



Board of Trustees  
15 Estabrooke Drive  
Orono, ME 04469

Tel: 207-581-5840  
Fax: 207-581-9212  
[www.maine.edu](http://www.maine.edu)

September 18, 2018

TO: Members of the Investment Committee

FR: Ellen N. Doughty, Clerk of the Board

RE: **September 28, 2018 Investment Committee Meeting**

The University of Maine

University of Maine  
at Augusta

University of Maine  
at Farmington

University of Maine  
at Fort Kent

University of Maine  
at Machias

University of Maine  
at Presque Isle

University of  
Southern Maine

The Investment Committee will meet from **9:00 am to 12:00 pm on September 28, 2018**. The meeting will be located at the University of Maine System Executive Offices, Rudman Conference Room, 253 Estabrooke Hall, 15 Estabrooke Drive in Orono. In addition to the Estabrooke Hall location, the following Polycom locations and a conference call connection will also be available:

USM – Wishcamper 327

UMFK – Alumni Conference Room

**PHONE: 1-800-605-5167 code – 743544#**

Refreshments will be provided at the USM and UMS locations. The meeting materials have been posted to the Diligent Board Portal under the Investment Committee section. Also these materials will be posted on the Board of Trustees website: <http://www.maine.edu/about-the-system/board-of-trustees/meeting-agendas/investment-committee/> If you have questions about the meeting arrangements or accessing the meeting materials please call me at 581-5840.

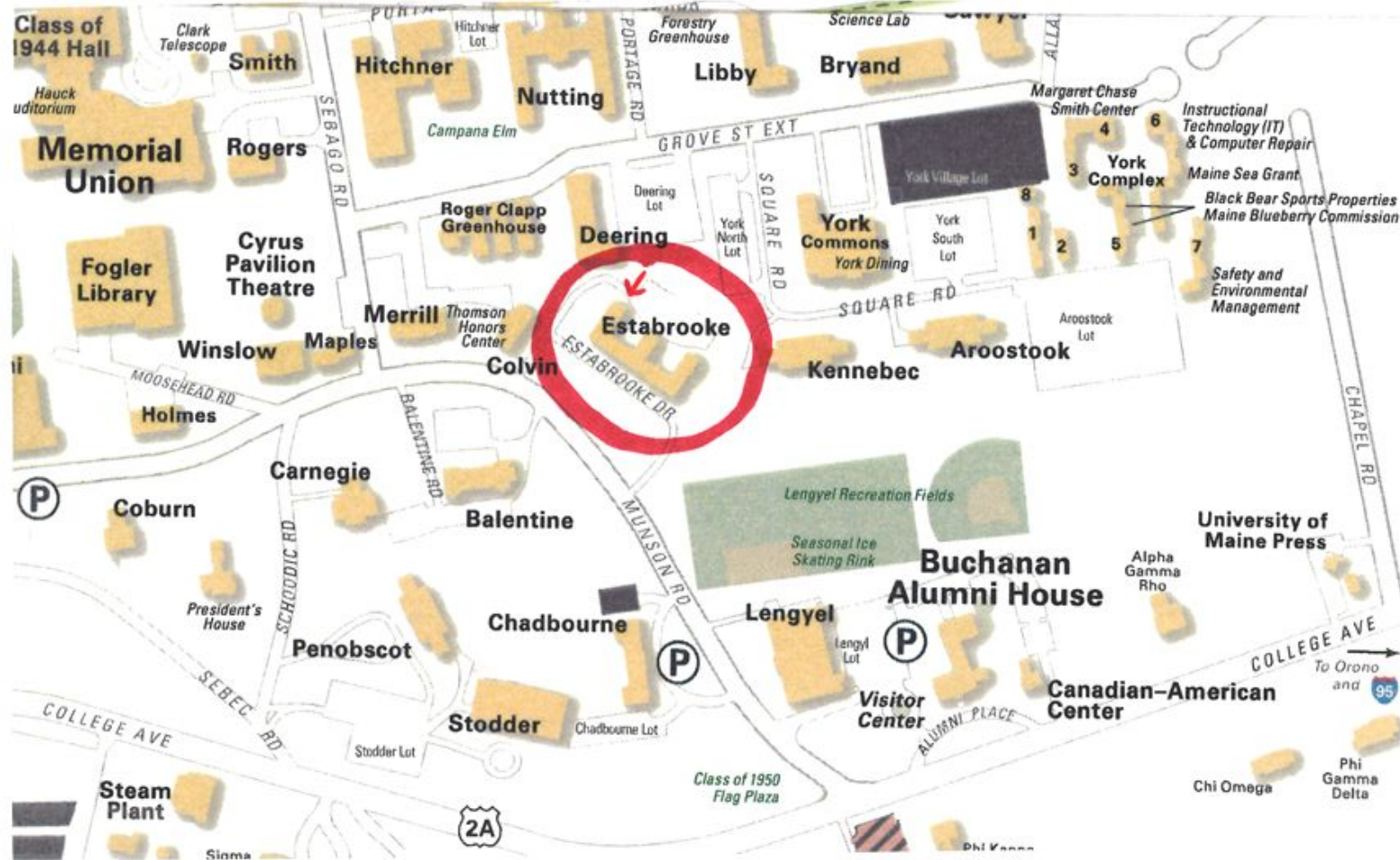
If you have any questions or desire additional information about the agenda items, please call Tracy Elliott at 581-5492.

cc: Chancellor James Page  
Trustees who are not members of the Committee  
Presidents  
Ryan Low  
Robert Neely  
Kay Kimball  
Tracy Elliott

# University of Maine System

15 Estabrooke Drive, Orono

**Rudman Conference Room**  
253 Estabrooke Hall, 2<sup>nd</sup> Floor  
15 Estabrooke Drive, Orono



## Directions to the UMS located on the UMaine Campus

**From the South on I-95:** take exit 191 to Kelly Road and turn right. Continue on Kelly Road for 1 mile until you reach the traffic light, then turn left onto Route 2 and go through downtown Orono. Cross the river. Turn left at the lights onto College Avenue. Buchanan Alumni House will be the first campus-related building on your right. Right after the Buchanan Alumni House, take a right onto Muson Road. Estabrooke Hall is the building on the right after Lengyel.

**From the North on I-95:** take exit 191 to Kelly Road and turn left. Continue on Kelly Road for 1 mile until you reach the traffic light, then turn left onto Route 2 and go through downtown Orono. Cross the river. Turn left at the lights onto College Avenue. Buchanan Alumni House will be the first campus-related building on your right. Right after the Buchanan Alumni House, take a right onto Muson Road. Estabrooke Hall is the building on the right after Lengyel.

The UMS is located on the 2<sup>nd</sup> floor of Estabrooke Hall. Enter Estabrooke Hall from the back of the building, the entrance closes to Deering Hall.

Board of Trustees

**Investment Committee**

September 28, 2018

9:00 am to 12:00 pm

Rudman Conference Room, 253 Estabrooke Hall, Orono

**AGENDA**

9:00 am – 9:15 am

**TAB 1** Reappointment of Non-Trustee/Non-Voting Member

**TAB 2** Investment Committee Work Plan

9:15 am – 10:00 am

Performance Reviews

**TAB 3** Executive Summary

**TAB 4** Managed Investment Pool (MIP)

**TAB 5** Defined Benefit Pension Fund

**TAB 6** Operating Cash Fund

10:00 am – 10:45 am

**TAB 7** Private Equity Discussion & Asset Allocation Recommendation - MIP

10:45 am – 11:15 am

**TAB 8** Defined Contribution Plan Review

11:15 am – 11:45 am

**TAB 9** Defined Contribution Plan – Manager Reviews & Recommendations

- Mid-Cap Growth Fund
- Foreign Large Growth Fund

Action items within the Committee purview are noted in green.

Items for Committee decisions and recommendations are noted in red.

*Note: Times are estimated based upon the anticipated length for presentation or discussion of a particular topic. An item may be brought up earlier or the order of items changed for effective deliberation of matters before the Committee.*



## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Reappointment of Non-Voting, Non-Trustee Committee Member
2. **INITIATED BY:** Kelly A. Martin, Chair

3. **BOARD INFORMATION:** **BOARD ACTION:** X

4. **OUTCOME:** **BOARD POLICY:**  
 Primary Outcome: Section 709 - Investments  
 Enhance fiscal positioning

5. **BACKGROUND:**

Trustee Martin, Chair of the Investment Committee, recommends the reappointment of Erik K. Hayward as a non-voting, non-trustee member of the Investment Committee. Mr. Hayward is Senior Vice President at the Libra Foundation, serves as a Director of Pineland Farms Dairy Company, Inc., Pineland Farms Natural Meats, Inc., Bath Savings Institution and is President and Treasurer of Libra Future Fund. He was initially appointed to the Committee for a three-year term on October 8, 2015.

6. **TEXT OF PROPOSED RESOLUTION:**

That the Board of Trustees acting through the Investment Committee, approve the reappointment of Erik K. Hayward to a second, three-year term as a non-voting, non-trustee member of the Investment Committee.

09/18/2018






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## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Investment Committee Fiscal Year 2019 Work Plan
2. **INITIATED BY:** Kelly A. Martin, Chair
3. **BOARD INFORMATION:** X **BOARD ACTION:**
4. **OUTCOME:** **BOARD POLICY:**  
 Primary Outcome: Section 709 - Investments  
 Enhance fiscal positioning
5. **BACKGROUND:**

Board Committees annually review their Work Plans, which provide an overview of the agendas for the Committee for the fiscal year. The Investment Committee's Fiscal Year 2019 Work Plan is presented for your information. This Plan will also be included in the November 18-19, 2018 Board of Trustees meeting materials as an information item.

In addition, a copy of the Committee Duties and Responsibilities are included for your information.



## **FY19 INVESTMENT COMMITTEE WORK PLAN**

Every meeting includes:

- Portfolio and Manager Performance Reviews for:
  - Pension (closed defined benefit plan)
  - Managed Investment Pool (including endowment)
  - Operating Cash
- Defined Contribution Plan Update

Any of the meetings may include:

- Investment manager presentations as warranted
  - Reasons may include performance reviews, changes in personnel, changes in organizational structure, or review new managers for investment consideration
- Asset allocation and scenario analysis including possible restriction of investment options
- Updating of investment guidelines
- Discussions regarding gift fees
- Oversight of the defined contribution retirement plan including sole recordkeeper relationship, plan economics, employee retirement readiness, employee engagement
- Review of consistent top performers, not currently part of the portfolio, for possible investment

Meetings typically are held during the following months. Anticipated agenda items for FY19 include:

### **SEPTEMBER:**

- Reappoint non-voting, non-trustee member to the Committee
- Private equity discussion
- Defined Contribution Plan manager recommendations

### **DECEMBER:**

- Approve endowment spending rate for FY20

### **FEBRUARY:**

- Review estimated endowment distributions for FY20
- Asset allocation study and recommendations

### **MAY/JUNE:**

- Update Investment Policy Statements

*Other meetings will be scheduled as needed.*

University of Maine System  
Board of Trustees

**Investment Committee**  
Duties and Responsibilities

Committee established: 1988

Last revised: 1/25/1999; 8/23/2010; 3/14/2011; 8/28/2012; 9/23/2013; 3/9/2017

Approved by the Board of Trustees: 3/14/2011; 9/23/2013; 3/27/2017

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The Investment Committee acknowledges its fiduciary responsibility for the conservation and prudent management of the Managed Investment Pool (including Endowments), Defined Benefit Pension Fund, and Operating Cash Funds. In addition, the Committee acknowledges its fiduciary responsibility for investment matters regarding the Defined Contribution Retirement Plan. The University of Maine System (System) staff will assist the Investment Committee in carrying out their duties.

#### Committee Authority

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Bylaws – Section 3  
Board of Trustee Policy Manual  
Section 709 - Investments

#### Duties and Responsibilities

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The primary duties and responsibilities of the Committee shall be to exercise prudent stewardship of the financial assets of the System and manage and invest funds in good faith and with the care an ordinary prudent person in a like position would exercise under similar circumstances. For the Defined Contribution (DC) Retirement Plan, the Committee shall exercise similar prudent stewardship regarding investment offerings available to participants.

1. Among those duties are:
  - a. To ensure compliance with the provisions of all pertinent federal and state regulations and rulings.
  - b. To develop investment objectives, asset allocation targets, investment guidelines, and performance measurement standards which are consistent with the needs of the funds.
  - c. To oversee the selection and evaluation of investment managers to invest and manage the funds' assets including taking appropriate action when an investment manager fails to meet mutually accepted performance standards or significantly violates investment guidelines.
  - d. To oversee the selection and evaluation of custodians, investment consultants, and defined contribution record keepers and vendors.

- e. To ensure that investment goals, objectives, and standards are effectively communicated to investment managers, including any material changes that may subsequently occur.
  - f. To ensure that existing assets and new monies are deployed to investment managers.
  - g. To review and evaluate investment results in the context of established standards of performance and adherence to the investment guidelines.
  - h. To oversee the DC Plan investment menu ensuring appropriate asset classes and fund offerings are available. The investment offerings will be of appropriate quality, competitively priced, and reasonable in number to allow for proper diversification by participants and proper fiduciary oversight by administration and the Trustees. The Committee will provide for ongoing monitoring and will replace fund offerings as appropriate.
2. The Vice-Chancellor, Treasurer, or Controller , or a subcommittee will assist the Committee in carrying out tasks associated with performing any of the duties set out above.
  3. The Committee, the Treasurer, the staff or a subcommittee may take whatever action is deemed prudent and appropriate to ensure the fiduciary duties of the Board of Trustees are fully accomplished.
  4. The Investment Committee is authorized to take action within its current Duties and Responsibilities with no requirement for further Board of Trustees approval. The Committee may refer an issue to the full Board when in the Committee's discretion the issue warrants a broader discussion and consideration. The Board is routinely updated about Committee actions through Committee Chair reports.
  5. If a quorum of the Investment Committee is not present at a meeting, those members present will provide direction to the staff without a formal vote. Actions will then be placed on the agenda of a subsequent Investment Committee or Board meeting for formal approval. Staff may take action based on the direction provided at the committee meeting, subject to reversing the actions should the Committee or Board subsequently vote otherwise.

### Membership of the Committee

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The Investment Committee shall be made up of at least three voting members of the Board of Trustees. The Chair and Vice-Chair of the Board and the Chancellor shall be ex-officio members, but the Chancellor shall have no vote. The Investment Committee may add up to five non-Trustee, non-voting members to the Investment Committee. The initial term will be for three years with the option of an appointment for a second, three year term.

## Investment Committee Duties and Responsibilities Continued

3

Meetings

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Meet as necessary and shall be called by the Committee Chair, but may be called by the Chair of the Board or a majority of the Committee.

Staff to the Committee

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The Investment Committee shall be staffed by the Vice Chancellor for Administration and Finance, Treasurer, and Controller.





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## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Performance Review Executive Summary – Managed Investment Pool, Pension Fund and Operating Fund

2. **INITIATED BY:** Kelly Martin, Chair

3. **BOARD INFORMATION:** X

**BOARD ACTION:**

4. **OUTCOME:**  
Primary Outcomes:  
Enhance fiscal positioning

**BOARD POLICY:**  
Section 709 - Investments

5. **BACKGROUND:**

Enclosed for your information is the executive summary performance report for all three portfolios for the quarter ended June 30, 2018 along with July results.

Jay Roney of NEPC will provide a brief review at the September 28, 2018 Investment Committee meeting.

9/18/2018

# **SECOND QUARTER 2018 INVESTMENT PERFORMANCE SUMMARY**



## **UNIVERSITY OF MAINE SYSTEM**

**September 28, 2018**

**Jay E. Roney, Partner**

**Kelly Regan, Senior Consultant**



BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

# MARKET REVIEW

NEPC, LLC

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# PERFORMANCE SUMMARY

## AS OF JUNE 30, 2018

<b>Domestic Equity Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Large Core	S&P 500	3.4%	2.6%	14.4%	11.9%	13.4%	10.2%
Small Core	Russell 2000	7.8%	7.7%	17.6%	11.0%	12.5%	10.6%
Small Growth	Russell 2000 Growth	7.2%	9.7%	21.9%	10.6%	13.6%	11.2%
Small Value	Russell 2000 Value	8.3%	5.4%	13.1%	11.2%	11.2%	9.9%
Large Core	Russell 1000	3.6%	2.9%	14.5%	11.6%	13.4%	10.2%
Large Growth	Russell 1000 Growth	5.8%	7.3%	22.5%	15.0%	16.4%	11.8%
Large Value	Russell 1000 Value	1.2%	-1.7%	6.8%	8.3%	10.3%	8.5%
Mid Core	S&P Mid Cap 400	4.3%	3.5%	13.5%	10.9%	12.7%	10.8%
REIT	NAREIT Composite	8.3%	1.2%	4.9%	9.3%	8.9%	8.3%
<b>Int'l Equity Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
International Developed	MSCI EAFE	-1.2%	-2.7%	6.8%	4.9%	6.4%	2.8%
Emerging Equity	MSCI EM	-8.0%	-6.7%	8.2%	5.6%	5.0%	2.3%
Small Cap Int'l	S&P EPAC SmallCap	-1.6%	-1.9%	11.7%	9.6%	11.5%	6.5%
World ex-US	MSCI ACWI ex-US	-2.6%	-3.8%	7.3%	5.1%	6.0%	2.5%
<b>Domestic FI Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Core Bonds	Barclays Aggregate	-0.2%	-1.6%	-0.4%	1.7%	2.3%	3.7%
Municipal Bond	Barclays Municipal	0.9%	-0.2%	1.6%	2.9%	3.5%	4.4%
High Yield	Barclays US High Yield	1.0%	0.2%	2.6%	5.5%	5.5%	8.2%
Intermediate Gov/Cred	Barclays Intern. Gov/Credit	0.0%	-1.0%	-0.6%	1.2%	1.6%	3.1%
Long Gov/Credit	Barclays Long Gov/Credit	-1.4%	-5.0%	-0.8%	4.3%	5.1%	6.8%
Long Credit	Barclays Long Credit	-2.7%	-6.4%	-1.3%	5.0%	5.5%	7.3%
Long Treasuries	Barclays US 20+ Yr Treas	0.4%	-3.0%	0.0%	3.6%	4.8%	6.2%
Cash	BofA ML US 3-Month T-Bill	0.5%	0.8%	1.4%	0.7%	0.4%	0.4%
Inflation	Barclays US TIPS 1-10 Yr	0.6%	0.2%	1.5%	1.5%	1.2%	2.3%
STRIPS	Barclays 20+ Yr STRIPS	0.9%	-3.7%	1.3%	5.7%	7.2%	8.6%
<b>Global FI Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
World Gov. Bonds	Citigroup WGBI	-3.4%	-0.9%	1.9%	2.8%	1.1%	2.1%
Em. Mkt. Bonds (Local)	JPM GBI-EM Glob. Div.	-10.4%	-6.4%	-2.3%	2.0%	-1.4%	2.6%
Global Inflation	Barclays Global ILB	-3.3%	-1.7%	3.3%	2.3%	2.5%	2.5%
<b>Diversified Benchmark</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Diversified	Diversified*	1.9%	0.8%	8.2%	7.3%	8.2%	6.9%
<b>Alternative Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Commodities	Bloomberg Commodity Index	0.4%	-0.0%	7.3%	-4.5%	-6.4%	-9.0%
Real Estate	NCREIF Property Index**	1.7%	1.7%	7.1%	8.7%	10.0%	6.1%

\* 35% LC, 10% SC, 12% Int'l, 3% Emerging, 25% FI, 5% HY, 5% Global FI, 5% REITS













\*\*As of 3/31/2018



June 30, 2018

# PERFORMANCE OVERVIEW

## Q2 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
											
5.0%	-3.9	12 bps	3.4%	-1.2%	-8.0%	-0.2%	1.0%	-3.5%	14.2%	-5.4%	8.3%

- **US stocks increased on the quarter, supported by strong earnings growth**
- **Emerging market equities and currencies weakened this quarter as trade concerns and Federal Reserve interest rate increases weighed on markets**
  - The US dollar reversed its first quarter decline and increased relative to a basket of major developed market currencies
- **The US yield curve continued to flatten as the second Fed rate hike of 2018 pushed short-term interest rates higher**

Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Developed Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), High Yield (Barclays US High Yield Index), Dollar EMD (JPM Emerging Market Bond Index), Crude Oil (WTI Crude Oil Spot), Gold (Gold Price Spot), and REITs (NAREIT Composite Index).



June 30, 2018



# CURRENT OPPORTUNITIES CHANGES

## Current Opportunities Changes

### The following actions were removed from the current opportunities list:

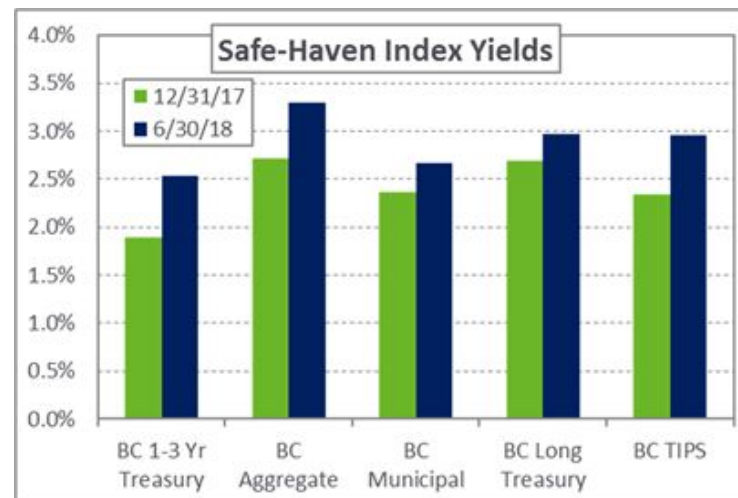
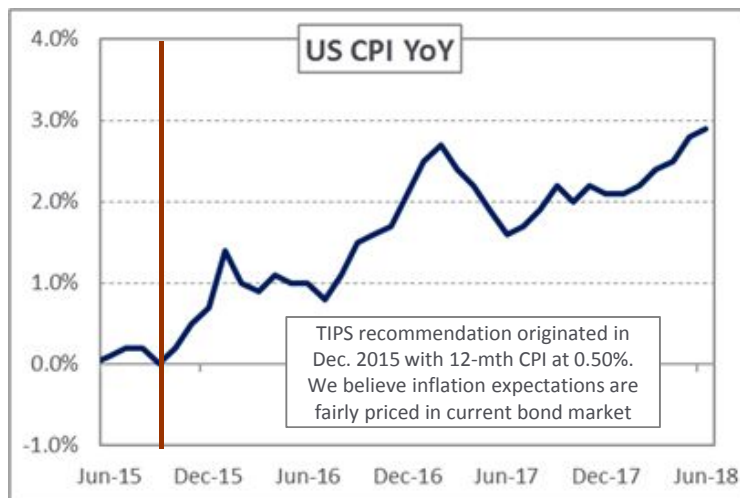
**Allocate to TIPS from Core Bonds:** *The relative value of TIPS vs Core Bonds has diminished*

**Reduce Return Seeking Credit Exposure:** *We continue to believe that lower quality credit exposure remains a funding source for safe-haven fixed income and portfolio rebalancing*

### “Raise Safe-Haven Fixed Income Exposure” replaces the actions listed above on the current opportunity list

We believe TIPS should remain a strategic allocation as a portion of safe-haven fixed income

Our recommendation reflects the improving attractiveness of safe-haven fixed income following recent increases in interest rates and the expanded potential for adverse economic outcomes



Source: (Left) Federal Reserve Bank of St. Louis

Source: (Right) Bloomberg



June 30, 2018

# EQUITY PERFORMANCE OVERVIEW

## Q2 Equity Market Summary

- **US small cap outperformed large cap as tax reform benefits helped boost earnings**
- **Trade concerns and yuan weakness weighed on Chinese returns as equity markets neared bear market territory**

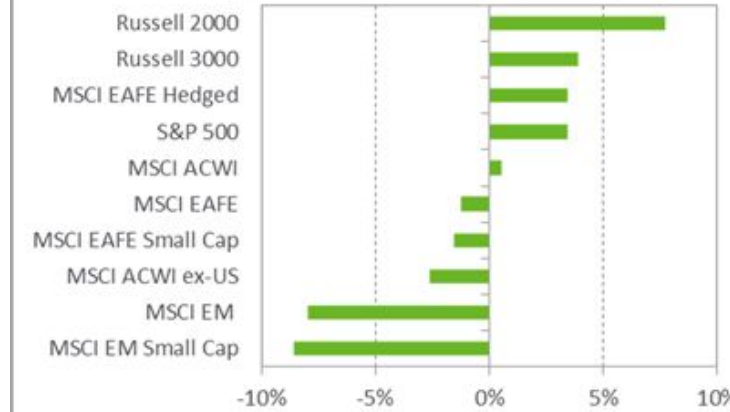
### Russell 3000 QTD Sector Return Contribution

Information Technology	1.5%
Consumer Discretionary	0.0%
Financials	0.1%
Industrials	0.4%
Consumer Staples	0.9%
Energy	0.4%
Materials	0.1%
Health Care	0.2%
Real Estate	0.0%
Telecommunication	-0.0%
Utilities	-0.1%

Source: Russell, Bloomberg

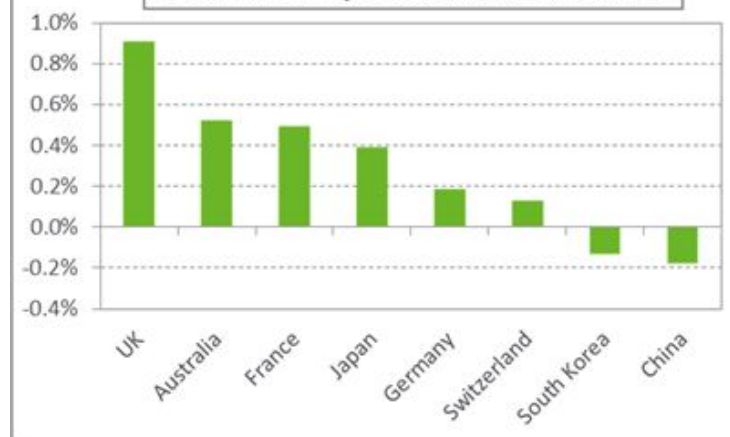


### QTD Equity Index Returns



Source: MSCI, Russell, S&amp;P, Bloomberg

### ACWI Ex-US QTD Return Contribution



Source: MSCI, Bloomberg. QTD top country contributors to index return

June 30, 2018

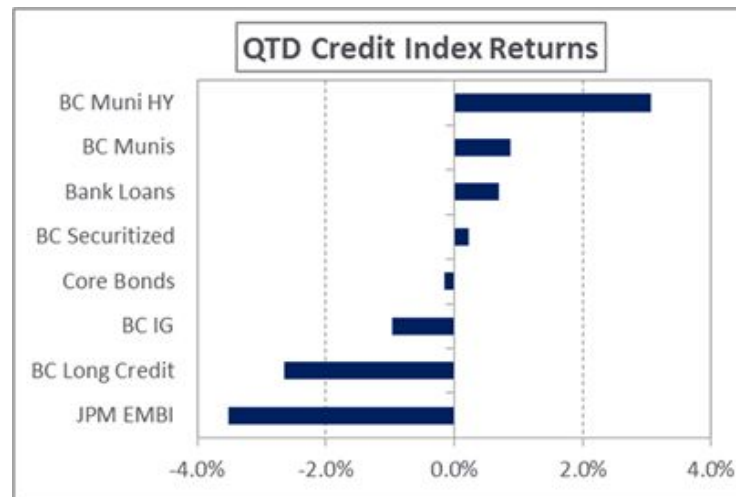
# CREDIT PERFORMANCE OVERVIEW

## Q2 Credit Market Summary

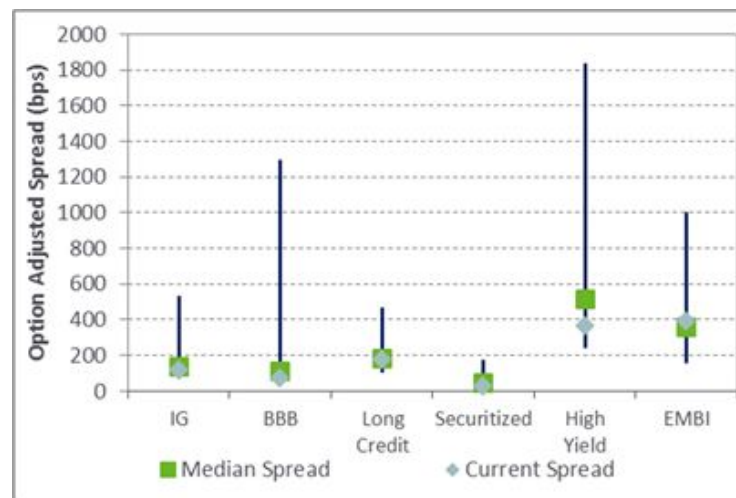
- Credit spreads increased slightly, but remain below medians in most areas of the credit market
- Dollar-denominated EMD spreads increased 62 bps during the quarter, resulting in a decline of 3.5%
- Local currency EMD declined 10.4% as currency weakness weighed on returns

Credit Spread (Basis Points)	03/31/18	06/30/18	Δ
BC IG Credit	103	116	13
BC Long Credit	148	174	26
BC Securitized	29	28	-1
BC High Yield	354	363	9
Muni HY	253	198	-55
JPM EMBI	326	388	62
Bank Loans - Libor	257	303	46

Source: Barclays, Merrill Lynch, JPM, Bloomberg, NEPC



Source: Barclays, JPM, S&P, Bloomberg



Source: Barclays, JPM, S&P, Bloomberg. As of 01/31/2000



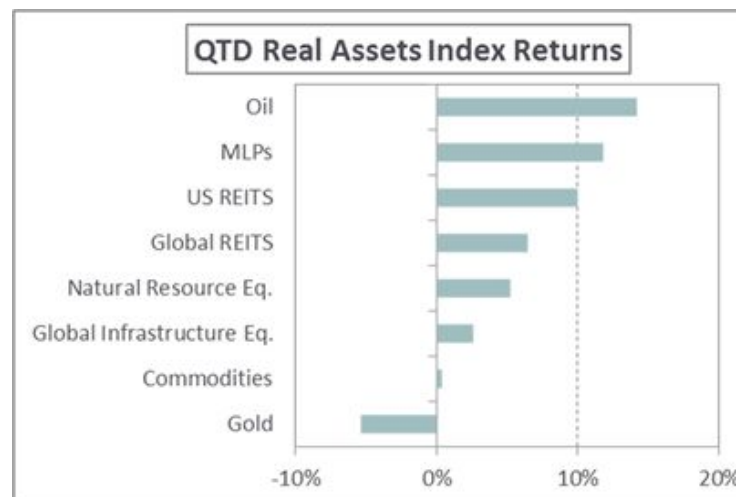
# REAL ASSETS PERFORMANCE OVERVIEW

## Q2 Real Assets Market Summary

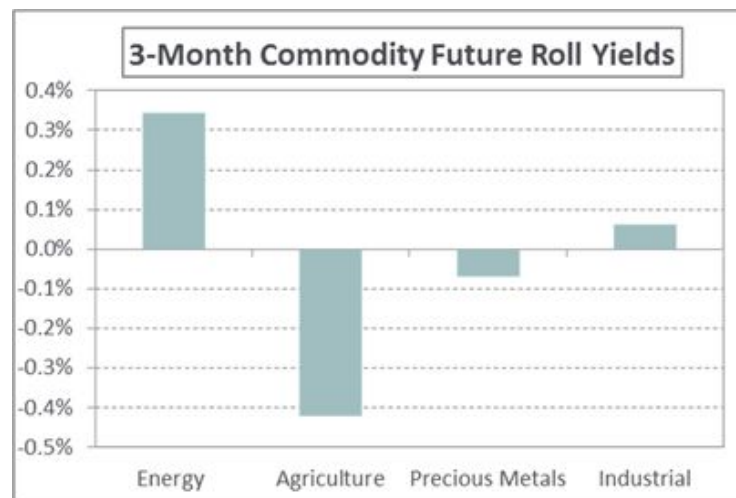
- **Crude oil increased 14.2% during the quarter as a result of tighter global supply and US-imposed sanctions on Iran**
- **Agricultural commodities broadly declined, as Chinese tariffs specifically targeted soybeans**
- **MLPs reversed steep losses from earlier in the year as industry consolidation and simplification continues**

Real Asset Yields	03/31/18	06/30/18
MLPs	8.9%	8.1%
Core Real Estate	4.5%	4.2%
US REITs	4.6%	4.4%
Global REITs	4.0%	3.7%
Global Infrastructure Equities	3.9%	4.4%
Natural Resource Equities	3.6%	3.5%
US 10-Yr Breakeven Inflation	2.1%	2.1%
Commodity Index Roll Yield	-1.6%	0.1%

Source: NCREIF, Alerian, NAREIT, S&P, Bloomberg



Source: S&P, NAREIT, Alerian, Bloomberg



Source: Bloomberg, NEPC Calculated as of 07/11/2018



June 30, 2018

# MACRO PERFORMANCE OVERVIEW

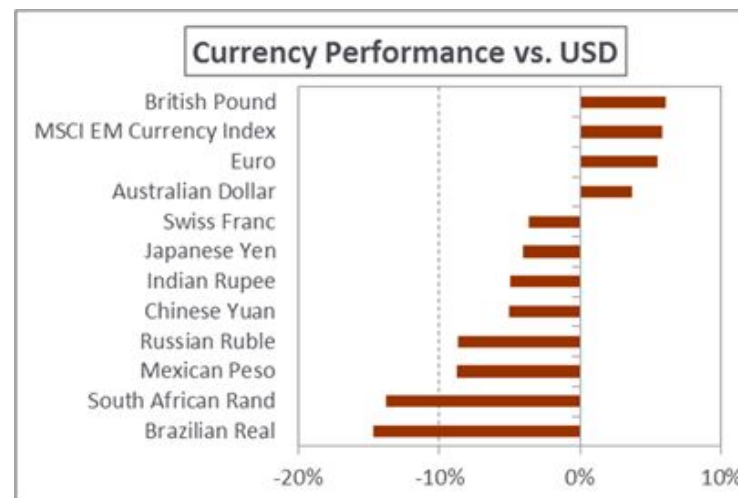
## Q2 Macro Market Summary

- The global growth outlook remains strong, particularly in the US
- Global equity market volatility fell, despite escalating tensions related to the US-China trade dispute
- The US Treasury curve continued to flatten raising concerns of an inverted curve should the Fed hike rates beyond market expectations

	Yield 03/31/18	Yield 06/30/18	Δ
US 10-Yr	2.74%	2.86%	0.12%
US 30-Yr	2.97%	2.99%	0.02%
US Real 10-Yr	0.68%	0.74%	0.05%
German 10-Yr	0.50%	0.30%	-0.20%
Japan 10-Yr	0.05%	0.04%	-0.01%
China 10-Yr	3.75%	3.48%	-0.27%
EM Local Debt	6.00%	6.59%	0.59%

Source: Bloomberg

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	1.75% - 2.00%	2.9%	The Fed increased its benchmark interest rate to 1.75% - 2.00% in June and is expected to hike rates two more times in 2018
European Central Bank	0.0%	1.7%	The ECB maintained its current benchmark interest rate, while indicating rates would remain steady at least through mid-2019.
Bank of Japan	-0.1%	1.3%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target.



Source: Bloomberg



June 30, 2018



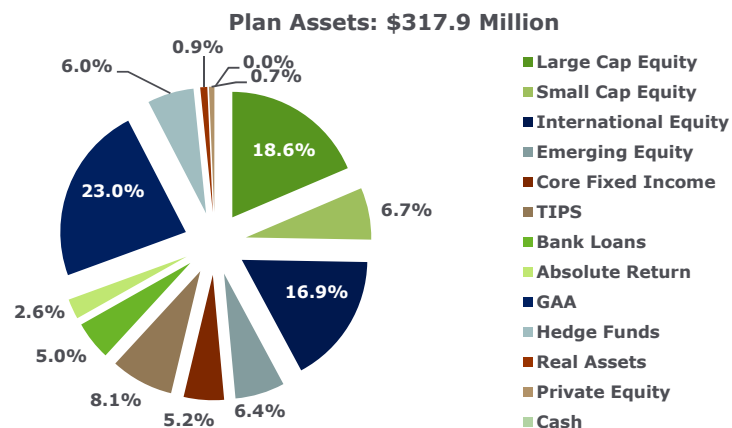
# **MANAGED INVESTMENT POOL (MIP)**

NEPC, LLC

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# EXECUTIVE SUMMARY

## ASSET ALLOCATION



## PLAN COMMENTS

### Asset Allocation

MIP assets were \$317.9 million as of June 30, 2018, a \$1.9 million increase over the quarter. During the 2<sup>nd</sup> quarter there was a \$185 thousand cash inflow and investment gains of \$1.7 million. All asset classes are within policy ranges.

### Performance (Net of Fees)

The Plan returned 0.3% in the 2<sup>nd</sup> quarter and 6.9% fiscal-year-to-date, ranking in the 70<sup>th</sup> and 74<sup>th</sup>, respectively.

Equity long/short hedge fund, domestic equity, and fixed income managers were the top contributors to overall performance during the quarter. Emerging market equity, international equity and select global asset allocation managers detracted from overall performance during the quarter.

## MIP PERFORMANCE: NET OF FEES

	QTR (%)	YTD (%)	FYTD (%)	3 YR (%)	5 YR (%)	10 YR (%)
COMPOSITE	0.3	0.1	6.9	5.3	6.1	5.5
ALLOC. INDEX	0.3	0.0	7.8	5.9	6.6	5.3
POLICY INDEX	0.3	0.2	8.2	6.5	6.9	5.8
RANK (E&F \$100-500M)	70	73	74	78	86	72

## RECENT ACTIONS/RECOMMENDATIONS

### Recent Actions

Guggenheim US Bank Loans was liquidated effective July 31 and Bain Capital is in the process of being funded.

Blackrock Strategic Opportunities strategy was funded in July 2018.

Rebalancing was provided to cover disbursements.

### Recommendations

There are no recommendations at this time.

### Investment Manager Updates

There were no new manager announcements during the second quarter.



# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>MIP Composite</b>	<b>317,888,826</b>	<b>100.0</b>	<b>100.0</b>	<b>0.3</b>	<b>0.1</b>	<b>6.9</b>	<b>9.1</b>	<b>5.3</b>	<b>6.1</b>	<b>5.8</b>	<b>5.5</b>
Allocation Index				0.3	0.0	7.8	9.6	5.9	6.6	6.0	5.3
Policy Index				0.3	0.2	8.2	10.4	6.5	6.9	6.3	5.8
<b>Total Domestic Large Cap</b>	<b>58,959,272</b>	<b>18.5</b>	<b>16.0</b>	<b>3.4</b>	<b>2.6</b>	<b>14.3</b>	<b>16.0</b>	<b>11.9</b>	<b>13.4</b>	<b>12.8</b>	<b>10.5</b>
S&P 500				3.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
SSgA S&P 500	58,959,272	18.5	16.0	3.4	2.6	14.3	16.0	11.9	13.3	13.2	10.1
S&P 500				3.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
<b>Total Domestic Small/Mid Cap</b>	<b>21,272,958</b>	<b>6.7</b>	<b>6.0</b>	<b>5.7</b>	<b>7.1</b>	<b>20.4</b>	<b>21.9</b>	<b>10.7</b>	<b>12.8</b>	<b>12.0</b>	<b>11.2</b>
Russell 2500				5.7	5.5	16.2	18.0	10.3	12.3	11.9	10.7
Westfield Capital	9,988,825	3.1	3.0	5.3	9.8	25.5	24.5	11.1	13.7	12.2	11.1
Russell 2500 Growth				5.5	8.0	21.5	21.5	10.9	13.9	12.6	11.4
DFA	11,284,133	3.5	3.0	6.0	3.7	14.1	17.8	9.4	11.3	11.4	--
Russell 2000 Value				8.3	5.4	13.1	18.8	11.2	11.2	11.1	9.9
<b>Total International Equity (including emerging markets)</b>	<b>73,939,477</b>	<b>23.3</b>	<b>23.0</b>	<b>-3.0</b>	<b>-3.3</b>	<b>5.9</b>	<b>11.4</b>	<b>4.6</b>	<b>5.3</b>	<b>4.2</b>	<b>2.7</b>
MSCI EAFE				-1.2	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
Morgan Stanley	20,429,738	6.4	6.3	-0.2	-1.7	5.4	10.9	4.1	5.4	5.2	3.5
Globeflex	20,943,544	6.6	6.3	-1.0	-0.8	11.1	16.1	7.2	8.3	5.9	2.2
MSCI EAFE				-1.2	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
Kabouter International Opportunities Offshore Fund II	12,356,473	3.9	3.5	-1.6	-0.6	--	--	--	--	--	--
MSCI EAFE Small Cap				-1.6	-1.3	12.4	17.7	10.1	11.3	8.4	6.8
<b>Emerging Markets Equity</b>	<b>20,209,722</b>	<b>6.4</b>	<b>7.0</b>	<b>-8.3</b>	<b>-8.6</b>	<b>-0.7</b>	<b>5.9</b>	<b>1.4</b>	<b>1.2</b>	<b>1.0</b>	<b>--</b>
MSCI Emerging Markets				-8.0	-6.7	8.2	15.7	5.6	5.0	1.4	2.3
Aberdeen Emerging Mkts	9,713,461	3.1	3.5	-11.1	-11.0	-2.6	7.2	3.4	2.1	1.6	--
MSCI Emerging Markets				-8.0	-6.7	8.2	15.7	5.6	5.0	1.4	2.3
Mondrian EM Small Cap	10,496,261	3.3	3.5	-5.6	-6.1	0.9	4.2	-0.8	--	--	--
MSCI Emerging Markets Small Cap				-8.6	-8.5	5.6	11.2	2.5	4.3	1.4	4.4
<b>Total Fixed Income</b>	<b>66,476,159</b>	<b>20.9</b>	<b>21.0</b>	<b>0.5</b>	<b>0.2</b>	<b>2.1</b>	<b>2.4</b>	<b>2.9</b>	<b>3.3</b>	<b>4.2</b>	<b>4.7</b>
BBgBarc US Aggregate TR				-0.2	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Commonfund	16,406,077	5.2	5.0	-0.3	-0.9	0.6	1.2	2.3	2.9	3.5	4.3
BBgBarc US Aggregate TR				-0.2	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Inflation-Protected Securities	25,791,470	8.1	8.0	0.8	-0.1	1.9	0.5	--	--	--	--
BBgBarc US TIPS TR				0.8	0.0	2.1	0.7	1.9	1.7	2.1	3.0
Guggenheim US Bank Loans	15,883,264	5.0	5.0	0.9	2.0	4.1	--	--	--	--	--
Credit Suisse Leveraged Loans				0.8	2.4	4.7	6.1	4.3	4.2	4.6	5.0



June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Blackrock Strategic Income Opportunities	8,395,349	2.6	3.0	--	--	--	--	--	--	--	--
3-Month Libor Total Return USD				0.6	1.1	1.8	1.4	1.1	0.8	0.7	0.7
<b>Total GAA</b>	<b>72,952,726</b>	<b>22.9</b>	<b>23.0</b>	<b>-0.9</b>	<b>-1.3</b>	<b>2.8</b>	<b>5.6</b>	<b>2.7</b>	<b>3.6</b>	<b>3.4</b>	<b>--</b>
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
GMO Global Absolute Return	24,125,389	7.6	7.7	-2.9	-2.1	3.1	6.5	3.4	3.6	4.7	4.8
Blended Index				0.1	-0.9	1.5	2.3	3.3	3.6	3.8	4.7
Wellington	24,391,014	7.7	7.7	-1.6	-2.4	4.0	9.9	4.9	6.4	4.0	--
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
Newton Global Real Return	24,436,322	7.7	7.7	1.8	0.6	1.1	-0.2	--	--	--	--
60% MSCI ACWI (Net) / 40% BBgBarc Global Agg				-0.8	-0.8	7.0	8.5	6.1	6.3	5.3	4.8
<b>Total Hedge Funds</b>	<b>19,166,995</b>	<b>6.0</b>	<b>6.0</b>	<b>2.3</b>	<b>2.9</b>	<b>7.1</b>	<b>6.4</b>	<b>3.0</b>	<b>2.9</b>	<b>2.1</b>	<b>1.9</b>
HFRI Fund of Funds Composite Index				0.4	0.7	5.1	5.8	1.9	3.5	2.8	1.4
Lighthouse	19,166,995	6.0	6.0	2.9	5.1	10.2	7.9	--	--	--	--
Credit Suisse Long Shrt Eqt USD				-0.3	0.7	7.1	7.7	3.3	5.8	5.1	4.1
<b>Total Real Assets</b>	<b>2,717,239</b>	<b>0.9</b>	<b>3.0</b>	<b>-0.3</b>	<b>-0.5</b>	<b>1.5</b>	<b>-1.8</b>	<b>1.0</b>	<b>3.2</b>	<b>3.9</b>	<b>--</b>
NCREIF Timberland Index				0.5	1.4	3.6	3.5	3.5	6.0	5.8	4.0
John Hancock Timber Fund	2,717,239	0.9	3.0	-0.3	-0.5	1.5	-1.8	1.0	3.2	3.9	0.1
NCREIF Timberland Index				0.5	1.4	3.6	3.5	3.5	6.0	5.8	4.0
<b>Private Equity</b>	<b>2,386,259</b>	<b>0.8</b>	<b>2.0</b>	<b>4.5</b>	<b>3.7</b>	<b>21.9</b>	<b>18.6</b>	<b>12.3</b>	<b>--</b>	<b>--</b>	<b>--</b>
Landmark Equity Partners XV	2,386,259	0.8	2.0	4.5	3.7	21.9	18.6	12.3	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)				2.7	7.9	16.2	16.8	12.0	13.2	12.9	10.3
<b>Total Cash</b>	<b>17,742</b>	<b>0.0</b>	<b>0.0</b>								
Distribution Account	17,742	0.0	0.0	0.4	0.7	1.1	0.6	0.4	0.3	0.2	0.3
91 Day T-Bills				0.5	0.8	1.4	1.0	0.7	0.4	0.3	0.3

## Notes:

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&amp;P 500, 10% BC High Yield, 10% JPM EMBI+

Returns are net of manager fees

John Hancock Timber market value as of 06/30/18

Landmark market value as of 06/30/18



June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>MIP Composite</b>	<b>326,087,492</b>	<b>100.0</b>	<b>100.0</b>	<b>1.3</b>	<b>1.4</b>	<b>1.3</b>	<b>8.2</b>	<b>5.7</b>	<b>5.8</b>	<b>6.1</b>	<b>5.8</b>
Allocation Index				1.7	1.7	1.7	9.0	6.5	6.4	6.3	5.6
Policy Index				1.7	1.9	1.7	9.7	7.1	6.7	6.7	6.1
<b>Total Domestic Large Cap</b>	<b>61,153,101</b>	<b>18.8</b>	<b>16.0</b>	<b>3.7</b>	<b>6.4</b>	<b>3.7</b>	<b>16.1</b>	<b>12.4</b>	<b>13.0</b>	<b>13.7</b>	<b>11.1</b>
S&P 500				3.7	6.5	3.7	16.1	12.5	13.1	14.2	10.7
SSgA S&P 500	61,153,101	18.8	16.0	3.7	6.4	3.7	16.1	12.4	13.1	14.1	10.6
S&P 500				3.7	6.5	3.7	16.1	12.5	13.1	14.2	10.7
<b>Total Domestic Small/Mid Cap</b>	<b>21,692,690</b>	<b>6.7</b>	<b>6.0</b>	<b>2.1</b>	<b>9.4</b>	<b>2.1</b>	<b>19.9</b>	<b>11.8</b>	<b>11.7</b>	<b>13.0</b>	<b>11.4</b>
Russell 2500				1.9	7.5	1.9	16.2	11.1	11.3	12.8	10.9
Westfield Capital	10,184,717	3.1	3.0	2.2	12.2	2.2	22.1	11.6	12.7	13.3	11.8
Russell 2500 Growth				1.9	10.1	1.9	19.1	11.1	12.7	13.6	11.6
DFA	11,507,973	3.5	3.0	2.0	5.8	2.0	16.1	11.1	10.2	12.3	--
Russell 2000 Value				1.8	7.3	1.8	16.8	12.9	10.2	11.9	9.5
<b>Total International Equity (including emerging markets)</b>	<b>75,640,321</b>	<b>23.2</b>	<b>23.0</b>	<b>0.5</b>	<b>-2.7</b>	<b>0.5</b>	<b>9.2</b>	<b>4.7</b>	<b>4.7</b>	<b>4.4</b>	<b>3.3</b>
MSCI EAFE				2.5	-0.4	2.5	11.9	5.0	5.9	5.5	3.4
Morgan Stanley	20,645,365	6.3	6.3	1.1	-0.7	1.1	9.8	3.9	4.8	5.6	4.0
Globeflex	21,293,862	6.5	6.3	1.7	0.8	1.7	13.0	7.4	7.4	6.2	3.0
MSCI EAFE				2.5	-0.4	2.5	11.9	5.0	5.9	5.5	3.4
Kabouter International Opportunities Offshore Fund II	11,990,812	3.7	3.5	-3.0	-3.5	-3.0	--	--	--	--	--
MSCI EAFE Small Cap				0.7	-0.7	0.7	14.6	10.0	10.2	8.6	7.4
<b>Emerging Markets Equity</b>	<b>21,710,283</b>	<b>6.7</b>	<b>7.0</b>	<b>1.0</b>	<b>-7.7</b>	<b>1.0</b>	<b>4.6</b>	<b>2.7</b>	<b>1.5</b>	<b>1.0</b>	<b>--</b>
MSCI Emerging Markets				2.2	-4.6	2.2	14.1	8.9	5.3	1.8	2.9
Aberdeen Emerging Mkts	11,377,859	3.5	3.5	3.8	-7.7	3.8	7.0	5.7	2.9	2.0	--
MSCI Emerging Markets				2.2	-4.6	2.2	14.1	8.9	5.3	1.8	2.9
Mondrian EM Small Cap	10,332,424	3.2	3.5	-1.7	-7.7	-1.7	2.0	-0.4	--	--	--
MSCI Emerging Markets Small Cap				1.2	-7.3	1.2	9.5	5.8	4.5	1.3	4.8
<b>Total Fixed Income</b>	<b>68,230,085</b>	<b>20.9</b>	<b>21.0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>1.8</b>	<b>2.9</b>	<b>3.2</b>	<b>4.0</b>	<b>4.8</b>
BBgBarc US Aggregate TR				0.0	-1.6	0.0	-0.7	1.5	2.2	2.3	3.7
Commonfund	16,444,846	5.0	5.0	0.2	-0.7	0.2	0.8	2.2	2.9	3.4	4.4
BBgBarc US Aggregate TR				0.0	-1.6	0.0	-0.7	1.5	2.2	2.3	3.7
Vanguard Inflation-Protected Securities	25,666,511	7.9	8.0	-0.5	-0.6	-0.5	0.0	--	--	--	--
BBgBarc US TIPS TR				-0.5	-0.5	-0.5	0.1	1.7	1.4	1.5	3.0



July 31, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Guggenheim US Bank Loans	15,990,523	4.9	5.0	0.7	2.7	0.7	--	--	--	--	--
Credit Suisse Leveraged Loans				0.8	3.2	0.8	5.8	4.6	4.2	4.7	5.2
Blackrock Strategic Income Opportunities	10,128,204	3.1	3.0	0.4	--	0.4	--	--	--	--	--
3-Month Libor Total Return USD				0.2	1.3	0.2	1.5	1.2	0.8	0.7	0.7
<b>Total GAA</b>	<b>73,914,229</b>	<b>22.7</b>	<b>23.0</b>	<b>1.3</b>	<b>-0.1</b>	<b>1.3</b>	<b>4.8</b>	<b>3.4</b>	<b>3.4</b>	<b>3.5</b>	<b>--</b>
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				1.9	1.1	1.9	8.6	6.8	6.3	6.0	5.3
GMO Global Absolute Return	24,425,675	7.5	7.7	1.2	-1.0	1.2	6.0	4.0	3.4	4.7	5.0
Blended Index				0.6	-0.3	0.6	2.0	3.3	3.5	3.7	4.8
Wellington	24,629,750	7.6	7.7	0.9	-1.6	0.9	8.3	5.4	5.9	4.2	4.8
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				1.9	1.1	1.9	8.6	6.8	6.3	6.0	5.3
Newton Global Real Return	24,858,804	7.6	7.7	1.7	2.3	1.7	0.0	--	--	--	--
60% MSCI ACWI (Net) / 40% BBgBarc Global Agg				1.7	0.9	1.7	7.9	6.4	6.0	5.6	5.1
<b>Total Hedge Funds</b>	<b>19,334,568</b>	<b>5.9</b>	<b>6.0</b>	<b>0.9</b>	<b>3.8</b>	<b>0.9</b>	<b>5.9</b>	<b>3.3</b>	<b>2.9</b>	<b>2.1</b>	<b>2.2</b>
HFRI Fund of Funds Composite Index				0.2	0.9	0.2	5.1	1.9	3.3	2.8	1.7
Lighthouse	19,334,568	5.9	6.0	0.9	6.0	0.9	7.5	5.3	--	--	--
Credit Suisse Long Shrt Eqt USD				1.4	2.1	1.4	7.8	3.3	5.7	5.3	4.6
<b>Total Real Assets</b>	<b>2,717,239</b>	<b>0.8</b>	<b>3.0</b>	<b>0.0</b>	<b>-0.5</b>	<b>0.0</b>	<b>-1.8</b>	<b>1.0</b>	<b>3.2</b>	<b>3.9</b>	<b>--</b>
NCREIF Timberland Index				0.0	1.4	0.0	3.5	3.5	6.0	5.8	4.0
John Hancock Timber Fund	2,717,239	0.8	3.0	0.0	-0.5	0.0	-1.8	1.0	3.2	3.9	0.1
NCREIF Timberland Index				0.0	1.4	0.0	3.5	3.5	6.0	5.8	4.0
<b>Private Equity</b>	<b>2,349,913</b>	<b>0.7</b>	<b>2.0</b>	<b>0.0</b>	<b>3.7</b>	<b>0.0</b>	<b>18.6</b>	<b>12.3</b>	<b>--</b>	<b>--</b>	<b>--</b>
Landmark Equity Partners XV	2,349,913	0.7	2.0	0.0	3.7	0.0	18.6	12.3	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)				0.0	7.9	0.0	16.8	12.0	13.2	12.9	10.3
<b>Total Cash</b>	<b>1,055,346</b>	<b>0.3</b>	<b>0.0</b>								
Distribution Account	1,055,346	0.3	0.0	0.1	0.9	0.1	0.7	0.5	0.3	0.2	0.3
91 Day T-Bills				0.2	1.0	0.2	1.0	0.8	0.5	0.3	0.3

## Notes:

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&amp;P 500, 10% BC High Yield, 10% JPM EMBI+

Returns are net of manager fees

John Hancock Timber market value as of 07/31/18

Landmark market value estimated as of 07/31/18

Cash account includes \$1,047 currently being held in the MetWest account and \$1,113 being held in the TCW account



July 31, 2018

# PRIVATE MARKETS UPDATE

- **The System invests in a number of private markets assets, committing capital for longer time periods to obtain illiquidity premiums and exposure to alternative markets**
- **Landmark Equity Partners XV**
  - Secondary Private Equity fund, purchasing interests in venture capital, growth equity and buyout funds, and to a lesser extent, special situation and energy funds
  - Strategy is diversified, investing in ~200 partnerships
  - Fund has a 4 year investment period and 10 year term
  - The System committed \$5 million in 2014 and has a remaining commitment of \$2.2 million
  - Since inception, the strategy has an IRR of 17.8%, net of fees (3/31/18)
- **Hancock Timberland VII**
  - Private Real Asset Timber Fund structured for the purpose of making direct and indirect investments in commercial timberland
  - The System has been invested in the strategy since 2005
  - Fund has a 3 year acquisition period, 8 year investment period, 2 year wind up period and 2 year extension period (estimated)
  - The System committed \$5 million in 2005 and there are no remaining commitments, the Fund is winding up
  - Since inception, the strategy has an IRR of 1.5%, net of fees (3/31/18)



# PENSION FUND

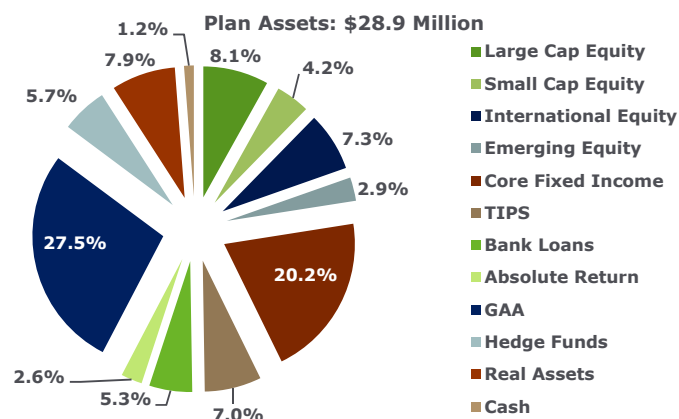
NEPC, LLC

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# EXECUTIVE SUMMARY

## ASSET ALLOCATION



## PLAN COMMENTS

### Asset Allocation

The Plan's assets were \$28.9 million as of June 30, 2018 a \$809 thousand decrease during the second quarter. Investment gains were \$290 thousand and benefit payments amounted to \$1.1 million. All asset classes are within policy ranges.

### Performance (Net of Fees)

The Fund returned 0.8% in the 2<sup>nd</sup> quarter and 4.5% fiscal-year-to-date, ranking in the 39<sup>th</sup> and 78<sup>th</sup> percentiles, respectively.

The Fund ranks below median over the longer trailing periods due to the Fund's conservative asset allocation and select manager underperformance.

Equity long/short hedge fund, domestic equity, and fixed income managers were the top contributors to overall performance during the quarter. Emerging market equity, Int'l equity and select global asset allocation managers detracted from overall performance during the quarter.



## PLAN PERFORMANCE: NET OF FEES

	QTR (%)	YTD (%)	FYTD (%)	3 YR (%)	5 YR (%)	10 YR (%)
COMPOSITE	0.8	0.3	4.5	4.0	5.1	4.5
ALLOC. INDEX	0.2	0.1	6.2	5.4	6.2	5.1
POLICY INDEX	0.2	0.0	5.9	5.5	6.3	5.7
RANK (TRUST FUNDS)	39	51	78	84	81	85

## RECENT ACTIONS/RECOMMENDATIONS

### Recent Actions

Guggenheim US Bank Loans was terminated effective July 31, 2018 and Bain Capital is in the process of being funded.

Blackrock Strategic Opportunities strategy was funded in July 2018.

Rebalancing was provided to cover benefit payments and expenses.

### Recommendations

There are no recommendations at this time.

### Investment Manager Updates

There were no new manager announcements during the second quarter.

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Pension Composite</b>	<b>28,930,221</b>	<b>100.0</b>	<b>100.0</b>	<b>0.8</b>	<b>4.5</b>	<b>0.3</b>	<b>4.5</b>	<b>5.8</b>	<b>4.0</b>	<b>5.1</b>	<b>5.0</b>	<b>4.5</b>
Allocation Index				0.2	6.2	0.1	6.2	7.1	5.4	6.2	5.9	5.1
Policy Index				0.2	5.9	0.0	5.9	7.1	5.5	6.3	6.1	5.7
<b>Total Domestic Large Cap</b>	<b>2,356,236</b>	<b>8.1</b>	<b>8.0</b>	<b>3.5</b>	<b>14.4</b>	<b>2.7</b>	<b>14.4</b>	<b>16.1</b>	<b>11.9</b>	<b>13.1</b>	<b>12.3</b>	<b>8.7</b>
S&P 500				3.4	14.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
Vanguard S&P 500 Index	2,356,236	8.1	8.0	3.5	14.4	2.7	14.4	16.1	11.9	--	--	--
S&P 500				3.4	14.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
<b>Total Small Cap Composite</b>	<b>1,206,362</b>	<b>4.2</b>	<b>4.0</b>	<b>7.7</b>	<b>17.5</b>	<b>7.7</b>	<b>17.5</b>	<b>21.0</b>	<b>11.0</b>	<b>12.2</b>	<b>11.6</b>	<b>--</b>
Russell 2000				7.8	17.6	7.7	17.6	21.0	11.0	12.5	11.8	10.6
SSgA R2000 Index Fund Non Lending	1,206,362	4.2	4.0	7.7	17.5	7.7	17.5	21.0	11.0	12.3	11.6	--
Russell 2000				7.8	17.6	7.7	17.6	21.0	11.0	12.5	11.8	10.6
<b>Total International Equity (including emerging markets)</b>	<b>2,975,855</b>	<b>10.3</b>	<b>10.0</b>	<b>-1.8</b>	<b>4.1</b>	<b>-3.0</b>	<b>4.1</b>	<b>8.9</b>	<b>2.7</b>	<b>4.0</b>	<b>3.6</b>	<b>2.4</b>
MSCI EAFE				-1.2	6.8	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
Morgan Stanley Int'l	2,126,173	7.3	7.0	-0.2	5.4	-1.7	5.4	11.0	4.3	5.5	5.3	3.5
MSCI EAFE				-1.2	6.8	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
<b>Emerging Markets Equity</b>	<b>849,682</b>	<b>2.9</b>	<b>3.0</b>	<b>-5.6</b>	<b>0.9</b>	<b>-6.1</b>	<b>0.9</b>	<b>4.2</b>	<b>-0.8</b>	<b>0.3</b>	<b>--</b>	<b>--</b>
MSCI Emerging Markets				-8.0	8.2	-6.7	8.2	15.7	5.6	5.0	1.4	2.3
Mondrian EM Small Cap	849,682	2.9	3.0	-5.6	0.9	-6.1	0.9	4.2	-0.8	--	--	--
MSCI Emerging Markets Small Cap				-8.6	5.6	-8.5	5.6	11.2	2.5	4.3	1.4	4.4
<b>Total Fixed Income</b>	<b>10,142,945</b>	<b>35.1</b>	<b>34.5</b>	<b>0.2</b>	<b>0.7</b>	<b>-0.8</b>	<b>0.7</b>	<b>0.6</b>	<b>2.3</b>	<b>2.6</b>	<b>3.2</b>	<b>4.8</b>
BBgBarc US Aggregate TR				-0.2	-0.4	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Total Bond Market Index	5,831,101	20.2	20.0	-0.2	-0.5	-1.6	-0.5	-0.5	1.7	--	--	--
BBgBarc US Aggregate TR				-0.2	-0.4	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Inflation-Protected Securities	2,019,927	7.0	7.0	0.8	1.9	-0.1	1.9	--	--	--	--	--
BBgBarc US TIPS TR				0.8	2.1	0.0	2.1	0.7	1.9	1.7	2.1	3.0
Guggenheim US Bank Loans	1,542,736	5.3	5.0	0.9	4.1	2.0	4.1	--	--	--	--	--
Credit Suisse Leveraged Loans				0.8	4.7	2.4	4.7	6.1	4.3	4.2	4.6	5.0
BlackRock Strategic Income Opportunities	749,182	2.6	2.5	--	--	--	--	--	--	--	--	--
3-Month Libor Total Return USD				0.6	1.8	1.1	1.8	1.4	1.1	0.8	0.7	0.7



June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Total GAA</b>	7,966,132	27.5	27.5	0.1	2.7	-0.9	2.7	4.9	2.4	3.7	2.9	--
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	7.4	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
Wellington	3,995,125	13.8	13.8	-1.6	4.0	-2.3	4.0	9.9	5.0	6.5	4.1	--
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	7.4	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
Newton Global Real Return	3,971,007	13.7	13.8	1.8	1.1	0.6	1.1	-0.1	--	--	--	--
60% MSCI ACWI (Net) / 40% CITI WGBI				-1.0	7.2	-0.6	7.2	8.2	6.2	6.2	5.1	4.6
<b>Total Alternative Investments</b>	1,642,216	5.7	5.0	2.3	7.1	3.0	7.1	6.4	3.1	3.6	2.4	--
HFRI Fund of Funds Composite Index				0.4	5.1	0.7	5.1	5.8	1.9	3.5	2.8	1.4
Lighthouse	1,642,216	5.7	5.0	2.9	10.2	5.1	10.2	7.9	--	--	--	--
Credit Suisse Long Shrt Eqt USD				-0.3	7.1	0.7	7.1	7.7	3.3	5.8	5.1	4.1
<b>Total Real Assets</b>	2,286,633	7.9	8.0									
Principal	2,286,633	7.9	8.0	2.2	8.1	4.1	8.1	8.5	9.4	10.6	11.1	4.7
NCREIF ODCE				2.1	8.4	4.3	8.4	8.2	9.4	11.0	11.4	5.3
<b>Total Cash</b>	353,840	1.2	3.0									
Distribution Account	353,840	1.2	3.0	0.4	1.1	0.7	1.1	0.6	0.4	0.3	0.2	0.3
91 Day T-Bills				0.5	1.4	0.8	1.4	1.0	0.7	0.4	0.3	0.3

Notes:

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&amp;P 500, 10% BC High Yield, 10% JPM EMBI+

Returns are net of manager fees



June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Pension Composite</b>	<b>28,849,074</b>	<b>100.0</b>	<b>100.0</b>	<b>0.9</b>	<b>1.2</b>	<b>0.9</b>	<b>4.7</b>	<b>5.2</b>	<b>4.3</b>	<b>4.8</b>	<b>5.2</b>	<b>4.6</b>
Allocation Index				1.2	1.3	1.2	5.9	6.6	5.6	5.8	6.1	5.3
Policy Index				1.1	1.1	1.1	5.5	6.5	5.7	6.0	6.3	5.8
<b>Total Domestic Large Cap</b>	<b>2,343,430</b>	<b>8.1</b>	<b>8.0</b>	<b>3.7</b>	<b>6.5</b>	<b>3.7</b>	<b>16.3</b>	<b>16.1</b>	<b>12.5</b>	<b>12.8</b>	<b>13.4</b>	<b>9.1</b>
S&P 500				3.7	6.5	3.7	16.2	16.1	12.5	13.1	14.2	10.7
Vanguard S&P 500 Index	2,343,430	8.1	8.0	3.7	6.5	3.7	16.3	16.1	12.5	--	--	--
S&P 500				3.7	6.5	3.7	16.2	16.1	12.5	13.1	14.2	10.7
<b>Total Small Cap Composite</b>	<b>1,127,392</b>	<b>3.9</b>	<b>4.0</b>	<b>1.7</b>	<b>9.5</b>	<b>1.7</b>	<b>18.7</b>	<b>18.6</b>	<b>12.1</b>	<b>11.1</b>	<b>12.4</b>	<b>--</b>
Russell 2000				1.7	9.5	1.7	18.7	18.6	12.0	11.3	12.7	10.4
SSgA R2000 Index Fund Non Lending	1,127,392	3.9	4.0	1.7	9.5	1.7	18.7	18.6	12.1	11.1	12.5	--
Russell 2000				1.7	9.5	1.7	18.7	18.6	12.0	11.3	12.7	10.4
<b>Total International Equity (including emerging markets)</b>	<b>2,985,033</b>	<b>10.3</b>	<b>10.0</b>	<b>0.3</b>	<b>-2.7</b>	<b>0.3</b>	<b>3.6</b>	<b>7.4</b>	<b>2.7</b>	<b>3.5</b>	<b>3.8</b>	<b>2.9</b>
MSCI EAFE				2.5	-0.4	2.5	6.4	11.9	5.0	5.9	5.5	3.4
Morgan Stanley Int'l	2,148,614	7.4	7.0	1.1	-0.7	1.1	5.1	9.8	4.1	5.0	5.6	4.1
MSCI EAFE				2.5	-0.4	2.5	6.4	11.9	5.0	5.9	5.5	3.4
<b>Emerging Markets Equity</b>	<b>836,419</b>	<b>2.9</b>	<b>3.0</b>	<b>-1.7</b>	<b>-7.7</b>	<b>-1.7</b>	<b>-0.3</b>	<b>2.0</b>	<b>-0.4</b>	<b>0.1</b>	<b>--</b>	<b>--</b>
MSCI Emerging Markets				2.2	-4.6	2.2	4.4	14.1	8.9	5.3	1.8	2.9
Mondrian EM Small Cap	836,419	2.9	3.0	-1.7	-7.7	-1.7	-0.3	2.0	-0.4	--	--	--
MSCI Emerging Markets Small Cap				1.2	-7.3	1.2	3.2	9.5	5.8	4.5	1.3	4.8
<b>Total Fixed Income</b>	<b>10,149,042</b>	<b>35.2</b>	<b>34.5</b>	<b>0.1</b>	<b>-0.7</b>	<b>0.1</b>	<b>0.3</b>	<b>0.2</b>	<b>2.1</b>	<b>2.5</b>	<b>3.0</b>	<b>4.8</b>
BBgBarc US Aggregate TR				0.0	-1.6	0.0	-0.8	-0.7	1.5	2.2	2.3	3.7
Vanguard Total Bond Market Index	5,833,713	20.2	20.0	0.0	-1.6	0.0	-0.9	-0.8	1.4	--	--	--
BBgBarc US Aggregate TR				0.0	-1.6	0.0	-0.8	-0.7	1.5	2.2	2.3	3.7
Vanguard Inflation-Protected Securities	2,010,141	7.0	7.0	-0.5	-0.6	-0.5	0.9	--	--	--	--	--
BBgBarc US TIPS TR				-0.5	-0.5	-0.5	1.2	0.1	1.7	1.4	1.5	3.0
Guggenheim US Bank Loans	1,553,154	5.4	5.0	0.7	2.7	0.7	4.0	--	--	--	--	--
Credit Suisse Leveraged Loans				0.8	3.2	0.8	4.7	5.8	4.6	4.2	4.7	5.2
BlackRock Strategic Income Opportunities	752,034	2.6	2.5	0.4	--	0.4	--	--	--	--	--	--
3-Month Libor Total Return USD				0.2	1.3	0.2	1.9	1.5	1.2	0.8	0.7	0.7



July 31, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Total GAA</b>	<b>8,078,582</b>	<b>28.0</b>	<b>27.5</b>	<b>1.4</b>	<b>0.5</b>	<b>1.4</b>	<b>3.5</b>	<b>4.3</b>	<b>3.2</b>	<b>3.5</b>	<b>3.1</b>	<b>--</b>
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				1.9	1.1	1.9	6.9	8.6	6.8	6.3	6.0	5.3
Wellington	4,038,920	14.0	13.8	1.0	-1.4	1.0	3.1	8.4	5.5	6.0	4.4	4.7
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				1.9	1.1	1.9	6.9	8.6	6.8	6.3	6.0	5.3
Newton Global Real Return	4,039,662	14.0	13.8	1.7	2.3	1.7	3.8	0.1	--	--	--	--
60% MSCI ACWI (Net) / 40% CITI WGBI				1.6	1.1	1.6	6.4	7.5	6.5	5.8	5.4	4.9
<b>Total Alternative Investments</b>	<b>1,656,574</b>	<b>5.7</b>	<b>5.0</b>	<b>0.9</b>	<b>3.9</b>	<b>0.9</b>	<b>7.3</b>	<b>5.9</b>	<b>3.4</b>	<b>3.5</b>	<b>2.4</b>	<b>--</b>
HFRI Fund of Funds Composite Index				0.2	0.9	0.2	4.3	5.1	1.9	3.3	2.8	1.7
Lighthouse	1,656,574	5.7	5.0	0.9	6.0	0.9	10.3	7.5	5.3	--	--	--
Credit Suisse Long Shrt Eqt USD				1.4	2.1	1.4	6.6	7.8	3.3	5.7	5.3	4.6
<b>Total Real Assets</b>	<b>2,302,880</b>	<b>8.0</b>	<b>8.0</b>									
Principal	2,302,880	8.0	8.0	0.7	4.8	0.7	8.1	8.5	9.4	10.7	11.1	4.7
NCREIF ODCE				0.0	4.3	0.0	8.4	8.2	9.4	11.0	11.4	5.3
<b>Total Cash</b>	<b>206,142</b>	<b>0.7</b>	<b>3.0</b>									
Distribution Account	206,142	0.7	3.0	0.2	0.8	0.2	1.2	0.7	0.5	0.3	0.2	0.3
91 Day T-Bills				0.2	1.0	0.2	1.5	1.0	0.8	0.5	0.3	0.3

Notes:

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&amp;P 500, 10% BC High Yield, 10% JPM EMBI+

Returns are net of manager fees



July 31, 2018

# OPERATING FUND

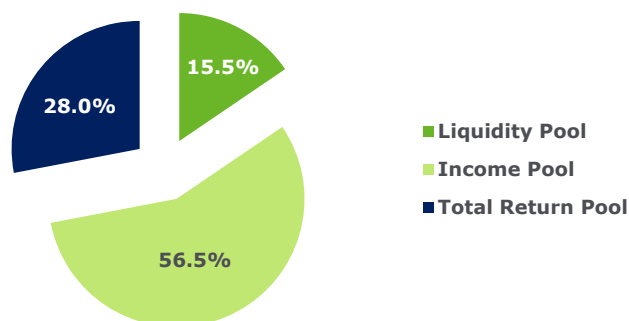
NEPC, LLC

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# EXECUTIVE SUMMARY

## ASSET ALLOCATION

Plan Assets: \$256.3 Million



## PLAN COMMENTS

### Asset Allocation

The Fund's assets as of June 30, 2018 were \$256.3 million. This represents a \$39.7 million decrease from the previous quarter.

The Liquidity Pool (15.5% v 25.0%), Income Pool (56.5% v 50.0%) and Total Return Pool (28.0% v 25.0%) are all within allowable ranges. Throughout the year, asset allocation will change based on cash inflows and outflows. NEPC reviews this on a monthly basis.

### Performance (Net of Fees)

The Fund returned 0.3% during the 2<sup>nd</sup> quarter and 2.4% fiscal-year-to-date.

## FUND PERFORMANCE: NET OF FEES

	QTR (%)	YTD (%)	FYTD (%)	3 YR (%)	5 YR (%)	10 YR (%)
--	---------	---------	----------	----------	----------	-----------

COMPOSITE	0.3	0.3	2.4	2.2	2.2	2.4
ALLOCATION INDEX	0.3	0.4	2.7	2.4	2.5	--

## RECENT ACTIONS/RECOMMENDATIONS

### Recent Actions

The System implemented a portfolio rebalance during June to bring asset allocation in-line with policy targets.

### Recommendations

There are no recommendations at this time.

### Investment Manager Updates

There were no new manager announcements during the second quarter.



June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Operating Funds Composite</b>	<b>256,267,533</b>	<b>100.0</b>	<b>100.0</b>	<b>0.3</b>	<b>0.3</b>	<b>2.4</b>	<b>3.0</b>	<b>2.2</b>	<b>2.2</b>	<b>2.3</b>	<b>2.4</b>
Allocation Index				0.3	0.4	2.7	3.0	2.3	2.4	2.3	--
<b>Liquidity Pool Composite</b>	<b>39,694,500</b>	<b>15.5</b>	<b>25.0</b>	<b>0.4</b>	<b>0.7</b>	<b>1.2</b>	<b>0.8</b>	<b>0.7</b>	<b>0.5</b>	<b>0.4</b>	<b>0.5</b>
State Pool	13,408,045	5.2		0.4	0.7	1.3	1.0	0.8	0.6	0.5	0.6
BOA General Fund	4,032,039	1.6		0.2	0.2	0.2	0.1	0.1	0.1	0.1	--
Federated Gov't Obligations	1,909,623	0.7		0.4	0.7	1.2	--	--	--	--	--
JP Morgan US Gov't Money Market Fund	20,344,793	7.9		0.4	0.7	1.1	--	--	--	--	--
Citi 3mth Treasury Bill				0.4	0.8	1.3	0.9	0.6	0.4	0.3	0.3
<b>Income Pool Composite</b>	<b>144,703,307</b>	<b>56.5</b>	<b>50.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.8</b>	<b>1.4</b>	<b>1.7</b>	<b>1.8</b>	<b>2.0</b>	<b>3.3</b>
Income Research + Management	77,270,112	30.2	26.7	0.3	0.0	0.1	0.3	0.8	1.0	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR				0.3	0.1	0.2	0.3	0.7	0.8	0.9	1.7
BlackRock Strategic Income Opportunities	19,313,054	7.5	6.7	-0.9	-0.5	1.8	3.6	2.3	--	--	--
3-Month Libor Total Return USD				0.6	1.1	1.8	1.4	1.1	0.8	0.7	0.7
Loomis Sayles Bank Loans	18,704,093	7.3	6.7	0.4	1.5	3.3	4.2	3.3	3.3	3.8	4.1
Loomis Bank Loans Custom Index				0.5	1.6	3.7	4.4	3.8	4.0	4.4	5.2
Vanguard Total Bond Market Instl Fund	14,719,907	5.7	5.0	-0.2	-1.6	-0.5	-0.5	1.7	2.2	2.5	--
BBgBarc US Aggregate TR				-0.2	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Inflation-Protected Securities	14,696,141	5.7	5.0	0.8	-0.1	1.9	--	--	--	--	--
BBgBarc US TIPS TR				0.8	0.0	2.1	0.7	1.9	1.7	2.1	3.0
<b>Total Return Pool Composite</b>	<b>71,869,726</b>	<b>28.0</b>	<b>25.0</b>	<b>0.5</b>	<b>0.5</b>	<b>6.5</b>	<b>8.2</b>	<b>5.2</b>	<b>4.9</b>	<b>4.8</b>	<b>4.7</b>
Lighthouse	14,816,485	5.8	5.0	2.9	5.1	10.2	7.9	--	--	--	--
Credit Suisse Long Shrt Eqt USD				-0.3	0.7	7.1	7.7	3.3	5.8	5.1	4.1
Newton Global Real Return	18,185,437	7.1	6.3	1.8	0.5	1.1	--	--	--	--	--
60% MSCI ACWI (Net)/ 40% BBgBarc Global Agg				-0.8	-0.8	7.0	8.5	6.1	6.3	5.3	4.8
PIMCO All Asset	18,087,605	7.1	6.3	-2.4	-2.1	4.2	7.5	4.9	3.9	4.1	5.1
Blended Index				0.1	-0.9	1.5	2.3	3.3	3.6	3.8	4.7
Vanguard Total World Stock Index	20,780,199	8.1	7.5	0.4	-0.1	11.1	15.0	8.5	9.8	--	--
FTSE Global All Cap Index				0.8	0.0	11.5	14.5	7.3	8.1	6.3	4.3

Returns are net of manager fees.

The inception date for the allocation index is 07/01/2009

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate / 30% BC U.S. TIPS 1-10YR / 10% S&amp;P 500 / 10% BC High Yield / 10% JPM EMBI+

Loomis Bank Loans Custom Index blends performance of "S&amp;P/LSTA Leveraged Loan Index" before 9/1/2014 and "S&amp;P/LSTA Leveraged BB Loan Index" after 9/1/2014.

Composite excludes external loans.



June 30, 2018



# TOTAL PLAN PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Operating Funds Composite</b>	<b>272,084,004</b>	<b>100.0</b>	<b>100.0</b>	<b>0.6</b>	<b>0.9</b>	<b>0.6</b>	<b>2.8</b>	<b>2.4</b>	<b>2.1</b>	<b>2.3</b>	<b>2.5</b>
Allocation Index				0.6	0.9	0.6	2.9	2.4	2.4	2.4	--
<b>Liquidity Pool Composite</b>	<b>68,037,361</b>	<b>25.0</b>	<b>25.0</b>	<b>0.1</b>	<b>0.8</b>	<b>0.1</b>	<b>0.9</b>	<b>0.7</b>	<b>0.5</b>	<b>0.4</b>	<b>0.5</b>
State Pool	33,446,695	12.3		0.1	0.8	0.1	1.0	0.8	0.6	0.5	0.6
BOA General Fund	5,393,711	2.0		0.0	0.2	0.0	0.1	0.1	0.1	0.1	--
Federated Gov't Obligations	1,015,187	0.4		0.2	0.9	0.2	--	--	--	--	--
JP Morgan US Gov't Money Market Fund	28,181,768	10.4		0.2	0.9	0.2	--	--	--	--	--
Citi 3mth Treasury Bill				0.2	0.9	0.2	1.0	0.7	0.4	0.3	0.3
<b>Income Pool Composite</b>	<b>135,938,099</b>	<b>50.0</b>	<b>50.0</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>1.2</b>	<b>1.7</b>	<b>1.7</b>	<b>2.0</b>	<b>3.1</b>
Income Research + Management	74,364,601	27.3	26.7	0.1	0.1	0.1	0.3	0.8	0.9	--	--
BBGBarc US Govt/Credit 1-3 Yr. TR				0.1	0.1	0.1	0.3	0.7	0.8	0.8	1.6
BlackRock Strategic Income Opportunities	17,382,627	6.4	6.7	0.4	-0.1	0.4	3.2	2.4	--	--	--
3-Month Libor Total Return USD				0.2	1.3	0.2	1.5	1.2	0.8	0.7	0.7
Loomis Sayles Bank Loans	18,821,576	6.9	6.7	0.7	2.2	0.7	4.0	3.4	3.2	3.9	4.2
Loomis Bank Loans Custom Index				0.7	2.4	0.7	4.2	3.9	4.0	4.5	5.4
Vanguard Total Bond Market Instl' Fund	12,728,898	4.7	5.0	0.0	-1.6	0.0	-0.8	1.4	2.2	2.3	--
BBGBarc US Aggregate TR				0.0	-1.6	0.0	-0.7	1.5	2.2	2.3	3.7
Vanguard Inflation-Protected Securities	12,640,397	4.6	5.0	-0.5	-0.6	-0.5	--	--	--	--	--
BBGBarc US TIPS TR				-0.5	-0.5	-0.5	0.1	1.7	1.4	1.5	3.0
<b>Total Return Pool Composite</b>	<b>68,108,544</b>	<b>25.0</b>	<b>25.0</b>	<b>1.8</b>	<b>2.3</b>	<b>1.8</b>	<b>7.8</b>	<b>5.9</b>	<b>4.9</b>	<b>5.0</b>	<b>5.0</b>
Lighthouse	14,946,022	5.5	5.0	0.9	6.0	0.9	7.5	5.2	--	--	--
Credit Suisse Long Shrt Eqt USD				1.4	2.1	1.4	7.8	3.3	5.7	5.3	4.6
Newton Global Real Return	17,495,767	6.4	6.3	1.7	2.3	1.7	--	--	--	--	--
60% MSCI ACWI (Net)/ 40% BBGBarc Global Agg				1.7	0.9	1.7	7.9	6.4	6.0	5.6	5.1
PIMCO All Asset	17,297,373	6.4	6.3	1.2	-1.0	1.2	6.9	5.8	3.9	4.0	5.2
Blended Index				0.6	-0.3	0.6	2.0	3.3	3.5	3.7	4.8
Vanguard Total World Stock Index	18,369,382	6.8	7.5	3.0	2.8	3.0	14.4	9.4	9.4	--	--
FTSE Global All Cap Index				2.8	2.8	2.8	13.6	8.1	7.7	7.1	4.9

## Notes:

Returns are net of manager fees.

The inception date for the allocation index is 07/01/2009

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate / 30% BC U.S. TIPS 1-10YR / 10% S&amp;P 500 / 10% BC High Yield / 10% JPM EMBI+

Loomis Bank Loans Custom Index blends performance of "S&amp;P/LSTA Leveraged Loan Index" before 9/1/2014 and "S&amp;P/LSTA Leveraged BB Loan Index" after 9/1/2014.

Composite excludes external loans.

Blackrock SIO changed its share class in May 2018 to BSIKX



July 31, 2018

# MANAGER DUE DILIGENCE MONITOR

NEPC, LLC

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# DUE DILIGENCE MONITOR

The items below summarize the recent quarter's performance and any changes or announcements from your Plan managers/funds. A "-" indicates there were no material announcements. A "Yes" indicates there was an announcement and a summary is provided separately. NEPC's Due Diligence Committee meets every two weeks to review events as they relate to investment managers and determines if any action should be taken by NEPC and/or by our clients. They rate events: No Action, Watch, Hold, Client Review or Terminate. With respect to Performance, a "-" indicates the manager/fund performed in line with the majority of managers/funds in the category; only outliers (placement in the Top or Bottom Quartile) are highlighted. Your Consultant's Recommendation is refreshed quarterly in view of the recent quarter's developments (performance, manager events, and any of the longer-term trending data). NEPC considers ourselves to be a fiduciary, as ERISA defines the term in Section 3(21).

Fund	MIP	Pension	Operating	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
Aberdeen	X			No	Maintain Hold
Lighthouse	X	X	X	No	Maintain Watch
PIMCO			X	No	Maintain Watch

NEPC Due Diligence Committee Recommendation Key	
<b>No Action</b>	Informational items have surfaced; no action is recommended.
<b>Watch</b>	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
<b>Hold</b>	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
<b>Client Review</b>	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
<b>Terminate</b>	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.



# APPENDIX

NEPC, LLC

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# GLOSSARY OF TERMS

**Alpha** - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

**Alpha Jensen** - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

**Annualized Excess Return over Benchmark** - Annualized fund return minus the annualized benchmark return for the calculated return.

**Annualized Return** - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

**Beta** - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

**Information Ratio** - A measure of the risk adjusted return of a financial security, asset, or portfolio.

*Formula:*  

$$\frac{(\text{Annualized Return of Portfolio} - \text{Annualized Return of Benchmark}) / \text{Annualized Standard Deviation}(\text{Period Portfolio Return} - \text{Period Benchmark Return})}{\text{To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.}}$$

**R-Squared** - Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

**Sharpe Ratio** - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

**Sortino Ratio** - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

*Formula:*  

$$\text{Calculation Average } (X-Y) / \text{Downside Deviation } (X-Y) * 2$$
*Where X=Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)*

**Standard Deviation** - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

*Formula:*  

$$\frac{(\text{Annualized Return of Portfolio} - \text{Annualized Return of Risk Free}) / \text{Annualized Standard Deviation}(\text{Portfolio Returns})}{\text{}}$$

**Tracking Error** - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

*Formula:*  

$$\text{Tracking Error} = \text{Standard Deviation } (X-Y) * \sqrt{(\text{\# of periods per year})}$$
*Where X = periods portfolio return and Y = the period's benchmark return*  
*For monthly returns, the periods per year = 12*  
*For quarterly returns, the periods per year = 4*

**Treynor Ratio** - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

*Formula:*  

$$\frac{(\text{Portfolio Average Return} - \text{Average Return of Risk-Free Rate}) / \text{Portfolio Beta}}{\text{}}$$

**Up/Down Capture Ratio** - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

$$\text{UpsideCapture} = \frac{\text{TotalReturn}(\text{FundReturns}) / \text{TotalReturns}(\text{BMReturn})}{\text{when Period Benchmark Return is } > = 0}$$

$$\text{DownsideCapture} = \frac{\text{TotalReturn}(\text{FundReturns}) / \text{TotalReturns}(\text{BMReturn})}{\text{when Benchmark } < 0}$$

Data Source: InvestorForce



June 30, 2018

# INFORMATION DISCLAIMER

## Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may not be available from the source or may be preliminary and subject to change.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodial bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- This report is provided as a management aid for the client's internal use only. Performance contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

## Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of Return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.





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## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Performance Review – Managed Investment Pool

2. **INITIATED BY:** Kelly Martin, Chair

3. **BOARD INFORMATION:** X

**BOARD ACTION:**

4. **OUTCOME:**

Primary Outcomes:

Enhance fiscal positioning

**BOARD POLICY:**

Section 709 - Investments

5. **BACKGROUND:**

Enclosed for your information is the Managed Investment Pool performance report for the quarter ended June 30, 2018.

Jay Roney of NEPC will provide a brief review at the September 28, 2018 Investment Committee meeting.

9/18/2018

## **SECOND QUARTER 2018 INVESTMENT REVIEW**

### **UNIVERSITY OF MAINE SYSTEM MANAGED INVESTMENT POOL**

**September 28, 2018**

**Jay E. Roney, Partner**

**Kelly Regan, Senior Consultant**

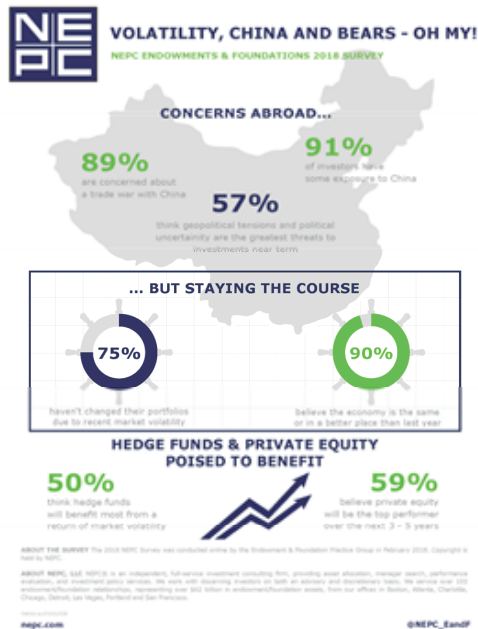


BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO



# HIGHLIGHTS OF SECOND QUARTER HAPPENINGS AT NEPC

4.1



## NEPC INSIGHTS

- Taking Stock: Globalization Backlash: Tariffs are a Dangerous Game
- Taking Stock: A Millennial's Take on ESG and Defined Contribution Plans
- The Need for Investment Discipline: Review, Revise and Repeat
- 2018 First Quarter Market Thoughts
- The State of Strategic Investing in Healthcare
- Taking Stock: Corporate Pension Plans: A Changing Yield Curve and Q1 Liability Performance
- Nothing Ventured, Nothing Gained: The European VC Opportunity
- Taking Stock: Megatrends – The Forces Driving Our Future
- May 2018 – Endowment & Foundation Survey Results & Infographic
- Taking Stock: A Roundup of NEPC's 2018 Investment Conference
- Taking Stock: Holding the Investment Industry to a Higher Standard
- Taking Stock: China's Demographic Solution: Too Little Too Late?
- Putting the Pieces Together: Equity Portfolio Construction for Private Wealth Clients
- Taking Stock: Is This the Ghost of Taper Tantrums Past?
- Taking Stock: What's 'Appening with Financial Wellness?

## WEBINAR REPLAYS

- 8<sup>th</sup> Annual Investment Manager Webinar Replay
- NEPC Q1 2018 Quarterly Markets Call

To download NEPC's recent insights and webinar replays, visit: [www.NEPC.com/insights](http://www.NEPC.com/insights)



# MARKET OUTLOOK













NEPC, LLC

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# PERFORMANCE OVERVIEW

4.1

## Q2 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
											
5.0%	-3.9	12 bps	3.4%	-1.2%	-8.0%	-0.2%	1.0%	-3.5%	14.2%	-5.4%	8.3%

- **US stocks increased on the quarter, supported by strong earnings growth**
- **Emerging market equities and currencies weakened this quarter as trade concerns and Federal Reserve interest rate increases weighed on markets**
  - The US dollar reversed its first quarter decline and increased relative to a basket of major developed market currencies
- **The US yield curve continued to flatten as the second Fed rate hike of 2018 pushed short-term interest rates higher**

Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Developed Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), High Yield (Barclays US High Yield Index), Dollar EMD (JPM Emerging Market Bond Index), Crude Oil (WTI Crude Oil Spot), Gold (Gold Price Spot), and REITS (NAREIT Composite Index).



