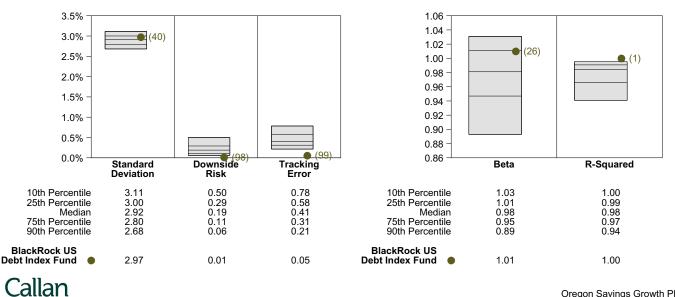
Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended September 30, 2018









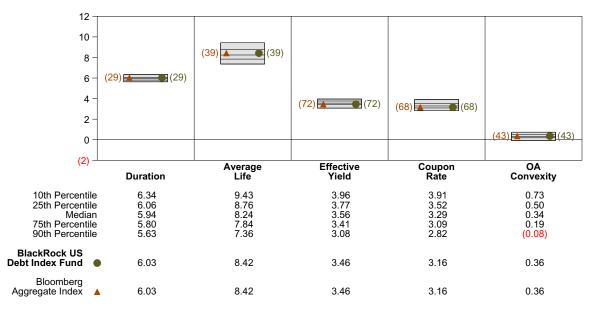


## BlackRock US Debt Index Fund Bond Characteristics Analysis Summary

## **Portfolio Characteristics**

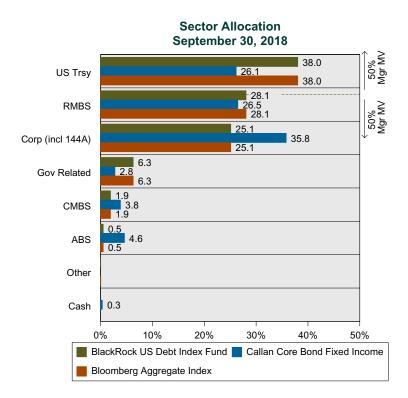
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of September 30, 2018

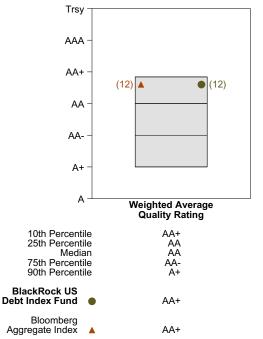


## Sector Allocation and Quality Ratings

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.



## Quality Ratings vs Callan Core Bond Fixed Income



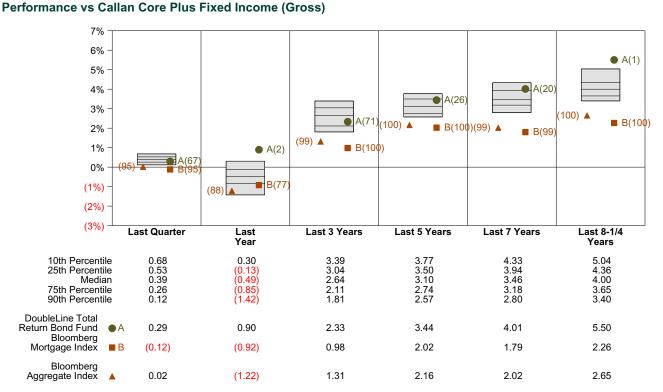
## DoubleLine Total Return Bond Fund Period Ended September 30, 2018

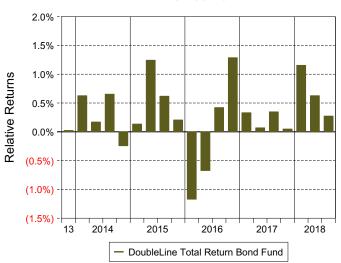
#### **Investment Philosophy**

DoubleLine believes that the most reliable way to enhance returns is to exploit inefficiencies within the subsectors of the MBS market, while maintaining active risk management constraints. DoubleLine's objective is to invest in securities that will outperform through the interest rate cycle, i.e., not only in today's environment but also when rates are higher and lower. DoubleLine does not believe that an investor can meaningfully outperform the market through interest rate predictions, but rather, through security selection.

#### **Quarterly Summary and Highlights**

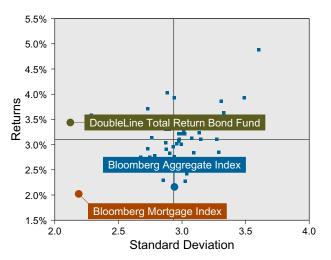
- DoubleLine Total Return Bond Fund's portfolio posted a 0.29% return for the quarter placing it in the 67 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 2 percentile for the last year.
- DoubleLine Total Return Bond Fund's portfolio outperformed the Bloomberg Aggregate Index by 0.27% for the quarter and outperformed the Bloomberg Aggregate Index for the year by 2.11%.





#### Relative Returns vs Bloomberg Aggregate Index

## Callan Core Plus Fixed Income (Gross) Annualized Five Year Risk vs Return



## DoubleLine Total Return Bond Fund Return Analysis Summary

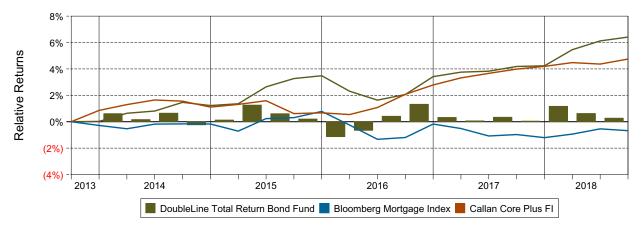
Performance vs Callan Core Plus Fixed Income (Gross)

## **Return Analysis**

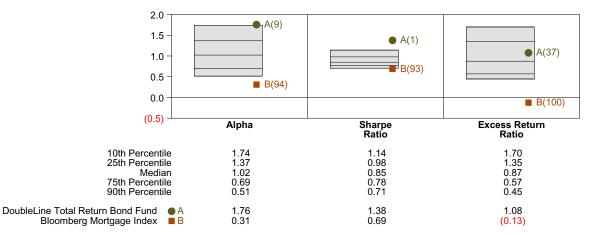
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

#### 12% 10% 8% 6% 2% 0% A(25) A(80) B(1000) (100) 🔺 95) ■ B(100) A(1) A(14 B(82 (96) (86) 🔽 4% 12/17-9/18 2017 2016 2015 2014 2013 2012 6.64 5.36 10th Percentile 6.10 5.45 4.97 11.56 1.05 7.34 1.10 25th Percentile 0.76 6.88 9.75 0.75 (0.13)6.18 5.70 5.36 Median .14) 4.67 0.34 0.67 8.66 75th Percentile 4.41 3.94 3.73 3.22 (0.36) (1.08) 7.08 6.13 35 1 07 90th Percentile .86 (1.66) DoubleLine Total Return Bond Fund 2.79 7.24 4.36 2.58 0.50 9.76 • A 0.46 Bloomberg Mortgage Index (1.07)2.47 1.67 1.51 6.08 (1.41) 2.59 Bloomberg Aggregate Index 3.54 2.65 0.55 5.97 4.21 (1.60)(2.02)

Cumulative and Quarterly Relative Return vs Bloomberg Aggregate Index



Risk Adjusted Return Measures vs Bloomberg Aggregate Index Rankings Against Callan Core Plus Fixed Income (Gross) Five Years Ended September 30, 2018

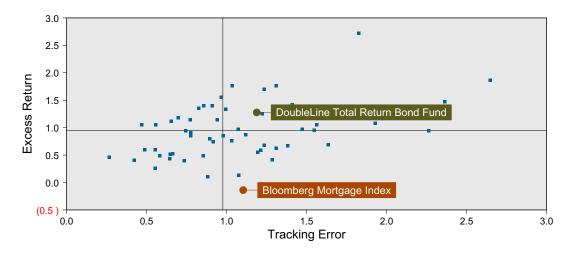


## **DoubleLine Total Return Bond Fund Risk Analysis Summary**

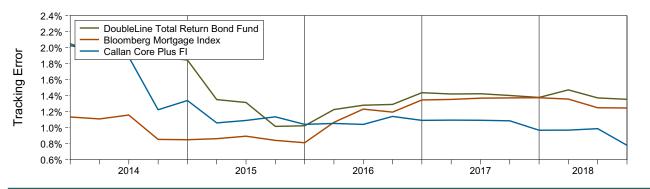
#### **Risk Analysis**

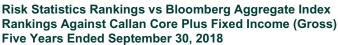
The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over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

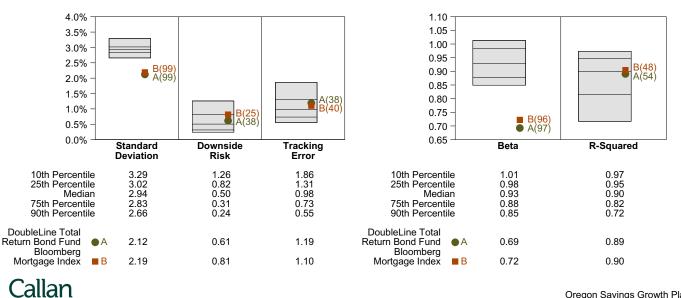
Risk Analysis vs Callan Core Plus Fixed Income (Gross) Five Years Ended September 30, 2018









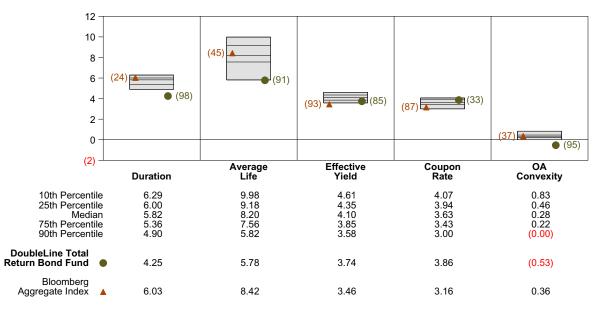


## DoubleLine Total Return Bond Fund Bond Characteristics Analysis Summary

## **Portfolio Characteristics**

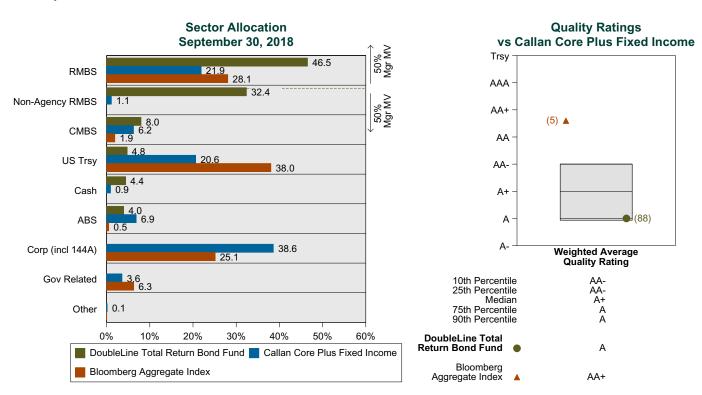
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Plus Fixed Income as of September 30, 2018



## 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.



## Wellington Trust Core Bond Plus Fund Period Ended September 30, 2018

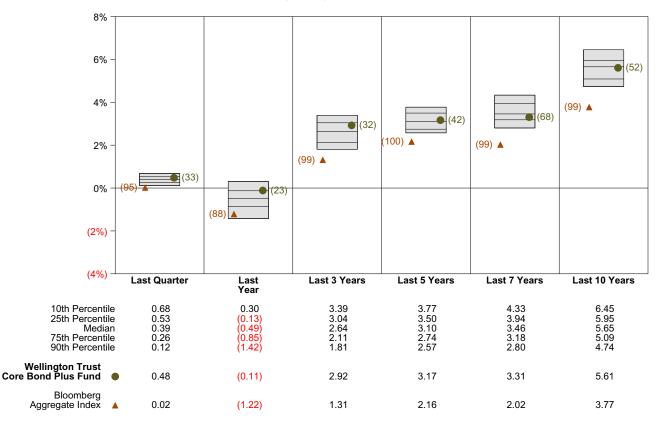
## **Investment Philosophy**

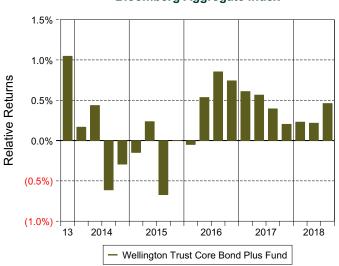
Wellington's fixed income process focuses on fundamental research, diversification and risk control. The firm's orientation is toward intensive, bottom-up research.

#### **Quarterly Summary and Highlights**

- Wellington Trust Core Bond Plus Fund's portfolio posted a 0.48% return for the quarter placing it in the 33 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 23 percentile for the last year.
- Wellington Trust Core Bond Plus Fund's portfolio outperformed the Bloomberg Aggregate Index by 0.46% for the quarter and outperformed the Bloomberg Aggregate Index for the year by 1.10%.

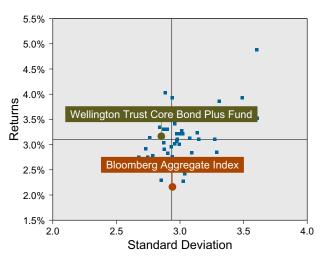
#### Performance vs Callan Core Plus Fixed Income (Gross)





#### Relative Returns vs Bloomberg Aggregate Index

## Callan Core Plus Fixed Income (Gross) Annualized Five Year Risk vs Return

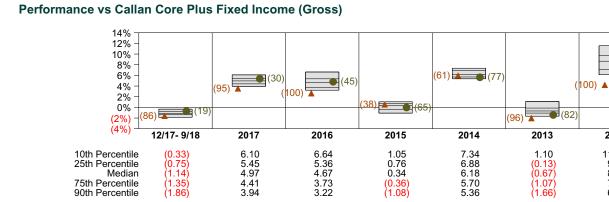


## Wellington Trust Core Bond Plus Fund Return Analysis Summary

## **Return Analysis**

Wellington Trust Core Bond Plus Fund

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

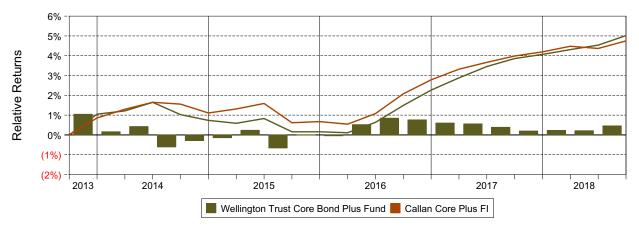


Bloomberg Aggregate Index (1.60) 3.54 2.65 0.55

5.37

(0.70)

Cumulative and Quarterly Relative Return vs Bloomberg Aggregate Index



4.81

(0.03)

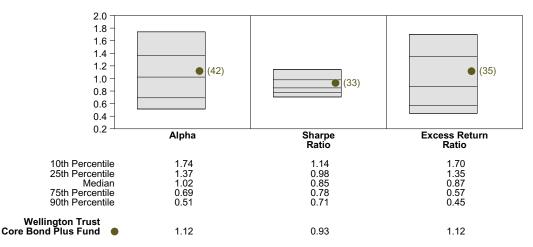
5.64

5.97

(1.42)

(2.02)

Risk Adjusted Return Measures vs Bloomberg Aggregate Index Rankings Against Callan Core Plus Fixed Income (Gross) Five Years Ended September 30, 2018



(50)

2012

11.56 9.75 8.66

7.08

6.13

8.61

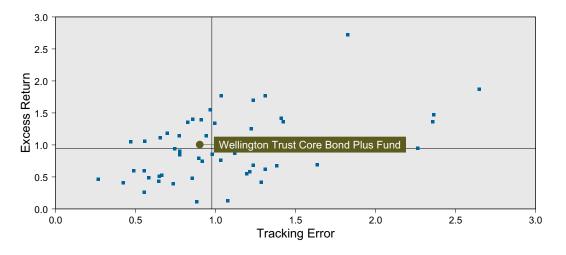
4.21

## Wellington Trust Core Bond Plus Fund Risk Analysis Summary

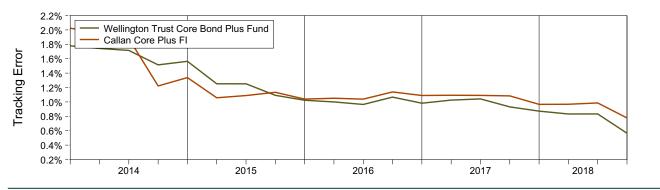
#### **Risk Analysis**

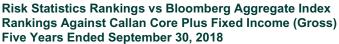
The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over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

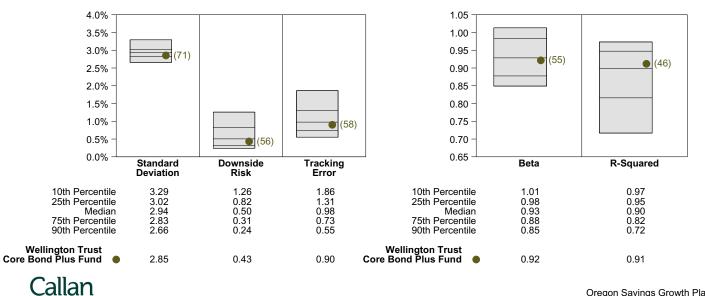
Risk Analysis vs Callan Core Plus Fixed Income (Gross) Five Years Ended September 30, 2018









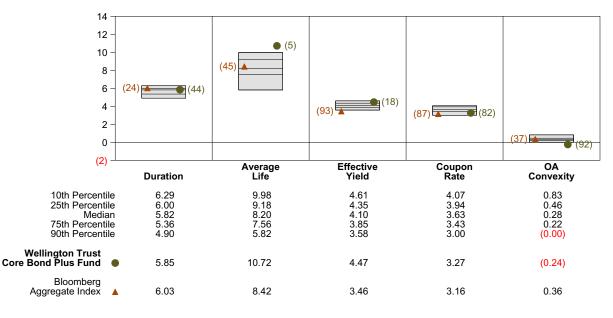


## Wellington Trust Core Bond Plus Fund Bond Characteristics Analysis Summary

## **Portfolio Characteristics**

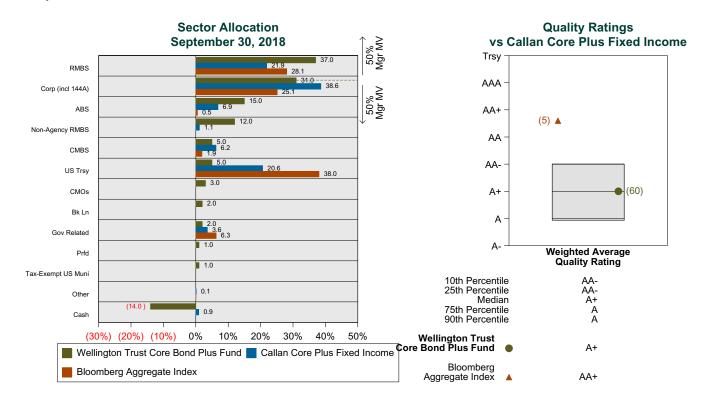
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Plus Fixed Income as of September 30, 2018



## 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.

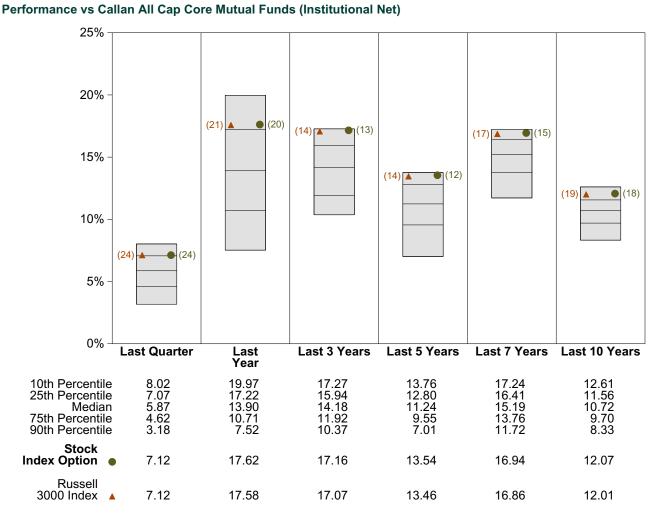


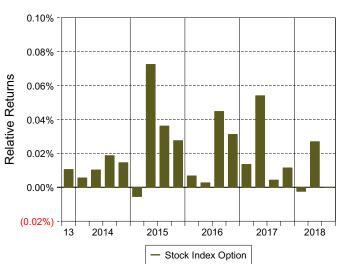


## Stock Index Option Period Ended September 30, 2018

## **Quarterly Summary and Highlights**

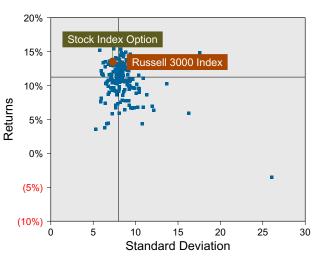
- Stock Index Option's portfolio posted a 7.12% return for the quarter placing it in the 24 percentile of the Callan All Cap Core Mutual Funds group for the quarter and in the 20 percentile for the last year.
- Stock Index Option's portfolio underperformed the Russell 3000 Index by 0.00% for the quarter and outperformed the Russell 3000 Index for the year by 0.04%.





#### **Relative Return vs Russell 3000 Index**

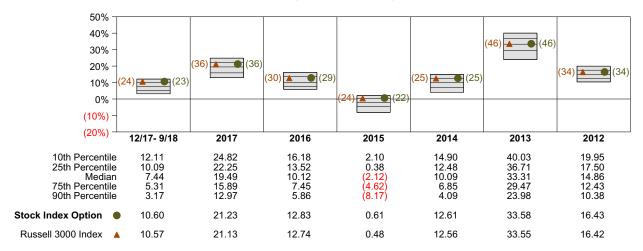
#### Callan All Cap Core Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Stock Index Option 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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

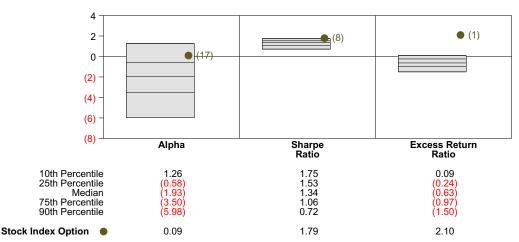


#### Performance vs Callan All Cap Core Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs Russell 3000 Index



## Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018

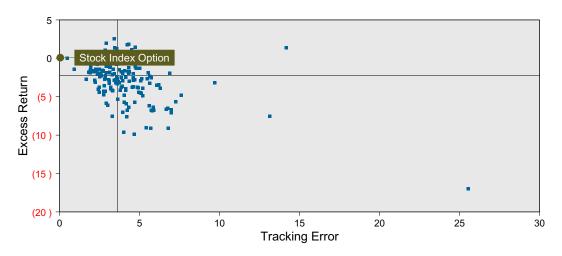


## Stock Index Option Risk Analysis Summary

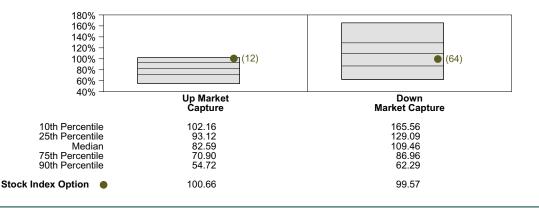
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

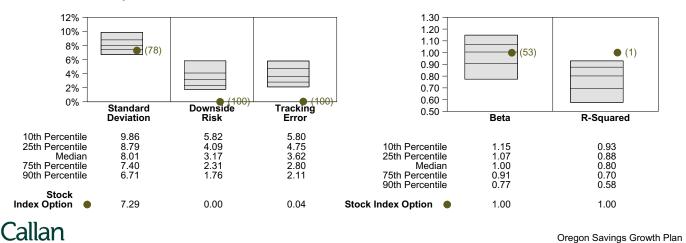
Risk Analysis vs Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



## Market Capture vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



#### Risk Statistics Rankings vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



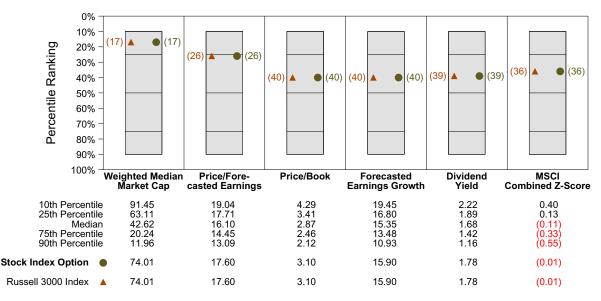
71

## Stock Index Option Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

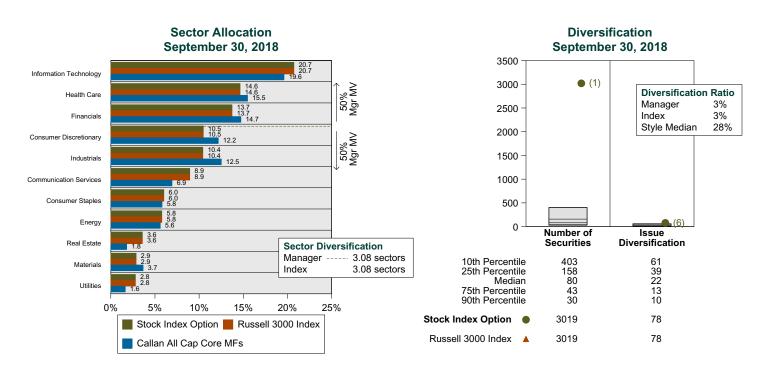
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan All Cap Core Mutual Funds as of September 30, 2018



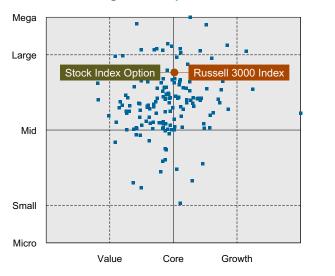
## **Sector Weights**

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.



## **Current Holdings Based Style Analysis Stock Index Option** As of September 30, 2018

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.

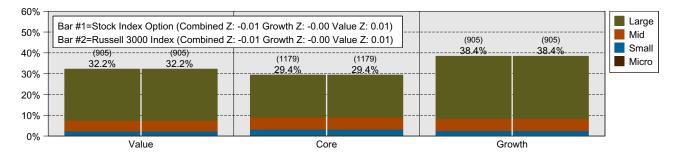


## Style Map vs Callan All Cap Core MFs Holdings as of September 30, 2018

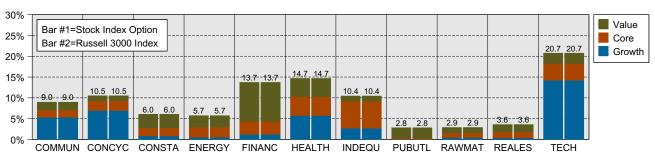
## Style Exposure Matrix Holdings as of September 30, 2018

	24.7% (97)	20.4% (107)	30.0% (95)	75.1% (299)	
Large					
	24.7% (97)	20.4% (107)	30.0% (95)	75.1% (299)	
	5.1% (186)	5.8% (201)	5.9% (211)	16.8% (598)	
Mid					
	5.1% (186)	5.8% (201)	5.9% (211)	16.8% (598)	
	2.1% (328)	2.8% (489)	2.3% (379)	7.1% (1196)	
Small					
	2.1% (328)	2.8% (489)	2.3% (379)	7.1% (1196)	
	0.3% (294)	0.4% (382)	0.2% (220)	0.9% (896)	
Micro					
	0.3% (294)	0.4% (382)	0.2% (220)	<b>0.9%</b> (896)	
	32.2% (905)	29.4% (1179)	38.4% (905)	100.0% (2989)	
Total					
	32.2% (905)	<b>29.4%</b> (1179)	38.4% (905)	100.0% (2989)	
				Total	

## **Combined Z-Score Style Distribution** Holdings as of September 30, 2018

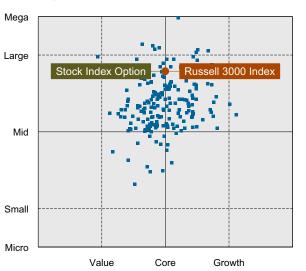


**Sector Weights Distribution** Holdings as of September 30, 2018



## Historical Holdings Based Style Analysis Stock Index Option For Three Years Ended September 30, 2018

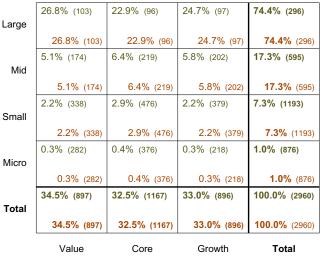
This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.



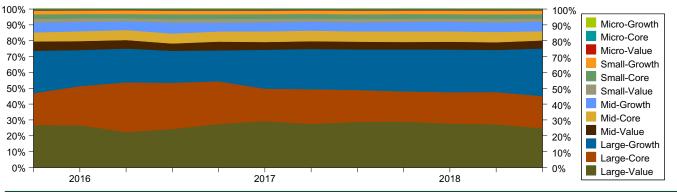
#### Average Style Map vs Callan All Cap Core MFs Holdings for Three Years Ended September 30, 2018

# Holdings for Three Years Ended September 30, 2018

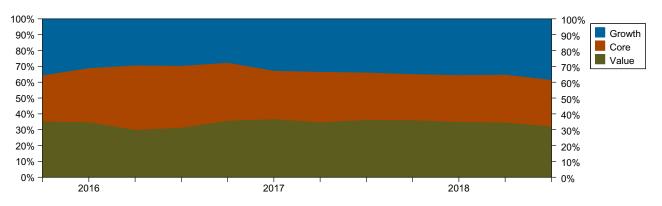
**Average Style Exposure Matrix** 







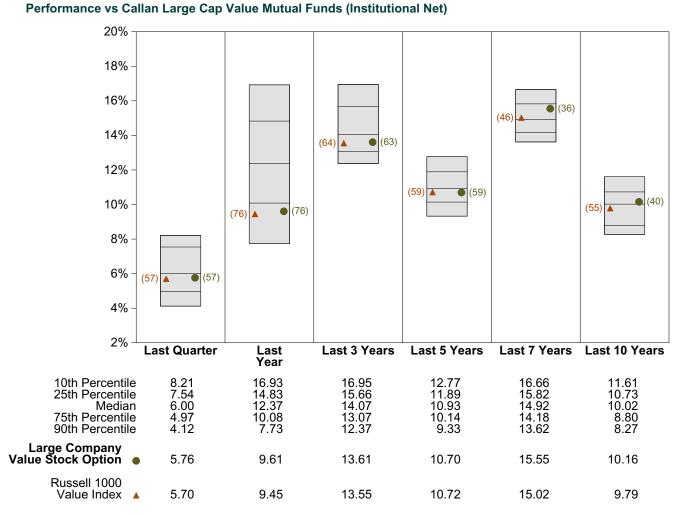


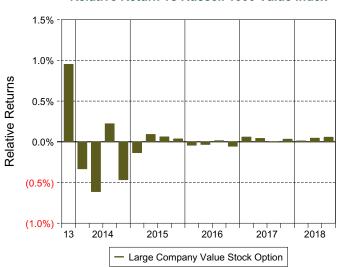


## Large Company Value Stock Option Period Ended September 30, 2018

## **Quarterly Summary and Highlights**

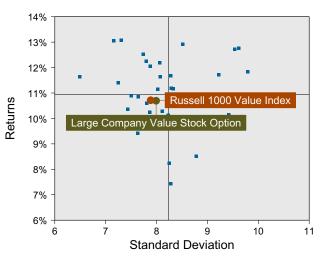
- Large Company Value Stock Option's portfolio posted a 5.76% return for the quarter placing it in the 57 percentile of the Callan Large Cap Value Mutual Funds group for the quarter and in the 76 percentile for the last year.
- Large Company Value Stock Option's portfolio outperformed the Russell 1000 Value Index by 0.06% for the quarter and outperformed the Russell 1000 Value Index for the year by 0.15%.





**Relative Return vs Russell 1000 Value Index** 

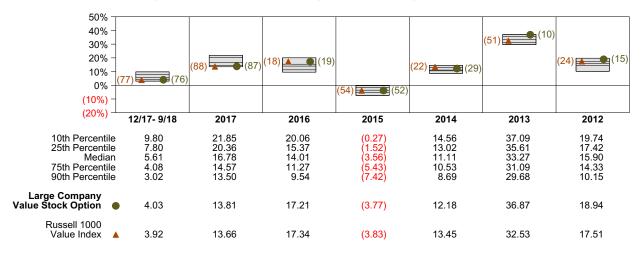
Callan Large Cap Value Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Large Company Value Stock Option Return Analysis Summary

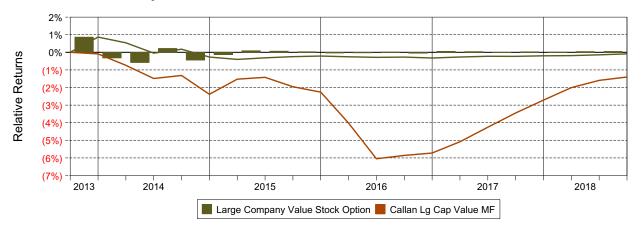
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

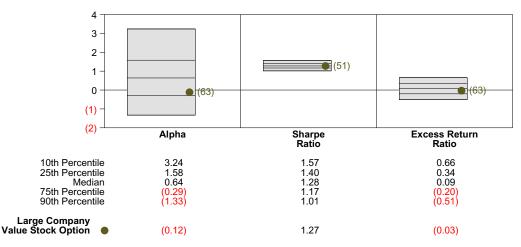




Cumulative and Quarterly Relative Return vs Russell 1000 Value Index



Risk Adjusted Return Measures vs Russell 1000 Value Index Rankings Against Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



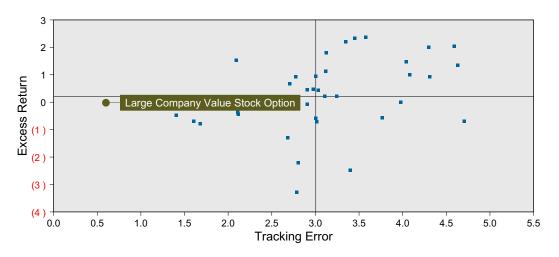


## Large Company Value Stock Option Risk Analysis Summary

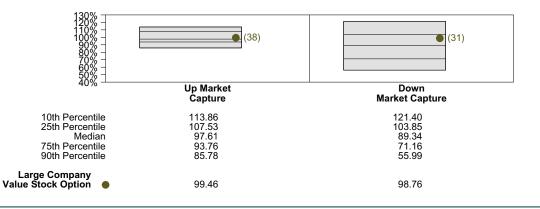
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

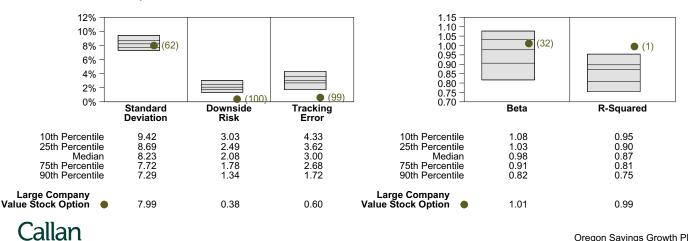
Risk Analysis vs Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



## Market Capture vs Russell 1000 Value Index Rankings Against Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



Risk Statistics Rankings vs Russell 1000 Value Index Rankings Against Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



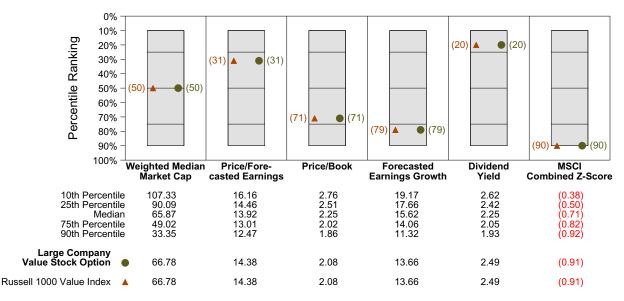
Oregon Savings Growth Plan 78

## Large Company Value Stock Option Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

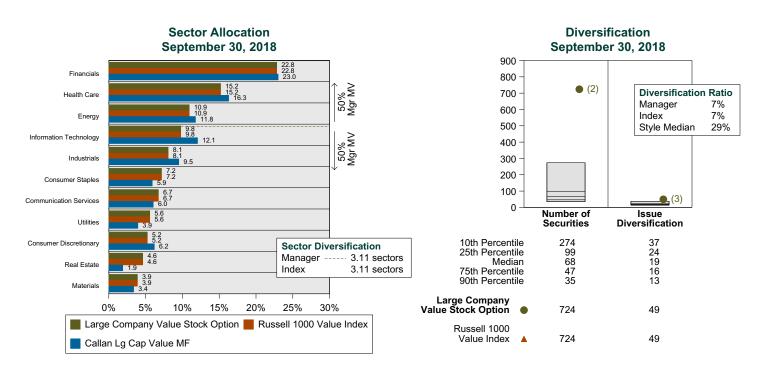
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Value Mutual Funds as of September 30, 2018



## **Sector Weights**

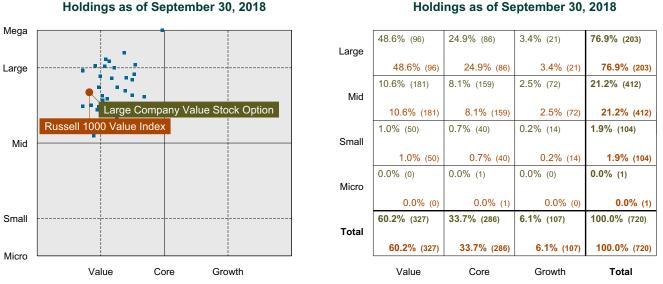
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



## Current Holdings Based Style Analysis Large Company Value Stock Option As of September 30, 2018

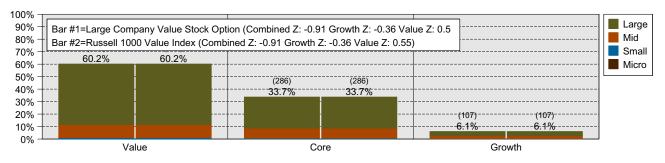
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**Style Exposure Matrix** 

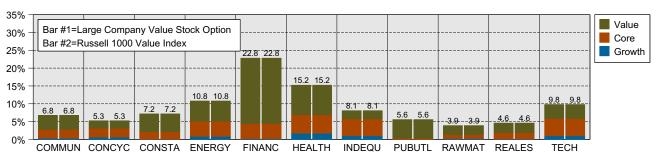


#### Style Map vs Callan Lg Cap Value MF Holdings as of September 30, 2018

## Combined Z-Score Style Distribution Holdings as of September 30, 2018



## Sector Weights Distribution Holdings as of September 30, 2018



## Historical Holdings Based Style Analysis Large Company Value Stock Option For Three Years Ended September 30, 2018

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.