June 30, 2018

# PERFORMANCE SUMMARY

## AS OF JUNE 30, 2018

<b>Domestic Equity Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Large Core	S&P 500	3.4%	2.6%	14.4%	11.9%	13.4%	10.2%
Small Core	Russell 2000	7.8%	7.7%	17.6%	11.0%	12.5%	10.6%
Small Growth	Russell 2000 Growth	7.2%	9.7%	21.9%	10.6%	13.6%	11.2%
Small Value	Russell 2000 Value	8.3%	5.4%	13.1%	11.2%	11.2%	9.9%
Large Core	Russell 1000	3.6%	2.9%	14.5%	11.6%	13.4%	10.2%
Large Growth	Russell 1000 Growth	5.8%	7.3%	22.5%	15.0%	16.4%	11.8%
Large Value	Russell 1000 Value	1.2%	-1.7%	6.8%	8.3%	10.3%	8.5%
Mid Core	S&P Mid Cap 400	4.3%	3.5%	13.5%	10.9%	12.7%	10.8%
REIT	NAREIT Composite	8.3%	1.2%	4.9%	9.3%	8.9%	8.3%
<b>Int'l Equity Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
International Developed	MSCI EAFE	-1.2%	-2.7%	6.8%	4.9%	6.4%	2.8%
Emerging Equity	MSCI EM	-8.0%	-6.7%	8.2%	5.6%	5.0%	2.3%
Small Cap Int'l	S&P EPAC SmallCap	-1.6%	-1.9%	11.7%	9.6%	11.5%	6.5%
World ex-US	MSCI ACWI ex-US	-2.6%	-3.8%	7.3%	5.1%	6.0%	2.5%
<b>Domestic FI Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Core Bonds	Barclays Aggregate	-0.2%	-1.6%	-0.4%	1.7%	2.3%	3.7%
Municipal Bond	Barclays Municipal	0.9%	-0.2%	1.6%	2.9%	3.5%	4.4%
High Yield	Barclays US High Yield	1.0%	0.2%	2.6%	5.5%	5.5%	8.2%
Intermediate Gov/Cred	Barclays Intern. Gov/Credit	0.0%	-1.0%	-0.6%	1.2%	1.6%	3.1%
Long Gov/Credit	Barclays Long Gov/Credit	-1.4%	-5.0%	-0.8%	4.3%	5.1%	6.8%
Long Credit	Barclays Long Credit	-2.7%	-6.4%	-1.3%	5.0%	5.5%	7.3%
Long Treasuries	Barclays US 20+ Yr Treas	0.4%	-3.0%	0.0%	3.6%	4.8%	6.2%
Cash	BofA ML US 3-Month T-Bill	0.5%	0.8%	1.4%	0.7%	0.4%	0.4%
Inflation	Barclays US TIPS 1-10 Yr	0.6%	0.2%	1.5%	1.5%	1.2%	2.3%
STRIPS	Barclays 20+ Yr STRIPS	0.9%	-3.7%	1.3%	5.7%	7.2%	8.6%
<b>Global FI Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
World Gov. Bonds	Citigroup WGBI	-3.4%	-0.9%	1.9%	2.8%	1.1%	2.1%
Em. Mkt. Bonds (Local)	JPM GBI-EM Glob. Div.	-10.4%	-6.4%	-2.3%	2.0%	-1.4%	2.6%
Global Inflation	Barclays Global ILB	-3.3%	-1.7%	3.3%	2.3%	2.5%	2.5%
<b>Diversified Benchmark</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Diversified	Diversified*	1.9%	0.8%	8.2%	7.3%	8.2%	6.9%
<b>Alternative Benchmarks</b>		<b>Qtr.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>10 Yr.</b>
Commodities	Bloomberg Commodity Index	0.4%	-0.0%	7.3%	-4.5%	-6.4%	-9.0%
Real Estate	NCREIF Property Index**	1.7%	1.7%	7.1%	8.7%	10.0%	6.1%

\* 35% LC, 10% SC, 12% Int'l, 3% Emerging, 25% FI, 5% HY, 5% Global FI, 5% REITS

\*\*As of 3/31/2018



June 30, 2018

# CURRENT OPPORTUNITIES CHANGES

## Current Opportunities Changes

### The following actions were removed from the current opportunities list:

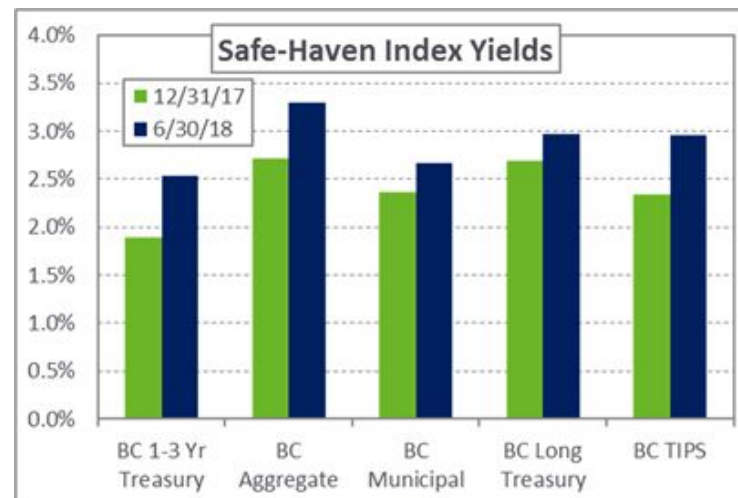
**Allocate to TIPS from Core Bonds:** *The relative value of TIPS vs Core Bonds has diminished*

**Reduce Return Seeking Credit Exposure:** *We continue to believe that lower quality credit exposure remains a funding source for safe-haven fixed income and portfolio rebalancing*

### “Raise Safe-Haven Fixed Income Exposure” replaces the actions listed above on the current opportunity list

We believe TIPS should remain a strategic allocation as a portion of safe-haven fixed income

Our recommendation reflects the improving attractiveness of safe-haven fixed income following recent increases in interest rates and the expanded potential for adverse economic outcomes



Source: (Left) Federal Reserve Bank of St. Louis

Source: (Right) Bloomberg



June 30, 2018

# EQUITY PERFORMANCE OVERVIEW

## Q2 Equity Market Summary

- **US small cap outperformed large cap as tax reform benefits helped boost earnings**
- **Trade concerns and yuan weakness weighed on Chinese returns as equity markets neared bear market territory**

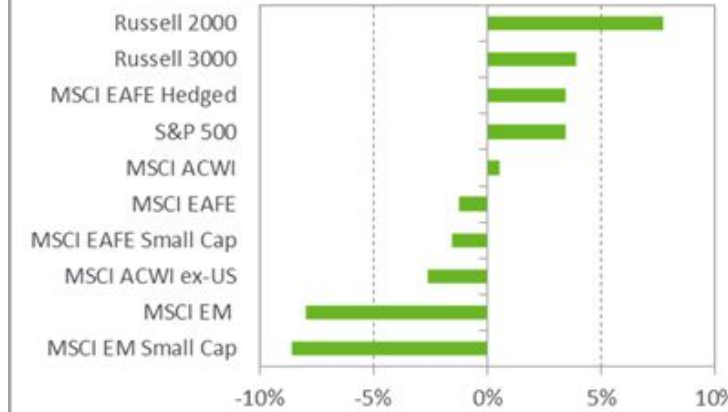
### Russell 3000 QTD Sector Return Contribution

Information Technology	1.5%
Consumer Discretionary	0.0%
Financials	0.1%
Industrials	0.4%
Consumer Staples	0.9%
Energy	0.4%
Materials	0.1%
Health Care	0.2%
Real Estate	0.0%
Telecommunication	-0.0%
Utilities	-0.1%

Source: Russell, Bloomberg

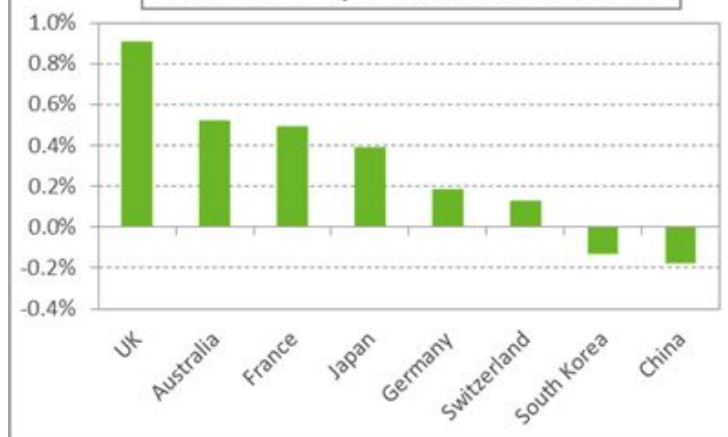


### QTD Equity Index Returns



Source: MSCI, Russell, S&amp;P, Bloomberg

### ACWI Ex-US QTD Return Contribution



Source: MSCI, Bloomberg. QTD top country contributors to index return

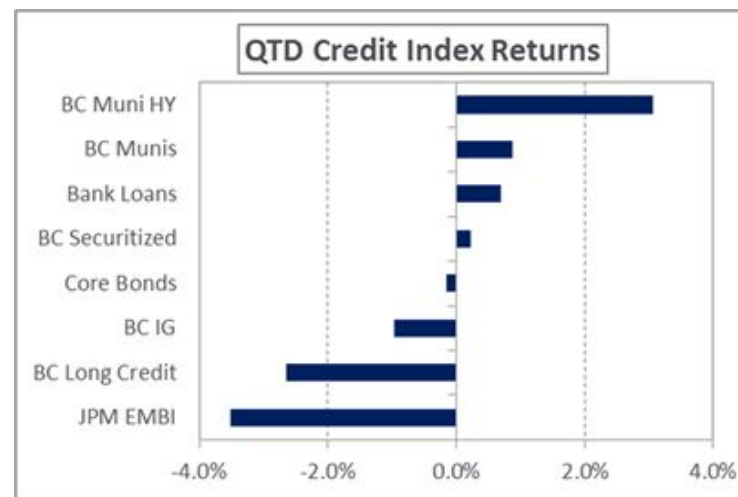
# CREDIT PERFORMANCE OVERVIEW

## Q2 Credit Market Summary

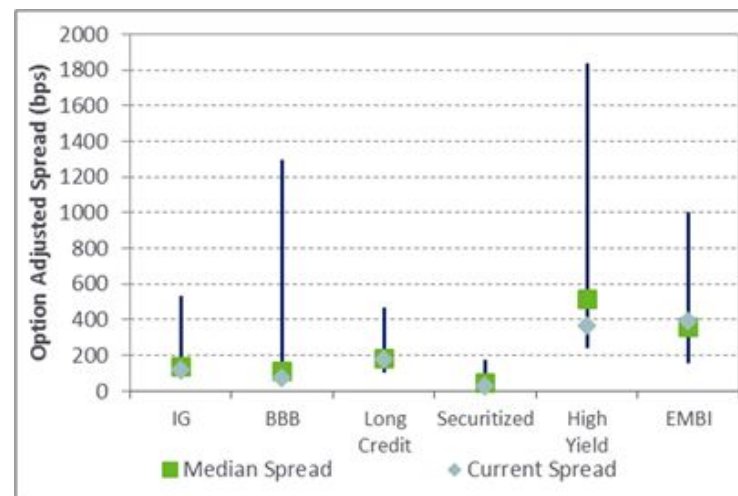
- **Credit spreads increased slightly, but remain below medians in most areas of the credit market**
- **Dollar-denominated EMD spreads increased 62 bps during the quarter, resulting in a decline of 3.5%**
- **Local currency EMD declined 10.4% as currency weakness weighed on returns**

Credit Spread (Basis Points)	03/31/18	06/30/18	Δ
BC IG Credit	103	116	13
BC Long Credit	148	174	26
BC Securitized	29	28	-1
BC High Yield	354	363	9
Muni HY	253	198	-55
JPM EMBI	326	388	62
Bank Loans - Libor	257	303	46

Source: Barclays, Merrill Lynch, JPM, Bloomberg, NEPC



Source: Barclays, JPM, S&P, Bloomberg



Source: Barclays, JPM, S&P, Bloomberg. As of 01/31/2000



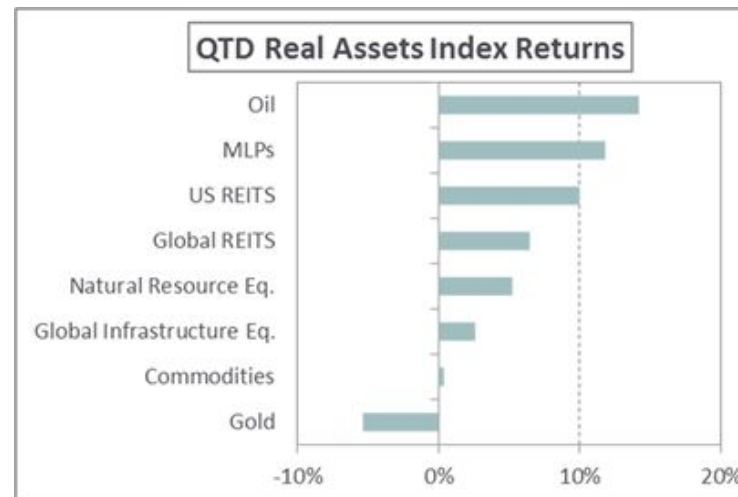
# REAL ASSETS PERFORMANCE OVERVIEW

## Q2 Real Assets Market Summary

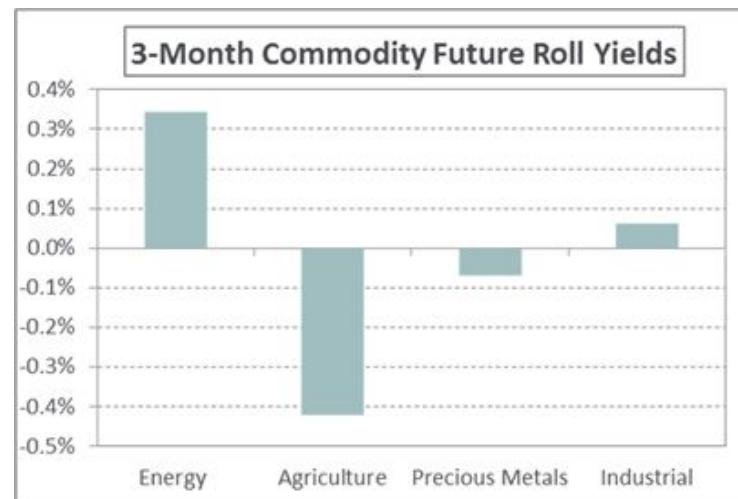
- **Crude oil increased 14.2% during the quarter as a result of tighter global supply and US-imposed sanctions on Iran**
- **Agricultural commodities broadly declined, as Chinese tariffs specifically targeted soybeans**
- **MLPs reversed steep losses from earlier in the year as industry consolidation and simplification continues**

Real Asset Yields	03/31/18	06/30/18
MLPs	8.9%	8.1%
Core Real Estate	4.5%	4.2%
US REITs	4.6%	4.4%
Global REITs	4.0%	3.7%
Global Infrastructure Equities	3.9%	4.4%
Natural Resource Equities	3.6%	3.5%
US 10-Yr Breakeven Inflation	2.1%	2.1%
Commodity Index Roll Yield	-1.6%	0.1%

Source: NCREIF, Alerian, NAREIT, S&P, Bloomberg



Source: S&P, NAREIT, Alerian, Bloomberg



Source: Bloomberg, NEPC Calculated as of 07/11/2018





# MACRO PERFORMANCE OVERVIEW

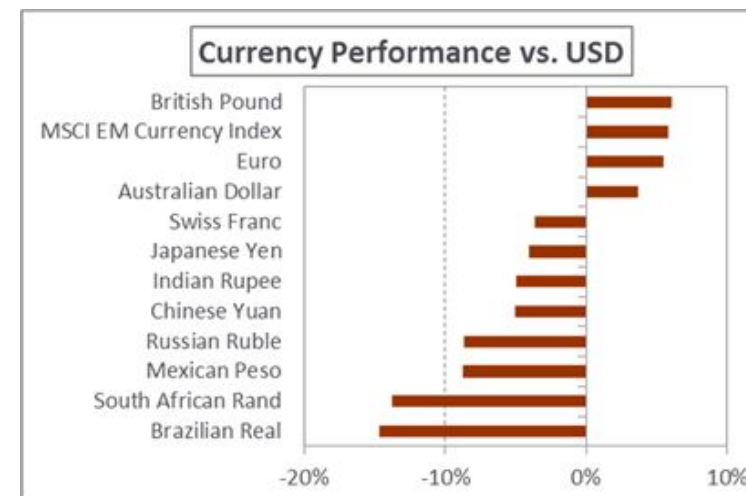
## Q2 Macro Market Summary

- The global growth outlook remains strong, particularly in the US
- Global equity market volatility fell, despite escalating tensions related to the US-China trade dispute
- The US Treasury curve continued to flatten raising concerns of an inverted curve should the Fed hike rates beyond market expectations

	Yield 03/31/18	Yield 06/30/18	Δ
US 10-Yr	2.74%	2.86%	0.12%
US 30-Yr	2.97%	2.99%	0.02%
US Real 10-Yr	0.68%	0.74%	0.05%
German 10-Yr	0.50%	0.30%	-0.20%
Japan 10-Yr	0.05%	0.04%	-0.01%
China 10-Yr	3.75%	3.48%	-0.27%
EM Local Debt	6.00%	6.59%	0.59%

Source: Bloomberg

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	1.75% - 2.00%	2.9%	The Fed increased its benchmark interest rate to 1.75% - 2.00% in June and is expected to hike rates two more times in 2018
European Central Bank	0.0%	1.7%	The ECB maintained its current benchmark interest rate, while indicating rates would remain steady at least through mid-2019.
Bank of Japan	-0.1%	1.3%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target.



Source: Bloomberg



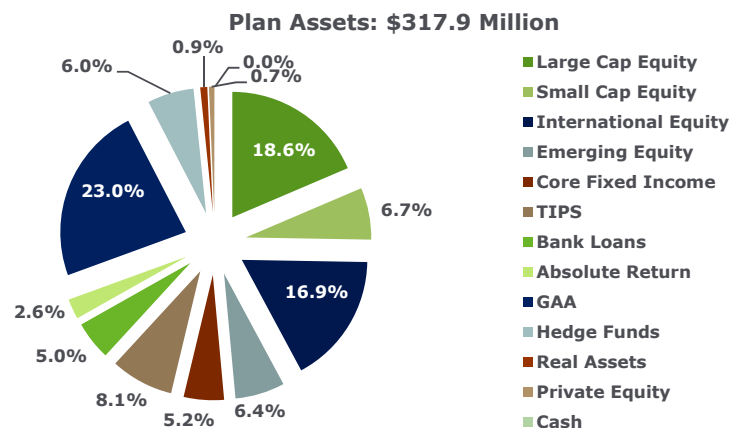
# EXECUTIVE SUMMARY

NEPC, LLC

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# EXECUTIVE SUMMARY

## ASSET ALLOCATION



## PLAN COMMENTS

### Asset Allocation

MIP assets were \$317.9 million as of June 30, 2018, a \$1.9 million increase over the quarter. During the 2<sup>nd</sup> quarter there was a \$185 thousand cash inflow and investment gains of \$1.7 million. All asset classes are within policy ranges.

### Performance (Net of Fees)

The Plan returned 0.3% in the 2<sup>nd</sup> quarter and 6.9% fiscal-year-to-date, ranking in the 70<sup>th</sup> and 74<sup>th</sup>, respectively.

Equity long/short hedge fund, domestic equity, and fixed income managers were the top contributors to overall performance during the quarter. Emerging market equity, international equity and select global asset allocation managers detracted from overall performance during the quarter.

## MIP PERFORMANCE: NET OF FEES

	QTR (%)	YTD (%)	FYTD (%)	3 YR (%)	5 YR (%)	10 YR (%)
COMPOSITE	0.3	0.1	6.9	5.3	6.1	5.5
ALLOC. INDEX	0.3	0.0	7.8	5.9	6.6	5.3
POLICY INDEX	0.3	0.2	8.2	6.5	6.9	5.8
RANK (E&F \$100-500M)	70	73	74	78	86	72

## RECENT ACTIONS/RECOMMENDATIONS

### Recent Actions

Guggenheim US Bank Loans was liquidated effective July 31 and Bain Capital is in the process of being funded.

Blackrock Strategic Opportunities strategy was funded in July 2018.

Rebalancing was provided to cover disbursements.

### Recommendations

There are no recommendations at this time.

### Investment Manager Updates

There were no new manager announcements during the second quarter.



June 30, 2018

# DUE DILIGENCE MONITOR

The items below summarize the recent quarter's performance and any changes or announcements from your Plan managers/funds. A "-" indicates there were no material announcements. A "Yes" indicates there was an announcement and a summary is provided separately. NEPC's Due Diligence Committee meets every two weeks to review events as they relate to investment managers and determines if any action should be taken by NEPC and/or by our clients. They rate events: No Action, Watch, Hold, Client Review or Terminate. With respect to Performance, a "-" indicates the manager/fund performed in line with the majority of managers/funds in the category; only outliers (placement in the Top or Bottom Quartile) are highlighted. Your Consultant's Recommendation is refreshed quarterly in view of the recent quarter's developments (performance, manager events, and any of the longer-term trending data). NEPC considers ourselves to be a fiduciary, as ERISA defines the term in Section 3(21).

Fund	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
Aberdeen	No	Maintain Hold
Lighthouse	No	Maintain Watch

NEPC Due Diligence Committee Recommendation Key	
<b>No Action</b>	Informational items have surfaced; no action is recommended.
<b>Watch</b>	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
<b>Hold</b>	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
<b>Client Review</b>	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
<b>Terminate</b>	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.



# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>MIP Composite</b>	<b>317,888,826</b>	<b>100.0</b>	<b>100.0</b>	<b>0.3</b>	<b>0.1</b>	<b>6.9</b>	<b>9.1</b>	<b>5.3</b>	<b>6.1</b>	<b>5.8</b>	<b>5.5</b>
Allocation Index				0.3	0.0	7.8	9.6	5.9	6.6	6.0	5.3
Policy Index				0.3	0.2	8.2	10.4	6.5	6.9	6.3	5.8
<b>Total Domestic Large Cap</b>	<b>58,959,272</b>	<b>18.5</b>	<b>16.0</b>	<b>3.4</b>	<b>2.6</b>	<b>14.3</b>	<b>16.0</b>	<b>11.9</b>	<b>13.4</b>	<b>12.8</b>	<b>10.5</b>
S&P 500				3.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
SSgA S&P 500	58,959,272	18.5	16.0	3.4	2.6	14.3	16.0	11.9	13.3	13.2	10.1
S&P 500				3.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
<b>Total Domestic Small/Mid Cap</b>	<b>21,272,958</b>	<b>6.7</b>	<b>6.0</b>	<b>5.7</b>	<b>7.1</b>	<b>20.4</b>	<b>21.9</b>	<b>10.7</b>	<b>12.8</b>	<b>12.0</b>	<b>11.2</b>
Russell 2500				5.7	5.5	16.2	18.0	10.3	12.3	11.9	10.7
Westfield Capital	9,988,825	3.1	3.0	5.3	9.8	25.5	24.5	11.1	13.7	12.2	11.1
Russell 2500 Growth				5.5	8.0	21.5	21.5	10.9	13.9	12.6	11.4
DFA	11,284,133	3.5	3.0	6.0	3.7	14.1	17.8	9.4	11.3	11.4	--
Russell 2000 Value				8.3	5.4	13.1	18.8	11.2	11.2	11.1	9.9
<b>Total International Equity (including emerging markets)</b>	<b>73,939,477</b>	<b>23.3</b>	<b>23.0</b>	<b>-3.0</b>	<b>-3.3</b>	<b>5.9</b>	<b>11.4</b>	<b>4.6</b>	<b>5.3</b>	<b>4.2</b>	<b>2.7</b>
MSCI EAFE				-1.2	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
Morgan Stanley	20,429,738	6.4	6.3	-0.2	-1.7	5.4	10.9	4.1	5.4	5.2	3.5
Globeflex	20,943,544	6.6	6.3	-1.0	-0.8	11.1	16.1	7.2	8.3	5.9	2.2
MSCI EAFE				-1.2	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
Kabouter International Opportunities Offshore Fund II	12,356,473	3.9	3.5	-1.6	-0.6	--	--	--	--	--	--
MSCI EAFE Small Cap				-1.6	-1.3	12.4	17.7	10.1	11.3	8.4	6.8
<b>Emerging Markets Equity</b>	<b>20,209,722</b>	<b>6.4</b>	<b>7.0</b>	<b>-8.3</b>	<b>-8.6</b>	<b>-0.7</b>	<b>5.9</b>	<b>1.4</b>	<b>1.2</b>	<b>1.0</b>	<b>--</b>
MSCI Emerging Markets				-8.0	-6.7	8.2	15.7	5.6	5.0	1.4	2.3
Aberdeen Emerging Mkts	9,713,461	3.1	3.5	-11.1	-11.0	-2.6	7.2	3.4	2.1	1.6	--
MSCI Emerging Markets				-8.0	-6.7	8.2	15.7	5.6	5.0	1.4	2.3
Mondrian EM Small Cap	10,496,261	3.3	3.5	-5.6	-6.1	0.9	4.2	-0.8	--	--	--
MSCI Emerging Markets Small Cap				-8.6	-8.5	5.6	11.2	2.5	4.3	1.4	4.4
<b>Total Fixed Income</b>	<b>66,476,159</b>	<b>20.9</b>	<b>21.0</b>	<b>0.5</b>	<b>0.2</b>	<b>2.1</b>	<b>2.4</b>	<b>2.9</b>	<b>3.3</b>	<b>4.2</b>	<b>4.7</b>
BBgBarc US Aggregate TR				-0.2	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Commonfund	16,406,077	5.2	5.0	-0.3	-0.9	0.6	1.2	2.3	2.9	3.5	4.3
BBgBarc US Aggregate TR				-0.2	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Inflation-Protected Securities	25,791,470	8.1	8.0	0.8	-0.1	1.9	0.5	--	--	--	--
BBgBarc US TIPS TR				0.8	0.0	2.1	0.7	1.9	1.7	2.1	3.0
Guggenheim US Bank Loans	15,883,264	5.0	5.0	0.9	2.0	4.1	--	--	--	--	--
Credit Suisse Leveraged Loans				0.8	2.4	4.7	6.1	4.3	4.2	4.6	5.0



June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	Fiscal YTD (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Blackrock Strategic Income Opportunities	8,395,349	2.6	3.0	--	--	--	--	--	--	--	--
3-Month Libor Total Return USD				0.6	1.1	1.8	1.4	1.1	0.8	0.7	0.7
<b>Total GAA</b>	<b>72,952,726</b>	<b>22.9</b>	<b>23.0</b>	<b>-0.9</b>	<b>-1.3</b>	<b>2.8</b>	<b>5.6</b>	<b>2.7</b>	<b>3.6</b>	<b>3.4</b>	<b>--</b>
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
GMO Global Absolute Return	24,125,389	7.6	7.7	-2.9	-2.1	3.1	6.5	3.4	3.6	4.7	4.8
Blended Index				0.1	-0.9	1.5	2.3	3.3	3.6	3.8	4.7
Wellington	24,391,014	7.7	7.7	-1.6	-2.4	4.0	9.9	4.9	6.4	4.0	--
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
Newton Global Real Return	24,436,322	7.7	7.7	1.8	0.6	1.1	-0.2	--	--	--	--
60% MSCI ACWI (Net) / 40% BBgBarc Global Agg				-0.8	-0.8	7.0	8.5	6.1	6.3	5.3	4.8
<b>Total Hedge Funds</b>	<b>19,166,995</b>	<b>6.0</b>	<b>6.0</b>	<b>2.3</b>	<b>2.9</b>	<b>7.1</b>	<b>6.4</b>	<b>3.0</b>	<b>2.9</b>	<b>2.1</b>	<b>1.9</b>
HFRI Fund of Funds Composite Index				0.4	0.7	5.1	5.8	1.9	3.5	2.8	1.4
Lighthouse	19,166,995	6.0	6.0	2.9	5.1	10.2	7.9	--	--	--	--
Credit Suisse Long Shrt Eqt USD				-0.3	0.7	7.1	7.7	3.3	5.8	5.1	4.1
<b>Total Real Assets</b>	<b>2,717,239</b>	<b>0.9</b>	<b>3.0</b>	<b>-0.3</b>	<b>-0.5</b>	<b>1.5</b>	<b>-1.8</b>	<b>1.0</b>	<b>3.2</b>	<b>3.9</b>	<b>--</b>
NCREIF Timberland Index				0.5	1.4	3.6	3.5	3.5	6.0	5.8	4.0
John Hancock Timber Fund	2,717,239	0.9	3.0	-0.3	-0.5	1.5	-1.8	1.0	3.2	3.9	0.1
NCREIF Timberland Index				0.5	1.4	3.6	3.5	3.5	6.0	5.8	4.0
<b>Private Equity</b>	<b>2,386,259</b>	<b>0.8</b>	<b>2.0</b>	<b>4.5</b>	<b>3.7</b>	<b>21.9</b>	<b>18.6</b>	<b>12.3</b>	<b>--</b>	<b>--</b>	<b>--</b>
Landmark Equity Partners XV	2,386,259	0.8	2.0	4.5	3.7	21.9	18.6	12.3	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)				2.7	7.9	16.2	16.8	12.0	13.2	12.9	10.3
<b>Total Cash</b>	<b>17,742</b>	<b>0.0</b>	<b>0.0</b>								
Distribution Account	17,742	0.0	0.0	0.4	0.7	1.1	0.6	0.4	0.3	0.2	0.3
91 Day T-Bills				0.5	0.8	1.4	1.0	0.7	0.4	0.3	0.3

## Notes:

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&amp;P 500, 10% BC High Yield, 10% JPM EMBI+

Returns are net of manager fees

John Hancock Timber market value as of 06/30/18

Landmark market value as of 06/30/18

June 30, 2018

## PRIVATE MARKETS UPDATE

- **The System invests in a number of private markets assets, committing capital for longer time periods to obtain illiquidity premiums and exposure to alternative markets**
- **Landmark Equity Partners XV**
  - Secondary Private Equity fund, purchasing interests in venture capital, growth equity and buyout funds, and to a lesser extent, special situation and energy funds
  - Strategy is diversified, investing in ~200 partnerships
  - Fund has a 4 year investment period and 10 year term
  - The System committed \$5 million in 2014 and has a remaining commitment of \$2.2 million
  - Since inception, the strategy has an IRR of 17.8%, net of fees (3/31/18)
- **Hancock Timberland VII**
  - Private Real Asset Timber Fund structured for the purpose of making direct and indirect investments in commercial timberland
  - The System has been invested in the strategy since 2005
  - Fund has a 3 year acquisition period, 8 year investment period, 2 year wind up period and 2 year extension period (estimated)
  - The System committed \$5 million in 2005 and there are no remaining commitments, the Fund is winding up
  - Since inception, the strategy has an IRR of 1.5%, net of fees (3/31/18)



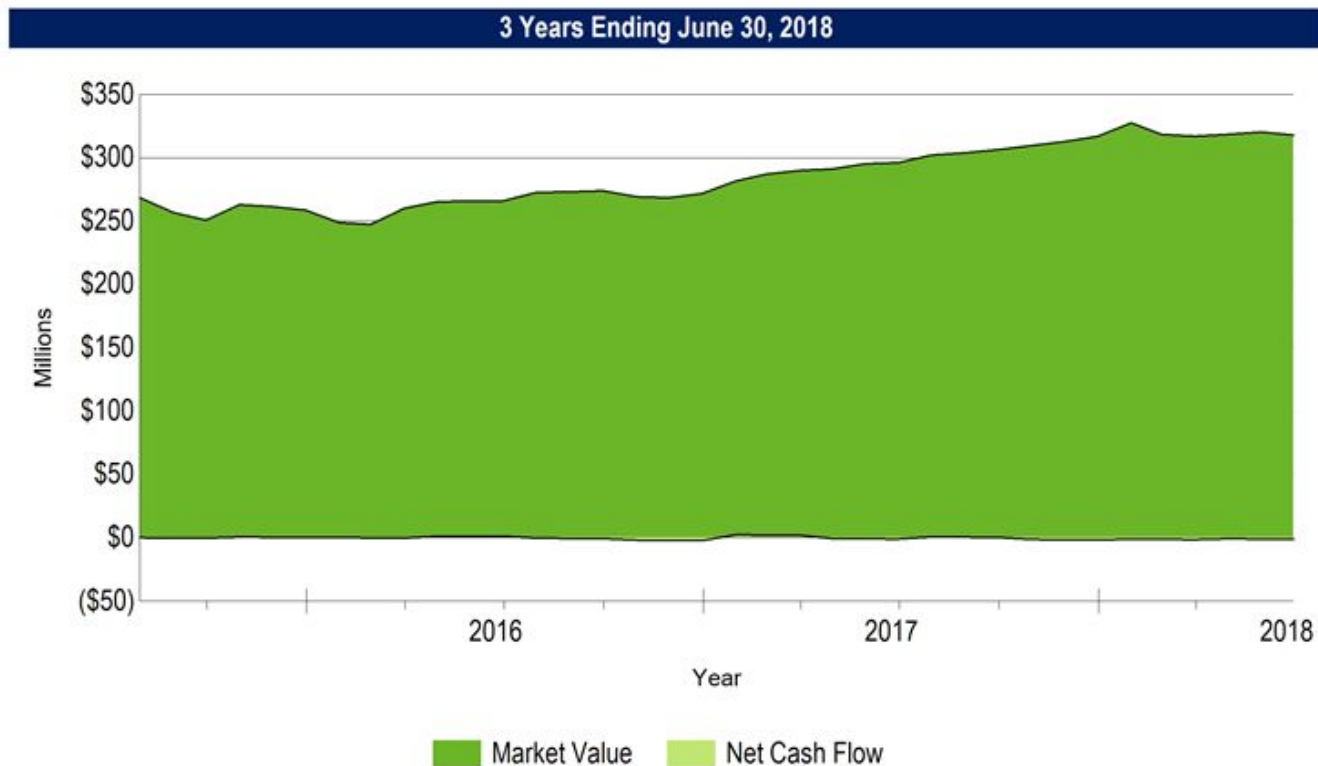
# PLAN SUMMARY AND STATISTICS

NEPC, LLC

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# ASSET GROWTH SUMMARY



	Last Three Months	Fiscal Year-To-Date	Three Years
Beginning Market Value	\$316,024,706	\$296,129,542	\$267,899,096
Net Cash Flow	\$185,224	-\$306,434	-\$1,324,342
Net Investment Change	\$1,678,896	\$22,065,718	\$51,314,073
Ending Market Value	\$317,888,826	\$317,888,826	\$317,888,826



June 30, 2018

# CASH FLOW SUMMARY

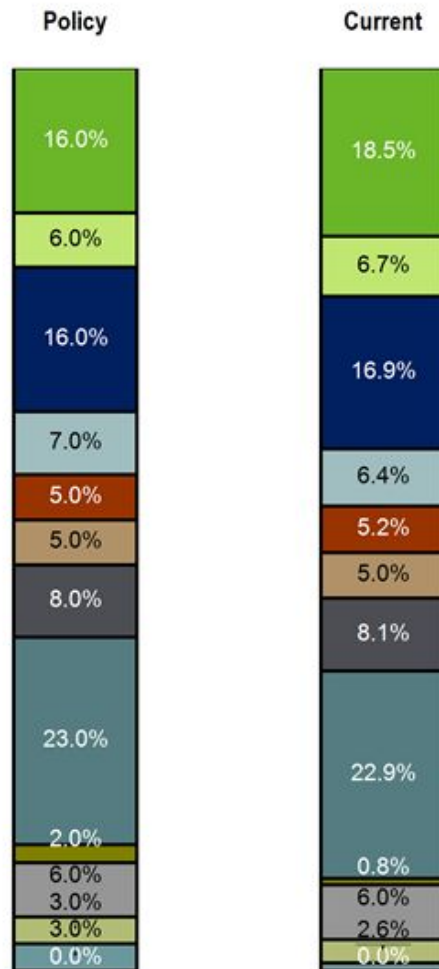
	3 Months Ending June 30, 2018					Ending Market Value
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	
Aberdeen Emerging Mkts	\$10,924,262	\$0	-\$28,020	-\$28,020	-\$1,182,780	\$9,713,461
Blackrock Strategic Income Opportunities	--	\$8,422,658	-\$7,425	\$8,415,234	-\$19,885	\$8,395,349
Commonfund	\$16,451,408	\$0	-\$6,553	-\$6,553	-\$38,778	\$16,406,077
DFA	\$9,310,545	\$1,300,000	-\$11,382	\$1,288,618	\$684,970	\$11,284,133
Distribution Account	\$1,625,653	\$8,963,709	-\$10,572,079	-\$1,608,369	\$458	\$17,742
EntrustPermal	\$8,470,926	\$0	-\$8,422,658	-\$8,422,658	-\$48,268	--
Globeflex	\$21,144,839	\$0	-\$40,156	-\$40,156	-\$161,139	\$20,943,544
GMO Global Absolute Return	\$24,777,686	\$0	-\$61,095	-\$61,095	-\$591,202	\$24,125,389
Guggenheim US Bank Loans	\$15,747,135	\$0	-\$19,812	-\$19,812	\$155,941	\$15,883,264
John Hancock Timber Fund	\$2,726,494	\$0	\$0	\$0	-\$9,255	\$2,717,239
Kabouter International Opportunities Offshore Fund II	\$11,558,913	\$1,000,000	-\$31,402	\$968,598	-\$171,037	\$12,356,473
Landmark Equity Partners XV	\$2,240,900	\$133,418	-\$91,051	\$42,367	\$102,992	\$2,386,259
Lighthouse	\$18,630,523	\$0	\$0	\$0	\$536,472	\$19,166,995
Mondrian EM Small Cap	\$11,107,675	\$0	-\$75,510	-\$75,510	-\$535,904	\$10,496,261
Morgan Stanley	\$20,464,423	\$0	-\$48,905	-\$48,905	\$14,220	\$20,429,738
Newton Global Real Return	\$23,996,942	\$0	-\$48,726	-\$48,726	\$488,107	\$24,436,322
SSgA S&P 500	\$57,011,279	\$0	-\$14,362	-\$14,362	\$1,962,354	\$58,959,272
Vanguard Inflation-Protected Securities	\$25,576,053	\$0	-\$4,490	-\$4,490	\$219,907	\$25,791,470
Wellington	\$24,757,459	\$0	-\$108,603	-\$108,603	-\$257,842	\$24,391,014
Westfield Capital	\$9,501,593	\$0	-\$42,333	-\$42,333	\$529,565	\$9,988,825
<b>Total</b>	<b>\$316,024,706</b>	<b>\$19,819,786</b>	<b>-\$19,634,562</b>	<b>\$185,224</b>	<b>\$1,678,896</b>	<b>\$317,888,826</b>



June 30, 2018

# ASSET CLASS ALLOCATIONS

4.1



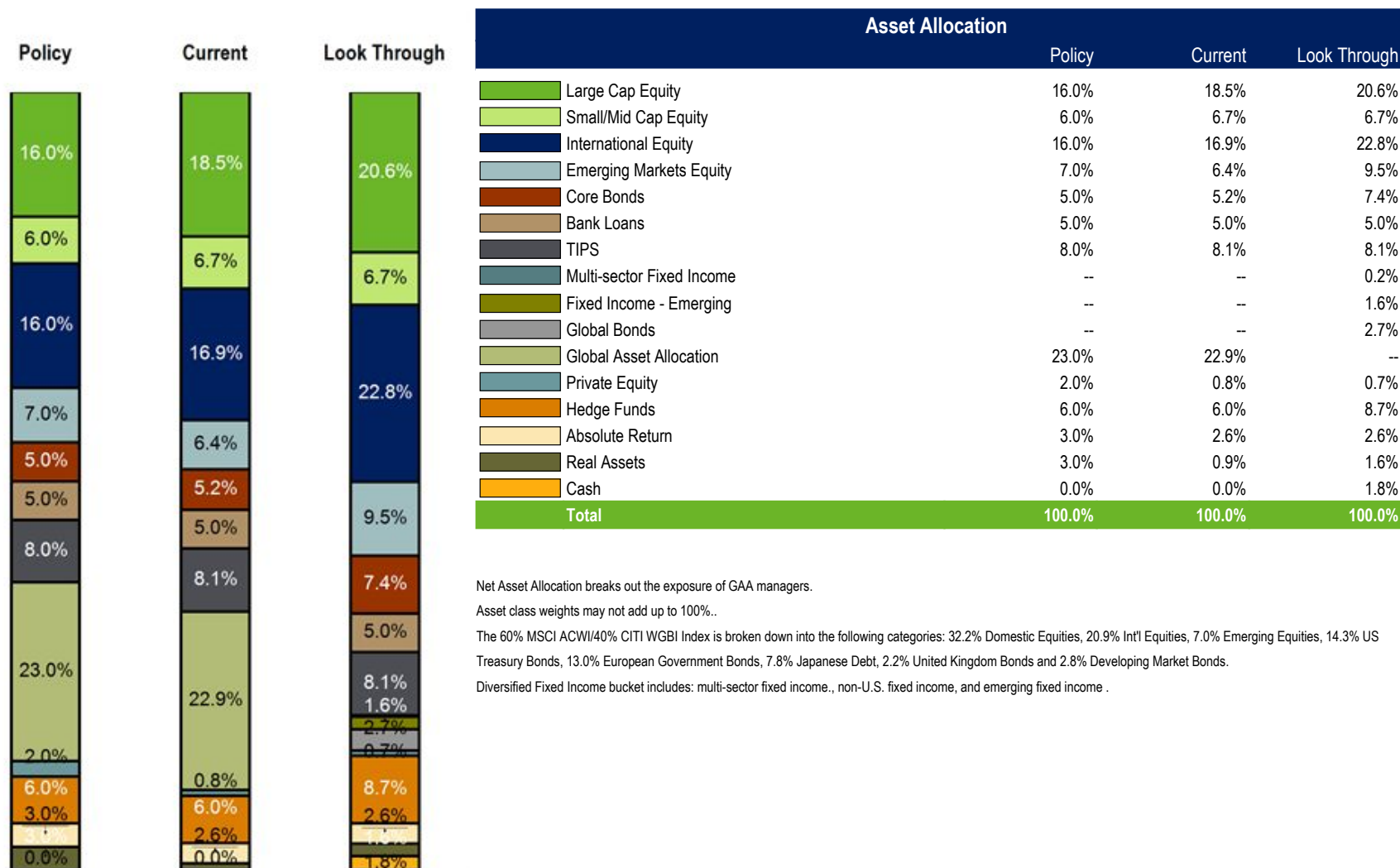
Asset Allocation vs. Target						
	Current	Policy	Current	Difference	Policy Range	Within Range
<div></div> Large Cap Equity	\$58,959,272	16.0%	18.5%	2.5%	11.0% - 21.0%	Yes
<div></div> Small/Mid Cap Equity	\$21,272,958	6.0%	6.7%	0.7%	0.0% - 9.0%	Yes
<div></div> International Equity	\$53,729,755	16.0%	16.9%	0.9%	11.0% - 21.0%	Yes
<div></div> Emerging Markets Equity	\$20,209,722	7.0%	6.4%	-0.6%	0.0% - 10.0%	Yes
<div></div> Core Bonds	\$16,406,077	5.0%	5.2%	0.2%	0.0% - 10.0%	Yes
<div></div> Bank Loans	\$15,883,264	5.0%	5.0%	0.0%	0.0% - 8.0%	Yes
<div></div> TIPS	\$25,791,470	8.0%	8.1%	0.1%	4.0% - 12.0%	Yes
<div></div> Global Asset Allocation	\$72,952,726	23.0%	22.9%	-0.1%	18.0% - 28.0%	Yes
<div></div> Private Equity	\$2,386,259	2.0%	0.8%	-1.2%	0.0% - 5.0%	Yes
<div></div> Hedge Funds	\$19,166,995	6.0%	6.0%	0.0%	0.0% - 12.0%	Yes
<div></div> Absolute Return	\$8,395,349	3.0%	2.6%	-0.4%	0.0% - 6.0%	Yes
<div></div> Real Assets	\$2,717,239	3.0%	0.9%	-2.1%	0.0% - 6.0%	Yes
<div></div> Cash	\$17,742	0.0%	0.0%	0.0%	0.0% - 10.0%	Yes
Total	\$317,888,826	100.0%	100.0%			



June 30, 2018

# ASSET CLASS ALLOCATIONS

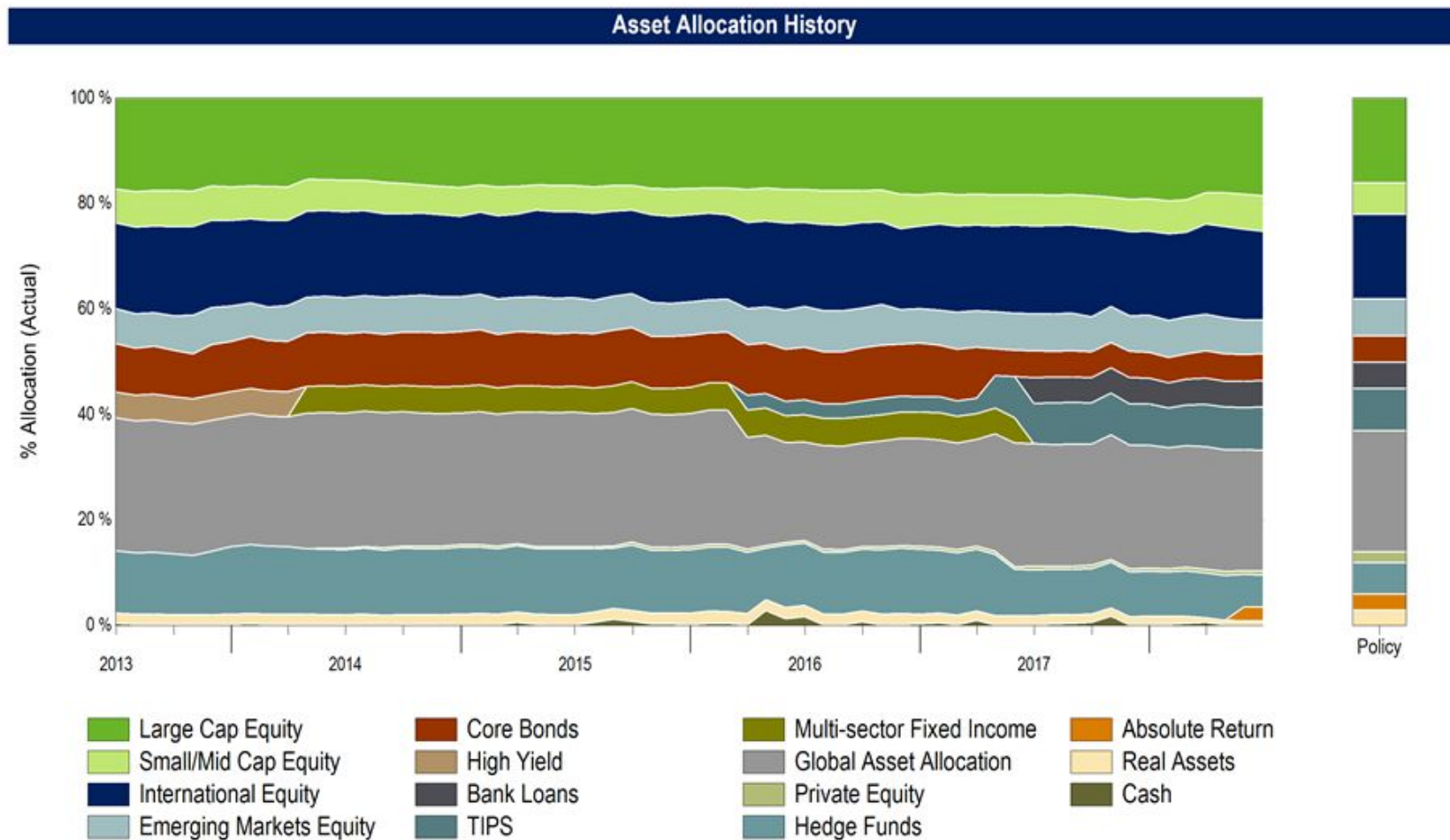
4.1



June 30, 2018

# ASSET ALLOCATION HISTORY

4.1

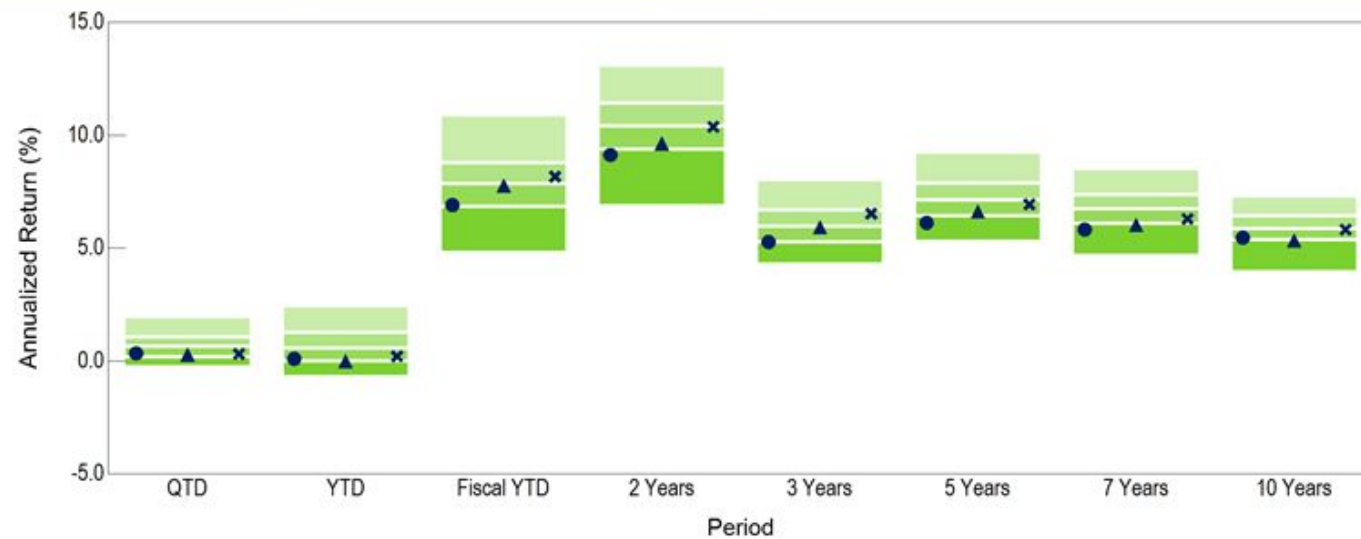


June 30, 2018

# RETURNS VS. PEER UNIVERSE

4.1

MIP Composite vs. InvestorForce All E&amp;F \$100mm - \$500mm Net



	Return (Rank)							
5th Percentile	2.0	2.5	10.9	13.1	8.0	9.2	8.5	7.3
25th Percentile	1.1	1.3	8.8	11.4	6.7	7.9	7.4	6.4
Median	0.7	0.6	7.9	10.4	6.0	7.1	6.8	5.9
75th Percentile	0.2	0.0	6.9	9.4	5.3	6.4	6.1	5.4
95th Percentile	-0.2	-0.7	4.8	6.9	4.3	5.3	4.7	4.0
# of Portfolios	174	173	170	165	162	153	144	133
• MIP Composite	0.3 (69)	0.1 (73)	6.9 (74)	9.1 (81)	5.3 (76)	6.1 (86)	5.8 (83)	5.5 (72)
▲ Allocation Index	0.3 (72)	0.0 (76)	7.8 (54)	9.6 (72)	5.9 (53)	6.6 (70)	6.0 (77)	5.3 (76)
× Policy Index	0.3 (70)	0.2 (66)	8.2 (43)	10.4 (53)	6.5 (34)	6.9 (62)	6.3 (69)	5.8 (54)

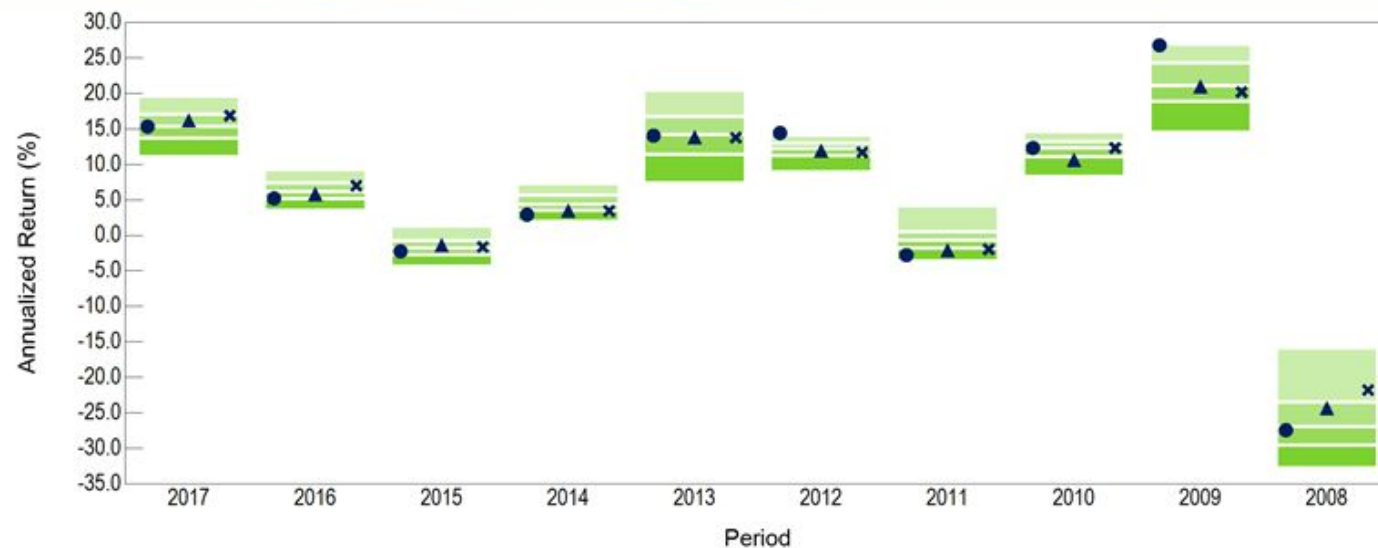


June 30, 2018

# RETURNS VS. PEER UNIVERSE

4.1

MIP Composite vs. InvestorForce All E&F \$100mm - \$500mm Net



	Return (Rank)									
5th Percentile	19.6	9.2	1.3	7.3	20.5	14.1	4.2	14.6	26.9	-15.9
25th Percentile	17.2	7.4	-0.7	5.7	16.8	13.0	0.5	13.3	24.3	-23.4
Median	15.4	6.2	-1.7	4.4	14.2	12.3	-0.6	12.4	21.1	-26.9
75th Percentile	13.8	5.2	-2.7	3.6	11.5	11.3	-1.8	11.1	18.9	-29.5
95th Percentile	11.1	3.6	-4.3	2.0	7.4	9.0	-3.6	8.3	14.6	-32.7
# of Portfolios	177	186	142	98	75	78	75	70	69	67
• MIP Composite	15.3 (53)	5.2 (75)	-2.2 (64)	2.9 (86)	14.1 (54)	14.4 (3)	-2.8 (90)	12.3 (53)	26.8 (9)	-27.4 (57)
▲ Allocation Index	16.2 (37)	5.8 (58)	-1.4 (44)	3.5 (77)	13.9 (57)	11.9 (58)	-2.1 (79)	10.7 (83)	21.0 (52)	-24.3 (30)
× Policy Index	16.9 (29)	7.0 (36)	-1.6 (48)	3.5 (78)	13.8 (57)	11.7 (64)	-2.0 (78)	12.3 (51)	20.2 (66)	-21.8 (16)



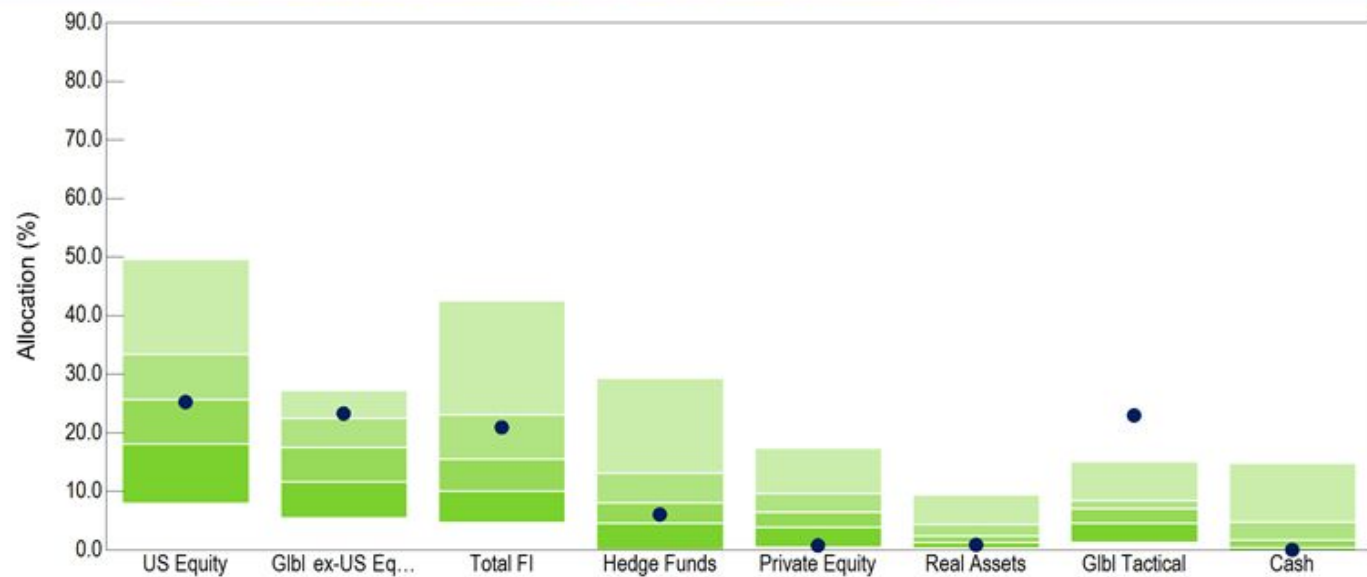
June 30, 2018



# ALLOCATIONS VS. PEER UNIVERSE

4.1

Total Plan Allocation vs. InvestorForce All E&F \$100mm - \$500mm Net



	Allocation (Rank)															
5th Percentile	49.7	27.2	42.5	29.3	17.4	9.4	15.1	14.8								
25th Percentile	33.5	22.6	23.1	13.2	9.7	4.4	8.5	4.8								
Median	25.7	17.6	15.6	8.2	6.6	2.5	7.2	1.7								
75th Percentile	18.2	11.7	10.1	4.7	4.0	1.4	4.6	0.5								
95th Percentile	8.0	5.5	4.7	0.0	0.6	0.4	1.4	0.0								
# of Portfolios	122	138	151	93	104	68	24	130								
• MIP Composite	25.2	(53)	23.3	(21)	20.9	(32)	6.0	(68)	0.8	(94)	0.9	(84)	22.9	(1)	0.0	(96)

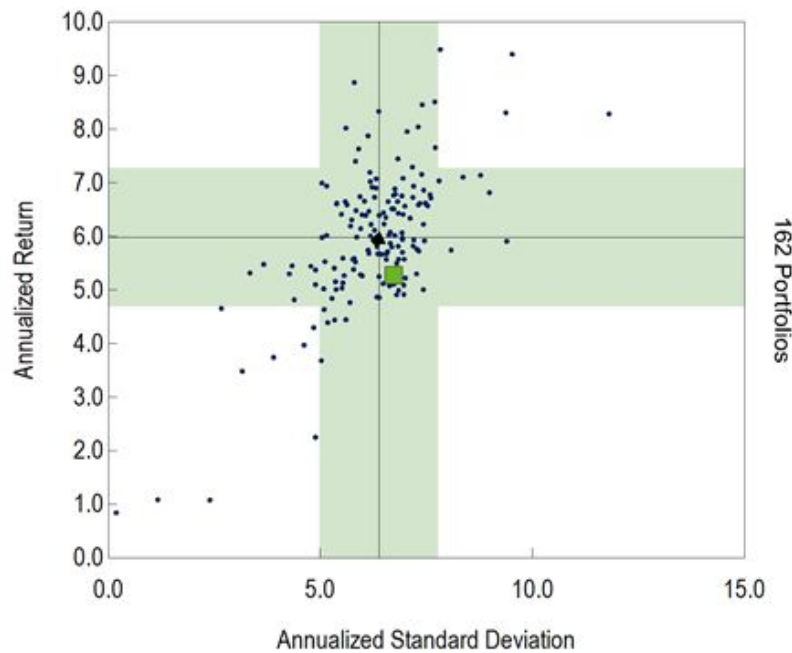


June 30, 2018



# TOTAL PLAN RISK/RETURN - 3 YEAR

3 Years Ending June 30, 2018



3 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
MIP Composite	5.3%	76	6.7%	62
Allocation Index	5.9%	53	6.3%	48
Policy Index	6.5%	34	6.5%	52
InvestorForce All E&F \$100mm - \$500mm Net Median	6.0%	--	6.4%	--

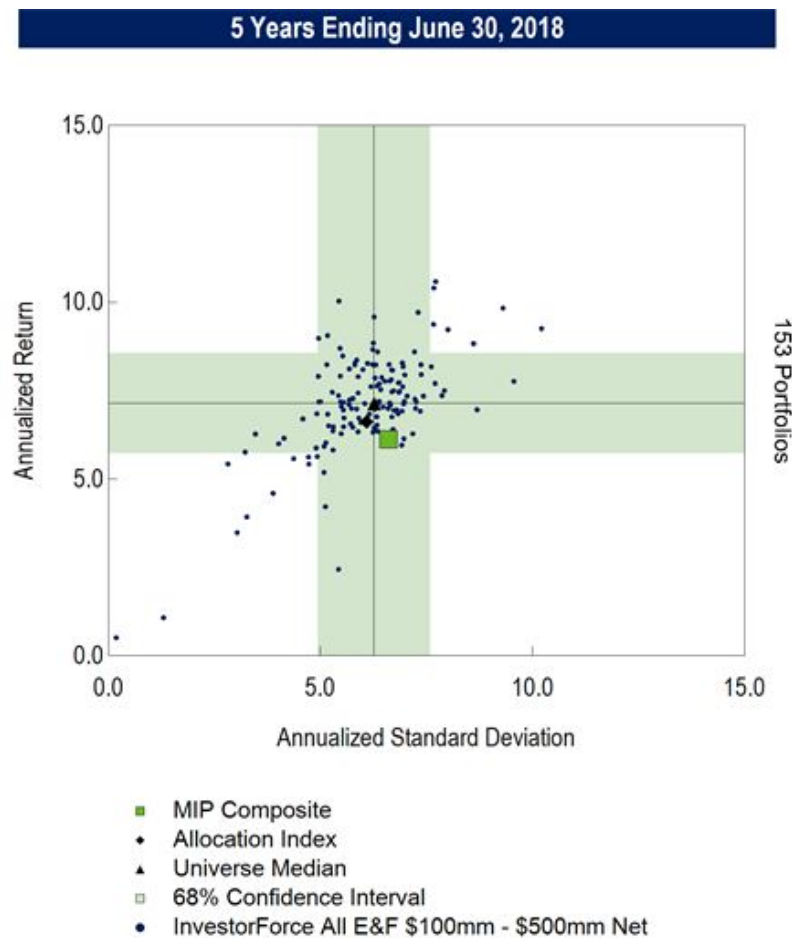
3 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
MIP Composite	0.7	88	0.9	85
Allocation Index	0.8	50	1.2	40
Policy Index	0.9	32	1.3	22
InvestorForce All E&F \$100mm - \$500mm Net Median	0.8	--	1.1	--

\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 5 YEAR



5 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
MIP Composite	6.1%	86	6.6%	65
Allocation Index	6.6%	70	6.1%	44
Policy Index	6.9%	62	6.1%	45
InvestorForce All E&F \$100mm - \$500mm Net Median	7.1%	--	6.3%	--

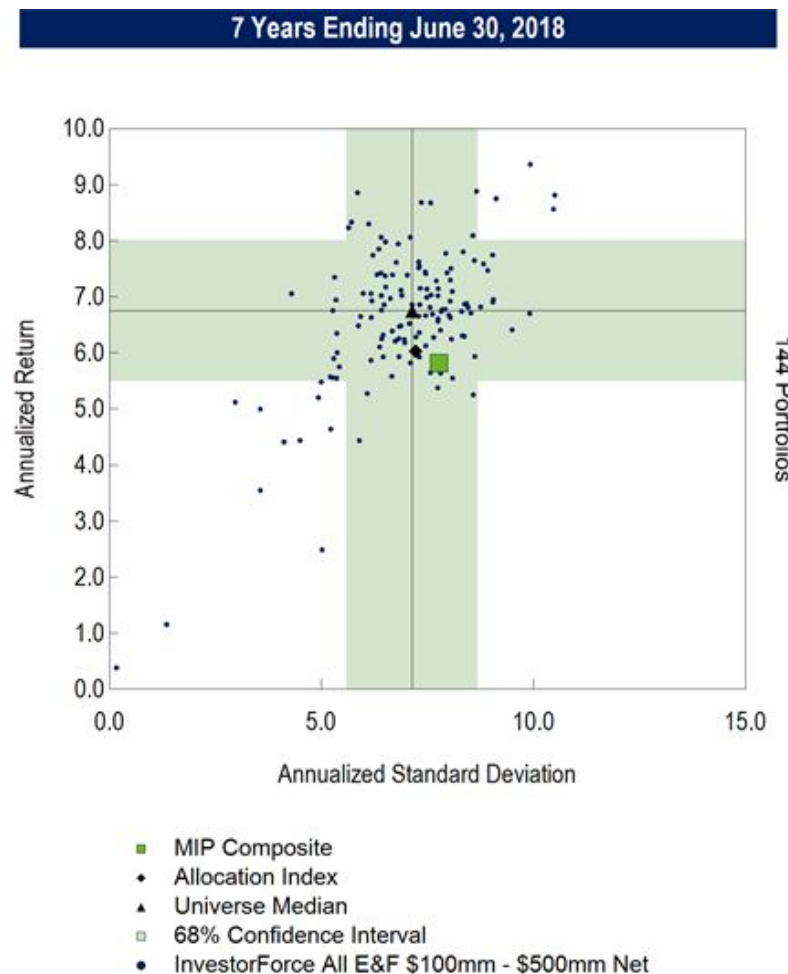
5 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
MIP Composite	0.9	94	1.4	88
Allocation Index	1.0	68	1.7	57
Policy Index	1.1	55	1.8	42
InvestorForce All E&F \$100mm - \$500mm Net Median	1.1	--	1.7	--

\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 7 YEAR



7 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
MIP Composite	5.8%	83	7.8%	73
Allocation Index	6.0%	77	7.2%	52
Policy Index	6.3%	69	7.2%	52
InvestorForce All E&F \$100mm - \$500mm Net Median	6.8%	--	7.1%	--

7 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
MIP Composite	0.7	92	0.9	91
Allocation Index	0.8	77	1.1	74
Policy Index	0.8	67	1.2	60
InvestorForce All E&F \$100mm - \$500mm Net Median	0.9	--	1.2	--

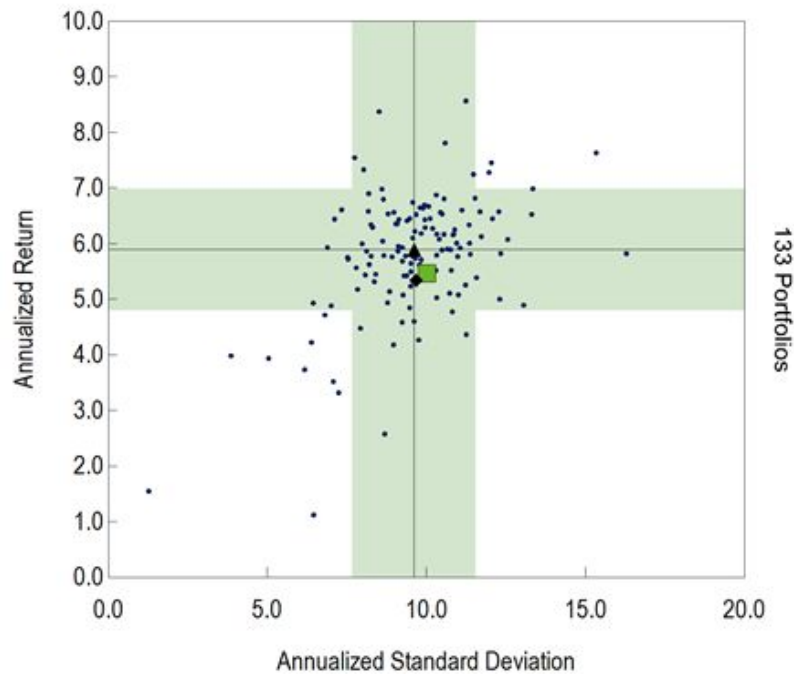
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 10 YEAR

10 Years Ending June 30, 2018



- MIP Composite
- ◆ Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce All E&F \$100mm - \$500mm Net

10 Years Ending June 30, 2018				
	Annzd Ret	Rank	Annzd Std Dev	Rank
MIP Composite	5.5%	72	10.0%	62
Allocation Index	5.3%	76	9.7%	54
Policy Index	5.8%	54	9.3%	41
InvestorForce All E&F \$100mm - \$500mm Net Median	5.9%	--	9.6%	--

10 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
MIP Composite	0.5	76	0.6	57
Allocation Index	0.5	72	0.6	61
Policy Index	0.6	47	0.8	23
InvestorForce All E&F \$100mm - \$500mm Net Median	0.6	--	0.7	--

\*Returns are net of fees.



June 30, 2018

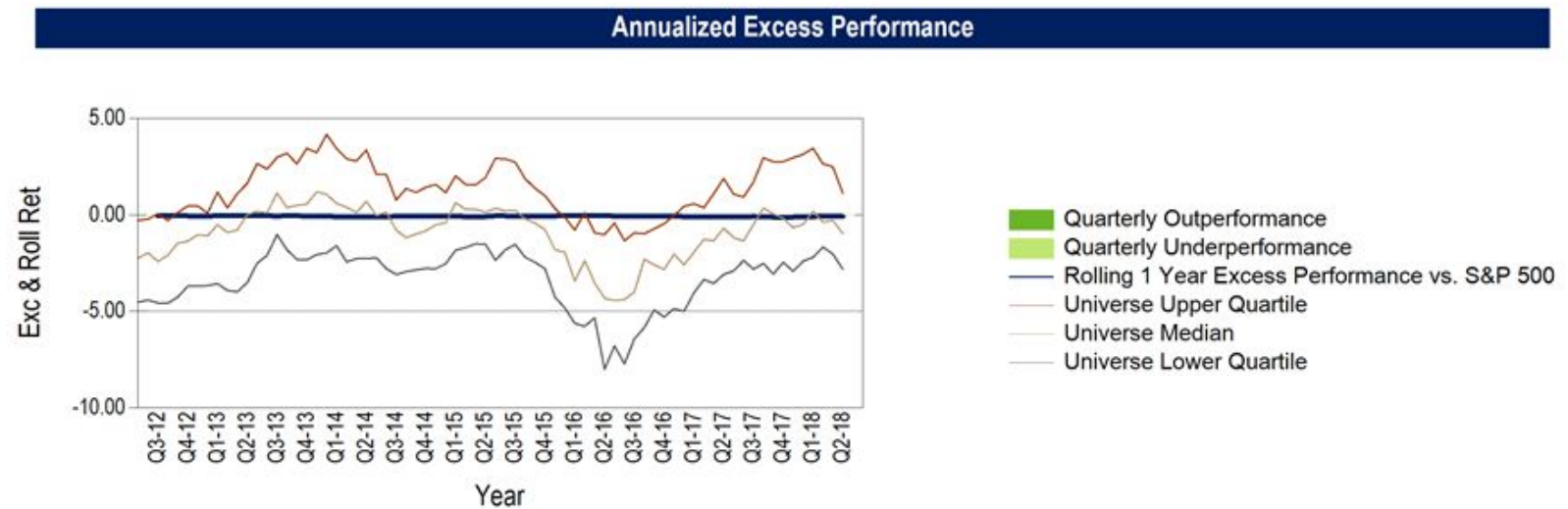
# MANAGER ANALYSIS

NEPC, LLC

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# SSgA S&P 500

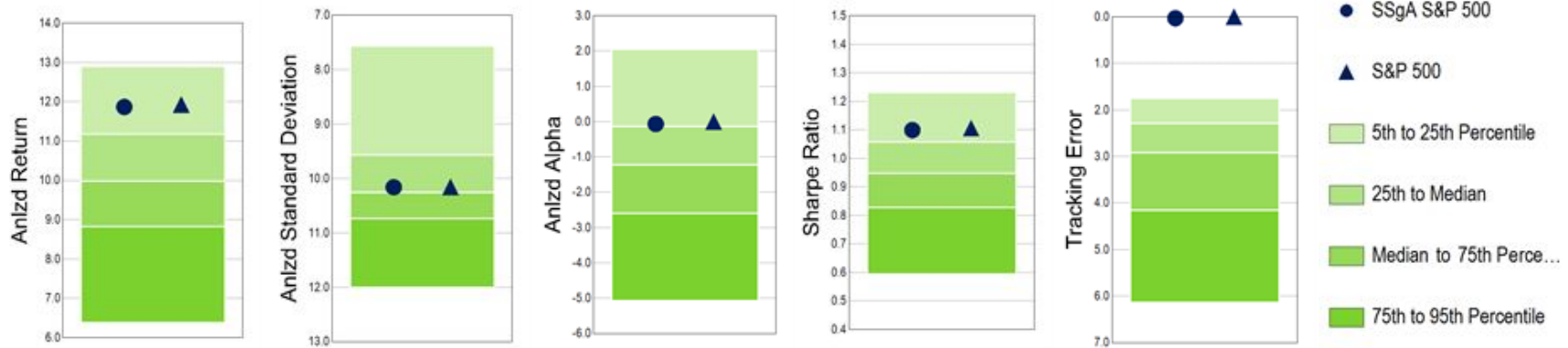
4.1



June 30, 2018

# SSgA S&P 500

4.1



\*Returns are net of fees.



June 30, 2018

# SSgA S&P 500

4.1

Characteristics		
	Portfolio	S&P 500
Number of Holdings	505	505
Weighted Avg. Market Cap. (\$B)	198.8	198.9
Median Market Cap. (\$B)	20.5	20.5
Price To Earnings	33.9	23.5
Price To Book	6.0	4.9
Price To Sales	4.3	4.1
Return on Equity (%)	22.5	21.7
Yield (%)	2.0	1.9
Beta		1.0
R-Squared		1.0

Equity Sector Attribution									
	Attribution Effects				Returns		Ending Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.0%	0.0%	0.0%	0.0%	13.6%	13.6%	6.3%	6.3%	
Materials	0.0%	0.0%	0.0%	0.0%	2.3%	2.3%	2.6%	2.6%	
Industrials	0.0%	0.0%	0.0%	0.0%	-3.2%	-3.2%	9.5%	9.5%	
Consumer Discretionary	0.0%	0.0%	0.0%	0.0%	8.2%	8.2%	12.9%	12.9%	
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-2.0%	-2.2%	6.9%	7.0%	
Health Care	0.0%	0.0%	0.0%	0.0%	3.3%	3.3%	14.1%	14.1%	
Financials	0.0%	0.0%	0.0%	0.0%	-3.2%	-3.2%	13.8%	13.8%	
Information Technology	0.0%	0.0%	0.0%	0.0%	7.0%	7.0%	26.0%	26.0%	
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-0.8%	-0.8%	2.0%	2.0%	
Utilities	0.0%	0.0%	0.0%	0.0%	3.8%	3.8%	3.0%	2.9%	
Real Estate	0.0%	0.0%	0.0%	0.0%	6.1%	6.1%	2.9%	2.9%	
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	0.0%	0.0%	
Unclassified	0.0%	--	--	--	--	--	--	--	--
Portfolio	0.0%	=	0.0%	+	0.0%	+	0.0%		
					3.4%	3.4%	100.0%	100.0%	

\*Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of period portfolio. Results may differ from actual performance. Returns are net of fees.

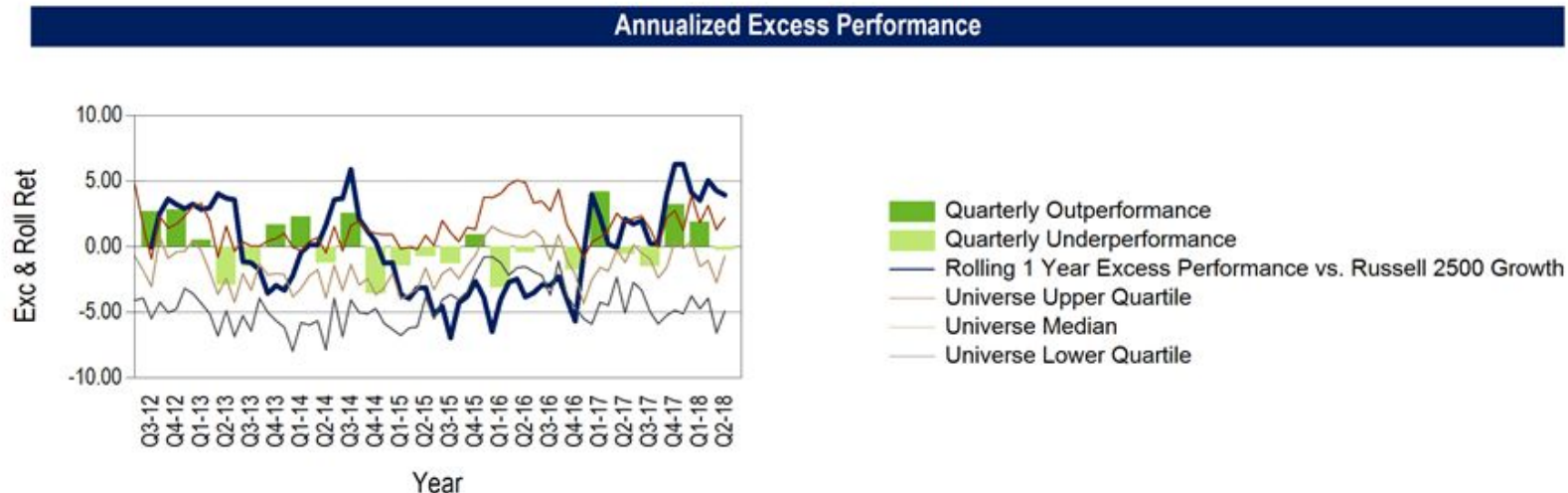


June 30, 2018



# WESTFIELD CAPITAL

4.1



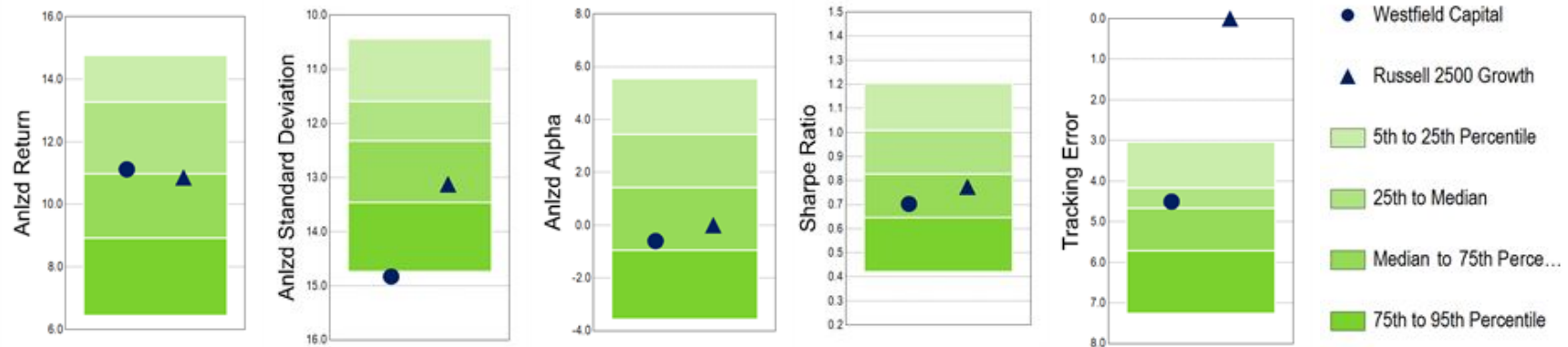
\*Returns are net of fees.



June 30, 2018

# WESTFIELD CAPITAL

4.1



\*Returns are net of fees.



June 30, 2018

# WESTFIELD CAPITAL

4.1

Characteristics			Top Positive Contributors			Top Negative Contributors		
	Portfolio	Russell 2500 Growth		Relative Contribution %	Return %		Relative Contribution %	Return %
Number of Holdings	71	1,473	ANDEAVOR	0.6%	31.0%	NEKTAR THERAPEUTICS	-0.8%	-54.0%
Weighted Avg. Market Cap. (\$B)	8.2	4.9	NEW RELIC	0.4%	35.7%	COMMSCOPE HLDG.CO. (BER)	-0.3%	-24.2%
Median Market Cap. (\$B)	7.2	1.3	WEX	0.4%	21.6%	ESSENT GROUP	-0.3%	-15.8%
Price To Earnings	29.4	21.4	BRINKER INTL.	0.4%	32.9%	CRANE	-0.2%	-13.2%
Price To Book	6.5	6.4	PINNACLE FOODS	0.3%	20.9%	SUMMIT MATERIALS 'A'	-0.2%	-13.3%
Price To Sales	4.3	3.9	JAZZ PHARMACEUTICALS	0.3%	14.1%	DANA	-0.2%	-21.3%
Return on Equity (%)	12.1	12.7	COSTAR GP.	0.3%	13.8%	COHERENT	-0.2%	-16.5%
Yield (%)	0.8	0.6	ACCELERON PHARMA	0.3%	24.1%	BUILDERS FIRSTSOURCE	-0.1%	-7.8%
Beta		1.0	W R GRACE	0.2%	20.1%	CANTEL MED.	-0.1%	-11.7%
R-Squared		1.0	FORTINET	0.2%	16.5%	FLOWSERVE	-0.1%	-6.3%

Equity Sector Attribution											
	Attribution Effects				Returns		Ending Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.5%	0.1%	0.1%	0.2%	19.8%	10.5%	3.3%	1.9%			
Materials	0.1%	0.2%	-0.1%	0.0%	2.6%	-0.2%	7.7%	5.1%			
Industrials	0.7%	0.8%	-0.1%	0.0%	3.9%	0.4%	20.8%	17.1%			
Consumer Discretionary	-0.2%	-0.2%	0.0%	0.0%	7.8%	9.2%	14.2%	16.5%			
Consumer Staples	0.1%	0.2%	0.0%	-0.1%	20.9%	10.6%	1.7%	2.0%			
Health Care	-1.2%	-1.4%	-0.1%	0.3%	0.7%	8.2%	16.2%	22.0%			
Financials	-0.2%	-0.1%	0.0%	0.0%	-1.0%	0.7%	7.3%	7.4%			
Information Technology	-0.4%	-0.4%	-0.1%	0.0%	5.5%	7.2%	25.1%	24.5%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	6.8%	7.0%	0.0%	0.7%			
Utilities	0.0%	--	0.0%	--	--	5.3%	0.0%	0.2%			
Real Estate	0.0%	0.0%	0.0%	0.0%	9.5%	9.2%	2.6%	2.5%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.5%	--	1.2%	0.0%			
Portfolio	-0.8%	=	-0.8%	+	-0.5%	+	0.6%	4.8%	5.5%	100.0%	100.0%

\*Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of period portfolio. Results may differ from actual performance. Returns are net of fees.

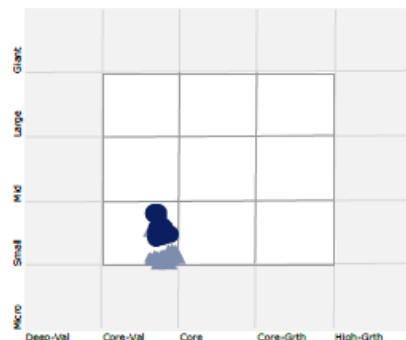


June 30, 2018

# DFA US TARGETED VALUE I

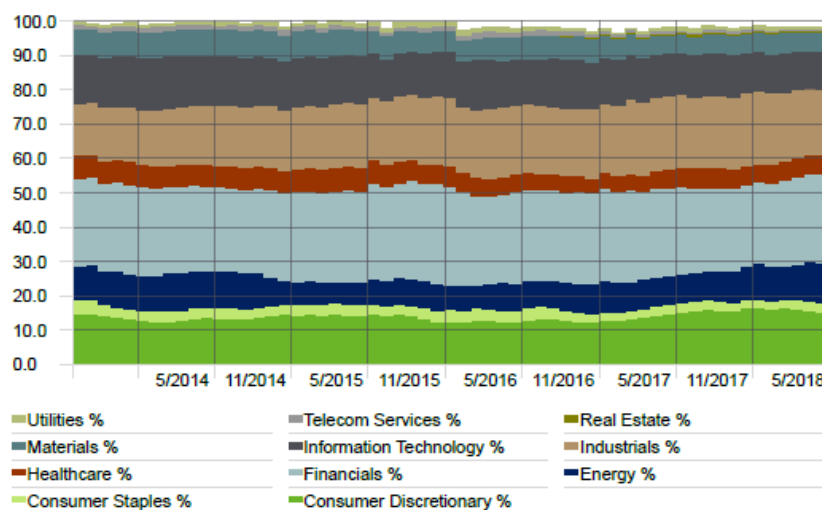
## Holdings Based Style Trail (5 Years)

Time Period: 7/31/2013 to 6/30/2018



• DFA US Targeted Value I    • Russell 2000 Value TR USD

## Historical Sector Allocations (5 Years)



## Portfolio Statistics

	Fund	Index
# of Holdings	1,478	1,364
% Asset in Top 10 Holdings	6.1	3.9
Turnover Ratio %	23.0	
P/E Ratio	15.0	14.9
P/B Ratio	1.5	1.5
LT Earm Growth	12.9	10.9
Hist Earm Growth	4.3	0.7
12 Mo Yield	1.0	

## Market Capitalization Breakdown

	Fund	Index
Market Cap Giant %	0.0	0.0
Market Cap Large %	0.0	0.0
Market Cap Mid %	40.7	22.9
Market Cap Small %	50.7	64.4
Market Cap Micro %	8.6	12.7
Average Market Cap (mil)	2,398.2	1,731.0

## Top 10 Holdings

	Portf Weight %	3 Month Ret %
S+p500 Emini Fut Jun18 Xome 20180615	0.74	
HollyFrontier Corp	0.88	40.73
Arrow Electronics Inc	0.85	-2.28
Reliance Steel & Aluminum Co	0.82	2.68
Toll Brothers Inc	0.81	-14.22
People's United Financial Inc	0.81	-2.12
Macy's Inc	0.80	27.13
Kohl's Corp	0.58	12.21
PacWest Bancorp	0.53	0.99
Quanta Services Inc	0.52	-2.77

## Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Consumer Discretionary	15.66	10.84	6.17	8.16	0.00	-0.32	-0.32
Consumer Staples	2.82	2.18	10.47	6.70	0.00	0.11	0.11
Energy	11.04	7.10	21.92	21.68	0.56	0.03	0.59
Financials	25.81	31.14	2.97	4.22	0.18	-0.34	-0.16
Health Care	5.29	6.83	9.89	9.97	-0.02	-0.01	-0.03
Industrials	19.60	12.13	1.97	5.58	-0.20	-0.74	-0.94
Information Technology	10.89	8.68	4.21	6.20	-0.04	-0.22	-0.27
Materials	5.62	4.30	5.03	6.05	-0.03	-0.06	-0.09
Real Estate	0.49	10.03	-1.92	14.73	-0.63	-0.08	-0.71
Telecommunication Services	0.56	0.47	-0.77	14.52	0.01	-0.09	-0.08
Utilities	0.19	6.15	1.87	8.61	-0.04	-0.01	-0.05
Attribution Total	97.98	99.84	6.05	8.00	-0.21	-1.73	-1.94
Cash	0.93	0.00					
Other	0.82	0.00					
Total	100.00	100.00					



Source: Morningstar

June 30, 2018

# DFA US TARGETED VALUE I

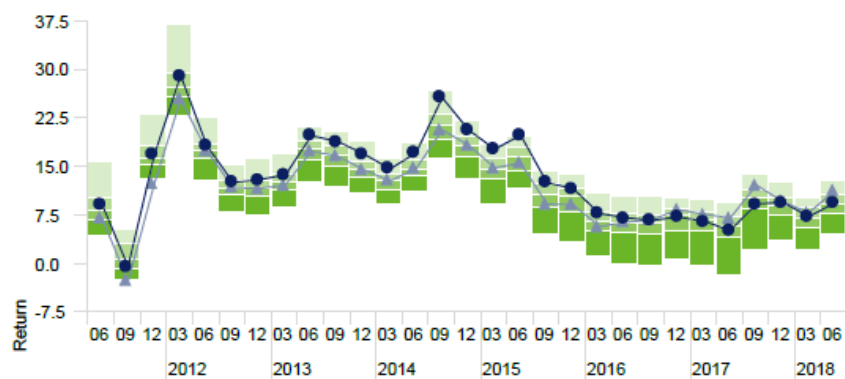
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	88.8	100.0
Alpha	1.2	0.0
Beta	0.9	1.0
Std Dev	11.3	12.0
Up Capture Ratio	94.5	100.0
Down Capture Ratio	82.4	100.0
Sharpe Ratio (geo)	1.0	0.9
Information Ratio (geo)	0.0	
Tracking Error	4.0	0.0
Correlation	0.9	1.0

## Rolling Return (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile

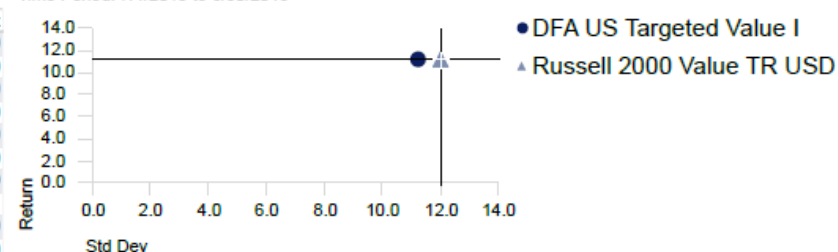


—DFA US Targeted Value I

—Russell 2000 Value TR USD

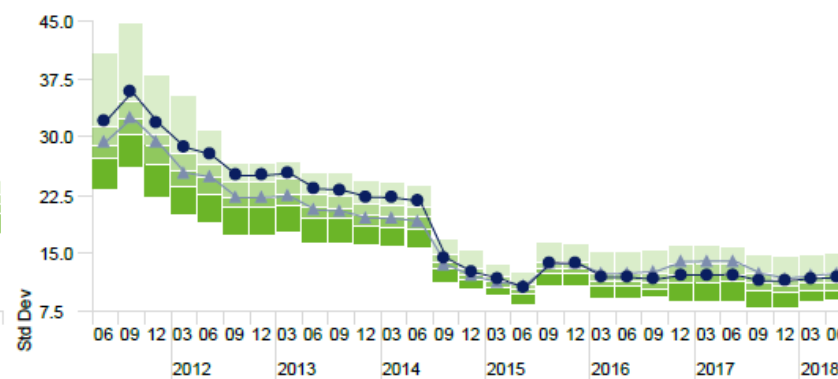
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—DFA US Targeted Value I

—Russell 2000 Value TR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
DFA US Targeted Value I	-33.8	68	31.9	37	29.0	24	-6.3	72	19.2	23	43.0	10	2.9	65	-5.7	46	26.9	40	9.6	40
Russell 2000 Value TR USD	-28.9		20.6		24.5		-5.5		18.1		34.5		4.2		-7.5		31.7		7.8	



Source: Morningstar

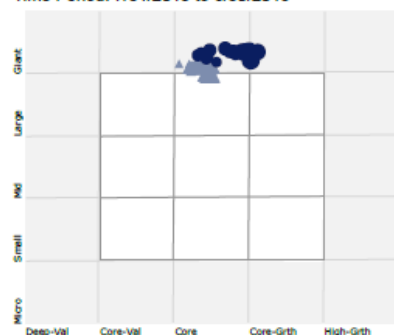
June 30, 2018

# MORGAN STANLEY INTERNATIONAL EQUITY I

4.1

## Holdings Based Style Trail (5 Years)

Time Period: 7/31/2013 to 6/30/2018



• Morgan Stanley Int'l International Eq I • MSCI EAFE NR USD

## Portfolio Statistics

	Fund	Index
# of Holdings	66	926
% Asset in Top 10 Holdings	36.9	11.2
Turnover Ratio %	18.0	
P/E Ratio	13.8	14.6
P/B Ratio	2.2	1.6
LT Eam Growth	9.7	10.1
Hist Eam Growth	25.0	13.0
12 Mo Yield	1.9	

## Market Capitalization Breakdown

	Fund	Index
Market Cap Giant %	63.5	51.0
Market Cap Large %	31.7	36.9
Market Cap Mid %	4.0	12.0
Market Cap Small %	0.8	0.0
Market Cap Micro %	0.0	0.0
Average Market Cap	56,885.6	36,559.9
Equity Region Developed %	96.8	99.5
Equity Region Emerging %	3.2	0.5

## Top Ten Holdings

	Port Weight %	3 Month Return
Unilever NV DR	4.82	-0.30
Reckitt Benckiser Group PLC	4.57	-1.16
British American Tobacco PLC	4.19	-11.63
GlaxoSmithKline PLC	4.01	4.57
L'Oreal SA	3.81	11.35
Pernod Ricard SA	3.59	-1.80
Novartis AG	3.24	-6.03
Sanofi SA	3.07	4.16
SAP SE	2.84	12.12
Heineken NV	2.73	-5.45

## Sector Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Consumer Discretionary	3.12	12.56	-6.65	-2.39	0.13	-0.14	-0.01
Consumer Staples	33.41	10.97	1.39	0.74	0.42	0.22	0.64
Energy	3.59	5.64	8.64	11.36	-0.24	-0.09	-0.33
Financials	16.69	20.66	-6.13	-5.95	0.18	-0.02	0.16
Health Care	14.20	10.17	0.94	2.07	0.13	-0.16	-0.03
Industrials	11.88	14.25	5.78	-2.09	0.03	0.94	0.97
Information Technology	7.89	6.60	1.92	-0.15	0.01	0.17	0.18
Materials	5.64	8.08	-1.55	0.80	-0.04	-0.13	-0.17
Real Estate	0.00	3.37		-0.16	-0.03	0.00	-0.03
Telecommunication Services	1.28	3.79	-9.90	-4.54	0.08	-0.07	0.01
Utilities	0.00	3.27		0.84	-0.06	0.00	-0.06
Attribution Total	97.69	99.37	0.26	-1.05	0.61	0.70	1.31
Cash	2.31	0.00					
Other	0.00	0.03					
Missing Performance	0.00	0.60					
Total	100.00	100.00					

## Region Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Asia - Developed	4.39	4.85	2.56	-2.33	0.00	0.22	0.22
Asia - Emerging	3.15	0.45	0.27	-4.79	-0.09	0.15	0.06
Australasia	0.00	6.71		5.20	-0.42	0.00	-0.42
Canada	2.56	0.00	8.79		0.25	0.00	0.25
Europe - ex Euro	6.84	12.38	-7.14	-2.91	0.09	-0.31	-0.22
Eurozone	42.22	31.58	1.99	-2.16	-0.12	1.78	1.66
Japan	13.72	24.54	0.67	-2.93	0.20	0.51	0.71
Middle East	0.00	0.47		10.84	-0.05	0.00	-0.05
United Kingdom	22.96	17.49	-2.76	2.58	0.23	-1.27	-1.04
United States	1.86	0.90	8.37	2.67	0.04	0.11	0.14
Attribution Total	97.69	99.37	0.26	-1.05	0.12	1.19	1.31
Cash	2.31	0.00					
Other	0.00	0.03					
Missing Performance	0.00	0.60					
Total	100.00	100.00					



Source: Morningstar

June 30, 2018

# MORGAN STANLEY INTERNATIONAL EQUITY I

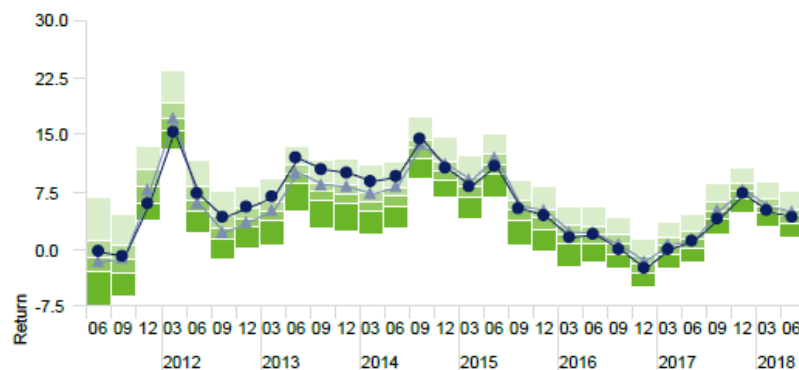
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	90.5	100.0
Alpha	-0.2	0.0
Beta	0.9	1.0
Std Dev	9.5	10.4
Up Capture Ratio	88.0	100.0
Down Capture Ratio	92.6	100.0
Sharpe Ratio (geo)	0.5	0.6
Information Ratio (geo)	-0.3	
Tracking Error	3.3	0.0
Correlation	1.0	1.0

## Rolling Returns (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Morgan Stanley Inst International Eq I

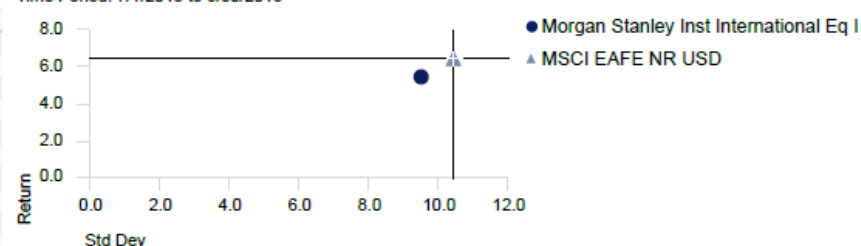
—MSCI EAFE NR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Morgan Stanley Inst International Eq I	-33.1	8	21.6	85	6.1	87	-7.6	5	19.6	26	20.4	43	-6.1	64	0.4	30	-2.0	82	25.2	53
MSCI EAFE NR USD	-43.4		31.8		7.8		-12.1		17.3		22.8		-4.9		-0.8		1.0		25.0	

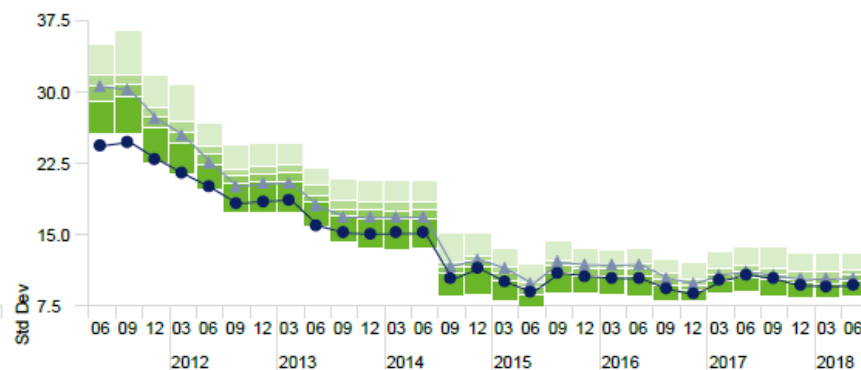
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Morgan Stanley Inst International Eq I

—MSCI EAFE NR USD



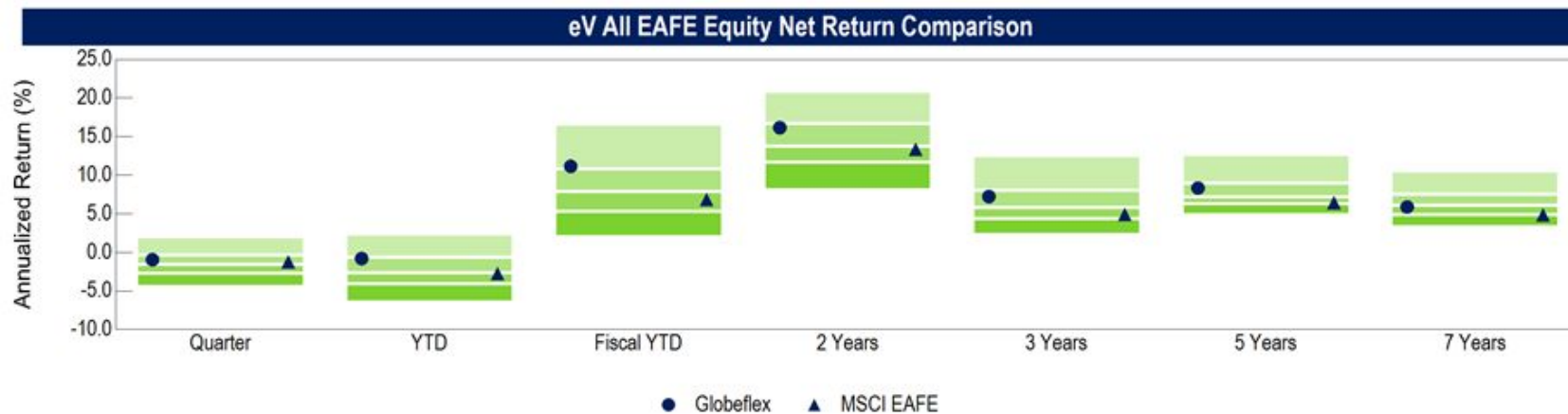
Source: Morningstar

June 30, 2018



# GLOBEFLEX

4.1



\*Returns are net of fees.

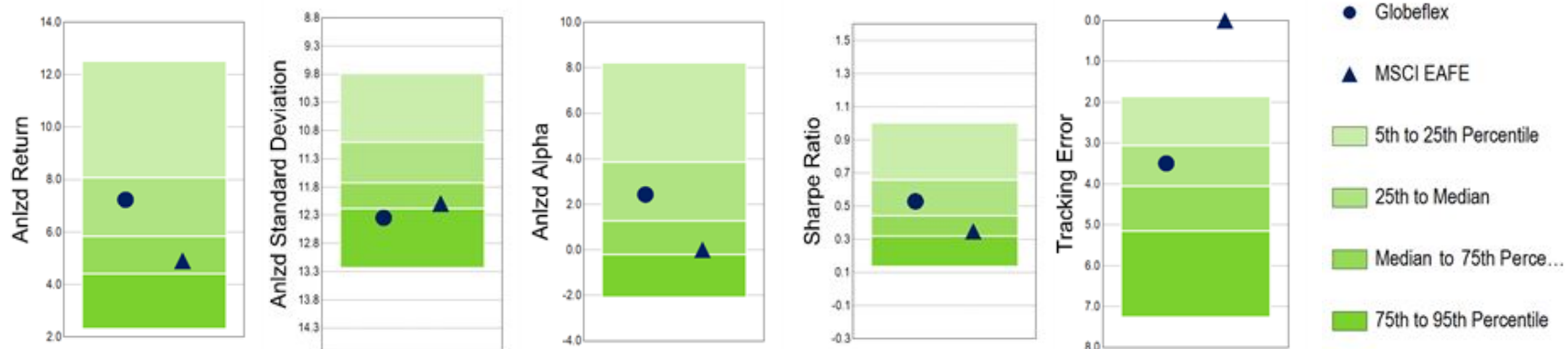


June 30, 2018



# GLOBEFLEX

4.1



\*Returns are net of fees.



June 30, 2018

# GLOBEFLEX

4.1

Characteristics	Portfolio	MSCI EAFE
Number of Holdings	126	926
Weighted Avg. Market Cap. (\$B)	23.1	56.3
Median Market Cap. (\$B)	10.7	10.9
Price To Earnings	18.8	18.9
Price To Book	2.8	2.5
Price To Sales	1.7	2.3
Return on Equity (%)	22.3	14.4
Yield (%)	3.0	3.1
Beta		1.0
R-Squared		1.0

Top Positive Contributors	Relative Contribution %	Return %
SUBSEA 7	0.3%	30.9%
AKER BP	0.3%	37.7%
CAE	0.3%	12.0%
PLUS500	0.3%	33.3%
SUSHIRO GLOBAL HDG.	0.2%	24.9%
GREAT CDN.GAMING	0.2%	39.4%
WHITEHAVEN COAL	0.2%	25.1%
H LUNDBECK	0.2%	26.1%
SUMITOMO DAINIPPON PHA.	0.2%	26.1%
BLUESCOPE STEEL	0.2%	10.2%

Top Negative Contributors	Relative Contribution %	Return %
TSUGAMI	-0.3%	-29.5%
LOTTE CHEMICAL	-0.3%	-23.1%
SCREEN HOLDINGS	-0.3%	-23.3%
AISIN SEIKI	-0.2%	-16.1%
ROYAL MAIL	-0.2%	-12.0%
SIGNIFY	-0.2%	-27.3%
DEUTSCHE LUFTHANSA	-0.2%	-22.2%
VALEO	-0.2%	-15.2%
ULVAC	-0.2%	-30.3%
COCA-COLA HBC (CDI)	-0.2%	-7.8%

	Equity Sector Attribution										
	Attribution Effects					Returns		Ending Sector Weights			
	Total Effects		Selection Effect	Allocation Effects		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.4%		-0.1%		0.8%		-0.4%	10.8%	11.4%	13.0%	6.1%
Materials	-0.1%		0.1%		0.1%		-0.2%	1.7%	0.7%	13.8%	8.1%
Industrials	-1.2%		-0.9%		0.0%		-0.3%	-7.4%	-1.9%	17.1%	14.3%
Consumer Discretionary	-0.2%		-0.3%		0.0%		0.2%	-4.1%	-2.0%	9.8%	12.4%
Consumer Staples	-0.1%		-0.9%		-0.2%		1.0%	-7.5%	0.8%	3.3%	11.3%
Health Care	0.8%		0.9%		-0.1%		-0.1%	10.8%	2.0%	10.0%	10.6%
Financials	1.1%		0.7%		0.3%		0.2%	-2.2%	-6.0%	15.7%	19.8%
Information Technology	-0.8%		-0.6%		0.0%		-0.1%	-9.0%	-0.1%	7.3%	6.8%
Telecommunication Services	0.1%		0.1%		0.0%		0.0%	-0.2%	-4.6%	4.6%	3.7%
Utilities	0.0%		0.0%		0.0%		0.0%	0.6%	0.8%	2.5%	3.3%
Real Estate	0.2%		0.3%		0.0%		-0.1%	7.7%	-0.2%	2.5%	3.6%
Cash	0.0%		--		--		--	--	--	0.0%	0.0%
Portfolio	0.4%	=	-0.7%	+	1.0%	+	0.1%	-0.6%	-1.0%	99.6%	100.0%

\*Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of period portfolio. Results may differ from actual performance. Returns are net of fees.



June 30, 2018

# GLOBEFLEX

4.1

Country Allocation				
	Manager Ending Allocation (USD)	Index Ending Allocation (USD)	Manager Return (USD)	Index Return (USD)
<b>Americas</b>				
Canada	10.7%	0.0%	4.2%	4.7%
United States	0.5%	0.0%	-9.0%	3.4%
<b>Total-Americas</b>	<b>11.2%</b>	<b>0.0%</b>	<b>3.4%</b>	<b>--</b>
<b>Europe</b>				
Austria	2.0%	0.2%	0.5%	-10.3%
Denmark	0.9%	1.6%	26.1%	-6.9%
France	7.0%	10.9%	-5.9%	0.4%
Germany	4.4%	9.4%	-4.5%	-3.6%
Ireland	0.4%	0.6%	12.2%	1.9%
Italy	5.8%	2.4%	-1.5%	-6.8%
Netherlands	2.2%	3.6%	-6.9%	-0.3%
Norway	1.8%	0.7%	33.9%	3.0%
Portugal	0.6%	0.2%	3.3%	2.3%
Spain	4.7%	3.1%	-1.0%	-4.1%
Sweden	0.8%	2.5%	-3.8%	-3.3%
Switzerland	1.5%	7.7%	3.6%	-2.2%
United Kingdom	20.2%	18.0%	1.7%	2.9%
<b>Total-Europe</b>	<b>52.5%</b>	<b>63.0%</b>	<b>0.4%</b>	<b>-0.9%</b>

Country Allocation				
	Manager Ending Allocation (USD)	Index Ending Allocation (USD)	Manager Return (USD)	Index Return (USD)
<b>AsiaPacific</b>				
Australia	7.0%	7.0%	11.7%	5.3%
China*	0.9%	0.0%	7.1%	-3.5%
Hong Kong	1.7%	3.6%	-9.0%	-1.3%
Japan	20.8%	24.3%	-4.7%	-3.0%
Korea*	5.8%	0.0%	-10.6%	-9.0%
<b>Total-AsiaPacific</b>	<b>36.3%</b>	<b>36.5%</b>	<b>-2.9%</b>	<b>-1.4%</b>
<b>Totals</b>				
Developed	93.3%	100.0%	0.1%	-1.0%
Emerging*	6.7%	0.0%	-9.9%	--

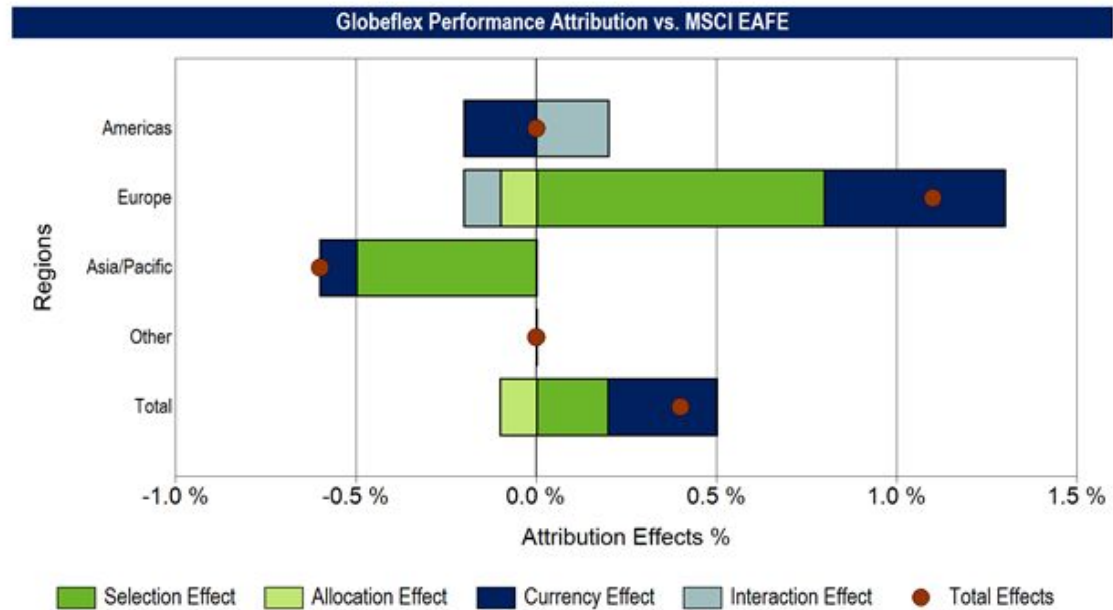
\*Returns are net of fees.



June 30, 2018

# GLOBEFLEX

4.1



	Returns and Ending Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	3.4%	--	11.2%	0.0%	0.0%	0.0%	-0.2%	0.2%	0.0%
Europe	0.4%	-0.9%	52.5%	63.0%	0.8%	-0.1%	0.5%	-0.1%	1.1%
Asia/Pacific	-2.9%	-1.4%	36.3%	36.5%	-0.5%	0.0%	-0.1%	0.0%	-0.6%
Other	--	10.8%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
<b>Total</b>	<b>-0.6%</b>	<b>-1.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.2%</b>	<b>-0.1%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.4%</b>
<b>Totals</b>									
Developed	0.1%	-1.0%	93.3%	100.0%	0.8%	0.0%	0.6%	-0.1%	1.3%
Emerging*	-9.9%	--	6.7%	0.0%	0.0%	0.0%	-0.3%	-0.7%	-0.9%

\*Returns are net of fees.



June 30, 2018

# KABOUTER INT'L OPPS OFFSHORE FUND II

4.1

SECTOR ATTRIBUTION W/CURRENCY															
			Avg % Wgt			CTR			Tot Rtn			Alloc	Selec	Curr	Tot Attr
			Port	Bench	+/-	Port	Bench	+/-	Port	Bench	+/-				
INTL SMALL CAP COMPOSITE			100.00	100.00	0.00	-1.17	-1.39	0.22	-1.17	-1.39	0.22	0.03	-0.04	0.23	0.22
Consumer Discretionary			4.47	15.66	-11.18	-0.37	-0.38	0.01	-7.96	-2.61	-5.35	0.13	-0.15	0.41	0.39
Consumer Staples			3.88	6.82	-2.94	-0.52	0.07	-0.59	-13.06	1.02	-14.08	-0.06	-0.56	0.12	-0.50
Energy			0.00	2.65	-2.65		0.35	-0.35		15.00	-15.00	-0.40	0.00	0.13	-0.27
Financials			11.49	11.55	-0.06	-0.17	-0.57	0.40	-1.59	-4.95	3.35	0.00	0.36	0.03	0.39
Health Care			20.73	7.27	13.46	1.16	0.12	1.05	5.87	1.64	4.23	0.45	0.64	-0.47	0.62
Industrials			27.49	21.30	6.19	0.82	-0.68	1.50	3.15	-3.11	6.26	-0.11	1.58	-0.17	1.30
Information Technology			8.65	11.55	-2.90	-1.58	-0.09	-1.49	-16.90	-0.73	-16.18	-0.02	-1.48	0.08	-1.42
Materials			10.81	9.36	1.45	-0.65	-0.14	-0.52	-6.12	-1.55	-4.56	-0.01	-0.54	0.00	-0.55
Real Estate			2.90	10.46	-7.56	-0.09	-0.08	0.00	-3.06	-0.80	-2.26	-0.05	-0.09	0.37	0.24
Telecommunication Services			0.00	1.31	-1.31		0.01	-0.01		0.54	-0.54	-0.03	0.00	0.06	0.04
Utilities			9.04	2.07	6.97	0.25	0.01	0.24	2.92	0.39	2.53	0.15	0.19	-0.33	0.01
Not Classified			0.52	0.00	0.52	-0.02		-0.02	-1.95		-1.95	-0.02	0.00	0.00	-0.02

\*Returns are gross of fees



Source: Kabouter

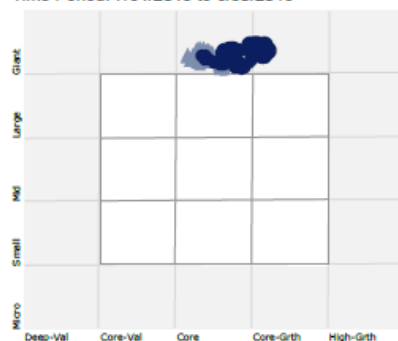
June 30, 2018

# ABERDEEN EMERGING MARKET EQUITY

4.1

## Holdings Based Style Trail (5 Years)

Time Period: 7/31/2013 to 6/30/2018



Aberdeen Emerging Markets Instl MSCI EM NR USD

## Portfolio Statistics

	Fund	Index
# of Holdings	66	1,138
% Asset in Top 10 Holdings	34.8	24.8
Turnover Ratio %	16.6	
P/E Ratio	16.2	13.4
P/B Ratio	2.3	1.6
LT Earn Growth	17.5	15.8
Hist Earn Growth	13.1	3.3
12 Mo Yield	1.5	

## Market Capitalization Breakdown

	Fund	Index
Market Cap Giant %	65.2	56.9
Market Cap Large %	26.0	31.8
Market Cap Mid %	6.7	10.3
Market Cap Small %	2.0	1.0
Market Cap Micro %	0.0	0.0
Average Market Cap	32,206.2	31,205.6
Equity Region Developed %	21.0	28.7
Equity Region Emerging %	79.0	71.3

## Top Ten Holdings

	Port Weight %	3 Month Return
Tencent Holdings Ltd	6.69	-3.61
Samsung Electronics Co Ltd Participating Preferred	6.05	-11.74
Taiwan Semiconductor Manufacturing Co Ltd	4.81	-13.25
Housing Development Finance Corp Ltd	3.42	-0.50
Alia Group Ltd	2.55	4.47
Bank Bradesco SA ADR	2.48	-36.33
Vale SA ADR	2.31	0.79
Kweichow Moutai Co Ltd	2.24	3.14
Fomento Economico Mexicano SAB de CV ADR	2.15	-3.15
China Mobile Ltd	2.08	-0.89

## Sector Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Consumer Discretionary	12.26	9.45	-11.41	-6.82	0.03	-0.57	-0.54
Consumer Staples	14.89	6.50	-11.40	-6.01	0.15	-0.80	-0.65
Energy	2.86	6.17	-25.61	-4.68	-0.10	-0.64	-0.74
Financials	26.42	23.63	-10.13	-12.46	-0.13	0.63	0.50
Health Care	0.84	2.81	-11.45	-4.48	-0.07	-0.06	-0.13
Industrials	2.77	5.17	3.02	-11.32	0.09	0.38	0.47
Information Technology	21.57	27.88	-7.55	-5.09	-0.15	-0.53	-0.68
Materials	8.74	7.46	-10.71	-5.29	0.03	-0.47	-0.44
Real Estate	5.32	2.77	-12.29	-10.87	-0.08	-0.08	-0.16
Telecommunication Services	3.35	4.53	-9.03	-9.52	0.02	0.02	0.04
Utilities	0.00	2.43		-7.53	-0.01	0.00	-0.01
Attribution Total	99.02	98.79	-10.15	-7.83	-0.19	-2.13	-2.32
Cash	0.95	0.00					
Other	0.03	0.07					
Missing Performance	0.00	1.14					
Total	100.00	100.00					

## Region Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Africa	3.86	6.60	-33.74	-11.39	0.09	-0.95	-0.86
Asia - Developed	20.11	27.46	-9.59	-8.00	0.01	-0.32	-0.31
Asia - Emerging	48.09	46.36	-3.93	-4.28	0.05	0.17	0.22
Europe - Emerging	6.49	4.91	-14.75	-11.58	-0.04	-0.22	-0.26
Europe - ex Euro	0.00	0.02		1.97	0.00	0.00	0.00
Eurozone	0.73	0.35	-17.07	-6.24	0.04	-0.11	-0.07
Latin America	19.01	11.82	-18.88	-17.81	-0.72	-0.24	-0.96
Middle East	0.00	1.18		-0.09	-0.09	0.00	-0.09
United Kingdom	0.74	0.00	-8.54		0.00	0.00	0.00
United States	0.00	0.08		-12.98	0.00	0.00	0.00
Attribution Total	99.02	98.79	-10.15	-7.83	-0.65	-1.67	-2.32
Cash	0.95	0.00					
Other	0.03	0.07					
Missing Performance	0.00	1.14					
Total	100.00	100.00					



Source: Morningstar

June 30, 2018

# ABERDEEN EMERGING MARKET EQUITY

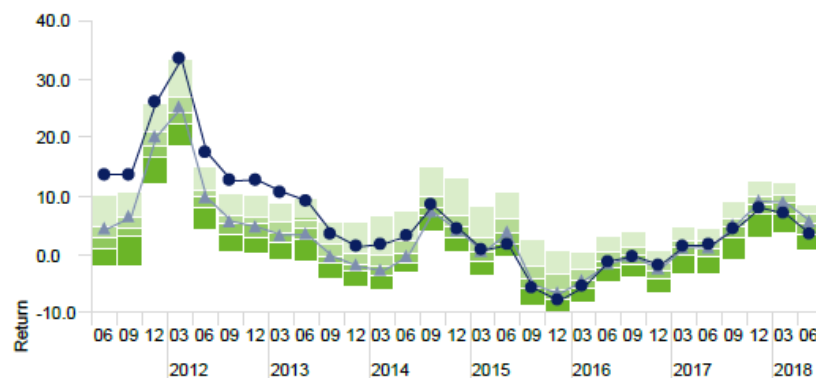
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	89.1	100.0
Alpha	-2.4	0.0
Beta	0.9	1.0
Std Dev	13.0	13.6
Up Capture Ratio	79.9	100.0
Down Capture Ratio	102.9	100.0
Sharpe Ratio (geo)	0.1	0.3
Information Ratio (geo)	-0.6	
Tracking Error	4.5	0.0
Correlation	0.9	1.0

## Rolling Returns (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Aberdeen Emerging Markets Instl

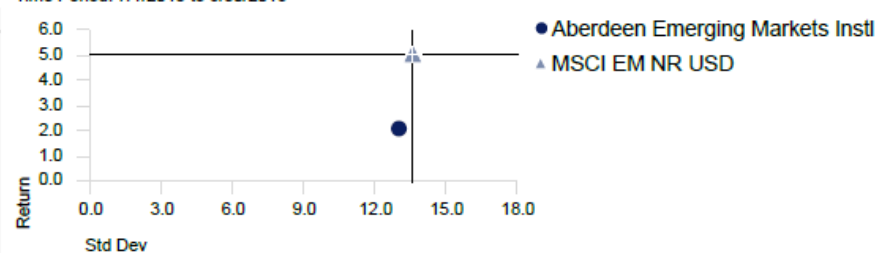
—MSCI EM NR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Aberdeen Emerging Markets Instl	-40.4	1	76.6	32	27.6	6	-11.0	4	26.2	8	-7.5	93	-2.5	43	-13.7	45	12.0	24	30.2	70
MSCI EM NR USD	-53.3		78.5		18.9		-18.4		18.2		-2.6		-2.2		-14.9		11.2		37.3	

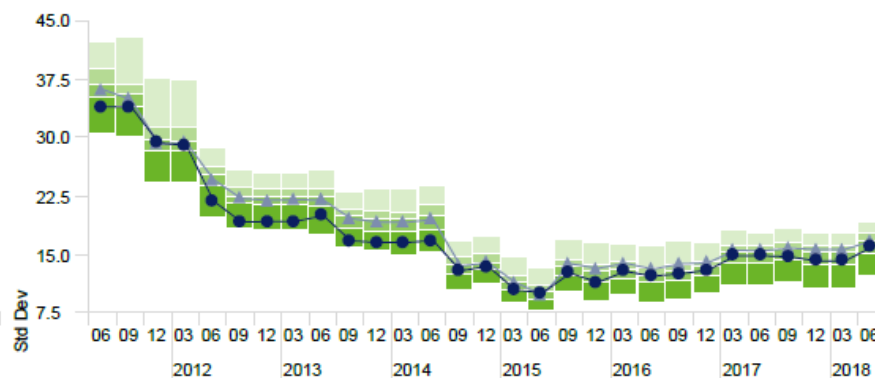
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Aberdeen Emerging Markets Instl

—MSCI EM NR USD

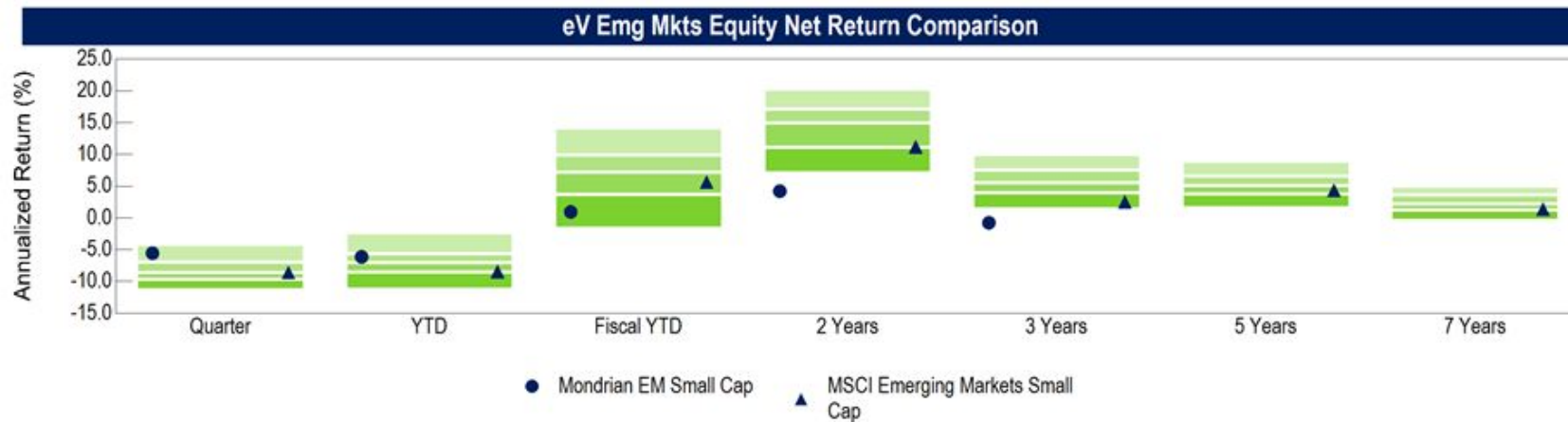
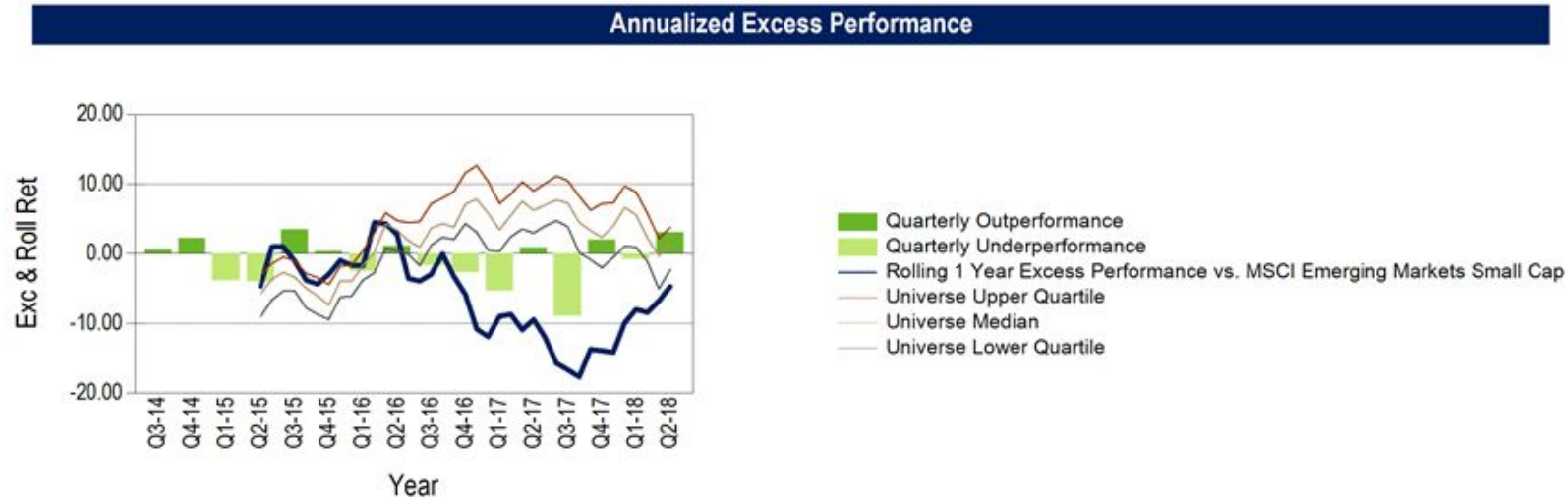


Source: Morningstar

June 30, 2018

# MONDRIAN EM SMALL CAP

4.1



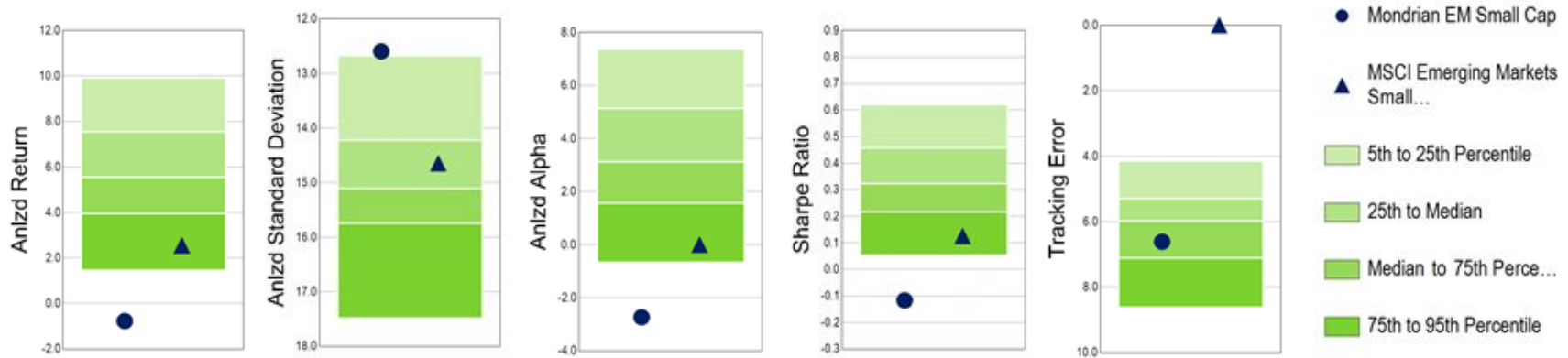
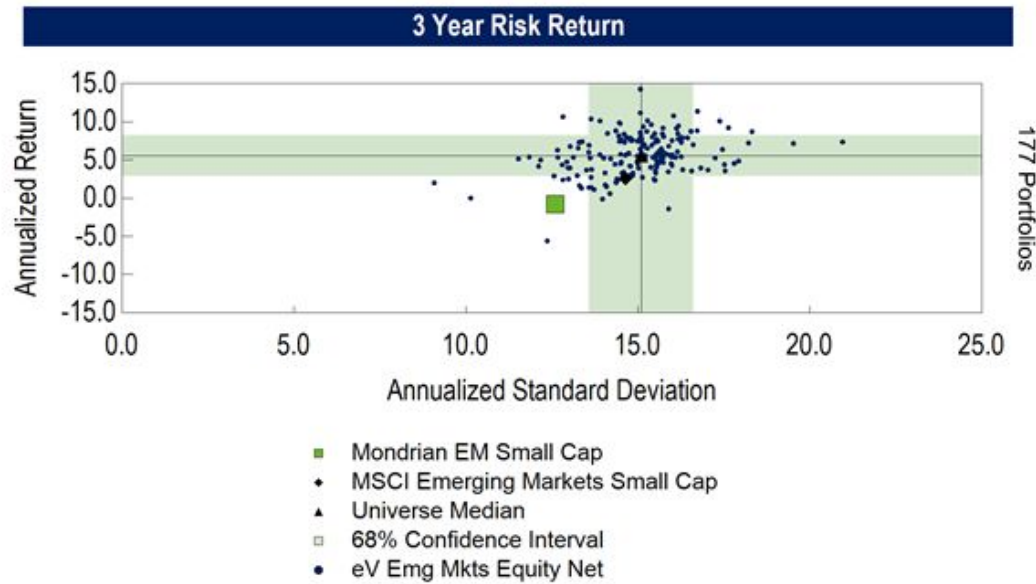
\*Returns are net of fees.



June 30, 2018



# MONDRIAN EM SMALL CAP



\*Returns are net of fees.



June 30, 2018

# MONDRIAN EM SMALL CAP

4.1

Characteristics		MSCI Emerging Markets Small Cap
	Portfolio	
Number of Holdings	112	1,738
Weighted Avg. Market Cap. (\$B)	1.6	1.2
Median Market Cap. (\$B)	0.9	0.7
Price To Earnings	33.0	17.5
Price To Book	4.9	2.6
Price To Sales	3.9	2.3
Return on Equity (%)	18.3	13.3
Yield (%)	2.2	2.4
Beta		1.0
R-Squared		1.0

Top Positive Contributors		
	Relative Contribution %	Return %
SSY GROUP	0.3%	27.0%
VARUN BEVERAG	0.3%	14.1%
PAGE INDUSTRIES	0.2%	16.9%
QL RESOURCES	0.2%	12.9%
FU SHOU YUAN INTL.GP.	0.2%	14.2%
MICROPORT SCIENTIFIC	0.2%	11.7%
SITC INTERNATIONAL HDG.	0.2%	14.9%
SINOSOFT TECHNOLOGY GP.	0.2%	13.2%
DINO POLSKA SA	0.1%	9.6%
GREENTOWN SER.GP.	0.1%	8.2%

Top Negative Contributors		
	Relative Contribution %	Return %
SILOAM INTL.HOSPS.	-0.5%	-37.3%
STRIDES PHARMA SCIENCE	-0.3%	-42.0%
AIRTAC INTERNATIONAL GP.	-0.3%	-17.4%
AJANTA PHARMA	-0.3%	-32.7%
PI INDUSTRIES	-0.3%	-19.0%
NIPPON INDOSARI CORPINDO	-0.3%	-24.6%
SYMPHONY	-0.3%	-24.6%
AKR CORPORINDO	-0.2%	-25.7%
MERRY ELECTRONICS	-0.2%	-25.4%
CENTURY PLYBOARDS INDIA	-0.2%	-26.7%

Equity Sector Attribution									
	Attribution Effects				Returns		Ending Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.1%	0.1%	0.0%	0.0%	-3.2%	-6.6%	2.3%	2.3%	
Materials	0.2%	-0.2%	0.0%	0.4%	-11.1%	-11.4%	8.9%	11.9%	
Industrials	1.0%	0.8%	0.0%	0.2%	-5.4%	-12.2%	13.1%	14.1%	
Consumer Discretionary	0.6%	0.4%	0.0%	0.2%	-4.3%	-8.2%	17.9%	16.2%	
Consumer Staples	0.5%	0.3%	0.4%	-0.2%	-1.7%	-6.1%	16.0%	7.1%	
Health Care	0.1%	0.2%	-0.2%	0.0%	-6.2%	-9.2%	18.3%	8.6%	
Financials	0.3%	0.1%	0.0%	0.2%	-9.2%	-9.3%	2.9%	9.6%	
Information Technology	0.0%	-0.1%	-0.4%	0.4%	-4.0%	-3.8%	7.5%	17.7%	
Telecommunication Services	0.1%	--	0.0%	--	--	-13.5%	0.0%	1.2%	
Utilities	0.1%	0.0%	0.0%	0.1%	-9.7%	-11.5%	2.9%	3.8%	
Real Estate	0.3%	0.6%	0.0%	-0.3%	-4.9%	-8.5%	8.3%	7.5%	
Cash	0.1%	0.0%	0.1%	0.0%	0.5%	--	0.9%	0.0%	
Portfolio	3.3%	=	2.3%	+	0.0%	+	1.1%	-5.3%	-8.6%
							99.0%	100.0%	

\* Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of period portfolio. Results may differ from actual performance. Returns are gross of fees.



June 30, 2018

# MONDRIAN EM SMALL CAP

## Sector Allocation\*

	Fund	MSCI EM SC
Consumer Discretionary	17.5	16.3
Consumer Staples	15.7	7.1
Energy	2.2	2.3
Financials	2.9	9.6
Health Care	19.9	8.6
Industrials	13.8	14.0
Information Technology	7.3	17.7
Materials	8.7	11.8
Real Estate	8.2	7.6
Telecommunication Services	—	1.1
Utilities	2.9	3.9
Cash	0.9	—
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>

## Country Allocation\*

	Fund	MSCI EM SC
<b>Latin America</b>	<b>10.0</b>	<b>9.8</b>
Brazil	2.5	4.9
Mexico	5.4	3.0
Peru	2.1	0.1
<b>Europe, Middle East &amp; Africa</b>	<b>10.0</b>	<b>11.0</b>
Czech Republic	1.3	—
Kuwait	1.3	—
Poland	2.9	0.9
Saudi Arabia	2.0	—
South Africa	1.5	5.0
<b>Pacific-Asia</b>	<b>79.1</b>	<b>79.2</b>
<b>North Asia</b>	<b>33.2</b>	<b>53.1</b>
China/Hong Kong	19.7	14.1
South Korea	6.4	18.8
Taiwan	7.1	20.2
<b>South Asia</b>	<b>45.9</b>	<b>25.3</b>
India	25.5	15.2
Indonesia	7.1	2.4
Malaysia	6.4	3.3
Philippines	4.3	0.9
Thailand	2.5	3.5
Cash	0.9	—
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>

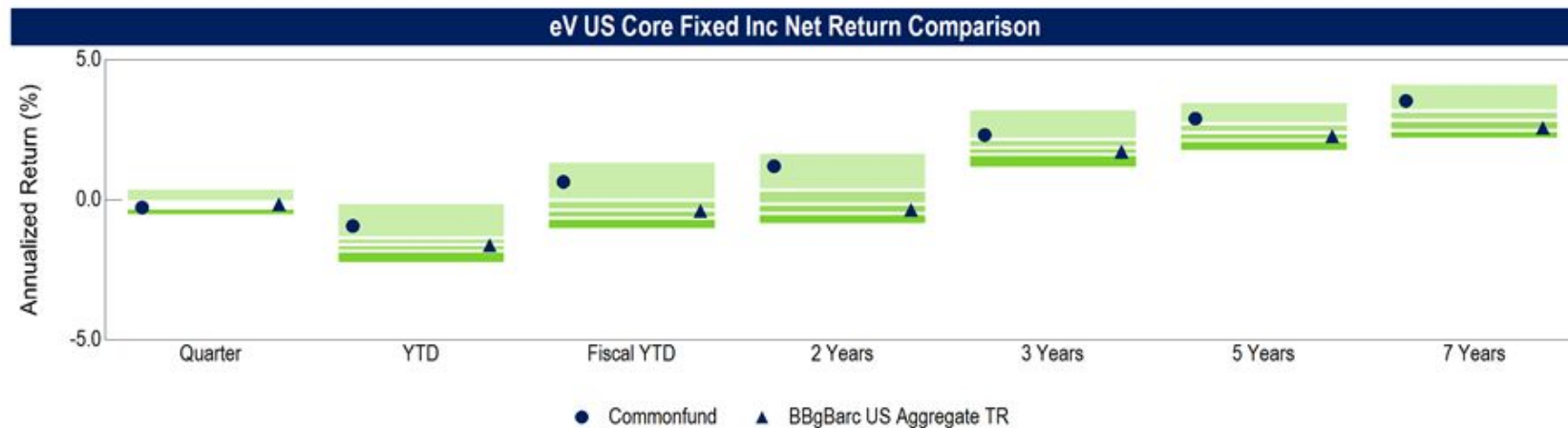
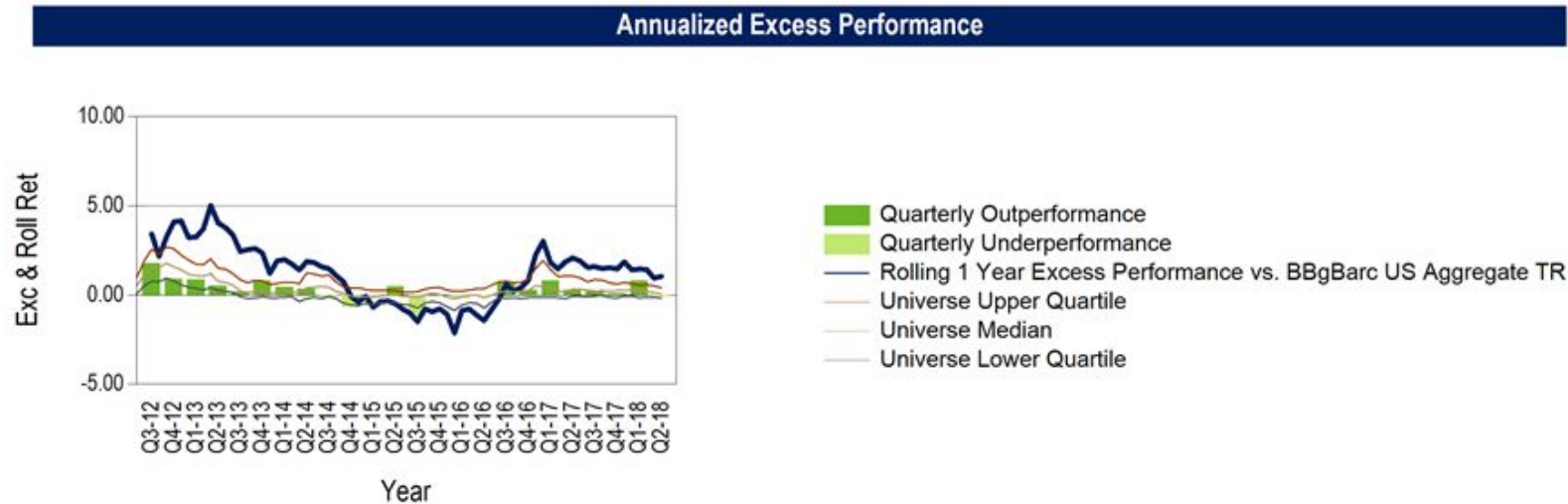


Source: Mondrian

June 30, 2018

# COMMONFUND

4.1



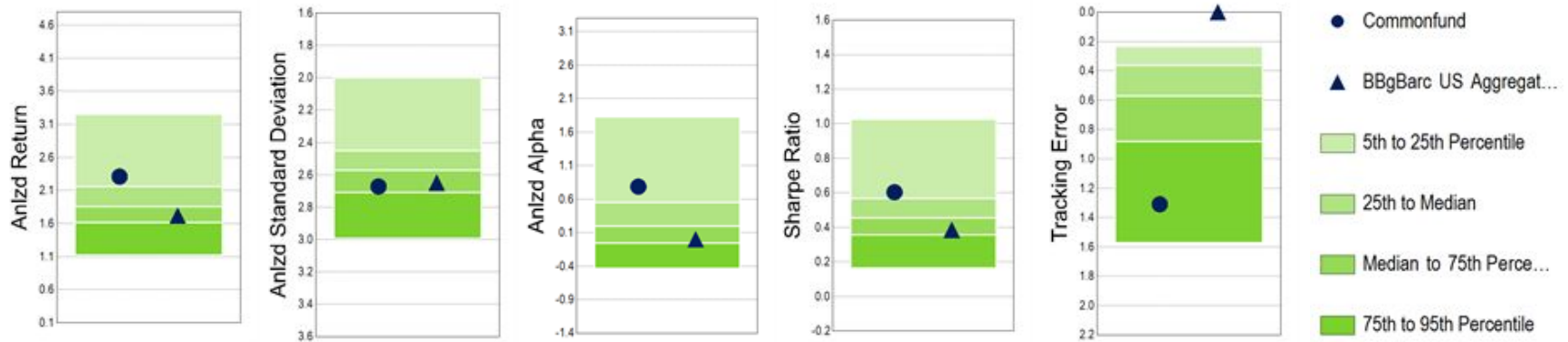
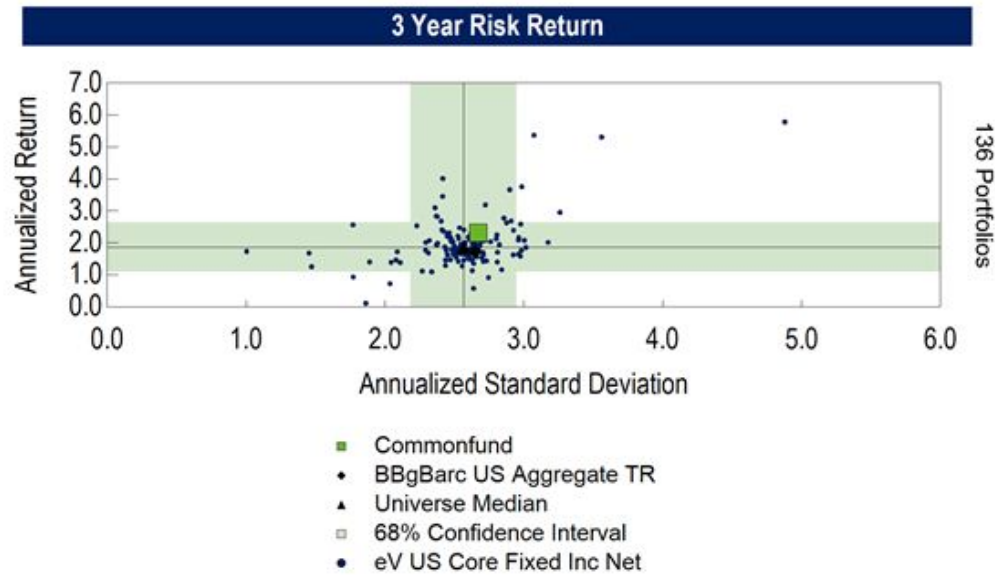
\*Returns are net of fees.



June 30, 2018

# COMMONFUND

4.1



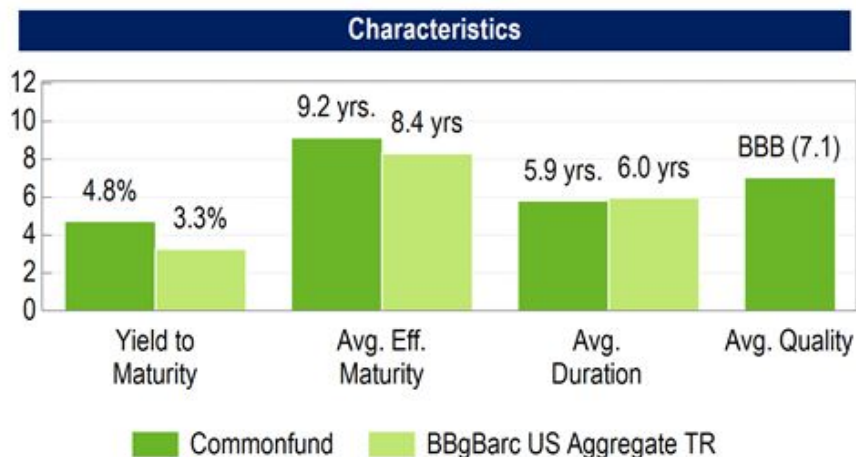
\*Returns are net of fees.



June 30, 2018

# COMMONFUND

4.1



June 30, 2018

# COMMONFUND

4.1

## Multi-Strategy Bond Fund: Investment Managers

Investment Managers	Core	Credit	Opportunistic
Bain Capital Specialty Fin.		X	
Brandywine Asset Management			X
Cerberus Capital Management		X	
Commonfund Private Credit Fund 2018		X	
Credit Partnerships		X	
Income Research & Management (IRM)	X		
PIMCO			X
Rimrock Capital Management	X		
Sit Investment Associates			X
Western Asset Mortgage Opportunities	X		X



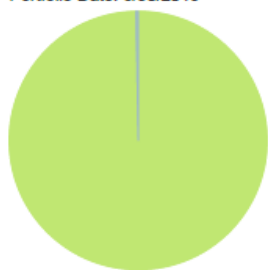
Source: Commonfund

June 30, 2018

# VANGUARD INFLATION PROTECTED SECURITIES

## Asset Allocation

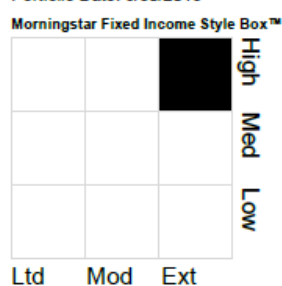
Portfolio Date: 6/30/2018



• Stock	0.0
• Bond	99.7
• Cash	0.0
• Other	0.3
<b>Total</b>	<b>100.0</b>

## Fixed Income Statistics

Portfolio Date: 6/30/2018



## Fixed-Income Stats

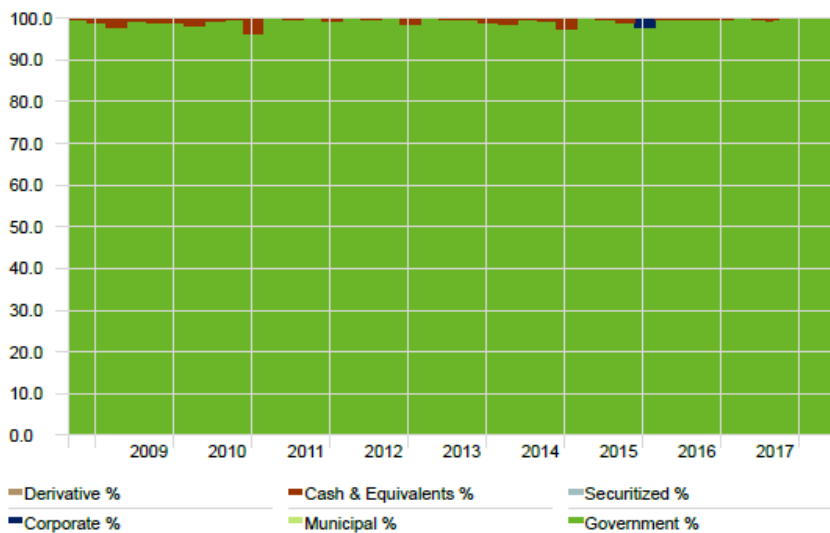
Average Eff Duration	7.6
Average Eff Maturity	8.3
Average Coupon	0.8
Average Price	102.2

## Credit Quality Breakdown

Portfolio Date: 5/31/2018

	Fund	Index
AAA %	100.0	
AA %	0.00	
A %	0.00	
BBB %	0.00	
BB %	0.00	
B %	0.00	
Below B %	0.00	
Not Rated %	0.00	
Yield to Maturity		

## Historical Sector Allocations (10 Years)



## Top Holdings

	Detail Holding Type	Portfolio Weighting %
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	5.27
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	4.01
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	4.00
United States Treasury Notes 0.5%	BOND - GOV'T INFLATION PROTECTED	3.87
United States Treasury Notes 0.62%	BOND - GOV'T INFLATION PROTECTED	3.73
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	3.71
United States Treasury Notes 0.38%	BOND - GOV'T INFLATION PROTECTED	3.66
United States Treasury Notes 0.38%	BOND - GOV'T INFLATION PROTECTED	3.64
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	3.64
United States Treasury Notes 0.25%	BOND - GOV'T INFLATION PROTECTED	3.63



Source: Morningstar

June 30, 2018



# VANGUARD INFLATION PROTECTED SECURITIES

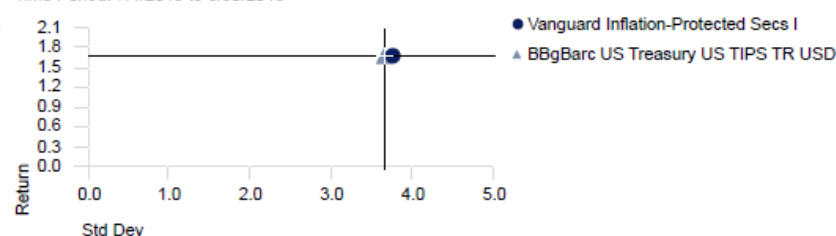
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	99.3	100.0
Alpha	0.0	0.0
Beta	1.0	1.0
Std Dev	3.8	3.6
Up Capture Ratio	102.2	100.0
Down Capture Ratio	104.1	100.0
Sharpe Ratio (geo)	0.3	0.3
Information Ratio (geo)	0.0	0.0
Tracking Error	0.3	0.0
Correlation	1.0	1.0

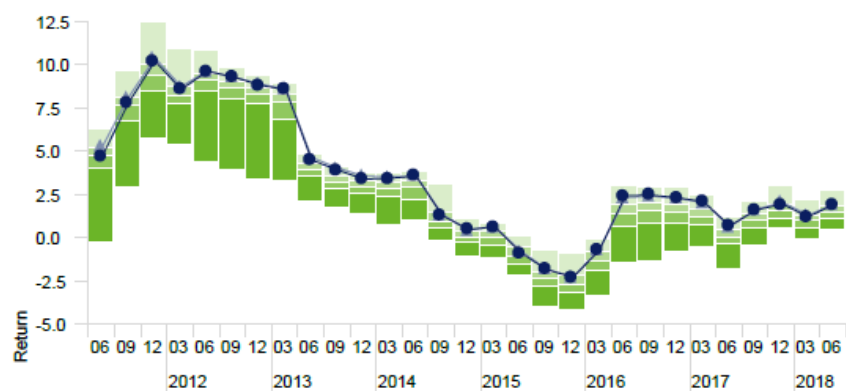
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Returns (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile

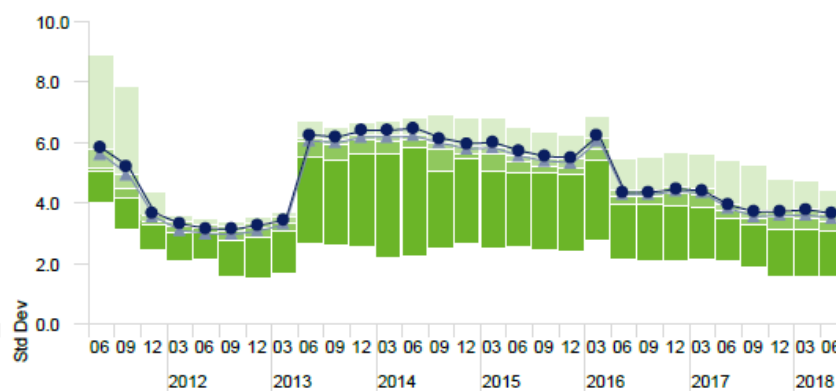


—Vanguard Inflation-Protected Secs I

—BBgBarc US Treasury US TIPS TR USD

## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—BBgBarc US Treasury US TIPS TR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Vanguard Inflation-Protected Secs I	-2.8	56	11.0	29	6.3	28	13.4	6	6.9	24	-8.8	52	4.1	5	-1.7	31	4.6	39	3.0	34
BBgBarc US Treasury US TIPS TR USD	-2.4		11.4		6.3		13.6		7.0		-8.6		3.6		-1.4		4.7		3.0	



Source: Morningstar

June 30, 2018

# GUGGENHEIM US BANK LOANS

## Characteristics

	US Bank Loans Composite	Credit Suisse Leveraged Loan Index
Effective Duration	0.15 years	0.09 years
Average Coupon	5.26%	5.65%
Average Market Price	\$98.94	\$98.57
Average YTM	6.09%	6.28%
Average YTW	5.12%	4.72%
Average OAS	308	342
Average Credit Quality <sup>2</sup>	B	B
WAL to Worst	2.98 years	2.67 years
No. of Issuers	237	1284

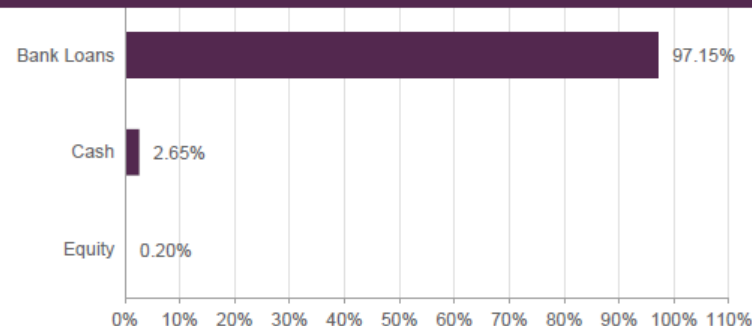
## Performance & Risk Analysis (Since Inception)

	US Bank Loans Composite (Gross)	Credit Suisse Leveraged Loan Index
Annualized Return	6.86%	5.12%
Excess Return	1.74%	–
Standard Deviation	4.90%	6.18%
Correlation	0.97	1
Information Ratio	0.93	–
Sharpe Ratio	1.17	0.64

## Industry Allocation

	Guggenheim	Index
Banking	0.00%	0.01%
Basic Industry	4.42%	4.92%
Brokerage	0.70%	1.05%
Capital Goods	11.08%	10.08%
Communications	9.94%	13.47%
Consumer Cyclical	20.61%	20.09%
Consumer Non Cyclical	23.20%	16.97%
Electric	2.35%	2.72%
Energy	1.30%	2.59%
Finance Companies	1.42%	2.54%
Insurance	1.31%	2.00%
Other Financials	1.02%	1.47%
Other Industry	2.05%	3.07%
Technology	16.56%	15.67%
Transportation	0.79%	1.93%
Cash	2.66%	0.00%
Other <sup>3</sup>	0.58%	1.42%

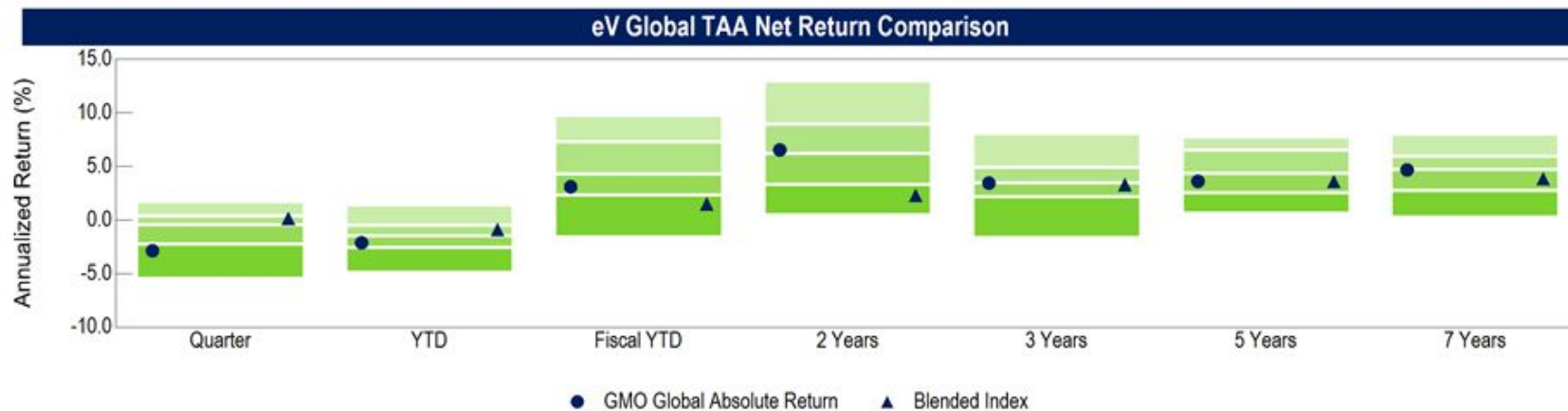
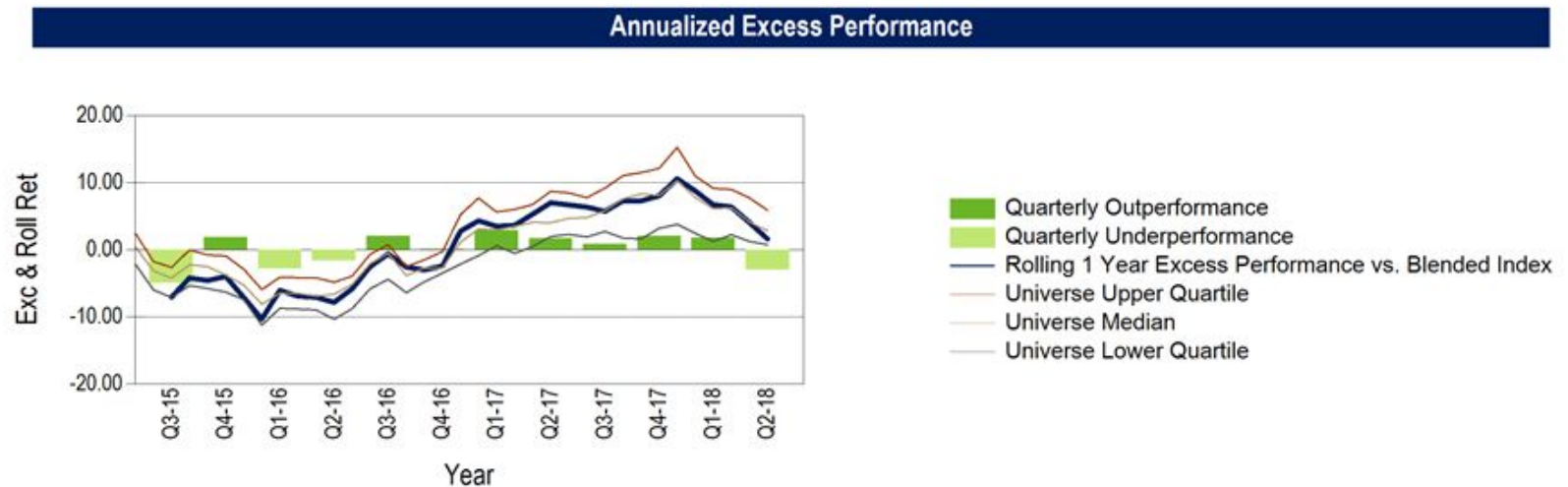
## Asset Class Allocation



Source: Guggenheim

June 30, 2018

# GMO GLOBAL ABSOLUTE RETURN



\*Returns are net of fees.

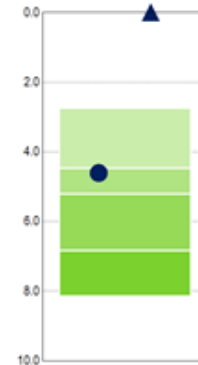
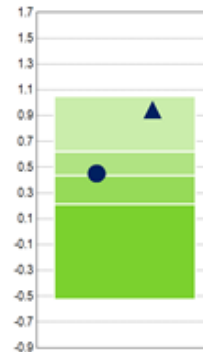
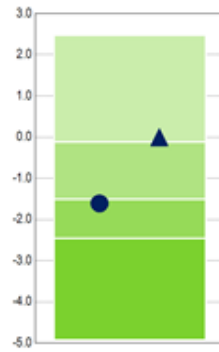
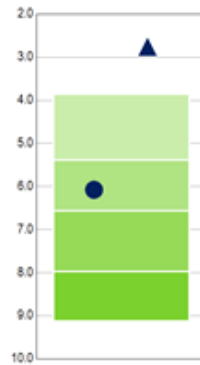
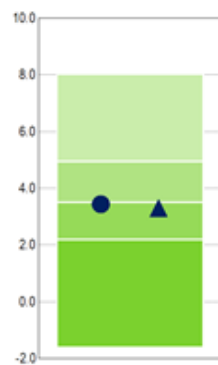
\*Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&P 500, 10% BC High Yield, 10% JPM EMBI+



June 30, 2018

# GMO GLOBAL ABSOLUTE RETURN

4.1



\*Returns are net of fees.

\*Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&P 500, 10% BC High Yield, 10% JPM EMBI+

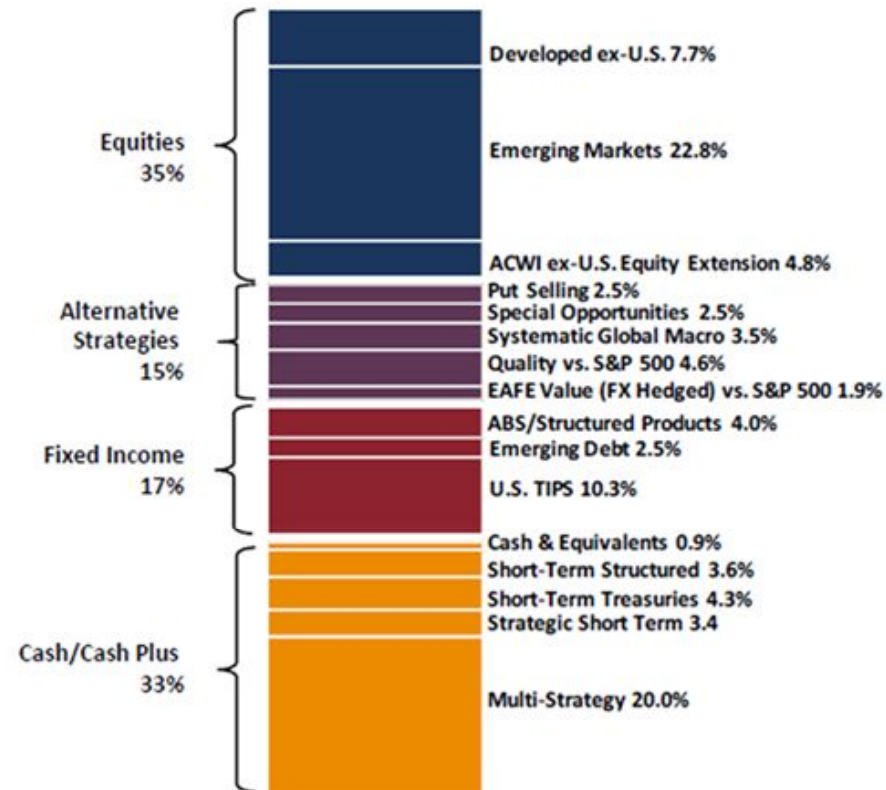


June 30, 2018

# GMO GLOBAL ABSOLUTE RETURN

4.1

Strategy Composition



Source: GMO

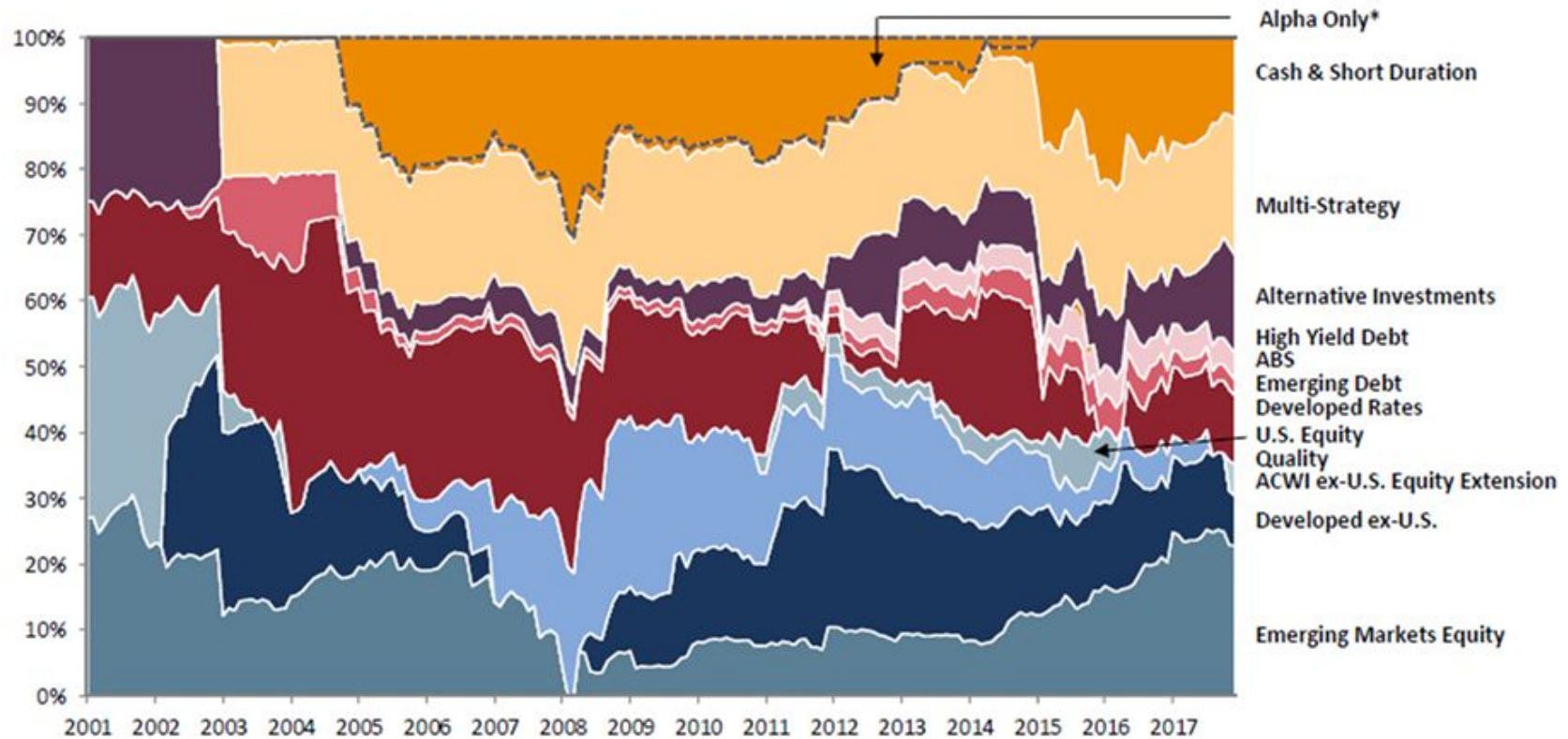


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# GMO GLOBAL ABSOLUTE RETURN

## Allocation History

4.1

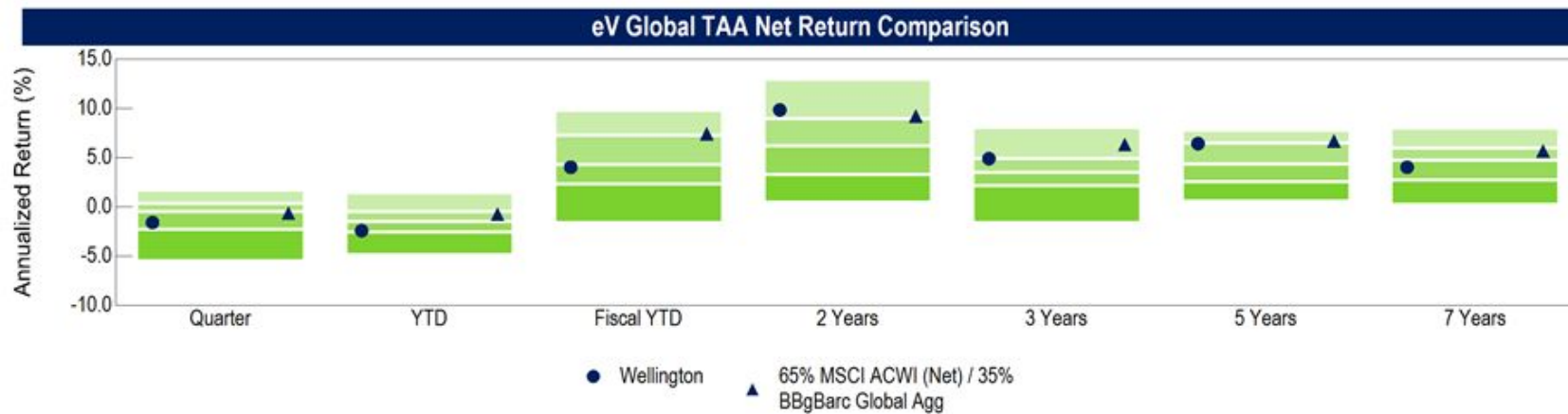
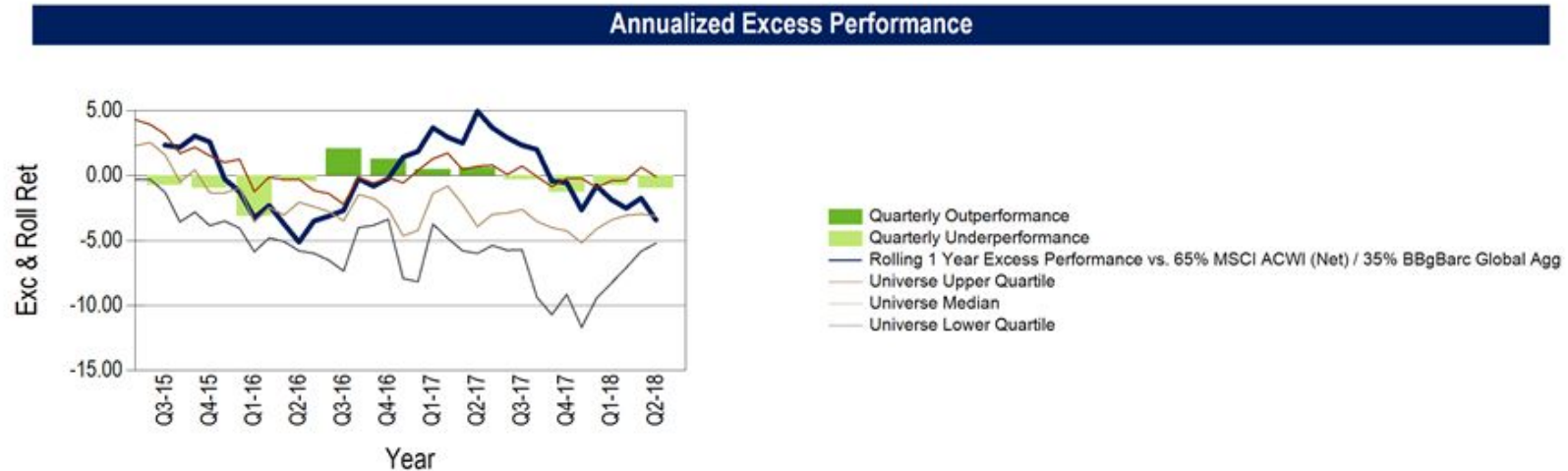


Source: GMO



June 30, 2018

# WELLINGTON OPPORTUNISTIC



\*Returns are net of fees.

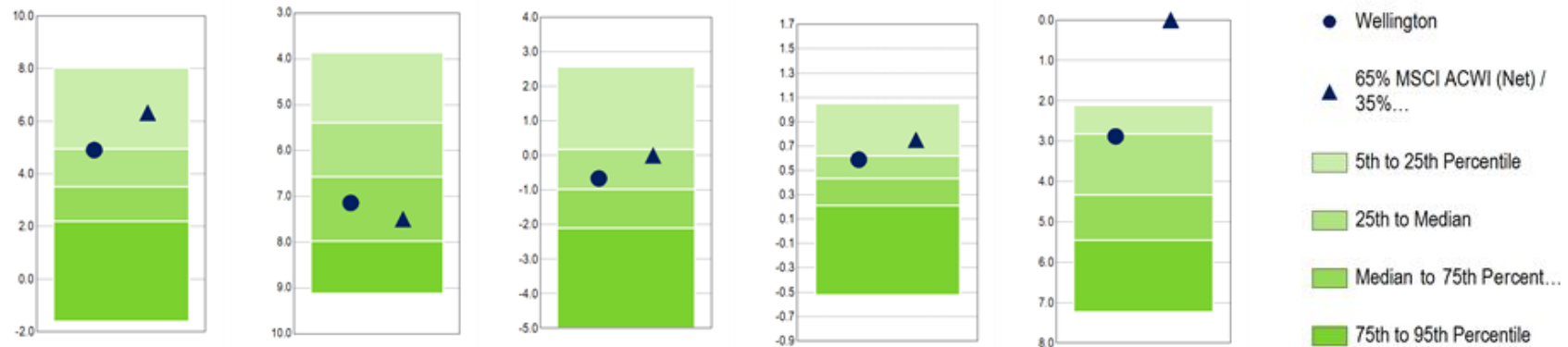


June 30, 2018



# WELLINGTON OPPORTUNISTIC

4.1



\*Returns are net of fees.

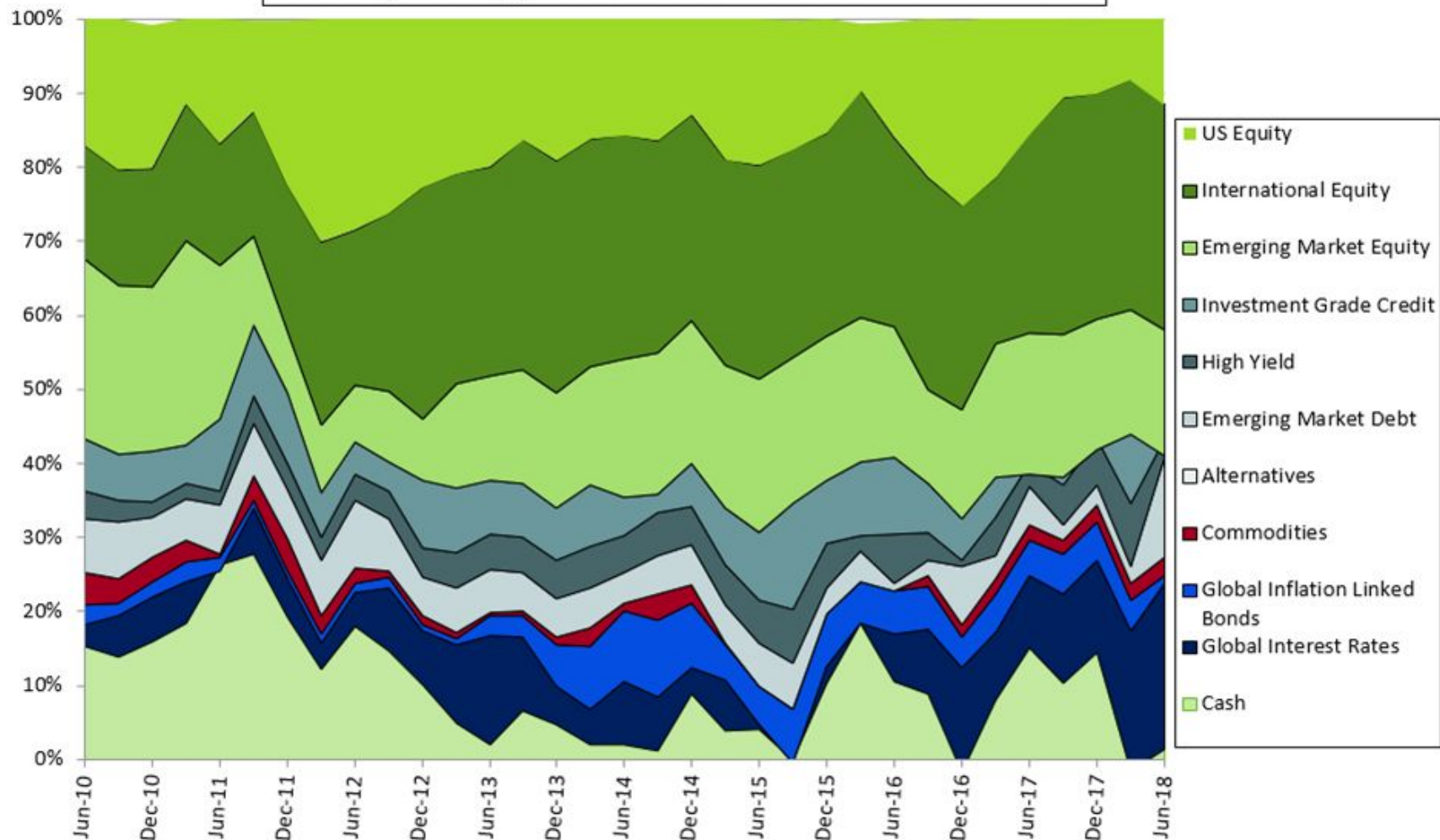


June 30, 2018



# WELLINGTON OPPORTUNISTIC

## Wellington Opportunistic Investment Allocation

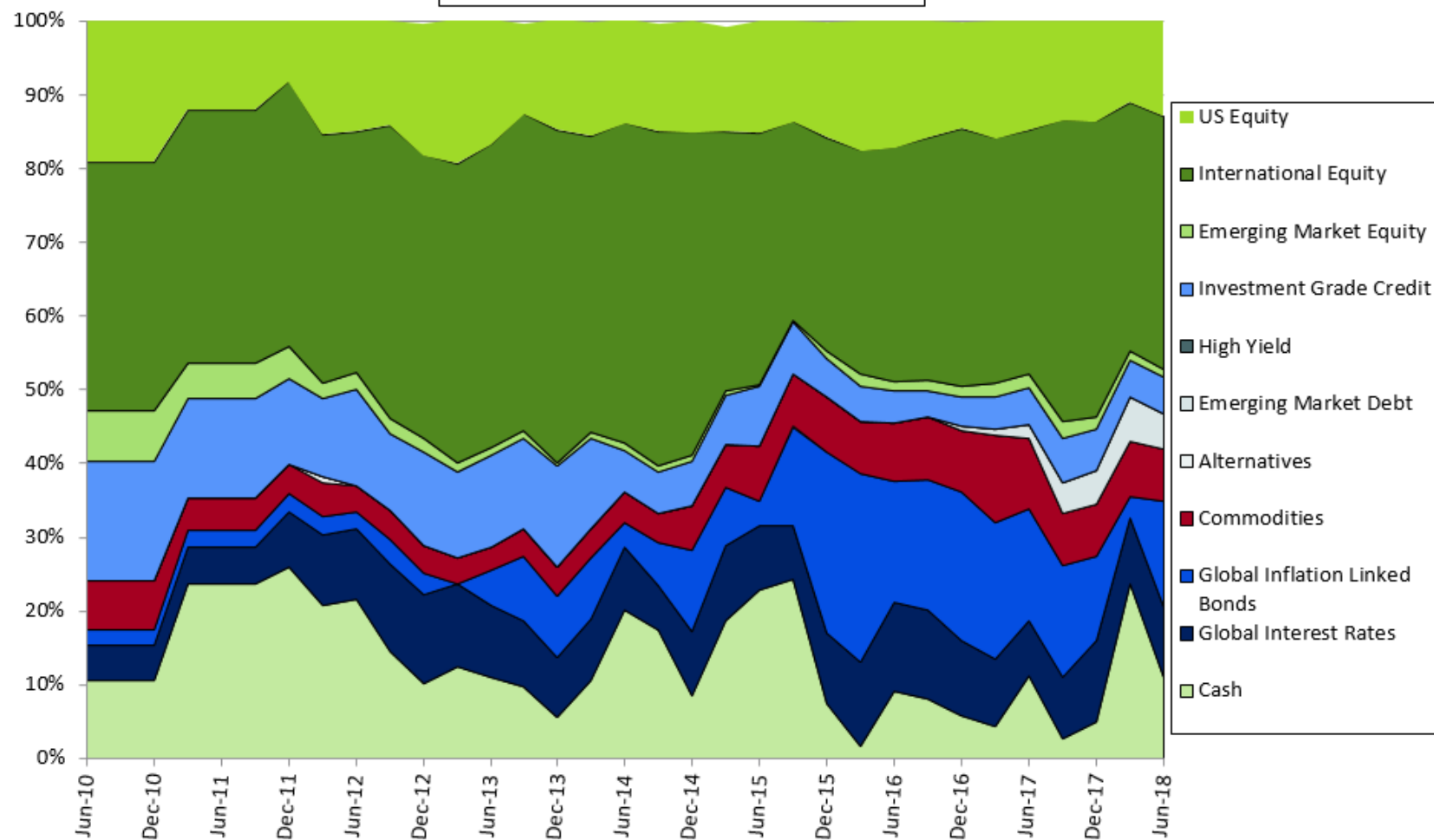


Source: Wellington

June 30, 2018

# NEWTON GLOBAL REAL RETURN

Newton Global Real Return



Source: Newton

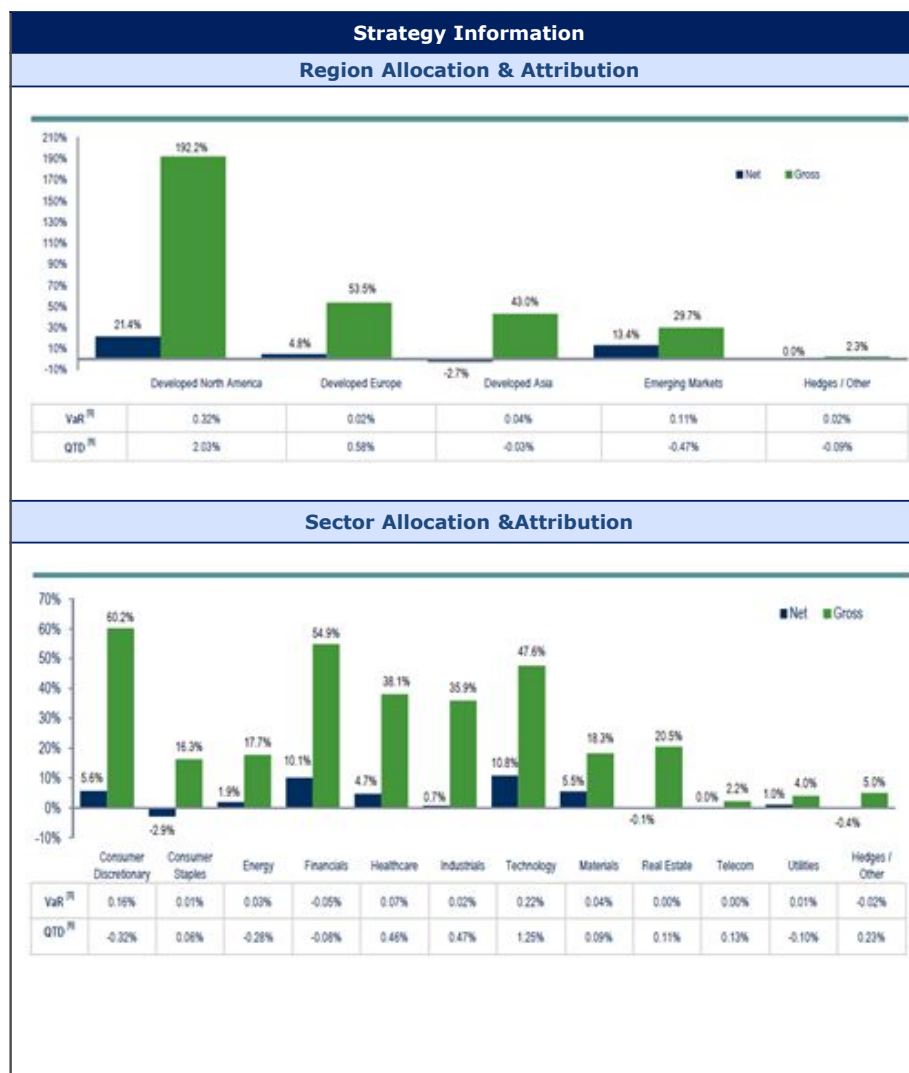
June 30, 2018

# LIGHTHOUSE GLOBAL LONG/SHORT

General Fund Information			
<b>Fund Name</b>	Lighthouse Global Long/Short Fund		
<b>Management Company</b>	Lighthouse Investment Partners, LLC		
<b>Location</b>	Palm Beach, FL		
<b>Firm AUM</b>	\$16.6 billion	<b>Strategy</b>	Fund of Fund
<b>Strategy AUM</b>	\$1.9 billion	<b>Sub-Strategy</b>	Long/Short Equity
<b>Portfolio Managers</b>	Ethan Baron	<b>Direct or FOF</b>	FOF

Terms	
<b>Share Class</b>	--
<b>Minimum Investment</b>	\$1 million
<b>Management Fee</b>	1.15%
<b>Incentive Fee</b>	--
<b>Hurdle Rate</b>	None
<b>High Water Mark</b>	Yes
<b>Subscription</b>	Monthly
<b>Redemption</b>	Quarterly (60 days notice) or Monthly (90 days notice)
<b>Lock-Up</b>	None

Investment Strategy
Lighthouse's Global Long/Short Fund is a global portfolio of 20-30 separately managed accounts with industry sector and country specialist managers. The geographical allocations are similar to the MSCI World Index (30%-75% Americas, 10%-35% Europe, 5%-35% Asia).
The Fund targets returns greater than 10% over market cycles with 6%-8% volatility and an equity beta of 0.2-0.4 to the MSCI World Index.