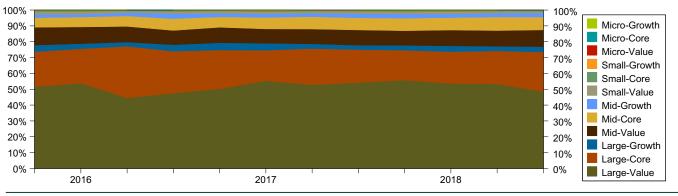


#### Average Style Map vs Callan Lg Cap Value MF Holdings for Three Years Ended September 30, 2018

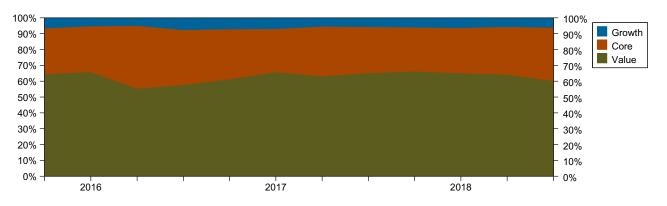
## Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2018

	Value	Core	Growth	Total	
	<b>62.9%</b> (320)	31.0% (267)	<b>6.1%</b> (111)	<b>100.0%</b> (698)	
Total	62.9% (320)	31.0% (267)	6.1% (111)	100.0% (698)	
	0.0% (0)	0.0% (1)	0.0% (1)	<b>0.0%</b> (2)	
Aicro	0.078 (0)	0.078 (1)	0.070 (1)	0.070 (2)	
	0.0% (0)	0.0% (1)	0.0% (1)	0.0% (2)	
Small	1.3% (60)	0.7% (39)	0.2% (18)	<b>2.2%</b> (117)	
	1.3% (60)	0.7% (39)	0.2% (18)	2.2% (117)	
	9.9% (160)	7.3% (156)	2.4% (66)	<b>19.5%</b> (382)	
Mid	. ,				
	9.9% (160)	7.3% (156)	2.4% (66)	19.5% (382)	
arge	51.8% (100)	23.0% (71)	3.5% (26)	<b>78.2%</b> (197)	
	51.8% (100)	23.0% (71)	3.5% (26)	78.2% (197)	

Large Company Value Stock Option Historical Cap/Style Exposures



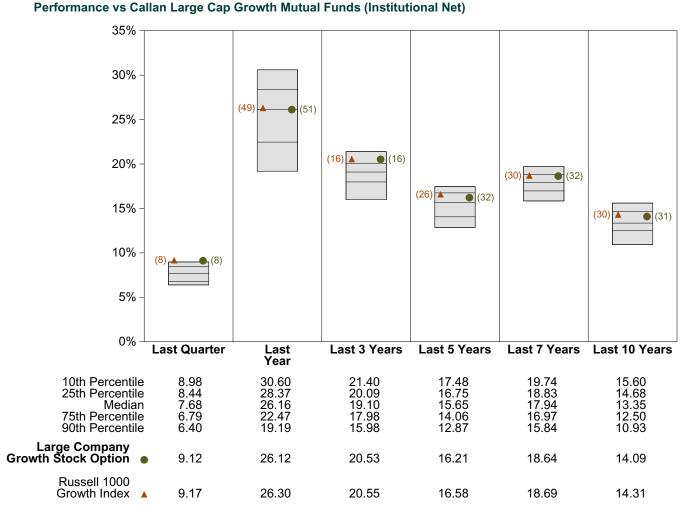




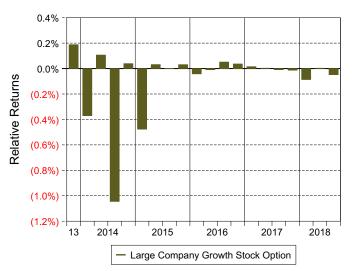
## Large Company Growth Stock Option Period Ended September 30, 2018

#### **Quarterly Summary and Highlights**

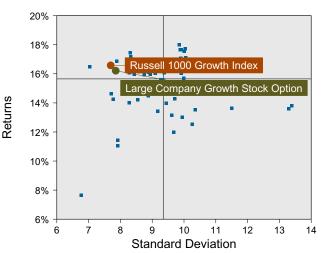
- Large Company Growth Stock Option's portfolio posted a 9.12% return for the quarter placing it in the 8 percentile of the Callan Large Cap Growth Mutual Funds group for the quarter and in the 51 percentile for the last year.
- Large Company Growth Stock Option's portfolio underperformed the Russell 1000 Growth Index by 0.05% for the quarter and underperformed the Russell 1000 Growth Index for the year by 0.17%.



Relative Return vs Russell 1000 Growth Index



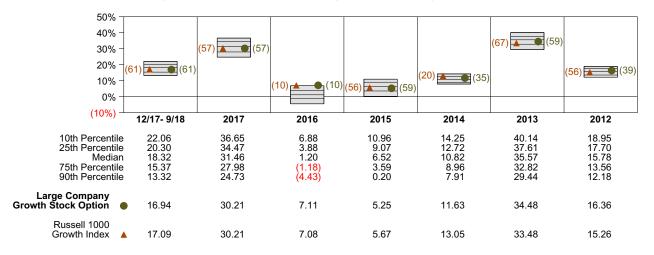
Callan Large Cap Growth Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Large Company Growth Stock Option Return Analysis Summary

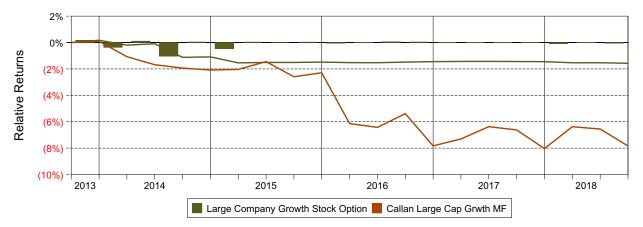
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

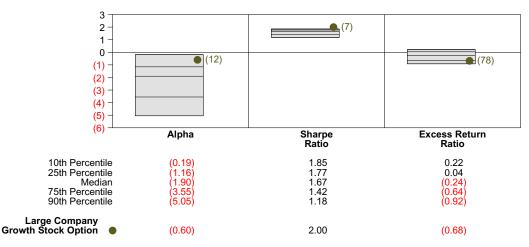


#### Performance vs Callan Large Cap Growth Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs Russell 1000 Growth Index



Risk Adjusted Return Measures vs Russell 1000 Growth Index Rankings Against Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



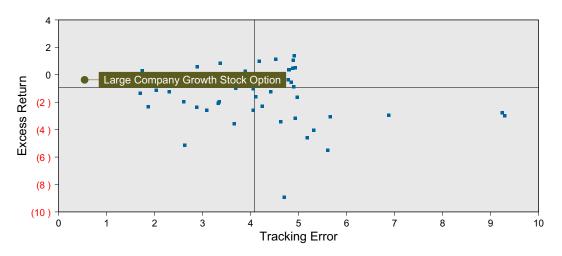


## Large Company Growth Stock Option **Risk Analysis Summary**

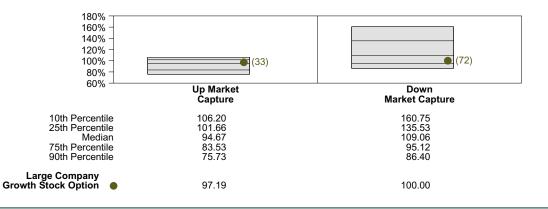
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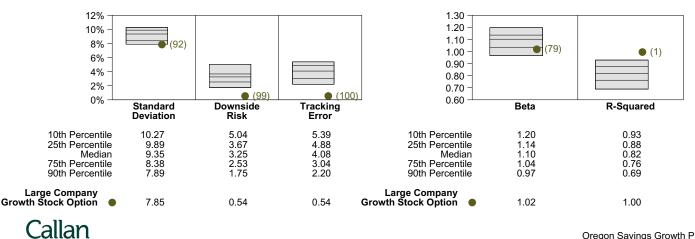
Risk Analysis vs Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



## Market Capture vs Russell 1000 Growth Index Rankings Against Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



**Risk Statistics Rankings vs Russell 1000 Growth Index** Rankings Against Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended September 30, 2018

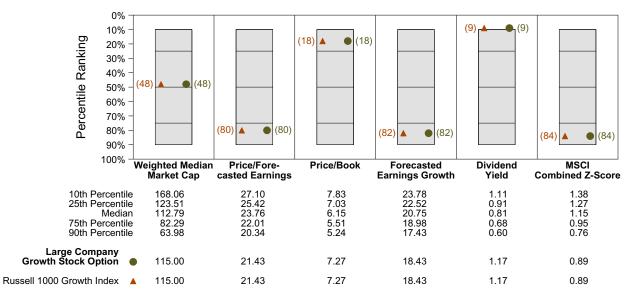


# Large Company Growth Stock Option Equity Characteristics Analysis Summary

### **Portfolio Characteristics**

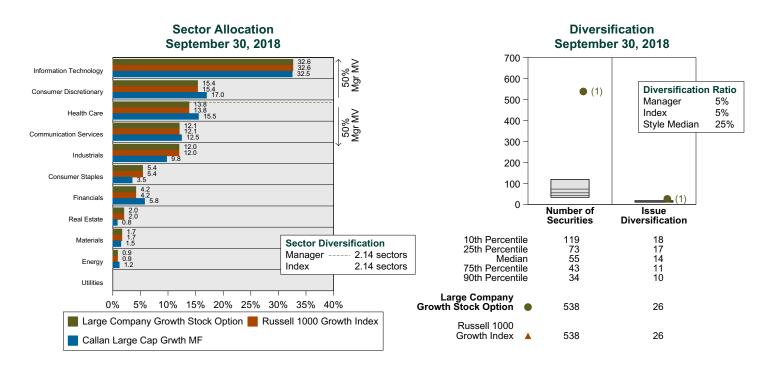
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## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Growth Mutual Funds as of September 30, 2018



### **Sector Weights**

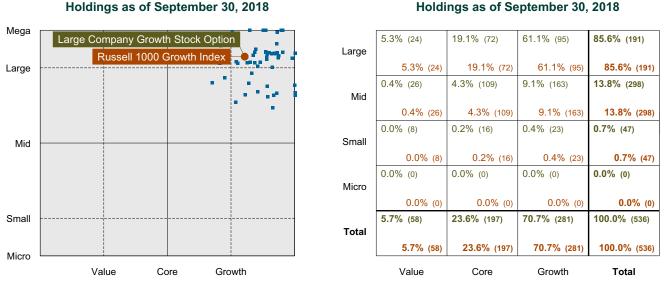
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# Current Holdings Based Style Analysis Large Company Growth Stock Option As of September 30, 2018

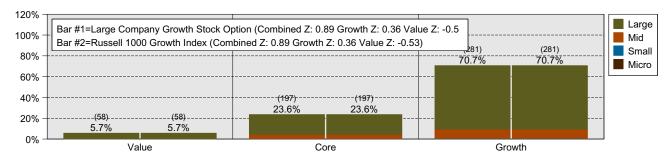
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

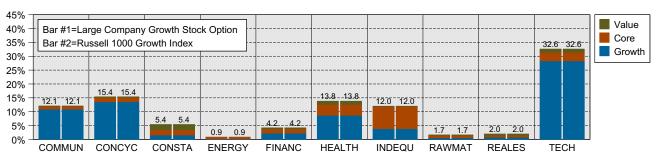


#### Style Map vs Callan Large Cap Grwth MF Holdings as of September 30, 2018

## Combined Z-Score Style Distribution Holdings as of September 30, 2018



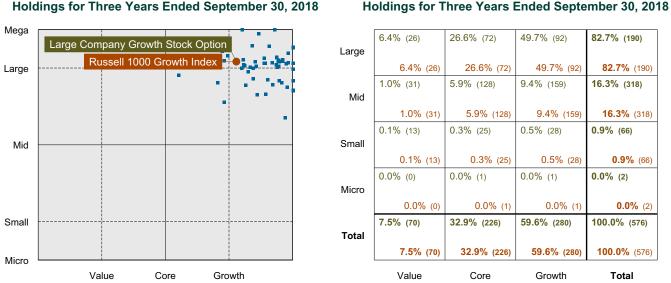
Sector Weights Distribution Holdings as of September 30, 2018



# **Historical Holdings Based Style Analysis** Large Company Growth Stock Option For Three Years Ended September 30, 2018

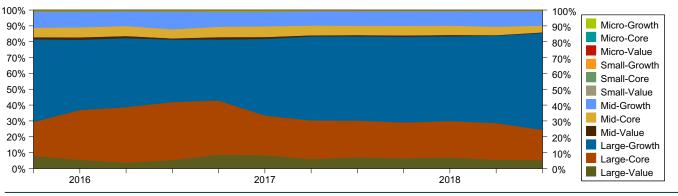
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**Average Style Exposure Matrix** 

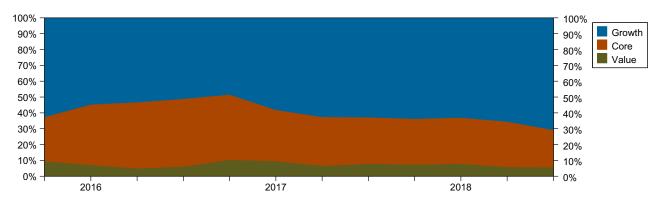


## Average Style Map vs Callan Large Cap Grwth MF Holdings for Three Years Ended September 30, 2018

Large Company Growth Stock Option Historical Cap/Style Exposures







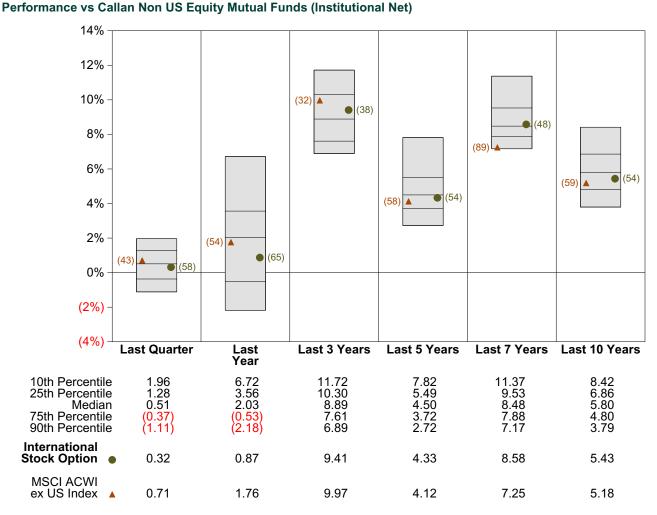
Callan

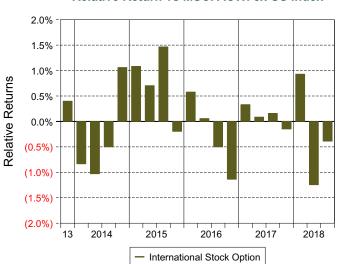
0.0% (2)

## International Stock Option Period Ended September 30, 2018

## **Quarterly Summary and Highlights**

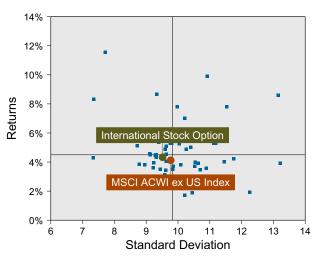
- International Stock Option's portfolio posted a 0.32% return for the quarter placing it in the 58 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 65 percentile for the last year.
- International Stock Option's portfolio underperformed the MSCI ACWI ex US Index by 0.39% for the quarter and underperformed the MSCI ACWI ex US Index for the year by 0.89%.





Relative Return vs MSCI ACWI ex US Index

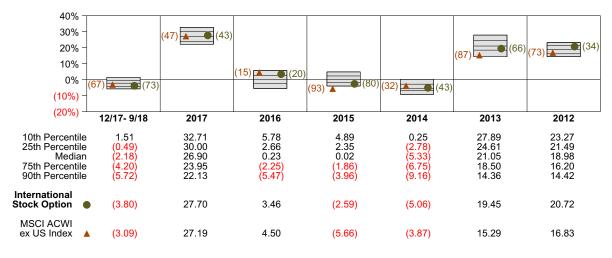
Callan Non US Equity Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



# International Stock Option Return Analysis Summary

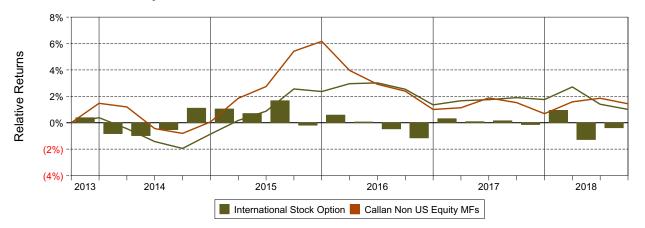
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

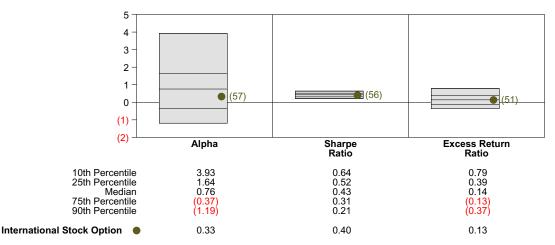


## Performance vs Callan Non US Equity Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs MSCI ACWI ex US Index



Risk Adjusted Return Measures vs MSCI ACWI ex US Index Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



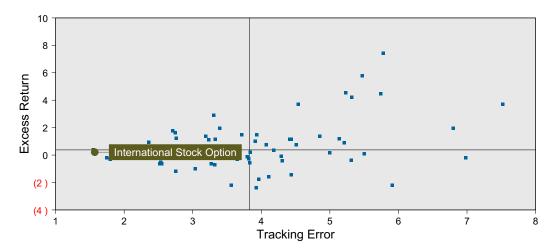


# International Stock Option Risk Analysis Summary

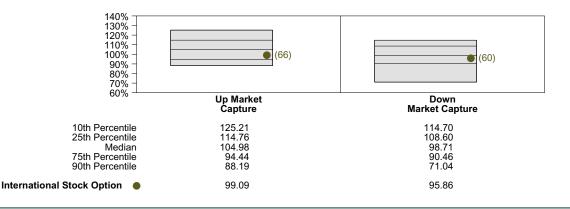
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

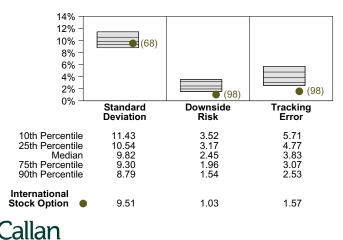
Risk Analysis vs Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended September 30, 2018

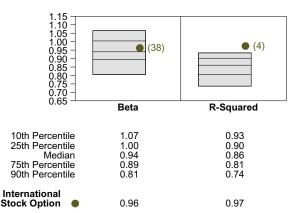


## Market Capture vs MSCI ACWI ex US Index Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



Risk Statistics Rankings vs MSCI ACWI ex US Index Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



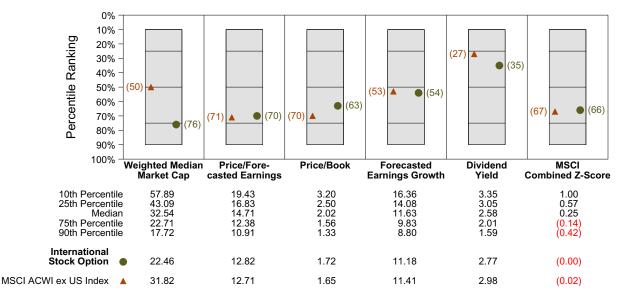


# International Stock Option Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

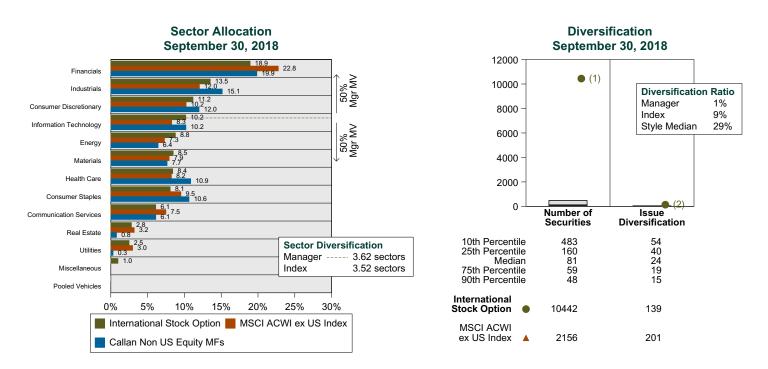
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2018



## **Sector Weights**

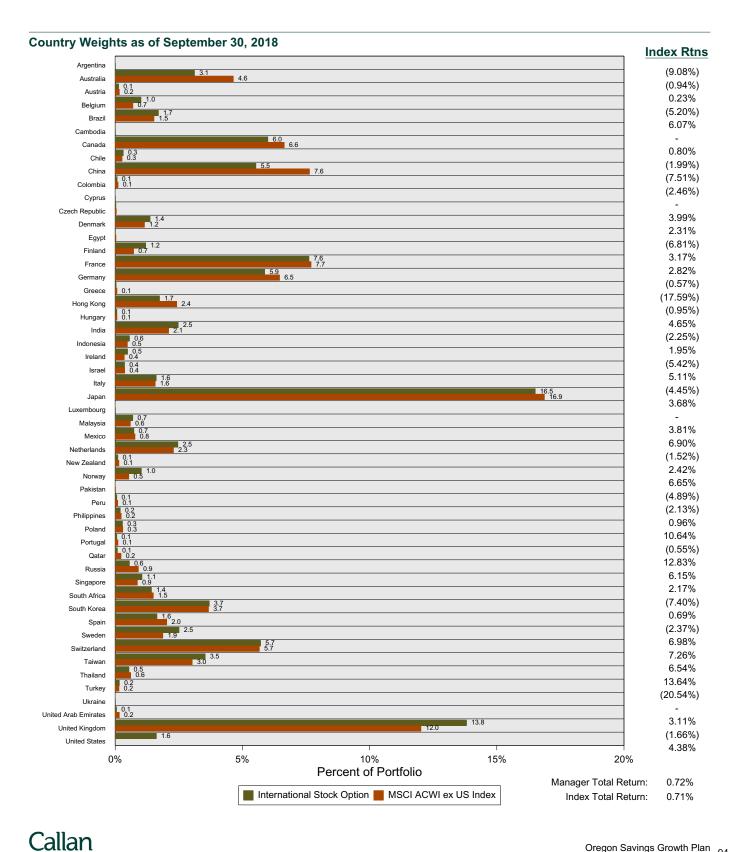
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



# **Country Allocation** International Stock Option VS MSCI ACWI ex US Index

## **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

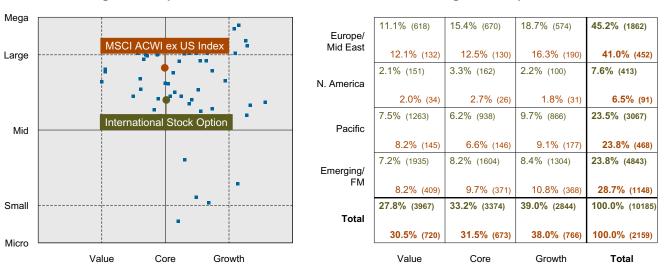


# Current Holdings Based Style Analysis International Stock Option As of September 30, 2018

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.

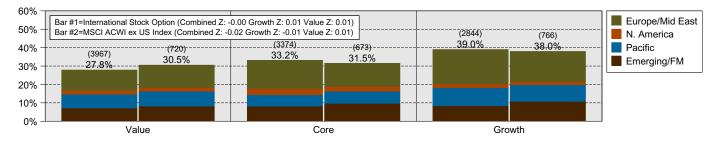
**Style Exposure Matrix** 

Holdings as of September 30, 2018

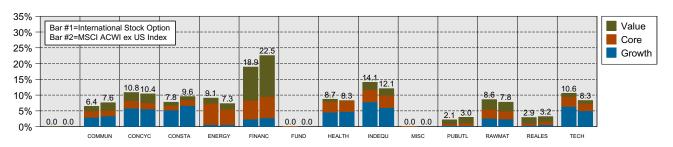


## Style Map vs Callan Non US Equity MFs Holdings as of September 30, 2018

## Combined Z-Score Style Distribution Holdings as of September 30, 2018



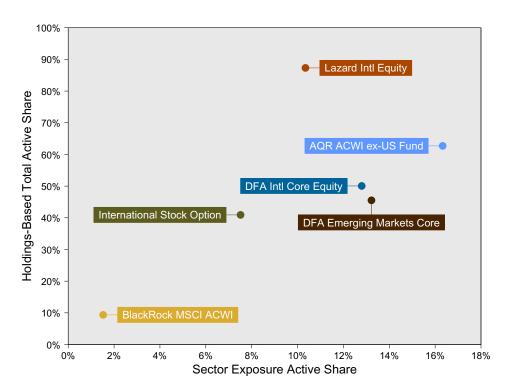
### Sector Weights Distribution Holdings as of September 30, 2018



# Active Share Structure Analysis For One Quarter Ended September 30, 2018

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.





	Weight		Total	Non-Idx	Sector	Number	Security
	%	Index	Act Share	Act Share	Act Share	Securities	Diverse
International Stock Option	100.00%	MSCI ACWI ex US	40.91%	6.79%	7.52%	10442	139.19
Lazard Intl Equity	24.78%	MSCI EAFE	87.32%	12.18%	10.35%	64	21.30
DFA Intl Core Equity	14.79%	MSCI World ex US	50.05%	18.92%	12.80%	5225	420.36
DFA Emerging Markets Cor	e 9.63%	MSCI EM	45.51%	15.06%	13.22%	4927	247.28
BlackRock MSCI ACWI	26.14%	MSCI ACWI ex US	9.36%	1.57%	1.52%	1970	178.84
AQR ACWI ex-US Fund	24.65%	MSCI ACWI ex US	62.70%	1.17%	16.33%	543	68.07

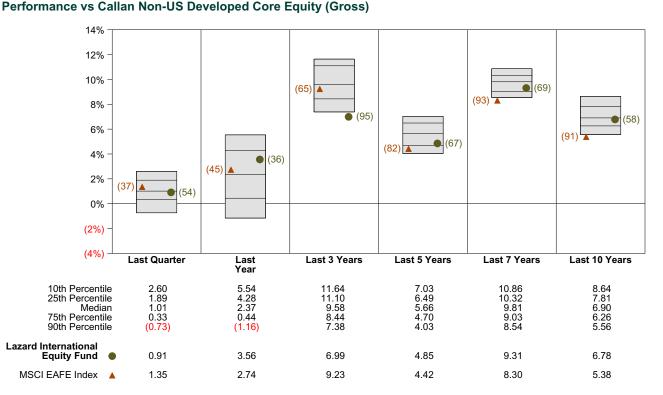
# Lazard International Equity Fund Period Ended September 30, 2018

#### **Investment Philosophy**

The Lazard International Equity strategy seeks to generate strong relative returns over a full market cycle by investing in companies with strong and/or improving financial productivity at attractive valuations. The strategy typically invests in non-US companies, including those from emerging markets, with a market capitalization generally of \$3 billion or greater. EAFE and ACWI ex-US benchmarked versions are available, resulting in different emerging markets exposure. A version that excludes emerging markets is also available.

#### **Quarterly Summary and Highlights**

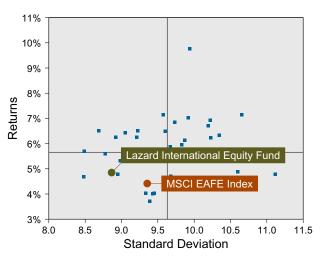
- Lazard International Equity Fund's portfolio posted a 0.91% return for the quarter placing it in the 54 percentile of the Callan Non-US Developed Core Equity group for the quarter and in the 36 percentile for the last year.
- Lazard International Equity Fund's portfolio underperformed the MSCI EAFE Index by 0.44% for the quarter and outperformed the MSCI EAFE Index for the year by 0.82%.



4% 3% 2% **Relative Returns** 1% 0% (1%) (2%) (3%) (4%) (5%) 13 2014 2015 2016 2017 2018 Lazard International Equity Fund

Relative Return vs MSCI EAFE Index

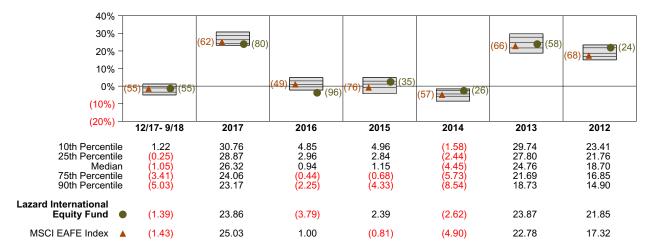
Callan Non-US Developed Core Equity (Gross) Annualized Five Year Risk vs Return



# Lazard International Equity Fund Return Analysis Summary

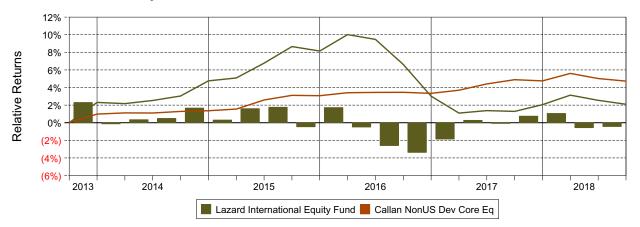
## **Return Analysis**

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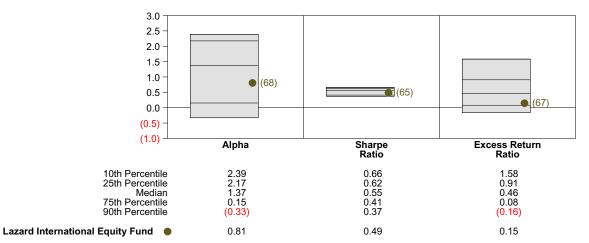


Performance vs Callan Non-US Developed Core Equity (Gross)

**Cumulative and Quarterly Relative Return vs MSCI EAFE Index** 



Risk Adjusted Return Measures vs MSCI EAFE Index Rankings Against Callan Non-US Developed Core Equity (Gross) Five Years Ended September 30, 2018

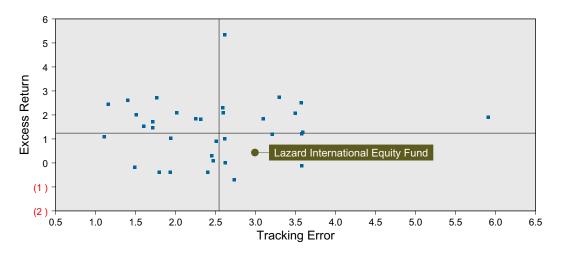


# Lazard International Equity Fund **Risk Analysis Summary**

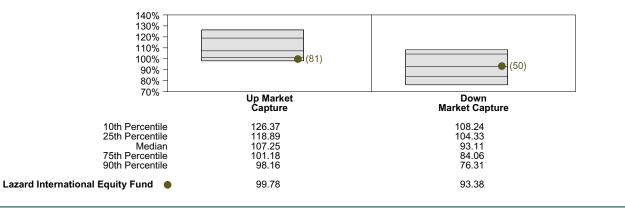
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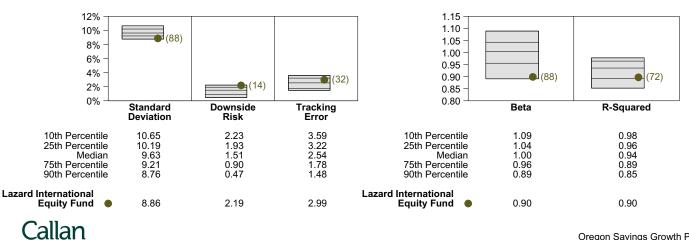
Risk Analysis vs Callan Non-US Developed Core Equity (Gross) Five Years Ended September 30, 2018



## Market Capture vs MSCI EAFE Index Rankings Against Callan Non-US Developed Core Equity (Gross) Five Years Ended September 30, 2018



#### **Risk Statistics Rankings vs MSCI EAFE Index** Rankings Against Callan Non-US Developed Core Equity (Gross) Five Years Ended September 30, 2018



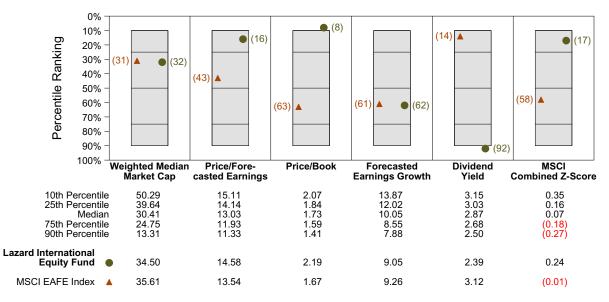
Oregon Savings Growth Plan 99

# Lazard International Equity Fund Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

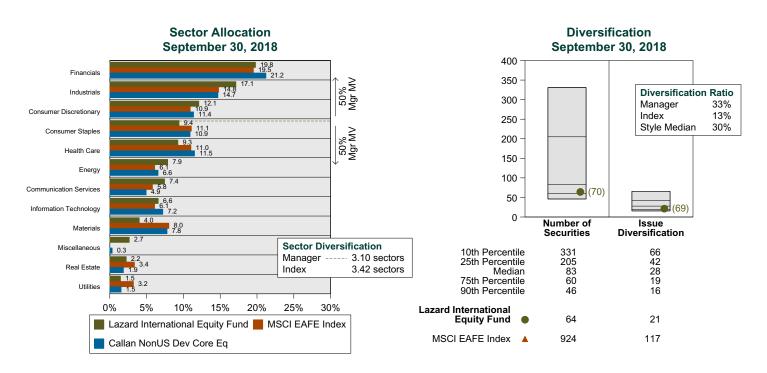
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Developed Core Equity as of September 30, 2018



## **Sector Weights**

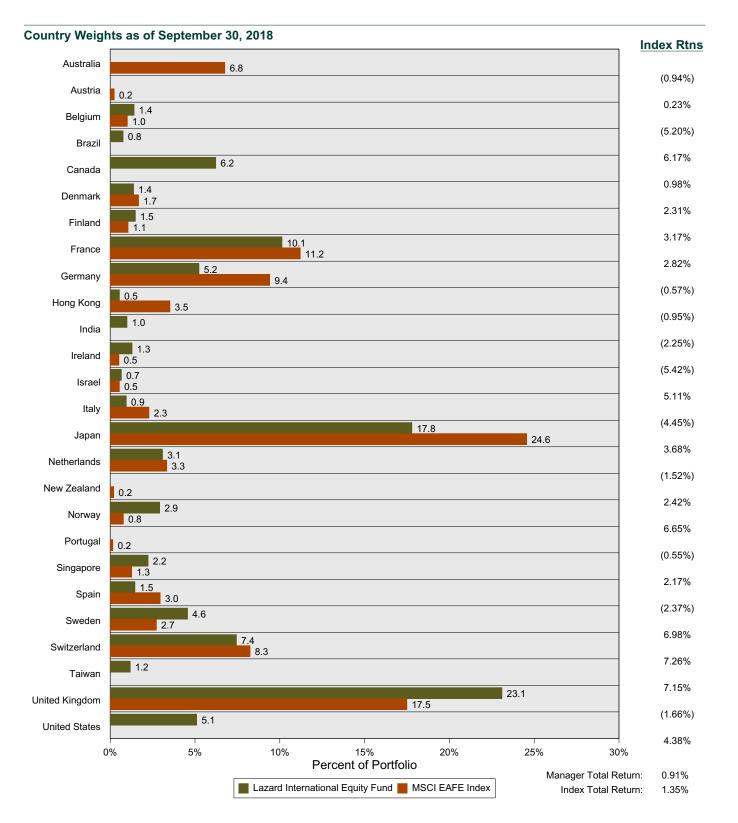
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



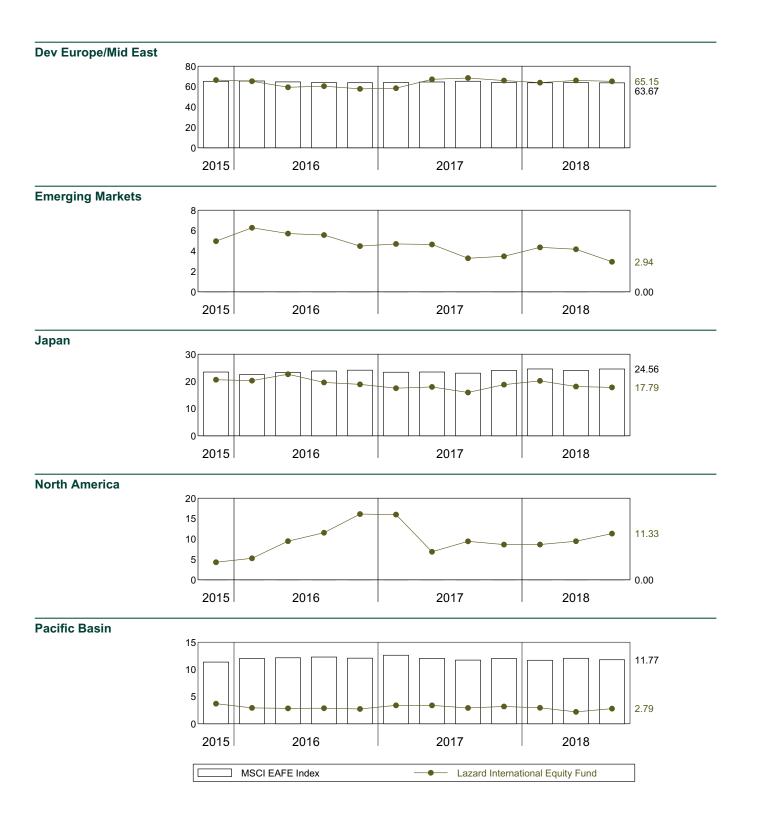
# Country Allocation Lazard International Equity Fund VS MSCI EAFE Index

## **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



# Oregon Savings Growth Plan History of Ending Regional Weights Period Ended September 30, 2018



# Current Holdings Based Style Analysis Lazard International Equity Fund As of September 30, 2018

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 Exposure Matrix** 

Holdings as of September 30, 2018

61.2% (35)

12.6% (6)

22.9% (14)

3.3% (3)

100.0% (58)

100.0% (920)

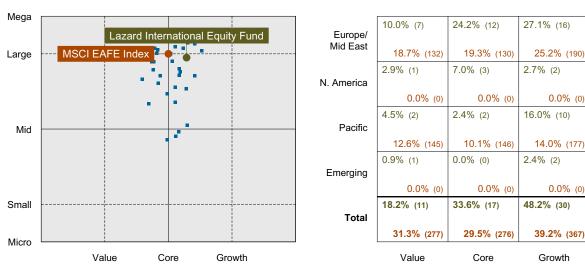
Total

63.2% (452)

0.0% (0)

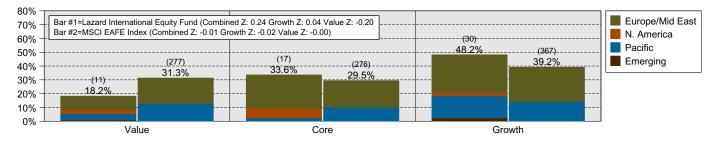
36.8% (468)

0.0% (0)

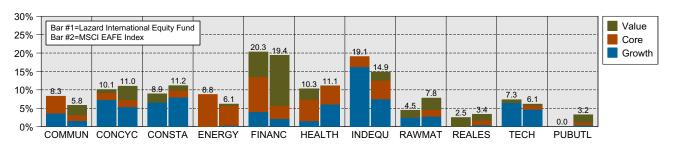


## Style Map vs Callan NonUS Dev Core Eq Holdings as of September 30, 2018

## Combined Z-Score Style Distribution Holdings as of September 30, 2018

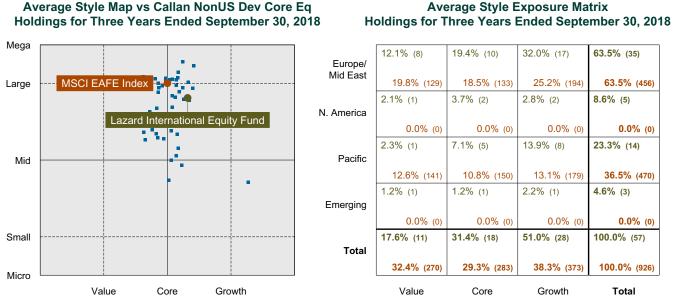


### Sector Weights Distribution Holdings as of September 30, 2018



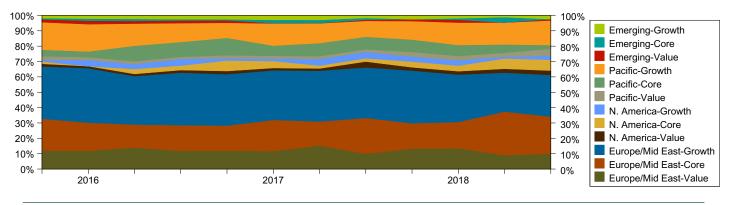
# **Historical Holdings Based Style Analysis** Lazard International Equity Fund For Three Years Ended September 30, 2018

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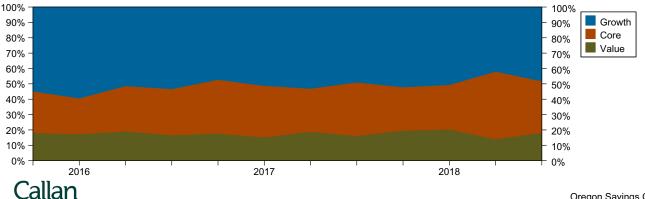


# Average Style Exposure Matrix

Lazard International Equity Fund Historical Region/Style Exposures







Oregon Savings Growth Plan 104

# DFA International Core Equity Period Ended September 30, 2018

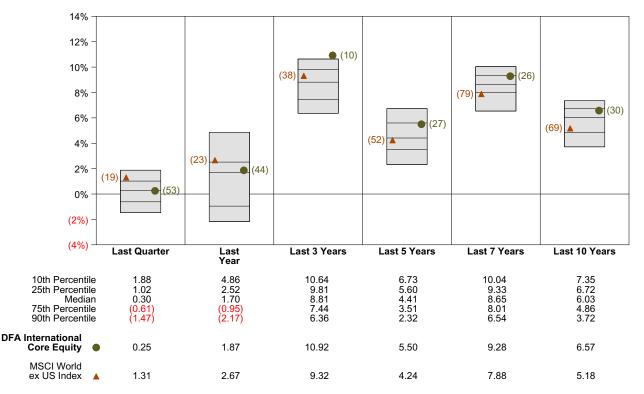
#### **Investment Philosophy**

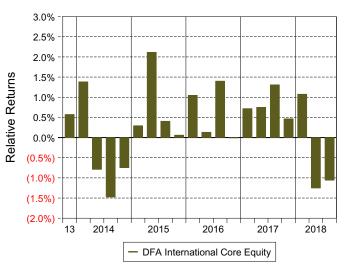
DFA takes a highly structured approach in all investment strategies, and relies on very careful, long-term focused portfolio engineering and trading expertise to achieve performance. They believe this systematic approach produces a more reliable and consistent investment rather than sector rotation, market forecasts and other speculative tools of traditional active managers.