For more information please see NEPC's Investment Due Diligence Report and Operational Due Diligence Report

June 30, 2018

# LIGHTHOUSE GLOBAL LONG/SHORT



# JOHN HANCOCK TIMBER

## INVESTMENTS

Property	Location	Acquisition date	Acres	Independent appraisals		Book value	Fair market value	Unrealized appreciation (depreciation)
				Last	Next			
Plum Grove	PA/NY	10/31/05	15,205	Dec-16	NA	\$ 45,097,342	\$ 40,925,855	\$ (4,171,487)
Tyler	TX	10/31/05	86,759	Dec-17	Dec-18	\$ 76,205,172	\$ 165,678,662	\$ 89,473,490
Total equity real estate			101,964			\$ 121,302,514	\$ 206,604,517	\$ 85,302,003
<b>Other investments</b>								
		Acquisition date						
Red River Timberlands Company *	LA, TX	4/1/08	119,067	Dec-17	Dec-18	\$ 110,530,184	\$ 127,960,215	\$ 17,430,031
Total other investments			119,067			\$ 110,530,184	\$ 127,960,215	\$ 17,430,031

## INVESTMENT REGIONS

### Hancock Timber Resource Group Total Assets Under Management by Geographical Location As of June 30, 2018

Property Count	NCREIF Region	Real Estate Market Value	Market Value (%)	Acres	Acres (%)
2	Northeast	\$ 173,144,186	1.5%	58,155	1.0%
3	Lake States	264,794,298	2.4%	441,288	7.4%
35	Pacific Northwest	2,672,752,053	23.8%	1,233,734	20.6%
33	Southeast	1,926,807,980	17.1%	1,077,922	18.0%
20	Southwest	1,714,767,661	15.2%	921,805	15.4%
9	Non - U.S.A.	4,500,677,820	40.0%	2,263,934	37.8%
102		\$ 11,252,943,998	100.0%	5,996,838	100.0%



Source: Hancock

June 30, 2018

# LANDMARK EQUITY PARTNERS XV

General Fund Information			
<b>Fund Name</b>	Landmark Equity Partners XV		
<b>General Partner</b>	Landmark Partners		
<b>Main Address</b>	10 Mill Pond Lane, Simsbury, CT 06070		
<b>Target Fund Size</b>	\$2.5B	<b>Expected Final Close</b>	Up to 15 months after Initial Closing
<b>Capital Raised</b>	\$3.25B	<b>Closes to Date</b>	Yes
<b>Investment Period</b>	3-4 years	<b>Minimum Investment</b>	\$10M (negotiable)
<b>Term of Entity</b>	10 years from initial close, subject to 2 one-year extensions at GP's discretion	<b>Investment Structure</b>	Delaware L.P.
<b>Key Persons</b>	There are 6 members of the Key Person clause	<b>Fund Auditor</b>	PWC
<b>Size of Fund Team</b>	78 professionals (includes investment and administrative)	<b>Number of Past Funds</b>	28 (across all strategies)

GP Fees, Promote and Commitment	
<b>Preferred Return</b>	<ul style="list-style-type: none"> <li>8% per annum</li> </ul>
<b>GP Fees</b>	Years 1 - 4: 1.00% of LP's capital commitments Years 5 - 8: 1.00% of the aggregate amount of LP's capital contributions plus amounts subject to call for Fund obligations Years 8 - remaining life of fund: 1.00% of LP's investment percentage of the reported value of Fund XV's portfolio investments
<b>GP Commitment</b>	<ul style="list-style-type: none"> <li>1% of aggregate commitments</li> </ul>
<b>Carried Interest</b>	<ul style="list-style-type: none"> <li>10% on secondary investments only</li> </ul>

Fund Strategy			
<b>Investment Strategy</b>	<ul style="list-style-type: none"> <li>Landmark XV's primary objective is to acquire interests in private equity investments through secondary transactions.</li> <li>Landmark will build a diversified portfolio of private equity partnership interests diversified by strategy, geography and vintage year.</li> <li>Landmark strives to execute transactions on a negotiated basis and acquire portfolios of interests in private equity funds and direct investments through secondary market transactions that are unique, may require structuring, and where the opportunity for value creation exists.</li> </ul>		
<b>Target Net Returns</b>	Landmark aims to return a 1.6x-1.8x net multiple and a 15%-20% net IRR	<b>Direct or fund of funds</b>	Fund of funds (secondary interests)
<b>Investment Style</b>	Secondary	<b>Target Fund Leverage</b>	May use up to 10% leverage on aggregate commitment amount
<b>Target Asset Types</b>	Secondary investments in limited partnership interests	<b>Target Geographies</b>	Global (primary focus North America and Europe)
		<b>Target Deal Size</b>	No stated minimums or maximums

Fund Sourcing and Asset Management Capabilities	
<b>Sourcing Capabilities</b>	<ul style="list-style-type: none"> <li>Reactive deal flow is attributed to inbound leads from limited partners, general partners and intermediaries - generally in the form of an auction.</li> <li>Firm will only consider participating in a competitive process if it believes it has an edge on its competitors with regard to familiarity of a portfolio and/or believes the assets are mispriced.</li> <li>Utilizes its proprietary database, quantitative research, and portfolio management tools to proactively engage with potential sellers with the ultimate goal of sourcing investments on an exclusive basis.</li> <li>Believes that deal exclusivity hinges on talking to LPs who do not yet realize that they are potential sellers. Two-thirds of their non-auctioned deal flow is due to their research tool projects undertaken with potential sellers.</li> </ul>
<b>Value Add</b>	<ul style="list-style-type: none"> <li>Focus on sourcing exclusive transactions should on average produce pricing that is lower than the prices available in the auction channel.</li> <li>Strives to arrange preferred structures to protect downside while preserving commensurate upside participation.</li> <li>Proactive sourcing model allows the investment team more time and better access to data to conduct due diligence.</li> </ul>



# APPENDIX

NEPC, LLC

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# GLOSSARY OF TERMS

**Alpha** - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

**Alpha Jensen** - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

**Annualized Excess Return over Benchmark** - Annualized fund return minus the annualized benchmark return for the calculated return.

**Annualized Return** - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

**Beta** - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

**Information Ratio** - A measure of the risk adjusted return of a financial security, asset, or portfolio.

*Formula:*

*(Annualized Return of Portfolio - Annualized Return of Benchmark)/Annualized Standard Deviation(Period Portfolio Return - Period Benchmark Return). To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.*

**R-Squared** - Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

**Sharpe Ratio** - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

**Sortino Ratio** - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

*Formula:*

*Calculation Average (X-Y)/Downside Deviation (X-Y) \* 2  
Where X=Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)*

**Standard Deviation** - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

*Formula:*

*(Annualized Return of Portfolio - Annualized Return of Risk Free) / Annualized Standard Deviation (Portfolio Returns)*

**Tracking Error** - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

*Formula:*

*Tracking Error = Standard Deviation (X-Y) \*  $\sqrt{(\# \text{ of periods per year})}$*

*Where X = periods portfolio return and Y = the period's benchmark return*

*For monthly returns, the periods per year = 12*

*For quarterly returns, the periods per year = 4*

**Treynor Ratio** - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

*Formula:*

*(Portfolio Average Return - Average Return of Risk-Free Rate)/Portfolio Beta*

**Up/Down Capture Ratio** - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

*UpsideCapture = TotalReturn(FundReturns)/TotalReturns(BMReturn) when Period Benchmark Return is >= 0*

*DownsideCapture = TotalReturn(FundReturns)/TotalReturns(BMReturn) when Benchmark < 0*

*Data Source: InvestorForce*





# INFORMATION DISCLAIMER AND REPORTING METHODOLOGY

## Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may not be available from the source or may be preliminary and subject to change.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodial bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- This report is provided as a management aid for the client's internal use only. Performance contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

## Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of Return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.





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## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Performance Review – Defined Benefit Pension Fund

2. **INITIATED BY:** Kelly Martin, Chair

3. **BOARD INFORMATION:** X

**BOARD ACTION:**

4. **OUTCOME:**

Primary Outcomes:

Enhance fiscal positioning

**BOARD POLICY:**

Section 709 - Investments

5. **BACKGROUND:**

Enclosed for your information is the Pension Fund performance report for the quarter ended June 30, 2018.

Jay Roney of NEPC will provide a brief review at the September 28, 2018 Investment Committee meeting.

9/18/2018

## **SECOND QUARTER 2018 INVESTMENT REVIEW**

### **UNIVERSITY OF MAINE SYSTEM PENSION PLAN**

**September 28, 2018**

**Jay E. Roney, Partner**

**Kelly Regan, Senior Consultant**



BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

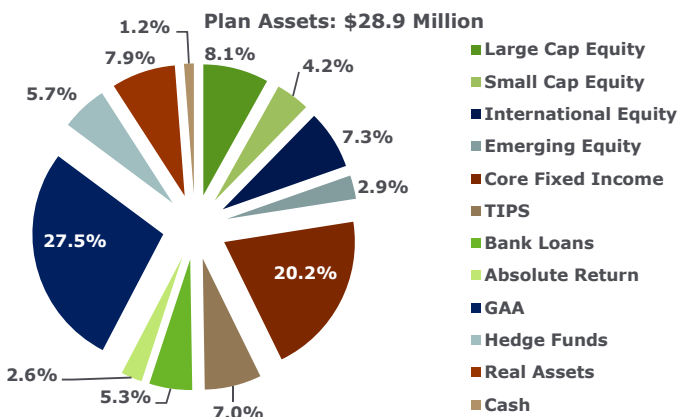
# EXECUTIVE SUMMARY

NEPC, LLC

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# EXECUTIVE SUMMARY

## ASSET ALLOCATION



## PLAN COMMENTS

### Asset Allocation

The Plan's assets were \$28.9 million as of June 30, 2018 a \$809 thousand decrease during the second quarter. Investment gains were \$290 thousand and benefit payments amounted to \$1.1 million. All asset classes are within policy ranges.

### Performance (Net of Fees)

The Fund returned 0.8% in the 2<sup>nd</sup> quarter and 4.5% fiscal-year-to-date, ranking in the 39<sup>th</sup> and 78<sup>th</sup> percentiles, respectively.

The Fund ranks below median over the longer trailing periods due to the Fund's conservative asset allocation and select manager underperformance.

Equity long/short hedge fund, domestic equity, and fixed income managers were the top contributors to overall performance during the quarter. Emerging market equity, Int'l equity and select global asset allocation managers detracted from overall performance during the quarter.



## PLAN PERFORMANCE: NET OF FEES

	QTR (%)	YTD (%)	FYTD (%)	3 YR (%)	5 YR (%)	10 YR (%)
COMPOSITE	0.8	0.3	4.5	4.0	5.1	4.5
ALLOC. INDEX	0.2	0.1	6.2	5.4	6.2	5.1
POLICY INDEX	0.2	0.0	5.9	5.5	6.3	5.7
RANK (TRUST FUNDS)	39	51	78	84	81	85

## RECENT ACTIONS/RECOMMENDATIONS

### Recent Actions

Guggenheim US Bank Loans was terminated effective July 31, 2018 and Bain Capital is in the process of being funded.

Blackrock Strategic Opportunities strategy was funded in July 2018.

Rebalancing was provided to cover benefit payments and expenses.

### Recommendations

There are no recommendations at this time.

### Investment Manager Updates

There were no new manager announcements during the second quarter.

# DUE DILIGENCE MONITOR

The items below summarize the recent quarter's performance and any changes or announcements from your Plan managers/funds. A "-" indicates there were no material announcements. A "Yes" indicates there was an announcement and a summary is provided separately. NEPC's Due Diligence Committee meets every two weeks to review events as they relate to investment managers and determines if any action should be taken by NEPC and/or by our clients. They rate events: No Action, Watch, Hold, Client Review or Terminate. With respect to Performance, a "-" indicates the manager/fund performed in line with the majority of managers/funds in the category; only outliers (placement in the Top or Bottom Quartile) are highlighted. Your Consultant's Recommendation is refreshed quarterly in view of the recent quarter's developments (performance, manager events, and any of the longer-term trending data). NEPC considers ourselves to be a fiduciary, as ERISA defines the term in Section 3(21).

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Fund	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
Lighthouse	No	Maintain Watch

NEPC Due Diligence Committee Recommendation Key	
<b>No Action</b>	Informational items have surfaced; no action is recommended.
<b>Watch</b>	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
<b>Hold</b>	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
<b>Client Review</b>	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
<b>Terminate</b>	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.



# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Pension Composite</b>	<b>28,930,221</b>	<b>100.0</b>	<b>100.0</b>	<b>0.8</b>	<b>4.5</b>	<b>0.3</b>	<b>4.5</b>	<b>5.8</b>	<b>4.0</b>	<b>5.1</b>	<b>5.0</b>	<b>4.5</b>
Allocation Index				0.2	6.2	0.1	6.2	7.1	5.4	6.2	5.9	5.1
Policy Index				0.2	5.9	0.0	5.9	7.1	5.5	6.3	6.1	5.7
<b>Total Domestic Large Cap</b>	<b>2,356,236</b>	<b>8.1</b>	<b>8.0</b>	<b>3.5</b>	<b>14.4</b>	<b>2.7</b>	<b>14.4</b>	<b>16.1</b>	<b>11.9</b>	<b>13.1</b>	<b>12.3</b>	<b>8.7</b>
S&P 500				3.4	14.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
Vanguard S&P 500 Index	2,356,236	8.1	8.0	3.5	14.4	2.7	14.4	16.1	11.9	--	--	--
S&P 500				3.4	14.4	2.6	14.4	16.1	11.9	13.4	13.2	10.2
<b>Total Small Cap Composite</b>	<b>1,206,362</b>	<b>4.2</b>	<b>4.0</b>	<b>7.7</b>	<b>17.5</b>	<b>7.7</b>	<b>17.5</b>	<b>21.0</b>	<b>11.0</b>	<b>12.2</b>	<b>11.6</b>	<b>--</b>
Russell 2000				7.8	17.6	7.7	17.6	21.0	11.0	12.5	11.8	10.6
SSgA R2000 Index Fund Non Lending	1,206,362	4.2	4.0	7.7	17.5	7.7	17.5	21.0	11.0	12.3	11.6	--
Russell 2000				7.8	17.6	7.7	17.6	21.0	11.0	12.5	11.8	10.6
<b>Total International Equity (including emerging markets)</b>	<b>2,975,855</b>	<b>10.3</b>	<b>10.0</b>	<b>-1.8</b>	<b>4.1</b>	<b>-3.0</b>	<b>4.1</b>	<b>8.9</b>	<b>2.7</b>	<b>4.0</b>	<b>3.6</b>	<b>2.4</b>
MSCI EAFE				-1.2	6.8	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
Morgan Stanley Int'l	2,126,173	7.3	7.0	-0.2	5.4	-1.7	5.4	11.0	4.3	5.5	5.3	3.5
MSCI EAFE				-1.2	6.8	-2.7	6.8	13.4	4.9	6.4	4.9	2.8
<b>Emerging Markets Equity</b>	<b>849,682</b>	<b>2.9</b>	<b>3.0</b>	<b>-5.6</b>	<b>0.9</b>	<b>-6.1</b>	<b>0.9</b>	<b>4.2</b>	<b>-0.8</b>	<b>0.3</b>	<b>--</b>	<b>--</b>
MSCI Emerging Markets				-8.0	8.2	-6.7	8.2	15.7	5.6	5.0	1.4	2.3
Mondrian EM Small Cap	849,682	2.9	3.0	-5.6	0.9	-6.1	0.9	4.2	-0.8	--	--	--
MSCI Emerging Markets Small Cap				-8.6	5.6	-8.5	5.6	11.2	2.5	4.3	1.4	4.4
<b>Total Fixed Income</b>	<b>10,142,945</b>	<b>35.1</b>	<b>34.5</b>	<b>0.2</b>	<b>0.7</b>	<b>-0.8</b>	<b>0.7</b>	<b>0.6</b>	<b>2.3</b>	<b>2.6</b>	<b>3.2</b>	<b>4.8</b>
BBgBarc US Aggregate TR				-0.2	-0.4	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Total Bond Market Index	5,831,101	20.2	20.0	-0.2	-0.5	-1.6	-0.5	-0.5	1.7	--	--	--
BBgBarc US Aggregate TR				-0.2	-0.4	-1.6	-0.4	-0.4	1.7	2.3	2.6	3.7
Vanguard Inflation-Protected Securities	2,019,927	7.0	7.0	0.8	1.9	-0.1	1.9	--	--	--	--	--
BBgBarc US TIPS TR				0.8	2.1	0.0	2.1	0.7	1.9	1.7	2.1	3.0
Guggenheim US Bank Loans	1,542,736	5.3	5.0	0.9	4.1	2.0	4.1	--	--	--	--	--
Credit Suisse Leveraged Loans				0.8	4.7	2.4	4.7	6.1	4.3	4.2	4.6	5.0
BlackRock Strategic Income Opportunities	749,182	2.6	2.5	--	--	--	--	--	--	--	--	--
3-Month Libor Total Return USD				0.6	1.8	1.1	1.8	1.4	1.1	0.8	0.7	0.7

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June 30, 2018

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Total GAA</b>	<b>7,966,132</b>	<b>27.5</b>	<b>27.5</b>	<b>0.1</b>	<b>2.7</b>	<b>-0.9</b>	<b>2.7</b>	<b>4.9</b>	<b>2.4</b>	<b>3.7</b>	<b>2.9</b>	<b>--</b>
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	7.4	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
Wellington	3,995,125	13.8	13.8	-1.6	4.0	-2.3	4.0	9.9	5.0	6.5	4.1	--
65% MSCI ACWI (Net) / 35% BBgBarc Global Agg				-0.6	7.4	-0.7	7.4	9.2	6.3	6.7	5.7	4.9
Newton Global Real Return	3,971,007	13.7	13.8	1.8	1.1	0.6	1.1	-0.1	--	--	--	--
60% MSCI ACWI (Net) / 40% CITI WGBI				-1.0	7.2	-0.6	7.2	8.2	6.2	6.2	5.1	4.6
<b>Total Alternative Investments</b>	<b>1,642,216</b>	<b>5.7</b>	<b>5.0</b>	<b>2.3</b>	<b>7.1</b>	<b>3.0</b>	<b>7.1</b>	<b>6.4</b>	<b>3.1</b>	<b>3.6</b>	<b>2.4</b>	<b>--</b>
HFRI Fund of Funds Composite Index				0.4	5.1	0.7	5.1	5.8	1.9	3.5	2.8	1.4
Lighthouse	1,642,216	5.7	5.0	2.9	10.2	5.1	10.2	7.9	--	--	--	--
Credit Suisse Long Shrt Eqt USD				-0.3	7.1	0.7	7.1	7.7	3.3	5.8	5.1	4.1
<b>Total Real Assets</b>	<b>2,286,633</b>	<b>7.9</b>	<b>8.0</b>									
Principal	2,286,633	7.9	8.0	2.2	8.1	4.1	8.1	8.5	9.4	10.6	11.1	4.7
NCREIF ODCE				2.1	8.4	4.3	8.4	8.2	9.4	11.0	11.4	5.3
<b>Total Cash</b>	<b>353,840</b>	<b>1.2</b>	<b>3.0</b>									
Distribution Account	353,840	1.2	3.0	0.4	1.1	0.7	1.1	0.6	0.4	0.3	0.2	0.3
91 Day T-Bills				0.5	1.4	0.8	1.4	1.0	0.7	0.4	0.3	0.3

Notes:

Fiscal YTD begins 7/1

Blended Index: 40% BC Aggregate, 30% BC U.S. TIPS 1-10YR, 10% S&amp;P 500, 10% BC High Yield, 10% JPM EMBI+

Returns are net of manager fees

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June 30, 2018

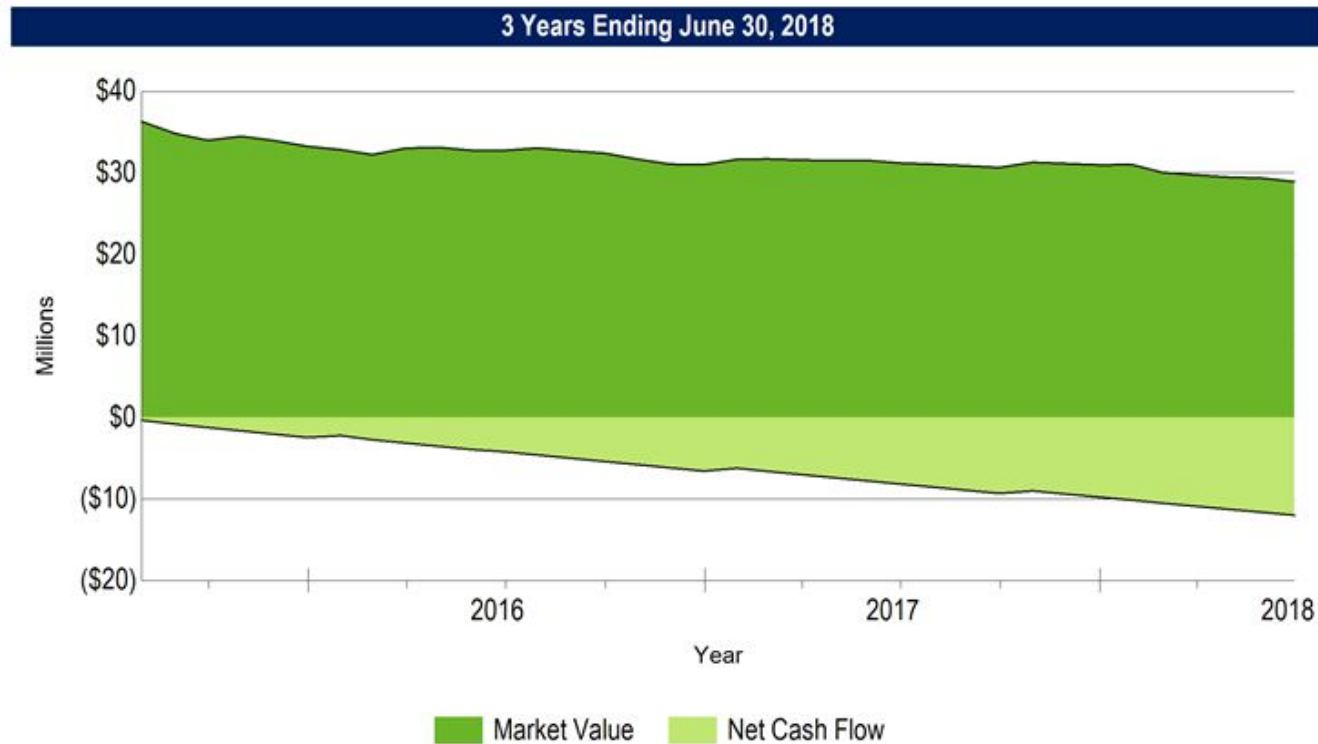


# PLAN SUMMARY AND STATISTICS

NEPC, LLC

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# ASSET GROWTH SUMMARY



	Last Three Months	Fiscal Year-To-Date	One Year	Three Years
Beginning Market Value	\$29,739,883	\$31,216,135	\$31,216,135	\$36,627,960
Net Cash Flow	-\$1,098,414	-\$3,836,385	-\$3,836,385	-\$12,000,720
Net Investment Change	\$288,752	\$1,550,472	\$1,550,472	\$4,302,981
Ending Market Value	\$28,930,221	\$28,930,221	\$28,930,221	\$28,930,221



June 30, 2018

# CASH FLOW SUMMARY

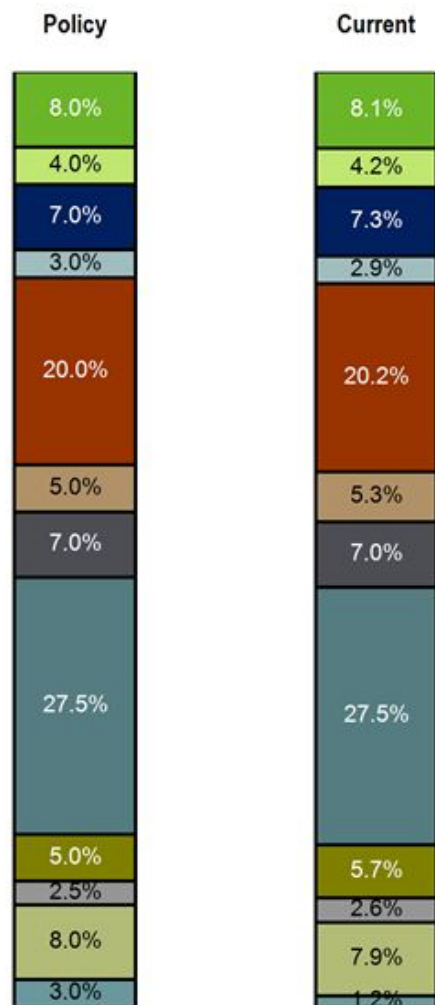
	Quarter Ending June 30, 2018					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
BlackRock Strategic Income Opportunities	--	\$751,619	-\$331	\$751,288	-\$2,106	\$749,182
Distribution Account	\$499,395	\$1,665,019	-\$1,811,124	-\$146,105	\$550	\$353,840
EntrustPermal	\$755,926	\$0	-\$751,619	-\$751,619	-\$4,307	--
Guggenheim US Bank Loans	\$1,529,514	\$0	-\$1,924	-\$1,924	\$15,147	\$1,542,736
Lighthouse	\$1,596,252	\$0	\$0	\$0	\$45,965	\$1,642,216
Mondrian EM Small Cap	\$899,437	\$0	-\$6,370	-\$6,370	-\$43,385	\$849,682
Morgan Stanley Int'l	\$2,129,783	\$0	-\$5,090	-\$5,090	\$1,480	\$2,126,173
Newton Global Real Return	\$4,105,830	\$0	-\$218,197	-\$218,197	\$83,374	\$3,971,007
Principal	\$2,533,813	\$0	-\$300,000	-\$300,000	\$52,821	\$2,286,633
SSgA R2000 Index Fund Non Lending	\$1,213,388	\$0	-\$100,490	-\$100,490	\$93,464	\$1,206,362
Vanguard Inflation-Protected Securities	\$2,003,056	\$0	-\$352	-\$352	\$17,223	\$2,019,927
Vanguard S&P 500 Index	\$2,374,930	\$0	-\$100,236	-\$100,236	\$81,542	\$2,356,236
Vanguard Total Bond Market Index	\$5,841,045	\$0	-\$1,018	-\$1,018	-\$8,926	\$5,831,101
Wellington	\$4,257,515	\$0	-\$218,301	-\$218,301	-\$44,089	\$3,995,125
Total	\$29,739,883	\$2,416,638	-\$3,515,052	-\$1,098,414	\$288,752	\$28,930,221

5.1



June 30, 2018

# ASSET ALLOCATION



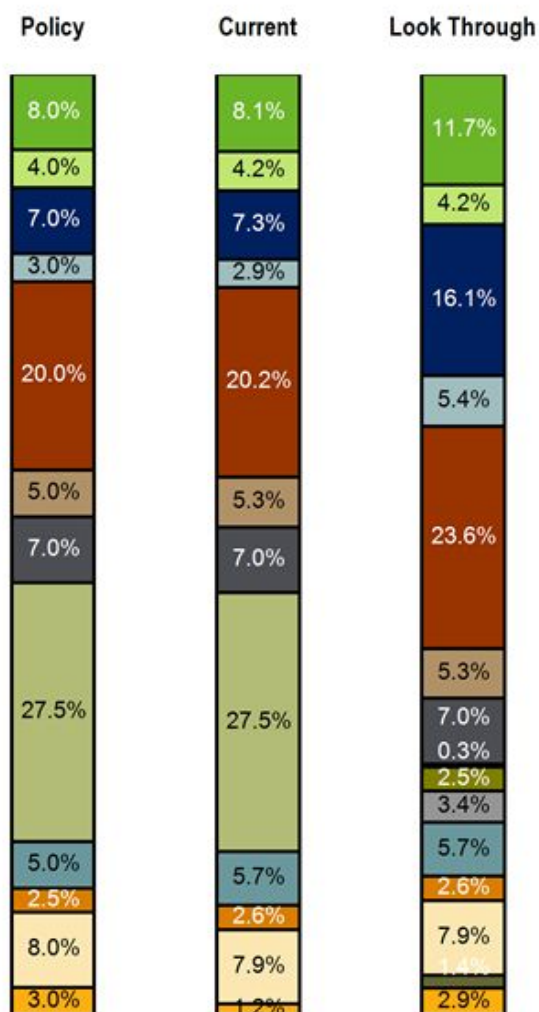
Asset Allocation vs. Target							
	Current	Policy	Current	Difference	Policy Range	Within Range	
Large Cap Equity	\$2,356,236	8.0%	8.1%	0.1%	3.0% - 13.0%	Yes	
Small Cap Equity	\$1,206,362	4.0%	4.2%	0.2%	0.0% - 6.0%	Yes	
International Equity	\$2,126,173	7.0%	7.3%	0.3%	2.0% - 12.0%	Yes	
Emerging Markets Equity	\$849,682	3.0%	2.9%	-0.1%	0.0% - 5.0%	Yes	
Core Bonds	\$5,831,101	20.0%	20.2%	0.2%	10.0% - 30.0%	Yes	
Bank Loans	\$1,542,736	5.0%	5.3%	0.3%	0.0% - 10.0%	Yes	
TIPS	\$2,019,927	7.0%	7.0%	0.0%	0.0% - 14.0%	Yes	
Global Asset Allocation	\$7,966,132	27.5%	27.5%	0.0%	25.0% - 30.0%	Yes	
Hedge Funds	\$1,642,216	5.0%	5.7%	0.7%	0.0% - 10.0%	Yes	
Absolute Return	\$749,182	2.5%	2.6%	0.1%	0.0% - 5.0%	Yes	
Real Estate	\$2,286,633	8.0%	7.9%	-0.1%	0.0% - 10.0%	Yes	
Cash	\$353,840	3.0%	1.2%	-1.8%	0.0% - 10.0%	Yes	
<b>Total</b>	<b>\$28,930,221</b>	<b>100.0%</b>	<b>100.0%</b>				

5.1



June 30, 2018

# ASSET ALLOCATION



Asset Allocation			
	Policy	Current	Look Through
Large Cap Equity	8.0%	8.1%	11.7%
Small Cap Equity	4.0%	4.2%	4.2%
International Equity	7.0%	7.3%	16.1%
Emerging Markets Equity	3.0%	2.9%	5.4%
Core Bonds	20.0%	20.2%	23.6%
Bank Loans	5.0%	5.3%	5.3%
TIPS	7.0%	7.0%	7.0%
Multi-sector Fixed Income	--	--	0.3%
Fixed Income - Emerging	--	--	2.5%
Global Bonds	--	--	3.4%
Global Asset Allocation	27.5%	27.5%	--
Hedge Funds	5.0%	5.7%	5.7%
Absolute Return	2.5%	2.6%	2.6%
Real Estate	8.0%	7.9%	7.9%
Real Assets	--	--	1.4%
Cash	3.0%	1.2%	2.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Net Asset Allocation breaks out the exposure of GAA managers.

Asset class weights may not add up to 100% due to rounding.

The 60% MSCI ACWI/40% CITI WGBI Index is broken down into the following categories: 32.2% Domestic Equities, 20.9% Int'l Equities, 7.0% Emerging Equities, 14.3% US Treasury Bonds, 13.0% European Government Bonds, 7.8% Japanese Debt, 2.2% United Kingdom Bonds and 2.8% Developing Market Bonds.

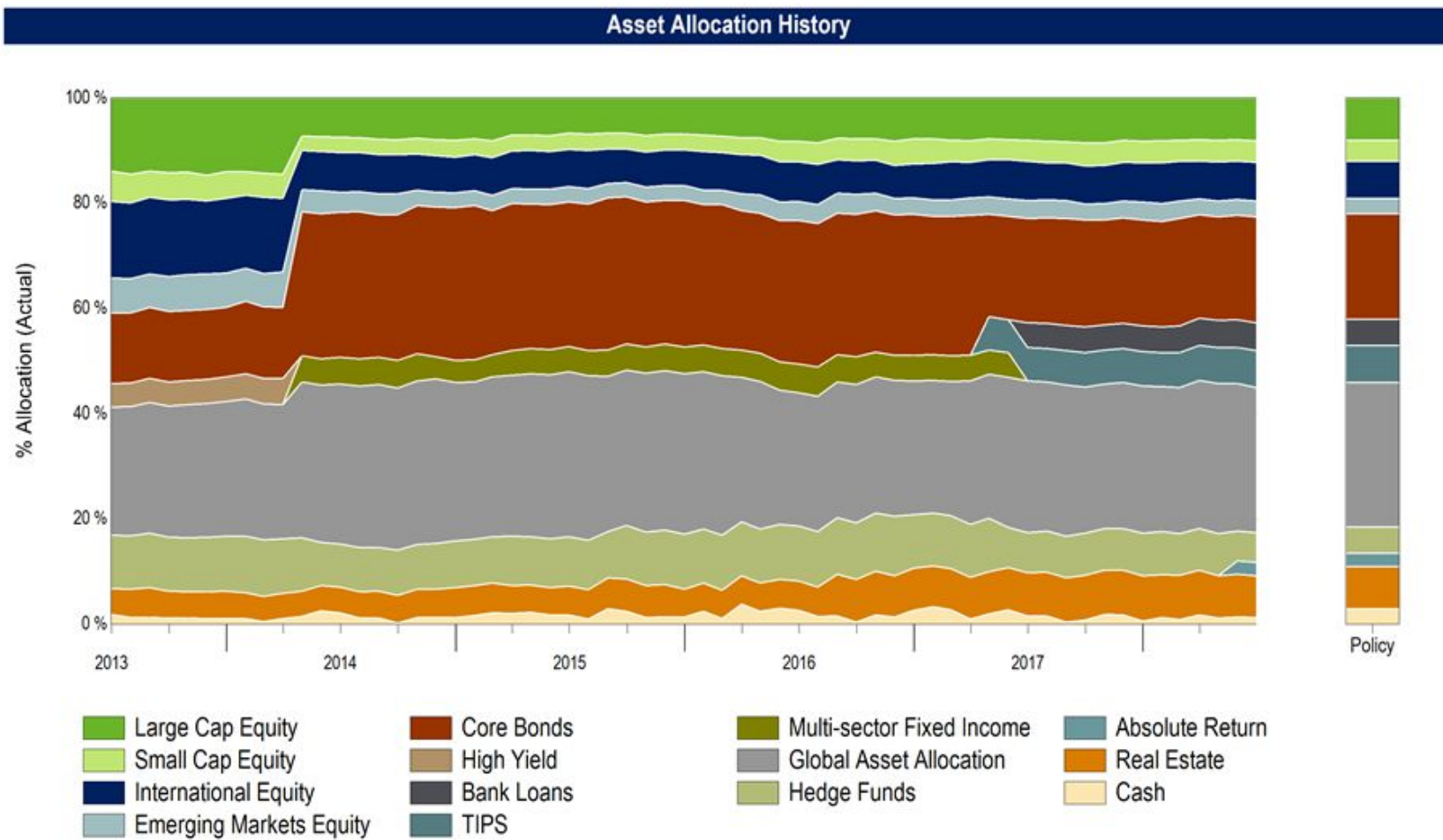
Diversified Fixed Income bucket includes: multi-sector fixed income, non-U.S. fixed income, and emerging fixed income.



June 30, 2018

# ASSET ALLOCATION HISTORY

5.1

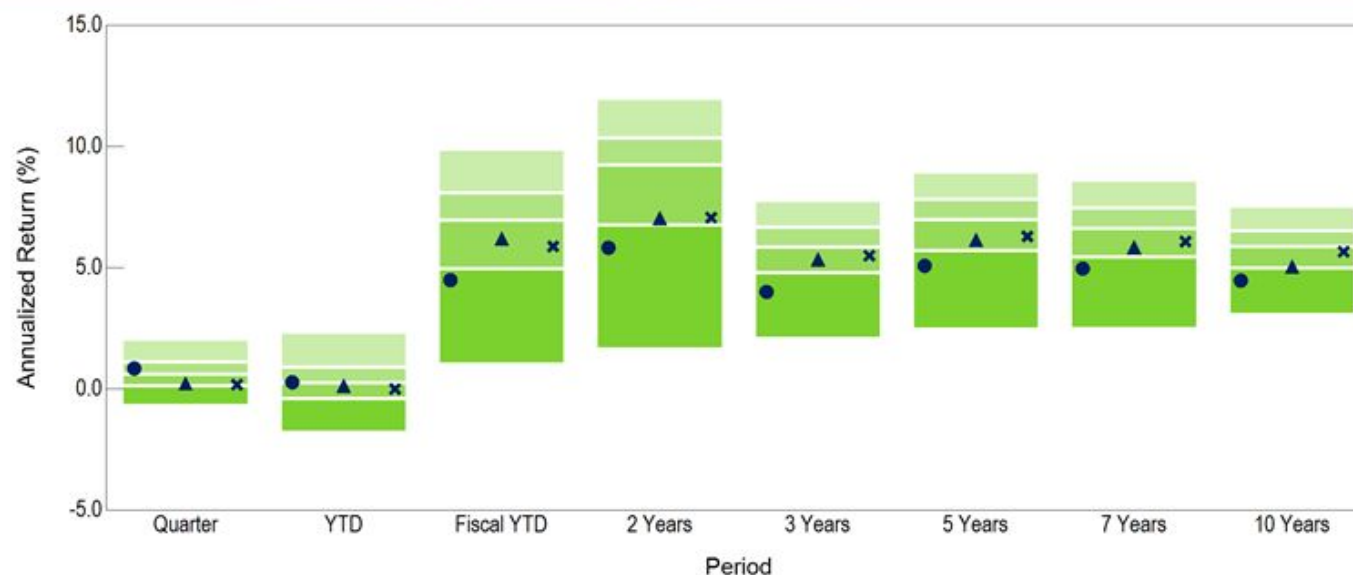


June 30, 2018

# RETURNS VS. PEER UNIVERSE

5.1

Pension Composite vs. InvestorForce Trust Funds Net



	Return (Rank)							
5th Percentile	2.0	2.3	9.9	12.0	7.8	9.0	8.6	7.5
25th Percentile	1.1	0.9	8.1	10.4	6.7	7.9	7.5	6.6
Median	0.6	0.3	7.0	9.3	5.9	7.0	6.6	5.9
75th Percentile	0.2	-0.4	5.0	6.8	4.8	5.7	5.5	5.0
95th Percentile	-0.7	-1.8	1.0	1.7	2.1	2.5	2.5	3.1
# of Portfolios	2,488	2,471	2,424	2,321	2,239	2,030	1,848	1,554
● Pension Composite	0.8 (39)	0.3 (51)	4.5 (78)	5.8 (80)	4.0 (84)	5.1 (81)	5.0 (82)	4.5 (85)
▲ Allocation Index	0.2 (72)	0.1 (56)	6.2 (63)	7.1 (74)	5.4 (65)	6.2 (68)	5.9 (69)	5.1 (75)
× Policy Index	0.2 (74)	0.0 (61)	5.9 (67)	7.1 (74)	5.5 (61)	6.3 (66)	6.1 (64)	5.7 (58)

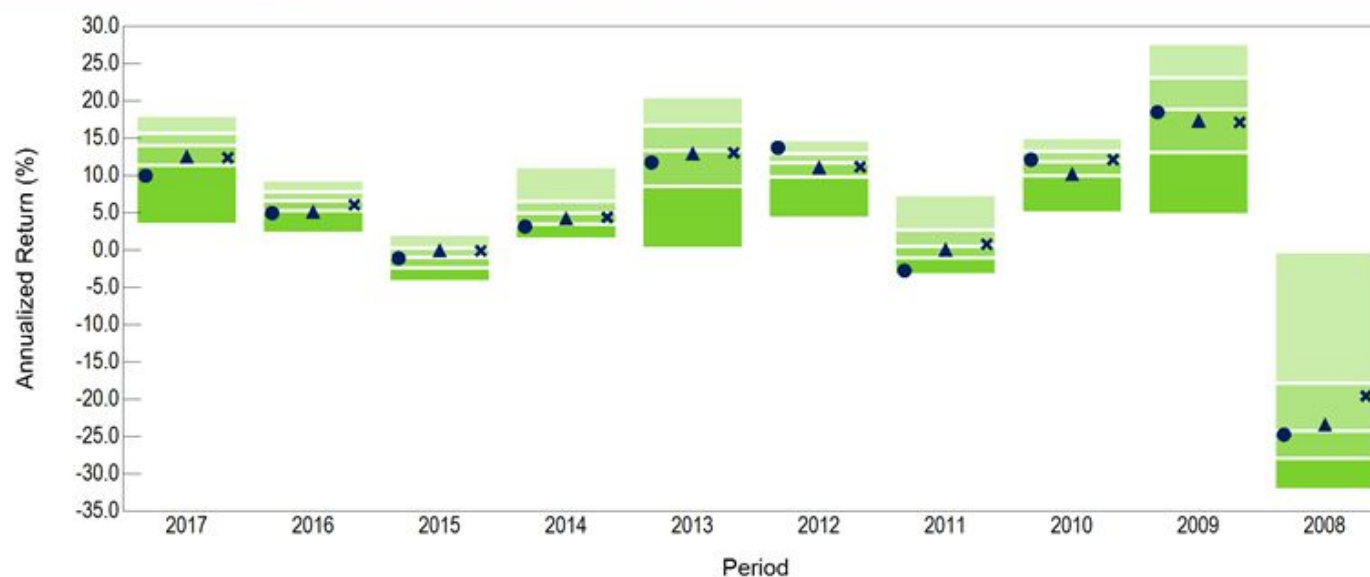


June 30, 2018

# RETURNS VS. PEER UNIVERSE

5.1

Pension Composite vs. InvestorForce Trust Funds Net



	Return (Rank)									
5th Percentile	18.0	9.4	2.1	11.2	20.6	14.8	7.4	15.1	27.7	-0.2
25th Percentile	15.7	7.9	0.3	6.6	16.7	13.0	2.8	13.3	23.1	-17.8
Median	14.1	6.7	-0.9	5.0	13.4	11.7	0.6	11.9	18.9	-24.2
75th Percentile	11.4	5.3	-2.3	3.6	8.7	9.8	-1.0	10.0	13.2	-27.9
95th Percentile	3.5	2.3	-4.2	1.5	0.3	4.3	-3.2	5.0	4.8	-32.1
# of Portfolios	2,518	2,446	2,339	2,007	1,709	1,539	1,403	1,326	1,233	1,161
• Pension Composite	10.0 (80)	5.0 (80)	-1.1 (54)	3.2 (82)	11.8 (60)	13.7 (14)	-2.7 (92)	12.1 (47)	18.5 (52)	-24.7 (54)
▲ Allocation Index	12.6 (67)	5.2 (77)	0.0 (32)	4.3 (64)	13.0 (53)	11.2 (60)	0.1 (57)	10.2 (73)	17.4 (58)	-23.3 (46)
× Policy Index	12.4 (69)	6.1 (64)	-0.1 (34)	4.4 (62)	13.1 (52)	11.2 (60)	0.8 (47)	12.2 (47)	17.1 (59)	-19.5 (29)



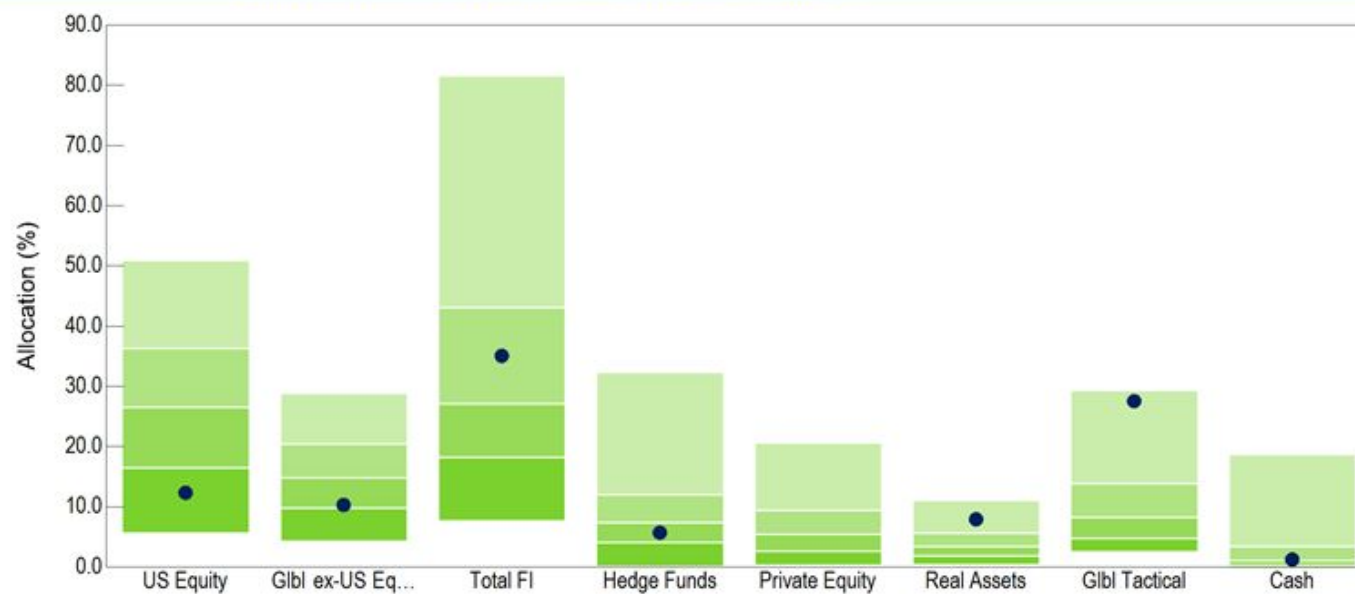
June 30, 2018



# ALLOCATIONS VS. PEER UNIVERSE

5.1

Total Plan Allocation vs. InvestorForce Trust Funds Net



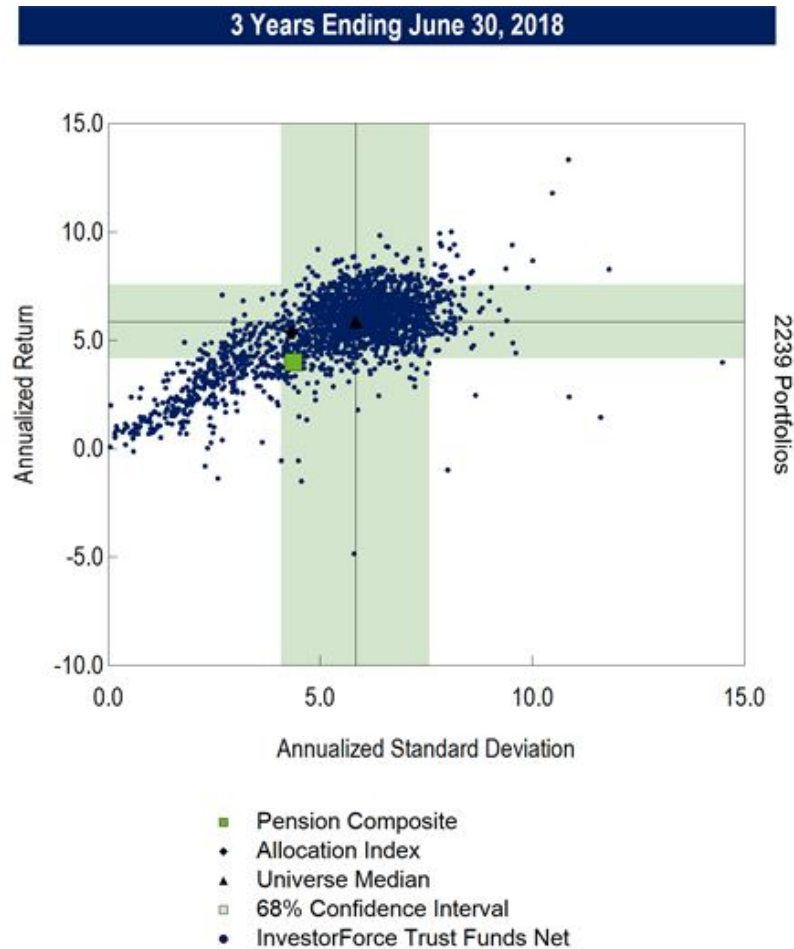
	Allocation (Rank)															
5th Percentile	50.9	28.8	81.6	32.3	20.6	11.0	29.3	18.6								
25th Percentile	36.4	20.5	43.2	12.1	9.5	5.7	13.9	3.5								
Median	26.6	14.9	27.2	7.5	5.5	3.4	8.3	1.1								
75th Percentile	16.6	9.9	18.3	4.2	2.7	1.9	4.9	0.3								
95th Percentile	5.7	4.3	7.7	0.2	0.3	0.4	2.6	0.0								
# of Portfolios	1,606	1,614	2,197	893	735	458	378	1,863								
• Pension Composite	12.3	(85)	10.3	(73)	35.1	(35)	5.7	(62)	--	--	7.9	(17)	27.5	(6)	1.2	(49)



June 30, 2018

# TOTAL PLAN RISK/RETURN - 3 YEAR

5.1



3 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Pension Composite	4.0%	84	4.4%	21
Allocation Index	5.4%	65	4.3%	21
Policy Index	5.5%	61	4.4%	22
InvestorForce Trust Funds Net Median	5.9%	--	5.8%	--

3 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	0.8	76	1.2	57
Allocation Index	1.1	22	1.6	15
Policy Index	1.1	21	1.7	11
InvestorForce Trust Funds Net Median	0.9	--	1.2	--

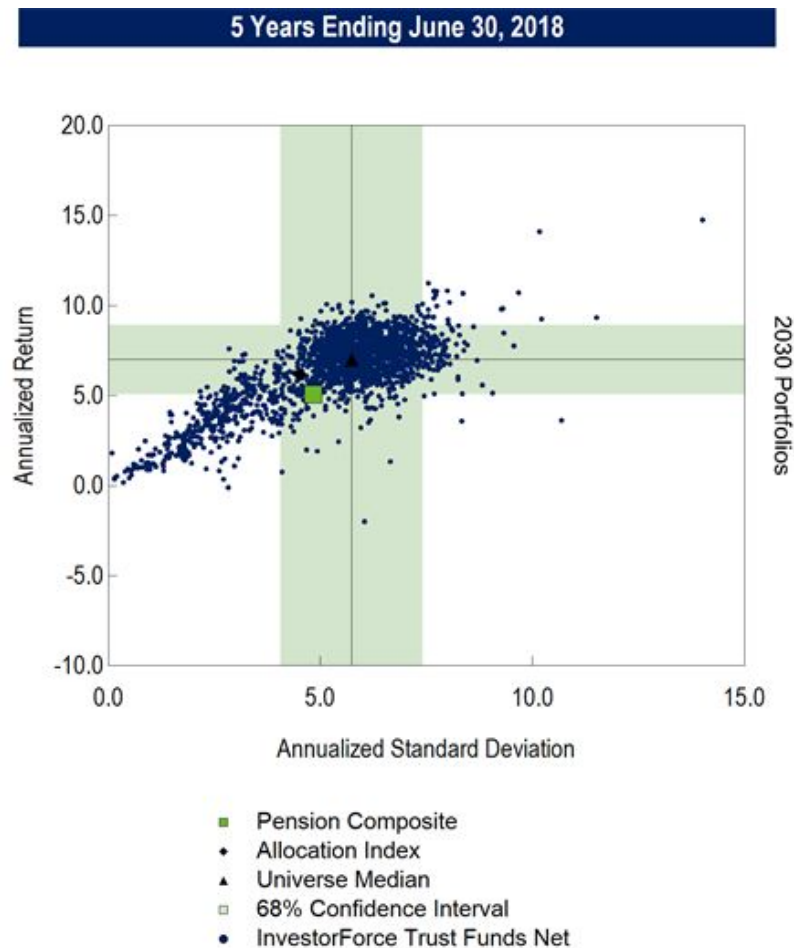
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 5 YEAR

5.1



5 Years Ending June 30, 2018				
	Annld Ret	Rank	Annld Std Dev	Rank
Pension Composite	5.1%	81	4.8%	26
Allocation Index	6.2%	68	4.5%	23
Policy Index	6.3%	66	4.5%	23
InvestorForce Trust Funds Net Median	7.0%	--	5.7%	--

5 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	1.0	78	1.8	46
Allocation Index	1.3	31	2.2	21
Policy Index	1.3	28	2.3	15
InvestorForce Trust Funds Net Median	1.1	--	1.8	--

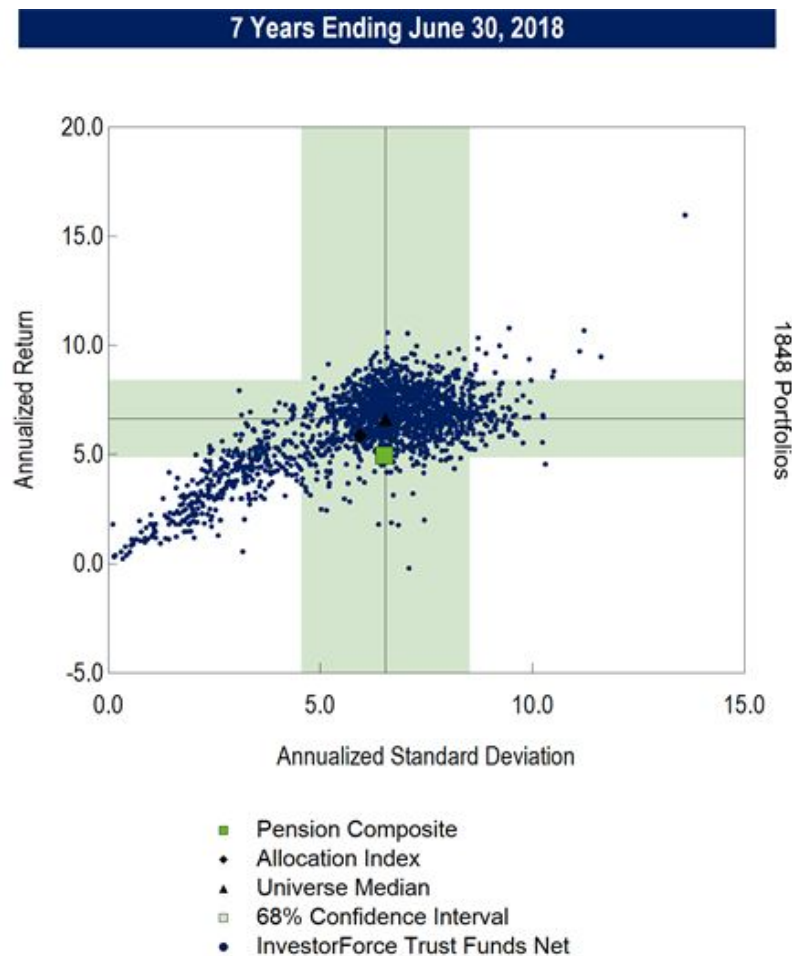
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 7 YEAR

5.1



7 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Pension Composite	5.0%	82	6.5%	49
Allocation Index	5.9%	69	5.9%	34
Policy Index	6.1%	64	5.8%	32
InvestorForce Trust Funds Net Median	6.6%	--	6.5%	--

7 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	0.7	91	0.9	94
Allocation Index	0.9	60	1.3	65
Policy Index	1.0	51	1.4	50
InvestorForce Trust Funds Net Median	1.0	--	1.4	--

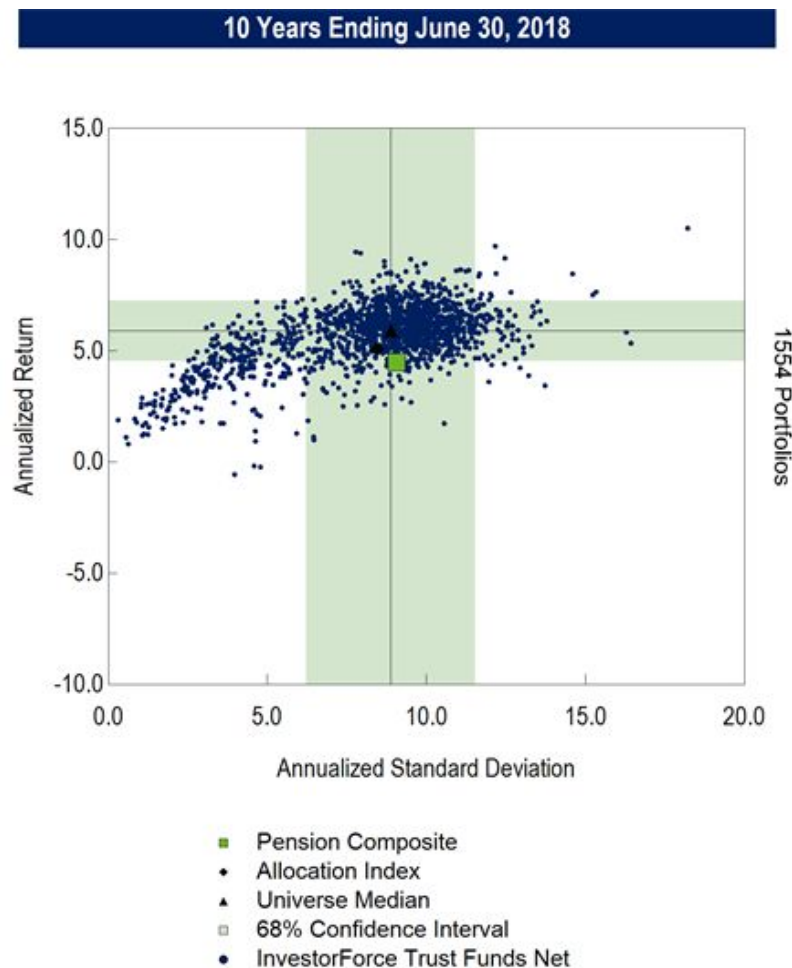
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 10 YEAR

5.1



10 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Pension Composite	4.5%	85	9.1%	55
Allocation Index	5.1%	75	8.5%	42
Policy Index	5.7%	58	8.0%	35
InvestorForce Trust Funds Net Median	5.9%	--	8.9%	--

10 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	0.5	92	0.5	91
Allocation Index	0.6	73	0.7	70
Policy Index	0.7	47	0.8	42
InvestorForce Trust Funds Net Median	0.7	--	0.8	--

\*Returns are net of fees.

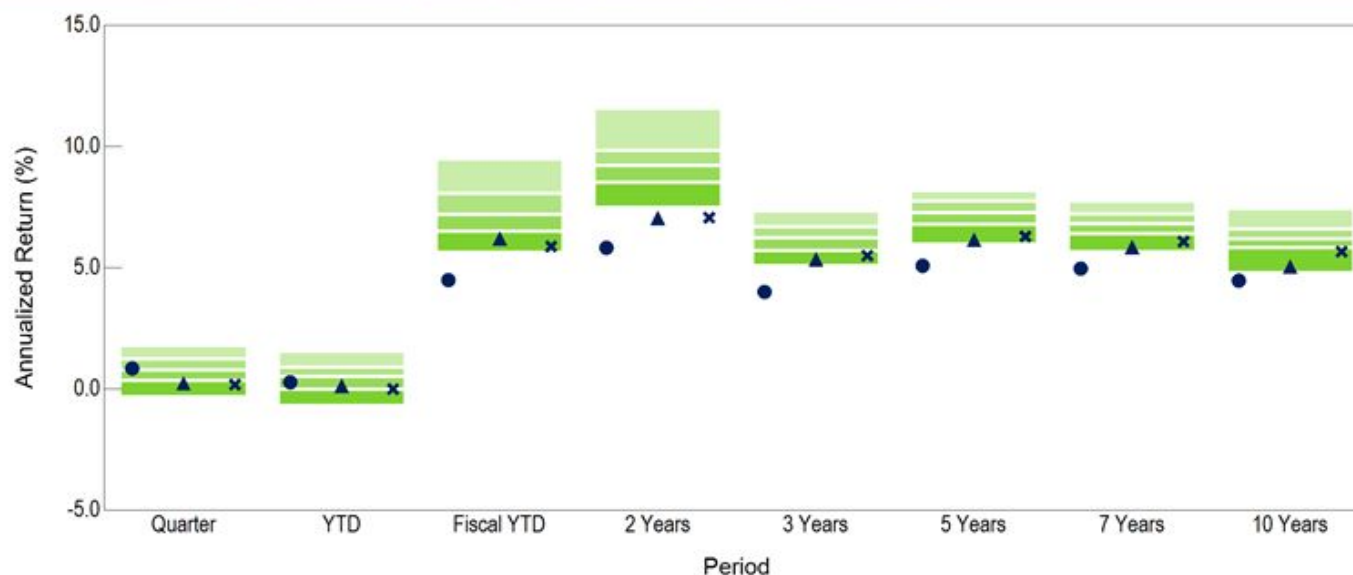


June 30, 2018

# RETURNS VS. PEER UNIVERSE

5.1

Pension Composite vs. InvestorForce Public DB \$50mm-\$250mm Net



	Return (Rank)							
5th Percentile	1.8	1.5	9.5	11.6	7.3	8.2	7.7	7.4
25th Percentile	1.3	0.9	8.1	9.9	6.7	7.8	7.2	6.6
Median	0.8	0.5	7.2	9.2	6.3	7.3	6.8	6.2
75th Percentile	0.4	0.0	6.5	8.5	5.7	6.8	6.4	5.8
95th Percentile	-0.3	-0.7	5.7	7.5	5.1	6.0	5.7	4.8
# of Portfolios	69	69	69	66	65	60	52	46
● Pension Composite	0.8 (47)	0.3 (59)	4.5 (99)	5.8 (99)	4.0 (99)	5.1 (99)	5.0 (99)	4.5 (99)
▲ Allocation Index	0.2 (82)	0.1 (68)	6.2 (86)	7.1 (99)	5.4 (92)	6.2 (91)	5.9 (88)	5.1 (93)
× Policy Index	0.2 (87)	0.0 (76)	5.9 (90)	7.1 (99)	5.5 (87)	6.3 (89)	6.1 (83)	5.7 (80)

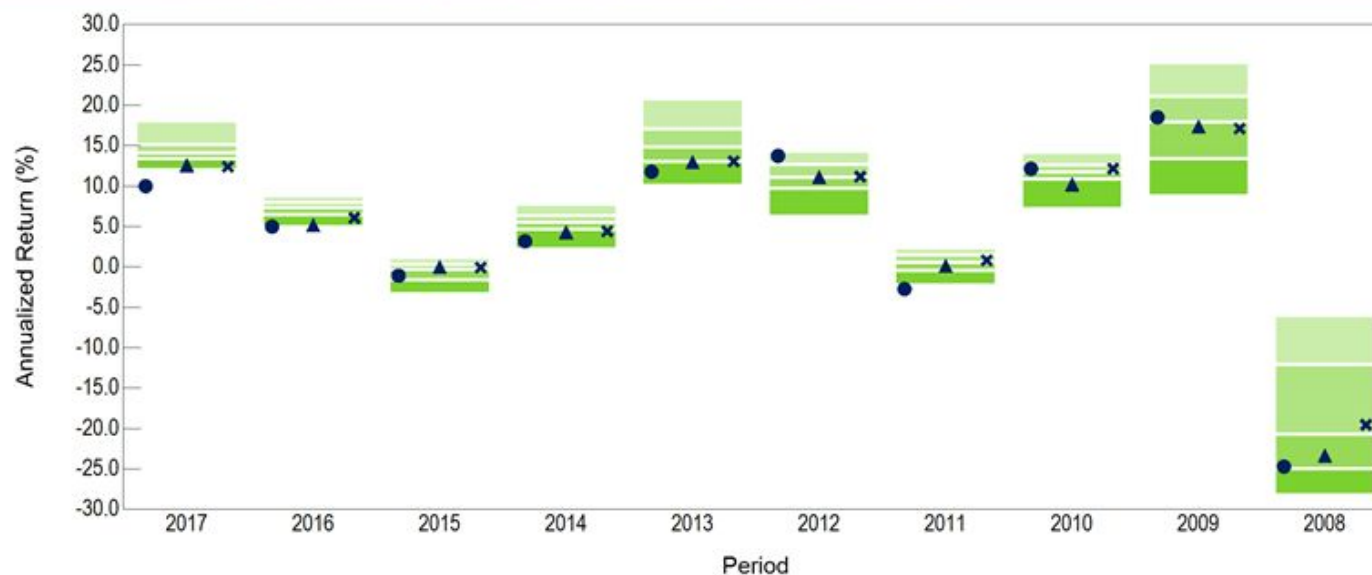


June 30, 2018

# RETURNS VS. PEER UNIVERSE

5.1

Pension Composite vs. InvestorForce Public DB \$50mm-\$250mm Net



	Return (Rank)									
5th Percentile	18.1	8.7	1.1	7.7	20.8	14.3	2.3	14.2	25.3	-6.0
25th Percentile	15.2	8.0	0.4	6.3	17.1	12.7	1.5	12.6	21.1	-12.0
Median	14.2	7.4	-0.3	5.6	14.9	11.1	0.6	11.7	18.0	-20.7
75th Percentile	13.5	6.5	-1.6	4.7	13.1	9.7	-0.4	10.9	13.4	-25.0
95th Percentile	12.1	5.0	-3.3	2.3	10.1	6.3	-2.2	7.2	8.9	-28.2
# of Portfolios	74	74	75	66	58	54	46	44	43	42
• Pension Composite	10.0 (99)	5.0 (96)	-1.1 (70)	3.2 (92)	11.8 (87)	13.7 (10)	-2.7 (98)	12.1 (38)	18.5 (48)	-24.7 (73)
▲ Allocation Index	12.6 (87)	5.2 (95)	0.0 (39)	4.3 (84)	13.0 (76)	11.2 (50)	0.1 (64)	10.2 (83)	17.4 (52)	-23.3 (64)
× Policy Index	12.4 (91)	6.1 (86)	-0.1 (43)	4.4 (82)	13.1 (76)	11.2 (50)	0.8 (44)	12.2 (38)	17.1 (52)	-19.5 (47)



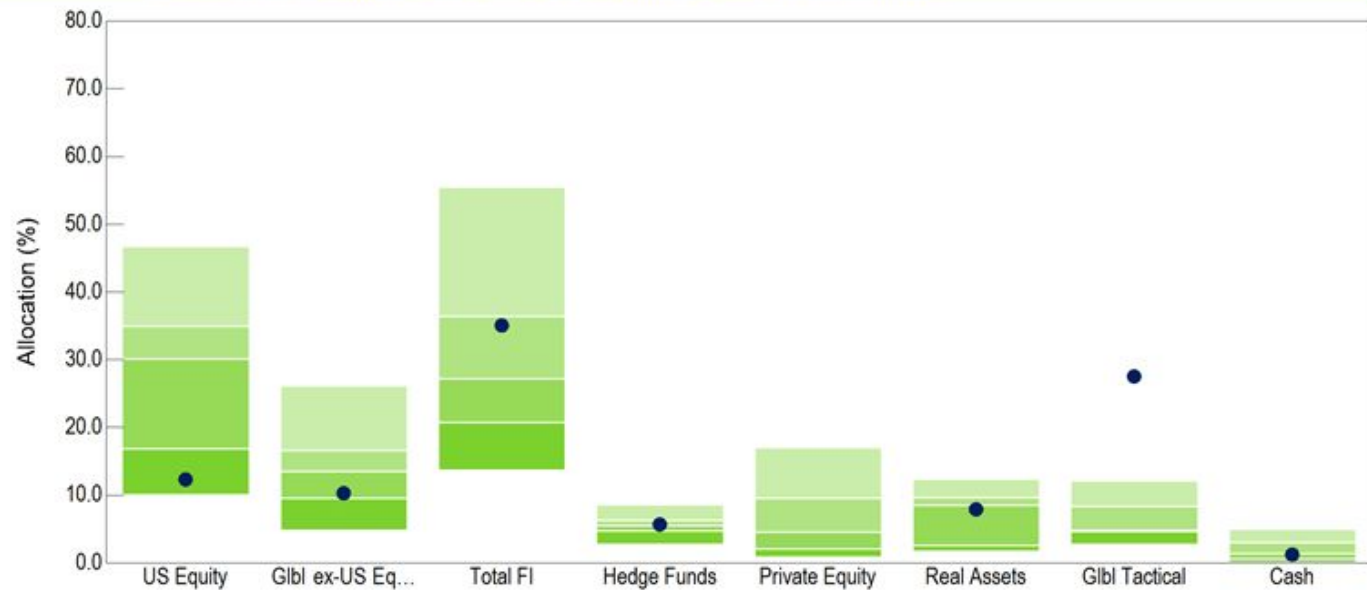
June 30, 2018



# ALLOCATIONS VS. PEER UNIVERSE

5.1

Total Plan Allocation vs. InvestorForce Public DB \$50mm-\$250mm Net



	Allocation (Rank)															
5th Percentile	46.7		26.2		55.5		8.6		17.0		12.4		12.1		5.0	
25th Percentile	35.0		16.7		36.5		6.3		9.6		9.7		8.4		3.1	
Median	30.2		13.6		27.3		5.6		4.7		8.6		4.9		1.4	
75th Percentile	16.9		9.6		20.8		4.8		2.2		2.7		4.7		0.7	
95th Percentile	10.1		4.9		13.7		2.8		0.9		1.8		2.9		0.1	
# of Portfolios	45		58		66		11		23		12		15		63	
• Pension Composite	12.3	(92)	10.3	(72)	35.1	(28)	5.7	(47)	--	--	7.9	(65)	27.5	(1)	1.2	(57)

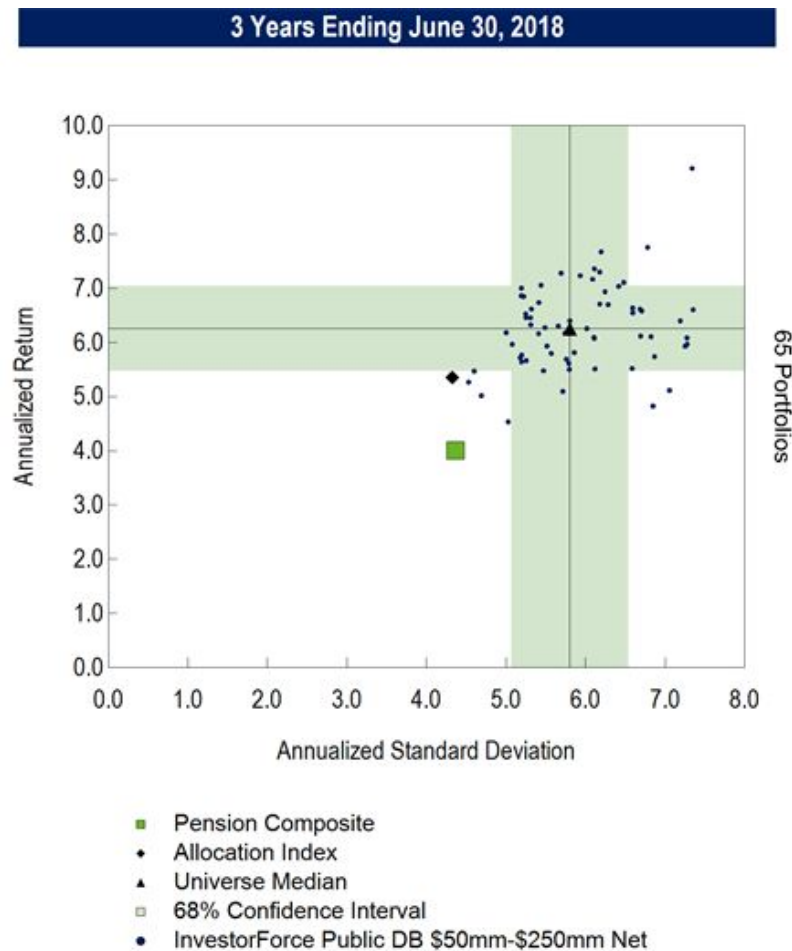


June 30, 2018



# TOTAL PLAN RISK/RETURN - 3 YEAR

5.1



3 Years Ending June 30, 2018				
	Annzd Ret	Rank	Annzd Std Dev	Rank
Pension Composite	4.0%	99	4.4%	1
Allocation Index	5.4%	92	4.3%	1
Policy Index	5.5%	87	4.4%	1
InvestorForce Public DB \$50mm-\$250mm Net Median	6.3%	--	5.8%	--

3 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	0.8	90	1.2	69
Allocation Index	1.1	23	1.6	8
Policy Index	1.1	20	1.7	2
InvestorForce Public DB \$50mm-\$250mm Net Median	1.0	--	1.3	--

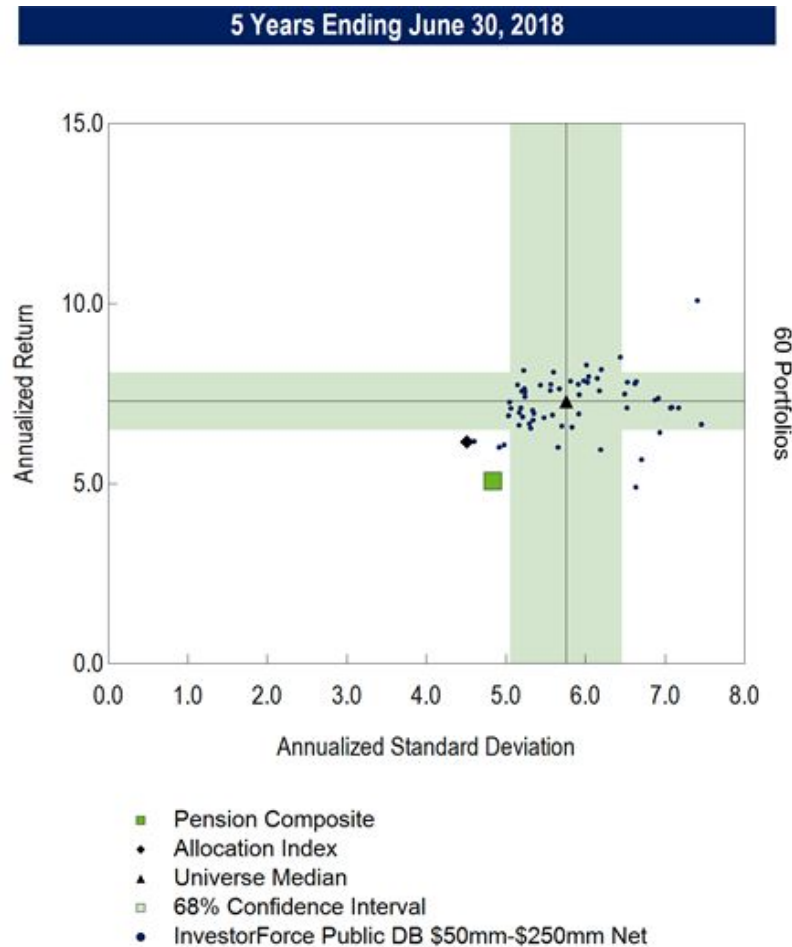
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 5 YEAR

5.1



5 Years Ending June 30, 2018				
	Annzd Ret	Rank	Annzd Std Dev	Rank
Pension Composite	5.1%	99	4.8%	2
Allocation Index	6.2%	91	4.5%	1
Policy Index	6.3%	89	4.5%	1
InvestorForce Public DB \$50mm-\$250mm Net Median	7.3%	--	5.8%	--

5 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	1.0	88	1.8	59
Allocation Index	1.3	29	2.2	13
Policy Index	1.3	22	2.3	4
InvestorForce Public DB \$50mm-\$250mm Net Median	1.2	--	1.9	--

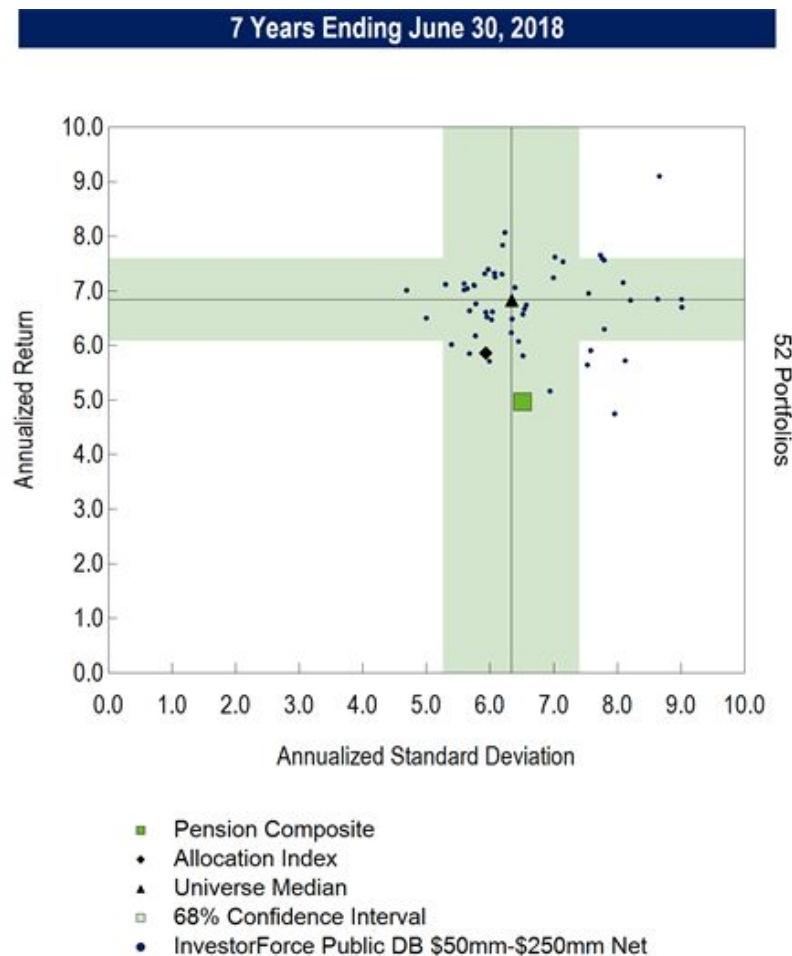
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 7 YEAR

5.1



7 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Pension Composite	5.0%	99	6.5%	57
Allocation Index	5.9%	88	5.9%	28
Policy Index	6.1%	83	5.8%	25
InvestorForce Public DB \$50mm-\$250mm Net Median	6.8%	--	6.3%	--

7 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	0.7	92	0.9	99
Allocation Index	0.9	69	1.3	68
Policy Index	1.0	54	1.4	48
InvestorForce Public DB \$50mm-\$250mm Net Median	1.0	--	1.4	--

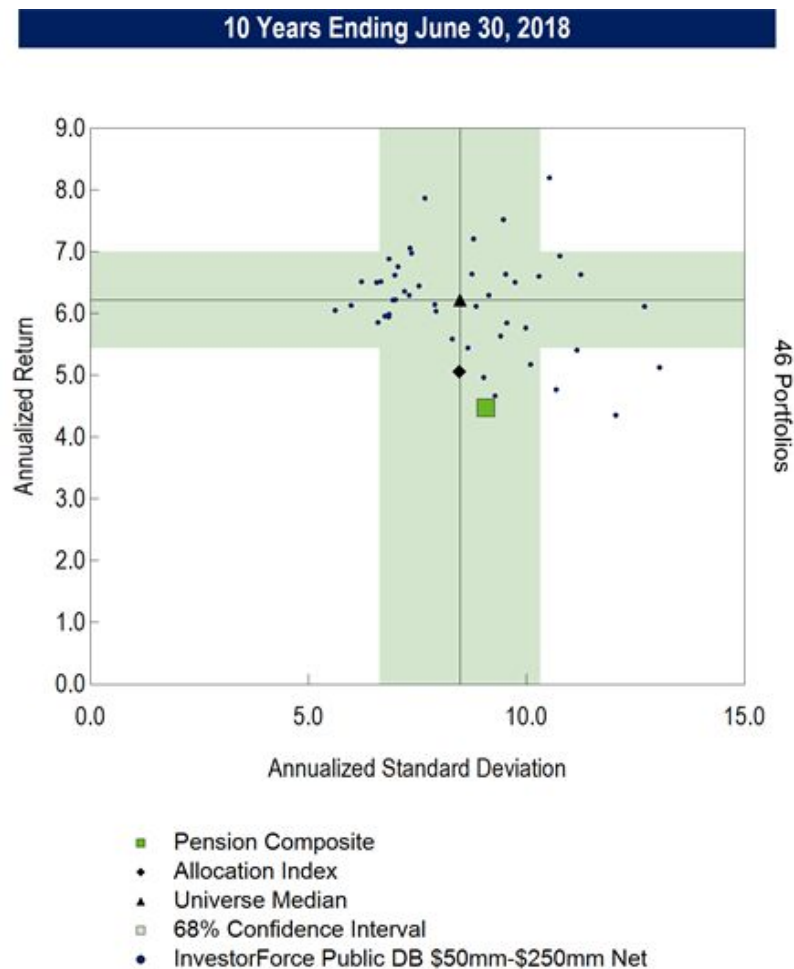
\*Returns are net of fees.



June 30, 2018

# TOTAL PLAN RISK/RETURN - 10 YEAR

5.1



10 Years Ending June 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Pension Composite	4.5%	99	9.1%	61
Allocation Index	5.1%	93	8.5%	50
Policy Index	5.7%	80	8.0%	48
InvestorForce Public DB \$50mm-\$250mm Net Median	6.2%	--	8.5%	--

10 Years Ending June 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Pension Composite	0.5	91	0.5	94
Allocation Index	0.6	81	0.7	81
Policy Index	0.7	58	0.8	64
InvestorForce Public DB \$50mm-\$250mm Net Median	0.7	--	0.9	--

\*Returns are net of fees.



June 30, 2018

# MANAGER ANALYSIS

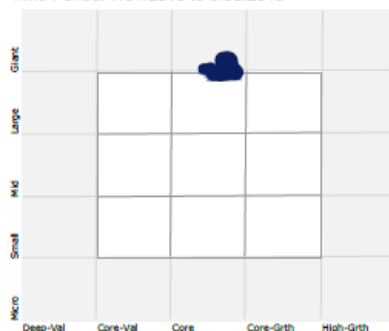
NEPC, LLC

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# VANGUARD INSTITUTIONAL INDEX I

## Holdings Based Style Trail (5 Years)

Time Period: 7/31/2013 to 6/30/2018



\*Vanguard Institutional Index I - S&amp;P 500 TR USD

## Portfolio Statistics

	Fund	Index
# of Holdings	512	505
% Asset in Top 10 Holdings	21.1	21.2
Turnover Ratio %	5.0	
P/E Ratio	20.4	20.4
P/B Ratio	3.2	3.2
LT Earn Growth	12.3	12.3
Hist Earn Growth	8.9	8.9
12 Mo Yield	1.8	

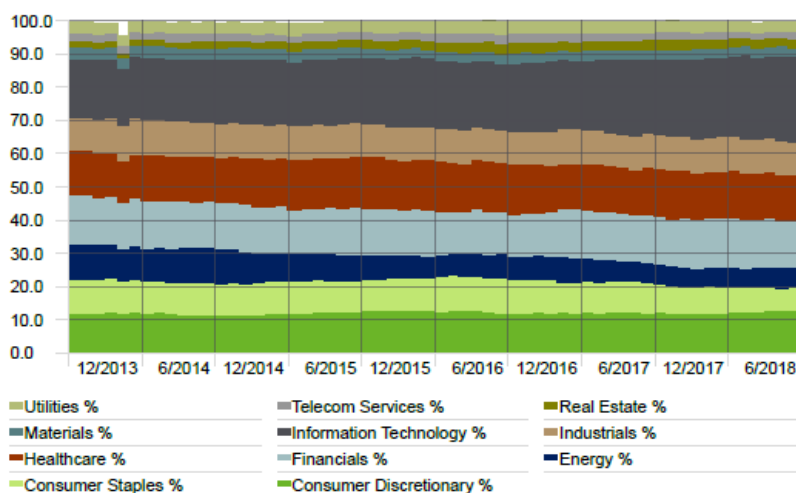
## Market Capitalization Breakdown

	Fund	Index
Market Cap Giant %	56.9	56.9
Market Cap Large %	34.4	34.5
Market Cap Mid %	8.7	8.6
Market Cap Small %	0.0	0.0
Market Cap Micro %	0.0	0.0
Average Market Cap (mil)	99,904.8	99,862.0

## Top 10 Holdings

	Portf Weight %	3 Month Ret %
Apple Inc	3.94	10.76
Microsoft Corp	3.28	8.50
Amazon.com Inc	2.96	17.44
Facebook Inc A	2.02	21.61
JPMorgan Chase & Co	1.53	-4.74
Exxon Mobil Corp	1.52	11.98
Berkshire Hathaway Inc B	1.50	-6.43
Alphabet Inc C	1.47	8.13
Alphabet Inc A	1.46	8.88
Johnson & Johnson	1.41	-4.61

## Historical Sector Allocations (5 Years)



## Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Consumer Discretionary	12.80		8.14				
Consumer Staples	6.99		-2.23				
Energy	6.07		13.59				
Financials	14.50		-3.17				
Health Care	13.98		3.33				
Industrials	9.98		-3.21				
Information Technology	25.00		7.06				
Materials	2.84		2.99				
Real Estate	2.75		6.14				
Telecommunication Services	1.86		-0.77				
Utilities	2.85		3.77				
Attribution Total	99.62		3.41				
Cash	0.21						
Bond	0.02						
Total	100.00						



Source: Morningstar

June 30, 2018

# VANGUARD INSTITUTIONAL INDEX I

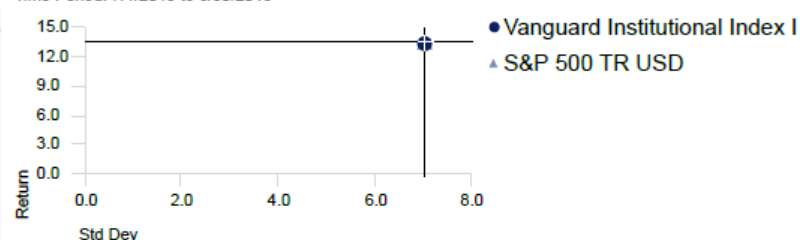
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	100.0	100.0
Alpha	0.0	0.0
Beta	1.0	1.0
Std Dev	7.0	7.0
Up Capture Ratio	99.8	100.0
Down Capture Ratio	100.2	100.0
Sharpe Ratio (geo)	1.8	1.8
Information Ratio (geo)	-3.2	
Tracking Error	0.0	0.0
Correlation	1.0	1.0

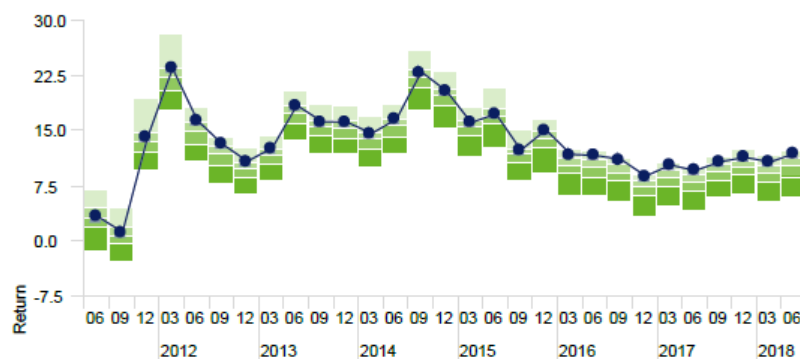
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Return (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile

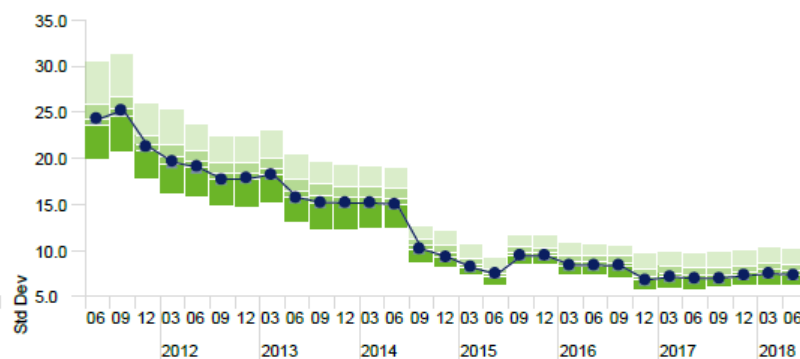


—Vanguard Institutional Index I

—S&amp;P 500 TR USD

## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Vanguard Institutional Index I

—S&amp;P 500 TR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Vanguard Institutional Index I	-37.0	37	26.6	52	15.0	29	2.1	17	16.0	35	32.3	42	13.7	18	1.4	20	11.9	27	21.8	29
S&P 500 TR USD	-37.0		26.5		15.1		2.1		16.0		32.4		13.7		1.4		12.0		21.8	

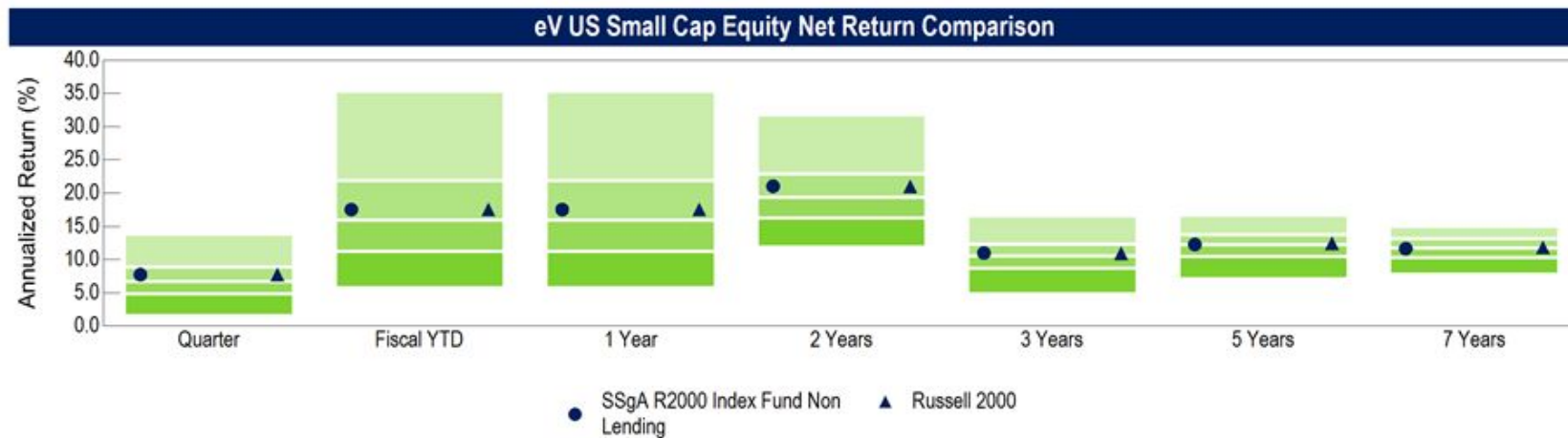
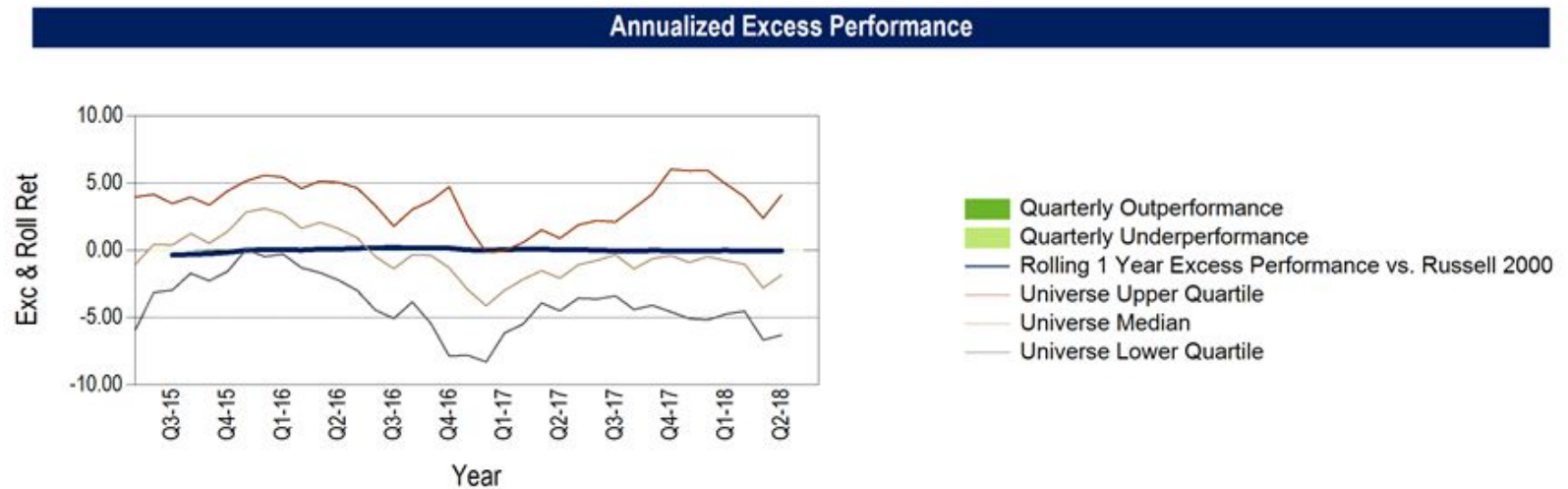


Source: Morningstar

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# SSgA R2000 NON LENDING

5.1



\*Returns are net of fees.

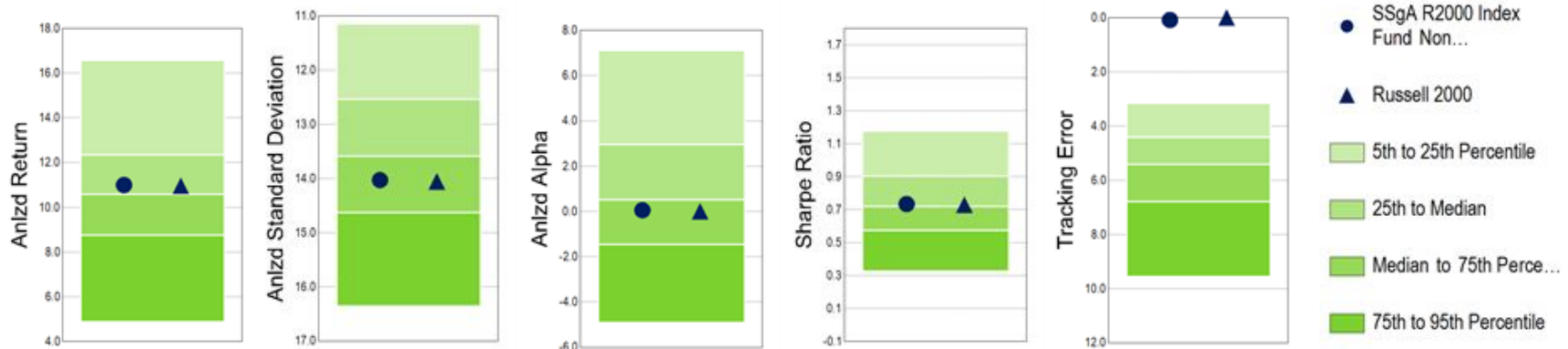
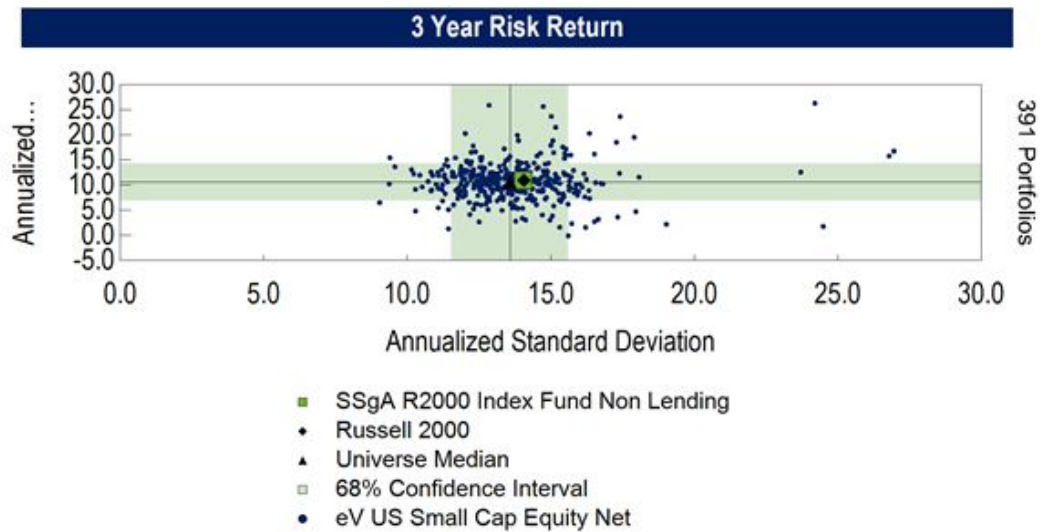


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# SSgA R2000 NON LENDING

5.1



\*Returns are net of fees.



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# SSgA R2000 NON LENDING

5.1

Characteristics		
	Portfolio	Russell 2000
Number of Holdings	2,021	2,021
Weighted Avg. Market Cap. (\$B)	2.2	2.2
Median Market Cap. (\$B)	0.9	0.9
Price To Earnings	18.1	17.4
Price To Book	3.9	3.0
Price To Sales	3.4	3.0
Return on Equity (%)	4.8	8.6
Yield (%)	1.3	1.1
Beta		1.0
R-Squared		1.0

Equity Sector Attribution									
	Attribution Effects				Returns		Ending Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.0%	0.0%	0.0%	0.0%	21.5%	21.4%	5.0%	4.8%	
Materials	0.0%	0.0%	0.0%	0.0%	3.7%	3.6%	4.3%	4.3%	
Industrials	0.0%	0.0%	0.0%	0.0%	3.2%	3.1%	14.9%	14.9%	
Consumer Discretionary	0.0%	0.0%	0.0%	0.0%	9.4%	9.5%	13.4%	13.4%	
Consumer Staples	0.0%	0.0%	0.0%	0.0%	12.2%	12.1%	2.8%	2.8%	
Health Care	0.0%	0.0%	0.0%	0.0%	9.3%	9.3%	15.6%	15.6%	
Financials	0.0%	0.0%	0.0%	0.0%	4.1%	4.1%	17.9%	17.9%	
Information Technology	0.0%	0.0%	0.0%	0.0%	7.6%	7.5%	14.7%	14.7%	
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	11.6%	11.1%	0.7%	0.7%	
Utilities	0.0%	0.0%	0.0%	0.0%	8.4%	8.4%	3.3%	3.3%	
Real Estate	0.0%	0.0%	0.0%	0.0%	13.1%	13.2%	7.3%	7.3%	
Cash	-0.1%	0.0%	-0.1%	0.0%	0.5%	--	0.0%	0.0%	
Unclassified	0.0%	--	--	--	--	--	0.3%	0.2%	
Portfolio	0.0%	=	0.0%	+	-0.1%	+	0.0%		
					7.6%	7.6%	100.0%	100.0%	

\*Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of period portfolio. Results may differ from actual performance. Returns are net of fees.

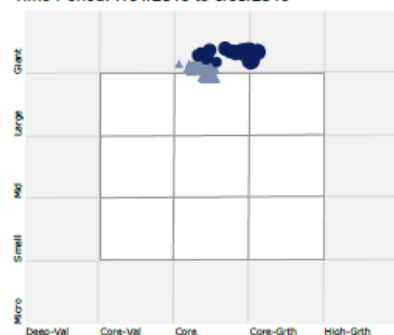


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# MORGAN STANLEY INTERNATIONAL EQUITY I

## Holdings Based Style Trail (5 Years)

Time Period: 7/31/2013 to 6/30/2018



• Morgan Stanley Int'l International Eq I • MSCI EAFE NR USD

## Portfolio Statistics

	Fund	Index
# of Holdings	66	926
% Asset in Top 10 Holdings	36.9	11.2
Turnover Ratio %	18.0	
P/E Ratio	13.8	14.6
P/B Ratio	2.2	1.6
LT Eam Growth	9.7	10.1
Hist Eam Growth	25.0	13.0
12 Mo Yield	1.9	

## Market Capitalization Breakdown

	Fund	Index
Market Cap Giant %	63.5	51.0
Market Cap Large %	31.7	36.9
Market Cap Mid %	4.0	12.0
Market Cap Small %	0.8	0.0
Market Cap Micro %	0.0	0.0
Average Market Cap	56,885.6	36,559.9
Equity Region Developed %	96.8	99.5
Equity Region Emerging %	3.2	0.5

## Top Ten Holdings

	Port Weight %	3 Month Return
Unilever NV DR	4.82	-0.30
Reckitt Benckiser Group PLC	4.57	-1.16
British American Tobacco PLC	4.19	-11.63
GlaxoSmithKline PLC	4.01	4.57
L'Oreal SA	3.81	11.35
Pernod Ricard SA	3.59	-1.80
Novartis AG	3.24	-6.03
Sanofi SA	3.07	4.16
SAP SE	2.84	12.12
Heineken NV	2.73	-5.45

## Sector Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Consumer Discretionary	3.12	12.56	-6.65	-2.39	0.13	-0.14	-0.01
Consumer Staples	33.41	10.97	1.39	0.74	0.42	0.22	0.64
Energy	3.59	5.64	8.64	11.36	-0.24	-0.09	-0.33
Financials	16.69	20.66	-6.13	-5.95	0.18	-0.02	0.16
Health Care	14.20	10.17	0.94	2.07	0.13	-0.16	-0.03
Industrials	11.88	14.25	5.78	-2.09	0.03	0.94	0.97
Information Technology	7.89	6.60	1.92	-0.15	0.01	0.17	0.18
Materials	5.64	8.08	-1.55	0.80	-0.04	-0.13	-0.17
Real Estate	0.00	3.37		-0.16	-0.03	0.00	-0.03
Telecommunication Services	1.28	3.79	-9.90	-4.54	0.08	-0.07	0.01
Utilities	0.00	3.27		0.84	-0.06	0.00	-0.06
Attribution Total	97.69	99.37	0.26	-1.05	0.61	0.70	1.31
Cash	2.31	0.00					
Other	0.00	0.03					
Missing Performance	0.00	0.60					
Total	100.00	100.00					

## Region Attribution (Quarter)

	Portfolio Weights	Benchmark Weights	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Active Return
Asia - Developed	4.39	4.85	2.56	-2.33	0.00	0.22	0.22
Asia - Emerging	3.15	0.45	0.27	-4.79	-0.09	0.15	0.06
Australasia	0.00	6.71		5.20	-0.42	0.00	-0.42
Canada	2.56	0.00	8.79		0.25	0.00	0.25
Europe - ex Euro	6.84	12.38	-7.14	-2.91	0.09	-0.31	-0.22
Eurozone	42.22	31.58	1.99	-2.16	-0.12	1.78	1.66
Japan	13.72	24.54	0.67	-2.93	0.20	0.51	0.71
Middle East	0.00	0.47		10.84	-0.05	0.00	-0.05
United Kingdom	22.96	17.49	-2.76	2.58	0.23	-1.27	-1.04
United States	1.86	0.90	8.37	2.67	0.04	0.11	0.14
Attribution Total	97.69	99.37	0.26	-1.05	0.12	1.19	1.31
Cash	2.31	0.00					
Other	0.00	0.03					
Missing Performance	0.00	0.60					
Total	100.00	100.00					



Source: Morningstar

June 30, 2018

# MORGAN STANLEY INTERNATIONAL EQUITY I

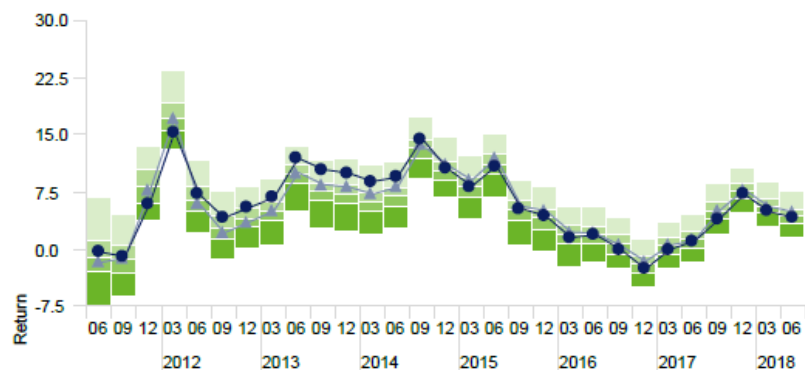
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	90.5	100.0
Alpha	-0.2	0.0
Beta	0.9	1.0
Std Dev	9.5	10.4
Up Capture Ratio	88.0	100.0
Down Capture Ratio	92.6	100.0
Sharpe Ratio (geo)	0.5	0.6
Information Ratio (geo)	-0.3	
Tracking Error	3.3	0.0
Correlation	1.0	1.0

## Rolling Returns (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Morgan Stanley Inst International Eq I

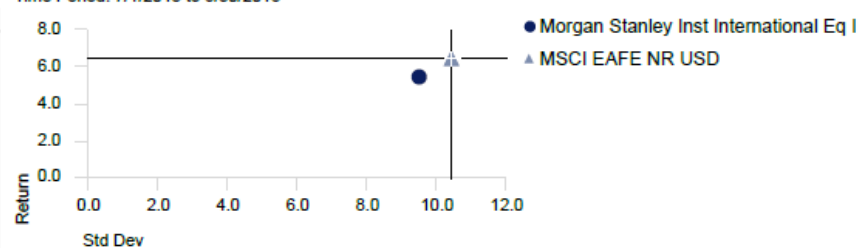
—MSCI EAFE NR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Morgan Stanley Inst International Eq I	-33.1	8	21.6	85	6.1	87	-7.6	5	19.6	26	20.4	43	-6.1	64	0.4	30	-2.0	82	25.2	53
MSCI EAFE NR USD	-43.4		31.8		7.8		-12.1		17.3		22.8		-4.9		-0.8		1.0		25.0	

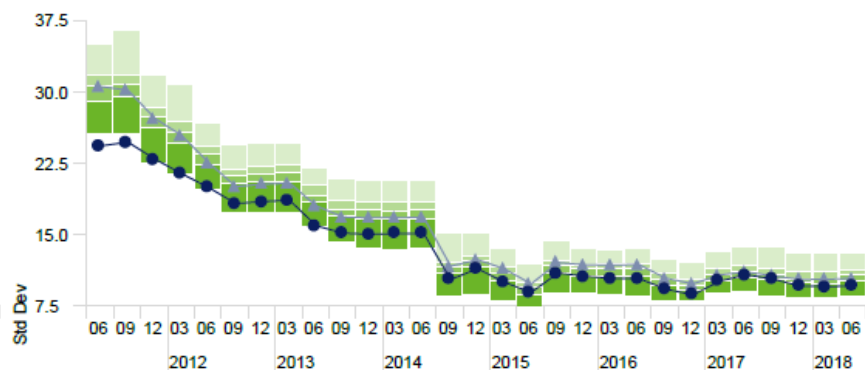
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



—Morgan Stanley Inst International Eq I

—MSCI EAFE NR USD

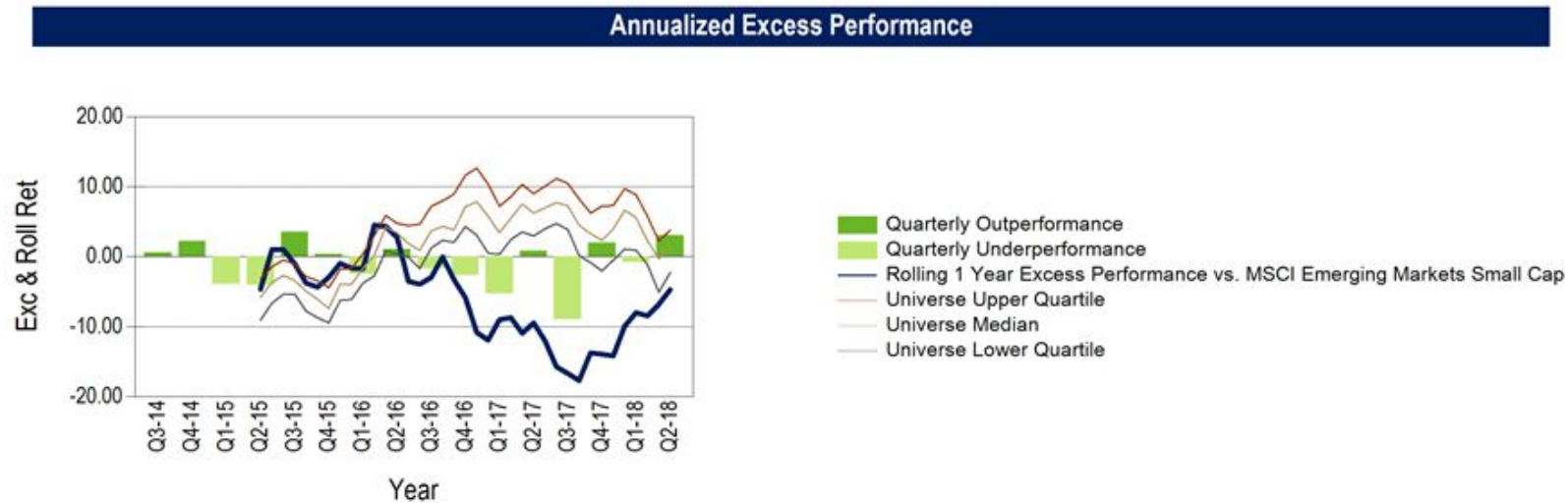


Source: Morningstar

June 30, 2018

# MONDRIAN EM SMALL CAP

5.1



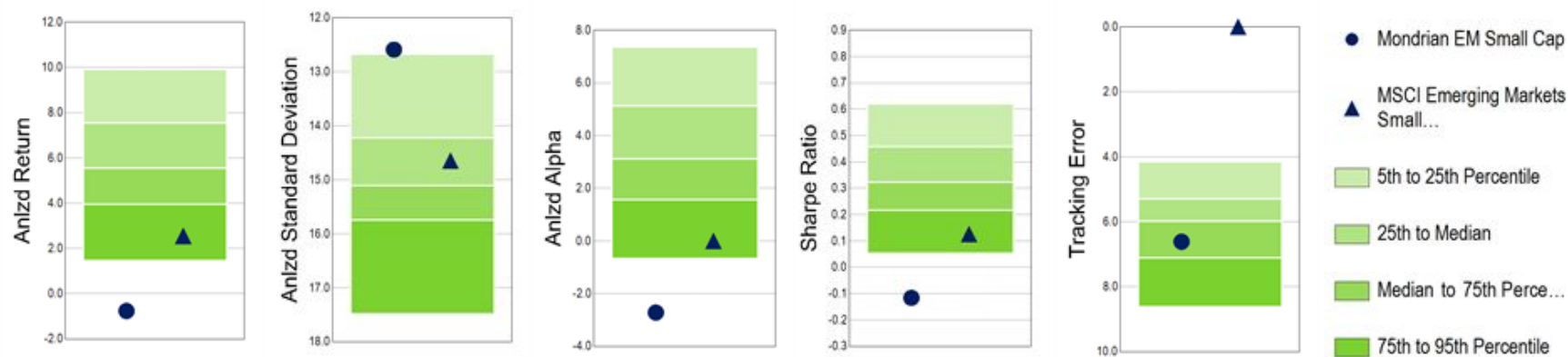
\*Returns are net of fees.



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# MONDRIAN EM SMALL CAP

5.1



# MONDRIAN EM SMALL CAP

Characteristics	Portfolio	MSCI Emerging Markets Small Cap
Number of Holdings	112	1,738
Weighted Avg. Market Cap. (\$B)	1.6	1.2
Median Market Cap. (\$B)	0.9	0.7
Price To Earnings	33.0	17.5
Price To Book	4.9	2.6
Price To Sales	3.9	2.3
Return on Equity (%)	18.3	13.3
Yield (%)	2.2	2.4
Beta		1.0
R-Squared		1.0

Top Positive Contributors	Relative Contribution %	Return %
SSY GROUP	0.3%	27.0%
VARUN BEVERAG	0.3%	14.1%
PAGE INDUSTRIES	0.2%	16.9%
QL RESOURCES	0.2%	12.9%
FU SHOU YUAN INTL.GP.	0.2%	14.2%
MICROPORT SCIENTIFIC	0.2%	11.7%
SITC INTERNATIONAL HDG.	0.2%	14.9%
SINOSOFT TECHNOLOGY GP.	0.2%	13.2%
DINO POLSKA SA	0.1%	9.6%
GREENTOWN SER.GP.	0.1%	8.2%

Top Negative Contributors	Relative Contribution %	Return %
SILOAM INTL.HOSPS.	-0.5%	-37.3%
STRIDES PHARMA SCIENCE	-0.3%	-42.0%
AIRTAC INTERNATIONAL GP.	-0.3%	-17.4%
AJANTA PHARMA	-0.3%	-32.7%
PI INDUSTRIES	-0.3%	-19.0%
NIPPON INDOSARI CORPINDO	-0.3%	-24.6%
SYMPHONY	-0.3%	-24.6%
AKR CORPORINDO	-0.2%	-25.7%
MERRY ELECTRONICS	-0.2%	-25.4%
CENTURY PLYBOARDS INDIA	-0.2%	-26.7%

Equity Sector Attribution									
	Attribution Effects				Returns		Ending Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction Effect	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.1%	0.1%	0.0%	0.0%	-3.2%	-6.6%	2.3%	2.3%	
Materials	0.2%	-0.2%	0.0%	0.4%	-11.1%	-11.4%	8.9%	11.9%	
Industrials	1.0%	0.8%	0.0%	0.2%	-5.4%	-12.2%	13.1%	14.1%	
Consumer Discretionary	0.6%	0.4%	0.0%	0.2%	-4.3%	-8.2%	17.9%	16.2%	
Consumer Staples	0.5%	0.3%	0.4%	-0.2%	-1.7%	-6.1%	16.0%	7.1%	
Health Care	0.1%	0.2%	-0.2%	0.0%	-6.2%	-9.2%	18.3%	8.6%	
Financials	0.3%	0.1%	0.0%	0.2%	-9.2%	-9.3%	2.9%	9.6%	
Information Technology	0.0%	-0.1%	-0.4%	0.4%	-4.0%	-3.8%	7.5%	17.7%	
Telecommunication Services	0.1%	--	0.0%	--	--	-13.5%	0.0%	1.2%	
Utilities	0.1%	0.0%	0.0%	0.1%	-9.7%	-11.5%	2.9%	3.8%	
Real Estate	0.3%	0.6%	0.0%	-0.3%	-4.9%	-8.5%	8.3%	7.5%	
Cash	0.1%	0.0%	0.1%	0.0%	0.5%	--	0.9%	0.0%	
Unclassified	0.0%	--	--	--	--	--	1.0%	0.0%	
Portfolio	3.3%	=	2.3%	+	0.0%	+	1.1%	-5.3%	-8.6%
							100.0%	100.0%	



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5.1



# MONDRIAN EM SMALL CAP

5.1

## Sector Allocation\*

	Fund	MSCI EM SC
Consumer Discretionary	17.5	16.3
Consumer Staples	15.7	7.1
Energy	2.2	2.3
Financials	2.9	9.6
Health Care	19.9	8.6
Industrials	13.8	14.0
Information Technology	7.3	17.7
Materials	8.7	11.8
Real Estate	8.2	7.6
Telecommunication Services	—	1.1
Utilities	2.9	3.9
Cash	0.9	—
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>

## Country Allocation\*

	Fund	MSCI EM SC
<b>Latin America</b>	<b>10.0</b>	<b>9.8</b>
Brazil	2.5	4.9
Mexico	5.4	3.0
Peru	2.1	0.1
<b>Europe, Middle East &amp; Africa</b>	<b>10.0</b>	<b>11.0</b>
Czech Republic	1.3	—
Kuwait	1.3	—
Poland	2.9	0.9
Saudi Arabia	2.0	—
South Africa	1.5	5.0
<b>Pacific-Asia</b>	<b>79.1</b>	<b>79.2</b>
<b>North Asia</b>	<b>33.2</b>	<b>53.1</b>
China/Hong Kong	19.7	14.1
South Korea	6.4	18.8
Taiwan	7.1	20.2
<b>South Asia</b>	<b>45.9</b>	<b>25.3</b>
India	25.5	15.2
Indonesia	7.1	2.4
Malaysia	6.4	3.3
Philippines	4.3	0.9
Thailand	2.5	3.5
Cash	0.9	—
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>



Source: Mondrian

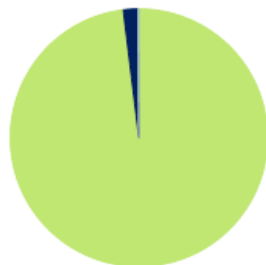
June 30, 2018



# VANGUARD TOTAL BOND MARKET I

## Asset Allocation

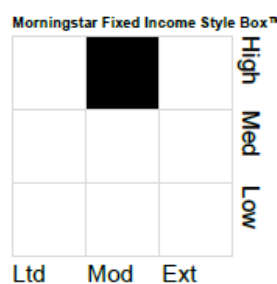
Portfolio Date: 6/30/2018



• Stock	0.0
• Bond	98.1
• Cash	1.8
• Other	0.1
<b>Total</b>	<b>100.0</b>

## Fixed Income Statistics

Portfolio Date: 6/30/2018



## Fixed-Income Stats

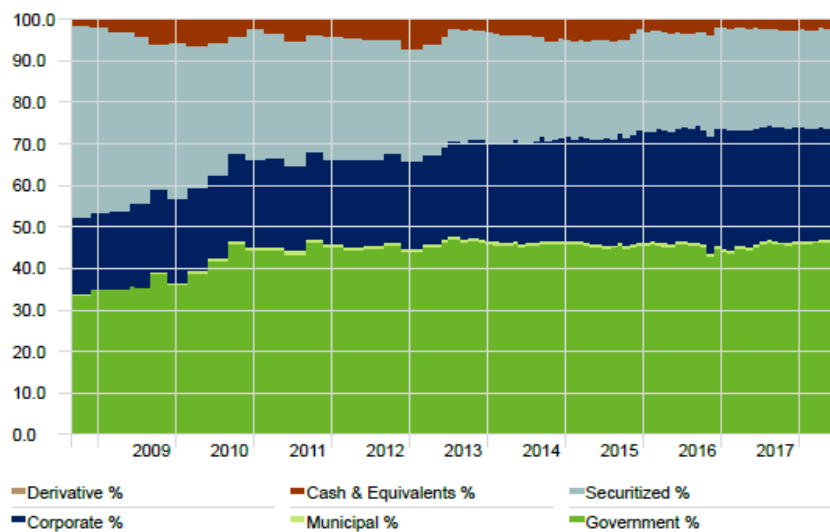
Average Eff Duration	6.1
Average Eff Maturity	8.4
Average Coupon	3.1
Average Price	100.2

## Credit Quality Breakdown

Portfolio Date: 5/31/2018

	Fund	Index
AAA %	70.1	
AA %	3.44	
A %	12.14	
BBB %	14.35	
BB %	0.00	
B %	0.00	
Below B %	0.00	
Not Rated %	0.00	
Yield to Maturity	3.22	

## Historical Sector Allocations (10 Years)



## Top Holdings

	Detail Holding Type	Portfolio Weighting %
United States Treasury Notes 2.12%	BOND - GOV'T/TREASURY	0.47
United States Treasury Notes 2.62%	BOND - GOV'T/TREASURY	0.43
United States Treasury Notes 2.12%	BOND - GOV'T/TREASURY	0.42
United States Treasury Notes 1.38%	BOND - GOV'T/TREASURY	0.42
United States Treasury Notes 1.75%	BOND - GOV'T/TREASURY	0.40
United States Treasury Notes 1.62%	BOND - GOV'T/TREASURY	0.39
United States Treasury Notes 3.62%	BOND - GOV'T/TREASURY	0.39
United States Treasury Notes 2.25%	BOND - GOV'T/TREASURY	0.39
United States Treasury Notes 1.75%	BOND - GOV'T/TREASURY	0.38
United States Treasury Notes 1.5%	BOND - GOV'T/TREASURY	0.37



Source: Morningstar

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# VANGUARD TOTAL BOND MARKET I

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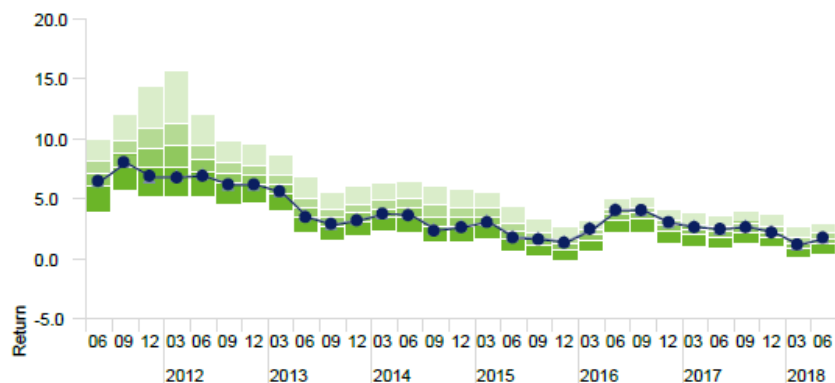
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	99.8	100.0
Alpha	-0.1	0.0
Beta	1.0	1.0
Std Dev	3.0	2.9
Up Capture Ratio	100.5	100.0
Down Capture Ratio	105.7	100.0
Sharpe Ratio (geo)	0.6	0.6
Information Ratio (geo)	-0.4	
Tracking Error	0.2	0.0
Correlation	1.0	1.0

## Rolling Returns (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



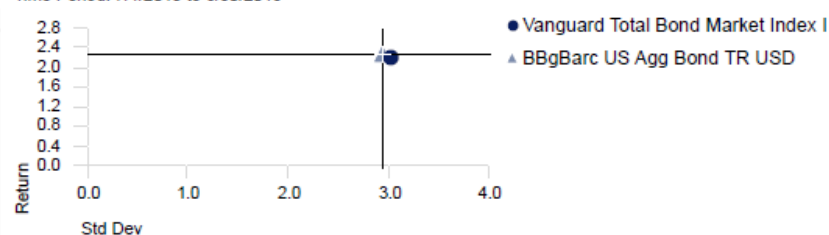
— Vanguard Total Bond Market Index I — BBgBarc US Agg Bond TR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Vanguard Total Bond Market Index I	5.2	9	6.1	89	6.6	70	7.7	11	4.2	83	-2.1	67	5.9	30	0.4	28	2.6	62	3.6	55
BBgBarc US Agg Bond TR USD	5.2		5.9		6.5		7.8		4.2		-2.0		6.0		0.5		2.6		3.5	

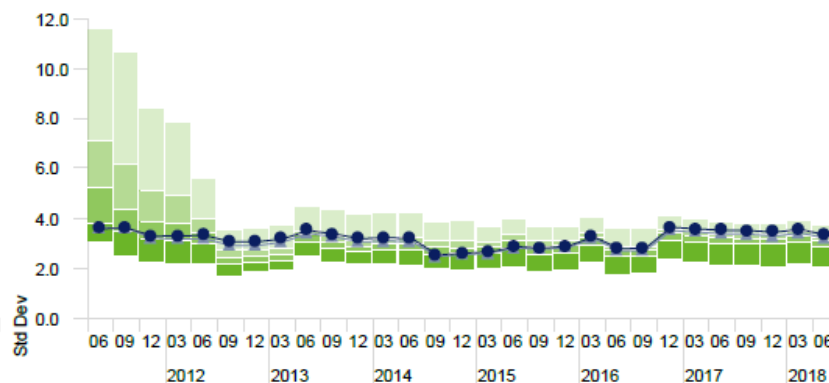
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



— Vanguard Total Bond Market Index I — BBgBarc US Agg Bond TR USD



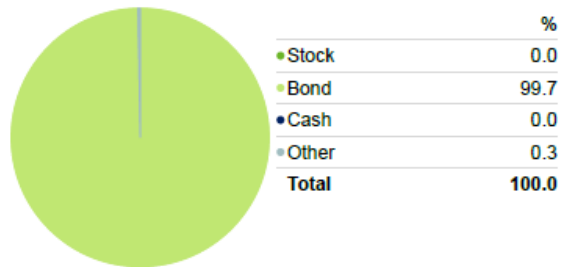
Source: Morningstar

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# VANGUARD INFLATION PROTECTED SECURITIES

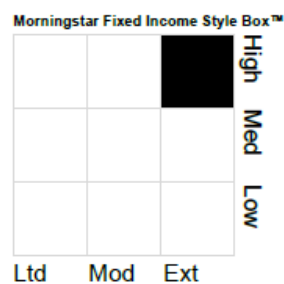
## Asset Allocation

Portfolio Date: 6/30/2018



## Fixed Income Statistics

Portfolio Date: 6/30/2018



## Fixed-Income Stats

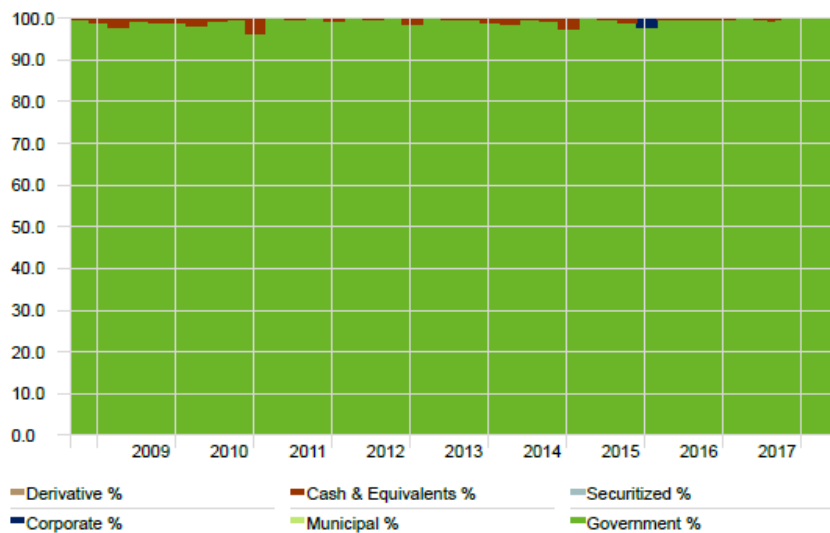
Average Eff Duration	7.6
Average Eff Maturity	8.3
Average Coupon	0.8
Average Price	102.2

## Credit Quality Breakdown

Portfolio Date: 5/31/2018

	Fund	Index
AAA %	100.0	
AA %	0.00	
A %	0.00	
BBB %	0.00	
BB %	0.00	
B %	0.00	
Below B %	0.00	
Not Rated %	0.00	
Yield to Maturity		

## Historical Sector Allocations (10 Years)



## Top Holdings

	Detail Holding Type	Portfolio Weighting %
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	5.27
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	4.01
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	4.00
United States Treasury Notes 0.5%	BOND - GOV'T INFLATION PROTECTED	3.87
United States Treasury Notes 0.62%	BOND - GOV'T INFLATION PROTECTED	3.73
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	3.71
United States Treasury Notes 0.38%	BOND - GOV'T INFLATION PROTECTED	3.66
United States Treasury Notes 0.38%	BOND - GOV'T INFLATION PROTECTED	3.64
United States Treasury Notes 0.12%	BOND - GOV'T INFLATION PROTECTED	3.64
United States Treasury Notes 0.25%	BOND - GOV'T INFLATION PROTECTED	3.63



Source: Morningstar

June 30, 2018

# VANGUARD INFLATION PROTECTED SECURITIES

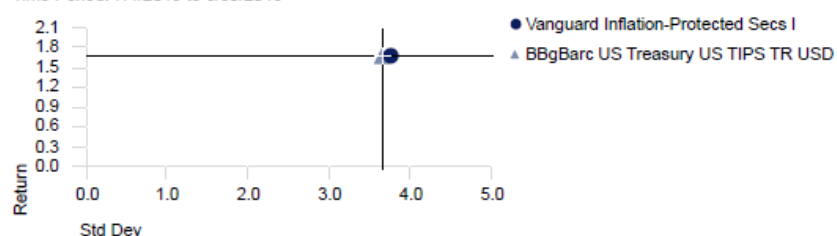
## Risk & Return Characteristics (5 Years)

Time Period: 7/1/2013 to 6/30/2018

	Fund	Index
R2	99.3	100.0
Alpha	0.0	0.0
Beta	1.0	1.0
Std Dev	3.8	3.6
Up Capture Ratio	102.2	100.0
Down Capture Ratio	104.1	100.0
Sharpe Ratio (geo)	0.3	0.3
Information Ratio (geo)	0.0	0.0
Tracking Error	0.3	0.0
Correlation	1.0	1.0

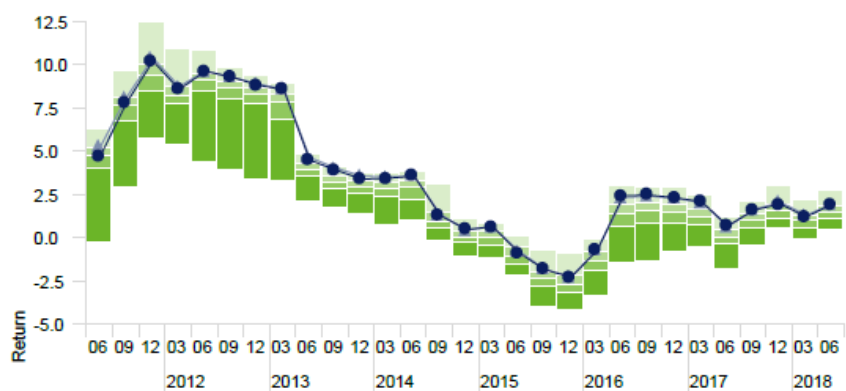
## Risk & Return Illustration (5 Years)

Time Period: 7/1/2013 to 6/30/2018



## Rolling Returns (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile

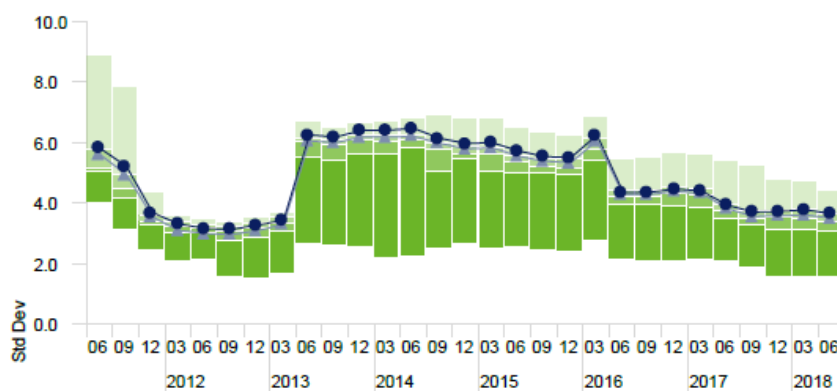


— Vanguard Inflation-Protected Secs I

— BBgBarc US Treasury US TIPS TR USD

## Rolling Risk (3 Years)

Top Quartile 2nd Quartile 3rd Quartile Bottom Quartile



— BBgBarc US Treasury US TIPS TR USD

## Calendar Year Returns

	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank
Vanguard Inflation-Protected Secs I	-2.8	56	11.0	29	6.3	28	13.4	6	6.9	24	-8.8	52	4.1	5	-1.7	31	4.6	39	3.0	34
BBgBarc US Treasury US TIPS TR USD	-2.4		11.4		6.3		13.6		7.0		-8.6		3.6		-1.4		4.7		3.0	



Source: Morningstar

June 30, 2018

5.1

# GUGGENHEIM US BANK LOANS

## Characteristics

	US Bank Loans Composite	Credit Suisse Leveraged Loan Index
Effective Duration	0.15 years	0.09 years
Average Coupon	5.26%	5.65%
Average Market Price	\$98.94	\$98.57
Average YTM	6.09%	6.28%
Average YTW	5.12%	4.72%
Average OAS	308	342
Average Credit Quality <sup>2</sup>	B	B
WAL to Worst	2.98 years	2.67 years
No. of Issuers	237	1284

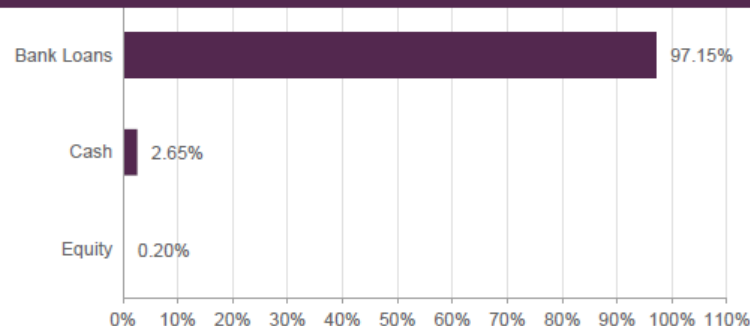
## Performance & Risk Analysis (Since Inception)

	US Bank Loans Composite (Gross)	Credit Suisse Leveraged Loan Index
Annualized Return	6.86%	5.12%
Excess Return	1.74%	–
Standard Deviation	4.90%	6.18%
Correlation	0.97	1
Information Ratio	0.93	–
Sharpe Ratio	1.17	0.64

## Industry Allocation

	Guggenheim	Index
Banking	0.00%	0.01%
Basic Industry	4.42%	4.92%
Brokerage	0.70%	1.05%
Capital Goods	11.08%	10.08%
Communications	9.94%	13.47%
Consumer Cyclical	20.61%	20.09%
Consumer Non Cyclical	23.20%	16.97%
Electric	2.35%	2.72%
Energy	1.30%	2.59%
Finance Companies	1.42%	2.54%
Insurance	1.31%	2.00%
Other Financials	1.02%	1.47%
Other Industry	2.05%	3.07%
Technology	16.56%	15.67%
Transportation	0.79%	1.93%
Cash	2.66%	0.00%
Other <sup>3</sup>	0.58%	1.42%

## Asset Class Allocation

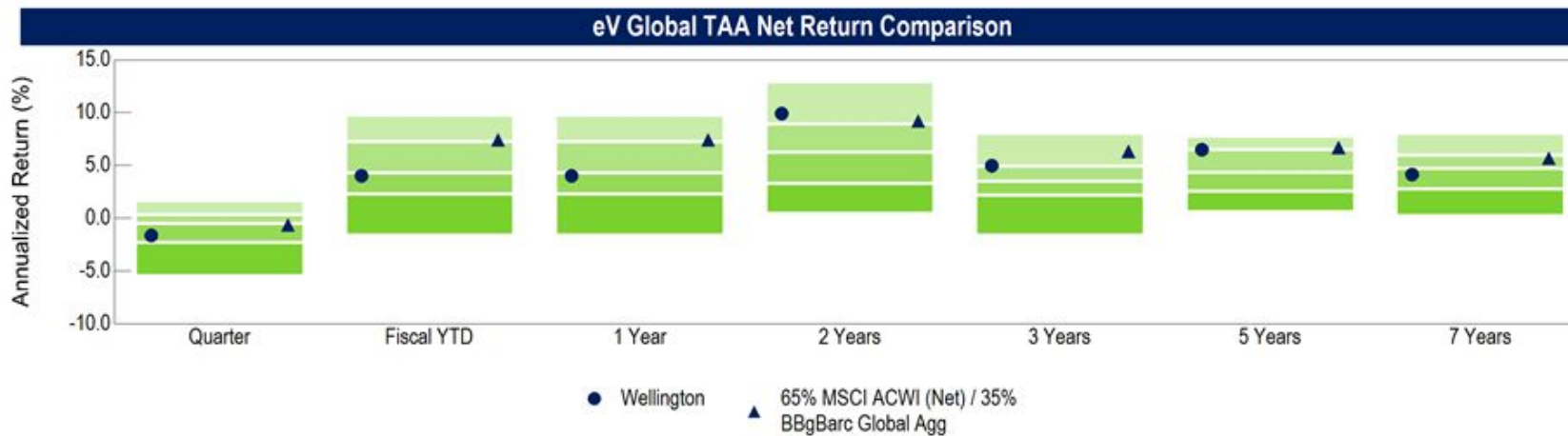
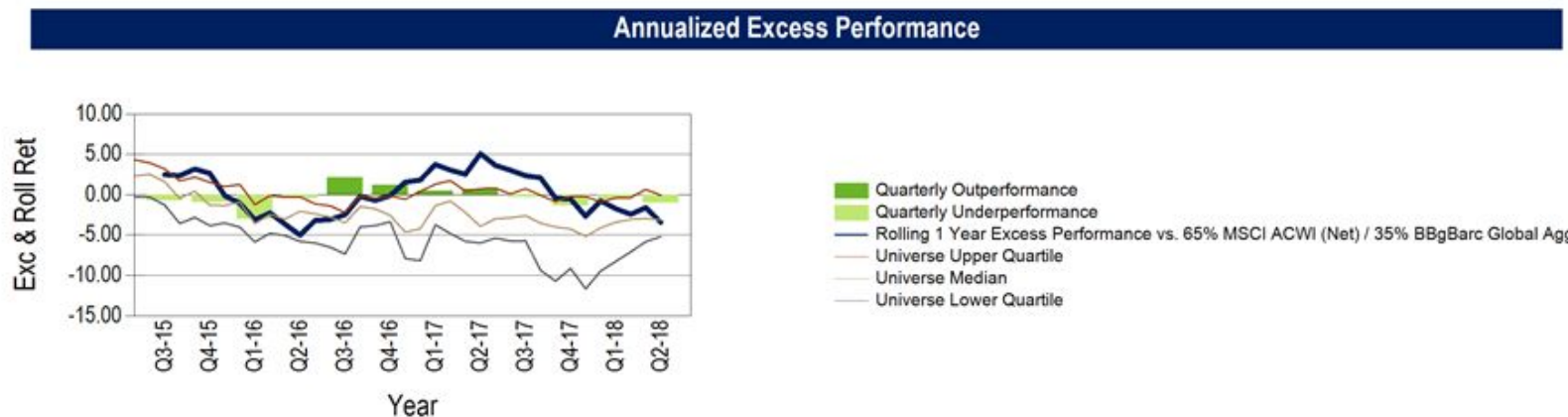


Source: Guggenheim

June 30, 2018

# WELLINGTON OPPORTUNISTIC

5.1



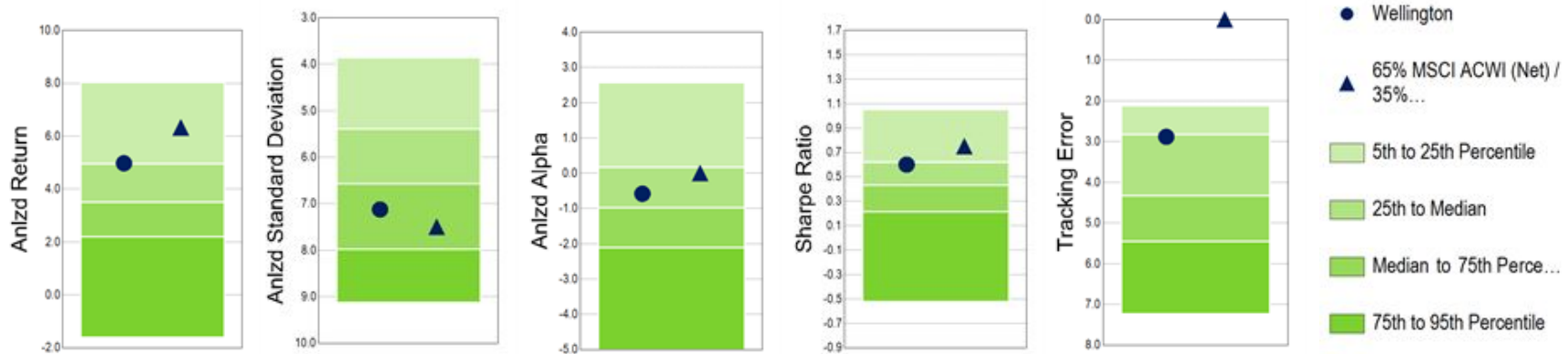
\*Returns are net of fees.



June 30, 2018

# WELLINGTON OPPORTUNISTIC

5.1



\*Returns are net of fees.



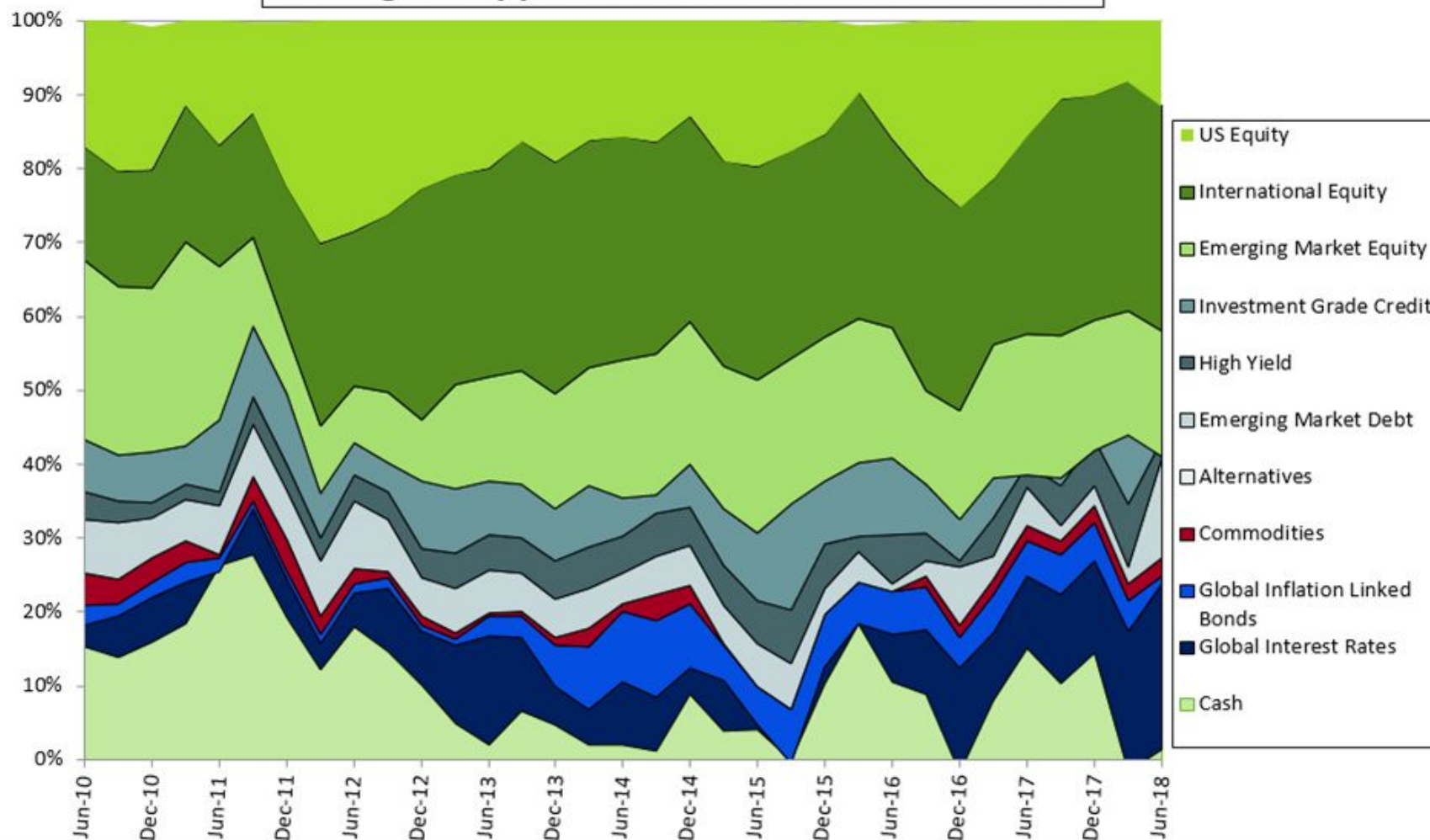
June 30, 2018



# WELLINGTON OPPORTUNISTIC

## Wellington Opportunistic Investment Allocation

5.1



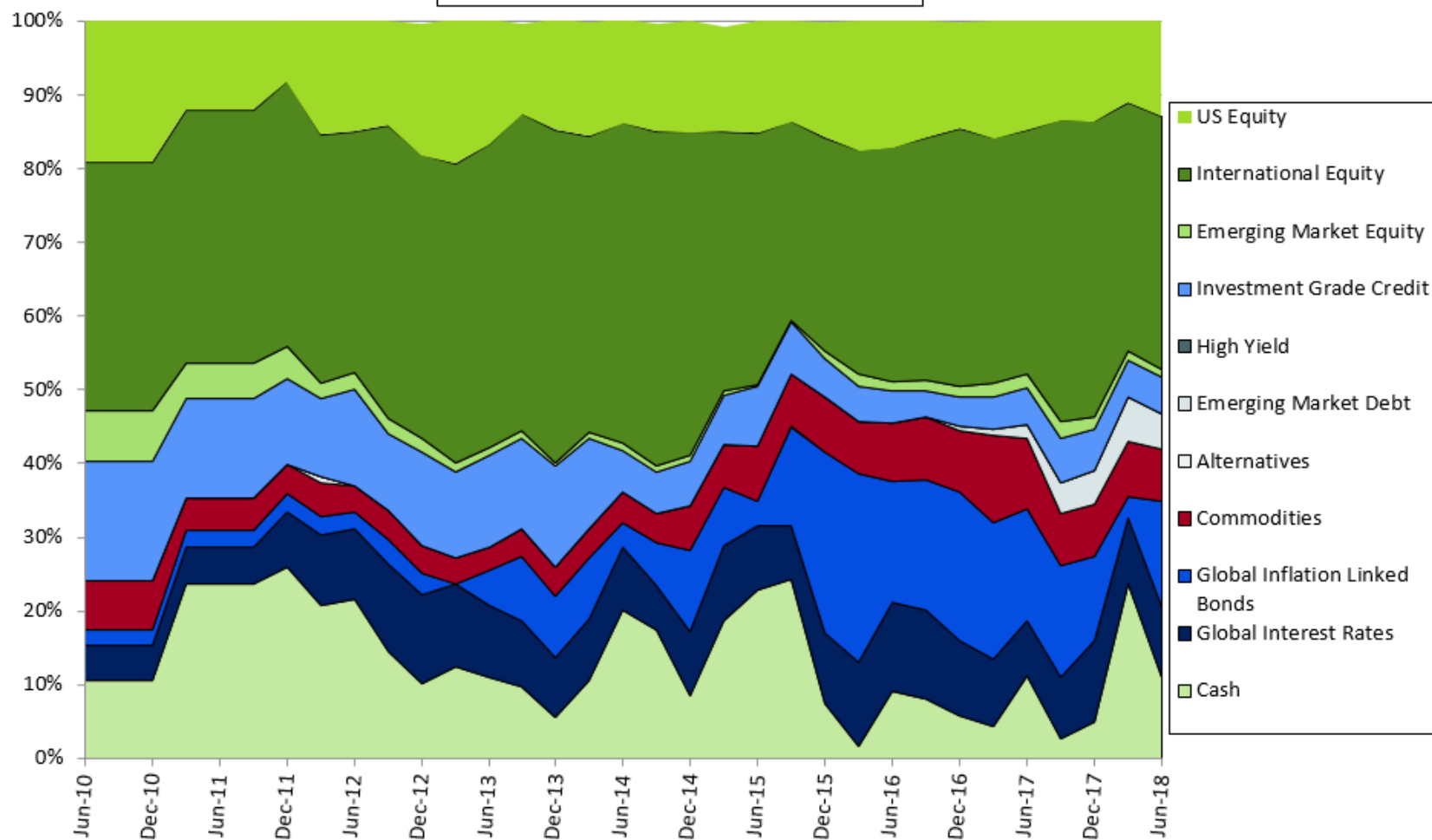
Source: Wellington

June 30, 2018



# NEWTON GLOBAL REAL RETURN

Newton Global Real Return



5.1



Source: Newton

June 30, 2018

# LIGHTHOUSE GLOBAL LONG/SHORT



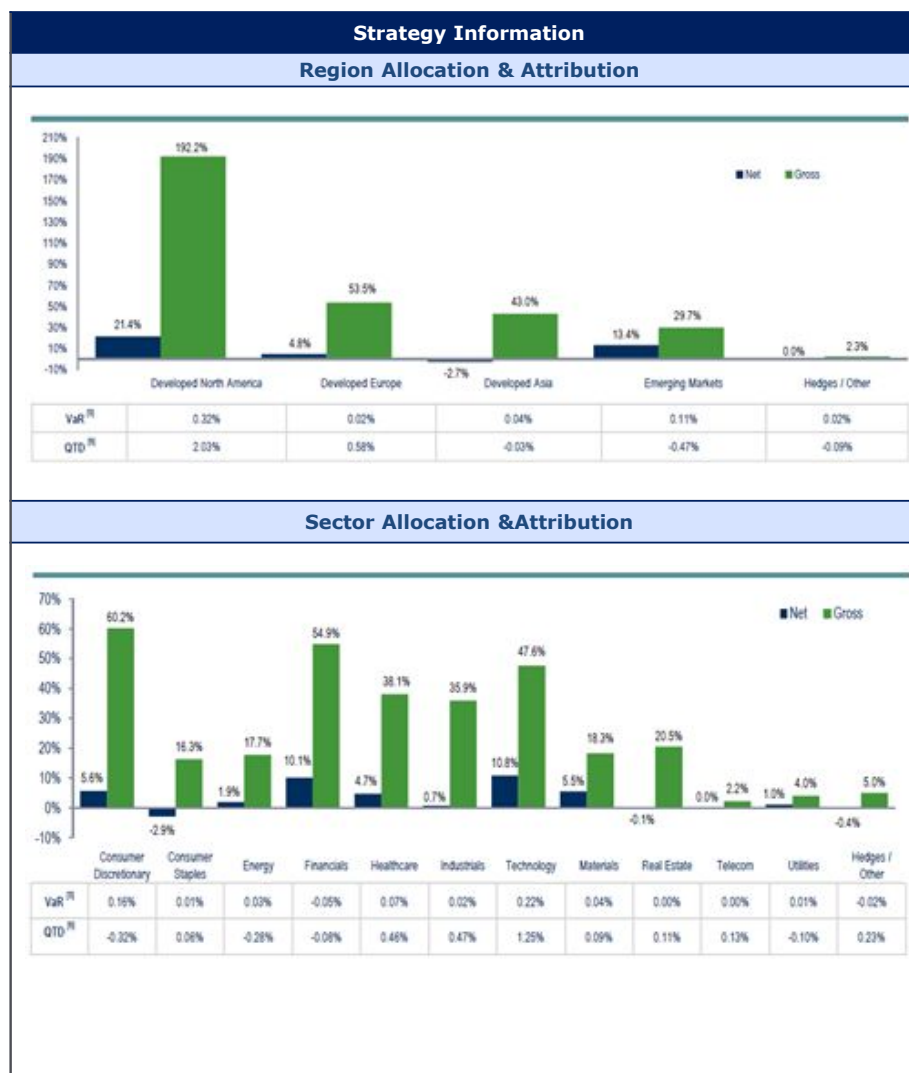
June 30, 2018

# LIGHTHOUSE GLOBAL LONG/SHORT

General Fund Information			
<b>Fund Name</b>	Lighthouse Global Long/Short Fund		
<b>Management Company</b>	Lighthouse Investment Partners, LLC		
<b>Location</b>	Palm Beach, FL		
<b>Firm AUM</b>	\$16.6 billion	<b>Strategy</b>	Fund of Fund
<b>Strategy AUM</b>	\$1.9 billion	<b>Sub-Strategy</b>	Long/Short Equity
<b>Portfolio Managers</b>	Ethan Baron	<b>Direct or FOF</b>	FOF

Terms	
<b>Share Class</b>	--
<b>Minimum Investment</b>	\$1 million
<b>Management Fee</b>	1.15%
<b>Incentive Fee</b>	--
<b>Hurdle Rate</b>	None
<b>High Water Mark</b>	Yes
<b>Subscription</b>	Monthly
<b>Redemption</b>	Quarterly (60 days notice) or Monthly (90 days notice)
<b>Lock-Up</b>	None

Investment Strategy
Lighthouse's Global Long/Short Fund is a global portfolio of 20-30 separately managed accounts with industry sector and country specialist managers. The geographical allocations are similar to the MSCI World Index (30%-75% Americas, 10%-35% Europe, 5%-35% Asia).
The Fund targets returns greater than 10% over market cycles with 6%-8% volatility and an equity beta of 0.2-0.4 to the MSCI World Index.



For more information please see NEPC's Investment Due Diligence Report and Operational Due Diligence Report

June 30, 2018

# PRINCIPAL U.S. PROPERTY

## Key Statistics

(as of June 30, 2018)

Inception Date

**January 1982**

Gross Asset Value

**\$10,175 million**

Net Asset Value

**\$7,821 million**

Number of  
Investments

**140**

Number of  
Markets

**42**

Size

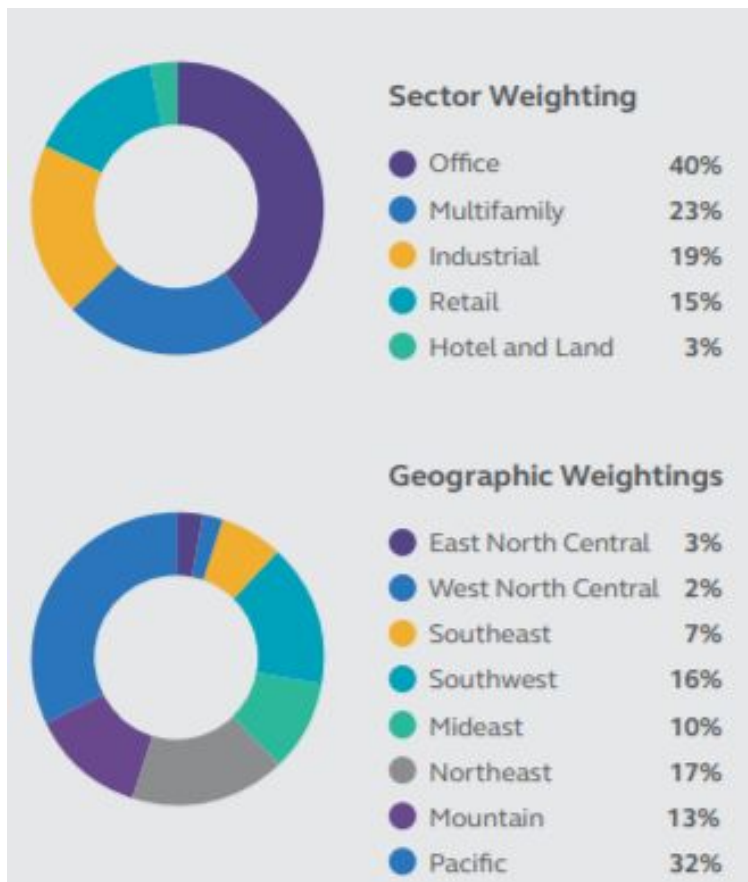
**39.0 million sf**

Cash to Gross Assets

**3.2%**

Leverage Ratio<sup>2</sup>

**21.0%**



Source: Principal

June 30, 2018

5.1

# APPENDIX

NEPC, LLC

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# GLOSSARY OF TERMS

**Alpha** - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

**Alpha Jensen** - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

**Annualized Excess Return over Benchmark** - Annualized fund return minus the annualized benchmark return for the calculated return.

**Annualized Return** - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

**Beta** - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

**Information Ratio** - A measure of the risk adjusted return of a financial security, asset, or portfolio.

*Formula:*  

$$\frac{(\text{Annualized Return of Portfolio} - \text{Annualized Return of Benchmark})}{\text{Annualized Standard Deviation}(\text{Period Portfolio Return} - \text{Period Benchmark Return})}$$
*To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.*

**R-Squared** - Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

**Sharpe Ratio** - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

**Sortino Ratio** - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

*Formula:*  

$$\text{Calculation Average } (X-Y) / \text{Downside Deviation } (X-Y) * 2$$
*Where X = Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)*

**Standard Deviation** - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

*Formula:*  

$$\frac{(\text{Annualized Return of Portfolio} - \text{Annualized Return of Risk Free})}{\text{Annualized Standard Deviation (Portfolio Returns)}}$$

**Tracking Error** - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

*Formula:*  

$$\text{Tracking Error} = \text{Standard Deviation } (X-Y) * \sqrt{\# \text{ of periods per year}}$$
*Where X = periods portfolio return and Y = the period's benchmark return*  
*For monthly returns, the periods per year = 12*  
*For quarterly returns, the periods per year = 4*

**Treynor Ratio** - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

*Formula:*  

$$\frac{(\text{Portfolio Average Return} - \text{Average Return of Risk-Free Rate})}{\text{Portfolio Beta}}$$

**Up/Down Capture Ratio** - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

$$\text{UpsideCapture} = \frac{\text{TotalReturn}(\text{FundReturns})}{\text{TotalReturns}(\text{BMReturn})} \text{ when Period Benchmark Return is } > = 0$$

$$\text{DownsideCapture} = \frac{\text{TotalReturn}(\text{FundReturns})}{\text{TotalReturns}(\text{BMReturn})} \text{ when Benchmark } < 0$$

Data Source: InvestorForce



# INFORMATION DISCLAIMER AND REPORTING METHODOLOGY

5.1

## Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may not be available from the source or may be preliminary and subject to change.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodial bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- This report is provided as a management aid for the client's internal use only. Performance contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

## Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of Return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.



June 30, 2018





## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Performance Review – Operating Fund
2. **INITIATED BY:** Kelly Martin, Chair
3. **BOARD INFORMATION:** X **BOARD ACTION:**
4. **OUTCOME:** **BOARD POLICY:**  
Primary Outcomes: Section 709 - Investments  
Enhance fiscal positioning
5. **BACKGROUND:**  
  
Enclosed for your information is the Operating Fund performance report for the quarter ended June 30, 2018.  
  
Jay Roney of NEPC will provide a brief review at the September 28, 2018 Investment Committee meeting.

9/18/2018





## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Private Equity Discussion & Asset Allocation Recommendation – MIP

2. **INITIATED BY:** Kelly A. Martin, Chair

3. **BOARD INFORMATION:**

**BOARD ACTION:** X

4. **OUTCOME:**

Primary Outcomes:

Enhance fiscal positioning

**BOARD POLICY:**

Section 709 - Investments

5. **BACKGROUND:**

As a follow up to the March 2018 asset allocation discussion, Jay Roney from NEPC will provide an education session on private equity investing. Mr. Roney will also discuss two alternative asset allocation mixes for the Managed Investment Pool (MIP). The first asset allocation option includes an allocation to private market investments and the second option excludes private market investments

6. **TEXT OF PROPOSED RESOLUTION:**

That the Board of Trustees, acting through the Investment Committee, approves one of two asset allocation options proposed for the Managed Investment Pool (MIP):

- Option 1 with Private Equity or
- Option 2 without Private Equity.



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  - Option 2 without Private Equity.

9/18/2018

## PRIVATE EQUITY EDUCATION



### UNIVERSITY OF MAINE SYSTEM MANAGED INVESTMENT POOL

September 28, 2018

Jay E. Roney, Partner

Kelly Regan, Senior Consultant

7.1



BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

## SUMMARY

- **During the annual asset allocation review, NEPC presented private equity as an area to consider to increase the MIP's return potential**
  - Additionally, the Investment Committee expressed views on being more like Endowment peers
- **The Investment Committee requested more information; including private equity education, portfolio construction, costs and operational requirements**
- **As background, the System has invested in private equity investments before with a 2% target to private equity and 3% target to private real assets**
  - Committed \$5m to John Hancock Timberland VII in 2005
  - Committed \$5m to Landmark Equity Partners XV (Secondaries) in 2014
    - This investment has been successful with a current IRR of 17.8%
- **This presentation will review:**
  - Private equity education
  - Mechanics of investing in private equity
  - Impact to asset allocation and expected return/risk
  - Sample portfolio construction
  - The pros and cons of the investment

7.1



# PRIVATE EQUITY OVERVIEW

- **Private Equity is a source of investment capital provided by institutional investors for the purposes of acquiring interests in companies and/or products**
- **The role in a portfolio is as a return enhancer, with the premium earned over other investment options serving to compensate for the liquidity risk**
- **Large investable universe**
  - Over \$400 billion raised annually across strategies in each of the last four years
  - Approximately \$3-4 trillion in assets under management, including portfolio value and un-invested capital
- **Two components of private equity/private debt return:**
  - Capital Appreciation: Derived from an increase in the value of an asset between acquisition and sale
  - Current Income: Derived from portfolio company operations, loans and leases
- **Investment diversification**
  - Not fully correlated with public equities
  - Access to smaller companies and wider range of strategies

7.1



Source: Preqin. Fundraising and market size data as of December 31, 2017

# HOW PRIVATE EQUITY IS DIFFERENT FROM PUBLIC EQUITY

## Public Equity

- **Daily liquidity**
- **Invested immediately**
- **Daily valuations**
- **Market pricing**
- **Fees as a % of NAV**
- **Regulated reporting**
- **Benchmark managed**
- **Some activism**

## Private Equity

- **Illiquid, 10+ year funds**
- **Invested over time**
- **Quarterly valuations**
- **Estimated fair value**
- **Fees as % of commitment**
- **Transparency varies**
- **Managed for alpha**
- **Active value creation**

7.1



# PRIVATE EQUITY CLOSED-END FUND LIFECYCLE

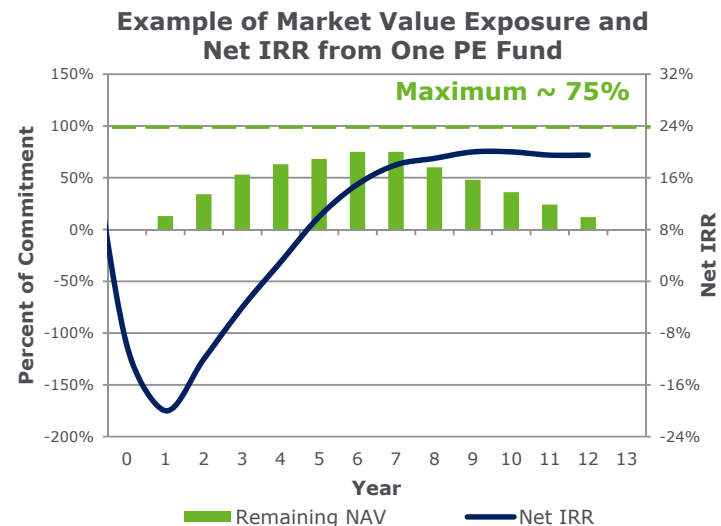
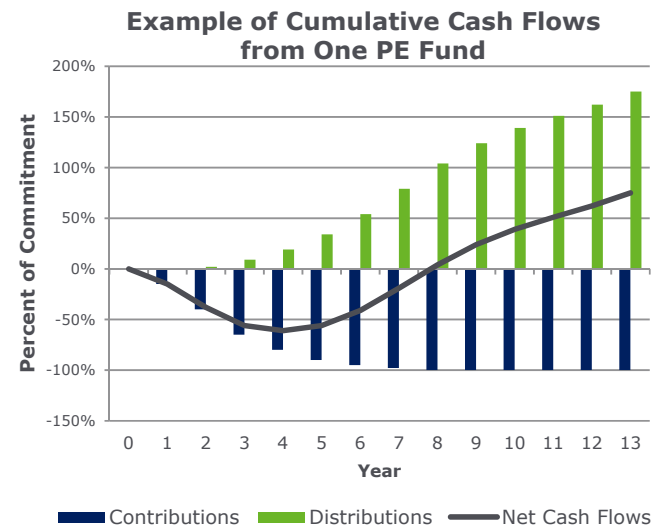
- **Fundraising, (0 – 2 years)**
  - The time period that managers uses to raise sufficient funds for the strategy
  - Limited Partners make an initial “Commitment” to a fund
- **Investing (years 1 – 5)**
  - The time period that managers use to source investment opportunities. This “Investment Period,” generally lasts the first four or five years of a fund’s life
  - Business plans are put into place. If investments do not meet expectations managers will take steps to mitigate the impact of losses
  - Current income may be paid out during the Investment Period (depending on the strategy), though early distributions may be recalled
  - Limited Partners fund their initial commitments as capital is called over time
- **Harvesting (years 4 – 8)**
  - The time period that managers use to exit the investments through asset sales, portfolio company sales, IPOs, and other exit opportunities
  - The proceeds of the realizations are distributed to fund investors according to a pre-determined schedule, or “Distribution Waterfall”, which includes the payment of carried interest to the manager (if applicable)
- **Liquidating (years 7 – 12)**
  - The managers use this time to exit the remaining investments in the portfolio
  - If the fund life is extended beyond its initial term (as stated in fund legal documents), management fees may be negotiated lower or waived

7.1



# THE “J-CURVE” OF PRIVATE EQUITY CASH FLOWS AND RETURNS

- **Cash flow pattern of investing in private equity**
  - **Years 1-3 returns are negative**, little income is generated, management fees are collected on committed (not invested) base, business plans established but improvements not yet impacting valuations
  - **Years 3-5 returns flatten out and gradually turn positive** as notable improvement in company financials justify valuation increases, debt refinancing may generate distributions and some income is received
  - **Years 5-10 returns spike** as many assets are sold and accumulated increases in value are reflected, and income is received
  - **Years 11-13 flatten out** as residual assets are liquidated
  - **All years combined** leads to what has been termed the “J-Curve.”





# SPECTRUM OF PRIVATE EQUITY STRATEGIES

**Private Equity is not a 'one size fits all' investment class, offering a broad range of strategies that can be customized based on specific investment objectives and risk/return targets**

Illustrative Strategy Return Targets		
Strategy	Description	Typical Return Targets
Venture	Early stage innovative / start-up companies	15% - 20% IRR, 2.0x TVPI
Growth Equity	Expansion capital for small, growing established businesses; commonly non-control investments	15% - 20% IRR, 1.7x TVPI
Buyouts	Investments to restructure or expand established companies; commonly control investments	17% - 20% IRR, 1.8x TVPI
Special Situations	Investments in mature businesses that may be profitable or unprofitable	15% - 20% IRR, 1.8x TVPI
Mezzanine	Subordinated debt to grow or restructure companies	8% - 12% IRR, 1.4x TVPI
Opportunistic Credit	Investment strategy involving various credit-linked opportunities	13% - 17% IRR, 1.3x-1.8x TVPI
Direct Lending	Primarily floating rate senior and/or unitranche (senior and subordinated debt in one instrument) debt capital used for various situations	8% - 12% IRR, 1.2x-1.4x TVPI
Distressed Debt	Companies with bad balance sheets; can involve more liquid trading strategies and less liquid control strategies	10% - 18% IRR, 1.7x TVPI
Secondaries	Purchases of Limited Partnership interests in established private equity partnerships from other investors	10% - 15% IRR, 1.5x TVPI
Energy	Exploration, production, transmission, storage of energy sources and related industry services	10% - 20% IRR, 1.8x TVPI



7.1

# FEES FOR PRIVATE EQUITY ARE HIGHER AND MORE COMPLEX THAN PUBLIC EQUITY FUNDS

- **Annual Management Fee**

- Charged as a percentage of commitment (fixed fee) during the investment period
- Charged as a percentage of net invested capital or NAV after the investment period
- Generally 1.5%-2.0% fee rates

- **Fund Expenses**

- One-time fund formation and ongoing administrative and operating costs
- Can add another 0.3%-1.0% to annual expenses

- **Preferred Return**

- Rate of return LPs need to achieve before GP can earn carried interest
- Typically computed on amounts invested and amounts paid for fees to the GP
- Generally 8%, but can vary by strategy and manager clout

- **Carried Interest**

- Performance fee paid to the fund manager for profits generated on investments
- Paid only on realized investments (not on unrealized gains)
- Generally 20% of realized investment gain
- Can be lower for lower return strategies or higher for “premium” managers



# MIP ASSET ALLOCATION ANALYSIS

	Policy Targets	Current Allocation (7/31/18)	Option 1 w/ PE	Option 2 w/o PE	Endowment Peers
<b>Cash</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
Large Cap Equities	16%	19%	16%	18%	16%
Small/Mid Cap Equities	6%	7%	6%	7%	6%
Int'l Equities (Unhedged)	13%	13%	13%	13%	16%
Int'l Sm Cap Equities (Unhedged)	4%	4%	4%	4%	0%
Emerging Int'l Equities	4%	4%	4%	4%	4%
Emerging Int'l Sm Cap Equities	4%	3%	4%	4%	4%
Private Equity	2%	1%	10%	0%	11%
<b>Total Equity</b>	<b>47%</b>	<b>49%</b>	<b>55%</b>	<b>49%</b>	<b>57%</b>
Core Bonds	5%	5%	5%	6%	6%
TIPS	8%	8%	8%	8%	5%
Bank Loans	5%	5%	5%	5%	0%
Absolute Return Fixed Income	3%	3%	3%	3%	5%
<b>Total Fixed Income</b>	<b>21%</b>	<b>21%</b>	<b>21%</b>	<b>22%</b>	<b>16%</b>
Private Real Assets	3%	1%	5%	0%	4%
<b>Total Real Assets</b>	<b>3%</b>	<b>1%</b>	<b>5%</b>	<b>0%</b>	<b>4%</b>
Global Asset Allocation	23%	23%	13%	23%	10%
Hedge Funds - Long/Short	6%	6%	6%	6%	7%
Hedge Funds - Credit	0%	0%	0%	0%	7%
<b>Total Multi Asset</b>	<b>29%</b>	<b>29%</b>	<b>19%</b>	<b>29%</b>	<b>23%</b>
<b>Expected Return 5-7 yrs</b>	<b>6.2%</b>	<b>6.1%</b>	<b>6.5%</b>	<b>6.2%</b>	<b>6.5%</b>
<b>Expected Return 30 yrs</b>	<b>7.3%</b>	<b>7.2%</b>	<b>7.6%</b>	<b>7.3%</b>	<b>7.6%</b>
<b>Standard Dev</b>	<b>12.2%</b>	<b>12.4%</b>	<b>12.8%</b>	<b>12.5%</b>	<b>13.1%</b>
<b>Sharpe Ratio (5-7 years)</b>	<b>0.35</b>	<b>0.33</b>	<b>0.35</b>	<b>0.34</b>	<b>0.35</b>

## Option 1 with Private Equity

The mix with PE proposes a total 15% allocation to private markets (PE and RE).

The resulting portfolio improves portfolio return and is more in line with the allocation and risk/return of peers.

It is expected that over a 5-7 year time period, the additional return would equate to roughly \$925,000 annually to the MIP (after fees).

## Option 2 without Private Equity

If the Committee does not move forward with private equity, NEPC recommends bringing the private market targets to 0% with a corresponding increase to equity and core bonds.

The resulting portfolio w/o private equity is similar in terms of return and risk to the current allocation.



Note: Endowment Peer allocation sourced from Greenwich Associates Asset Allocation Trends 2018 report, some assumptions made by NEPC in terms if US, International and Fixed Income allocations

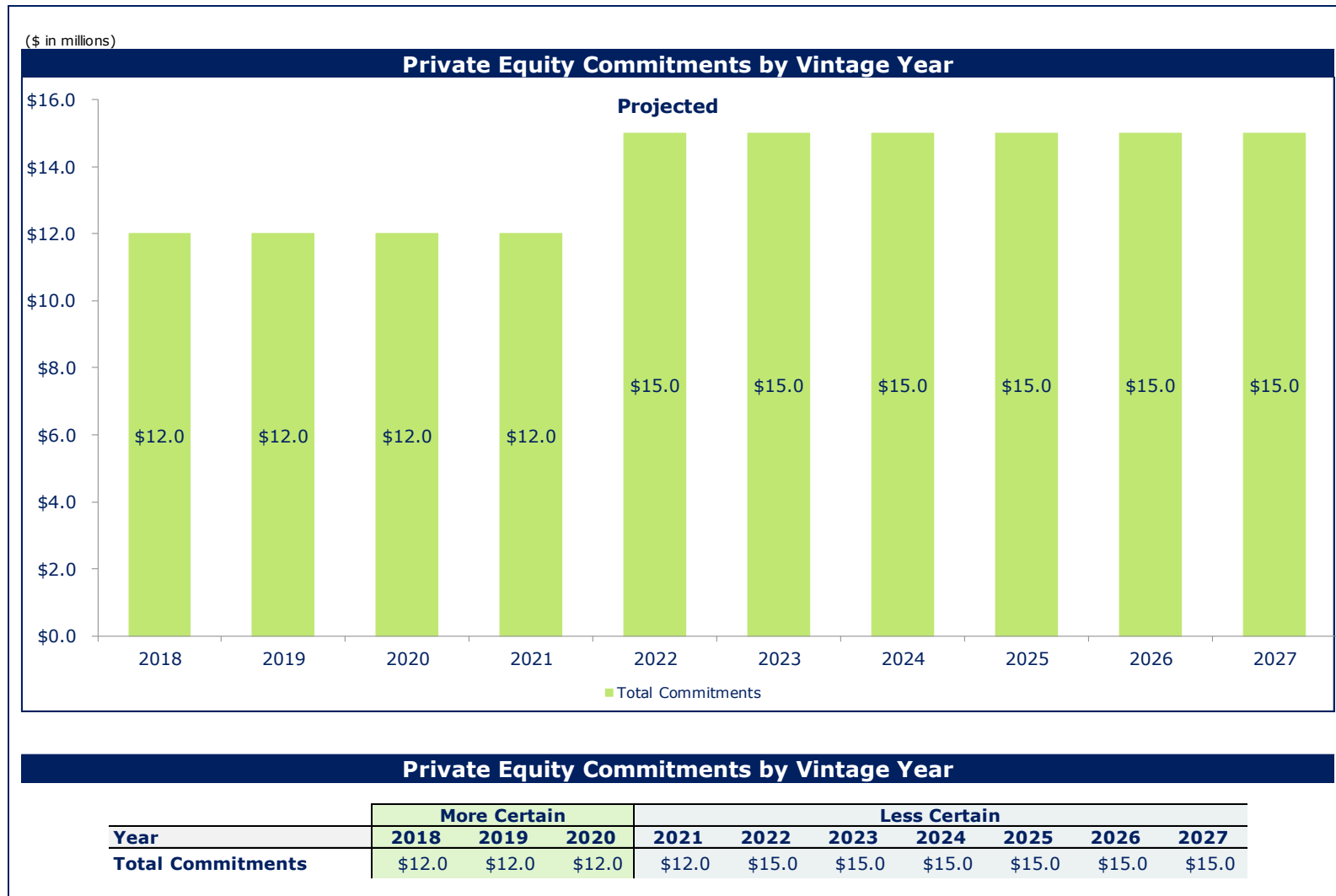
# PORTFOLIO CONSTRUCTION

- **In constructing a private markets portfolio, NEPC will complete:**
  - An annual pacing plan analysis to determine total commitment amounts to achieve the target allocation
  - A review of sub-strategy asset classes to determine the market opportunity
  - Provide the Committee with a recommendation on managers and strategies
    - Typically, only one manager will be presented for each allocation which is different from the traditional search process
    - NEPC will provide a full investment due diligence memo on the manager and strategy after NEPC's Alternative Asset Committee approval
  - On a quarterly basis, NEPC will provide a private equity performance report detailing statistics on each investment
- **On the following pages we show a sample commitment pace:**
  - Assumes an annual 4.5% spending rate and a 7.5% investment return
  - It is expected that the MIP would achieve the 15% target by year 7
- **Based on an initial pacing plan review, NEPC would recommend a \$12m commitment to private markets in year 1**
  - This would be roughly 3-4 managers/strategies per year

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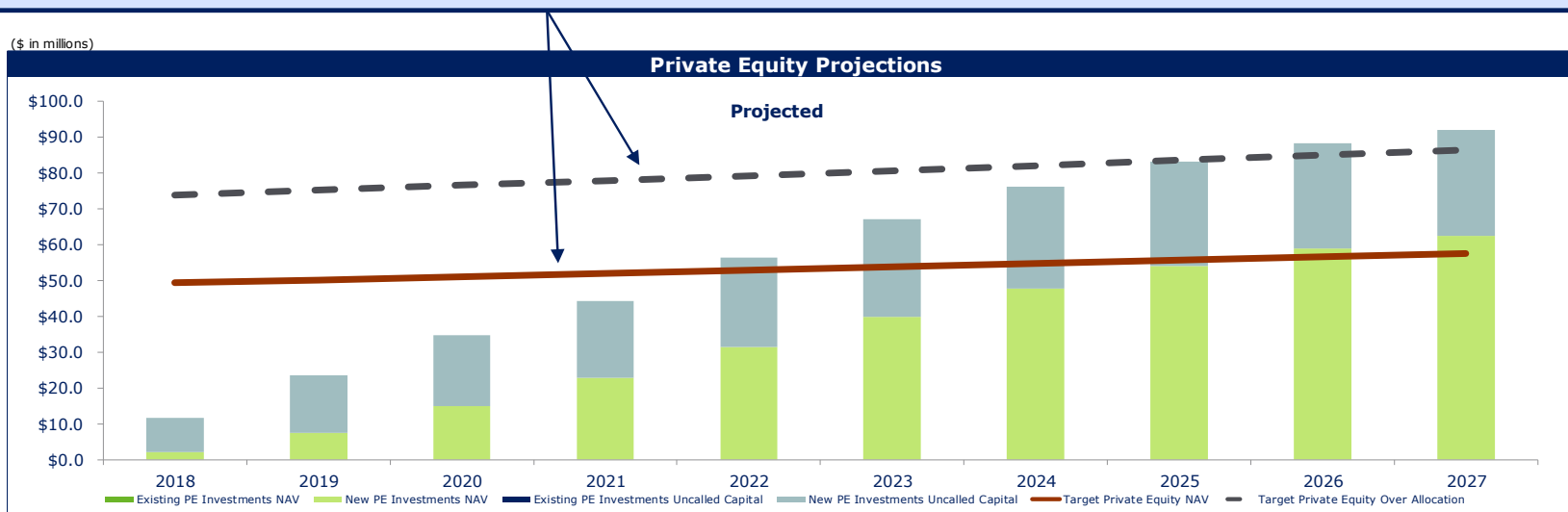


## COMMITMENT PACE GOING FORWARD



# FUND PROJECTIONS

- **Red line** is the 10% target Private Markets allocation based on projected plan total NAV; **Black dashed line** is the 1.5x over-commitment.
- Goal is to keep private markets NAV (**green bar**) plus uncalled capital commitments (**blue bar**), between red line and black dashed line.



Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Private Equity NAV	\$2.2	\$7.5	\$15.0	\$22.8	\$31.6	\$39.8	\$47.7	\$54.0	\$58.8	\$62.4
Uncalled Capital Commitments	\$9.6	\$16.1	\$19.8	\$21.5	\$24.9	\$27.2	\$28.4	\$29.0	\$29.3	\$29.5
Private Equity NAV + Uncalled Capital Commitments	\$11.8	\$23.6	\$34.8	\$44.2	\$56.4	\$67.0	\$76.2	\$83.0	\$88.1	\$91.9
Target Private Equity NAV	\$49.3	\$50.1	\$51.0	\$51.9	\$52.8	\$53.7	\$54.7	\$55.6	\$56.6	\$57.6
Over-Commitment Pace	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x
Target Private Equity Over Allocation	\$73.9	\$75.2	\$76.5	\$77.8	\$79.2	\$80.6	\$82.0	\$83.4	\$84.9	\$86.4
Beginning Program NAV	\$326.0	\$328.4	\$334.1	\$340.0	\$345.9	\$352.0	\$358.1	\$364.4	\$370.8	\$377.3
Yearly Return	\$2.4	\$5.7	\$5.8	\$5.9	\$6.1	\$6.2	\$6.3	\$6.4	\$6.5	\$6.6
Ending Program NAV	\$328.4	\$334.1	\$340.0	\$345.9	\$352.0	\$358.1	\$364.4	\$370.8	\$377.3	\$383.9
Private Equity Percent of Total Program Assets										
Private Equity NAV	0.7%	2.3%	4.4%	6.6%	9.0%	11.1%	13.1%	14.6%	15.6%	16.3%
Private Equity Uncalled Capital Commitments	2.9%	4.8%	5.8%	6.2%	7.1%	7.6%	7.8%	7.8%	7.8%	7.7%
NAV + Uncalled Capital Commitments	3.6%	7.1%	10.2%	12.8%	16.0%	18.7%	20.9%	22.4%	23.4%	24.0%
Target Private Equity Allocation	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%



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## CONCLUSION

- **Increasing the allocation to private equity has the potential to improve portfolio returns, after fees**
- **Additionally, the portfolio's allocation will be more in line with peers which was important to the Investment Committee**
  - Results from the January survey below:

	Managed Investment Pool (MIP)
<b>Risk</b>	Moderate
<b>Drawdown</b>	10% (5% in 1 answer)
<b>2008/2009 Scenario</b>	Mixed, Opportunistic Tilt
<b>Peer Rankings</b>	Important
<b>Managers</b>	Benchmark Aware

- **However, there are other considerations**
  - 3-4 fund commitments a year increases administrative burden
    - Completing paperwork
    - Managing liquidity for capital calls
    - Re-investing distributions
  - Private equity valuations are on a quarter lag and may delay annual audits
  - The System would need to amend NEPC's current contract if committing to direct private investments as opposed to fund of funds
- **NEPC recommends the Investment Committee decide between Option 1 or Option 2**



# **APPENDIX A: ADDITIONAL INFORMATION**

NEPC, LLC

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# INVESTMENT FRAMEWORK AND PLANNING: BUILDING A PRIVATE EQUITY PROGRAM

**In constructing a private markets portfolio there are several key considerations that impact the allocation**

Decision	Implementation Considerations
Investment Objectives	<ul style="list-style-type: none"> <li>• Committee will develop an Investment Policy with goals and guidelines around return objectives, current income and/or capital appreciation, risk and volatility tolerances, liquidity requirements and performance benchmarks</li> <li>• Target allocation will determine commitment pace at a high level</li> <li>• Annual investment plan will determine size of private equity commitments and investment strategy and manager selection based on environment and opportunities available</li> </ul>
Investment Thesis	<ul style="list-style-type: none"> <li>• Short term investment objective</li> <li>• Long-term objective</li> <li>• Opportunistic objective</li> </ul>
Investment Strategy	<ul style="list-style-type: none"> <li>• Strategy diversification will impact returns and can mitigate the “J-Curve” while managing macro-economic risk</li> <li>• Manager selection has a dramatic impact upon returns; diversification across managers can help mitigate idiosyncratic manager risk</li> </ul>
Market Opportunity & Vintage Year Considerations	<ul style="list-style-type: none"> <li>• Vintage year diversification is critical to the program’s success</li> <li>• Mitigate vintage year risk through steady commitment pacing</li> <li>• Fund managers control timing of investment acquisitions &amp; dispositions based on market opportunities</li> <li>• LPs can sparingly use secondary sales to lessen exposures</li> </ul>

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# PRIVATE EQUITY ECONOMIC RETURN DRIVERS

- **Private equity managers have multiple levers to create value:**
  - Buying low and selling high (multiple arbitrage)
  - Growing EBITDA (through organic revenue growth, cost cutting and making acquisitions)
  - Using leverage
- **Portfolio investments are made throughout the capital structure of target companies**
- **Returns are generated through capital appreciation and current income**
  - Capital appreciation is realized through the eventual sale of a company
  - Current income is derived from portfolio company operations, loans and leases, with loans typically structured to have rate adjustments and equity kickers
- **Leverage can amplify returns (positively and negatively) from current income and capital appreciation**

7.1



# APPENDIX B: GLOSSARY

NEPC, LLC

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# PRIVATE EQUITY GLOSSARY

- **Carried interest** - the share of profits that the fund manager is due once it has returned the cost of investment to investors
- **Commitment** - every investor in a private equity fund commits to investing a specified sum of money in the fund partnership over a specified period of time. The fund records this as the limited partnership's capital commitment. The sum of capital commitments is equal to the size of the fund
- **DPI** - a ratio of the amount of capital distributed (D) to investors over the amount of capital called from (or Paid In by) investors
- **IRR** - a dollar-weighted, since inception return expressed as a percentage. IRR uses the present sum of cash drawdowns (money invested), the present value of distributions (money returned from investments) and the current value of unrealized investments
- **Management fee** - this is the annual fee paid to the general partner. It is typically a percentage of limited partner commitments to the fund and is meant to cover the basic salaries and overhead costs of running a fund
- **Fund expenses** - these are certain administrative, fund formation, reporting, legal and regulatory costs that are paid by the fund in addition to management fees. A fund's Limited Partnership Agreement (LPA) will specify what costs are fund expenses & which are not
- **Preferred return** - minimum returned distributed to the limited partners until the time when the general partner is eligible to deduct carried interest. The preferred return ensures that the general partner shares in the profits of the partnership only after investments have performed well
- **TVPI** - a ratio of the Total Value (TV) of all distributions and current net asset value over the amount of capital called from (or Paid In by) investors (PI)
- **EBITDA** - Earnings Before Interest, Taxes, Depreciation and Amortization. Commonly used as a proxy for operating cash flow
- **TEV/EBITDA** - common valuation metric for companies, expressed as a ratio of the Total Enterprise Value over an annual EBITDA amount



# **APPENDIX C: DETAILED INVESTMENT STRATEGY INFORMATION**

7.1

NEPC, LLC

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# PRIVATE EQUITY INVESTMENT STRATEGIES (DIRECT MANAGER)

Private Equity Strategy Overview	Description	Sector Exposure	Considerations
<b>Venture Capital</b> <ul style="list-style-type: none"> <li>Return driver: appreciation</li> <li>Expected IRR: 15%-20%</li> <li>Expected TVPI: 2.0x</li> <li>Time Horizon: 6-10 years</li> </ul>	Minority equity investments in startup businesses that are perceived to have significant growth potential	Technology Software Biotech Healthcare Consumer CleanTech	<ul style="list-style-type: none"> <li>Vintage year is important</li> <li>Access to the highest quality managers is paramount</li> <li>Risk of failure is high</li> </ul>
<b>Growth Equity</b> <ul style="list-style-type: none"> <li>Return driver: appreciation</li> <li>Expected IRR: 15%-20%</li> <li>Expected TVPI: 2.0x</li> <li>Time Horizon: 3-6 years</li> </ul>	Minority expansion capital for small, growing businesses that are generating cash flow and profits. Generally, these investments have less exposure to technology and leverage risk	Diversified Business Services Technology Healthcare Industrial Consumer	<ul style="list-style-type: none"> <li>Execution risk is high</li> <li>Lack of control positions</li> </ul>
<b>Buyouts</b> <ul style="list-style-type: none"> <li>Return driver: appreciation</li> <li>Expected IRR: 17%-20%</li> <li>Expected TVPI: 2.0x</li> <li>Time Horizon: 4-6 years</li> </ul>	Investments in established companies that require capital to expand and/or restructure	Diversified Business Services Technology Healthcare Industrial Consumer	<ul style="list-style-type: none"> <li>Generally high leverage</li> <li>Operational control is key to execution</li> </ul>
<b>Special Situations</b> <ul style="list-style-type: none"> <li>Return driver: appreciation and income</li> <li>Expected IRR: 17%-20%</li> <li>Expected TVPI: 2.0x</li> <li>Time Horizon: 3-6 years</li> </ul>	Investments in mature businesses that may be profitable or unprofitable. Investments are often in the equity of the acquired business.	Diversified Business Services Technology Healthcare Industrial Consumer	<ul style="list-style-type: none"> <li>Operational control is key to execution</li> <li>Businesses may have more going concern risk than buyouts</li> </ul>

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# PRIVATE EQUITY INVESTMENT STRATEGIES (MULTI-MANAGER)

Private Equity Strategy Overview	Description	Sector Exposure	Considerations
<b>Co-Investments</b> <ul style="list-style-type: none"> <li>Return driver: appreciation and income</li> <li>Expected IRR: 14%-16%</li> <li>Expected TVPI Multiple: 1.8x-2.0x</li> <li>Time Horizon: 5-7 years</li> </ul>	Investments in established companies that require capital to expand and/or restructure	Highly diversified across underlying deals and managers	<ul style="list-style-type: none"> <li>Generally high leverage</li> <li>Co-Investors will not typically have much oversight for investments</li> </ul>
<b>Secondary Fund of Funds</b> <ul style="list-style-type: none"> <li>Return driver: appreciation</li> <li>Expected IRR: 14%-18%</li> <li>Expected TVPI Multiple: 1.5x</li> <li>Time Horizon: 2-3 years</li> </ul>	Private equity interests are generally purchased at a discount of NAV from motivated owners of private equity interests. The interests purchased are generally venture and buyout fund and/or company interests with limited exposure to unfunded capital commitments	Highly diversified across underlying managers	<ul style="list-style-type: none"> <li>Limited alpha producing opportunities</li> <li>Most value is generated at time of purchase through discounts and underwriting quality</li> <li>Long lived funds due to diversification</li> </ul>
<b>Primary Fund of Funds</b> <ul style="list-style-type: none"> <li>Return driver: appreciation</li> <li>Expected IRR: 10%-16%</li> <li>Expected TVPI Multiple: 1.6x-1.8xx</li> <li>Time Horizon: 5-10 years</li> </ul>	Investments as LP commitments to underlying funds diversified across vintage, strategy, and geography	Highly diversified across underlying managers	<ul style="list-style-type: none"> <li>Limited alpha producing opportunities</li> <li>Long lived funds due to diversification</li> <li>Passive investments</li> <li>Lower fees minimize impact of double layer</li> </ul>

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# PRIVATE DEBT INVESTMENT STRATEGIES (PERFORMING CREDIT)

Private Credit Strategy Overview	Description	Sector Exposure	Considerations
<b>Direct Lending</b> <ul style="list-style-type: none"> <li>Return driver: income</li> <li>Expected IRR: 8%-12%</li> <li>Expected TVPI Multiple: 1.3x-1.5x</li> <li>Time Horizon: 2-4 years</li> </ul>	Primarily floating rate senior and/or unitranche (senior and subordinated debt in one instrument) debt capital used for various situations: facilitating changes in ownership through leveraged buyouts or recapitalizations, financing acquisitions, or enabling growth	Companies in a variety of industries that are backed by Private Equity Managers (Sponsored) or not backed by a Private Equity Manager (Sponsor-less)	<ul style="list-style-type: none"> <li>Fund economics play a role in returns</li> <li>Vintage year is important</li> <li>Floating rates, shorter holding periods</li> </ul>
<b>Mezzanine</b> <ul style="list-style-type: none"> <li>Return driver: current income and appreciation</li> <li>Expected IRR: 14%-16%</li> <li>Expected TVPI Multiple: 1.6x-1.7x</li> <li>Time Horizon: 5-7 years</li> </ul>	Primarily fixed rate subordinated (the level of financing senior to equity and below senior debt) debt obligations made to non-investment grade borrowers to effect buyout, M&A or other growth strategies	Companies in a variety of industries that are backed by Private Equity Managers (Sponsored) or not backed by a Private Equity Manager (Sponsor-less)	<ul style="list-style-type: none"> <li>Fund economics play a role in returns</li> <li>Manager has limited recourse due to subordinated position in capital structure</li> </ul>
<b>Opportunistic Credit</b> <ul style="list-style-type: none"> <li>Return driver: current income and appreciation</li> <li>Expected IRR: 13%-17%</li> <li>Expected TVPI Multiple: 1.3x-1.8x</li> <li>Time Horizon: 1-4 years</li> </ul>	Investment strategy involving various credit-linked opportunities such as distressed debt, performing and non-performing loans, structured products (CLOs, CDOs), hard assets	Diversified industry exposure. Instruments include publicly traded debt securities, private debt, trade claims, mortgage debt, common and preferred stock and commercial paper	<ul style="list-style-type: none"> <li>Thematic</li> <li>Esoteric investments</li> </ul>





# PRIVATE DEBT INVESTMENT STRATEGIES (DISTRESSED CREDIT)

Private Credit Strategy Overview	Description	Sector Exposure	Considerations
<b>Distressed Debt (Control)</b> <ul style="list-style-type: none"> <li>Return driver: appreciation and income</li> <li>Expected IRR: 15%-17%</li> <li>Expected TVPI: 1.3x-1.8x</li> <li>Time Horizon: 3-6 years</li> </ul>	Debt investments with the intent to take equity control of companies that have typically defaulted on debt obligations and are in need of financial and operational restructuring.	Diversified	<ul style="list-style-type: none"> <li>Window of opportunity tends to be short lived</li> </ul>
<b>Distressed Debt (Non-control)</b> <ul style="list-style-type: none"> <li>Return driver: appreciation</li> <li>Expected IRR: 13%-17%</li> <li>Expected TVPI Multiple: 1.3x-1.8x</li> <li>Time Horizon: 1-4 years</li> </ul>	Debt investments in companies that have typically defaulted on debt obligations and are in need of financial and operational restructuring.	Diversified exposure through various access points. Securities can include common and preferred shares, bank debt, trade claims (goods owed) and corporate bonds	<ul style="list-style-type: none"> <li>Vintage year is important</li> <li>Window of opportunity tends to be short lived</li> </ul>

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# **APPENDIX D: ALTERNATIVE INVESTMENT DISCLAIMER**

NEPC, LLC

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## ALTERNATIVE INVESTMENT DISCLAIMER

**It is important to note the following characteristics of many non-traditional investment strategies including hedge funds and private equity:**

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers are not required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Limited partnership agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy

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## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Defined Contribution Plan – Quarterly Review
2. **INITIATED BY:** Kelly Martin, Chair
3. **BOARD INFORMATION:** X **BOARD ACTION:**
4. **OUTCOME:** **BOARD POLICY:**  
Primary Outcome: Section 709 - Investments  
Enhance fiscal positioning
5. **BACKGROUND:**

Michael Pratico and Barry Schmitt with CAPTRUST Financial Advisors, will provide a quarterly update regarding the Defined Contribution Plan at the September 28, 2018 Investment Committee meeting.

UNIVERSITY OF MAINE SYSTEM  
2ND QUARTER, 2018

8.1

**DEFINED CONTRIBUTION  
QUARTERLY REVIEW**

**CAPTRUST**  
4208 Six Forks Road, Suite 1700  
Raleigh, NC 27609

Our mission is to enrich the lives of our clients, colleagues and communities through sound financial advice, integrity, and a commitment to service beyond expectation.

## IN THIS REVIEW

Period Ending 6.30.18 | Q2 18

University of Maine System

### University of Maine System Defined Contribution Plans

2nd Quarter, 2018 Quarterly Review

prepared by:

**Michael S. Pratico**

Senior Vice President | Financial Advisor

**Barron V. Schmitt**

Senior Vice President | Financial Advisor

Section 1

### RETIREMENT INDUSTRY UPDATES

Section 2

### MARKET COMMENTARY AND REVIEW

Section 3

### PLAN INVESTMENT REVIEW

Section 4

### FUND FACT SHEETS

Appendix

8.1

SECTION 1: RETIREMENT INDUSTRY UPDATES

Period Ending 6.30.18 | Q2 18

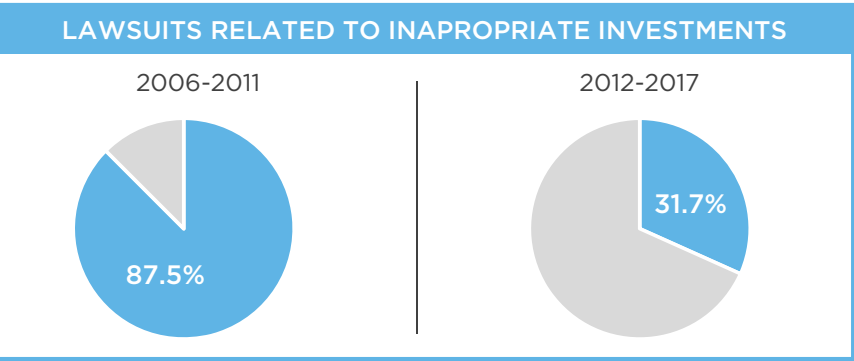
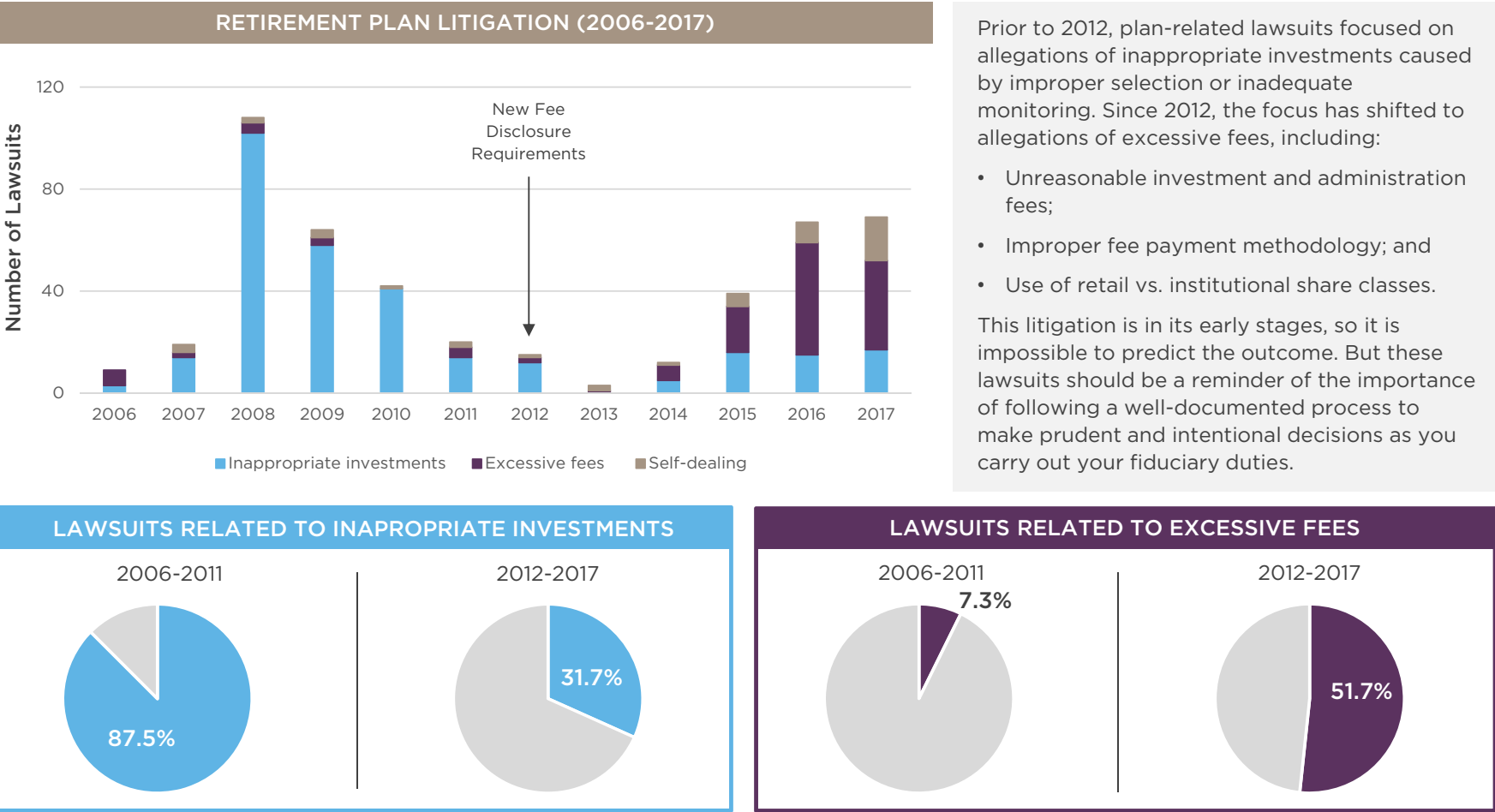
University of Maine System

SECTION 1: RETIREMENT INDUSTRY UPDATES
Industry Updates.....

RETIREMENT PLAN MARKETPLACE — INDUSTRY UPDATE

Period Ending 6.30.18 | Q2 18

FIDUCIARY UPDATE: LITIGATION TRENDS SHIFTING



Source: Center for Retirement Research at Boston College, “401(k) Lawsuits: What Are the Causes and Consequences?”, May 2018

This document is intended to be educational only. CAPTRUST does not render legal, accounting, or tax advice. Plan sponsors requiring such advice should consult the appropriate professional advisor.

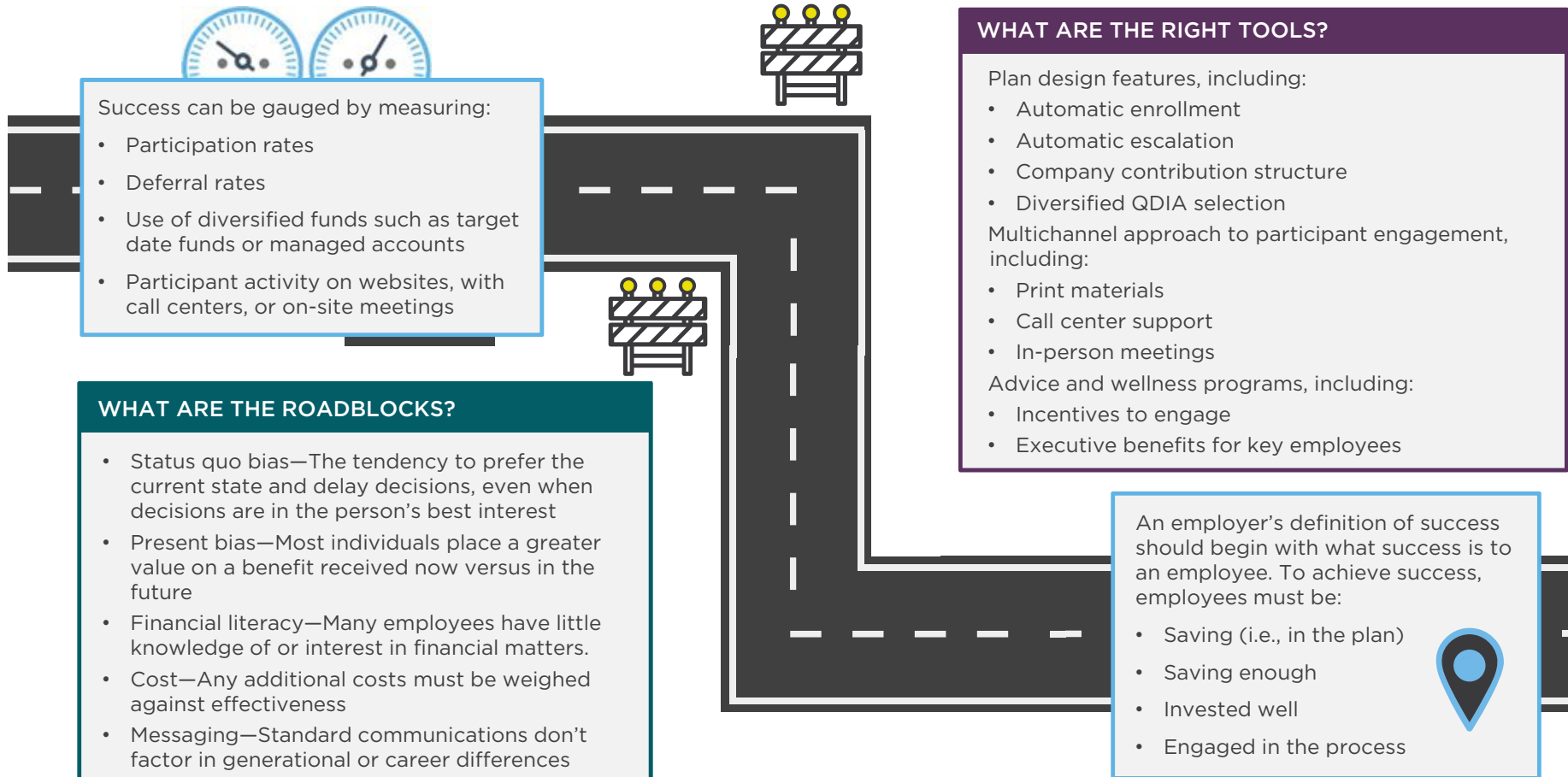


## RETIREMENT PLAN MARKETPLACE — INDUSTRY UPDATE

Period Ending 6.30.18 | Q2 18

## PAVING THE WAY TO AN OPTIMIZED RETIREMENT PROGRAM

An optimized retirement program is one that most efficiently uses employer resources to give employees the best odds of achieving a distinguished retirement. As we've seen, failure to address retirement saving and planning for employees can affect productivity and the ability to attract and retain talent and can become costly for employers over time. Below, we outline a road map toward optimizing your retirement program and offer a few steps to move you in the right direction.



8.1

## RETIREMENT PLAN MARKETPLACE — INDUSTRY UPDATE

Period Ending 6.30.18 | Q2 18

## ADMINISTRATION CORNER



## SELECTING YOUR AUDITOR

Hiring a plan auditor is an important fiduciary responsibility. The Department of Labor has been concerned about the quality of independent audits for a number of years. Among other things, they suggest that you ask your auditors for their credentials, including the number of audits they have performed and references.

When your audit is complete, the DOL suggests you review your auditor's testing of the following:

- Whether plan assets covered by the audit have been fairly valued
- Whether plan obligations are properly stated and described
- Whether plan contributions were received timely
- Whether benefit payments were made in accordance with plan terms
- If participant accounts are fairly stated (if applicable)
- Issues that could impact the plan's tax status
- Identification of any transactions prohibited by ERISA



## NEW DISABILITY GUIDELINES

The DOL issued guidelines effective April 2 related to the handling of disability claims designed to provide broader protection for plan participants.

Plan sponsors will want to confirm the following:

- They are using a third party for determining if benefits are available; the Social Security Administration's definition is commonly used
- Review and update claims procedures in summary plan descriptions to ensure processes and procedures meet DOL guidelines
- Plans using an outsourced disability vendor should review their service agreements and understand who has responsibility and liability for compliance procedures



## DEFINITION OF COMPENSATION

Failing to understand how your plan defines compensation and reporting incorrect information to your recordkeeper for plan testing frequently causes issues. With tax reform impacting deductions of fringe benefits, it may be a good time to review your plan's definition:

- Confirm that the definition matches up with your processes and procedures for calculating salary deferrals, match, and other plan provisions
- Ensure that your payroll vendor and recordkeeper are both applying the definition of compensation as defined in the plan document
- Plans that use different definitions of compensation for various contributions will want to ensure they are properly reflected in payroll and recordkeeping processes and systems.

8.1

SECTION 2: MARKET COMMENTARY AND REVIEW

Period Ending 6.30.18 | Q2 18

University of Maine System

SECTION 2: MARKET COMMENTARY AND REVIEW	
Market Commentary.....	
Market Review.....	
Asset Class Returns.....	
Index Performance.....	

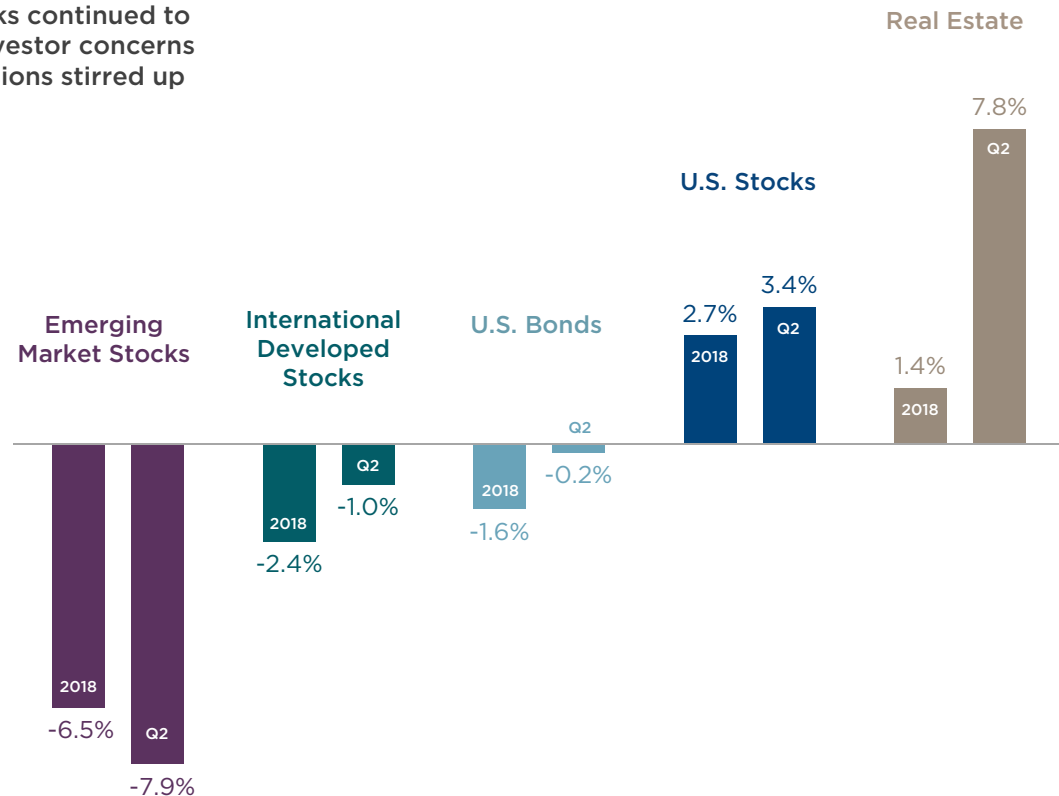
## MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

## A LACKLUSTER AND VOLATILE YEAR

U.S. stocks made up their lost ground in the second quarter, but international developed and emerging market stocks continued to slide. Despite a solid U.S. (and global) economy, investor concerns about rising interest rates and escalating trade tensions stirred up market volatility.

- U.S. stocks outpaced international stocks in the second quarter, crawling into positive territory for the year. Strong earnings and economic activity have so far offset concerns about trade tensions.
- International developed stocks logged a small loss in the second quarter, held back by signs of slowing European economic growth and the return of political turmoil.
- Emerging market stocks continue to face headwinds from a stronger U.S. dollar. They are this year's laggards.
- Bonds held their own in the second quarter as interest rates backed off multiyear highs. They have notched a small loss for the year so far.
- Stabilizing interest rates boosted public real estate in Q2, placing the asset class in positive territory for 2018.



Asset class returns are represented by the following indexes: S&P 500 Index (U.S. large-cap stocks), MSCI EAFE Index (international developed stocks), MSCI Emerging Markets Index (emerging market stocks), Bloomberg Barclays U.S. Aggregate Bond Index (U.S. bonds), and Dow Jones U.S. Real Estate Index (real estate).

## MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

## DIGGING DEEPER: STOCKS AND BONDS

## Equities

	Q2 2018	YTD 2018	Last 12 Months
U.S. Stocks	3.4%	2.7%	14.3%
- Best Sector: Energy	13.5%	6.8%	21.0%
- Worst Sector: Industrials	-3.2%	-4.7%	7.1%
International Stocks	-1.0%	-2.4%	5.9%
Emerging Market Stocks	-7.9%	-6.5%	5.4%

## Fixed Income

	6.30.18	3.31.18	6.30.17
1-Year U.S. Treasury Yield	2.33%	2.09%	1.24%
10-Year U.S. Treasury Yield	2.85%	2.74%	2.31%
	QTD 2018	YTD 2018	Last 12 Months
10-Year U.S. Treasury Total Return	-0.23%	-2.36%	-1.73%

## Equities - Relative Performance by Market Capitalization and Style

Q2 2018				YTD 2018				2017			
	Value	Blend	Growth		Value	Blend	Growth		Value	Blend	Growth
Large	1.2%	3.4%	5.8%	Large	-1.7%	2.6%	7.3%	Large	13.7%	21.8%	30.2%
Mid	2.4%	2.8%	3.2%	Mid	-0.2%	2.3%	5.4%	Mid	13.3%	18.5%	25.3%
Small	8.3%	7.8%	7.2%	Small	5.4%	7.7%	9.7%	Small	7.8%	14.6%	22.2%

Asset class returns are represented by the following indexes: S&P 500 Index (U.S. stocks), MSCI EAFE Index (international stocks), and MSCI Emerging Markets Index (emerging market stocks). Relative performance by market capitalization and style is based upon the Russell Pure Style Indexes except for large-cap blend, which is based upon the S&P 500 Index. Source: Bloomberg and JP Morgan.

8.1

## MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

## DIGGING DEEPER: FIXED INCOME MARKET

Interest Rates	3 Month	2 Year	5 Year	10 Year	30 Year	Mortgage Rate
March 2018	1.70%	2.27%	2.56%	2.74%	2.97%	4.27%
June 2018	1.92%	2.53%	2.74%	2.86%	2.99%	4.40%
Change	0.22%	0.26%	0.18%	0.12%	0.02%	0.13%

Interest rates rose across the board, particularly for maturities under 10 years, as the yield curve continued to flatten. Mortgage rates continue to be cheap relative to long-term historical averages, although they have steadily risen from recent lows.

Bloomberg Barclays U.S. Aggregate Bond Index	Yield to Worst	Duration	Total Return	Spread	Treasury Rate	AA Spread	BBB Spread
March 2018	3.12%	6.08		0.41%	2.71%	0.57%	1.38%
June 2018	3.29%	6.01		0.44%	2.85%	0.62%	1.57%
Change	0.17%	-0.07	-0.16%	0.03%	0.14%	0.05%	0.19%

The Bloomberg Barclays U.S. Aggregate Bond Index fell 0.56% over the past quarter, driven primarily by rising interest rates. Widening spreads among BBB-rated issues were a modest contributor to the decline in Q2.

Bloomberg Barclays U.S. Long Credit Index	Yield to Worst	Duration	Total Return	Spread	Treasury Rate	AA Spread	BBB Spread
March 2018	4.40%	13.82		1.48%	2.92%	0.95%	1.85%
June 2018	4.69%	13.41		1.74%	2.95%	1.08%	2.17%
Change	0.29%	-0.41	-2.65%	0.26%	0.03%	0.13%	0.32%

At the long end of the yield curve, spread widening was a bigger driver of performance than rates, particularly for lower-quality bonds.

Source: Bloomberg, CAPTRUST 10

## MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

## ECONOMIC OUTLOOK

The global economic picture typically consists of favorable attributes (tailwinds) and challenges (headwinds). Here, we provide our perspective on both and offer our view on which side has the upper hand.

## TAILWINDS

**Jobs Jump—Job Seekers Sought by Employers**

- More job openings than job seekers means full employment and strong consumer spending.

**Tax Cut Catalyzes CAPEX and Buybacks, Boosts Confidence**

- Stock buybacks and CAPEX have both increased this year due to repatriated cash and higher after-tax corporate profits.
- CAPEX grew 9% in the first quarter compared to last year.
- The NAM's Outlook Survey shows highs for business outlook, expected sales growth, production, employment, capital investments, and employee wage increases.

**Stimulus Outweighing Tariff Troubles for Now**

- The combination of the stimulus from lower individual and corporate taxes, higher government spending, and repatriation should be enough to outweigh proposed tariffs.

**Diversified Portfolios Prove Beneficial**

- U.S.-centric small-cap and mid-cap stocks have been a haven in the rough seas of tariff talks.
- PEs have fallen as earnings have grown, even while stock prices have been flat.



## HEADWINDS

**The U.S. Breaks Away from the Global Pack**

- Global synchronized growth is fading. The tax deal has boosted U.S. growth, while Europe, Japan, and China are slowing.
- While geopolitical tensions are ebbing on the Korean peninsula, Italy's new government has increased investors' focus on European issues.

**Tariff Negotiation Won't End Soon**

- Tit-for-tat Trump tariff talks could lead to a decline in business confidence and corporate reinvestment. Also, concerns about midterm elections could produce more market volatility.
- A stronger dollar, in conjunction with higher U.S. interest rates, has negatively impacted emerging market stocks, even while aiding U.S. small-cap and mid-cap stocks.

**Wages Higher—Gas Prices Higher, Too**

- Although increasing, wage growth is still modest. If wage growth accelerates, inflation could increase, resulting in reduced consumer spending.
- Gas prices have declined 3% from their peak, but are 20% higher than a year ago, offsetting most of lower-paid workers' tax cuts.



8.1

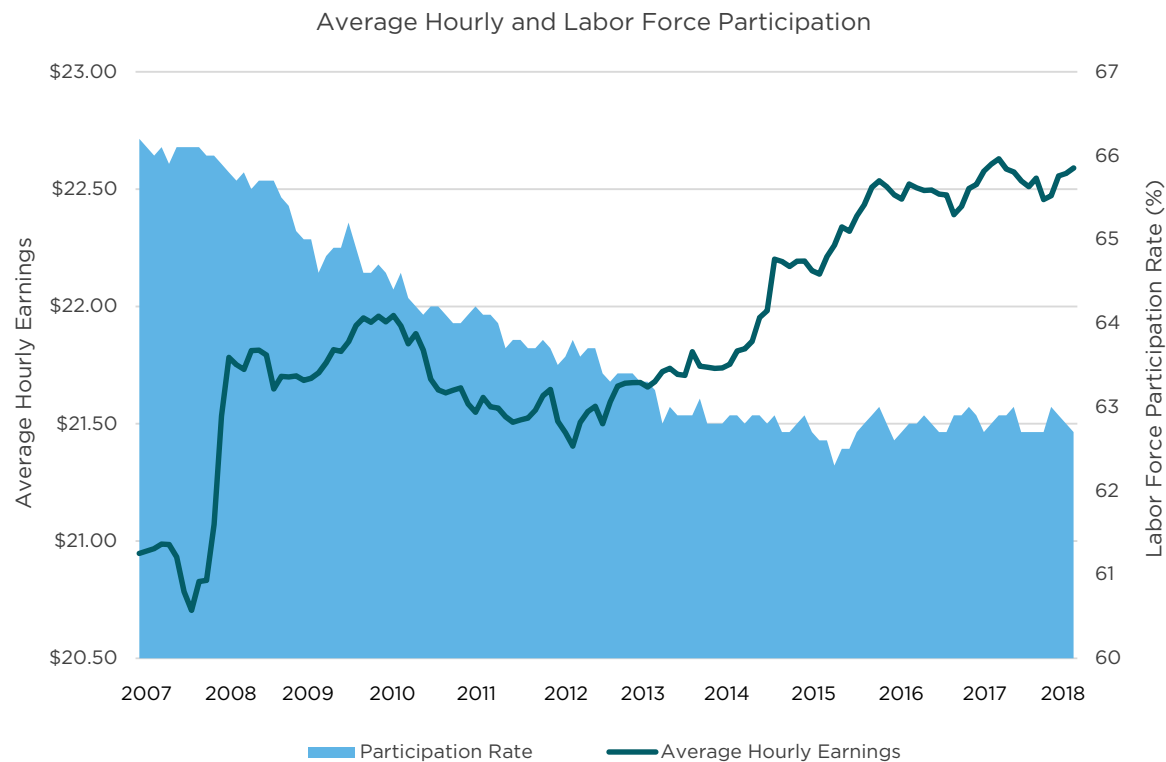
Overall, the global economic backdrop continues to strengthen. At current valuations, international stocks are more attractively priced than U.S. stocks.

## MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

## LOW UNEMPLOYMENT BUT STAGNANT WAGE GROWTH?

Despite robust gross domestic product (GDP) growth and historically low unemployment, the growth in wages is slow and runs the risk of a real decline if inflation grows at a faster pace. Given that far more workers rely on wages than investment income and consumer spending's significance to the economy (70% of GDP), this will be a point to watch.



### OBSERVATIONS

- Why the tepid growth in wages? One contributing factor may be the labor participation rate, which remains low relative to pre-2008 levels—and far below its peak at 67% in the late 1990s.
- This data series excludes people who are not searching for work.
- If strengthening labor market conditions lure non-participating workers back into the workforce, it could serve as a "shadow supply" of labor that could offset the inflationary pressures of low unemployment.

Source: Bureau of Labor Statistics, CAPTRUST

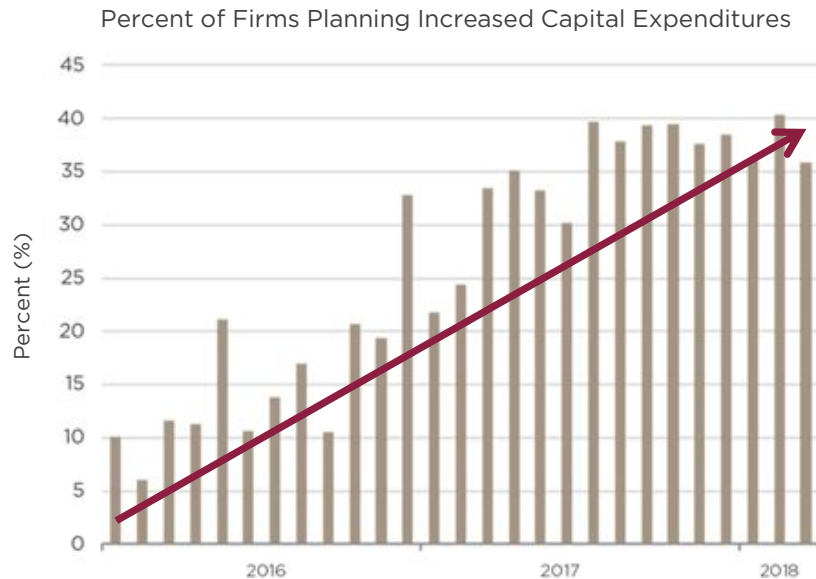


## MARKET COMMENTARY

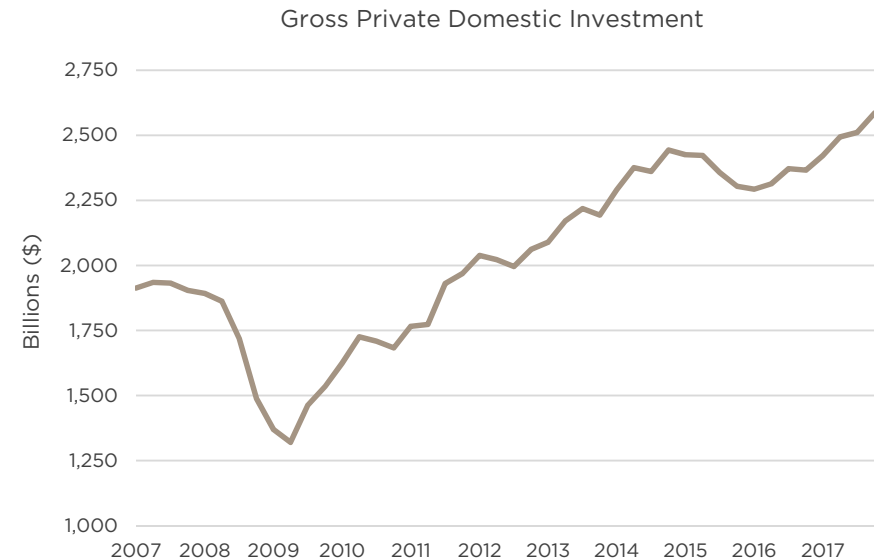
Period Ending 6.30.18 | Q2 18

**CAPEX: STRENGTHENING BUSINESS INVESTMENT**

Capital expenditures—or CAPEX—are investments by businesses in new property, plants, and equipment, and are, therefore, an important component of current GDP growth. Strengthening domestic business conditions combined with a windfall from corporate tax relief—measured in the hundreds of billions of dollars—and repatriations of overseas cash, have accelerated business reinvestment. S&P 1500 companies reported sharp acceleration in Q1, with capital expenditures up more than 20% year over year, the fastest pace since 2011.



Source: Federal Reserve Bank of Philadelphia



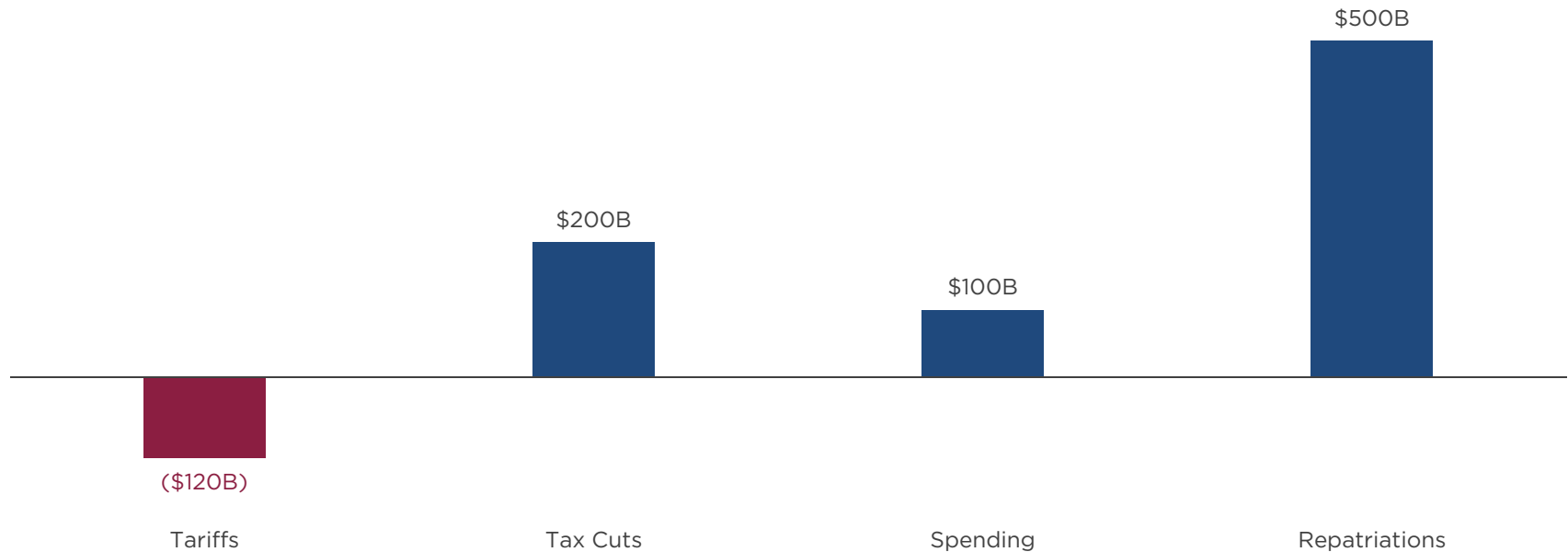
Source: St. Louis Fed/FRED, U.S. Bureau of Economic Analysis

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# WEIGHING THE IMPACT OF TARIFFS

With the steady drumbeat of trade tensions and the first set of China tariffs effective on July 6—a 25% duty on \$34 billion of products—there is growing concern that escalation of trade disputes poses a risk to the economy (e.g., manufacturing activity and jobs). A number of U.S. companies with large exposures to China have seen stock price declines, particularly in the semiconductor sector. However, the direct impact of tariffs announced so far pales in comparison to the stimulative impact of tax cuts, fiscal spending, and repatriations—which amount to an \$800 billion shot in the arm.

Estimated Size of Tariffs, Fiscal Policy, and Repatriations in \$Billions (2018)



Source: Strategas

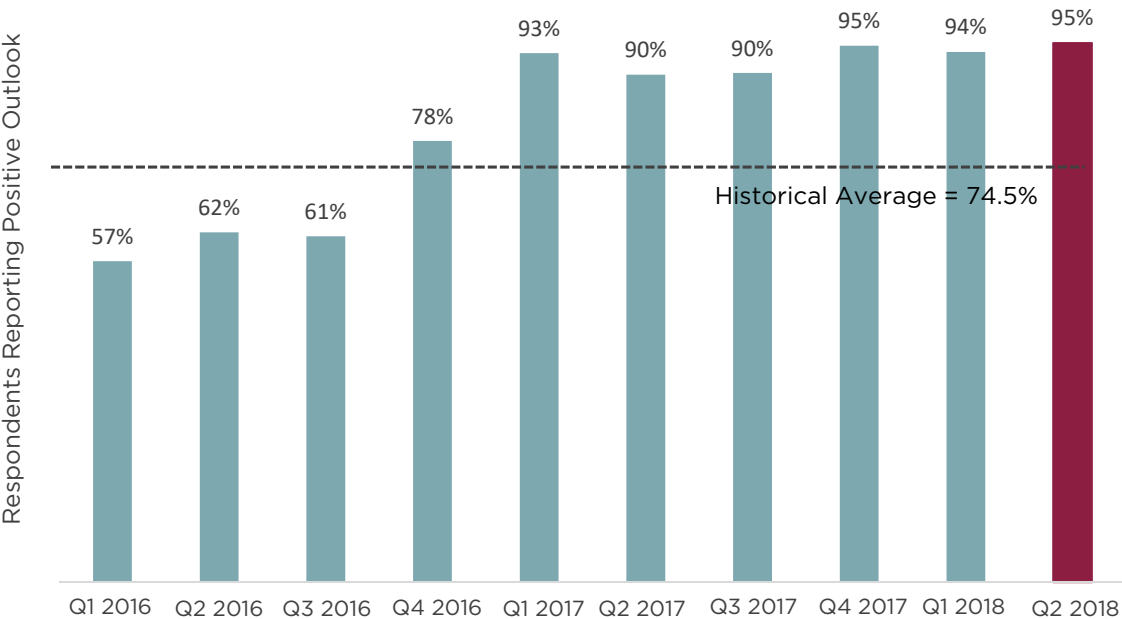
MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

MANUFACTURING BUSINESS OUTLOOK REFLECTS CONFIDENCE

According to the National Association of Manufacturers' Second Quarter Outlook Survey, businesses continue to experience highly elevated levels of activity as a result of pro-growth policies like tax reform, with optimism once again breaking records. More than 95% of respondents were either somewhat or very positive about their companies' outlook, the highest level since the 20-year-old survey was introduced.

Manufacturing Business Outlook by Quarter



Source: National Association of Manufacturers

OBSERVATIONS

- The business environment is no longer the concern that it once was, with just 19.1% of respondents citing the tax and regulatory climate as a top concern.
- Two years ago, 75% of respondents cited the tax and regulatory climate as their top worry.
- Today, the major concern is the inability to attract and retain a quality workforce.
- Manufacturers are projecting historic growth in production, hiring, wages, and capital investment.

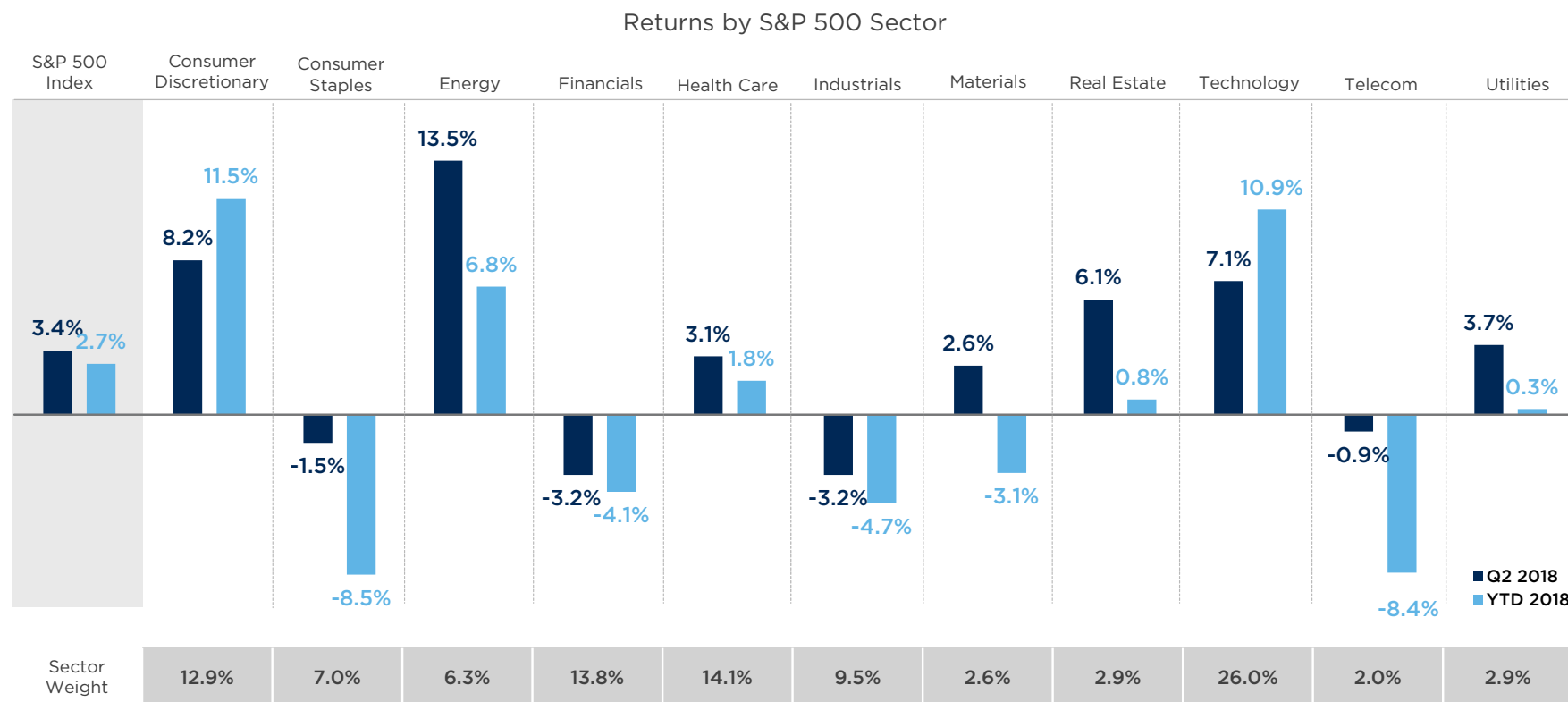
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## MARKET COMMENTARY

Period Ending 6.30.18 | Q2 18

## DIGGING DEEPER: U.S. EQUITY MARKETS

The S&P 500 Index is a market-capitalization-weighted index of U.S. large-cap stocks across 11 diverse industry sectors. The chart below shows second quarter and year-to-date returns for the sectors that make up the S&P 500 Index, along with the index's sector weightings.



Source: Standard & Poor's, J.P. Morgan Asset Management, Cornerstone Macro. Data as of 6.30.2018. All calculations are cumulative total return, not annualized, including dividends for the stated period. Past performance is not indicative of future returns.

8.1

## ASSET CLASS RETURNS

Period Ending 6.30.18 | Q2 18

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD 2018
International Equities 14.02%	International Equities 26.86%	Large-Cap Growth 11.81%	Fixed Income 5.08%	Mid-Cap Growth 46.29%	Small-Cap Growth 29.09%	Fixed Income 7.84%	Mid-Cap Value 18.51%	Small-Cap Growth 43.30%	Mid-Cap Value 14.75%	Large-Cap Growth 5.67%	Small-Cap Value 31.74%	Large-Cap Growth 30.21%	Small-Cap Growth 9.70%
Mid-Cap Value 12.65%	Small-Cap Value 23.48%	International Equities 11.63%	Cash 1.51%	Large-Cap Growth 37.21%	Mid-Cap Growth 26.38%	Large-Cap Growth 2.64%	Small-Cap Value 18.05%	Mid-Cap Growth 35.74%	Large-Cap Value 13.45%	Fixed Income 0.55%	Mid-Cap Value 20.00%	International Equities 25.62%	Large-Cap Growth 7.25%
Mid-Cap Growth 12.10%	Large-Cap Value 22.25%	Mid-Cap Growth 11.43%	Small-Cap Value -28.92%	Small-Cap Growth 34.47%	Mid-Cap Value 24.75%	Large-Cap Value 0.39%	International Equities 17.90%	Small-Cap Value 34.52%	Large-Cap Growth 13.05%	Cash 0.05%	Large-Cap Value 17.34%	Mid-Cap Growth 25.27%	Small-Cap Value 5.44%
Large-Cap Value 7.05%	Mid-Cap Value 20.22%	Fixed Income 7.39%	Large-Cap Value -36.85%	Mid-Cap Value 34.21%	Small-Cap Value 24.50%	Cash 0.10%	Large-Cap Value 17.51%	Large-Cap Growth 33.48%	Mid-Cap Growth 11.90%	Mid-Cap Growth -0.20%	Small-Cap Growth 11.32%	Small-Cap Growth 22.17%	Mid-Cap Growth 5.40%
Large-Cap Growth 5.26%	Small-Cap Growth 13.35%	Small-Cap Growth 7.05%	Mid-Cap Value -38.44%	International Equities 32.46%	Large-Cap Growth 16.71%	Mid-Cap Value -1.38%	Mid-Cap Growth 15.81%	Mid-Cap Value 33.46%	Fixed Income 5.97%	International Equities -0.39%	Mid-Cap Growth 7.33%	Large-Cap Value 13.66%	Cash 0.81%
Small-Cap Value 4.71%	Mid-Cap Growth 10.66%	Cash 4.71%	Large-Cap Growth -38.44%	Small-Cap Value 20.58%	Large-Cap Value 15.51%	Mid-Cap Growth -1.65%	Large-Cap Growth 15.26%	Large-Cap Value 32.53%	Small-Cap Growth 5.60%	Small-Cap Growth -1.38%	Large-Cap Growth 7.08%	Mid-Cap Value 13.34%	Mid-Cap Value -0.16%
Small-Cap Growth 4.15%	Large-Cap Growth 9.07%	Large-Cap Value -0.17%	Small-Cap Growth -38.54%	Large-Cap Value 19.69%	International Equities 8.21%	Small-Cap Growth -2.91%	Small-Cap Growth 14.59%	International Equities 23.29%	Small-Cap Value 4.22%	Large-Cap Value -3.83%	Fixed Income 2.65%	Small-Cap Value 7.84%	Fixed Income -1.62%
Cash 3.35%	Cash 5.08%	Mid-Cap Value -1.42%	International Equities -43.06%	Fixed Income 5.24%	Fixed Income 5.89%	Small-Cap Value -5.50%	Fixed Income 4.22%	Cash 0.07%	Cash 0.03%	Mid-Cap Value -4.78%	International Equities 1.51%	Fixed Income 3.54%	Large-Cap Value -1.69%
Fixed Income 1.58%	Fixed Income 4.08%	Small-Cap Value -9.78%	Mid-Cap Growth -44.32%	Cash 0.21%	Cash 0.13%	International Equities -11.73%	Cash 0.11%	Fixed Income -2.02%	International Equities -4.48%	Small-Cap Value -7.47%	Cash 0.33%	Cash 0.86%	International Equities -2.37%

Small-Cap Value Stocks (Russell 2000 Value)	Large-Cap Value Stocks (Russell 1000 Value)	International Equities (MSCI EAFE)
Small-Cap Growth Stocks (Russell 2000 Growth)	Mid-Cap Growth Stocks (Russell Mid-Cap Growth Index)	Fixed Income (Bloomberg Barclays U.S. Aggregate Bond Index)
Large-Cap Growth Stocks (Russell 1000 Growth)	Mid-Cap Value Stocks (Russell Mid-Cap Value Index)	Cash (Merrill Lynch 3-Month Treasury Bill)

Source: Markov Processes, Inc., Bloomberg, Mobius

The information contained in this report is from sources believed to be reliable, but not warranted by CAPTRUST Financial Advisors to be accurate or complete.

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## INDEX PERFORMANCE

Period Ending 6.30.18 | Q2 18

INDEXES	Q2 2018	YTD 2018	2017	2016	2015	2014	2013	1 YEAR	3 YEAR	5 YEAR	10 YEAR
90-Day US Treasury	0.45%	0.81%	0.86%	0.33%	0.05%	0.03%	0.07%	1.36%	0.68%	0.42%	0.35%
Bloomberg Barclays Government 1-3 Year	0.21%	0.06%	0.45%	0.87%	0.57%	0.64%	0.37%	0.03%	0.42%	0.59%	1.32%
Bloomberg Barclays Intermediate Govt	0.06%	-0.67%	1.14%	1.05%	1.18%	2.52%	-1.25%	-0.73%	0.63%	1.04%	2.41%
Bloomberg Barclays Muni Bond	0.87%	-0.25%	5.45%	0.25%	3.30%	9.05%	-2.55%	1.56%	2.85%	3.53%	4.43%
Bloomberg Barclays Intermediate Govt/Credit	0.01%	-0.97%	2.14%	2.08%	1.07%	3.13%	-0.86%	-0.58%	1.16%	1.60%	3.08%
Bloomberg Barclays Intermediate Credit	-0.08%	-1.45%	3.67%	3.68%	0.90%	4.16%	-0.17%	-0.36%	1.96%	2.51%	4.37%
Bloomberg Barclays Aggregate Bond	-0.16%	-1.62%	3.54%	2.65%	0.55%	5.97%	-2.02%	-0.40%	1.72%	2.27%	3.72%
Bloomberg Barclays Corporate IG Bond	-0.98%	-3.27%	6.42%	6.11%	-0.68%	7.46%	-1.53%	-0.83%	3.07%	3.51%	5.39%
Bloomberg Barclays High Yield	1.03%	0.16%	7.50%	17.13%	-4.47%	2.45%	7.44%	2.62%	5.53%	5.51%	8.19%
Bloomberg Barclays US Long Corporate	-2.83%	-6.77%	12.09%	10.97%	-4.61%	15.73%	-5.68%	-1.75%	5.10%	5.47%	7.40%
S&P 500	3.43%	2.65%	21.83%	11.96%	1.38%	13.69%	32.39%	14.37%	11.93%	13.42%	10.17%
Dow Jones Industrial Average	1.26%	-0.73%	28.11%	16.50%	0.21%	10.04%	29.65%	16.31%	14.07%	12.96%	10.78%
NASDAQ Composite	6.31%	8.79%	28.24%	7.50%	5.73%	13.40%	38.32%	22.31%	14.62%	17.15%	12.60%
Russell 1000 Value	1.18%	-1.69%	13.66%	17.34%	-3.83%	13.45%	32.53%	6.77%	8.26%	10.34%	8.49%
Russell 1000	3.57%	2.85%	21.69%	12.05%	0.92%	13.24%	33.11%	14.54%	11.64%	13.37%	10.20%
Russell 1000 Growth	5.76%	7.25%	30.21%	7.08%	5.67%	13.05%	33.48%	22.51%	14.98%	16.36%	11.83%
Russell Mid-Cap Value Index	2.41%	-0.16%	13.34%	20.00%	-4.78%	14.75%	33.46%	7.60%	8.80%	11.27%	10.06%
Russell Mid-Cap Index	2.82%	2.35%	18.52%	13.80%	-2.44%	13.22%	34.76%	12.33%	9.58%	12.22%	10.23%
Russell Mid-Cap Growth Index	3.16%	5.40%	25.27%	7.33%	-0.20%	11.90%	35.74%	18.52%	10.73%	13.37%	10.45%
MSCI EAFE	-0.97%	-2.37%	25.62%	1.51%	-0.39%	-4.48%	23.29%	7.37%	5.41%	6.93%	3.33%
MSCI ACWI ex US	-2.39%	-3.44%	27.77%	5.01%	-5.25%	-3.44%	15.78%	7.79%	5.56%	6.48%	3.01%
Russell 2000 Value	8.30%	5.44%	7.84%	31.74%	-7.47%	4.22%	34.52%	13.10%	11.22%	11.18%	9.88%
Russell 2000	7.75%	7.66%	14.65%	21.31%	-4.41%	4.89%	38.82%	17.57%	10.96%	12.46%	10.60%
Russell 2000 Growth	7.23%	9.70%	22.17%	11.32%	-1.38%	5.60%	43.30%	21.86%	10.60%	13.65%	11.24%
MSCI Emerging Markets	-7.86%	-6.51%	37.75%	11.60%	-14.60%	-1.82%	-2.27%	8.59%	5.98%	5.39%	2.60%
Dow Jones US Real Estate Index	7.78%	1.41%	9.84%	7.56%	2.14%	27.24%	1.77%	5.19%	8.88%	8.61%	7.74%
HFRX Absolute Return Index	0.74%	1.04%	3.40%	0.31%	2.86%	0.79%	3.58%	3.04%	1.85%	2.04%	-0.77%
Consumer Price Index (Inflation)	1.04%	1.99%	2.11%	2.07%	0.73%	0.76%	1.50%	2.71%	1.78%	1.55%	1.41%
<b>BLENDED BENCHMARKS</b>	<b>Q2 2018</b>	<b>YTD 2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>1 YEAR</b>	<b>3 YEAR</b>	<b>5 YEAR</b>	<b>10 YEAR</b>
25% S&P 500/5% MSCI EAFE/70% Barclays Agg	0.70%	-0.53%	8.93%	5.00%	0.92%	7.37%	7.01%	3.60%	4.51%	5.32%	5.55%
30% S&P 500/10% MSCI EAFE/60% Barclays Agg	0.84%	-0.34%	10.90%	5.43%	0.95%	7.21%	9.92%	4.73%	5.22%	6.13%	5.91%
35% S&P 500/15% MSCI EAFE/50% Barclays Agg	0.98%	-0.16%	12.90%	5.85%	0.97%	7.04%	12.89%	5.86%	5.93%	6.93%	6.23%
40% S&P 500/20% MSCI EAFE/40% Barclays Agg	1.12%	0.01%	14.93%	6.26%	0.96%	6.87%	15.93%	7.00%	6.63%	7.73%	6.54%
45% S&P 500/25% MSCI EAFE/30% Barclays Agg	1.26%	0.18%	16.99%	6.65%	0.93%	6.69%	19.04%	8.13%	7.32%	8.52%	6.81%
60% S&P 500/40% Barclays Agg	2.04%	1.10%	14.21%	8.31%	1.28%	10.62%	17.56%	8.45%	7.99%	9.07%	8.14%

The opinions expressed in this report are subject to change without notice. This material has been prepared or is distributed solely for informational purposes and is not a solicitation or an offer to buy any security or to participate in any investment strategy. The performance data quoted represents past performance and does not guarantee future results. Index averages are provided for comparison purposes only. The information and statistics in this report are from sources believed to be reliable but are not guaranteed to be accurate or complete. CAPTRUST Financial Advisors is an investment adviser registered under the Investment Advisers Act of 1940. Sources: Morningstar Direct, MPI

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SECTION 3: PLAN INVESTMENT REVIEW

Period Ending 6.30.18 | Q2 18

University of Maine System

SECTION 3: PLAN INVESTMENT REVIEW	
Plan Investment Menu Review.....	
Plan Assets.....	
Investment Policy Monitor.....	
Investment Review Select Commentary.....	
Investment Performance Summary.....	
Plan Performance Measurement.....	

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## PLAN INVESTMENT REVIEW | PLAN MENU

Period Ending 6.30.18 | Q2 18

University of Maine System

↑  
EXPECTED RETURN

8.1

Specialty-Private Real Estate	TIAA Real Estate Account
Emerging Markets	DFA Emerging Markets Core Equity I
Small Company Growth	Carillon Eagle Small Cap Growth R6
Small Company Value	Victory Sycamore Small Company Opp I
Foreign Large Growth	Oppenheimer Intl Growth I
Foreign Large Blend	Vanguard Total Intl Stock Index Inst
Foreign Large Value	MFS International Value R6
Medium Company Growth	Goldman Sachs Growth Opportunities R6
Medium Company Blend	Vanguard Extended Market Index Inst
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS
Large Company Growth	Harbor Capital Appreciation Retirement
Large Company Blend	Vanguard Institutional Index I
Large Company Value	JHancock Disciplined Value R6
Allocation--85%+ Equity	CREF Stock R3
Target Date Funds	Vanguard Target Retirement
World Allocation	CREF Social Choice R3
Intermediate Term Bond	PGIM Total Return Bond R6 Vanguard Total Bond Market Index Adm
Inflation Protected Bond	CREF Inflation-Linked Bond R3
Stable Value	TIAA Traditional - Group Retirement Annuity
Cash and Equivalents - Money Market	CREF Money Market R3 Vanguard Federal Money Market

EXPECTED RISK →

**QDIA OPTION:**

Vanguard Target Retirement

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## PLAN INVESTMENT REVIEW | EXECUTIVE ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

Plan Name	Plan/Contract Number	Plan Assets
University of Maine System Retirement Plan for Faculty and Professionals 403(b) DC	102965	\$1,249,011,065
University of Maine System Retirement Tax Deferred Annuity Plan 403(b) TDA	102966	\$162,921,696
University of Maine System Optional Retirement Savings 403(b)	102967	\$1,563,924
University of Maine System Optional Retirement Savings 401(a)	102968	\$1,199,595
University of Maine System Basic Retirement Plan for Classified Employees 403(b)	102969	\$37,047,719
University of Maine System Basic Retirement Plan for Classified Employees 401(a)	102970	\$70,027,123
University of Maine System Deferred Compensation Plan 457(b)	102971	\$30,997,926
<b>TOTALS</b>		<b>\$1,552,769,051</b>

 <p>University of Maine System * Alternate Carrier Transfers In Date Range April 1, 2018 - June 30, 2018</p>	
Alternate Carrier	Amount
VALIC	\$ 26,658.73
VOYA	\$ 572,906.72
LINCOLN FINANCIAL	\$ 20,992.20
FIDELITY	\$ 394,238.82
	\$ 3,637.94
JACKSON NATIONAL LIFE INSURANCE	\$ 1,914.71
<b>Total</b>	<b>\$ 1,020,349.12</b>
<i>* 7 plans : 102965, 102966, 102967, 102968, 102969, 102970 &amp; 102971</i>	

Disclosures

The data provided is for informational purposes only. It is not intended as an offer or solicitation or any similar communication being made for the purchase or sale of any financial instrument / product or as an official confirmation or as an official statement on any transaction.

Pursuant to your request for information, enclosed you will find data related to the Plan(s) and/or investments specified. You have solicited this information for fiduciary due diligence and review purposes related to the referenced Plan. This report should not be used for regulatory filings or for benefit statements.

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These numbers include non-approved assets held at TIAA-CREF that are no longer available for additional investments.

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Retirement Plan for Faculty and Professionals 403(b) DC - 102965

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$8,746,690	0.70%	\$9,017,778	0.72%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$990,060	0.08%	\$1,649,716	0.13%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$434,258,268	34.92%	\$434,666,326	34.80%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$13,593,255	1.09%	\$14,544,614	1.16%
Intermediate Term Bond	PGIM Total Return Bond R6	\$16,352,164	1.32%	\$18,651,472	1.49%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$7,174,322	0.58%	\$6,596,639	0.53%
World Allocation	CREF Social Choice R3	\$35,791,845	2.88%	\$34,884,186	2.79%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$7,058,640	0.57%	\$6,003,338	0.48%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$4,705,291	0.38%	\$4,601,881	0.37%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$11,281,830	0.91%	\$11,680,026	0.94%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$10,262,935	0.83%	\$11,670,279	0.93%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$9,821,585	0.79%	\$10,057,726	0.81%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$9,633,940	0.77%	\$10,162,909	0.81%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$9,440,954	0.76%	\$10,337,915	0.83%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$7,820,688	0.63%	\$8,608,277	0.69%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$4,582,436	0.37%	\$5,435,983	0.44%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$1,668,316	0.13%	\$1,828,488	0.15%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$72,722	0.01%	\$146,048	0.01%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Retirement Plan for Faculty and Professionals 403(b) DC - 102965

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$0	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$214,743,505	17.27%	\$208,385,171	16.68%
Large Company Value	JHancock Disciplined Value R6	\$22,058,927	1.77%	\$22,051,442	1.77%
Large Company Blend	Vanguard Institutional Index I	\$34,031,139	2.74%	\$36,411,512	2.92%
Large Company Growth	Harbor Capital Appreciation Retirement	\$12,028,018	0.97%	\$13,593,665	1.09%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$15,548,636	1.25%	\$15,313,397	1.23%
Medium Company Blend	Vanguard Extended Market Index Inst	\$15,548,329	1.25%	\$16,091,643	1.29%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$4,930,354	0.40%	\$5,722,038	0.46%
Foreign Large Value	MFS International Value R6	\$21,124,769	1.70%	\$21,208,525	1.70%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$11,073,927	0.89%	\$12,500,164	1.00%
Foreign Large Growth	Oppenheimer Intl Growth I	\$4,866,072	0.39%	\$4,544,600	0.36%
Small Company Value	Victory Sycamore Small Company Opp I	\$11,471,306	0.92%	\$12,759,001	1.02%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$3,712,424	0.30%	\$3,766,222	0.30%
Emerging Markets	DFA Emerging Markets Core Equity I	\$19,843,594	1.60%	\$19,094,102	1.53%
Specialty-Private Real Estate	TIAA Real Estate Account	\$51,256,299	4.12%	\$51,091,222	4.09%
Other Assets	Non Approved Funds	\$157,443,150	12.66%	\$151,387,393	12.12%
Self-Directed Brokerage	Self Directed Accounts	\$50,540,429	4.06%	\$54,547,369	4.37%
TOTALS		\$1,243,476,821	100%	\$1,249,011,065	100%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Retirement Tax Deferred Annuity Plan 403(b) TDA- 102966

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$826,248	0.51%	\$995,146	0.61%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$32,998	0.02%	\$33,195	0.02%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$54,259,359	33.55%	\$55,094,021	33.82%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$2,436,960	1.51%	\$2,395,601	1.47%
Intermediate Term Bond	PGIM Total Return Bond R6	\$3,904,319	2.41%	\$4,286,810	2.63%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$1,628,320	1.01%	\$1,496,428	0.92%
World Allocation	CREF Social Choice R3	\$5,850,210	3.62%	\$5,749,463	3.53%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$1,815,210	1.12%	\$1,766,886	1.08%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$957,555	0.59%	\$872,113	0.54%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$2,655,509	1.64%	\$3,070,938	1.88%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$2,449,593	1.51%	\$2,954,278	1.81%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$1,668,874	1.03%	\$1,735,645	1.07%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$1,050,291	0.65%	\$1,166,754	0.72%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$807,796	0.50%	\$832,446	0.51%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$266,425	0.16%	\$287,112	0.18%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$179,787	0.11%	\$188,064	0.12%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$74,520	0.05%	\$77,114	0.05%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$4,082	0.00%	\$4,598	0.00%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Retirement Tax Deferred Annuity Plan 403(b) TDA- 102966

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$0	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$19,887,105	12.30%	\$18,895,795	11.60%
Large Company Value	JHancock Disciplined Value R6	\$2,253,669	1.39%	\$2,371,719	1.46%
Large Company Blend	Vanguard Institutional Index I	\$9,515,741	5.88%	\$9,648,063	5.92%
Large Company Growth	Harbor Capital Appreciation Retirement	\$1,952,121	1.21%	\$2,357,731	1.45%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$1,414,278	0.87%	\$1,453,338	0.89%
Medium Company Blend	Vanguard Extended Market Index Inst	\$2,580,396	1.60%	\$2,772,164	1.70%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$392,521	0.24%	\$417,311	0.26%
Foreign Large Value	MFS International Value R6	\$3,471,616	2.15%	\$3,395,296	2.08%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$1,501,184	0.93%	\$1,698,067	1.04%
Foreign Large Growth	Oppenheimer Intl Growth I	\$544,502	0.34%	\$495,713	0.30%
Small Company Value	Victory Sycamore Small Company Opp I	\$1,518,633	0.94%	\$1,677,687	1.03%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$239,191	0.15%	\$240,082	0.15%
Emerging Markets	DFA Emerging Markets Core Equity I	\$2,072,874	1.28%	\$2,042,793	1.25%
Specialty-Private Real Estate	TIAA Real Estate Account	\$11,065,712	6.84%	\$10,570,368	6.49%
Other Assets	Non Approved Funds	\$20,305,370	12.55%	\$19,460,887	11.94%
Self-Directed Brokerage	Self Directed Accounts	\$2,155,163	1.33%	\$2,418,069	1.48%
TOTALS		\$161,738,129	100%	\$162,921,697	100%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Optional Retirement Savings 403(b) - 102967

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$12,370	0.84%	\$9,482	0.61%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$0	0.00%	\$0	0.00%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$615,697	41.88%	\$725,642	46.40%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$17,389	1.18%	\$17,350	1.11%
Intermediate Term Bond	PGIM Total Return Bond R6	\$10,084	0.69%	\$9,974	0.64%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$339	0.02%	\$333	0.02%
World Allocation	CREF Social Choice R3	\$37,626	2.56%	\$37,054	2.37%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$1,373	0.09%	\$1,372	0.09%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$160	0.01%	\$160	0.01%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$53,140	3.61%	\$51,919	3.32%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$2,339	0.16%	\$2,340	0.15%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$0	0.00%	\$0	0.00%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$0	0.00%	\$0	0.00%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$0	0.00%	\$0	0.00%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$0	0.00%	\$0	0.00%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$0	0.00%	\$0	0.00%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$0	0.00%	\$0	0.00%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$0	0.00%	\$0	0.00%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Optional Retirement Savings 403(b) - 102967

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$0	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$241,018	16.40%	\$236,187	15.10%
Large Company Value	JHancock Disciplined Value R6	\$1,618	0.11%	\$1,478	0.09%
Large Company Blend	Vanguard Institutional Index I	\$14,114	0.96%	\$12,840	0.82%
Large Company Growth	Harbor Capital Appreciation Retirement	\$1,179	0.08%	\$1,404	0.09%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$1,631	0.11%	\$1,441	0.09%
Medium Company Blend	Vanguard Extended Market Index Inst	\$2,439	0.17%	\$2,479	0.16%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$48	0.00%	\$1,394	0.09%
Foreign Large Value	MFS International Value R6	\$3,328	0.23%	\$3,531	0.23%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$1,952	0.13%	\$2,060	0.13%
Foreign Large Growth	Oppenheimer Intl Growth I	\$865	0.06%	\$641	0.04%
Small Company Value	Victory Sycamore Small Company Opp I	\$1,405	0.10%	\$1,488	0.10%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$261	0.02%	\$281	0.02%
Emerging Markets	DFA Emerging Markets Core Equity I	\$1,782	0.12%	\$1,644	0.11%
Specialty-Private Real Estate	TIAA Real Estate Account	\$45,204	3.08%	\$46,260	2.96%
Other Assets	Non Approved Funds	\$402,667	27.39%	\$395,171	25.27%
Self-Directed Brokerage	Self Directed Accounts	\$0	0.00%	\$0	0.00%
TOTALS		\$1,470,030	100%	\$1,563,925	100%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Optional Retirement Savings 401(a) - 102968

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$8,054	0.66%	\$6,440	0.54%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$0	0.00%	\$0	0.00%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$379,021	31.10%	\$368,758	30.74%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$17,721	1.45%	\$17,629	1.47%
Intermediate Term Bond	PGIM Total Return Bond R6	\$17,554	1.44%	\$18,675	1.56%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$11,383	0.93%	\$12,643	1.05%
World Allocation	CREF Social Choice R3	\$26,384	2.17%	\$26,071	2.17%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$911	0.07%	\$910	0.08%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$0	0.00%	\$0	0.00%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$43,013	3.53%	\$42,012	3.50%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$487	0.04%	\$1,436	0.12%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$947	0.08%	\$0	0.00%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$0	0.00%	\$0	0.00%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$0	0.00%	\$0	0.00%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$0	0.00%	\$0	0.00%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$0	0.00%	\$0	0.00%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$0	0.00%	\$0	0.00%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$0	0.00%	\$0	0.00%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Optional Retirement Savings 401(a) - 102968

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$0	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$149,370	12.26%	\$139,345	11.62%
Large Company Value	JHancock Disciplined Value R6	\$10,951	0.90%	\$9,575	0.80%
Large Company Blend	Vanguard Institutional Index I	\$6,948	0.57%	\$7,202	0.60%
Large Company Growth	Harbor Capital Appreciation Retirement	\$1,118	0.09%	\$1,336	0.11%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$722	0.06%	\$677	0.06%
Medium Company Blend	Vanguard Extended Market Index Inst	\$607	0.05%	\$615	0.05%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$21,918	1.80%	\$21,578	1.80%
Foreign Large Value	MFS International Value R6	\$19,488	1.60%	\$19,465	1.62%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$584	0.05%	\$618	0.05%
Foreign Large Growth	Oppenheimer Intl Growth I	\$323	0.03%	\$256	0.02%
Small Company Value	Victory Sycamore Small Company Opp I	\$333	0.03%	\$356	0.03%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$473	0.04%	\$508	0.04%
Emerging Markets	DFA Emerging Markets Core Equity I	\$21,241	1.74%	\$18,406	1.53%
Specialty-Private Real Estate	TIAA Real Estate Account	\$56,858	4.67%	\$57,567	4.80%
Other Assets	Non Approved Funds	\$283,149	23.23%	\$280,153	23.35%
Self-Directed Brokerage	Self Directed Accounts	\$139,084	11.41%	\$147,362	12.28%
TOTALS		\$1,218,640	100%	\$1,199,595	100%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Basic Retirement Plan for Classified Employees 403(b) - 102969

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$431,803	1.18%	\$515,345	1.39%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$47,383	0.13%	\$13,150	0.04%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$6,314,386	17.23%	\$6,448,034	17.40%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$484,117	1.32%	\$548,639	1.48%
Intermediate Term Bond	PGIM Total Return Bond R6	\$619,270	1.69%	\$724,260	1.95%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$127,295	0.35%	\$114,525	0.31%
World Allocation	CREF Social Choice R3	\$1,064,178	2.90%	\$1,053,379	2.84%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$522,092	1.42%	\$393,550	1.06%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$553,650	1.51%	\$386,579	1.04%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$1,202,160	3.28%	\$1,272,621	3.44%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$1,460,601	3.99%	\$1,659,499	4.48%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$599,958	1.64%	\$626,887	1.69%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$533,790	1.46%	\$591,032	1.60%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$492,684	1.34%	\$544,410	1.47%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$344,417	0.94%	\$372,235	1.00%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$146,145	0.40%	\$165,289	0.45%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$156,473	0.43%	\$180,816	0.49%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$29,069	0.08%	\$39,470	0.11%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Basic Retirement Plan for Classified Employees 403(b) - 102969

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$642	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$3,607,550	9.84%	\$3,509,270	9.47%
Large Company Value	JHancock Disciplined Value R6	\$830,159	2.27%	\$807,449	2.18%
Large Company Blend	Vanguard Institutional Index I	\$986,139	2.69%	\$1,026,464	2.77%
Large Company Growth	Harbor Capital Appreciation Retirement	\$643,998	1.76%	\$714,463	1.93%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$514,046	1.40%	\$553,518	1.49%
Medium Company Blend	Vanguard Extended Market Index Inst	\$473,869	1.29%	\$494,322	1.33%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$306,344	0.84%	\$296,414	0.80%
Foreign Large Value	MFS International Value R6	\$962,912	2.63%	\$941,529	2.54%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$430,086	1.17%	\$476,809	1.29%
Foreign Large Growth	Oppenheimer Intl Growth I	\$105,558	0.29%	\$97,489	0.26%
Small Company Value	Victory Sycamore Small Company Opp I	\$406,457	1.11%	\$421,686	1.14%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$189,283	0.52%	\$206,013	0.56%
Emerging Markets	DFA Emerging Markets Core Equity I	\$902,556	2.46%	\$852,091	2.30%
Specialty-Private Real Estate	TIAA Real Estate Account	\$2,020,549	5.51%	\$1,972,017	5.32%
Other Assets	Non Approved Funds	\$6,413,795	17.50%	\$6,201,512	16.74%
Self-Directed Brokerage	Self Directed Accounts	\$2,726,671	7.44%	\$2,826,310	7.63%
TOTALS		\$36,649,444	100%	\$37,047,720	100%

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8.1

## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Basic Retirement Plan for Classified Employees 401(a) - 102970

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$1,131,460	1.63%	\$1,116,747	1.59%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$95,429	0.14%	\$86,463	0.12%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$14,288,311	20.64%	\$14,318,702	20.45%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$968,323	1.40%	\$1,079,324	1.54%
Intermediate Term Bond	PGIM Total Return Bond R6	\$1,078,551	1.56%	\$1,290,406	1.84%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$238,818	0.34%	\$230,074	0.33%
World Allocation	CREF Social Choice R3	\$2,850,961	4.12%	\$2,798,883	4.00%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$894,108	1.29%	\$733,393	1.05%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$946,725	1.37%	\$752,022	1.07%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$1,915,567	2.77%	\$2,061,975	2.94%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$1,961,821	2.83%	\$2,182,151	3.12%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$1,045,411	1.51%	\$1,066,462	1.52%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$879,719	1.27%	\$978,868	1.40%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$745,198	1.08%	\$813,475	1.16%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$524,036	0.76%	\$565,794	0.81%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$259,364	0.37%	\$288,408	0.41%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$143,155	0.21%	\$156,338	0.22%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$28,998	0.04%	\$35,038	0.05%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Basic Retirement Plan for Classified Employees 401(a) - 102970

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$642	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$9,179,601	13.26%	\$9,036,308	12.90%
Large Company Value	JHancock Disciplined Value R6	\$1,198,822	1.73%	\$1,233,996	1.76%
Large Company Blend	Vanguard Institutional Index I	\$1,624,846	2.35%	\$1,763,280	2.52%
Large Company Growth	Harbor Capital Appreciation Retirement	\$1,093,668	1.58%	\$1,264,760	1.81%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$683,696	0.99%	\$735,745	1.05%
Medium Company Blend	Vanguard Extended Market Index Inst	\$724,862	1.05%	\$813,256	1.16%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$428,766	0.62%	\$461,482	0.66%
Foreign Large Value	MFS International Value R6	\$1,555,197	2.25%	\$1,614,099	2.30%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$542,316	0.78%	\$693,140	0.99%
Foreign Large Growth	Oppenheimer Intl Growth I	\$160,570	0.23%	\$135,946	0.19%
Small Company Value	Victory Sycamore Small Company Opp I	\$546,281	0.79%	\$578,569	0.83%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$194,206	0.28%	\$239,737	0.34%
Emerging Markets	DFA Emerging Markets Core Equity I	\$1,169,774	1.69%	\$1,138,092	1.63%
Specialty-Private Real Estate	TIAA Real Estate Account	\$3,553,456	5.13%	\$3,494,645	4.99%
Other Assets	Non Approved Funds	\$14,368,429	20.75%	\$13,956,851	19.93%
Self-Directed Brokerage	Self Directed Accounts	\$2,219,020	3.20%	\$2,312,051	3.30%
TOTALS		\$69,239,464	100%	\$70,027,124	100%

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8.1

## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Deferred Compensation Plan 457(b) - 102971

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Cash and Equivalents - Money Market	CREF Money Market R3	\$568,491	1.91%	\$565,963	1.83%
Cash and Equivalents - Money Market	Vanguard Federal Money Market	\$35,912	0.12%	\$72,425	0.23%
Stable Value	TIAA Traditional - Group Retirement Annuity	\$7,133,436	23.96%	\$7,512,398	24.24%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$528,055	1.77%	\$564,445	1.82%
Intermediate Term Bond	PGIM Total Return Bond R6	\$919,646	3.09%	\$1,027,213	3.31%
Intermediate Term Bond	Vanguard Total Bond Market Index Adm	\$183,568	0.62%	\$200,167	0.65%
World Allocation	CREF Social Choice R3	\$1,389,989	4.67%	\$1,403,872	4.53%
Target Date Ret Income Moderate	Vanguard Target Retirement Income Inv	\$483,934	1.63%	\$449,020	1.45%
Target Date 2015 Moderate	Vanguard Target Retirement 2015 Inv	\$511,514	1.72%	\$558,556	1.80%
Target Date 2020 Moderate	Vanguard Target Retirement 2020 Inv	\$866,151	2.91%	\$898,106	2.90%
Target Date 2025 Moderate	Vanguard Target Retirement 2025 Inv	\$968,607	3.25%	\$991,927	3.20%
Target Date 2030 Moderate	Vanguard Target Retirement 2030 Inv	\$588,562	1.98%	\$573,191	1.85%
Target Date 2035 Moderate	Vanguard Target Retirement 2035 Inv	\$242,119	0.81%	\$339,225	1.09%
Target Date 2040 Moderate	Vanguard Target Retirement 2040 Inv	\$256,932	0.86%	\$303,077	0.98%
Target Date 2045 Moderate	Vanguard Target Retirement 2045 Inv	\$137,767	0.46%	\$137,901	0.44%
Target Date 2050 Moderate	Vanguard Target Retirement 2050 Inv	\$36,617	0.12%	\$38,314	0.12%
Target Date 2055 Moderate	Vanguard Target Retirement 2055 Inv	\$0	0.00%	\$0	0.00%
Target Date 2060+ Moderate	Vanguard Target Retirement 2060 Inv	\$0	0.00%	\$0	0.00%

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## PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System Deferred Compensation Plan 457(b) - 102971

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2017	(%)	CURRENT	(%)
Target Date 2060+ Moderate	Vanguard Target Retirement 2065 Inv	\$0	0.00%	\$0	0.00%
Allocation--85%+ Equity	CREF Stock R3	\$1,975,792	6.64%	\$2,011,673	6.49%
Large Company Value	JHancock Disciplined Value R6	\$737,600	2.48%	\$713,282	2.30%
Large Company Blend	Vanguard Institutional Index I	\$1,322,232	4.44%	\$1,468,860	4.74%
Large Company Growth	Harbor Capital Appreciation Retirement	\$619,078	2.08%	\$661,529	2.13%
Medium Company Value	Virtus Ceredex Mid Cap Value Equity IS	\$389,160	1.31%	\$419,352	1.35%
Medium Company Blend	Vanguard Extended Market Index Inst	\$715,468	2.40%	\$745,997	2.41%
Medium Company Growth	Goldman Sachs Growth Opportunities R6	\$158,848	0.53%	\$181,244	0.58%
Foreign Large Value	MFS International Value R6	\$704,999	2.37%	\$683,577	2.21%
Foreign Large Blend	Vanguard Total Intl Stock Index Inst	\$448,106	1.50%	\$465,631	1.50%
Foreign Large Growth	Oppenheimer Intl Growth I	\$145,454	0.49%	\$133,881	0.43%
Small Company Value	Victory Sycamore Small Company Opp I	\$348,544	1.17%	\$371,260	1.20%
Small Company Growth	Carillon Eagle Small Cap Growth R6	\$154,110	0.52%	\$151,123	0.49%
Emerging Markets	DFA Emerging Markets Core Equity I	\$720,796	2.42%	\$694,811	2.24%
Specialty-Private Real Estate	TIAA Real Estate Account	\$1,940,793	6.52%	\$2,026,753	6.54%
Other Assets	Non Approved Funds	\$3,557,299	11.95%	\$3,466,952	11.18%
Self-Directed Brokerage	Self Directed Accounts	\$988,434	3.32%	\$1,166,198	3.76%
TOTALS		\$29,778,011	100%	\$30,997,927	100%

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## INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT	QUANTITATIVE								QUALITATIVE		TOTALS	
	Risk-Adjusted Performance		vs. Peers Performance		Style		Confidence		Fund Management	Fund Firm	Overall	Total Score
	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr				
Inflation Protected Bond CREF Inflation-Linked Bond R3	●	●	●	●	●	●	●	●	●	●	●	93
Intermediate Term Bond PGIM Total Return Bond R6	●	●	●	●	●	●	●	●	●	●	●	100
World Allocation CREF Social Choice R3	●	●	●	●	●	●	●	●	●	●	●	100
Large Company Value JHancock Disciplined Value R6	▼	▼	●	●	●	●	●	●	●	●	●	86
Large Company Growth Harbor Capital Appreciation Retirement	●	●	●	●	●	●	●	●	●	●	●	99
Medium Company Value Virtus Ceredex Mid Cap Value Equity IS	●	●	●	●	●	●	●	●	●	●	●	98
Medium Company Growth Goldman Sachs Growth Opportunities R6	▼	▼	▼	▼	●	●	▼	▼	▼	●	●	61
Foreign Large Value MFS International Value R6	●	●	●	●	▼	▼	●	●	●	▼	●	96

## LEGEND

●	IN GOOD STANDING	▼	MARKED FOR REVIEW	●	CONSIDER FOR TERMINATION
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The CAPTRUST Investment Policy Monitor ("Scorecard") is an illustration of our monitoring system and is designed to assist our clients in their efforts to provide fiduciary oversight to investment assets. It is not intended as a solicitation to buy any security. The scoring system measures quantitative areas as well as qualitative (or subjective) fields for actively managed investment options. Quantitative scoring areas include Risk Adjusted Performance (3 & 5 yr.); Performance vs. Relevant Peer Group; Style Attribution; and Confidence. Qualitative Scoring Areas measure the quality of the Management Team while also considering the stewardship of the investment option's parent company under Investment Family Items. Qualitative areas of analysis are subjective in nature. CAPTRUST typically requires at least 3 months of monitoring before including an investment in this report. Investments that have been added to our system less than 3 months prior to a report being generated may have a Fund Management assessment of '25' as a default, but will be updated, if necessary, after the first quarter of monitoring to more accurately reflect our system. Investments that are not mutual funds or have less than 3 years of performance history may not be scored. This material is for institutional investor use only and is not intended to be shared with individual investors.

8.1



## INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT	QUANTITATIVE								QUALITATIVE		TOTALS	
	Risk-Adjusted Performance		vs. Peers Performance		Style		Confidence		Fund Management	Fund Firm	Overall	Total Score
	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr				
Foreign Large Growth Oppenheimer Intl Growth I	▼	▼	▼	▼	●	●	▼	▼	●	●	▼	78
Small Company Value Victory Sycamore Small Company Opp I	●	●	●	●	●	●	●	●	●	▼	●	99
Small Company Growth Carillon Eagle Small Cap Growth R6	▼	●	▼	●	●	●	▼	●	●	●	●	86
Emerging Markets DFA Emerging Markets Core Equity I	●	●	●	●	●	●	▼	●	●	▼	●	89

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## LEGEND

●	IN GOOD STANDING	▼	MARKED FOR REVIEW	●	CONSIDER FOR TERMINATION
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## INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 6.30.18 | Q2 18

University of Maine System

## TARGET DATE INVESTMENTS

INVESTMENT	QUANTITATIVE						QUALITATIVE				TOTALS	
	Risk-Adjusted Performance		vs. Peers Performance		Glidepath		Portfolio Construct.	Underlying Inv. Vehicles	Fund Mgmt	Fund Firm	Overall	Total Score
	3 Yr	5 Yr	3 Yr	5 Yr	% of Equities	Beta to Equities						
Vanguard Target Retirement	●	●	●	●	●	●	●	●	●	●	●	95

## CAPITAL PRESERVATION INVESTMENTS

INVESTMENT	Overall	Commentary
CREF Money Market R3	●	According to CAPTRUST Financial Advisors, this Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.
Vanguard Federal Money Market	●	According to CAPTRUST Financial Advisors, this Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.
TIAA Traditional - Group Retirement Annuity	●	According to CAPTRUST Financial Advisors, this Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.