#### **Quarterly Summary and Highlights**

- DFA International Core Equity's portfolio posted a 0.25% return for the quarter placing it in the 53 percentile of the Callan Intl Eq Developed Mkts MFs group for the quarter and in the 44 percentile for the last year.
- DFA International Core Equity's portfolio underperformed the MSCI World ex US Index by 1.06% for the quarter and underperformed the MSCI World ex US Index for the year by 0.80%.

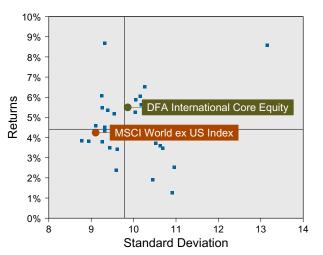






**Relative Return vs MSCI World ex US Index** 

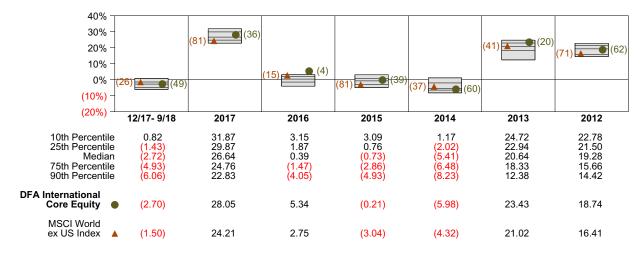
Callan Intl Eq Developed Mkts MFs (Institutional Net) Annualized Five Year Risk vs Return



# DFA International Core Equity Return Analysis Summary

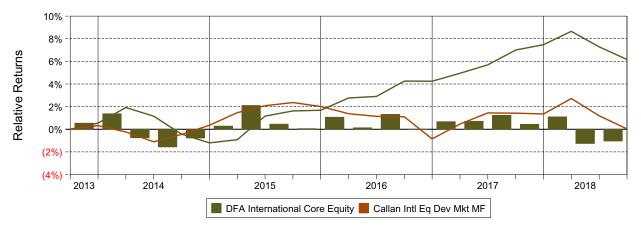
## **Return Analysis**

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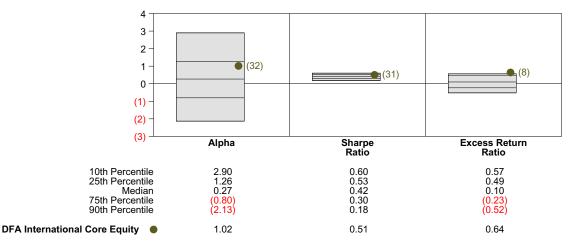


# Performance vs Callan Intl Eq Developed Mkts MFs (Institutional Net)

Cumulative and Quarterly Relative Return vs MSCI World ex US Index



Risk Adjusted Return Measures vs MSCI World ex US Index Rankings Against Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended September 30, 2018



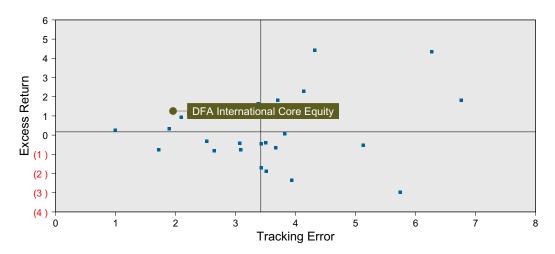


# **DFA International Core Equity Risk Analysis Summary**

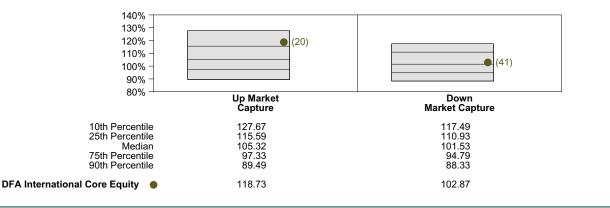
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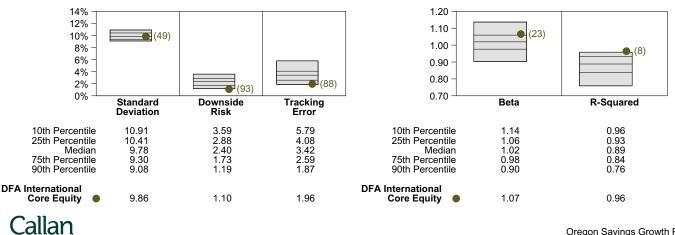
Risk Analysis vs Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended September 30, 2018



## Market Capture vs MSCI World ex US Index Rankings Against Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended September 30, 2018



#### **Risk Statistics Rankings vs MSCI World ex US Index** Rankings Against Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended September 30, 2018

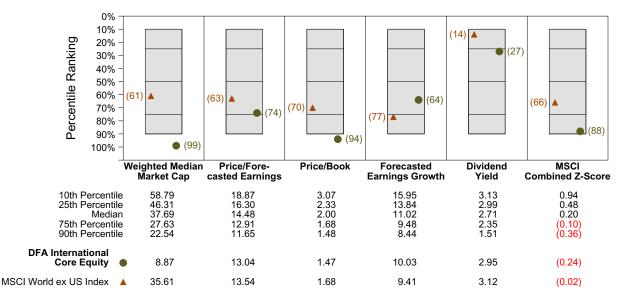


# DFA International Core Equity Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

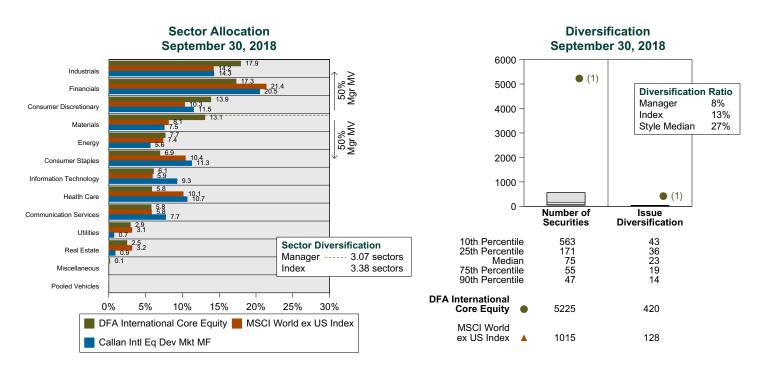
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## Portfolio Characteristics Percentile Rankings Rankings Against Callan Intl Eq Developed Mkts MFs as of September 30, 2018



## **Sector Weights**

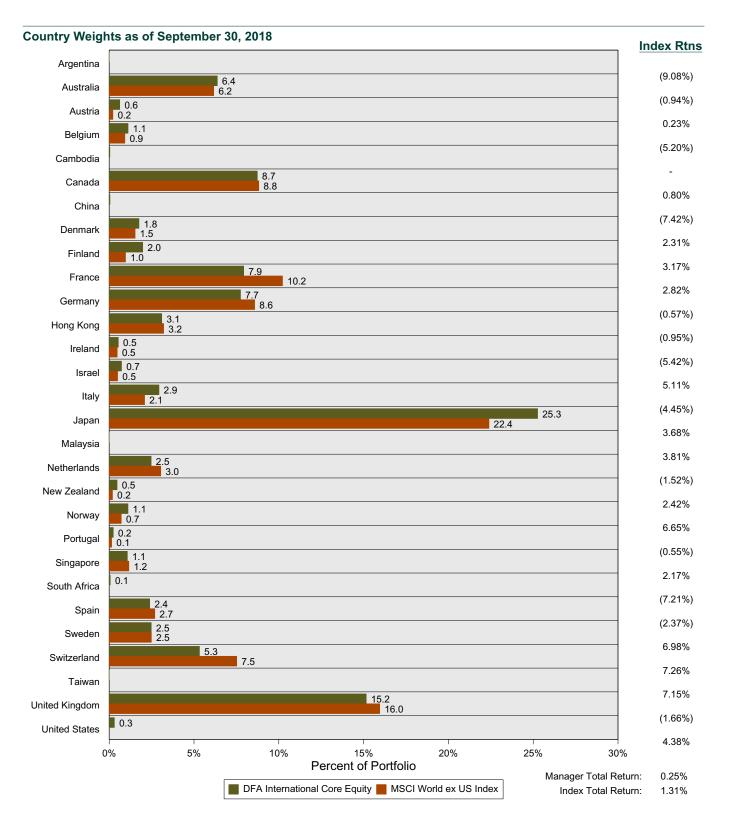
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



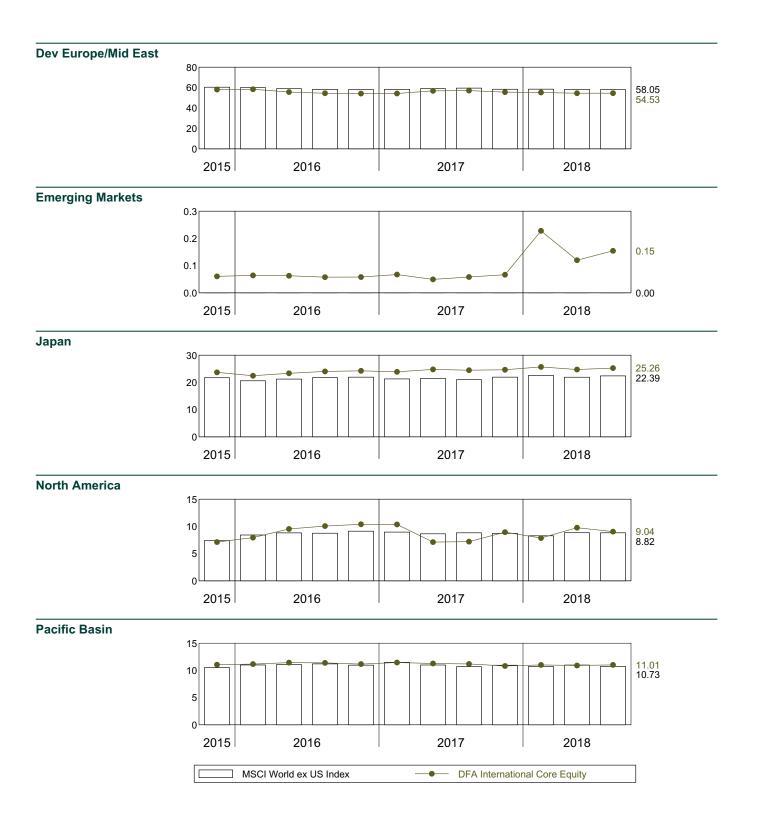
# Country Allocation DFA International Core Equity VS MSCI World ex US Index

## **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



# Oregon Savings Growth Plan History of Ending Regional Weights Period Ended September 30, 2018

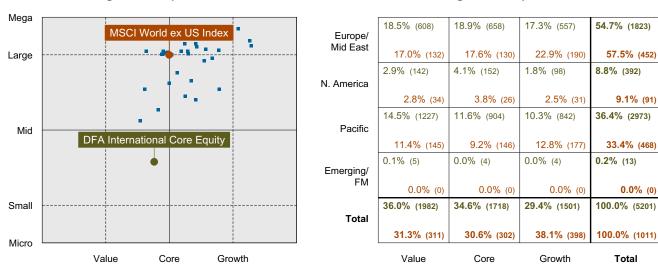


# Current Holdings Based Style Analysis DFA International Core Equity As of September 30, 2018

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.

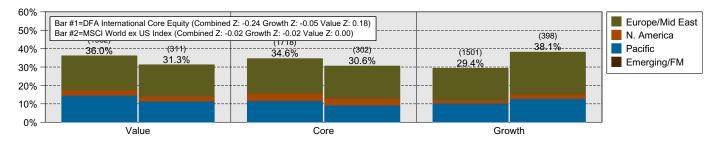
**Style Exposure Matrix** 

Holdings as of September 30, 2018

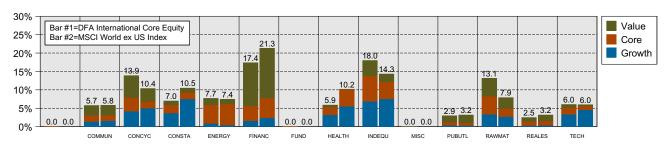


#### Style Map vs Callan Intl Eq Dev Mkt MF Holdings as of September 30, 2018

## Combined Z-Score Style Distribution Holdings as of September 30, 2018



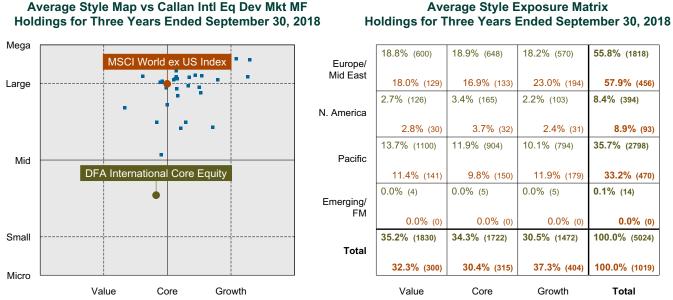
### Sector Weights Distribution Holdings as of September 30, 2018





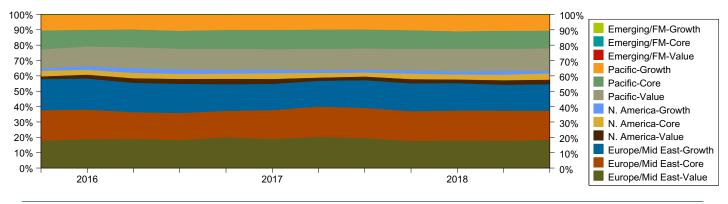
# **Historical Holdings Based Style Analysis DFA International Core Equity** For Three Years Ended September 30, 2018

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various region 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The next two style exposure charts illustrate the actual guarterly region/style and style only segment exposures of the portfolio through history.

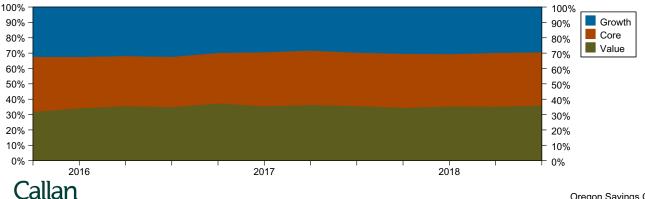


# Average Style Exposure Matrix

## **DFA International Core Equity Historical Region/Style Exposures**







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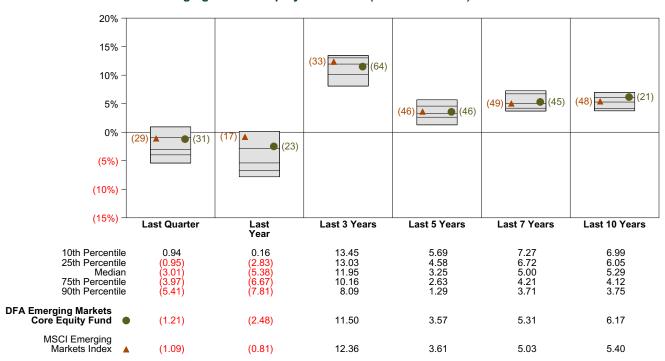
# DFA Emerging Markets Core Equity Fund Period Ended September 30, 2018

#### **Investment Philosophy**

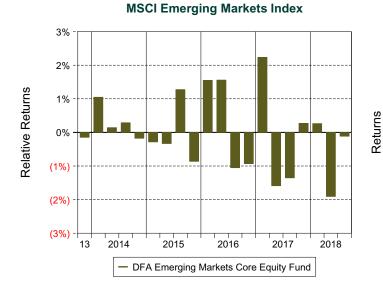
Dimensional's core philosophical principles are: 1) Public capital markets work: Prices in liquid and competitive markets reflect the aggregate expectations of all market participant; 2) Diversification is essential as it helps reduce uncertainty, manage risk, increase the reliability of outcomes, and provide flexibility in implementation; 3) Managing tradeoffs adds value by targeting market premiums efficiently and continuously, reducing the costs associated with turnover, and implementing a flexible trading strategy.

#### **Quarterly Summary and Highlights**

- DFA Emerging Markets Core Equity Fund's portfolio posted a (1.21)% return for the quarter placing it in the 31 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 23 percentile for the last year.
- DFA Emerging Markets Core Equity Fund's portfolio underperformed the MSCI Emerging Markets Index by 0.11% for the quarter and underperformed the MSCI Emerging Markets Index for the year by 1.67%.

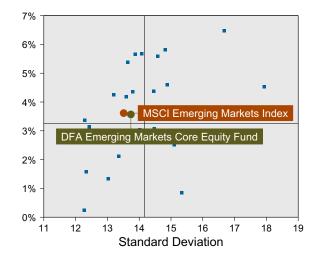


#### Performance vs Callan Emerging Markets Equity Mut Funds (Institutional Net)



**Relative Returns vs** 

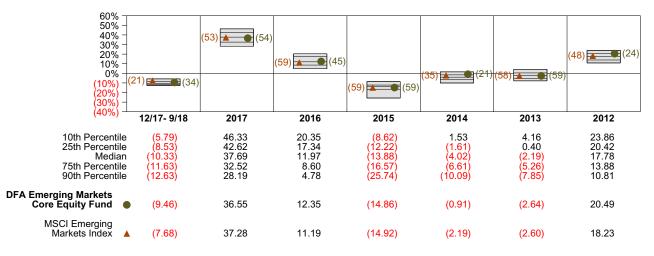
Callan Emerging Markets Equity Mut Funds (Institutional Net) Annualized Five Year Risk vs Return



# DFA Emerging Markets Core Equity Fund Return Analysis Summary

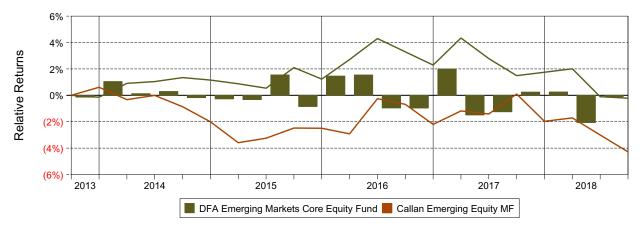
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

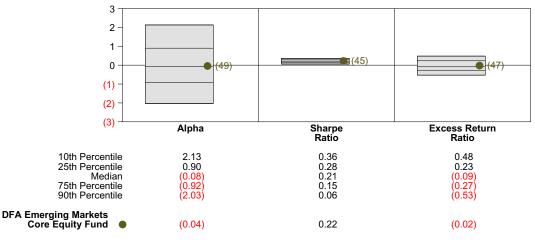


## Performance vs Callan Emerging Markets Equity Mut Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs MSCI Emerging Markets Index



Risk Adjusted Return Measures vs MSCI Emerging Markets Index Rankings Against Callan Emerging Markets Equity Mut Funds (Institutional Net) Five Years Ended September 30, 2018

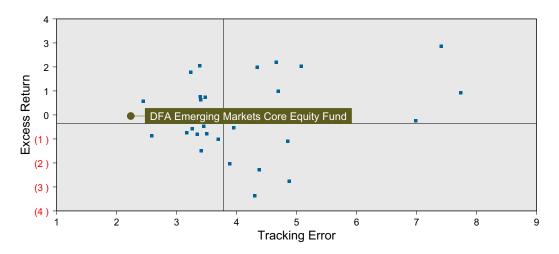


# **DFA Emerging Markets Core Equity Fund Risk Analysis Summary**

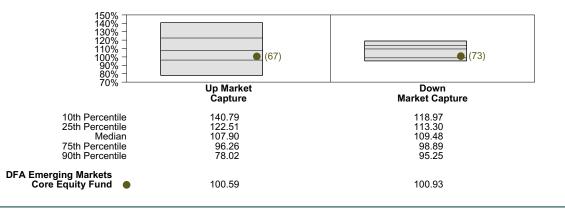
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

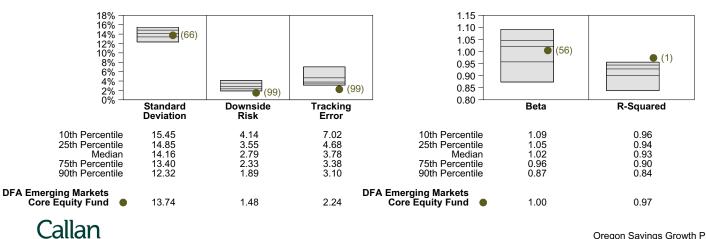
Risk Analysis vs Callan Emerging Markets Equity Mut Funds (Institutional Net) Five Years Ended September 30, 2018



## Market Capture vs MSCI Emerging Markets Index Rankings Against Callan Emerging Markets Equity Mut Funds (Institutional Net) Five Years Ended September 30, 2018



**Risk Statistics Rankings vs MSCI Emerging Markets Index** Rankings Against Callan Emerging Markets Equity Mut Funds (Institutional Net) Five Years Ended September 30, 2018



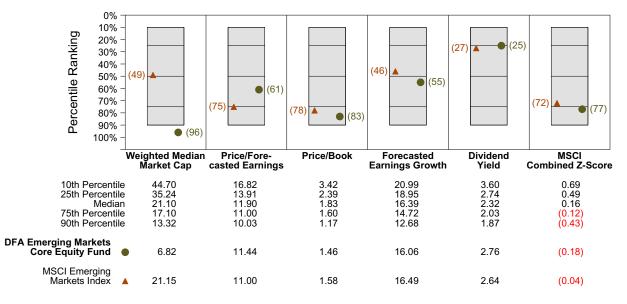
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# DFA Emerging Markets Core Equity Fund Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

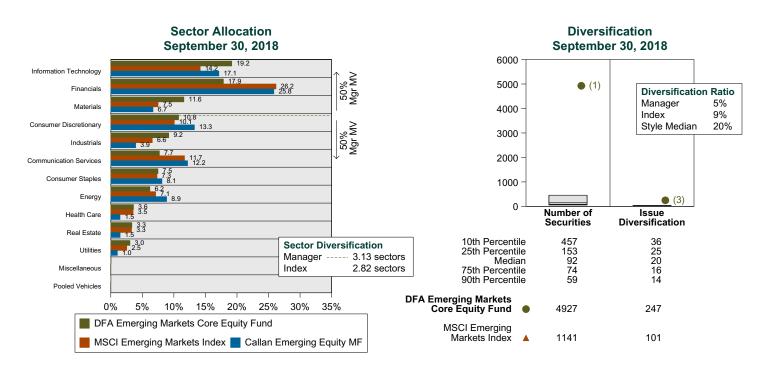
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Markets Equity Mut Funds as of September 30, 2018



## **Sector Weights**

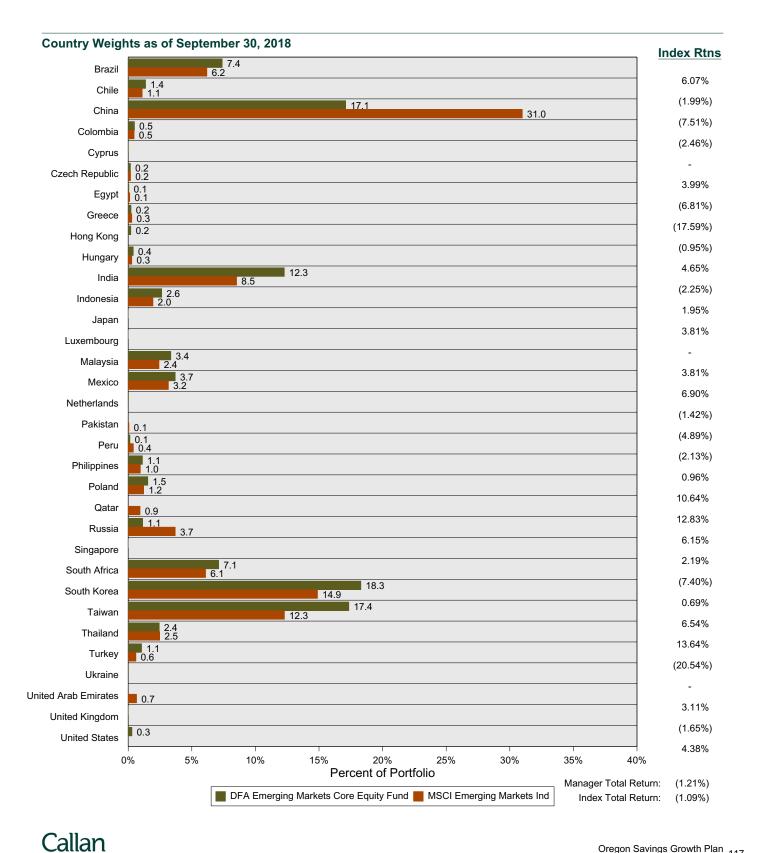
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



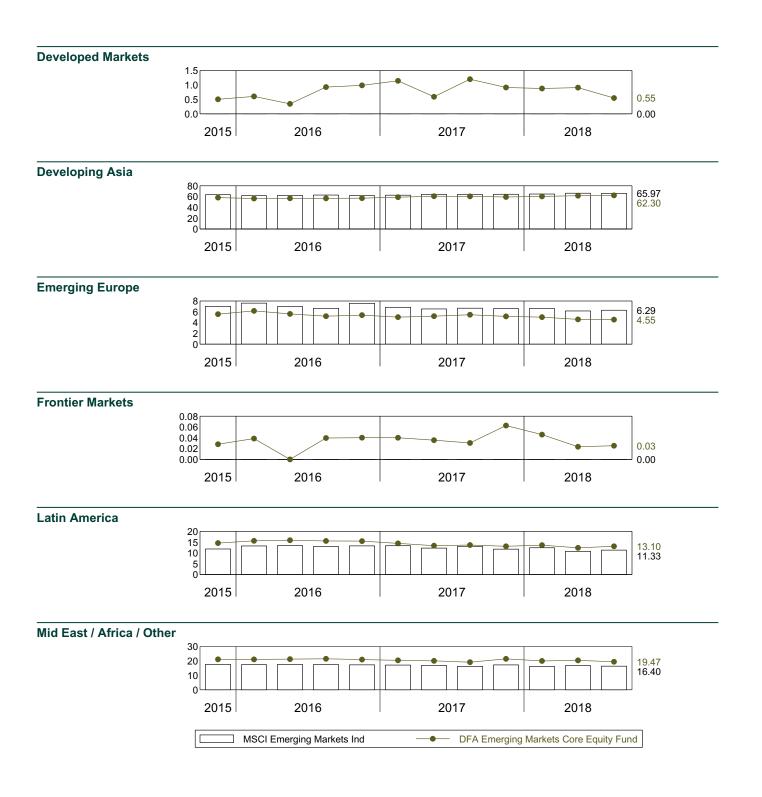
# **Country Allocation** DFA Emerging Markets Core Equity Fund VS MSCI Emerging Markets Index

## **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent guarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



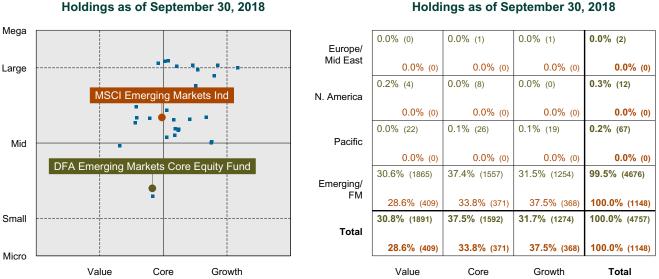
# Oregon Savings Growth Plan History of Ending Regional Weights Period Ended September 30, 2018



# Current Holdings Based Style Analysis DFA Emerging Markets Core Equity Fund As of September 30, 2018

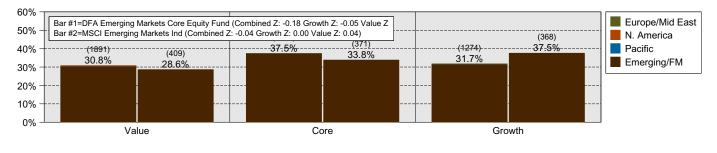
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are 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 Exposure Matrix** 

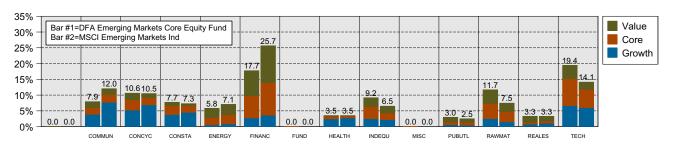


## Style Map vs Callan Emerging Equity MF Holdings as of September 30, 2018

## Combined Z-Score Style Distribution Holdings as of September 30, 2018



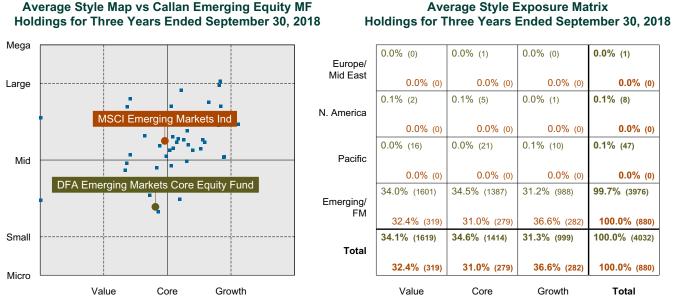
### Sector Weights Distribution Holdings as of September 30, 2018





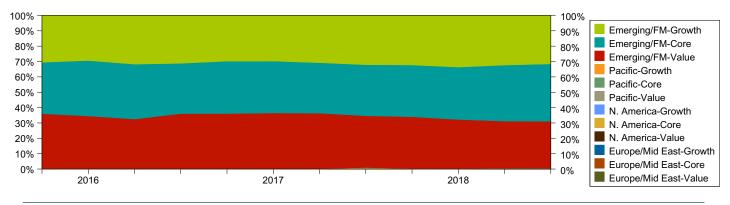
# **Historical Holdings Based Style Analysis DFA Emerging Markets Core Equity Fund** For Three Years Ended September 30, 2018

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various region 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The next two style exposure charts illustrate the actual guarterly region/style and style only segment exposures of the portfolio through history.

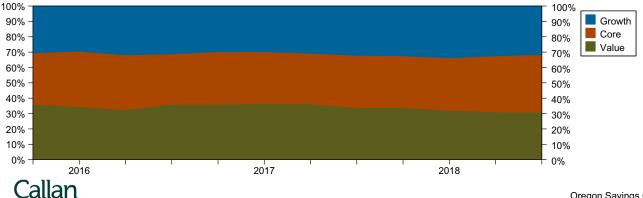


# Average Style Exposure Matrix

## DFA Emerging Markets Core Equity Fund Historical Region/Style Exposures







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# BlackRock MSCI ACWI ex-US Index Fund Period Ended September 30, 2018

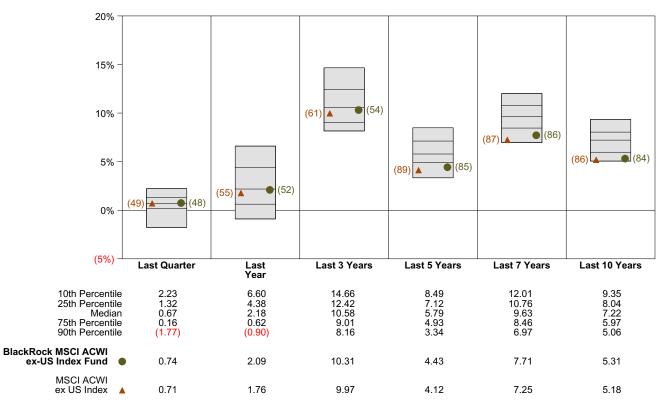
#### Investment Philosophy

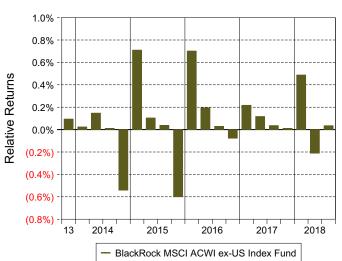
The objective of the ACWI ex-US Fund is to track the performance of its benchmark, the MSCI ACWI ex-US Index. BlackRock's objective in managing the fund is to deliver a high quality and cost-effective index-based portfolio available to institutional investors.

#### **Quarterly Summary and Highlights**

- BlackRock MSCI ACWI ex-US Index Fund's portfolio posted a 0.74% return for the quarter placing it in the 48 percentile
  of the Callan Non-US All Country Broad Equity group for the quarter and in the 52 percentile for the last year.
- BlackRock MSCI ACWI ex-US Index Fund's portfolio outperformed the MSCI ACWI ex US Index by 0.04% for the quarter and outperformed the MSCI ACWI ex US Index for the year by 0.33%.