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The CAPTRUST Financial Advisors Investment Scorecard is an illustration of our monitoring system and is designed to assist our clients in their efforts to provide fiduciary oversight to investment assets. It is not intended as a solicitation to buy any security. The scoring system measures quantitative areas as well as qualitative (or subjective) fields. Quantitative scoring areas for target date funds include Risk Adjusted Performance (3 & 5 yr.); Performance vs. Relevant Peer Group; and Glidepath. Qualitative Scoring Areas for target date funds measure the quality of the Management Team while also considering the stewardship of the investment option's parent company under Investment Family Items. Qualitative areas of analysis are subjective in nature. Qualitative Scoring for Target Date funds also includes a score for Portfolio Construction and Underlying Investment vehicles to express CAPTRUST's views on the manager or strategy. CAPTRUST typically requires at least 3 months of monitoring before including an investment in this report. Investments that have been added to our system less than 3 months prior to a report being generated may have a Fund Management assessment of '25' as a default, but will be updated, if necessary, after the first quarter of monitoring to more accurately reflect our system. Investments that are not mutual funds or have less than 3 years of performance history may not be scored. Capital Preservation options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics, depending on the type of capital preservation option being evaluated, and may include quantitative criteria such as: Crediting Rate/Yield, Market to Book Ratio, Average Crediting Quality, Insurer Quality/Diversification, Duration, and Sector Allocations, and/or qualitative criteria such as quality and experience of the Management Team and stewardship of the investment option's parent company. Passively Managed options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics and may include quantitative criteria such as: Tracking Error, Fees, and Performance versus relevant peer group, and/or qualitative criteria such as index replication strategy, securities lending practices, and fair value pricing methodology. Distinct investment options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics. This material is for institutional investor use only and is not intended to be shared with individual investors.

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## INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 6.30.18 | Q2 18

University of Maine System

## PASSIVE INVESTMENTS

INVESTMENT	Overall	Commentary
Vanguard Total Bond Market Index Adm	●	This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
Vanguard Institutional Index I	●	This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
Vanguard Extended Market Index Inst	●	This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
Vanguard Total Intl Stock Index Inst	●	This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.

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INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENTS IN DISTINCT ASSET CLASSES

INVESTMENT	Overall	Commentary
CREF Stock R3		This fund currently meets the guidelines set forth by CAPTRUST for distinct investments in the Investment Policy Statement. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, excess return, and risk-adjusted performance.
TIAA Real Estate Account		This fund currently meets the guidelines set forth by CAPTRUST for distinct investments in the Investment Policy Statement. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, excess return, and risk-adjusted performance.

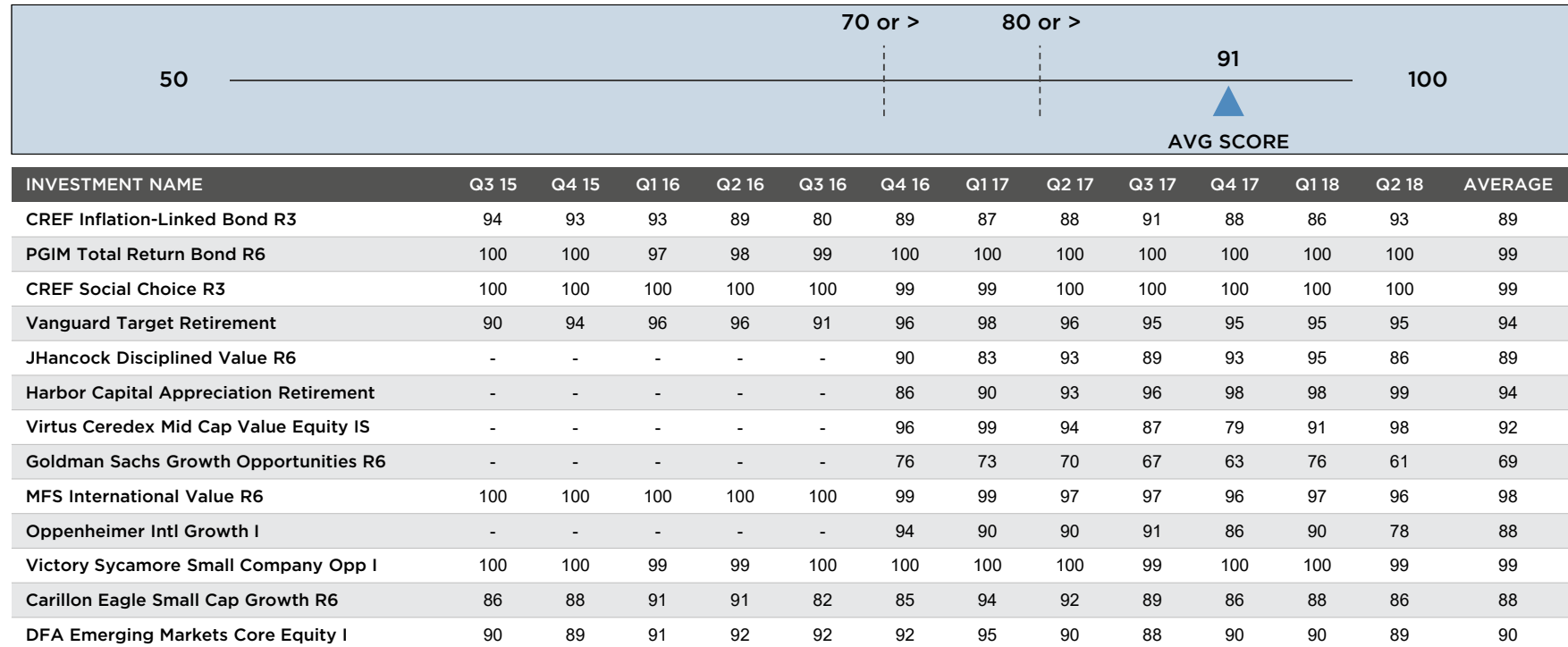
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## PLAN INVESTMENT REVIEW | PLAN PERFORMANCE MEASUREMENT

Period Ending 6.30.18 | Q2 18

University of Maine System

**Plan Performance Success Rate:** Average score of plan investments illustrated below

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CONTINUED...

**SUMMARY:** Over the previous quarters the plan investment options have averaged a score of **91**.

Scores are calculated quarterly using the CAPTRUST Investment Policy Monitoring System ("Scorecard"). In the 4Q2013, our methodology changed utilizing different quantitative statistics than the prior system resulting in a re-categorization of some specific funds as either "passive" (funds designed to track a given benchmark) or "distinct" funds with a limited number of comparable funds, or funds with distinct strategies that do not have an appropriate benchmark. These funds (passive and/or distinct) will no longer be included in the Plan Performance Measurement Report but will continue to be included on the Investment Policy Monitor and be scored by CAPTRUST for their ability to achieve stated goals.

## INVESTMENT REVIEW | SELECT COMMENTARY

Period Ending 6.30.18 | Q2 18

University of Maine System

FUND MANAGEMENT ITEMS	COMMENTARY
Goldman Sachs Growth Opp	<p>Following a disappointing performance in 2015, the strategy again lagged its peers and the benchmark in 2016 due to a rally in lower quality stocks at the end of the year. The team also had some missteps in individual positions where their thesis did not work as expected. The strategy has recently faced stylistic headwinds and has not navigated the backdrop as well as some of its peers. Execution in the consumer sectors has also been a cause for concern. Although 2017 results showed improvement, they have again fallen behind both the benchmark and peers through the first half of 2018. Longer-term results remain a concern and we have less confidence in this team's ability to outperform going forward. As such, we believe that this strategy merits further consideration.</p> <p>Goldman Sachs recently announced changes to its U.S. fundamental equity business. The firm will combine its U.S. value and growth teams into a single fundamental equity team. Sean Gallagher will join Steve Barry as Co-Chief Investment Officer of the combined team. Importantly, these changes will not impact the Small Cap Value strategy as it will continue to be managed by a separate team. Sally Pope Davis and Rob Crystal have been at the helm of this strategy since 2006 and are supported by a team of five experienced sector analysts.</p>

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FUND FIRM ITEMS	COMMENTARY
MFS Family of Funds	<p>Carol Geremia recently became president of MFS Investment Management and head of Global Distribution. Jim Jessee, who served as co-head of Global Distribution alongside Carol since 2011, continues to assist the global retail business.</p> <p>In addition, James Swanson, chief investment strategist, will be retiring from the firm effective December 31, 2018. He will be succeeded by Robert Almeida, an institutional portfolio manager on the U.S. Equity Growth team.</p> <p>In Q4 2017, Aditi Taylor joined MFS as chief risk officer, replacing MFS' former CRO who departed at the end of 2017.</p>

## INVESTMENT REVIEW | SELECT COMMENTARY

Period Ending 6.30.18 | Q2 18

University of Maine System

FUND FIRM ITEMS	COMMENTARY
<b>Prudential Investments</b>	<p>Prudential Investments is streamlining its share class offerings. These are share class changes only and the funds remain open for purchase by group retirement plans. No funds are closing as a result of these actions. Effective June 1, 2018, Class R4 and R2 share classes for select Prudential funds became available for purchase by group retirement plans. Class Z, Class A, and Class C shares for all Prudential funds closed only to new group retirement plans wishing to add the funds (similar to a soft close). All existing plans and investors may remain in their current share class and may continue to make additional purchases or exchanges. No forced share class conversions will take place. These shares classes will remain open to all retail brokerage, retail IRA and retail wrap accounts. Class R share purchases will be closed to all new investors. Effective June 11, 2018, Class Q shares were renamed Class R6 shares for all funds. Lastly, Prudential Mutual Funds will be renamed to PGIM Mutual Funds. This is a name change only, and the funds management, CUSIPS, and tickers will not change.</p>
<b>Dimensional Fund Advisors</b>	<p>On August 15, 2017, Dimensional Fund Advisors announced that Gerald O'Reilly will become co-CEO alongside Dave Butler, Co-CEO and head of Global Financial Advisor Services. Gerald is replacing Eduardo Reppetto as co-CEO and will continue as CIO following Eduardo's departure from the firm in September.</p> <p>Effective 10/31/17, Dimensional added 3 new members to their investment committee: Dave Butler co-CEO and head of Global Financial Advisor Services, Ryan Wiley co-head of Global Equity Trading, and Savina Rizova head of Strategy Research.</p> <p>During Q4 2017, Savina Rizova and Marlena Lee were named co-heads of Research.</p>
<b>OppenheimerFunds</b>	<p>Ahmad Deek has joined as Chief Risk Officer. He reports to chairman and CEO Art Steinmetz. Ahmad succeeds Geoffrey Craddock, who left to become CRO at parent MassMutual. Bob Agan, director of enterprise risk, and Jerry Chubbin, and director of fixed income risk management, who had served as interim co-heads of risk management, following Geoffrey's departure have returned to their existing roles and will report to Ahmad.</p>
<b>Victory Capital Management, Inc.</b>	<p>Victory Capital Holdings, the parent of Victory Capital, filed an had an IPO on 2/8/2018. The current ownership structure is: Victory employees 29%; Crestview Partners 45%; Reverence Capital Partners 12%; and public 14%.</p>

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PLAN INVESTMENT REVIEW | TARGET DATE REVIEW

Period Ending 6.30.18 | Q2 18

University of Maine System

VANGUARD TARGET RETIREMENT

MEETING DATE: JULY 20, 2018

FOCUS AREA
<div>Organizational</div> <div>COMMENTARY</div> <p>There were no material changes to the target date team during the quarter.</p>
<div>Investments</div> <div>COMMENTARY</div> <p>There were no changes made to the underlying investments of the Target Retirement series during the quarter.</p>
<div>Performance and Positioning</div> <div>COMMENTARY</div> <p><b>Vanguard Target Retirement Performance Update</b> After outperforming in the first quarter, the Vanguard Target Retirement series slowed down in the second quarter as it mostly underperformed peers and its benchmark.</p> <ul style="list-style-type: none"><li>• The reversal of Target Retirement's performance is reflective of market trends that occurred during the second quarter, most notably the sell-off in emerging markets equities and the rally by U.S. markets over international markets</li><li>• These two trends were the primary drivers of Target Retirement's underperformance given the series' higher allocation to international and emerging markets equities relative to peers</li><li>• In addition, the series was also hurt by its larger exposure to international fixed income as U.S. bonds significantly outperformed</li></ul> <p>There were no changes made to the series' strategic asset allocation during the quarter.</p>

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## PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT NAME	Q2 '18	YTD '18	2017	2016	2015	2014	2013	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
<b>CASH AND EQUIVALENTS - MONEY MARKET</b>											
CREF Money Market R3	0.28%	0.50%	0.50%	0.13%	0.00%	0.00%	0.00%	0.82%	0.38%	0.23%	0.23%
Vanguard Federal Money Market	0.42%	0.75%	0.81%	0.30%	0.04%	0.01%	0.02%	1.26%	0.63%	0.38%	0.34%
ICE BofA ML US Treasury Bill 3 Mon USD	0.45%	0.81%	0.86%	0.33%	0.05%	0.03%	0.07%	1.36%	0.68%	0.42%	0.35%
<b>STABLE VALUE</b>											
TIAA Traditional	Current rate is 4.00%										
ICE BofA ML US Treasury Bill 3 Mon USD	0.45%	0.81%	0.86%	0.33%	0.05%	0.03%	0.07%	1.36%	0.68%	0.42%	0.35%
Hueler Stable Value Index (gross)	0.55%	1.07%	1.95%	1.79%	1.77%	1.69%	1.83%	2.11%	1.90%	1.83%	2.35%
<b>INFLATION PROTECTED BOND</b>											
CREF Inflation-Linked Bond R3	0.60%	0.06%	1.85%	4.23%	-1.68%	3.34%	-9.01%	1.27%	1.43%	1.23%	2.56%
BBgBarc US Treasury US TIPS TR USD	0.77%	-0.02%	3.01%	4.68%	-1.44%	3.64%	-8.61%	2.11%	1.93%	1.68%	3.03%
Inflation Protected Bond Universe	0.63%	-0.05%	2.55%	4.59%	-2.23%	1.95%	-7.58%	1.81%	1.51%	1.12%	2.33%
<b>INTERMEDIATE TERM BOND</b>											
PGIM Total Return Bond R6	-0.53%	-1.88%	6.71%	4.83%	0.09%	7.25%	-0.91%	0.59%	3.15%	3.75%	5.74%
Vanguard Total Bond Market Index Adm	-0.17%	-1.64%	3.56%	2.60%	0.40%	5.89%	-2.15%	-0.53%	1.67%	2.20%	3.66%
BBgBarc Aggregate Bond Index	-0.16%	-1.62%	3.54%	2.65%	0.55%	5.97%	-2.02%	-0.40%	1.72%	2.27%	3.72%
Intermediate Term Bond Universe	-0.27%	-1.59%	3.82%	3.27%	-0.28%	5.18%	-1.40%	-0.39%	1.70%	2.27%	3.94%
<b>WORLD ALLOCATION</b>											
CREF Social Choice R3	0.79%	0.08%	14.27%	7.40%	-0.87%	6.83%	16.68%	6.82%	6.53%	7.32%	6.70%
60% MSCI World 40% BBgBarc Agg Index	1.45%	0.21%	17.99%	6.67%	-0.09%	5.63%	17.90%	8.74%	7.26%	8.34%	6.06%
World Allocation Universe	-0.30%	-1.26%	14.31%	6.13%	-4.41%	1.67%	11.53%	5.39%	4.19%	5.07%	4.67%

\*ANNUALIZED

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## PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT NAME	Q2 '18	YTD '18	2017	2016	2015	2014	2013	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
<b>TARGET DATE RET INCOME MODERATE</b>											
Vanguard Target Retirement Income Inv	0.43%	-0.07%	8.47%	5.25%	-0.17%	5.54%	5.87%	3.96%	4.15%	4.79%	5.08%
Morningstar Lifetime Moderate Income Index	0.75%	0.40%	8.55%	5.98%	-1.30%	4.09%	6.45%	4.97%	4.14%	4.55%	-
Retirement Income Moderate	0.26%	-0.70%	9.75%	5.04%	-1.38%	4.58%	6.61%	3.96%	3.85%	4.66%	4.66%
<b>TARGET DATE 2015 MODERATE</b>											
Vanguard Target Retirement 2015 Inv	0.52%	0.00%	11.50%	6.16%	-0.46%	6.56%	13.00%	5.40%	5.14%	6.43%	5.94%
Morningstar Lifetime Moderate 2015 Index	0.73%	-0.02%	11.39%	7.10%	-1.73%	5.55%	10.50%	5.91%	5.15%	5.87%	-
2015 Moderate	0.46%	-0.38%	11.31%	6.29%	-1.40%	4.69%	11.76%	4.76%	4.65%	5.74%	5.06%
<b>TARGET DATE 2020 MODERATE</b>											
Vanguard Target Retirement 2020 Inv	0.61%	0.06%	14.08%	6.95%	-0.68%	7.11%	15.85%	6.68%	6.08%	7.44%	6.43%
Morningstar Lifetime Moderate 2020 Index	0.77%	-0.07%	12.79%	7.66%	-1.88%	5.87%	12.98%	6.54%	5.65%	6.51%	-
2020 Moderate	0.43%	-0.29%	13.46%	6.14%	-1.41%	5.02%	15.43%	5.87%	5.22%	6.64%	5.63%
<b>TARGET DATE 2025 MODERATE</b>											
Vanguard Target Retirement 2025 Inv	0.65%	0.05%	15.94%	7.48%	-0.85%	7.17%	18.14%	7.58%	6.68%	8.11%	6.71%
Morningstar Lifetime Moderate 2025 Index	0.87%	-0.01%	14.54%	8.39%	-2.06%	6.04%	16.28%	7.45%	6.28%	7.33%	-
2025 Moderate	0.53%	-0.10%	15.26%	6.84%	-1.42%	5.11%	17.80%	6.95%	6.01%	7.26%	6.10%
<b>TARGET DATE 2030 MODERATE</b>											
Vanguard Target Retirement 2030 Inv	0.78%	0.21%	17.52%	7.85%	-1.03%	7.17%	20.49%	8.48%	7.19%	8.71%	6.96%
Morningstar Lifetime Moderate 2030 Index	1.01%	0.15%	16.59%	9.26%	-2.30%	6.01%	19.64%	8.64%	7.02%	8.20%	-
2030 Moderate	0.72%	0.31%	17.38%	7.54%	-1.42%	5.23%	20.81%	8.35%	6.87%	8.51%	6.60%

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## PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT NAME	Q2 '18	YTD '18	2017	2016	2015	2014	2013	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
<b>TARGET DATE 2035 MODERATE</b>											
Vanguard Target Retirement 2035 Inv	0.83%	0.24%	19.12%	8.26%	-1.26%	7.24%	22.82%	9.25%	7.66%	9.31%	7.29%
Morningstar Lifetime Moderate 2035 Index	1.16%	0.33%	18.52%	10.07%	-2.58%	5.80%	22.04%	9.81%	7.70%	8.91%	-
2035 Moderate	0.85%	0.46%	19.40%	8.01%	-1.34%	5.34%	22.01%	9.44%	7.67%	8.94%	7.22%
<b>TARGET DATE 2040 MODERATE</b>											
Vanguard Target Retirement 2040 Inv	0.90%	0.36%	20.71%	8.73%	-1.59%	7.15%	24.37%	10.14%	8.14%	9.79%	7.61%
Morningstar Lifetime Moderate 2040 Index	1.23%	0.43%	19.87%	10.61%	-2.83%	5.51%	23.05%	10.62%	8.14%	9.30%	-
2040 Moderate	0.94%	0.50%	20.12%	7.48%	-1.42%	5.53%	23.38%	9.86%	7.60%	9.19%	6.85%
<b>TARGET DATE 2045 MODERATE</b>											
Vanguard Target Retirement 2045 Inv	0.94%	0.36%	21.42%	8.87%	-1.57%	7.16%	24.37%	10.51%	8.40%	9.95%	7.68%
Morningstar Lifetime Moderate 2045 Index	1.22%	0.42%	20.53%	10.84%	-3.03%	5.25%	23.07%	10.96%	8.31%	9.39%	-
2045 Moderate	0.91%	0.38%	20.49%	7.99%	-1.99%	5.03%	22.00%	9.97%	7.69%	8.94%	6.73%
<b>TARGET DATE 2050 MODERATE</b>											
Vanguard Target Retirement 2050 Inv	0.94%	0.39%	21.39%	8.85%	-1.58%	7.18%	24.34%	10.52%	8.40%	9.95%	7.68%
Morningstar Lifetime Moderate 2050 Index	1.15%	0.36%	20.78%	10.89%	-3.19%	5.00%	22.83%	11.00%	8.30%	9.35%	-
2050 Moderate	1.04%	0.52%	20.59%	7.99%	-1.79%	5.23%	23.68%	10.14%	7.79%	9.23%	6.97%
<b>TARGET DATE 2055 MODERATE</b>											
Vanguard Target Retirement 2055 Inv	0.95%	0.38%	21.38%	8.88%	-1.72%	7.19%	24.33%	10.53%	8.37%	9.92%	-
Morningstar Lifetime Moderate 2055 Index	1.08%	0.28%	20.95%	10.90%	-3.34%	4.74%	22.49%	10.98%	8.26%	9.27%	-
2055 Moderate	0.86%	0.21%	20.87%	8.38%	-1.55%	5.95%	23.70%	10.13%	8.03%	9.49%	8.03%

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## PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT NAME	Q2 '18	YTD '18	2017	2016	2015	2014	2013	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
<b>TARGET DATE 2060+ MODERATE</b>											
Vanguard Target Retirement 2060 Inv	0.93%	0.40%	21.36%	8.84%	-1.68%	7.16%	24.35%	10.51%	8.37%	9.92%	-
Vanguard Target Retirement 2065 Inv	0.97%	0.37%	-	-	-	-	-	-	-	-	-
Morningstar Lifetime Moderate 2060 Index	1.00%	0.21%	21.06%	10.88%	-3.48%	4.53%	-	10.93%	8.19%	-	-
2060+ Moderate	1.22%	0.79%	20.99%	8.72%	-0.89%	7.24%	24.34%	10.65%	8.43%	9.85%	-
<b>ALLOCATION--85%+ EQUITY</b>											
CREF Stock R3	1.37%	0.94%	23.45%	9.17%	-0.84%	6.41%	27.83%	12.33%	9.25%	10.93%	7.79%
85% S&P 500, 15% BBgBarc Agg	2.89%	2.04%	18.92%	10.60%	1.38%	12.54%	26.65%	12.09%	10.42%	11.75%	9.34%
Allocation--85%+ Equity Universe	1.71%	0.89%	18.98%	9.10%	-2.47%	5.64%	27.64%	10.17%	7.58%	9.46%	7.11%
<b>LARGE COMPANY VALUE</b>											
JHancock Disciplined Value R6	-0.42%	-2.19%	19.33%	14.07%	-4.81%	11.04%	35.97%	9.54%	8.20%	10.29%	9.86%
Russell 1000 Value	1.18%	-1.69%	13.66%	17.34%	-3.83%	13.45%	32.53%	6.77%	8.26%	10.34%	8.49%
Large Value Universe	1.41%	-1.18%	15.86%	14.54%	-3.91%	10.56%	31.59%	8.51%	8.10%	9.86%	8.18%
<b>LARGE COMPANY BLEND</b>											
Vanguard Institutional Index I	3.42%	2.63%	21.79%	11.93%	1.37%	13.65%	32.35%	14.33%	11.90%	13.39%	10.17%
S&P 500 Index	3.43%	2.65%	21.83%	11.96%	1.38%	13.69%	32.39%	14.37%	11.93%	13.42%	10.17%
Large Blend Universe	2.61%	1.48%	20.38%	10.48%	-0.80%	11.28%	31.93%	12.45%	9.86%	11.74%	9.02%
<b>LARGE COMPANY GROWTH</b>											
Harbor Capital Appreciation Retirement	6.36%	10.99%	36.68%	-1.04%	10.99%	9.93%	37.66%	29.31%	15.34%	18.17%	12.37%
Russell 1000 Growth	5.76%	7.25%	30.21%	7.08%	5.67%	13.05%	33.48%	22.51%	14.98%	16.36%	11.83%
Large Growth Universe	5.21%	7.89%	28.06%	3.15%	3.73%	10.07%	34.26%	21.04%	12.38%	14.53%	10.29%

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## PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT NAME	Q2 '18	YTD '18	2017	2016	2015	2014	2013	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
<b>MEDIUM COMPANY VALUE</b>											
Virtus Ceredex Mid Cap Value Equity IS	3.86%	3.04%	11.98%	20.53%	-5.63%	11.05%	31.21%	8.01%	9.78%	11.17%	11.69%
Russell Mid Cap Value	2.41%	-0.16%	13.34%	20.00%	-4.78%	14.75%	33.46%	7.60%	8.80%	11.27%	10.06%
Mid Value Universe	2.20%	-0.20%	13.12%	17.84%	-5.56%	9.57%	34.91%	7.76%	7.58%	9.93%	8.94%
<b>MEDIUM COMPANY BLEND</b>											
Vanguard Extended Market Index Inst	5.99%	6.15%	18.12%	16.15%	-3.24%	7.56%	38.42%	16.79%	10.36%	12.65%	10.80%
Russell Mid Cap	2.82%	2.35%	18.52%	13.80%	-2.44%	13.22%	34.76%	12.33%	9.58%	12.22%	10.23%
Mid Blend Universe	2.87%	1.63%	15.54%	14.09%	-4.31%	8.41%	34.39%	10.42%	7.61%	10.27%	8.83%
<b>MEDIUM COMPANY GROWTH</b>											
Goldman Sachs Growth Opportunities R6	0.04%	3.92%	27.24%	1.49%	-5.24%	11.44%	32.38%	15.09%	7.69%	11.08%	9.81%
Russell Mid Cap Growth	3.16%	5.40%	25.27%	7.33%	-0.20%	11.90%	35.74%	18.52%	10.73%	13.37%	10.45%
Mid Growth Universe	4.16%	6.78%	24.92%	5.98%	-0.73%	7.22%	35.05%	18.51%	9.91%	12.54%	9.53%
<b>FOREIGN LARGE VALUE</b>											
MFS International Value R6	0.42%	-0.28%	27.25%	4.31%	6.85%	1.61%	27.80%	9.08%	10.09%	10.28%	7.65%
MSCI EAFE	-0.97%	-2.37%	25.62%	1.51%	-0.39%	-4.48%	23.29%	7.37%	5.41%	6.93%	3.33%
Foreign Large Value Universe	-3.37%	-4.79%	22.72%	3.20%	-3.30%	-6.25%	20.69%	3.60%	3.34%	4.98%	2.03%
<b>FOREIGN LARGE BLEND</b>											
Vanguard Total Intl Stock Index Inst	-3.17%	-3.61%	27.55%	4.70%	-4.24%	-4.15%	15.15%	7.12%	5.35%	6.44%	2.75%
MSCI EAFE	-0.97%	-2.37%	25.62%	1.51%	-0.39%	-4.48%	23.29%	7.37%	5.41%	6.93%	3.33%
Foreign Large Blend Universe	-2.57%	-3.41%	25.29%	0.96%	-1.50%	-5.01%	19.60%	5.70%	4.32%	5.86%	2.68%

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## PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 6.30.18 | Q2 18

University of Maine System

INVESTMENT NAME	Q2 '18	YTD '18	2017	2016	2015	2014	2013	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
<b>FOREIGN LARGE GROWTH</b>											
Oppenheimer Intl Growth I	-3.02%	-2.84%	27.15%	-1.88%	3.63%	-6.80%	25.71%	6.63%	5.51%	6.71%	5.55%
MSCI EAFE	-0.97%	-2.37%	25.62%	1.51%	-0.39%	-4.48%	23.29%	7.37%	5.41%	6.93%	3.33%
Foreign Large Growth Universe	-0.82%	-0.34%	31.67%	-2.09%	0.94%	-3.79%	19.91%	11.13%	6.75%	7.84%	3.97%
<b>SMALL COMPANY VALUE</b>											
Victory Sycamore Small Company Opp I	4.85%	3.69%	11.88%	30.04%	-0.39%	6.80%	33.39%	14.59%	13.47%	13.78%	11.40%
Russell 2000 Value	8.30%	5.44%	7.84%	31.74%	-7.47%	4.22%	34.52%	13.10%	11.22%	11.18%	9.88%
Small Value Universe	6.00%	3.27%	9.27%	25.69%	-6.74%	3.50%	35.65%	12.01%	9.07%	10.07%	9.74%
<b>SMALL COMPANY GROWTH</b>											
Carillon Eagle Small Cap Growth R6	5.71%	7.45%	23.40%	10.45%	-0.39%	5.59%	34.70%	18.50%	10.22%	13.09%	11.46%
Russell 2000 Growth	7.23%	9.70%	22.17%	11.32%	-1.38%	5.60%	43.30%	21.86%	10.60%	13.65%	11.24%
Small Growth Universe	8.28%	11.06%	22.09%	11.43%	-2.37%	2.71%	41.24%	22.93%	11.01%	12.87%	10.91%
<b>EMERGING MARKETS</b>											
DFA Emerging Markets Core Equity I	-9.87%	-8.35%	36.55%	12.35%	-14.86%	-0.91%	-2.64%	5.17%	5.37%	5.00%	3.67%
MSCI Emerging Markets	-7.86%	-6.51%	37.75%	11.60%	-14.60%	-1.82%	-2.27%	8.59%	5.98%	5.39%	2.60%
Emerging Markets Universe	-8.98%	-7.16%	35.24%	8.21%	-13.56%	-2.73%	0.32%	6.07%	4.93%	4.35%	2.21%
<b>SPECIALTY-PRIVATE REAL ESTATE</b>											
TIAA Real Estate Account	1.63%	2.60%	4.37%	5.20%	8.16%	12.22%	9.65%	5.05%	5.30%	7.49%	2.66%
NCREIF Property Index	1.81%	3.54%	6.98%	7.97%	13.33%	11.81%	10.99%	7.20%	8.26%	9.77%	6.22%
Specialty-Real Estate Universe	7.64%	0.18%	5.71%	6.63%	2.47%	28.44%	1.65%	3.17%	6.84%	7.59%	7.29%

\*ANNUALIZED

This summary is intended for "Institutional (Plan Sponsor) Use Only" and only includes historical performance of the funds currently in the plan's fund lineup as compared to the peer group (universe) maintained/developed by CAPTRUST (using Morningstar open-end mutual fund data), which may include other investment types such as collective investment trusts. Fund and peer group returns are shown net of investment management fees, unless otherwise indicated, but gross of CAPTRUST advisory fees. The plan's overall performance will be reduced by CAPTRUST's advisory fees and other plan level fees not contemplated in this summary. Therefore, each participant's account performance will differ substantially. Past performance is not indicative of future results. Information from sources believed to be reliable, but not warranted by CAPTRUST to be accurate or complete.

SECTION 4: FUND FACT SHEETS

Period Ending 6.30.18 | Q2 18

University of Maine System

SECTION 4: FUND FACT SHEETS	
Fund Fact Sheets.....	

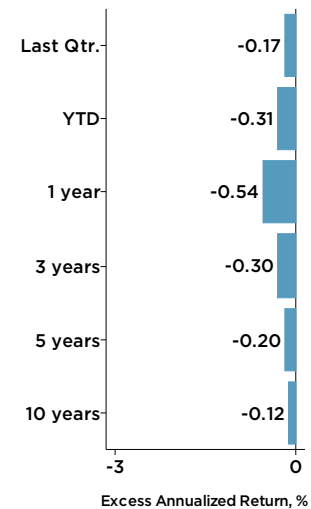
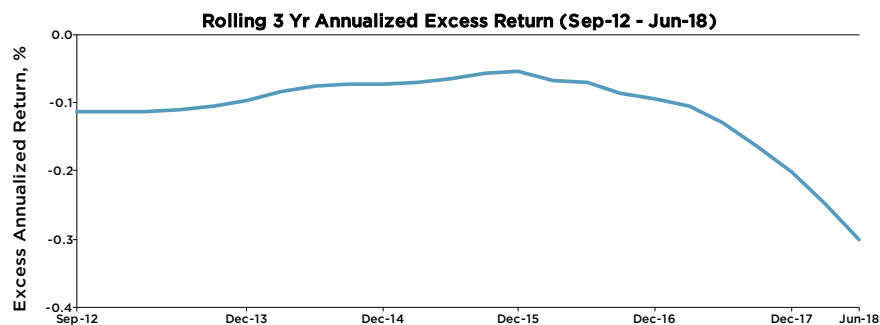
# CREF MONEY MARKET R3

Period Ending 6.30.18 | Q2 18

## INDUSTRY ANALYSIS

Money market reform passed in 2010 imposed new mandates on 2a-7 managers including shorter average maturities, tighter restrictions on allowable securities, increased liquidity mandates and mandatory stress testing by fund managers. In July 2014, the SEC passed further 2a-7 regulations that mandated a floating rate NAV for some products and allowed managers, under certain circumstances, to limit redemptions or charge a fee for withdrawals. The July regulations will have a multi-year phase-in period.

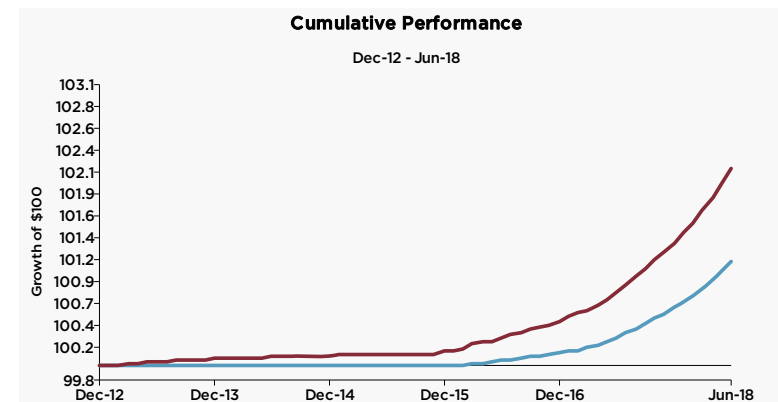
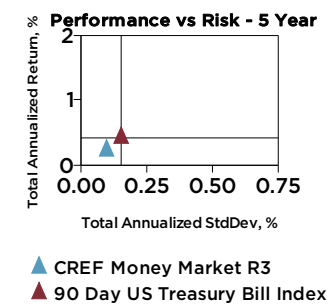
	CREF Money Market R3	90 Day US Treasury Bill Index
<b>TRAILING RETURNS</b>		
Last Qtr.	0.28	0.45
YTD	0.50	0.81
1 Year	0.82	1.36
3 Years	0.38	0.68
5 Years	0.23	0.42
10 Years	0.23	0.35
<b>CALENDAR RETURNS</b>		
2017	0.50	0.86
2016	0.13	0.33
2015	0.00	0.05
2014	0.00	0.03
2013	0.00	0.07
<b>KEY MEASURES / 5 YEAR</b>		
5 Year	0.10	0.16



CREF Money Market R3  
■ Excess

## INVESTMENT PROFILE

Ticker	-
Strategy Incept Date	-
Prospectus Exp Ratio	-
12 Mo Yield	-



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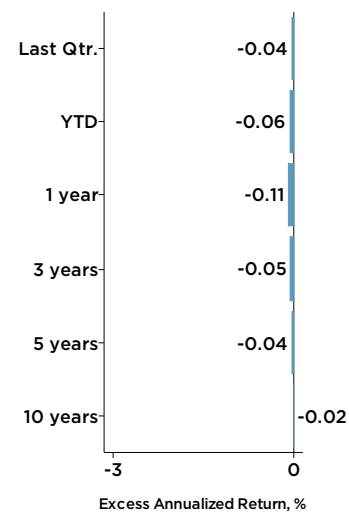
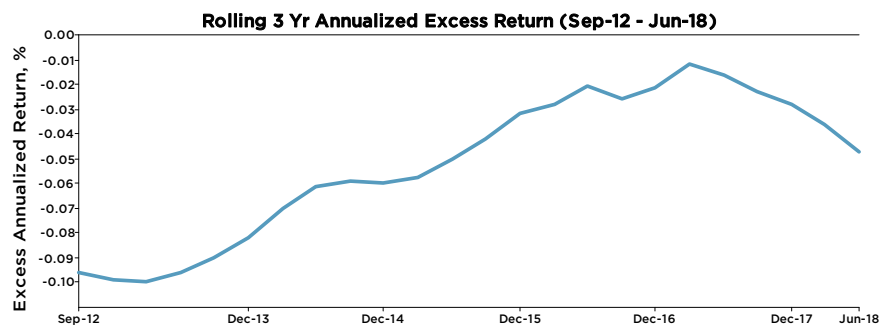
## VANGUARD FEDERAL MONEY MARKET

Period Ending 6.30.18 | Q2 18

## INDUSTRY ANALYSIS

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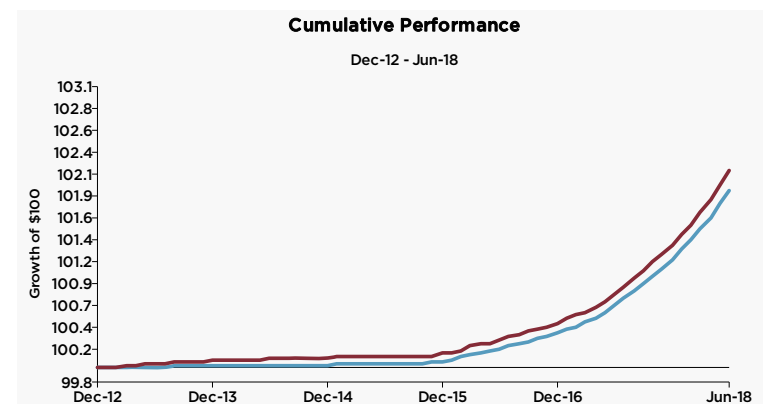
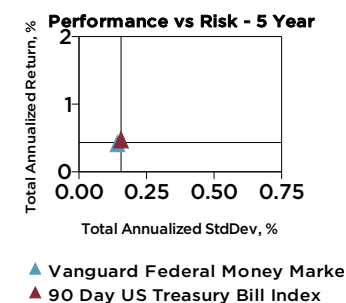
	Vanguard Federal Money Market	90 Day US Treasury Bill Index
<b>TRAILING RETURNS</b>		
Last Qtr.	0.42	0.45
YTD	0.75	0.81
1 Year	1.26	1.36
3 Years	0.63	0.68
5 Years	0.38	0.42
10 Years	0.34	0.35
<b>CALENDAR RETURNS</b>		
2017	0.81	0.86
2016	0.30	0.33
2015	0.04	0.05
2014	0.01	0.03
2013	0.02	0.07
<b>KEY MEASURES / 5 YEAR</b>		
5 Year	0.14	0.16



Vanguard Federal Money Market  
■ Excess

## INVESTMENT PROFILE

Ticker	VMFXX
Strategy Incept Date	07/13/1981
Prospectus Exp Ratio	0.11%
12 Mo Yield	1.25%



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## TIAA TRADITIONAL – GROUP RETIREMENT ANNUITY (GRA)

Period Ending 6.30.18 | Q2 18

## INDUSTRY ANALYSIS

The insurance providers and industry as a whole have historically exhibited a high degree of sensitivity to broad financial markets. The economic and market downturn of 2008 and 2009 proved to be no exception as many of these providers watched as the assets on their balance sheets – public and private – were marked meaningfully lower. The shrinking assets resulted in deterioration of capital ratios and reserve amounts across the industry, leading to system-wide downgrades from the ratings agencies. However, the drive in equity markets since the nadir in March of 2009 have presented a formidable rally across every major fixed income sector. As this rally strengthened the balance sheets of insurers, attention shifted away from the industry, which has now been able to breathe a collective sigh of relief. While the insurance industry has staged an impressive recovery, investors should use this episode as a reminder of the risks inherent with single-insurer backed products.

## CAPTRUST ANALYSIS

## Jennifer Dunbar – Senior Manager| Investment Research

The TIAA Traditional Annuity is a guaranteed annuity account (group annuity contract) that is backed by the financial strength and claims-paying ability of TIAA. The product offers participants guaranteed principal and a contractually specified interest rate. The contractually agreed upon minimum annual interest rate is 3%. The TIAA Board of Trustees also reserves the right each year to declare a higher crediting rate to participants which remains effective for a twelve month period that begins each March 1.

The product has a payout structure at the participant level that varies the length of time it takes for a participant to fully redeem. This payout structure is individual contract-specific.

## GROSS CREDITING RATES - For Contributions Applied:

4/1/17 - 6/30/17	7/1/17 - 9/30/17	10/1/17 - 12/31/17	1/1/18 - 3/31/18	4/1/18 - 6/30/18
4.00%	4.00%	4.00%	4.00%	4.00%

## INVESTMENT DETAILS

Crediting Rate Details:	Current contributions are invested at the new money rate, which can change monthly but is guaranteed until the last day of February. Old Money is grouped by time period into vintages, rate on all vintages are reviewed for reset every March 1 <sup>st</sup> .
Competing Options:	Allowed.
Minimum Rate:	3.00% during accumulation stage and 2.50% during annuity payout stage, reset annually.

## LIQUIDITY PROVISIONS

Plan Sponsor	Participant
Not applicable. Contracts are individually owned by the participant.	Lump Sum withdrawals are available within 120 days of termination of employment with a 2.5% surrender charge. Transfers and withdrawals can be made in 10 annual installments (paid over 9 years and 1 day) .

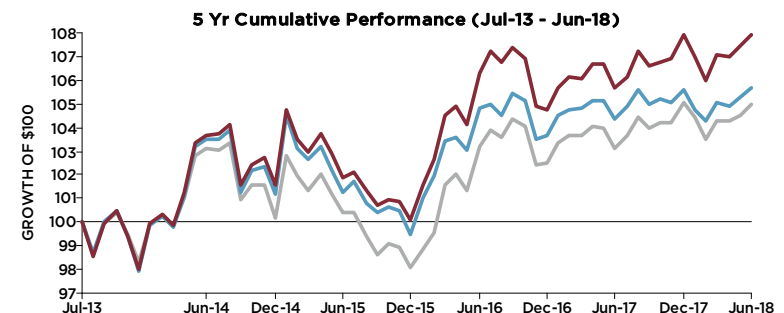
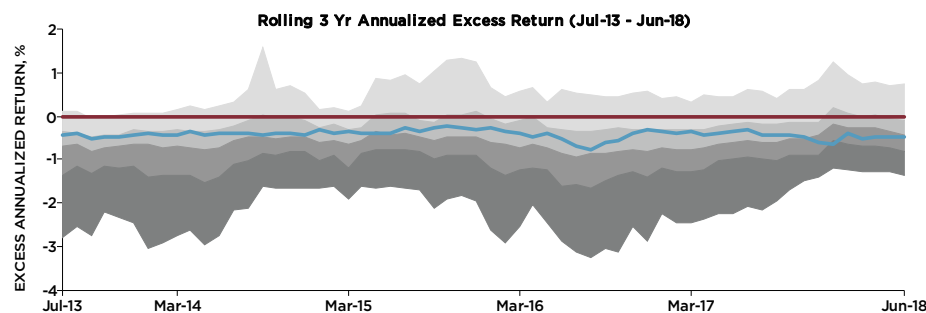
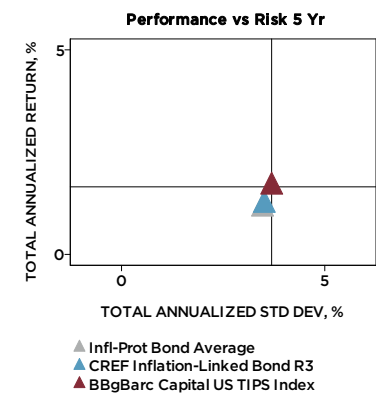
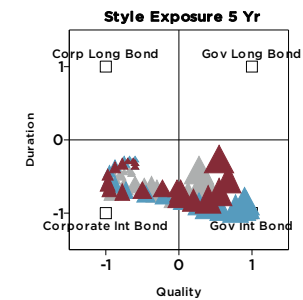
Important Disclosures: This slide is intended solely for institutional use. The opinions expressed in this report are subject to change without notice. The statistics and data have been compiled from sources believed to be reliable but are not guaranteed to be accurate or complete. Any performance quoted represents past performance and does not guarantee future results. Bloomberg Index averages are derived from Morningstar. This material is not a solicitation or an offer to buy any security or to participate in any investment strategy. Any such solicitation must be made by prospectus only. For more information or to obtain a prospectus, please contact your financial advisor at 800.216.0645. CAPTRUST Financial Advisors.

8.1

## CREF INFLATION-LINKED BOND R3

Period Ending 6.30.18 | Q2 18

	CREF Inflation-Linked Bond R3	Peer Group Rank	BBgBarc Capital US TIPS Index	Infl-Prot Bond	# of Funds
<b>KEY MEASURES / 5 YEAR</b>					
Standard Deviation	3.50	32%	3.68	3.48	217
Sharpe Ratio	0.23	41%	0.34	0.19	217
Alpha	-0.36	49%	0.00	-0.37	217
Beta	0.94	63%	1.00	0.85	217
R-Squared	96.49	44%	100.00	83.66	217
Up Mkt Capture	87.74	56%	100.00	82.97	217
Down Mkt Capture	93.83	35%	100.00	89.46	217
Information Ratio	-0.63	60%	NA	-0.79	217
<b>TRAILING RETURNS</b>					
Last Qtr.	0.60	56%	0.77	0.63	240
YTD	0.06	32%	-0.02	-0.05	236
1 Year	1.27	75%	2.11	1.81	236
3 Years	1.43	53%	1.93	1.51	230
5 Years	1.23	44%	1.68	1.12	217
10 Years	2.56	45%	3.03	2.33	156
<b>CALENDAR RETURNS</b>					
2017	1.85	73%	3.01	2.55	241
2016	4.23	53%	4.68	4.59	248
2015	-1.68	36%	-1.44	-2.23	257
2014	3.34	21%	3.64	1.95	256
2013	-9.01	67%	-8.60	-7.58	256



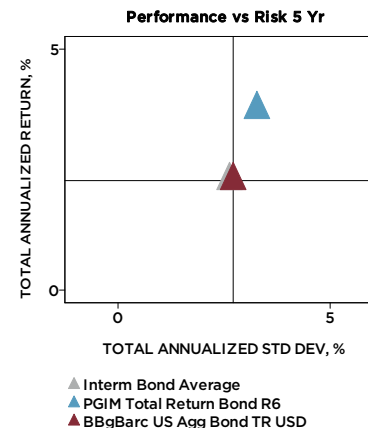
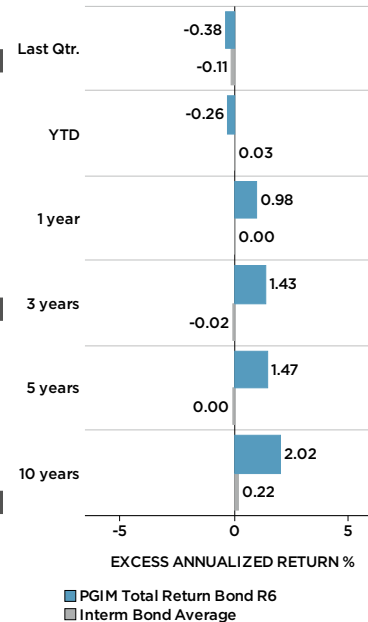
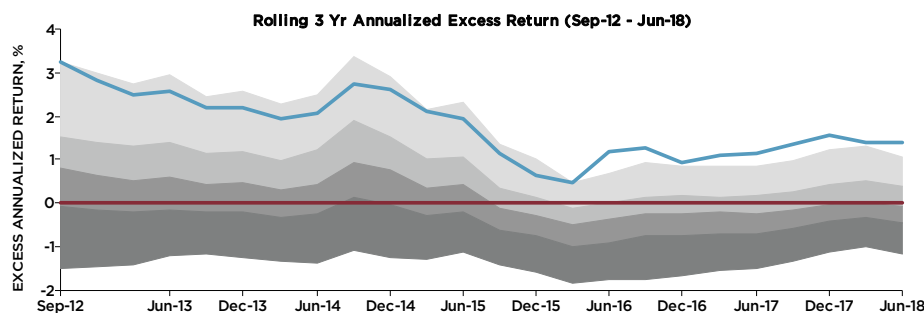
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8.1

## PGIM TOTAL RETURN BOND R6

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	PGIM Total Return Bond R6	Peer Group Rank	BBgBarc US Agg Bond TR USD	Interm Bond	# of Funds
Standard Deviation	3.29	96%	2.70	2.64	921
Sharpe Ratio	1.01	11%	0.68	0.71	921
Alpha	1.20	8%	0.00	0.20	921
Beta	1.15	1%	1.00	0.89	921
R-Squared	89.92	50%	100.00	84.89	921
Up Mkt Capture	134.08	1%	100.00	93.72	921
Down Mkt Capture	106.39	83%	100.00	88.79	921
Information Ratio	1.28	3%	NA	-0.17	921
TRAILING RETURNS					
Last Qtr.	-0.53	82%	-0.16	-0.27	1035
YTD	-1.88	67%	-1.62	-1.59	1030
1 Year	0.59	11%	-0.40	-0.39	1017
3 Years	3.15	3%	1.72	1.70	963
5 Years	3.75	3%	2.27	2.27	921
10 Years	5.74	2%	3.72	3.94	817
CALENDAR RETURNS					
2017	6.71	2%	3.54	3.82	1033
2016	4.83	13%	2.65	3.27	1054
2015	0.09	45%	0.55	-0.28	1059
2014	7.25	5%	5.97	5.18	1102
2013	-0.91	28%	-2.02	-1.40	1117



## INVESTMENT PROFILE

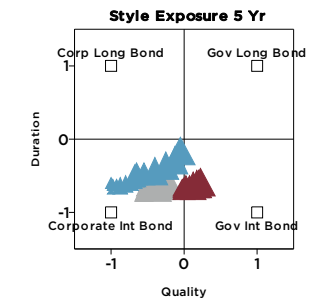
Ticker	PTRQX
CUSIP	74440B884
Net Assets \$MM	\$34,534.00
Manager Names	Team Managed
Manager Tenure	15.7 Years
Prospectus Exp Ratio	0.41%
Cat Median Exp Ratio	0.78%
Current 12b-1	N/A
Annlzd Ret Since Incept	4.52%
Inception Date	12/27/2010
Phone Number	800-225-1852
Sub Advisor	PGIM Fixed Income

## HOLDINGS OVERVIEW

Total Number of Holdings	2678
% Assets in Top 10 Holdings	81.04%
Avg Mkt Cap \$MM	N/A
Turnover Ratio	95.00%

## TOP HOLDINGS

US 5 Year Note (CBT) Se	23.94%
US 10 Year Note (CBT) Se	8.10%
Us Ultra Bond Cbt Sep18	7.36%
Payb Fra 2.8375 06/28/2	7.18%
Recv Fra 4.0 06/28/2018	7.18%

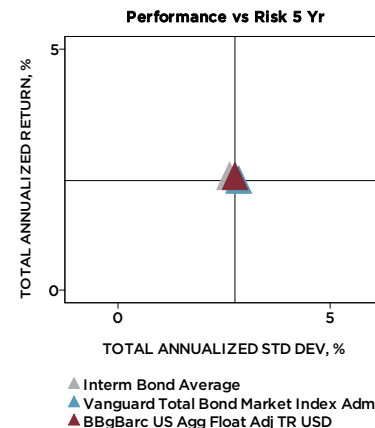
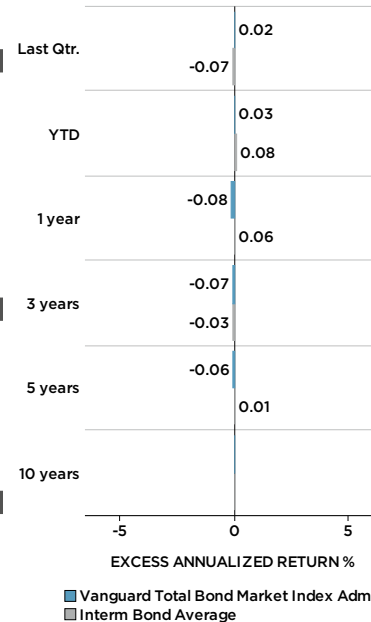
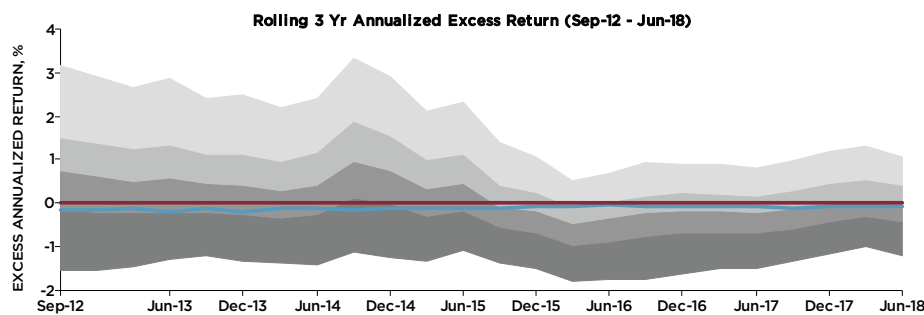


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## VANGUARD TOTAL BOND MARKET INDEX ADM

Period Ending 6.30.18 | Q2 18

	Vanguard Total Bond Market Index Adm	Peer Group Rank	BBgBarc US Agg Float Adj TR USD	Interm Bond	# of Funds
<b>KEY MEASURES / 5 YEAR</b>					
Standard Deviation	2.85	82%	2.75	2.64	921
Sharpe Ratio	0.62	61%	0.67	0.71	921
Alpha	-0.12	69%	0.00	0.24	921
Beta	1.03	4%	1.00	0.87	921
R-Squared	99.24	3%	100.00	84.94	921
Up Mkt Capture	101.25	25%	100.00	92.70	921
Down Mkt Capture	104.50	85%	100.00	86.72	921
Information Ratio	-0.24	63%	NA	-0.14	921
<b>TRAILING RETURNS</b>					
Last Qtr.	-0.17	37%	-0.20	-0.27	1035
YTD	-1.64	46%	-1.67	-1.59	1030
1 Year	-0.53	53%	-0.45	-0.39	1017
3 Years	1.67	49%	1.74	1.70	963
5 Years	2.20	54%	2.26	2.27	921
10 Years	3.66	68%	NA	3.94	817
<b>CALENDAR RETURNS</b>					
2017	3.56	58%	3.63	3.82	1033
2016	2.60	65%	2.75	3.27	1054
2015	0.40	28%	0.44	-0.28	1059
2014	5.89	31%	5.85	5.18	1102
2013	-2.15	68%	-1.97	-1.40	1117



## INVESTMENT PROFILE

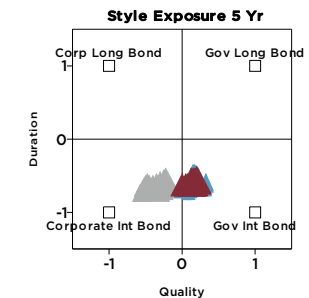
Ticker	VBTLX
CUSIP	921937603
Net Assets \$MM	\$198,045.00
Manager Names	Team Managed
Manager Tenure	5.4 Years
Prospectus Exp Ratio	0.05%
Cat Median Exp Ratio	0.78%
Current 12b-1	N/A
Annlzd Ret Since Incept	3.97%
Inception Date	11/12/2001
Phone Number	800-662-7447
Sub Advisor	N/A

## HOLDINGS OVERVIEW

Total Number of Holdings	17458
% Assets in Top 10 Holdings	4.04%
Avg Mkt Cap \$MM	N/A
Turnover Ratio	55.00%

## TOP HOLDINGS

United States Treasury Not	0.46%
United States Treasury Not	0.42%
United States Treasury Not	0.42%
United States Treasury Not	0.42%
United States Treasury Not	0.40%

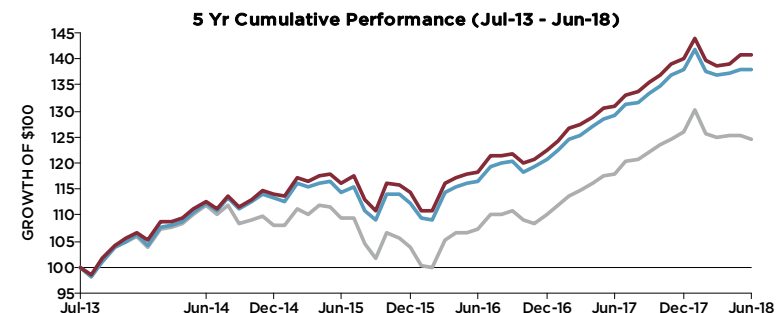
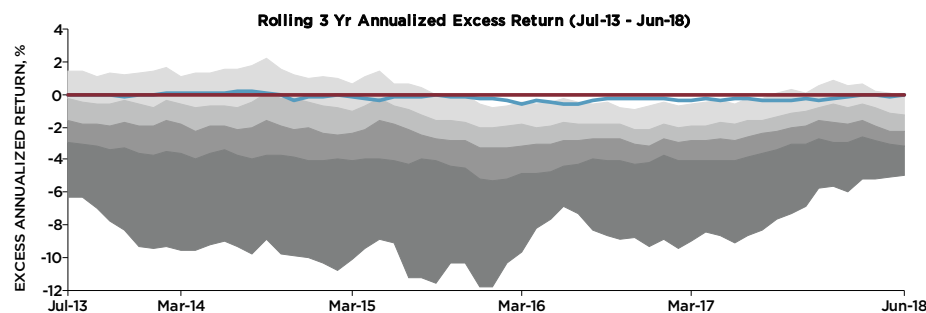
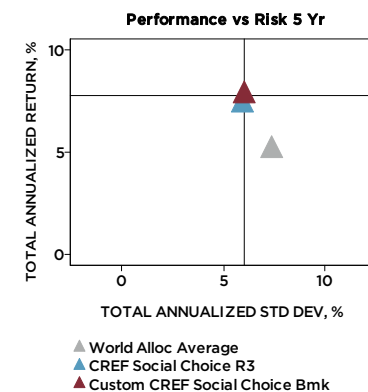
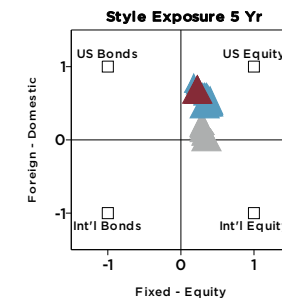
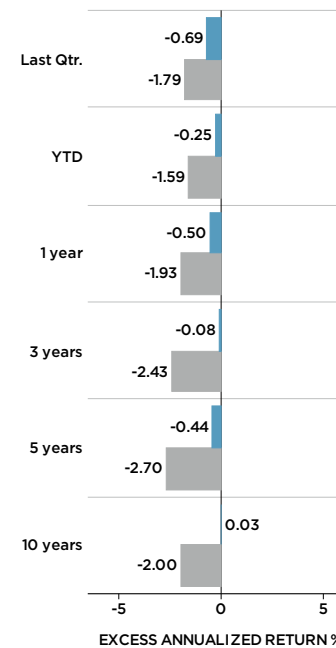


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# CREF SOCIAL CHOICE R3

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	CREF Social Choice R3	Peer Group Rank	Custom CREF Social Choice Bmk	World Alloc	# of Funds
Standard Deviation	5.94	14%	6.02	7.40	414
Sharpe Ratio	1.16	1%	1.22	0.66	414
Alpha	-0.31	3%	0.00	-3.36	414
Beta	0.98	78%	1.00	1.09	414
R-Squared	99.04	1%	100.00	80.68	414
Up Mkt Capture	96.68	39%	100.00	91.07	414
Down Mkt Capture	100.42	12%	100.00	128.30	414
Information Ratio	-0.70	43%	NA	-0.79	414
TRAILING RETURNS					
Last Qtr.	0.79	21%	1.49	-0.30	491
YTD	0.08	18%	0.33	-1.26	488
1 Year	6.82	23%	7.32	5.39	475
3 Years	6.53	5%	6.61	4.19	445
5 Years	7.32	8%	7.77	5.07	414
10 Years	6.70	6%	6.67	4.67	253
CALENDAR RETURNS					
2017	14.27	52%	14.44	14.31	493
2016	7.40	27%	7.12	6.13	517
2015	-0.87	18%	0.20	-4.41	529
2014	6.83	5%	6.91	1.67	523
2013	16.68	26%	16.23	11.53	519



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## VANGUARD TARGET RETIREMENT

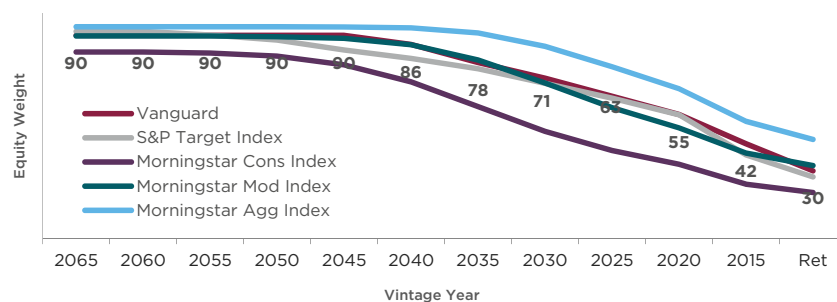
Period Ending 6.30.18 | Q2 18

## Investor Assumptions/Glidepath Methodology

Glidepath Management	• Through retirement (assumed at age 65) ending 7 years after retirement
Assumed Investor Savings Rate:	• Contributions start at 5% at age 25 and increase to 10% at age 65. Also includes a 50% employer match up to 3% of salary.
Assumed Investor Income Growth Rate	• 1.1% annual salary growth
Income Replacement	• The portfolios are designed to provide withdrawals in retirement based on multiples of an investor's age 65 salary.
Assumed Accumulated Savings at Retirement	• N/A
Life Expectancy	• Through age 95
Asset Allocation Flexibility	• Strict targets with narrow ranges.
Other Assumptions	• Glidepath was tested against 10,000 potential lifetime return outcomes

Vanguard uses a proprietary capital markets modeling tool to statistically analyze historical data, including interest rates, inflation, and other risk factors for global equities, fixed income, and commodity markets. This tool is used to generate forward-looking distributions of expected returns. Then, by combining these figures with their investor assumptions, Vanguard constructs target portfolios with asset allocations that seek to provide the highest probability of a successful outcome (not outliving retirement savings).

## Target Asset Allocation Glidepath per Vintage Year



## Investment Profile

% Open Architecture:	0%	Active/Passive:	Passive
Inception Date:	10-27-2003	% Active:	0%
Net Assets \$MM:	\$248,789	Manager Tenure:	5.72 years (longest)
Manager Name:	Team	Expense Range:	0.13% - 0.15%
Avg # of Holdings:	5	Investment Structure:	Mutual Fund

## Dedicated Asset Class Granularity/Diversification

Asset Class	Through Intl Index Fund
Emerging Market Equities	
International/Global Debt	Yes
Inflation-Protected Securities	Yes
High Yield Fixed Income	No
Real Estate	No
Commodities	No

The Vanguard Target Retirement funds allocate to five broad index funds that provide comprehensive exposure to U.S. and non-U.S. equity and bond markets. Using index funds allows Vanguard to provide investment diversification at a low cost while also producing returns in line with equity and fixed income markets. Through its five index funds, the strategies gain exposure to over 25 sub-asset classes, capturing over 90% of the world's investable market.

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## VANGUARD TARGET RETIREMENT

Period Ending 6.30.18 | Q2 18

## Material Changes to the Series

## 2006:

- Increased minimum equity allocation from 20% to 30%
- Added Emerging Markets Equity

## Rationale:

- Participant behavior showed lower savings rate
- Decreased costs within the EM space led to increased liquidity

## 2010:

- Collapsed three international equity index funds (Europe, Pacific, and Emerging Markets) with Vanguard Total International Stock Index

## Rationale:

- More cost-effective way to gain international exposure

## 2013:

- Replaced the broad TIPs fund with a short-term TIPs allocation
- Eliminated the Prime Money Market fund
- Added a 20% International Bond Index Allocation

## Rationale:

- Short-Term TIPs provide better inflation exposure with lower interest rate risk
- Deemed to be an unnecessary asset class
- Dedicated exposure to move more in line with the Global fixed income Market Cap; better FI diversification

## 2015:

- Increased international stock allocation from 30% to 40%
- Increased International bond allocation from 20% to 30%

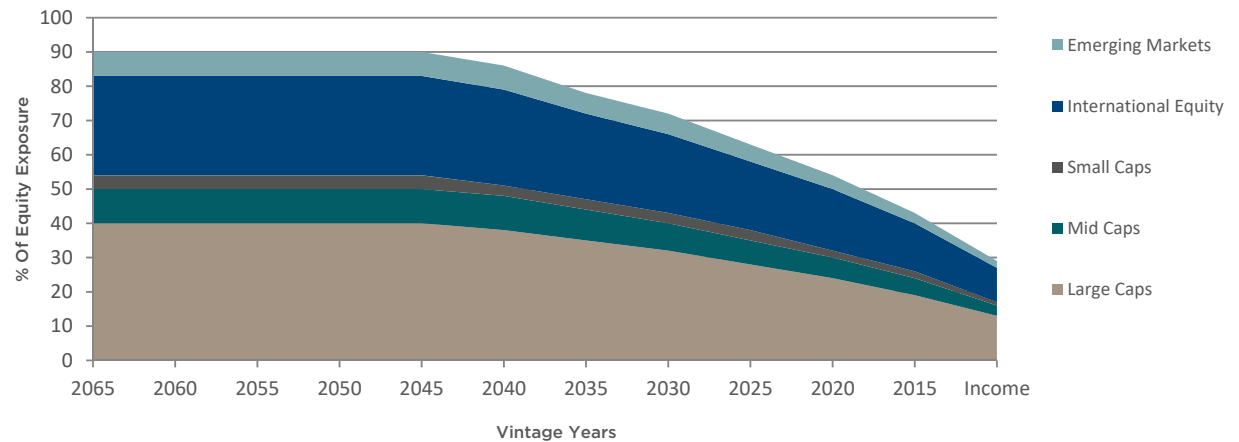
## Rationale:

- Move to be more in line with the Global Market Cap

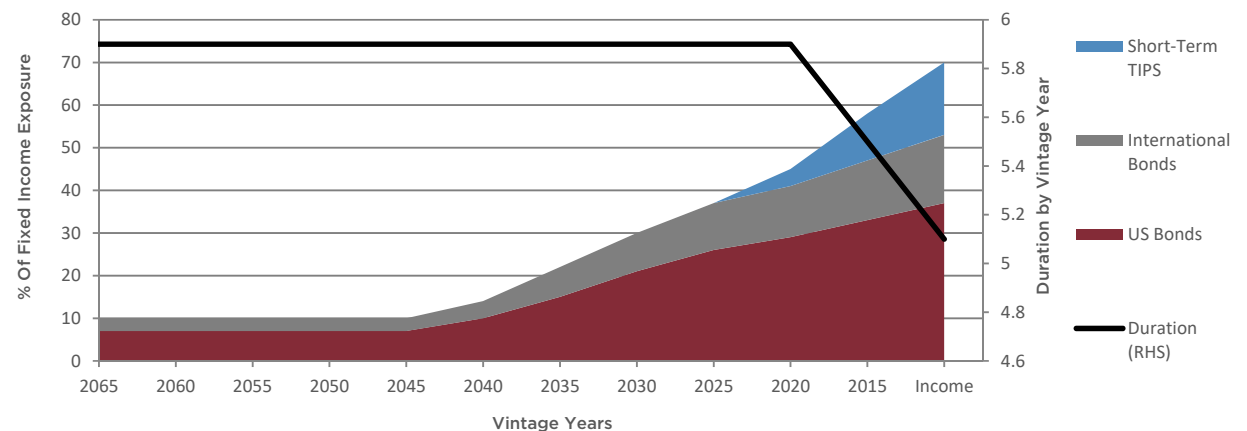
\*All information provided by the asset manager, as of 12/31/17. Asset allocations shown are static in nature and do not incorporate any tactical views implemented by the manager.

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## Equity Exposure



## Fixed Income Exposure



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## TARGET DATE ANALYSIS

Period Ending 6.30.18 | Q2 18

	3 Year				5 Year			
	Beta	Sharpe	Up Capture	Down Capture	Beta	Sharpe	Up Capture	Down Capture
Vanguard Target Retirement 2015 Inv	0.97	0.91	95.80	95.34	0.99	1.21	100.04	95.10
Morningstar Target Date 2015	0.97	0.83	93.83	100.23	0.96	1.04	92.42	99.64
S&P Target Date 2015 TR	1.00	0.93	100.00	100.00	1.00	1.15	100.00	100.00

	3 Year				5 Year			
	Beta	Sharpe	Up Capture	Down Capture	Beta	Sharpe	Up Capture	Down Capture
Vanguard Target Retirement 2025 Inv	1.03	0.89	102.62	103.63	1.03	1.15	104.40	101.01
Morningstar Target Date 2025	1.00	0.77	95.08	104.50	0.99	1.00	95.56	102.01
S&P Target Date 2025 TR	1.00	0.91	100.00	100.00	1.00	1.11	100.00	100.00

	3 Year				5 Year			
	Beta	Sharpe	Up Capture	Down Capture	Beta	Sharpe	Up Capture	Down Capture
Vanguard Target Retirement 2045 Inv	1.06	0.84	102.55	106.08	1.04	1.07	103.85	103.41
Morningstar Target Date 2045	1.05	0.77	98.96	107.80	1.03	0.98	98.81	104.17
S&P Target Date 2045 TR	1.00	0.91	100.00	100.00	1.00	1.08	100.00	100.00

\*Lowest cost share class shown

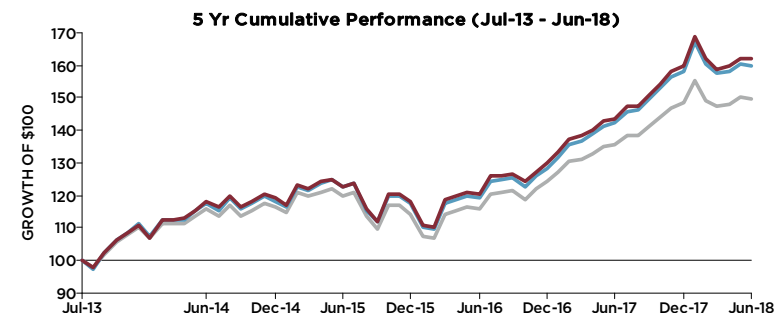
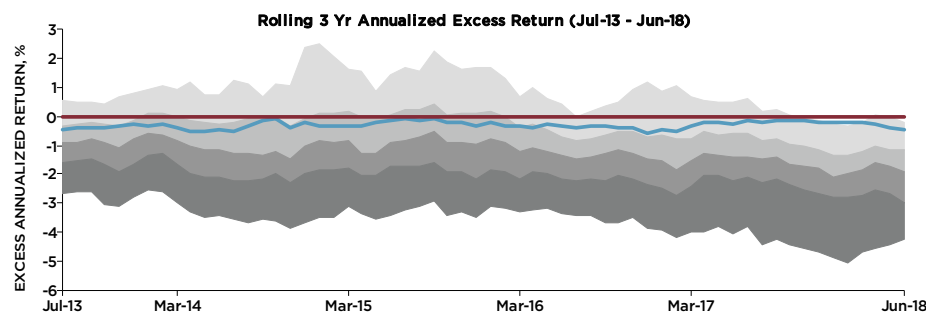
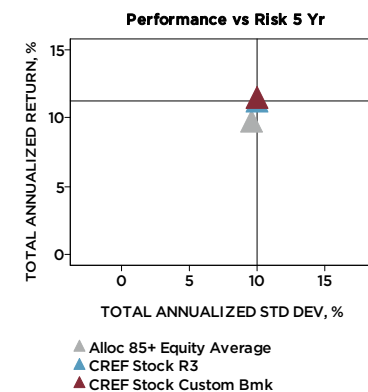
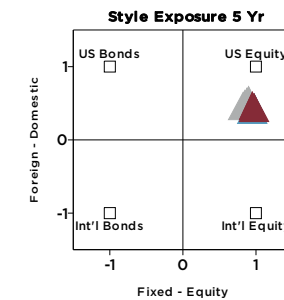
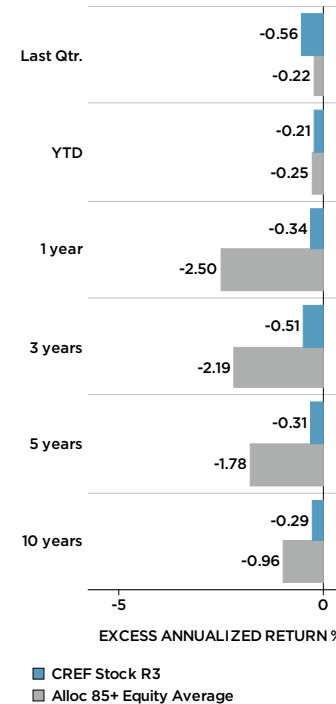
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## CREF STOCK R3

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	CREF Stock R3	Peer Group Rank	CREF Stock Custom Bmk	Alloc 85+ Equity	# of Funds
Standard Deviation	9.99	78%	9.93	9.63	189
Sharpe Ratio	1.05	17%	1.09	0.94	189
Alpha	-0.35	20%	0.00	-1.07	189
Beta	1.00	12%	1.00	0.93	189
R-Squared	99.56	1%	100.00	93.16	189
Up Mkt Capture	99.86	9%	100.00	89.73	189
Down Mkt Capture	102.73	81%	100.00	97.57	189
Information Ratio	-0.42	27%	NA	-0.82	189
TRAILING RETURNS					
Last Qtr.	1.37	45%	1.93	1.71	212
YTD	0.94	43%	1.15	0.89	208
1 Year	12.33	18%	12.67	10.17	206
3 Years	9.25	11%	9.77	7.58	203
5 Years	10.93	10%	11.24	9.46	189
10 Years	7.79	14%	8.08	7.11	152
CALENDAR RETURNS					
2017	23.45	6%	23.13	18.98	209
2016	9.17	26%	10.25	9.10	219
2015	-0.84	25%	-1.02	-2.47	221
2014	6.41	33%	7.41	5.64	214
2013	27.83	37%	28.07	27.64	194



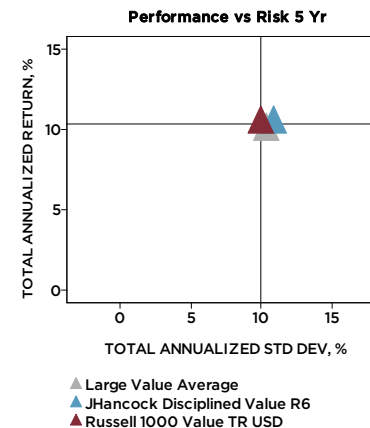
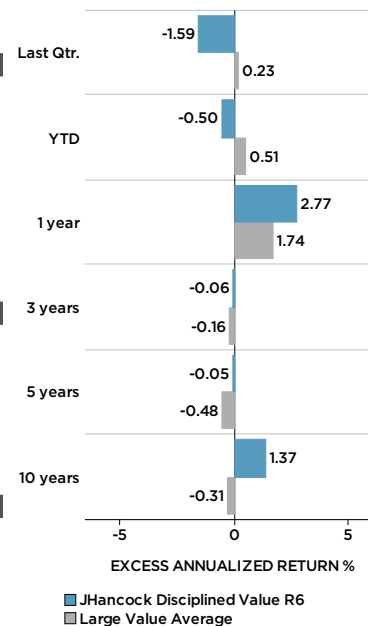
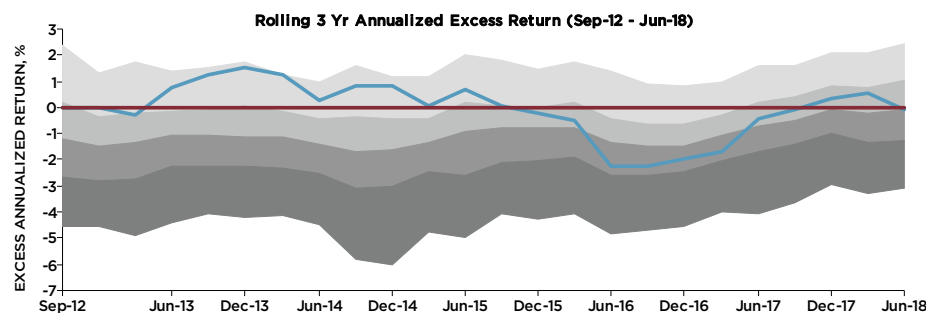
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# JHancock Disciplined Value R6

Period Ending 6.30.18 | Q2 18

	JHancock Disciplined Value R6	Peer Group Rank	Russell 1000 Value TR USD	Large Value	# of Funds
<b>KEY MEASURES / 5 YEAR</b>					
Standard Deviation	10.91	76%	9.97	10.29	1092
Sharpe Ratio	0.90	56%	1.00	0.93	1092
Alpha	-0.58	58%	0.00	-0.30	1092
Beta	1.05	26%	1.00	0.98	1092
R-Squared	92.65	54%	100.00	90.67	1092
Up Mkt Capture	100.31	30%	100.00	96.03	1092
Down Mkt Capture	101.06	61%	100.00	97.21	1092
Information Ratio	-0.02	39%	NA	-0.17	1092
<b>TRAILING RETURNS</b>					
Last Qtr.	-0.42	92%	1.18	1.41	1238
YTD	-2.19	75%	-1.69	-1.18	1237
1 Year	9.54	36%	6.77	8.51	1230
3 Years	8.20	50%	8.26	8.10	1166
5 Years	10.29	39%	10.34	9.86	1092
10 Years	9.86	9%	8.49	8.18	941
<b>CALENDAR RETURNS</b>					
2017	19.33	14%	13.66	15.86	1257
2016	14.07	53%	17.34	14.54	1320
2015	-4.81	68%	-3.83	-3.91	1330
2014	11.04	48%	13.45	10.56	1330
2013	35.97	14%	32.53	31.59	1308



## INVESTMENT PROFILE

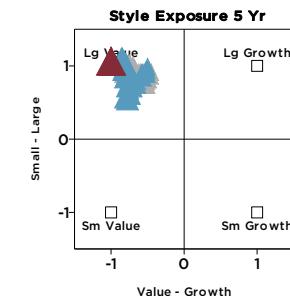
Ticker	JDVWX
CUSIP	47803U418
Net Assets \$MM	\$15,133.00
Manager Names	Team Managed
Manager Tenure	21.5 Years
Prospectus Exp Ratio	0.70%
Cat Median Exp Ratio	1.08%
Current 12b-1	0.00%
Annld Ret Since Incept	13.89%
Inception Date	09/01/2011
Phone Number	888-972-8696
Sub Advisor	Boston Partners Global Investors, Inc

## HOLDINGS OVERVIEW

Total Number of Holdings	84
% Assets in Top 10 Holdings	33.11%
Avg Mkt Cap \$MM	\$78,686.82
Turnover Ratio	45.00%

## TOP HOLDINGS

Bank of America Corporal	4.43%
Berkshire Hathaway Inc B	4.00%
JPMorgan Chase & Co	3.92%
Johnson & Johnson	3.74%
Citigroup Inc	3.64%



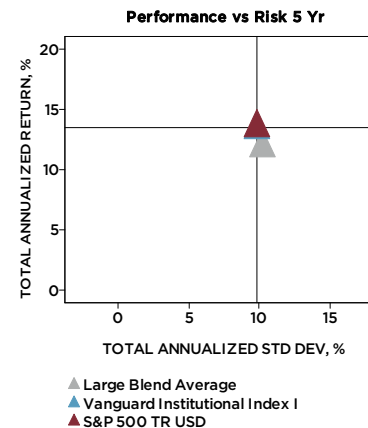
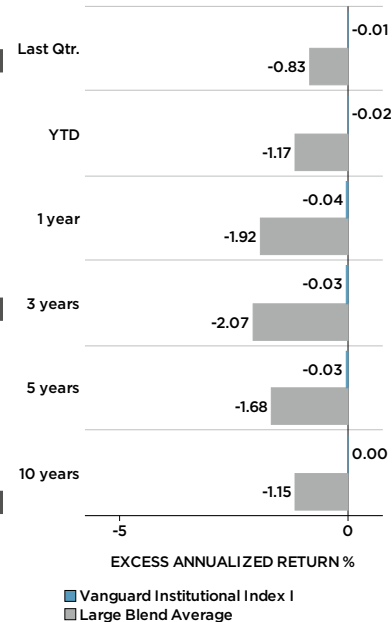
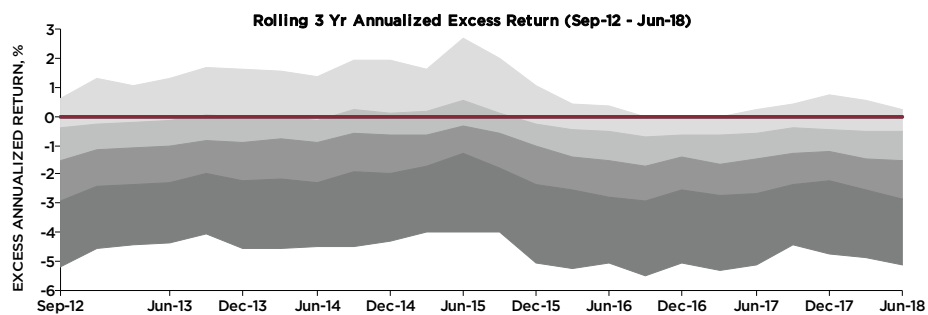
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## VANGUARD INSTITUTIONAL INDEX I

Period Ending 6.30.18 | Q2 18

	Vanguard Institutional Index I	Peer Group Rank	S&P 500 TR USD	Large Blend	# of Funds
<b>KEY MEASURES / 5 YEAR</b>					
Standard Deviation	9.81	31%	9.81	10.18	1149
Sharpe Ratio	1.32	6%	1.33	1.12	1149
Alpha	-0.03	11%	0.00	-1.63	1149
Beta	1.00	53%	1.00	1.00	1149
R-Squared	100.00	1%	100.00	92.55	1149
Up Mkt Capture	99.88	22%	100.00	94.32	1149
Down Mkt Capture	100.08	22%	100.00	105.09	1149
Information Ratio	-2.62	92%	NA	-1.29	1149
<b>TRAILING RETURNS</b>					
Last Qtr.	3.42	24%	3.43	2.61	1328
YTD	2.63	24%	2.65	1.48	1320
1 Year	14.33	27%	14.37	12.45	1298
3 Years	11.90	8%	11.93	9.86	1217
5 Years	13.39	10%	13.42	11.74	1149
10 Years	10.17	15%	10.17	9.02	1023
<b>CALENDAR RETURNS</b>					
2017	21.79	29%	21.83	20.38	1323
2016	11.93	27%	11.96	10.48	1394
2015	1.37	20%	1.38	-0.80	1455
2014	13.65	17%	13.69	11.28	1488
2013	32.35	43%	32.39	31.93	1492



## INVESTMENT PROFILE

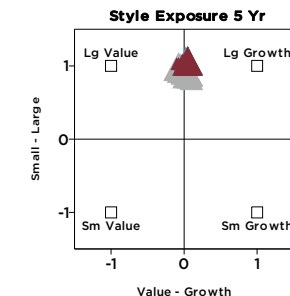
Ticker	VINIX
CUSIP	922040100
Net Assets \$MM	\$223,489.00
Manager Names	Team Managed
Manager Tenure	17.5 Years
Prospectus Exp Ratio	0.04%
Cat Median Exp Ratio	1.10%
Current 12b-1	N/A
Annld Ret Since Incept	9.85%
Inception Date	07/31/1990
Phone Number	888-809-8102
Sub Advisor	N/A

## HOLDINGS OVERVIEW

Total Number of Holdings	515
% Assets in Top 10 Holdings	21.06%
Avg Mkt Cap \$MM	\$99,633.09
Turnover Ratio	5.00%

## TOP HOLDINGS

Apple Inc	4.10%
Microsoft Corp	3.29%
Amazon.com Inc	2.83%
Facebook Inc A	1.99%
JPMorgan Chase & Co	1.59%

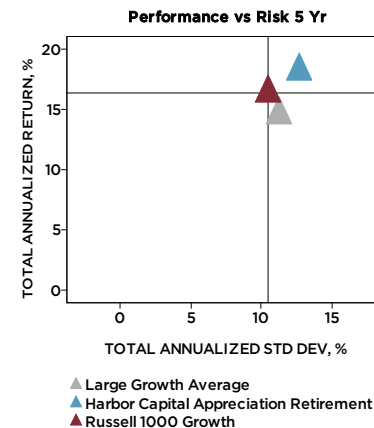
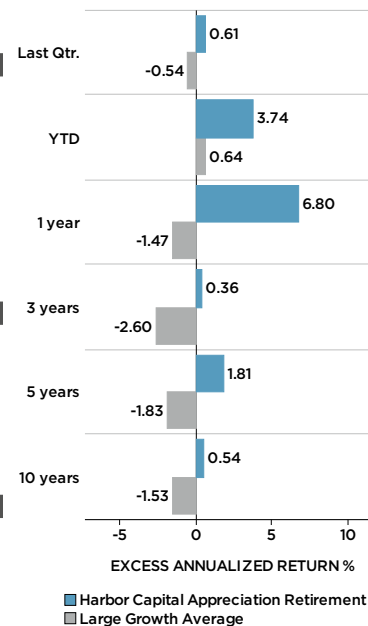
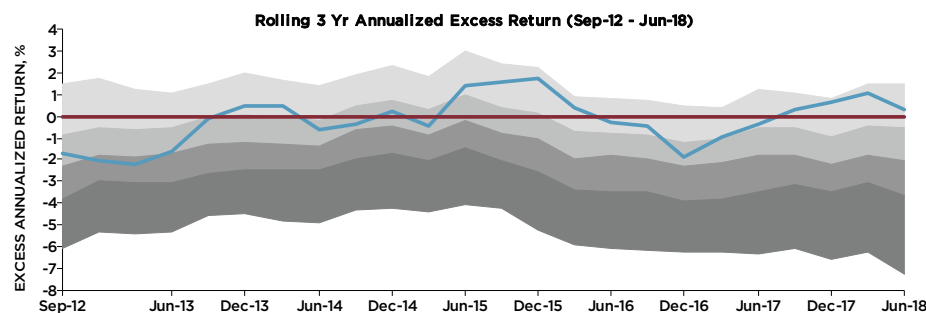


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## HARBOR CAPITAL APPRECIATION RETIREMENT

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR					
Standard Deviation	12.67	91%	10.47	11.26	1360
Sharpe Ratio	1.40	24%	1.52	1.26	1360
Alpha	-0.30	22%	0.00	-1.90	1360
Beta	1.13	8%	1.00	1.00	1360
R-Squared	87.70	64%	100.00	88.03	1360
Up Mkt Capture	114.94	4%	100.00	95.30	1360
Down Mkt Capture	117.77	83%	100.00	107.14	1360
Information Ratio	0.34	6%	NA	-0.47	1360
TRAILING RETURNS					
Last Qtr.	6.36	26%	5.76	5.21	1465
YTD	10.99	20%	7.25	7.89	1465
1 Year	29.31	6%	22.51	21.04	1456
3 Years	15.34	13%	14.98	12.38	1395
5 Years	18.17	6%	16.36	14.53	1360
10 Years	12.37	12%	11.83	10.29	1179
CALENDAR RETURNS					
2017	36.68	5%	30.21	28.06	1458
2016	-1.04	85%	7.08	3.15	1571
2015	10.99	4%	5.67	3.73	1663
2014	9.93	55%	13.05	10.07	1713
2013	37.66	20%	33.48	34.26	1776



## INVESTMENT PROFILE

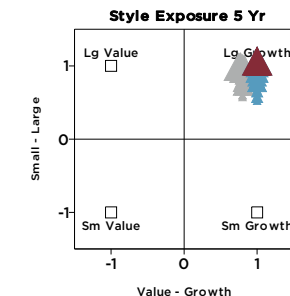
Ticker	HNACX
CUSIP	411512528
Net Assets \$MM	\$31,393.00
Manager Names	Team Managed
Manager Tenure	28.2 Years
Prospectus Exp Ratio	0.58%
Cat Median Exp Ratio	1.16%
Current 12b-1	N/A
Annld Ret Since Incept	23.54%
Inception Date	03/01/2016
Phone Number	800-422-1050
Sub Advisor	Jennison Associates LLC

## HOLDINGS OVERVIEW

Total Number of Holdings	53
% Assets in Top 10 Holdings	37.90%
Avg Mkt Cap \$MM	\$147,719.93
Turnover Ratio	52.00%

## TOP HOLDINGS

Amazon.com Inc	5.64%
Apple Inc	4.27%
Microsoft Corp	4.02%
Alibaba Group Holding Lt	4.00%
Netflix Inc	3.98%

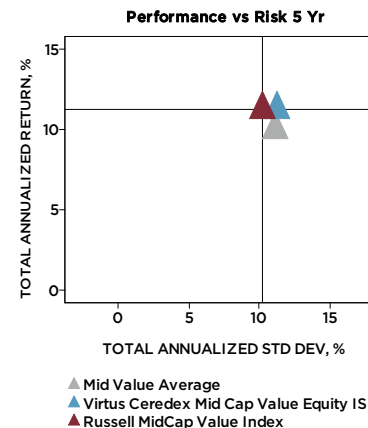
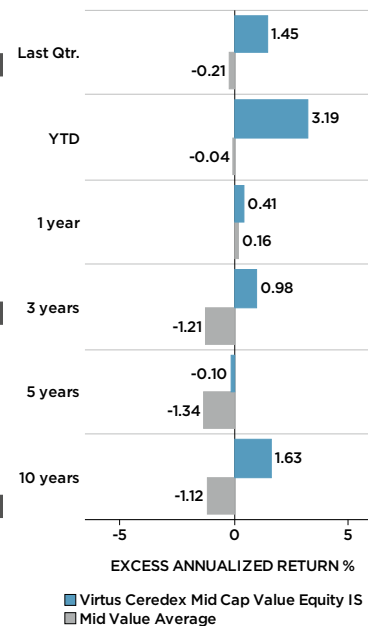
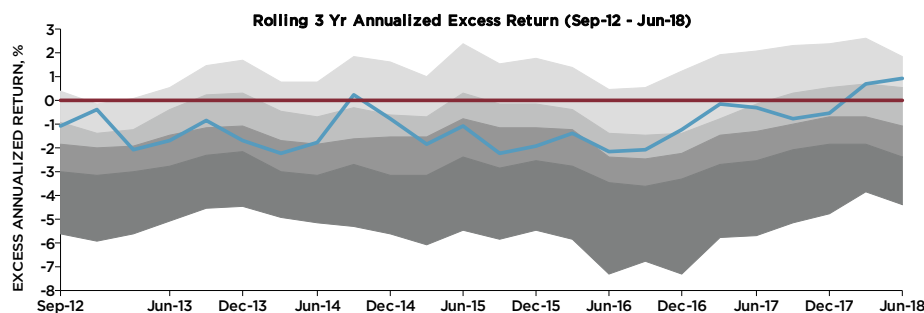


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## VIRTUS CEREDEX MID CAP VALUE EQUITY IS

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	Virtus Ceredex Mid Cap Value Equity IS	Peer Group Rank	Russell MidCap Value Index	Mid Value	# of Funds
Standard Deviation	11.19	61%	10.22	11.14	346
Sharpe Ratio	0.96	24%	1.06	0.87	346
Alpha	-0.63	28%	0.00	-1.61	346
Beta	1.05	37%	1.00	1.03	346
R-Squared	91.85	49%	100.00	88.95	346
Up Mkt Capture	101.91	26%	100.00	96.48	346
Down Mkt Capture	104.50	49%	100.00	105.96	346
Information Ratio	-0.03	20%	NA	-0.33	346
TRAILING RETURNS					
Last Qtr.	3.86	14%	2.41	2.20	407
YTD	3.04	6%	-0.16	-0.20	407
1 Year	8.01	39%	7.60	7.76	395
3 Years	9.78	18%	8.80	7.58	380
5 Years	11.17	20%	11.27	9.93	346
10 Years	11.69	5%	10.06	8.94	303
CALENDAR RETURNS					
2017	11.98	61%	13.34	13.12	406
2016	20.53	30%	20.00	17.84	415
2015	-5.63	57%	-4.78	-5.56	429
2014	11.05	38%	14.75	9.57	414
2013	31.21	82%	33.46	34.91	413



## INVESTMENT PROFILE

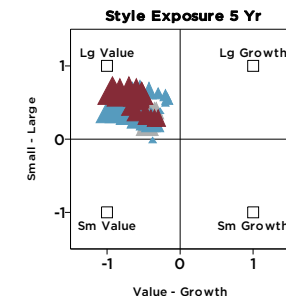
Ticker	SMVZX
CUSIP	92837F441
Net Assets \$MM	\$2,894.00
Manager Names	Team Managed
Manager Tenure	16.6 Years
Prospectus Exp Ratio	0.80%
Cat Median Exp Ratio	1.17%
Current 12b-1	N/A
Annld Ret Since Incept	8.80%
Inception Date	08/01/2014
Phone Number	888-784-3863
Sub Advisor	Ceredex Value Advisors LLC