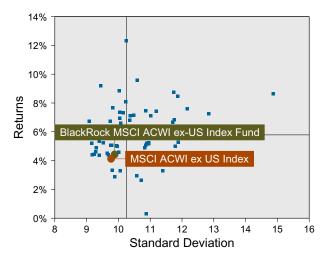
## Performance vs Callan Non-US All Country Broad Equity (Gross)





#### **Relative Return vs MSCI ACWI ex US Index**

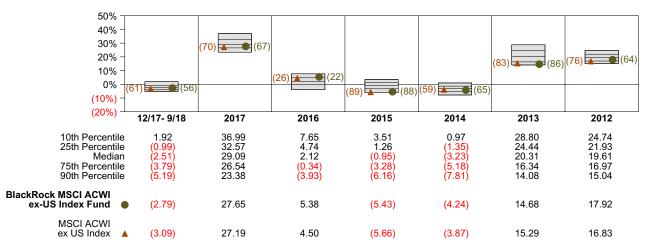
Callan Non-US All Country Broad Equity (Gross) Annualized Five Year Risk vs Return



# BlackRock MSCI ACWI ex-US Index Fund Return Analysis Summary

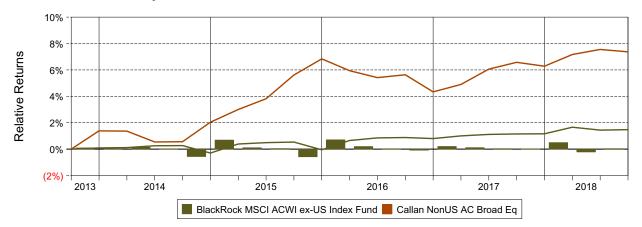
## **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

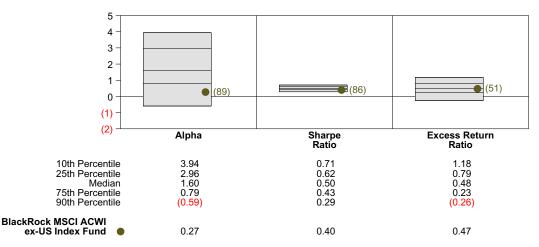


## Performance vs Callan Non-US All Country Broad Equity (Gross)

Cumulative and Quarterly Relative Return vs MSCI ACWI ex US Index



Risk Adjusted Return Measures vs MSCI ACWI ex US Index Rankings Against Callan Non-US All Country Broad Equity (Gross) Five Years Ended September 30, 2018

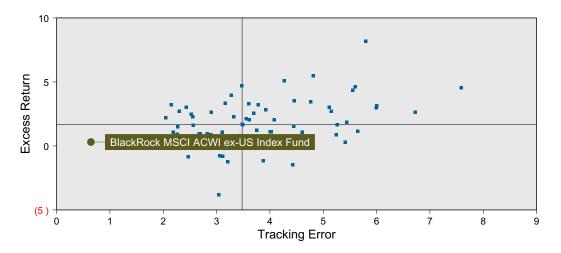


## BlackRock MSCI ACWI ex-US Index Fund **Risk Analysis Summary**

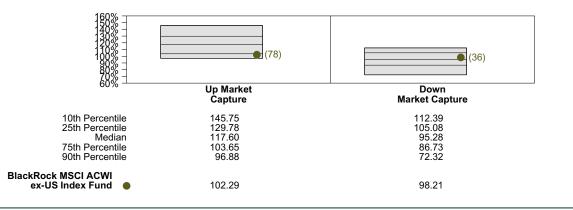
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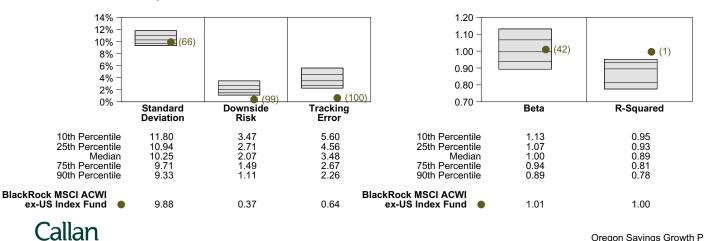
Risk Analysis vs Callan Non-US All Country Broad Equity (Gross) Five Years Ended September 30, 2018



#### Market Capture vs MSCI ACWI ex US Index Rankings Against Callan Non-US All Country Broad Equity (Gross) Five Years Ended September 30, 2018



#### **Risk Statistics Rankings vs MSCI ACWI ex US Index** Rankings Against Callan Non-US All Country Broad Equity (Gross) Five Years Ended September 30, 2018

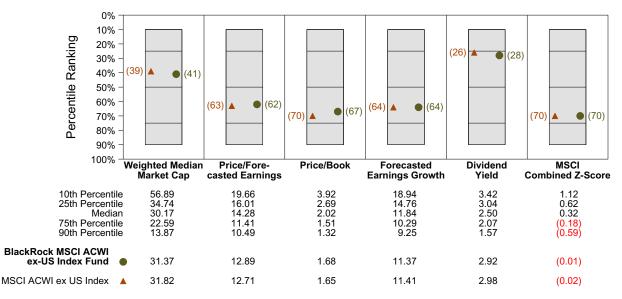


## BlackRock MSCI ACWI ex-US Index Fund Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

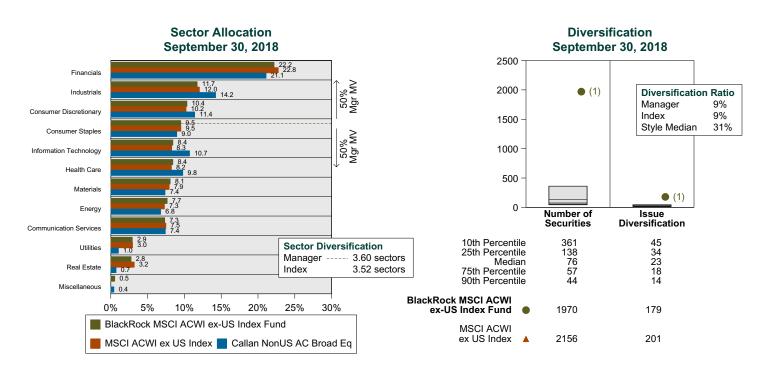
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US All Country Broad Equity as of September 30, 2018



#### **Sector Weights**

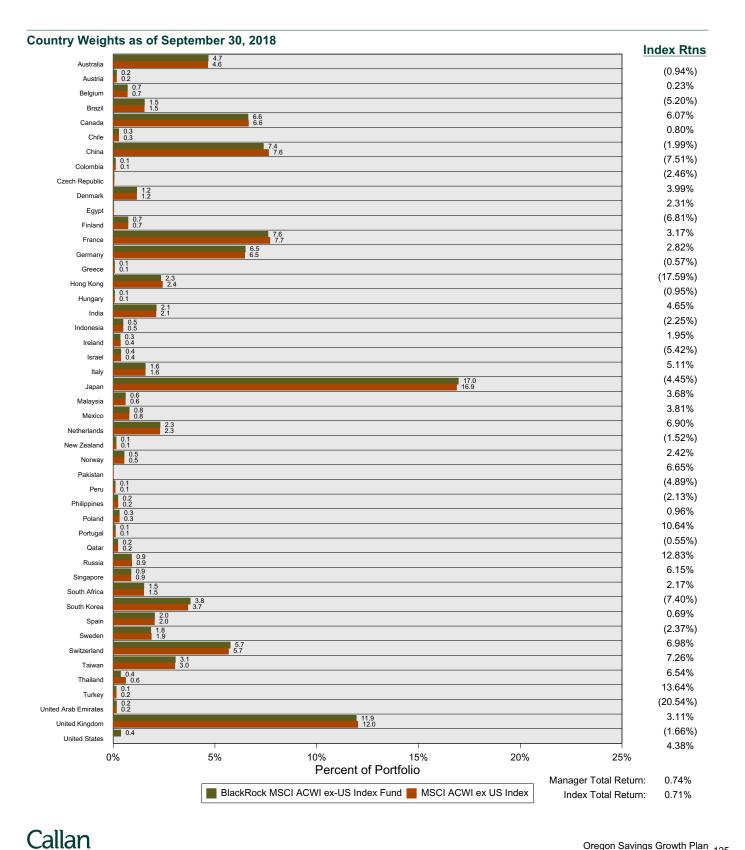
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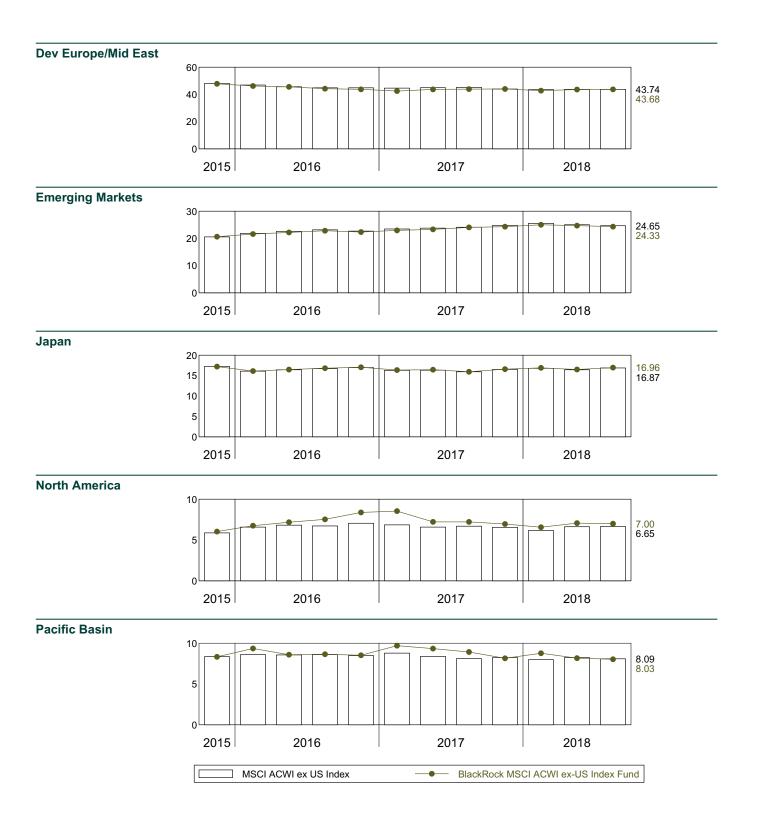
## **Country Allocation** BlackRock MSCI ACWI ex-US Index Fund VS MSCI ACWI ex US Index

#### **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent guarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



## Oregon Savings Growth Plan History of Ending Regional Weights Period Ended September 30, 2018

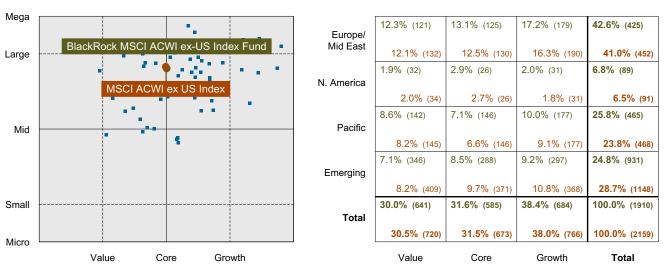


## Current Holdings Based Style Analysis BlackRock MSCI ACWI ex-US Index Fund As of September 30, 2018

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.

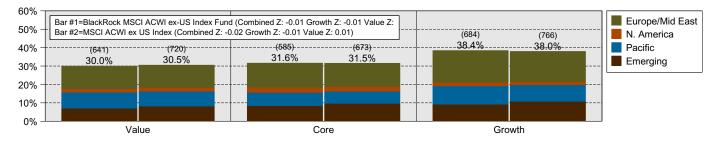
**Style Exposure Matrix** 

Holdings as of September 30, 2018

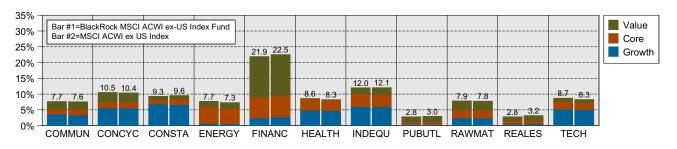


#### Style Map vs Callan NonUS AC Broad Eq Holdings as of September 30, 2018

#### Combined Z-Score Style Distribution Holdings as of September 30, 2018



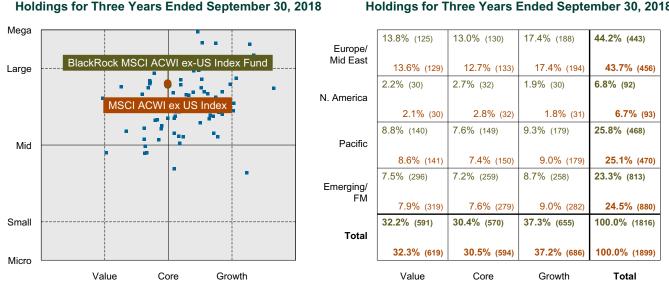
#### Sector Weights Distribution Holdings as of September 30, 2018



## Historical Holdings Based Style Analysis BlackRock MSCI ACWI ex-US Index Fund For Three Years Ended September 30, 2018

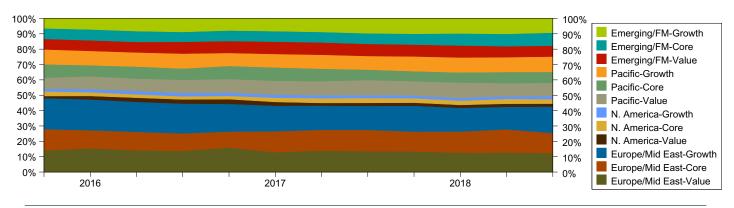
Average Style Map vs Callan NonUS AC Broad Eq

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various region 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The next two style exposure charts illustrate the actual quarterly region/style and style only segment exposures of the portfolio through history.

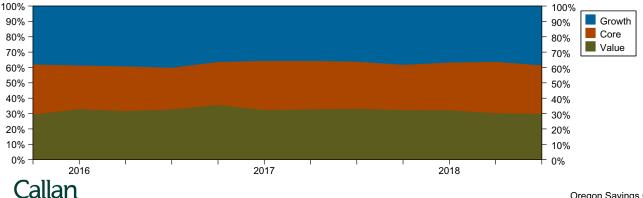


#### Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2018









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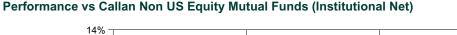
## AQR ACWI ex-US Fund Period Ended September 30, 2018

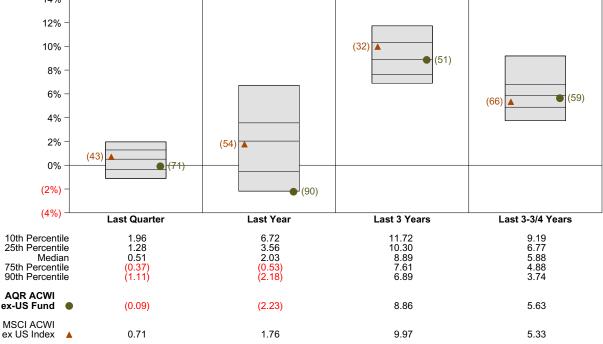
#### **Investment Philosophy**

AQR Capital Management considers themselves fundamental investors who employ quantitative tools to maintain a diversified portfolio that is overweight cheap securities with good momentum and underweight expensive securities with poor momentum. They believe value and momentum make a powerful combination, as the two strategies are significantly negatively correlated and therefore produce an investment that may preserve the expected return of both strategies but with dramatically lower volatility.

#### **Quarterly Summary and Highlights**

- AQR ACWI ex-US Fund's portfolio posted a (0.09)% return for the quarter placing it in the 71 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 90 percentile for the last year.
- AQR ACWI ex-US Fund's portfolio underperformed the MSCI ACWI ex US Index by 0.80% for the quarter and underperformed the MSCI ACWI ex US Index for the year by 3.99%.

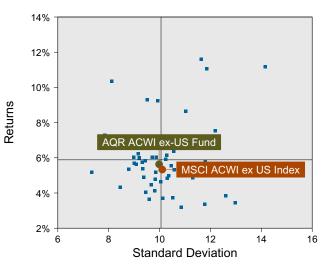






**Relative Return vs MSCI ACWI ex US Index** 

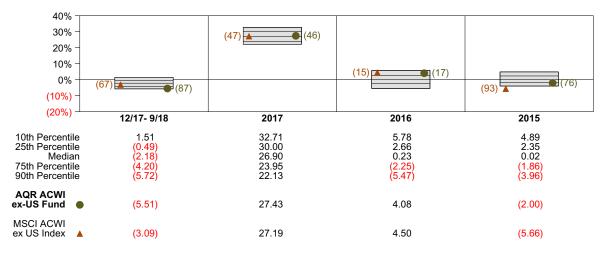
Callan Non US Equity Mutual Funds (Institutional Net) Annualized Three and Three-Quarter Year Risk vs Return



## AQR ACWI ex-US Fund Return Analysis Summary

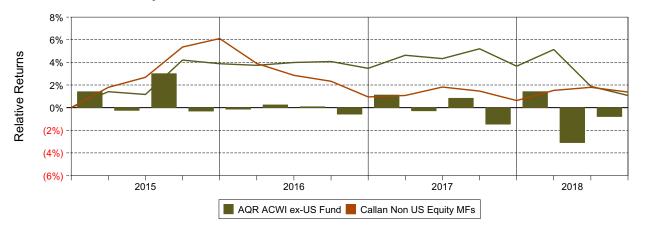
#### **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

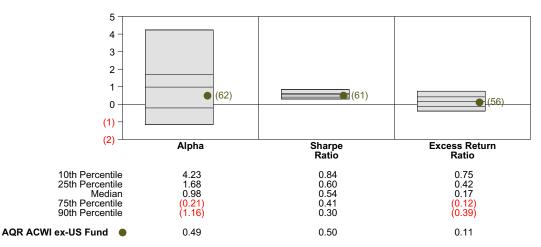


#### Performance vs Callan Non US Equity Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs MSCI ACWI ex US Index



#### Risk Adjusted Return Measures vs MSCI ACWI ex US Index Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Three and Three-Quarter Years Ended September 30, 2018



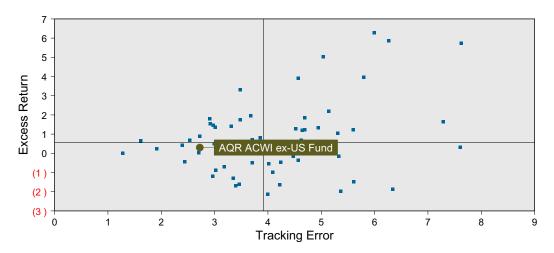


## AQR ACWI ex-US Fund Risk Analysis Summary

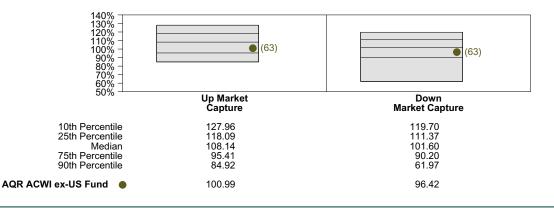
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

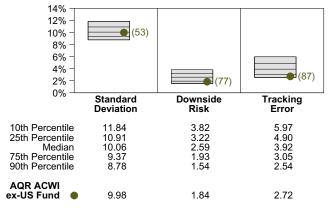
Risk Analysis vs Callan Non US Equity Mutual Funds (Institutional Net) Three and Three-Quarter Years Ended September 30, 2018

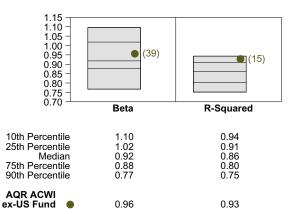


#### Market Capture vs MSCI ACWI ex US Index Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Three and Three-Quarter Years Ended September 30, 2018



#### Risk Statistics Rankings vs MSCI ACWI ex US Index Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Three and Three-Quarter Years Ended September 30, 2018





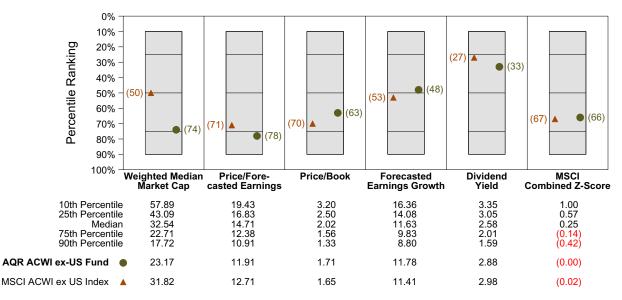


## AQR ACWI ex-US Fund Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

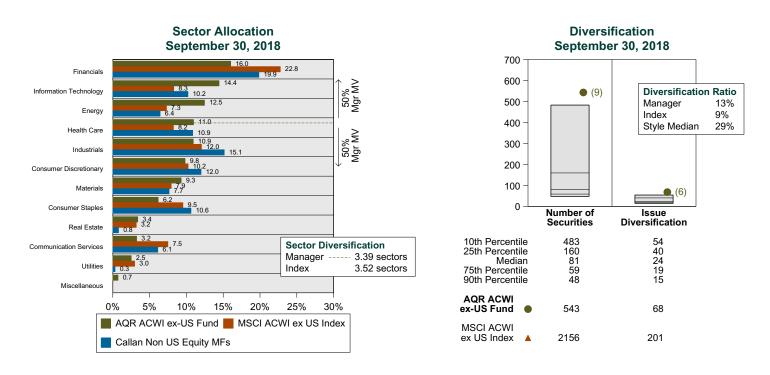
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2018



#### **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.

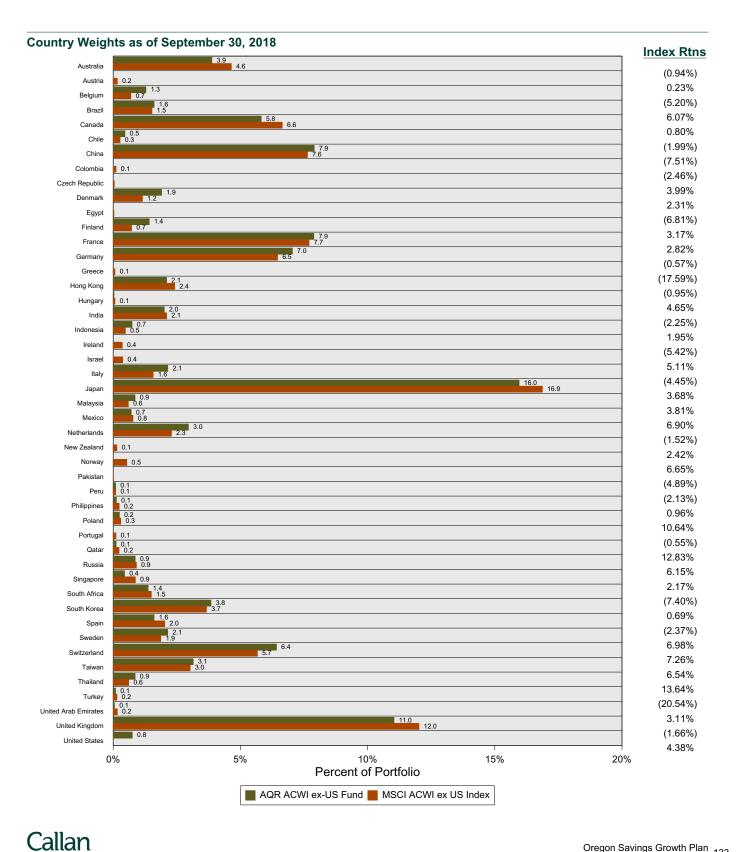




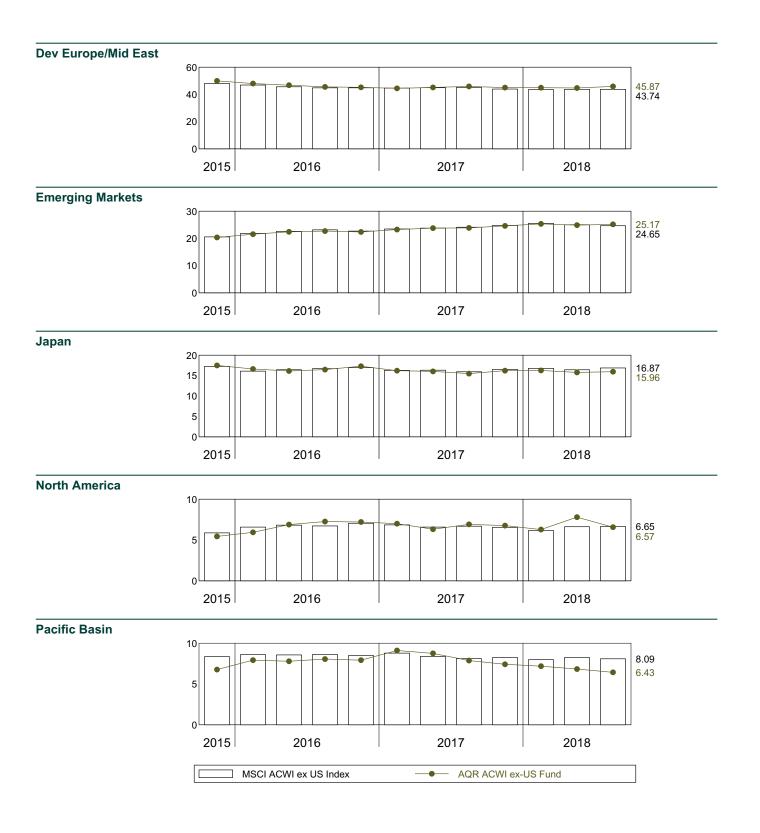
## **Country Allocation** AQR ACWI ex-US Fund VS MSCI ACWI ex US Index

#### **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



## Oregon Savings Growth Plan History of Ending Regional Weights Period Ended September 30, 2018

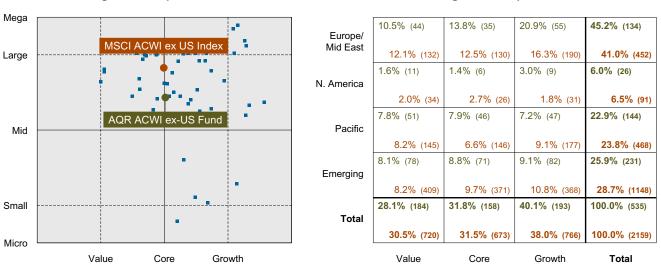


## Current Holdings Based Style Analysis AQR ACWI ex-US Fund As of September 30, 2018

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.

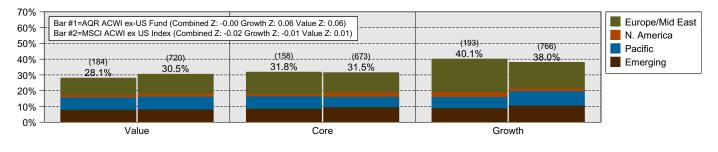
**Style Exposure Matrix** 

Holdings as of September 30, 2018

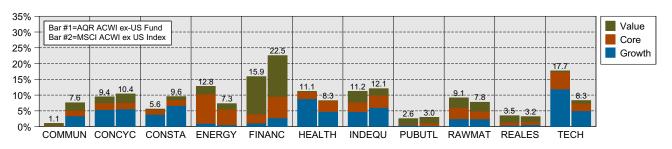


#### Style Map vs Callan Non US Equity MFs Holdings as of September 30, 2018

#### Combined Z-Score Style Distribution Holdings as of September 30, 2018

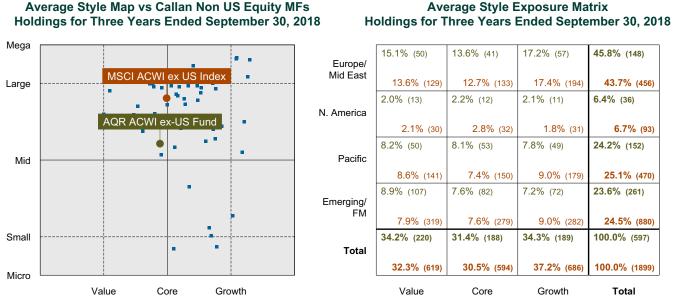


#### Sector Weights Distribution Holdings as of September 30, 2018



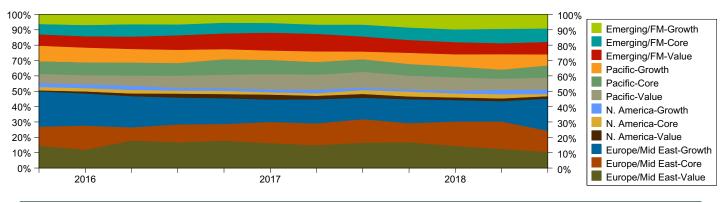
### **Historical Holdings Based Style Analysis AQR ACWI ex-US Fund** For Three Years Ended September 30, 2018

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various region 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The next two style exposure charts illustrate the actual guarterly region/style and style only segment exposures of the portfolio through history.

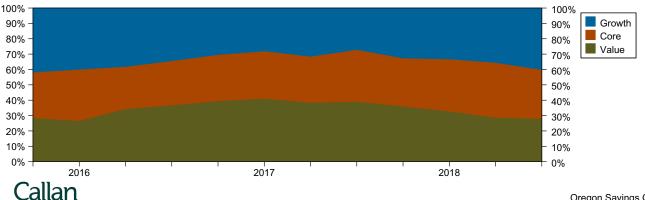


# Average Style Exposure Matrix

#### AQR ACWI ex-US Fund Historical Region/Style Exposures





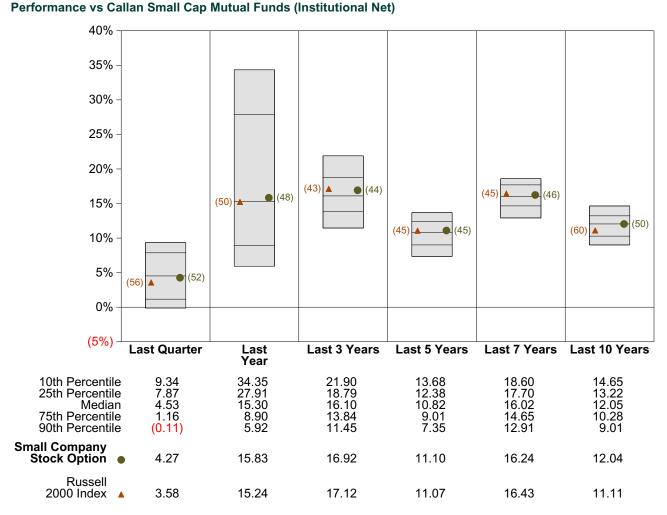


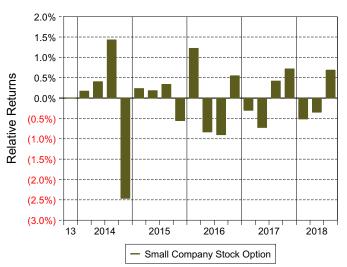
Oregon Savings Growth Plan 136

### Small Company Stock Option Period Ended September 30, 2018

#### **Quarterly Summary and Highlights**

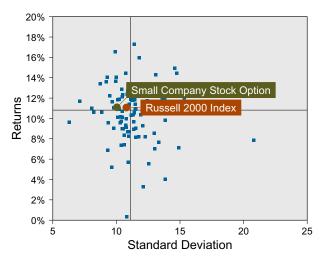
- Small Company Stock Option's portfolio posted a 4.27% return for the quarter placing it in the 52 percentile of the Callan Small Cap Mutual Funds group for the quarter and in the 48 percentile for the last year.
- Small Company Stock Option's portfolio outperformed the Russell 2000 Index by 0.69% for the quarter and outperformed the Russell 2000 Index for the year by 0.60%.





**Relative Return vs Russell 2000 Index** 

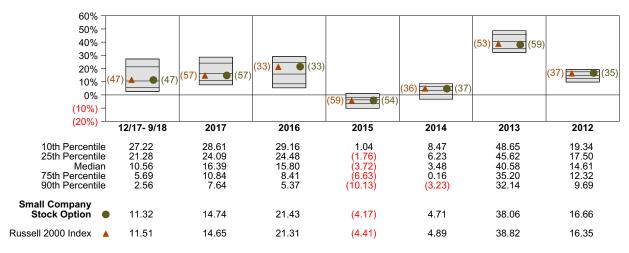
Callan Small Cap Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Small Company Stock Option Return Analysis Summary

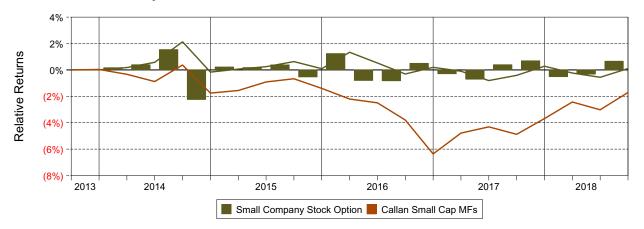
#### **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

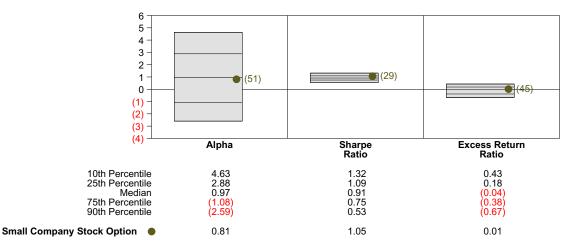


#### Performance vs Callan Small Cap Mutual Funds (Institutional Net)

**Cumulative and Quarterly Relative Return vs Russell 2000 Index** 



Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended September 30, 2018

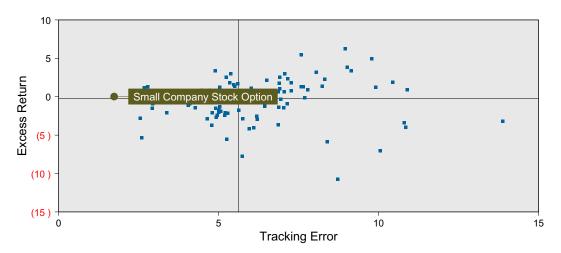


## Small Company Stock Option Risk Analysis Summary

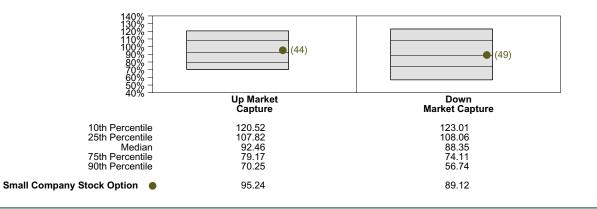
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

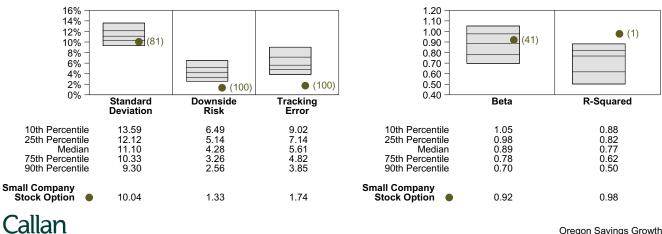
Risk Analysis vs Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



#### Market Capture vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



#### Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



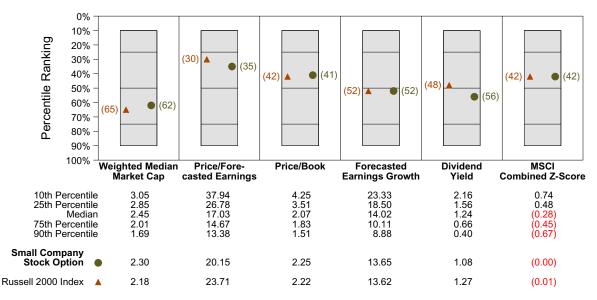
Oregon Savings Growth Plan 140

## Small Company Stock Option Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

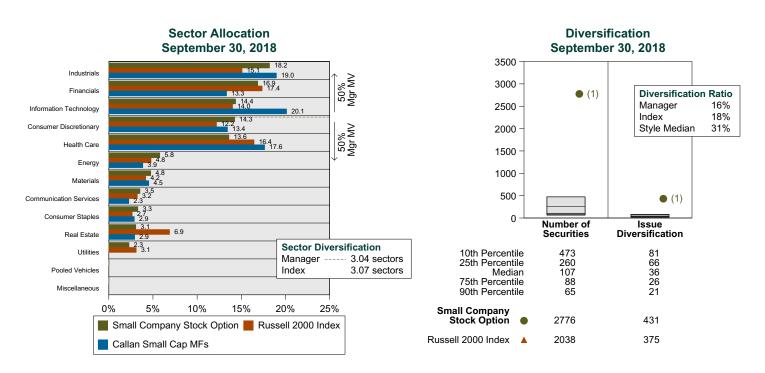
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Mutual Funds as of September 30, 2018



#### **Sector Weights**

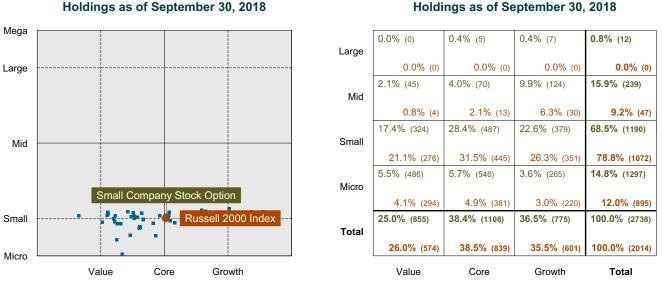
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



## Current Holdings Based Style Analysis Small Company Stock Option As of September 30, 2018

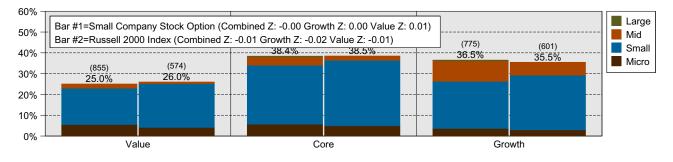
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**Style Exposure Matrix** 

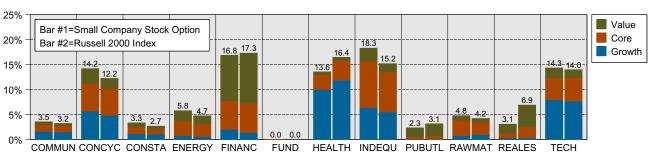


#### Style Map vs Callan Small Cap MFs Holdings as of September 30, 2018

#### Combined Z-Score Style Distribution Holdings as of September 30, 2018



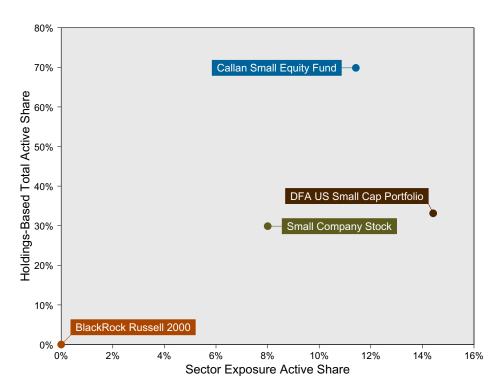
Sector Weights Distribution Holdings as of September 30, 2018



## Active Share Structure Analysis For One Quarter Ended September 30, 2018

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.





	Weight		Total	Non-Idx	Sector	Number	Security
	%	Index	Act Share	Act Share	Act Share	Securities	Diverse
Small Company Stock	100.00%	Russell 2000	29.89%	9.18%	8.00%	2776	430.81
BlackRock Russell 2000	29.39%	Russell 2000	0.00%	0.00%	0.00%	2038	374.74
Callan Small Equity Fund	35.41%	Russell 2000	69.87%	20.01%	11.42%	921	212.57
DFA US Small Cap Portfolio	35.20%	Russell 2000	33.14%	6.34%	14.42%	2023	306.32

## BlackRock Russell 2000 Index Fund Period Ended September 30, 2018

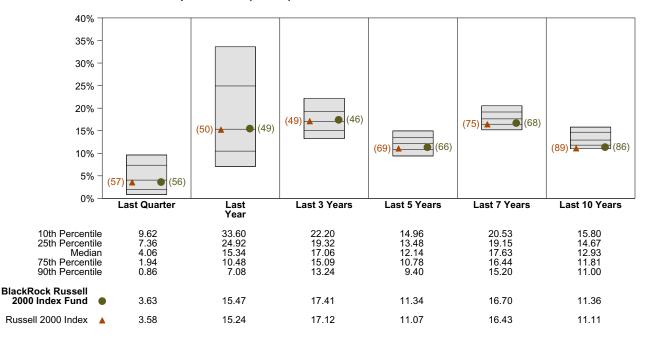
#### **Investment Philosophy**

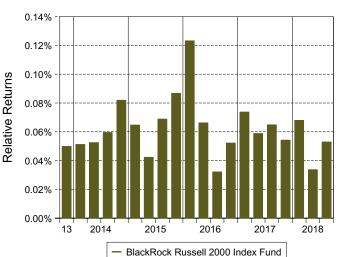
As with all indexing strategies, the objective of the Russell 2000 Index Fund is to track the performance of its benchmark, the Russell 2000 Index. To manage the fund effectively, BGI focuses on three objectives: minimizing transaction costs, minimizing tracking error and minimizing risk. Due to the illiquid nature and high transaction costs involved in trading the smallest securities in the Index, the Fund is managed using an optimization technique. The optimization is based on a risk model, with a goal of creating a fund that statistically reflects the respective index's characteristics. This approach allows BGI to decrease transaction costs, and minimize negative tracking error. BGI's broad and diverse asset and client base produces significant economies of scale for further minimizing transaction costs to clients, as we have the ability to "cross" a majority of trades among funds tracking related US equity security universes.

#### **Quarterly Summary and Highlights**

Performance vs Callan Small Capitalization (Gross)

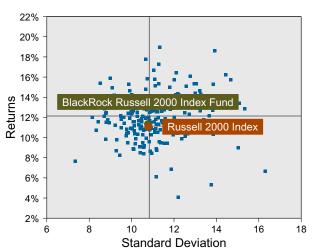
- BlackRock Russell 2000 Index Fund's portfolio posted a 3.63% return for the quarter placing it in the 56 percentile of the Callan Small Capitalization group for the quarter and in the 49 percentile for the last year.
- BlackRock Russell 2000 Index Fund's portfolio outperformed the Russell 2000 Index by 0.05% for the quarter and outperformed the Russell 2000 Index for the year by 0.23%.