## HOLDINGS OVERVIEW

Total Number of Holdings	58
% Assets in Top 10 Holdings	28.17%
Avg Mkt Cap \$MM	\$12,515.53
Turnover Ratio	82.00%

## TOP HOLDINGS

Humana Inc	4.05%
Martin Marietta Materials I	3.45%
Zimmer Biomet Holdings I	3.18%
First Republic Bank	2.91%
Pinnacle Financial Partner	2.73%

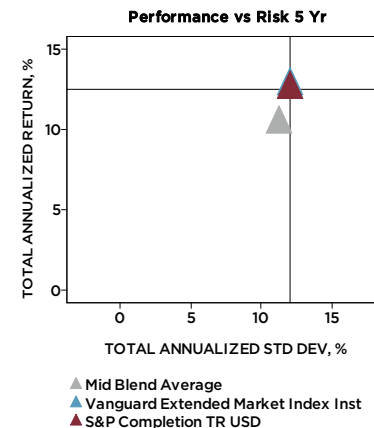
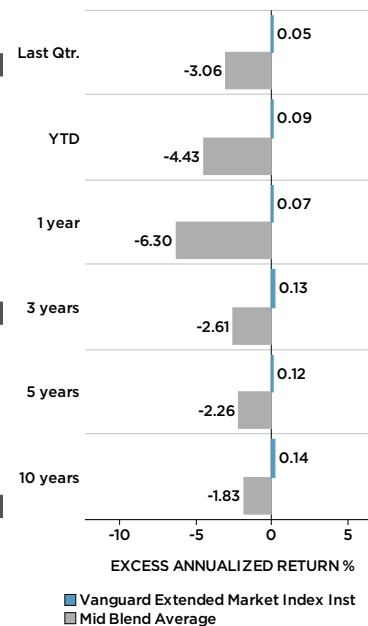
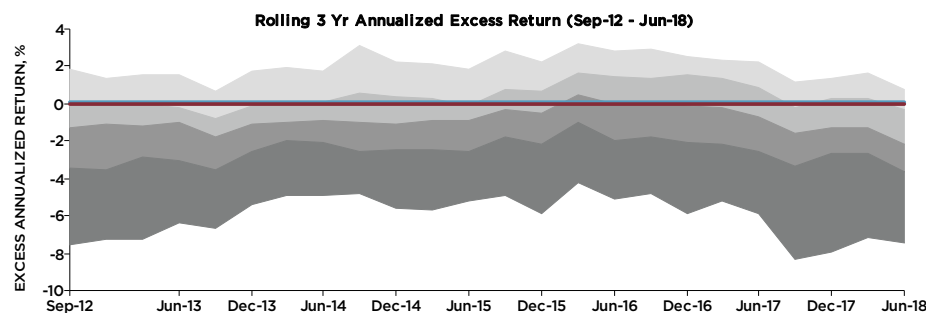


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## VANGUARD EXTENDED MARKET INDEX INST

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	Vanguard Extended Market Index Inst	Peer Group Rank	S&P Completion TR USD	Mid Blend	# of Funds
Standard Deviation	12.07	85%	12.05	11.19	371
Sharpe Ratio	1.01	39%	1.00	0.89	371
Alpha	0.10	47%	0.00	-0.49	371
Beta	1.00	3%	1.00	0.85	371
R-Squared	100.00	1%	100.00	85.11	371
Up Mkt Capture	100.45	3%	100.00	83.28	371
Down Mkt Capture	99.87	84%	100.00	87.28	371
Information Ratio	1.42	1%	NA	-0.39	371
TRAILING RETURNS					
Last Qtr.	5.99	7%	5.94	2.87	442
YTD	6.15	8%	6.07	1.63	441
1 Year	16.79	7%	16.72	10.42	439
3 Years	10.36	16%	10.23	7.61	392
5 Years	12.65	9%	12.53	10.27	371
10 Years	10.80	9%	10.66	8.83	318
CALENDAR RETURNS					
2017	18.12	25%	18.11	15.54	447
2016	16.15	39%	15.95	14.09	435
2015	-3.24	54%	-3.35	-4.31	451
2014	7.56	63%	7.50	8.41	448
2013	38.42	18%	38.24	34.39	450



## INVESTMENT PROFILE

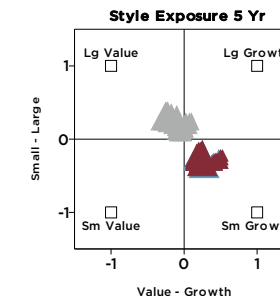
Ticker	VIEIX
CUSIP	922908884
Net Assets \$MM	\$66,808.00
Manager Names	Team Managed
Manager Tenure	20.5 Years
Prospectus Exp Ratio	0.06%
Cat Median Exp Ratio	1.15%
Current 12b-1	N/A
Annlzd Ret Since Incept	9.00%
Inception Date	07/07/1997
Phone Number	888-809-8102
Sub Advisor	N/A

## HOLDINGS OVERVIEW

Total Number of Holdings	3261
% Assets in Top 10 Holdings	4.50%
Avg Mkt Cap \$MM	\$4,279.96
Turnover Ratio	11.00%

## TOP HOLDINGS

Tesla Inc	0.73%
ServiceNow Inc	0.59%
Las Vegas Sands Corp	0.56%
Worldpay Inc Class A	0.45%
Twitter Inc	0.43%

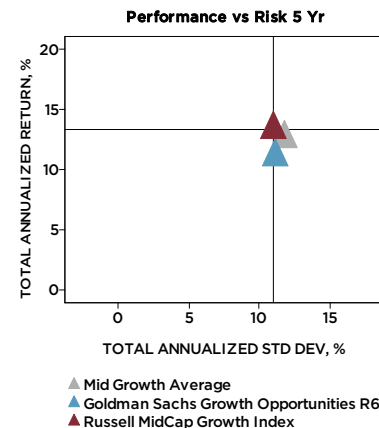
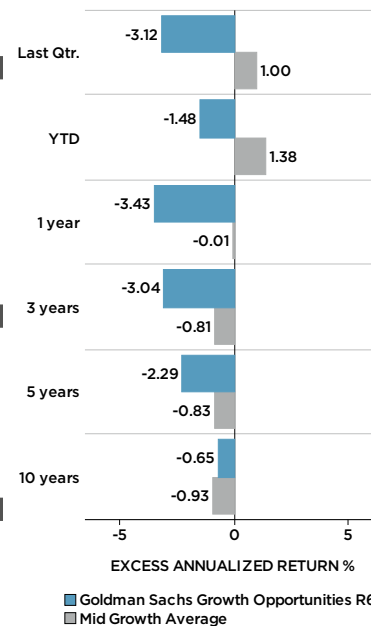
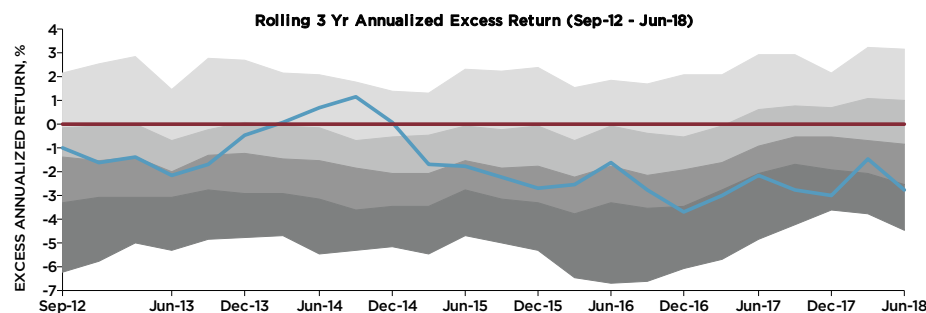


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## GOLDMAN SACHS GROWTH OPPORTUNITIES R6

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	Goldman Sachs Growth Opportunities R6	Peer Group Rank	Russell MidCap Growth Index	Mid Growth	# of Funds
Standard Deviation	11.07	35%	10.93	11.75	559
Sharpe Ratio	0.96	69%	1.18	1.04	559
Alpha	-1.95	73%	0.00	-0.77	559
Beta	0.97	60%	1.00	1.00	559
R-Squared	92.48	30%	100.00	86.77	559
Up Mkt Capture	89.88	84%	100.00	97.90	559
Down Mkt Capture	100.31	43%	100.00	103.21	559
Information Ratio	-0.67	83%	NA	-0.25	559
TRAILING RETURNS					
Last Qtr.	0.04	99%	3.16	4.16	605
YTD	3.92	75%	5.40	6.78	605
1 Year	15.09	68%	18.52	18.51	600
3 Years	7.69	79%	10.73	9.91	579
5 Years	11.08	81%	13.37	12.54	559
10 Years	9.81	45%	10.45	9.53	501
CALENDAR RETURNS					
2017	27.24	28%	25.27	24.92	618
2016	1.49	82%	7.33	5.98	655
2015	-5.24	86%	-0.20	-0.73	676
2014	11.44	14%	11.90	7.22	697
2013	32.38	67%	35.74	35.05	687



## INVESTMENT PROFILE

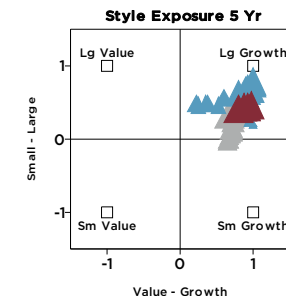
Ticker	GGOUX
CUSIP	38148U601
Net Assets \$MM	\$2,217.00
Manager Names	Team Managed
Manager Tenure	19.0 Years
Prospectus Exp Ratio	0.94%
Cat Median Exp Ratio	1.26%
Current 12b-1	N/A
Annlzd Ret Since Incept	7.62%
Inception Date	07/31/2015
Phone Number	800-526-7384
Sub Advisor	N/A

## HOLDINGS OVERVIEW

Total Number of Holdings	83
% Assets in Top 10 Holdings	23.48%
Avg Mkt Cap \$MM	\$14,707.95
Turnover Ratio	61.00%

## TOP HOLDINGS

Roper Technologies Inc	2.98%
Amphenol Corp Class A	2.80%
Zoetis Inc	2.58%
Global Payments Inc	2.46%
The Middleby Corp	2.21%



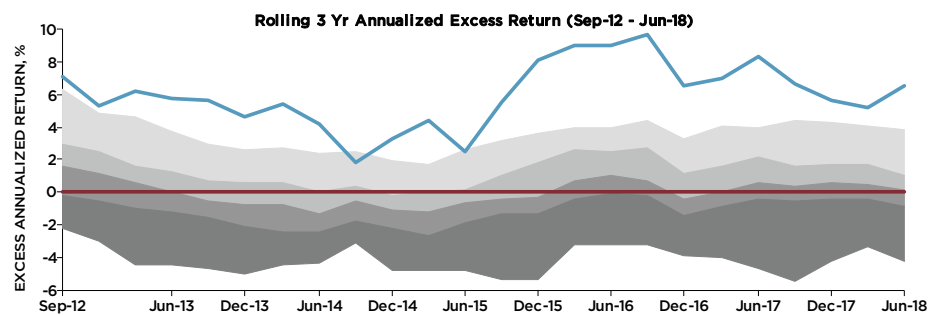
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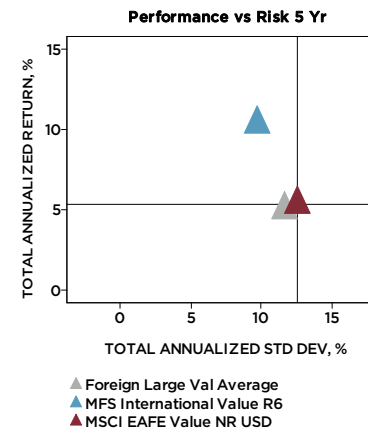
## MFS INTERNATIONAL VALUE R6

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	MFS International Value R6	Peer Group Rank	MSCI EAFE Value NR USD	Foreign Large Val	# of Funds
Standard Deviation	9.64	5%	12.53	11.57	260
Sharpe Ratio	1.02	1%	0.40	0.40	260
Alpha	6.82	1%	0.00	0.27	260
Beta	0.61	99%	1.00	0.87	260
R-Squared	63.83	98%	100.00	88.18	260
Up Mkt Capture	77.23	83%	100.00	86.42	260
Down Mkt Capture	42.51	1%	100.00	86.45	260
Information Ratio	0.61	7%	NA	-0.05	260
TRAILING RETURNS					
Last Qtr.	0.42	3%	-2.64	-3.37	296
YTD	-0.28	3%	-4.61	-4.79	296
1 Year	9.08	5%	4.25	3.60	296
3 Years	10.09	1%	3.30	3.34	290
5 Years	10.28	1%	5.37	4.98	260
10 Years	7.65	1%	2.17	2.03	210
CALENDAR RETURNS					
2017	27.25	12%	21.44	22.72	304
2016	4.31	29%	5.02	3.20	329
2015	6.85	1%	-5.68	-3.30	352
2014	1.61	1%	-5.39	-6.25	345
2013	27.80	2%	22.95	20.69	338



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## INVESTMENT PROFILE

Ticker	MINJX
CUSIP	552746349
Net Assets \$MM	\$29,315.00
Manager Names	Team Managed
Manager Tenure	9.6 Years
Prospectus Exp Ratio	0.66%
Cat Median Exp Ratio	1.20%
Current 12b-1	N/A
Annld Ret Since Incept	7.05%
Inception Date	05/01/2006
Phone Number	800-225-2606
Sub Advisor	N/A

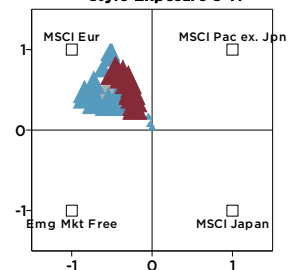
## HOLDINGS OVERVIEW

Total Number of Holdings	110
% Assets in Top 10 Holdings	24.62%
Avg Mkt Cap \$MM	\$24,866.90
Turnover Ratio	7.00%

## TOP HOLDINGS

Nestle SA	3.68%
Givaudan SA	2.64%
Henkel AG & Co KGaA ParI	2.62%
Pernod Ricard SA	2.46%
Amadeus IT Group SA A	2.34%

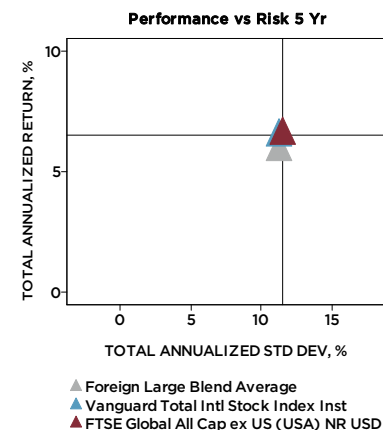
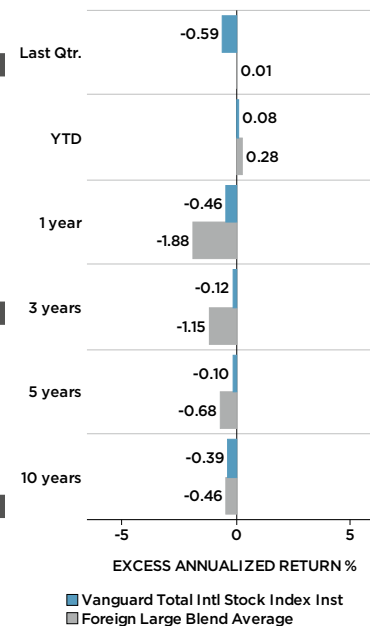
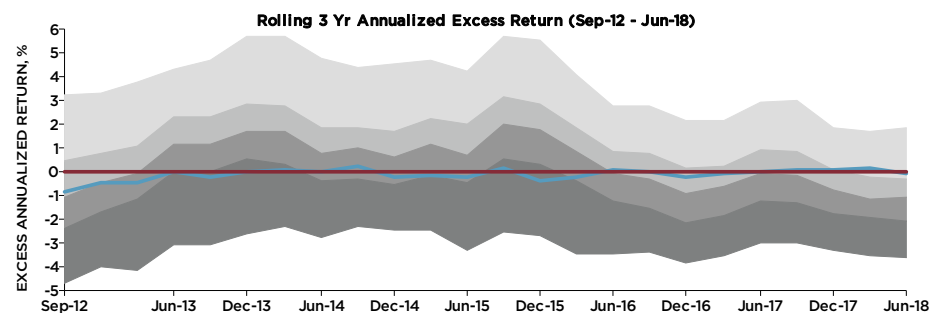
## Style Exposure 5 Yr



## VANGUARD TOTAL INTL STOCK INDEX INST

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	Vanguard Total Intl Stock Index Inst	Peer Group Rank	FTSE Global All Cap ex US (USA) NR USD	Foreign Large Blend	# of Funds
Standard Deviation	11.31	59%	11.50	11.31	636
Sharpe Ratio	0.53	34%	0.53	0.49	636
Alpha	0.06	42%	0.00	-0.24	636
Beta	0.97	23%	1.00	0.93	636
R-Squared	98.11	1%	100.00	89.26	636
Up Mkt Capture	97.44	17%	100.00	91.85	636
Down Mkt Capture	97.39	65%	100.00	94.05	636
Information Ratio	-0.06	37%	NA	-0.18	636
TRAILING RETURNS					
Last Qtr.	-3.17	66%	-2.58	-2.57	767
YTD	-3.61	60%	-3.69	-3.41	758
1 Year	7.12	25%	7.58	5.70	750
3 Years	5.35	21%	5.47	4.32	676
5 Years	6.44	34%	6.54	5.86	636
10 Years	2.75	44%	3.14	2.68	522
CALENDAR RETURNS					
2017	27.55	24%	27.41	25.29	762
2016	4.70	12%	4.72	0.96	782
2015	-4.24	81%	-4.29	-1.50	761
2014	-4.15	30%	-3.39	-5.01	772
2013	15.15	83%	15.59	19.60	794



## INVESTMENT PROFILE

Ticker	VTSNX
CUSIP	921909784
Net Assets \$MM	\$343,070.00
Manager Names	Team Managed
Manager Tenure	9.9 Years
Prospectus Exp Ratio	0.09%
Cat Median Exp Ratio	1.15%
Current 12b-1	N/A
Annld Ret Since Incept	5.25%
Inception Date	11/29/2010
Phone Number	800-662-7447
Sub Advisor	N/A

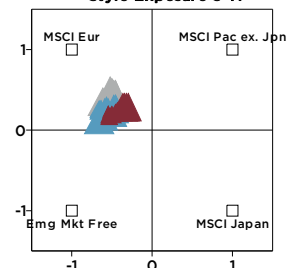
## HOLDINGS OVERVIEW

Total Number of Holdings	6258
% Assets in Top 10 Holdings	7.45%
Avg Mkt Cap \$MM	\$23,026.07
Turnover Ratio	3.00%

## TOP HOLDINGS

Tencent Holdings Ltd	1.11%
Nestle SA	0.92%
Samsung Electronics Co Ltd	0.87%
HSBC Holdings PLC	0.75%
Taiwan Semiconductor Mar	0.69%

## Style Exposure 5 Yr

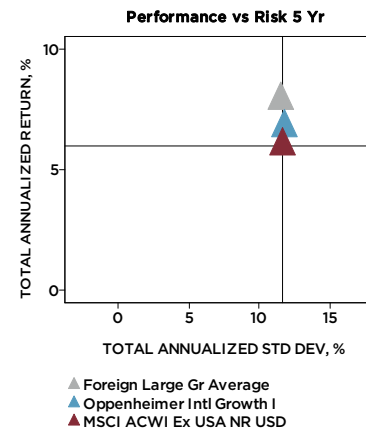
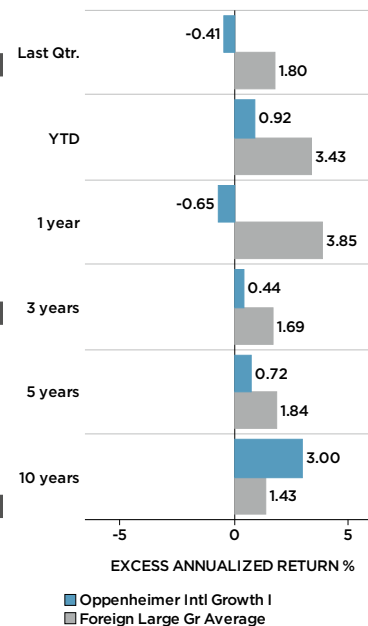
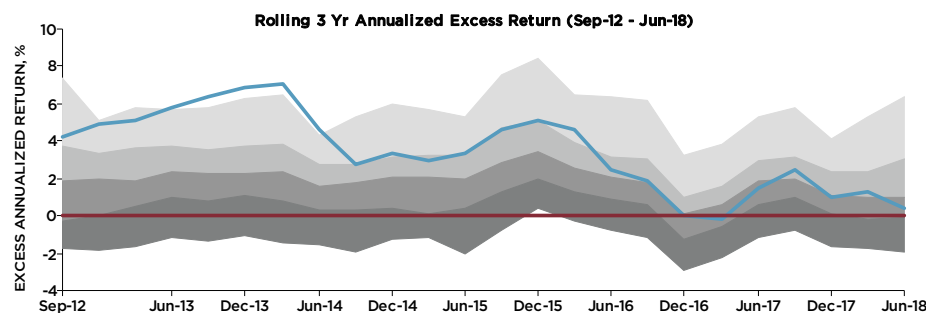


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# OPPENHEIMER INTL GROWTH I

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	Oppenheimer Intl Growth I	Peer Group Rank	MSCI ACWI Ex USA NR USD	Foreign Large Gr	# of Funds
Standard Deviation	11.76	70%	11.65	11.45	370
Sharpe Ratio	0.54	77%	0.48	0.65	370
Alpha	1.13	75%	0.00	2.43	370
Beta	0.93	30%	1.00	0.89	370
R-Squared	84.01	47%	100.00	82.75	370
Up Mkt Capture	94.96	42%	100.00	94.78	370
Down Mkt Capture	88.89	78%	100.00	81.06	370
Information Ratio	0.14	71%	NA	0.33	370
TRAILING RETURNS					
Last Qtr.	-3.02	88%	-2.61	-0.82	432
YTD	-2.84	83%	-3.77	-0.34	432
1 Year	6.63	85%	7.28	11.13	430
3 Years	5.51	64%	5.07	6.75	384
5 Years	6.71	71%	5.99	7.84	370
10 Years	5.55	12%	2.54	3.97	315
CALENDAR RETURNS					
2017	27.15	81%	27.19	31.67	436
2016	-1.88	51%	4.50	-2.09	436
2015	3.63	19%	-5.66	0.94	436
2014	-6.80	84%	-3.87	-3.79	431
2013	25.71	14%	15.29	19.91	428



## INVESTMENT PROFILE

Ticker	OIGIX
CUSIP	68380L605
Net Assets \$MM	\$25,957.00
Manager Names	Team Managed
Manager Tenure	22.3 Years
Prospectus Exp Ratio	0.69%
Cat Median Exp Ratio	1.21%
Current 12b-1	N/A
Annlzd Ret Since Incept	7.79%
Inception Date	03/29/2012
Phone Number	800-225-5677
Sub Advisor	OppenheimerFunds Inc

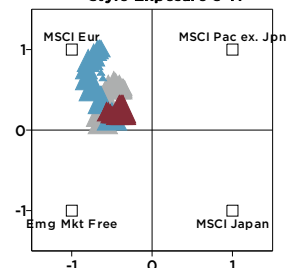
## HOLDINGS OVERVIEW

Total Number of Holdings	96
% Assets in Top 10 Holdings	18.35%
Avg Mkt Cap \$MM	\$21,386.29
Turnover Ratio	22.00%

## TOP HOLDINGS

Infineon Technologies AG	2.50%
Temenos AG	2.25%
SAP SE	2.04%
Nippon Telegraph & Telep	1.84%
Keyence Corp	1.70%

## Style Exposure 5 Yr

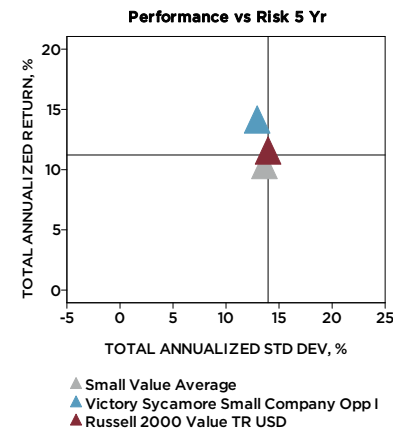
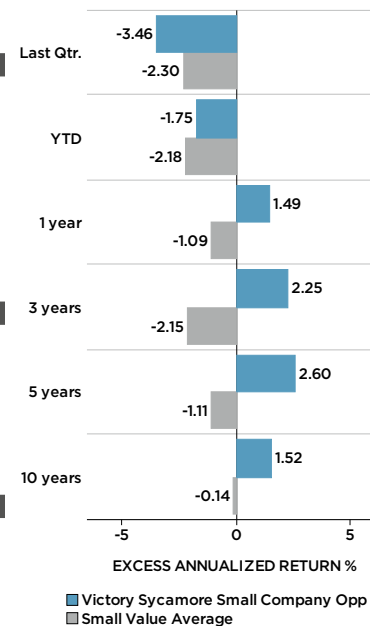
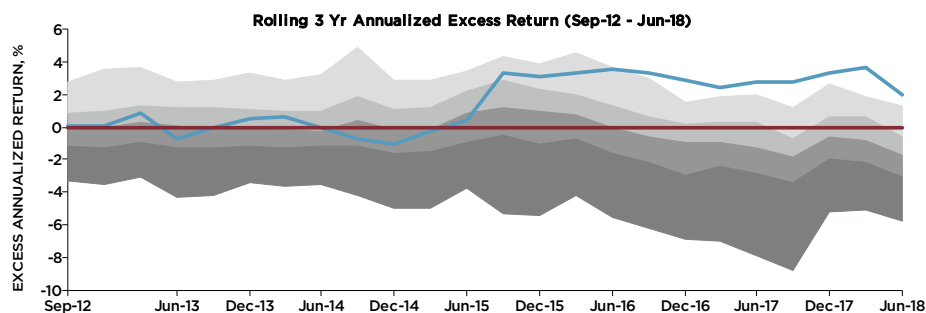


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## VICTORY SYCAMORE SMALL COMPANY OPP I

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	Victory Sycamore Small Company Opp I	Peer Group Rank	Russell 2000 Value TR USD	Small Value	# of Funds
Standard Deviation	12.94	31%	14.01	13.58	356
Sharpe Ratio	1.03	4%	0.77	0.73	356
Alpha	3.68	3%	0.00	-0.21	356
Beta	0.90	60%	1.00	0.92	356
R-Squared	94.79	32%	100.00	90.15	356
Up Mkt Capture	99.12	15%	100.00	89.20	356
Down Mkt Capture	83.53	25%	100.00	90.56	356
Information Ratio	0.72	2%	NA	-0.19	356
TRAILING RETURNS					
Last Qtr.	4.85	69%	8.30	6.00	407
YTD	3.69	37%	5.44	3.27	404
1 Year	14.59	19%	13.10	12.01	398
3 Years	13.47	2%	11.22	9.07	376
5 Years	13.78	1%	11.18	10.07	356
10 Years	11.40	12%	9.88	9.74	307
CALENDAR RETURNS					
2017	11.88	27%	7.84	9.27	406
2016	30.04	18%	31.74	25.69	414
2015	-0.39	4%	-7.47	-6.74	422
2014	6.80	14%	4.22	3.50	420
2013	33.39	71%	34.52	35.65	425



## INVESTMENT PROFILE

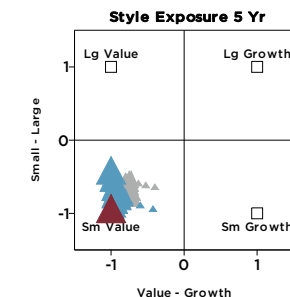
Ticker	VSOIX
CUSIP	92646A815
Net Assets \$MM	\$5,363.00
Manager Names	Team Managed
Manager Tenure	20.1 Years
Prospectus Exp Ratio	0.90%
Cat Median Exp Ratio	1.29%
Current 12b-1	0.00%
Annld Ret Since Incept	9.74%
Inception Date	08/31/2007
Phone Number	800-539-3863
Sub Advisor	N/A

## HOLDINGS OVERVIEW

Total Number of Holdings	100
% Assets in Top 10 Holdings	15.60%
Avg Mkt Cap \$MM	\$2,560.20
Turnover Ratio	36.00%

## TOP HOLDINGS

Validus Holdings Ltd	1.90%
EMCOR Group Inc	1.68%
The Hanover Insurance Gr	1.65%
UniFirst Corp	1.59%
Wolverine World Wide Inc	1.57%

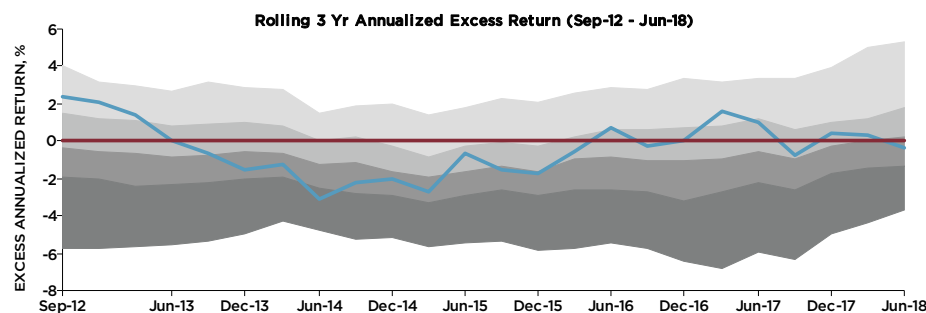


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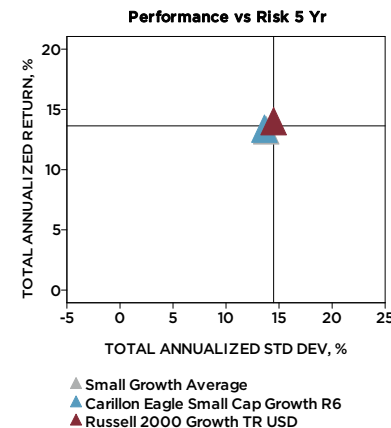
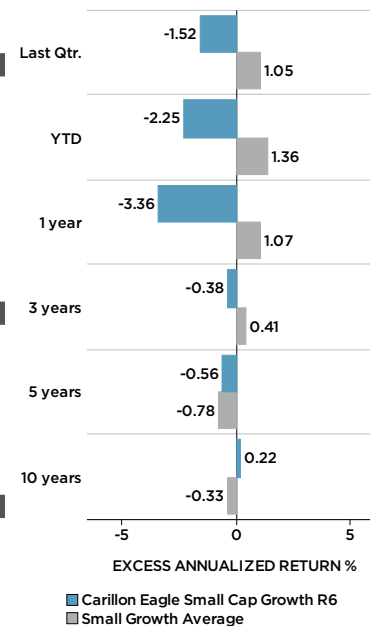
## CARILLON EAGLE SMALL CAP GROWTH R6

Period Ending 6.30.18 | Q2 18

	Carillon Eagle Small Cap Growth R6	Peer Group Rank	Russell 2000 Growth TR USD	Small Growth	# of Funds
<b>KEY MEASURES / 5 YEAR</b>					
Standard Deviation	13.64	50%	14.47	13.78	652
Sharpe Ratio	0.93	48%	0.91	0.91	652
Alpha	0.64	53%	0.00	0.64	652
Beta	0.91	47%	1.00	0.89	652
R-Squared	93.06	27%	100.00	88.36	652
Up Mkt Capture	93.06	40%	100.00	90.19	652
Down Mkt Capture	92.34	58%	100.00	88.83	652
Information Ratio	-0.13	49%	NA	-0.14	652
<b>TRAILING RETURNS</b>					
Last Qtr.	5.71	83%	7.23	8.28	726
YTD	7.45	76%	9.70	11.06	725
1 Year	18.50	69%	21.86	22.93	717
3 Years	10.22	59%	10.60	11.01	698
5 Years	13.09	45%	13.65	12.87	652
10 Years	11.46	38%	11.24	10.91	584
<b>CALENDAR RETURNS</b>					
2017	23.40	43%	22.17	22.09	738
2016	10.45	53%	11.32	11.43	763
2015	-0.39	28%	-1.38	-2.37	781
2014	5.59	26%	5.60	2.71	791
2013	34.70	86%	43.30	41.24	791



Performance Disclosure: For use with CAPTRUST clients only. Mutual fund investing involves risk. Please visit [captrustadvisors.com/risk-disclosures/](http://captrustadvisors.com/risk-disclosures/) for a detailed description of the risks associated with investing by asset class. Statistics and data have been derived from Morningstar and are not guaranteed to be accurate or complete. Performance data included here represents past performance and does not guarantee future results. This is not a solicitation to invest. Each mutual fund has a prospectus with a complete description of the risks associated with investing in the specific fund. To request a prospectus on this fund, please call CAPTRUST at (800)216-0645.



## INVESTMENT PROFILE

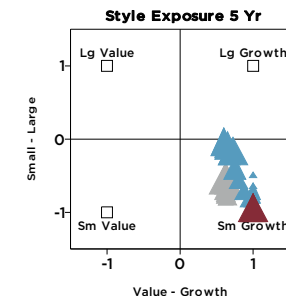
Ticker	HSRUX
CUSIP	14214L452
Net Assets \$MM	\$5,455.00
Manager Names	Team Managed
Manager Tenure	22.5 Years
Prospectus Exp Ratio	0.66%
Cat Median Exp Ratio	1.32%
Current 12b-1	0.00%
Annld Ret Since Incept	13.65%
Inception Date	08/15/2011
Phone Number	800-421-4184
Sub Advisor	Eagle Asset Management, Inc.

## HOLDINGS OVERVIEW

Total Number of Holdings	109
% Assets in Top 10 Holdings	18.48%
Avg Mkt Cap \$MM	\$3,897.77
Turnover Ratio	40.00%

## TOP HOLDINGS

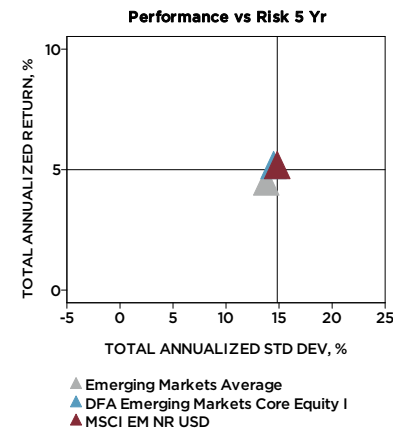
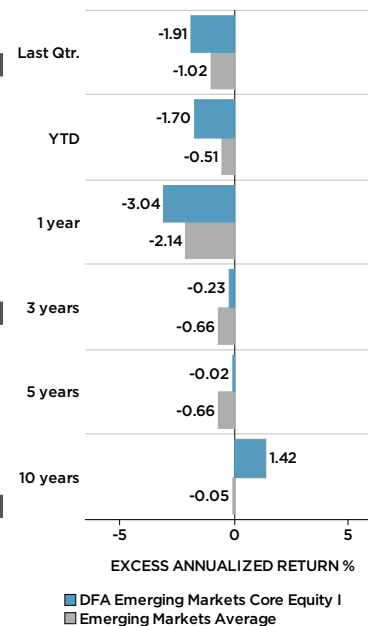
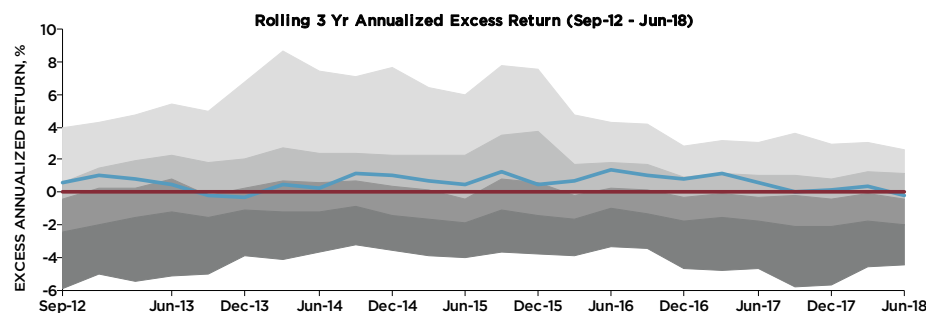
PTC Inc	2.29%
RSP Permian Inc	2.23%
Coherent Inc	2.06%
Quaker Chemical Corp	1.97%
The Ultimate Software Grc	1.76%



## DFA EMERGING MARKETS CORE EQUITY I

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	DFA Emerging Markets Core Equity I	Peer Group Rank	MSCI EM NR USD	Emerging Markets	# of Funds
Standard Deviation	14.46	65%	14.85	13.79	575
Sharpe Ratio	0.32	42%	0.31	0.28	575
Alpha	0.16	46%	0.00	-0.05	575
Beta	0.96	25%	1.00	0.87	575
R-Squared	97.34	7%	100.00	86.74	575
Up Mkt Capture	98.15	24%	100.00	87.49	575
Down Mkt Capture	98.15	70%	100.00	89.59	575
Information Ratio	-0.01	41%	NA	-0.12	575
TRAILING RETURNS					
Last Qtr.	-9.87	66%	-7.96	-8.98	814
YTD	-8.35	72%	-6.66	-7.16	807
1 Year	5.17	63%	8.20	6.07	796
3 Years	5.37	48%	5.60	4.93	733
5 Years	5.00	41%	5.01	4.35	575
10 Years	3.67	16%	2.26	2.21	302
CALENDAR RETURNS					
2017	36.55	48%	37.28	35.24	808
2016	12.35	20%	11.19	8.21	849
2015	-14.86	59%	-14.92	-13.56	838
2014	-0.91	30%	-2.19	-2.73	786
2013	-2.64	61%	-2.60	0.32	693



## INVESTMENT PROFILE

Ticker	DFCEX
CUSIP	233203421
Net Assets \$MM	\$27,480.00
Manager Names	Team Managed
Manager Tenure	8.3 Years
Prospectus Exp Ratio	0.53%
Cat Median Exp Ratio	1.42%
Current 12b-1	N/A
Annlzd Ret Since Incept	7.90%
Inception Date	04/05/2005
Phone Number	888-576-1167
Sub Advisor	DFA Australia Limited/ Dimensional Fund Advisors Ltd

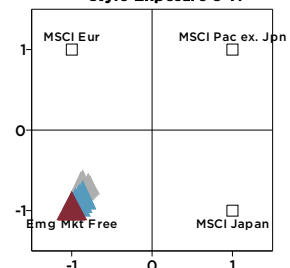
## HOLDINGS OVERVIEW

Total Number of Holdings	5068
% Assets in Top 10 Holdings	12.86%
Avg Mkt Cap \$MM	\$8,679.95
Turnover Ratio	4.00%

## TOP HOLDINGS

Samsung Electronics Co Ltd	3.92%
Tencent Holdings Ltd	1.83%
Taiwan Semiconductor Mar	1.42%
Taiwan Semiconductor Mar	1.06%
SK Hynix Inc	0.94%

## Style Exposure 5 Yr

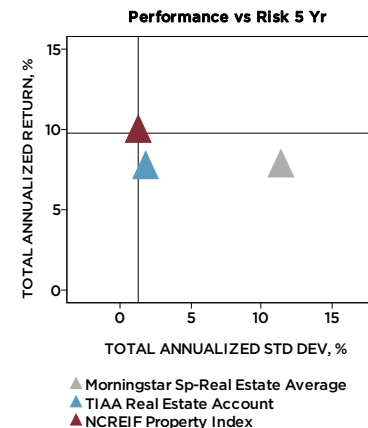
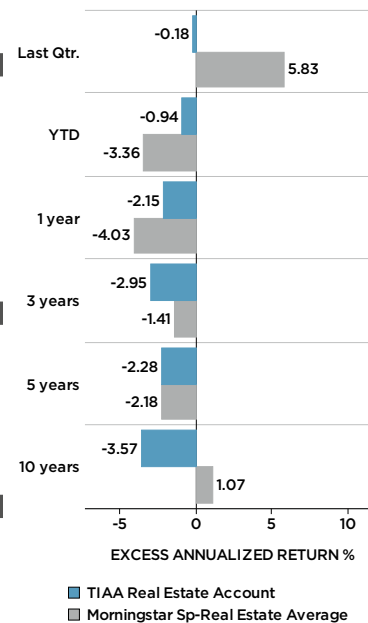
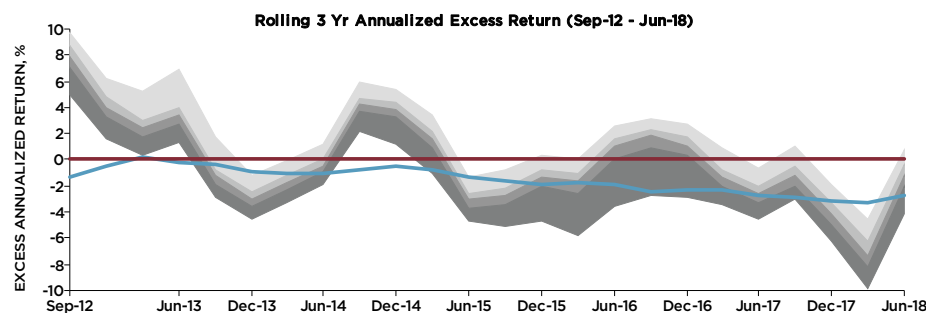


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## TIAA REAL ESTATE ACCOUNT

Period Ending 6.30.18 | Q2 18

KEY MEASURES / 5 YEAR	TIAA Real Estate Account	Peer Group Rank	NCREIF Property Index	Morningstar Sp-Real Estate	# of Funds
Standard Deviation	1.79	1%	1.25	11.44	221
Sharpe Ratio	3.94	1%	7.51	0.64	221
Alpha	-2.59	8%	0.00	-9.42	221
Beta	1.03	94%	1.00	1.77	221
R-Squared	58.96	1%	100.00	5.13	221
Up Mkt Capture	76.69	58%	100.00	77.65	221
Down Mkt Capture	NA	0%	NA	NA	0
Information Ratio	-1.71	100%	NA	-0.19	221
TRAILING RETURNS					
Last Qtr.	1.63	99%	1.81	7.64	252
YTD	2.60	1%	3.54	0.18	252
1 Year	5.05	17%	7.20	3.17	243
3 Years	5.30	87%	8.26	6.84	239
5 Years	7.49	58%	9.77	7.59	221
10 Years	2.66	100%	6.22	7.29	196
CALENDAR RETURNS					
2017	4.37	63%	6.98	5.71	252
2016	5.20	72%	7.97	6.63	271
2015	8.16	1%	13.33	2.47	276
2014	12.22	99%	11.81	28.44	274
2013	9.65	2%	10.99	1.65	269



## INVESTMENT PROFILE

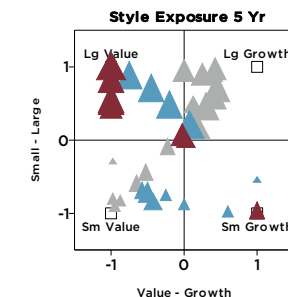
ID VAUSA059TL  
 Cusip 878094200  
 Net Assets \$ \$25,290,212,327.00  
 Manager Name Team Managed  
 Manager Start Date 2016-05-01  
 Expense Ratio 0.83%  
 Cat Median Exp Ratio 1.25%  
 Annlzd Ret Since Incept 6.33%  
 Inception Date 10-02-1995  
 Share Class Incep Date 10/02/1995  
 Phone Number 877-518-9161

## HOLDINGS OVERVIEW

% Assets in Top 10 Holdings 21.00%  
 Avg Mkt Cap \$MM \$12,118.70  
 Turnover Ratio 2.70%

## TOP HOLDINGS

Fashion Show 3.02%  
 1001 Pennsylvania Avenue 2.78%  
 The Florida Mall 2.77%  
 Ddr Joint Venture 2.30%  
 Fourth And Madison 2.00%



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APPENDIX

Period Ending 6.30.18 | Q2 18

University of Maine System

APPENDIX

Your CAPTRUST Service Team.....

Glossary of Terms.....

Evaluation Methodology.....



## YOUR CAPTRUST SERVICE TEAM MEMBERS

Period Ending 6.30.18 | Q2 18

University of Maine System

TEAM MEMBERS	RESPONSIBILITIES
<b>Michael S. Pratico</b> Senior Vice President   Financial Advisor Michael.Pratico@CAPTRUSTAdvisors.com	<b>Account Role: Lead Consultant</b> Our Lead Consultants serve as the primary relationship manager for the fiduciaries of corporate retirement plans. They oversee and ensure quality delivery of comprehensive investment advisory services. They are available to assist with any aspect of clients' accounts, or put them in contact with the appropriate resources here at CAPTRUST.
<b>Barron V. Schmitt</b> Senior Vice President   Financial Advisor barry.schmitt@CapTrustAdvisors.com	<b>Account Role: Consultant</b> Our Consultants have responsibility for client project management, client meetings, report preparation, and presentation. Projects involve the establishment of investment policies and objectives, asset allocation modeling, investment manager analyses and searches, fee analysis, performance evaluation, and other specialized projects. In addition, they will provide comprehensive written investment option and plan reviews, as well as monitor overall results and service delivery to ensure complete satisfaction.
<b>Scott T. Matheson, CFA, CPA</b> Senior Director   Defined Contribution Practice Leader Scott.Matheson@CAPTRUSTAdvisors.com	<b>Account Role: Research Analyst</b> Our Investment Analysts conduct investment manager research, asset allocation studies, portfolio monitoring and performance measurement. Some of their specific duties include: evaluating fund lineups and investment options, reporting due diligence findings to clients, and researching the various universes for viable investment options. Our team monitors and evaluates mutual funds, separate account managers and alternative investments for use with current and prospective clients.
<b>Che-Che S. McCrimmon</b> Senior Client Management Consultant Che-Che.McCrimmon@captrustadvisors.com	<b>Account Role: Client Management Consultant</b> The Client Management Consultants are focused on overall client management from initial conversion of new plans to CAPTRUST throughout their 'life' at CAPTRUST. As the primary contact for day-to-day client service needs, the main goal of the Client Management Consultant is to deliver exceptional proactive client service. On a daily basis, the Client Management Consultants are available to assist employees with questions related to plan enrollment and education, available investment options, and other areas.

8.1

## GLOSSARY

Period Ending 6.30.18 | Q2 18

**ALPHA**

Alpha measures a manager's rate of return in excess of that which can be explained by its systematic risk, or Beta. It is a result of regressing a manager's returns against those of a benchmark index. A positive alpha implies that a manager has added value relative to its benchmark on a risk-adjusted basis.

**BATTING AVERAGE**

Batting Average, an indicator of consistency, measures the percentage of time an active manager outperformed the benchmark.

**BETA**

Beta measures a manager's sensitivity to systematic, or market risk. Beta is a result of the analysis regressing a manager's returns against those of a benchmark Index. A manager with a Beta of 1 should move perfectly with a benchmark. A Beta of less than 1 implies that a manager's returns are less volatile than the market's (i.e., selected benchmarks). A Beta of greater than 1 implies that a manager exhibits greater volatility than the market (i.e., selected benchmark).

**CAPTURE RATIO**

Up Market Capture is the average return of a manager relative to a benchmark index using only periods where the benchmark return was positive. Down Market Capture is the average return of a manager relative to a benchmark index using only periods where the benchmark return was negative. An Up Market Capture of greater than 100% and a Down Market Capture of less than 100% is considered desirable.

**INFORMATION RATIO**

The Information Ratio measures a manager's excess return over the passive index divided by the volatility of that excess return, or Tracking Error. To obtain a higher Information Ratio, which is preferable, a manager must demonstrate the ability to generate returns above its benchmark while avoiding large performance swings relative to that same benchmark.

**PERCENTILE RANK**

Percentile Rankings are based on a manager's performance relative to all other available funds in its universe. Percentiles range from 1, being the best, to 100 being the worst. A ranking in the 50th percentile or above demonstrates that the manager has performed better on a relative basis than at least 50% of its peers.

**RISK-ADJUSTED PERFORMANCE**

Risk-adjusted Performance, or RAP, measures the level of return that an investment option would generate given a level of risk equivalent to the benchmark index.

**R-SQUARED**

R-squared measures the portion of a manager's movements that are explained by movements in a benchmark index. R-squared values range from 0 to 100. An R-squared of 100 means that all movements of a manager are completely explained by movements in the index. This measurement is identified as the coefficient of determination from a regression equation. A high R-squared value supports the validity of the Alpha and Beta measures, and it can be used as a measure of style consistency.

**SHARPE RATIO**

Sharpe ratio measures a manager's return per unit of risk, or standard deviation. It is the ratio of a manager's excess return above the risk-free rate divided by a manager's standard deviation. A higher Sharpe ratio implies greater manager efficiency.

**STANDARD DEVIATION**

Standard Deviation is a measure of the extent to which observations in a series vary from the arithmetic mean of the series. This measure of volatility or risk allows the estimation of a range of values for a manager's returns. The wider the range, the more uncertainty, and, therefore, the riskier a manager is assumed to be.

**TRACKING ERROR**

Tracking Error is the standard deviation of the portfolio's residual (i.e. excess) returns. The lower the tracking error, the closer the portfolio returns have been to its risk index. Aggressively managed portfolios would be expected to have higher tracking errors than portfolios with a more conservative investment style.


**TREYNOR RATIO**

The Treynor Ratio is a measure of reward per unit of risk. With Treynor, the numerator (i.e. reward) is defined as the annualized excess return of the portfolio versus the risk-free rate. The denominator (i.e. risk) is defined as the portfolio beta. The result is a measure of excess return per unit of portfolio systematic risk. As with Sharpe and Sortino, the Treynor Ratio only has value when it is used as the basis of comparison between portfolios. The higher the Treynor Ratio, the better.

## INVESTMENT REVIEW | EVALUATION METHODOLOGY

Period Ending 6.30.18 | Q2 18

University of Maine System

	QUANTITATIVE EVALUATION ITEMS	QUALITATIVE EVALUATION ITEMS
 <b>MARKED FOR REVIEW</b>  <b>The following categories of the Investment Policy Monitor appear “Marked For Review” when:</b>	<b>3/5 Year Risk- adjusted Performance</b> The investment option's 3 or 5 Year Annualized Risk Adjusted Performance falls below the 50th percentile of the peer group.	<b>Fund Management</b> A significant disruption to the investment option's management team has been discovered.
	<b>3/5 Year Performance vs. Peers</b> The investment option's 3 or 5 Year Annualized Peer Relative Performance falls below the 50th percentile of the peer group.	<b>Fund Family</b> A significant disruption to the investment option's parent company has been discovered.
<b>CAPTRUST's Investment Policy Monitoring Methodology</b> The Investment Policy Monitoring Methodology document describes the systems and procedures CAPTRUST uses to monitor and evaluate the investment vehicles in your plan/account on a quarterly basis.  Our current Investment Policy Monitoring Methodology document can be accessed through the following link:  <a href="http://captrustadvisors.com/investmentmonitoring">captrustadvisors.com/investmentmonitoring</a>	<b>3/5 Year Style</b> The investment option's 3 or 5 Year R-Squared measure falls below the absolute threshold set per asset class.	<b>Portfolio Construction</b> The investment option's combined Portfolio Construction score is 6 or below out of a possible 15 points.
	<b>3/5 Year Confidence</b> The investment option's 3 or 5 Year Confidence Rating falls below the 50th percentile of the peer group.	<b>Underlying Investment Vehicles</b> The investment option's combined Underlying Investment Vehicles score is 6 or below out of a possible 15 points.
	<b>Glidepath Assessment</b> % of Equity Exposure: The combined percentage of an investment option's equity exposure ranks in the top 20th percentile or bottom 20th percentile of the peer group.  Regression to the Benchmark: The investment option's sensitivity to market risk - as measured by beta relative to a Global Equity Index - is above 0.89.	

8.1



## AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Mid Cap Growth Manager and Foreign Large Growth Manager – Reviews and Recommendations - Defined Contribution Plans

2. **INITIATED BY:** Kelly Martin, Chair

3. **BOARD INFORMATION:**

**BOARD ACTION:** X

4. **OUTCOME:**

Primary Outcome:

Enhance fiscal positioning

**BOARD POLICY:**

Section 709 - Investments

5. **BACKGROUND:**

At the September 2018 meeting, Michael Pratico, Barry Schmitt, and Sam Kirby (via conference line) with CAPTRUST, will provide an overview of plan investments, including the scoring of investments, consistent with the Investment Policy Statement. All funds, except for the Goldman Sachs Growth Opportunities and the Oppenheimer International Growth Fund are meeting policy objectives.

CAPTRUST is recommending that the Committee consider replacing both managers due to lingering underperformance within their respective asset class category.

6. **TEXT OF PROPOSED RESOLUTION:**

That the Board of Trustees, acting through the Investment Committee, approves the following fund changes in the Defined Contribution Plans:

- Replacement of the Goldman Sachs Growth Opportunities Fund with the MFS Mid Cap Growth Fund.
- Replacement of the Oppenheimer International Growth Fund with the American Funds Europacific Growth Fund.

09/18/2018

UNIVERSITY OF MAINE SYSTEM  
2ND QUARTER, 2018

**Fund Comparisons**

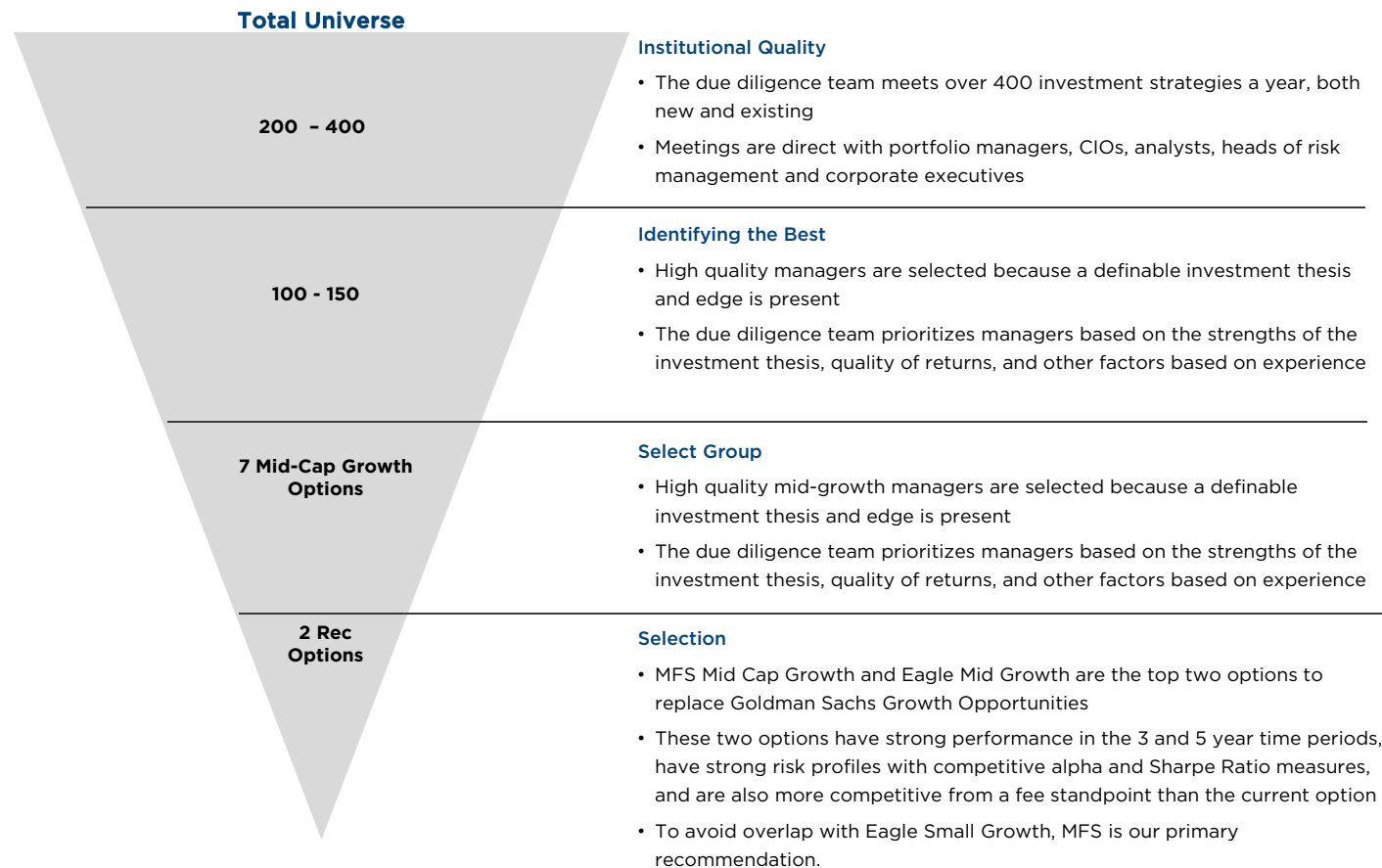
**CAPTRUST**  
4208 Six Forks Road, Suite 1700  
Raleigh, NC 27609

Our mission is to enrich the lives of our clients, colleagues and communities through sound financial advice, integrity, and a commitment to service beyond expectation.

9.1

## INVESTMENT MANAGER RESEARCH- MID CAP GROWTH

Differentiated selection process combined with an extensive network and strategy expertise strengthens CAPTRUST's sourcing capabilities.



9.1

## INVESTMENT ANALYSIS - MEDIUM COMPANY GROWTH

## INVESTMENT SUMMARY

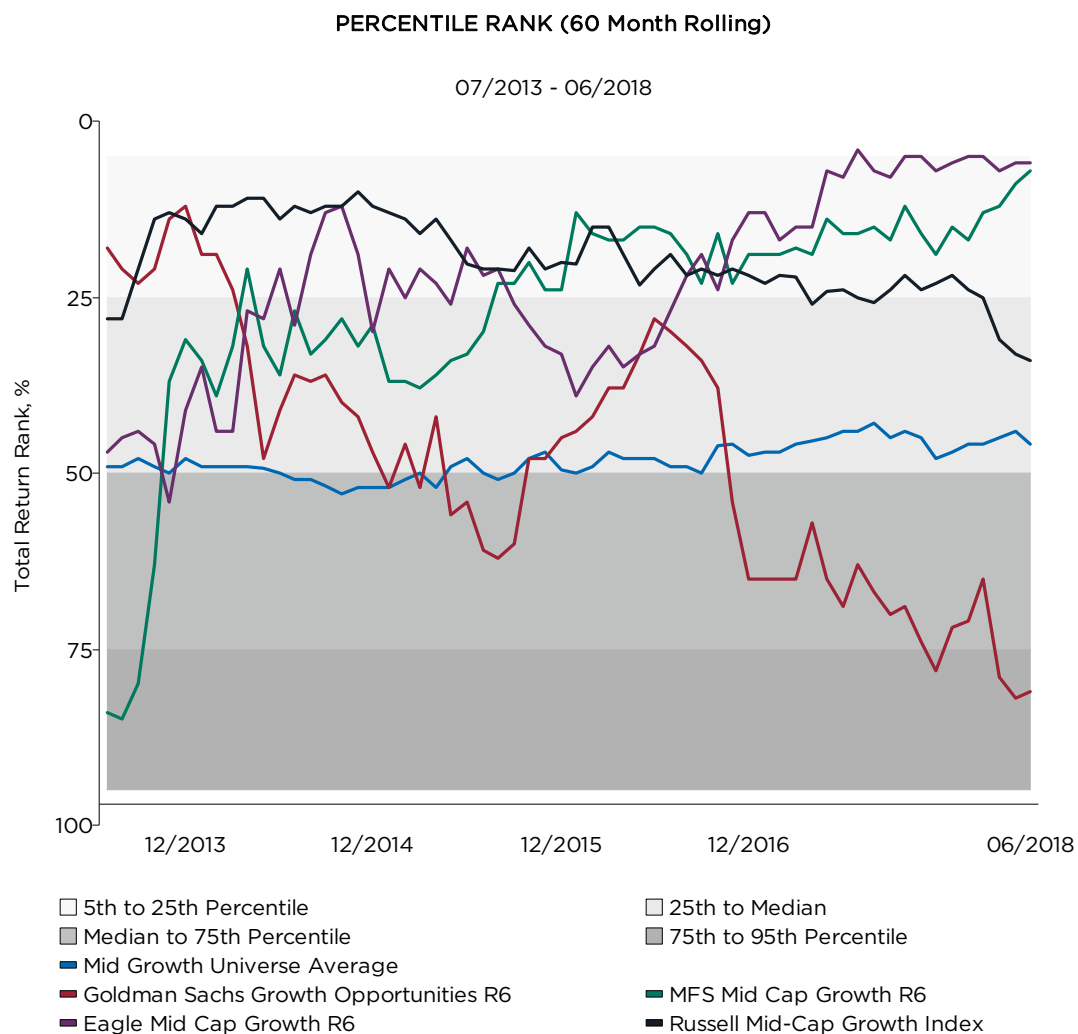
	Goldman Sachs Growth Opportunities R6	MFS Mid Cap Growth R6	Eagle Mid Cap Growth R6	Russell Mid-Cap Growth Index	Mid Growth Universe Average
Morningstar Category	Mid-Cap Growth	Mid-Cap Growth	Mid-Cap Growth	-	-
Ticker	GGOUX	OTCKX	HRAUX	-	-
Manager Name	Steven M. Barry	Eric B. Fischman	Bert L. Boksen	-	-
Manager Tenure	19.0 years	9.6 years	19.9 years	-	7.2 years
Net Assets (\$MM)	\$2,217.00	\$3,019.00	\$3,717.00	-	\$1,309.65
Expense Ratio	0.94%	0.85%	0.69%	-	1.42%
Current 12b-1	-	-	-	-	-
<b>PERFORMANCE</b>					
Quarter	0.04%	5.92%	3.36%	3.16%	4.16%
YTD	3.92%	11.66%	7.96%	5.40%	6.78%
1 Year	15.09%	23.26%	21.29%	18.52%	18.51%
3 Year	7.69%	13.17%	12.63%	10.73%	9.91%
5 Year	11.08%	15.24%	15.42%	13.37%	12.54%
10 Year	9.81%	9.24%	10.86%	10.45%	9.53%
<b>CALENDAR PERFORMANCE</b>					
2017	27.24%	26.39%	30.44%	25.27%	24.92%
2016	1.49%	4.75%	7.18%	7.33%	5.98%
2015	-5.24%	4.60%	2.68%	-0.20%	-0.73%
2014	11.44%	8.95%	10.11%	11.90%	7.22%
2013	32.38%	37.27%	38.15%	35.74%	35.05%
2012	19.58%	16.18%	16.35%	15.81%	14.47%
2011	-3.70%	-6.12%	-8.78%	-1.65%	-4.00%
<b>MPT STATISTICS (5 YR)</b>					
Standard Deviation	11.07	10.57	12.06	10.93	11.75
Sharpe Ratio	0.96	1.40	1.24	1.18	1.04
Alpha	-1.95	2.93	1.11	-	-0.77
Beta	0.97	0.92	1.07	1.00	1.00
R Squared	92.48	90.28	94.51	100.00	86.77
<b>PORTFOLIO STATISTICS</b>					
Avg Market Cap	\$14,707.95	\$13,285.21	\$15,786.82	-	\$8,752.96
Total Holdings	83	104	86	-	102
% Assets in Top 10	23.48%	20.86%	20.09%	-	27.56%
% Turnover	61.00%	30.00%	44.00%	-	93.35%

DISCLAIMER: Fund performance depicts historical performance and is not meant to predict future results. Peer group averages are derived from Morningstar and are provided for comparison purposes only. The information and statistics in this report are from sources believed to be reliable, but are not warranted by CAPTRUST Financial Advisors to be accurate or complete. The opinions expressed in this report are subject to change without notice. This material has been prepared or is distributed solely for informational purposes and is not a solicitation or an offer to buy any security or instrument or to participate in any trading strategy. We believe this information to fully satisfy the disclosure requirements of ERISA section 408(b)(2).

9.1

## INVESTMENT ANALYSIS - MEDIUM COMPANY GROWTH

## INVESTMENT SUMMARY



## ABOUT THIS ANALYSIS

## PERCENTILE RANK

Percentile Rankings are based on an individual fund's performance relative to all other available funds in its universe. Percentiles range from 1, being the best, to 100 being the worst.

## MEASUREMENT GUIDE

Ideally, managers prefer to be in the 50th percentile or above which demonstrates that they have done better on a relative basis than at least 50% of their peers.

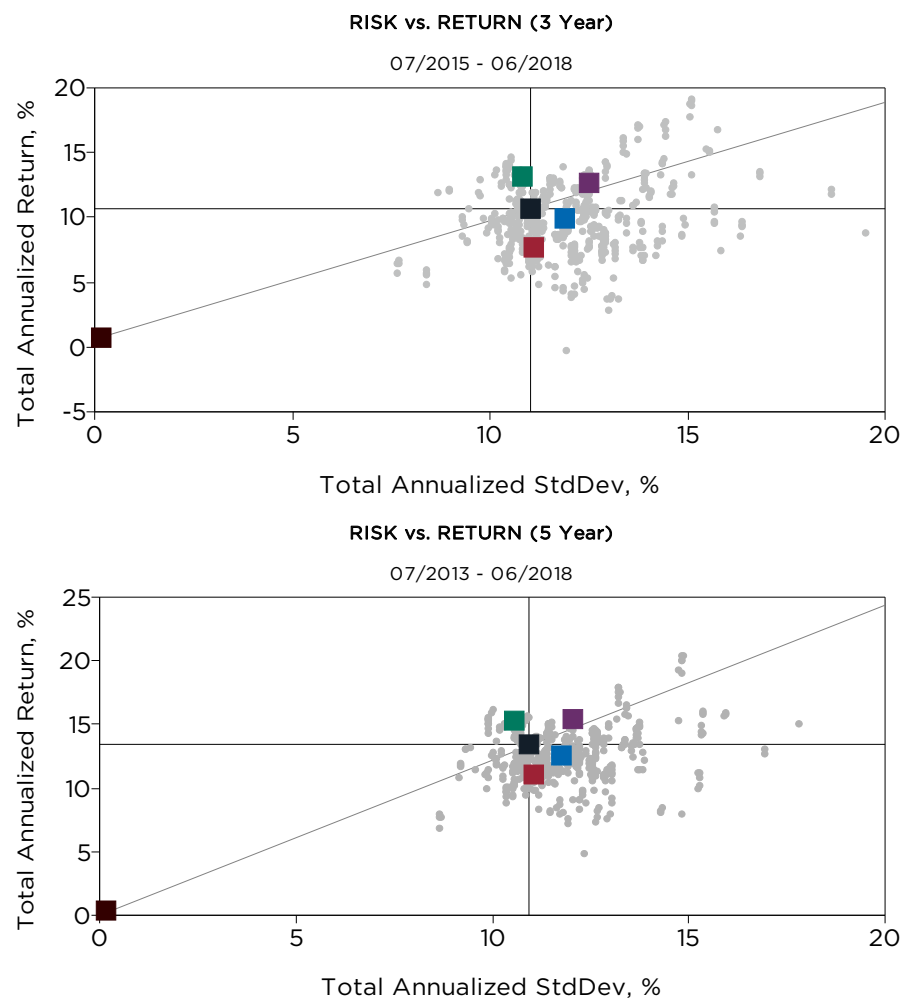
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## INVESTMENT ANALYSIS - MEDIUM COMPANY GROWTH

## INVESTMENT SUMMARY



## ABOUT THIS ANALYSIS

## RISK/RETURN

The Risk/Return Graph is highlighted by a straight line connecting the riskless asset, in this case cash, to the risk/return plot of a relevant benchmark index. From Modern Portfolio Theory we know that the slope of this line represents the Sharpe Ratio of the index.

## MEASUREMENT GUIDE

Given the formula for Sharpe Ratio we can conclude that all points above the line offer a more attractive risk/return trade off than the index over the relevant time period. Consequently, all points below the line offer a less attractive risk/return trade off.

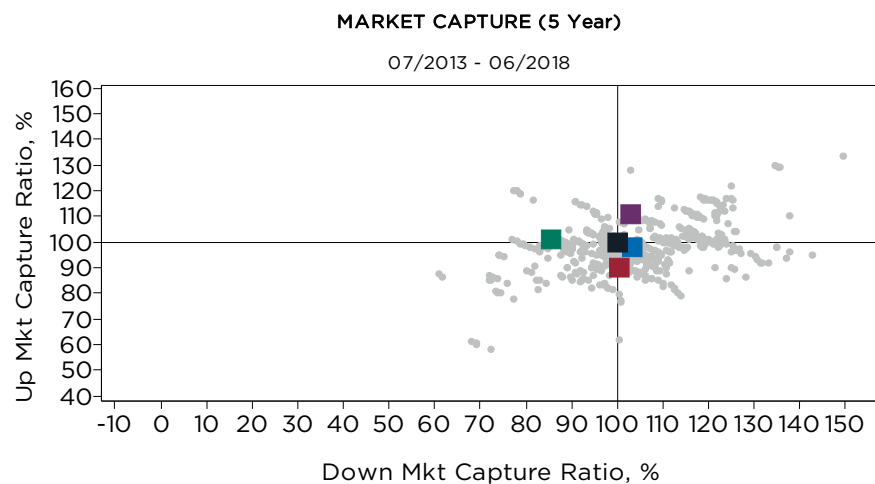
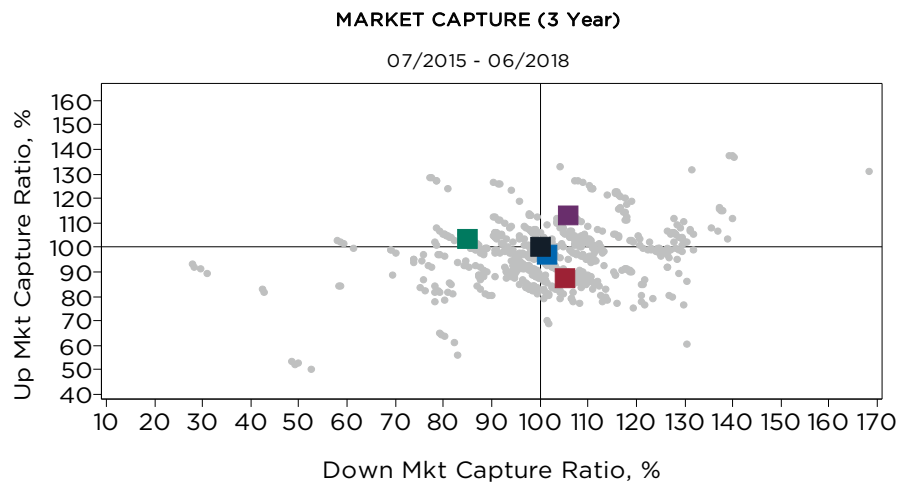
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- Mid Growth Universe
- Mid Growth Universe Average
- Goldman Sachs Growth Opportunities R6
- MFS Mid Cap Growth R6
- Eagle Mid Cap Growth R6
- Russell Mid-Cap Growth Index

DISCLAIMER: Fund performance depicts historical performance and is not meant to predict future results. Peer group averages are derived from Morningstar and are provided for comparison purposes only. The information and statistics in this report are from sources believed to be reliable, but are not warranted by CAPTRUST Financial Advisors to be accurate or complete. The opinions expressed in this report are subject to change without notice. This material has been prepared or is distributed solely for informational purposes and is not a solicitation or an offer to buy any security or instrument or to participate in any trading strategy. We believe this information to fully satisfy the disclosure requirements of ERISA section 408(b)(2).

## INVESTMENT ANALYSIS - MEDIUM COMPANY GROWTH

## INVESTMENT SUMMARY



## ABOUT THIS ANALYSIS

## CAPTURE RATIO

Up Market Capture is the average return of the Manager relative to a benchmark index using only periods where the benchmark return was positive.

Down Market Capture is the average return of the Manager relative to a benchmark index using only periods where the benchmark return was negative.

## MEASUREMENT GUIDE

An Up Market Capture of greater than 100% and a Down Market Capture of less than 100% is considered desirable.

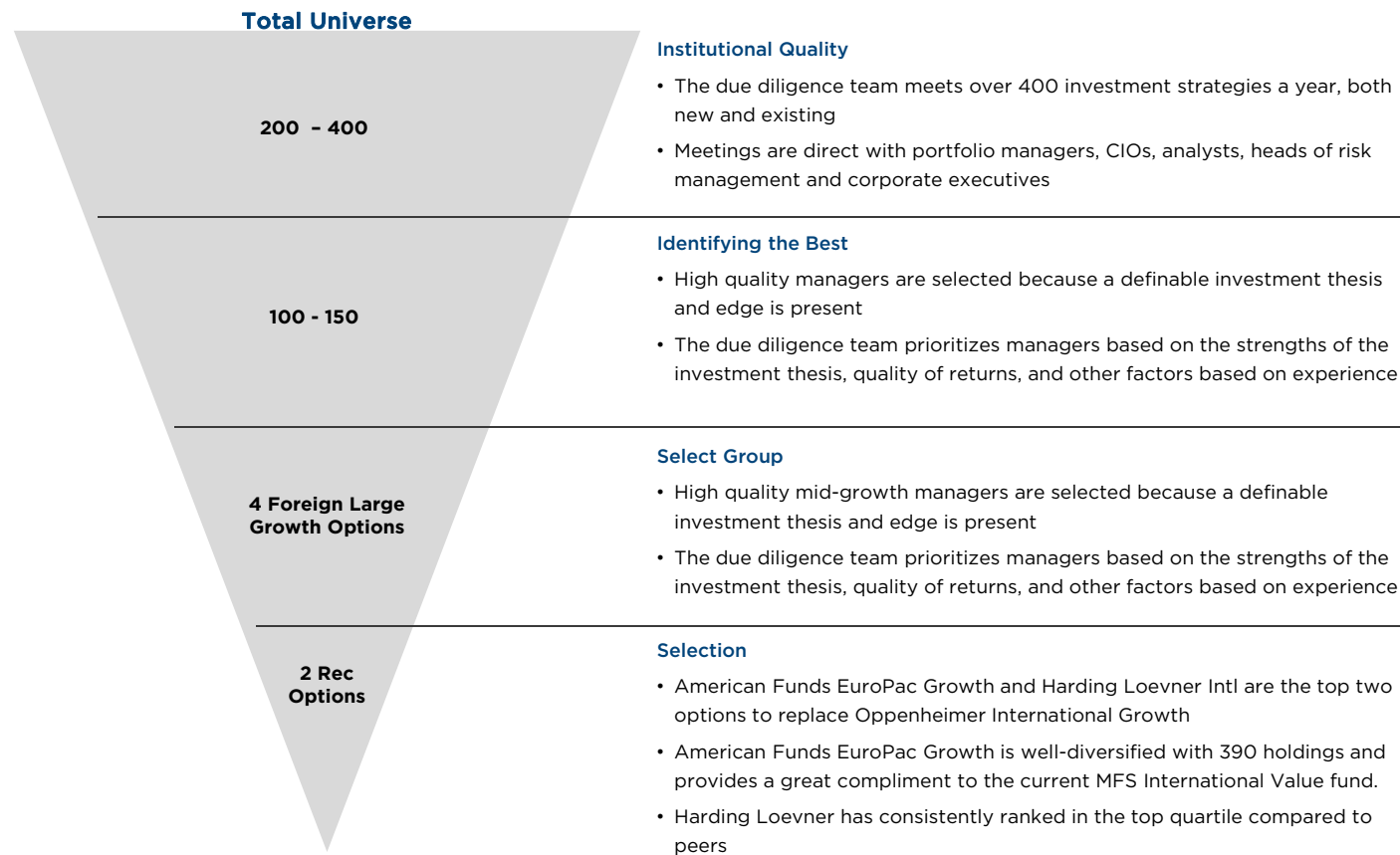
- Mid Growth Universe
- Mid Growth Universe Average
- Goldman Sachs Growth Opportunities R6
- MFS Mid Cap Growth R6
- Eagle Mid Cap Growth R6
- Russell Mid-Cap Growth Index

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## INVESTMENT MANAGER RESEARCH- FOREIGN LARGE GROWTH

Differentiated selection process combined with an extensive network and strategy expertise strengthens CAPTRUST's sourcing capabilities.



9.1

## INVESTMENT ANALYSIS - FOREIGN LARGE GROWTH

## INVESTMENT SUMMARY

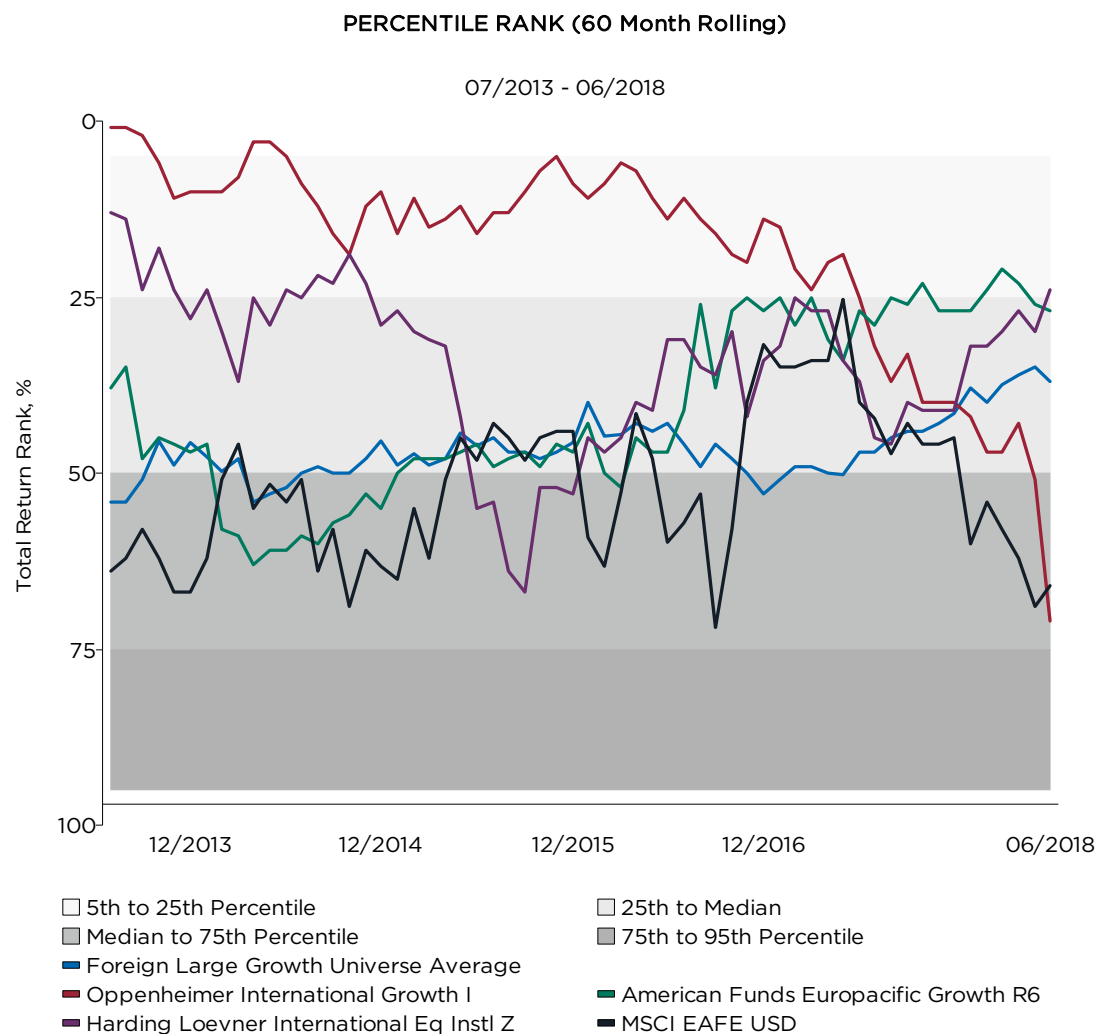
	Oppenheimer International Growth I	American Funds Europacific Growth R6	Harding Loevner International Eq Instl Z	MSCI EAFE USD	Foreign Large Growth Universe Average
Morningstar Category	Foreign Large Growth	Foreign Large Growth	Foreign Large Growth	-	-
Ticker	OIGIX	RERGX	HLIZX	-	-
Manager Name	George R. Evans	Mark E. Denning	Alexander T. Walsh	-	-
Manager Tenure	22.3 years	26.5 years	17.4 years	-	7.4 years
Net Assets (\$MM)	\$25,957.00	\$163,875.00	\$14,278.00	-	\$6,199.13
Expense Ratio	0.69%	0.49%	0.80%	-	1.34%
Current 12b-1	-	-	-	-	-
<b>PERFORMANCE</b>					
Quarter	-3.02%	-2.82%	-1.26%	-0.97%	-0.82%
YTD	-2.84%	-1.82%	-0.35%	-2.37%	-0.34%
1 Year	6.63%	9.35%	10.46%	7.37%	11.13%
3 Year	5.51%	6.51%	8.44%	5.41%	6.75%
5 Year	6.71%	8.34%	8.65%	6.93%	7.84%
10 Year	5.55%	4.82%	5.75%	3.33%	3.97%
<b>CALENDAR PERFORMANCE</b>					
2017	27.15%	31.17%	30.00%	25.62%	31.67%
2016	-1.88%	1.01%	5.30%	1.51%	-2.09%
2015	3.63%	-0.48%	-1.62%	-0.39%	0.94%
2014	-6.80%	-2.29%	-1.61%	-4.48%	-3.79%
2013	25.71%	20.58%	14.02%	23.29%	19.91%
2012	22.12%	19.64%	20.28%	17.90%	18.72%
2011	-7.71%	-13.31%	-9.78%	-11.73%	-12.45%
<b>MPT STATISTICS (5 YR)</b>					
Standard Deviation	11.76	10.80	11.95	11.63	11.45
Sharpe Ratio	0.54	0.73	0.69	0.56	0.65
Alpha	0.12	2.22	2.08	-	1.56
Beta	0.95	0.87	0.95	1.00	0.90
R Squared	87.85	88.83	84.62	100.00	83.59
<b>PORTFOLIO STATISTICS</b>					
Avg Market Cap	\$21,386.29	\$47,131.27	\$53,159.32	-	\$31,350.83
Total Holdings	96	390	62	-	119
% Assets in Top 10	18.35%	21.22%	32.62%	-	27.30%
% Turnover	22.00%	29.00%	12.00%	-	64.25%

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## INVESTMENT ANALYSIS - FOREIGN LARGE GROWTH

## INVESTMENT SUMMARY



## ABOUT THIS ANALYSIS

## PERCENTILE RANK

Percentile Rankings are based on an individual fund's performance relative to all other available funds in its universe. Percentiles range from 1, being the best, to 100 being the worst.

## MEASUREMENT GUIDE

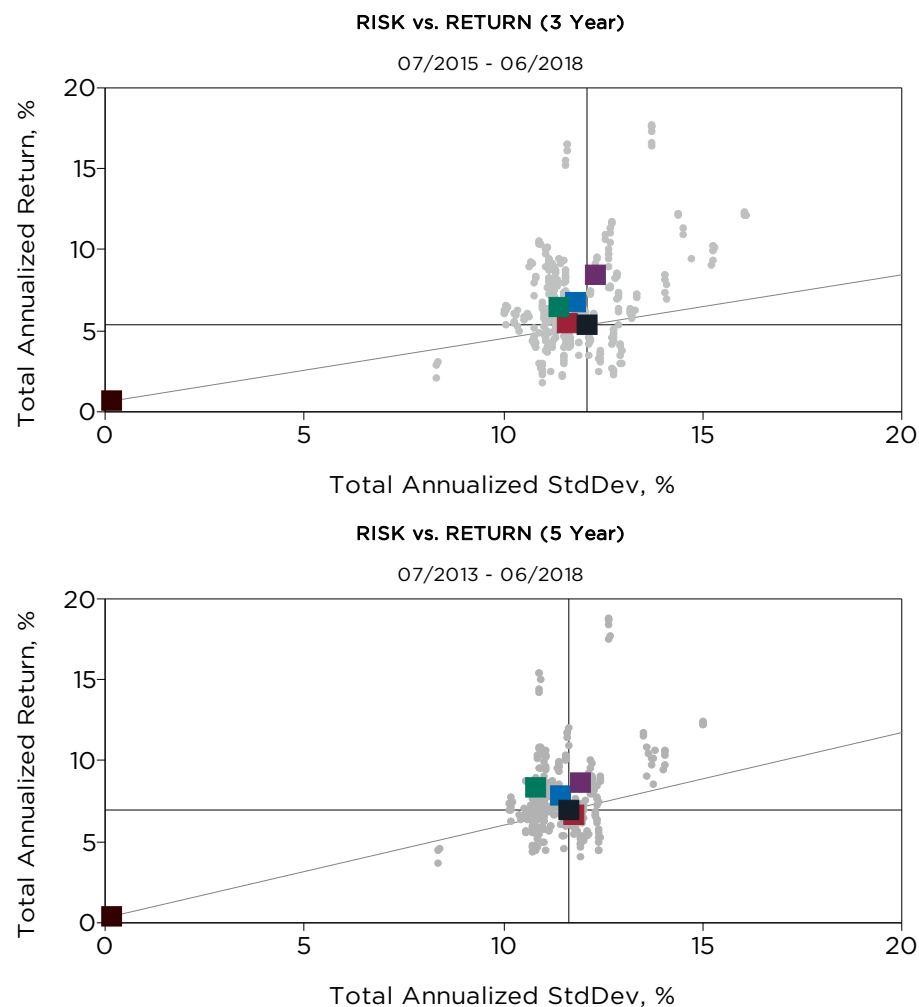
Ideally, managers prefer to be in the 50th percentile or above which demonstrates that they have done better on a relative basis than at least 50% of their peers.

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## INVESTMENT ANALYSIS - FOREIGN LARGE GROWTH

## INVESTMENT SUMMARY



## ABOUT THIS ANALYSIS

## RISK/RETURN

The Risk/Return Graph is highlighted by a straight line connecting the riskless asset, in this case cash, to the risk/return plot of a relevant benchmark index. From Modern Portfolio Theory we know that the slope of this line represents the Sharpe Ratio of the index.

## MEASUREMENT GUIDE

Given the formula for Sharpe Ratio we can conclude that all points above the line offer a more attractive risk/return trade off than the index over the relevant time period. Consequently, all points below the line offer a less attractive risk/return trade off.

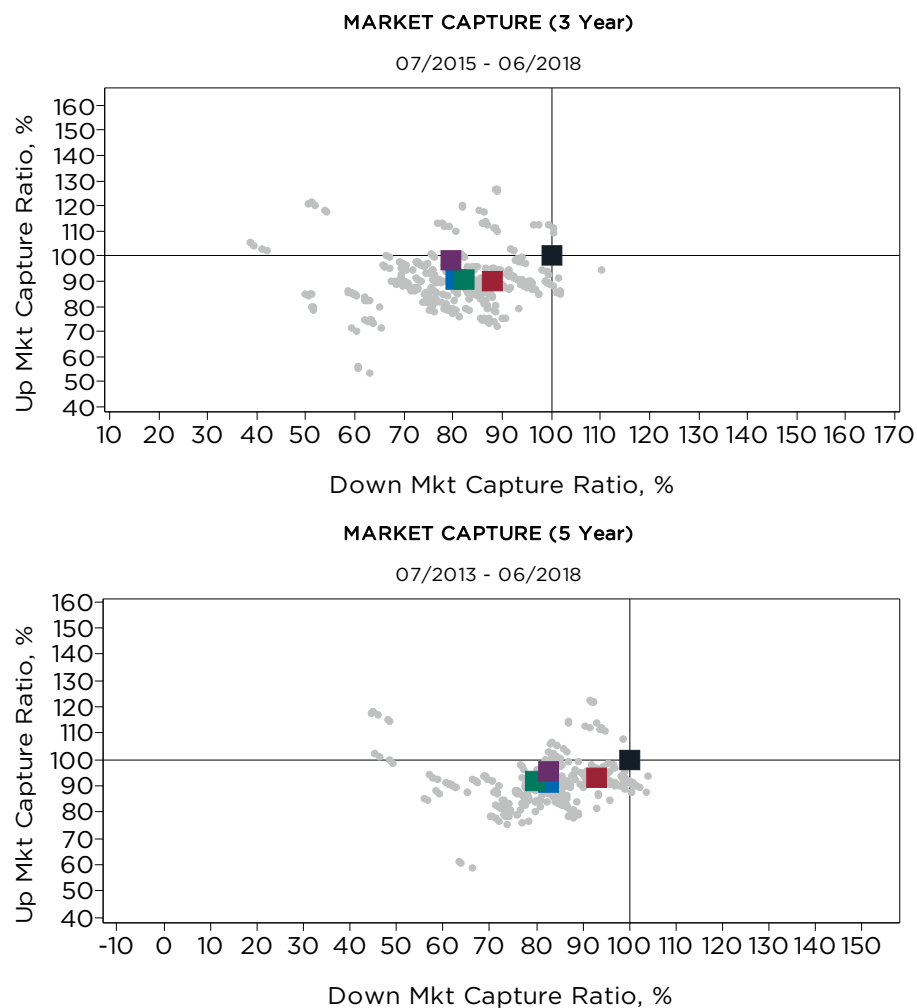
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- Foreign Large Growth Universe
- Foreign Large Growth Universe Average
- Oppenheimer International Growth I
- American Funds Europacific Growth R6
- Harding Loevner International Eq Instl Z
- MSCI EAFE USD

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## INVESTMENT ANALYSIS - FOREIGN LARGE GROWTH

## INVESTMENT SUMMARY



## ABOUT THIS ANALYSIS

## CAPTURE RATIO

Up Market Capture is the average return of the Manager relative to a benchmark index using only periods where the benchmark return was positive.

Down Market Capture is the average return of the Manager relative to a benchmark index using only periods where the benchmark return was negative.

## MEASUREMENT GUIDE

An Up Market Capture of greater than 100% and a Down Market Capture of less than 100% is considered desirable.

- Foreign Large Growth Universe
- Foreign Large Growth Universe Average
- Oppenheimer International Growth I
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## INVESTMENT ANALYSIS

## GLOSSARY OF TERMS

**ALPHA**

A manager's rate of return in excess of that which can be explained by its systematic risk, or Beta. It is a result of the analysis regressing a manager's returns against those of a benchmark index. A positive alpha implies that a manager has added value relative to its benchmark on a risk-adjusted basis.

**BETA**

A manager's sensitivity to systematic, or market risk. Beta is a result of the analysis regressing a manager's returns against those of a benchmark index. A manager with a Beta of 1 should move perfectly with the benchmark. A Beta of less than 1 implies that a manager's returns are less volatile than the market's. A Beta of greater than 1 similarly implies that a manager exhibits greater volatility than the market.

**CAPTURE RATIO**

A measure of a manager's performance relative to its benchmark under different market conditions. It is the ratio of the average manager return to the average benchmark return. Up market capture refers to relative performance in periods where the benchmark return is greater than 0. Down market capture is calculated over those periods where the benchmark return is less than 0.

**INFORMATION RATIO**

An efficiency measure which estimates a manager's excess return over a benchmark, divided by the volatility of the excess return, or Tracking Error.

**PERCENTILE RANK**

Percentile Rank is based on an individual fund's performance relative to all other available funds in its universe. Percentiles range from 1, being the best, to 100 being the worst. Ideally, managers prefer to be in the 50th percentile or above which demonstrates that they have done better on a relative basis than at least 50% of their peers.

**R-SQUARED**

The portion of a manager's movements that are explained by movements in a benchmark index. R-squared values range from 0 to 100. An R-squared of 100 means that all movements of a manager are completely explained by movements in the index. Also identified as the coefficient of determination from a regression equation, a high R-squared value supports the validity of the Alpha and Beta measures.

**SHARPE RATIO**

A measure of a manager's return per unit of risk. It is the ratio of a manager's excess return above the risk free rate over the standard deviation. A higher Sharpe Ratio implies greater manager efficiency.

**STANDARD DEVIATION**

A measure of the extent to which observations in a series vary from the arithmetic mean of the series. This measure of volatility or risk allows the estimation of a range of values for a manager's returns. The wider the range, the more uncertainty, and therefore the riskier a manager is assumed to be.