#### **Relative Return vs Russell 2000 Index**

#### Callan Small Capitalization (Gross) Annualized Five Year Risk vs Return

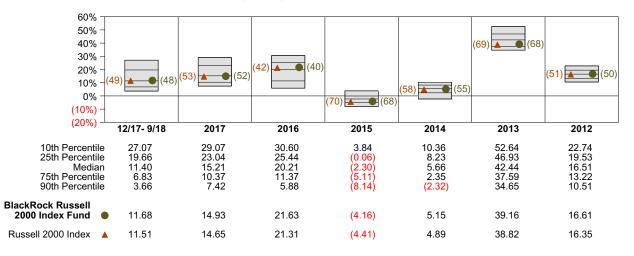


## BlackRock Russell 2000 Index Fund Return Analysis Summary

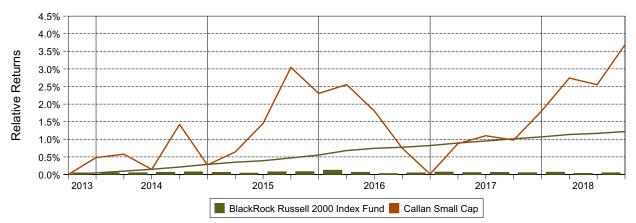
#### **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

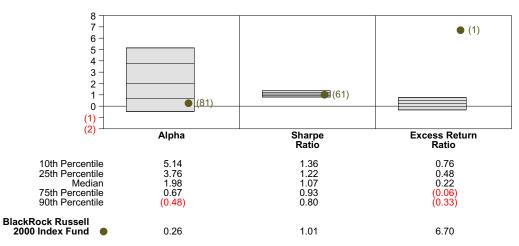
#### Performance vs Callan Small Capitalization (Gross)



Cumulative and Quarterly Relative Return vs Russell 2000 Index



#### Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended September 30, 2018



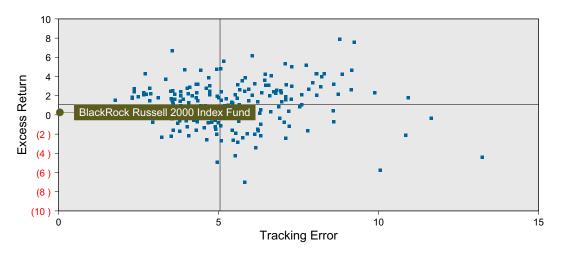


## BlackRock Russell 2000 Index Fund **Risk Analysis Summary**

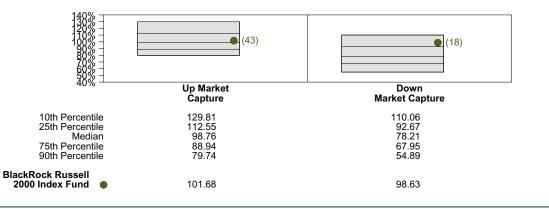
#### **Risk Analysis**

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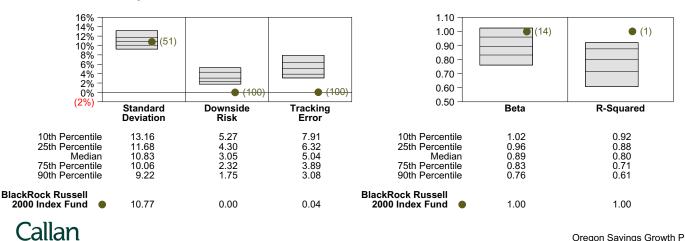
**Risk Analysis vs Callan Small Capitalization (Gross)** Five Years Ended September 30, 2018



#### Market Capture vs Russell 2000 Index **Rankings Against Callan Small Capitalization (Gross)** Five Years Ended September 30, 2018



#### **Risk Statistics Rankings vs Russell 2000 Index** Rankings Against Callan Small Capitalization (Gross) Five Years Ended September 30, 2018



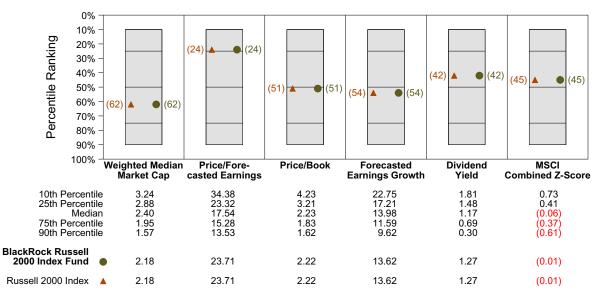
Oregon Savings Growth Plan 146

## BlackRock Russell 2000 Index Fund Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

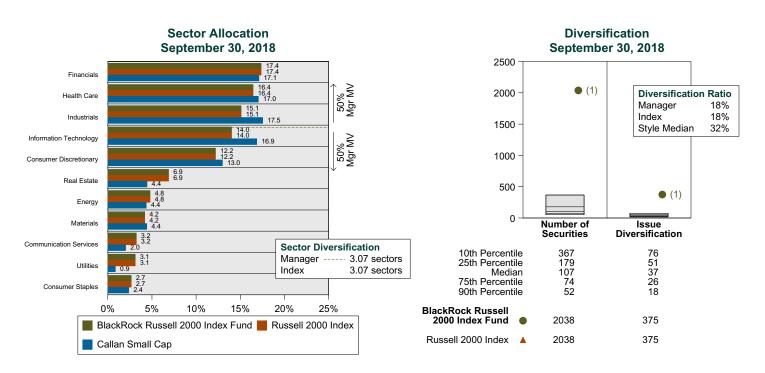
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Capitalization as of September 30, 2018



#### **Sector Weights**

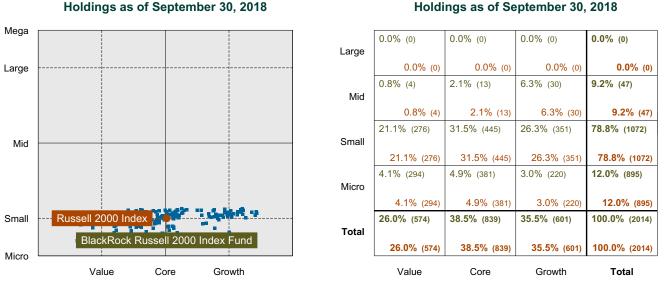
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



## Current Holdings Based Style Analysis BlackRock Russell 2000 Index Fund As of September 30, 2018

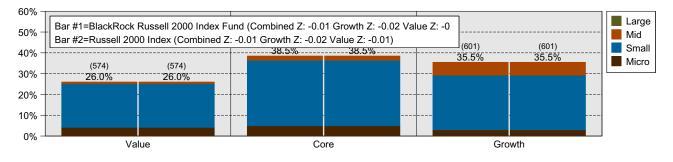
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**Style Exposure Matrix** 

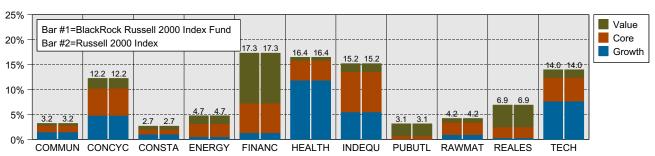


#### Style Map vs Callan Small Cap Holdings as of September 30, 2018

#### Combined Z-Score Style Distribution Holdings as of September 30, 2018



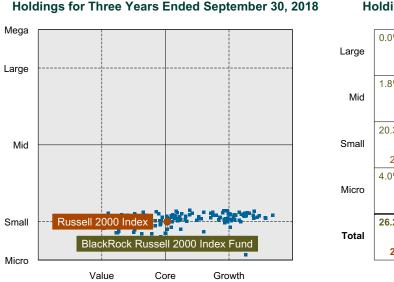
Sector Weights Distribution Holdings as of September 30, 2018



## Historical Holdings Based Style Analysis BlackRock Russell 2000 Index Fund For Three Years Ended September 30, 2018

Average Style Map vs Callan Small Cap

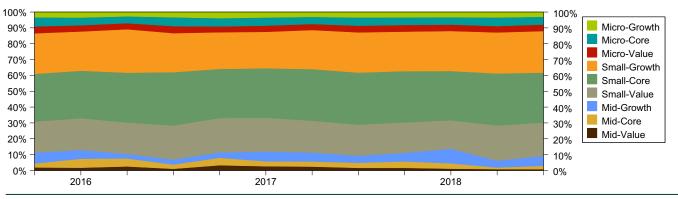
This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.



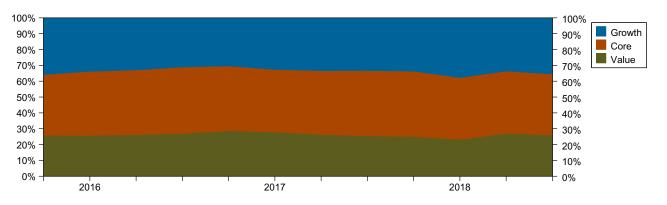
#### Average Style Exposure Matrix Holdings for Three Years Ended September 30, 2018

	Value	Core	Growth	Total
	<b>26.2%</b> (566)	<b>40.2%</b> (819)	33.6% (587)	<b>100.0%</b> (1972)
otal	26.2% (566)	40.2% (819)	33.6% (587)	100.0% (1972)
	4.0% (282)	5.0% (374)	3.3% (217)	<b>12.3%</b> (873)
licro	4.0% (282)	5.0% (374)	3.3% (217)	12.3% (873)
	20.3% (275)	31.7% (428)	25.1% (344)	<b>77.2%</b> (1047)
mall				
	20.3% (275)	31.7% (428)	25.1% (344)	77.2% (1047)
Mid	1.8% (9)	3.4% (17)	5.3% (26)	<b>10.5%</b> (52)
	1.8% (9)	3.4% (17)	5.3% (26)	10.5% (52)
U	0.0% (0)	0.0% (0)	0.0% (0)	<b>0.0%</b> (0)
arge	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)

BlackRock Russell 2000 Index Fund Historical Cap/Style Exposures



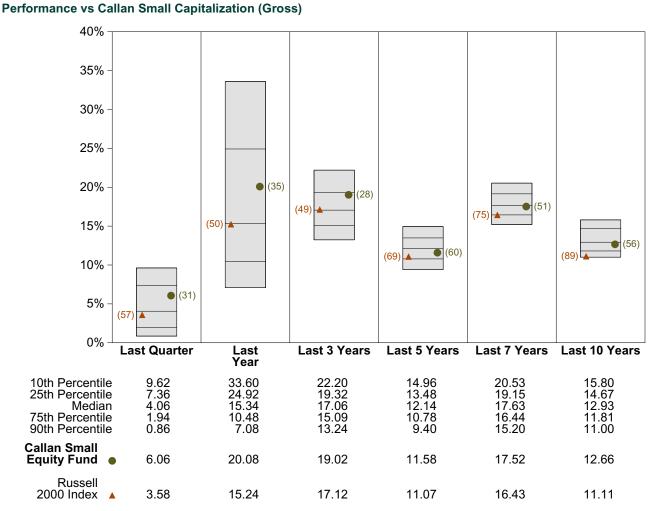


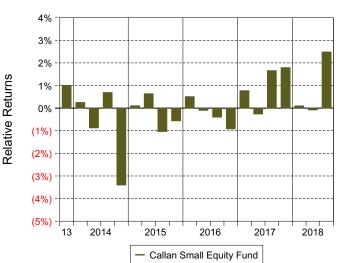


## Callan Small Equity Fund Period Ended September 30, 2018

#### **Quarterly Summary and Highlights**

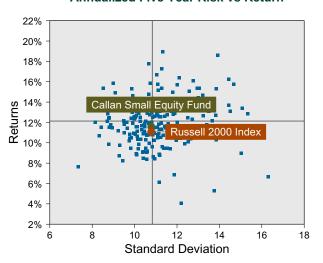
- Callan Small Equity Fund's portfolio posted a 6.06% return for the quarter placing it in the 31 percentile of the Callan Small Capitalization group for the quarter and in the 35 percentile for the last year.
- Callan Small Equity Fund's portfolio outperformed the Russell 2000 Index by 2.49% for the quarter and outperformed the Russell 2000 Index for the year by 4.84%.





#### **Relative Return vs Russell 2000 Index**

Callan Small Capitalization (Gross) Annualized Five Year Risk vs Return

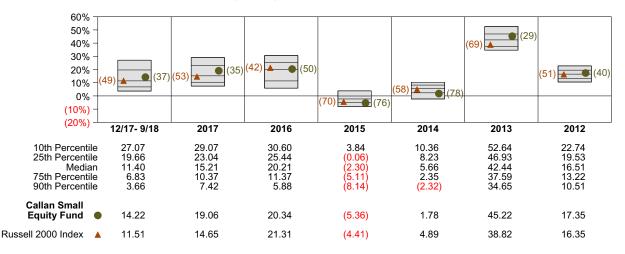


## Callan Small Equity Fund Return Analysis Summary

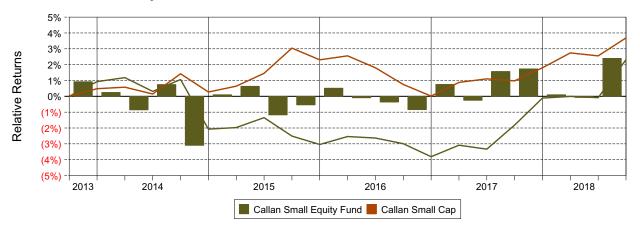
#### **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

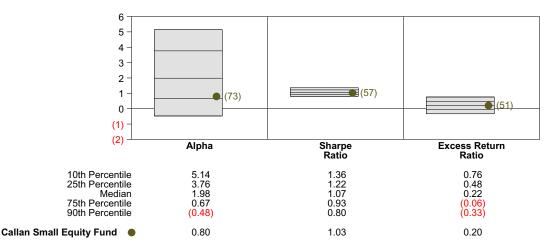
#### Performance vs Callan Small Capitalization (Gross)



**Cumulative and Quarterly Relative Return vs Russell 2000 Index** 



#### Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended September 30, 2018



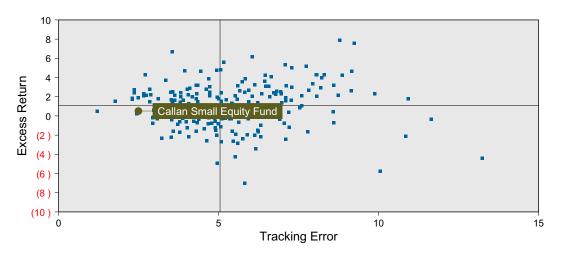


## Callan Small Equity Fund Risk Analysis Summary

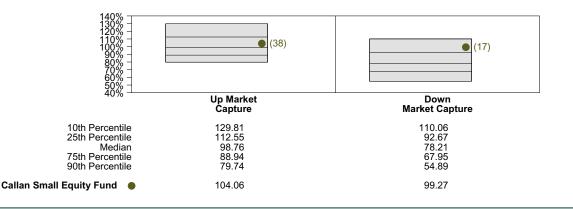
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

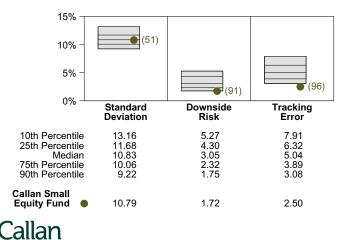
Risk Analysis vs Callan Small Capitalization (Gross) Five Years Ended September 30, 2018

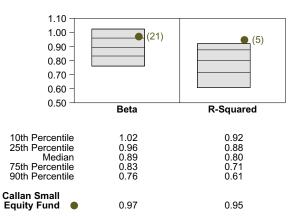


#### Market Capture vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended September 30, 2018



#### Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended September 30, 2018





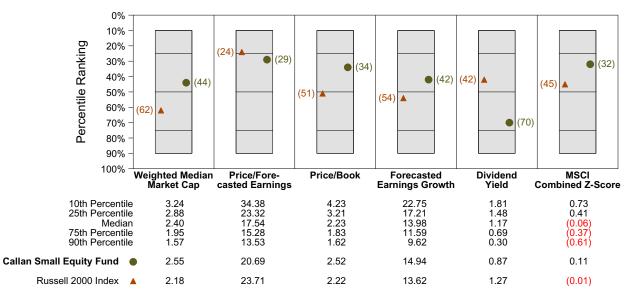
Oregon Savings Growth Plan 152

## Callan Small Equity Fund Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

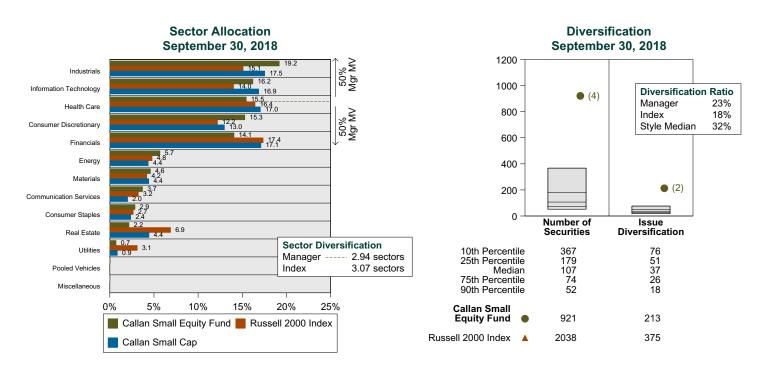
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Capitalization as of September 30, 2018



#### **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.

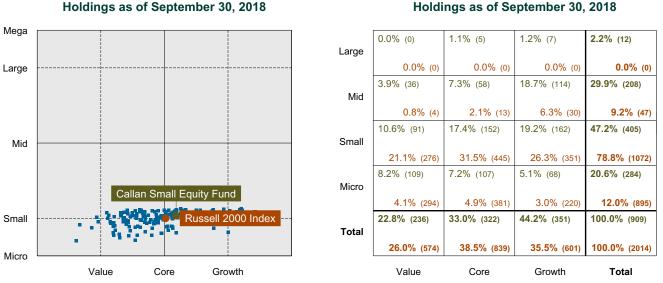




## Current Holdings Based Style Analysis Callan Small Equity Fund As of September 30, 2018

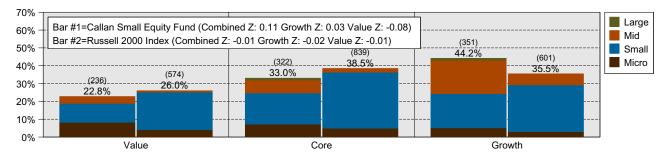
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

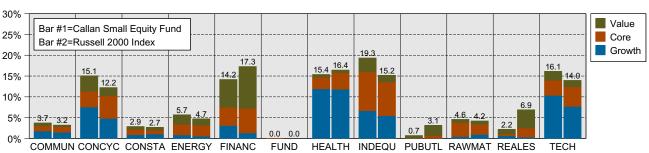


#### Style Map vs Callan Small Cap Holdings as of September 30, 2018

#### Combined Z-Score Style Distribution Holdings as of September 30, 2018

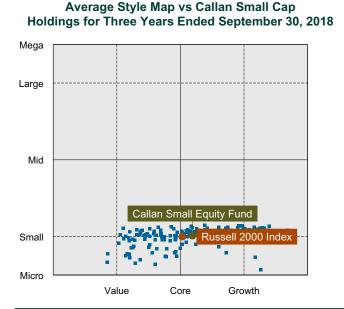


Sector Weights Distribution Holdings as of September 30, 2018



## **Historical Holdings Based Style Analysis Callan Small Equity Fund** For Three Years Ended September 30, 2018

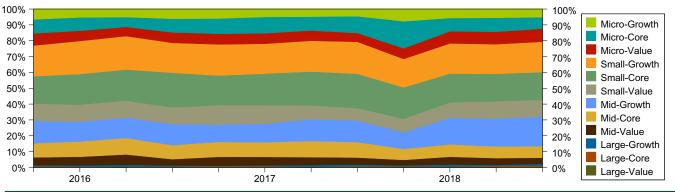
This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented guarterly by capitalization and style. 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.



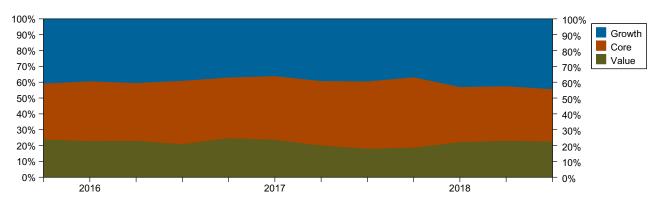
#### **Average Style Exposure Matrix** Holdings for Three Years Ended September 30, 2018

	0.1% (1)	0.5% (3)	0.8% (5)	1.5% (9)
Large				
	0.0% (0)	0.0% (0)	0.0% (0)	<b>0.0%</b> (0)
	4.8% (36)	8.8% (67)	13.8% (91)	27.5% (194)
Mid				
	1.8% (9)	3.4% (17)	5.3% (26)	<b>10.5%</b> (52)
	10.3% (89)	19.4% (160)	19.5% (165)	49.1% (414)
Small				
	20.3% (275)	31.7% (428)	25.1% (344)	<b>77.2%</b> (1047)
	6.9% (82)	9.4% (125)	5.6% (67)	21.9% (274)
Micro				
	4.0% (282)	5.0% (374)	3.3% (217)	<b>12.3%</b> (873)
	22.1% (208)	38.2% (355)	39.7% (328)	100.0% (891)
Total				
	26.2% (566)	<b>40.2%</b> (819)	<b>33.6%</b> (587)	<b>100.0%</b> (1972)
	Value	Core	Growth	Total









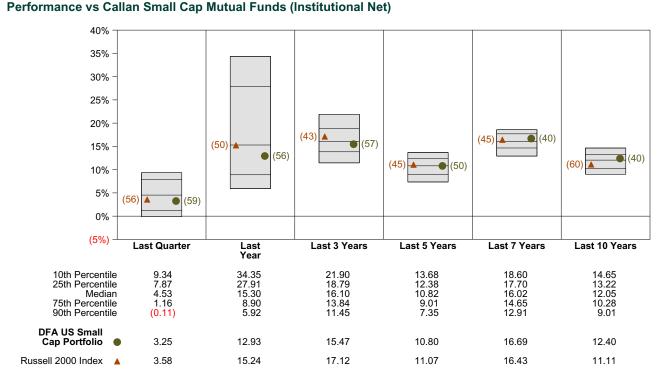
## DFA US Small Cap Portfolio Period Ended September 30, 2018

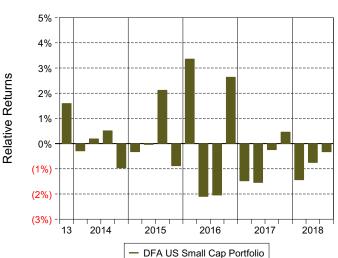
#### **Investment Philosophy**

Dimensional's core philosophical principles are: public capital markets work (Dimensional uses information in market prices to identify reliable dimensions of expected market returns: size, relative price, and profitability and to design and implement strategies along those dimensions); diversification is essential (helps reduce uncertainty, manage risk, increase the reliability of outcomes, and provide flexibility); and managing tradeoffs adds value (Dimensional seeks to add value by targeting market premiums efficiently and continuously, reducing the costs associated with turnover, and implementing a flexible trading strategy).

#### **Quarterly Summary and Highlights**

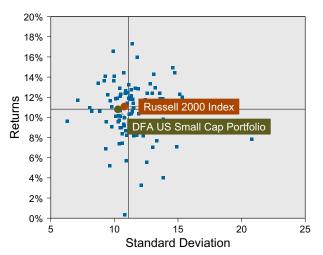
- DFA US Small Cap Portfolio's portfolio posted a 3.25% return for the quarter placing it in the 59 percentile of the Callan Small Cap Mutual Funds group for the quarter and in the 56 percentile for the last year.
- DFA US Small Cap Portfolio's portfolio underperformed the Russell 2000 Index by 0.33% for the quarter and underperformed the Russell 2000 Index for the year by 2.31%.





**Relative Return vs Russell 2000 Index** 

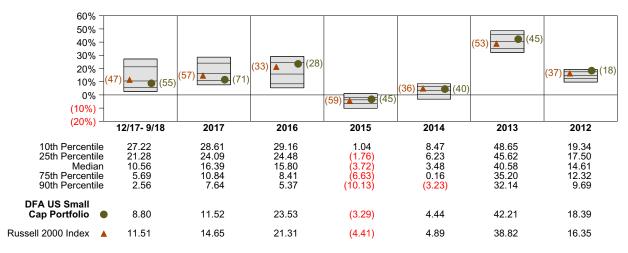
Callan Small Cap Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## DFA US Small Cap Portfolio Return Analysis Summary

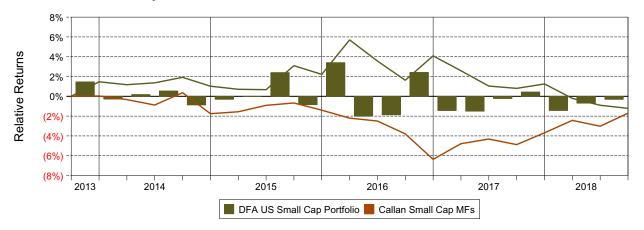
#### **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

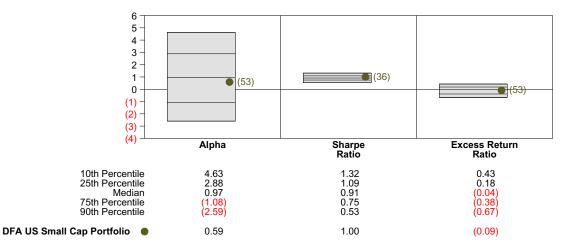


#### Performance vs Callan Small Cap Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Return vs Russell 2000 Index



Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



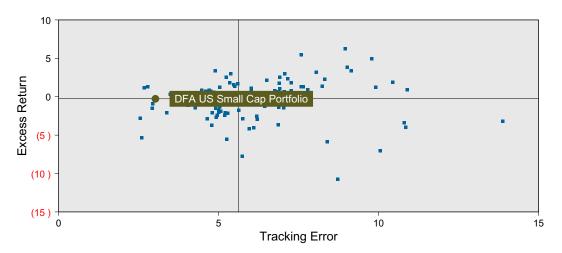


## **DFA US Small Cap Portfolio Risk Analysis Summary**

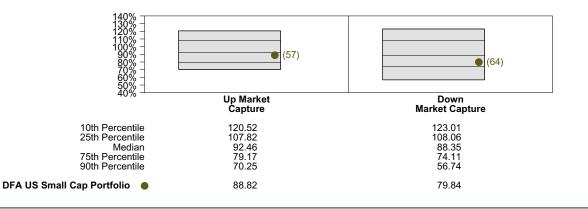
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

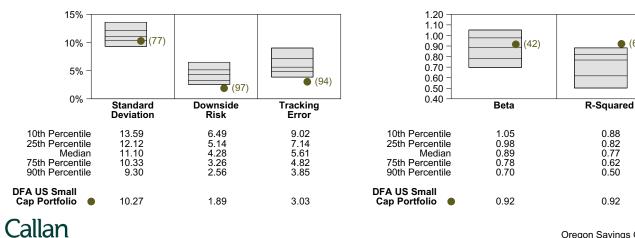
**Risk Analysis vs Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended September 30, 2018



#### Market Capture vs Russell 2000 Index **Rankings Against Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended September 30, 2018



#### **Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended September 30, 2018



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(6)

0.88

0.82 0.77

0.62

0.50

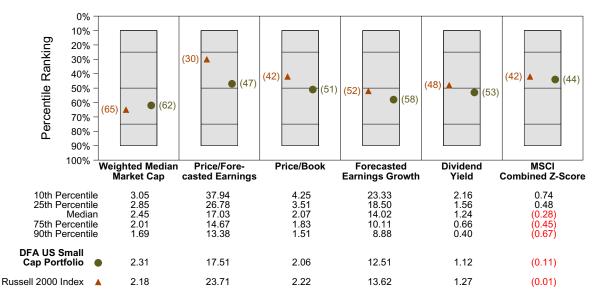
0.92

## DFA US Small Cap Portfolio Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

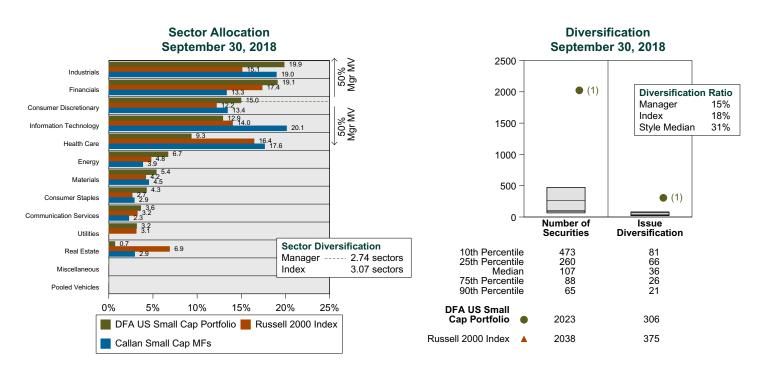
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Mutual Funds as of September 30, 2018



#### **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.

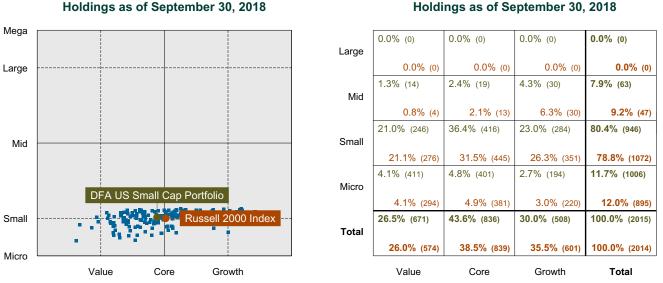




# Current Holdings Based Style Analysis DFA US Small Cap Portfolio As of September 30, 2018

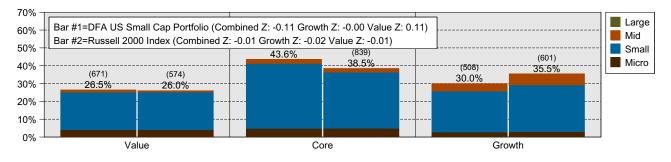
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

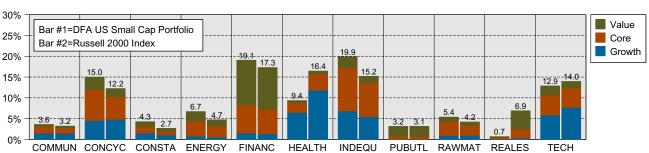


#### Style Map vs Callan Small Cap Holdings as of September 30, 2018

# Combined Z-Score Style Distribution Holdings as of September 30, 2018

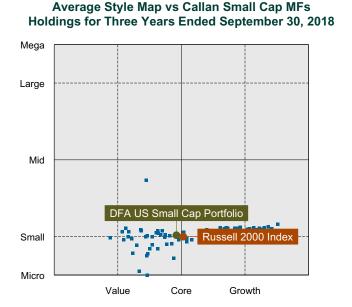


Sector Weights Distribution Holdings as of September 30, 2018



# **Historical Holdings Based Style Analysis DFA US Small Cap Portfolio** For Three Years Ended September 30, 2018

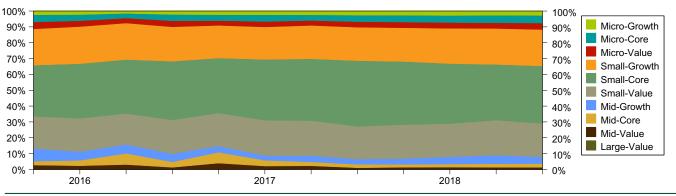
This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.



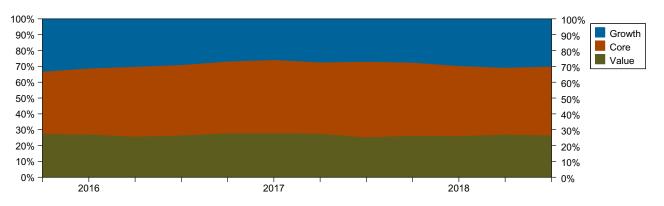
## **Average Style Exposure Matrix** Holdings for Three Years Ended September 30, 2018

	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Large				
	0.0% (0)	0.0% (0)	0.0% (0)	<b>0.0%</b> (0)
	2.0% (17)	3.3% (26)	4.7% (31)	10.1% (74)
Mid				
	1.8% (9)	3.4% (17)	5.3% (26)	<b>10.5%</b> (52)
	21.1% (249)	36.7% (396)	22.0% (251)	79.9% (896)
Small				
	20.3% (275)	31.7% (428)	25.1% (344)	<b>77.2%</b> (1047)
	3.6% (386)	4.1% (417)	2.4% (178)	10.1% (981)
Micro				
	4.0% (282)	5.0% (374)	3.3% (217)	<b>12.3%</b> (873)
	26.8% (652)	44.2% (839)	29.0% (460)	100.0% (1951)
Total				
	26.2% (566)	<b>40.2%</b> (819)	<b>33.6%</b> (587)	<b>100.0%</b> (1972)
	Value	Core	Growth	Total

### DFA US Small Cap Portfolio Historical Cap/Style Exposures



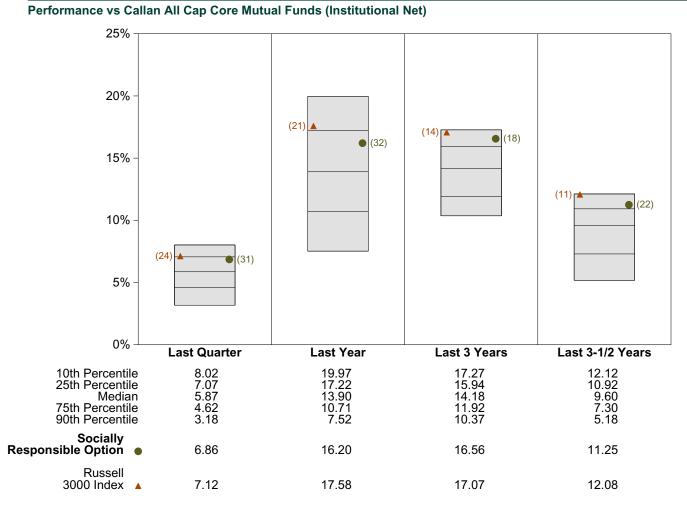


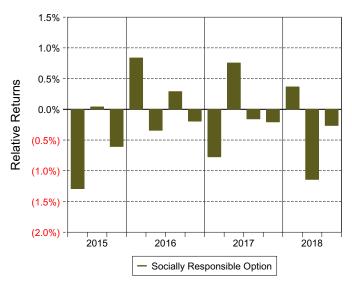


# Socially Responsible Option Period Ended September 30, 2018

#### **Quarterly Summary and Highlights**

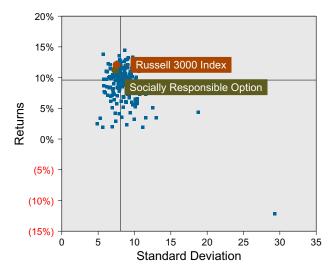
- Socially Responsible Option's portfolio posted a 6.86% return for the quarter placing it in the 31 percentile of the Callan All Cap Core Mutual Funds group for the quarter and in the 32 percentile for the last year.
- Socially Responsible Option's portfolio underperformed the Russell 3000 Index by 0.26% for the quarter and underperformed the Russell 3000 Index for the year by 1.38%.





**Relative Return vs Russell 3000 Index** 

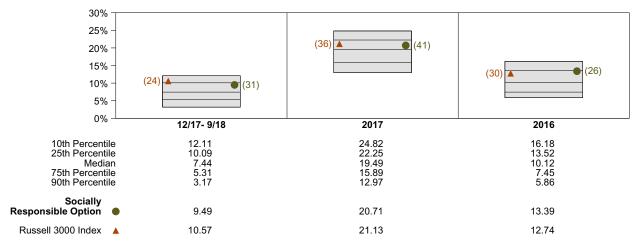
Callan All Cap Core Mutual Funds (Institutional Net) Annualized Three and One-Half Year Risk vs Return



# Socially Responsible Option Return Analysis Summary

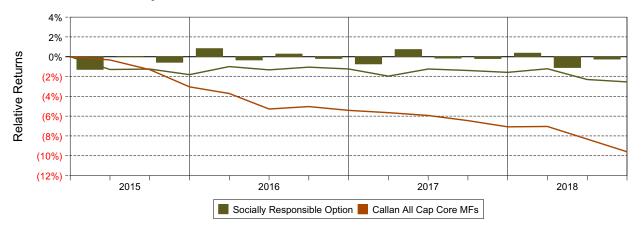
# **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

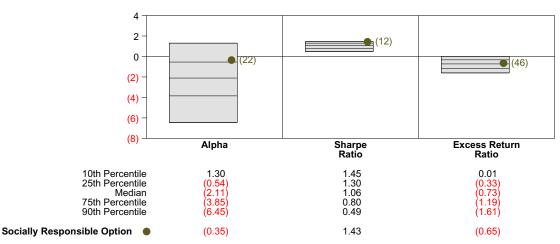


# Performance vs Callan All Cap Core Mutual Funds (Institutional Net)

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



Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Three and One-Half Years Ended September 30, 2018



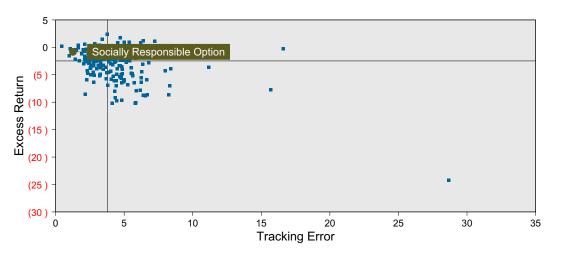


# **Socially Responsible Option Risk Analysis Summary**

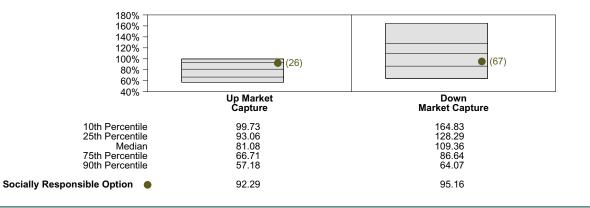
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

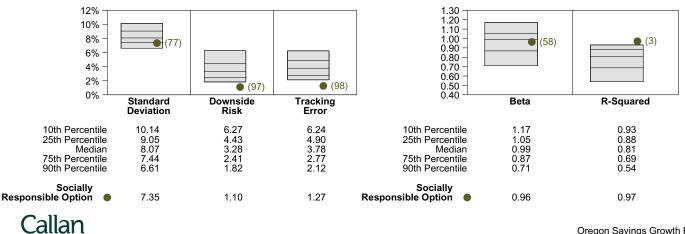
Risk Analysis vs Callan All Cap Core Mutual Funds (Institutional Net) Three and One-Half Years Ended September 30, 2018



### Market Capture vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Three and One-Half Years Ended September 30, 2018



#### **Risk Statistics Rankings vs Russell 3000 Index** Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Three and One-Half Years Ended September 30, 2018



# TIAA-CREF Social Choice Equity Fund Period Ended September 30, 2018

# **Investment Philosophy**

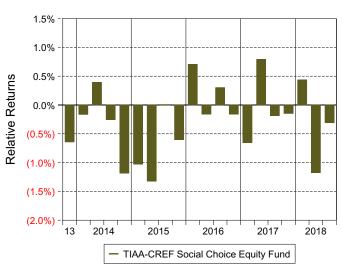
The Social Choice Equity fund uses the MSCI USA IMI ESG index as it's starting universe, but rebalances stock weightings to match the risk factors of the Russell 3000. The goal is to neutralize, to the extent possible, the inherent biases introduced by using a screened universe of securities and minimize tracking error versus the Russell 3000.

#### **Quarterly Summary and Highlights**

- TIAA-CREF Social Choice Equity Fund's portfolio posted a 6.82% return for the quarter placing it in the 32 percentile of the Callan All Cap Core Mutual Funds group for the quarter and in the 31 percentile for the last year.
- TIAA-CREF Social Choice Equity Fund's portfolio underperformed the Russell 3000 Index by 0.31% for the quarter and underperformed the Russell 3000 Index for the year by 1.31%.

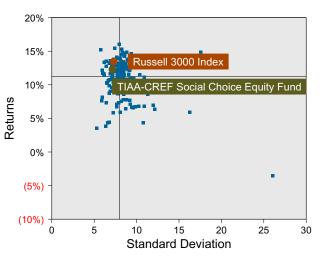
### Performance vs Callan All Cap Core Mutual Funds (Institutional Net)





#### **Relative Return vs Russell 3000 Index**

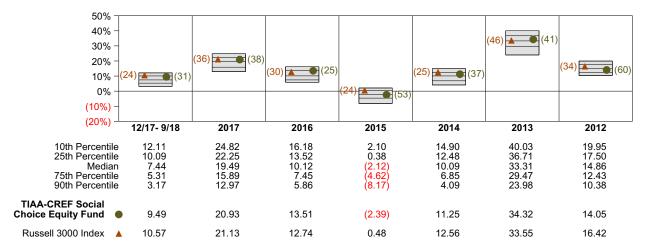
#### Callan All Cap Core Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



# TIAA-CREF Social Choice Equity Fund Return Analysis Summary

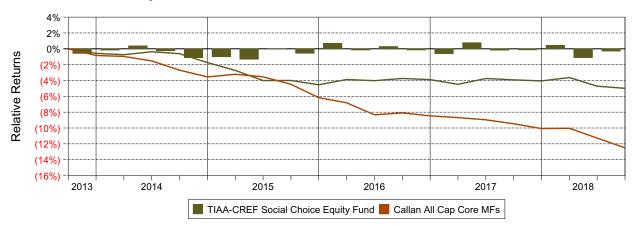
# **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

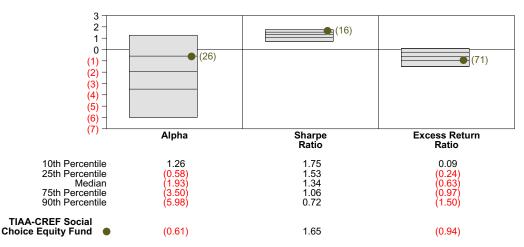


# Performance vs Callan All Cap Core Mutual Funds (Institutional Net)

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



Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018

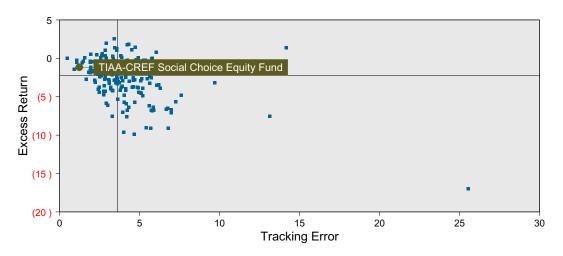


# **TIAA-CREF Social Choice Equity Fund Risk Analysis Summary**

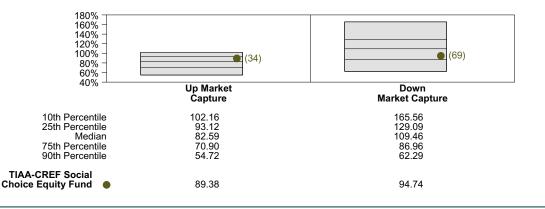
#### **Risk Analysis**

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 chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

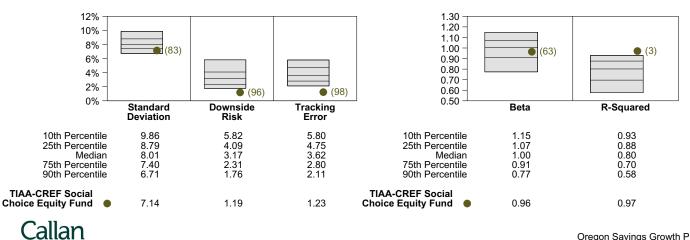
Risk Analysis vs Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



## Market Capture vs Russell 3000 Index Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



#### **Risk Statistics Rankings vs Russell 3000 Index** Rankings Against Callan All Cap Core Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



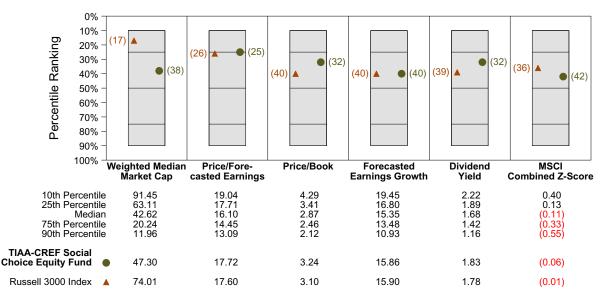
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# TIAA-CREF Social Choice Equity Fund Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

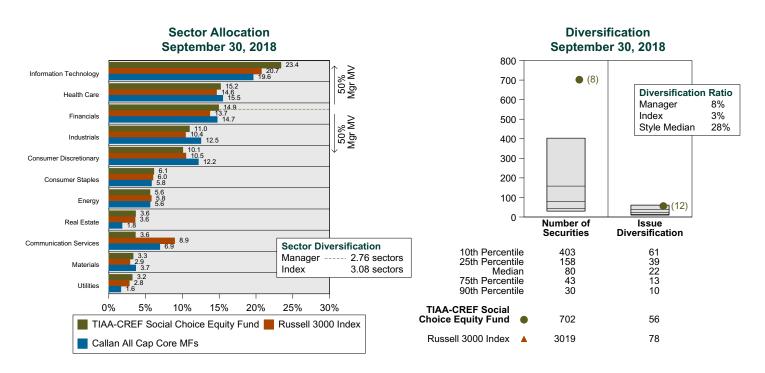
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan All Cap Core Mutual Funds as of September 30, 2018



# **Sector Weights**

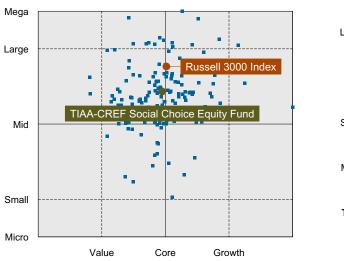
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.





# Current Holdings Based Style Analysis TIAA-CREF Social Choice Equity Fund As of September 30, 2018

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.

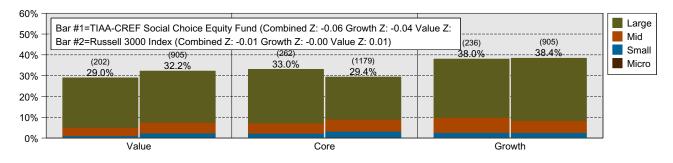


## Style Map vs Callan All Cap Core MFs Holdings as of September 30, 2018

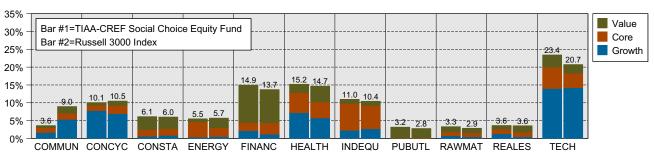
# Style Exposure Matrix Holdings as of September 30, 2018

	Value	Core	Growth	Total
	32.2% (905)	<b>29.4%</b> (1179)	38.4% (905)	100.0% (2989)
otal	20.070 (202)	00.070 (202)	55.070 (250)	100.070 (700)
	29.0% (202)	33.0% (262)	38.0% (236)	100.0% (700)
nore	0.3% (294)	0.4% (382)	0.2% (220)	<b>0.9%</b> (896)
licro	0.3% (27)	0.3% (33)	0.3% (21)	0.8% (81)
	. ,	· · · · ·	· · · · ·	
llidii	2.1% (328)	2.8% (489)	2.3% (379)	7.1% (1196)
mall	0.8% (60)	1.9% (100)	2.3% (85)	5.1% (245)
	5.1% (186)	5.8% (201)	5.9% (211)	16.8% (598)
Mid				
	4.0% (59)	5.0% (71)	7.3% (87)	<b>16.2%</b> (217)
	24.7% (97)	20.4% (107)	30.0% (95)	75.1% (299)
arge				
	23.9% (56)	25.9% (58)	28.1% (43)	77.9% (157)

# Combined Z-Score Style Distribution Holdings as of September 30, 2018

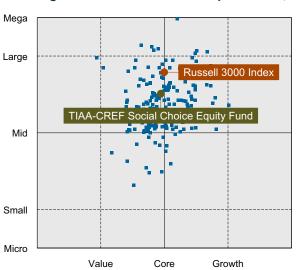


Sector Weights Distribution Holdings as of September 30, 2018



# **Historical Holdings Based Style Analysis TIAA-CREF Social Choice Equity Fund** For Three Years Ended September 30, 2018

This page analyzes the historical investment style of a portfolio utilizing a detailed holdings-based style analysis to determine average 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 average historical market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the average historical portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The next two style exposure charts illustrate the actual quarterly cap/style and style only segment exposures of the portfolio through history.

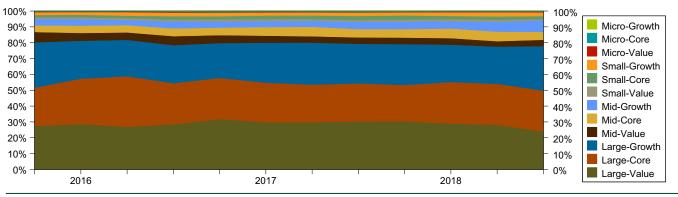


#### Average Style Map vs Callan All Cap Core MFs Holdings for Three Years Ended September 30, 2018

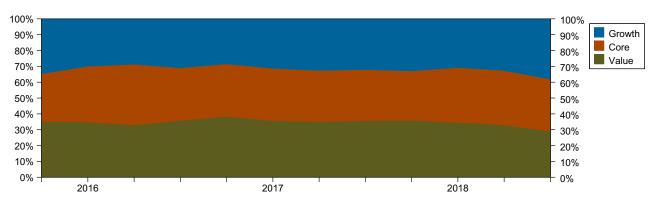
# **Average Style Exposure Matrix** Holdings for Three Years Ended September 30, 2018

	28.7% (62)	25.9% (54)	24.9% (52)	79.5% (168)
Large				
	26.8% (103)	22.9% (96)	24.7% (97)	<b>74.4%</b> (296)
	4.6% (60)	5.2% (84)	4.5% (67)	14.3% (211)
Mid				
	5.1% (174)	6.4% (219)	5.8% (202)	<b>17.3%</b> (595)
	1.1% (93)	2.1% (118)	2.1% (85)	5.3% (296)
Small				
	2.2% (338)	2.9% (476)	2.2% (379)	<b>7.3%</b> (1193)
	0.2% (34)	0.3% (40)	0.3% (29)	0.8% (103)
Micro				
	0.3% (282)	0.4% (376)	0.3% (218)	<b>1.0%</b> (876)
	34.7% (249)	33.4% (296)	31.8% (233)	100.0% (778)
Total				
	34.5% (897)	<b>32.5%</b> (1167)	<b>33.0%</b> (896)	<b>100.0%</b> (2960)
	Value	Core	Growth	Total

TIAA-CREF Social Choice Equity Fund Historical Cap/Style Exposures



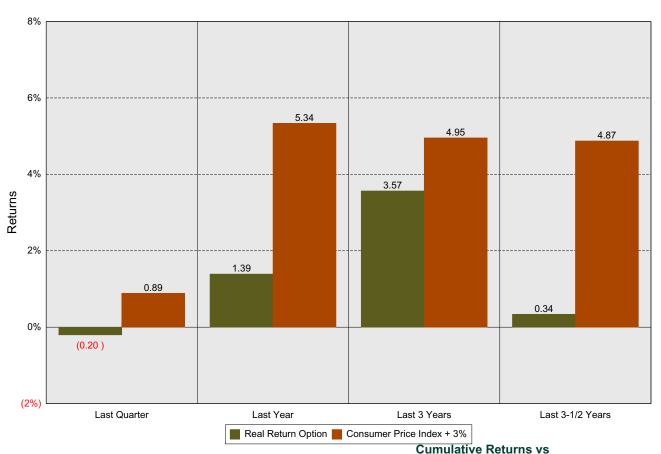




# Real Return Option Period Ended September 30, 2018

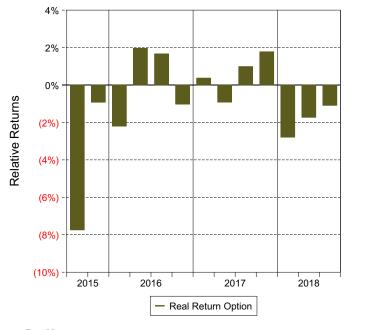
## **Quarterly Summary and Highlights**

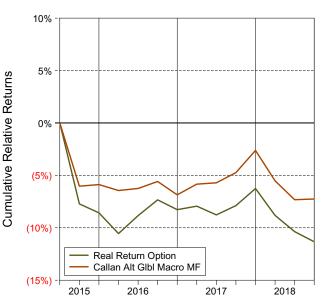
- Real Return Option's portfolio posted a (0.20)% return for the quarter placing it in the 76 percentile of the Callan Alt Global Macro Mutual Funds group for the quarter and in the 67 percentile for the last year.
- Real Return Option's portfolio underperformed the Consumer Price Index + 3% by 1.09% for the quarter and underperformed the Consumer Price Index + 3% for the year by 3.95%.



**Relative Return vs Consumer Price Index + 3%** 

Consumer Price Index + 3%





# GMO Benchmark-Free Allocation Fund Period Ended September 30, 2018

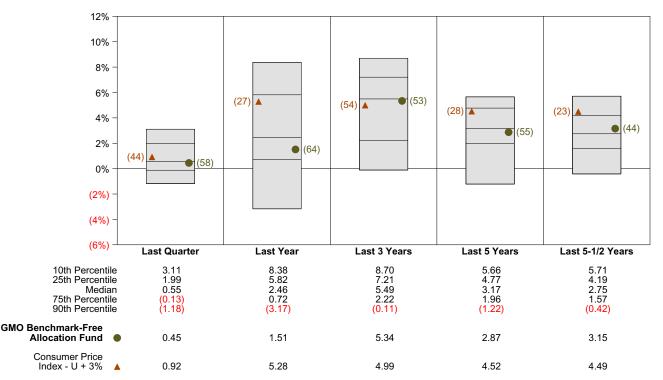
#### **Investment Philosophy**

The philosophy that underlies all of GMO's Asset Allocation investment strategies is that the pricing of asset classes, and individual securities, may deviate from true intrinsic value. Investors who are able to embrace the embedded advantages of their long horizon, be unconventional in their portfolio exposures, and avoid the instinct to follow the herd are best positioned to capitalize on long term value opportunities.

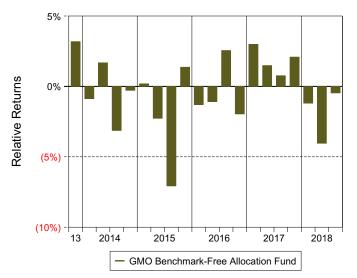
#### **Quarterly Summary and Highlights**

- GMO Benchmark-Free Allocation Fund's portfolio posted a 0.45% return for the quarter placing it in the 58 percentile of the Callan Alt Global Macro Mutual Funds group for the quarter and in the 64 percentile for the last year.
- GMO Benchmark-Free Allocation Fund's portfolio underperformed the Consumer Price Index U + 3% by 0.47% for the quarter and underperformed the Consumer Price Index U + 3% for the year by 3.76%.

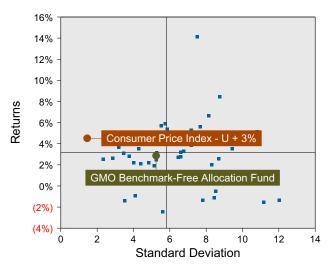








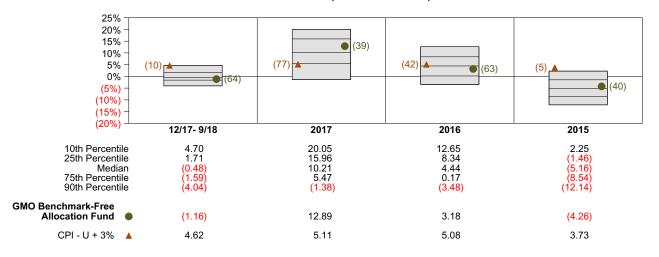
Callan Alt Global Macro Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



# GMO Benchmark-Free Allocation Fund Return Analysis Summary

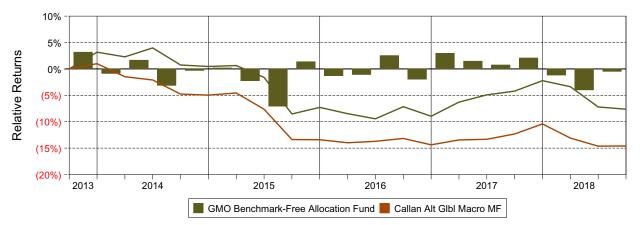
# **Return Analysis**

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 chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

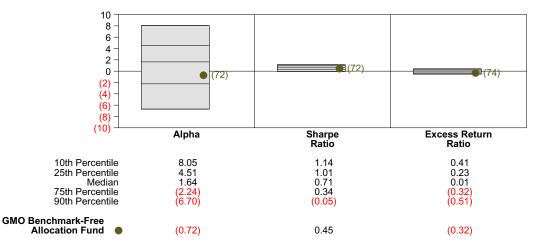


#### Performance vs Callan Alt Global Macro Mutual Funds (Institutional Net)





#### Risk Adjusted Return Measures vs CPI - U + 3% Rankings Against Callan Alt Global Macro Mutual Funds (Institutional Net) Five Years Ended September 30, 2018

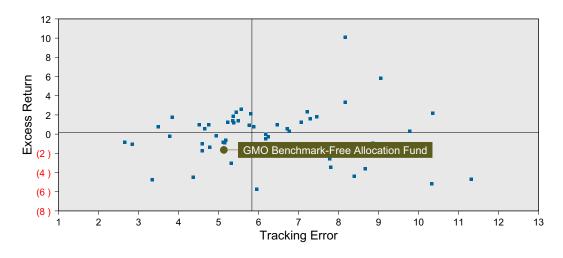


# **GMO Benchmark-Free Allocation Fund Risk Analysis Summary**

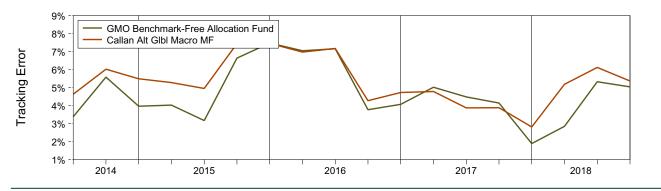
#### **Risk Analysis**

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 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.

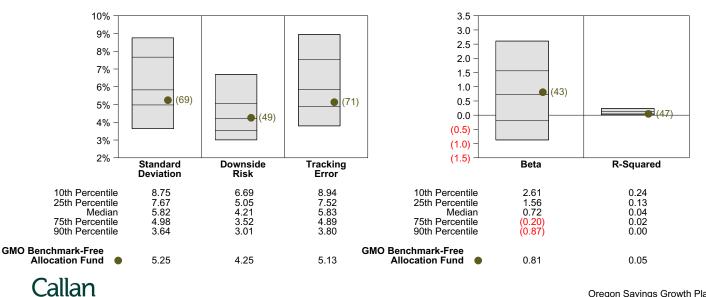
Risk Analysis vs Callan Alt Global Macro Mutual Funds (Institutional Net) Five Years Ended September 30, 2018



#### Rolling 4 Quarter Tracking Error vs CPI - U + 3%







Oregon Savings Growth Plan 176

# State Street Real Asset Strategy Period Ended September 30, 2018

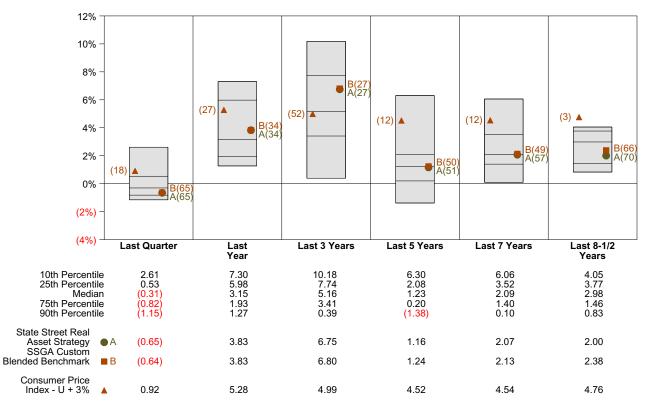
#### **Investment Philosophy**

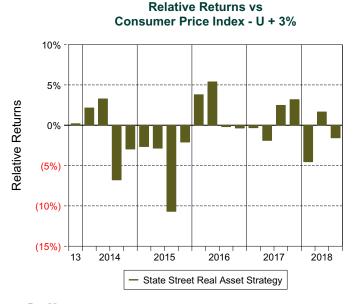
SSGA Custom Blended Benchmark comprised of: 15% Dow Jones US Select REIT Index, 25% Bloomberg Roll Select Commodity Index, 25% S&P Global LargeMidCap Commodity and Resources Index, 25% Bloomberg Barclays US Treasury Inflation Protected Securities Index, and 10% S&P Global Infrastructure Index.

#### **Quarterly Summary and Highlights**

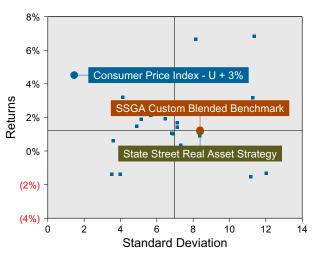
- State Street Real Asset Strategy's portfolio posted a (0.65)% return for the quarter placing it in the 65 percentile of the Callan Real Assets Database group for the quarter and in the 34 percentile for the last year.
- State Street Real Asset Strategy's portfolio underperformed the Consumer Price Index U + 3% by 1.57% for the quarter and underperformed the Consumer Price Index U + 3% for the year by 1.45%.

#### Performance vs Callan Real Assets Database (Institutional Net)





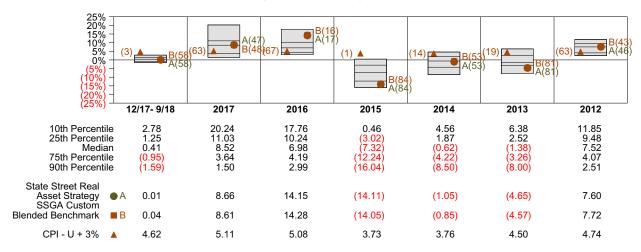
#### Callan Real Assets Database (Institutional Net) Annualized Five Year Risk vs Return



# State Street Real Asset Strategy Return Analysis Summary

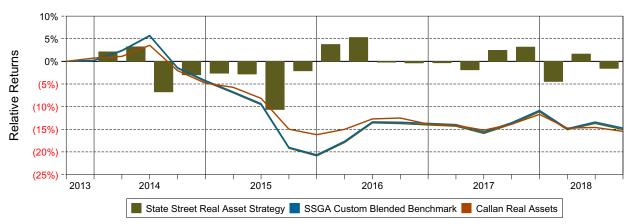
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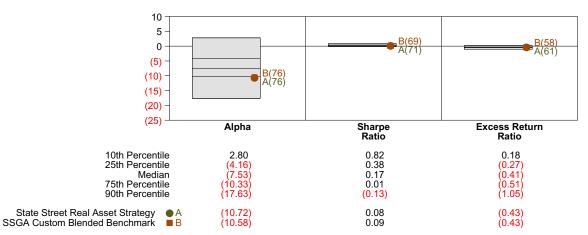








#### Risk Adjusted Return Measures vs CPI - U + 3% Rankings Against Callan Real Assets Database (Institutional Net) Five Years Ended September 30, 2018

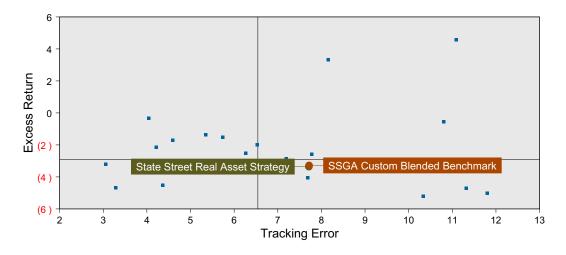


# State Street Real Asset Strategy **Risk Analysis Summary**

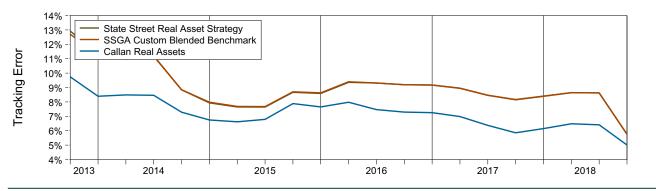
#### **Risk Analysis**

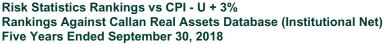
The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over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

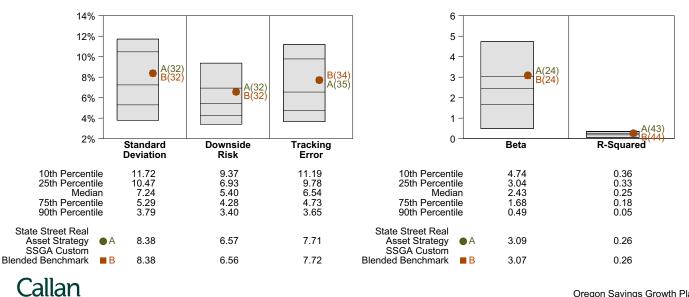
**Risk Analysis vs Callan Real Assets Database (Institutional Net)** Five Years Ended September 30, 2018











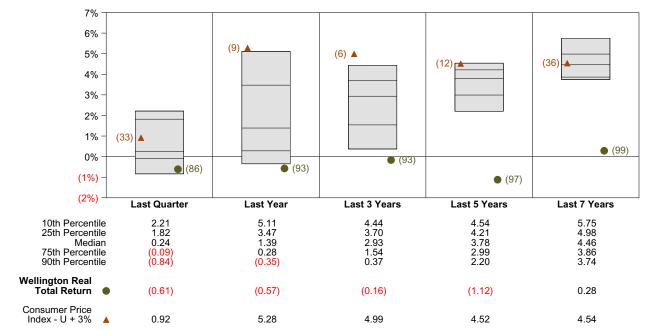
# Wellington Real Total Return Period Ended September 30, 2018

#### **Investment Philosophy**

Wellington believes that by combining the dynamic management of market exposures, the selection of active strategies, and a robust risk management process, they can create a portfolio with a compelling return that is diversifying for many investors while offering moderate volatility and limited correlation to equities. The portfolio's investment philosophy is the foundation for the selection of market exposures, active managers and risk management, and reflects these core beliefs: Assets with an attractive trend and valuation should produce attractive risk adjusted returns. Displaced markets create a tailwind for managers to create sustainable alpha. Balancing risk across the portfolio and hedging significant factor exposures against tail events minimizes the potential for significant drawdowns.

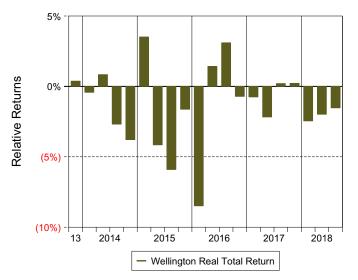
## **Quarterly Summary and Highlights**

- Wellington Real Total Return's portfolio posted a (0.61)% return for the quarter placing it in the 86 percentile of the Callan Multi-Asset Absolute Return group for the quarter and in the 93 percentile for the last year.
- Wellington Real Total Return's portfolio underperformed the Consumer Price Index U + 3% by 1.53% for the quarter and underperformed the Consumer Price Index U + 3% for the year by 5.85%.









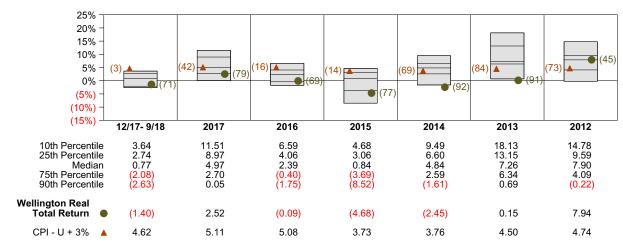
Callan Multi-Asset Absolute Return (Gross) Annualized Five Year Risk vs Return



# Wellington Real Total Return Return Analysis Summary

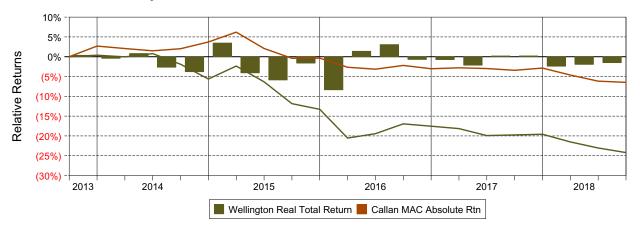
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The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly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

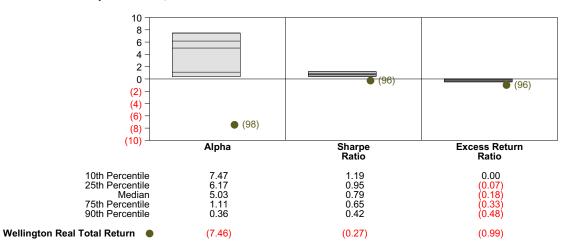


# Performance vs Callan Multi-Asset Absolute Return (Gross)

Cumulative and Quarterly Relative Return vs CPI - U + 3%



Risk Adjusted Return Measures vs CPI - U + 3% Rankings Against Callan Multi-Asset Absolute Return (Gross) Five Years Ended September 30, 2018



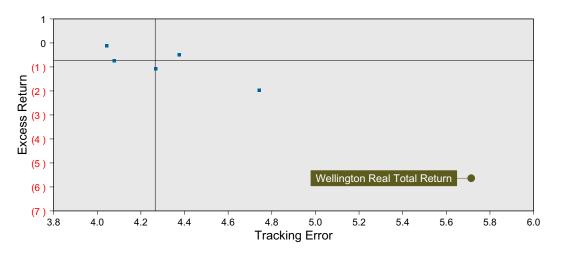


# Wellington Real Total Return **Risk Analysis Summary**

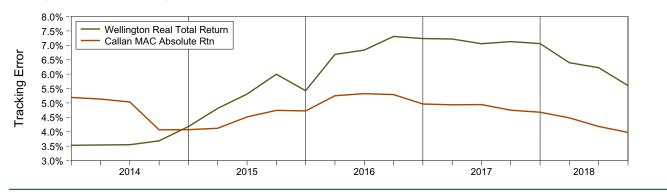
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The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows 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.

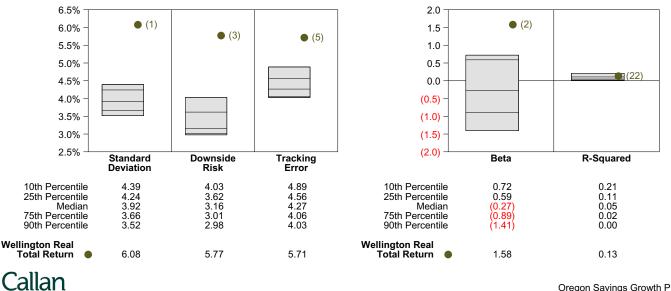
Risk Analysis vs Callan Multi-Asset Absolute Return (Gross) Five Years Ended September 30, 2018











# **Equity Market Indicators**

The market indicators included in this report are regarded as measures of equity or fixed income performance results. The returns shown reflect both income and capital appreciation.

**Russell 1000 Growth** measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 1000 Value** measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

**Russell 2000 Index** is composed of the 2000 smallest stocks in the Russell 3000 Index, representing approximately 11% of the U.S. equity market capitalization.

Standard & Poor's 500 Index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index is capitalization-weighted, with each stock weighted by its proportion of the total market value of all 500 issues. Thus, larger companies have a greater effect on the index.

# **Fixed Income Market Indicators**

**90-Day U.S. Treasury Bills** provide a measure of riskless return. The rate of return is the average interest rate available on the beginning of each month for a Treasury Bill maturing in ninety days.

**Bloomberg Barclays Aggregate Bond Index** is a combination of the Mortgage Backed Securities Index and the intermediate and long-term components of the Government/Credit Bond Index.

# **International Equity Market Indicators**

**Morgan Stanley Capital International (MSCI) EAFE Index** is composed of approximately 1000 equity securities representing the stock exchanges of Europe, Australia, New Zealand and the Far East. The index is capitalization-weighted and is expressed in terms of U.S. dollars.



# **Definitions**

**Core Bond** - Managers who construct portfolios to approximate the investment results of the Bloomberg Barclays Capital Government/Credit Bond Index or the Bloomberg Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

**Core Equity** - Managers whose portfolio holdings and characteristics are similar to that of the broader market as represented by the Standard & Poor's 500 Index, with the objective of adding value over and above the index, typically from sector or issue selection. The core portfolio exhibits similar risk characteristics to the broad market as measured by low residual risk with Beta and R-Squared values close to 1.00 and combined growth and value z-score values close to 0.00.

**Core Plus Broad International Equity Style** This is a hybrid group incorporating the Core Plus, Growth Plus and Value Plus style groups. It incorporates managers that typically add value from increased tactical or strategic exposure to emerging markets and smaller capitalization stocks. Portfolios may undertake concentrated bets.

**Intermediate Fixed-Income Style Mutual Funds** - mutual funds whose objective is to lower interest rate risk by investing only in intermediate-term securities. The average portfolio maturity is typically five to seven years.

Large Cap Growth - Managers who invest mainly in large companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to-Book values, Return-on-Assets values, Growth-in-Earnings values above the broader market. The companies typically have zero dividends or dividend yields below the broader market. Invests in securities which exhibit greater volatility than the broader market as measured by the securities' Beta and Standard Deviation. Portfolios have high growth z-scores and low value z-scores.

Large Cap Value - Managers who invest primarily in large companies believed to be currently undervalued in the general market and whose shares are priced below the market compared to their peers. Valuation issues take precedence over near term earnings prospects in the stock selection process. The Large Cap Value Style invests in companies with P/E ratios, Return-on-Equity values, and Price-to-Book values below the broader market and the middle capitalization segment. This style invests in securities with risk/reward profiles in the lower risk range of the medium capitalization market. Portfolios have low growth z-scores and high value z-scores.

**Non-U.S. Equity Style Mutual Funds** - Mutual funds that invest their assets only in non-U.S. equity securities but exclude regional and index funds.

**Small Capitalization** - Mutual funds that invest in companies with relatively small capitalization. The average market capitalization is approximately \$1.4 billion. The companies typically have zero dividends or dividend yields below the broader market. The securities exhibit greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. The Small Capitalization Style Group consists of the Small Capitalization (Growth) Style Group and the Small Capitalization (Value) Style Group.

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# **Risk/Reward Statistics**

The risk statistics used in this report examine performance characteristics of a manager or a portfolio relative to a benchmark (market indicator) which assumes to represent overall movements in the asset class being considered. The main unit of analysis is the excess return, which is the portfolio return minus the return on a risk free asset (3 month T-Bill).

**Alpha** measures a portfolio's return in excess of the market return adjusted for risk. It is a measure of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk which was taken for that level of market exposure.

**Beta** measures the sensitivity of rates of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the return on the market. If a beta of a portfolio is 1.5, a 1 percent increase in the return on the market will result, on average, in a 1.5 percent increase in the return on the portfolio. The converse would also be true.

**Downside Risk** stems from the desire to differentiate between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation punishes both upside and downside volatility, downside risk measures only the standard deviation of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

**Excess Return Ratio** is a measure of risk adjusted relative return. This ratio captures the amount of active management performance (value added relative to an index) per unit of active management risk (tracking error against the index.) It is calculated by dividing the manager's annualized cumulative excess return relative to the index by the standard deviation of the individual quarterly excess returns. The Excess Return Ratio can be interpreted as the manager's active risk/reward tradeoff for diverging from the index when the index is mandated to be the "riskless" market position.

**Information Ratio** measures the manager's market risk-adjusted excess return per unit of residual risk relative to a benchmark. It is computed by dividing alpha by the residual risk over a given time period. Assuming all other factors being equal, managers with lower residual risk achieve higher values in the information ratio. Managers with higher information ratios will add value relative to the benchmark more reliably and consistently.

**R-Squared** indicates the extent to which the variability of the portfolio returns are explained by market action. It can also be thought of as measuring the diversification relative to the appropriate benchmark. An r-squared value of .75 indicates that 75% of the fluctuation in a portfolio return is explained by market action. An r-squared of 1.0 indicates that a portfolio's returns are entirely related to the market and it is not influenced by other factors. An r-squared of zero indicates that no relationship exists between the portfolio's return and the market.

**Relative Standard Deviation** is a simple measure of a manager's risk (volatility) relative to a benchmark. It is calculated by dividing the manager's standard deviation of returns by the benchmark's standard deviation of returns. A relative standard deviation of 1.20, for example, means the manager has exhibited 20% more risk than the benchmark over that time period. A ratio of .80 would imply 20% less risk. This ratio is especially useful when analyzing the risk of investment grade fixed-income products where actual historical durations are not available. By using this relative risk measure over rolling time periods one can illustrate the "implied" historical duration patterns of the portfolio versus the benchmark.

**Residual Portfolio Risk** is the unsystematic risk of a fund, the portion of the total risk unique to the fund (manager) itself and not related to the overall market. This reflects the "bets" which the manager places in that particular asset market. These bets may reflect emphasis in particular sectors, maturities (for bonds), or other issue specific factors which the manager considers a good investment opportunity. Diversification of the portfolio will reduce or eliminate the residual risk of that portfolio.

# **Risk/Reward Statistics**

**Rising Declining Periods** refer to the sub-asset class cycles vis-a-vis the broader asset class. This is determined by evaluating the cumulative relative sub-asset class index performance to that of the broader asset class index. For example, to determine the Growth Style cycle, the S&P 500 Growth Index (sub-asset class) performance is compared to that of the S&P 500 Index (broader asset class).

**Sharpe Ratio** is a commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

**Sortino Ratio** is a downside risk-adjusted measure of value-added. It measures excess return over a benchmark divided by downside risk. The natural appeal is that it identifies value-added per unit of truly bad risk. The danger of interpretation, however, lies in these two areas: (1) the statistical significance of the denominator, and (2) its reliance on the persistence of skewness in return distributions.

**Standard Deviation** is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (ie. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

**Total Portfolio Risk** is a measure of the volatility of the quarterly excess returns of an asset. Total risk is composed of two measures of risk: market (non-diversifiable or systematic) risk and residual (diversifiable or unsystematic) risk. The purpose of portfolio diversification is to reduce the residual risk of the portfolio.

**Tracking Error** is a statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

**Treynor Ratio** represents the portfolio's average excess return over a specified period divided by the beta relative to its benchmark over that same period. This measure reflects the reward over the risk-free rate relative to the systematic risk assumed.

Note: Alpha, Total Risk, and Residual Risk are annualized.

# Callan INSTITUTE

# **Research and Educational Programs**

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Corry Walsh at 312.346.3536 / institute@callan.com.

# New Research from Callan's Experts

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An Investor Framework for Addressing Climate Change | Callan's Anna West lays out the top issues for investors about this issue. We also identify solutions and areas of progress for those seeking to address

climate-related risks as well as benefit from emerging opportunities.

**Promoting Gender Diversity in the Investment Industry** | Callan Executive Chairman Ron Peyton offers his observations on what has worked for gender inclusion at the firm over the last 45 years and what we have learned in the hope that it will inform others on how to progress toward equality in senior roles industry-wide.



Helping DC Plan Participants in the "Distribution" Phase | Callan's Tom Shingler and James Veneruso discuss our research on the "distribution phase" of defined contribution plans, when participants are drawing down assets, and the issues that plan sponsors should address.

**Picking Through the Alpha Graveyard: Correcting for Survivorship Bias in Investment Product Universes** | In this paper from the *Journal of Investment Management*, Callan's Greg Allen, Ivan Cliff, and Wally Meerschaert propose a technique to correct for survivorship bias in investment product universes. It uses all available data for survivors and non-survivors, corrects for bias across the full distribution (from 1st to 99th percentile), and can be applied to other return-based statistics such as the Sharpe ratio.

**Infrastructure: No Longer a Niche Option |** Callan's Jan Mende discusses investing in infrastructure. Institutional investors are increasing allocations, managers are creating more investment options, and benchmarks are being refined.

The Shape of Risk: Making Cents of the Irrational With Options | In the third quarter's *Hedge Fund Monitor*, Jim McKee discusses the use of options as insurance for institutional portfolios.

**2018 ESG Survey** | Callan's sixth annual survey on the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market reveals more than 40% of investors are incorporating ESG factors into investment decisions.

Your Plan Will Face a Cyberattack; Here's How to Prepare | The third quarter's edition of the *DC Observer* is designed to assist plan sponsors with formulating and executing their cybersecurity strategy to protect their information and their assets.

#### **Quarterly Periodicals**

**Private Equity Trends** | This newsletter offers the latest data on private equity fundraising, buyouts, venture capital, and returns.

**Market Pulse Flipbook** | 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.

**Capital Market Review |** This quarterly publication provides analysis and a broad overview of the economy and public and private market activity across a wide range of asset classes.

**Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle?** | Callan's Real Assets Consulting group identifies seven indicators—based on spreads in real estate and fixed income markets—that, combined with an understanding of prevailing market dynamics, have helped signal when the institutional real estate market is overheated or cooled.

# **Events**

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

Callan's **2019 National Conference** will be held January 28-30, 2019. Mark your calendars for this upcoming event! And please visit the Events page on our website (www.callan.com/events/) for additional information as it becomes available.

For more information about events, please contact Barb Gerraty: 415.274.3093 / gerraty@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 sessions are:

# Introduction to Investments

San Francisco, April 16-17, 2019 San Francisco, July 16-17, 2019 Chicago, October 22-23, 2019

This program familiarizes fund sponsor trustees, staff, and asset management advisers 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 assetmanagement 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 www.callan.com/events/callan-college-intro or contact Kathleen Cunnie: 415.274.3029 / cunnie@callan.com

# Education: By the Numbers

525	Attendees (on average) of the Institute's annual National Conference	50+	Unique pieces of research the Institute generates each year
3,700	Total attendees of the "Callan College" since 1994	1980	Year the Callan Institute was founded



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialog to raise the bar across the industry."

Greg Allen, Chief Executive Officer and Chief Research Officer

# 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 note that if an investment manager receives a product or service on a complimentary basis (e.g. attending and educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. 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	Manager Name
Acadian Asset Management LLC	Capital Group
AEGON USA Investment Management	Carillon Tower Advisers
Aether Investment Partners	CastleArk Management, LLC
AEW Capital Management	Causeway Capital Management
Affiliated Managers Group, Inc.	CenterSquare Investment Management
Alcentra	Chartwell Investment Partners
AllianceBernstein	Christian Brothers Investment Services
Allianz Global Investors	CIM Group
Allianz Life Insurance Company of North America	ClearBridge Investments, LLC
American Century Investments	Cohen & Steers Capital Management, Inc.
Amundi Pioneer Asset Management	Columbia Threadneedle Investments
Apollo Global Management	Columbus Circle Investors
AQR Capital Management	Credit Suisse Asset Management
Ares Management LLC	CS McKee, L.P.
Ariel Investments, LLC	DePrince, Race & Zollo, Inc.
Atlanta Capital Management Co., LLC	D.E. Shaw Investment Management, L.L.C.
Aviva Investors Americas	Diamond Hill Capital Management, Inc.
AXA Investment Managers	Dimensional Fund Advisors LP
Baillie Gifford International, LLC	Doubleline
Baird Advisors	Duff & Phelps Investment Management Co.
Baron Capital Management, Inc.	DWS (Formerly Deutsche Asset Management)
Barrow, Hanley, Mewhinney & Strauss, LLC	EARNEST Partners, LLC
Black Creek Investment Management, Inc.	Eaton Vance Management
BlackRock	Epoch Investment Partners, Inc.
BMO Global Asset Management	Fayez Sarofim & Company
BNP Paribas Asset Management	Federated Investors
BNY Mellon Asset Management	Fidelity Institutional Asset Management
Boston Partners	Fiera Capital Corporation
Brandes Investment Partners, L.P.	First Eagle Investment Management, LLC
Brandywine Global Investment Management, LLC	First Hawaiian Bank Wealth Management Division
Breckinridge Capital Advisors, Inc.	Fisher Investments
BrightSphere Investment Group (FKA Old Mutual Asset)	Franklin Templeton
Brown Brothers Harriman & Company	Fred Alger Management, Inc.
Cambiar Investors, LLC	GAM (USA) Inc.

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# Manager Name

Gerding Edlen GlobeFlex Capital, L.P. GMO LLC Goldman Sachs Asset Management Green Square Capital LLC Greenwich Investment Management, Inc. Guggenheim Investment Management Harbor Capital Group Trust Hardford Funds Hartford Funds Hartford Investment Management Co. Heitman LLC Hotchkis & Wiley Capital Management, LLC HSBC Global Asset Management, Inc. Insight Investment Management, Inc. Insight Investment Management, Inc. Insight Investment Management, LLC Invesco Investec Asset Management Ivy Investments J.P. Morgan Janus Jennison Associates LLC Jansen Investment Management Jobs Peak Advisors KeyCorp Lazard Asset Management Legal & General Investment Management America Lincoln National Corporation LMCG Investments, LLC Longview Partners Loomis, Sayles & Company, L.P. Loord Abbett & Company Los Angeles Capital Management MacKay Shields LLC Macquarie Investment Management MacKay Shields LLC Macquarie Investment Management MacKinley Capital Management MidFirst Bank
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Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
MUFG Union Bank, N.A.
Natixis Investment Managers
Neuberger Berman
Newton Investment Management
Nikko Asset Management Co., Ltd.
Northern Trust Asset Management
Nuveen Investments, Inc.
OFI Global Asset Management
O'Shaughnessy Asset Management, LLC
P/E Investments

# Manager Name

Manager Name
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, Inc.
Perkins Investment Management
PGIM
PGIM Fixed Income
PineBridge Investments
Pictet Asset Management Ltd.
PNC Capital Advisors, LLC
Principal Global Investors
Private Advisors, LLC
Putnam Investments, LLC
QMA
RBC Global Asset Management
Reaves Asset Management
Regions Financial Corporation
Riverbridge Partners LLC
Robeco Institutional Asset Management, US Inc.
Rockefeller & Co., Inc.
Rothschild Asset Management Inc.
Russell Investments
Santander Global Facilities
Schroder Investment Management North America Inc.
Smith Graham & Co. Investment Advisors, L.P.
Smith Group Asset Management
South Texas Money Management, Ltd.
Sprucegrove Investment Management Ltd.
Standard Life Investments Limited
State Street Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
The Boston Company Asset Management, LLC
The London Company
The TCW Group, Inc.
Thompson, Siegel & Walmsley LLC
Thornburg Investment Management, Inc.
Tri-Star Trust Bank
UBS Asset Management VanEck
Velanne Asset Management Ltd. Versus Capital Group
Victory Capital Management Inc.
Virtus Investment Partners, Inc.
Vontobel Asset Management, Inc.
Voya
WCM Investment Management
WEDGE Capital Management
Wedgewood Partners, Inc.
Wellington Management Company, LLP
Wells Capital Management
Western Asset Management Company LLC
Westfield Capital Management Company, LP
William Blair & Company LLC

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

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TOBIAS READ STATE TREASURER



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

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

Date: November 20, 2018

To: Oregon Savings Growth Plan Advisory Committee

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

Re: Deferred Compensation Program, 3<sup>rd</sup> Quarter 2018 Report

# Background

The Oregon Savings Growth Plan (the "Plan" or "OSGP") is the State of Oregon's 457 Deferred Compensation plan. OSGP is a voluntary supplemental retirement plan that provides eligible state and local government employees the opportunity to defer a portion of their current salary on a pre-tax or after-tax (Roth) basis. These deferrals are invested in various investment options until participants draw funds at retirement. The Plan offers an array of equity and fixed income investment options, a suite of target-date retirement funds, which in aggregate constitute a single investment option, and a self-directed brokerage option. The plan has over 30,000 participants and assets totaling \$2.28 billion, as of September 30, 2018.

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

## **OSGP** Performance

## Oregon Savings Growth Plan As of September 30, 2018

Fund Option	Performance (%)					
Benchmarks	3 Months	YTD	1 Year	3 Years	5 Years	10 Years
Short-Term Fixed Option	0.45	1.16	1.39	0.64	0.32	0.14
91 Day T-Bill	0.49	1.30	1.59	0.84	0.52	0.34
Stable Value Option	0.51	1.44	1.86	1.60	1.44	1.59
91 Day T-Bill	0.49	1.30	1.59	0.84	0.52	0.34
Rolling Average 5 Year CMT*	0.42	1.22	1.59	1.39	1.39	2.12
Active Fixed Income Option	0.16	-0.83	-0.36	1.99	2.71	4.72
Barclays US Aggregate Bond Index	0.02	-1.60	-1.22	1.31	2.16	3.77
Large Company Value Stock Option	5.70	3.90	9.42	13.44	10.48	10.00
Russell 1000 Value Index	5.70	3.92	9.45	13.55	10.72	9.79
Stock Index Option	7.09	10.47	17.42	16.95	13.33	11.87
Russell 3000 Index	7.12	10.57	17.58	17.07	13.46	12.01
Large Company Growth Stock Option	9.12	16.93	26.05	20.37	16.09	14.04
Russell 1000 Growth Index	9.17	17.09	26.30	20.55	16.58	14.31
International Stock Option	0.23	-4.00	0.58	9.09	4.13	5.39
MSCI ACWI ex-US (net) Index	0.71	-3.09	1.76	9.97	4.22	5.28
Small Company Stock Option	4.24	11.23	15.71	16.83	11.03	12.02
Russell 2000 Index	3.58	11.51	15.24	17.12	11.79	12.23
Socially Responsible Stock Option	6.78	9.39	16.12	16.49	N/A	N/A
Russell 3000 Index	7.12	10.57	17.58	17.07	N/A	N/A
Real Return Option	-0.29	-1.09	1.19	3.48	N/A	N/A
CPI + 3%	0.86	4.63	5.28	5.02	N/A	N/A
BlackRock LifePath Retirement	1.53	1.19	3.74	5.99	4.62	5.74
BlackRock LifePath 2020	1.75	1.46	4.41	7.01	5.31	6.23
BlackRock LifePath 2025	2.20	2.07	5.68	8.33	6.07	6.75
BlackRock LifePath 2030	2.59	2.71	6.90	9.64	6.86	7.27
BlackRock LifePath 2035	2.96	3.11	7.86	10.68	7.37	7.63
BlackRock LifePath 2040	3.29	3.55	8.80	11.67	7.93	7.98
BlackRock LifePath 2045	3.48	3.81	9.40	12.27	8.30	8.23
BlackRock LifePath 2050	3.56	3.90	9.61	12.46	8.47	8.51
BlackRock LifePath 2055	3.57	3.90	9.61	12.45	8.53	N/A
BlackRock LifePath 2060	3.57	3.90	9.59	12.43	N/A	N/A

\*CMT is the Constant Maturity Treasury Yield.

Performance shown is net of fees and annualized for periods longer than one year.

OSGP has two types of fees: investment management and administrative fees.

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

#### **Additional OSGP Data**

Fund Name	Market Value (\$)	% of	Plan	IM Fees	Admin Fees	<b>Total Fees</b>
runu Name	warket value (\$)	Total	Participants	(bps)	(bps)	(bps)
Short-Term Fixed Option	50,339,969	2.2%	3,246	11.0	11.9	22.9
Stable Value Option	217,867,544	9.6%	7,386	38.0	11.9	49.9
Active Fixed Income Option	116,491,309	5.1%	6,628	17.2	11.9	29.1
Large Company Value Stock Option	202,357,427	8.9%	10,378	3.0	11.9	14.9
Stock Index Option	271,068,737	11.9%	9,829	3.9	11.9	15.8
Large Company Growth Stock Option	277,329,128	12.2%	11,728	3.0	11.9	14.9
International Stock Option	117,725,597	5.2%	9,690	37.4	11.9	49.3
Small Company Stock Option	288,827,599	12.7%	11,507	39.7	11.9	51.6
Real Return Option	4,399,928	0.2%	635	53.4	11.9	65.3
Socially Responsible Investment Option	14,840,421	0.7%	1,486	18.0	11.9	29.9
BlackRock LifePath Retirement Fund	195,818,561	8.6%	3,748	9.0	11.9	20.9
BlackRock LifePath 2020 Fund	143,419,034	6.3%	3,230	9.0	11.9	20.9
BlackRock LifePath 2025 Fund	111,118,494	4.9%	3,536	9.0	11.9	20.9
BlackRock LifePath 2030 Fund	82,128,648	3.6%	3,486	9.0	11.9	20.9
BlackRock LifePath 2035 Fund	60,990,606	2.7%	3,423	9.0	11.9	20.9
BlackRock LifePath 2040 Fund	41,627,630	1.8%	3,128	9.0	11.9	20.9
BlackRock LifePath 2045 Fund	27,200,096	1.2%	2,679	9.0	11.9	20.9
BlackRock LifePath 2050 Fund	24,040,145	1.1%	2,096	9.0	11.9	20.9
BlackRock LifePath 2055 Fund	9,137,490	0.4%	1,113	9.0	11.9	20.9
BlackRock LifePath 2060 Fund	5,195,890	0.2%	692	9.0	11.9	20.9
Self-Directed Brokerage Option	15,426,841	0.7%	215	0.0	11.9	11.9
Total	2,277,351,092	100%				

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

OSGP has two types of fees: investment management (IM) and administrative (admin) fees.

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

The plan's Self-Directed Brokerage Option, executed through Charles Schwab, finished the quarter with \$15.4 million in assets, or 0.7% of total OSGP assets.

#### **Investment Structure Evaluation**

On September 19, 2018, the Oregon Investment Council (OIC) approved staff's recommendations surrounding changes to the Short-Term Fixed Income Option, International Stock Option, and Real Return Option. Staff is currently coordinating the changes outlined below and is targeting an implementation date of March 22, 2019 for the stated investment option enhancements.

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

OSGP currently offers two options serving the purpose of capital preservation, the Short-Term Fixed Income Option and the Stable Value Option. Given the redundancy of these options, staff recommended streamlining the capital preservations options by eliminating the Short-Term Fixed Income Option and transferring associated assets to the Stable Value Option. This change will reduce participant confusion of having multiple investment options serving the same purpose, while capturing some attractive features offered by the Stable Value Option, including enhanced diversification, a stable crediting rating, and a reduced fee schedule. 2) Add Arrowstreet ACWI ex-US to and remove BlackRock ACWI ex-US from International Stock Option

The Plan's International Stock Option is currently comprised of five underlying funds: AQR ACWI ex-US; BlackRock MSCI ACWI ex-US Index; DFA International Core Equity; Lazard International Equity; and DFA Emerging Markets Core Equity. In an attempt to more closely align the investment managers with those in the Oregon Public Employees Retirement Fund (OPERF), staff recommended the inclusion of Arrowstreet ACWI ex-US, as a replacement to the BlackRock MSCI ACWI ex-US Index Fund. Previously, Arrowstreet did not offer a suitable investment vehicle for inclusion within a qualified, governmental defined contribution plan. Although this change is expected to moderately increase the expense ratio for the International Stock Option, staff and Callan remain comfortable with the addition given the high level of conviction in Arrowstreet.

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

The Plan's Real Return Option is currently comprised of three underlying funds: GMO Benchmark Free Allocation Fund, Wellington Real Return Fund, and SSgA Real Assets Fund. Although the current structure is reasonable, it contains sizable equity beta, as both the GMO and Wellington funds have exposure to traditional equities, as well as absolute return and style premia strategies. Accordingly, staff recommended simplifying the Real Return Option by eliminating GMO and Wellington from the fund structure, while retaining SSgA, making it more of a pure-play inflation sensitive option. The SSgA Real Assets Fund is well diversified across several inflation-sensitive asset classes such as commodities, REITs, TIPS, and global infrastructure. Furthermore, the SSgA Real Assets fund is passively implemented so, this change is expected to significantly reduce fees for the Real Return Option.

## FUND OVERVIEW AS OF 9/30/18

#### ANNUALIZED PERFORMANCE<sup>1</sup>

Periods Ending 9/30/18 <b>3Q'18</b>	Fund (%) 0.51	Benchmark (%) 0.68	ICE BofAML 3Mo. T-Bill (%) 0.49
YTD	1.44	1.91	1.30
1 Year	1.86	2.37	1.59
3 Year	1.60	1.59	0.84
5 Year	1.44	1.31	0.52
10 Year	1.59	1.10	0.34

## FUND FACTS

Fund Category	Stable Value
Fund Assets	\$217,898,864
Fund Advisor	Galliard Capital Management
Expense Ratio	0.50%
Participant Withdrawals/Transfers	Daily

#### FUND CHARACTERISTICS

Blended Yield (after fees)	2.08%
Effective Duration	2.65 Yrs
Annualized Turnover <sup>2</sup> (as of 12/31/17)	79.07%

#### INVESTMENT CONTRACT ISSUERS

Issuer Transamerica Premier Life Ins. Co. Voya Ret. Ins. and Annuity Co. Prudential Ins. Co. of America Massachusetts Mutual Life Ins. Co.	Moody's Rating A1 A2 A1 Aa2	S&P Rating AA- A AA- AA+
New York Life Ins. Co.	Aaa	AA+
Massachusetts Mutual Life Ins. Co.	Aa2	AA+

## FUND ALLOCATION

	Fund (%)
Security Backed Investment Contracts	80.2
Separate Account GICs	11.8
Cash/Equivalents	8.0

#### SECTOR ALLOCATION OF THE UNDERLYING FIXED INCOME PORTFOLIO

U.S. Treasury/Agency	Fund (%) 19.2
Other U.S. Government	2.8
Corporate/Taxable Muni/Not for Profit	28.8
Mortgage Backed Securities (MBS)	21.4
Asset Backed Securities (ABS)	11.8
International Gov't/Agency Securities	0.2
Cash/Equivalents	15.9

## **INVESTMENT OBJECTIVE**

The State of Oregon Stable Value Fund (the "Fund") is an investment option that seeks to provide safety of principal and a stable credited rate of interest, while generating competitive returns over time compared to other comparable investments.

#### **INVESTMENT STRATEGY**

The State of Oregon Stable Value Fund, managed by Galliard Capital Management, is primarily comprised of investment contracts issued by financial institutions and other eligible stable value investments. All contract issuers and securities utilized in the portfolio are rated investment grade by one of the Nationally Recognized Statistical Rating Organizations at time of purchase. The types of investment contracts in which the Fund invests include Separate Account GICs and Security Backed Investment Contracts. These types of contracts seek to provide participants with safety of principal and accrued interest as well as a stable crediting rate.

SEPARATE ACCOUNT GICs are GICs issued by an insurance company and are maintained within a separate account. Separate Account GICs are typically backed by segregated portfolios of fixed income securities.

SECURITY BACKED INVESTMENT CONTRACTS are comprised of two components: 1) investment contracts issued by a financial institution and 2) underlying portfolios of fixed income securities (i.e. bonds) whose market prices fluctuate. The investment contract is designed to allow participants to transact at book value (principal plus accrued interest) without reference to the price fluctuations of the underlying fixed income securities.

#### **INVESTMENT RISK**

Conservative	Moderate	Aggressive
Money Markets STABLE VALUE	Bond Funds	Stock Funds

The Fund's investment contracts are designed to allow for participant transactions at book value. A principal risk of the Fund is investment contract risk. This includes the risk that the issuer will default on its obligation under the contract or that another event of default may occur under the contract rendering it invalid; that the contract will lapse before a replacement contract with favorable terms can be secured; or that the occurrence of certain other events including employer-initiated events, could cause the contract to lose its book value withdrawal features. These risks may result in a loss to a contract holder. Other primary risks include default risk, which is the possibility that instruments the Fund holds will not meet scheduled interest and/or principal payments; interest rate risk, which includes the risk of reinvesting cash flows at lower interest rates; and liquidity risk, which includes the effect of very large unexpected withdrawals on the Fund's total value. The occurrence of any of these events could cause the Fund to lose value.

<sup>1:</sup> Returns for periods less than one year are not annualized. Performance is net of all fees and includes all income, realized and 1: Returns for periods less than one year are not annualized. Performance is net of all fees and includes all income, realized and unrealized capital gains and losses and all annual fund operating expenses. Returns may have been impacted by the effect of compounding and have been rounded to the nearest basis point. Benchmark is the 3 Year Constant Maturity Treasury. While it is believed that the benchmark used here represents an appropriate point of comparison for the Fund referenced above, prospective investors should be aware that the volatility of the above referenced benchmark or index may be substantially different from that of the Fund; and holdings in the Fund may differ significantly from the benchmark or index if the investment guidelines and criteria are different than the Fund.
2: Please refer to the Fund's Disclosure Booklet for information regarding methodology of turnover calculation. The Fund and the underlying collective funds are not insured by the FDIC, Federal Reserve Bank, nor guaranteed by Wells Fargo or any affiliate, including Galliard Capital Management. Past performance is not an indication of how the investment will perform in the future. For further information on the Fund, see your company representative.

#### **FUND ADVISOR**

Galliard Capital Management is the Fund's Advisor. Galliard specializes in stable value management and currently manages \$90.0 billion in assets for institutional investors.

#### **FEES AND EXPENSES**

The following table shows Galliard's fees and expense information for this investment option. Total Annual Operating Expenses are expenses that reduce the rate of return of the investment option. The cumulative effect of fees and expenses will reduce the growth of your retirement savings. Visit the Department of Labor's website for an example showing the long-term effect of fees and expenses. Fees and expenses are only one of many factors to consider when you decide to invest in this Fund. You may also want to think about whether an investment in this Fund, along with your other investments, will help you achieve your financial goals.

#### **TOTAL ANNUAL FUND OPERATING EXPENSES**

Total Annual Fund Operating Expenses are deducted directly from the Fund's net asset value and reduce the investment option's rate of return.

Expenses	Expense Ratio (as of 9/30/18)	Per \$1,000
Investment Management Fees paid to Galliard	0.136%	\$1.36
Investment Management Fees paid to Non-Affiliated Investment Advisors	0.009%	\$0.09
Investment Contract Fees <sup>1</sup>	0.172%	\$1.72
Acquired Fund Fees <sup>2</sup>	0.063%	\$0.63
Investment Contract Fees	None	None
Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non-Affiliated Investment Advisors <sup>3</sup>	0.063%	\$0.63
12b-1 Distribution Fee	None	None
Other Expenses	0.120%	\$1.20
Total Annual Fund Operating Expenses <sup>4</sup>	0.500%	\$5.00

Please contact your plan administrator for additional information about this investment option.

<sup>1:</sup> These are fees paid to create and maintain the investments used by a stable value fund.

<sup>2:</sup> These are fees borne indirectly by the Fund when it acquires an interest in another fund which pays its own separate fees.

<sup>3:</sup> Includes audit fees for the cost of producing a report by a qualified auditor.

<sup>4:</sup> Total Annual Fund Operating Expenses are reflected daily in the Fund's net asset value (NAV).



# STATE OF OREGON STABLE VALUE FUND

THIRD QUARTER 2018 PORTFOLIO REVIEW

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Total Annual Fund Operating Expenses16

The information contained in this report is for informational purposes only. It is intended to provide a summary of portfolio performance and characteristics, and an accounting based view of transactions and holdings. This is a standardized report and is not intended to be used for compliance purposes. Individual portfolio compliance requirements may not be captured in this report.

## GALLIARD CONTACTS

Client Portfolio Management Matt Kline Senior Director 612.667.0856 matt.kline@galliard.com

Carrie Callahan Managing Partner 612.667.1793 carrie.a.callahan@galliard.com

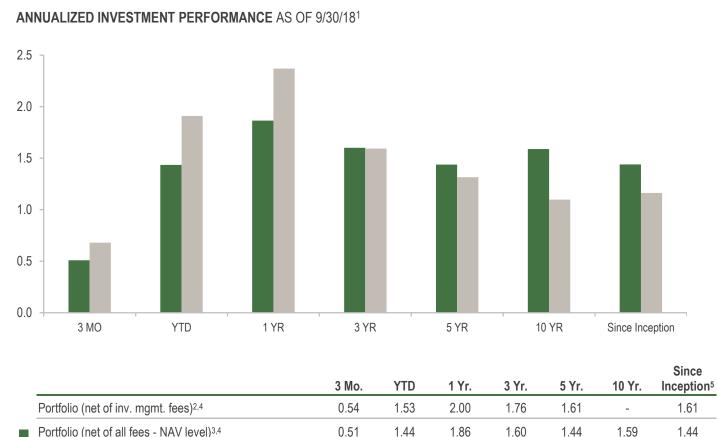
## **Galliard Client Service**

612.667.3220 galliardclientservice@galliard.com

#### Stable Value Audit Support

Galliard Stable Value Audit Team SVAudit@galliard.com

Third Quarter 2018



Value Added (net of all fees - NAV level) <sup>6</sup>	(0.17)	(0.47)	(0.51)	0.01	0.12	0.49	
3 Year Constant Maturity Treasury	0.68	1.91	2.37	1.59	1.31	1.10	
	0.01	1.77	1.00	1.00	1.77	1.00	

1: Returns for periods of less than one year are not annualized.

2: Returns are net of book value contract, Galliard investment management fees, and, if applicable, external manager fees and Wells Fargo collective fund administrative fees.

3: Returns are net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, Wells Fargo collective fund administrative fees, and plan administrative reimbursement.

4: Galliard assumed management of this portfolio on September 1, 2012. Performance for periods referenced prior to this date include historical performance of another investment advisor.

5: Performance inception: September 1, 2012.

6: May not add due to rounding.

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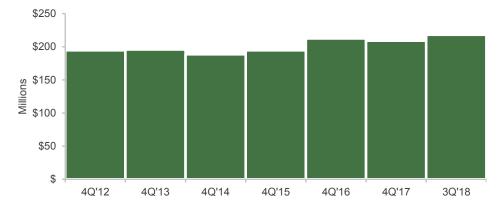
Third Quarter 2018

#### STATE OF OREGON STABLE VALUE FUND

#### ACCOUNT SUMMARY

Benchmark	3 Year Constant Maturity Treasury
Galliard Inception Date	September 4, 2012
Net Asset Value	\$217,898,864

HISTORICAL FUND ASSETS



#### PORTFOLIO CHARACTERISTICS

	<b>Portfolio</b> 6/30/18	<b>Portfolio</b> 9/30/18
Average Quality - Book Value <sup>1</sup>	AA-	AA-
Average Quality - Market Value <sup>2</sup>	AA	AA
Number of Contract Issuers	5	5
Blended Yield (after all fees) <sup>3</sup>	1.98%	2.08%
Yield to Maturity	3.10%	3.16%
Effective Duration	2.84 years	2.65 years
Market/Book Value Ratio	98.29%	98.06%

#### PORTFOLIO DISTRIBUTION

	% Portfolio 6/30/18	% Portfolio 9/30/18
Liquidity Buffer: Cash & Equivalents <sup>4</sup>	6.7	8.0
Short Portfolio	37.5	37.1
Short / Intermediate Portfolio	9.7	9.5
Intermediate Portfolio	46.1	45.5
Total	<b>100.0%</b> <sup>5</sup>	<b>100.0%</b> <sup>5</sup>

1: Average holdings quality of the contracts and other book value assets in the portfolio. The Weighted Average Quality of the portfolio has NOT been assessed by a nationally recognized statistical rating organization. The Weighted Average Quality shown represents an average quality of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch.

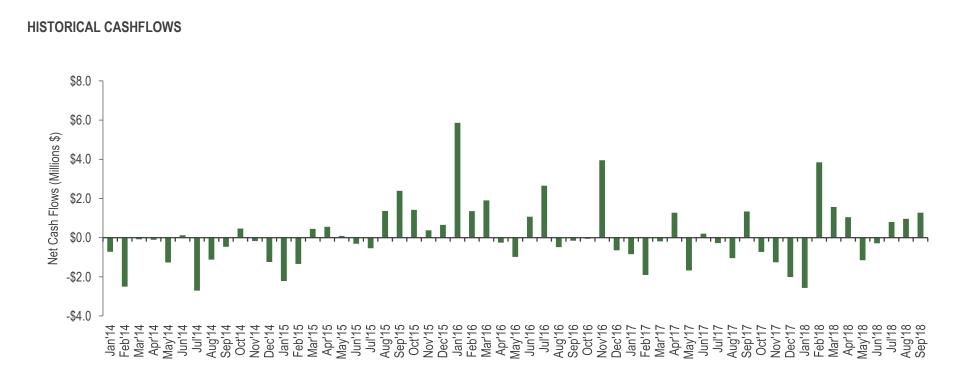
2: Average holdings quality of the underlying assets of the portfolio. The Weighted Average Quality of the portfolio has NOT been assessed by a nationally recognized statistical rating organization. The Weighted Average Quality shown represents an average quality of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch.

3: Blended Yield is net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, Wells Fargo collective fund administrative fees, and plan administrative reimbursement.

4: Includes Receivables and Payables.

5: Total % of portfolio may not add to 100% due to rounding.

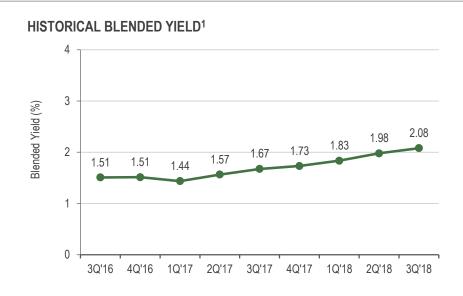
Third Quarter 2018



	2014	2015	2016	2017	1Q'18	2Q'18	3Q'18	2018 YTD
Beginning Assets	\$195.7	\$188.7	\$194.6	\$212.4	\$209.1	\$213.0	\$213.7	\$209.1
Net Cash Flow (\$) <sup>1</sup>	-\$9.8	\$2.9	\$14.2	-\$7.1	\$2.8	-\$0.4	\$3.0	\$5.5
Net Cash Flow (%)	-5.02%	1.52%	7.29%	-3.35%	1.36%	-0.19%	1.45%	2.62%
Estimated Investment Earnings	\$2.7	\$3.1	\$3.6	\$3.9	\$1.0	\$1.1	\$1.2	\$3.3
Ending Assets <sup>2</sup>	\$188.7	\$194.6	\$212.4	\$209.1	\$213.0	\$213.7	\$217.9	\$217.9

1: Contributions, Withdrawals and Investment Transfers 2: Cashflows may not net to final assets due to rounding.

Third Quarter 2018

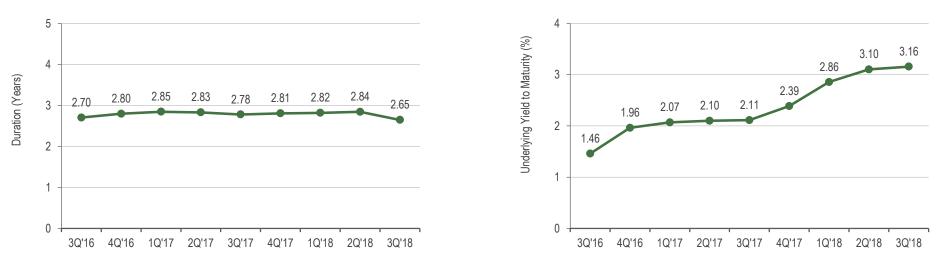


HISTORICAL MARKET VALUE TO BOOK VALUE RATIO

HISTORICAL UNDERLYING YIELD TO MATURITY



**HISTORICAL DURATION** 



1: Blended Yield is net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, Wells Fargo collective fund administrative fees, and plan administrative reimbursement.

Third Quarter 2018

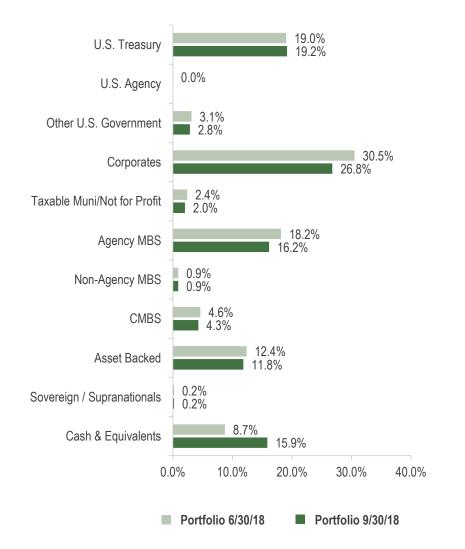
## CONTRACT ISSUER DISTRIBUTION & RATING SUMMARY<sup>1</sup>

	% Portfolio 6/30/18	<b>% Portfolio</b> 9/30/18	<b>Rating</b> 6/30/18	<b>Rating</b> 9/30/18
Massachusetts Mutual Life Ins. Co.	11.9	11.8	AA+	AA+
New York Life Ins. Co.	9.7	9.5	AAA	AAA
Prudential Ins. Co. of America	21.6	21.3	AA-	AA-
Transamerica Premier Life Ins. Co.	25.9	25.5	A+	A+
Voya Ret. Ins. and Annuity Co.	24.2	23.9	A	А

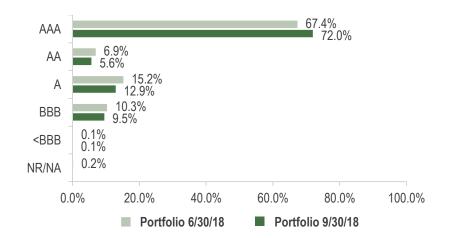
1: The quality rating shown represents the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch. Ratings shown as NR/NA are not rated or not available security ratings.

Third Quarter 2018

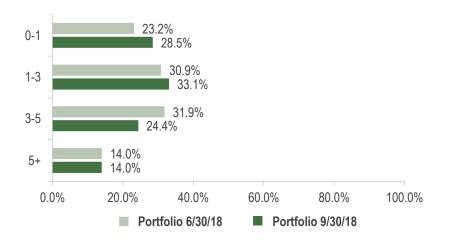
## UNDERLYING FIXED INCOME ASSET ALLOCATION<sup>1</sup>



#### UNDERLYING QUALITY DISTRIBUTION<sup>1</sup>



#### UNDERLYING DURATION DISTRIBUTION



1: Market Value. Total % of portfolio may not add to 100% due to rounding. The external managers provide holdings and the securities are classified using Galliard's analytics methodology for maximum comparability across managers. The quality distribution shown represents the distribution of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch. Ratings shown as NR/NA are not rated or not available security ratings. Distributions represent the portfolio positions for reporting purposes only. Investment guideline compliance is reported in your quarterly portfolio commentary or separately through your Galliard relationship manager.

# STATE OF OREGON STABLE VALUE FUND PORTFOLIO HOLDINGS

September 30, 2018

Asset ID	Security Description	Contract <sup>1</sup> Type	Manager	Contract Value (\$)	Market Value (\$)	Market/Book Value Ratio (%)	% of Portfolio	Crediting Rate (%) <sup>2</sup>	UCA Yield (%)		Galliard Composite Rating	Wrap Fees (bps)
LIQUIDITY BL	JFFER											
	Cash Receivable / (Payable)			0	0	0.0	0.0	2.05	2.05	0.10	AAA	
3839909B6	State Street Government STIF 10			17,347,524	17,347,524	100.0	8.0	2.05	2.05	0.10	AAA	
TOTAL LIQUI	DITY BUFFER			17,347,524	17,347,524	100.0	8.0	2.05	2.05	0.10	AAA	
SHORT PORT	FOLIO											
575997ZT1	Massachusetts Mutual Life Ins. Co.	SAGIC	Galliard	6,102,416	5,929,271	97.2	2.8	2.68	2.67	1.50	AA+	20.0
744999SP9	Prudential Ins. Co. of America	SBIC	Galliard	22,878,219	22,568,469	98.6	10.5	2.49	3.18	1.87	AA-	18.0
600996DU3	Transamerica Premier Life Ins. Co.	SBIC	Galliard	30,813,181	30,166,415	97.9	14.1	2.18	3.18	1.87	A+	18.0
75999UTZ1	Voya Ret. Ins. and Annuity Co.	SBIC	Galliard	20,943,809	20,506,837	97.9	9.6	2.51	3.18	1.87	А	18.0
TOTAL SHOR	RT PORTFOLIO			80,737,625	79,170,992	98.1	37.1	2.39	3.14	1.84	A+	
SHORT / INTE	ERMEDIATE PORTFOLIO											
64999DNB2	New York Life Ins. Co.	SBIC	NYL Investors LLC	20,774,142	20,157,725	97.0	9.5	1.79	3.07	2.44	AAA	22.0
TOTAL SHOR	RT / INTERMEDIATE PORTFOLIO			20,774,142	20,157,725	97.0	9.5	1.79	3.07	2.44	AAA	
INTERMEDIA	TE PORTFOLIO											
575997ZT1	Massachusetts Mutual Life Ins. Co.	SAGIC	Barings LLC	19,592,724	19,036,817	97.2	9.0	2.68	3.80	4.27	AA+	20.0
744999SP9	Prudential Ins. Co. of America	SBIC	Jennison Assoc.	23,501,109	23,182,925	98.6	10.8	2.49	3.08	3.57	AA-	18.0
600996DU3	Transamerica Premier Life Ins. Co.	SBIC	Dodge & Cox	22,778,276	22,300,162	97.9	10.5	2.18	3.20	3.03	A+	18.0
600996DU3	Transamerica Premier Life Ins. Co.	SBIC	Galliard	2,047,123	2,004,154	97.9	0.9	2.18	3.50	4.28	A+	18.0
75999UTZ1	Voya Ret. Ins. and Annuity Co.	SBIC	Galliard	31,120,341	30,471,045	97.9	14.3	2.51	3.50	4.28	А	18.0
TOTAL INTER	RMEDIATE PORTFOLIO			99,039,572	96,995,103	97.9	45.5	2.46	3.39	3.82	AA-	
TOTAL PORT	FOLIO			217,898,864	213,671,343	98.1	100.0	2.34	3.16	2.65	AA-	

1: SAGIC = Separate Account GIC. SBIC = Security Backed Investment Contract. 2: Crediting rates are net of wrap fees and any other fees being netted out of the rates.

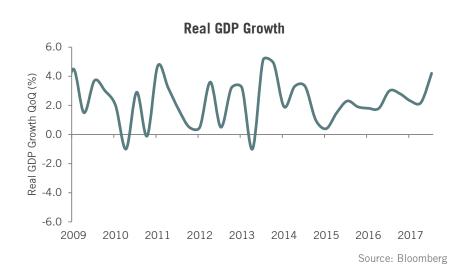
MARKET REVIEW

#### Strong Momentum for Growth in Q3

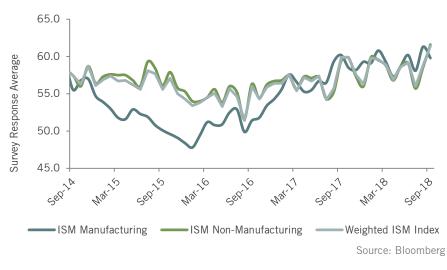
- After muted first quarter growth of 2.2%, the U.S. economy grew at an accelerated pace of 4.2% in 2Q18. Growth during the quarter was marked by a strong rebound in personal consumption growth.
- Consumer driven momentum continued during the quarter. Control Group Retail Sales rose 0.8% and 0.1% m/m in July and August respectively, and confidence surveys remain at or near historic highs.
- Business activity also continues to expand, with the ISM Economy Weighted Index increasing from 56.0 in July to 61.4 in September, marking a multi-decade high point.
- The Atlanta Fed's GDPNow forecast for GDP growth in the third quarter stands at 4.1% (as of 10/1/18).

#### **Trade Tensions Continue as Mid-Term Elections Near**

- As the Trump administration escalated the trade war with China throughout the quarter, developed and emerging market economies continued to lag the U.S., as evidenced by year-to-date equity and currency returns.
- In September, the U.S. initiated a 10% tariff on \$200 billion of Chinese goods that will increase to 25% by year-end, and indicated that it could implement tariffs on another \$267 billion of goods in the event China continues to retaliate.
- On a positive note, the U.S., Canada, and Mexico have announced a new trade agreement, the United States-Mexico-Canada Agreement (USMCA), which primarily impacts issues in the auto, labor, intellectual property, and agriculture markets.



ISM Manufacturing, Non-Manufacturing, and Weighted Indices



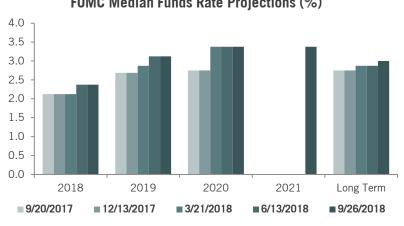
The information contained herein reflects the views of Galliard Capital Management, Inc. & sources believed to be reliable by Galliard as of the date of publication. The views expressed here may change at any time subsequent to the date of publication. This publication is for informational purposes only. For institutional investor use only.

## Fed Raises in September and Stays on Course for 4<sup>th</sup> Hike in 2018

- The Fed raised its policy rate during the quarter via a single 25 bps hike at its September meeting. The policy rate now stands at a range of 2.00% to 2.25%.
- Policymakers continue to react to the strong incoming data, signaling • their intent to stay the course with an additional rate increase in the fourth quarter. The Fed's official statement removed the phrase "policy remains accommodative," indicating policy is moving to a more neutral stance.
- Looking ahead, the market is pricing in two rate hikes in 2019, while the median of FOMC members' official projections still calls for a highwater mark for the Fed Funds rate of 3.4% by the end of 2020.

## **Continued Strong Labor Market and Near Target Inflation**

- Headline inflation readings have measured in the 2.7% to 2.9% range since early this spring; more importantly, core inflation measures (ex food and energy) have remained between 2.2% and 2.4% during the same timeframe.
- Notably, the Fed's preferred inflation gauge, the Personal Consumption Expenditures Core Price Index (Core PCE) has struggled to reach/remain at the Fed's target level of 2.0%.
- Job creation remained robust during the quarter, adding 165k, 270k. and 134k jobs in July, August, and September respectively. The September unemployment rate reached a near-50 year low at 3.7%.
- Average hourly earnings rose 2.8% v/y in September, a slight decrease • from the 2.9% v/v post-crisis high in August, largely due to base effects.



FOMC Median Funds Rate Projections (%)

Source: Bloomberg



Source: Bloomberg

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APPENDIX

Third Quarter 2018

## CALENDAR YEAR INVESTMENT PERFORMANCE

	2013	2014	2015	2016	2017
Portfolio (net of inv. mgmt. fees) <sup>1</sup>	1.52	1.28	1.50	1.63	1.75
Portfolio (net of all fees - NAV level) <sup>2</sup>	1.34	1.10	1.33	1.46	1.58
3 Year Constant Maturity Treasury	0.54	0.90	1.03	1.01	1.58
Value Added (net of all fees – NAV level) <sup>3</sup>	0.80	0.21	0.30	0.45	0.00
MARKET INDICES					
ICE BofAML U.S. 3 Month Treasury Bill	0.07	0.03	0.05	0.33	0.86
Consumer Price Index	1.51	0.76	0.73	2.07	2.11

#### **GUIDELINE COMPLIANCE**

We have not become aware of any investment guideline compliance issues occurring in the portfolio during the quarter.

1: Returns are net of book value contract, Galliard investment management fees, and, if applicable, external manager fees and Wells Fargo collective fund administrative fees. 2: Returns are net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, and plan administrative reimbursement.

3: May not add due to rounding.

# **APPENDIX - STATE OF OREGON STABLE VALUE FUND**

Third Quarter 2018

#### TOTAL ANNUAL FUND OPERATING EXPENSES

Total Annual Operating Expenses are deducted directly from the Fund's net asset value and reduce the investment option's rate of return.

Expense	Expense Ratio 9/30/18	Per \$1000
Investment Management Fees paid to Galliard	0.136%	\$1.36
Investment Management fees paid to Non-Affiliated Investment Advisors	0.009%	\$0.09
Investment Contract Fees*1	0.172%	\$1.72
Acquired Fund Fees <sup>2</sup>	0.063%	\$0.63
-Investment Contract Fees	None	None
-Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non-Affiliated Investment Advisors <sup>3</sup>	0.063%	\$0.63
12b-1 Distribution Fee	None	None
Other Expenses	0.120%	\$1.20
Total Annual Fund Operating Expenses <sup>4</sup>	0.500%	\$5.00

1: These are fees paid to create and maintain the investments used by a stable value fund.

2: These are fees borne indirectly by the Fund when it acquires an interest in another fund which pays its own separate fees.

3: Includes audit fees for the cost of producing a report by a qualified auditor.

4: Total Annual Fund Operating Expenses are reflected daily in the Fund's net asset value (NAV).

Excluding STIF or money market allocations, non-affiliated investment advisors include Barings LLC, Dodge & Cox , Jennison Assoc., NYL Investors LLC.

# *charles* SCHWAB

# OREGON SAVINGS GROWTH PLAN

Schwab Personal Choice Retirement Account (PCRA) Quarterly Report

As of 9/30/2018

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Plan Profile Information	
Plan Type	457B
Total PCRA Assets	\$15,442,672
Total Funded PCRA Accounts	224
Total Roth Assets	\$123,840
Total Funded Roth Accounts	10
Total Advisor Managed PCRA Assets	\$5,198,308
Total Advisor Managed Funded PCRA Accounts	60
PCRA Accounts Opened This Quarter	17
PCRA Assets In and Out This Quarter*	\$803,274
Average PCRA Account Balance	\$68,941

## Assets and Accounts (Trailing 4 Quarters)



\* Assets In and Out includes contributions and distributions.

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PCRA Participant Profile Information				
Average Participant Age	54			
Percent Male Participants	73%			
Percent Female Participants	27%			
Total Assets by Category				
Cash Investments	\$1,313,949			
Equities	\$3,055,411			
ETFs	\$2,856,942			
Fixed Income	\$151,312			
Mutual Funds	\$8,065,057			

#### Other **Average Positions Per Account** Cash Investments 1.0 Equities 1.6 1.1 ETFs 0.0 **Fixed Income** 2.6 **Mutual Funds** 0.0 Other 6.3 Total

Average Trades Per Account	
Equities	2.8
ETFs	0.8
Fixed Income	0.0
Mutual Funds	2.5
Other	0.0
Total	6.1

\$0

## Top 10 Mutual Fund Holdings\*\*

Name RISKPRO PEG AGGRESSIVE 30 PLUS ED CL R	Category International	<b>Symbol</b> PFSUX	<b>OS*</b> Y	<b>\$MF Assets</b> \$643,816	<b>%MF Assets</b> 8.02%
RISKPRO PFG EQUITY 30 PLUS FD CL R	Large Capitalization Stock Funds	PFDEX	Y	\$588,370	7.33%
RISKPRO DYNAMIC 15 TO 25 FD CL R	Hybrid Funds	PFDPX	Y	\$509,576	6.35%
RISKPRO DYNAMIC 20 TO 30 FD CL R RISKPRO AGGRESSIVE 30 PLUS FD CL R	Hybrid Funds International	PFJDX PFLWX	Y Y	\$421,504 \$416,372	5.25% 5.18%
RISKPRO PFG BALANCED 20 TO 30 FD CL R	Hybrid Funds	PFDBX	Y	\$413,422	5.15%
RISKPRO PFG GLOBAL 30 PLUS FD CL R	International	PFDGX	Y	\$399,973	4.98%
RISKPRO TACTICAL 0 TO 30 FD CL R RISKPRO PFG 30 PLUS FD CL R	Hybrid Funds International	PFTEX PFSMX	Y Y	\$331,534 \$316,102	4.13% 3.94%
RISKPRO DYNAMIC 0 TO 10 FD CL R	Taxable Bond Funds	PFDOX	Y	\$277,163	3.45%

# Top 10 Fund Families

Name	\$MF Assets	%MF Assets
VANGUARD	\$652,578	8.13%
COLUMBIA	\$374,447	4.66%
SCHWAB	\$248,251	3.09%
T ROWE PRICE	\$223,043	2.78%
PRIMECAP	\$206,133	2.57%
FIDELITY	\$153,554	1.91%
PIMCO FUNDS	\$87,283	1.09%
WASATCH	\$74,621	0.93%
OPPENHEIMER	\$74,245	0.92%
MATTHEWS	\$66,004	0.82%

\*\*Top 10 Mutual Funds does not include Money Market Funds.

\*OS = OneSource, no-load, no transaction fee.

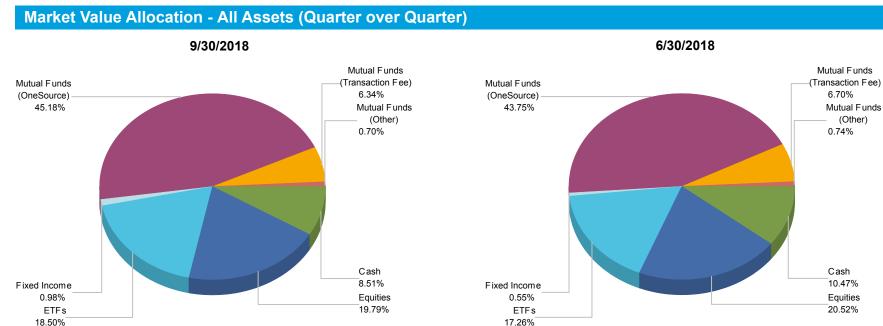
## **Top 10 Equity Holdings**

Name AMAZON.COM INC		<b>Category</b> Consumer Discretionary	<b>Symbol</b> AMZN	<b>\$EQ Assets</b> \$522,783	<b>%EQ Assets</b> 17.11%
TEEKAY CORP F		Energy	ТК	\$141,540	4.63%
NVIDIA CORP		Information Technology	NVDA	\$108,783	3.56%
TESLA INC		Consumer Discretionary	TSLA	\$101,142	3.31%
APPLE INC		Information Technology	AAPL	\$87,579	2.87%
CALAMOS CONVERTIBLE OPPO		Other	CHI	\$73,730	2.41%
BANK OF AMERICA CORP		Financials	BAC	\$73,650	2.41%
FACEBOOK INC CLASS	А	Communication Services	FB	\$72,362	2.37%
ALIBABA GROUP HOLDING FSPON	SORED ADR	Consumer Discretionary	BABA	\$67,222	2.20%
SQUARE INC CLASS	А	Information Technology	SQ	\$66,040	2.16%

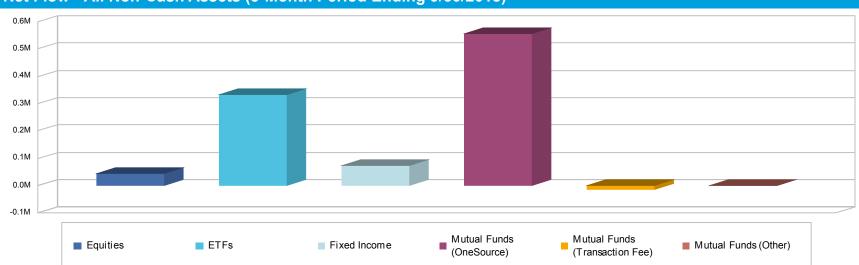
## Top 10 ETF Holdings

Name	Category	Symbol	OS*	\$ETF Assets	%ETF Assets
SCHWAB US DIVIDEND EQUITY ETF	US Equity	SCHD	Y	\$219,518	7.68%
SPDR BLMBRG BRCLY SHT TRM HGH ETF	US FI	SJNK	Ν	\$193,130	6.76%
SCHWAB US LARGE CAP VALUE ETF	US Equity	SCHV	Y	\$128,703	4.50%
VANGUARD FTSE PACIFIC ETF	International Equity	VPL	Ν	\$123,224	4.31%
VANGUARD FTSE EUROPE ETF	International Equity	VGK	Ν	\$111,899	3.92%
INVESCO EMERGING MARKETSSOVEREIGN DEBT ETF	International FI	PCY	Y	\$111,850	3.92%
SCHWAB US BROAD MARKET ETF	US Equity	SCHB	Y	\$86,061	3.01%
VANGUARD SMALL CAP VALUEETF	US Equity	VBR	Ν	\$84,261	2.95%
SPDR MFS SYSTEMATIC VALUE EQUITY ETF	US Equity	SYV	Y	\$68,542	2.40%
SCHWAB US LARGE CAP ETF	US Equity	SCHX	Y	\$59,361	2.08%

\*OS = OneSource, no transaction fee.



The above charts illustrate the percent of PCRA participant assets in each noted asset class as percentage of total PCRA assets. Percentages are calculated as of quarter-end. Money Market Funds are classified under Mutual Funds.

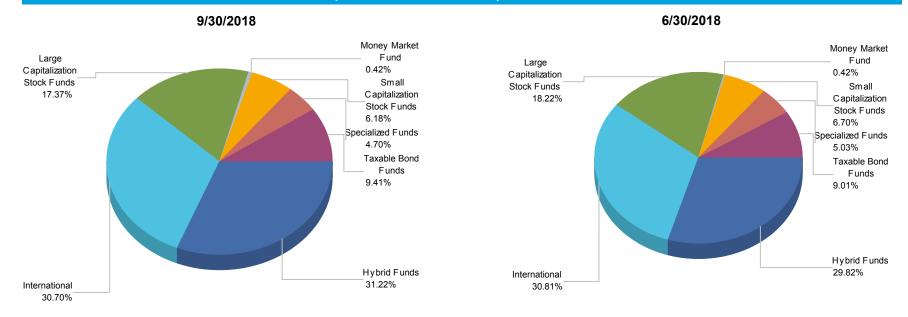


## Net Flow - All Non-Cash Assets (3-Month Period Ending 9/30/2018)

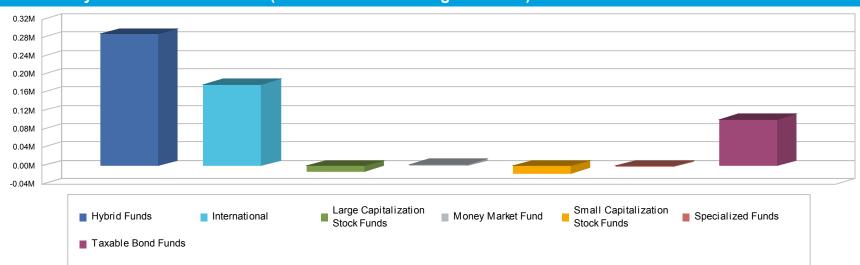
Net Flow is the net of all cash inflows and outflows in and out of financial assets; the performance of an asset or fund is not taken into account, only share redemptions, or outflows, and share purchases, or inflows.

(Other)

## Market Value Allocation - Mutual Funds (Quarter over Quarter)



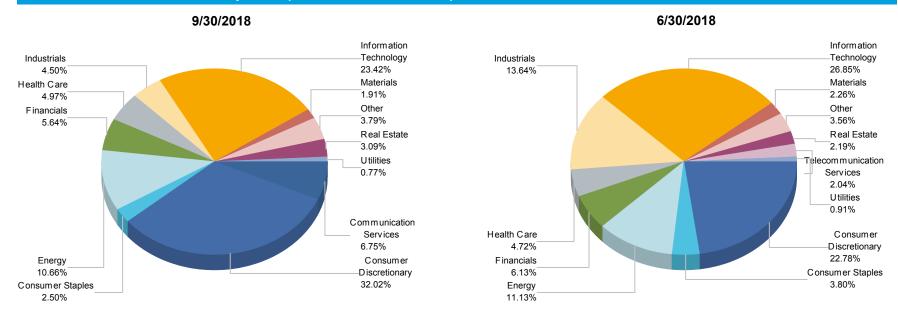
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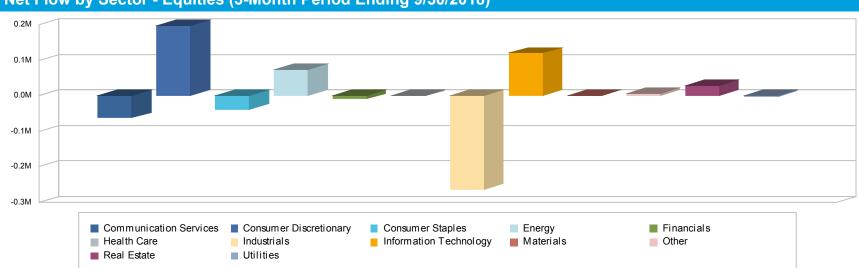
## Net Flow by Sector - Mutual Funds (3-Month Period Ending 9/30/2018)

Net Flow is the net of all cash inflows and outflows in and out of financial assets; the performance of an asset or fund is not taken into account, only share redemptions, or outflows, and share purchases, or inflows.

#### Market Value Allocation - Equities (Quarter over Quarter)

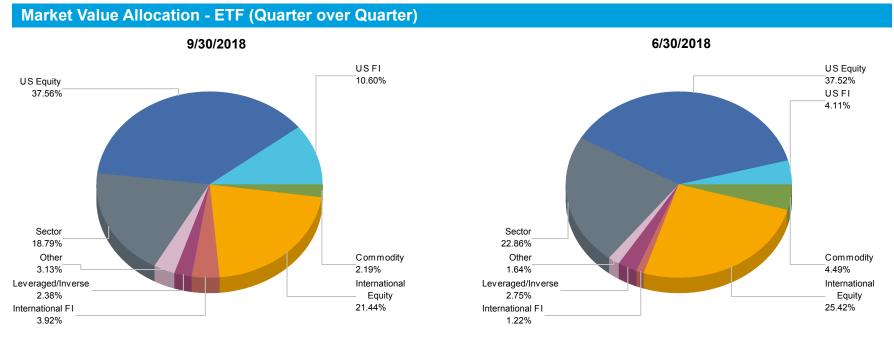


The above charts illustrate the percent of PCRA participant assets in each noted asset class as percentage of total PCRA assets. Percentages are calculated as of quarter-end. Money Market Funds are classified under Mutual Funds.

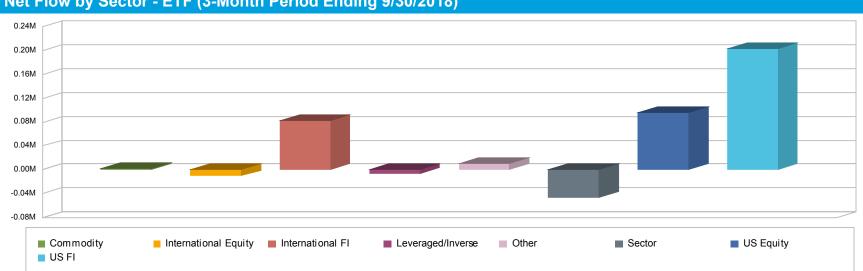


## Net Flow by Sector - Equities (3-Month Period Ending 9/30/2018)

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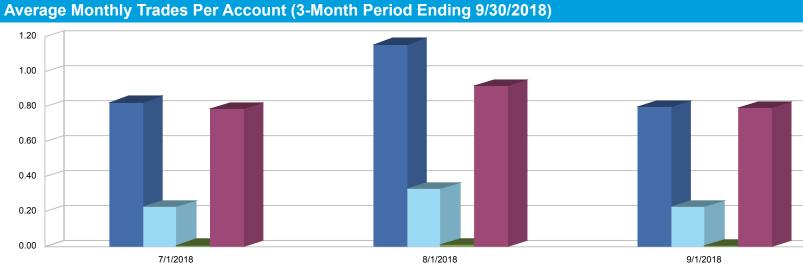


The above charts illustrate the percent of PCRA participant assets in each noted asset class as percentage of total PCRA assets. Percentages are calculated as of quarter-end. Money Market Funds are classified under Mutual Funds.



Net Flow by Sector - ETF (3-Month Period Ending 9/30/2018)

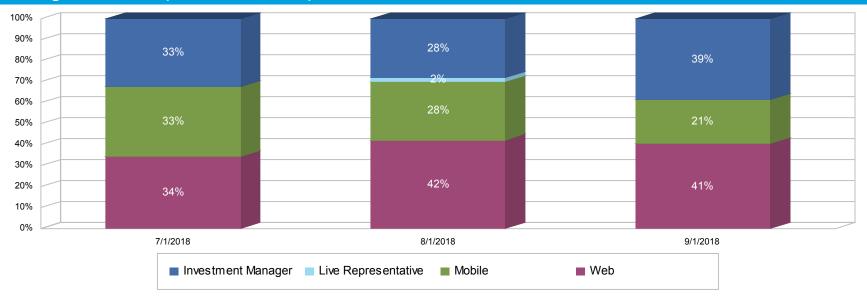
Net Flow is the net of all cash inflows and outflows in and out of financial assets; the performance of an asset or fund is not taken into account, only share redemptions, or outflows, and share purchases, or inflows.



0/1/2



## **Trading Channel Mix (Month over Month)**



Important Disclosures

Schwab Personal Choice Retirement Account (PCRA) is offered through Charles Schwab & Co., Inc. (Member SIPC), the registered broker/dealer, which also provides other brokerage and custody services to its customers.

For participants who utilize the Personal Choice Retirement Account (PCRA), the following fees and conditions may apply: Schwab's shortterm redemption fee of \$49.95 will be charged on redemption of funds purchased through Schwab's Mutual Fund OneSource® service (and certain other funds with no transaction fee) and held for 90 days or less. Schwab reserves the right to exempt certain funds from this fee, including Schwab Funds®, which may charge a separate redemption fee, and funds that accommodate short-term trading.

Trades in no-load mutual funds available through Mutual Funds OneSource service (including Schwab Funds) as well as certain other funds, are available without transaction fees when placed through schwab.com or our automated phone channels. Schwab reserves the right to change the funds we make available without transaction fees and to reinstate fees on any funds. Funds are also subject to management fees and expenses.

Charles Schwab & Co., Inc., member SIPC, receives remuneration from fund companies for record keeping, shareholder services and other administrative services for shares purchased through its Mutual Fund OneSource service. Schwab also may receive remuneration from transaction fee fund companies for certain administrative services.

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## INVESTMENT OPTION PERFORMANCE RESULTS

#### Investment Option Returns for the Period Ending July 31, 2018

#### CORE INVESTMENT OPTIONS

				Annualized						
OPTION BENCHMARKS (for comparison)	1 Month	3 Months	Year to Date	From Inception 10/31/96	Since 10/31/01	1 Year	2 Years	3 Years	5 Years	10 Years
Short-Term Fixed Option	0.15%	0.42%	0.86%	1.98%	1.13%	1.22%	0.80%	0.54%	0.26%	0.14%
91-Day T-Bill	0.16%	0.48%	0.97%	2.24%	1.34%	1.43%	0.99%	0.73%	0.45%	0.35%
Stable Value Option	0.17%	0.49%	1.09%	3.34%	2.68%	1.80%	1.65%	1.56%	1.41%	1.63%
91-Day T-Bill	0.16%	0.48%	0.97%	2.24%	1.34%	1.43%	0.99%	0.73%	0.45%	0.35%
Rolling Average 5 Year CMT**	0.14%	0.41%	0.93%	3.73%	3.03%	1.55%	1.42%	1.37%	1.39%	2.16%
Active Fixed Income Option	0.09%	0.70%	-0.90%	4.97%	4.48%	0.15%	0.53%	2.12%	2.79%	4.55%
BC Aggregate	0.02%	0.61%	-1.59%	4.98%	4.09%	-0.80%	-0.66%	1.49%	2.25%	3.73%
Large Company Value Stock Option	3.95%	4.83%	2.18%	8.22%	8.11%	9.47%	11.52%	9.38%	10.00%	8.98%
Russell 1000 Value	3.96%	4.83%	2.20%	8.66%	8.08%	9.54%	11.63%	9.51%	10.04%	8.95%
Stock Index Option	3.31%	6.90%	6.57%	8.53%	8.37%	16.23%	16.13%	12.07%	12.70%	10.55%
Russell 3000	3.32%	6.93%	6.64%	8.75%	8.55%	16.39%	16.26%	12.18%	12.83%	10.68%
Large Company Growth Stock Option	2.94%	8.45%	10.31%	7.94%	8.43%	22.61%	20.24%	14.64%	15.57%	11.99%
Russell 1000 Growth	2.94%	8.48%	10.40%	8.36%	8.63%	22.84%	20.42%	14.81%	15.83%	12.37%
International Stock Option	2.20%	-2.54%	-2.11%	6.07%	6.95%	4.86%	11.28%	5.80%	5.62%	3.88%
MSCI ACWI EX-US BLENDED	2.39%	-1.85%	-1.46%	4.99%	6.35%	5.94%	12.28%	6.00%	5.78%	3.39%
Small Company Stock Option	1.89%	8.76%	8.72%	10.84%	10.78%	18.91%	18.21%	11.78%	11.22%	10.98%
RUSSELL SMALL CAP BLENDED	1.74%	8.69%	9.54%	10.26%	10.70%	18.73%	18.59%	12.04%	11.91%	11.18%
Real Return Option	0.12%	-0.02%	-0.68%			2.54%	3.54%	1.45%		
CPI + 3%	0.41%	1.48%	4.15%			6.19%	5.48%	4.93%		
Environmental Social Governance Option	3.40%	5.96%	5.92%			15.03%	15.76%	11.80%		
Russell 3000	3.32%	6.93%	6.64%			16.39%	16.26%	12.18%		

#### TARGET DATE FUNDS ( LIFEPATH PORTFOLIOS)

				Annualized					
OPTION BENCHMARKS (for comparison)	1 Month	3 Months	Year to Date	1 Year	2 Years	3 Years	5 Years	10 Years	
LifePath® Retirement	0.91%	1.69%	0.58%	4.37%	4.83%	4.50%	4.68%		
LifePath® 2020	1.07%	1.81%	0.79%	5.11%	5.87%	5.07%	5.43%		
LifePath® 2025	1.39%	2.13%	1.26%	6.41%	7.34%	5.95%	6.19%		
LifePath® 2030	1.66%	2.40%	1.77%	7.66%	8.76%	6.83%	6.98%		
LifePath® 2035	1.92%	2.66%	2.07%	8.65%	9.91%	7.46%	7.52%		
LifePath® 2040	2.15%	2.88%	2.41%	9.61%	11.03%	8.09%	8.06%		
LifePath® 2045	2.30%	3.03%	2.63%	10.26%	11.73%	8.50%	8.45%		
LifePath® 2050	2.37%	3.07%	2.71%	10.48%	11.96%	8.65%	8.65%		
LifePath® 2055	2.37%	3.08%	2.71%	10.48%	11.95%	8.64%	8.72%		
LifePath® 2060	2.38%	3.08%	2.71%	10.45%	11.94%	8.65%			

\*\*5 Year Rolling Average of the 5 Year Constant Maturing Treasury Yield.

Updated on 8/7/2018

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## INVESTMENT OPTION PERFORMANCE RESULTS

#### Investment Option Returns for the Period Ending August 31, 2018

#### CORE INVESTMENT OPTIONS

			Annualized						
1 Month	3 Months	Year to Date	From Inception 10/31/96	Since 10/31/01	1 Year	2 Years	3 Years	5 Years	10 Years
0.15%	0.44%	1.01%	1.98%	1.13%	1.30%	0.87%	0.59%	0.29%	0.14%
0.18%	0.51%	1.15%	2.23%	1.34%	1.52%	1.07%	0.79%	0.49%	0.36%
0.17%	0.50%	1.27%	3.33%	2.68%	1.83%	1.67%	1.58%	1.42%	1.61%
0.18%	0.51%	1.15%	2.23%	1.34%	1.52%	1.07%	0.79%	0.49%	0.36%
0.14%	0.42%	1.08%	3.73%	3.03%	1.57%	1.44%	1.38%	1.39%	2.14%
0.55%	0.60%	-0.36%	4.98%	4.49%	-0.27%	0.79%	2.34%	3.02%	4.54%
0.64%	0.54%	-0.96%	4.99%	4.10%	-1.05%	-0.28%	1.76%	2.49%	3.70%
1.50%	5.76%	3.71%	8.26%	8.16%	12.43%	11.93%	12.21%	11.14%	8.97%
1.48%	5.76%	3.71%	8.70%	8.13%	12.47%	12.02%	12.32%	11.22%	8.93%
3.50%	7.61%	10.30%	8.67%	8.54%	20.08%	18.00%	15.74%	14.12%	10.76%
3.51%	7.65%	10.39%	8.89%	8.73%	20.25%	18.14%	15.86%	14.25%	10.89%
5.44%	9.56%	16.31%	8.17%	8.73%	26.99%	23.77%	19.15%	17.09%	12.48%
5.47%	9.61%	16.44%	8.59%	8.93%	27.23%	23.98%	19.33%	17.47%	12.84%
-2.33%	-2.76%	-4.39%	5.93%	6.76%	1.79%	9.85%	7.50%	5.54%	3.96%
-2.09%	-1.64%	-3.53%	4.87%	6.18%	3.18%	10.75%	8.08%	5.62%	3.60%
4.66%	7.54%	13.79%	11.03%	11.03%	26.16%	19.96%	15.76%	12.84%	11.20%
4.31%	6.89%	14.26%	10.43%	10.92%	25.45%	20.07%	16.11%	13.59%	11.34%
-0.57%	-1.45%	-1.25%			0.79%	3.42%	2.52%		
0.25%	0.92%	4.26%			5.72%	5.36%	4.93%		
3.24%	7.28%	9.35%			19.23%	17.17%	15.31%		
3.51%	7.65%	10.39%			20.25%	18.14%	15.86%		
	0.15% 0.18% 0.17% 0.18% 0.55% 0.64% 1.50% 1.48% 3.50% 3.51% 5.44% 5.47% -2.33% -2.09% 4.66% 4.31% -0.57% 0.25% 3.24%	0.15%         0.44%           0.18%         0.51%           0.17%         0.50%           0.18%         0.51%           0.14%         0.42%           0.55%         0.60%           0.64%         0.54%           1.50%         5.76%           1.48%         5.76%           3.50%         7.61%           3.51%         7.65%           5.44%         9.56%           5.47%         9.61%           -2.33%         -2.76%           -2.09%         -1.64%           4.66%         7.54%           4.31%         6.89%           -0.57%         -1.45%           0.25%         0.92%           3.24%         7.28%	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1 Month         3 Months         Year to Date         From Inception 10/31/96         Since 10/31/96         1 Year         2 Years         3 Years           0.15%         0.44%         1.01%         1.98%         1.13%         1.30%         0.87%         0.59%           0.18%         0.51%         1.15%         2.23%         1.34%         1.52%         1.07%         0.79%           0.17%         0.50%         1.27%         3.33%         2.68%         1.83%         1.67%         1.58%           0.18%         0.51%         1.15%         2.23%         1.34%         1.52%         1.07%         0.79%           0.14%         0.42%         1.08%         3.73%         3.03%         1.57%         1.44%         1.38%           0.55%         0.60%         -0.36%         4.98%         4.49%         -0.27%         0.79%         2.34%           0.64%         0.54%         -0.96%         4.99%         4.10%         -1.05%         -0.28%         1.76%           1.50%         5.76%         3.71%         8.26%         8.16%         12.43%         11.93%         12.21%           1.48%         5.76%         3.71%         8.26%         8.13%         20.25%         18.14	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$

#### TARGET DATE FUNDS ( LIFEPATH PORTFOLIOS)

						Annualized		
OPTION BENCHMARKS (for comparison)	1 Month	3 Months	Year to Date	1 Year	2 Years	3 Years	5 Years	10 Years
LifePath® Retirement	0.98%	1.68%	1.56%	4.73%	5.38%	5.74%	5.14%	
LifePath® 2020	0.99%	1.82%	1.78%	5.53%	6.44%	6.60%	5.93%	
LifePath® 2025	1.04%	2.21%	2.31%	6.94%	7.95%	7.77%	6.75%	
LifePath® 2030	1.09%	2.54%	2.89%	8.30%	9.42%	8.94%	7.59%	
LifePath® 2035	1.14%	2.86%	3.23%	9.40%	10.61%	9.83%	8.15%	
LifePath® 2040	1.18%	3.14%	3.62%	10.46%	11.78%	10.70%	8.74%	
LifePath® 2045	1.19%	3.29%	3.85%	11.15%	12.49%	11.24%	9.16%	
LifePath® 2050	1.19%	3.35%	3.93%	11.39%	12.73%	11.41%	9.38%	
LifePath® 2055	1.19%	3.36%	3.93%	11.38%	12.72%	11.39%	9.48%	
LifePath® 2060	1.19%	3.36%	3.93%	11.35%	12.70%	11.37%		

\*\*5 Year Rolling Average of the 5 Year Constant Maturing Treasury Yield.

Updated on 9/7/2018

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## INVESTMENT OPTION PERFORMANCE RESULTS

#### Investment Option Returns for the Period Ending September 30, 2018

#### CORE INVESTMENT OPTIONS

				Annualized						
OPTION BENCHMARKS (for comparison)	1 Month	3 Months	Year to Date	From Inception 10/31/96	Since 10/31/01	1 Year	2 Years	3 Years	5 Years	10 Years
Short-Term Fixed Option	0.15%	0.45%	1.16%	1.98%	1.14%	1.39%	0.93%	0.64%	0.32%	0.14%
91-Day T-Bill	0.15%	0.49%	1.30%	2.23%	1.34%	1.59%	1.12%	0.84%	0.52%	0.34%
Stable Value Option	0.17%	0.51%	1.44%	3.33%	2.68%	1.86%	1.70%	1.60%	1.44%	1.59%
91-Day T-Bill	0.15%	0.49%	1.30%	2.23%	1.34%	1.59%	1.12%	0.84%	0.52%	0.34%
Rolling Average 5 Year CMT**	0.14%	0.42%	1.22%	3.72%	3.02%	1.59%	1.46%	1.39%	1.39%	2.12%
Active Fixed Income Option	-0.47%	0.16%	-0.83%	4.93%	4.43%	-0.36%	0.55%	1.99%	2.71%	4.72%
BC Aggregate	-0.64%	0.02%	-1.60%	4.94%	4.04%	-1.22%	-0.57%	1.31%	2.16%	3.77%
Large Company Value Stock Option	0.18%	5.70%	3.90%	8.23%	8.14%	9.42%	12.16%	13.44%	10.48%	10.00%
Russell 1000 Value	0.20%	5.70%	3.92%	8.68%	8.11%	9.45%	12.25%	13.55%	10.72%	9.79%
Stock Index Option	0.15%	7.09%	10.47%	8.64%	8.51%	17.42%	18.00%	16.95%	13.33%	11.87%
Russell 3000	0.17%	7.12%	10.57%	8.86%	8.69%	17.58%	18.14%	17.07%	13.46%	12.01%
Large Company Growth Stock Option	0.54%	9.12%	16.93%	8.16%	8.72%	26.05%	23.88%	20.37%	16.09%	14.04%
Russell 1000 Growth	0.56%	9.17%	17.09%	8.58%	8.92%	26.30%	24.10%	20.55%	16.58%	14.31%
International Stock Option	0.41%	0.23%	-4.00%	5.93%	6.76%	0.58%	9.17%	9.09%	4.13%	5.39%
MSCI ACWI EX-US BLENDED	0.46%	0.71%	-3.09%	4.87%	6.18%	1.76%	10.33%	9.97%	4.22%	5.28%
Small Company Stock Option	-2.25%	4.24%	11.23%	10.87%	10.82%	15.71%	18.09%	16.83%	11.03%	12.02%
RUSSELL SMALL CAP BLENDED	-2.41%	3.58%	11.51%	10.26%	10.71%	15.24%	17.96%	17.12%	11.79%	12.23%
Real Return Option	0.16%	-0.29%	-1.09%			1.19%	2.89%	3.48%		
CPI + 3%	0.30%	0.86%	4.63%			5.28%	5.29%	5.02%		
Environmental Social Governance Option	0.04%	6.78%	9.39%			16.12%	17.20%	16.49%		
Russell 3000	0.17%	7.12%	10.57%			17.58%	18.14%	17.07%		
		•	•	•		•	•	•		

#### TARGET DATE FUNDS ( LIFEPATH PORTFOLIOS)

						Annualized		
OPTION BENCHMARKS (for comparison)	1 Month	3 Months	Year to Date	1 Year	2 Years	3 Years	5 Years	10 Years
LifePath® Retirement	-0.36%	1.53%	1.19%	3.74%	5.02%	5.99%	4.62%	
LifePath® 2020	-0.32%	1.75%	1.46%	4.41%	6.09%	7.01%	5.31%	
LifePath® 2025	-0.24%	2.20%	2.07%	5.68%	7.62%	8.33%	6.07%	
LifePath® 2030	-0.18%	2.59%	2.71%	6.90%	9.09%	9.64%	6.86%	
LifePath® 2035	-0.12%	2.96%	3.11%	7.86%	10.30%	10.68%	7.37%	
LifePath® 2040	-0.06%	3.29%	3.55%	8.80%	11.47%	11.67%	7.93%	
LifePath® 2045	-0.04%	3.48%	3.81%	9.40%	12.19%	12.27%	8.30%	
LifePath® 2050	-0.03%	3.56%	3.90%	9.61%	12.43%	12.46%	8.47%	
LifePath® 2055	-0.03%	3.57%	3.90%	9.61%	12.42%	12.45%	8.53%	
LifePath® 2060	-0.02%	3.57%	3.90%	9.59%	12.40%	12.43%		

\*\*5 Year Rolling Average of the 5 Year Constant Maturing Treasury Yield.

Updated on 10/4/2018

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